



Hamilton

CITY OF HAMILTON

REQUEST FOR TENDERS

Contract Number: C13-14-26

**Contractor Required for the Renovation of the
Bennetto Community Centre Including Auditorium
Accessibility Improvements, Auditorium Adequate
Egress and Updating Universal Washroom**

**Closes: 3:00 PM, Hamilton time
Tuesday June 9, 2026**

***** ELECTRONIC BID SUBMISSIONS ONLY *****

**Procurement Division
Corporate Services Department**

Table of Contents

<u>Description</u>	<u>Page Number</u>
Communications	3
Request for Tenders Notice	4 to 7
Instructions to Bidders	8 to 26
Supplementary Instructions to Bidders	27 to 29
CCDC 2 -2020 Stipulated Price Contract	30
Supplementary Conditions to Contract CCDC 2-2020	31 to 92
Project Specific Supplementary Conditions to Contract CCDC 2-2020	93 to 96
Drawings and Specifications	177 pages
Online documents:	
Schedule of Prices	
Specifications	
• Bidder's Business Structure	
• Business Attestation Form	
Bonding	
Form of Tender	

COMMUNICATIONS

Revised: March 21, 2023

Contract Number: C13-14-26

Contractor Required for the Renovation of the Bennetto Community Centre Including Auditorium Accessibility Improvements, Auditorium Adequate Egress and Updating Universal Washroom

All questions related to this Request for Tenders (RFT) or for clarification on completing the Form of Tender shall be submitted through the Bidding System by clicking on the "Submit a Question" button for the specified Request for Tenders document and shall be directed to:

Vicki Lafford-Field
Procurement Specialist

All questions related to this Request for Tenders (RFT) or any clarification with respect to this RFT must be made no later than **3 Business Days prior** to the closing date of this RFT in order that City staff may have sufficient time to respond. The City reserves the right to extend the deadline for questions if required regarding this RFT.

Written answers or clarifications to issues of substance shall be shared with all bidders and issued as part of the RFT in the form of an Addendum. **All bidders are advised that any Addenda issued will only be posted on the following website:**

<https://hamilton.bidsandtenders.ca>

It is the sole responsibility of each bidder to check the website for any and all Addenda that have been issued for this Request for Tenders.



City of Hamilton
Corporate Services Department
Procurement Division
Email: procurement@hamilton.ca

Vicki Lafford-Field
Procurement Specialist
Telephone: (905) 546-2424, extension 8844
Email: vicki.laffordfield@hamilton.ca

REQUEST FOR TENDERS NOTICE

Contract Number: C13-14-26

Contractor Required for the Renovation of the Bennetto Community Centre Including Auditorium Accessibility Improvements, Auditorium Adequate Egress and Updating Universal Washroom

**Closes: 3:00 PM, Hamilton time
Tuesday June 9, 2026**

Only electronic bid submissions shall be accepted and received through the Bidding System by the closing date and time stated above.

There is no public opening for this Request for Tenders.

1.0 SCOPE OF WORK

The objectives of the renovation are to improve accessibility to the auditorium that better serves the public who utilize the services within the building (reorganizing program space and increase accessibility) and complete general upgrades throughout the affected areas, including finishes. Priority items for the renovation include, but may not be limited to the following:

- i. Convert and expand the existing single-occupant Water Closet (WC) into a Universal WC.
- ii. Provide six (6) level wheelchair spaces, ten (10) adaptable seating spaces, and one (1) designated mobility device storage area in the auditorium.
- iii. Provide a power door operator to existing door ED142.
- iv. Provide a ramp to connect corridor level to auditorium level.
- v. Modify the two (2) existing stairs down to the auditorium.
- vi. Modify the two (2) existing stairs up to the stage.
- vii. Provide tactile attention indicators at the edge of the stage.
- viii. Replace carpet floor finish in the auditorium.

- ix. Refresh multi-stall WC 125 & 126.
- x. Preparation for AV equipment upgrade.
- xi. Exterior ramp & stairs redevelopment (Provisional item).

2.0 CONTRACT REQUIREMENTS

Bidders are advised of the following contract requirements for this Request for Tenders:

2.1 Bid Security

Bid security: **\$121,000.00**

The City will only accept a digital bid bond in an electronically verifiable and enforceable (e-Bond) format.

2.2 Performance and/or Labour and Material Payment Security

Successful Bidder to provide:

Performance security (bond only accepted): **50%** of the Base Bid Price.

Successful Bidder to provide:

Labour and Material Payment security (bond only accepted): **50%** of the Base Bid Price.

2.3 NOTICE

Note to Bidders: Bidders are advised that the City's Fair Wage Policy and Fair Wage Schedule has been updated and approved by Council as of April 16, 2025. Where the awarded amount of the Contract is at or more than \$500,000, the Successful Bidder will be required to adhere to the Fair Wage Policy in effect as of the closing date for this Request for Tenders.

The Fair Wage Policy and Fair Wage Schedule are available on the City's website: Fair Wage Policy & Fair Wage Schedule | City of Hamilton.

3.0 SITE MEETINGS

3.1 Optional Site Meeting

There is an optional site meeting scheduled.

Location: 450 Hughson St. North, Hamilton, ON (see location map attached)
Date: Wednesday May 27, 2026
Time: 1:00 PM, Hamilton time

4.0 TO OBTAIN DOCUMENTS

4.1 Free Preview of Request for Tenders Documents

A complete set of Request for Tenders documents may be viewed for free on the City of Hamilton's bid opportunities website **hamilton.bidsandtenders.ca**.

4.2 Purchase of Request for Tenders Documents

The Request for Tenders documents are available for online purchase only.

Online: **hamilton.bidsandtenders.ca**

Fee: \$65.99 non-refundable, tax included + applicable bids&tenders™ fees

4.3 Accommodations for Bidders with Disabilities

In accordance with the Ontario Human Rights Code, Ontarians with Disabilities Act, 2001 (ODA) and Accessibility for Ontarians with Disabilities Act, 2005 (AODA), the City of Hamilton will accommodate for a disability, ensuring full and equitable participation throughout the bid process.

If a bidder requires this Request for Tenders in a different format to accommodate a disability, the bidder must contact the Tender Coordinator as soon as possible and in any event prior to the closing date. The Request for Tenders in the different format will be issued only to the requesting bidder and all Addenda will be issued in such different format only to the requesting bidder.

5.0 TRADE AGREEMENTS

This Request for Tenders is subject to the Canadian Free Trade Agreement (CFTA).

Procurement Manager
City of Hamilton

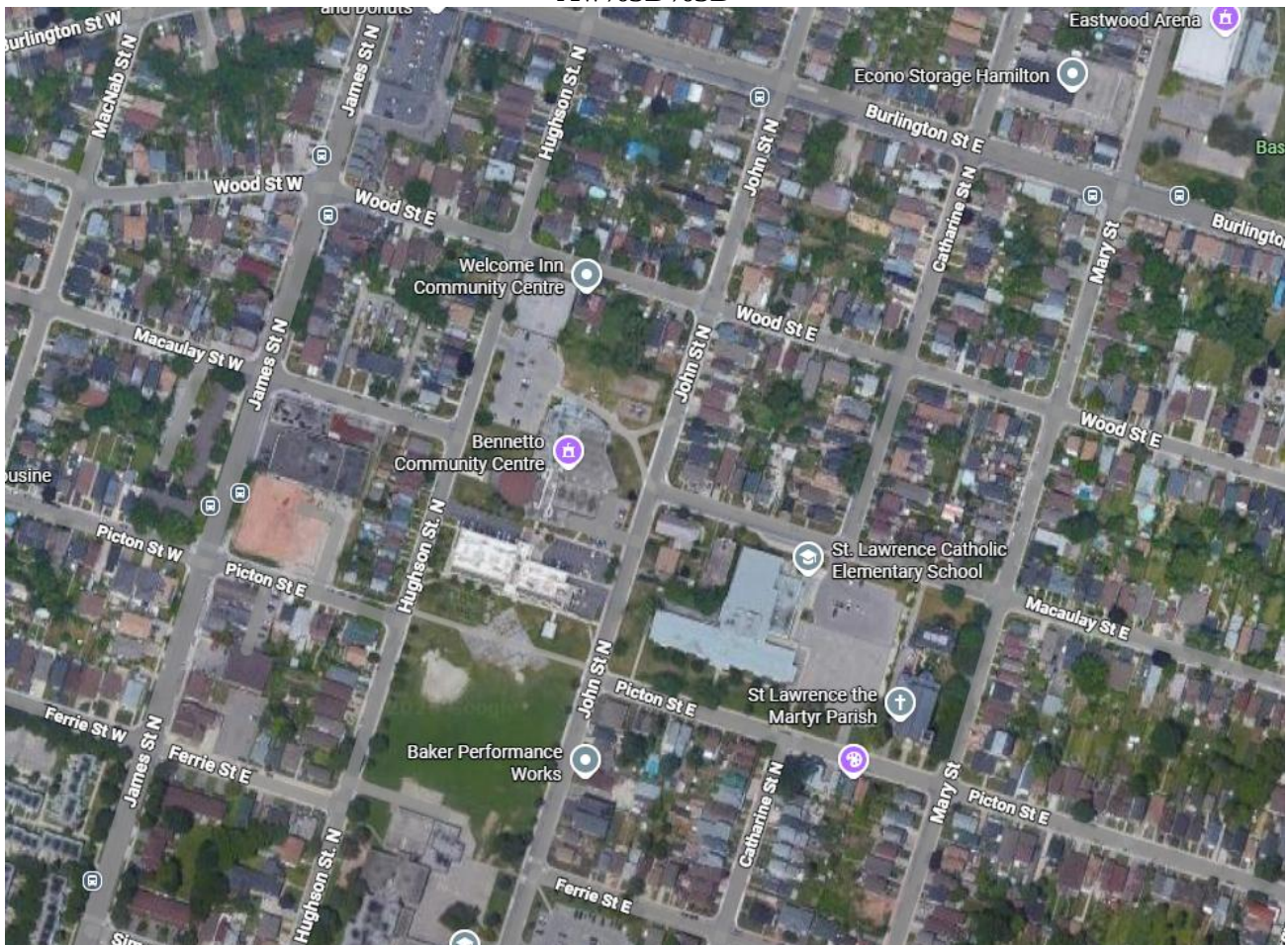
MAP LOCATION OF 450 Hughson St. North, Hamilton, ON

DISCLAIMER:

The following URL address and map have been provided for illustration purposes only and every effort has been made to ensure accuracy. The City of Hamilton cannot accept any responsibility for errors, omissions, or positional inaccuracy for this information.

**Bidders must copy and paste the following URL address
into a new web browser:**

https://www.google.com/maps/place/Bennetto+Community+Centre/@43.2696263,-79.861612,780m/data=!3m2!1e3!5s0x882c9c70e5a7242b:0xb5a973436a6d5745!4m6!3m5!1s0x882c9c70e48137b5:0x58b8f52208b25b9b!8m2!3d43.2702259!4d-79.8608388!16s%2Fg%2F1233d2nh5?entry=ttu&g_ep=EgoyMDI2MDMxNS4wIKXMDSOASAFQAw%3D%3D



CITY OF HAMILTON
REQUEST FOR TENDERS

INSTRUCTIONS TO BIDDERS
Revised: October 23, 2025

Table of Contents

1	Interpretation	9
2	Definitions	9
3	Guidelines Regarding Bid Irregularities	13
4	Bid Submission and Form of Tender	14
5	Bid Security	16
6	Addenda and Clarification of the Request for Tenders	17
7	Bidder Responsibilities	19
8	Opening of Bids	20
9	Review of Bids & Bid Verification	20
10	Acceptance & Irrevocability of Bid	20
11	Award of Contract	21
12	Conflict of Interest, Lobbying and Collusion	21
13	Confidentiality	22
14	Withdrawal of Bids by Bidder	23
15	Price	23
16	Reserved Privileges of the City	24
17	Notice to Proceed and Start Date	25
18	Applicable Law and Limit on Liability	25
19	Accommodations for Bidders with Disabilities	6

INSTRUCTIONS TO BIDDERS

Notice to prospective bidders: The Instructions set out herein define your obligations and limit your rights. Read carefully.

1 Interpretation

In these Instructions to Bidders,

- 1.1 the provisions shall be read with changes of gender, number or corporate status as the context may require;
- 1.2 a reference to any Act, by-law, rule, procedure or regulation shall be deemed to include a reference to any substitution or amendment thereof;
- 1.3 the headings to each section are inserted for convenience of reference only and do not form part of the Request for Tenders;
- 1.4 any reference to an officer of the City shall be construed to mean the person holding that office from time to time, the designate or deputy of that person, and shall be deemed to include a reference to any person holding a successor office or the designate or deputy of that person.
- 1.5 unless expressly stated to the contrary, the number of days shall be calculated by,
 - 1.5.1 counting all days including Saturdays, Sundays and public holidays, provided, however, that if the final day of any period shall fall on a Saturday, Sunday or public holiday, then the final day shall be deemed to be the next day which is not a Saturday, Sunday or public holiday;
 - 1.5.2 where "month" is referred to, it shall be a calendar month.

2 Definitions

Capitalized words and phrases used in these Instructions to Bidders, Supplementary Instructions to Bidders, and the Form of Tender shall have the following meanings, unless expressly stated otherwise.

"Addendum" means a written change issued to the Request for Tenders.

"Alternative" means anything for which bidders provide a price in a manner that gives the City options in determining the actual Work of the Contract and may include such items as an optional product, system, installation, method, design and requirement. The City shall not be obliged to purchase an Alternative when

accepting a Bid, but may, at its discretion elect to purchase all, some or none of the Alternatives offered.

“Alternative Price” means the amount stipulated by the bidder for an Alternative, which can be stated as an addition, a deduction, or no change to the Base Bid Price. The Successful Bidder shall be obliged to adhere to the Alternative Price quoted in its Bid.

“Base Bid Price” means the amount stated in the Form of Tender by the bidder, for the Work without considering any Alternative or Alternative Price and includes all Provisional Items and Provisional Prices (if any).

“Bid” means a submission made by a bidder in response to the Request for Tenders.

“Bid Security” means the security submitted by a bidder with its Bid which provides financial protection to the City should the Successful Bidder not enter into the Contract or commence the Work following the issuance of a purchase order, and/or not provide the specified security required under the Contract.

“Bidding System” means the electronic system used by the City for the advertisement of public bid opportunities at the following website: <https://hamilton.bidsandtenders.ca>, and which is required to be used for all dissemination of information by or on behalf of the City and submissions from bidders for this Request for Tenders.

“Business Day” means a day which is not a Saturday, Sunday, public holiday or day when the administrative offices of the City are closed.

“Canadian Business” is a vendor (including a supplier, manufacturer, or distributor) of any business that provides Goods and/or Services on a permanent basis in Canada. The business:

- (a) has Permanent Offices or production facilities in any province or territory within Canada; or
- (b) has at least 70% of its workforce employed in Canada as of the bid closing date or contract award date, whichever comes first.

“City” means the City of Hamilton, and where an authority or discretion is conferred upon the City under the Request for Tenders, means the appropriate official of the City as designated or appointed under its governing by-laws, resolutions or policies from time to time.

“Contract” means the agreement by formal contract executed by both the City and the Successful Bidder, or by purchase order issued by the City, to perform the Work, including the supply and delivery of all labour, Goods, Services, equipment and incidentals necessary for the proper and satisfactory execution of the Work, and the fulfillment of all other contractual obligations and undertakings, all in accordance with

the Request for Tenders, and any written supplementary agreements which form part of the Contract.

“Electronic Bidding” means a method of issuing this Request for Tenders and/or receiving Bids where the process of using and/or receiving Bids by internet is considered appropriate, and in particular includes the Bidding System operated by bids&tenders™ system operated by eSolutions Group, 455 Philip Street, Waterloo, Ontario N2L 3X2.

“Form of Tender” means the City’s forms entitled Form of Tender and Schedule of Prices and any other documents that are supplied as part of the Request for Tenders and which are to be completed and confirmed by the bidder and submitted back to the City in their entirety through the Bidding System.

“Good” means any product of any description required to be installed, supplied or consumed in order to complete the Work.

“Lump Sum Price” means an all inclusive one price that applies to a single item, or specific Service as set out on the Form of Tender.

“Non-U.S. Business” is a vendor (including a supplier, manufacturer or distributor) of any business that does not meet the criteria of a U.S. Business or a Canadian Business.

“Permanent Office” is a fixed, physical place of business where business activities are conducted. Post office boxes, rental mailboxes, virtual offices, and home offices occupied by an employee will not be considered a fixed place of business.

“Procurement Manager” means the City’s Procurement Manager or his or her delegate or designate.

“Procurement Policy” includes those City procurement policies found at: <https://www.hamilton.ca/build-invest-grow/buying-selling-city/bids-and-tenders/procurement-policy-by-law>

“Procurement Division Office” means 28 James Street North, 4th Floor, Hamilton, Ontario L8R 1A1.

“Project Manager” means the person designated by the City to administer and oversee the Work.

“Provisional Item” means work or a portion of work the City may wish to have performed but which may be removed, at no additional cost to the City from the scope of the Work at any time. Where such item is removed, the City will deduct the relevant Provisional Price from the Base Bid Price after the award of the Contract.

“Provisional Price” means the amount stipulated by the bidder for a Provisional Item which is to be included in the Base Bid Price.

“Request for Tenders” means all of the following documents, and in the event of a conflict between them, each shall enjoy priority against the others (subject to any express term or condition to the contrary) in accordance with the following successive order:

- (a) any Addendum;
- (b) any Supplementary General Conditions or Supplementary Conditions;
- (c) the General Conditions;
- (d) the Specifications, with any Supplementary Specifications (if any) taking priority over the standard Specifications;
- (e) any contract drawings;
- (f) the Supplementary Instructions to Bidders
- (g) these Instructions to Bidders;
- (h) the standard form text of the Form of Tender as prescribed by the City;
- (i) the sample Contract;
- (j) any other documents that form a part of the Request for Tenders.

“Service” means a service of any description required in order to complete the Work, whether commercial, industrial, trade or otherwise, and includes all professional, technical and artistic service, and the transporting, acquiring, supplying, storing and otherwise dealing in a Good.

“Specifications” means all written or printed requirements and standards forming part of the Request for Tenders and pertaining to the method and the manner of performing the Work or Service, to the scope of Work and to the quality of a Good to be furnished under the Contract.

“Stipulated Price” means a single, all inclusive, one price that applies to all of the Work.

“Successful Bidder” means the bidder to whom the City has awarded the Contract.

“Tender Coordinator” means the single point of contact for the Request for Tenders and will be the person named on the Communications page of the Request for Tenders.

“Tender Notice” means the public notification of the Request for Tenders.

“Total Contract Price” has the same meaning as Base Bid Price.

“Unit Price” means any component price as set out on the Form of Tender.

“U.S. Business” is a vendor (including a supplier, manufacturer, or distributor) of any business that provides Goods and/or Services on a permanent basis in the United States of America (“USA”). The business:

- (a) has Permanent Offices or production facilities in any state or territory within the USA; and
- (b) has at least 51% of its workforce employed in the USA as of the bid closing date or contract award date, whichever comes first.

“Value Added Taxes” means such sum as shall be levied upon the Base Bid Price by the Federal or Provincial or Territorial Government and is computed as a percentage of the Base Bid Price and includes the Goods and Services Tax, the Quebec Sales Tax, the Harmonized Sales Tax, and any similar tax, the collection and payment of which have been imposed on the bidder by the tax legislation.

“Work” means the whole of the work, the supply and delivery of a Good, the delivery and performance of any Services, the total construction and related services, material, matters and things required to be completed, supplied, mentioned or referred to in performing or executing the work in full in accordance with the requirements set out in the Request for Tenders.

3 Guidelines Regarding Bid Irregularities

As a guide to the bidder, but without qualifying any rights and privileges reserved to the City, the bidders guidelines set out below is indicative of the manner in which discretion reserved by the City is to be exercised with respect to non-compliant Bids. However, the City shall not be liable to any bidder or other person where it elects to exercise a discretion, reserved privilege or right in a manner different from that indicated below. An irregularity that goes beyond the scope of the bidders Guidelines set out below shall be considered by the Procurement Manager.

BIDDERS GUIDELINES		
IRREGULARITY		RESPONSE
1.	Qualified or conditional Bid (A Bid restricted by a statement added to the Form of Tender or a covering letter or alterations to the Form of Tender).	Automatic rejection unless the Request for Tenders specifically permit such qualification or condition.

BIDDERS GUIDELINES		
IRREGULARITY		RESPONSE
2.	A Bid received in a format not specified in the Request for Tenders such as hardcopy submission, fax, email, etc.	Automatic rejection.
3.	A Bid received on documents other than those original documents supplied by the Bidding System.	Automatic rejection.
4.	Bid Security: Amount of Bid Security provided by bidder is insufficient, does not name correct Municipality as obligee, or no Bid Security is provided or is not otherwise in compliance with the Request for Tenders requirements.	Automatic rejection.
5.	Execution of Bid bond: Corporate seal or electronic signature of bidder, or both, are missing. Corporate seal or electronic signature of bonding company, or both, are missing.	Automatic rejection. Automatic rejection.
6.	Digital bid bond not provided or not an electronically verifiable and enforceable e-Bond.	Automatic rejection.
7.	Other irregularities.	An irregularity that goes beyond the scope of the Bidders Guidelines may be considered by the Procurement Manager.

4 Bid Submission and Form of Tender

4.1 Every Bid **shall**

- 4.1.1 be submitted on the City's prescribed Form of Tender in its entirety;
- 4.1.2 be completed in English;
- 4.1.3 have all of the required blank spaces provided on the Form of Tender completed by the bidder;
- 4.1.4 include all material, Goods, Services, equipment and labour, required to complete the Work; and
- 4.1.5 state all prices in Canadian funds, unless otherwise stipulated.

4.2 Electronic Bid submissions only, shall be accepted and received by the Bidding System, on or before the closing date and time stated in the Request for Tenders. A Bid submitted by mail, in person, fax, e-mail or other

electronic means, other than through the Bidding System, will not be accepted.

- 4.3 Bidders shall have a Bidding System vendor account and must be registered as a plan taker for this Request for Tenders. Only plan takers will have access to download this Request for Tenders document, receive Addendum email notifications, download Addendum and to submit their Bid electronically through the Bidding System.

If a bidder has obtained the Request for Tenders document from a third party, the onus is on the bidder to create a Bidding System vendor account and register as a plan taker for the bid opportunity.

- 4.4 Time is of the essence with respect to the submission of a Bid. It is the **sole** responsibility of each bidder to ensure that its Bid is received by the Bidding System on or before the closing date and time stated in the Request for Tenders document. The closing time shall be determined by the Bidding System web clock.

Bidders are advised that the timing of their Bid submission is based on when the Bid is RECEIVED by the Bidding System, not when a Bid is submitted by a bidder, as Bid transmission can be delayed in an “internet traffic jam” due to file transfer size, transmission speed, etc.

Bidders shall allow sufficient time to upload their Bid submission, including any attachments. Late Bid submission shall not be accepted by the Bidding System.

- 4.5 The Bidding System will send a confirmation email to the bidder advising that their Bid was submitted successfully. If an email confirmation is not received, contact technical support at bids&tenders™ via email: support@bidsandtenders.ca or by telephone 1-800-594-4798.
- 4.6 It is the exclusive responsibility of each bidder to submit a complete Bid in accordance with the Request for Tenders.
- 4.7 All documents prepared and work carried out by a bidder in preparing a Bid, and all oral presentations to the City in connection with a Bid, shall be without cost to the City, and neither the City’s publication of a Request for Tenders nor the submission of a Bid shall be construed to oblige the City to award a Contract.
- 4.8 All words and phrases forming part of a Bid should be written out in full, and abbreviations should not be used.
- 4.9 No amendment may be made to a Bid after it has been submitted, except in the circumstances set out in Article 6.4 of these Instructions to Bidders.

5 Bid Security

- 5.1 Each bidder shall submit with its Bid a Bid Security in the form of a digital bid bond in an electronically verifiable and enforceable (e-Bond) format in the amount set out in the Supplementary Instructions to Bidders.

For additional information regarding e-Bonds, bidders should contact their surety company or visit the Surety Association of Canada website.

- 5.2 A scanned PDF copy of bonds, original certified cheque, bank draft, money order or any other format other than a digital bid bond is not acceptable and shall be rejected.
- 5.3 Bidders shall upload their Bid Security to the Bidding System, in the bid submission file labelled "Bid Bond". All instructions and details for assessing authentication shall be included with the digital bond uploaded in the Bidding System.
- 5.4 A Bid Security shall, include such terms, be in a form, be executed appropriately and be provided by an issuer authorized to do business in the Province of Ontario, satisfactory to the City in its reasonable discretion.
- 5.5 When a Bid is accepted by the City, the Successful Bidder will enter into a Contract for the performance of the Work. The Successful Bidder will commence the Work, following the issuance of a purchase order or notice to proceed, and will give the specified security required under the Request for Tenders and the Contract within 10 Business Days of request by the City.
- 5.6 The digital bid bond will not be returned to the bidder.
- 5.7 The term of the Bid Security shall be for a minimum period of 90 days after the closing date of the Request for Tenders. Where the irrevocability period for a Bid is extended in accordance with Article 10.2 of these Instructions to Bidder, the bidder shall also ensure that the term of the Bid Security is extended for the same period of time as the irrevocability period.
- 5.8 A Bid submitted without the required Bid Security will be rejected by the City.
- 5.9 Each bidder that submits a Bid will be deemed to have acknowledged and agreed that the amount of the Bid Security required with respect to a Bid constitutes a genuine pre-estimate on the part of the City of the damages that will be suffered by the City as a result of a failure or refusal on the part of the Successful Bidder to enter into a Contract, to commence the Work following the issue of a purchase order or notice to proceed, and/or to give the specified security required under the Request for Tenders and the Contract.

- 5.10 In the event of a failure or refusal on the part of the Successful Bidder to enter into the Contract, to commence the Work following the issue of a purchase order or notice to proceed, and/or to give the specified security required under the Request for Tenders and the Contract, the City shall declare the Bid Security forfeited and the Successful Bidder may be held responsible at the City's discretion for any increased costs or damages incurred by the City over and above the amount of that Bid Security.
- 5.11 In addition to the Reserved Privileges of the City set out at Article 16 of the Instructions to Bidders, the City may at its discretion, in the event of a failure, refusal or default on the part of the Bidder to enter into the Contract, to commence the Work following the issue of a purchase order or notice to proceed, and/or to give the specified security required under the Request for Tenders and the Contract, annul the award or terminate the Contract, accept the next lowest compliant Bid, advertise for new tenders, or carry out the Work in any manner deemed in the best interests of the City. In such a case, if required by the City, the bidder shall pay the City the difference between the Base Bid Price and any greater sum that the City may be obligated to pay by reason of the failure, refusal or default of that bidder, including the cost of any advertisement for new tenders.

6 Addenda and Clarification of the Request for Tenders

- 6.1 The City reserves the right at any time prior to the award of the Contract,
- 6.1.1 to withdraw or cancel the Request for Tenders;
 - 6.1.2 to extend the time for the submission of Bids; or
 - 6.1.3 to modify the Request for Tenders,
- by the publication of an Addendum, which shall become part of the Request for Tenders, and the City shall not be liable for any expense, cost, loss or damage incurred or suffered by any bidder (or any other person) as a result of its so doing.
- 6.2 Without limiting the City's right, Article 6.1 may apply to situations where no Bid is compliant or an insufficient number of bids have been received.
- 6.3 Any Addendum shall be posted on the following website and is sufficiently served upon any prospective bidder if so posted.

<https://hamilton.bidsandtenders.ca>

- 6.3.1 In addition to the above method of posting, the City may also notify prospective bidders of any Addendum by any other method it deems appropriate, including email, telephone, fax, courier, hand-delivery or by personal delivery. The need for additional notification and the

method(s) to be used shall be in the absolute discretion of the City and notification shall be to the co-ordinates provided by the bidder to the City at the time it obtained the Request for Tenders from the City.

- 6.3.2 It is the sole responsibility of each bidder to check the website and ensure that it has received any and all Addenda issued by the City. Bidders shall confirm in the Form of Tender that they have received, examined and provided for all Addenda issued under the Request for Tenders. Bidders may in writing, seek confirmation of the number of Addenda issued under the Request for Tenders from the Tender Coordinator.
- 6.4 Where a bidder submits their Bid prior to the Request for Tenders closing date and time and an Addendum has been issued by the City, the Bidding System automatically **WITHDRAWS** the bidder's Bid submission and changes the Bid submission to an **INCOMPLETE STATUS (NOT accepted by the City)**. The withdrawn Bid can be viewed by the bidder in the "**MY BIDS**" section of the Bidding System. The bidder is solely responsible to:
 - 6.4.1 make any required adjustments to their Bid;
 - 6.4.2 acknowledge all Addenda that have been issued for this Request for Tenders; and
 - 6.4.3 ensure the re-submitted Bid is **RECEIVED** by the Bidding System before the closing date and time stated in the Request for Tenders.
- 6.5 All communication between a bidder and the City (including requests for information or clarification) **shall** be set down in writing and directed to the Tender Coordinator named in the Communications page.
- 6.6 Any request directed to the City with respect to Article 6.5 prior to the closing date of the Request for Tenders must allow sufficient time for a written response or clarification to be issued by the City prior to the closing date, should the City consider it necessary to issue such response or clarification.
- 6.7 A written response or clarification of substance shall be shared with each bidder and issued in the form of an Addendum.
- 6.8 The City shall not be bound by any oral:
 - 6.8.1 instruction;
 - 6.8.2 amendment or clarification of the Request for Tenders;

6.8.3 information; or

6.8.4 advice or suggestion,

provided by any member of the City's staff or consultant to the City concerning the Request for Tenders or the manner in which the Work is to be carried out and the bidder bears any and all risk in relying on such representation.

- 6.9 Bidders shall acknowledge receipt of any Addenda when submitting their Bid through the Bidding System. Bidders shall check a box for all Addenda and any applicable attachments that have been issued before a bidder can re-submit their Bid submission online.

7 Bidder Responsibilities

- 7.1 The Contract shall only be between the City and the Successful Bidder. Neither the City nor its consultant shall be construed to have any contractual relationship with the Successful Bidder's employees, subcontractors or material suppliers, or their respective employees or suppliers.

- 7.2 Each bidder shall be responsible for:

7.2.1 ensuring that it has conducted a thorough inspection of the site, has investigated and examined the Request for Tenders and any other document made available to the bidder by the City and has delivered to the City any request for information in respect of all questions arising out of the foregoing inspections, investigations and examinations in respect to the site;

7.2.2 reviewing all drawings, reports, tests and other documents with respect to site, subsurface or otherwise concealed physical conditions which have been provided or made available to the bidder by the City in relation to the Request for Tenders and shall be responsible for any site, subsurface or otherwise concealed physical condition set out in or inferable from any such report; and

7.2.3 ensuring that they have conducted a sufficient and appropriate scope of inquiry into the manner, method(s) and magnitude of the work that is proposed in the Request for Tenders such that they have established a clear and full understanding of the work being undertaken and are able to fully appreciate the consequences of that work in preparing their Bid.

- 7.3 The cost of any Work which results from encountering any condition that is described in or properly inferable from the information referred to in Article 7.2 above shall be included in the bidder's Base Bid Price.

8 Opening of Bids

There is no public opening for this Request for Tenders. All Bids shall be electronically opened and posted on the Bidding System, <https://hamilton.bidsandtenders.ca>, following the closing date and time of the Request for Tenders. The name of the bidder and the Base Bid Price shall be posted for each Bid received.

9 Review of Bids & Bid Verification

- 9.1 Following the electronic opening, each apparently eligible Bid will be examined by the Procurement Manager to confirm that they are compliant and otherwise complete.
- 9.2 Unless expressly stated otherwise, the City shall apply a standard of substantial compliance against each Bid.
- 9.3 The City is not obliged to seek verification of any aspect of a Bid, however, the City may, if it determines that it is appropriate to do so under the circumstances, verify any aspect of any Bid received, at any time, in order to resolve an ambiguity in either the language used or any other vague or uncertain aspect of the Bid.
- 9.4 Such verification shall not alter the Bid, constitute negotiation or re-negotiation of the price or any other aspect of the Bid, and all correspondence with a bidder for the purposes of such verification shall be conducted through the Procurement Manager.
- 9.5 The review or verification of a Bid with a bidder shall not oblige the City to enter into a Contract with a particular bidder, nor shall it constitute an acceptance of a Bid.
- 9.6 All verification under this section shall form part of the Bid, be in writing, and be in a form satisfactory to the City.

10 Acceptance & Irrevocability of Bid

- 10.1 A Bid shall be irrevocable and open for acceptance by the City of Hamilton for a period of 90 days following the closing date and time of the Request for Tenders.
- 10.2 Where the City is unable to award a Contract prior to the expiry of the irrevocability period, the City may, on or prior to that expiry date, make a request to each of the compliant bidders to confirm, in writing, their willingness to hold their Bid prices, extend the term of their Bid Security and extend the irrevocability period for the specific period of time requested by the City.

11 Award of Contract

- 11.1 The City shall notify the Successful Bidder as soon as practicable after the award of the Contract. Despite any requirement for the formal execution of a Contract, the Contract shall be deemed to arise upon the award of the Contract to the Successful Bidder.
- 11.2 Where a Request for Tenders is awarded to a bidder in respect of the Work and in accordance with the provisions of the Request for Tenders and Bid, the bidder shall be required to either:
- 11.2.1 execute a Contract on the form set out in the Request for Tenders and approved by the City's Legal Services Division; or
 - 11.2.2 where the form of Contract in Article 11.2.1 is not required they shall be assigned a contract number and the Request for Tenders and the Bid shall become the Contract in respect of the Work.
- 11.3 The award letter will identify documents required by the City prior to being able to issue a purchase order, the timeline for providing those documents to the City and the name of the Project Manager who will coordinate the start date for the Work.
- 11.4 The Base Bid Price for each compliant Bid received as well as the Contract award information may be obtained from the following website:

<https://hamilton.bidsandtenders.ca>

12 Conflict of Interest, Lobbying and Collusion

- 12.1 The City may reject any Bid submitted where a bidder is in contravention of the City's Procurement Policy with respect to conflict of interest.
- 12.2 Other than as expressly permitted or required in the Request for Tenders a bidder and their representative shall not, with respect to the Request for Tenders or the Work, make any public comment, respond to questions in a public forum, or carry out any activities to publicly promote or advertise their qualifications, their Bid, or their interest in this competitive procurement process.
- 12.3 For greater certainty, a bidder shall not communicate with the City regarding this procurement except through the Tender Coordinator identified on the Communications page of the Request for Tenders who shall be the City's single point of contact for the bidder during this process.
- 12.4 The bidder acknowledges that this Bid is made without any connection, comparison of figures or arrangements with, or knowledge of, any other

person making a Bid for the same work and is in all respects fair and without collusion or fraud.

13 Confidentiality

13.1 A bidder should be aware that all information submitted is being collected under authority of the Municipal Act, 2001, and may be used in the City's review of Bids and in the Contract that is entered into with the Successful Bidder. In this regard, the bidder should be aware that:

13.1.1 the bidder's name and Base Bid Price at a minimum will be made public. In addition, certain contractual information must be disclosed to Council and accordingly may become part of the public record; and

13.1.2 all correspondence, documentation and information provided by a bidder to the City as part of a Bid may be reproduced for the purposes of reviewing the bidder's Bid and/or for the purposes of an audit of the procurement process.

13.2 All such information is also subject to collection in accordance with the Municipal Freedom of Information and Protection of Privacy Act ("MFIPPA") and Personal Health Information Protection Act ("PHIPA") and City policies and procedures related to the collection and administration of such records. For greater particularity and direction regarding how such issues of confidentiality will be handled and may affect a bidder's rights, the bidder should reference the City's policies related to Freedom of Information on the City's website under the Office of the City Clerk at hamilton.ca. In preparing the Bid, the bidder should note the following:

13.2.1 a bidder may mark as confidential any scientific, technical, commercial, proprietary or similar confidential information contained in its Bid, the disclosure of which could cause it injury, excluding the Base Bid Price and its name. A bidder shall not identify the whole of a Bid as confidential. A watermark or rubber stamp imprint is suitable to identify confidential parts of a Bid.

13.3 All correspondence, documentation and information provided by the City, its employees, agents or representatives to any bidder in connection with, or arising out of the Request for Tenders remains the property of the City and must not be used for any purpose other than for replying to the Request for Tenders. Confidentiality of records and information of the City relating to the Work described in the Request for Tenders must be maintained at all times. If any proprietary or confidential information belonging to, or in the care of, the City is disclosed to any bidder by the City's employees, agents, representatives and independent contractors, or any other person at the request of the City in connection with the Request for Tenders, the bidder shall:

- 13.3.1 safeguard all such information;
- 13.3.2 maintain in strict confidence and not reproduce or disclose any such information to any person except as required by law or as expressly permitted in advance by the City in writing;
- 13.3.3 return forthwith all such information as may be in documentary form or recorded electronically by the closing date and time; and
- 13.3.4 not use any such information for any purpose other than the purpose for which it was provided by the City or by any other person at the request of the City.

14 Withdrawal of Bids by Bidder

- 14.1 Withdrawal of a Bid after it has been submitted and received by the Bidding System, is permitted only prior to the closing date and time of the Request for Tenders.
- 14.2 Requests made after the closing date and time of the Request for Tenders to withdraw a Bid received by the Bidding System will be disregarded.
- 14.3 A Bid withdrawn prior to the closing date and time of the Request for Tenders may be revised and re-submitted at any time prior to that closing date and time. Bidders are solely responsible to ensure:
 - 14.3.1 any required revisions are made to their Bid;
 - 14.3.2 acknowledge all Addenda that have been issued for this Request for Tenders; and
 - 14.3.3 ensure the re-submitted Bid is received by the Bidding System prior to the closing date and time of the Request for Tenders.

15 Price

- 15.1 No variation in Bid price(s) shall be permitted after the closing date and time of the Request for Tenders except where the City corrects an obvious computational or other mathematical error evident on the face of the Bid. Only extensions, subtotals and totals shall be corrected. No modification to individual prices, either Unit Price or Lump Sum Price, shall be made by the City.
- 15.2 Where the bidder is instructed to price the Work on a Stipulated Price basis only, no corrections to the Base Bid Price shall be made by the City.

15.3 The Base Bid Price must be quoted on an all-in basis and include the provision and delivery of all necessary labour, Goods, materials, warranty and maintenance requirements, Services, tools, equipment, supplies, utilities, levies and duties and other incidentals, and for performing all the Work and providing all Services contemplated under the Contract.

15.4 The Base Bid Price and all other prices quoted on the Form of Tender shall be exclusive of Value Added Taxes. All other taxes shall be included in the prices submitted for this Request for Tenders.

Where there is a variation due solely to an increase or decrease in the rate of applicable Value Added Tax from a Canadian taxing authority, beyond the control of the Successful Bidder, occurring after the time and date of submission of its Bid, the variation shall alter the price of the Bid only to the extent of the Value Added Tax increase or decrease. The Successful Bidder must prove to the satisfaction of the City that the Successful Bidder will not benefit in any way by reason of any increase to the Base Bid Price.

15.5 As various parts of the Work may or may not be exempt from Value Added Taxes, the bidder is required to refer to the Supplementary Instructions to Bidders for details, if any, respecting payment exemptions, rebates and Value Added Taxes.

16 Reserved Privileges of the City

The City shall have the following reserved privileges, which may be exercised or waived in its absolute discretion.

16.1 The City may reject a Bid on the following basis:

16.1.1 the City may reject any Bid, the lowest Bid or all Bids, may cancel the Request for Tenders or may cancel the Request for Tenders and require the submission of new Bids;

16.1.2 any extraordinary or unjustified disparity between the lowest Bid and the other Bids received by the City;

16.1.3 the need to avoid the use of unproven technology and methodologies;

16.1.4 the prior record of the bidder as a contractor to the City;

16.1.5 a Bid submitted by a person which in the opinion of the City or its professional advisors, does not possess the experience, or financial, technical, personnel or other resources that may reasonably be expected to be necessary in order to carry out the obligations that the bidder proposes to assume under the terms of its Bid.

- 16.2 Where the Contract is awarded to the lowest compliant bidder, the City may negotiate amendments to the Contract or to the Work to be done or Services or materials to be supplied under the Contract.
- 16.3 Where none of the Bids are compliant and in the opinion of the City it is impractical to reissue a new Request for Tenders, the City will reject all of the Bids and may permit Bids to be submitted without issuing a new Request for Tenders.
- 16.4 Where the Base Bid Price for the lowest compliant Bid received substantially exceeds the estimated procurement cost of the Work, the City may negotiate with the lowest compliant bidder for a reduction to the Base Bid Price.
- 16.5 The City maintains the right to verify any information provided or contained in any Bid.
- 16.6 The City reserves the ability to exercise the rights, privileges and authority contained in the Procurement Policy and procedures thereunder with respect to the Request for Tenders.

17 Notice to Proceed and Start Date

- 17.1 The City may issue a written notice to proceed to the Successful Bidder prior to the execution of any required Contract.
- 17.2 Work shall commence on the start date specified in the notice to proceed, unless otherwise agreed by the Successful Bidder and the City.

18 Applicable Law and Limit on Liability

- 18.1 The City shall not be liable, in any way, to the bidder for any delays, or costs associated with delays, in the Request for Tenders process.
- 18.2 The bidder agrees that,
 - 18.2.1 any action or proceeding relating to the Request for Tenders process shall be brought in an Ontario court of competent jurisdiction and any such action or proceeding shall be issued at the Hamilton, Ontario office of that Court and for that purpose each party irrevocably and unconditionally attorns and submits to the jurisdiction of that Ontario court at Hamilton, Ontario;
 - 18.2.2 it irrevocably waives any right to and will not oppose any Ontario action or proceeding relating to the Request for Tenders process on any jurisdictional basis, including forum non conveniens; and

- 18.2.3 it will not oppose, in any other jurisdiction, the enforcement against it of any judgment or order duly obtained from an Ontario court in Hamilton, Ontario as set out above.
- 18.3 If a bidder is required by applicable law to hold or obtain a licence, permit, consent or authorization to carry on an activity contemplated in its Bid, neither acceptance of the Bid nor execution of the Contract shall be considered to be approval by the City of carrying on such activity without the requisite licence, permit, consent or authorization.
- 18.4 The bidder agrees that if the City commits a material breach of the Request for Tenders (that is, a material breach of Contract A), the City's liability to the bidder and the aggregate amount of damages recoverable against the City for any matter relating to or arising from that material breach, whether based upon an action or claim in contract, warranty, equity, negligence, intended conduct or otherwise, including any action or claim arising from the acts or omissions, negligent or otherwise, of the City, shall be no greater than the Bid preparation costs that the bidder seeking damages from the City can demonstrate.

19 Accommodations for Bidders with Disabilities

- 19.1 In accordance with the Ontario Human Rights Code, Ontarians with Disabilities Act, 2001 (ODA) and Accessibility for Ontarians with Disabilities Act, 2005 (AODA), the City of Hamilton will accommodate for a disability, ensuring full and equitable participation throughout the bid process.
- 19.2 If a bidder requires this Request for Tenders in a different format to accommodate a disability, the bidder must contact the Tender Coordinator as soon as possible and in any event prior to the closing date. The Request for Tenders in the different format will be issued only to the requesting bidder and all Addenda will be issued in such different format only to the requesting bidder.

SUPPLEMENTARY INSTRUCTIONS TO BIDDERS

Revised: October 24, 2025

1. OPTIONAL SITE MEETING

There is an optional site meeting scheduled.

Location: 450 Hughson St. North, Hamilton, ON (see location map attached)

Date: Wednesday May 27, 2026

Time: 1:00 PM, Hamilton time

2. TAXES

There are no supplementary instructions regarding Value Added Taxes.

3. BID SECURITY

Bidders shall submit a Bid Security in accordance with Article 5 Bid Security of the Instructions to Bidders in the amount of not less than (one hundred and twenty-one thousand dollars) \$121,000.00.

4. JOINT VENTURES

For greater certainty, a Bid must be submitted by a single entity as the Bidder. The City will not accept a Bid from a collection of entities jointly submitting as the Bidder. The single entity submitting the Bid must not be a special purpose company incorporated solely for the purpose of entering into a Contract with the City regarding the Work. The Bidder shall be expected to perform the Work either through itself, or through itself and any subcontractors.

5. RECORD AND REPUTATION

See the City of Hamilton Procurement Policy for specific requirements and obligations at: <https://www.hamilton.ca/build-invest-grow/buying-selling-city/bids-and-tenders/procurement-policy-by-law>

6. AWARD OF CONTRACT

Subject to the City's reserved rights and privileges set out in the Tender, the Contract shall be awarded to the lowest compliant Bid submitted by a:

A. Canadian Business or Non-U.S. Business; or

- B. U.S. Business, where the U.S. Business' Bid is at least 25% lower in Total Contract Price than the lowest compliant Bid submitted by a Canadian Business or Non-U.S. Business.

7. SPECIFIED PRODUCTS OR SERVICES

Specified product or service by name, trade or company is regarded as the standard of quality required by the Specifications. **No alternates or substitutes will be considered prior to the award of the Contract.** After the award of the Contract, should the Successful Bidder want the City to approve an alternate or substitute for a specified product or service, the Successful Bidder shall make such request in writing to the City, which the City may consider, in its sole discretion. No alternate nor substitution for a specified product or service required by the Specifications shall be made by the Successful Bidder without the prior written approval of the City.

8. BIDDER RESPONSIBILITIES

The Bidder may submit, when requested, evidence in writing of its ability to furnish all labour and materials necessary and complete the Work and all Work required in a satisfactory manner. Where the information is either not provided or is not satisfactory to the City, the City shall declare the submission insufficient and the Bid will be rejected.

9. BRAND NAME

Any reference to the trade name, brand name or catalogue number of a particular manufacturer shall be understood to have been made solely for the purpose of establishing and describing general performance and quality levels of the item to be supplied, unless specified otherwise. Unless specified otherwise and shall be construed to restrict Bidders to that manufacturer, but Bids shall be deemed to be invited for generic no-name equals and comparable equipment of any manufacturer.

10. PROPOSED TIMELINES

Event	Date
Tender closing date	Tuesday June 9, 2026
Anticipated award date	Approximately three (3) weeks from closing date
Commencement of Work	Approximately four (4) weeks from award date

11. POLICIES, REGULATIONS AND GUIDELINES

The Successful Bidder shall be aware of and adhere to all of the applicable City Policies and Legislation set out on the City of Hamilton website at: <https://www.hamilton.ca/build-invest-grow/buying-selling-city/bids-and-tenders/procurement-policy-by-law>

12. DECLARATION OF BIDDER COMPLIANCE WITH CITY BY-LAWS

Should the Bidder's declaration in its Form of Tender that it is in compliance with all City of Hamilton by-laws be untrue or incorrect, the City shall be entitled at its sole discretion to reject their Bid.

CCDC 2 - 2020 STIPULATED PRICE CONTRACT

A copy of the CCDC 2 – 2020 Stipulated Price Contract is not being reproduced for this RFT and the English version can be purchased at:

<https://www.ccdc.org/documents/>

Supplementary Conditions to Contract CCDC 2-2020

Dated: November 5, 2025

SC 1. GENERAL

These Supplementary Conditions presuppose the use of the Standard Construction Document CCDC 2-2020 Stipulated Price Contract, English version. These “Supplementary Conditions” void, supersede or amend the “Agreement”, “Definitions” and “General Conditions” as hereinafter provided, as the case may be.

Where a Definition, a General Condition or paragraph of the Agreement or a General Conditions of the Stipulated Price Contract is deleted by these Supplementary Conditions, the numbering of the remaining Agreement, Definitions, General Conditions or paragraphs shall remain unchanged, and the numbering of the deleted item will be retained, unused, unless noted otherwise.

SC 2. AGREEMENT

1. Delete the words “*Ready-for-Takeover*” from paragraph 1.3 Article A-1 THE WORK and replace with “*Substantial Performance Date*”.
2. Add new paragraph 1.4 to Article A-1 THE WORK, as follows:

“1.4 Provide all the labour, material, equipment, machinery, *Products* and work including, without limitation, all *Commissioning* services required by the *Contract Documents* in order to fully complete and construct the *Work* and in accordance with, and satisfaction of all *Applicable Laws* including, without limitation, those relating to occupational health and safety and any and all obligations, responsibilities and duties required by or set in any site plan agreement or approval, attributable to the *Place of the Work* and/or the proposed development therein, and furnish efficient business and construction administration and superintendence consistent with the interests of the *Owner*.”
3. Add documents to the existing list of *Contract Documents* in paragraph 3.1 of Article A-3 CONTRACT DOCUMENTS as follows:
 - Addenda, as issued
 - the Special Provisions
 - *Project* specific Supplementary Conditions to Contract CCDC 2-2020
 - Supplementary Conditions to Contract CCDC 2-2020
 - the *Form of Tender* as approved and accepted by the *Owner*
 - detailed *Contract Price Breakdown* or Lump Sum Breakdown of Base Bid Price
 - the *Specifications*

- *Drawings*
- 4. Delete subparagraph 5.2.1 from Article A-5 PAYMENT in its entirety and replace with the following:

“5.2.1 Should either party fail to make payments as they become due under the terms of the *Contract* or in an award by arbitration or court, interest at the rate prescribed by the Construction Act (Ontario) on such unpaid amounts shall also become due and payable until payment. Such interest shall be compounded on a monthly basis.”
- 5. Add new paragraph 5.3 to Article A-5 PAYMENT as follows:

“5.3 In the event of loss or damage occurring where payment becomes due under the property and boiler insurance policies, payments shall be made to the *Contractor* in accordance with the provisions of GC 11.1 - INSURANCE.”
- 6. Add to the end of paragraph 6.5, the following:

“The only *Notices in Writing* which will be delivered by electronic communication are applications for progress payment, applications for final payment, and notices of non-payment. All other *Notices in Writing* will be delivered by hand, by courier, by prepaid first class mail or by facsimile.”
- 7. Delete Article A-7 LANGUAGE OF THE CONTRACT in its entirety.
- 8. Add new Article A-9 CONFLICT OF INTEREST as follows:

“ARTICLE A-9 CONFLICT OF INTEREST

- 9.1 The *Contractor*, all of the *Subcontractors*, and any of their respective advisors, partners, directors, officers, employees, and agents shall not engage in any activity or provide any services where such activity or the provision of such services creates a conflict of interest (actually or potentially, in the sole opinion of the *Owner*) with the provision of the *Work* pursuant to the *Contract*. The *Contractor* acknowledges and agrees that a conflict of interest includes the use of *Confidential Information* where the *Owner* has not specifically authorized such use.
- 9.2 The *Contractor* shall disclose to the *Owner*, in writing, without delay any actual or potential situation that may be reasonably interpreted as either a conflict of interest or a potential conflict of interest, including the retention of any *Subcontractor* or *Supplier* that is directly or indirectly affiliated with or related to the *Contractor*.

- 9.3 The *Contractor* covenants and agrees that it will not hire or retain the services of any employee or previous employee of the City of Hamilton where to do so constitutes a breach by such employee or previous employee of the *Owner's* conflict of interest policy, as it may be amended from time to time.
- 9.4 A breach of this Article or a contravention of the *Owner's* Procurement Policy, by the *Contractor*, any of the *Subcontractors*, or any of their respective advisors, partners, directors, officers, employees, agents, and volunteers shall entitle the *Owner* to terminate the *Contract*, in addition to any other rights and remedies that the *Owner* has in the *Contract*, in law, or in equity."

9. Add new Article A-10 CONFIDENTIALITY as follows:

"ARTICLE A-10 CONFIDENTIALITY

- 10.1 The *Contractor* agrees to ensure that it shall, both during or following the term of the *Contract*, maintain the confidentiality and security of all *Confidential Information* and *Personal Information*, and that it shall not directly or indirectly disclose, destroy, exploit, or use any *Confidential Information* or *Personal Information*, except where required by law, without first obtaining the written consent of the *Owner*. The *Contractor* may disclose any portion of the *Contract Documents* or any other information provided to the *Contractor* by the *Owner* to any *Subcontractor* or *Supplier* if the *Contractor* discloses only such information as is necessary to fulfill the purposes of the *Contract* and the *Contractor* has included a commensurate confidentiality provision in its contract with the *Subcontractor* or *Supplier*. The *Contractor* acknowledges that it will comply with all requirements of the *Personal Information Protection and Electronic Documents Act*. The *Contractor* acknowledges that the *Owner* is bound by the provisions of the *Municipal Freedom of Information and Protection of Privacy Act* ("MFIPPA"). The *Contractor* further acknowledges that the *Owner* may be required to disclose any or all of the *Confidential Information* and *Personal Information* in the event that it is compelled to do so by law, through a request under *MFIPPA*, or by the rules of any applicable regulatory authority."

SC 3. DEFINITIONS

1. Add to the end of Definition *Consultant*, the following:

"The term *Consultant* means the *Consultant* or the *Consultant's* authorized representative."

2. Add to the end of Definition *Contractor*, the following:

“The term *Contractor* means the *Contractor* or the *Contractor’s* authorized representative as designated to the *Owner* in writing.”

3. Add to the end of Definition *Owner*, the following:

“The term *Owner* means the *Owner* or the *Owner’s* authorized representative as designated to the *Contractor* in writing, but does not include the *Consultant*.”

4. Add after “The *Work* means the total construction” in Definition *Work*, the following:

“, *Products*, installation, *Commissioning*, checkout, start-up testing”

5. Delete Definition *Working Day* in its entirety and replace with the following:

“***Working Day*** means a day when the *Owner’s* administrative offices are open, and does not include weekends or statutory holidays.”

6. Add new Definitions as follows:

“Applicable Laws

Applicable Laws and applicable laws means all public laws, statutes, regulations, transactions, codes, acts, orders, by-laws, rules, judgements, decrees, treaties, *Governmental Consents*, notices, protocols, binding policies and guidelines, and requirements of all *Governmental Authorities*, which now or hereafter, may be applicable to and enforceable against the *Work* or any part thereof, including those relating to employment, zoning, building, life/safety, environment and health, and includes, where appropriate, any interpretation of a rule, statute, regulation, order, decree, treaty or other requirement having the force of law by any person having jurisdiction over it, or charged with its administration or interpretation.

As-Built Drawings

As-Built Drawings means the *Drawings* and *Specifications* revised by the *Contractor* during the *Work*, showing any and all changes or variations to the *Work* from the requirements of the *Drawings* and *Specifications*.

Authorities Having Jurisdiction

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

Commission

Commission means and *Commissioning* refers to the procedure which includes checking, balancing, testing, adjusting and measuring *Work* performed by the *Contractor* to demonstrate and verify to the *Owner* and *Consultant*, the

satisfactory installation, operation and performance of all components of the *Work* and that the *Project* is ready for use.

Confidential Information

Confidential Information means all the information or material of the *Owner* that is of a proprietary or confidential nature, whether it is identified as proprietary or confidential or not, including but not limited to information and material of every kind and description such as *Drawings* which is communicated to or comes into the possession or control of the *Contractor* at any time, but *Confidential Information* shall not include information that:

- (1) is or becomes generally available to the public without fault or breach on the part of the *Contractor*, including without limitation breach of any duty of confidentiality owed by the *Contractor* to the *Owner* or to any third party, but only after that information becomes generally available to the public;
- (2) the *Contractor* can demonstrate to have been rightfully obtained by the *Contractor* from a third party who had the right to transfer or disclose it to the *Contractor* free of any obligation of confidence;
- (3) the *Contractor* can demonstrate to have been rightfully known to or in the possession of the *Contractor* at the time of disclosure, free of any obligation of confidence; or
- (4) is independently developed by the *Contractor* without use of any *Confidential Information*.

Construction Act

The Construction Act, R.S.O. 1990, Chapter C.30 is the legislation covering construction in Ontario and is also referred to throughout the *Contract* as the Payment Legislation.

Construction Costs

Construction Costs means the direct costs of all the elements of the *Work* or a change in the *Work* as the case may be. A cost that can be applied wholly to a particular item of the *Work*, or a change in the *Work*, should be considered part of the *Construction Costs*, excluding all *Value Added Taxes*, *Overhead Costs*, and profit.

Contemplated Change Order

Contemplated Change Order means a standard document issued to the *Contractor* by the *Consultant* on behalf of the *Owner*, requesting that the *Contractor* provide pricing for a change to the scope of the *Work*. Authorization of the *Contemplated Change Order* is formalized by a *Change Order* prior to the *Work* proceeding.

Fair Wage Policy

Fair Wage Policy means the City of Hamilton's Fair Wage Policy and Fair Wage Schedule available on the City of Hamilton's website at:

Final Completion of the Work

Final Completion of the Work shall have been reached when the *Work* has previously been deemed substantially performed as defined in these *Contract Documents*, and all deficiencies and incomplete *Work* have been completed and certified by the *Consultant*, prior to the release of final holdback monies on the *Project*.

Force Majeure

Force Majeure means a delay in the performance of the services occurring other than as a result of the deliberate act or negligence of either party respectively, and which:

- (1) could not have been reasonably foreseen, and
- (2) was caused by an event beyond the reasonable control of each party respectively, and
- (3) for the sake of greater certainty, shall include any one or more of the following:
 - (i) acts of God, His Majesty the King or His enemies;
 - (ii) civil war, insurrections or riots;
 - (iii) fires, floods, explosions, earthquakes, or serious accidents;
 - (iv) unusually severe weather, epidemics, or quarantine restrictions;
 - (v) governmental priorities or allocation regulations or orders affecting materials, labour, equipment and facilities;
 - (vi) fuel shortages or freight embargoes;
 - (vii) strikes or labour troubles causing cessation, slowdown, interruption of work or other similar events relating to a person other than the *Contractor* (or any *Subcontractor*) or to the *Owner*.

Financial difficulties experienced by the *Contractor* will not be considered an occurrence of a *Force Majeure* under the *Contract*.

Form of Tender

Form of Tender means the City's forms entitled Form of Tender and Schedule of Prices and any other documents that were supplied as part of the request for tenders/request for proposals for the *Contract*, and were completed and submitted by the *Contractor* back to the *Owner*.

Governmental Authority

Governmental Authority means any federal, provincial, or municipal government and any agency, authority, body, board or commission established by any of them. It includes the police and fire departments.

Governmental Consent

Governmental Consent means any license, right, permit, franchise, privilege, registration, direction, decree, consent, order, permission, approval, or authority to be issued or provided by, or written contract between the *Owner* and a *Governmental Authority*.

Overhead Costs

Overhead Costs means those costs that cannot be attributed to a single task of *Work* and are exclusive of *Construction Costs*, *Value Added Taxes*, and profit. *Overhead Costs* include both general and administrative costs of the *Contractor* or *Subcontractor* together with any and all *Project* specific or office costs of the *Contractor* or *Subcontractor*. Without limiting the generality of the foregoing, *Overhead Costs* include costs associated with general conditions, administration, head office, field office, management, supervision, coordination, scheduling, purchasing, security, health and safety, general labour, accommodation, subsistence, travel, storage, inventory, loading and unloading, computers and electronics, software, printing, general tools and equipment, standby costs and charges, vehicles, engineering, drafting, shop drawings, submittals, surveying, temporary facilities, traffic control, fire safety, sanitation, site clean-up, utilities and services, controls, insurance, bonding, heating, winterization, permits, inspection, regulatory fees, mobilization, demobilization, and other costs of a similar reasonable nature.

Personal Information

Personal Information has the same definition as in subsection 2(1) of *MFIPPA* and includes an individual's name, address, telephone number, and date of birth, whether recorded in printed form, on film, by electronic means, or otherwise and disclosed to the *Contractor*.

Request for Information (RFI)

Request for Information ("RFI") means a standard document typically issued by the *Contractor* to the *Consultant*, requesting a clarification of the scope of *Work* provided in the *Contract Documents*. The response to the RFI typically results in a formal *Supplemental Instruction* where there is no modification of the original scope of the *Work*, or a *Contemplated Change Order* from which the *Contractor* may provide pricing for the revision to the original scope of the *Work*.

Substantial Performance Date

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

Statutory Declaration

Statutory Declaration means the form of the statutory declaration to be delivered by the *Contractor* upon applications for progress payment, release of holdback and final payment, being CCDC 9A – 2001 Statutory Declaration (latest edition available)."

SC 4. GC 1.1 CONTRACT DOCUMENTS

1. Delete subparagraph 1.1.4 in its entirety.
2. Delete subparagraph 1.1.5.1 in its entirety and replace with the following:

“.1 the order of priority of documents, from highest to lowest, shall be

- *Change Orders* and/or *Change Directives*
- the executed Agreement between the *Owner* and the *Contractor*
- detailed *Contract Price* breakdown or Lump Sum Schedule Breakdown
- the *Form of Tender* as approved and accepted by the *Owner*
- Addenda, as issued
- Special Provisions
- *Project* specific Supplementary Conditions
- Supplementary Conditions to Contract CCDC 2-2020
- Definitions
- the General Conditions of the Stipulated Price Contract
- the *Specifications*
- *Drawings*”

3. Delete “and shall remain the *Consultant’s* property” from the first sentence of paragraph 1.1.10 and replace with the following:

“are not the *Contractor’s* property”

SC 5. GC 1.2 LAW OF THE CONTRACT

1. Add new paragraphs 1.2.2 and 1.2.3 as follows:

“1.2.2 The *Contractor* agrees that:

- .1 any action or proceeding relating to the *Contract* shall be brought in a court of competent jurisdiction in the City of Hamilton and for that purpose each party irrevocably and unconditionally attorns and submits to the jurisdiction of that court;
- .2 it irrevocably waives any right to and will not oppose any action or proceeding relating to the *Contract* on any jurisdictional basis, including forum non conveniens; and
- .3 it will not oppose in any other jurisdiction, the enforcement against it, of any judgment or order duly obtained from a Hamilton court as set out above.

1.2.3 The *Contractor* shall comply with all municipal by-laws as they pertain to the City of Hamilton in respect of the operation of the *Contractor’s* business and the *Work*. Further, the *Contractor* shall, at all times that the *Contract* is in effect and upon request of the *Owner*, provide proof of

compliance satisfactory to the *Owner*, at the *Contractor's* own cost. If the *Contractor* fails to do any of the foregoing, the *Contractor* shall be considered to be in default of the *Contract* in accordance with GC7.1.2 and the *Owner* shall be entitled at its sole discretion to terminate the *Contract* and to pursue any other legal recourse the *Owner* deems appropriate.”

SC 6. GC 1.3 RIGHTS AND REMEDIES

1. Add to the beginning of paragraph 1.3.2, the following:

“Except with respect to the notice requirements set out in paragraphs 6.4.1, 6.5.4, and 6.6.1,”

2. Add new paragraph 1.3.3 as follows:

“1.3.3 All rights and remedies of the parties for any breach by the other party of its obligations under the *Contract* shall be cumulative and not exclusive or mutually exclusive alternatives, may be exercised singularly, jointly or in combination and shall not be deemed to be in exclusion of any other rights or remedies available to the non-breaching party under the *Contract* or otherwise at law or in equity or by statute.”

SC 7. GC 1.4 ASSIGNMENT

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

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

2. Add new paragraph 1.4.2 as follows:

“1.4.2 Neither the use of one or more *Subcontractors* to carry out part of the *Work*, nor the assignment of the whole or of any part of the *Contract* or the *Work* to be done under it shall relieve the *Contractor* of its obligations and liability to the *Owner*.”

SC 8. GC 1.5 MUNICIPAL CONFLICT OF INTEREST

1. Add new general condition GC 1.5 MUNICIPAL CONFLICT OF INTEREST as follows:

“GC 1.5 MUNICIPAL CONFLICT OF INTEREST

- 1.5.1 The *Owner* may terminate the *Contract* where the *Contractor* is in contravention with the *Owner's* Procurement Policy with respect to conflict of interest.”

SC 9. GC 1.6 ENTIRE CONTRACT, AMENDMENTS TO BE IN WRITING

1. Add new general condition GC 1.6 ENTIRE CONTRACT, AMENDMENTS TO BE IN WRITING as follows:

“GC 1.6 ENTIRE CONTRACT, AMENDMENTS TO BE IN WRITING

- 1.6.1 The *Contract Documents* (including all properly authorized *Change Directives* and *Change Orders*) constitute the entire *Contract* between the parties. Each of the parties,
- .1 acknowledges that it is not relying upon any representation, warranty, promise, instruction, advice or information received from the other party or from any employee or agent of the other party, except as set out in the *Contract Documents*;
 - .2 shall not rely at any time in the future on any representations, warranty, instruction, advice or information purportedly received from the other party or any employee or agent of the other party, except as set out in a properly authorized *Change Order*, *Change Directive* or in an amendment as provided under this section.
- 1.6.2 The *Contract* shall not be deemed to be or construed as having been amended as a result of any oral communication between the parties or as a result of any practice of the parties, but all amendments to the *Contract* shall be in writing and shall be signed by both parties, provided that any such amendment may be executed in counterpart form.”

SC 10. GC 1.7 NON-DISCLOSURE AND NO COMMENT

1. Add new general condition GC 1.7 NON DISCLOSURE AND NO COMMENT as follows:

“GC 1.7 NON-DISCLOSURE AND NO COMMENT

- 1.7.1 The *Contractor* shall not disclose details relating to the *Contract*, *Work* or *Project* to any outside person not engaged in activities relating to the *Contract*, *Work* or *Project*, and shall restrain its employees from giving unauthorized information with respect thereto.
- 1.7.2 The *Contractor* shall refer all inquiries from whatever source relating to the works to be undertaken within the scope of the *Contract* to the *Consultant*.”

SC 11. GC 1.8 OWNER'S ACCESS TO SITE

1. Add new general condition GC 1.8 OWNER’S ACCESS TO SITE as follows:

“GC 1.8 OWNER’S ACCESS TO SITE

- 1.8.1 The Owner shall have the right to enter and occupy the *Place of the Work* in whole or in part, for the purpose of placing fittings and equipment or for other uses before the issuance of the certificate of the *Substantial Performance of the Work*, where in the opinion of the *Consultant*, such entry and occupancy will not interfere unreasonably with the *Contractor’s* delivery of the *Work*.
- 1.8.2 Notwithstanding paragraph 1.8.1, the parties agree that during the term of the *Contract*, the *Owner* may inspect any and all aspects of the *Project*, at all reasonable times, for the purpose of ensuring that the *Contractor* is carrying out the *Work* and other obligations in accordance with the *Contract*.”

SC 12. GC 1.9 PATENTS AND OTHER INTELLECTUAL PROPERTY

1. Add new general condition GC 1.9 PATENTS AND OTHER INTELLECTUAL PROPERTY as follows:

“GC 1.9 PATENTS AND OTHER INTELLECTUAL PROPERTY

- 1.9.1 Where the *Work* or *Project* to be carried out requires the installation or use of any patented or other protected intellectual property,
 - .1 belonging to the *Contractor*, the *Contract Price* shall be deemed to include the grant of a perpetual license from the *Contractor* to the *Owner* to make use of that intellectual property;
 - .2 belonging to any other person, the *Contractor* shall obtain and assign to the *Owner* a perpetual license from the owner thereof entitling the *Owner* to make use of that intellectual property, and the cost thereof shall be deemed to be included in the *Contract Price*.”

SC 13. GC 2.1 AUTHORITY OF THE CONSULTANT

1. Delete from the end of paragraph 2.1.2, the following:

“, the *Consultant* and the *Contractor*”

SC 14. GC 2.2 ROLE OF THE CONSULTANT

1. Add to the beginning of subparagraph 2.2.4 the following:

“After receipt of the *Contractor*’s invoices for payment,”

2. Delete from the beginning of paragraph 2.2.6, the following:

“Except with respect to GC5.1 – FINANCING INFORMATION REQUIRED OF THE OWNER,”

3. Add to the end of paragraph 2.2.9, the following:

“and not more than forty-eight (48) hours after receipt of the written query unless otherwise agreed to by the parties.”

4. Add after “with reasonable promptness” in paragraph 2.2.12, the following:

“but not more than five (5) *Working Days* after receipt of a written Request for Information from the *Contractor*”

5. Add after “, the *Consultant* does not guarantee” in the second sentence of paragraph 2.2.16, the following:

“to the *Contractor*”

6. Add to the end of paragraph 2.2.17, the following:

“The *Consultant* shall ensure that all such warranties and documents submitted for approval and for the *Owner*’s records are in accordance with the *Contract Documents* prior to the documents being forwarded.”

7. Delete from paragraph 2.2.18, the following:

“against whom the *Contractor* makes no reasonable objection and”

8. Add new paragraph 2.2.19 as follows:

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

SC 15. GC 2.3 REVIEW AND INSPECTION OF THE WORK

1. Add to end of paragraph 2.3.2, the following:

“Reasonable notice shall not be less than twenty-four (24) hours prior to the testing and inspection.”

2. Add after “inspection reports relating to the *Work*” in paragraph 2.3.3, the following:

“, and in any event no later than two (2) *Working Days* from the date of the inspection”

SC 16. GC 2.4 DEFECTIVE WORK

1. Add after “failing to conform to the *Contract Documents*” in paragraph 2.4.1, the following:

“at the *Contractor*’s expense”

2. Add new paragraphs 2.4.1.1, 2.4.1.2 as follows:

“2.4.1.1 The *Contractor* shall rectify, in a manner acceptable to the *Owner* and the *Consultant*, all defective work and deficiencies throughout the *Work*, whether or not they are specifically identified by the *Consultant*.

2.4.1.2 The *Contractor* shall prioritize and schedule the correction of any defective *Work* which, in the sole discretion of the *Owner*, adversely affects the day to day operation of the *Owner*.”

SC 17. GC 3.1 CONTROL OF THE WORK

1. Add after “construction means, methods, techniques,” in paragraph 3.1.2, the following:

“schedule,”

2. Add new paragraph 3.1.3, as follows:

“3.1.3 Prior to commencing individual procurement, fabrication and construction activities, the *Contractor* shall verify, at the *Place of the Work*, all relevant measurements and levels necessary for proper and complete fabrication, assembly and installation of the *Work* and shall further carefully compare such field measurements and conditions with the requirements of the *Contract Documents*. Where dimensions are not included or exact locations are not apparent, the *Contractor* shall immediately notify the *Consultant* in writing and obtain written instructions from the *Consultant* before proceeding with any part of the affected work.”

SC 18. GC 3.2 CONSTRUCTION BY OWNER OR OTHER CONTRACTORS

1. Delete subparagraphs 3.2.2.1, 3.2.2.3 and 3.2.2.4 in their entirety.

2. Add to the end of subparagraph 3.2.2.2, the following:

“; the *Contractor* acknowledges that, if the *Owner* does not enter into any other contracts for the *Project*, the *Contractor* is the “constructor” and the “employer” within the meaning of the *Occupational Health and Safety Act (Ontario)* and the *Contractor* undertakes to carry out the duties, obligations and responsibilities of the constructor and the employer with respect to the *Project*. In the event that the *Owner* enters into more than one contract for the *Project*, or when work is performed by the *Owner*’s own forces, the *Owner* agrees to fulfill all of the duties, obligations and responsibilities required under the *Occupational Health and Safety Act (Ontario)*. Without restricting the generality of any other term or condition in the *Contract*, the *Contractor* shall indemnify and hold harmless the *Owner* from any liability for claims, damages or penalties, including reasonable legal fees to defend any offences, arising from the *Contractor*’s failure to comply with the duties, responsibility and obligations of the constructor and the employer under the *Occupational Health and Safety Act (Ontario)*.”

3. Delete from the subparagraph 3.2.3.2, the following:

“that are identified in the *Contract Documents*”

4. Add new subparagraph 3.2.3.5 as follows:

“3.2.3.5 Subject to General Condition 6.1.1 Owners Right to Make Changes and GC 9.4 - CONSTRUCTION SAFETY, where paragraph 3.2.4 of GC 3.2 - CONSTRUCTION BY OWNER OR OTHER CONTRACTORS applies, for the *Owner*’s own forces and for other contractors performing work within the construction site limits identified in the *Contract Documents*, assume overall responsibility for compliance with all aspects of the applicable health and safety legislation in the *Place of the Work*, including all of the responsibilities of the constructor as that term is defined in the *Occupational Health and Safety Act*.”

SC 19. GC 3.4 CONSTRUCTION SCHEDULE

1. Delete paragraph 3.4.1 in its entirety and replace with the following:

“3.4.1 The *Contractor* shall:

- .1 prior to the first application for payment, prepare and submit to the *Owner* and the *Consultant* for their review and acceptance, a construction schedule that indicates the timing of the activities of the *Work* and provides sufficient detail of the critical events and their inter-relationship to demonstrate the

Work will be performed in conformity with the *Contract Time* and in accordance with the *Contract Documents*. The *Contractor* shall employ construction scheduling software, where required by the *Specifications*, that permits the progress of the *Work* to be monitored in relation to the critical path established in the schedule. The *Contractor* shall provide the schedule and any successor or revised schedules in both electronic format and paper copy. Once accepted by the *Owner* and the *Consultant*, the construction schedule submitted by the *Contractor* shall become the baseline construction schedule, and any errors or omissions within that construction schedule not captured by the *Owner* and or *Consultant* as part of schedule acceptance does not alleviate the *Contractor* of their responsibility to meet the *Contract Time* and the *Contractor* shall be required to make the necessary corrections to the schedule immediately to comply with the *Contract Time*;

- .2 provide the expertise and resources, such resources including manpower and equipment, as are necessary to maintain progress under the accepted baseline construction schedule or any successor or revised schedule accepted by the *Owner* pursuant to GC 3.4 - CONSTRUCTION SCHEDULE;
- .3 monitor the progress of the *Work* on a weekly basis relative to the baseline construction schedule, or any successor or revised schedule accepted by the *Owner* pursuant to GC 3.4 - CONSTRUCTION SCHEDULE, update the schedule on a monthly basis and advise the *Consultant* and the *Owner* in writing of any variation from the baseline or slippage in the schedule; and
- .4 if, after applying the expertise and resources required under subparagraph 3.4.1.2, the *Contractor* forms the opinion that the variation or slippage in schedule reported pursuant to subparagraph 3.4.1.3 cannot be recovered by the *Contractor*, it shall, in the same notice, indicate to the *Consultant* and the *Owner* if the *Contractor* intends to apply for an extension of *Contract Time* as provided in PART 6 of the General Conditions - CHANGES IN THE WORK.”

- 2. Add new paragraphs 3.4.2, 3.4.3, 3.4.4, 3.4.5, 3.4.6, 3.4.7, 3.4.8, 3.4.9 and 3.4.10 as follows:

“3.4.2 If, at any time, it should appear to the *Owner* or the *Consultant* that the actual progress of the *Work* is behind schedule or is likely to become behind schedule, or if the *Contractor* has given notice of such to the *Owner* or the *Consultant* pursuant to subparagraph 3.4.1.3, the *Contractor* shall take appropriate steps to cause the actual progress of the *Work* to conform to the 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 schedule. If the *Contractor* intends to apply for a change in the *Contract Price* in relation to a schedule recovery plan, then the *Contractor* shall proceed in accordance with GC 6.5 – DELAYS.

- 3.4.3 Where a *Force Majeure* occurs, the *Consultant* shall determine the number of days (if any) to be allowed by reason thereof for the *Substantial Performance of the Work*.
- 3.4.4 An extension of time may be granted under this section by the *Consultant* where in the *Consultant's* reasonable opinion it is appropriate in all of the circumstances to do so;
- .1 by reason of the occurrence of a *Force Majeure*;
 - .2 by reason of a *Change Directive* or *Change Order*;
 - .3 where the *Owner*, for any reason, directs that *Work* be discontinued; provided that,
 - (1) an extension under subparagraph 3.4.4.1 shall not entitle the *Contractor* to any additional payment; and
 - (2) any other extension shall entitle the *Contractor* to additional overhead costs only to the extent that the *Consultant* is satisfied that such costs will increase by reason of the extension.
- 3.4.5 Any extension of time so granted shall not exceed the amount that is reasonably required. Requests for extension will be evaluated collectively, rather than on an individual *Change Directive* or *Change Order* basis, provided that the collective evaluation shall not be less frequently than at least once per quarter. There is no presumption that the time required to carry out a *Change Directive* or *Change Order* will necessarily extend the date of the *Substantial Performance of the Work* by the same length of time. Instead, the *Consultant* shall make an independent determination of whether an extension is required.
- 3.4.6 An extension of time under this section shall be for such time as the *Consultant* may prescribe as being fair and reasonable and the *Consultant* shall fix the terms on which the said extension may be granted.
- 3.4.7 An application for an extension of time as herein provided shall be made in writing by the *Contractor* to the *Consultant* through the *Change Order* process.
- 3.4.8 Any additional time granted for the completion of the *Contract* will be conditional upon the *Contractor* providing the *Owner* with evidence that all insurance, bonds or other securities, furnished to the *Owner* by the *Contractor*, have been increased and, if necessary, extended beyond the limit of the time extension.
- 3.4.9 Any extension of time that may be granted to the *Contractor* shall be so granted and accepted without prejudice to any rights of the *Owner* whatsoever under the *Contract* and all of such rights shall continue in full force and effect after the time limited in the *Contract* for the

completion of the *Work*, and whenever in the *Contract* power and authority is given to the *Owner* or the *Consultant* or any person to take any action consequent upon the act, default, breach, neglect, delay, non-observance or non-performance by the *Contractor* in respect of the *Work* or *Contract*, or any portion thereof, such powers or authorities may be exercised from time to time and not only in the event of the happening of such contingencies before the time limited in the *Contract* for the completion of the *Work* but also in the event of the same happening after the time so limited in the case of the *Contractor* being permitted to proceed with the execution of the *Work* under an extension of time granted by the *Consultant*. In the event of the *Consultant* granting an extension of time, time shall continue to be deemed of the essence with respect to that extension.

- 3.4.10 Due to the time constraints regarding the *Project*, the *Contractor* shall maintain rigorous control of all elements of the *Work* for which the deadlines are indicated in the *Contract Documents*.”

SC 20. GC 3.5 SUPERVISION

1. Delete paragraph 3.5.1 in its entirety and replace with the following:

“3.5.1 The *Contractor* shall furnish a competent and adequate staff, who shall be in attendance at the *Place of the Work* at all times, as necessary, for the proper administration, co-ordination, supervision and superintendence of the *Work*; organize the procurement of all materials and equipment so that they will be available at the time they are needed for the *Work*, and keep an adequate force of skilled workmen on the job to complete the *Work* in accordance with all requirements of the *Contract Documents*. The appointed representatives shall not be changed except for valid reasons, at no additional cost to the *Owner*, and upon the *Contractor* obtaining the *Owner’s* written consent, which consent will not be unreasonably withheld. Further, the *Contractor* shall not employ or continue to employ on the *Work* anyone to whom the *Owner* may reasonably object.”

2. Add new paragraphs 3.5.3, 3.5.4, 3.5.5, 3.5.6, 3.5.7, 3.5.8 and 3.5.9 as follows:

“3.5.3 The *Contractor* shall at all times have at the *Place of Work*, a full-time and competent construction superintendent who shall be capable of reading and thoroughly understanding plans and specifications and of adequately communicating with the *Consultant* and its representatives and who also must be thoroughly experienced in the type of *Work* being performed, and who shall be the recipient of all instructions from the *Consultant* or its authorized representatives. No work of any kind shall

be carried out by the *Contractor* or its *Subcontractors* during prolonged absence of the construction superintendent.

- 3.5.4 The construction superintendent shall have full authority to execute the orders or directions of the *Consultant* without delay, and to promptly provide such materials, equipment, tools, labour and incidentals as may be required. The *Contractor* shall provide a superintendent regardless of the amount of *Work* subcontracted.
- 3.5.5 The *Contractor* shall provide the *Consultant* with the telephone and the address of its appointed representative(s), who could be contacted on matters relating to the *Contract*, (e.g. urgent messages or emergencies), and who shall be available within reasonable notice, twenty-four (24) hours a day, seven (7) days a week, on matters relating to the *Contract*.
- 3.5.6 The *Owner* may, at any time during the course of the *Work*, request the replacement of the appointed representative(s), where the grounds for the request involve incompetent or disorderly conduct or conduct which jeopardizes the safety and security of the site or the *Owner's* operations. Immediately upon receipt of the request, the *Contractor* shall make arrangements to appoint an acceptable replacement at no additional cost to the *Owner*.
- 3.5.7 The *Contractor* shall cause each *Subcontractor* at all times while the *Work* is being carried out, to have a fully competent supervisor at the *Place of the Work*, who is thoroughly familiar with all aspects of the *Project* for which that *Subcontractor* is responsible.
- 3.5.8 The superintendent shall not be employed in any other capacity at the *Place of Work*. Where it is necessary to employ a superintendent in some other capacity, the *Consultant* shall approve the extent to which a labour time charge may be claimed by the *Contractor* or a *Subcontractor* in respect of that superintendent.
- 3.5.9 The *Contractor* acknowledges that the replacement of the construction superintendent or project team members will have significant impacts on the *Project* schedule and quality of the *Work*; therefore, all measures will be taken by the *Contractor* in order to maintain the original team assigned to the *Project*. Replacement of any team members will result in a possible delay to the *Project* and will be the responsibility of the *Contractor* to make-up any such delays.”

SC 21. GC 3.6 SUBCONTRACTORS AND SUPPLIERS

1. Add to the end of paragraph 3.6.2, the following:

“Failure on the part of the *Contractor* to indicate in writing such *Subcontractors* and *Suppliers* to the *Owner*, shall be deemed to be a failure or refusal to enter into the *Contract*.”

2. Add to the end of paragraph 3.6.4, the following:

“at the discretion of the *Consultant*.”

3. Add new paragraph 3.6.7 as follows:

“3.6.7 The *Contractor* shall not change any of the *Subcontractors* or *Suppliers* proposed by the *Contractor* in writing and accepted by the *Owner* at the signing of the *Contract* without the *Owner*’s written consent or execute any subcontracts for the performance of the *Work* without the *Owner*’s prior written consent.”

SC 22. GC 3.7 LABOUR AND PRODUCTS

1. Add new paragraphs 3.7.4, 3.7.5, 3.7.6, 3.7.7, 3.7.8, 3.7.9, 3.7.10, 3.7.11, 3.7.12, 3.7.13, 3.7.14 and 3.7.15 as follows:

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

3.7.5 The *Contractor* shall comply with all requirements set out in the *Fair Wage Policy*. The *Owner* has adopted the *Fair Wage Policy*, respecting contractors and subcontractors that must be adhered to on this *Project*.

3.7.6 The *Contractor* shall comply in all respects with the *Fair Wage Policy* and is fully responsible for ensuring that all of its *Subcontractors* also comply in all respects with the *Fair Wage Policy*.

3.7.7 All workers employed by the *Contractor* and its *Subcontractors* in connection with the *Work* or *Project* shall be paid or provided with wages, benefits and hours of work in accordance with the *Fair Wage Policy* which were in effect on the date of the closing of the request for tenders/request for proposals for the *Contract*.

3.7.8 The *Contractor* is responsible for the safe on-site storage of *Products* and their protection (including *Products* supplied by the *Owner* and other contractors to be installed under the *Contract*) in such ways as to avoid dangerous conditions or contamination of the *Products* or other person or property and in locations at the *Place of the Work* to the

satisfaction of the *Owner* and the *Consultant*. The *Owner* shall provide all relevant information on the *Products* to be supplied by the *Owner* within the *Contract Documents*.

- 3.7.9 The *Contractor* shall neither permit nor allow underaged persons contrary to *Applicable Laws*, the introduction or use of alcoholic beverages or illegal narcotics on or about the *Place of the Work*.
- 3.7.10 At the request of the *Owner* or *Consultant*, the *Contractor* shall remove from the *Place of the Work*, any person (whether employed on the *Work* or not) who, in the opinion of the *Owner* or *Consultant*, is incompetent, intoxicated or otherwise impaired, or who is conducting himself (or herself) improperly, and the *Contractor* shall not permit any such person to remain on the *Place of the Work*, nor to return to the *Place of the Work* without the written approval of the *Owner* or *Consultant* as the case may be.
- 3.7.11 Where required by the *Consultant*, the *Contractor* shall furnish a complete written statement of the origin, composition and manufacture of all materials to be supplied by them, and shall furnish samples thereof for testing purposes, if so instructed by the *Consultant*.
- 3.7.12 The *Consultant's* approval of changed materials shall not be considered as waiver of objection to the *Work* or materials at any subsequent time due to their failure to conform to the *Specifications*.
- 3.7.13 The *Contractor* shall furnish for the *Consultant's* approval, such material tests, mock-ups, mix designs and tests of items and/or materials manufactured or fabricated off the *Place of the Work* as the *Consultant* may reasonably request.
- 3.7.14 Specified product by name, trade or company is regarded as the standard of quality required by the *Specifications*. No substitution shall be made by the *Contractor* without the prior written approval of the *Owner*.
- 3.7.15 By-law 07-170 (City of Hamilton Licensing Code) as amended from time to time, regulates the trade licensing process in Hamilton. The By-law regulates all businesses of plumbing, heating, ventilation and air-conditioning, drain laying and building repair. The City of Hamilton's Standards & Licensing Section is responsible for the licensing of contractors and masters. Licenses are issued to contractors and masters working in the above noted trades."

SC 23 GC 3.8 SHOP DRAWINGS

1. Delete the word "and" in subparagraph 3.8.3.2 and add the word "and" to the end of subparagraph 3.8.3.2.

2. Add new subparagraph 3.8.3.3 as follows:

“3.3 the *Contractor* shall ensure completeness and accuracy of all *Shop Drawings* in accordance with *the Contract Documents*. ”

3. Add new paragraphs 3.8.8, 3.8.9, 3.8.10, 3.8.11 and 3.8.12 as follows:

“3.8.8 Upon request of the *Contractor* or the *Consultant*, they shall jointly prepare a schedule of the dates for provision, review and return of *Shop Drawings*.

3.8.9 The *Contractor* shall provide *Shop Drawings* in the form specified, or if not specified, as directed by the *Consultant*.

3.8.10 *Shop Drawings* provided by the *Contractor* to the *Consultant* shall indicate by stamp, date and signature of the person responsible for the review that the *Contractor* has reviewed each one of them.

3.8.11 *Shop Drawings* which require approval of any legally constituted authority having jurisdiction shall be provided to such authority by the *Contractor* for approval.

3.8.12 The *Contractor* shall provide revised *Shop Drawings* to correct those which the *Consultant* rejects as inconsistent with the *Contract Documents*, unless otherwise directed by the *Consultant*. The *Contractor* shall notify the *Consultant* in writing of any revisions to the *Shop Drawings* other than those requested by the *Consultant*.”

SC 24. GC 3.9 DOCUMENT REVIEW

1. Add new general condition GC 3.9 DOCUMENT REVIEW as follows:

“GC 3.9 DOCUMENT REVIEW

1.9.1. The *Contractor* shall review the *Contract Documents* and shall report promptly to the *Consultant* any error, inconsistency or omission the *Contractor* may discover. Such review by the *Contractor* shall comply with the standard of care described in paragraph 3.14.1 of the *Contract*. Except for its obligation to make such review and report the result, the *Contractor* does not assume any responsibility to the *Owner* or to the *Consultant* for the accuracy of the *Contract Documents*. The *Contractor* shall not be liable for damage or costs resulting from such errors, inconsistencies, or omissions in the *Contract Documents*, which the *Contractor* could not reasonably have discovered. If the *Contractor* does discover any error, inconsistency or omission in the *Contract Documents*, the *Contractor* shall not proceed with the work affected until

the *Contractor* has received corrected or missing information from the *Consultant*.

- 1.9.2 The *Contractor* shall follow the procedures as set forth in the *Contract Documents*. All requests are to be formal, written, and tracked, beginning with a *Request for Information* from the *Contractor*. If the *Request for Information* results in a change to the *Work* as specified in the *Contract Documents*, the *Consultant* will then issue a written request for *Change Order*, as set forth in GC 6 - CHANGES IN THE WORK.
- 1.9.3 If, at any time, the *Contractor* finds errors, inconsistencies, or omissions in the *Contract Documents* or has any doubt as to the meaning or intent of any part thereof, the *Contractor* shall immediately notify the *Consultant*, through a *Request for Information*. The *Contractor* shall not proceed with the work until the *Consultant* has responded to the *Request for Information*, and in dealing with such error, inconsistency or omission the *Contractor* shall co-operate with the *Owner* and the *Consultant* in good faith to resolve such errors, inconsistency or omission so as to avoid any increase in the *Contract Price* or delay in the progress of the *Work*. Neither the *Owner* nor the *Consultant* will be responsible for the consequences of any action of the *Contractor* based on oral instructions.”

SC 25. GC 3.10 DOCUMENTS AT THE SITE

1. Add new general condition GC 3.10 DOCUMENTS AT THE SITE as follows:

“GC 3.10 DOCUMENTS AT THE SITE

- 3.10.1 The *Contractor* shall keep one copy of current *Contract Documents*, submittals, reports, and records of meetings at the *Place of the Work*, in good order and available to the *Owner* and the *Consultant*.”

SC 26. GC 3.11 USE OF THE WORK

1. Add new general condition GC 3.11 USE OF THE WORK as follows:

“GC 3.11 USE OF THE WORK

- 3.11.1 The *Contractor* shall confine *Construction Equipment*, *Temporary Work*, storage of *Products*, waste products and debris, and operations of employees and *Subcontractors* to limits indicated by laws, ordinances, permits, or the *Contract Documents* and shall not unreasonably encumber the *Place of the Work*.
- 3.11.2 The *Contractor* shall not load or permit to be loaded any part of the *Work* with a weight or force that will endanger the safety of the *Work*.

- 3.11.3 The *Contractor* shall abide by and enforce directives and policies regarding signs, advertisements, safety procedures, fires and smoking at the *Place of the Work* as directed by the *Owner*.”

SC 27. GC 3.12 CUTTING AND REMEDIAL WORK

1. Add new general condition GC 3.12 CUTTING AND REMEDIAL WORK as follows:

“GC 3.12 CUTTING AND REMEDIAL WORK

- 3.12.1 The *Contractor* shall perform the cutting and remedial work required to make the affected parts of the *Work* come together properly.
- 3.12.2 The *Contractor* shall co-ordinate the *Work* to ensure that the cutting and remedial work is kept to a minimum.
- 3.12.3 Should the *Owner*, the *Consultant*, other contractors or anyone employed by them be responsible for ill-timed work necessitating cutting or remedial work to be performed, the cost of such cutting or remedial work shall be valued as provided in GC 6.1 – OWNER’S RIGHT TO MAKE CHANGES, GC 6.2 - CHANGE ORDER and GC 6.3 - CHANGE DIRECTIVE.
- 3.12.4 Cutting and remedial work shall be performed by specialists familiar with the Products affected and shall be performed in a manner to neither damage nor endanger the *Work*.”

SC 28. GC 3.13 CLEANUP

1. Add new general condition GC 3.13 CLEANUP as follows:

“GC 3.13 CLEANUP

- 3.13.1 The *Contractor* shall maintain the *Work* in a safe and tidy condition and free from the accumulation of waste products and debris, other than that caused by the *Owner*, other contractors or their employees.
- 3.13.2 Before applying for *Substantial Performance of the Work* as provided in GC 5.4 – SUBSTANTIAL PERFORMANCE OF THE WORK, 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 the 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.
- 3.13.3 Prior to application for the final payment, the *Contractor* shall remove any remaining products, tools, *Construction Equipment*, *Temporary*

Work, and waste products and debris, other than those resulting from the work of the *Owner*, other contractors or their employees.

- 3.13.4 The *Owner* shall have the right to set-off the cost of cleaning to the *Contractor* if it is not done within twenty-four (24) hours of written notice to clean and the *Owner* shall have the right to set-off the cost of damage to the *Place of the Work* caused by the *Contractor's*, the *Subcontractor's* or the *Supplier's* transportation in and out of the *Place of the Work* if not repaired within five (5) *Working Days* of written notice to repair or before final payment, whichever is earlier.
- 3.13.5 All material delivered to the *Place of the Work* shall be neatly stored or contained upon delivery only in areas as approved by the *Owner* or the *Consultant* and shall be secured and remain in the *Contractor's* control until installed.
- 3.13.6 The *Contractor* shall legally dispose forthwith of any debris and surplus material accumulated at the *Place of the Work*, and where requested, the *Contractor* shall provide to the *Consultant* a true copy of the original certificate approval from a waste management system and a true copy of the original certificate of approval from the place of disposal for all debris and surplus material disposed of by the *Contractor* under the *Contract*.”

SC 29. GC 3.14 PERFORMANCE BY CONTRACTOR

1. Add new general condition GC 3.14 PERFORMANCE BY CONTRACTOR as follows:

“GC 3.14 PERFORMANCE BY CONTRACTOR

- 3.14.1 In performing its services and obligations under the *Contract*, the *Contractor* shall exercise a standard of care, skill and diligence that would normally be provided by an experienced and prudent contractor supplying similar services for similar projects. The *Contractor* acknowledges and agrees that throughout the *Contract*, the *Contractor's* obligations, duties and responsibilities shall be interpreted in accordance with this standard. The *Contractor* shall exercise the same standard of due care and diligence in respect of any *Products*, personnel, or procedures which it may recommend to the *Owner*.
- 3.14.2 The *Contractor* further represents, covenants and warrants to the *Owner* that:
 - .1 the personnel it assigns to the *Project* are appropriately experienced;

- .2 it has a sufficient staff of qualified and competent personnel to replace any vacancy, subject to the *Owner's* approval, resulting from death, incapacity, removal or resignation; and
- .3 there are no pending, threatened or anticipated claims that would have a material effect on the financial ability of the *Contractor* to perform its work under the *Contract*.”

SC 30. GC 3.15 SECURITY

1. Add new general condition GC 3.15 SECURITY as follows:

“GC 3.15 SECURITY

- 3.15.1 The *Contractor* is responsible to provide and maintain the *Place of the Work* in a secure manner, free from public access, trespassing, or vandalism. This provision is to be maintained on a twenty-four (24) hours per day, seven (7) days per week basis and may require such items as fencing, hoarding, lighting, security guards or systems, and security cameras.”

SC 31. GC 4.1 CASH ALLOWANCES

1. Add after “*Contractor's*,” in paragraph 4.1.2, the following:

“and *Subcontractor's*”

2. Add new paragraph 4.1.8 as follows:

- “4.1.8 The *Owner* reserves the right to call, or to have the *Contractor* call, for competitive bids for portions of the *Work* to be paid from cash allowances.”

SC 32. GC 4.2 CONTINGENCY ALLOWANCE

1. Add new paragraphs 4.2.5 and 4.2.6:

- “4.2.5 Any contingency allowance specified in the *Contract Documents*, the *Owner's* Council resolution with respect to the *Contract*, or elsewhere, shall be deemed to be solely a budgetary authorization by the *Owner*. The *Contractor* shall have no right to draw upon any such contingency allowance for payment unless specifically authorized to do so by way of *Change Order*.
- 4.2.6 In the absence of a contingency allowance being shown on the *Contract Documents*, the *Contractor* is not to assume that there is one in place. The disclosure of any contingency allowances is at the discretion of the *Owner*.”

SC 33. GC 4.3 PROVISIONAL AMOUNTS

1. Add new general condition GC 4.3 PROVISIONAL AMOUNTS as follows:

“GC 4.3 PROVISIONAL AMOUNTS

- 4.3.1 The *Contract Price* includes provisional items, if any, as stated in the *Contract Documents*.
- 4.3.2 The *Contractor* is not entitled to payment of any provisional items except for the extra or additional work carried out by the *Contractor*, as directed by the *Owner* and in accordance with the *Contract* and only to the extent of such extra or additional work and payment approved by the *Owner*.
- 4.3.3 The *Owner* reserves the right to delete from the *Contract Price* any of the provisional items identified in the *Form of Tender*, for credit at the price shown. All prices are inclusive of all duties and taxes applicable, except *Value Added Taxes*.”

SC 34. GC 5.1 PROVISIONAL AMOUNTS

1. Delete GC 5.1 FINANCING INFORMATION REQUIRED OF THE OWNER in its entirety.

SC 35. GC 5.2 APPLICATIONS FOR PAYMENT

1. Add to the end of paragraph 5.2.1, the following:

“Applications for payment shall be in accordance with the Construction Act and made by way of a *Notice in Writing* delivered by electronic communication, or as may be otherwise agreed, to both the *Consultant* and the *Owner*.”

2. Add to the end of paragraph 5.2.3, the following:

“The *Contractor* shall review with the *Consultant* and the *Owner*, at a scheduled time, the percentage of work completed for each item indicated in the schedule of values. This procedure shall be complied with for each application for payment prior to submitting the formal application for payment.”

3. Delete paragraph 5.2.5 in its entirety and replace with the following:

“The schedule of values shall be made out in such form and supported by such evidence as the *Consultant* may reasonably direct and when accepted by the *Consultant*, shall be used as the basis for applications for payment, unless it is found to be in error.”

4. Delete paragraph 5.2.7 in its entirety and replace with the following:

“Each application for payment shall meet the requirements of a “proper invoice” as defined in the *Construction Act* (Ontario) if the *Contractor* includes the following:

- a statement based on the schedule of values, which statement shall include the *Contract* number, *Project* name and purchase order number;
- breakdown of approved *Change Orders* and percentage completed of each;.
- a *Statutory Declaration* as required by paragraph 5.2.9;
- any other requirement that the *Construction Act* (Ontario) prescribes for a proper invoice; and
- evidence of compliance with workers' compensation legislation at the *Place of the Work* and after the first payment, a declaration by the *Contractor* as to the distribution made of the amounts previously received using document CCDC 9A 'Statutory Declaration'.

5. Add to the end of paragraph 5.2.8, the following:

“Any *Products* delivered to the *Place of the Work* but not yet incorporated into the *Work* shall remain at the risk of the *Contractor* notwithstanding that title has passed to the *Owner* pursuant to General Condition 13.1 - OWNERSHIP OF MATERIALS.”

6. Add new paragraphs 5.2.9, 5.2.10, 5.2.11, 5.2.12, 5.2.13, 5.2.14 and 5.2.15, as follows:

“5.2.9 The *Contractor* must provide with each application of a proper invoice after the first, a *Statutory Declaration*, certifying that all accounts for all subcontract, construction machinery and equipment, materials, *Products*, labour and other indebtedness which may have been incurred by the *Contractor* and for which the *Owner* might in any way be held responsible have been paid in full or will be paid with the proceeds from such application for payment, except for amounts properly retained as holdback or as an identified amount in dispute.

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

5.2.11 Subject to the *Construction Act* and all other *Applicable Laws*, the *Owner* will pay to the *Contractor* ninety percent (90%) of the amount shown on such application for payment, subject to any amount that is disputed, and where the *Owner* has received notice of a lien, an amount sufficient to satisfy the lien may be retained , less previous payments, less the amount of any liens or any written notice of a lien of which the *Owner* has notice, plus 25% for security for costs, less the maintenance

security referred to in GC 12.3 – WARRANTY, and less any amounts that the *Owner* deems necessary to retain for its protection against claims or liabilities or for any claim or claims the *Owner* may have against the *Contractor* under the *Contract*, other contracts, or otherwise, and such payments shall not in any way be construed as, nor shall it constitute, an acceptance of all or any part of the *Work* or material under the *Contract*. Once the reason for the *Owner* being entitled to withhold payment of any amount has been rectified, the amount withheld due to that reason will be paid by the *Owner* to the *Contractor*.

- 5.2.12 Deviation or incomplete submissions with respect to the breakdown of approved *Change Orders* and percentage completed of each will require resubmission of the application for payment.
- 5.2.13 If any *Work* or item under the *Contract* is included by the *Contractor* in its progress claims as partially or fully completed, but it is not completed in accordance with *Drawings* or *Specifications*, or is not completed to the *Consultant's* satisfaction, the *Consultant* shall omit the partial or total cost of such items from the certificates of payment and shall notify the *Contractor* in writing of its action and the reason for same, and shall withhold payments for such items, over, above and distinct from applicable construction lien holdbacks, until they are completed or corrected to its full satisfaction.
- 5.2.14 The *Consultant* and/or the *Owner* shall not be held responsible for any delays in payment due to a disagreement in the amounts shown by the *Contractor* on their payment application as submitted to the *Consultant* for review.
- 5.2.15 The *Contractor* shall not submit an application for payment between the period of December 14 to January 4, inclusive, in any year. The *Contractor* shall not submit an application for payment during any other reasonable period which the *Owner* advises the *Contractor* in writing due to downtime for payment system upgrades.”

SC 36. GC 5.3 PAYMENT

- 1. Delete “10 calendar days” in subparagraph 5.3.1.1 and replace with “5 calendar days”.

SC 37. GC 5.4 SUBSTANTIAL PERFORMANCE OF THE WORK AND PAYMENT OF HOLDBACK

- 1. Add to the beginning of paragraph 5.4.1:

“When the *Contractor* considers that the *Work* is substantially performed, or if permitted by the lien legislation applicable to the *Place of the Work* a designated

portion thereof which the *Owner* agrees to accept separately is substantially performed, the *Contractor* shall, within one *Working Day*, deliver to the *Consultant* and to the *Owner* a comprehensive list of items to be completed or corrected, together with a written application for a review by the *Consultant* to establish *Substantial Performance of the Work* or substantial performance of the designated portion of the *Work*. Failure to include an item on the list does not alter the responsibility of the *Contractor* to complete the *Contract*.”

2. Delete paragraphs 5.4.2 and 5.4.3 in their entirety.

3. Add new paragraph 5.4.2 as follows:

“The prerequisites to attaining Substantial Performance includes but is not limited to the following:

- .1 Evidence of compliance with the requirements for occupancy or occupancy permit as prescribed by the authorities having jurisdiction
- .2 Final cleaning and waste removal at the time of applying for *Ready-for-Takeover*, as required by the *Contract Documents*.
- .3 The delivery to the *Owner* of such operations and maintenance documents reasonably necessary for immediate operation and maintenance, as required by the *Contract Documents*.
- .4 Make available a copy of the as-built drawings completed to date on site.
- .5 Startup, testing required for immediate occupancy, as required by the *Contract Documents*.
- .6 Ability to secure access to the *Work* has been provided to the *Owner*, if required by the *Contract Documents*.”

4. Add to the end of paragraph 5.4.4, the following:

“and submit CCDC 9A ‘Statutory Declaration’ to state that all accounts for labour, subcontracts, *Products*, *Construction Equipment*, and other indebtedness which may have been incurred by the *Contractor* in the *Substantial Performance of the Work* and for which the *Owner* might in any way be held responsible have been paid in full, except for amounts properly retained as a holdback or as an identified amount in dispute.”

5. Add after “Where legislation” in subparagraph 5.4.5, the following:

“and the Contract”

SC 38. GC 5.5 FINAL PAYMENT

1. Delete paragraph 5.5.1 in its entirety and replace with the following:

“5.5.1 When the *Contractor* considers that the *Work* is completed, the *Contractor* shall submit an application for final payment. The *Contractor’s* application for final payment shall be accompanied by any

documents or materials not yet delivered pursuant to paragraph 5.4.2 and, for purposes of the *Construction Act*, the remaining *Work* is valued at more than \$5,000. The *Work* shall be deemed not to be performed until all of the aforementioned documents have been delivered. Application for final payment shall be made by way of *Notice in Writing* and shall be delivered by electronic communication to both the *Consultant* and the *Owner*. Application for final payment shall meet the requirements of a “proper invoice” as set out in paragraph 5.2.7.”

2. Delete “10 calendar days” in paragraph 5.5.2 and replace with “5 calendar days”.
3. Delete “5 calendar days after the issuance of a final certificate for payment” in paragraph 5.5.4 and replace with “the deadline prescribed by the *Construction Act* (Ontario)”.
4. Add new paragraph 5.5.5 as follows:

“5.5.5 Prior to the release of the holdback for finishing work under the *Construction Act*, the *Contractor* shall submit:
.1 *Contractor’s* written request for release of the holdback, including a statement that no written notices of lien have been received by it;
.2 a *Statutory Declaration*; and
.3 a final Workplace Safety & Insurance Board Clearance Certificate.”

SC 39. GC 5.6 WITHHOLDING OF PAYMENT

1. Delete “or if” in paragraph 5.6.1 and replace with “and where”.

SC 40. GC 5.8 LIENS

1. Add new general condition GC 5.8 LIENS as follows:

“GC 5.80 LIENS

- 5.8.1 In the event that a construction lien arising from the performance of the *Work* is claimed, the *Contractor* shall, if requested, undertake the *Owner’s* defence of any subsequent lawsuit commenced in respect of the lien at the *Contractor’s* sole expense.
- 5.8.2 Without limiting any of the foregoing, the *Contractor* shall indemnify the *Owner* for all costs (including, without limitation, legal fees on a solicitor and client basis) it may incur in connection with the claim for lien or subsequent lawsuit brought in connection with the lien, or in connection with any other claim or lawsuit brought against the *Owner* by any person that provided services or materials to the *Project* lands which constituted a part of the *Work*.

- 5.8.3 This GC 5.8 does not apply to construction liens claimed by the *Contractor*.”

SC 41. GC 5.9 PAYMENT BY ELECTRONIC FUNDS TRANSFER

1. Add new general condition GC 5.9 PAYMENT BY ELECTRONIC FUNDS TRANSFER as follows:

“GC 5.9 PAYMENT BY ELECTRONIC FUNDS TRANSFER

- 5.9.1 The term "EFT" refers to electronic funds transfer and may also include the payment information transfer.
- 5.9.2 All payments by the *Owner* under the *Contract* shall be made by EFT as a direct deposit to a Canadian chartered bank, save and except where:
- .1 the funds payable under the terms of the *Contract* are only payable in a single lump sum and not payable by installments or progress payments or otherwise than a single lump sum payment; or
 - .2 the *Owner* is unable to release one or more payments by EFT, in which case the *Contractor* shall agree to accept payment by cheque or some other mutually agreeable method of payment.
- 5.9.3 Mandatory Submission of the *Contractor*'s EFT Information
- .1 The *Contractor* is required to provide the *Owner* with the information required for the *Owner* to make payment by EFT. A purchase order may not be issued to the *Contractor* without this requisite information.
 - .2 In the event that the EFT information changes, the *Contractor* shall be responsible for providing forthwith the updated information to the *Owner*.
 - .3 Where the *Contractor* provides changes to the EFT information more than once in a calendar year, the *Contractor* shall also pay any fee approved by the Council of the City of Hamilton for each additional change.
 - .4 If the EFT information changes after submission of correct EFT information, the *Owner* shall have thirty (30) calendar days within which to update the changed EFT information after its receipt by the designated officer to the extent payment is made by EFT.
- 5.9.4 Liability for Uncompleted or Erroneous Transfers
- .1 If an uncompleted or erroneous transfer occurs because the *Owner* used the *Contractor*'s EFT information incorrectly, the *Owner* remains responsible for making a correct payment.
 - .2 If an uncompleted or erroneous transfer occurs because the *Contractor*'s EFT information was incorrect, or was revised

- within thirty (30) calendar days of the *Owner's* release of the EFT payment transaction instruction, and
- .3 Funds are no longer under the control of the *Owner's* payment office, the *Owner* is deemed to have made payment and the *Contractor* is responsible for recovery of any erroneously directed funds and to comply with the Payment Legislation.

5.9.5 EFT and Timely Payment

A payment shall be deemed to have been made in a timely manner in accordance with the payment terms of the *Contract* if, in the *Owner's* EFT payment transaction instruction released to its bank, the date specified for settlement of the payment is on or before the last date for due payment under the terms of the *Contract*, provided the specified payment date is a valid date when the *Owner's* bank is open for business.

5.9.6 Liability for Change of EFT Information by Financial Agent

The *Owner* is not liable for errors resulting from changes to EFT information provided by the *Contractor's* financial agent."

SC 42. GC 6.1 OWNER'S RIGHT TO MAKE CHANGES

1. Add new paragraph 6.1.3 as follows:

"6.1.3 The *Contractor* is not entitled to any compensation for loss or loss of anticipated profit as a result of the deletion of any major item or major part of an item."

SC 43. GC 6.2 CHANGE ORDER

2. Add after "in a form that can be reasonably evaluated" in subparagraph 6.2.1 and add "and is acceptable to the *Consultant*".

SC 44. GC 6.3 CHANGE DIRECTIVE

1. Delete subparagraph 6.3.6.3 in its entirety and replace with the following:

"3 The *Contractor's* fee shall be as specified in GC 6.7 - EXTRA WORK, CLAIMS PAYMENT FROM CONTINGENCY or as otherwise agreed by the parties."

2. Delete subparagraph 6.3.7 in its entirety and add the following:

"6.3.7 The cost of performing the work attributable to the *Change Directive* shall be limited to the actual cost of the following in as much as it contributes directly to the implementation of the *Change Directive*:

- .1 salaries, wages and benefits paid to personnel in the direct employ of the *Contractor* while directly engaged in the *Work* attributable to the change under a salary or wage schedule agreed upon by the *Owner* and the *Contractor*, or in the absence of such a schedule, actual salaries, wages and benefits paid under applicable bargaining agreement, and in the absence of a salary or wage schedule and bargaining agreement, actual salaries, wages and benefits paid by the *Contractor* while directly engaged in the *Work* attributable to the change, for personnel
 - (1) stationed at the *Contractor's* field office, in whatever capacity employed;
 - (2) engaged in the preparation or review of *Shop Drawings*, fabrication drawings, and coordination drawings; or
 - (3) engaged in the processing of changes in the *Work*;
- .2 contributions, assessments or taxes incurred for such items as employment insurance, provincial or territorial health insurance, workers' compensation, and Canada or Quebec Pension Plan, insofar as such cost is based on wages, salaries or other remuneration paid to employees of the *Contractor* and included in the cost of the *Work* as provided in paragraph 6.3.7.1;
- .3 travel and subsistence expenses of the *Contractor's* personnel described in paragraph 6.3.7.1;
- .4 all *Products* including cost of transportation thereof;
- .5 materials, supplies, *Construction Equipment*, *Temporary Work*, exclusive of hand tools, including transportation and maintenance thereof, which are consumed in the performance of the *Work*; and cost less salvage value on such items used but not consumed, which remain the property of the *Contractor*;
- .6 all tools and *Construction Equipment*, exclusive of hand tools used in the performance of the *Work*, whether rented from or provided by the *Contractor* or others, including installation, minor repairs and replacements, dismantling, removal, transportation, and delivery cost thereof;
- .7 all equipment and services required for the *Contractor's* field office;
- .8 deposits lost;
- .9 the amounts of all subcontracts provided however that the cost included in such amounts shall be limited to the actual costs of the items described in this paragraph 6.3.7 changing "*Contractor*" to "*Subcontractor*" as necessary;
- .10 quality assurance such as independent inspection and testing services;
- .11 charges levied by authorities having jurisdiction at the *Place of the Work*;
- .12 royalties, patent licence fees and damages for infringement of patents and cost of defending suits therefor subject always to the *Contractor's* obligations to indemnify the *Owner* as provided in paragraph 10.3.1 of GC 10.3 - PATENT FEES;
- .13 any adjustment in premiums for all bonds and insurance which the *Contractor* is required, by the *Contract Documents*, to purchase and maintain;

- .14 any adjustment in taxes, other than *Value Added Taxes*, and duties for which the *Contractor* is liable;
- .15 charges for voice and data communications, courier services, expressage, transmittal and reproduction of documents, and petty cash items;
- .16 incurred in relation to the performance of the *Work*;
- .17 removal and disposal of waste products and debris; and
- .18 safety measures and requirements not caused by the *Contractor* or anyone for whom it is responsible.”

3. Delete paragraph 6.3.9 in its entirety and replace with the following:

“6.3.9 The *Contractor* shall keep full and detailed accounts and records, including all documents and invoicing from the *Contractor*, *Subcontractor* and *Supplier*, for the documentation of the cost of performing the *Work* attributable to the *Change Directive* and shall provide the *Consultant* with copies upon submission of any claim for costs related to the *Change Directive* as included in an application for payment.”

4. Add to the end of paragraph 6.3.10, the following:

“The *Contractor* shall include all pertinent documentation as back-up with any claims for additional *Contract Time* and/or increase in *Contract Price* to the *Consultant* for review and approval.”

5. Add after “proposed adjustment in the *Contract Time* from paragraph 6.3.12, the following:

“and/or *Contract Price*”

SC 45. GC 6.4 CONCEALED OR UNKNOWN CONDITIONS

1. Add new paragraph 6.4.5 as follows:

“6.4.5 If the *Contractor* was given access to the *Place of the Work* prior to the submission of the bid on which the *Contract* was awarded, then the *Contractor* confirms that it carefully investigated the *Place of the Work* and, in doing so, applied to that investigation the degree of care and skill required by paragraph 3.14.1. In those circumstances, notwithstanding the provisions of paragraph 6.4.1, the *Contractor* is not entitled to an adjustment to the *Contract Price* or to an extension of the *Contract Time* for conditions which could reasonably have been ascertained by the *Contractor* by such careful investigation, or which could have been reasonably inferred from the material provided with the *Contract Documents*. In those circumstances, should a claim arise, the *Contractor* will have the burden of establishing that it could not have discovered the materially different conditions from a careful investigation, because of

restrictions placed on its access or inferred the existence of the conditions from the material provided with the *Contract Documents*.”

SC 46. GC 6.5 DELAYS

1. Delete paragraph 6.5.1 in its entirety and replace with the following:

“6.5.1 If the *Contractor* is delayed in the performance of the *Work* by an action or omission of the *Owner*, *Consultant* or anyone employed or engaged by the *Owner* directly, contrary to the provisions of the *Contract Documents*, then the *Contract Time* shall be extended for such reasonable time as the *Consultant* may recommend in consultation with the *Contractor*. The *Contractor* shall be reimbursed by the *Owner* for reasonable costs incurred by the *Contractor* as the result of such delay, provided that the *Owner* shall not be liable for any other costs or damages whatsoever including, without limitation, any indirect, consequential, or special damages, such as loss of profits, loss of opportunity or loss of productivity resulting from such delay.”

2. Delete the words “Ready-for-Takeover” in paragraph 6.5.2 and replace with “Substantial Performance”.

3. Add to the end of paragraph 6.5.2, the following:

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

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

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

1. Subject to the foregoing, each party shall be excused from performance so long as the *Force Majeure* persists, and shall not be considered to be in default under this section, if and to the extent that its failure of, or delay in performance is due to that *Force Majeure*.
 2. Where a *Force Majeure* remains in effect for more than ninety (90) calendar days, either party may terminate the *Contract* upon thirty (30) calendar days written notice to the other party, provided at the time when that notice is given the *Force Majeure* is then continuing.
 3. While a *Force Majeure* subsists which prevents the *Contractor* from proceeding with the *Work* under the *Contract*, the *Owner* may engage an alternate contractor on an interim basis, and the *Work* and the *Contract Price* will be adjusted accordingly.”
5. Add new paragraph 6.5.6 as follows:
- “6.5.6 Where the *Project* is not totally completed within twenty (20) *Working Days* of the *Substantial Performance Date*, or at a time mutually agreed to by the parties, the *Owner* has the right to complete any remaining deficiencies or outstanding work and deduct the amount from monies that may be due or payable to the *Contractor*. ”

SC 47. GC 6.6 CLAIMS FOR A CHANGE IN CONTRACT PRICE

1. Add new paragraph 6.6.7 as follows:
- “6.6.7 The *Owner* may make claims against the *Contractor* arising out of the costs incurred for additional services provided by the *Consultant* resulting from the *Contractor*’s failure to reasonably perform the *Work* in accordance with the terms and conditions of the *Contract*. ”

SC 48. GC 6.7 EXTRA WORK, CLAIMS, PAYMENT FROM CONTINGENCY

1. Add new general condition GC 6.7 EXTRA WORK, CLAIMS, PAYMENT FROM CONTINGENCY, as follows:
- “GC 6.7 EXTRA WORK, CLAIMS, PAYMENT FROM CONTINGENCY.**
- 6.7.1 When a change in the *Work* is proposed or required, the *Consultant* may, on behalf of the *Owner*, issue a *Contemplated Change Order* to the *Contractor*. The *Contractor* shall upon receipt of a *Contemplated Change Order* promptly present to the *Consultant* a method of adjustment or, pursuant to paragraph 6.7.2, an amount of adjustment for the *Contract Price*, if any, and the adjustment in the *Contract Time*, if any, for the proposed change in the *Work*.

- 6.7.2 When the *Contractor* submits an amount of adjustment in response to a *Contemplated Change Order* or a *Change Directive*, the following provisions shall apply:
- .1 Where the scope of *Work* identified by the *Contemplated Change Order* or *Change Directive* involves an adjustment in the *Contract Price*, the *Contractor* shall express and calculate the adjustment in the form of a written quotation with supporting documentation, including documentation and detailed invoicing from *Subcontractors*, and *Suppliers*, acceptable to the *Consultant*, and to include an amount:
 - (1) representing the net change in *Construction Costs* of the *Work*, taking into account all credits and scope reductions resulting from the change;
 - (2) for *Overhead Costs* and profit calculated in accordance with paragraph 6.7.3; and,
 - (3) for *Value Added Taxes*.
 - .2 Where the scope of *Work* identified by the *Contemplated Change Order* or *Change Directive* involves an adjustment in the *Contract Time*, the *Contractor* shall express the number of *Working Days*, the reason and logic for the adjustment, and all the supporting documentation inclusive of a *Project* schedule identifying the impacted activities, their inter-relationship, and changes to the critical path.
 - .3 Notwithstanding any other provisions in the General Conditions or Supplementary Conditions of the *Contract*, it is the intention and agreement of the parties that the *Contractor's* submitted adjustment in *Contract Price*, if any, and the adjustment in *Contract Time*, if any, in response to a *Contemplated Change Order* or *Change Directive* shall be all-inclusive of any costs, claims, impacts, and liabilities of the *Contractor* and *Subcontractor(s)* whether known or unknown, direct or indirect, collective or cumulative.
 - .4 The *Consultant* and *Owner* are entitled to rely on the accuracy, completeness, and all-inclusive nature of the *Contractor's* submitted adjustment(s), if any, in response to a *Contemplated Change Order* or *Change Directive*. Once a *Change Order* has been issued for the submitted adjustment(s) the *Contractor* shall not be entitled to any further claim or adjustment in the *Contract Price* or *Contract Time* associated, in part or whole, with the respective change.
- 6.7.3 Where an adjustment to the *Contract Price* and/or *Contract Time* is made for a change carried out by *Change Order* or *Change Directive*, the amount of *Overhead Costs* and profit for the *Contractor* and *Subcontractor* shall be calculated in accordance with the following provisions:

- .1 Where a change in the *Work* is performed by the *Contractor's* own forces, *Overhead Costs* and profit shall not exceed an amount equal to 15% of the first \$50,000.00 in additional *Construction Costs* and 5% thereafter;
- .2 Where a change in the *Work* is performed by a *Subcontractor's* forces:
 - (1) The *Subcontractor's Construction Costs* for the change in the *Work* shall be all-inclusive to perform the change and be identified separate and apart from any *Value Added Taxes*, *Overhead Costs*, or profit of the *Subcontractor* or *Contractor*.
 - (2) The *Subcontractor's Overhead Costs* and profit shall not exceed an amount equal to 15% of the first \$50,000.00 in additional *Construction Costs* and 5% thereafter; and
 - (3) The *Contractor's Overhead Costs* and profit shall not exceed an amount equal to 10% of the first \$50,000 in additional *Subcontractor Construction Costs* and 5% thereafter;
- .3 Where a change in the *Work* is performed both by the *Contractor's* own forces and a *Subcontractor's* forces the *Overhead Costs* and profit shall be calculated separately in accordance with paragraph 6.7.3.1 and 6.7.3.2 as the case may be, as applied proportionately to the total amount of change in *Construction Costs* being done by the *Contractor* and *Subcontractor*."

SC 49. GC 7.1 OWNER'S RIGHT TO PERFORM THE WORK, TERMINATE THE CONTRACTOR'S RIGHT TO CONTINUE WITH THE WORK OR TERMINATE THE CONTRACT

1. Add before "OR TERMINATE THE CONTRACT" in the title of GC 7.1, the following:

"SUSPEND THE WORK"
2. Delete "however, if such cost of finishing the *Work* is less than the unpaid balance of the *Contract Price*, the *Owner* shall pay the *Contractor* the difference" from subparagraph 7.1.5.3.
3. Delete paragraph 7.1.6 in its entirety.
4. Add new paragraphs 7.1.6, 7.1.7, 7.1.8, 7.1.9 and 7.1.10 as follows:

"7.1.6 In addition to its right to terminate the *Contract* set out herein, the *Owner* may terminate the *Contract* at any time for any other reason and without cause upon giving the *Contractor Notice in Writing* to that effect. In such event, the *Contractor* shall be entitled to be paid for all *Work* performed including reasonable profit, for loss sustained upon

Products and Construction Equipment, and such other damages as the *Contractor* may have sustained as a result of the termination of the *Contract*, but in no event shall the *Contractor* be entitled to be compensated for any loss of profit on unperformed portions of the *Work*, or indirect, special, or consequential damages incurred.

- 7.1.7 The *Owner* may suspend *Work* under the *Contract* at any time for any reason and without cause upon giving the *Contractor Notice in Writing* to that effect. In such event, the *Contractor* shall be entitled to be paid for all *Work* performed to the date of suspension and be compensated for all actual costs incurred arising from the suspension, including reasonable profit, for loss sustained upon *Products and Construction Equipment*, and such other damages as the *Contractor* may have sustained as a result of the suspension of the *Work*, but in no event shall the *Contractor* be entitled to be compensated for any indirect, special, or consequential damages incurred. In the event that the suspension continues for more than one hundred and eighty (180) calendar days, the *Contract* shall be deemed to be terminated and the provisions of paragraph 7.1.6 shall apply.
- 7.1.8 In the case of either a termination of the *Contract* or a suspension of the *Work* under GC 7.1 - OWNER'S RIGHT TO PERFORM THE WORK, TERMINATE THE CONTRACTOR'S RIGHT TO CONTINUE WITH THE WORK, SUSPEND THE WORK OR TERMINATE THE CONTRACT or GC 7.2 - CONTRACTOR'S RIGHT TO SUSPEND THE WORK OR TERMINATE THE CONTRACT, the *Contractor* shall use its best commercial efforts to mitigate the financial consequences to the *Owner* arising out of the termination or suspension, as the case may be.
- 7.1.9 Upon the resumption of the *Work* following a suspension under GC 7.1 - OWNER'S RIGHT TO PERFORM THE WORK, TERMINATE THE CONTRACTOR'S RIGHT TO CONTINUE WITH THE WORK, SUSPEND THE WORK OR TERMINATE THE CONTRACT or GC 7.2 - CONTRACTOR'S RIGHT TO SUSPEND THE WORK OR TERMINATE THE CONTRACT, the *Contractor* will endeavour to minimize the delay and financial consequences arising out of the suspension.
- 7.1.10 The *Contractor's* obligation under the *Contract* as to quality, correction, and warranty of the *Work* performed by the *Contractor* up to the time of termination or suspension shall continue after such termination of the *Contract* or suspension of the *Work*.”

SC 50. GC 7.2 CONTRACTOR'S RIGHT TO SUSPEND THE WORK OR TERMINATE THE CONTRACT

1. Delete “20 *Working Days*” in paragraph 7.2.2 and replace with the following:

“ninety (90) *Working Days*”

2. Delete paragraph 7.2.3 in its entirety and replace with the following:

“7.2.3 The *Contractor* may give *Notice in Writing* to the *Owner*, with a copy to the *Consultant*, that the *Owner* is in default of the *Owner's* contractual obligations if:

- .1 subject to the other terms and conditions of the *Contract* the *Owner* fails to pay the *Contractor* when due the amounts certified by the *Consultant* or awarded by adjudication, arbitration or court, except where the *Owner* has a bona fide claim for set-off, or
- .2 the *Owner* fails to comply with the requirements of the *Contract* to a substantial degree and the *Consultant*, confirms by written statement to the *Contractor* and the *Owner*, that sufficient cause exists.”

3. Delete paragraph 7.2.4 in its entirety and replace with the following:

“7.2.4 The *Contractor's Notice in Writing* to the *Owner* provided under paragraph 7.2.3 shall advise that if the default is not corrected within twenty (20) *Working Days* following the receipt of the *Notice in Writing*, the *Contractor* may, without prejudice to any other right or remedy the *Contractor* may have, suspend the *Work* until the default is corrected, provided, however, that in the event of such suspension, the provisions of paragraph 7.1.10 shall apply. If the *Contractor's Notice in Writing* to the *Owner* was given pursuant to paragraph 7.2.3, then, ninety (90) *Working Days* after the delivery of the *Notice in Writing*, the *Contractor* may terminate the *Contract*, provided, however, that in the event of such termination, the provisions of paragraph 7.1.10 shall apply.”

4. Delete paragraph 7.2.5 in its entirety and replace with the following:

“7.2.5. If the *Contractor* terminates the *Contract* **by giving a Notice in Writing to the Owner** under the conditions set out above, the *Contractor* shall be entitled to be paid for all *Work* performed to the date of termination and be compensated for all actual costs incurred arising from the suspension, including reasonable profit, for loss sustained upon *Products* and *Construction Equipment*, and such other damages as the *Contractor* may have sustained as a result of the termination of the *Work*, but in no event shall the *Contractor* be entitled to be compensated for any indirect, special or consequential damages incurred.”

SC 51. GC 8.3 NEGOTIATION, MEDIATION AND ARBITRATION

1. Delete paragraphs 8.3.6, 8.3.7 and 8.3.8 in their entirety.
2. Add new paragraphs 8.3.6 and 8.3.7 as follows:
 - “8.3.6 When a dispute has not been resolved through negotiation or mediation, within ten (10) *Working Days* after the date of termination of the mediated negotiations under paragraph 8.3.5, either party may give a *Notice in Writing* to the other party and to the *Consultant* inviting the other party to agree to submit the dispute to be finally resolved by arbitration, pursuant to provisions of the *Arbitration Act, 1991*. If the other party wishes to accept the invitation to submit the dispute to arbitration, it shall so indicate by the delivery of a responding *Notice in Writing* within ten (10) *Working Days* of receipt of the invitation. If, within the required times, no invitation is made or, if made, is not accepted, either party may refer the dispute to the courts or to any other form of dispute resolution, including arbitration, which the parties may agree to use.
 - 8.3.7 The determination of a matter by an adjudicator under the *Construction Act (Ontario)* may be submitted to arbitration or the courts or other form of dispute resolution as provided in section 8.3.6 at any time.”

SC 52. GC 9.1 PROTECTION OF WORK AND PROPERTY

1. Delete “property adjacent to the *Place of the Work*” in paragraphs 9.1.1 replace with the following:

“property adjacent, in the vicinity of or proximate to the *Place of the Work*”
2. Delete subparagraph 9.1.1.1 in its entirety and replace with the following:

“.1 errors in the *Contract Documents* which the *Contractor* could not have reasonably discovered applying the standard of care described in paragraph 3.14.1;”
3. Delete paragraph 9.1.2 in its entirety and replace with the following:

“9.1.2 Before commencing any work, the *Contractor* shall determine the locations of all underground utilities and structures indicated in the *Contract Documents* or reasonably apparent from the *Contract Documents*, or that are reasonably apparent from an inspection of the *Place of the Work* exercising the degree of care and skill described in paragraph 3.14.1.”
4. Delete “property adjacent to the *Place of the Work*” in paragraphs 9.1.3 and replace with the following:

“property adjacent, in the vicinity of or proximate to the *Place of the Work*”

5. Add new paragraph 9.1.5 as follows:

“9.1.5 With respect to any damage to which paragraph 9.1.4 applies, the *Contractor* shall neither undertake to repair or replace any damage whatsoever to the work of other contractors, or to property adjacent, in the vicinity of or proximate to the *Place of the Work*, nor acknowledge that the same was caused or occasioned by the *Contractor*, without first consulting the *Owner* and receiving written instructions as to the course of action to be followed from either the *Owner* or the *Consultant*. Where, however, there is danger to life, the environment, or public safety, the *Contractor* shall take such emergency action as it deems necessary to remove the danger.”

SC 53. GC 9.2 TOXIC OR HAZARDOUS SUBSTANCES

1. Delete paragraph 9.2.6 in its entirety and replace with the following:

“9.2.6 If the *Owner* and *Contractor* do not agree on the existence, significance of, or whether the toxic or hazardous substances were brought onto the *Place of the Work* by the *Contractor* or anyone for whom the *Contractor* is responsible, or whether any toxic or hazardous substances or materials already at the *Place of the Work* (and which were then harmless or stored, contained or otherwise dealt with in accordance with legal and regulatory requirements) were dealt with by the *Contractor* or anyone for whom the *Contractor* is responsible in a manner which does not comply with legal and regulatory requirements, or which threatens human health and safety or the environment, or material damage to the property of the *Owner* or others, the *Owner* shall retain and pay for an independent qualified expert to investigate and determine such matters. The expert's report shall be delivered to the *Owner* and the *Contractor*.”

2. Delete subparagraph 9.2.7.4 in its entirety and replace with the following:

“9.2.7.4 indemnify the *Contractor* from and against claims, demands, losses, costs, damages, actions, suits or proceedings made, suffered or brought by third parties arising out of or resulting from exposure to, or the presence of, toxic or hazardous substances for which the *Contractor* is not responsible under GC 9.2 – TOXIC AND HAZARDOUS SUBSTANCES at the *Place of Work*. This obligation shall not be construed to negate, abridge or reduce other rights or obligations of indemnity set out in GC 13.1 – INDEMNIFICATION or that otherwise exist respecting a person or party described in this paragraph.”

3. Delete paragraph 9.2.8 in its entirety and replace with the following:

- “9.2.8 If the *Owner* and *Contractor* agree or if the expert referred to in paragraph 9.2.6 determines that the toxic or hazardous substances were brought onto the place of the *Work* by the *Contractor* or anyone for whom the *Contractor* is responsible, that any toxic or hazardous substances or materials already at the *Place of the Work* (and which were then harmless or stored, contained or otherwise dealt with in accordance with legal and regulatory requirements) were dealt with by the *Contractor* or anyone for whom the *Contractor* is responsible in a manner which does not comply with legal and regulatory requirements, or which threatens human health and safety or the environment, or material damage to the property of the *Owner* or others, the *Contractor* shall promptly at the *Contractor's* own expense:
- .1 take all necessary steps, in accordance with applicable legislation in force at the *Place of the Work*, to safely remove and dispose the toxic or hazardous substances;
 - .2 make good any damage to the *Work*, the *Owner's* property or property adjacent to the place of the *Work* as provided in paragraph 9.1.3 of GC 9.1- PROTECTION OF WORK AND PROPERTY;
 - .3 reimburse the *Owner* for reasonable costs incurred under paragraph 9.2.6; and as a result of the delay
 - .4 indemnify the *Owner* as required by GC 13.1 - INDEMNIFICATION.”

SC 54. GC 9.4 CONSTRUCTION SAFETY

1. Delete GC 9.4. in its entirety and replace with the following:

“9.4.1 The *Contractor* shall be solely responsible for construction safety at the *Place of the Work* and for compliance with the rules, regulations, and practices required by the applicable construction health and safety legislation and shall be responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the performance of the *Work*.

9.4.2 Prior to the commencement of the *Work*, the *Contractor* shall submit to the *Owner*:

- .1 documentation setting out the *Contractor's* in-house safety programs; and
- .2 a copy of the Notice of Project filed with the Ministry of Labour naming the *Contractor* as “constructor” under the *Occupational Health and Safety Act*.

9.4.3 The *Contractor* shall indemnify, defend and save harmless the *Owner*, its agents, officers, directors, employees, consultants, successors, appointees, and assigns from and against the consequences of any and all

safety infractions committed by the *Contractor* under the *Occupational Health and Safety Act*, including the payment of legal fees and disbursements on a solicitor and client basis. Such indemnity shall apply to the extent to which the *Owner* is not covered by insurance, provided that the indemnity contained in this paragraph shall be limited to costs and damages resulting directly from such infractions and shall not extend to any consequential, indirect or special damages.

- 9.4.4 The *Owner* undertakes to include in its contracts with other contractors and in its instructions to its own forces the requirement that the other contractor or its own forces, as the case may be, comply with the policies and procedures of and the directions and instructions from the *Contractor* with respect to occupational health and safety and related matters. Prior to admission to the *Place of the Work*, the *Contractor* may, as a condition of admission, require any other contractor or the *Owner's* own forces to sign a written acknowledgement in the following form:

Acknowledgement

The undersigned acknowledges that the *Work* it will perform on behalf of the *Owner* requires it to enter a *Place of the Work* which is under the total control of a *Contractor* that has a contract with the *Owner*, pursuant to which the *Contractor* has assumed overall responsibility for compliance with all aspects of the applicable health and safety legislation, including all the responsibilities of the “constructor” under the *Occupational Health and Safety Act*, as well as responsibility to co-ordinate and schedule the activities of our *Work* with the *Work* of the *Contractor* under its contract. The undersigned agrees to comply with the *Contractor's* directions and instructions with respect to health, safety, co-ordination, and scheduling and acknowledges that its failure to do so will be cause for termination of employment or of the undersigned's contract with the *Owner*, as the case may be. The undersigned also agrees to have the *Contractor* named as an additional insured on any commercial general liability insurance policy, where such insurance is required.

- 9.4.5 Without limiting any of the foregoing, prior to commencement of the *Work*, the *Contractor* shall have both a written occupational health and safety policy and program to implement that policy, and that all of its employees, *Subcontractors* and any other persons performing the *Work* shall be appropriately trained, licensed and certified, as required to perform the *Work*.
- 9.4.6 The *Contractor* and *Subcontractors* shall comply with the safety by-laws of the *Owner*, the *Employment Standards Act*, *Occupational Health and Safety Act* and all regulations thereunder, any other legislation governing construction or workplace safety, and all instructions issued by the

Consultant or any inspector appointed by the Province of Ontario or City of Hamilton.

- 9.4.7 The *Contractor* shall be responsible for keeping the work free from trespassers and for protection of the work and the public from any loss or injury from commencement of the work to *Substantial Performance of the Work*.
- 9.4.8 The *Contractor* shall comply with all applicable occupational health and safety requirements in force during the time when *Work* is being carried out, and shall provide at the *Place of the Work*, such equipment and medical facilities as are necessary to furnish first aid to anyone who may be injured in connection with the *Work*.
- 9.4.9 Before commencing with any *Work*, the *Contractor*, the *Consultant* and the *Owner's* representative shall meet at the *Place of the Work*, and establish safe routes and routines for material deliveries, material storage locations, construction office location, and all other aspects of the execution of all *Work*.
- 9.4.10 The *Contractor* shall erect and maintain during construction, a dependable temporary fence, barricades, warning lights, and signage around the perimeter of the *Place of the Work*, all hazardous areas and excavations, and the *Consultant* may give reasonable directions to the *Contractor* as to the type and extent of the fence, barriers, warning lights, and signage needed.
- 9.4.11 The *Contractor* shall, at its own expense, shore up or otherwise securely support or protect any buildings, walls, fences, pavement, boulevards or other structures at the *Place of the Work*, and on the adjoining properties which may be endangered or which may cause injury during the *Work*, and in case of damage, disturbance or injuries to any such structures during and attributable, whether directly or indirectly, to any work under the *Contract*, or to any extra work entering into the *Contract*, the *Contractor* shall at its own expense, repair, rebuild or other wise make good all damage, injuries or disturbance to said structures and put all such structures in a condition the same as, or equal to, that existing previous to its beginning that work."

SC 55 GC 9.5 MOULD

1. Add to the end of subparagraph 9.5.2.3, the following:

"and incurred as a result of the delay"
2. Delete subparagraph 9.5.3.4 in its entirety and replace with the following:

- “9.5.3.4 indemnify the *Contractor* from and against claims, demands, losses, costs, damages, actions, suits or proceedings made, suffered or brought by third parties arising out of or resulting from exposure to, or the presence of, mould for which the *Contractor* is not responsible under GC 9.5 – MOULD at the *Place of Work*. This obligation shall not be construed to negate, abridge or reduce other rights or obligations of indemnity set out in GC 13.1 – INDEMNIFICATION or that otherwise exist respecting a person or party described in this paragraph.”

SC 56 GC 10.1 TAXES AND DUTIES

1. Add to the end of paragraph GC 10.1.2 the following:

“The *Contractor* must prove to the satisfaction of the *Owner* that the *Contractor* will not benefit in any way by reason of any increase to the *Contract Price*.”

2. Add new paragraph 10.1.3 as follows:

“10.1.3 Where the *Owner* is entitled to an exemption or a recovery of sales taxes, customs duties, excise taxes or *Value Added Taxes* applicable to the *Contract*, the *Contractor* shall, at the request of the *Owner*, assist with application for any exemption, recovery or refund of all such taxes and duties and all amounts recovered or exemptions obtained shall be for the sole benefit of the *Owner*. The *Contractor* agrees to endorse over to the *Owner* any cheques received from the federal or provincial governments, or any other taxing authority, as may be required to give effect to this paragraph.”

SC 57 GC 10.2 LAWS, NOTICES, PERMITS, AND FEES

1. Add to the beginning of paragraph 10.2.5, the following:

“Subject to paragraph 3.4.1,”

SC 58 GC 10.3 PATENT FEES

1. Add before “hold the *Owner* harmless” in the second sentence of paragraph 10.3.1, the following:

“indemnify and”

2. Add after “which was supplied to the *Contractor*” in paragraph 10.3.2, the following:

“by the *Owner*”

SC 59 GC 10.4 WORKERS’ COMPENSATION

1. Add after the words “Prior to commencing the *Work*,” in the first line of paragraph 10.4.1, the following:

“and upon execution of the Agreement, again with each application for progress payment,”

2. Add new paragraph 10.4.2 as follows:

“The *Contractor* shall ensure that each *Subcontractor* complies with the workers' compensation legislation at the *Place of the Work*. At any time during the term of the *Contract*, when requested by the *Owner*, the *Contractor* shall provide such evidence of compliance by the *Contractor* and *Subcontractors*.”

SC 60 GC 11.1 INSURANCE

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

“GC 11.1 INSURANCE

11.1.1 The *Contractor* shall obtain and maintain at its own expense, including the cost of any applicable deductible, the following policies of insurance.

- .1 Commercial General Liability Insurance, written on IBC Form 2100 or its equivalent, including but not limited to bodily and personal injury liability, property damage, products liability, completed operations liability, owners & contractors protective liability, blanket contractual liability, premises liability, and contingent employer's liability coverage, having an inclusive limit of not less than \$5,000,000 per occurrence. If a policy has an aggregate limit, the amount of the aggregate shall be double the required per occurrence limit. Coverage shall be included for injury/loss/damage, due to pollution arising from “hostile fires”. To achieve the desired limit, Umbrella or Excess liability insurance may be used. Coverage shall be subject to the following:

(1) where the *Work* involves one or more of the following activities:

- (i) the use of explosives for blasting;
- (ii) vibration from pile driving or caisson work;
- (iii) the removal or weakening of support of any property, building or land whether such support be natural or otherwise,

explosion, collapse and underground (“XCU”) coverages shall be added by endorsement to the policy and noted on the certificate of insurance;

(2) where the *Work* provides for or contemplates the handling of asbestos, coverage shall not contain an asbestos exclusion and same shall be noted on the certificate of insurance.

Alternatively, coverage may be provided under Contractors Pollution Liability Insurance providing coverage in an amount of not less than \$1,000,000 per claim. Such Contractors Pollution Liability Insurance coverage shall remain in effect for 12 months following the completion of the *Work*.

- (3) the policy shall include coverage for pollution from "hostile fires";
 - (4) unless otherwise approved by the *Owner*, the *Contractor's* deductible on the Commercial General Liability policy and, if applicable, Contractors Pollution Liability Insurance shall be not more than \$100,000; and
 - (5) the insurance coverage shall remain in effect throughout the time that the *Contract* is in effect, including the warranty period.
- .2 Standard Form Automobile Liability Insurance that complies with all requirements of the current legislation of the Province of Ontario, having an inclusive limit of not less than \$5,000,000 per occurrence for third party liability, in respect of the use or operation of vehicles owned, operated or leased by the *Contractor* for the performance of the *Work* under the *Contract*. The insurance coverage shall remain in effect throughout the time that the *Contract* is in effect, including the warranty period. To achieve the desired limit, Umbrella or Excess liability insurance may be used;
- .3 Non-Owned Automobile Liability Insurance in standard form having an inclusive limit of not less than \$2,000,000 per occurrence, in respect of vehicles not owned by the *Contractor*, that are used or operated on its behalf for the performance of the *Work* under the *Contract*. The insurance coverage shall remain in effect throughout the time that the *Contract* is in effect, including the warranty period. To achieve the desired limit, Umbrella or Excess liability insurance may be used;
- .4 Builders Risk Insurance which covers the *Place of Work* for the full amount of the *Contract Price* plus the full value of any optional features or other options that the *Owner* elects to order (but the *Owner* may require insurance up to the amount of the replacement cost of any building or structure in, on, or upon which any *Work* is to be done under the *Contract*, where in the reasonable opinion of the *Owner* there is a sufficient risk of damage to the same). Such policy shall:
- (1) apply to all risks of direct loss or damage (including theft and sinkhole) subject to the actual policy form;
 - (2) unless otherwise directed in writing by the *Owner*, or stipulated elsewhere herein, be in force and be maintained from the commencement date of the *Contract* until the day of issue of the certificate of *Substantial Performance of the Work*;

- (3) apply to all *Products*, labour, equipment and supplies of every nature, the property of the *Owner* or *Contractor* or for which the *Owner* or *Contractor* may have assumed responsibility (whether on site or in transit), that is to be used in or pertaining to site preparation, and the erection, fabrication, construction, reconstruction, re-modeling or repair of any building, structure, other fixture or thing;
 - (4) include the installation, testing and any subsequent use of machinery and equipment, including boilers, pressure vessels or vessels under vacuum;
 - (5) include damage to the *Work* caused by an accident to or the explosion of any boiler or other pressure vessel or equipment forming part of the *Work*;
 - (6) include off-site storage, transit and installation risks;
 - (7) include flood and earthquake insurance;
 - (8) include coverage for loss of income, extra expense and/or expediting expense if such exposures exist;
 - (9) be subject to a waiver of coinsurance;
 - (10) permit use and occupancy of the *Project*, or any part thereof, where such use and occupancy is for the purposes for which the *Project* is intended upon completion;
 - (11) be endorsed to cover the interest of the *Owner* ;
 - (12) unless otherwise approved by the *Owner*, provide for a deductible of not more than \$25,000; and
 - (13) provide that in the case of a loss or damage, payment shall be made to the *Owner* as their interest may appear. The *Contractor* shall act on behalf of the *Owner* for the purpose of adjusting the amount of such loss or damage payment with the insurer. When the extent of the loss or damage is determined, the *Contractor* shall proceed to restore the *Work*. Loss or damage shall not affect the rights and obligations of either party under the *Contract* except that the *Contractor* shall be entitled to a reasonable extension of *Contract Time*.
- .5 Property Insurance with respect to loss or damage (including fire, theft, burglary, etc.) of the *Contractor's* own property and property in its care, custody and control, including its equipment, tools and stock, used in connection with the *Contract*.

- 11.1.2 All policies of insurance required under paragraph 11.1.1 shall,
- .1 be recorded as being a primary policy and shall be in a form and issued by an insurance company satisfactory to the *Owner*, that is licensed to carry on business in Ontario;
 - .2 be maintained continuously during the course of carrying out the *Work*, or for such period of time as may be required after completion of the *Work* as deemed necessary by the *Owner*;
 - .3 except in the case of standard form automobile liability insurance and non-owned automobile liability insurance, include the *Owner*

- named as an additional insured, to the extent of the *Contractor's* obligations to the *Owner* under the *Contract Documents*;
- .4 contain cross liability and severability of interest provisions, as may be applicable;
 - .5 preclude subrogation claims against the *Owner* and any other person insured under the policy; and
 - .6 provide that at least 30 days prior written notice (15 days in the case of standard form automobile liability insurance, and 10 days in the event of non-payment of premiums) shall be given to the *Owner* by the insurer before the insurer or *Contractor* takes any steps to cancel, terminate, fail to renew, amend or otherwise change or modify the insurance or any part thereof.
- 11.1.3 The *Contractor* shall be responsible for deductible amounts under all of the policies of insurance required under paragraph 11.1.1.
- 11.1.4 The *Owner* reserves the right to require the *Contractor* to purchase such additional insurance coverage as the *Owner* may reasonably require. The *Owner* reserves the right to request such higher limits of insurance or otherwise alter the types of coverage requirements due to material or significant change arising from such matters as the nature of the work, agreement value, industry standards, and availability of insurance, as the *Owner* may reasonably require from time to time. Where such a right is exercised by the *Owner*, the *Owner* will compensate the *Contractor* for any resulting increase in applicable insurance premiums only where the *Contractor* can establish to the satisfaction of the *Owner*, acting reasonably, that such increase in applicable insurance premiums for the insurance required pursuant to the *Contract* does not result from the actions or omissions, negligence, claims history or reassessment by the insurer of the insurable risk posed by the *Contractor*.
- 11.1.5 Any insurance coverage acquired under the *Contract* shall in no manner discharge, restrict or limit the liabilities assumed by the *Contractor* under the *Contract*. The dollar limit of insurance coverage shall not be limited to the *Contract Price*.
- 11.1.6 The *Contractor* shall pay all premiums on the policies as they become due provided that the *Owner* may pay premiums as they become due and deduct the amount thereof from monies due from the *Owner* to the *Contractor* should the *Contractor* fail to do so.
- 11.1.7 The *Contractor* shall deposit with the *Owner* such evidence of its insurance policies required under paragraph 11.1.1 at the time of execution of the Agreement and thereafter during the term of the *Contract*, no later than 20 *Working Days* prior to the renewal date of each applicable policy, a certificate of insurance originally signed by an authorized insurance representative confirming thereon relevant

coverage information including but not limited to the *Contract* name and description, name of insurer, name of insurance broker, name of insured, name of additional insureds as may be applicable, commencement and expiry dates of coverage, dollar limits of coverage, deductible levels as may be applicable, cancellation/termination provisions; or at the *Owner's* election, a certified copy of the insurance policy or policies required under paragraph 11.1.1. The *Contractor* shall ensure that the certificate holder is identified on each certificate of insurance as the *Owner* at 71 Main Street West, Hamilton, Ontario L8P 4Y5, or at such other address as the *Owner* may advise in writing, and that all certificates, cancellation, nonrenewal or adverse change notices are mailed to that address.

- 11.1.8 The *Contractor* shall not do or omit to do anything that would impair or invalidate the insurance policies.
- 11.1.9 Delivery to and examination or approval by the *Owner* of any certificates of insurance or policies of insurance or other evidence of insurance does not relieve the *Contractor* of any of its indemnification or insurance obligations under the *Contract*. The *Owner* is not under a duty either to ascertain the existence of or to examine such certificates of insurance or policies of insurance, nor to advise the *Contractor* in the event such insurance coverage is not in compliance with the requirements set out in the *Contract*.
- 11.1.10 The *Contractor* shall promptly investigate claims reported to the *Contractor* by a third party or by the *Owner*. The *Contractor* shall make contact with the claimant within forty-eight (48) hours of the *Contractor's* receipt of notice of a claim. The *Contractor* shall initiate an investigation of the claim immediately upon notice, and advise the claimant by letter of its position regarding resolution of the claim within twenty (20) *Working Days* of the notice. The *Contractor* shall include in its letter of resolution the reasons for its position. Failing acceptance of the resolution by the claimant of the proposed resolution, the *Contractor* agrees to report the claim to its insurer for further review and response to the claimant. Should the *Contractor* fail to follow this procedure, the *Owner* may investigate and resolve such claims, and offset the resultant costs against any monies due to the *Contractor*, from time to time, under the *Contract*."

SC 61 GC 11.2 CONTRACT SECURITY

1. Add new general condition GC 11.2 CONTRACT SECURITY

"GC 11.2 CONTRACT SECURITY

- 11.2.1 The *Contractor* shall, upon execution of the Agreement, provide to the *Owner*:
- .1 a performance bond , in an amount equal to 50% of the *Contract Price*, covering the performance of the *Contract*, including the warranty period and the *Contractor's* requirements with respect to the correction of deficiencies, excluding all extended warranties; and
 - .2 a labour and material payment bond, in the form set out in the *Contract Documents*, in an amount equal to 50% of the *Contract Price* covering payment for labour, *Products*, or both.
- 11.2.2 The bonds referred to in paragraph 11.2.1 shall be issued by a duly licensed surety company authorized to transact the business of suretyship in the Province of Ontario, using the prescribed forms set out in the *Construction Act*, and shall be maintained in good standing until the fulfillment of the *Contract*, including the warranty period.”

SC 62 GC 11.3 CERTIFICATE OF STATUS

1. Add new general condition GC 11.3 CERTIFICATE OF STATUS as follows:

“GC 11.3 CERTIFICATE OF STATUS

- 11.3.1 The *Contractor* shall, upon execution of the Agreement, provide to the *Owner* a certificate of status from the Companies and Personal Property Security Branch of the Ontario Ministry of Government Services, or other ministry acceptable to the *Owner*, which indicates that the *Contractor* is an existing corporation and has not been dissolved.”

SC 63 GC 12.1 READY-FOR-TAKEOVER

1. Delete subparagraphs 12.1.1.2 through to 12.1.1.8.
2. Delete subparagraph 12.1.2 in its entirety.
3. Add after the words “the *Work* is *Ready-for-Takeover*,” in the subparagraph 12.1.3, “and where the *Consultant* requests”
4. Delete the word “comprehensive” in subparagraph 12.1.3 and replace with “updated”.

SC 64 GC 12.2 EARLY OCCUPANCY BY THE OWNER

1. Delete GC 12.2 EARLY OCCUPANCY BY THE OWNER in its entirety.

SC 65 GC 12.3 WARRANTY

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

“Except for extended warranties as described in paragraph 12.3.6, the warranty period under the *Contract* is one year from the date when *Substantial Performance of the Work* has been attained, unless the *Contract Documents* otherwise provide.”
2. Add to the beginning of paragraph 12.3.2, the following:

“Subject to paragraph 3.14.1,”
3. Delete “one year” from paragraph 12.3.3.
4. Delete “one year” from paragraph 12.3.4.
5. Delete “one year warranty period as described in paragraph 12.3.1” from paragraph 12.3.6 and replace with the following:

“warranty period”
6. Add new paragraphs 12.3.7, 12.3.8, 12.3.9, 12.3.10, 12.3.11, 12.3.12, 12.3.13, 12.3.14, 12.3.15, 12.3.16, 12.3.17 and 12.3.18 as follows:

“12.3.7 Any material or equipment requiring excessive servicing during the warranty period (or free maintenance period, if applicable) shall be considered defective and the warranty shall be deemed to take effect from the time that the defect has been corrected so as to cause excessive servicing to terminate. Where an extended warranty is provided beyond the warranty period, and any material or equipment requires excessive servicing during the first fifteen percent (15%) of the extended warranty period (or free maintenance period, if applicable) the material or equipment shall be considered defective and the extended warranty shall be deemed to take effect from the time that the defect has been corrected so as to cause excessive servicing to terminate.

12.3.8 The final payment certificate shall not relieve the *Contractor* from its responsibility under this GC 12.3 – WARRANTY.

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

- 12.3.10 The *Contractor* shall provide to the *Owner* for the duration of the warranty period, a maintenance security the value of which shall be derived from the following table:

CONTRACT PRICE		VALUE OF MAINTENANCE SECURITY \$
FROM \$	TO \$	
Less than \$100,000.00		4 % of final <i>Contract Price</i>
\$100,000.00	\$499,999.99	\$4,000.00 on first \$100,000.00 + 3.0% on next \$399,999.99
\$500,000.00	\$999,999.99	\$16,000.00 on first \$500,000.00 + 2.4% on next \$499,999.99
\$1,000,000.00	\$1,999,999.99	\$28,000.00 on first \$1,000,000.00 + 2.2% on next \$999,999.99
\$2,000,000.00	\$3,999,999.99	\$50,000.00 on first \$2,000,000.00 + 2.0% on next \$1,999,999.99
\$4,000,000.00	\$5,999,999.99	\$90,000.00 on first \$4,000,000.00 + 1.8% on next \$1,999,999.99
\$6,000,000.00	\$9,999,999.99	\$126,000.00 on first \$6,000,000.00 + 1.5% on next \$3,999,999.99
\$10,000,000.00 or Greater		\$186,000.00 on first \$10,000,000.00 + 1% on balance

- 12.3.11 The maintenance security, which is at no time a part of the statutory holdback, shall be retained by the *Owner* in increments from monies that would otherwise be payable to the *Contractor*, commencing during the latter part of the period of construction, so that by the date of *Substantial Performance of the Work* the full value of the required maintenance security has been retained.
- 12.3.12 Except as otherwise provided hereunder, the maintenance security, less any deductions made therefrom as provided for in the *Contract*, shall be paid to the *Contractor* following the issuance by the *Consultant* of a final certificate at the end of the warranty period, provided that all defects and deficiencies in the *Work* have been corrected by the *Contractor*. No interest shall be payable to the *Contractor* on such funds withheld in accordance with 12.3.10.
- 12.3.13 The *Contractor* may apply in writing to the *Owner* at the time of *Substantial Performance of the Work* to substitute for the monies retained as the maintenance security an alternative maintenance security of equivalent or greater value comprising:
- .1 one or more irrevocable letters of credit, or

.2 another readily negotiable security.

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

12.3.15 Following receipt and acceptance of any such alternative, the *Owner* shall release to the *Contractor* the monies previously retained for maintenance security purposes.

12.3.16 The *Owner* may, in its discretion, allow the total maintenance security to be made up in part of monies retained under the *Contract* and in part of an alternative maintenance security as indicated in paragraph 12.3.13 above provided that the total value of such parts, as determined by the *Owner*, shall be not less than the required value as derived from the table set out in paragraph 12.3.10 above.

12.3.17 Such alternative maintenance security or the monies derived therefrom, less any deductions made as provided for in the *Contract*, shall be released to the *Contractor* following the issuance by the *Consultant* of the final certificate at the end of the warranty period.

12.3.18 The *Contractor* will be responsible for extended warranty periods on equipment and materials as outlined in the *Specifications*. Warranties shall be provided for all inclusive replacement including all costs for labour and materials upon failure. Warranties shall be provided irrespective of the standard manufacturers, *Suppliers* and vendors' warranties and are in addition to the standard construction warranty of one year for general construction, materials and equipment."

SC 66 GC 13.1 INDEMNIFICATION

1. Delete GC 13.1 INDEMNIFICATION in its entirety and replace with the following:

"GC 13.1 INDEMNIFICATION

PSSC 8. GC 13.1 INDEMNIFICATION

1. Delete paragraph 13.1.1 as set out in SC 66 of the Supplementary Conditions and replace with the following:

"13.1.1 The *Contractor* shall indemnify, defend, and hold the *Owner*, including its elected officials, officers, employees, agents, affiliates and representatives, His Majesty the King in right of Ontario and Canada, respectively, their respective ministers, officers, servants, agents, appointees and employees (collectively referred to as the "Indemnified Party") harmless against any and all claims, demands, costs (including legal costs on a substantial indemnity basis), penalties, fines, fees, royalties, damages (including indirect, special, remote, and/or consequential damages) and causes of action,

including, without limitation, proprietary or personal injury (including death) that arise from, either directly or indirectly, or relate to,

(a) the *Contractor*, its officials, directors, officers, employees, agents, affiliates, partners (general or limited), joint venturers, contractors, *Subcontractors*, and other representatives (collectively referred to as the “Indemnifying Party”), under this *Contract*,

- (i) negligently carrying out any obligation to which it is subject,
- (ii) failing to carry out any obligation to which it is subject,
- (iii) negligently exercising any right to which it is entitled, or,
- (iv) exercising any right to which it is entitled in a manner which is inconsistent with the terms and conditions of this *Contract*,

or any combination thereof, except to the extent that the same are caused by the negligence or deliberate wrong-doing of the Indemnified Party, or

(b) any patent, trademark, copyright infringement or other breach of any intellectual property right of any person, for which the Indemnifying Party is responsible.”

13.1.1 The *Contractor* shall indemnify, defend, and hold the *Owner*, including its elected officials, officers, employees, agents, affiliates and representatives (collectively referred to as the “Indemnified Party”) harmless against any and all claims, demands, costs (including legal costs on a substantial indemnity basis), penalties, fines, fees, royalties, damages (including indirect, special, remote, and/or consequential damages) and causes of action, including, without limitation, proprietary or personal injury (including death) that arise from, either directly or indirectly, or relate to,

(a) the *Contractor*, its officials, directors, officers, employees, agents, affiliates, partners (general or limited), joint venturers, contractors, *Subcontractors*, and other representatives (collectively referred to as the “Indemnifying Party”), under this *Contract*,

- (i) negligently carrying out any obligation to which it is subject,
- (ii) failing to carry out any obligation to which it is subject,
- (iii) negligently exercising any right to which it is entitled, or,
- (iv) exercising any right to which it is entitled in a manner which is inconsistent with the terms and conditions of this *Contract*,

or any combination thereof, except to the extent that the same are caused by the negligence or deliberate wrong-doing of the Indemnified Party, or

(b) any patent, trademark, copyright infringement or other breach of any intellectual property right of any person, for which the Indemnifying Party is responsible.

13.1.2 The *Owner* shall notify the *Contractor* upon receipt of any such claim or demand that it receives. No settlement shall be made nor consent to

judgment given without prior written approval of *Contractor* and its insurers, which approval shall not be unreasonably withheld.

- 13.1.3 The rights to indemnity contained herein shall survive the early termination or expiry of this *Contract*.
- 13.1.4 The *Owner* may enforce the rights of indemnity conferred on any Indemnified Party under this GC 13.1 on their behalf and to the same extent as if they were parties to this *Contract*.
- 13.1.5 The rights to indemnity provided for in this GC 13.1 shall be deemed to be in addition to any rights with respect to insurance in favour of the Indemnified Party provided in this *Contract*.”

SC 67 GC 13.2 WAIVER OF CLAIMS

- 1. Delete GC 13.2 WAIVER OF CLAIMS in its entirety.

SC 68 GC 14 MISCELLANEOUS

- 1. Add new PART 14 MISCELLANEOUS as follows:

“PART 14 MISCELLANEOUS GC 14.1 OWNERSHIP OF MATERIALS

- 14.1.1 All *Work* and *Products* delivered to the *Place of the Work* by the *Contractor* shall be the property of the *Owner*. The *Contractor* shall remove all surplus or rejected materials when notified in writing to do so by the *Consultant*.

GC 14.2 REVIEW BY OWNER AND REVIEW BY CONSULTANT

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

GC 14.3 USE AND/OR OCCUPATION OF COMPLETED PORTIONS OF THE WORK

- 14.3.1 Upon the *Owners* ' request, the *Owner* shall, at any time or times, have the right of occupying and/or using any part of parts of the *Work* (including, without limitation, for the purposes of installing and testing fittings and equipment), whether partially performed or entirely complete, or whether completed on schedule or not, before the completion of the *Work*.
- 14.3.2 In the event the *Owner* desires to exercise the privilege of occupancy and/or use of the *Work* as provided above, the *Contractor* shall co-operate with the *Owner* throughout in making available for the *Owners* ' use such building services, as heating, ventilation, cooling, water, lighting, and telephone for the space or spaces to be occupied and/or used and if the equipment required to furnish such services is not entirely completed at the time the *Owner* desires to occupy and/or use the aforesaid space or spaces, the *Contractor* shall make every reasonable effort to complete same as soon as possible to the extent that the necessary equipment can be put into operation and use and any extra costs beyond that originally required to complete the *Work* arising from such early occupancy and/or use shall be borne by the *Owner*.
- 14.3.3 In the event that the *Owner* exercises the privilege of occupancy and/or use of the *Work* as provided above, it agrees to do so, as not to materially interfere with the respective work of the *Contractor*, *Subcontractors* or *Suppliers* and under the understanding that the *Owner* will be occupying premises within a construction site which will require compliance with all normal construction site requirements including, without limitation, health and safety requirements.
- 14.3.4 It shall be understood, however, that the *Owner* 's occupancy and/or use of such space or spaces of the *Work* shall not constitute the *Owner* 's acceptance of any *Work*, material or equipment which are not in accordance with the requirements of the *Contract Documents*, nor affect the warranty period under the *Contract* nor relieve the *Contractor* from his obligations, duties, responsibilities and liabilities to complete the *Work*, nor for responsibility for loss or damage due to or arising out of defects in, or malfunctioning of, any *Work*, material or equipment, nor from any other unfulfilled duties, liabilities, obligation or responsibilities under the *Contract* nor from any other duty, liability obligation or responsibility under the *Contract* including, without limitation, the *Contractors* ' warranty obligation. If however, damage results from any act by the *Owner*, the *Owner* shall assume its share of the responsibility for such damage.

GC 14.4 NON-INTERFERENCE

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

GC 14.5 LIQUIDATED DAMAGES

- 14.5.1 It is expressly agreed by the parties that if the date of *Substantial Performance of the Work* occurs later than the *Substantial Performance Date*, the *Contractor* shall pay to the *Owner* liquidated damages calculated as ONE THOUSAND DOLLARS (\$1,000.00) for each *Working Day* that *Substantial Performance of the Work* extends beyond the *Substantial Performance Date*.
- 14.5.2 It is expressly agreed that it is difficult to calculate the damages which would result from the *Contractor's* failure to attain *Substantial Performance of the Work* by the *Substantial Performance Date* and the parties agree that the liquidated damages are not intended to be penalties but rather represent the parties' best estimate of damages resulting from the delay.
- 14.5.3 The *Owner* may deduct any amount due under this paragraph from any monies that may be due or payable to the *Contractor* on any account whatsoever. The liquidated damages payable under this paragraph are in addition to and without prejudice to any other remedy, action or other right that may be available to the *Owner*.

GC 14.6 CONTRACTOR DISCHARGE OF LIABILITIES

- 14.6.1 In addition to the obligations assumed by the *Contractor* pursuant to General Condition 3.6 – SUBCONTRACTORS AND SUPPLIERS, the *Contractor* agrees to discharge all liabilities incurred by it for labour, materials, services, *Subcontractors* and *Products*, used or reasonably required for use in the performance of the *Work*, except for amounts withheld by reason of legitimate dispute which have been identified to the party or parties, from whom payment has been withheld.

GC 14.7 CONTRACTOR EVALUATION

- 14.7.1 In accordance with the *Owner's* policy for vendor performance evaluation, the *Owner* will evaluate the performance of the *Contractor* with respect to the *Work* using the following criteria:
- .1 general responsiveness of the work relationship;
 - .2 conformity of the work done, materials supplied and provision of services with the description of *Project* and *Specifications*;
 - .3 general dependability and quality of all work done and any goods or services supplied;
 - .4 timely performance;
 - .5 general conformity with the reasonable expectations of the *Owner* under the terms of the *Contract* in their entirety;
 - .6 supervision of subcontractors and the maintenance of an orderly, neat and secure job site;
 - .7 accuracy of carrying out instructions.
- 14.7.2 Where a performance review is conducted at *Final Completion of the Work*, the *Contractor's* performance shall be ranked by the *Owner* at one of the following standards:
- .1 Unacceptable (performance well below the general standard); or
 - .2 Satisfactory (performance in accordance of general standard).
- 14.7.3 Where at a performance review carried out prior to the completion of the *Contract*, one or more criteria of assessment are ranked as unacceptable:
- .1 the parties shall agree at the time of the conduct of the review or within ten (10) *Working Days* thereafter, on the measures to be taken by the *Contractor* during the ensuing *Contract* review period to improve its performance to at least a good standard;
 - .2 within ten (10) *Working Days* of agreeing on those measures, the *Contractor* shall confirm in writing that the measures in question have been implemented.
- 14.7.4 Where the *Contractor* fails or refuses to implement measures as provided in paragraph 14.7.3, it shall be deemed to be in default under the *Contract*, and the *Owner* may take such remedies as provided for in the *Contract Documents* or are otherwise available at law or in equity.
- 14.7.5 Where the unsatisfactory performance of the *Contractor* is not corrected as required under this section, that performance may be taken into account by the *Owner* with respect to the award of any future contract to the *Contractor*.

GC 14.8 RECORDS/DAILY REPORTS/DAILY LOGS

- 14.8.1 The *Contractor* shall maintain and keep accurate *Project* records (which means all tangible records, documents, computer printouts, electronic information, books, plans, *Drawings*, *Specifications*, accounts or other information relating to the *Work*) in its head office in accordance with

requirements of *Applicable Laws*, but in any event for not less than four (4) years from *Substantial Performance of the Work* or until all claims have been settled. During this time, the *Contractor* shall allow the *Owner* access to the *Project* records during normal business hours upon the giving of reasonable notice. The *Contractor* shall ensure that equivalent provisions to those provided herein are made in each subcontract and shall require the *Subcontractors* and *Suppliers* to incorporate them into every level of contract thereunder for any part of the *Work*.

GC 14.9 ONTARIANS WITH DISABILITIES ACT, 2001 (ODA) AND THE ACCESSIBILITY FOR ONTARIANS WITH DISABILITIES ACT, 2005 (AODA)

14.9.1 The *Contractor* shall ensure that all of its employees, agents, volunteers and any *Subcontractors* comply with all applicable accessibility laws, regulations and by-laws, including but not limited to the Ontarians with Disabilities Act, 2001 (ODA), the Accessibility for Ontarians with Disabilities Act, 2005 (AODA), Ontario Regulation 429/07 (Accessibility Standards for Customer Service) and Ontario Regulation 191/11 (Integrated Accessibility Standards), during the term of the *Contract*.

14.9.2 Without limiting the generality of the foregoing, the *Contractor* shall ensure that all of its employees, agents, volunteers and any *Subcontractors* who, as part of the *Contract*:

- (a) deal with members of the public or other third parties, or
- (b) participate in developing policies, practices and procedures governing the provision of goods or services to members of the public or other third parties,

receive training about the provision of its goods or services to persons with disabilities. The *Contractor* shall ensure that such training includes, without limitation, a review of the purposes of the AODA and the requirements of Ontario Regulation 429/07.

14.9.3 Prior to commencing the *Work*, the *Contractor* shall provide a Statement of Acknowledgement to the City of Hamilton that it has read and understands the City of Hamilton's AODA Integrated Accessibility Standards and Customer Service Standard Handbook; that it has provided the training required by said Handbook; and that it will comply with the requirements of said Handbook and applicable accessibility laws, regulations and by-laws.

14.9.4 The *Owner* and the City of Hamilton reserve the right to inspect the *Contractor's* training records relating to Ontario Regulation 429/07 and

Ontario Regulation 191/11, which must describe its training policy and summarize the training, including to whom the training has been given and when the training was given. The *Owner* and the City of Hamilton also reserve the right to require the *Contractor* to amend its training policies, practices and procedures if the *Owner* or the City of Hamilton deems the training is not compliant with the requirements of Ontario Regulation 429/07 and Ontario Regulation 191/11.

See City of Hamilton's AODA Integrated Accessibility Standards and Customer Service Standard Handbook at:

<https://www.hamilton.ca/people-programs/equity-diversity-inclusion/accessibility-services/accessibility-guidelines-policies#policies-procedures>

GC 14.10 SET-OFF

- 14.10.1 The parties agree that the *Owner* has the contractual right to set-off against any amounts owing by the *Owner* to the *Contractor* under this *Contract*, any amount owed to the *Owner* by the *Contractor*, whether such amount arises from this *Contract* or under any other contract between the *Owner* and the *Contractor*, irrespective of whether or not those contracts are related or arise at equity or law. This right of set-off shall be subject to the Construction Act, as applicable.
- 14.10.2 The costs to the *Owner* of sending or publishing any notice or document required by the Construction Act shall constitute damages to the *Owner* and may be retained by the *Owner* in accordance with its set-off rights.”

Project Specific Supplementary Conditions to Contract CCDC 2-2020
Dated: June 20, 2023

These Project Specific Supplementary Conditions presuppose the use of the Standard Construction Document CCDC 2-2020 Stipulated Price Contract, English version. These "Project Specific Supplementary Conditions" void, supersede or amend the "Agreement", "Definitions", "General Conditions" and "Supplementary Conditions" as hereinafter provided, as the case may be.

GENERAL CONDITIONS OF THE STIPULATED PRICE CONTRACT

Where a General Condition or paragraph of the General Conditions of the Stipulated Price Contract is deleted by these Project Specific Supplementary Conditions, the numbering of the remaining General Conditions or paragraphs shall remain unchanged, and the numbering of the deleted item will be retained, unused, unless noted otherwise.

PSSC 1. GC 3.4 CONSTRUCTION SCHEDULE

1. Add new paragraph 3.4.11 to SC19 of the Supplementary Conditions as follows:

"3.4.11 The *Work* under this *Contract* must achieve *Substantial Performance of the Work* by **October 9, 2026.**"

PSSC 2. GC 3.8 SHOP DRAWINGS

1. Add after "SHOP DRAWINGS" in the title of GC 3.8, the following:

"AND OTHER SUBMITTALS"
2. Add new paragraph 3.8.13 as follows:

"3.8.13 As the *Work* progresses, the *Contractor* shall keep a complete and accurate record of all changes or deviations from the *Contract Documents* and *Shop Drawings*, indicating the *Work* as actually installed. At the completion of the *Work*, the *Contractor* shall certify by endorsement thereof, that each of the revised prints of the *Drawings* and *Specifications* are complete and accurate. Prior to the *Contractor's* application for final payment, the record *Drawings* and *Specifications*, arranged in proper order, indexed and endorsed, and in the following form, shall be delivered to the *Owner*, namely:
 - .1 three (3) complete sets of reproducible final versions of the *As-Built Drawings*; and
 - .2 three (3) copies of the final versions of the *As-Built Drawings* in digital format in both AutoCAD and PDF formats (latest version of software)."

PSSC 3. GC 5.4 SUBSTANTIAL PERFORMANCE OF THE WORK AND PAYMENT OF HOLDBACK

1. Delete paragraph 5.4.3 in its entirety and replace with the following:

"5.4.3 Prior to the issuance of the certificate of *Substantial Performance of the Work*, the *Contractor*, in consultation with the *Consultant*, shall establish reasonable dates for finishing the *Work* and correcting deficiencies."
2. Add new paragraphs 5.4.7, 5.4.8, 5.4.9, 5.4.10. and 5.4.11 as follows:

- “5.4.7 Within seven (7) calendar days of receiving a copy of the certificate of *Substantial Performance of the Work* signed by the *Consultant*, the *Contractor* shall publish a copy of the certificate in accordance with the *Construction Act*) and shall provide to the *Consultant* and the *Owner* the date of publication and the name of the construction trade newspaper in which the publication occurred. If the *Contractor* fails to comply with this provision, the *Owner* may publish a copy of the certificate and charge the *Contractor* with the costs so incurred.
- 5.4.8 In addition to the prerequisites identified in paragraph 5.4.2, prior to submitting its written application for *Substantial Performance of the Work*, the *Contractor* shall submit to the *Consultant* all:
- .1 guarantees;
 - .2 warranties;
 - .3 certificates;
 - .4 testing and balancing reports;
 - .5 distribution system diagrams;
 - .6 spare parts;
 - .7 operations and maintenance manuals which shall consist of three (3) hard copies and three (3) digital copies (on CD or DVD) and shall be well-organized and tabbed for ease of reference;
 - .8 samples;
 - .9 existing reports and correspondence from *Authorities Having Jurisdiction* in the *Place of the Work*; and
- other materials or documentation required to be submitted under the *Contract*, together with written proof acceptable to the *Owner* and the *Consultant* that the *Work* has been substantially performed in conformance with the requirements of all *Governmental Authority* and utility authorities having jurisdiction in the *Place of the Work*.
- 5.4.9 Where the *Contractor* is unable to deliver the documents and materials described in paragraph 5.4.2 and 5.4.8, then, provided that none of the missing documents and materials interferes with the use and occupancy of the *Project* in a material way, the failure to deliver shall not be grounds for the *Consultant* to refuse to certify *Substantial Performance of the Work*. If the *Contractor* fails to deliver any of the materials required in subparagraphs 5.4.8.7 or 5.4.8.8, the *Consultant* may retain a reasonable amount or, where applicable, the amount specified in the Project Specific Supplementary Conditions from the payment of holdback under General Condition 5.4 – SUBSTANTIAL PERFORMANCE OF THE WORK AND PAYMENT OF HOLDBACK. Should any documents or materials not be delivered in accordance with paragraph 5.4.2 by the earlier of sixty (60) calendar days following publication of the certificate of *Substantial Performance of the Work* and the submission of the *Contractor's* application for final payment under paragraph 5.5.1 of GC 5.5 – FINAL PAYMENT, then the amount previously retained pursuant to this provision shall be forfeited to the *Owner* as compensation for the damages deemed to have been incurred by the *Owner*, and not as a penalty, arising from the failure to deliver the documents or materials, and the *Contract Price* shall be reduced accordingly.
- 5.4.10 Together with the submission of its written application for *Substantial Performance of the Work*, the *Contractor* shall submit to the *Consultant* and to the *Owner* a *Statutory Declaration* setting forth in reasonable detail any then outstanding and unresolved disputes or claims between the *Contractor* and any *Subcontractor* or *Supplier*, including any claims allegedly arising from delay, which are, directly or indirectly, related to any then outstanding or anticipated disputes or claims between the *Contractor* and the *Owner*, and this disclosure shall, at a minimum:
- .1 identify the parties involved;

- .2 identify the amount in dispute;
- .3 provide a brief statement summarizing the position of each party;
- .4 include copies of any correspondence or documents in support of either party's position;
- .5 include copies of any documents of any court or arbitration process related to the matter;
- .6 identify the dispute or claim between the *Contractor* and the *Owner* to which the matter relates; and
- .7 include a copy of any written agreement or a summary of any oral agreement between the parties related to resolution of the matter.

The disclosure requirements detailed herein are of a continuing nature and survive completion of the *Work*. Accordingly, the *Contractor* shall supplement the information provided with the original *Statutory Declaration* with additional materials pertaining to new or existing disputes or claims, as they become available. The *Contractor* shall not be entitled to recover from the *Owner* any amount pertaining to any claim or dispute referred to in this paragraph, if the provisions of this paragraph have not been fully complied with. For greater certainty, the *Contractor* is not obliged to make the aforementioned disclosure with respect to any dispute or claim that is not related to or does not touch upon any then outstanding and unresolved dispute or claim between the *Contractor* and the *Owner*.

- 5.4.11 Prior to the issuance of the certificate of *Substantial Performance of the Work*, the *Commissioning* of the *Work* must be successfully completed and the associated submittals evidencing same must be provided by the *Contractor* to the *Consultant* in order for the *Consultant* to verify that the *Project* is ready to use and/or is being used for its intended purpose."

PSSC 4. GC 5.10 WITHHOLDING OF PAYMENT

- 1. Add new paragraph 5.10.1 as follows:

"5.10.1 The *Consultant* may withhold from the *Contractor*, a minimum of FIVE THOUSAND DOLLARS (\$5,000.00) from any final payments pending submission and approval of all *Project* close-out documentation including operations & maintenance manuals, *As-Built Drawings*, warranty information, training of staff, and confirmation of any materials to be left on-site for future repairs."

PSSC 5. FAIR WAGE POLICY

- 1. All references to the *Fair Wage Policy* shall only apply to the *Contract* where the *Contract Price* is FIVE HUNDRED THOUSAND DOLLARS (\$500,000.00) or greater.

PSSC 6. GC 11.1 INSURANCE

- 1. Delete GC 11.1.1.4 as set out in SC60 of the Supplementary Conditions and replace with the following:
 - “.4 Property Installation Floater (All Risks) Insurance in an amount to adequately insure the *Contractor's* ownership interest in equipment and materials. The coverage shall provide for the full replacement value of the property, repairs, additions or equipment being installed, handled, or stored on or off premises awaiting installation and while in transit.

If the Property Installation Floater (All Risks) Insurance does not provide transportation coverage, separate Motor Truck Cargo or Transportation (All Risks) Insurance is to be provided for materials or equipment transported in the *Contractor's* vehicles or others hired by the *Contractor* from place of receipt to building sites or other storage sites.”

**BENNETTO COMMUNITY CENTRE AUDITORIUM UPGRADES AT
450 HUGHSON ST, HAMILTON**

FOR

CITY OF HAMILTON

PROJECT MANUAL

ISSUED FOR TENDER

TABLE OF CONTENTS

Division 1 General Requirements

01 10 00	Provisional Items
01 14 00	Work Restrictions
01 25 00	Substitution Procedures
01 32 00	Construction Progress Documentation
01 33 00	Submittal Procedures
01 56 00	Temporary Barriers and Enclosures
01 71 00	Examination and Preparation
01 73 29	Cutting and Patching
01 77 00	Closeout Procedures
01 78 00	Closeout Submittals
01 79 00	Demonstration and Training

Division 2 Existing Conditions

02 41 13	Selective Site Demolition
02 41 19	Selective Demolition

Division 3 Concrete

See Structural drawings for Concrete Formwork, Concrete Reinforcement and Cast-In-Place Concrete specifications.

Division 4 Masonry

04 20 00	Unit Masonry
----------	--------------

Division 5 Metals

Refer to Structural drawings for Structural Steel specifications.

05 50 00	Miscellaneous Metals
----------	----------------------

Division 6 Wood, Plastics and Composites

06 40 00	Architectural Woodwork
----------	------------------------

Division 7 Thermal and Moisture Protection

07 92 00	Sealants
----------	----------

Division 8 Openings

08 11 00	Steel Doors and Frames
08 70 00	Finishing Hardware
08 81 00	Interior Glass Glazing

Division 9 Finishes

09 22 16	Non-Structural Metal Framing
09 29 00	Gypsum Wall Board
09 30 00	Tiling
09 68 00	Carpet
09 90 00	Painting

Division 10 Specialties

10 20 00	Solid Phenolic Toilet Partitions
10 28 13	Washroom Accessories

Division 20 Mechanical Support

Refer to Mechanical drawings

Division 22 Plumbing

Refer to Mechanical drawings

Division 26 Electrical

Refer to Electrical Drawings

Division 31 Earthwork

31 23 33	Excavation, Trenching and Backfilling
----------	---------------------------------------

Division 32 Exterior Improvements

32 13 13	Concrete Walks and Curbs
32 17 26	Tactile Warning Surface Indicators

1.1 Provisional Items

.1 Provide prices for the following items, refer to architectural drawings A1.0, A1.1 and A3.1 for references.

- .1 Demolish existing exterior handrail
- .2 Demolish existing exterior concrete sidewalk and stairs
- .3 Install new exterior concrete stairs
- .4 Install new exterior concrete ramp
- .5 Install new exterior concrete platform
- .6 Install tactile attention indicator studs in concrete surface
- .7 Install new guard rail with handrail, mounted to concrete surface
- .8 Install new concrete sidewalk
- .9 Install new masonry half wall with cast stone cap and 6" concrete curb

END OF SECTION

1.1 RESTRICTIONS ON USE OF PREMISES

- .1 Limit use of premises for *Work*, and for access, to allow;
 - .1 Partial *Owner* occupancy.
- .2 Coordinate use of premises under direction of *Owner*.

1.2 PARTIAL OWNER OCCUPANCY

- .1 *Owner* will occupy premises during entire construction period.

1.3 RESTRICTED HOURS OF WORK IN OCCUPIED FACILITIES

- .1 Allow for hours of work restrictions in construction progress schedule.

1.4 NOISY WORK RESTRICTIONS IN OCCUPIED FACILITIES

- .1 Schedule excessively noisy work to avoid disturbance to building occupants. Perform excessive noise generating work outside of *Owner's* business hours.
- .2 Use powder actuated devices only with *Consultant's* written permission.

1.5 MAINTAINING LIFE SAFETY SYSTEMS IN OCCUPIED FACILITIES

- .1 Maintain operational life safety systems and public access to exits in occupied areas during all stages of the *Work*.
- .2 Determine nature and exact locations of existing fire and smoke sensors prior to the commencement of the *Work*. Avoid direct or indirect jarring while working in adjacent areas and exercise caution to avoid triggering these devices.
- .3 Be responsible for costs incurred by *Owner* on account of false fire alarms activated as a result of the execution of the *Work* without adequate precautions.

END OF SECTION

1.1 DEFINITION

- .1 In this Section "Substitution" means a *Product*, a manufacturer, or both, not originally specified in *Contract Documents* by proprietary name but proposed for use by *Contractor* in place of a *Product*, a manufacturer, or both, specified by proprietary name.

1.2 SUBSTITUTION PROCEDURES

- .1 *Contractor* may propose a Substitution wherever a *Product* or manufacturer is specified by proprietary name(s), unless there is accompanying language indicating that Substitutions will not be considered.
- .2 *Contractor* may propose a Substitution wherever a *Product* or manufacturer is specified by proprietary name(s) and accompanied by language such as "or equal", "or approved equal", or other similar words. Do not construe such language as an invitation to unilaterally provide a Substitution without *Consultant's* prior acceptance in writing. Do not order or install any Substitution without a *Supplemental Instruction* or *Change Order*.
- .3 Provided a proposed Substitution submission includes all of the information specified in this Section under Submission Requirements For Proposed Substitutions, *Consultant* will promptly review and accept or reject the proposed Substitution.
- .4 *Consultant* may accept a Substitution if satisfied that:
 - .1 the proposed substitute *Product* is the same type as, is capable of performing the same functions as, interfaces with adjacent work the same as, and meets or exceeds the standard of quality, performance and, if applicable, appearance and maintenance considerations, of the specified *Product*,
 - .2 the proposed substitute manufacturer has capabilities comparable to the specified manufacturer, and
 - .3 the Substitution provides a benefit to *Owner*.
- .5 If *Contractor* fails to order a specified *Product* or order a *Product* by a specified manufacturer in adequate time to meet *Contractor's* construction schedule, *Consultant* will not consider that a valid reason to accept a Substitution.
- .6 If *Consultant* accepts a Substitution and subject to *Owner's* agreement, the change in the *Work* will be documented in the form of either a *Supplemental Instruction* or *Change Order* as specified in Section 01 26 00 – Contract Modification Procedures.
- .7 If a Substitution is accepted in the form of a *Supplemental Instruction* or *Change Order*, *Contractor* shall not revert to an originally specified *Product* or manufacturer without *Consultant's* prior written acceptance.

1.3 SUBMISSION REQUIREMENTS FOR PROPOSED SUBSTITUTIONS

- .1 Include with each proposed Substitution the following information:
 - .1 Identification of the Substitution, including product name and manufacturer's name, address, telephone numbers, and web site.

- .2 Reason(s) for proposing the Substitution.
- .3 A statement verifying that the Substitution will not affect the *Contract Price* and *Contract Time* or, if applicable, the amount and extent of a proposed increase or decrease in *Contract Price* and *Contract Time* on account of the Substitution.
- .4 A statement verifying that the Substitution will not affect the performance [or warranty] of other parts of the *Work*.
- .5 Manufacturer's *Product* literature for the Substitution, including material descriptions, compliance with applicable codes and reference standards, performance and test data, compatibility with contiguous materials and systems, and environmental considerations.
- .6 Product samples as applicable.
- .7 A summarized comparison of the physical properties and performance characteristics of the specified *Product* and the Substitution, with any significant variations clearly highlighted.
- .8 Availability of maintenance services and sources of replacement materials and parts for the Substitution, as applicable, including associated costs and time frames.
- .9 If applicable, estimated life cycle cost savings resulting from the Substitution.
- .10 Details of other projects and applications where the Substitution has been used.
- .11 Identification of any consequential changes in the *Work* to accommodate the Substitution and any consequential effects on the performance of the *Work* as a whole. A later claim for an increase to the *Contract Price* or *Contract Time* for other changes in the *Work* attributable to the Substitution will not be considered.

END OF SECTION

1.1 SUMMARY

- .1 This Section specifies *Contractor's* responsibilities for preparation and submission of schedules and other documentation related to tracking construction progress.
- .2 The purpose of submitting progress schedules is to:
 - .1 inform *Owner* and *Consultant* of actual progress versus planned progress, and
 - .2 provide assurance that scheduling issues are being proactively identified and addressed in a timely manner, and that planned progress is being maintained as closely as possible.

1.2 CONSTRUCTION PROGRESS SCHEDULE

- .1 Format and Content:
 - .1 Prepare schedule in the form of a Critical Path Method (CPM) Gantt chart using appropriate scheduling software.
 - .2 Provide a work breakdown structure identifying key activities, work packages, and major milestones, including long delivery *Products*, inspection and testing activities, shutdown or closure activities, demonstration and training activities, and similar items, at a sufficient level of detail to effectively manage construction progress.
 - .3 Indicate milestone dates for *Ready-for-Takeover* and *Substantial Performance of the Work*.
- .2 Submission:
 - .1 Submit initial schedule to *Owner* and *Consultant* within [10] *Working Days* after *Contract* award.
 - .2 Submit schedule via e-mail as .pdf files.
 - .3 *Consultant* will review format and content of initial schedule and request necessary changes, if any, within 10 *Working Days* after receipt.
 - .4 If changes are required, resubmit finalized initial schedule within 10 *Working Days* after return of review copy.
 - .5 Submit updated progress schedule monthly to *Owner* and *Consultant*, indicating actual and projected start and finish dates with report date line and progress, activity relationships, critical path, float, and baseline comparison to current progress.

1.3 SUBMITTALS SCHEDULE

- .1 Format and Content:
 - .1 Prepare schedule identifying all required *Shop Drawing*, *Product* data, and sample submissions, including samples required for testing.
 - .2 Prepare schedule in electronic format.

- .3 Provide a separate line for each required submittal, organized by *Specifications* section names and numbers, and further broken down by individual *Products* and systems as required.
- .4 For each required submittal, show planned earliest date for initial submittal and latest date for return of reviewed submittal without causing delay.
- .5 Allow time in schedule for resubmission of submittals, should resubmission be necessary.
- .2 Submission:
 - .1 Submit initial schedule to *Consultant* within 15 *Working Days* after *Contract* award.
 - .2 Submit schedule via e-mail as .pdf files.
 - .3 Consultant will review format and content of initial schedule and request necessary changes, if any, within 10 *Working Days* after receipt.
 - .4 If changes are required, resubmit finalized schedule within 10 *Working Days* after return of review copy.
 - .5 Submit updated submittals schedule monthly to *Owner* and *Consultant*..

1.4 SCHEDULE MANAGEMENT

- .1 A schedule submitted as specified and accepted by *Consultant* shall become the baseline schedule and shall be used as the baseline for updates.
- .2 At each regular progress meeting, review and discuss current construction progress and submittals schedules with *Consultant* [and *Owner*], including activities that are behind schedule and planned measures to regain schedule slippage in key areas on or near the critical path.
- .3 Activities considered behind schedule are those with start or completion dates later than the dates shown on the baseline schedule.

1.5 RECORDING ACTUAL SITE CONDITIONS ON AS-BUILT DRAWINGS

- .1 Obtain from *Consultant* an electronic copy of the construction *Drawings* for the purpose of creating as-built drawings. Record information in electronic form, clearly identifying as-built deviations from the originally obtained construction *Drawings*.
- .2 Clearly label each drawing as "AS-BUILT DRAWING". Record information concurrently with construction progress. Do not conceal *Work* until required information is recorded.
- .3 Record actual construction including:
 - .1 Measured depths of elements of foundation in relation to finish first floor datum.
 - .2 Measured horizontal and vertical locations of underground utilities and appurtenances, referenced to permanent surface improvements.

- .3 Measured locations of pipes, ducts, conduits, outlets, fixtures, access panels, and appurtenances, referenced to visible and accessible features of construction.
- .4 Field changes of dimension and detail.
- .5 Changes made by *Change Orders* and *Supplemental Instructions*
- .6 References to *Shop Drawings*, where *Shop Drawings* show more detail.
- .4 Do not use as-built drawings for construction purposes.

1.6 PROGRESS PHOTOGRAPHS

- .1 Arrange for periodic digital photography to document and provide a photographic record of the progress of the *Work*.
- .2 Identify each photograph by project name and date taken.
- .3 Submission: Submit .jpg format files in standard resolution via e-mail at completion of building.
- .4 Do not use progress or any other *Project* photographs for promotional purposes without *Owner's* written consent.

END OF SECTION

1.1 ADMINISTRATIVE

- .1 Submit specified submittals to *Consultant* for review. Submit with reasonable promptness and in orderly sequence so as to not cause delay in the *Work*. Failure to submit in ample time is not considered sufficient reason for an extension of *Contract Time* or for *Product* substitutions or other deviations from the *Drawings* and *Specifications*.
- .2 Where required by authorities having jurisdiction, provide submittals to such authorities for review and approval.
- .3 Do not proceed with *Work* affected by a submittal until review is complete.
- .4 Present *Shop Drawings*, *Product* data, and samples in SI metric units. Where items or information is not produced in SI Metric units, converted values are acceptable.
- .5 Review submittals, provide verified field measurements where applicable, and affix *Contractor's* review stamp prior to submission to *Consultant*. *Contractor's* review stamp represents that necessary requirements have been determined and verified, and that the submittal has been checked and coordinated with requirements of the *Work* and *Contract Documents*.
- .6 Verify field measurements and that affected adjacent work is coordinated.
- .7 Submittals not meeting specified requirements will be returned with comments.
- .8 Reproduction of construction *Drawings* to serve as background for *Shop Drawings* is not permitted.
- .9 Do not propose Substitutions or deviations from *Contract Documents* via *Shop Drawing*, *Product* data and sample submittals. Substitutions shall follow Specification 0 25 00 procedures.

1.2 SHOP DRAWINGS AND PRODUCT DATA

- .1 Indicate *Products*, methods of construction, and attachment or anchorage, erection diagrams, connections, explanatory notes and other information necessary for completion of the *Work*.
- .2 Where *Products* attach or connect to other *Products*, indicate that such items have been coordinated, regardless of Section under which adjacent items will be supplied and installed. Indicate cross-references to *Drawings*, *Specifications* and other already reviewed *Shop Drawings*.
- .3 Accompany submittals with a transmittal information including:
 - .1 Date.
 - .2 *Project* title and number.
 - .3 *Contractor's* name and address.
 - .4 Identification of each submittal item and quantity.
 - .5 Other pertinent data.
- .4 *Shop Drawing* submittals shall include:
 - .1 Date and revision dates.

- .2 *Project* title and number.
- .3 Name and address of:
 - .1 *Subcontractor*.
 - .2 *Supplier*.
 - .3 Manufacturer.
- .4 *Contractor's* stamp, date, and signature of *Contractor's* authorized representative responsible for *Shop Drawing* review, indicating that each *Shop Drawing* has been reviewed for compliance with *Contract Documents* and, where applicable, that field measurements have been verified.
- .5 Details of appropriate portions of the *Work* as applicable:
 - .1 Fabrication.
 - .2 Layout, showing dimensions, including identified field dimensions, and clearances.
 - .3 Setting or erection details.
 - .4 Capacities.
 - .5 Performance characteristics.
 - .6 Standards.
 - .7 Operating weight.
 - .8 Wiring diagrams.
 - .9 Single line and schematic diagrams.
 - .10 Relationships to other parts of the *Work*.
- .5 *Product* data submittals shall include material safety data sheets (MSDS) for all controlled Products.
- .6 Submit electronic copy of *Shop Drawings* where specified in the technical *Specifications*.
- .7 Submit electronic copy of Product data sheets or brochures where specified in the technical *Specifications*.
- .8 Where a submittal includes information not applicable to the *Work*, clearly identify applicable information and strike out non-applicable information.
- .9 Supplement standard information to include details applicable to *Project*.
- .10 Allow 15 *Working Days* for *Consultant's* review of each submittal and incorporate in submittals schedule specified in Section 01 32 00 – Construction Progress Documentation. Allow additional 5 *Working Days* where sub-*Consultant* review is required.
- .11 If upon *Consultant's* review no errors or omissions are discovered, or if only minor corrections are required as indicated, submittal will be returned and fabrication or installation of *Work* may proceed.
- .12 If upon *Consultant's* review significant errors or omissions are discovered, a so noted copy will be returned for correction and resubmission. Do not commence fabrication or installation.
- .13 *Consultant's* notations on submittals are intended to ensure compliance with *Contract Documents* and are not intended to constitute a change in the *Work* requiring change to the *Contract Price* or *Contract Time*. If *Contractor* considers any *Consultant's* notation to be a change in the *Work*, promptly notify *Consultant* in writing before proceeding with the *Work*.

- .14 Resubmit corrected submittals through same procedure indicated above, before any fabrication or installation of the *Work* proceeds. When resubmitting, notify *Consultant* in writing of any revisions other than those requested by *Consultant*.

1.3 SAMPLES

- .1 Submit samples for *Consultant*'s review in triplicate where specified in the technical *Specifications*. Label samples as to origin, *Project* name, and intended use.
- .2 Deliver samples prepaid to *Consultant*'s business address.
- .3 Notify *Consultant* in writing of any deviations in samples from requirements of *Contract Documents*.
- .4 Where a required colour, pattern or texture has not been specified, submit full range of available *Products* meeting other specified requirements.
- .5 *Consultant* selection from samples is not intended to change the *Contract Price* or *Contract Time*. If a selection would affect the *Contract Price* or *Contract Time*, notify *Consultant* in writing prior to proceeding with the *Work*.
- .6 Resubmit samples as required by *Consultant* to comply with *Contract Documents*.
- .7 Reviewed and accepted samples will establish the standard against which installed *Work* will be reviewed.

END OF SECTION

1.1 BARRIERS AND ENCLOSURES - GENERAL

- .1 Provide temporary barriers and enclosures necessary to protect the public and building occupants and to secure *Place of the Work* during performance of the *Work*.
- .2 Comply with applicable regulatory requirements.
- .3 Maintain temporary barriers and enclosures in good condition for the duration of the *Work*.
- .4 Remove temporary barriers and enclosures from *Place of the Work* when no longer required.

1.2 DUST TIGHT SCREENS

- .1 Provide dust tight polyethylene screens to localize interior building areas from dust generating activities.
- .2 Erect, maintain, and relocate screens as required to facilitate construction operations and *Owner's* operational requirements.

1.3 FIRE ROUTES

- .1 Maintain fire access routes, including overhead clearances, for use by emergency response vehicles.

1.4 PROTECTION OF BUILDING FINISHES

- .1 Provide necessary temporary barriers and enclosures to protect [existing and] completed or partially completed finished surfaces from damage during performance of the *Work*.

END OF SECTION

1.1 EXISTING UTILITIES AND STRUCTURES

- .1 Before commencing excavation, drilling or other earthwork, establish or confirm location and extent of all existing underground utilities and structures in work area.
- .2 Promptly notify *Consultant* if underground utilities, structures, or their locations differ from those indicated in *Contract Documents* or in available project information. *Consultant* will provide appropriate direction.
- .3 Record locations of maintained, re-routed and abandoned utility lines.

1.2 VERIFICATION OF EXISTING CONDITIONS

- .1 Where work specified in any Section is dependent on the work of another Section or Sections having been properly completed, verify that work is complete and in a condition suitable to receive the subsequent work. Commencement of work of a Section that is dependent on the work of another Section or Sections having been properly completed, means acceptance of the existing conditions.
- .2 Verify that ambient conditions are suitable before commencing the work of any Section and will remain suitable for as long as required for proper setting, curing, or drying of *Products* used.
- .3 Ensure that substrate surfaces are clean, dimensionally stable, cured and free of contaminants.
- .4 Notify *Consultant* in writing of unacceptable conditions.

END OF SECTION

1.1 SUMMARY

- .1 Except where otherwise specified in technical *Specifications* or otherwise indicated on *Drawings*, comply with requirements of this Section.

1.2 MANUFACTURER'S INSTRUCTIONS

- .1 Install, erect, or apply *Products* in strict accordance with manufacturer's instructions.
- .2 Notify *Consultant*, in writing, of conflicts between *Contract Documents* and manufacturer's instructions where, in *Contractor's* opinion, conformance with *Contract Documents* instead of the manufacturer's instructions may be detrimental to the *Work* or may jeopardize the manufacturer's warranty.
- .3 Do not rely on labels or enclosures provided with *Products*. Obtain written instructions directly from manufacturers.
- .4 Provide manufacturer's representatives with access to the *Work* at all times. Render assistance and facilities for such access so that manufacturer's representatives may properly perform their responsibilities.

1.3 CONCEALMENT

- .1 Conceal pipes, ducts, and wiring in floors, walls and ceilings in finished areas:
 - .1 after review by *Consultant* and authority having jurisdiction, and
 - .2 where locations differ from those shown on *Drawings*, after recording actual locations on as-built drawings.
- .2 Provide incidental furring or other enclosures as required.
- .3 Notify *Consultant* in writing of interferences before installation.

1.4 FASTENINGS - GENERAL

- .1 Provide metal fastenings and accessories in same texture, colour and finish as adjacent materials.
- .2 Prevent electrolytic action and corrosion between dissimilar metals and materials by using suitable non-metallic strips, washers, sleeves, or other permanent separators to avoid direct contact.
- .3 Use non-corrosive fasteners and anchors for securing exterior work [and in spaces where high humidity levels are anticipated].
- .4 Space anchors within individual load limit or shear capacity and ensure they provide positive permanent anchorage.
- .5 Keep exposed fastenings to a minimum, space evenly and install neatly.
- .6 Do not use fastenings or fastening methods that may cause spalling or cracking of material to which anchorage is made.

1.5 FASTENINGS - EQUIPMENT

- .1 Use fastenings of standard commercial sizes and patterns with material and finish suitable for service.
- .2 Bolts shall not project more than one diameter beyond nuts.

1.6 FIRE RATED ASSEMBLIES

- .1 When penetrating fire rated walls, ceiling, or floor assemblies, completely seal voids with fire-stopping materials, smoke seals, or both, in full thickness of the construction element as required to maintain the integrity of the fire rated assembly.

1.7 LOCATION OF FIXTURES, OUTLETS AND DEVICES

- .1 Consider location of fixtures, outlets, and devices indicated on *Drawings* as approximate.
- .2 Locate fixtures, outlets, and devices to provide minimum interference, maximum usable space, and as required to meet safety, access, maintenance, acoustic, and regulatory, including barrier free, requirements.
- .3 Promptly notify *Consultant* in writing of conflicting installation requirements for fixtures, outlets, and devices. If requested, indicate proposed locations and obtain approval for actual locations.

1.8 PROTECTION OF COMPLETED WORK AND WORK IN PROGRESS

- .1 Adequately protect parts of the *Work* completed and in progress from any kind of damage.
- .2 Promptly remove, replace, clean, or repair, as directed by *Consultant*, work damaged as a result of inadequate protection.
- .3 Do not load or permit to be loaded any part of the *Work* with a weight or force that will endanger the safety or integrity of the *Work*.

1.9 REMEDIAL WORK

- .1 Notify *Consultant* of, and perform remedial work required to, repair or replace defective or unacceptable work. Ensure that properly qualified workers perform remedial work. Coordinate adjacent affected work as required.

END OF SECTION

1.1 REQUEST FOR CUTTING, PATCHING AND REMEDIAL WORK

- .1 Submit written request in advance of cutting, coring, or alteration which affects or is likely to affect:
 - .1 Structural integrity of any element of the *Work*.
 - .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 other contractors.
 - .6 Warranty of *Products* affected.
- .2 Include in request:
 - .1 Identification of *Project*.
 - .2 Location and description of affected work, including drawings or sketches as required.
 - .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 other contractors.
 - .7 Written permission of affected other contractors.
 - .8 Date and time work will be executed.

1.2 PRODUCTS

- .1 Unless otherwise specified, when replacing existing or previously installed *Products* in the course of cutting and patching work, use replacement *Products* of the same character and quality as those being replaced.
- .2 If an existing or previously installed *Product* must be replaced with a different *Product*, submit request for substitution in accordance with Section 01 25 00 - Substitution Procedures.

1.3 PREPARATION

- .1 Inspect existing conditions in accordance with Section 01 71 00 - Examination and Preparation.
- .2 Provide supports to ensure structural integrity of surroundings; provide devices and methods to protect other portions of the *Work* from damage.
- .3 Provide protection from elements for areas that may be exposed by uncovering work.

1.4 EXISTING UTILITIES

- .1 When breaking into or connecting to existing services' utilities, execute the *Work* at times directed by local governing authorities, with a minimum of disturbance to the *Work*, pedestrian and vehicular traffic, and ongoing *Owner* operations.
- .2 Maintain excavations free of water.
- .3 Keep duration of interruptions to a minimum.

- .4 Carry out interruptions after regular working hours of occupants, preferably on weekends, unless *Owner's* prior written approval is obtained.
- .5 Protect and maintain existing active services. Record location of services, including depth, on as-built drawings.
- .6 Construct or erect barriers in accordance with Section 01 56 00 - Temporary Barriers and Enclosures as required to protect pedestrian and vehicular traffic.

1.5 CUTTING, PATCHING, AND REMEDIAL WORK

- .1 Coordinate and perform the *Work* to ensure that cutting and patching work is kept to a minimum.
- .2 Perform cutting, fitting, patching, and remedial work [including excavation and fill,] to make the affected parts of the *Work* come together properly and complete the *Work*.
- .3 Provide openings in non-structural elements of the *Work* for penetrations of mechanical and electrical work.
- .4 Perform cutting by methods to avoid damage to other work
- .5 Provide proper surfaces to receive patching, remedial work, and finishing.
- .6 Perform cutting, patching, and remedial work using competent and qualified specialists familiar with the *Products* affected, in a manner that neither damages nor endangers the *Work*.
- .7 Do not use pneumatic or impact tools without *Consultant's* prior approval.
- .8 Ensure that cutting, patching, and remedial work does not jeopardize manufacturers' warranties.
- .9 Refinish surfaces to match adjacent finishes. For continuous surfaces refinish to nearest intersection. For an assembly, refinish entire unit.
- .10 Fit work to pipes, sleeves, ducts, conduit, and other penetrations through surfaces with suitable allowance for deflection, expansion, contraction, acoustic isolation, and firestopping.
- .11 Maintain fire ratings of fire rated assemblies where cutting, patching, or remedial work is performed. Completely seal voids or penetrations of assembly with firestopping material to full depth or with suitably rated devices.

END OF SECTION

1.1 READY-FOR-TAKEOVER

- .1 The prerequisites to attaining *Ready-for-Takeover* of the *Work* are described in the General Conditions of the *Contract*.

1.2 INSPECTION AND REVIEW BEFORE READY-FOR-TAKEOVER

- .1 *Contractor's Inspection*: Before applying for the *Consultant's* review to establish *Ready-for-Takeover* of the *Work*:
 - .1 Ensure that the specified prerequisites to *Ready-for-Takeover* of the *Work* are completed.
 - .2 Conduct an inspection of the *Work* to identify defective, deficient, or incomplete work.
 - .3 Prepare a comprehensive and detailed list of items to be completed or corrected.
 - .4 Provide an anticipated schedule and costs for items to be completed or corrected.
- .2 *Consultant's Review*: Upon receipt of the *Contractor's* application for review, together with the *Contractor's* list of items to be completed or corrected, the *Consultant* will review the *Work*. The *Consultant* will advise the *Contractor* whether or not the *Work* is *Ready-for-Takeover* and will provide the *Contractor* with a list of items, if any, to be added to the *Contractor's* list of items to be completed or corrected. Provide the *Consultant* with a copy of the *Contractor's* revised list.
- .3 Maintain the list of items to be completed or corrected and promptly correct or complete defective, deficient and incomplete work. The *Contractor's* inspection and *Consultant's* review procedures specified above shall be repeated until the *Work* is *Ready-for-Takeover* and no items remain on the *Contractor's* list of items to be completed or corrected.
- .4 When the *Consultant* determines that the *Work* is *Ready-for-Takeover*, the *Consultant* will notify the *Contractor* and the *Owner* in writing to that effect.

1.3 PREREQUISITES TO FINAL PAYMENT

- .1 After *Ready-for-Takeover* of the *Work* and before submitting an application for final payment in accordance with the General Conditions of Contract:
 - .1 Correct or complete all remaining defective, deficient, and incomplete work.
 - .2 Remove from the *Place of the Work* all remaining surplus *Products*, *Construction Equipment*, and *Temporary Work*.
 - .3 Perform final cleaning and waste removal necessitated by the *Contractor's* work performed after *Ready-for-Takeover*, as specified in Section 01 74 00 – Cleaning and Waste Management.

1.4 PARTIAL USER OCCUPANCY

- .1 If partial *Owner* occupancy of a part of the *Work* is required before the date of *Ready-for-Takeover* of the entire *Work* of the *Contract*, the provisions of this Section shall apply, to the extent applicable, to that part of the *Work* that the *Owner* intends to occupy.

1.5 SUBSTANTIAL PERFORMANCE OF THE WORK

- .1 The prerequisites to, and the procedures for, attaining substantial performance of the *Work*, or similar such milestone as provided for in the lien legislation applicable to the *Place of the Work*, shall be:
 - .1 independent of those for attaining *Ready-for-Takeover* of the *Work*, and
 - .2 in accordance with the lien legislation applicable to the *Place of the Work*.

END OF SECTION

1.1 OPERATION AND MAINTENANCE MANUAL

- .1 Prepare a comprehensive operation and maintenance manual, in the language of the *Contract*, using personnel qualified and experienced for this task.
- .2 Submit an initial draft of the operation and maintenance manual for *Consultant's* review. If required by *Consultant's* review comments, revise manual contents and resubmit for *Consultant's* review. If required, repeat this process until *Consultant* accepts the draft manual in writing.
- .3 Submit final version to *Owner* electronic format.

1.2 OPERATION AND MAINTENANCE MANUAL FORMAT

- .1 Organize data in the form of an instructional manual.
- .2 Arrange content under Section numbers and sequence of Table of Contents.
- .3 Provide tabbed chapter for each separate *Product* or system, with description of *Product* and major component parts of equipment.
- .4 Text: Manufacturer's printed data, or typewritten data.
- .5 Drawings: provide in both PDF and CAD format.
- .6 Provide electronic copy of manual in PDF format.
- .7 Provide electronic copy of Shop *Drawings* in manual as full scale PDF drawings.

1.3 OPERATION AND MAINTENANCE MANUAL – GENERAL CONTENT

- .1 Table of contents for each volume.
- .2 Introductory information including:
 - .1 Date of manual submission.
 - .2 Complete contact information for *Consultant*, subconsultants, other consultants, and *Contractor*, with names of responsible parties.
 - .3 Schedule of *Products* and systems indexed to content of volume.
- .4 For each *Product* or system, include complete contact information for *Subcontractors*, *Suppliers* and manufacturers, including local sources for supplies and replacement parts.
- .5 *Product* Data: mark each sheet to clearly identify specific products, options, and component parts, and data applicable to installation. Delete or strike out inapplicable information. Supplement with additional information as required.
- .6 Reviewed *Shop Drawings*.
- .7 Permits, certificates, letters of assurance and other relevant documents issued by or required by authorities having jurisdiction.

- .8 Warranties.
- .9 Operating and maintenance procedures, incorporating manufacturer's operating and maintenance instructions, in a logical sequence.
- .10 Training materials as specified in Section 01 79 00 - Demonstration and Training.

1.4 OPERATION AND MAINTENANCE MANUAL - EQUIPMENT AND SYSTEMS CONTENT

- .1 Each Item of Equipment and Each System: include description of unit or system and component parts. Give function, normal operation characteristics, and limiting conditions. Include performance curves, with engineering data and tests, and complete nomenclature and commercial number of replaceable parts.
- .2 Panel Board Circuit Directories: provide electrical service characteristics, controls, and communications.
- .3 Include installed colour coded wiring diagrams.
- .4 Operating Procedures: include start-up, break-in, and routine normal operating instructions and sequences. Include regulation, control, stopping, shut-down, and emergency instructions. Include summer, winter, and any special operating instructions.
- .5 Maintenance Requirements: include routine procedures and guide for trouble-shooting; disassembly, repair, and reassembly instructions; and alignment, adjusting, balancing, and checking instructions.
- .6 Provide servicing and lubrication schedule, and list of lubricants required.
- .7 Include manufacturer's printed operation and maintenance instructions.
- .8 Include sequence of operation by controls manufacturer.
- .9 Provide original manufacturer's parts list, illustrations, assembly drawings, and diagrams required for maintenance.
- .10 Provide installed control diagrams by controls manufacturer.
- .11 Provide *Contractor's* coordination drawings, with installed colour coded piping diagrams.
- .12 Provide charts of valve tag numbers, with location and function of each valve, keyed to flow and control diagrams.
- .13 Provide list of original manufacturer's spare parts, current prices, and recommended quantities to be maintained in storage.
- .14 Include testing and balancing reports.
- .15 Include additional content as specified in technical *Specifications* sections.

1.5 OPERATION AND MAINTENANCE MANUAL - PRODUCTS AND FINISHES CONTENT

- .1 Include *Product* data, with catalogue number, options selected, size, composition, and colour and texture designations. Provide information for re-ordering custom manufactured *Products*.
- .2 Instructions for cleaning agents and methods, precautions against detrimental agents and methods, and recommended schedule for cleaning and maintenance.
- .3 Include an outline of requirements for routine and special inspections and for regular maintenance to ensure that on-going performance of the building envelope will meet the initial building envelope criteria.
- .4 Include additional content as specified in technical *Specifications* sections.

1.6 OPERATION AND MAINTENANCE MANUAL - WARRANTIES CONTENT

- .1 Separate each warranty with index tab sheets keyed to Table of Contents listing.
- .2 List each warrantor with complete contact information.
- .3 Verify that documents are in proper form and contain full information. Ensure that warranties are for the correct duration and are in *Owner's* name.
- .4 [Include maintenance bond(s)].

1.7 CONTRACTOR'S AS-BUILT DRAWINGS

- .1 Submit final as-built drawings in the form specified in Section 01 32 00 – Construction Progress Documentation to *Owner & Consultant*.

1.8 PROJECT RECORD DRAWINGS

- .1 Transfer all information marked up on the as-built drawings during the progress of the *Work* to a master set of record drawing files provided by *Consultant*
- .2 Mark revised drawings as "RECORD DRAWINGS".
- .3 Submit completed record drawings in electronic form (both PDF and CAD format) and include in the Manuals.

1.9 SPARE PARTS, MAINTENANCE MATERIALS, AND SPECIAL TOOLS

- .1 Supply spare parts, maintenance materials, and special tools in quantities specified in technical *Specifications* sections.
- .2 Ensure spare parts and maintenance materials are new, not damaged nor defective, and of same quality, manufacturer, and batch or production run as installed *Products*.
- .3 Provide tags for special tools identifying their function and associated *Product*.
- .4 Deliver to and store items at location directed by *Owner* at *Place of the Work*. Store in original packaging with manufacturer's labels intact and in a manner to prevent damage or deterioration.

- .5 Catalogue all items and submit to *Consultant* an inventory listing organized by *Specifications* section. Include *Consultant* reviewed inventory listing in operation and maintenance manual.

END OF SECTION

1.1 SUMMARY

- .1 Demonstrate and provide training to *Owner's* personnel on operation and maintenance of equipment and systems prior to scheduled date of *Ready-for-Takeover of the Work*.
- .2 *Owner* will provide list of personnel to receive training and will coordinate their attendance at agreed upon times.
- .3 Coordinate and schedule demonstration and training provided by *Subcontractors* and *Suppliers*.

1.2 SUBMITTALS

- .1 Submit proposed dates, times, durations, and locations for demonstration and training of each item of equipment and each system for which demonstration and training is required. Allow sufficient time for training and demonstration for each item of equipment or system, or time as may be specified in technical *Specifications*.
- .2 *Consultant* and *Owner* will review submittal and advise *Contractor* of any necessary revisions.
- .3 Submit report(s) within 5 *Working Days* after completion of demonstration and training:
 - .1 identifying time and date of each demonstration and training session,
 - .2 summarizing the demonstration and training performed, and
 - .3 including a list of attendees.

1.3 PREREQUISITES TO DEMONSTRATION AND TRAINING

- .1 Testing, adjusting, and balancing has been performed in accordance with *Contract Documents*.
- .2 Equipment and systems are fully operational.
- .3 Copy of completed operation and maintenance manual is available for use in demonstration and training.
- .4 Conditions for demonstration and training comply with requirements specified in technical *Specifications*.

1.4 DEMONSTRATION AND TRAINING

- .1 Demonstrate start-up, operation, control, adjustment, trouble-shooting, servicing, and maintenance of each item of equipment and system.
- .2 Review operation and maintenance manual in detail to explain all aspects of operation and maintenance.
- .3 Prepare and insert additional information in operation and maintenance manual if required.

END OF SECTION

1 General

1.1 SUMMARY

- .1 Review drawings, site conditions, and other specification sections to ascertain the extent and nature of work of this section.
- .2 The Work of this Section includes, but is not limited to the following:
 - .1 Demolish and removal of the following, where indicated on the Drawings:
 - .1 Soil and sod;
 - .2 Tress, stumps and roots;
 - .3 Asphalt paving
 - .4 Cast-in-place concrete;
 - .5 Pre-cast concrete pavers and curbs
 - .6 Wood and metal fencing;
 - .7 Light standards and exterior signage/pylons;
 - .8 Steel handrails and stairs.
 - .2 Dispose of demolished materials except where required to be salvaged or reused.
 - .3 Refer to demolition notes indicated on all disciplines Drawings.
 - .4 Payment for salvage, stockpiling, sealing, disposal, recycling, excavating and backfilling will be included in above removal items.
 - .5 Measure removal of waste, and materials designated for alternate disposal from site in tonnes.
- .3 Drawings contain details that suggest directions for solving some of the major demolition and removal requirements for this project; Contractor is required to develop these details further by submitting a demolition plan prepared by a professional engineer employed by the Contractor.

1.2 REFERENCE STANDARDS

- .1 American National Standards Institute (ANSI):
 - .1 ANSI A10.8-2011, Scaffolding Safety Requirements
- .2 Canadian Standards Association (CSA):
 - .1 CSA S350- M1980 (R2003), Code of Practice for Safety in Demolition of Structures.
- .3 National Fire Protection Association (NFPA):
 - .1 NFPA 241-09, Standard for Safeguarding Construction, Alteration, and Demolition Operations
- .4 Provincial Legislation:
 - .1 Legislation specific to Authority Having Jurisdiction for work governed by this Section.
- .5 Health Canada/Workplace Hazardous Materials Information System (WHMIS)
 - .1 Material Safety Data Sheets (MSDS).

- .6 Transport Canada (TC)
 - .1 Transportation of Dangerous Goods Act, 1992 (TDGA), c. 34.

1.3 DEFINITIONS

- .1 Demolish: Detach items from existing construction and legally dispose of them off site, unless indicated to be removed and salvaged or removed and reinstalled.
- .2 Remove and Salvage: Detach items from existing construction and deliver them to Owner ready for reuse.
- .3 Remove and Reinstall: Detach items from existing construction, prepare them for reuse, and reinstall them where indicated.
- .4 Existing to Remain: Existing items of construction that are not removed and that are not otherwise indicated as being removed, removed and salvaged, or removed and reinstalled.
- .5 Hazardous Materials: dangerous substances, dangerous goods, hazardous commodities and hazardous products, may include but not limited to: asbestos PCB's, CFC's, HCFC's poisons, corrosive agents, flammable substances, ammunition, explosives, radioactive substances, or other material that can endanger human health or well being or environment if handled improperly.
- .6 Waste Audit (WA): detailed inventory of materials in building. Indicates quantities of reuse, recycling and landfill.
 - .1 Involves quantifying by volume/weight amounts of materials and wastes generated during construction, demolition, deconstruction, or renovation project.
 - .2 Indicates quantities of reuse, recycling and landfill.
- .7 Waste Reduction Workplan (WRW): written report which addresses opportunities for reduction, reuse, or recycling of materials. WRW is based on information acquired from WA.

1.4 ADMINISTRATIVE REQUIREMENTS

- .1 Site Meetings.
 - .1 Convene pre-demolition meeting one week prior to beginning work of this Section in accordance with Division 01, to:
 - .1 Verify project requirements.
 - .2 Review installation and substrate conditions.
 - .3 Co-ordination with other building subtrades.
 - .4 Review manufacturer's installation instructions and warranty requirements.
 - .2 Arrange for site visit with Consultant, to examine existing site conditions adjacent to demolition work, prior to start of Work.
 - .3 Hold project meetings weekly, unless otherwise agreed upon by the Consultant and the Contractor.
 - .4 Reporting Requirements: Contractor to complete.
 - .5 Provide verbal reporting on status of waste diversion activity at each meeting.
 - .6 Consultant will provide written notification of change of meeting schedule established upon contract award 24 hours prior to scheduled meeting.

1.5 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Submit in accordance with Division 01.
- .2 Shop Drawings:
 - .1 Submit drawings stamped and signed by professional engineer registered or licensed in Province, Canada.
 - .2 Submit for approval drawings, diagrams or details showing sequence of demolition work and supporting structures and underpinning, where required by authorities having jurisdiction.
- .3 Waste Reduction Workplan:
 - .1 Prior to beginning of Work on site submit detailed Waste Reduction Workplan in accordance with Division 01 and indicate:
 - .1 Descriptions of and anticipated quantities in percentages of materials to be salvaged reused, recycled and landfilled.
 - .2 Schedule of selective demolition.
 - .3 Number and location of dumpsters.
 - .4 Anticipated frequency of tipping.
 - .5 Name and address of haulers, waste facilities, and waste receiving organizations.
- .4 Certificates:
 - .1 Submit copies of certified receipts from authorized disposal sites and reuse and recycling facilities for material removed from site on monthly basis.
 - .2 Written authorization from Consultant is required to deviate from haulers and receiving facilities listed in Waste Reduction Workplan.

1.6 DELIVERY, STORAGE AND HANDLING

- .1 Store and manage hazardous materials in accordance with Division 01.
- .2 Storage and Protection.
 - .1 Protect in accordance with Section 31 23 33 Excavation, Trenching and Backfilling.
 - .2 Protect existing items designated to remain and items designated for salvage. In event of damage to such items, immediately replace or make repairs to approval of Consultant and at no cost to the Owner.
 - .3 Remove and store materials to be salvaged, in manner to prevent damage.
 - .4 Store and protect in accordance with requirements for maximum preservation of material.
 - .5 Handle salvaged materials as new materials.
- .3 Develop Waste Reduction Workplan related to Work of this Section and in accordance with Division 01.

1.7 SITE CONDITIONS

- .1 Site Environmental Requirements.
 - .1 Ensure that selective demolition work does not adversely affect adjacent watercourses, groundwater and wildlife, or contribute to excess air and noise pollution.

- .2 Do not dispose of waste of volatile materials including but not limited to, mineral spirits, oil, petroleum based lubricants, or toxic cleaning solutions into watercourses, storm or sanitary sewers.
 - .1 Ensure proper disposal procedures are maintained throughout the project.
- .3 Do not pump water containing suspended materials into watercourses, storm or sanitary sewers or onto adjacent properties.
- .4 Control disposal or runoff of water containing suspended materials or other harmful substances in accordance with local authorities, as directed by Consultant.
- .5 Protect trees, plants and foliage on site and adjacent properties where indicated.

2 Products

2.1 EQUIPMENT

- .1 Leave machinery running only while in use, except where extreme temperatures prohibit shutting machinery down.

3 Execution

3.1 PREPARATION

- .1 Inspect site with Consultant and verify extent and location of items designated for removal, disposal, alternative disposal, recycling, salvage and items to remain.
- .2 Locate and protect utilities. Preserve active utilities traversing site in operating condition.
- .3 Notify and obtain approval of utility companies before starting demolition.

3.2 REMOVAL OF HAZARDOUS WASTES

- .1 Remove contaminated or dangerous materials defined by authorities having jurisdiction, relating to environmental protection, from site and dispose of in safe manner to minimize danger at site or during disposal.

3.3 REMOVAL OPERATIONS

- .1 Remove items as indicated.
- .2 Do not disturb items designated to remain in place.
- .3 Removal of pavements, curbs and gutters:
 - .1 Square up adjacent surfaces to remain in place by saw cutting or other method approved by Consultant.
 - .2 Protect adjacent joints and load transfer devices.
 - .3 Protect underlying and adjacent granular materials.
- .4 Prevent contamination with base course aggregates, when removing asphalt pavement for subsequent incorporation into hot mix asphalt concrete paving,
- .5 Excavate at least 300mm below pipe invert, when removing pipes under existing or future pavement area.
- .6 Remove designated trees during site demolition.
 - .1 Obtain written approval of Consultant prior to removal of trees not designated.
- .7 Stockpile topsoil for final grading and landscaping:
 - .1 Provide erosion control and seeding if not immediately used.

- .8 Disposal of Material:
 - .1 Dispose of materials not designated for salvage or reuse on site at authorized facilities approved in Waste Reduction Workplan.

3.4 STOCKPILING

- .1 Label stockpiles, indicating material type and quantity.
- .2 Designate appropriate security resources/measures to prevent vandalism, damage and theft.
- .3 Locate stockpiled materials convenient for use in new construction to eliminate double handling wherever possible.
- .4 Stockpile materials designated for alternate disposal in location which facilitates removal from site and examination by potential end markets, and which does not impede disassembly, processing, or hauling procedures.

3.5 REMOVAL FROM SITE

- .1 Remove stockpiled material as directed by Consultant, when it interferes with operations of project.
- .2 Remove stockpiles of like materials by alternate disposal option once collection of materials is complete.
- .3 Transport material designated for alternate disposal using approved facilities and haulers listed in Waste Reduction Workplan, and in accordance with applicable regulations.
- .4 Dispose of materials not designated for alternate disposal in accordance with applicable regulations.
 - .1 Disposal Facilities: approved and listed in Waste Reduction Workplan.

3.6 RESTORATION

- .1 Restore areas and existing works outside areas of demolition to conditions that existed prior to beginning of Work.
- .2 Use soil treatments and procedures which are not harmful to health, are not injurious to plants, and do not endanger wildlife, adjacent water courses or ground water.

3.7 CLEANING

- .1 Progress Cleaning: Clean in accordance with Division 01.
 - .1 Leave Work area clean at end of each day.
 - .2 Remove debris, trim surfaces and leave work site clean, upon completion of Work
 - .3 Use cleaning solutions and procedures which are not harmful to health, are not injurious to plants, and do not endanger wildlife, adjacent water courses or ground water.
- .2 Final Cleaning: upon completion remove surplus materials, rubbish, tools and equipment in accordance with Division 01.
- .3 Waste Management: separate waste materials for reuse or recycling in accordance with Division 01.
 - .1 Remove recycling containers and bins from site and dispose of materials at appropriate facility.

3.8 PROTECTION

- .1 Repair damage to adjacent materials or property caused by selective site demolition.

END OF SECTION

1 General

1.1 SUMMARY

- .1 Review drawings, site conditions, and other specification sections to ascertain the extent and nature of work of this section.
- .2 The Work of this Section includes, but is not limited to the following:
 - .1 Demolish and removal of the following where indicated on the Drawings:
 - .1 Concrete slabs;
 - .2 Masonry;
 - .3 Structural steel;
 - .4 Drywall/steel stud partitions/assemblies
 - .5 Doors, windows, frames and associated hardware;
 - .6 Roofing, insulation and roof ballast
 - .7 Exterior mechanical equipment and cap weather tight.
 - .2 Disconnect/cap existing service in areas of demolition.
 - .3 Trace, demolish and remove decommissioned mechanical and electrical services found during demolition. Remove decommissioned services to the area of demolition to the source, leaving no buried services in walls and floors, unless otherwise approved by written notice from the Owner.
 - .4 Dispose of demolished materials except where required to be salvaged or reused.
 - .5 Refer to demolition notes indicated on all disciplines Drawings.
- .3 Drawings contain details that suggest directions for solving some of the major demolition and removal requirements for this project; Contractor is required to develop these details further by submitting a demolition plan prepared by a professional engineer employed by the Contractor.

1.2 REFERENCE STANDARDS

- .1 American National Standards Institute (ANSI):
 - .1 ANSI A10.8-2011, Scaffolding Safety Requirements
- .2 Canadian Standards Association (CSA):
 - .1 CSA S350- M1980 (R2003), Code of Practice for Safety in Demolition of Structures.
- .3 National Fire Protection Association (NFPA):
 - .1 NFPA 241-09, Standard for Safeguarding Construction, Alteration, and Demolition Operations
- .4 Provincial Legislation:
 - .1 Legislation specific to Authority Having Jurisdiction for work governed by this Section.

1.3 DEFINITIONS

- .1 Demolish: Detach items from existing construction and legally dispose of them off site, unless indicated to be removed and salvaged or removed and reinstalled.
- .2 Remove and Salvage: Detach items from existing construction and deliver them to Owner ready for reuse.

- .3 Remove and Reinstall: Detach items from existing construction, prepare them for reuse, and reinstall them where indicated.
- .4 Existing to Remain: Existing items of construction that are not removed and that are not otherwise indicated as being removed, removed and salvaged, or removed and reinstalled.

1.4 EXAMINATION

- .1 Visit and examine the site and note all characteristics and irregularities affecting Work of this Section. Submit a pre-demolition inspection report. Ensure the Owner of premises being inspected is represented at inspection.
- .2 Where appropriate prepare a photographic or video record of existing conditions, particularly of existing work scheduled to remain.
- .3 Where applicable, examine adjacent tenancies not part of the scope of work. Determine extent of protection required to areas and related components not subject to demolition.

1.5 SUBMITTALS

- .1 Provide required information in accordance with Division 01.
- .2 Action Submittals: Provide the following submittals before starting any work of this Section:
 - .1 Prepare schedule in conjunction with overall project schedule, and outline proposed methods in writing. Obtain approval before commencing demolition work, and indicate the following:
 - .1 Detailed sequence of selective demolition and removal work, with starting and ending dates for each activity
 - .2 Interruption of utility services
 - .3 Coordination for shutoff, capping, and continuation of utility services

1.6 QUALITY ASSURANCE

- .1 Conform to requirements of all authorities having jurisdiction.
- .2 Comply with applicable requirements of CSA S350-M "Code of Practice for Safety in Demolition of Structures".
- .3 Work of this Contract shall be executed by an approved company having a minimum of five (5) years continuous experience and able to deploy adequate equipment and skilled personnel to complete work expediently in an efficient and orderly manner.
- .4 Perform cutting and coring, where applicable, by a firm specializing in this type of work, able to produce evidence of successful completion of similar work over a period of at least five (5) years immediately prior to date of contract.
- .5 Apply for, secure, arrange and pay for all permits, notices and inspections necessary for proper execution and completion of work in this Section.
- .6 Professional Engineer Qualifications: Procure the services of a professional engineer who is experienced in providing relevant engineering services to perform the following:
 - .1 Review portions of the Work requiring structural performance, prepare plan of action, engineer temporary shoring and bracing, and Provide site administration and inspection for work of this Section.

1.7 PROTECTION

- .1 Prevent movement or settlement of adjacent work. Provide and place bracing or shoring and be responsible for safety and support of such work. Be liable for any such movement or settlement, and any damage or injury caused.

- .2 Cease operations and notify Consultant if safety of any adjacent work or structure appears to be endangered. Take all precautions to support the structure. Do not resume operations until reviewed with the Consultant.
- .3 Prevailing weather conditions and weather forecasts shall be considered. Demolition work shall not proceed when weather conditions constitute a hazard to the workers and site.
- .4 Prevent damage of surrounding vegetation by construction. Install tree protection barriers to trees that are scheduled to remain.
- .5 Prevent debris from blocking surface drainage inlets and mechanical and electrical systems which remain in operation.
- .6 Temporarily suspended work that is without continuous supervision shall be closed to prevent entrance of unauthorized persons.

1.8 REMAINING AND ADJACENT STRUCTURES

- .1 Do not interfere with, encumber, endanger or create nuisance, from any cause due to demolition work, to public property or any adjacent attached and/or detached structures in possession of Owner or others, which are to remain, whether occupied or unoccupied during this work.
- .2 Make good damage to such structures resulting from work under this Section at no cost to Owner. Make good adjacent building surfaces damaged by work of this Section.

1.9 PROTECTION OF SERVICES AND STRUCTURES

- .1 Take necessary precautions to guard against movement, settlement or collapse of existing adjacent utility services, public property and/or structures, whether to remain or not. If these or other unforeseen conditions develop, take immediate emergency measures, report to Consultant, confirm in writing, and await instructions before proceeding with any further related demolition work.
- .2 Prior to saw cutting or core drilling of existing concrete slabs, use ground penetrating radar (GPR) to detect utilities and structural reinforcing. Concrete X-Rays can be used when access to both sides of concrete slab is accessible for placement of required x-ray film.

1.10 EXISTING SERVICES

- .1 Prior to start of demolition disconnect all electrical service lines in the areas to be demolished. Post warning signs on all electrical lines and equipment which must remain energized to serve other areas during period of demolition. Disconnect electrical service lines in demolition areas to the requirements of local authority having jurisdiction.
- .2 In each case, notify the affected utility company in advance and obtain approval where required before commencing with the work on main services.
- .3 Arrange with utility companies for locating of such services and for disconnection of existing services owned by utility companies and which will be disconnected by said utility companies, provided such services do not interfere with adjacent tenancy operators.
- .4 Remove sewer and water lines where required within existing building as deemed necessary, and cap to prevent leakage, in accordance with authorities having jurisdiction.
- .5 Existing services are to be maintained where required for normal tenant operation during regular hours of operation and/or as deemed necessary by Owner.

1.11 DECOMMISSIONED SERVICES

- .1 Remove fully decommissioned electrical and mechanical service lines, plumbing, ducting, fixtures and all fasteners and supports for decommissioned items.

- .1 Remove sewer and water lines where required within existing building as deemed necessary, and cap to prevent leakage, in accordance with authorities having jurisdiction.
- .2 Patch and repair surfaces affected by this selective demolition to match existing adjacent surfaces, as approved by the Consultant.

1.12 EXISTING WARRANTIES

- .1 Remove, replace, patch, and repair materials and surfaces cut or damaged during selective demolition, by methods and with materials so as not to void existing warranties.

2 Products

2.1 DEBRIS, SALVAGED MATERIAL AND EQUIPMENT DISPOSAL

- .1 All materials and or equipment salvaged from demolition work becomes property of demolition Contractor unless designated otherwise.
- .2 At no cost to Owner repair or replace material and/or equipment scheduled to remain which is damaged by demolition work. Do not sell any salvaged material or equipment directly from project site.
- .3 Remove waste debris continually and entirely from project site during demolition work. Do not load vehicles transporting such debris beyond their safe capacity or in a manner which might cause spillage on public or private property. If spillage does occur, clean up immediately to prevent traffic hazards or nuisance.

2.2 PROTECTION

- .1 Temporary Protection:
 - .1 Erect temporary hoarding protection, to enclose openings in exterior walls, and/or provide security to partially occupied interior spaces, as indicated in Division 01.
 - .2 Erect temporary dust screens to prevent dust and debris to enter areas of the building which are not scheduled for demolition. Remove temporary dust screens when no longer required.

2.3 REPAIR MATERIALS

- .1 Use repair materials identical to existing materials:
 - .1 If identical materials are unavailable or cannot be used for exposed surfaces, use materials that visually match existing adjacent surfaces to the fullest extent possible.
 - .2 Use a material whose installed performance equals or surpasses that of existing material.
 - .3 Comply with material and installation requirements specified in individual Specification Sections.
- .2 Floor Patching and Levelling Compounds: Cement based, trowelable, self-levelling compounds compatible with specified floor finishes; as indicated in Sections 03 35 00 Concrete Finishing, 09 30 00 Tile and 09 65 00 Resilient Flooring.
- .3 Concrete Unit Masonry: Lightweight concrete masonry units, and mortar, cut and trimmed to fit existing opening to be filled. Provide standard hollow core units, square end units and bond beam units.
 - .1 Refer to drawings for schedule/extent of patching required.
- .4 Gypsum Board Patching Compounds: Joint compound to ASTM C475, bedding and finishing types thinned to provide skim coat consistency to patch and prepare existing gypsum board walls ready for new finishes in accordance with Section 09 29 00.

- .5 Fireproofing: Patch and repair all fireproofing damaged during demolition of adjacent surfaces with compatible fireproofing materials. Provide test reports from fireproofing manufacture warranting installation, adhesion and compatibility between existing and new fireproofing materials.

2.4 EXISTING MATERIALS

- .1 Items to be retained for re-use in new construction include, but are not limited to the following:
 - .1 Confirm with Consultant any materials that appear to be in re-usable condition prior to disposal.
 - .2 Confirm with Consultant any materials scheduled for re-use that are not in re-usable condition prior to installation.

3 Execution

3.1 GENERAL

- .1 Exercise caution in dismantling, disconnecting of work adjacent to existing work designated to remain.
- .2 Carry out demolition in a manner to cause as little inconvenience to the adjacent properties as possible.
- .3 Carry out demolition in an orderly and careful manner.
- .4 Demolition by explosives is not permitted.
- .5 Selling or burning of materials on site is not permitted.
- .6 Sprinkle exterior debris with water to prevent dust. Do not cause flooding, contaminated run-off or icing. Do not allow waste material, rubbish, and windblown debris to reach and contaminate adjacent properties.
- .7 Lower waste materials in a controlled manner; do not drop or throw materials from heights.
- .8 At end of each day's work, leave in safe condition so that no part is in danger of toppling or falling.

3.2 PREPARATION

- .1 Although possible (with additional precautions), openings through existing concrete columns and beams are generally not permitted; the structural engineer must be contacted for such proposed openings for specific additional requirements.
- .2 For all openings to be located through existing structural components, the following requirements for coring or sawcutting openings through existing reinforced concrete floor slabs, roof slab and shear walls for mechanical and electrical services must be followed:
 - .1 Prior to installation of openings, a testing agency is to be engaged to accurately scan the areas of the proposed openings to locate existing reinforcing steel, electrical conduit and cast-in mechanical services (i.e. pipes). Electromagnetic scanning or ground-penetrating radar are acceptable methods of scanning for these purposes. Note that x-ray technology will not be permitted.
 - .2 During/after conducting the scanning procedures, the testing agency is to clearly and accurately mark the surfaces of the concrete elements identifying individual existing reinforcing bars and electrical/mechanical services.

3.3 SAFETY AND SECURITY

- .1 Maintain security of the building at all times during demolition work.
- .2 Provide and maintain fire prevention equipment and alarms accessible during demolition.

3.4 ACCESS ROUTES

- .1 Restrict operations to designated access routes.
- .2 Do not obstruct roads, parking lots, sidewalks, hydrants and the like.

3.5 SELECTIVE DEMOLITION

- .1 Provide necessary shoring and supports to assure safety of structure prior to cutting and coring.
- .2 Where practical, sawcut and remove material as required.
- .3 Where sawcutting is not appropriate, use suitable hand tools.
- .4 Demolish, cut-out and remove from site all other work noted on drawings or required to permit new construction.
- .5 Do not allow water to accumulate or flow beyond work area. Provide receptacles and mop-up as work proceeds.
- .6 Fill all openings in concrete block walls with concrete masonry units, coursing to match existing, prepare ready to receive new finishes to match existing.
 - .1 Provide bond beams in new openings cut into existing concrete masonry unit walls.
 - .2 Provide finished end masonry units to patch and repair for new jamb sections in existing concrete masonry unit walls.
- .7 Fill all openings in gypsum board walls with gypsum board and steel framing to match existing, skim coat to make wall smooth and even.
- .8 Demolish existing flooring and wall finishes, and adhesive remnants as follows:
 - .1 Floor and wall substrate shall be smooth, free from ridges and depressions, and adhesive remnants that could telegraph through new flooring and wall finishes.
- .9 Demolish completely all ceiling panels and grid as indicated.
- .10 Patch and repair all walls, floor and ceilings damaged during demolition with material matching adjacent walls, prepare ready for new finishes.
 - .1 Prepare existing surfaces schedule to receive new finish by grinding, filling, over-coating, stripping, washing, etching, shot blasting or other chemical or mechanical means, as required to ensure satisfactory installation of new finish.

3.6 PATCHING AND REPAIRING

- .1 Floors and Walls:
 - .1 Where walls or partitions that are demolished extend from one finished area into another, patch and repair floor and wall surfaces in the new space.
 - .2 Provide a level and smooth surface having uniform finish colour, texture, and appearance.
 - .3 Remove existing floor and wall coverings and replace with new materials, if necessary, to achieve uniform colour and appearance.
 - .4 Patch with durable seams that are as invisible as possible.
 - .5 Provide materials and comply with installation requirements specified in other Sections of these Specifications.
 - .6 Patch any existing areas adjoining / adjacent to new construction in good workmanship, filling and finishing gaps between finishes to allow new work to blend seamlessly with existing work.

- .7 Where patching occurs in a painted surface, apply primer and intermediate paint coats over patch and apply final paint coat over entire unbroken surface containing patch. Provide additional coats until patch blends with adjacent surfaces.
- .8 Where feasible, test and inspect patched areas after completion to demonstrate integrity of installation.
- .2 Exterior Walls:
 - .1 Where existing doors and/or windows are schedule to be removed during demolition, patch and repair exterior walls using similar wall construction techniques as adjacent wall construction. Provide exterior and interior substrate and finish materials, matching existing adjacent materials, to provide an even-plane surface of uniform appearance suitable for application of air barrier membrane AB-01 and/or finishes as scheduled.
- .3 Parging:
 - .1 Patch and repair existing parging damaged or spalling, at areas identified in the Document, using single-component, sand/cement blend designed for coating or parging vertical surfaces. Build up in multiple layers in locations where depth of required repair cannot be filled in a single layer.

3.7 EQUIPMENT

- .1 The Testing Agency shall provide and operate all necessary equipment for conducting accurate scans of existing reinforced concrete components for which openings are required.
- .2 Equipment and methodology to be capable of scanning concrete elements to a maximum of 400 mm thickness.

3.8 EXCESSIVE DEMOLITION

- .1 Where excessive demolition occurs, be responsible for cost of replacing such work.
- .2 Consultant shall determine extent of such 'over-demolition' and method of rectification.

3.9 COMPLETION

- .1 Leave project site as directed, reasonably clean and presentable, free from above grade debris, any salvaged material and/or equipment except those designated to remain.
- .2 Maintain access to exits clean and free of obstruction during removal of debris.

END OF SECTION

1 General

1.1 SUMMARY

- .1 This Section includes supply and installation of single wythe unit masonry assemblies, complete with mortar and grout, masonry joint reinforcement, ties, anchors, and miscellaneous masonry accessories.
 - .1 Standard Concrete Masonry Units
 - .2 Fire Resistant Concrete Masonry Units
 - .3 Architectural Concrete Masonry Units
 - .4 Architectural Trim Units
 - .5 Mortar, and Grout
 - .6 Reinforcing steel
 - .7 Masonry joint reinforcement
 - .8 Ties and anchors
 - .9 Miscellaneous masonry accessories

1.2 REFERENCE STANDARDS

- .1 American Concrete Institute: (ACI):
 - .1 ACI 530.1-99/ASCE 6-99/TMS 602-99, Commentary on Specification for Masonry Structures
- .2 Canadian Standards Association (CSA):
 - .1 CAN/CSA A82, Fired Masonry Brick Made From Clay or Shale.
 - .2 CSA A165 Series-04 (R2009), CSA Standards on Concrete Masonry Units
 - .3 CSA A179-04 (R2009), Mortar and Grout for Unit Masonry
 - .4 CSA A370-04 (R2009), Connectors for Masonry
 - .5 CAN/CSA A371-04 (R2009), Masonry Construction for Buildings
 - .6 CSA S304.1-04 (R2010), Design of Masonry Structures
 - .7 CSA W186-M1990 (R2012), Welding of Reinforcing Bars in Reinforced Concrete Construction
- .3 American Society for Testing of Materials (ASTM):
 - .1 ASTM A123/A123M-09, Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products
 - .2 ASTM A153/A153M-09, Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware
 - .3 ASTM A496/A496M-07, Standard Specification for Steel Wire, Deformed, for Concrete Reinforcement
 - .4 ASTM A563-07a, Standard Specification for Carbon and Alloy Steel Nuts
 - .5 ASTM A653/A653M-11, Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process
 - .6 ASTM A1011/A1011M-12, Standard Specification for Steel, Sheet and Strip, Hot-Rolled, Carbon, Structural, High-Strength Low-Alloy and High-Strength Low-Alloy with Improved Formability, and Ultra-High Strength

- .7 ASTM C67-11, Standard Test Methods for Sampling and Testing Brick and Structural Clay Tile.
- .8 ASTM C207-06(2011), Standard Specification for Hydrated Lime for Masonry Purposes
- .9 ASTM C270-12, Standard Specification for Mortar for Unit Masonry.
- .10 ASTM C494-11, Standard Specification for Chemical Admixtures for Concrete.
- .11 ASTM E488/E488M-10, Standard Test Methods for Strength of Anchors in Concrete Elements
- .12 ASTM E514/E514M-11, Standard Test Method for Water Penetration and Leakage Through Masonry
- .13 ASTM E2556/E2556M-10, Standard Specification for Vapour Permeable Flexible Sheet Water Resistive Barriers Intended for Mechanical Attachment.
- .14 ASTM F593-02(2008)e1, Standard Specification for Stainless Steel Bolts, Hex Cap Screws, and Studs
- .15 ASTM F594-09e1, Standard Specification for Stainless Steel Nuts
- .4 Ontario Concrete Masonry Block Association (OCBA):
 - .1 OCBA Metric Technical Manual
- .5 Underwriters Laboratories of Canada (ULC):
 - .1 ULC List of Equipment and Materials for Fire Rated Construction

1.3 ADMINISTRATIVE REQUIREMENTS

- .1 Pre-Construction Conference: Arrange a site meeting, to coincide with regular bi-weekly site meetings, attended by the Contractor, the Subcontractor's representative and foreman for this project, the Consultant, materials supplier(s), and other relevant personnel before commencement of work for this Section; agenda for meeting will include; but not be limited to, the following:
 - .1 Confirmation of specifications and details for the project;
 - .2 Required mortar, grout and concrete testing, batch control and grouting procedures;
 - .3 Confirmation of appearance of exposed block lintels;
 - .4 Confirmation of reinforcement at corners and wall intersections;
 - .5 Coordination of interior crack control measures;
 - .6 Confirmation of trowelled or tooled joints to concealed and exposed masonry faces.
- .2 Coordination: Coordinate components of the work of this Section with work performed by other Sections including; but not limited to, the following:
 - .1 Steel Support Angles and Brackets:
 - .1 Coordinate requirements for structural steel support angles and brackets supplied and installed onto the building structure by Structural.
 - .2 Provide requirements for supply of loose steel lintels and shelf angles installed by this section to Section 05 50 00.
 - .2 Masonry Anchors:
 - .1 Coordinate supply of anchor sections connecting to structural frame installed by Structural.

- .2 Include additional products for coordination furnished, but not installed, under this Section.

1.4 SUBMITTALS

- .1 Provide submittals in accordance with Division 01.
- .2 Samples: Submit samples of the following; Concrete block, mortar, masonry reinforcement, ties and anchors for Consultant's approval before commencing work of this section.
- .3 Shop Drawings: Submit shop drawings indicating the following:
 - .1 Indicate sizes, profiles, coursing, and locations of special shapes for concrete masonry units and clay masonry veneer units.
 - .2 Detail corner units, end dam units, and other special applications for fabricated flashings.
- .4 Informational Submittals: Provide the following submittals when requested by the Consultant:
 - .1 Submit ULC Assembly Listings and Materials cut sheets for fire rated assemblies as follows:
 - .1 Not later than thirty (30) working days following Award of Contract, submit copies of ULC Assembly and Materials Listing for indicating ULC Number and how assembly meets the rating criteria for assemblies listed on drawings.
 - .2 Use the same system and material as would be required for a tested assembly for the project; ULC Listings are tested with the specific materials indicated; substitutions will not be permitted unless evidence of equivalency is confirmed.
 - .3 Submit manufacturer's product data for materials and prefabricated devices, providing descriptions are sufficient for identification at job site; include manufacturer's printed instructions for installation.
- .5 Certificates: Submit statements of material properties indicating compliance with specified requirements for each type and size of the following:
 - .1 Masonry Units:
 - .1 Include material test reports substantiating compliance with requirements.
 - .2 Include ULC Listings for fire resistance rated materials and construction equivalent to assemblies with indicated on drawings indicating fire resistance ratings.
 - .2 Cementitious Materials:
 - .1 Include brand, type, and name of manufacturer for site mixed mortar materials.
 - .2 Include description of type and proportions of ingredients for pre-blended, dry mortar mixes.
 - .3 Include description of type and proportions of ingredients for grout mixes.
 - .3 Accessories:
 - .1 Reinforcing bars
 - .2 Joint reinforcement
 - .3 Anchors, ties, and metal accessories

- .4 Site Quality Control Submissions: Submit detailed description of methods, materials, and proposed unit masonry cleaning techniques.

1.5 SITE CONDITIONS

- .1 Protection of Masonry: Protect masonry and other work from marking and other damage and as follows:
 - .1 Cover tops of walls, projections, and sills with waterproof sheeting at end of each day's work during construction until permanent flashings and membranes are completed.
 - .2 Cover partially completed masonry when construction is not in progress to prevent wetting of inside wythes of construction and contribution to efflorescence.
 - .3 Extend cover a minimum of 610mm (24") down both sides and hold cover securely in place.
 - .4 Secure cover a minimum of 610mm (24") down face next to un-constructed wythe and hold cover in place where one (1) wythe of multi-wythe masonry walls is completed in advance of other wythes.
 - .5 Provide adequate bracing for masonry during construction and until permanent lateral supports are in place.
 - .6 Do not apply uniform floor or roof loads for a minimum of twelve (12) hours and concentrated loads for a minimum of three (3) days after building masonry walls or columns.

1.6 DELIVERY, STORAGE, HANDLING AND PROTECTION

- .1 Delivery and Acceptance Requirements: Deliver pre-blended, dry mortar mix in moisture resistant containers designed for lifting and emptying into dispensing silo; store dry mortar mix in delivery containers on elevated platforms, under cover, and in a dry location or in a metal dispensing silo with weatherproof cover.
- .2 Storage and Handling Requirements: Store masonry units on elevated platforms in a dry location and as follows:
 - .1 Stack materials on floors of building so that structural design loads are not exceeded; coordinate with Consultant.
 - .2 Cover tops and sides of stacks with waterproof sheeting securely tied to pallets if units are not stored in an enclosed location; do not install masonry units that become wet until they are dry.
 - .3 Store cementitious materials on elevated platforms, under cover, and in a dry location; do not use cementitious materials that have become wet or damp.
 - .4 Store masonry accessories, including metal items, to prevent corrosion and accumulation of dirt and oil.

2 Products

2.1 CONCRETE MASONRY UNITS (BLK-01)

- .1 Standard concrete blocks: Autoclave or bubble cure process, high pressure steam cured, modular, conforming to CSA A165 Series-04 (R2009), with lineal shrinkage and moisture movement not to exceed 0.035% and shall be as follows:
 - .1 Classification: S/15/A/M, 75% solid for all locations where structural members bear on concrete block.
 - .2 H/15/A/M, for all other block work.
 - .3 Size: Modular to sizes indicated on Drawings and schedules.

- .4 Special shapes:
 - .1 Provide square units for exposed corners.
 - .2 Provide purpose made shapes for lintels and bond beams.
 - .3 Provide additional special shapes required for project.
 - .4 Manufacture special shapes at same time and with the same batch as standard concrete block to be used.
- .2 Fire Resistant Concrete Masonry Units: Manufactured in accordance with CSA A165 Series-04 (R2009) as modified below:
 - .1 Classification:
 - .1 1 Hour Fire Rating: H/15/A/O
 - .2 Concrete Composition – 2 Hour Fire Rating: Type L₂20S Concrete.
 - .3 Size: Modular to sizes indicated on Drawings.
 - .4 Where concrete block walls are required as fire separations or barriers, they shall conform to the local Building Code with respect to equivalent thickness and type of concrete. Consult with Consultant for locations and special conditions.

2.2 MORTAR MATERIALS

- .1 Mortar materials shall conform to CSA A179.
- .2 Water: Potable (clean, exempt of ice, oils, acid, alkalis, organic matter, sediments or any other harmful matter).
- .3 Aggregate: Meeting CSA A179, and as follows:
 - .1 Use same brands of materials and source of aggregate for entire project.
 - .2 Use washed aggregate consisting of natural sand or crushed stone for mortar that is exposed to view.
 - .3 Use aggregate graded with 100% passing the No. 16 (1.18-mm) sieve for joints less than 6 mm thick.
- .4 Cement: Normal portland, in accordance with CSA A3000-08, Type GU.
- .5 Grout: In accordance with CSA A179, Table 3.
- .6 Hydrated Lime: ASTM C207, Type S.

2.3 MORTAR MIXES

- .1 Mixing:
 - .1 Prepare and mix mortar materials under strict supervision and in small batches for immediate use only.
 - .2 Mix proprietary mortars in strict accordance with CSA A179. Do not use re-tempered mortars for coloured mortars.
- .2 For Exterior Wythe of Cavity/Composite Walls (non load-bearing, above grade):
 - .1 Use Type 'N', 1:1:6 pre-mixed, pre-coloured, Portland cement/lime/sand mortar, 'Betomix Plus' by Daubois Inc., or Maxi-Mix silo. Use non-staining "white" cement where required to achieve colour as selected later by the Consultant.
- .3 For Interior Reinforced or Non-Reinforced Block Walls:
 - .1 Use Type 'S', premixed 'Bloc Mix' by Daubois Inc., or approved equivalent by Maxi-Mix.
- .4 Mortar pigment (for exterior wythe of cavity/composite walls):

- .1 'Bay Ferrox' by Bayer Inc. or approved alternative by Elementis Pigments. Colour to later selection by Consultant.

2.4 MASONRY REINFORCEMENT, TIES AND ANCHORS

- .1 Masonry Joint Reinforcement: In accordance with to CSA A371 and ASTM A496, with corrosion protection in accordance with CSA S304.1 and CSA A370, and as follows:
 - .1 Interior Walls: Hot dip galvanized, carbon steel.
 - .2 Exterior Walls: Stainless steel.
 - .3 Lengths: A minimum of 3048mm (10') with prefabricated corner and tee units.
- .2 Connectors: In accordance with to CSA A370-04 (R2009) and CSA S304.1-04(R2010) with hot dip galvanized finish.
- .3 Single Wythe Masonry Joint Reinforcement: Either ladder or truss type with single pair of side rods.
- .4 Ties and anchors specified in this section shall be designed in accordance with CSA A370-04 (R2009) for non-conventional masonry connectors as follows:
 - .1 Deflection: Maximum 1.6mm (1/16") including free play, when acted upon by a lateral load of 0.45 kN, in all possible positions of adjustment.
 - .2 Positive restraint at position of maximum adjustment.
 - .3 Free play of multi-component ties maximum 0.8mm (1/32") when assembled in all possible configurations.
 - .4 Anchors shall allow vertical adjustment but resist tension and compression forces perpendicular to plane of wall.
- .5 Wall Ties (masonry veneer/insulated cavity/masonry backup): Single screw, Type 304 stainless steel veneer tie for concrete/CMU construction featuring a dual-diameter barrel with factory-installed EPDM washers to seal both the face of the insulation and the air/vapor barrier, and thermal wings to decrease thermal transfer through cavity insulation. Provide 3/16" diameter, type 304 stainless steel 2X-Hook to wire tie. Length of tie/hook to suit thickness of cavity insulation and air space as detailed.
 - .1 Acceptable product: 2-Seal Thermal Concrete Wing Nut Anchor by Blok-Lok or equivalent.
- .6 Lateral Partition Supports (Top of Wall Anchors):
 - .1 Angle Support: Fabricated from 3mm (1/8") core metal thickness angled steel plate having 75mm (3") long legs fastened to deck structure to allow vertical movement of masonry assembly; hot dip galvanized; coordinate with Section 07 84 00 for firestopping insulation and smoke seals.
 - .1 Basis of Design Materials: Blok-Lok BL-LSA1 & 2 (or approved equivalent).
 - .2 Plate Support: Fabricated from 3mm (1/8") core metal thickness stainless steel plate with 10mm (3/8") diameter metal 150mm (6") long welded to plate having closed end plastic tube fitted over rod that allows rod to move in and out of tube.
 - .3 Anchor Bolts: Where required provide Headed or L-shaped steel bolts in accordance with ASTM A307-10, Grade A; with ASTM A563-07a hex nuts and, where indicated, flat washers; hot-dip galvanized in accordance with ASTM A153, Class C.
- .7 Galvanizing for Masonry Reinforcement, Ties and Anchors:
 - .1 Hot Dip Hardware and Bolts: In accordance with ASTM A153/A153M-09, Class B-2 regardless of location.

- .2 Hot Dip Sheet Steel: In accordance with ASTM A653, Coating Designation Z600, regardless of location.
- .3 Structural Shapes and Pipes: In accordance with ASTM A123, Grade 85, regardless of location.
- .8 Rebar Positioners: 9 gauge diameter wire, hot dipped galvanized.
 - .1 Basis of Design Materials: Blok-Lok BL-RB Rebar Positioners (or approved equivalent).
- .9 Fastening Into Solid Concrete or Solidly Grouted Installation: Two component, injectable adhesive specifically manufactured for use in installing dowels or threaded anchor rods and inserts into new or existing concrete or grout, and as follows:
 - .1 Epoxy Composition: Sealed packaging containing resin, hardener, cement and water; components.
 - .2 Curing Time: Rapid set, high strength and stiffness; maximum time 45 minutes at 20 deg C.
 - .3 Basis-of-Design Materials: Hilti Inc., HIT HY150 System (or approved equivalent).
- .10 Fastening through Hollow Wall Installation: Two-component, injectable adhesive specifically manufactured for use in installing dowels or threaded anchor rods and inserts, with cylindrical mesh screen tube into new or existing masonry cavity wall, and as follows:
 - .1 Epoxy Composition: Sealed packaging containing resin, hardener, cement and water.
 - .2 Curing Time: Rapid set, high strength and stiffness; maximum time 60 minutes at 20 deg C.
 - .3 Basis-of-Design Materials: Hilti Inc., HIT HY20 System (or approved equivalent).

2.5 MISCELLANEOUS MASONRY ACCESSORIES

- .1 Packing Insulation: As indicated in Section 07 20 00.
- .2 Firestopping: As specified under Section 07 84 00.
- .3 Sealants: As specified under Section 07 92 00, and as follows:
 - .1 Vertical Sealant: Colour to match brick
 - .2 Horizontal Sealant: Colour to match mortar
- .4 Maintenance Cleaners: Manufacturer's recommended maintenance cleaners.
- .5 Support Angle: Hot dip galvanized, in accordance with CSA A370 and ASTM A153.
- .6 Fasteners: Galvanized fasteners meeting the requirements of ASTM A325, and as recommended by manufacturer.
- .7 Compressible Joint Filler: Pre-moulded filler strips in accordance with ASTM D1056-07, Grade 2A1; compressible up to 35%; of width and thickness indicated; formulated from neoprene, urethane or PVC.
- .8 Bond Breaker Strips: #15 asphalt saturated, organic roofing felt in accordance with CSA A123.3-05 (R2010).
- .9 Weep hole vents: Flexible ultra-violet resistant polypropylene-copolymer plastic, 'Cell-Vent' by Blok-Lok, 'Mortar Maze Cell Vents' by Advanced Building Products Inc. or approved alternative. Provide at 600mm intervals at through-wall flashing/base course and as vents at high level below sill/horizontal interruptions to encourage air movement within cavity. Stagger high level vents in relation to base vents.

- .10 Metal through wall flashings: Prefinished metal flashings in accordance with Section 07 62 00, continuous strips with a 19 mm folded drip edge.
- .11 Membrane through wall flashing: Reinforced SBS rubberized asphalt compound laminated to cross-laminated polyethylene film, 40 mils thick; 'Airshield Thru Wall Flashing' by W.R. Meadows or approved alternative, complete with primer and adhesive recommended by flashing manufacturer. Refer also to Specification 07 27 39.

2.6 MASONRY COATINGS

- .1 Proprietary Masonry Cleaner: Masonry manufacturer's recommended cleaner designed for removing mortar/grout stains, efflorescence, and other new construction stains from new masonry without discolouring or damaging masonry surfaces.
 - .1 Clear coating.
 - .2 Verify acceptability of cleaner for cleaning masonry with mortar joints and for kinds of masonry units specified.

3 Execution

3.1 EXAMINATION

- .1 Examine conditions for compliance with requirements for installation tolerances and other conditions affecting performance of work.
 - .1 Prepare written report listing conditions detrimental to performance of work and submit to the Consultant.
 - .2 Verify that reinforcing dowels are properly placed.
- .2 Examine rough-in and built-in construction for piping systems to verify actual locations of piping connections before installation of unit masonry.
- .3 Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION - GENERAL

- .1 Thickness: Build single wythe walls to actual widths of masonry units, using units of widths indicated on Drawings.
- .2 Single wythe masonry construction shall conform with the Ontario Concrete Block Association (OCBA) requirements for water resistant single wythe masonry construction.
- .3 Use full size units without cutting except as follows:
 - .1 Cut units with motor driven saws if cutting is required to provide a continuous pattern or to fit adjoining construction.
 - .2 Provide clean, sharp, un-chipped edges.
 - .3 Allow units to dry before laying unless wetting of units is specified.
 - .4 Install cut units with cut surfaces and cut edges concealed where possible; obtain Consultant's acceptance where cut edges must be exposed.
- .4 Select and arrange units for exposed unit masonry to produce a uniform blend of colours and textures; mix units by drawing units diagonally down multiple rows from at least three different pallets as masonry units are placed. "Exposed" means visible in complete work, unpainted and painted.
 - .1 Large variations in colour or texture between adjacent blocks of material will cause the Consultant to reject the installation, and the installer to rebuild the assembly at no additional cost to Contract.
- .5 Wet masonry before laying when recommended by manufacturer; allow units to absorb water so they are damp but not wet at time of laying.

- .6 Maintain dimensions, lines and levels.
- .7 Keep exposed faces free from stains, chips and cracks.
- .8 Keep tolerance in plane of 3mm in 2440mm (1/8" in 96"). Do not use chipped, cracked or deformed units in exposed work.
- .9 Buttering corners of units, throwing mortar droppings into joints, will not be permitted. Do not shift or tap units after mortar has taken initial set, where adjustments must be made after mortar has started to set, remove mortar and replace with fresh supply.

3.3 LAYING MASONRY WALLS

- .1 Lay out walls in advance for accurate spacing of surface bond patterns with uniform joint thicknesses and for accurate location of openings, movement type joints, returns, and offsets; avoid using less-than-half-size units, particularly at corners, jambs, and, where possible, at other locations.
- .2 Bond Pattern for Exposed Masonry: Lay exposed masonry in bond as indicated on the Drawings; do not use units with less than 100mm (4") horizontal face dimensions at corners or jambs. Lay masonry in running bond where not otherwise indicated on the Drawings.
- .3 Lay concealed masonry with all units in a wythe in running bond or bonded by lapping a minimum of 100mm (4"), and as follows:
 - .1 Bond and interlock each course of each wythe at corners.
 - .2 Do not use units with less than nominal 100mm (4") horizontal face dimensions at corners or jambs.
- .4 Stopping and Resuming Work:
 - .1 Stop work by racking back units in each course from those in course below; do not tooth.
 - .2 Clean masonry surfaces that are to receive mortar, remove loose masonry units and mortar, and wet brick if required before laying fresh masonry when resuming work.
- .5 Built-In Work:
 - .1 Build in items specified in this and other Sections as construction progresses.
 - .2 Fill in solidly with masonry around built-in items.
 - .3 Fill space between steel frames and masonry solidly with mortar.
 - .4 Place a layer of metal lath, wire mesh, or plastic mesh in the joint below and rod mortar or grout into core where built-in items are to be embedded in cores of hollow masonry units.
 - .5 Protect built-in items from damage arising from work of this Section.
- .6 Grouting Hollow Concrete Masonry Units – Load Barring Application:
 - .1 Fill cores in hollow concrete masonry units with grout 610mm (24") under bearing plates, beams, lintels, posts, and similar items.
 - .2 Use concrete or fine grout where indicated, and also for vertical core filling, lintel beams, bond beams and other filled cores where reinforcing steel is indicated.
 - .3 Use fine grout where the space being grouted is 50mm (2") or less in its least dimensions; use concrete in all other applications that call for grout.
 - .4 Use square end concrete masonry units wherever a full or half concrete masonry unit will receive concrete fill.
 - .5 Use full mortar bedding of cross webs for cores that are filled.

- .6 Fill cores in lifts of 1220mm (4') maximum; provide cleanout openings for lifts in excess of 4' where Consultant has accepted larger lifts.
 - .7 Consolidate core fill during placement by vibration or puddling.
 - .8 Stop concrete core fill 38mm (1-1/2") below top surface of lift whenever filling will be stopped for more than a 1 hour time duration.
 - .9 Fill all cores of roof parapets with concrete.
 - .10 Secure vertical reinforcement in position at top and bottom of core, and a maximum 4' spacing, refer to Drawings for location of vertical reinforcement.
 - .11 Fill voids solid with mortar so that ties and anchors are set in full mortar bed where masonry walls abut steel or concrete columns.
- .7 Build non-load bearing interior partitions full height of storey to underside of solid floor or roof structure above, leaving a gap to allow for structural deflection, and as follows:
- .1 Fasten lateral partition supports to structure above and build into top of partition; grout cells of concrete masonry units solidly around plastic tubes of anchors and push tubes down into grout to provide 13mm (1/2") clearance between end of anchor rod and end of tube; space anchors at 1220mm (4') O.C.

3.4 MORTAR BEDDING AND JOINTING

- .1 Lay solid masonry units with completely filled bed and head joints; butter ends with sufficient mortar to fill head joints and shove into place; do not deeply furrow bed joints or slush head joints.
- .2 Lay block work as follows:
 - .1 Provide special shapes and sizes as required such as halves, jambs, lintels, solids, corners, semi-solids, etc.
 - .2 Webs to align plumb over each other with thick ends of webs up. Leave no cells open in exposed work. Reinforce all block.
 - .3 Minimize cutting block. Cut exposed work with power driven abrasive cutting disc or diamond cutting wheel for flush mounted electrical outlets, grilles, pipes, conduit, etc., leaving 3mm (1/8") maximum clearance.
 - .4 Do not wet concrete masonry units before or during laying.
 - .5 Locate corners accurately. Use full bed of mortar for first course. Bed face shells and cross and end web fully in mortar. Stagger joints in every course. Align joints plumb over each other in every other course.
 - .6 Bond intersecting block walls in alternate courses. Where block abuts concrete, bond each block course with dovetail anchors, ties and dovetail slot. Do not break bond of corridor walls or other walls of exposed units where partitions intersect and if bonding would show through on intersect with prefabricated intersection masonry reinforcement in each course.
 - .7 Take special care in erecting block walls to which other sections will be applying finishes or attaching equipment to ensure tolerances required for work of other sections can be met with reasonable construction procedures. (e.g. thin-set application of ceramic tile.)
 - .8 Provide bullnose block at all exposed block corners.
 - .9 Build block lintels, ensure that lintel jointing coincides with regular bond.
- .3 Set trim units in full bed of mortar with full vertical joints, and as follows:
 - .1 Fill dowel, anchor, and similar holes.

- .2 Clean soiled surfaces with fibre brush and soap powder and rinse thoroughly with clear water.
- .3 Lay trim units so that joints are even and so that average distance between joint centrelines is equal to the nominal modular dimension of adjacent masonry. Lay trim units in running bond, unless otherwise indicated on the Drawings.
- .4 Set trim units in accordance with manufacturers recommended installation practices and materials. Review manufacturer's written recommendations with the Consultant before proceeding.
- .5 Use chipped or blemished units only where the defect will be concealed; reject all defective and broken units or units with chipped edges or corners.
- .6 Install cut units with cut surfaces and, where possible, cut edges concealed. Where complex cutting is required, place mortar along the cut edge and trowel smooth to provide a consistent 50mm (2") wide gap.
- .4 When mortar is "thumbprint" hard, tool all joints (exposed or concealed) concave except at blockwork designated to receive ceramic tile finish which blockwork shall be struck flush.
 - .1 Use sufficient force to press mortar tight against masonry units on both sides of joints.
 - .2 Remove excess material or burrs left after jointing. Use trowel or rub with burlap bag.
- .5 Lay all joints 10mm (3/8") thick unless otherwise specified or otherwise indicated. Fill all joints solidly with mortar except where specifically designated to be left open.
- .6 Stagger joints in every course. Align joints plumb over each other in every other course. Vertical and horizontal joints to be uniform in thickness.

3.5 PARTITIONS (OTHER THAN LOAD-BEARING)

- .1 Carry following partitions up through ceiling to structure above, unless noted or specified otherwise; corridor partitions, partitions around staircases and shafts, partitions around washrooms, and any other partitions so indicated on drawings. Terminate all other partitions at first coursing joint above finished ceiling.
- .2 Except around staircases and shafts, terminate through partitions within 19mm (3/4") of structure above, i.e. floor, roof decking depending under which partitions occur, and where such partitions occur directly under and parallel to structural framing carry these partitions up to within 19mm (3/4") of bottom of such structural framing.
- .3 Around staircases and shafts, wedge and grout masonry solidly to structure above. Laterally support other partitions as required by building code. Where tops of partitions are exposed to view, lateral supports shall be concealed.
- .4 Where walls and partitions are pierced by structural members, ducts or pipes, fill voids with mortar to within 19mm (3/4") of such members flush with wall fins.
- .5 Fill spaces between partition and structure, ducts and pipes with compressed glass fibre or mineral wool insulation completely from one side of wall to other.

3.6 CONTROL JOINTS

- .1 Provide vertical through wall control joints 7620mm (25') O.C. maximum (except as otherwise shown or specified) in continuous walls having no openings, intersections or columns. Control joints as shown on Drawings.
- .2 Locate control joints at high stress concentrations and at points of weakness such as at abrupt changes in work height, wall thickness changes such as at chases and at pilasters and maximum of 3658mm (12') from corners.
- .3 Construct joint as detailed and generally as follows:

- .1 Place building paper against end of block on one side of control joint. Extend bond breaker full wall thickness.
- .2 Fill voids between ends of block with mortar to form key and strike back exposed vertical joints 19mm (3/4") deep, install backer rod and caulk in accordance with Section 07 92 00.
- .3 Reinforce joints every third course with two 6mm (1/4") diameter greased smooth rods. Locate rods 32mm (1-1/4") in from faces of block centres on joint running parallel to wall.

3.7 REINFORCEMENT AND REINFORCING TIES

- .1 Reinforce all masonry walls with continuous masonry horizontal reinforcement in every second block course.
- .2 Provide extra reinforcement or reinforcing ties at openings so that first and second courses above and below openings are reinforced. Extend extra reinforcement 610mm (2') beyond opening in each direction.
- .3 Anchor new masonry to structural steel to concrete elements, to existing construction at maximum 406mm (16") O.C., vertically in accordance with local building code requirements.

3.8 BUILT-INS

- .1 Built-in items provided by other Sections, anchor bolts, sleeves, inserts, loose steel lintels, shelf angles, access panels, and other such items.
- .2 Built-in items to present neat, rigid, true and plumb installation. Leave wall openings required for ducts, grilles, pipes and other items.
- .3 Fill voids between masonry and metal frames with masonry mortar.

3.9 REPOINTING OR TUCKPOINTING

- .1 Repoint defective joints as follows:
 - .1 Cut back joints 13mm (1/2"), taking care not to damage units. Remove dust and loose materials by brushing or by water jet.
 - .2 If water jet is used, allow excess water to drain before repointing.
 - .3 Repoint with same mix as original. Pack mortar tightly in thin layers, and tool joints or strike flush as required.

3.10 CLEANING

- .1 Keep work clean and free of mortar stains during laying. Allow mortar droppings which adhere to wall to dry out but not set.
- .2 Rub with small piece of masonry followed by brushing to remove all traces.
- .3 On completion of masonry, after mortar is thoroughly set and cured, and defective joints tucked and pointed, clean masonry thoroughly.
- .4 Remove mortar with wood paddles and scrapers before wetting. Saturate masonry with clean water and flush off loose mortar and dirt. Clean block work using water, scrubbing brushes and wood paddles only.

END OF SECTION

1 General

1.1 SUMMARY

- .1 Supply and install all miscellaneous metal work indicated on drawings and not included in the work of other Sections in addition to items listed in this Section.
- .2 Section includes the supply and installation of decorative steel railings, complete with intermediate stanchions, as detailed on the Drawings for use in the following locations:
 - .1 Guardrail/Handrails at interior ramps/stairs;
 - .2 Guardrails/Handrails at exterior ramps/stairs

1.2 RELATED REQUIREMENTS

- .1 Read carefully all other Sections and review drawings to determine extent of metal work supplied and installed, or installed by others.
- .2 Be responsible for co-ordinating this section with all related sections.

1.3 REFERENCE STANDARDS

- .1 American Society for Testing and Materials (ASTM):
 - .1 ASTM A53/A53M-12, Standard Specification for Pipe, Steel, Black and Hot Dipped, Zinc Coated, Welded and Seamless
 - .2 ASTM A325-10, Standard Specification for Structural Bolts, Steel, Heat Treated, 120/105 ksi Minimum Tensile Strength
 - .3 ASTM A653/A653M-11, Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process
 - .4 ASTM C939-10, Standard Test Method for Flow of Grout for Preplaced Aggregate Concrete (Flow Cone Method)
 - .5 ASTM A1011/A1011M-12b, Standard Specification for Steel, Sheet and Strip, Hot-Rolled, Carbon, Structural, High-Strength Low-Alloy, High-Strength Low-Alloy with improved Formability, and Ultra-High Strength
 - .6 ASTM C1107/C1107M-11, Standard Specification for Packaged Dry, Hydraulic Cement Grout (Nonshrink)
- .2 Canadian Standards Association (CSA):
 - .1 CSA G40.20-04/G40.21-04 (R2009), General Requirements for Rolled or Welded Structural Quality Steel / Structural Quality Steel
 - .2 CAN/CSA-G164-M92 (R2003), Hot Dip Galvanizing or Irregularly Shaped Articles
 - .3 CSA-S16-09, Design of Steel Structures
 - .4 CSA-S136-07, North American Specification for the Design of Cold Formed Steel Structural Members
 - .5 CSA W47.1-09, Certification of Companies for Fusion Welding of Steel
 - .6 CSA W55.3-08, Certification of Companies for Resistance Welding of Steel and Aluminum
 - .7 CSA W59-03 (R2008), Welded Steel Construction (Metal Arc Welding)
- .3 Canadian General Standards Board (CGSB):
 - .1 CAN/CGSB-1.181-99, Ready-Mixed Organic Zinc-Rich Coating
 - .2 CAN/CGSB-51.32-M77, Sheathing, Membrane, Breather Type
 - .3 CGSB 31-GP-105Ma, Zinc Phosphate Conversion Coatings for Paint Base

- .4 The Society for Protective Coatings (SSPC):
 - .1 SSPC1 Solvent Cleaning - 2004
 - .2 SSPC2 Hand Tool Cleaning - 2004
 - .3 SSPC-3 Power Tool Cleaning - 2004
 - .4 SSPC-6 Commercial Blast Cleaning - 2007

1.4 QUALITY ASSURANCE

- .1 All Codes and Standards referred to in this Specification shall be current editions including all latest revisions and addenda.
- .2 Conform to requirements of CSA-S16, Design of Steel Structures and CAN/CSA-S136, Cold Formed Steel Structural Members.
- .3 Architectural metals work shall be of the highest architectural quality, free of scratches, pitting, roughness, marring, discolouration, staining and other imperfections.
- .4 Work of this Section to be executed by firm thoroughly conversant with laws, by-laws and regulations which govern, and capable of workmanship of best grade of modern shop and field practice known to recognized manufacturer's specializing in this work.
- .5 Work of this Section shall be executed by workers especially trained and experienced in this type of work. Have a full time, senior, qualified representative at the site to direct the work of this Section.
- .6 Where required by authorities having jurisdiction, have work of this Section designed by a professional engineer licensed to design structures and registered in the Province of the Work.

1.5 SUBMITTALS

- .1 Provide submittals in accordance with Division 01, bearing stamp or seal and signature of the Professional Engineer responsible for the design of the work of this Section.
- .2 Shop Drawings:
 - .1 Make thorough examination of drawings and details, determine the intent, extent, and materials, and be fully cognizant of requirements when preparing shop drawings.
 - .2 Submit shop drawings showing and describing in detail all work of this Section including large scale detail of members and materials, of connection and interfacing with work of other Sections, jointing details, and of anchorage devices, dimension, gauges, thicknesses, description of materials, metal finishing, as well as other pertinent data and information.
 - .3 Digital files of design drawings shall not be used in the preparation of shop drawings.

1.6 STORAGE, DELIVERY, HANDLING AND PROTECTION

- .1 Coordinate deliveries to comply with construction schedule and arrange ahead for strategic off the ground, under cover storage locations. Do not load any area beyond the design limits.
- .2 Adequately protect and crate all components against damage, dirt, disfigurement and weather during delivery and storage. Damaged materials shall not be used and shall be replaced by approved material.
- .3 Cover and protect the work of other Sections in the area of work from damage. Make good all damage to the satisfaction of the Consultant.
- .4 Protect the installed work of this Section and on completion the work shall be examined and damage shall be remedied to the complete satisfaction of the Consultant.

2 Products

2.1 PERFORMANCE REQUIREMENTS

- .1 Delegated Design: Engage a qualified professional engineer, to design railings, including attachment to building construction.
- .2 Structural Performance: Railings, including attachment to building construction, shall withstand the effects of gravity loads and the following loads and stresses within limits and under conditions indicated:
 - .1 Handrails and Top Rails of Guards:
 - .1 Uniform load of 50 lbf/ft. (0.73 kN/m) applied in any direction.
 - .2 Concentrated load of 200 lbf (0.89 kN) applied in any direction.
 - .3 Uniform and concentrated loads need not be assumed to act concurrently.
 - .2 Infill of Guards:
 - .1 Concentrated load of 50 lbf (0.22 kN) applied horizontally on an area of 1 sq. ft. (0.093 sq. m).
 - .3 Infill load and other loads need not be assumed to act concurrently.

2.2 MATERIALS

- .1 Structural Steel Sections and Steel Plate: New stock (not weathered or rusted); to conform to CAN/CSA-G40.21, Grade 300W (44W) and Grade 350W (50W) for wide flange shapes.
- .2 Hollow Structural Sections (HSS): New stock; to conform to CAN/CSA-G40.21, Grade 350W (50W), Class C, stress relieved.
- .3 Sheet Steel (Structural Quality): Conforms to ASTM A1011/A1011M.
- .4 Sheet Steel (Commercial Quality): Conforms to ASTM A653/A653M, stretcher levelled or temper rolled.
- .5 Tube: Conforms to ASTM A53.
- .6 Galvanized Sheet Steel (Commercial Quality): Galvanized coating G90 (Z275) in accordance with ASTM A653/A653M, minimized spangle, stretch levelled or temper rolled. Specially treat by phosphate conversion process conforming to CGSB 31-GP-105Ma ready to receive prime paint finish.
- .7 Steel Pipe: Hot-dip galvanized, zinc coated, welded and seamless type steel pipe conforming to ASTM A53/A53M.
- .8 Aluminum Plate and Sheet: ASTM B209M, Alloy 6061-T6.
- .9 Aluminum Extrusions: ASTM B221M, Alloy 6063-T6.
- .10 Non-Shrink Grout: Premixed, high strength, maximum bearing, impact resistant, non-shrink non-metallic aggregate grout having minimum 76 Mpa 28 day compressive strength and conforms to ASTM C939 and ASTM C1107/C1107M, 'Embeco Premixed Grout' by Master Builders Technologies Ltd., or 'Tartan Grout Iron' by Webster & Sons Ltd., or 'Sika Grout 212 HP' by Sika Canada Inc., or approved equivalent.
- .11 Galvanizing: All uncoated steel specified to be galvanized shall be galvanized after fabrication by the hot dip process according to CAN/CSA-G164, with minimum coating of 2 oz./sq.ft. Galvanize after all welding is complete. Welding of galvanized material will not be permitted. Specially treat by phosphate conversion process conforming to CGSB 31-GP-105Ma ready to receive prime paint finish.
- .12 Primer Paint: CISC/CPMA 2-75.

- .13 Bolts, Nuts, Washers: Conforms to ASTM A325.
- .14 Welding Materials: Conforms to CSA W59.
- .15 Metal Filler: Polyester based type.
- .16 Painting:
 - .1 Shop Applied Structural Steel Primer: Steel Spec Universal Primer (B50RV6227 Red), by Sherwin Williams Company of Canada Ltd., or approved equivalent. Apply a minimum of 2 mils dft./coat. Grey coloured primer is acceptable.
 - .2 Zinc Rich Paint For Touch-up of Galvanized Metals: Ready mixed, zinc-rich primer conforming to CAN/CGSB-1.181, Sealtight Galvafrid Zinc-Rich Coating by W.R. Meadows of Canada Limited or Zinc Clad No. 5 Organic Zinc Rich Primer by Sherwin Williams Company of Canada Ltd., or approved equivalent.
 - .3 Touch-up Primer (On Site): Procryl Universal Acrylic Primer by Sherwin Williams Company of Canada Ltd, or approved equivalent. Touch-up primer shall be no less than 3 mil dft.
 - .4 Refer to Section 09 90 00, and coordinate with the above.
- .17 Isolation Coating: Acid and alkali resistant bituminous paint.
- .18 Building Paper: Conforms to CAN/CGSB-51.32.
- .19 Butyl Tape: Extruded, high grade, macro-polyisobutylene tape of size, width and shore hardness to suit conditions.

2.3 FABRICATION

- .1 Fit and assemble work in shop where possible. Execute work according to details and reviewed shop drawings.
- .2 Take measurements at the building for work which is to fit or be connected to steel or concrete before commencing fabrication.
- .3 Where shop fabrication is not possible, make trial assembly in shop.
- .4 Do all welding in accordance with requirements of CSA W59, CSA W55.3 and CSA W47.1 including all supplements. Weld stainless steel electric arc process. Grind welds smooth and flush with surface of parent metal, where exposed to view and where specifically indicated on drawings. Welds shall be continuous seam welds unless specified otherwise. Maintain sharp arises.
- .5 Fit joints and intersecting members accurately in true planes, square, plumb, straight with tight joints and intersections.
- .6 Provide adequate reinforcing, fastenings, anchors, accessories required for fabrication and erection of work of this Section. Such items occurring on or in an exterior wall or slab shall be hot-dip galvanized. Make thread dimensions such that nuts and bolts will fit without rethreading or chasing threads.
- .7 Fabricate, drill and tap members to accommodate attachments, anchorage and work of other Sections where located and directed by them.
- .8 Exposed steel surfaces shall be smooth and free from imperfections such as warping, buckling, weld marks, burrs, rust and scale.
- .9 Gauges and sizes of metal shall be adequate for various conditions.
- .10 Make exposed metal fastenings and accessories of same material, texture, colour and finish as base metal on which they occur unless otherwise shown or specified. Keep exposed fastenings to an absolute minimum evenly spaced and neatly laid out. Make fastenings of permanent type unless otherwise indicated.

2.4 SHOP PAINTING AND PROTECTION

- .1 As per SSPC2 Hand Tool Clean and SSPC1 Solvent Clean, clean welds by wire brushing and wash down with clean water, to remove the chemical residues left by the electrodes, prior to painting.
- .2 Prepare steel as per SSPC-3 Power Tool Cleaning for Interior or SSPC-6 Commercial Blast Cleaning for exterior members. Remove rust, mill scale, oil, dirt, and other foreign matter before commencing shop painting.
- .3 Apply shop coat of primer to all surfaces except areas requiring field welding. Apply by brush, working paint well into surfaces, interstices and cavities.
- .4 Primer is to be free of runs, sags, or other collections of primer due to dipping of members into primer.
- .5 Steel work shall be painted under cover, and shall remain under cover, until the paint protection is dry.
- .6 Prime field welded areas after erection and touch up shop coat where damaged and barred by erection and handling.
- .7 Prime steel with two full coats of paint in strict accordance with paint manufacturer's directions.
- .8 Give the parts which are inaccessible after assembly two coats of primer coat paint, of different colours, when members are noted to be painted.

2.5 HOT DIP GALVANIZING

- .1 Hot dip galvanize, after fabrication, steel metal fabrication items. Straighten shapes and assemblies true to line and plane after galvanizing. Repair damaged galvanized surfaces with brush or spray-applied anti-corrosion coating containing 92-95% zinc, in accordance with manufacturer's printed directions.
 - .1 Members exposed to elements when in final location.
 - .2 Members embedded on exterior side of exterior walls.
 - .3 Members imbedded in concrete.
 - .4 Members specified in this Section or indicated on Drawings.
- .2 Hot-dip galvanize members in accordance with CAN/CSA G164 and requirements of the following ASTM standards, with minimum coating weights or thicknesses as follows, unless otherwise indicated that high performance organic finish is required:
 - .1 Rolled, Pressed and Forged Steel Shapes, Plates, Bars and Strips: ASTM A123/A123M; average weight of zinc coating of actual surface
 - .1 4.8 mm (3/16") and less member thickness: 600 g/sq.m.
 - .2 6 mm (1/4") and heavier members: 640 g/sq.m.
 - .2 Iron and Steel Hardware: ASTM A153/A153M; minimum weight of zinc coating, in gram per square meter of surface, in accordance with Table 1 for the various classes of materials used in the Work.

3 Execution

3.1 GENERAL

- .1 Verify at site that the Work to receive the work of this Section is free of irregularities detrimental to the installation and performance of the work and that it is located correctly and at proper levels before delivery and installation.
- .2 Erection: To meet specified requirements of CAN/CSA-S16.
- .3 Bearing Plates and Anchors: Standard.

- .4 Anchors: Anchors to structural concrete shall be approved inserts set into concrete or approved self-drilling expansion insets drilled and placed afterwards.

3.2 INSTALLATION

- .1 Assemble and erect work plumb, true, square, straight, level and accurate to sizes detailed, to reviewed shop drawings, free from distortion and defects detrimental to appearance and performance.
- .2 Isolate metals where necessary to prevent corrosion due to contact between dissimilar metals and between metals and masonry, concrete or plaster. Use bituminous paint or butyl tape.
- .3 Supply adequate instructions, templates, and if necessary, supervise installation of the fastenings or accessories requiring to be built-in by other Sections of the Work.

3.3 SCHEDULES

- .1 Where items are required to be built into masonry, concrete or other work, supply such items to respective Sections with all anchors and accessories for building in.
- .2 Itemized List: Supply and install metal work listed below unless specifically designated to be supplied only. Each item shall be as shown on drawings and as detailed on reviewed shop drawings.
- .3 Miscellaneous Steel Framing, Channels, Angles, Plates and Brackets: As required and indicated on drawings.
- .4 Metal grating: refer to structural drawings.
- .5 Guardrails and Handrails:
 - .1 Guardrail (G1) at Ramp/Stair (interior):
 - .1 Galvanized steel guardrail, complete with top and bottom rail, intermediate stanchions and vertical pickets.
 - .1 Continuous 43mm diameter handrail c/w rounded end caps on 10mm diameter stand offs
 - .2 Mounting: grouted into new concrete ramp/stair.
 - .3 Finish: hot dip galvanized.
 - .2 Handrail (H2) at Ramp/Stair (interior)
 - .1 Continuous 43mm diameter handrail c/w rounded end caps on 10mm diameter stand off with 75mm diameter mounting plate.
 - .2 Mounting: mounting plate anchored into new/existing masonry wall.
 - .3 Finish: hot dip galvanized.
 - .3 Handrail (H3) at Ramp/Stair (interior)
 - .1 Continuous 43mm diameter handrail c/w rounded end caps on 43mm diameter pipe post.
 - .2 Mounting: grouted into new concrete ramp/stair.
 - .3 Finish: hot dip galvanized.
- .6 Loose Lintels:
 - .1 Provide and install loose lintels if not by structural steel.
 - .2 Finish: Hot-dip galvanized after fabrication.
- .7 Other Miscellaneous Metal Components:

- .1 As required and indicated on drawings.
- .2 Finish: Prime paint for interior components, ready for finishing by Section 09 90 00 and hot-dip galvanized after fabrication for exterior components.

END OF SECTION

1 General

1.1 SUMMARY

- .1 Supply all labour, materials, equipment, services and perform all operations required to complete all finish carpentry, millwork and fitment installation including but not limited to the following:
 - .1 Interior millwork
 - .2 High pressure decorative laminate
 - .3 Solid Surface countertops/caps/sills.
 - .4 Millwork finishing hardware and accessories.

1.2 REFERENCE STANDARDS

- .1 American Society for Testing and Materials (ASTM):
 - .1 ASTM A307-04e1, Standard Specification for Carbon Steel Bolts and Studs, 60,000 PSI Tensile Strength
 - .2 ASTM D6007-02, Standard Test Method for Determining Formaldehyde Concentration in Air from Wood Products Using a Small Scale Chamber
 - .3 ASTM D6330-98(2003), Standard Practice for Determination of Volatile Organic Compounds (Excluding Formaldehyde) Emissions from Wood-Based Panels Using Small Environmental Chambers Under Defined Test Conditions
 - .4 ASTM E1333-96(2002), Standard Test Method for Determining Formaldehyde Concentrations in Air and Emission Rates from Wood Products Using a Large Chamber
- .2 Underwriters Laboratories of Canada (ULC):
 - .1 CAN/ULC S102-18, Standard Method of Test for Surface Burning Characteristics of building Materials and Assemblies
- .3 Canadian Standards Association (CSA):
 - .1 CSA B111-1974 (R2003), Wire Nails, Spikes and Staples
 - .2 CSA G164-M92 (R2003), Hot Dip Galvanizing of Irregularly Shaped Articles
 - .3 CAN/CSA O80 Series-97 (R2002), Wood Preservation
 - .4 CSA O86-01, Engineering Design in Wood
 - .5 CSA O112 Series-M1977(R2001), Adhesives for Wood
 - .6 CSA O121-M1978 (R2003), Douglas Fir Plywood
 - .7 CAN/CSA-O141-M91(R1999), Softwood Lumber.
 - .8 CSA O151-M1978(R2003), Canadian Softwood Plywood.
 - .9 CSA O325.0-92(R2003), Construction Sheathing
 - .10 CSA O437 Series 93 (R2003) OSB and Waferboard
 - .11 CSA O452 Series 94 (R2001), Design Rated OSB

- .4 National Lumber Grading Association (NLGA):
 - .1 NLGA Canadian Lumber Grading Rules

1.3 QUALITY ASSURANCE

- .1 Follow applicable requirements of The Architectural Woodwork Manufacturer's Association of Canada (AWMAC) Standard for Millwork latest edition, including supplements and modifications.
- .2 Unless otherwise indicated on drawings, all millwork shall be Custom Grade, in accordance with AWMAC standards.
- .3 Supplements and modifications to the above standards as indicated on the drawings or as specified herein shall govern work of this section.

1.4 SUBMITTALS

- .1 Provide submittals in accordance with Division 01.
- .2 Samples for Verification: Submit two (2) samples prior to fabrication of millwork as follows; accepted samples will form the standard of acceptance for the remainder of the work:
 - .1 High pressure decorative laminate for finishing of millwork.
 - .2 Solid surface countertops.
 - .3 Wood trim with applied opaque Finish: 12" long lumber for each finish system and colour.
 - .4 Exposed Fasteners, Hardware and Accessories: One unit for each type and finish.
- .3 Shop Drawings:
 - .1 Submit detailed shop drawings of all shop fabricated finish carpentry components.

1.5 ADMINISTRATIVE REQUIREMENTS

- .1 Coordination: Coordinate sizes and locations of framing, blocking, furring, and reinforcements provided by work that is specified in other Sections is complete before starting work of this Section.
- .2 Pre-Construction Conference: Arrange a site meeting, to coincide with regular bi-weekly site meetings, attended by the Contractor, the Subcontractor's representative and foreman for this project, the Consultant, materials supplier(s), and other relevant personnel before commencement of work for this Section. Topics for discussion include but are not limited to the following:
 - .1 Installation requirements;
 - .2 Special surface effects and finishing;
 - .3 Coordination of work with adjacent finishes;
 - .4 Protection of finishes;
 - .5 Acceptability of substrates and quality of materials being used for the project.

1.6 DELIVERY, STORAGE, HANDLING & PROTECTION

- .1 Do not permit delivery of work of this section to site until area is sufficiently dry so that
woodwork will not be damage by excessive changes in moisture content.
- .2 Coordinate deliveries to comply with construction schedules and arrange ahead for under
cover storage location.
- .3 Materials shall be carefully checked, unloaded, stored and handled to prevent damage.
Protect material with suitable non-staining waterproof coverings.
- .4 Store material in original, undamaged containers or wrappings.
- .5 Unsatisfactory materials shall be promptly removed from the site.
- .6 Adequately protect the structure and work of other sections during delivery, storage,
handling and execution of the work of this section.
- .7 Provide tools, plant and other equipment required for the proper execution of the work of
this section.

1.7 SITE CONDITIONS

- .1 Site Measurements: Verify dimensions by site measurements before fabrication and
indicate measurements on Shop Drawings where casework is indicated to fit walls and
other construction; coordinate fabrication schedule with construction progress to avoid
delaying the Work; locate concealed framing, blocking, and reinforcements that support
woodwork by site measurements before being enclosed and indicate measurements on
Shop Drawings.
- .2 Established Dimensions: Establish dimensions and proceed with fabricating casework
without confirmed site measurements where site measurements cannot be made without
delaying the Work; coordinate with the construction to ensure that actual dimensions
correspond to established dimensions; allow for trimming and fitting.
- .3 Ambient Conditions: Maintain area or room in which casework is being installed at a
uniform temperature and humidity for 24 hours prior to, during and after installation in
accordance with AWS for relative humidity and moisture content; provide additional
lighting to maintain a minimum of 430 lx on surfaces and areas where casework is being
installed.

1.8 WARRANTY

- .1 Warrant plastic laminate work of this Section against defects in materials and
workmanship in accordance with General Conditions but for an extended period of two
(2) years.
- .2 Solid Surface Countertop Manufacturer Warranty: Provide manufacturer's standard 10
year warranty against defects in materials and workmanship; including material and
labour to repair or replace defective materials.
- .3 Agree to repair or replace faulty materials or work which appears during warranty period,
without cost to the Owner.
- .4 Defects shall include but not be limited to, opening of joints, cracking, shrinkage,
warpage, delamination of plastic laminate.

2 Products

2.1 MATERIALS

- .1 Framing Lumber:
 - .1 Lumber for structural components shall be of species and grade specified, well
seasoned, and processed and stamped at same mill with appropriate grade
markings. Conform to requirements of standard grading rule for Canadian

lumber of Nation Lumber Grades Authority (NLGA) latest issue, approved by Canadian Lumber Standards Administrative Board, as follows:

- .1 Rough Carpentry for built-in work: No. 2 select grade Ontario white pine.
 - .2 Blocking, Ground, Furring and Strapping, Bucks and Nailing Strips: C.L.A. No. 1 grade pine, kiln dried stock.
 - .3 Non-Exposed Softwood: Fabricator's option, meeting requirements of CAN/CSA O141-05(R2009), kiln dried for interior use to a moisture content of 4% to 8%, and 7% to 10% for exterior use; Surface 4 sides (S4S).
- .2 Panel Materials:
- .1 Plywood: Douglas Fir veneer core plywood, 19mm (3/4") thick or thickness as indicated on drawings, Select Sheathing-Tight Face, good two sides, sanded "B" faces and conforms to CSA 0121.
 - .2 Particleboard: ANSI A208.1, 700 kg/m³ density.
 - .3 Medium density fibreboard (MDF): ANSI A208.2, density minimum 750 kg/m³, moisture resistant.
 - .1 Basis of Design Materials: Premier Plus MR MDF by Flakeboard, or approved equivalent.
 - .4 Fire-Rated (FR) Medium density fibreboard (MDF): ANSI A208.2, meeting CAN/ULC S102, FSC certified; Modulus of Rupture (MOR): 4000 psi, with face screw hold of 250lbs.
 - .1 Basis of Design Materials: TRUPAN Fire-Rated (FR) MDF by Arauco, or approved equivalent.
- .3 Glue: CSA 0112; Water-resistant urea-formaldehyde-free resin glue.
- .4 Plastic Laminate Covered Components (PLAM-01, 02, etc):
- .1 Plastic laminate face sheets: High pressure, paper based, melamine surfaced, laminated plastic sheets, conforming to CAN/CSA-A172, with thickness tolerances in accordance with Table 1 of CAN/CSA-A172 and plastic laminate grades as follows:
 - .1 General Purpose Grade (GP): Minimum 1.27mm (0.050") thick.
 - .2 Post-forming Grade (PF): Minimum 1.06mm (0.042") thick.
 - .2 Plastic laminate face sheet colour, gloss and texture (PLAM-01): Carry pricing for 3 colours, as selected by the Consultant, from the manufacturers standard product line.
 - .3 Plastic laminate backing and liner sheets: High pressure, paper based, melamine surfaced, laminated plastic backing sheets, conforming to CAN/CSA-A172, backing grade (BK), minimum 0.5mm (0.020") thick.
 - .4 Cores: Unless otherwise indicated, 19mm (3/4") thick core.
 - .5 Laminating Adhesive: CSA-0112, water resistant type.
 - .6 Draw Bolt Fasteners: 'K&V 516' by Knape & Vogt Canada, or approved equivalent.
 - .7 Basis of Design: Wilsonart, Pionite, Nevamar or Formica.
- .5 Solid Surface Countertop Material (SO-01): Cast, nonporous, filled polymer, with through body colour meeting requirements of NEMA LD 3, and having the following nominal properties:
- .1 Thickness: 20mm and as detailed.

- .2 Surface Burning Characteristics: in accordance with CAN/ULC S102 and as follows:
 - .1 Flame Spread: Maximum 25
 - .2 Smoke Developed: Maximum 450
- .3 Pattern and Colour: to be selected by Consultant from manufacturers standard colour line, allow for 2 colours from Price Group 1.
- .4 Basis-of-Design Material: Quartz by Ceasarstone, CambriaQuartz by Cambria, Quartz by Corian or approved equivalent.
- .6 Rough Hardware:
 - .1 Provide required rough hardware to frame and fix all finished carpentry and include for expansion shields, nails, spikes, screws, bolts, anchors, clips, plates, washers, rods, wires, wall brackets, chrome finishing trim, and other ironmongery which may be required. All wood screws shall be drill thread screws except at chipboard where self-tapping screws shall be used. All rough hardware shall be galvanized unless otherwise noted.
- .7 Millwork Finishing Hardware:
 - .1 As scheduled on drawings/details.

2.2 FABRICATION AND WORKMANSHIP

- .1 Work shall be executed by skilled carpenters under the supervision of a competent carpentry foreman. All items shall be shop assembled, insofar as is practical. Unless indicated otherwise comply with AWMAC Custom Grade requirements.
- .2 Make thorough examination of drawings and details, check anchorage, interfacing with work of other sections and other factors influencing the installation of the work, and be fully cognizant of requirements.
- .3 Finished woodwork shall be free from bruises, blemishes, mineral marks, knots, shakes and other defects and shall be selected for uniformity of colour, grain and texture.
- .4 Be responsible for methods of construction and for ensuring that materials are rigidly and securely attached and will not be loosened by the work of other sections.
- .5 Fabricate the work in a manner which will permit expansion and contraction of the materials without visible open joints.
- .6 Mitre exposed corners; no end grain shall be visible in completed installation.
- .7 Provide solid wood edging at exposed plywood edges.
- .8 Provide wood trim mouldings to profiles as indicated on drawings.
- .9 Jointing of shop assembled work shall be by means of mortise and tenons, dowels, stub tenons, dovetails, dadoes, lock joints as applicable for the jointing condition.
- .10 Accurately cut, mitre, fit and frame work together to produce tight hairline joints, rigidly secured together in a permanent manner using glue, blind screw fixing or nails. Use concealed glue blocks for additional strength where possible.
- .11 Finished woodwork shall be in one piece wherever possible and all trim shall be in long lengths. Where jointing is necessary in the length, the joints between pieces shall be scarfed, glued and properly fastened. The material being jointed shall match reasonably well for grain and colour where natural finish is specified. Joints between lengths where paint finish is to be applied may be finger jointed in lieu of scarfing. Trim shall be accurately cut and mitred at all corners, glued and properly fastened.
- .12 Machine dressed work shall be properly machine using sharp cutters, the finished work shall be free from drag, feathers, slivers or roughness of any kind. Remove machine marks by sanding.

- .13 Finished woodwork shall be carefully hand sanded after installation to remove roughness and planer marks. Sanding shall be done with the grain of the wood and finished with fine grit paper to leave a smooth scratch-free surface suitable to receive the paint or natural finishes to be applied over as specified in Section 09 90 00.
- .14 Nail heads in the finished surfaces shall be set with straight shank nail sets. Screw and bolt heads in finished surfaces shall be let into the work and capped with edge grain wood caps dressed and finished flush.
- .15 Provide cutouts for fixtures, fittings, inserts, outlet boxes, services, other mechanical and electrical items and appliances. Round corners, and chamfer edges. Where items for cutouts butt to underside or back of finished surface, finish exposed edge to match face. Where item covers cutout, and at all concealed cut edges of core material, apply uniform coating of seal to cut edges.
- .16 The finished work shall be of a high quality, with all corners having exact angles to ensure no swerve or twisting. All bends, crimps or angle parts shall be produced by professional equipment and tools for this purpose and if long runs or repeats are required, such shall be produced in the shop, or have proper equipment on site.
- .17 Counters, Cabinets, Window Sills and Fitments:
 - .1 Provide and install counters, cabinets, and fitments as indicated on drawings.
 - .2 Shop fabricate and finish countertops and cabinet work in as large a size as practical. Verify field dimensions and conditions prior to fabrication.
 - .3 Make each unit rigid and self-supporting, suitable for individual removal. Assemble components with dovetail connections, mortise and tenon or blind dado joints, and adequately glued and secured with screws.
 - .4 Construct cabinets of solid lumber framing, with 19mm (3/4") MDF gables. Provide 19mm (3/4") MDF bottoms. Provide minimum 6mm (1/4") thick MDF full width backs having joints concealed behind framing. Backs which support shelves, equipment, or other loads, shall be 19mm (3/4") thick MDF. Route backs into end gables.
 - .5 Fabricate cabinet base in wood, separately in height indicated or, if not indicated, to match flooring base.
 - .6 Fabricate cabinet doors of flush panels from 19mm (3/4") thick MDF framed with hardwood edging.
 - .7 Make drawer fronts of 19mm (3/4") finished MDF, and wide enough to cover slide space. Provide 13mm (1/2") drawer backs, 16mm (5/8") sides, 6mm (1/4") dividers, and 6mm (1/4") bottoms, all of finished MDF. Fasten sides to fronts with dovetail joints, and grooved and glued joints for backs. Groove and glue bottoms into fronts and sides.
 - .8 Drawers shall be supported and guided with side extension drawer slides.
 - .9 Where a locking drawer is located below another drawer, provide 6mm (1/4") thick MDF diaphragm in framing immediately above locking drawer.
 - .10 Fabricate shelving of 19mm (3/4") finished MDF. Route cabinet gables to receive fixed shelving where indicated and to receive recessed metal shelf standards flush with adjacent surfaces for adjustable shelving.
 - .11 Fabricate countertops to details shown of 20mm solid surfacing mounted to 19mm exterior grade waterproof Douglas Fir plywood.
 - .1 Fit corners and edges of countertops with solid stock. Extend side and backsplashes to heights indicated. Provide side returns to match backsplashes at all abutting fixed vertical surfaces.
- .18 Edging Treatment:

- .1 Provide Self Edge Laminate: HPDL, colour matching cabinet work, as indicated on the Drawings.
- .19 Plastic Laminate Covered Components:
 - .1 Meet requirements of CAN/CSA-A172, Appendix A.
 - .2 Bond plastic laminate to core with adhesive using pressure. Provide balanced construction with plastic laminate face sheet on exposed sides of core and backer/liner sheet. Finish drawers with liner sheet on both sides of core for balanced construction.
 - .3 Unless otherwise detailed, provide 19mm (3/4") thick core.
 - .4 Apply plastic laminate to core material in accordance with adhesive manufacturer's instructions. Provide same core and laminate profiles to provide continuous support and bond over entire surface.
 - .5 Use continuous lengths up to 2439mm (8'). Keep joints 610mm (2') from cutouts and in locations indicated on reviewed shop drawings.
 - .6 Locate joints, where required at 2439mm to 3048mm (8' to 10') O.C. At L-shaped corners mitre plastic laminate, to the outside corner. Accurately fit members together to provide tight and flush butt joints, in true planes. Provide 6mm (1/4") blind spline and approved type draw bolts; one draw bolt for widths up to 150mm (6") at maximum 457mm (18") centres for widths exceeding 150mm (6"). Colour-match adjoining units.
 - .7 Form shaped profiles and bends using postforming grade laminate to laminate manufacturer's instructions.
 - .8 Where curved or bent surfaces are required for counters, backsplashes and other areas, use postforming laminate.
 - .9 Self-edge straight-line-edging with general purpose laminate and radius corners with postforming laminate, of same colour and finish as facing sheet, to cover exposed edges of core material. Apply with same adhesive as facing sheet. Chamfer edges uniformly at approximately 20 deg using machine router. Do not mitre laminate edges.
 - .10 Fabricate horizontal wearing surfaces including counters, shelves, both sides of removable shelves, cabinet doors and drawer fronts, of general purpose laminate except where postforming is required.
 - .11 Use general purpose laminate for exposed vertical surfaces except where otherwise specified or indicated.
 - .12 Apply plastic laminate backing sheet to reverse side of core of plastic laminate finished work including under counter tops and concealed portions of plastic laminate faced work. Provide backing sheet of specified minimum thickness, increased as required to compensate stresses caused by facing sheet.
 - .13 Apply laminated plastic liner sheet to interior of cabinetry unless indicated otherwise.
 - .14 Assemble work, true and square. Arrange adjacent parts of continuous laminate work to match in colour and pattern.

2.3 MOISTURE CONTENT

- .1 Moisture content of interior woodwork shall be between 8% and 12%.

2.4 FINISHES

- .1 Finishes shall match approved finished samples of wood treatment submitted by this section for each species of wood required. Wood items provided under this section shall be finished as part of the work of this section.

- .2 Apply stain to items where scheduled, indicated or as directed Consultant, providing uniform required stain colour(s).

3 Execution

3.1 EXAMINATION

- .1 Inspect available spaces and check surfaces over which the work of this section is dependent for any irregularities detrimental to the application and performance of the work. Notify Consultant in writing of all conditions which are at variance with those on the Contract Documents and/or detrimental to the proper and timely installation of the work of this section. The decision regarding correct measures shall be obtained from the Consultant prior to proceeding with the affected work.
- .2 Check humidity in building with moisture reading instruments if doubt exists that building is sufficiently dry and ready to receive millwork. Do not proceed until unsatisfactory conditions are corrected.
- .3 Commencement of work indicates acceptance of surfaces and conditions.

3.2 INSTALLATION - GENERAL

- .1 Provide and fit in place all furring, strapping, battens, grounds and blocking required to provide adequate properly placed fixing for all finish carpentry work and as required for the work of other sections.
- .2 Refer to drawings and coordinate with drywall, the painting and floor covering sections to establish sequence of installation or execution of each others' work. Pay particular attention to areas where materials are supplied by others and installed under this Contract.
- .3 All nails where their use is permitted, shall be long enough so that at least half their length penetrates into the second member. Splitting of wood members shall be minimized by staggering the nails in the direction of the grain and by keeping nails well in from edges.
- .4 Unless otherwise permitted by Consultant, fasten finish carpentry components in concealed manner.
- .5 Plastic laminate work shall be free of cracks and chipped or broken edges. Replace damaged components.
- .6 Fitments shall be installed level, plumb and true and complete in all respects.
- .7 Fit small scribe moulds of same material as fitment to hide voids at junction of fitment to fitment and fitment to walls, partitions, ceilings, furrings.

3.3 PRIMING

- .1 Immediately in instances where primed work is cut (as for fitting), a coat of primer shall be applied to the resulting raw surfaces.

3.4 INSTALLATION - FINISHING HARDWARE

- .1 Take delivery of all finishing hardware and install. Check each item as received.
- .2 Set, fit and adjust hardware according to manufacturer's directions at heights directed by Consultant. Hardware shall operate freely. Protect installed hardware from damage and paint spotting.
- .3 Install all hardware for hollow metal doors including hinges.
- .4 Pre-drill kickplates and doors before attachment of plates. Apply with water-resistant adhesive and countersunk stainless steel screws.

END OF SECTION

1 General

1.1 SUMMARY

- .1 Read other Sections of the Specification for extent of sealant specified in those Sections. Do all other sealing indicated, specified or required.
- .2 Provide all items, articles, materials, operations or methods listed, mentioned or scheduled on drawings and/or herein, including all labour, materials, equipment and incidentals necessary and required for the completion of the sealant.

1.2 REFERENCE STANDARDS

- .1 American Society for Testing and Materials (ASTM):
 - .1 ASTM C509-06(2011), Standard Specifications for Elastomeric Cellular Performed Gasket and Sealing Material
 - .2 ASTM C920-11, Standard Specification for Elastomeric Joint Sealants
 - .3 ASTM C-1382-11, Standard Test Method for Determining Tensile Adhesion Properties of Sealants when Used in Exterior Insulation and Finish Systems (EIFS) Joints
 - .4 ASTM D2240-05(2010), Standard Test Method for Rubber Property - Durometer Hardness
- .2 Canadian General Standards Board (CGSB):
 - .1 CAN/CGSB-19.13-M87, Sealing Compound, One-Component, Elastomeric, Chemical Curing

1.3 SUBMITTALS

- .1 Provide submittals in accordance with Division 01.
- .2 Action Submittals: Provide the following submittals before starting any work of this Section:
 - .1 Manufacturer's Data: Submit manufacturer's literature describing each material to be used in the work of this Section. Literature shall contain a statement that the material complies with the specified standard.
 - .2 Samples: Submit for approval and colour selection sample of each type of compound, recommended primers and joint filler or fillers proposed to be used.
 - .3 Mock-Up:
 - .1 If requested by the Consultant, construct mock-ups where directed to show location, size, shape, colour and depth of joints complete with back-up material, primer and sealant. Mock-up may be part of finished work.
 - .2 Allow 24-hours for inspection of work before proceeding with work.
 - .4 Safety Data Sheets: Submit WHMIS safety data sheets for inclusion with project record documents. Keep one copy of WHMIS safety data sheets on Site for reference by workers.

1.4 QUALITY ASSURANCE

- .1 Adhere to Manufacturer's recommendations for mixing or preparation of materials listed in this Section.
- .2 Pot life or installation times shall not be exceeded.
- .3 Integral materials which compose a joint detail shall be compatible.

- .4 Component parts, where possible, shall have the same manufacturer.
- .5 A representative of sealant material manufacturer shall visit the site during application to ensure that all Work is carried out according to the manufacturer's printed instructions.

1.5 SITE CONDITIONS

- .1 Apply sealants only to completely dry surfaces, and at air, substrate and material temperatures above minimum established by manufacturer's written specifications.

1.6 DELIVERY, STORAGE HANDLING AND PROTECTION

- .1 Deliver all materials to the jobsite in their original, unopened containers, with all labels intact.
- .2 Receive and store materials as recommended by materials manufacturer.
- .3 Maintain containers and labels in undamaged condition.

1.7 WARRANTY

- .1 Provide a written warranty endorsed and issued in the name of the Owner stating that all sealant work of this Section is warranted against leakage, cracking, crumbling, melting, running, deterioration, shrinkage, loss of cohesion, loss of adhesion, staining of adjoining or adjacent work or surfaces, or failure to provide intended seal for a period of five (5) years from the Date of Substantial Performance of the Work, and that any defects will be made good including, related materials and installation at no additional cost to the Owner.

2 Products

2.1 MATERIALS

- .1 Joint Cleaner:
 - .1 Non-corrosive solvents as recommended by sealant manufacturer for applicable substrate material(s).
- .2 Primer:
 - .1 Non-staining type as recommended by sealant manufacturer, for use on substrate conditions outlined, and compatible with specified sealant being applied.
- .3 Joint Back-Up – Backer Rod:
 - .1 Round, closed cell, reticulated foam, 50% compression, compatible with sealant and primer, non-adhering to sealant.
- .4 Bond Breaker:
 - .1 Pressure sensitive plastic tape, not bondable to sealant as recommended by sealant manufacturer.
- .5 Sealant Type "A" – Joints around Interior Door Frames, Windows and Under Exterior Thresholds:
 - .1 One-part, low or medium modulus, neutral curing 100% silicone joint sealant, conforming to ASTM C920-11, Type S, Grade NS, Class 35.
 - .1 DC CWS by Dow Corning.
 - .2 SWS by GE
 - .3 SikaSil WS-305CN by Sika
 - .4 Or approved equivalent.

OR

- .2 One component, low modulus, moisture curing, polyurethane joint sealant, conforming to ASTM C920-11, Type S, Grade NS, Class 25.
 - .1 Dymonic FC by Tremco Ltd., division of RPM Company.
 - .2 Sikaflex 1A by Sika Canada Inc.
 - .3 Sonolastic NP1 by BASF.
 - .4 Pourthane NS by W.R MEADOWS
 - .5 Or approved equivalent.
- .6 Sealant Type "B" – Exterior Wall Joints; Control Joints; Expansion Joints:
 - .1 One-part, ultra low modulus, non-staining neutral curing 100% silicone joint sealant, conforming to ASTM C920-11, Type S, Grade NS, Class 50.
 - .1 DC 790 by Dow Corning.
 - .2 Spectrem 1 by Tremco
 - .3 SCS2700 SilPruf LM by GE
 - .4 SikaSil WS-290 by Sika
 - .5 Or approved equivalent.
- .7 Sealant Type "C" – Floor Control Joints:
 - .1 Multi-component, chemical curing, self-levelling, polyurethane joint sealant, conforming to ASTM C920-11, Type M, Grade P, Class 25.
 - .1 THC-900 by Tremco (Canada) Ltd., division of RPM Company.
 - .2 Sonolastic SL2 by Sonneborn Building Products, division of BASF Building Systems.
 - .3 Sikaflex 2c SL by Sika Canada Inc.
 - .4 Or approved equivalent.
- .8 Sealant Type "E" – Mould and Mildew Resistant:
 - .1 Mould and mildew resistant, Shore A Hardness 15-25, conforming to ASTM C920-11, Type S, Grade NS, Class 25, use NT, G, and A:
 - .1 SCS1700 by GE
 - .2 DC 786 by Dow Corning
 - .3 Tremsil 200 by Tremco
 - .4 Omni Plus by Sonneborn
 - .5 SikaSil –GP by Sika
 - .6 Or approved equivalent.
- .9 Sealant Type "F" – Glazing Joints:
 - .1 Silicone Sealant: Butt glazing, one part, moisture curing, shore A hardness 15-25, conforming to CAN/CGSB-19.13-M, Classification C-1-40-B-N and C-1-25-B-N and ASTM C920-11, Type S, Grade NS, Class 25, use NT, G, A, O; Colour: clear (translucent):
 - .1 DC 795 by Dow Corning
 - .2 SCS2000 by GE.
 - .3 Multiseal by Chemtron.
 - .4 Spectrum 2 by Tremco

- .5 SikaSil WS-295 by Sika
 - .6 Or approved equivalent.
 - .10 Sealant Type "H" – Saw Cut Sealant:
 - .1 Multi-component, self-levelling, conforming to ASTM D2240-05(2010):
 - .1 Tremco Control Joint Sealant
 - .2 BASF Masterfill 300
 - .3 Sika Loadflex
 - .4 Rezi-Weld Flex by W.R MEADOWS
 - .5 Or approved equivalent.
 - .11 Sealant Type "I" – HVAC Sealant:
 - .1 One-part, RTV, acetoxycure silicone sealant for heating, ventilation, air conditioning and refrigeration applications:
 - .1 Dow Corning HVAC Silicone Sealant
 - .2 Or approved equivalent.
 - .12 Sealant Type "J" – Electrical Sealant:
 - .1 One-part, white, non-flowing moisture cure adhesive for electrical applications:
 - .1 Dow Corning 738 Electrical Sealant
 - .2 Or approved equivalent.
 - .13 Sealant Type "K" - Interior Acoustical Sealant:
 - .1 Non-skinning, non-hardening, single component synthetic rubber sealant, conforming to CAN/CGSB-19.21-M:
 - .1 Tremco Acoustic Sealant
 - .2 Chemtron Metaseal
 - .3 Or approved equivalent.
 - .14 Preformed Compression Seal:
 - .1 Compartmental open cell neoprene extrusion type conforming to ASTM C509-06(2011), complete with liquid lubricant adhesive recommended by manufacturer.
- 3 Execution
- 3.1 **INSPECTION**
 - .1 Verify at site that joints and surfaces conditions provided will not adversely affect execution, performance or quality of completed work.
 - .2 Ensure masonry and concrete have cured 28 days minimum.
 - .3 Ascertain that sealers and coatings applied to substrates are compatible with sealant used and that full bond of the sealant and substrate is attained. Request samples of the sealed or coated substrate from their fabricators for testing of compatibility and adhesion, if necessary.
 - .4 Verify that specified recommended environmental conditions are present before commencing work.
 - .5 Defective work resulting from application to unsatisfactory joint conditions will be considered the responsibility of those performing the work of this section.

- .6 Do not start work of this Section until conditions are satisfactory.

3.2 PREPARATION

- .1 Clean joint surfaces using joint cleaner as necessary, to remove dust, paint, loose mortar, and other foreign matter and dry joint surfaces.
- .2 Remove dust, silt, scale and coatings from ferrous metals by wire brush, grinding or sandblasting.
- .3 Remove oil, grease and other coatings from non-ferrous metals with approved cleaning solvent.
- .4 Ensure surfaces are free of frost, rust, lacquers, laitance, release agents, moisture or other matter which might adversely affect adhesion of sealant.
- .5 Examine joint sizes and correct as required to allow for anticipated movement and to achieve proper width/depth ratio per manufacturer's written recommendations for specified sealant.
- .6 Support joint filler on horizontal traffic surfaces against vertical movement which might result from traffic loads or foot traffic.
- .7 Prepare surfaces as recommended by sealant manufacturer.
- .8 Fully remove existing sealant scheduled to be removed and replaced with new sealant, in areas indicated on the Drawings.
 - .1 Follow manufacturers procedures for removal of existing sealant and test areas for adhesion of new sealant. Provide the Consultant with field report identifying results of adhesion testing.
- .9 Install joint backing material or apply bond breaker tape to achieve correct joint depth and prevent three-sided adhesion.
- .10 To protect adjacent surfaces, mask adjacent surfaces with tape prior to priming and/or sealing.
- .11 Prime sides of joints using two cloth method in accordance with manufacturer's directions immediately prior to sealing.
- .12 Before any sealing is commenced, a test of the material shall be made for indications of staining, poor adhesion or other undesirable effects.
- .13 Seal joints in surfaces to be painted before painting. Where surfaces to be sealed are prime painted in shop before sealing, check to make sure prime paint is compatible with primer and sealant. If incompatible inform Consultant, consult the manufacturer, and change primer and sealant to approved compatible types.
- .14 Check form release agent used on concrete for compatibility with primer and sealant. If incompatible inform Consultant and change primer and sealant to approved compatible types or clean concrete to Consultant's approval.

3.3 APPLICATION

- .1 Apply sealant in accordance with manufacturer's directions, using a gun with proper nozzle size, ensuring to fill voids and joints completely, to leave a weathertight, airtight installation. Superficial pointing with skin bead is not acceptable.
- .2 Neatly tool surface to a slight concave profile. Surface of sealant shall be smooth, free from ridges, wrinkles, sags, air pockets and embedded impurities.
- .3 Clean adjacent surfaces immediately and leave Work neat and clean. Remove excess sealant and droppings, using recommended cleaners as Work progresses. Remove masking tape after tooling of joints.

3.4 CLEANING AND PROTECTION

- .1 Remove all waste materials from site. Sealant shall be cleaned of all foreign material as recommended by the sealant manufacturer. Leave work in a condition satisfactory to the Consultant.

END OF SECTION

PART 1 - GENERAL

1.1 Work Included: As detailed or scheduled in the contract documents, supply of:

- .1 Steel frame products including frames, transom frames (glazed or paneled), sidelight and window assemblies, fire-rated and non-rated, interior and exterior.
- .2 Steel panels, fixed or removable, flush or rabbetted, similar in construction to steel doors, for use in steel frame product.
- .3 Steel doors, swing type, flush, with or without embossed face sheets, with or without glazed or louvered openings, fire-rated, with or without temperature rise ratings, and non-rated.

1.2 References

- .1 ANSI/NFPA 80-1999, Standard for Fire Doors and Fire Windows
- .2 ASTM A653/A653M-05a, Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy Coated (Galvannealed) by the Hot-Dip Process
- .3 ASTM C553-02, Specification for Mineral Fiber Blanket Insulation for Commercial and Industrial Applications
- .4 ASTM C578-05, Specification for Rigid, Cellular Polystyrene Thermal Insulation
- .5 ASTM C591-01, Specification for Un-Faced Pre-formed Rigid Cellular Polyisocyanurate Thermal Insulation
- .6 ASTM C592-04, Specification for Mineral Fiber Batt and Blanket Thermal Insulation for Light Frame Construction
- .7 ASTM C1289-05a, Specification for Faced Rigid Cellular Polyisocyanurate Thermal Insulation Board
- .8 CAN4-S104-M80, Standard Method for Fire Tests of Door Assemblies
- .9 CAN4-S106-M80, Standard Method for Fire Tests of Window and Glass Block Assemblies
- .10 CGSB 41-GP-19MA (1984), Rigid Vinyl Extrusions for Windows and Doors
- .11 CSA W59-2003, Welded Steel Construction (Metal Arc Welding)
- .12 CSDMA, Recommended Dimensional Standards for Commercial Steel Doors and Frames, 2000
- .13 CSDMA, Selection and Usage Guide for Steel Doors and Frames, 1990
- .14 CSDMA, Recommended Specifications for Commercial Steel Door and Frame Products – 08 11 00, 2006

1.3 Submittals

- .1 Submit shop drawings in accordance with Division 01.
- .2 Indicate each type of door, frame, steel, construction and core.
- .3 Indicate material thickness, mortises, reinforcements, anchorages, locations of exposed fasteners, openings (glazed, paneled or louvered) and arrangement of standard hardware.
- .4 Include schedule identifying each unit, with door marks and numbers relating to numbering on drawings and door schedule of the Architect.
- .5 Contractor responsible for coordination and installation of products provided under this Section shall;

- .1 Verify and provide to the contractor responsible for the supply of steel door and frame products, actual opening sizes and field conditions by field measurement before fabrication. Submittal drawings shall reflect measurements and conditions provided, and product manufactured accordingly. Coordinate field measurements with fabrication and construction schedules to avoid delays.
- .2 Verify that substrate conditions, whether existing or installed under other Sections, are as detailed in the Architect's drawings, and are acceptable for product installation in accordance with the manufacturer's instructions.
- .6 Manufacturer shall not proceed with fabrication without receipt of approved submittal drawings and approved hardware schedule.

1.4 DEFINITIONS

- .1 Base Metal Thickness: Thickness dimensions are minimums as defined in referenced ASTM standards for both uncoated steel sheet and the uncoated base metal of metallic coated steel sheets.
- .2 Opening Sizes: Standard metric door sizes indicated on the Drawings, are considered nominal dimensions, measured from frame rabbet width and height, with allowances for nominal clearances between head, jamb and door bottom in accordance with CSDMA Recommended Dimensional Standards for Commercial Steel Doors and Frames.

1.5 QUALITY ASSURANCE

- .1 Manufacturer: Obtain hollow metal doors and frames from single source of supply and from a single manufacturer, and as follows:
 - .1 Fabricate work of this Section to meet the requirements of the Canadian Steel Door and Frame Manufacturer's Association, Manufacturing Specification for Doors and Frames as a minimum, and as further modified in this section.
 - .2 Fabricator shall be a member in good standing of the Canadian Steel Door and Frame Manufacturer's Association.
- .2 Supplier: Obtain hollow metal doors and frames from single source of supply and from a single manufacturer.
- .3 Installer: Use installers who are experienced with the installation of hollow metal doors and frames of similar complexity and extent to that required for the Project.
- .4 Testing Agencies: Provide doors produced under label service program of a testing agency acceptable to Authorities Having Jurisdiction, and as follows:
 - .1 Steel Fire Rated Doors and Frames: Labelled and listed by an organization accredited by Standards Council of Canada for ratings specified or indicated.
 - .2 Provide fire labelled frame products for those openings requiring fire protection ratings, as scheduled:
 - .1 List by nationally recognized agency having factory inspection service and construct as detailed in Follow-up Service Procedures/Factory Inspection Manuals issued by listing agency to individual manufacturers.
 - .2 Fabricate all rated doors, frames and screens to labelling authority standard.

1.6 DELIVERY, STORAGE AND HANDLING

- .1 Coordinate deliveries to comply with construction schedule and arrange ahead for off-the-ground, under cover storage location. Do not load any area beyond the design limits.
- .2 Adequately protect units against rust and damage during manufacture, delivery and storage.
- .3 Store materials on planks in a dry area and cover to protect from damage. Make good immediately any damage done. Clean scratches and touch-up with rust-inhibitive primer.

1.7 SITE CONDITIONS

- .1 Site Measurements: Verify actual dimensions of openings by site measurements before fabrication and indicate measurements on shop drawings; coordinate fabrication schedule with construction progress to avoid delaying the Work.
- .2 Established Measurements: Establish dimensions and proceed with fabricating doors and frames without site measurements where site measurements cannot be made without delaying the Work; coordinate construction to ensure that actual site dimensions correspond to established dimensions.

1.8 Warranty

- .1 Materials and workmanship shall be warranted by the manufacturer for a period of one (1) year from date of substantial performance.

PART 2 - PRODUCTS

2.1 Materials

- .1 Acceptable Materials: Steel doors and frame product manufactured in accordance with this Specification by CSDMA members, are eligible for use on this project.
- .2 Steel: Commercial grade steel to ASTM A653, CS, Type B, Coating Designation ZF75 (A25) minimum. Minimum steel thicknesses shall be in accordance with Appendix 1 of the CSDMA, "Recommended Specifications for Commercial Steel Door and Frame Products".
- .3 Door Core Materials
 - .1 Honeycomb (Interior Doors). Structural small cell 25.4 mm (1") maximum kraft paper 'honeycomb'. Weight: 36.3 kg (80lb.) per ream minimum, density: 16.5 kg/m³ (1.03 pcf) minimum, sanded to required thickness.
 - .2 Polyisocyanurate (Exterior Doors). Rigid, modified polyisocyanurate, fire retardant treated, closed cell board. Density; 32 kg/m³ (2.0 pcf) minimum, thermal values; RSI 1.9 (R 11.0) minimum, in accordance with ASTM C591 (un-faced) or C 1289 (faced).
- .4 Primers
 - .1 Rust inhibitive touch-up only.
- .5 Miscellaneous
 - .1 Door Silencers. Single stud rubber/neoprene type.
 - .2 Exterior Top Caps. Rigid polyvinylchloride extrusion conforming to CGSB 41-GP-19MA.
 - .3 Frame Thermal Breaks. Rigid polyvinylchloride extrusion conforming to CGSB 41-GP-19MA.

2.2 Fabrication - Frame Products

- .1 Exterior frame product shall be 14 gauge. Exterior frames shall be welded type construction, thermally broken. Exterior transom frames, sidelight and window assemblies shall be welded type construction, thermally broken. Interior frame product shall be 14 gauge. Interior frames and window assemblies shall be welded type construction. Interior transom frames shall be welded type construction. Interior sidelight assemblies shall be welded type construction.
- .2 Frame product shall be mortised, blanked, reinforced, drilled and tapped at the factory for templated hardware only, in accordance with the approved hardware schedule and templates provided by the hardware supplier.
- .3 Mortised cutouts shall be protected with steel guard boxes (may be omitted on dry wall applications).

- .4 Frame product shall be reinforced only, where required, for surface mounted hardware, anchor hinges, thrust pivots, pivot reinforced hinges, or non-templated hardware. Drilling and tapping is by others, on site, at time of installation.
- .5 Provide anchorage appropriate to floor, wall and frame construction. Each wall anchor shall be located immediately above or below each hinge reinforcement on the hinge jamb and directly opposite on the strike jamb. For rebate opening heights up to and including 1520 mm (60") provide two (2) anchors, and an additional anchor for each additional 760 mm (30") of height or fraction thereof, except as indicated below. Frames in previously placed concrete, masonry or structural steel shall be provided with anchors located not more than 150 mm (6") from the top and bottom of each jamb, and intermediate anchors at 660 mm (26") on centre maximum. Fasteners for such anchors shall be provided by others.
- .6 Minimum reinforcing, anchor and other component gauges shall be in accordance with Table 1 of the CSDMA, "Recommended Specifications for Commercial Steel Door and Frame Products".
- .7 Each door opening shall be prepared for single stud rubber door silencers, three (3) for single door openings, two (2) for double door openings, except on gasketed frame product.
- .8 Provide factory-applied touch up primer at areas where zinc coating has been removed during fabrication.
- .9 Fire-rated frame products shall be provided for those openings requiring fire protection as determined and scheduled by the Architect. Frames, transom and sidelight assemblies shall be listed for conformance with CAN4-S104. Window assemblies shall be listed for conformance with CAN4-S106. All fire-rated frame products shall bear the label of, and be listed by a nationally recognized testing agency having a factory inspection service. Labeling shall be in accordance with NFPA 80, the listing authority's policies and label materials, and shall identify the manufacturer. Fire-rated frame products shall be constructed as listed for labeling in the Follow-Up Service Procedures/Factory Inspection Manuals issued by the listing agency to individual manufacturers
- .10 Provide grout guards fabricated from not less than 0.016 in. (0.4 mm) thick steel at all hardware mortises on frame product to be grouted.

2.3 Welded Type Construction

- .1 Frame product shall be accurately mitered or mechanically jointed.
- .2 As defined in Appendix 2 of the CSDMA, "Recommended Specifications for Commercial Steel Door and Frame Products", frame product perimeter corner joints shall be:
 - .1 Face welded; continuously welded on the profile faces, with exposed faces filled and ground to a smooth, uniform, seamless surface.
- .3 Joints at mullions, sills and center rails shall:
 - .1 Be coped accurately, butted and tightly fitted.
 - .2 At intersecting flush profile faces, be securely welded, filled and ground to a smooth, uniform, seamless surface.
 - .3 At intersecting recessed profile faces, be securely welded to concealed reinforcements, with exposed hairline face seams.
 - .4 At all other intersecting profile elements, have exposed hairline face seams.
- .4 Welding shall conform to CSA W59.
- .5 Where frame product is to be installed prior to the adjacent partition, a floor anchor shall be securely attached to the inside of each jamb profile. Each floor anchor shall be provided with two (2) holes for securing to the floor. For conditions that do not permit the use of a floor anchor, an additional wall anchor, located within 150 mm (6") of the base of the jamb, shall be substituted.

- .6 Weld in two (2) temporary jamb spreaders per door opening to maintain proper alignment during shipment and handling, which shall not be used for installation.
- .7 Glazing stops shall be formed steel channel, minimum 16 mm (0.625") height, accurately fitted, butted at corners and fastened to frame sections with counter-sunk oval head sheet metal screws.
- .8 When required due to site access, when advised by the contractor responsible for coordination or installation, as specified on the Architect's drawings or due to shipping limitations, frame product for large openings shall be fabricated in sections as designated on the approved submittal drawings, with splice joints for field assembly and welding by others.
- .9 Prior to shipment, mark each frame product with an identification number as shown on the approved submittal drawings.

2.4 Fabrication – Doors

- .1 General
 - .1 Exterior doors shall be laminated core construction.
 - .2 Interior doors shall be welded stiffener construction.
 - .3 Longitudinal edges shall be continuously welded, filled and sanded with no visible edge seams.
 - .4 Doors shall be mortised, blanked, reinforced, drilled and tapped at the factory for template hardware only, in accordance with the approved hardware schedule and templates provided by the hardware supplier.
 - .5 Holes 12.7 mm (0.5") diameter and larger shall be factory prepared, except mounting and through-bolt holes, which are by others, on site, at time of hardware installation. Holes less than 12.7 mm (0.5") diameter shall be factory prepared only when required for the function of the device (for knob, lever, cylinder, thumb or turn pieces) or when these holes over-lap function holes.
 - .6 Doors shall be reinforced only, where required, for surface mounted hardware, anchor hinges, thrust pivots, pivot reinforced hinges, or non-templated hardware. Drilling and tapping is by others, on site, at time of installation.
 - .7 Top and bottom of doors shall be provided with inverted, recessed, welded steel channels. Exterior doors, and where otherwise scheduled by the Architect, shall be provided with flush steel top caps.
 - .8 Minimum reinforcing and component gauges shall be in accordance with Table 1 of the CSDMA, "Recommended Specifications for Commercial Steel Door and Frame Products".
 - .9 Provide factory-applied touch-up primer at areas where zinc coating has been removed during fabrication.
 - .10 Fire-rated doors shall be provided for those openings requiring fire protection and temperature rise ratings, as determined and scheduled by the Architect. Such products shall be listed for conformance with CAN4-S104. All fire-rated doors shall bear the label of, and be listed by a nationally recognized testing agency having a factory inspection service. Labeling shall be in accordance with NFPA 80, the listing authority's policies and label materials, and shall identify the manufacturer. Fire-rated doors shall be constructed as listed for labeling in the Follow-Up Service Procedures/Factory Inspection Manuals issued by the listing agency to individual manufacturers.
 - .11 Prior to shipment, mark each door with an identification number as shown on the approved submittal drawings.
- .2 Laminated Core Construction
 - .1 Both face sheets for exterior doors shall be formed from a sheet of minimum 16 gauge (1.34 mm) steel with polyisocyanurate core, laminated under pressure to face sheets.

- .2 Both face sheets for interior doors shall be formed from a sheet of minimum 18 gauge (1.06 mm) steel with honeycomb core laminated under pressure to face sheets.

PART 3 - EXECUTION

.1 Site Storage and Protection of Materials

- .1 Doors and frame product shall be removed from their wrappings or coverings upon receipt on site, be stored in a vertical position, and be spaced with blocking to permit air circulation between them.
- .2 All materials shall be thoroughly inspected upon receipt and all discrepancies, deficiencies and/or damages shall be immediately reported, in writing, to the supplier.
- .3 All damages incurred during shipment shall be immediately reported, in writing, to the supplier.
- .4 Any scratches or disfigurement of doors or frame product caused by shipping or handling shall be promptly cleaned and touched-up with a zinc-rich primer.

.2 Installation

- .1 Prior to installation, remove temporary shipping spreaders.
- .2 Prior to installation, the area of floor on which the frame is to be installed, and within the path of the door swing, shall be checked and corrected for flatness.
- .3 Door and frame product shall be checked for correct size, swing, rating and opening number.
- .4 Caulk perimeter of frames between frame and adjacent material.
- .5 Set frames plumb, square, level and at correct elevation.
- .6 Fire-rated door and frame product shall be installed in accordance with the terms of their listings, NFPA-80, or the local Authority Having Jurisdiction (AHJ).
- .7 Secure anchorages and connections to adjacent construction.
- .8 Brace frames rigidly in position while building-in. Install wood spreaders at third points of frame rebate height to maintain frame width. Provide vertical support at centre of head for openings exceeding 1200 mm (48") in width.
- .9 During the setting of frame product, check and correct as necessary for opening width, opening height, square, alignment, twist and plumb, in accordance with the CSDMA, "Recommended Dimensional Standards for Commercial Steel Doors and Frames".
- .10 Grout guards and junction boxes are intended to protect hardware mortises and tapped holes from masonry grout of 4 in. (101 mm) maximum slump consistency that is hand troweled in place.
- .11 Frame products are not intended or designed to act as forms for grout or concrete. Grout hollow metal sections in "lifts" or take precautions otherwise to ensure that frames are not deformed or damaged by the hydraulic forces that occur during this process.
- .12 Keep hollow metal surfaces free of grout, tar, and/or other bonding materials or sealers. Promptly clean grout, tar, and/or other bonding materials or sealers off of frame product and doors.
- .13 Remove wood spreaders after frames have been built-in.
- .14 Make allowance for deflection to ensure structural loads are not transmitted to frame product.
- .15 Install doors, and hardware in accordance with hardware templates and manufacturer's instructions.
- .16 Adjust operable parts for correct clearances and function.
- .17 Install louvers, glazing and door silencers.

.18 Finish paint in accordance with Section 09 90 00.

END OF SECTION

1 General

1.1 SUMMARY

- .1 Supply and install door hardware listed in the Hardware Schedule, establishes the quality standards, finishes, manufacturers and functions, and meets all current barrier free design standards required by authorities having jurisdiction.

1.2 ADMINISTRATIVE REQUIREMENTS

- .1 Submission of Substitutions: Materials other than the named products for the Project may be acceptable to the Consultant, subject to Specification 01 25 00.
- .2 Pre-installation Conference: Arrange a preconstruction meeting in accordance with Division 01 to discuss the following:
 - .1 Keying Conference: Conduct keying conference between the Owner, the Contractor and manufacturer to review and finalize requirements, at the Project site and incorporate decisions into final keying schedule after reviewing door hardware keying system.
 - .2 Electrified Hardware Conference: Conduct pre-installation conference at Project site and review methods and procedures related to electrified door hardware.
- .3 Coordination: Obtain and distribute templates for doors, frames, and other work specified to be factory prepared for installing door hardware. Coordinate with shop drawings of other work to confirm that adequate provisions are made for locating and installing door hardware.

1.3 SUBMITTALS

- .1 Provide required information in accordance with Division 01.
- .2 Action Submittals: Provide the following submittals before starting any work of this Section:
 - .1 Product Data: Submit product data indicating installation details, material descriptions, dimensions of individual components and profiles, and finishes.
 - .2 Shop Drawings: Submit shop drawings indicating details of electrified door hardware including, but not limited to, the following:
 - .1 Wiring Diagrams: Detail wiring for power, signal, and control systems and differentiate between manufacturer installed and site installed wiring.
 - .3 Samples:
 - .1 Submit samples of complete line of hardware and finishes, if and when requested, to accompany any proposal for substitution. Fully label each sample as to manufacture, type, size and location for use proposed.
 - .4 Hardware Schedule: Submit door hardware schedule prepared by Architectural Hardware Consultant (AHC), detailing fabrication and assembly of door hardware, including make, model, material, function, size, finish, and other pertinent information.
- .3 Do not order hardware from manufacturers until samples have been approved. Hardware and finishes supplied shall be identical with approved samples.

1.4 PROJECT CLOSEOUT SUBMISSION

- .1 Operation and Maintenance Data: Provide operations and maintenance information in accordance with Division 01.
- .2 Spare Parts and Tools: Submit unique parts and tools for maintaining hardware system in accordance with Division 01.

1.5 DELIVERY, HANDLING AND PROTECTION

- .1 Pack hardware in suitable wrappings and containers to protect from injury during shipping and storage. Enclose accessories, fastening devices and other loose items with each item. Mark packages for easy identification as indicated on approved delivery schedule. Hand over hardware to designated installer.

1.6 WARRANTY

- .1 Warrant door closers to remain free from defects in materials and workmanship in accordance with the General Conditions, but for a period of five (5) years, and locks and locksets for two (2) years. Agree to promptly make good defects which become apparent within warranty periods without cost to Owner.

2 Products

2.1 GENERAL

- .1 Supply to the job site all items of finishing hardware as indicated in the Hardware Scheduled appended to this Section. All items to be supplied with complete and adequate fixing and anchoring devices necessary for satisfactory installation into or upon the various surfaces to which it is to be affixed.
- .2 Cooperate with all trades using hardware supplied under this Section.
- .3 Render a complete service to the metal fabrication contractor wherein full cooperation is assured them of the supply of hardware information, and templates as requested.
- .4 Supply for installation by others where specified, as scheduled or indicated on the drawings.
- .5 Provide six, (6) copies of the hardware specification for field construction and office use.
- .6 All hardware shall be of the best quality and design, construction and finish, free from all defects.
- .7 All blank strikes shall be ASA with no lip.
- .8 Lock strikes shall be ASA with lip.
- .9 All deadlock strikes shall be ASA with no lip.
- .10 Where door pulls are scheduled on one side of door and a push plate on the other side, the contractor shall be responsible for fixing, so that the pull shall be secured through the door from the reverse side and the push plate installed to cover the thru bolts which will be countersunk flush with door.
- .11 All door closers shall be non sized and where possible non handed. They shall be sized and adjusted by the installer to suit the site conditions.
- .12 Panic sets are to be of style specified and completely plated.
- .13 Before installing any hardware, carefully check all architectural drawings of Work requiring hardware, verify door swings, door and frame material and operating conditions. Ensure hardware will fit Work.
- .14 Provide ULC approved hardware to ULC labelled doors.
- .15 Check shop drawings and frame and door lists affecting hardware type and installation. Certify to correctness or advise Consultant in writing of required revisions.
- .16 Templates:
 - .1 Check hardware schedule, drawings and specifications. Furnish promptly to applicable trades any patterns, templates, template information and manufacturer's literature required for proper preparation for and application of hardware, in ample time to facilitate progress of Work.

- .2 Exposed screws for installing hardware shall have Phillips or Robertson heads.
- .3 All door closers shall have back-checking features and shall be of proper size to operate door efficiently.
- .4 Use no wall stops on drywall.
- .5 Rim Panic Device strikes shall be mortise type application. Equip panic devices with hex bolts.
- .17 Hinges
 - .1 Provide mortise type hinges, steel based for interior doors and stainless steel or brass for exterior doors or interior doors exposed to moisture.
 - .2 Provide hinges with stainless steel pins; non removable for exterior and public interior exposure, non rising for non security exposure.
 - .3 Provide full length continuous geared hinges, continuous pin and barrel hinges or full mortise type heavy weight butt hinges on all high frequency use or extreme weighted doors.
 - .4 Where doors are required to swing 180 degrees, provide ball bearing type swing clear hinges sufficient to clear trim.
- .18 Locks, Cylinders, Latches and Bolts
 - .1 Locks are to be ANSI Grade 1 mortise type unless specified otherwise.
 - .2 Equip all locks with anti-friction latches with auxiliary latch guard. All fire rated doors must have a minimum latch throw as indicated on the fire door label.
 - .3 Where lever trim is required, provide levers containing concealed mounting and constructed of solid cast or forged material.
 - .4 Locks must be lever type.
 - .5 Provide locks in accordance with current barrier free accessibility requirements as set out by the OBC or by the jurisdiction having authority, when located in the barrier free path of travel.
 - .6 Strikes shall be ANSI standard size with curved lip strikes for latch bolts and no lip strikes for deadlocks. Provide complete with wrought iron boxes finished to match strike.
 - .7 Provide Cylinders and thumb turns with the correct cam or tailpiece to operate hardware correctly. Coordinate with Section 08 44 13 Glazed Aluminum Curtain Wall when applicable.
 - .8 Automatic flush bolts are to be equipped on all fire rated pairs of doors with regular use. Provide a coordinator in conjunction with automatic flush bolts.
 - .9 Provide a filler bar when using coordinators for a clean architectural appearance.
- .19 Keying
 - .1 Provide a keying system for approval by the Owner.
- .20 Exit Device
 - .1 All exit devices installed on labelled fire doors shall carry a ULC or Warnock Hersey Label.
 - .2 Coordinate exit devices with astragals, coordinators, carry open bars and thresholds for correct and safe operation.
 - .3 All exit devices shall have exposed metal to match architectural finishes used on other hardware.
 - .4 Exit devices are push pad style only.

- .5 Provide non-fire rated exit devices with hex key dogging feature (Cylinder dogging may be required in lieu of hex key dogging).
- .6 Provide Power supplies of same manufacturer when using electrified exit devices.
- .7 Match style and finish of trims on exit devices for locksets used.
- .21 Closers
 - .1 All closers shall be hydraulically controlled and full rack and pinion in operation.
 - .2 All closers shall be fully adjustable including the following features: back check, speed control, and latch speed control.
 - .3 Provide mounting plates where required on special frame applications.
 - .4 Install all necessary attaching brackets, mounting channels, and cover plates where necessary for correct application of door closers.
 - .5 Supply to the Owner any special keys and wrenches as usually packed with door closers.
 - .6 Closers complete with a cover unless specified otherwise by the Consultant. Provide cover of matching architectural finish to the other hardware used in the project.
 - .7 Coordinate closers with overhead stops & holders.
- .22 Push Plates and Door Pulls
 - .1 Provide and install stainless steel plates in type #304 stainless steel and install secure with screw fastening.
 - .2 Length of kick plates shall be 1-1/2" less than door width for single doors and 1" less than door width for doors in pairs.
 - .3 All stainless steel plates are 0.050" thick, free of rough or sharp edges. Corners and edges to have slight radiuses. Install kick plates and armor plates on both sides of the door with 3M tape or counter sunk screws as specified.
 - .4 Where door pulls are scheduled on one side of door and push plates on other side, issue installations instructions to ensure that the pull is secured through door from reverse side and countersunk flush with door installation of push plate. Locate push plate to cover fasteners for door pulls.
- .23 Door Stops and Holders
 - .1 Wall stops are only to be used on wall conditions such as block or masonry. If necessary to mount on drywall, provide proper backing to ensure no damage to the wall.
 - .2 Supply floor stops of sufficient height to suit floor conditions and the undercut of the door.
 - .3 Provide gray rubber exposed resilient parts.
 - .4 Surface mount overhead door stops may be used unless they conflict with the door closer. All overhead stops are to be set to 90 degree opening unless stated otherwise.
 - .5 All door stops shall be heavy duty and of high quality.
- .24 Door Seals and Thresholds
 - .1 Perimeter seals must be provided that fully seal all gaps between the floor, door and frame. Perimeter seal must protect against weather, smoke and sound.

- .2 Frame gasketing must be constructed of neoprene. The aluminum housing must have a rib to prevent against distortion during installation.
- .3 Provide aluminum frames with felt inserts by door supplier.
- .4 Install Thresholds in a manner that ensures the door bottom comes in full contact.
- .5 All thresholds shall be aluminum and installed with lead shields and stainless steel screws.
- .6 Cut ends of thresholds to follow exactly the door frame profile.
- .7 Provide barrier-free thresholds to all units identified as barrier free (BF) on balcony doors.

3 Execution

3.1 INSTALLATION

- .1 Subcontractor installing the hardware shall carefully follow manufacturers' instructions for installation of all finish hardware.
- .2 For mounting heights of various hardware items refer to the following, unless otherwise indicated on the Drawings:
 - .1 Locksets: 1024mm (40-5/16") from centre of lever to finished floor.
 - .2 Deadlocks: 1220mm (48") from centre of cylinder to finished floor.
 - .3 Mortise Night Latches: 1024mm (40-5/16") from centre of cylinder to finished floor.
 - .4 Panic Bolts: 1024mm (40-5/16") from centre of crossbar to finished floor.
 - .5 Push Plates: 1143mm 45" from centre of plate to finished floor.
 - .6 Guard Bars: 1024mm (40-5/16") from centre of bar to finished floor.
 - .7 Door Pulls: 1067mm (42") from centre of pull to finished floor.
 - .8 Blank Strike: 1024mm (40-5/16") from centre of strike to finished floor.
 - .9 Blank Fronts: 1024mm (40-5/16") from centre of strike to finished floor.

3.2 PERFORMANCE

- .1 Adjustment and Cleaning:
 - .1 Provide services of competent mechanic without additional cost to Owner. Mechanic shall inspect installation of all hardware furnished under this Section and supervise all adjustments (by trades responsible for fixing) necessary to leave hardware in perfect working order.

3.3 HARDWARE SCHEDULE

- .1 Refer to Schedule of Finishing Hardware below.

END OF SECTION

PART 1 - GENERAL

1.1 Summary

- .1 Design, labour, Products, equipment, tools, and services necessary for glass and glazing Work in accordance with the Contract Documents.
- .2 Decorative surface glazing films.

1.2 References

- .1 Canadian Door and Window Manufacturers, Certification Program.
- .2 Canadian General Standards Board (CGSB)
 - .1 CAN/CGSB-12.1-M90, Tempered or Laminated Safety Glass.
 - .2 CAN/CGSB-12.2-M91, Flat, Clear Sheet Glass.
 - .3 CAN/CGSB-12.3-M91, Flat, Clear Float Glass.
 - .4 CAN/CGSB-12.4-M91, Heat Absorbing Glass.
 - .5 CAN/CGSB-12.5-M86, Mirrors, Silvered.
 - .6 CAN/CGSB-12.6-M91, Transparent (One-Way) Mirrors.
 - .7 CAN/CGSB-12.8-97, Insulating Glass Units.
 - .8 CAN/CGSB-12.9-M91, Spandrel Glass.
 - .9 CAN/CGSB-12.10-M76, Glass, Light and Heat Reflecting.
 - .10 CAN/CGSB-12.11-M90, Wired Safety Glass.
 - .11 CAN/CGSB-12.12-M90, Plastic Safety Glazing.
 - .12 CAN/CGSB-12.13-M91, Patterned Glass.
 - .13 CAN/CGSB-12.20-M, Structural Design of Glass for Buildings
- .3 Flat Glass Manufacturers Association (FGMA), Glazing Manual

1.3 Submittals

- .1 Submit shop drawings in accordance with Section 01 33 00 - Submittal Procedures. Where indicated, Shop drawings shall be sealed by a qualified professional engineer licensed to design structures and registered in Place of the Work.
- .2 Samples:
 - .1 Submit following samples in accordance with Section 01 33 00.
 - .2 Submit one 300 x 300mm sample of ultra clear low iron glass

1.4 Closeout Submittals

- .1 Provide maintenance data including cleaning instructions for incorporation into manual specified in Section 01 78 00 - Closeout Submittals.

1.5 Quality Assurance

- .1 Installer shall comply with GANA (Glass Association of North America) - Glazing Manual other relevant standards, guidelines, and the Ontario Building Code
- .2 Tempered glass:
 - .1 Tempered and heat strengthened glass shall be horizontally treated; vertical treatment will not be acceptable. Fabrication and treatment shall be such that distortion lines (where they occur) run horizontally (parallel to sill and head) after installation.

- .2 Tempered glass shall bear the manufacturer's identification as to thickness. Such identification for glazing shall be permanently etched so as to be visible after glass has been installed. Glass other than fully tempered (FT) glass shall not have etched labels.
- .3 Identification: Label each pane of glass and glass unit with type, thickness, quality, and colour of glass and with manufacturer's trade name
- .4 Glazing: Glazing compounds and methods shall conform with applicable requirements of GANA Glazing Manual.
- .5 Where glass and glazing is located less than 1m (40") above finished floor, it shall be designed as a guardrail as per OBC 4.1.5.14. and shall be tempered.

PART 2 – PRODUCTS

2.1 General:

- .1 Glazing to be used for interior glass doors and partitions shall be heat treated to strengthen glass in bending to not less than 4.5 times annealed strength. Glass shall have minimal waviness or distortion and with all areas free of tong marks

2.2 Materials

- .1 Ultra Clear Tempered Glass (**TGL**): Ultra clear, low iron glass, tempered for indoor use shall conform to ASTM C1048, Kind FT, Condition A, Type I, Class 1, Quality q3
 - .1 Type 1: 12mm thick TGL all interior glass screens up to 3200mm in height.
- .2 Annealed Clear Float Glass (**FGL**): ASTM C 1036, Type 1, Class 1, Quality q3, clear.

2.3 Surface Glazing Films

- .1 Acceptable product: Milky Milky SH2MAMM by 3M Window Film or equivalent per Specification 01 25 00.

2.4 Accessories

- .1 Aluminum framing support for interior glass partitions – See Specification 08 30 00.

PART 3.0 - EXECUTION

3.1 Installation of Glazing

- .1 Obtain field dimensions for each opening that is to receive glass and cut each glass to provide the optimal fit on, and clearance from, the sash or frame.
- .2 Clean the surfaces that are to receive the glass and glazing materials. Surfaces shall be free of dirt, corrosion, residue, oils, and any other substance that may impair adhesion of glazing materials.
- .3 Clean contact surfaces with solvent and apply primers to surfaces to receive tapes and sealants in accordance with the glass manufacturer's written instructions.
- .4 Ensure all finishes are fully dry before installing the glazing.
- .5 Seal porous glazing channels or recesses with substrate compatible primer or sealer. Prime surfaces scheduled to receive glazing compound.
- .6 Do not perform glazing when ambient temperature is below 4 degrees Celsius
- .7 Ensure humidity level is low before installation.
- .8 Install glazing according to manufacturers' specifications.

- .9 Ensure space between double-glazing is perfectly clean before installing the second panel.

3.2 General Glazing requirements:

- .1 Comply with the general provisions of GANA Glazing Manual and the Ontario Building Code for minimum glazing requirements, and ensure that minimum frame lap (minimum grip of glass) and edge clearances are provided as required for the size of openings. Provide for expansion and contraction of glass as required.
- .2 Conform with the manufacturers' latest published installation instructions and recommendations for glazing of tempered glass, laminated glass, and insulating glass. Follow manufacturer's latest published instructions for protection of edges and sizing of glass.
- .3 Provide setting blocks at quarter points along the bottom of the glass pane. Blocks shall support the glass 1.5875 mm above the metal. Provide spacers to hold glass in centre between stops
- .4 Provide spacers for glass panes where length plus width is greater than 1270 mm
 - .1 Locate spacers directly opposite each other on both inside and outside faces of the glass. Install correct size of spacers and spacing to preserve required face clearances, unless gaskets and glazing tapes are used that have demonstrated ability to maintain required face clearances and to comply with system performance requirements
 - .2 Provide 3.2 mm minimum bite of spacers on glass and use thickness equal to sealant width.
- .5 Adjust glazing channel dimensions as required by conditions during installation to provide necessary bite on glass, minimum edge and face clearances, and adequate sealant thicknesses, with reasonable tolerances.
- .6 Protect glass edges from damage during handling and installation. Remove damaged glass from project site and dispose in accordance with municipal waste management and recycling requirements. Glass is considered to be damaged if edge damage, or other imperfections that, when installed, could weaken the glass and impair performance and/or appearance.
- .8 Glazing of hollow metal doors and frames: glass shall be set around all edges with glazing gaskets hereinbefore specified. Provide setting blocks and spacers blocks as required. Set gasket legs on both sides of glass. Gasket shall be continuous, notched only at top rail in the centre. Compress gasket at least 15 percent to form a tight seal.
- .9 For indoor glass panels: - set glass panes with proper orientation so that coating faces the correct specified direction

3.3 Installation of Glazing Film

- .1 Clean surfaces thoroughly prior to installation.
- .2 Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.
- .3 Install in accordance with manufacturer's instructions.
- .4 Cut film edges neatly and square at a uniform distance of 1/8 inch (3 mm) to 1/16 inch (1.5 mm) of window sealant. Use new blade tips after 3 to 4 cuts.
- .5 Spray the slip solution, composed of one capful of baby shampoo or dishwashing liquid to 1 gallon of water, on window glass and adhesive to facilitate proper positioning of film.
- .6 Apply film to glass and lightly spray film with slip solution.
- .7 Squeegee from top to bottom of window. Spray slip solution to film and squeegee a second time.
- .8 Bump film edge with lint-free towel wrapped around edge of a 5-way tool.
- .9 Upon completion of film application, allow 30 days for moisture from film installation to dry thoroughly, and to allow film to dry flat with no moisture dimples when viewed under normal viewing conditions.

3.4 Finishing

- .1 Immediately remove sealant and compound droppings from finished surfaces. Remove labels after work is completed.

3.5 Cleaning and Replacement

- .1 Upon completion of glazing, remove paint spots, splatters, and other blemishes from glass
- .2 Assure that each light is identified as to type and grade of glass
- .3 Remove and replace glass panes that are cracked or broken and where distortion is evident and distracting, as determined by the Consultant.
- .4 Remove paper labels, wash, and polish glass just before acceptance by Consultant.
- .5 Protect glass against damage from subsequent construction activities and damage.

END OF SECTION

1 General

1.1 SUMMARY

- .1 Section Includes the following:
 - .1 Steel framing systems for interior partitions.
 - .2 Laterally supported walls and bulkheads.
 - .3 Suspension systems for interior ceilings and soffits.
 - .4 Grid suspension systems for gypsum board ceilings.

1.2 REFERENCE STANDARDS

- .1 Canadian Standards Association (CSA):
 - .1 CSA S136-07, North American Specification for the Design of Cold-Formed Steel Structural Members.
- .2 Canadian General Standards Board (CGSB):
 - .1 CAN/CGSB-7.1-98, Lightweight Steel Wall Framing Components
- .3 American Society for Testing and Materials International (ASTM):
 - .1 ASTM A641/A641M-09a, Standard Specification for Zinc-Coated (Galvanized) Carbon Steel Wire.
 - .2 ASTM A653/A653M-11 - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.
 - .3 ASTM A792/A792M-10, Standard Specification for Steel Sheet, 55% Aluminum-Zinc Alloy-Coated by the Hot-Dip Process.
 - .4 ASTM A875/A875M-10, Specification for Steel Sheet, Zinc-5% Aluminum Alloy-coated by the Hot Dip Process.
 - .5 ASTM A1003/A1003M-12, Specification for Steel Sheet, Carbon, Metallic and Non-Metallic Coated for Cold Formed Framing Members.
 - .6 ASTM C11-10a, Standard Terminology Relating to Gypsum and Related Building Materials.
 - .7 ASTM C473-12, Standard Test Methods for Physical Testing of Gypsum Panel Products.
 - .8 ASTM C645-11a, Standard Specification for Nonstructural Steel Framing Members.
 - .9 ASTM C665-12, Standard Specification for Mineral-Fibre Blanket Thermal Insulation for Light Frame Construction and Manufactured Housing.
 - .10 ASTM C754-11, Specification for Installation of Steel Framing Members to Receive Screw-Attached Gypsum Panel Products.
 - .11 ASTM C834-10, Standard Specification for Latex Sealants.
 - .12 ASTM C841-03(2008)e1, Standard Specification for Installation of Interior Lathing and Furring.
 - .13 ASTM C954-11, Standard Specification for Steel Drill Screws for the Application of Gypsum Panel Products or Metal Plaster Bases to Steel Studs From 0.033" to 0.112" in Thickness.
 - .14 ASTM C955-11c, Standard Specification for Load-Bearing (Transverse and Axial) Steel Studs, Runners (Tracks), and Bracing or Bridging for Screw Application of Gypsum Panel Products and Metal Plaster Bases

- .15 ASTM C1002-07, Standard Specification for Steel Self-Piercing Tapping Screws for the Application of Gypsum Panel Products or Metal Plaster Bases to Wood Studs or Steel Studs.
- .4 Canadian Sheet Steel Building Institute (CSSBI):
 - .1 CSSBI S6-2011, Guide Specification for Lightweight Steel Framing

1.3 SUBMITTALS

- .1 Provide submittals in accordance with Division 01.
- .2 Action Submittals: Provide the following submittals before starting any work of this Section:
 - .1 Product Data: Submit manufacturer's product data for each materials specified including recommended application rates and methods of installation.
- .3 Informational Submittals: Provide the following submittals during the course of the work:
 - .1 Product Certificates: For each type of code-compliance certification for studs and tracks.
 - .2 Shop Drawings: Submit shop drawings showing the design, construction and relevant details of furring, enclosures and partitions which require a fire rating.

1.4 QUALITY ASSURANCE

- .1 Code-Compliance Certification of Studs and Tracks: Provide documentation that framing members are certified according to the product-certification program of the Steel Stud Manufacturers Association (SSMA).
- .2 Contractor executing work of this Section shall have a minimum of five (5) years continuous experience in successful installation of work of type and quality shown and specified. Submit proof of experience upon Consultant's request.

1.5 DELIVERY, STORAGE, HANDLING AND PROTECTION

- .1 Coordinate deliveries to comply with construction schedule and arrange ahead for off the ground, enclosed, under cover storage location. Do not load any area beyond the design limits.
- .2 Materials shall be carefully checked, unloaded, stored and handled to prevent damage. Protect materials with suitable non-staining waterproof coverings.
- .3 Store material in original, undamaged containers or wrappings with manufacturer's seals and labels intact, in accordance with GA-238 and manufacturer's recommendations.

2 Products

2.1 PERFORMANCE REQUIREMENTS

- .1 Fire-Test-Response Characteristics: For fire-resistance-rated assemblies that incorporate non-load-bearing steel framing, provide materials and construction identical to those tested in assembly indicated, according to ASTM E119 by an independent testing agency.
- .2 STC-Rated Assemblies: For STC-rated assemblies, provide materials and construction identical to those tested in assembly indicated on Drawings, according to ASTM E90 and classified according to ASTM E413 by an independent testing agency.

2.2 FRAMING SYSTEMS

- .1 Framing Members, General: Comply with ASTM C754 for conditions indicated.
 - .1 Steel Sheet Components: Comply with ASTM C645 requirements for steel unless otherwise indicated.

- .2 Steel sheet components shall comply with ASTM C645 requirements for metal, unless otherwise indicated.
- .3 Steel for non-loadbearing members shall have metallic coats that conform to ASTM A653M or ASTM A792M with minimum metallic coating weighs (mass) of Z120 and AZM150 respectively.
- .4 Framing members shall comply with the CAN/CSA S136 - North American Specification for the Design of Cold Formed Steel Structural Members, for conditions indicated.
- .5 Isolate where necessary to prevent electrolysis due to dissimilar metal-to-metal contact or metal-to-masonry and concrete contact. Use bituminous paint, butyl tape or other approved divorcing material.
- .2 Studs and Tracks: ASTM C645.
 - .1 Steel Studs and Tracks:
 - .1 Minimum 0.0179" (25 gauge), screwable with crimped web and returned flange. Provide knockout openings in web at 150mm (6") O.C. to accommodate (if required) horizontal mechanical and electrical service lines, and bracing. Widths as indicated on drawings. Provide structural studs where indicated.
 - .2 Framing behind all fire resistant gypsum board shall be minimum 0.0329" (20 gauge).
 - .3 Where metal stud framing forms walls are to be thermally insulated as indicated on drawings, provide metal studs with integrated fastening system for glass fibre/mineral fibre insulation.
 - .4 Provide special shapes indicated on drawings as part of steel stud/drywall assemblies.
 - .3 Slip-Type Head Joints: Where indicated, provide one of the following:
 - .1 Clip System: Clips designed for use in head-of-wall deflection conditions that provide a positive attachment of studs to tracks while allowing 2" (51-mm) minimum vertical movement.
 - .2 Double-Track System: ASTM C645 top outer tracks, inside track with 2" (51 mm) deep flanges in thickness not less than indicated for studs and fastened to studs, and outer track sized to friction-fit over inner track.
 - .3 Deflection Track: Steel sheet top track manufactured to prevent cracking of finishes applied to interior partition framing resulting from deflection of structure above; in thickness not less than indicated for studs and in width to accommodate depth of studs.
 - .4 Flat Strap and Backing Plate: Steel sheet for blocking and bracing in length and width indicated.
 - .1 Minimum Base-Steel Thickness: As indicated on Drawings.
 - .5 Cold-Rolled Channel Bridging: Steel, 0.0538" (1.367 mm) minimum base-steel thickness, with minimum ½" (13 mm) wide flanges.
 - .1 Depth: As indicated on Drawings.
 - .2 Clip Angle: Not less than 1-1/2" x 1-1/2" (38 mm x 38 mm), 0.068" (1.72 mm) thick, galvanized steel.

- .6 Hat-Shaped, Rigid Furring Channels: ASTM C645.
 - .1 Depth: As indicated on Drawings.
- .7 Resilient Furring Channels: ½" (13 mm) deep, steel sheet members designed to reduce sound transmission.
 - .1 Configuration: hat shaped.
- .8 Cold-Rolled Furring Channels: 0.053" (1.34 mm) uncoated-steel thickness, with minimum ½" (13 mm) wide flanges.
 - .1 Depth: As indicated on Drawings
 - .2 Furring Brackets: Adjustable, corrugated-edge-type steel sheet with minimum uncoated-steel thickness of 0.0329" (0.8 mm).
 - .3 Tie Wire: ASTM A641/A641M, Class 1 zinc coating, soft temper, 0.062" (1.59 mm) diameter wire, or double strand of 0.048" (1.21 mm) diameter wire.
- .9 Z-Shaped Furring: With slotted or nonslotted web, face flange of 1-1/4" (32 mm), wall attachment flange of 7/8" (22 mm), minimum uncoated-steel thickness of 0.0179" (0.455 mm), and depth required to fit insulation thickness indicated.

2.3 SUSPENSION SYSTEMS

- .1 Tie Wire: ASTM A641/A641M, Class 1 zinc coating, soft temper, 0.062" (1.59 mm) diameter wire, or double strand of 0.048" (1.21 mm) diameter wire.
- .2 Wire Hangers: ASTM A641/A641M, Class 1 zinc coating, soft temper, 0.16" (4.12 mm) in diameter.
- .3 Flat Hangers: Steel sheet, in size indicated on Drawings.
- .4 Carrying Channels (Main Runners): Cold-rolled, commercial-steel sheet with a base-steel thickness of 0.0538" (1.367 mm) and minimum ½" (13 mm) wide flanges.
 - .1 Depth: As indicated on Drawings.
- .5 Furring Channels (Furring Members):
 - .1 Cold-Rolled Channels: 0.0538" (1.367 mm) uncoated-steel thickness, with minimum ½" (13 mm) wide flanges, ¾" (19 mm) deep.
 - .2 Steel Studs and Tracks: ASTM C645.
 - .1 Depth: As indicated on Drawings.
 - .3 Hat-Shaped, Rigid Furring Channels: ASTM C645, 7/8 inch (22 mm) deep.
 - .4 Resilient Furring Channels: 1/2" (13 mm) deep members designed to reduce sound transmission.
 - .1 Configuration: Hat shaped.
- .6 Grid Suspension System for Gypsum Board Ceilings: ASTM C645, direct-hung system composed of main beams and cross-furring members that interlock.

2.4 AUXILIARY MATERIALS

- .1 General: Provide auxiliary materials that comply with referenced installation standards.
 - .1 Fasteners for Steel Framing: Of type, material, size, corrosion resistance, holding power, and other properties required to fasten steel members to substrates.

- .2 Isolation Strip at Exterior Walls: Provide one of the following:
 - .1 Asphalt-Saturated Organic Felt: ASTM D226/D226M, Type I (No. 15 asphalt felt), nonperforated.
 - .2 Foam Gasket: Adhesive-backed, closed-cell vinyl foam strips that allow fastener penetration without foam displacement, 1/8" (3.2 mm) thick, in width to suit steel stud size.

3 Execution

3.1 EXAMINATION

- .1 Examine areas and substrates, with Installer present, and including welded hollow-metal frames, cast-in anchors, and structural framing, for compliance with requirements and other conditions affecting performance of the Work.
- .2 Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- .1 Suspended Assemblies: Coordinate installation of suspension systems with installation of overhead structure to ensure that inserts and other provisions for anchorages to building structure have been installed to receive hangers at spacing required to support the Work and that hangers will develop their full strength.
 - .1 Furnish concrete inserts and other devices indicated to other trades for installation in advance of time needed for coordination and construction.
- .2 Coordination with Sprayed Fire-Resistive Materials:
 - .1 Before sprayed fire-resistive materials are applied, attach offset anchor plates or ceiling tracks to surfaces indicated to receive sprayed fire-resistive materials. Where offset anchor plates are required, provide continuous plates fastened to building structure not more than 24" (610 mm) o.c.
 - .2 After sprayed fire-resistive materials are applied, remove them only to extent necessary for installation of non-load-bearing steel framing. Do not reduce thickness of fire-resistive materials below that are required for fire-resistance ratings indicated. Protect adjacent fire-resistive materials from damage.

3.3 INSTALLATION, GENERAL

- .1 Installation Standard: ASTM C754.
 - .1 Gypsum Plaster Assemblies: Also comply with requirements in ASTM C841 that apply to framing installation.
 - .2 Gypsum Board Assemblies: Also comply with requirements in ASTM C840 that apply to framing installation.
- .2 Install framing and accessories plumb, square, and true to line, with connections securely fastened.
- .3 Install supplementary framing, and blocking to support fixtures, equipment services, heavy trim, grab bars, toilet accessories, furnishings, or similar construction.
- .4 Install bracing at terminations in assemblies.
- .5 Do not bridge building control and expansion joints with non-load-bearing steel framing members. Frame both sides of joints independently.

3.4 INSTALLING FRAMED ASSEMBLIES

- .1 Install framing system components according to spacings indicated, but not greater than spacings required by referenced installation standards for assembly types.
- .2 Where studs are installed directly against exterior masonry walls or dissimilar metals at exterior walls, install isolation strip between studs and exterior wall.
- .3 Install studs so flanges within framing system point in same direction.
- .4 Install tracks at floors and overhead supports. Extend framing full height to structural supports or substrates above suspended ceilings except where partitions are indicated to terminate at suspended ceilings. Continue framing around ducts that penetrate partitions above ceiling.
 - .1 Slip-Type Head Joints: Where framing extends to overhead structural supports, install to produce joints at tops of framing systems that prevent axial loading of finished assemblies.
 - .2 Door Openings: Screw vertical studs at jambs to jamb anchor clips on door frames; install track section (for cripple studs) at head and secure to jamb studs.
 - .1 Extend jamb studs through suspended ceilings and attach to underside of overhead structure.
 - .3 Other Framed Openings: Frame openings other than door openings the same as required for door openings unless otherwise indicated. Install framing below sills of openings to match framing required above door heads.
 - .4 Fire-Resistance-Rated Partitions: Install framing to comply with fire-resistance-rated assembly indicated and support closures and to make partitions continuous from floor to underside of solid structure.
 - .5 Sound-Rated Partitions: Install framing to comply with sound-rated assembly indicated.
 - .6 Curved Partitions:
 - .1 Bend track to uniform curve and locate straight lengths so they are tangent to arcs.
 - .2 Begin and end each arc with a stud, and space intermediate studs equally along arcs. On straight lengths of no fewer than two studs at ends of arcs, place studs 6" (150 mm) o.c.
- .5 Direct Furring:
 - .1 Screw to wood framing.
 - .2 Attach to concrete or masonry with stub nails, screws designed for masonry attachment, or powder-driven fasteners spaced 24 inches (610 mm) o.c.
- .6 Z-Shaped Furring Members:
 - .1 Erect insulation, vertically and hold in place with Z-shaped furring members spaced 24" (610 mm).
 - .2 Except at exterior corners, securely attach narrow flanges of furring members to wall with concrete stub nails, screws designed for masonry attachment, or powder-driven fasteners spaced 24" (610 mm) o.c.
 - .3 At exterior corners, attach wide flange of furring members to wall with short flange extending beyond corner; on adjacent wall surface, screw-attach short flange of furring channel to web of attached channel. At interior corners, space second member no more than 12" (305 mm) from corner and cut insulation to fit.
- .7 Installation Tolerance: Install each framing member so fastening surfaces vary not more than 1/8" (3 mm) from the plane formed by faces of adjacent framing.

3.5 INSTALLING CEILING SUSPENSION SYSTEMS

- .1 Install suspension system components according to spacings indicated, but not greater than spacings required by referenced installation standards for assembly types.
 - .1 Hangers: 48" (1219 mm).
 - .2 Carrying Channels (Main Runners): 48" (1219 mm)
 - .3 Furring Channels (Furring Members): 24" (610 mm), unless otherwise indicated on the Drawings.
- .2 Isolate suspension systems from building structure where they abut or are penetrated by building structure to prevent transfer of loading imposed by structural movement.
- .3 Suspend hangers from building structure as follows:
 - .1 Install hangers plumb and free from contact with insulation or other objects within ceiling plenum that are not part of supporting structural or suspension system.
 - .1 Splay hangers only where required to miss obstructions and offset resulting horizontal forces by bracing, countersplaying, or other equally effective means.
 - .2 Where width of ducts and other construction within ceiling plenum produces hanger spacings that interfere with locations of hangers required to support standard suspension system members, install supplemental suspension members and hangers in the form of trapezes or equivalent devices.
 - .1 Size supplemental suspension members and hangers to support ceiling loads within performance limits established by referenced installation standards.
 - .3 Wire Hangers: Secure by looping and wire tying, either directly to structures or to inserts, eye screws, or other devices and fasteners that are secure and appropriate for substrate, and in a manner that will not cause hangers to deteriorate or otherwise fail.
 - .4 Flat Hangers: Secure to structure, including intermediate framing members, by attaching to inserts, eye screws, or other devices and fasteners that are secure and appropriate for structure and hanger, and in a manner that will not cause hangers to deteriorate or otherwise fail.
 - .5 Do not attach hangers to steel roof deck.
 - .6 Do not attach hangers to permanent metal forms. Furnish cast-in-place hanger inserts that extend through forms.
 - .7 Do not attach hangers to rolled-in hanger tabs of composite steel floor deck.
 - .8 Do not connect or suspend steel framing from ducts, pipes, or conduit.
- .4 Fire-Resistance-Rated Assemblies: Wire tie furring channels to supports.
- .5 Grid Suspension Systems: Attach perimeter wall track or angle where grid suspension systems meet vertical surfaces. Mechanically join main beam and cross-furring members to each other and butt-cut to fit into wall track.
- .6 Installation Tolerances: Install suspension systems that are level to within 1/8" in 12' (3 mm in 3.6 m) measured lengthwise on each member that will receive finishes and transversely between parallel members that will receive finishes.

END OF SECTION

1 General

1.1 SUMMARY

- .1 This Section includes requirement for supply and installation of components required for a complete gypsum board assembly with proprietary components as follows:
 - .1 Gypsum Board Panels:
 - .1 Standard Gypsum Board
 - .2 Fire-Rated Gypsum Board 'Type X'
 - .3 Gypsum Ceiling Board
 - .4 Tile Backer Board
 - .2 Gypsum Wallboard Accessories:
 - .1 Screws, tape, joint compound and all other accessories required for gypsum board ceiling and wall partitions.

1.2 REFERENCE STANDARDS

- .1 American Society for Testing and Materials International (ASTM):
 - .1 ASTM A641/A641M-09a, Standard Specification for Zinc-Coated (Galvanized) Carbon Steel Wire.
 - .2 ASTM A653/A653M-11 - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.
 - .3 ASTM A792/A792M-10, Standard Specification for Steel Sheet, 55% Aluminum-Zinc Alloy-Coated by the Hot-Dip Process.
 - .4 ASTM A875/A875M-10, Specification for Steel Sheet, Zinc-5% Aluminum Alloy-coated by the Hot Dip Process.
 - .5 ASTM A1003/A1003M-12, Specification for Steel Sheet, Carbon, Metallic and Non-Metallic Coated for Cold Formed Framing Members.
 - .6 ASTM C11-10a, Standard Terminology Relating to Gypsum and Related Building Materials.
 - .7 ASTM C473-12, Standard Test Methods for Physical Testing of Gypsum Panel Products.
 - .8 ASTM C475/C475M-12, Standard Specification for Joint Compound and Joint Tape for Finishing Gypsum Board.
 - .9 ASTM C514-04(2009)e1, Standard Specifications for Nails for the Application of Gypsum Board.
 - .10 ASTM C645-11a, Standard Specification for Nonstructural Steel Framing Members.
 - .11 ASTM C665-12, Standard Specification for Mineral-Fibre Blanket Thermal Insulation for Light Frame Construction and Manufactured Housing.
 - .12 ASTM C754-11, Specification for Installation of Steel Framing Members to Receive Screw-Attached Gypsum Panel Products.
 - .13 ASTM C834-10, Standard Specification for Latex Sealants.
 - .14 ASTM C840-11, Standard Specification for Application and Finishing of Gypsum Board.
 - .15 ASTM C841-03(2008)e1, Standard Specification for Installation of Interior Lathing and Furring.

- .16 ASTM C954-11, Standard Specification for Steel Drill Screws for the Application of Gypsum Panel Products or Metal Plaster Bases to Steel Studs From 0.033" to 0.112" in Thickness.
- .17 ASTM C955-11c, Standard Specification for Load-Bearing (Transverse and Axial) Steel Studs, Runners (Tracks), and Bracing or Bridging for Screw Application of Gypsum Panel Products and Metal Plaster Bases
- .18 ASTM C1002-07, Standard Specification for Steel Self-Piercing Tapping Screws for the Application of Gypsum Panel Products or Metal Plaster Bases to Wood Studs or Steel Studs.
- .19 ASTM C1047-10a, Standard Specification for Accessories for Gypsum Wallboard and Gypsum Veneer Base.
- .20 ASTM C1177/C1177M-08, Standard Specification for Glass Mat Gypsum Substrate for Use as Sheathing.
- .21 ASTM C1178/C1178M-11, Standard Specification for Coated Glass Mat Water-Resistant Gypsum Backing Panel.
- .22 ASTM C1186-08, Standard Specification for Flat Fiber-Cement Sheets.
- .23 ASTM C1278/C1278M-07a(2011), Standard Specification for Fiber-Reinforced Gypsum Panel.
- .24 ASTM C1396/C1396M-11, Standard Specification for Gypsum Board.
- .25 ASTM C1629/C1629M-06(2011), Standard Classification for Abuse-Resistant Nondecorated Interior Gypsum Panel Products and Fiber-Reinforced Cement Panels.
- .26 ASTM C1658/C1658M-12, Standard Specification for Glass Mat Gypsum Panels.
- .27 ASTM D3273-12, Standard Test Method for Resistance to Growth of Mold on the Surface of Interior Coatings in an Environmental Chamber.
- .28 ASTM D3274-09, Standard Test Method for Evaluating Degree of Surface Disfigurement of Paint Films by Fungal or Algal Growth, or Soil and Dirt Accumulation.
- .29 ASTM D3678-97(2008)e1, Standard Specification for Rigid Poly (Vinyl Chloride) (PVC) Interior-Profile Extrusions.
- .2 Gypsum Association (GA):
 - .1 GA-214-10, Recommended Levels of Gypsum Board Finish.
 - .2 GA-216-10, Application and Finishing of Gypsum Board.
 - .3 GA-231-06, Assessing Water Damage to Gypsum Board.
 - .4 GA-238-03, Guidelines for the Prevention of Mold Growth on Gypsum Board.
- .3 Underwriters Laboratories of Canada (ULC):
 - .1 CAN/ULC S101-07, Standard Methods of Fire Endurance Tests of Building Construction and Materials
 - .2 CAN/ULC S102-10, Standard Method of Test for Surface Burning Characteristics of Building Materials and Assemblies
 - .3 ULC List of Equipment and Materials
 - .4 Underwriters' Laboratories (UL), Standards for Safety acceptable to the Standards Council of Canada (SCC)

1.3 QUALITY ASSURANCE

- .1 Contractor executing work of this Section shall have a minimum of five (5) years continuous experience in successful installation of work of type and quality shown and specified.
- .2 Submit proof of experience upon Consultant's request.

1.4 SUBMITTALS

- .1 Provide submittals in accordance with the requirements of Division 01.
- .2 Shop Drawings: Submit shop drawings showing the design, construction and relevant details of furring, enclosures and partitions which require a fire rating.
- .3 Product Data: Submit manufacturer's current technical literature for each component.
- .4 Samples: Supply for Consultant's review, if requested, samples of the following:
 - .1 Board: Submit sample of each panel product specified, 150mm (6") square.
 - .2 Trim: Submit sample of each type of trim specified, 305mm (12") long.
- .5 Quality Assurance Submittals:
 - .1 Design Data, Test Reports: Provide manufacturer's test reports indicating product compliance with indicated requirements.
 - .2 Manufacturer's Instructions: Provide manufacturer's written installation instructions.

1.5 DELIVERY, STORAGE, HANDLING AND PROTECTION

- .1 Coordinate deliveries to comply with construction schedule and arrange ahead for off the ground, enclosed, under cover storage location. Do not load any area beyond the design limits.
- .2 Materials shall be carefully checked, unloaded, stored and handled to prevent damage. Protect materials with suitable non-staining waterproof coverings.
- .3 Store material in original, undamaged containers or wrappings with manufacturer's seals and labels intact, in accordance with GA-238 and manufacturer's recommendations.
- .4 Protect bagged products from excessive moisture or wetting. Store metal component sections in crates to prevent damage to material. Do not use bent or deformed material.

1.6 PROJECT CONDITIONS

- .1 Establish and maintain environmental conditions for application and finishing gypsum wallboard to comply with ASTM C 840 and in accordance with manufacturer's written instructions.
- .2 In cold weather (outdoor temperatures less than 13 deg. C, controlled heat in the range of 13 deg. C to 21 deg. C must be provided. Recommended temperature must be maintained twenty-four (24) hours before, during, and after entire gypsum board joint finishing and until the permanent heating system is in operation or the building is occupied.
 - .1 Minimum temperature of 10 deg. C shall be maintained during gypsum board application.
- .3 Ventilate building spaces to remove excess moisture and humidity during the drying process. Avoid drafts during dry, hot weather to prevent materials from drying too rapidly.

2 Products

2.1 MATERIALS – WALLBOARD (GWB)

- .1 Standard Gypsum Board:
 - .1 Conforming to ASTM C1396, ivory paper faced, tapered edges, 1220mm (48") wide sheets of maximum practical lengths to minimize end joints, 1/2" thick unless indicated otherwise on drawings.
 - .1 Sheetrock Brand Gypsum Panels by CGC Inc.
 - .2 ProRoc Regular by CertainTeed.
 - .3 ToughRock Gypsum Wallboard by Georgia-Pacific Canada.
 - .4 Or approved equivalent.
- .2 Fire-Rated Gypsum Board 'Type X':
 - .1 Conforming to ASTM C1396, 1220mm (48") wide sheets of maximum practical lengths to minimize end joints, tapered edges, 16mm (5/8") thick, as indicated on drawing.
 - .1 Sheetrock Brand Gypsum Panels, Firecode Core by CGC Inc.
 - .2 ProRoc Type X by CertainTeed.
 - .3 ToughRock Fireguard Gypsum Board by Georgia-Pacific Canada.
 - .4 Or approved equivalent.
- .3 Gypsum Ceiling Board:
 - .1 Sag Resistant Gypsum Board: Meeting requirements of ASTM C1396M, ceiling board manufactured to have more sag resistance than regular type gypsum board with long edges tapered, and as follows:
 - .1 Location: Ceiling surfaces.
 - .2 Acceptable Materials:
 - .1 Sheetrock Interior Ceiling Board by CGC Inc.
 - .2 Tough Rock CD Ceiling Board by Georgia Pacific Canada.
 - .3 ProRoc Interior Ceiling Board by CertainTeed.
 - .4 Or approved equivalent.
- .4 Tile Backer Board:
 - .1 Glass Mat Water Resistant Gypsum Backer Board: Manufactured in accordance with ASTM C1178 and C1658 to produce greater resistance to water penetration and to provide improved surface bonding characteristics for ceramic tile than standard gypsum board:
 - .1 Location: Substrate for ceramic tile.
 - .2 Acceptable Materials:
 - .1 Fiberock Aqua Tough Tile Backerboard by CGC Inc.
 - .2 Diamondback Tile Backer by CertainTeed.
 - .3 GlasRoc Tile Backer by Georgia-Pacific Canada.
 - .4 Or approved equivalent.
- .5 Abuse Resistant Gypsum Board:

- .1 Manufactured to produce greater resistance to surface indentation and impact penetration resistance than standard gypsum panels:
 - .1 Gypsum panels with glass fibre reinforced core, tapered edges, minimum 5/8" thickness, Type X ULC fire rating, conforming to ASTM C1396M and tested to the following performance ratings.
 - .2 Acceptable Materials:
 - .1 Sheetrock Abuse Resistant Firecode by CGC Inc.
 - .2 Abuse Resistant Type X by CertainTeed.
 - .3 ToughRock Abuse Resistant Fireguard by Georgia Pacific Canada.
 - .4 Or approved equivalent.
- .6 Glass-Mat Liner Board:
 - .1 Glass Mat faced with water resistant treated gypsum core to ASTM C1658, Type X, 25mm (1") thick, 610mm (2'0") wide x maximum practical length. Score of 10 (no mould growth) as per ASTM D3273. Stamped with UL or ULC Classification label documenting UL or ULC Classifications for fire resistance, surface burning characteristics and noncombustibility.
 - .2 Acceptable product:
 - .1 Glass-Mat Liner Panel by CGC
 - .2 Equivalent per Division 01.

2.2 ACCESSORIES

- .1 Concrete Anchors:
 - .1 Self-drilling tie wire anchors, "Red-Head No. T-32" by Phillips Drill Company, Division of ITT Industries of Canada Ltd., (or approved alternate).
- .2 Concrete Inserts:
 - .1 Hot-dip galvanized "turtle back" type concrete inserts to suit conditions as approved by Consultant, by Acrow-Richmond National Concrete Accessories, Division of Premetalco Inc., (or approved alternate).
- .3 Mineral Fibre Acoustical Insulation: As indicated in Section 07 21 16.
- .4 Gypsum Wallboard Accessories:
 - .1 In general, gypsum wallboard accessories shall conform to ASTM C1047.
 - .2 Corner Beads:
 - .1 Made from galvanized steel sheet conforming to ASTM A653, minimum 0.0179" (25 gauge). Minimum width of flanges 28mm for 13mm (1-1/8" for 1/2") thick wallboard and 32mm for 16mm (1-1/4" for 5/8") thick wallboard.
 - .3 Casing Beads:
 - .1 Made from galvanized steel sheet conforming to ASTM A653, minimum 30 gauge, U-shaped designed for finishing with joint compound.

- .4 Control Joints:
 - .1 Made from galvanized sheet steel conforming to ASTM A653, minimum 0.0179" (25 gauge), or roll-formed zinc-alloy to resist corrosion, with expansion joint material perforated flanges.
 - .1 'Zinc Control Joint No. 093' by CGC Inc.
 - .2 (or approved alternate).
- .5 Reveals:
 - .1 Galvanized sheet steel conforming to ASTM A653, minimum 0.0179" (25 gauge), in profiles as indicated on drawings.
- .5 Wallboard Screws:
 - .1 Corrosion resistant, self-drilling, self-tapping gypsum wallboard screws conforming to ASTM C1002 (Type S) and ASTM C954 (Type S-12), 25mm (1") long No. 6 for single layer application, 41mm (1-5/8") long No. 7 for double layer application.
 - .2 At fire rated construction, type and size of wallboard screw shall be same as used in fire-rating test.
- .6 Joint Compound for Interior Gypsum Board:
 - .1 Conforming to ASTM C475 and as recommended by gypsum wallboard, fire-rated gypsum wallboard and exterior wallboard manufacturers to suit conditions.
- .7 Joint Compound for Tile Backing Panels:
 - .1 Gypsum based tile backing board: Use setting type taping and setting type, sandable topping compounds.
- .8 Joint Compound for Exterior Sheathing Boards and Soffit Panels:
 - .1 Fibreglass mesh tape.
- .9 Joint Compound for Abuse-Resistant Panels:
 - .1 ToughRock™ Sandable Joint Compound, by Georgia-Pacific.
 - .2 Durabond/Sheetrock Setting-Type Joint Compound, by CGC Canada Inc.
 - .3 Or approved equivalent.
- .10 Resilient Sponge Tape:
 - .1 Closed cell neoprene sponge type tape with self-sticking adhesive on one side. 'Permastik 122X' by Jacobs and Thompson Ltd., or foamed vinyl type tape, 'Arnofoam' by Arno Adhesive Tape Incorporated, (or approved alternate).
- .11 Adhesive:
 - .1 Conforming to CGSB 71-GP-25M, and as recommended by manufacturer and compatible with contacted surfaces.

3 Execution

3.1 EXAMINATION

- .1 Examine gypsum wallboard panels for damage and existence of mould. Install only undamaged panels.
- .2 Examine gypsum wallboard in accordance with GA-231 for water damage.
- .3 Examine areas and substrates, with installer present, and including welded hollow-metal frames, cast-in anchors, and structural framing, for compliance with requirements and other conditions affecting performance.

- .4 Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- .1 Suspended Assemblies: Coordinate installation of suspension systems with installation of overhead structure to ensure that inserts and other provisions for anchorages to building structure have been installed to receive hangers at spacing required to support the Work and that hangers will develop their full strength.
- .2 Coordinate installation of gypsum board suspension systems with installation of acoustical ceiling tiles (ACT) suspension systems. Where gypsum board suspension systems about ACT systems, ensure that ceiling tiles grid fit into gypsum grid without affecting overall design and appearance.
- .3 Furnish concrete inserts and other devices indicated to other trades for installation in advance of time needed for coordination and construction.

3.3 INSTALLATION - GENERAL

- .1 Conform to ASTM C840, except as otherwise specified herein. Co-operate with mechanical, electrical and other trades to accommodate fixtures, fittings and other items in wallboard areas.
- .2 Review extent of temporary heat provided. Carry out the work of this Section only when temperature is maintained and controlled in the range of 13 deg. C to 21 deg. C for at least twenty-four (24) hours before installing gypsum board and shall be maintained until joint compound and adhesives are dried or cured.
- .3 Bring gypsum board into contact, but do not force into place.

3.4 GYPSUM WALLBOARD - SINGLE LAYER APPLICATION

- .1 Metal Studs:
 - .1 Apply gypsum wallboard with screws. Erect wallboard with long dimension at right angles to supports. For fire rated partitions, erect board vertically or horizontally according to the ULC listing. Locate end joints over supporting members.
 - .2 Locate vertical joints at least 305mm (12") from the jamb/head/sill lines of openings.
 - .3 For parallel application space screws at 200mm (8") O.C. at board edges at 305mm (12") O.C. on board fields.
- .2 Fasteners:
 - .1 Perimeter screws shall be not less than 10mm (3/8") from edges and ends and shall be opposite the screws on adjacent boards.
 - .2 Screws shall be driven with a power screw gun and set with countersunk head slightly below the surface of the board.
- .3 Joints:
 - .1 Finish all joints.

3.5 GYPSUM WALLBOARD - DOUBLE LAYER APPLICATION

- .1 General:
 - .1 Lay out work to minimize end joints on the face layer and to offset parallel joints between face and base layers by at least 254mm (10"). Apply the face layer at right angles to the base layer.

- .2 Base Layer:
 - .1 The base layer shall be same as face layer or wallboard backing board applied at right angles to framing members. Secure base layers with screws spaced 305mm (12") O.C. to each member. Perimeter screws shall be opposite the screws on adjacent boards.
 - .2 The surface of the erected base layer shall be straight, plumb or level, and without protrusions before the face layer is applied.
- .3 Face Layer:
 - .1 Apply face layer at right angles to base layer with adhesive. Apply adhesive with a notched spreader to leave 10mm x 13mm (3/8" x 1/2") ribbons, 38mm (1-1/2") apart over entire back side of face layer. Erect wallboard immediately after spreading adhesive.
 - .2 Supplement adhesive with screw fasteners. Provide temporary support for wallboard until adhesive bond has fully developed.
 - .3 As an alternative to adhesive specified, joint compound mixed with water in accordance with manufacturer's directions may be used. Allow joint compound and water mixture to stand thirty (30) minutes before using.
- .4 Joints:
 - .1 Finish joints in face layers only, unless otherwise required to achieve fire resistant ratings indicated, as hereinafter specified.

3.6 TILE BACKING PANELS

- .1 Install standard gypsum board panels in areas not subject to wetting to produce a flat surface.
- .2 Install water resistant gypsum board in locations requiring tile applications in washrooms, and as indicated on the Drawings.
- .3 Shim surfaces to produce a uniform plane across panel surfaces where tile backing panels abut other types of panels in the same plane.

3.7 FIRE RESISTANT ASSEMBLIES

- .1 Fire resistance rating of gypsum board assemblies and framing shall be as called for on drawings or schedules, and as required to conform with applicable codes and requirements of authorities having jurisdiction.
- .2 Appropriate ULC designs as listed in current ULC list of equipment and materials, Volume II, Building Construction, shall be placed when applicable. Extend partitions full height through ceiling space unless otherwise noted on drawings.
- .3 Vertical bulkheads in ceiling spaces over fire rated glazed partitions, doors and the like shall have same fire rating as the door or partition over which they occur. All such bulkheads shall be of drywall construction unless otherwise noted.
- .4 Use fire rated gypsum board as specified.
- .5 Where lighting fixtures, diffusers, and the like are recessed into fire rated ceilings or bulkheads, provide enclosure to maintain required fire rating. Form removable panel to give access to fixture outlet box.
- .6 Where fire hose cabinets or other fixtures or equipment are recessed in fire rated walls or partitions, provide drywall enclosure or backing to maintain required fire rating, unless otherwise detailed.

3.8 CONTROL JOINTS

- .1 Install control joints using metal control joint strip as specified where:
 - .1 A partition, furring or column fireproofing abuts a structural element, dissimilar wall or partition assembly, or other vertical penetration, or ceiling.
 - .2 A ceiling or soffit abuts a structural element, dissimilar wall or partition assembly or other vertical penetrations.
 - .3 Wings of "L", "U" and "T"-shaped ceiling/soffit areas are joined;
 - .4 Construction changes within the plane of the partition or ceiling or soffit.
 - .5 Partition, restrained ceiling or furring run exceeds 9144mm (30').
 - .6 Unrestrained ceiling dimensions exceed 15240mm (50') in either direction.
 - .7 Expansion or control joints occur in the base exterior wall.
 - .8 Wallboard is installed over masonry control joints.
 - .9 And elsewhere as indicated on the drawings.
- .2 Install in accordance with manufacturer's instructions. Where application is on furring members and double furring members at control joints, place one furring member on each side of the control joint.

3.9 BULKHEADS

- .1 Fur out bulkheads in areas indicated and as required to conceal mechanical, electrical or other services in rooms where drywall finishes are scheduled, and elsewhere if called for on drawings.
- .2 Ensure hangers are installed as to prevent splaying.

3.10 PRESSED STEEL (HOLLOW METAL) FRAMES

- .1 Install pressed steel (hollow metal) frames where they occur in gypsum wallboard partitions.
- .2 Anchor frames securely to studs using a minimum of three (3) anchors per jamb for jambs up to 2134mm (7') high and minimum of four (4) anchors per jamb for jambs over 2134mm (7') high.

3.11 THERMAL BREAK

- .1 Install self-sticking resilient sponge tape at edges of wallboard in contact with metal windows and exterior door frames to provide a thermal break.
- .2 Adhere tape to casing bead and compress during installation.

3.12 FINISHING

- .1 Before proceeding with installation of finishing materials ensure the following:
 - .1 Wallboard is fastened and held close to framing and furring.
 - .2 Fastening heads in wallboard are slightly below surface in dimple formed by driving tool.
- .2 Levels of Gypsum Wallboard Finish:
 - .1 Level 0: Temporary construction only.
 - .2 Level 1: Plenum areas and above ceilings. Where a fire-resistance rating is required finishing should be in accordance with reports of fire tests of assemblies that have met the requirements of the fire rating imposed.
 - .3 Level 2: Areas of water resistant gypsum backing board under tile, exposed areas where appearance is not critical.

- .4 Level 3: Service corridors and areas to receive heavy or medium textured coatings or heavy-duty wall coverings.
- .5 Level 4: Areas to receive light textured coatings or lightweight wall coverings.
- .6 Level 5: Areas to receive gloss, semi-gloss or flat sheen paints and critical lighting conditions. Embed tape and apply separate first, fill, and finish coats of joint compound to tape, fasteners, and trim flanges, and apply skim coat over entire surface for corridors, long hallways, walls and ceilings longer than 7500 mm or walls higher than 3600 mm , and for all curved or angled wall surfaces.
- .3 Finish gypsum wallboard in strict accordance with ASTM C840, GA-214 and GA-216 and as follows:
 - .1 Fill and tape joints and internal corners and fill screw depressions in board face and smooth out along corner beads and metal strip with joint compound.
 - .2 Mix joint compound (powder) in accordance with manufacturer's written instructions.
 - .3 Prefill "V" grooves of rounded edges with special setting type joint compound using a 127mm to 150mm (5" to 6") joint finishing knife. Finish flush with tapered surface ready for tape reinforcing application. Allow prefill material to dry thoroughly before application of embedding compound and tape.
 - .4 Apply joint compound in thin uniform layer. Embed reinforcing tape accurately centred on joint and securely pressed in, leaving sufficient compound under tape to provide proper bond. Immediately apply skim coat over tape application. Allow to dry thoroughly before application of next coat.
 - .5 Apply fill coat finishing the tapered depression flush with board surfaces. Allow to dry thoroughly before application of finish coat.
 - .6 Apply finish coat extending slightly beyond the filler coat and feathered out onto the board surface. Do not apply finish coat to gypsum board scheduled to be sprayed with acoustic surfacing finish.
 - .7 Sand between coats and following the finishing coat, where necessary, and leave surface smooth and ready for painting.
 - .8 Finish screw depressions with filler material and finish coat as specified above.
 - .9 Joint and depression finish shall in no case protrude beyond the plane of the board surface.
 - .10 Furnish corner beads and metal trim flush with board surface using filler and finishing coats feathered out approximately 50mm (2") and 100mm (4") respectively onto the board surface.
 - .11 Provide metal casing beads at exposed edges, at junctions of gypsum board with dissimilar material, at control joints and at junction with columns. Casing beads are required at perimeter of gypsum wallboard ceilings and soffits. Fasten with screws at 305mm (12") O.C. along entire length.
 - .12 Finish gypsum board to receive a Level 4 finish, unless indicated on the Drawings as a Level 5 finish.

3.13 REPAIRS

- .1 After taping and finishing has completed, and before decoration, repair all damaged and defective work, including non-decorated surfaces.
- .2 Patch holes or openings 13mm (1/2") or less in diameter, or equivalent size, with a setting type finishing compound or patching plaster.

- .3 Repair holes or openings over 13mm (1/2"), or equivalent size, with 16mm (5/8") thick gypsum wallboard secured in such a manner as to provide solid substrate equivalent to undamaged surface.
- .4 Tape and refinish scratched, abraded or damaged finished surfaces including cracks and joints in non-decorated surface to provide smoke tight construction, fire protection equivalent to the fire rated construction and STC equivalent to the sound rated construction.

3.14 PROTECTION

- .1 Protect installed products from damage during remainder of construction period.
- .2 Remove and replace panels that are damaged.

END OF SECTION

1 General

1.1 SUMMARY

.1 The work in this section includes supply and installation for the following:

- .1 Wall Tile
- .2 Floor Tile
- .3 Ant-Fracturing Waterproof Membrane
- .4 Edge trims, Transition Strips and Accessories

1.2 REFERENCE STANDARDS

.1 American National Standards Institute/Ceramic Tile Institute (ANSI/CTI):

- .1 ANSI/CTI A108.1-2011, Specification for the Installation of Ceramic Tile:
Collection of 20 ANSI/CTI A108, A118 and A136 Series of Standards on Tile
Installation

.2 American Society for Testing and Materials (ASTM):

- .1 ASTM C241/C241M-09, Standard Test Method for Abrasion Resistance of Stone
Subjected to Foot Traffic
- .2 ASTM C627-10, Standard Test Method for Evaluating Ceramic Floor Tile
Installation Systems Using the Robinson-Type Floor Tester
- .3 ASTM C920-11, Standard Specification for Elastomeric Joint Sealants
- .4 ASTM C1028-07e1, Standard Test Method for Determining the Static Coefficient
of Friction of Ceramic Tile and Other Like Surfaces by the Horizontal
Dynamometer Pull-Meter Method

.3 Canadian General Standards Board (CGSB):

- .1 CAN/CGSB-75.1-M88, Tile, Ceramic

.4 Terrazzo, Tile and Marble Association of Canada (TTMAC):

- .1 2019-2021 Specification Guide 09 30 00, Tile Installation Manual
- .2 Hard Surface Maintenance Guide

1.3 EXAMINATION

.1 Examine all areas and conditions affecting work of this Section and report any
discrepancies or defects which would affect finished results.

1.4 SUBMITTALS

.1 Submit submittals in accordance with Division 01.

.2 Samples:

- .1 Submit sample panel of each type and colour tile, 610mm x 610mm (24" x 24").
- .2 Adhere to a rigid board with setting compound, grout and a dummy control joint
showing sealant as specified. Identify samples by project number, date, name of
sub-contractor and tile type.
- .3 Tile and grout used in the building shall correspond to appearance of approved
samples in all respects. Do not install tile until samples are approved.
- .4 Upon Consultant's request submit samples of base, trim and fittings.

- .3 Material Lists:
 - .1 Prior to ordering any materials submit list of products to be used. Products proposed must be recommended by their manufacturer for purpose intended. Upon Consultant's request submit evidence of manufacturer's endorsement.
 - .2 Take care to ensure compatibility of all materials. Consult the manufacturers in case of doubt.
 - .3 The supplementary materials shall come from the same production batch as installed materials.
- .4 Safety Data Sheets:
 - .1 Submit WHMIS safety data sheets for inclusion with project record documents. Keep one copy of WHMIS safety data sheets on Site for reference by workers.
- .5 Maintenance Instructions:
 - .1 Upon completion of the Work, furnish Consultant with copies of maintenance instructions, containing complete detailed and specific instructions for maintaining, preserving and keeping clean the surfaces of this Work and in particular, giving adequate warning of maintenance practices of materials detrimental to the work of this Section for inclusion in the Operation and Maintenance Manual.
- .6 Maintenance Materials:
 - .1 Supply five percent (5%) extra of each colour of tile and of each tile type for future repairs by the Owner.
 - .2 Place maintenance materials where directed by the Owner and store in their original containers.

1.5 QUALITY ASSURANCE

- .1 Subcontractor executing work of this Section shall employ installers having a minimum of five (5) years continuous experience in successful installation of work of type and quality shown and specified. Submit proof of experience upon Consultant's request.
- .2 Work of this Section shall be executed by workers especially trained and experienced in this type of work. Have a full time, qualified representative at the Site to direct the work of this Section at all times.
- .3 Ensure proper use of proprietary materials in strict accordance with the material manufacturer's directions. It shall be the responsibility of the material manufacturer or supplier to furnish these directions to the Contractor and to check periodically at the site to ensure that they are being carried out.

1.6 PRE-INSTALLATION CONFERENCE

- .1 Pre-Construction Conference: Arrange a site meeting, to coincide with regular bi-weekly site meetings, attended by the Contractor, the Subcontractor's representative and foreman for this project, the Consultant, materials supplier(s), and other relevant personal before commencement of work for this Section; agenda for meeting will include; but not be limited to, the following:
 - .1 Substrate conditions, non-structural cracks, structural cracks and preparation requirements;
 - .2 Floor and wall surface irregularities and levelness tolerances, including all remedial requirements;
 - .3 Installation of anti-fracturing membranes and setting bed materials;
 - .4 Installation of tiles and grouting;
 - .5 Edge details and treatments;

- .6 Installation of tile and grout sealers.

1.7 DELIVERY, STORAGE, HANDLING AND PROTECTION

- .1 Co-ordinate deliveries to comply with construction schedule and arrange ahead for off the ground, under cover storage location. Do not load any area beyond the design limits.
- .2 Materials shall be carefully checked, unloaded, stored and handled to prevent damage. Protect materials with suitable non-staining waterproof coverings.
- .3 Store material in original, undamaged containers or wrappings with manufacturer's seals and labels intact.
- .4 Restrict traffic by other trades during installation.
- .5 Provide adequate protection of completed tiled surfaces to prevent damage by other trades until final completion of this project. Minimum protection shall consist of 4 mil polyethylene sheets lapped 100mm (4") and taped.
- .6 Heavily travelled areas shall have additional 13mm (1/2") thick fibreboard sheet protection with taped joints over polyethylene sheet protection as specified above.
- .7 Protect exposed edges of floor tile with same thickness as tile x 100mm (4") wide tapered strip of plywood adhered to floor until adjoining floor finish is to be installed.

1.8 SITE CONDITIONS

- .1 Ambient Conditions: Apply tile after completion of work by other Sections is complete; to surfaces sufficiently dry, clean, firm, level, plumb and free from oil or wax or any other material deleterious to tile adhesion and as follows:
 - .1 Temperature: Maintain tile materials and substrate temperature between TTMAC recommended minimum and maximum temperature range; unless indicated otherwise by manufacturer, for forty-eight (48) hours before and during installation until materials are fully set and cured; provide additional heat during winter months or at any other time when there is a risk that surface temperatures may drop below minimum recommended temperatures.
 - .2 Ventilation: Maintain adequate ventilation where Work of this Section generates toxic gases or where there is a risk of raising relative humidity to levels that could damage building finishes and assemblies.

1.9 WARRANTY

- .1 Warrant the work of this Section against defects in materials and workmanship in accordance with the General Conditions, but for a period of five (5) years, and agree to promptly make good defects which become evident during the warranty period without cost to the Owner.
- .2 Defects shall include but not be limited to the following:
 - .1 Cracking and crazing;
 - .2 Discolouration and staining;
 - .3 Pitting, splitting, and;
 - .4 Deformation of tiles and grout.

2 Products

2.1 PERFORMANCE REQUIREMENTS

- .1 Dynamic Coefficient of Friction (DCOF): Tile installed on walkway surfaces having following values as determined by testing identical products per ANSI A137.1:
 - .1 Level Interior Wet Spaces: A minimum wet DCOF AcuTest Value of 0.42 or higher.

- .2 Level Interior Dry Spaces: A minimum wet DCOF AcuTest Value below 0.42
- .2 Floor Level Tolerances: Provide materials to attain floor levelness tolerances required by this Section.
 - .1 Calculate quantity of materials based on the difference between the specified tolerance and the initial tolerance specified in Section 03 35 00.
 - .2 Measurements: As indicated in Section 03 35 00.

2.2 MATERIALS

- .1 Porcelain Floor Tiles (POR-01):
 - .1 Size: 50mm x 50mm
 - .2 Finish: matte
 - .3 Basis of Design Model and Manufacturer: Olympia Tile, Quebec Series; Daltile, Keystone Series equivalent per Spec 01 25 00.
 - .1 Colour to be selected from full colour range, allow for 2 colours.
- .2 Ceramic Wall Tile (CER-01):
 - .1 Size: 100mm x 400mm
 - .2 Finish: matte
 - .3 Basis of Design Model and Manufacturer: Olympia Tile; Colour and Dimension; Or approved equivalent.
 - .1 Colour to be selected from full colour range, allow for 2 colours
- .3 Control Joint Caulking:
 - .1 As supplied by the Grout Manufacturer.
 - .2 Colour: To match adjacent grout, as approved by the Consultant.
- .4 Tile Edge Trims:
 - .1 Extruded clear satin anodized aluminum edge trim, 3mm (1/8") wide at top edge; Height as required to suit tile installation; with integral perforated anchoring leg for setting the strip into the setting material.
 - .1 Basis of Design Materials: Schlüter Schiene AE by Schlüter.
 - .2 Coved profile at Floor to Wall junction: roll-formed stainless steel profile with integrated trapezoid-perforated anchoring legs, connected at a 90-degree angle by a cove shaped section with 23/32" (18.5 mm) radius that forms the visible surface. Provide matching inside and outside corners. Material: Stainless Steel Type 316.
 - .1 Acceptable product: Schluter DILEX-EHK.

2.3 MORTAR SETTING MATERIALS

- .1 Manufacturers: Mortar and grout materials listed in this Section shall be of a uniform quality for each mortar, and grout component from a single manufacturer and each aggregate from one source or producer as follows:
 - .1 Flextile Ltd.
 - .2 MAPEI Inc.
 - .3 Custom Building Products Ltd.
 - .4 Laticrete International Inc.
 - .5 Or approved equivalent.

- .2 Surface Preparation Materials: As indicated in Section 03 35 00.
- .3 Interior Thin Set Wall System: Dry set mortar meeting or exceeding the requirements of ANSI A108.1 formulated for thin set applications of ceramic biscuit tile, factory sanded mortar consisting of portland cement, sand and additives requiring only potable water to be added for installation:
 - .1 Acceptable mortar materials:
 - .1 #51 Floor and Wall Mix by Flextile Ltd.
 - .2 Kerabond by MAPEI Inc.
 - .3 Premium Blend Thinset by Custom Building Products.
 - .4 Laticrete 317 Mortar by Laticrete International Inc.
 - .5 Or approved equivalent.
 - .4 Interior Thin Set Floor System: Dry set mortar meeting or exceeding the requirements of ASTM C627 for Heavy installation using latex modified, portland cement mortar meeting requirements of ANSI A108.1:
 - .1 Acceptable mortar materials:
 - .1 #53 Floor Mix by Flextile Ltd.
 - .2 Kerabond by MAPEI Inc.
 - .3 Master Blend Thinset by Custom Building Products.
 - .4 Laticrete 253 Thinset by Laticrete International Inc.
 - .5 Or approved equivalent.

2.4 GROUT MATERIALS

- .1 Grout Colours: As selected by the Consultant from manufacturer's full product range.
- .2 Portland Cement Grout for Wall and Floor Joints $\leq 3\text{mm}$ (1/8") Interior Only: factory blended polymer modified mixture meeting requirements of ANSI A108.1:
 - .1 Acceptable Materials:
 - .1 500 Series Unsanded Grout by Flextile Ltd.
 - .2 Ker 800 Unsanded Grout by MAPEI Inc.
 - .3 Polyblend Unsanded Grout by Custom Building Products.
 - .4 Peracolor Grout Laticrete International Inc.
 - .5 Or approved equivalent.
 - .3 Latex-Portland Cement Grout for Floors with Joints $\geq 3\text{mm}$ (1/8") Interior or Exterior: factory blended stain resistant latex modifiers, portland cement and graded silica sand and dry-set grout and meeting requirements of A108.1:
 - .1 Acceptable Materials:
 - .1 600/100 Series Sanded Grout by Flextile Ltd.
 - .2 Keracolor S Sanded Grout by MAPEI Inc.
 - .3 Polyblend Sanded Grout by Custom Building Products.
 - .4 Peracolor Grout Laticrete International Inc.
 - .5 Or approved equivalent.

2.5 WATERPROOFING ANTI-FRACTURING MEMBRANES

- .1 Waterproofing Anti-Fracturing Membranes: Load bearing, reinforced, liquid applied membrane; manufactured to accommodate flood testing and reduce the incidence of thermal shock cracking to tiling installations; meeting requirements of ANSI A108.1 and as follows:
 - .1 Acceptable Membrane Materials:
 - .1 Flex WP-980 Waterproof and Crack Isolation Membrane by Flextile Ltd.
 - .2 Mapelastic 315 Waterproofing and Reinforcing Fabric by MAPEI Inc.
 - .3 Level Quik Waterproof and Anti-Fracture Membrane by Custom Building Products.
 - .4 Hydroban Waterproofing by Laticrete International Inc.
 - .5 Or approved equivalent per Specification 01 25 00
 - .2 Reinforcing Fabric: strong, absorbent, flexible, alkali-resistant, polyester reinforcing fabric for use at coves, corners, cracks and around drains.
 - .1 Acceptable product: Reinforcing Fabric by Mapei
 - .2 Or approved equivalent per Specification 01 25 00

2.6 ACCESSORY MATERIALS

- .1 Tile Cleaner: A neutral cleaner capable of removing soil and residue without harming tile and grout surfaces, specifically approved for materials and installations indicated by tile and grout manufacturers and as follows:
 - .1 Job Site Cleaner: Phosphoric acid/nitric acid based cleaning solution mixed in accordance with cleaner manufacturer's recommendations and as recommended by tile manufacturer.
 - .2 Maintenance Cleaner: Non-toxic, electrolytic, biodegradable, non-ammonia containing, pH controlled cleaning solution mixed in accordance with manufacturer's recommendations.

3 Execution

3.1 EXAMINATION

- .1 Maintain minimum temperature of 13 deg C at tile installation area for twenty-four (24) hours prior to curing and for twenty-four (24) hours after installation. Do not apply work to frozen surfaces.
- .2 Examine carefully surfaces to which tile is to be installed and report any defects to the Consultant.
- .3 Anti-Fracturing Membranes:
 - .1 Prepare all surfaces of non-structural and structural cracks in strict accordance with the anti-fracturing membrane manufacturer's written instructions.
 - .2 Prime and fill all surfaces of non-structural and structural cracks in strict accordance with the anti-fracturing membrane manufacturer's written instructions.
- .4 Commencement of installation shall signify complete acceptance of surfaces and conditions.

3.2 PREPARATION

- .1 Surface Preparation:

- .1 Make backing surfaces level and true to a tolerance in plane of 3mm in 2439mm ($\pm 1/8"$ in 8') for walls and 3mm in 3048mm ($\pm 1/8"$ in 10') for floors using levelling bed mortar.
- .2 Surfaces shall be structurally sound, well fastened, clean and free from dust, oil, grease, paint, tar, wax, curing agents, primers, sealers, form release agents or any deleterious substances that may act as bond barriers.
- .3 Backing surfaces shall be dry and fully cured. Dampness must not exceed five percent (5%) by volume.
- .2 Examine concrete substrate, repair as required to produce level, clean surface for new tile installation. Repair Work shall include levelling, filling, grinding or cutting, in accordance with Section 03 35 00.
- .3 Work of other trades that are required before new tile installation (i.e. electrical conduit installed below ceramic tile) shall be installed, complete and approved before tile installation.

3.3 INSTALLATION – BACKER UNIT BOARD UNDERLAYMENT

- .1 Install minimum 13mm cementitious backer unit (CBU) underlayment over existing plywood subfloor at 2nd and 3rd floor washroom areas – refer also to Specification 09 29 00.
- .2 Bed CBU underlayment in 3mm latex-Portland cement mortar, gapped at 3mm.
- .3 Fasten CBU underlayment to subfloor with 30mm galvanized screws at 200mm oc throughout the body of the panel. Do not countersink screws.
- .4 Treat joints as per manufacturers directions.

3.4 INSTALLATION – ANTI-FRACTURING MEMBRANES

- .1 Install waterproofing anti-fracturing membrane in accordance with waterproofing manufacturer's written instructions to produce a waterproof membrane of uniform thickness bonded securely to substrate.
- .2 Do not install tile over waterproofing membrane until waterproofing has cured and been tested to determine that it is watertight.
- .3 Prepare floor and wall substrates in accordance with manufacturers written instructions.
 - .1 All substrates should be structurally sound, stable, dry, clean and free of any substance or condition that may reduce or prevent proper adhesion.
 - .2 Do not use chemicals (acid etching or stripping) to prepare approved substrates.
 - .3 Concrete substrates should have a concrete surface profile of #2 per the International Concrete Repair Institute (ICRI). Mechanically clean and profile by diamond-cup grinding or other engineer-approved method when necessary.
- .4 Application
 - .1 Fill all cracks, control joints and gaps in corners and coves that are greater than 1/32" (1 mm) with an appropriate filler material. Force material into crack and finish smooth with trowel. Let dry.
 - .2 Pre-treat cracks, corners, coves and floor wall intersections with 2 coats of waterproof membrane.
 - .3 Pre-treat drains by filling space between drain pipe and substrate with appropriate expansion joint materials and apply 2-coats of waterproof membrane
- .5 Fabric Reinforcing Application

- .1 Lay reinforcing fabric into wet waterproof membrane at all "pre-treat" sections as outlined in application section below (cracks, coves, corners and penetrations). Allow for 50mm fabric on horizontal surface and 100mm fabric on vertical surface. Use brush to press fabric into corners until liquid comes through fabric. Work out any wrinkles or bubbles.
- .2 While fabric is wet, apply additional waterproof membrane over fabric until completely covered to create void-free surface. Let dry. Apply a second coat and let dry.
- .3 Install reinforcing fabric through main/field areas by placing into wet first coat of waterproof membrane. Using a roller, apply pressure to the fabric, working out wrinkles or bubbles while forcing liquid waterproof membrane to come through the fabric. Overlap seams and ends of the fabric by 2" (50mm). While fabric is still wet, apply additional liquid waterproof membrane over the fabric until completely covered, creating a void-free surface. Let dry completely.
- .4 Apply a second coat of liquid waterproof membrane to entire area. Let dry.
- .5 Apply a bead of commercial-grade silicone or urethane sealant between the membrane and the drain flange, about 1/2" (12 mm) in from the drain opening.
- .6 Bolt the drain collar into place while the sealant is still fresh.
- .7 Install tile as per following section below.

3.5 INSTALLATION - GENERAL

- .1 Unless otherwise specified, execute tile work according to the latest issue of Specification Guide 09 30 00, Tile Installation Manual - published by Terrazzo, Tile and Marble Association of Canada, as the minimum standard except as varied by this Specification.
- .2 Thoroughly clean surfaces to which tile is to be applied.
- .3 Back butter all floor tile.
- .4 Neatly cut tile around fitments, fixtures, access panels, and the like. Splitting of tile is expressly prohibited except where no alternative is possible. Form intersections, corners and returns accurately.
- .5 Finish surfaces flat and level or, sloped and graded as required.
- .6 Joint Widths: Install tile with the following joint widths, unless indicated on drawings:
 - .1 Wall Tile: 1.6mm (1/16")
 - .2 Floor Tile: 6mm (1/4"), unless otherwise indicated on the Drawings.
 - .3 Quarry Tile: As per manufacturers recommendations.
 - .4 Make joints consistent width and alignment within tile area.
 - .5 Maintain 2/3 of grout joint depth free of setting material.
- .7 Joints in base shall match floor patterns. Joints shall be watertight without voids, cracks or excess grout.
- .8 Lay out tile so that fields or patterns are centred on wall areas or architectural features and so that no tile less than 1/2 size occurs.
- .9 Arrange and set recessed accessories in tile work so that they are evenly spaced, centred with joints and set true with correct projection. Rigidly install accessories.
- .10 Provide manufacturer's standard trim pieces at changes of direction and at terminations. Unless otherwise indicated provide the following corner and edge conditions:
 - .1 Internal horizontal corners: Coved.
 - .2 External vertical and horizontal corners: Bullnosed.

- .3 Internal vertical corners and unexposed edges: Square.
- .11 Install tiles in patterns and locations as indicated on drawings.
- .12 Install wall tile full wall height unless shown otherwise.
- .13 Coordinate work of this Section with work of other Sections for items requiring to be recessed into work of this Section.
- .14 Sound tiles after setting and remove and replace tiles not fully bedded.
- .15 Re-point joints after cleaning to eliminate imperfections. Avoid scratching tile surfaces.
- .16 Finished tile work shall be clean and free of tiles which are pitted, chipped, cracked or scratched. All damaged tile shall be removed and replaced.
- .17 Where indicated on Drawings or as required, install continuous single piece metal edge trims centred under doors in closed position and other locations where tile meets other floor finishes.

3.6 MORTAR APPLICATION METHOD

- .1 Thin-Set Application Method:
 - .1 Install wall tile to gypsum wallboard and moisture resistant wallboard in dry areas using latex modified thin-set setting bed and latex modified wall grout in strict accordance with tile manufacturers written installation instructions as per the pre-installation conference.
 - .2 Apply floor tile and prepare floor slabs in strict accordance with tile manufacturers written installation instructions as per the pre-installation conference.

3.7 GROUTING

- .1 Grout tiles in accordance with ANSI A108.10 and as specified herein.
- .2 When grouting a fresh laid floor, make certain that traffic and grouting will not cause movement of floor in setting bed. Protect floor by using kneeling boards or gypsum board to defend floor against traffic while grouting.
- .3 Mix grouts and install in strict accordance with the manufacturer's instructions.
- .4 Excess grout shall be removed from the surface of tiles using the edge of a rubber float held at a 45 deg angle, moving it diagonally to the joints. Fill all gaps and air holes.
- .5 Do not allow grout to harden on face of tile. Refer to manufacturer's instructions for thorough removal.
- .6 Floors which required damp curing shall be cured for the required length of time using heavy kraft paper, not polyethylene sheets. Consult manufacturer for instructions.

3.8 CONTROL JOINTS AND SEALING

- .1 Control joints of a flexible caulking material shall be placed every 4877mm to 6096mm (16' to 20') apart, directly over existing control joints and/or where indicated on drawings or as required in accordance with TTMAC Detail No. 301MJ-2019-2021, Details E, F and G, whichever is applicable.
- .2 Control joints shall be placed around the floor perimeter at walls, around columns, and where tile abuts other hard materials or vertical surfaces. Saw cutting of tile after installation is prohibited. Tile shall be cut if required and installed along each side of control joints.
- .3 Expansion joints must always be placed directly over all slab expansion joints in accordance with TTMAC Detail No. 301MJ-2019-2021, Details A and B, whichever is applicable.
- .4 Locate expansion, control, contraction, and isolation joints, as indicated below, unless specifically indicated otherwise on the Drawings:

- .1 Interior: 4877mm (16') maximum: 6mm (1/4") joint width.
- .5 Joints around fixtures, pipes or other fittings shall be sealed with a sealant. Refer to Section 07 92 00 for type of sealants to be used.
- .1 Colour of sealant shall match grout as selected later by Consultant.

3.9 CLEANING AND PROTECTION

- .1 Clean tiled areas after grouting has cured, using compatible solutions and methods as recommended by the manufacturer.
- .2 Remove grout residue from tile as soon as possible.
- .3 Unglazed tile may be cleaned with acid solutions only when permitted by tile and grout manufacturer's written instructions, but no sooner than 10 days after installation.
- .4 Protect metal surfaces, cast iron, and vitreous plumbing fixtures from effects of acid cleaning.
- .5 Flush surface with clean water before and after cleaning.
- .6 Leave finished installation clean and free of cracked, chipped, broken, unbonded, or other tile deficiencies.

END OF SECTION

PART 1.0 - GENERAL

1.1 References

- .1 Canadian General Standards Board (CGSB)
 - .1 CAN/CGSB-4.2- [92], Textile Test Methods.
 - .2 CGSB 4-GP-36M- [78], Carpet Underlay, Fiber Type.
 - .3 CAN/CGSB-4.129- [93], Carpets for Commercial Use.
 - .4 CGSB 20-GP-23M- [78], Cushion, Carpet, Flexible Polymeric Material.
 - .5 CAN/CGSB-25.20- [95], Surface Sealer Floors.

1.2 Samples

- .1 Submit samples in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Submit duplicate 675 x 900 mm pieces of each carpet type specified.
- .3 Include installation recommendations for each type of substrate as specified in carpet manufacturer's installation guidelines and/or Carpet & Rug Institute Installation Standard 2011, where applicable.

1.3 Closeout Submittals

- .1 Submit carpet maintenance recommendations as outlined by the carpet manufacturer for incorporation into manual specified in Section 01 78 00 - Closeout Submittals.
- .2 Include information on recycling of carpet including manufacturer's reprocessing program. Indicate which portions of materials are recyclable. Ensure compliance with Section 2.

1.4 Regulatory Requirements

- .1 Prequalification: compliance with Department of Consumers and Corporate Affairs regulations under "Hazardous Products Act", Part II of the Schedule, tested to CAN/ULC-S102.2.
- .2 Indoor Air Quality: compliance with CRI Indoor Air Quality Program, CRI -IAQ requirements for maximum total volatile chemicals released into air. Label each carpet product with CRI -IAQ label.
- .3 Provide documentation that product meets or exceeds following criteria based on an emission factor measured in mg/m /hr:
 - .1 Total Volatile Organic Compounds - 0.5.
 - .2 Formaldehyde - 0.05.
 - .3 4-phenylcyclohexene - 0.05.
 - .4 Styrene - 0.4.

1.5 Delivery, Storage and Handling

- .1 Label packaged materials. For tile products indicate nominal dimensions of tile.
- .2 Store packaged materials in original containers or wrapping with manufacturer's seals and labels intact.
- .3 Store carpeting and accessories in location as directed by Owner.
- .4 Prevent damage to materials during handling and storage. Keep materials under cover and free from dampness.
- .5 Maintain temperature of store room at a minimum of 20C, for at least 24 hours immediately before the installation

1.6 Waste Management and Disposal

- .1 Place materials defined as hazardous or toxic waste in designated containers.
- .2 Ensure emptied containers are sealed and stored safely for disposal away from children.
- .3 Collect and separate plastic, paper packaging and corrugated cardboard in accordance with Waste Management Plan.
- .4 Fold up metal banding, flatten and place in designated area for recycling.
- .5 Collect and separate plastic and/or paper packaging for recycling.
- .6 Use the least toxic sealants and adhesives necessary to comply with requirements of this section.
- .7 Close and seal, tightly, all partly used sealant and adhesive containers and store protected in well ventilated, fire-safe area at moderate temperature.
- .8 Place used hazardous sealant tubes and adhesive containers in areas designated for hazardous materials.
- .9 Collect, package and store carpet cut-offs and waste material for recycling and return to recycler in accordance with Waste Management Plan.

1.7 Project/Site Environmental Requirements

- .1 Moisture: Ensure substrate is within moisture limits prescribed by manufacturer.
- .2 Temperature: Maintain ambient temperature of not less than [18] C from [72] hours before installation to at least 72 hours after completion of work.
- .3 Relative humidity: Maintain relative humidity between 10 and 65% RH for 48 hours before, during and 48 hours after installation.
- .4 Safety: Comply with requirements of Workplace Hazardous Materials Information System (WHMIS) regarding use, handling, storage, and disposal of hazardous materials.
- .5 Ventilation:
 - .1 Ventilate area of work as directed by client by use of approved portable supply and exhaust fans.

1.8 Extra Materials

- .1 Provide extra materials of carpet, carpet base, and adhesives in accordance with Section 01 78 00 - Closeout Submittals.
- .2 Extra Carpet Tile: Full-size units equal to 5 percent of amount installed for each type indicated, but not less than 10.67 sq. yd. (8.9 sq. m).
- .3 Extra materials to be from same production run as installed materials.
- .4 Identify each package of carpet and each container of adhesive.
- .5 Deliver to Owner and store where directed by Owner.

PART 2.0 - PRODUCTS

2.1 Acceptable Manufacturers/Products

.1 Carpet CPT

- .1 Colour Beat as manufactured by Mohawk Group.
- .2 Alternatives as per Section 01 25 13.
- .3 Size: Size: 610mm x 610mm (24in x 24in)

.4 Colours

- .1 Allow for one(1) field colour and one (1) accent colour, to be selected by Consultant from full manufacturer colour range.

.5 Installation Method

- .1 To be selected by Consultant from manufacturer recommended installation methods prior to the time of installation.

2.2 Performance Characteristics

- .1 Critical Radiant Flux Classification, Flooring Radiant Panel ASTM E 648: Not less than 0.45 W/sq. cm.
- .2 Smoke Density: Less than 450 per ASTM E662.
- .3 Methanamine Pill Test CPSC FF1-70: Must pass pill test.
- .4 Tuft Bind: Not less than 8 lbf (36 N) according to ASTM D 1335.
- .5 Delamination: Not less than 3.5 lbf/in. according to ASTM D 3936.
- .6 Dimensional Tolerance: Within 1/32 inch of specified size dimensions, as determined by physical measurement.
- .7 Dimensional Stability: 0.119 percent or less according to ISO 2551 (Aachen Test).
- .8 Colorfastness to Crocking: Not less than 4, wet and dry, according to AATCC 129 and AATCC 164.
- .9 Colorfastness to Light: Not less than 4 after 60 AFU (AATCC fading units) according to AATCC 16, Option E.
- .10 Electrostatic Propensity: Less than 3.5 kV according to AATCC 134.
- .11 Emissions: Provide carpet tile that complies with testing and product requirements of Carpet & Rug Institute's "Green Label Plus" program.

2.3 Accessories

.1 Rubber Wall Base:

- .1 Rubber thermoplastic wall base to ASTM F1861 consisting of a blend of a thermoplastic and rubber backing covered with a durable colored top layer
- .2 Dimensions: 107.95mm high x 9.53mm thick x 2440mm lengths
- .3 Surface burning: Class A per ASTM E84/NFPA 253, FSR 50/SDS 175 per CAN/ULC-S102.2
- .4 Acceptable product:
 - .1 Contours, PV4060 by Roppe
 - .2 Equivalent per 01 25 00
- .5 Colour: To be selected by Consultant from manufacturer's full colour range; allow for 2 colours.
- .2 Carpet grippers: types recommended by carpet manufacturer.
- .3 Seaming tape: types recommended by carpet manufacturer for purpose intended.
- .4 Seaming adhesive: type recommended by carpet manufacturer for purpose intended.
- .5 Binder bars: type recommended by carpet manufacturer.
- .6 Adhesive:
 - .1 Acrylic release type: recommended by carpet manufacturer.
 - .2 Low VOC content in accordance with CRI requirements:
 - .1 Total volatile organic compounds: [10.0]mg/m /hr.

- .2 Formaldehyde: [0.05] mg/m /hr.
- .3 2-Ethyl-1-Hexanol: [3.0] mg/m /hr.
- .7 Carpet protection: non-staining heavy duty kraft paper.
- .8 Concrete floor sealer: to CAN/CGSB-25.20, Type1.
- .9 Subfloor filler: white premix latex requiring only water to produce cementitious paste.
- .10 Metal Edge/Transition Strips: Extruded aluminum with mill finish of width shown and height required to protect exposed edge of carpet, and of maximum lengths to minimize running joints. Provide at edging between carpet flooring and all other floor materials. Submit for review by Consultant prior to installation.

2.5 RECLAMATION

- .1 All carpet provided under this contract to be removed at the end of its' life cycle is at no cost to the Owner and must be sent for reclamation. Manufacturers must provide certification that reclaimed carpet will not go to landfill.
- .2 Reclamation to be third party certified.

3.0 - EXECUTION

3.1 Preparation

- 1 Prepare floor surfaces in accordance with Contract Carpet Manual, Standard for Installation of Textile Floorcovering Materials No.001.
- .2 Concrete Subfloors: Verify that concrete slabs comply with ASTM F 710 and the following:
 - .1 Slab substrates are dry and free of curing compounds, sealers, hardeners, and other materials that may interfere with adhesive bond. Determine adhesion and dryness characteristics by performing moisture and pH tests as recommended by carpet tile manufacturer.
 - .2 Use trowelable leveling and patching compounds that contain a cementitious base with a latex additive, according to manufacturer's written instructions, to fill cracks, holes, depressions, and protrusions in substrates. Fill or level cracks, holes and depressions 1/8 inch wide or wider and protrusions more than 1/32 inch unless more stringent requirements are required by manufacturer's written instructions.
 - .3 Remove coatings, including curing compounds, and other substances that are incompatible with adhesives and that contain soap, wax, oil, or silicone, without using solvents. Use mechanical methods recommended in writing by carpet tile manufacturer.
- .3 Broom and vacuum clean substrates to be covered immediately before installing carpet tile.
- .4 Pre-condition carpeting following manufacturer's printed instructions.
- .3 Install toeless type resilient base before proceeding with carpeting.

3.2 Installation

- .1 Install carpeting using minimum of pieces.
- .2 Install in accordance with manufacturer's printed instructions and in accordance with Contract Carpet Manual, Standard for Installation of Textile Floorcovering Materials No.001.
- .3 Finish installation to present smooth wearing surface free from conspicuous seams, burring and other faults.
- .4 Use material from same dye lot. Ensure colour, pattern and texture match within any one visual area. Maintain constant pile direction.

- .6 Fit neatly around architectural, mechanical, electrical and telephone outlets, and furniture fitments, around perimeter of rooms into recesses, and around projections.

3.3 Application of Rubber Base

- .1 Lay out base to keep number of joints at minimum.
- .2 Clean substrate and prime with one coat of adhesive.
- .3 Apply adhesive to back of base.
- .4 Set base against wall and floor surfaces tightly by using 3 kg hand roller.
- .5 Install straight and level to variation of 1:1000.
- .6 Scribe and fit to door frames and other obstructions. Use premoulded end pieces at flush door frames.
- .7 Cope internal corners. Use premoulded corner units for right angle external corners. Use formed straight base material for external corners of other angles.

3.4 Protection of Finished Work

- .1 Perform the following operations immediately after installing carpet tile:
 - .1 Remove excess adhesive, and other surface blemishes using cleaner recommended by carpet tile manufacturer.
 - .2 Remove yarns that protrude from carpet tile surface.
 - .3 Vacuum carpet tile using commercial machine with face-beater element.
- .2 Protect installed carpet tile to comply with Carpet & Rug Institute Installation Standard 2011, "Protecting Indoor Installations."
- .3 When construction or move-in activities will continue where new carpet is installed, provide non-staining building material paper to protect carpet. Do not use plastic sheeting as it can trap moisture, and self-sticking plastic sheeting can transfer adhesive residue to carpet that will attract soil.
- .4 When heavy objects are moved over carpet within 24 hours of installation, use plywood over carpet to prevent buckling and wrinkling.
- .5 Protect carpet tile against damage from construction operations and placement of equipment and fixtures during the remainder of construction period. Use protection methods indicated or recommended in writing by carpet tile manufacturer.

END OF SECTION

1 General

1.1 SUMMARY

- .1 Section includes surface preparation and the application of paint systems on the following interior and exterior substrates:
 - .1 Concrete;
 - .2 Concrete masonry units (CMU)
 - .3 Steel and iron;
 - .4 Galvanized metal;
 - .5 Hollow metal doors and frames;
 - .6 Gypsum board;
 - .7 Cotton or canvas insulation covering.

1.2 REFERENCE STANDARDS

- .1 Environmental Choice Paints and Surface Coatings, Low VOC Product Listings Program (ECP):
 - .1 Paints and Surface Coatings, Low VOC Product Listings
- .2 The Master Painters Institute (MPI):
 - .1 New Surfaces: Architectural Painting Specification Manual.
- .3 The Society for Protective Coatings (SSPC):
 - .1 Coating Materials Guidelines
 - .2 Surface Preparation Guidelines
 - .3 Application, Inspection and Quality Control Guidelines

1.3 DEFINITIONS

- .1 Gloss Levels: Standard coating terms defined by MPI Manual apply to products of this Section as follows:
 - .1 MPI Gloss Level 1: Not more than five units at 60 degrees and 10 units at 85 degrees, according to ASTM D523.
 - .2 MPI Gloss Level 2: Not more than 10 units at 60 degrees and 10 to 35 units at 85 degrees, according to ASTM D523.
 - .3 MPI Gloss Level 3: 10 to 25 units at 60 degrees and 10 to 35 units at 85 degrees, according to ASTM D523.
 - .4 MPI Gloss Level 4: 20 to 35 units at 60 degrees and not less than 35 units at 85 degrees, according to ASTM D523.
 - .5 MPI Gloss Level 5: 35 to 70 units at 60 degrees, according to ASTM D523.
 - .6 MPI Gloss Level 6: 70 to 85 units at 60 degrees, according to ASTM D523.
 - .7 MPI Gloss Level 7: More than 85 units at 60 degrees, according to ASTM D523.
- .2 Gloss Values: Generally, provide paints and coatings having the following sheens when installed on the following substrates:
 - .1 Walls: Eggshell (G3) or Satin (G4) as selected by Consultant at a later date.
 - .2 Trim and Doors: Semi-gloss (G5).
 - .3 Ceilings: Flat (G1).

1.4 SUBMITTALS

- .1 Provide required information in accordance with Division 01.
- .2 Action Submittals: Provide the following submittals before starting any work of this Section:
 - .1 Product Data: Submit list of all painting materials used for the Work to the Consultant for review prior to ordering materials for each paint system indicated, including block fillers and primers.
 - .1 Material List: An inclusive list of required coating materials indicating each material and cross reference specific coating, finish system, and application; identify each material by manufacturer's catalogue number and general classification.
 - .2 Manufacturer's Information: Manufacturer's technical information, including label analysis and instructions for handling, storing, and applying each coating material.
 - .2 Samples: Provide stepped samples, defining each separate coat, including block fillers and primers using representative colours required for the project; label each sample for location and application, and as follows:
 - .1 Drawdown Samples: Provide three (3) drawdown sample charts (cards) for each type, texture and colour of finish specified for verification purposes before ordering paint materials.
 - .3 Informational Submittals: Provide the following submittals when requested by the Consultant:
 - .1 Certification: Submit certification reports for paint products indicating that they meet or exceed low VOC and coloured base requirements listed in this Section.

1.5 PROJECT CLOSEOUT SUBMISSIONS

- .1 Operation and Maintenance Data: Submit copies of paint manufacturer's written maintenance information for inclusion in the operations manual in accordance with Division 01, including specific warning of any maintenance practice or materials that may damage or disfigure the finished Work.
- .2 Maintenance Materials: Deliver maintenance materials to Owner in quantities indicated and in accordance with Division 01, that match products installed; packaged with protective covering for storage, and identified with labels describing contents and building location and as follows:
 - .1 Paints and Coatings: Minimum of 4-4L containers of field colours and 4-1 L containers of each accent colour, and all remnants.

1.6 QUALITY ASSURANCE

- .1 Conform to the standards contained in the MPI Manual.
- .2 Source Limitations: Obtain block fillers and primers for each coating system from the same manufacturer as the finish coats and as follows:
 - .1 Use only paint manufacturers and products as listed under the Approved Products section of the MPI Manual Architectural Painting Specification Manual.

1.7 DELIVERY, STORAGE, AND HANDLING

- .1 Store materials not in use in tightly covered containers in well-ventilated areas with ambient temperatures continuously maintained at not less than 7 deg C (45 deg F).
 - .1 Maintain containers in clean condition, free of foreign materials and residue.
 - .2 Remove rags and waste from storage areas daily.

1.8 FIELD CONDITIONS

- .1 Apply paints only when temperature of surfaces to be painted and ambient air temperatures are between 10 and 35 deg C (50 and 95 deg F).
- .2 Do not apply paints when relative humidity exceeds 85 percent; at temperatures less than 3 deg C (5 deg F) above the dew point; or to damp or wet surfaces.

1.9 WARRANTY

- .1 Provide upon completion of the work, a Warranty Certificate, in the name of the Owner, stating that the work of this section was performed in accordance with these specifications and the MPI manual (latest edition), and is warranted against defects in material or installation, for a period of two (2) years from Date of Substantial Performance.

2 Products

2.1 MANUFACTURERS

- .1 Subject to compliance with requirements, manufacturers that have attained the prerequisites for ecologically sustainable labelling mark on their products and may be incorporated into the Work include; but are not limited to, the following:
 - .1 Dulux Paints
 - .2 Sherwin-Williams LLC
 - .3 Benjamin Moore and Co. Limited
 - .4 ICI Paints (Canada) Inc.

2.2 PAINT, GENERAL

- .1 MPI Standards: Products shall comply with MPI standards indicated and shall be listed in its "MPI Approved Products Lists".
- .2 Material Compatibility:
 - .1 Materials for use within each paint system shall be compatible with one another and substrates indicated, under conditions of service and application as demonstrated by manufacturer, based on testing and field experience.
 - .2 For each coat in a paint system, products shall be recommended in writing by topcoat manufacturers for use in paint system and on substrate indicated.
- .3 VOC Content: For field applications, paints and coatings shall comply with VOC content limits of authorities having jurisdiction and the following VOC content limits:
 - .1 Flat Paints and Coatings: 50 g/L.
 - .2 Nonflat Paints and Coatings: 50 g/L.
 - .3 Dry-Fog Coatings: 150 g/L.
 - .4 Primers, Sealers, and Undercoaters: 100 g/L.
 - .5 Rust-Preventive Coatings: 100 g/L.
 - .6 Zinc-Rich Industrial Maintenance Primers: 100 g/L.
 - .7 Pretreatment Wash Primers: 420 g/L.
 - .8 Shellacs, Clear: 730 g/L.
 - .9 Shellacs, Pigmented: 550 g/L.
- .4 Paint Colour and Manufacturer (PT): As selected by the Consultant from the manufacturer's standard product line. Carry five (5) colours and three (3) accent colours in Bid Price.

2.3 PREPARATORY COATS

- .1 CMU Block Filler:
 - .1 Benjamin Moore; Coronado Super Kote 5000 Latex Block Filler (958-11).
 - .2 PPG; Speedhide Interior/Exterior Masonry Latex Block Filler (6-7).
 - .3 SW; PrepRite Block Filler Interior/Exterior Latex (B25W25).

3 Execution

3.1 EXAMINATION

- .1 Examine substrates and conditions, with Applicator present, for compliance with requirements for maximum moisture content and other conditions affecting performance of the Work.
- .2 Maximum Moisture Content of Substrates: When measured with an electronic moisture meter as follows:
 - .1 Concrete: 12 percent.
 - .2 Fiber-Cement Board: 12 percent.
 - .3 Masonry (Clay and Concrete Masonry Units): 12 percent.
 - .4 Wood: 15 percent.
 - .5 Portland Cement Plaster: 12 percent.
 - .6 Gypsum Board: 12 percent.
- .3 Gypsum Board Substrates: Verify that finishing compound is sanded smooth.
- .4 Verify suitability of substrates, including surface conditions and compatibility, with existing finishes and primers.
- .5 Proceed with coating application only after unsatisfactory conditions have been corrected.
 - .1 Application of coating indicates acceptance of surfaces and conditions.

3.2 PREPARATION

- .1 Comply with manufacturer's written instructions and recommendations in "MPI Painting Specification Manual" applicable to substrates and paint systems indicated.
- .2 Remove hardware, covers, plates, and similar items already in place that are removable and are not to be painted. If removal is impractical or impossible because of size or weight of item, provide surface-applied protection before surface preparation and painting.
 - .1 After completing painting operations, use workers skilled in the trades involved to reinstall items that were removed. Remove surface-applied protection if any.
- .3 Clean substrates of substances that could impair bond of paints, including dust, dirt, oil, grease, and incompatible paints and encapsulants.
 - .1 Remove incompatible primers and reprime substrate with compatible primers or apply tie coat as required to produce paint systems indicated.
- .4 Concrete Substrates: Remove release agents, curing compounds, efflorescence, and chalk. Do not paint surfaces if moisture content or alkalinity of surfaces to be painted exceeds that permitted in manufacturer's written instructions.
 - .1 Use abrasive blast-cleaning methods if recommended by paint manufacturer.

- .5 CMU / Masonry Substrates: Remove efflorescence and chalk. Do not paint surfaces if moisture content or alkalinity of surfaces or mortar joints exceeds that permitted in manufacturer's written instructions.
- .6 Steel Substrates: Remove rust, loose mill scale, and shop primer, if any. Clean using methods recommended in writing by paint manufacturer, but not less than the following:
 - .1 SSPC-SP 3.
- .7 Shop-Primed Steel Substrates: Clean field welds, bolted connections, and abraded areas of shop paint, and paint exposed areas with the same material as used for shop priming to comply with SSPC-PA 1 for touching up shop-primed surfaces.
- .8 Galvanized-Metal Substrates: Remove grease and oil residue from galvanized sheet metal by mechanical methods to produce clean, lightly etched surfaces that promote adhesion of subsequently applied paints.
- .9 Gypsum Wallboard: Repair all surfaces in gypsum wallboard with wallboard joint finishing compound or spackling compound, filled out flush and sanded smooth. Clean all surfaces and taped joints of dust, dirt and other contaminants and be sure they are thoroughly dry before applying paint.
- .10 Cotton or Canvas Insulation Covering Substrates: Remove dust, dirt, and other foreign material that might impair bond of paints to substrates.
- .11 Mix and prepare paint materials according to manufacturer's written instructions.
 - .1 Maintain containers used in mixing and applying paint in a clean condition, free of foreign materials and residue.
 - .2 Stir material before application to produce a mixture of uniform density. Stir as required during application. Do not stir surface film into material. If necessary, remove surface film and strain material before using.
 - .3 Use only thinners approved by paint manufacturer and only within recommended limits.

3.3 APPLICATION

- .1 Apply paints according to manufacturer's written instructions and to recommendations in "MPI Manual."
 - .1 Use applicators and techniques suited for paint and substrate indicated.
 - .2 Paint surfaces behind movable equipment and furniture same as similar exposed surfaces. Before final installation, paint surfaces behind permanently fixed equipment or furniture with prime coat only.
 - .3 Paint front and backsides of access panels, removable or hinged covers, and similar hinged items to match exposed surfaces.
 - .4 Do not paint over labels of independent testing agencies or equipment name, identification, performance rating, or nomenclature plates.
 - .5 Primers specified in painting schedules may be omitted on items that are factory primed or factory finished if acceptable to topcoat manufacturers.
- .2 Tint each undercoat a lighter shade to facilitate identification of each coat if multiple coats of same material are to be applied. Tint undercoats to match colour of topcoat, but provide sufficient difference in shade of undercoats to distinguish each separate coat.
- .3 Apply first coat to surfaces that have been cleaned, pretreated, or otherwise prepared for painting as soon as practicable after preparation and before subsequent surface deterioration.

- .1 The number of coats and film thickness required are the same regardless of application method. Do not apply succeeding coats until previous coat has cured as recommended by manufacturer. If sanding is required to produce a smooth, even surface according to manufacturer's written instructions, sand between applications.
 - .1 Recoat primed and sealed surfaces where evidence of suction spots or unsealed areas in first coat appears, to ensure a finish coat with no burn-through or other defects due to insufficient sealing.
 - .2 Primers specified in painting schedules may be omitted on items that are factory primed or factory finished if acceptable to topcoat manufacturers.
 - .3 If undercoats, stains, or other conditions show through final coat of paint, apply additional coats until paint film is of uniform finish, color, and appearance. Give special attention to ensure that edges, corners, crevices, welds, and exposed fasteners receive a dry film thickness equivalent to that of flat surfaces.
- .2 Allow sufficient time between successive coats to permit proper drying. Do not recoat surfaces until paint has dried to where it feels firm, and does not deform or feel sticky under moderate thumb pressure, and until application of another coat of paint does not cause undercoat to lift or lose adhesion.
- .4 Apply paints and coatings by brush, roller, spray, or other applicators according to manufacturer's written instructions.
 - .1 Brushes: Use brushes best suited for type of material applied. Use brush of appropriate size for surface or item being painted.
 - .2 Rollers: Use rollers of carpet, velvet-back, or high-pile sheep's wool as recommended by manufacturer for material and texture required.
 - .3 Spray Equipment: Use airless spray equipment with orifice size as recommended by manufacturer for material and texture required.
- .5 Apply paints to produce surface films without cloudiness, spotting, holidays, laps, brush marks, roller tracking, runs, sags, ropiness, or other surface imperfections. Cut in sharp lines and colour breaks.
- .6 Apply block fillers to CMU at a rate to ensure complete coverage with pores filled.
- .7 Painting Fire Suppression, Plumbing, HVAC, Electrical, Communication, and Electronic Safety and Security Work:
 - .1 Paint the following work where exposed in equipment rooms and where exposed in occupied spaces:
 - .1 Equipment, including panelboards.
 - .2 Uninsulated metal piping.
 - .3 Uninsulated plastic piping.
 - .4 Pipe hangers and supports.
 - .5 Metal conduit.
 - .6 Plastic conduit.
 - .7 Tanks that do not have factory-applied final finishes.
 - .8 Duct, equipment, and pipe insulation having cotton or canvas insulation covering or other paintable jacket material.
- .8 Paint portions of internal surfaces of metal ducts, without liner, behind air inlets and outlets that are visible from occupied spaces.

- .1 Colour: Flat (gloss level 1), nonspecular, black.

3.4 FIELD QUALITY CONTROL

- .1 Dry Film Thickness Testing: Owner may engage the services of a qualified testing and inspecting agency to inspect and test paint for dry film thickness.
 - .1 Contractor shall touch up and restore painted surfaces damaged by testing.
 - .2 If test results show that dry film thickness of applied paint does not comply with paint manufacturer's written recommendations, Contractor shall pay for testing and apply additional coats as needed to provide dry film thickness that complies with paint manufacturer's written recommendations.

3.5 CLEANING AND PROTECTION

- .1 At end of each workday, remove rubbish, empty cans, rags, and other discarded materials from Project site.
- .2 After completing paint application, clean spattered surfaces. Remove spattered paints by washing, scraping, or other methods. Do not scratch or damage adjacent finished surfaces.
- .3 Protect work of other trades against damage from paint application. Correct damage to work of other trades by cleaning, repairing, replacing, and refinishing, as approved by Consultant, and leave in an undamaged condition.
- .4 At completion of construction activities of other trades, touch up and restore damaged or defaced painted surfaces.

3.6 INTERIOR PAINTING SCHEDULE

- .1 Concrete Substrates:
 - .1 Latex System - MPI INT 3.1A:
 - .1 Primer: Alkali resistant, water based.
 - .2 Intermediate Coat: Latex, interior, matching topcoat.
 - .3 Topcoat: Latex, interior (gloss as selected by the Consultant).
- .2 CMU Substrates:
 - .1 Latex System - MPI INT 4.2A:
 - .1 Primer: CMU block filler.
 - .2 Intermediate Coat: Latex, interior, matching topcoat.
 - .3 Topcoat: Latex, interior (gloss as selected by the Consultant).
- .3 Structural Steel Substrates:
 - .1 Water-Based Dry Fall Finish - MPI INT 5.1C
 - .2 High-Performance Architectural Latex System - MPI INT 5.1R:
 - .1 Primer: Acrylic.
 - .2 Intermediate Coat: Latex, interior, high performance architectural; matching topcoat.
 - .3 Topcoat: Latex, interior, high performance architectural (gloss as selected by the Consultant).
 - .3 Coordinate with existing structural steel elements scheduled to receive applied fireproofing and/or intumescent fireproofing.
- .4 Steel (Factory-Primed) Substrates:
 - .1 High-Performance Architectural Latex System:

- .1 Primer: Acrylic (applied over factory primer).
 - .2 Intermediate Coat: Latex, interior, high performance architectural; matching topcoat.
 - .3 Topcoat: Latex, interior, high performance architectural (gloss as selected by the Consultant).
- .5 Galvanized-Metal Substrates:
 - .1 High-Performance Architectural Latex System - MPI INT 5.3M:
 - .1 Prime Coat: Primer, galvanized, water based.
 - .2 Intermediate Coat: Latex, interior, high performance architectural, matching topcoat.
 - .3 Topcoat: Latex, interior, high performance architectural, semi-gloss (MPI Gloss Level 5).
- .6 Hollow Metal Doors and Frames.
 - .1 High-Performance Architectural Latex System - MPI INT 5.3M:
 - .1 Prime Coat: Primer, galvanized, water based.
 - .2 Intermediate Coat: Latex, interior, high performance architectural, matching topcoat.
 - .3 Topcoat: Latex, interior, high performance architectural, semi-gloss (MPI Gloss Level 5).
- .7 Gypsum Board Substrates:
 - .1 Latex System - MPI INT 9.2A:
 - .1 Primer: Sealer, latex, interior.
 - .2 Intermediate Coat: Latex, interior, matching topcoat.
 - .3 Topcoat: Latex, interior (gloss as selected by the Consultant).
- .8 Cotton or Canvas Insulation-Covering Substrates: Including pipe and duct coverings.
 - .1 Latex System - MPI INT 10.1A:
 - .1 Prime Coat: Primer sealer, latex, interior.
 - .2 Topcoat: Latex, interior, flat (MPI Gloss Level 1).

END OF SECTION

PART 1 - GENERAL

1.01 SUMMARY

.1 Section Includes

Furnish, deliver and install colour through phenolic Toilet Partitions as indicated on the drawings and as required by actual conditions at the building. The Toilet Partitions shall include the furnishing of all necessary screws, special screws, bolts, special bolts, expansion shields and all other devices necessary for the proper installation and application of the Toilet Partitions.

1.02 REFERENCES

.1 Standard

All Toilet Partitions must be scheduled, supplied and installed in accordance with: Local Building Code, CGSB (Canadian Government Specifications Board), CSA (Canadian Standards Association), ANSI (American National Standards Institute), ADA (Americans with Disabilities Act). In all cases the above references shall be taken to mean the latest edition of that particular standard including all revisions.

1.03 SUBMITTALS

.1 Make all submittals in accordance with Section: 01 33 00

.2 Submit detailed shop drawings. Drawings must clearly indicate all methods of attachment at floor/ceiling/walls.

.3 Submit product sheets and/or catalogue cuts, of all products listed in the shop drawings.

.4 Samples

1. Upon request, a returnable sample of the Toilet Partitions shall be submitted to the Consultant/Owner for approval not later than (10) days after requested. All samples must be properly identified including: name of supplier, and name of manufacturer.

.5 Operations and Maintenance Data

1. Provide closeout documents in accordance with Specification 01 78 00.
2. Include at a minimum documentation relating to proper care of toilet partitions, such as required lubrications, adjustments, cleaning, etc

1.04 QUALITY ASSURANCE

.1 Supplier Qualifications

1. Toilet Partition shop drawings and Toilet Partitions shall be procured from a source of supply approved by the Consultant/Owner/Architect. Supplier is responsible for the complete Toilet Partition subcontract.

1.05 DELIVERY, STORAGE AND HANDLING

.1 Marking and Packaging

1. Toilet Partitions must be delivered to the job site in the manufacturers' original packages and marked to correspond with the approved shop drawings.

.2 Delivery

1. Toilet Partitions must be delivered in an amount of time deemed appropriate by the Consultant/Owner.

1.06 WARRANTY

- .1 Written Guarantee
 - 1. The Toilet Partition manufacturer shall guarantee all Toilet Partitions by written certification, for a period of (5) years from date of certified substantial performance of the project, against any defects in design, materials and workmanship. Any defects as described will be made good by the manufacturer at no additional cost to the owner.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

- .1 Approved Manufacturers
 - 1. Hadrian Manufacturing Inc.
 - 2. ASI Global Partitions
 - 3. Bradley Corporation

2.02 PHENOLIC TOILET COMPARTMENTS

- .1 Toilet Compartments: Color-Thru phenolic.
 - .1 Configuration: Floor-anchored, overhead-braced mounting.
- .2 Design Criteria
 - .1 Color-Thru Phenolic Surface Burning Characteristics: Provide assemblies with flame spread index of 25 or less and smoke developed index of 450 or less, Class A, when tested in accordance with ASTM E84.
- .3 Fabrication
 - .1 Fabricate toilet compartment components to sizes indicated.
 - .2 Coordinate requirements and provide cutouts for through-partition toilet accessories and solid blocking within panel where required for attachment of toilet accessories.
 - .3 Provide shoes and caps at pilasters and posts to conceal anchorage, supports, and leveling mechanisms.
 - .4 Provide manufacturer's standard corrosion-resistant supports, leveling mechanisms, anchors, and anchoring assemblies for pilasters and posts.
 - .5 Floor Anchored, Overhead Braced Units with Adjustable Pedestals: Provide adjustable pedestals at pilasters to suit floor conditions.

2.03 PHENOLIC TOILET COMPARTMENTS

- .1 Doors, Panels, and Pilasters: Phenolic-resin impregnated, wood-based product core with melamine-impregnated decorative surface papers and transparent, protective topcoat; NEMA LD 3 Compact Laminate.
 - .1 Finish: Matte.
 - .2 Color-Thru Phenolic Color: As selected by Consultant from manufacturer's standard colour range.
 - .3 Privacy: Provide interlocking doors and pilasters with integral Zero-Sightline System routed edges.
- .2 Standard Door and Panel Dimensions:
 - .1 Door Thickness: 3/4 inch (19 mm).
 - .2 Door Width: as indicated on drawings
 - .3 Door Panel Height: 72 inches (1829 mm).
 - .1 Door Height above Floor: 6 inches (152 mm)

- .3 Standard Pilasters: 3/4 inch (19 mm) thick, of sizes required to suit compartment width and spacing.
 - .1 Pilaster Height: 82 inches (2134 mm).
 - .2 Easy-Stall Pilaster Shoes: Formed 20 gauge, 0.0359 inch (0.91 mm) ASTM A666 Type 304 stainless steel with No.4 finish, 3 inches (76 mm) high, concealing floor fastenings and leveling bolts; secured to pilaster with stainless steel tamper-resistant screws; secured to floor with concrete anchors.
 - .1 Provide height and leveling adjustment with machine thread leveling bolts and bottom of pilaster threaded inserts.

2.04 MATERIALS

- .1 Aluminum Extrusions: ASTM B221 (ASTM B221M), 6063 alloy.
- .2 Stainless Steel Sheet: ASTM A240/A240M or ASTM A666/A666M, Type 304, stretcher-leveled standard of flatness.
- .3 Stainless Steel Castings: ASTM A743/A743M.
- .4 Zamac: ASTM B86, commercial zinc-alloy die castings, chrome plated.
- .5 Phenolic Panels: Monolithic core of phenolic resin, reinforced with cellulose fibers, manufactured under high pressure and at high temperatures, with melamine-impregnated decorative surface papers; NEMA LD 3, Compact Laminate.

2.05 HARDWARE AND ACCESSORIES

- .1 Brackets:
 - .1 Continuous Type: Brushed stainless steel, extended depth
- .2 Standard Door Hardware: Brushed stainless steel:
 - .1 Hinges: Brushed stainless steel Alpaco barrel hinges.
 - .2 Latch and Keeper: Brushed stainless steel Alpaco latch with occupancy indicator
 - .3 Coat Hook: Manufacturer's standard coat hook with rubber bumper; one per compartment, mounted on door.
 - .4 Door Pull: Provide door pull for outswinging doors. Provide on both sides of doors designated as accessible.
 - .5 Door Bumper: Provide rubber-tipped door bumpers at out-swinging doors.
- .3 Attachments, Screws, and Bolts: Stainless steel, tamper-resistant type.
 - .1 For Attaching Panels and Pilasters to Brackets: Sex-type through-bolts and nuts, tamper-resistant.

PART 3 - EXECUTION

3.01 EXAMINATION

- .1 Site Preparation
 - 1. The contractor must examine all site conditions that would prevent the proper application and installation of Toilet Partitions. Any defect must be immediately identified and corrected, prior to the installation of the Toilet Partitions.

3.02 INSTALLATION

- .1 Mounting Locations
 - 1. All Toilet Partitions must be mounted according Manufacturers standard locations and those specified on the drawings.

3.03 FIELD QUALITY CONTROL

.1 Inspection

1. After installation has been completed, provide for a site inspection of all Toilet Partitions to determine that all items have been supplied and installed as per the enclosed details. Also, check the operation and adjustment of all Toilet Partitions. Any discrepancies, or malfunctioning product, must be reported to the Architect immediately.

3.04 ADJUSTMENT AND CLEANING

.1 Final Preparation

1. At final completion, Toilet Partitions shall be left clean and free from disfigurement. Make all final adjustments. Where Toilet Partitions are found defective, repair or replace or otherwise correct as directed.

3.05 PROTECTION

.1 Site Protection

1. The Contractor must provide for the proper protection of all Toilet Partitions until the owner accepts the project as complete.

3.06 TOILET PARTITION SCHEDULE

.1 Schedule

1. Provide Toilet Partitions as specified in all above sections and as per the detailed Architectural Drawings.

END OF SECTION

1 General

1.1 SUMMARY

- .1 Furnish labour, materials and other services to complete the fabrication and installation of the following:
 - .1 Washroom and accessories and attachment hardware.
- .2 Include all materials and fitments required for the operation of any unit furnished, in the manner, direction and performance shown on the shop drawings and specified herein.

1.2 REFERENCE STANDARDS

- .1 American Society for Testing and Materials (ASTM):
 - .1 ASTM A153/A153M-09, Standard Specification for Zinc Coating (Hot Dip) on Iron and Steel Hardware
 - .2 ASTM A653/A653M-15, Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process
 - .3 ASTM A666-10, Standard Specification for Annealed or Cold-Worked Austenitic Stainless Steel Sheet, Strip, Plate, and Flat Bar
 - .4 ASTM A1008/A1008M-12a, Standard Specification for Steel, Sheet, Cold-Rolled, Carbon, Structural, High-Strength Low-Alloy, High-Strength Low-Alloy with Improved Formability, Solution Hardened, and Bake Hardenable

1.3 SUBMITTALS

- .1 Provide required information in accordance with Division 01.
- .2 Shop Drawings:
 - .1 Show and describe in detail, materials, finishes, dimensions, details of connections and fastenings, elevations, plans, sections, metal gauges, hardware and any other pertinent information.
- .3 Coordinate the work of this Section with the placement of internal wall reinforcement.

1.4 DELIVERY, STORAGE AND HANDLING

- .1 Coordinate deliveries to comply with construction schedule and arrange ahead for off the ground, under cover storage location.
- .2 Materials shall be carefully checked, unloaded, stored and handled to prevent damage. Protect materials with suitable non-staining waterproof coverings.
- .3 Store materials in original, undamaged containers or wrappings with manufacturer's seals and labels intact.
- .4 Unsatisfactory materials shall be removed from the site.
- .5 Adequately protect the structure and work of other Sections during delivery, storage, handling and execution of the work of the Section.
- .6 Provide tools, plant and other equipment required for the proper execution of the work of this Section.

2 Products

2.1 MANUFACTURERS

- .1 Basis-of-Design Products: Products named in this Section were used as the basis-of-design for the project; additional manufacturers offering similar products may be incorporated into the work of this Section provided they meet the performance requirements established by the named products and provided they submit requests for substitution in accordance with Division 01.
- .2 Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include; but are not limited to, the following:
 - .1 ASI Watrous - Global Partitions
 - .2 Bobrick
 - .3 Frost
 - .4 Koala Kare
 - .5 Dyson
 - .6 Or approved equivalent.

2.2 MATERIALS

- .1 Provide one of the products indicated for each designation in the Washroom and Custodial Accessory Schedule below, subject to compliance with specified requirements.
- .2 Stainless Steel: In accordance with ASTM A666, Type 304, with No. 4 finish (satin); minimum nominal thickness as established by product type.
- .3 Sheet Steel: Steel: In accordance with ASTM A1008/A1008M, cold rolled, commercial quality; minimum nominal thickness as established by product type; surface preparation and metal pretreatment as required for applied finish.
- .4 Galvanized Steel Sheet: In accordance with ASTM A653/A653M, minimum Z180 coating designation.
- .5 Galvanized Steel Mounting Devices: In accordance with ASTM A153/A153M, hot dip galvanized after fabrication.
- .6 Fasteners: Screws, bolts, and other devices of same material as accessory unit, tamper and theft resistant when exposed, and of galvanized steel when concealed.

2.3 FABRICATION

- .1 Washroom and Accessories:
 - .1 Surface Mounted:
 - .1 Fabricate units with tight seams and joints, and exposed edges rolled.
 - .2 Hang doors and access panels with continuous stainless steel hinge.
 - .3 Provide concealed anchorage where possible.
 - .2 Recessed Mounted:
 - .1 Fabricate units of all welded construction, without mitred corners.
 - .2 Hang doors and access panels with full length, stainless steel hinge.
 - .3 Provide anchorage that is fully concealed when unit is closed.
- .2 Workmanship shall be best grade of modern shop practice known to recognized manufacturers specializing in this work. Joints and intersecting members shall be accurately fitted, made in true planes with adequate fastening. Wherever possible fastenings shall be concealed.

- .3 Isolate where necessary to prevent electrolysis between dissimilar metal to metal or metal to masonry or concrete contact.
- .4 Fabricate and erect work square, plumb, straight, true and accurately fitted. Provide adequate reinforcing and anchorage.
- .5 Drilling shall be reamed and exposed edges left clean and smooth.
- .6 Include anchors and fastenings necessary to anchor work of this Section.
- .7 Coordinate with Section 06 10 00 for wood blocking for attachment of washroom accessories.
 - .1 Installed grab bars shall be capable of supporting a downward pull of 500 lbs. per lineal foot.
 - .2 Install blocking, plywood sheathing, and adjust stud spacing or gauge, in locations identified on the Drawings, scheduled to receive a future adult change table (NIC).
 - .1 Once installed, adult change tables shall be capable of supporting a weight of 400 pounds (1.78 kN).
 - .2 Provide Engineered Shop Drawings indicating blocking support, fire-retardant plywood sheathing and steel stud design, including large scale detail of members and materials, connection and interfacing with work of other Sections, jointing details, and anchorage devices. Provide dimension, gauges, thicknesses, description of materials, metal finishing, as well as other pertinent data and information.
 - .3 Shop Drawings are required to identify the load rating of the wall assembly scheduled to accept the adult change table, and shall be stamped by an Engineer located in the Province of the Work.
- .8 Keys: Provide universal keys for internal access to accessories for servicing and re-supplying. Provide minimum of six (6) keys to Owner's representative.

3 Execution

3.1 EXAMINATION

- .1 Inspect surfaces over which the work of this Section is dependent for any irregularities detrimental to the application and performance of the work.
- .2 Notify Consultant in writing of all conditions which are at variance with those in the Contract Documents and/or detrimental to the proper and timely installation of the work of this Section. The decision regarding corrective measures shall be obtained from the Consultant prior to proceeding with the affected work.
- .3 Commencement of work of this Section implies acceptance of surfaces and conditions.

3.2 INSTALLATION

- .1 Make thorough examination of drawings and details, determine the intent, extent, materials, conditions of interfacing with other work and be fully cognizant of requirements.
- .2 Work of this Section shall include complete installation of items specified herein. Installation shall be in strict accordance with manufacturer's printed instructions.
- .3 Securely fasten accessories, level and plumb in the locations shown on the drawings and specified herein. All fastenings shall be concealed.
- .4 Co-ordinate the work of this Section with the work of other Sections to provide the necessary recesses, edge conditions wood blocking for the accessories as required.
- .5 Do all drilling of steel, masonry and concrete necessary for the anchorage of the work.

3.3 ADJUSTING

- .1 Check mechanisms, hinges, locks and latches, adjust and lubricate to ensure that accessories are in perfect working order.

3.4 CLEANING

- .1 Upon completion of the work of this Section or when directed by Consultant, remove all protective coatings, and coverings. Clean and polish exposed surfaces.

3.5 WASHROOM AND CUSTODIAL ACCESSORY SCHEDULE

No.	Description / Model
W1	Mirror (Flat): Framed, 762mm (30") high x 460mm (18") wide, fixed installation, mounted 1000mm (40") to bottom of frame. Provide 1no at each hand wash sink. Bobrick B-165x1830 Or Approved Equivalent
W2	Soap dispenser: Welded 18-8, Type-304, 18-gauge (1.0 mm) stainless steel with satin finish. Plastic back plate incorporates mounting screw holes and mounting tape. Equipped with concealed mounting, clear acrylic refill-indicator window and key lock. Refillable, plastic container. Capacity: 850 ml (30-fl oz). Bobrick B-2012 Or approved equivalent
W3	Hand dryer: Dyson airblade V, ss finish, provide 1no at Universal WC
W4	Horizontal Grab Bar: 1.214mm (0.048") thickness; 610mm (24") long x 32mm (1-1/4") Ø, straight, stainless steel, slip resistant grip, concealed mounting, cap secured with vandal resistant set screws: ASI 3801-30P Bobrick B-6806.99x24 Or Approved Equivalent
W5	L-Shaped Grab Bar: Side "L"-shape grab bar, 760mm (30") long x 760mm (30") high x 32mm (1-1/4") dia., stainless steel, slip resistant grip, concealed mounting, cap secured with vandal resistant set screws: ASI Type 04 Or Approved Equivalent
W6	Toilet paper dispenser – Owner supplied, Contractor installed; 1per toilet.
W7	Sanitary Napkin Disposal: Surface mounted, satin finished stainless steel, concealed fastening, self closing disposal opening with leak-proof, 2.3L capacity plastic receptacle. 1no per Universal WC and 1no per female WC: Bobrick B-35139 Or Approved Equivalent
W8	Shelf: Type 304, 1.2mm thick, satin finish stainless steel shelf with 19mm return edges and hemmed front edge, 365mm long x 125mm deep. Provide 1no at Universal WC: Bobrick B-295 x 14 Or approved equivalent
W9	Coat Hooks: Type 303, solid machined stainless steel in satin finish, 3/4" (20mm) diameter, 2-31/32" (76mm) long post with hook pin fastened to 1-5/16" (34mm) diameter flange cover. Provide 2no at Universal WC and 2no at male and female WC (5no total) : Bobrick B-9542 Or Approved Equivalent

END OF SECTION

PART 1 - GENERAL

1.1 GENERAL REQUIREMENTS:

- .1 The conditions of the Contract Division 1 apply to this section in full, as if repeated herein.
- .2 All depths of materials indicated on the drawings and in these specifications refer to minimum required depth of materials, after compacting.

1.2 SCOPE OF WORK:

- .1 Excavation, backfill and site grading for this Work includes but is not necessarily limited to the following:
 - 1. Stripping and disposal off-site of native topsoil that is surplus or has been indicated by the Consultant to be undesirable.
 - .2 All required excavation.
 - .3 Stockpiling and reuse of on-site fill material approved by the Consultant.
 - .4 Disposal off-site of cut material that is surplus or has been indicated by the Consultant to be undesirable.
 - .5 Supplying imported topsoil and granular materials as well as trucking them to the site.
 - .6 Filling, backfilling and compacting granular materials, amended native topsoil or imported topsoil to attain indicated final grades.

1.3 SOURCE OF FILL:

- .1 The Consultant must approve the soils and granular materials for use. If testing is required, it is to be paid for by Cash Allowance.

1.4 DISPOSAL OF EXCAVATED MATERIALS:

- .1 All excavated sub-grade material generated by construction, may be used as fill on-site unless otherwise rejected by the Consultant, in which case it is to be disposed of legally off-site at a location determined and paid for by the Contractor.
- .2 All surplus sub-grade material generated by construction and not required to attain indicated final grades is to be disposed of legally off-site at a location determined and paid for by the Contractor.
- .3 Refer to Geotechnical Report for results of toxicity characteristic leaching procedure analysis. Any additional required testing of excavated material to be disposed of off-site shall be arranged and paid for by the Contractor.

1.5 INSPECTIONS AND TESTING:

- .1 The Contractor shall engage a third party testing and inspections consultant satisfactory to the Owner for the testing/inspections outlined below. Cost for testing/inspections consultant shall be paid for from the project cash allowance.
- .2 The Contractor shall provide washed sieve gradation analysis for all aggregates and granular materials to be used in accordance with MTO Laboratory Testing Manual Section LS-602 and related standards.
- .3 The Contractor shall carry out field inspections and compaction testing of all compacted sub-grade and base materials in accordance with MTO Laboratory Testing Manual Section LS-623 and related standards.
- .4 The Contractor shall maintain a record showing the location and result of inspections and testing conducted. These records shall be submitted to the Consultant when requested, or prior to proceeding with work that depends upon the work of this Section.

PART 2 - PRODUCTS

2.01 SOIL, GRANULAR & BACKFILL MATERIALS:

- .1 Granular 'A' and 'B': All structural backfill material shall be manufactured granular crushed from limestone rock, described as Granular 'A' and Granular 'B', conforming to the requirements of Ontario Provincial Standard Specification OPSS 1010, "Material Specifications for Aggregates - Granular A, B, M and Select Subgrade Material". **Reclaimed concrete material (RCM) is not acceptable.**
- .2 19mm (or 20mm) crushed stone ("crusher run") shall be clean, durable, angular crushed gravel or stone conforming to the following limits:

Sieve Designation	% Passing
19.0mm	100%
4.75mm	40-80%
2.36mm	27-65%
600µm	12-35%
- .3 19mm (or 20mm) clear stone shall be clean, durable, angular crushed gravel or stone conforming to the following limits:

Sieve Designation	% Passing
19.0mm	100%
4.75mm	2%
- .4 Fill Material: Selected material from excavation or other sources, approved by the Consultant for use intended, unfrozen and free from rocks larger than 75mm, cinders, ashes, sods, refuse, contaminants or other deleterious materials.

2.02 OTHER MATERIALS:

- .1 All other materials not specifically described but required for a complete and proper installation, shall be selected by the Contractor, subject to the review of the Consultant.
- .2 Geotextile: Terrafix 270R or equal.

PART 3 - EXECUTION

3.01 REMOVAL OF TOPSOIL:

- .1 Remove all topsoil from areas to be excavated or regraded. Strip topsoil when it is dry enough to prevent contamination with sub-grade material.
- .2 Do not handle topsoil in wet or frozen condition.
- .3 Stockpile any available topsoil on-site where directed. Piles shall not exceed 2000mm in height.

3.02 EXCAVATION:

- .1 Provide, install and maintain adequate fences and barricades.
- .2 Excavate to lines, grades, elevations and dimensions indicated on the Drawings.
- .3 Remove concrete, masonry, rubble and other obstructions encountered during excavation and dispose of legally off-site.
- .4 Excavation required within proximity of underground utility lines or within the dripline of trees designated to remain are to be made by hand.

- .5 Excavation must not interfere with normal 45° plane of bearing from the bottom of any footing.
- .6 Earth bottoms of excavations to be undisturbed soil, level, free from loose, soft or organic material.

3.03 DEWATERING:

- .1 Keep excavations free of water while Work is in progress.
- .2 Avoid excavation below groundwater table if quick condition or heave is likely to occur. Prevent piping or bottom heave of excavations by groundwater lowering, or other means.
- .3 Protect open excavations against flooding and damage due to surface run-off.
- .4 Dispose of accumulated water in a manner not detrimental to public and private property, or any portion of Work completed or under construction.
- .5 Provide flocculation tanks, settling basins, or other treatment facilities to remove suspended solids or other materials before discharging to storm sewers.

3.04 OVER-EXCAVATION:

- .1 Where excavations are made below the indicated intended elevations, backfill with lean concrete, unshrinkable fill, crushed stone or granular material as directed by the Consultant. Compact to provide a firm, unyielding sub-grade at no additional cost to the Owner.

3.05 BACKFILL:

- .1 Do not place, spread or compact any backfill materials during unfavourable weather. Unfavourable weather includes temperatures below 0°C and/or precipitation.
- .2 Do not commence any backfill operation without adequate compaction equipment.
- .3 Protect the site of the backfilling and storage of backfill materials from freezing.
- .4 Prior to placing backfill, scarify the sub-grade surface to a depth of 50mm.

3.06 COMPACTION:

- .1 All layers of backfill material shall be compacted to not less than the minimum density specified. The Contractor is not to proceed until approval of compaction has been granted.
 - .1 Refer to Pavement Design section of Geotechnical report and City of Toronto Pavement Structural Design Guidelines for specific compaction requirements.

3.07 STORAGE AND STOCKPILING OF MATERIALS:

- .1 Stockpiled and imported materials to be stored away from existing trees, drainage areas and access points.

3.08 SITE GRADING:

- .1 Perform all rough and finish grading and backfilling required to achieve the finished elevations indicated on the Drawings.
- .2 Ensure that the finished ground slopes are as indicated on the Drawings.
- .3 Regrade all areas that retain or pond water.
- .4 All areas shall be rough graded within a tolerance of plus or minus 50mm.

END OF SECTION

1 General

1.1 SUMMARY

- .1 Supply and installation of concrete and to form curbs and sidewalks, as indicated in this Section.

1.2 REFERENCE STANDARDS

- .1 American Society for Testing and Materials (ASTM)
- .1 ASTM C309-11, Standard Specification for Liquid Membrane-Forming Compounds for Curing Concrete
 - .2 ASTM D1751-04(2008), Standard Specification for Preformed Expansion Joint Filler for Concrete Paving and Structural Construction (Non-extruding and Resilient Bituminous Types)
 - .3 ASTM D1752-04a(2008): Standard Specification for Preformed Sponge Rubber Cork and Recycled PVC Expansion Joint Fillers for Concrete Paving and Structural Construction
- .2 Canadian Standards Association (CSA)
- .1 CSA A23.1-09/23.2-09: Concrete Materials and Methods of Concrete Construction/Test methods and Standard Practices for Concrete
 - .2 CSA G30.18-09: Carbon Steel Bars for Concrete Reinforcement
 - .3 CAN/CSA B651-04(R2010): Accessible Design for the Built Environment

2 Products

2.1 MATERIALS

- .1 Granular Base:

- .1 Conforming to OPSS Form No. 1010, Class 'A' aggregate:

Sieve Designation	% Passing by Dry Weight
Imperial	
22mm (7/8")	100
16mm (5/8")	75 - 100
13mm (1/2")	65 - 90
No. 4	35 - 55
No. 16	15 - 45
No. 50	5 - 22
No. 200	0 - 8

- .2 Forms:

- .1 Form Materials: Plywood, metal, metal framed plywood, or other acceptable panel type materials to provide full depth, continuous, straight, smooth exposed surfaces.

- .2 Use flexible or curved forms for curves with a radius of 30m or less.
- .3 Form Release Agent: Commercially formulated form release agent that will not bond with, stain, or adversely affect concrete surfaces and will not impair subsequent treatments of concrete surfaces.
- .3 Steel Reinforcement:
 - .1 Plain Steel Welded Wire Reinforcement: Meeting the requirements of ASTM A185, fabricated from as-drawn steel wire into flat sheets.
 - .2 Deformed Steel Welded Wire Reinforcement: Meeting the requirements of ASTM A497, flat sheet.
 - .3 Reinforcing Bars: Deformed bars, meeting requirements of CSA G30.18, and Grade meeting requirements of Structural Engineer. Dowels and Tie-Bars: Smooth or deformed bars, meeting requirements of CSA G30.18, Grade meeting requirements of Structural Engineer, and as follows:
 - .1 Dowels:
 - .1 Plain round bars, clean, straight and free from flattened or burred ends.
 - .2 Dowels for contraction joints shall be in rigid assemblies of required dimension and spacing and held in the middle of the slab depth to proper horizontal and vertical alignment.
 - .2 Tie-Bars: Deformed steel bars.
 - .4 Bar Supports: Bolsters, chairs, spacers, and other devices for spacing, supporting, and fastening reinforcing bars, welded wire reinforcement, and dowels in place, fabricated from steel wire, plastic, or precast concrete of greater compressive strength than concrete; equip wire bar supports with sand plates or horizontal runners where base material will not support chair legs.
- .4 Concrete Materials:
 - .1 Cement Type: Normal Portland Cement in accordance with CSA A3000, Type GU.
 - .2 Concrete Admixtures: Certified by manufacturer to contain a maximum of 0.1% water-soluble chloride ions by mass of cementitious material and being compatible with other admixtures and cementitious materials; do not use admixtures containing calcium chloride:
 - .1 Corrosion Inhibiting Admixture:
 - .1 Commercially formulated, anodic inhibitor or mixed cathodic and anodic inhibitor; capable of forming a protective barrier and minimizing chloride reactions with steel reinforcement in concrete.
 - .2 Acceptable materials: Subject to compliance with requirements, products that may be incorporated into the Work include, but are not limited to, the following:
 - .1 FerroGard-901; Sika Corporation.
 - .2 DCI or DCI-S; Grace Construction Materials.
 - .3 Rheocrete 222+; BASF
- .5 Water: Meeting requirements of CSA A23.1/A23.2.

- .6 Concrete Aggregate: Meeting requirements of CSA A23.1/A23.2, containing no shale, and as follows:
 - .1 Normal Density Fine Aggregate: Nominal maximum aggregate size in accordance with CSA A23.2-1A, uniformly graded to maintain Workability and control water bleed out, as indicated on Drawings.
 - .2 Normal Density Coarse Aggregate: Aggregate selected from Group I or Group II Grading Classifications, to suit design mix, in accordance with CSA A23.2-13A, nominal maximum aggregate sizes and applications as indicated on Drawings.
- .7 Expansion and Isolation Joint Filler Strips: Meeting requirements of ASTM D1751, asphalt saturated cellulose fibre.
- .8 Curing Materials:
 - .1 Absorptive Cover: AASHTO M182, Class 2, burlap cloth made from jute or kenaf, weighing approximately 300 g/m² dry weight.
 - .2 Moisture Retaining Cover: ASTM C171, polyethylene film or white burlap polyethylene sheet.
 - .3 Water: Potable.
 - .4 Curing and Sealing Compound: Ultra-violet light resistant, non-yellowing acrylic polymer/water based type curing and sealing compound conforming to ASTM C309-93, Type 1, Class B, 'Sealtight VOCOMP-20' by W.R. Meadows of Canada Limited, or 'Florseal W.B.' by Sika Canada Inc., (or approved alternate).

3 Execution

3.1 PREPARATION

- .1 Set out work from lines and levels shown on drawings.
- .2 Fine grade, shape and compact subgrade to minimum of 98% Standard Proctor Density.

3.2 INSTALLATION

- .1 Concrete Curbs:
 - .1 Align concrete curbs with curves and tangents as shown on drawings. The minimum overall depth shall be 457mm (18") with a curb face of 150mm (6") as shown on drawings.
 - .2 Obtain approval of forms from Consultant before pouring concrete.
 - .3 Side forms shall be of nominal 50mm (2") thick lumber, free of warp, and properly supported to maintain alignment and grade, except on curved sections where nominal 25mm (1") lumber may be used. Treat all form lumber with a non-staining mineral oil prior to concrete placement. Construct form to prevent honeycombing.
 - .4 Curbs shall have expansion joints of asphalt plank at 4572mm to 6096mm (15' to 20') intervals. Place a reinforcing bar at top and base of curb, with concrete coverage of 50mm (2") minimum.
 - .1 Recess all expansion joint fillers required in this Section, 3mm (1/8") deep.
- .2 Sidewalks:
 - .1 Place granular base immediately after the subgrade is approved by the Consultant, to 150mm (6") compacted thickness.
 - .2 Fine grade, shape and compact each layer to a minimum of 98% Standard Proctor Density.

- .3 Maintain true grade and cross section for each layer of material.
- .4 Place asphalt planks at locations as indicated on drawings to form expansion joints at maximum of 4572mm to 6096mm (15' to 20') intervals with dummy joints at 1524mm (5') O/C.
- .5 Place welded wire mesh 38mm (1-1/2") from top surface of concrete. Lap mesh mats 150mm (6") and tie securely.
- .3 Concrete:
 - .1 Pour concrete on prepared granular base to required levels and dimensions. Execute work in accordance with CAN/CSA-A23.1/A23.2.
 - .2 Do not deposit concrete on frozen ground. When deposited in forms concrete shall have a temperature between 10 deg.C and 30 deg.C and these limits shall be maintained for 72 hours.
 - .3 Fill forms with an excess of concrete and, after compacting strike to the required level in such a manner as to force the coarse aggregate below the mortar surface; finish top surface with a wood float to an even, smooth, dense surface.
 - .4 Do not strip forms for 24 hours after pouring concrete.
 - .5 After finishing and after stripping the forms, treat surfaces with approved curing compound.
 - .6 By means acceptable to the Consultant protect concrete from harmful effects of sunshine, drying winds and cold running of surface water for a minimum period of 5 days.
- .4 Curbs Finishes:
 - .1 Curbs finish edges and joints, and expansion joints:
 - .1 Square Edge Joints; Saw-cut straight. Radius edges are not acceptable.
 - .2 Recess joint fillers 3mm (1/8") deep from finished surface.
 - .2 Sidewalks Concrete shall have a broom finish, employing a stiff broom, to produce an even, "non-slip", lightly sandblasted surface.
 - .3 Provide concrete curb cuts and sidewalk handicap access ramps as indicated in accordance with CAN/CSA-B651, as per city of Toronto Standards and the authorities having jurisdiction.

END OF SECTION

1 General

1.1 SUMMARY

.1 Section Includes:

- .1 Supply and installation of interior and exterior cast-in-place, one-piece, tactile warning surface indicator plates.

1.2 REFERENCE STANDARDS

.1 Verify accessibility requirements with authorities having jurisdiction.

- .1 Accessibility Requirements: Comply with applicable provisions in the Ontario Building Code.
- .2 CSA standard B651-12
- .3 AODA specifications.

1.3 SUBMITTALS

.1 Product Data: For each type of product, submit manufacturer's literature describing products.

.2 Shop Drawings: For each type of tactile walking surface indicator.

- .1 Submit standard manufacturer shop drawings showing all pertinent characteristics, including profile, sound on cane contact amplification feature, and installation methods.

.3 Samples for Verification:

- .1 Submit samples of tactile of the kind proposed for use.
- .2 Samples shall be properly labeled and shall contain the following information:
 - .1 Name of Project, Submitted by, Date of Submittal, Manufacturer's Name, and Catalog Number.

1.4 INFORMATIONAL SUBMITTALS

.1 Material Test Reports:

- .1 Submit current test reports from qualified, accredited independent testing laboratory in accordance with ASTM guidelines and indicating that materials proposed for use are in compliance with specification requirements and the meet properties indicated.

1.5 CLOSEOUT SUBMITTALS

.1 Maintenance Data:

- .1 Include copies of manufacturer's specified maintenance practices for each type of tactile warning surface tiles and accessories.

1.6 QUALITY ASSURANCE

- .1 Installer Qualifications: Experienced installer, certified in writing by tactile warning indicators manufacturer, who has successfully completed tactile warning indicators installations similar in material, design, and extent to work in project.

1.7 PROJECT CONDITIONS

- .1 Ensure existing surface is acceptable for installation of product.
- .2 Start of installation indicates project conditions are acceptable.

1.8 WARRANTY

- .1 Warranty: Manufacturer agrees to repair or replace components of tactile warning indicators that fail in materials within specified warranty period.
 - .1 Warranty includes: manufacturing defects, breakage, and deformation.
 - .2 Warranty Period: Five (5) years from date of Substantial Performance.

2 Products

2.1 DETECTABLE WALKING SURFACE INDICATORS

- .1 Exterior Decorative Tactile Warning Surface Indicators (TWSI-01): One-piece, cast iron indicators and plate.
 - .1 Plate Size: 610mm x 610mm
 - .2 Tactile Indicators:
 - .1 Diameter: 22 mm.
 - .2 Height: 5 mm.
 - .3 15 mm fixed spigot.
 - .4 Non-slip concentric ring surface texture.
 - .3 Basis of Design Materials: Advantage Cast Iron Plates by Kinesik Engineered Products, or approved equivalent.
- .2 Interior Standard Tactile Warning Surface Indicators (TWSI-02):
 - .1 Vitrified Polymer Composite (VPC) Cast in Place Warning tiles shall be an epoxy polymer composition with a ultra-violet coating employing aluminum oxide particles in the truncated domes.
 - .2 Dimensions: The tile shall incorporate an in-line pattern of truncated domes measuring nominal 0.2" height, 0.9" base diameter, 0.45" top diameter spaced center-to-center 2.35" as measured on a diagonal and 1.67" as measured side by side in-line.
 - .3 Colour: Homogeneous throughout the tile; Colour: Federal Yellow.
 - .4 Basis of Design Materials: Armor Tile by Kinesik Engineered Products, or approved equivalent.

3 Execution

3.1 EXAMINATION

- .1 Verify that installation area is in suitable condition to begin installation according to manufacturer's written instructions. Verify that installation of tactile warning indicators will comply with accessibility requirements upon completion.

3.2 INSTALLATION OF TACTILE SURFACE INDICATORS

- .1 Place tactile surface indicators in pattern and spacing in accordance with Ontario Building Code, current edition, and CSA standard B-651-12 to extent indicated in the construction documents.

3.3 CLEANING AND PROTECTION

- .1 Protect detectable warning indicators against damage during construction period.

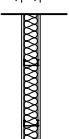
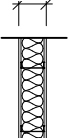
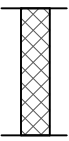
END OF SECTION

FIRM NAME: WORKSHOP ARCHITECTURE 1157 DAVENPORT ROAD Toronto, ON M6H 2G4 tel. 416.901.8055 fax 416.849.0383		LOCATION: 450 Hughson Street N, Hamilton, ON, L8L 4N5	
NAME OF PROJECT: Bennetto Community Centre - Auditorium and Washroom Upgrades		Project Area: 150 M²	
ITEM		ONTARIO'S 2024 BUILDING CODE DATA MATRIX PARTS 9 & 9	
1	PROJECT DESCRIPTION:	☐ NEW ☐ ADDITION ☒ ALTERATION	☒ PART 11 11.1 TO 11.4
2	MAJOR OCCUPANCY(S):	A1 & A2	3.12.1(1)
3	BUILDING AREA (M²)	EXISTING 2927 NEW TOTAL no change	1.4.12.1[A]
4	GROSS AREA	EXISTING 2927 NEW TOTAL no change	1.4.12.1[A]
5	NUMBER OF STOREYS	ABOVE GRADE 1 BELOW GRADE 0	1.4.12.1[A] & 3.2.1.1
6	NUMBER OF STREETS / FIRE FIGHTER ACCESS	2 (EXISTING UNCHANGED)	3.2.2.10 & 3.2.5
7	BUILDING CLASSIFICATION	3.2.2.21 and 3.2.2.28	3.2.2.20-83
8	SPRINKLER SYSTEM (PROPOSED)	☐ ENTIRE BUILDING ☐ BASEMENT ☒ SELECTED FLOOR AREAS ☐ NOT REQUIRED	3.2.2.20-83 3.2.15 3.2.2.17 INDEX
9	STANDPIPE REQUIRED	☐ YES ☒ NO	3.2.9
10	FIRE ALARM REQUIRED	☒ YES ☐ NO	3.2.4
11	WATER/SERVICE/SUPPLY IS ADEQUATE	☒ YES ☐ NO	3.2.5.7
12	HIGH BUILDING	☐ YES ☒ NO	3.2.6
13	CONSTRUCTION RESTRICTIONS	☒ COMBUSTIBLE ☐ NON-COMBUSTIBLE ☐ BOTH	3.2.2.20-83
14	MEZZANINE(S) AREA M²	NA	3.2.1.1(3)-(8)
15	OCCUPANT LOAD BASED ON	☐ MSO/PERSON ☒ DESIGN OF BUILDING	3.1.17
Auditorium Fixed Seating: 405 (existing)		LOAD _____ PERSONS	9.10.13
16	BARRIER-FREE DESIGN	☒ YES ☐ NO (EXPLAIN)	3.8
17	HAZARDOUS SUBSTANCES	☐ YES ☒ NO	3.3.12 & 3.3.1.19
18	REQUIRED FIRE RESISTANCE RATING (FRR)	HORIZONTAL ASSEMBLIES FIRE FRR (HOURS) FLOORS no change HOURS ROOF no change HOURS MEZZANINE NA HOURS FRR OF SUPPORTING MEMBERS	LISTED DESIGN NO. OR DESCRIPTION (SG-2) NO CHANGE LISTED DESIGN NO. OR DESCRIPTION (SG-2) NO CHANGE
19	SPATIAL SEPARATION - CONSTRUCTION OF EXTERIOR WALLS	NA	3.2.3
20	OTHER-DESCRIBE	NA	9.10.14

ONTARIO'S 2024 BUILDING CODE DATA MATRIX - PART 11			
11.00	Building Code Version:	O. Reg. 163/24	Last Amendment O. Reg. 447/24
11.08	Existing Building Classification:	Change in Major Occupancy: ☐ Yes ☒ Not Applicable (no change of major occupancy) Construction Index: O Hazard Index: O Importance Category: ☐ Low ☒ Normal ☐ High ☐ Post-disaster	10.11.2, 11.2.1.1, 11.2.1.1A, 11.2.1.1B to N, 4.1.2.1(3), 2.3.1, and 5.2.2.1(2)
11.09	Renovation Type:	☒ Basic Renovation ☐ Extensive Renovation	11.3.3.1, 11.3.3.2
11.13	Reduction in Performance Level:	Structural: ☐ Yes ☒ No By increase in occupant load: ☐ Yes ☒ No By change of major occupancy: ☐ Yes ☒ No Plumbing: ☐ Yes ☒ No Sewage systems: ☐ Yes ☒ No Extension of buildings of combustible construction: ☐ Yes ☒ No	11.4.2.1, 11.4.2.2, 11.4.2.3, 11.4.2.4, 11.4.2.5, 11.4.2.6
11.14	Compensation Construction:	☐ No ☒ Yes Structural: ☒ No ☐ Yes By increase in occupant load: ☒ No ☐ Yes By change of major occupancy: ☒ No ☐ Yes Plumbing: ☒ No ☐ Yes Sewage systems: ☒ No ☐ Yes Extension of buildings of combustible construction: ☒ No ☐ Yes	11.4.3.1, 11.4.3.2, 11.4.3.3, 11.4.3.4, 11.4.3.5, 11.4.3.6, 11.4.3.7
11.15	Compliance Alternatives Proposed:	☒ No ☐ Yes _____	11.5.1

ASSEMBLY SCHEDULE

- USE WATER RESISTANT DRYWALL IN ALL WET AREAS - REFER TO SPECIFICATION 09 25 00.
- PROVIDE CONTINUOUS PLYWOOD BLOCKING BEHIND ALL MILLWORK CABINETS, SUSPENDED ITEMS, TELEVISIONS ETC.
- ALL INTERNAL PARTITIONS EXTEND TO U/S DECK ABOVE UNLESS NOTED OTHERWISE.
- PROVIDE FIRE RESISTANCE RATINGS AS INDICATED ON DRAWINGS.

INTERIOR PARTITIONS	
	1 LAYER 16mm TYPE X GYPSUM WALLBOARD 92mm STEEL STUDS ACOUSTICAL FIRE BATT INSULATION 1 LAYER 16mm TYPE X GYPSUM WALLBOARD TO U/S OF SLAB UNLESS NOTED OTHERWISE
	1 LAYER 16mm TYPE X GYPSUM WALLBOARD 152mm STEEL STUDS ACOUSTICAL FIRE BATT INSULATION 1 LAYER 16mm TYPE X GYPSUM WALLBOARD TO U/S OF SLAB UNLESS NOTED OTHERWISE
	190mm CMU or STG PARTITION
	1 LAYER 16mm TYPE X GYPSUM WALLBOARD 92mm STEEL STUDS TO U/S OF SLAB UNLESS NOTED OTHERWISE

General Notes:

- Drawings are to be read in conjunction with project specifications.
- Make good all surfaces/areas/finishes damaged during demolition. Prepare existing surfaces to accept new finishes as scheduled/specified.
- All dimensions are to face of partition unless noted otherwise.
- Angles are 90 degrees unless noted otherwise.
- Contractor to measure and verify all site dimensions and verify existing conditions affecting new work. Notify consultant of any discrepancies before proceeding with new work.
- General Contractor to provide adequate blocking for all millwork, signage, grab bars, equipment, etc mounted to walls/ceilings.
- General Contractor shall be responsible for all mechanical, electrical and plumbing work. The General Contractor shall be responsible for all chases, cutting, openings (including scanning/x-ray where required) and patching as required by mechanical, electrical, plumbing and IT cabling trades. Review requirements with these trades.
- Site access, including working hours, for material delivery, work forces and for refuse removal is to be coordinated with the Owner, as per terms outline in **Division 1**.
- General Contractor is to co-ordinate and co-operate with trades retained directly by Owner as applicable (eg security contractor, IT sub trades, etc).
- General Contractor shall be responsible for scheduling the trades identified in item 9, where such work affects the progress of the job.
- Any temporary shoring required, including excavation support systems, shall be coordinated and provided by General Contractor within bid price. Refer also to Structural drawings, details and specification for additional requirements.
- Building Permit shall be obtained by Owner. All other permits/fees (including but not limited to ESA, Municipal road closure permits, service connection fees, sign permits, etc) to be obtained by the Contractor as necessary to complete the Work. All costs for these permits (Municipal inspections, traffic direction costs, etc) shall be included in bid price and provided at no additional cost to the Owner.
- Reinstatement of any adjacent paving/sidewalks/roadways/asphalt within the Municipal Right of Way or adjacent properties disturbed during construction to be carried out according to applicable Municipal Standards. Refer also to Landscape/Civil drawings.

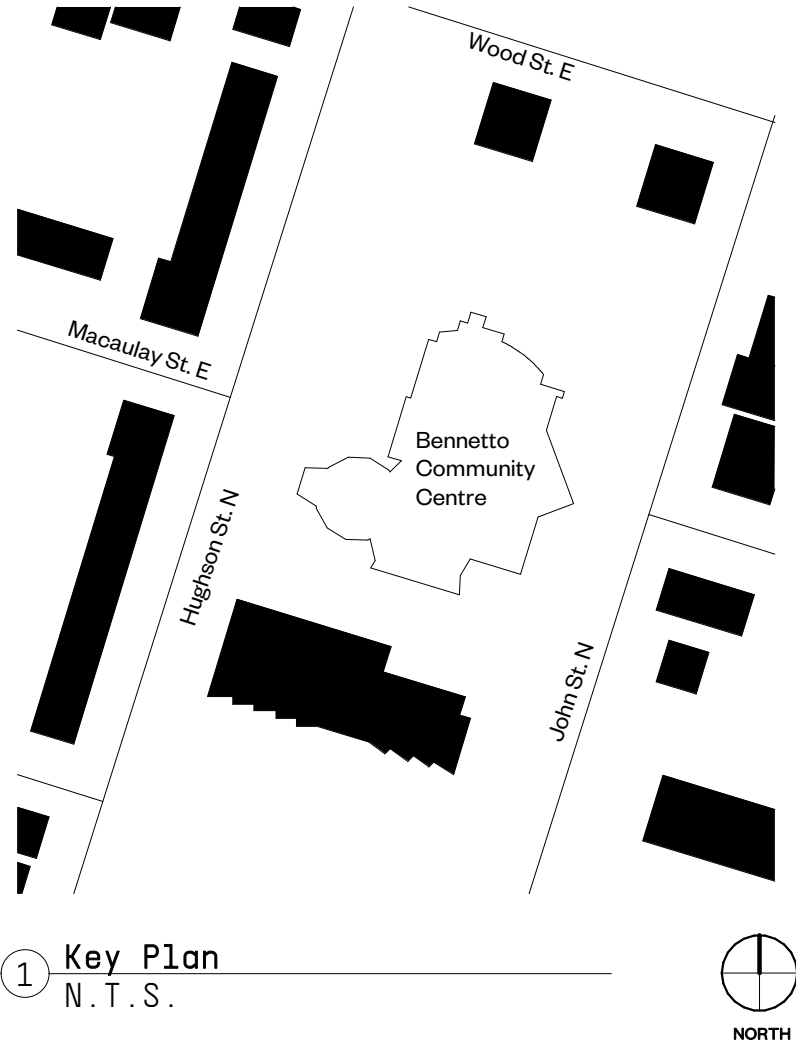
Sheet List	
Sheet Number	Sheet Name
ARCHITECTURAL	
A0.0	OBO Matrix, Life Safety Plan, Key Plan
A1.0	Demolition Plans
A1.1	Proposed Plans & Schedules
A3.0	Details - Interior Ramp
A3.1	Details - Exterior Ramp & Stairs

MECHANICAL	
M0.0	Lead Sheet
M0.1	General Mechanical Specifications
M0.2	Plumbing Specifications
M1.0	Ground Floor Proposed Drainage Plan
M1.1	Ground Floor Proposed Plumbing Plan
M2.0	Mechanical Details
MD1.0	Ground Floor Drainage Demolition Plan
MD1.1	Ground Floor Drainage Demolition Plan
MD1.2	Ground Floor Plumbing Demolition Plan

ELECTRICAL	
E0.0	General Notes & Legend
E0.1	Specifications #1/2

Sheet List	
Sheet Number	Sheet Name
E0.2	
E1.1	Specifications #2/2
E2.1	Ground Floor Proposed Plan
E3.0	Ground Floor Lighting Plan and Fire Alarm Proposed Plan
E3.1	Panel Schedules and Details
ED1.1	Ground Floor Power and Systems Demolition
ED2.1	Ground Floor Lighting and Fire Alarm Demolition Plan

STRUCTURAL	
S0.0	General Notes & Key Plan
S1.0	Proposed Plan and Details
S1.1	Proposed Ramp Details
S2.0	Sections
S2.1	Sections
S2.2	Washroom Elevations & Details
S3.0	Details
S4.0	Details
SD1.0	Demolition Plan



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Rev	Description	Date
2	Issued for Costing	2024-05-16
3	Issued for Permit	2026-02-27
4	Issued for Tender	2026-03-06

Materials Legend

ACT	Acoustic Ceiling Tile
ALUM	Aluminum
CER	Ceramic Tile
CMU	Concrete Block
CPT	Carpet
EXIST	Existing
EXP	Exposed
GWB	Gypsum Wallboard
HM	Hollow Metal
MIR	Mirror
MTL1	Sheet Metal
POR	Porcelain Tile
PLAM	Plastic Laminate
PLT	Plaster Finish (Existing)
PT	Paint Finish
RB	Rubber Base
RES	Resilient Sheet Flooring
SGT	Structural Glazed Block
SS	Stainless Steel
WD	Solid Wood
WV	Wood Veneer

WORKSHOP

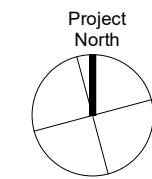
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www.workshoparchitecture.ca

Bennetto CC Auditorium
Upgrades

450 Hughson St
Hamilton, ON

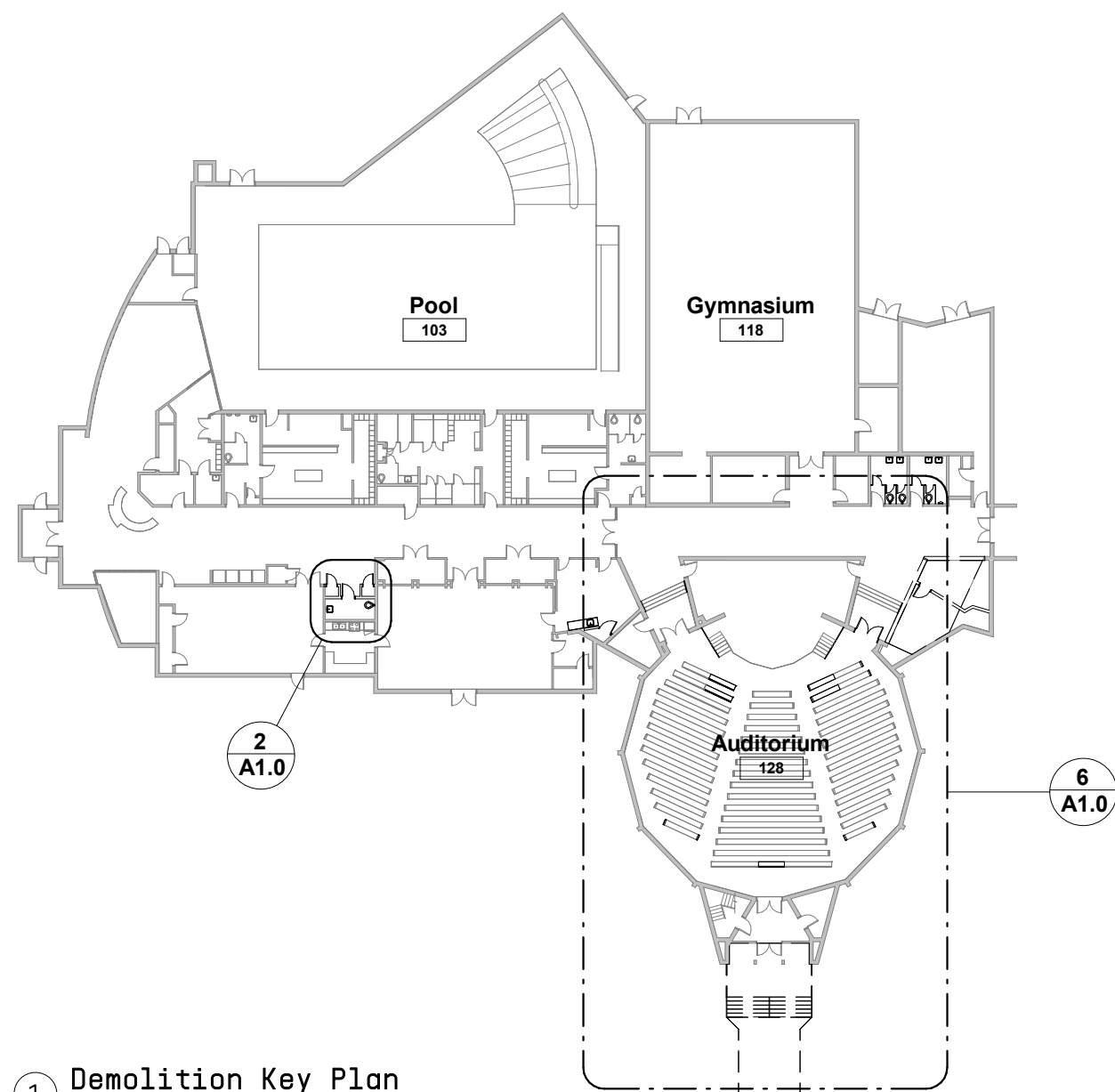
PROJECT CODE:	SCALE:
2504	As indicated
DATE:	STATUS:
February 2026	Issued for Tender

OBO Matrix, Life Safety Plan, Key
Plan



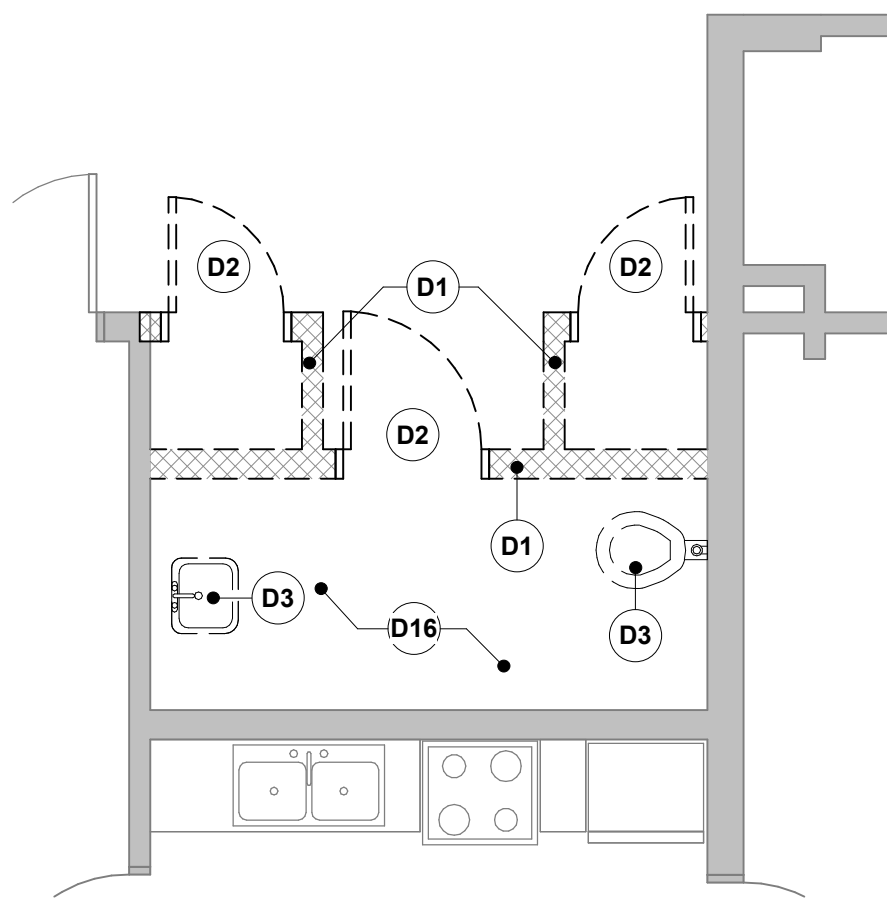
drawing number

A0.0

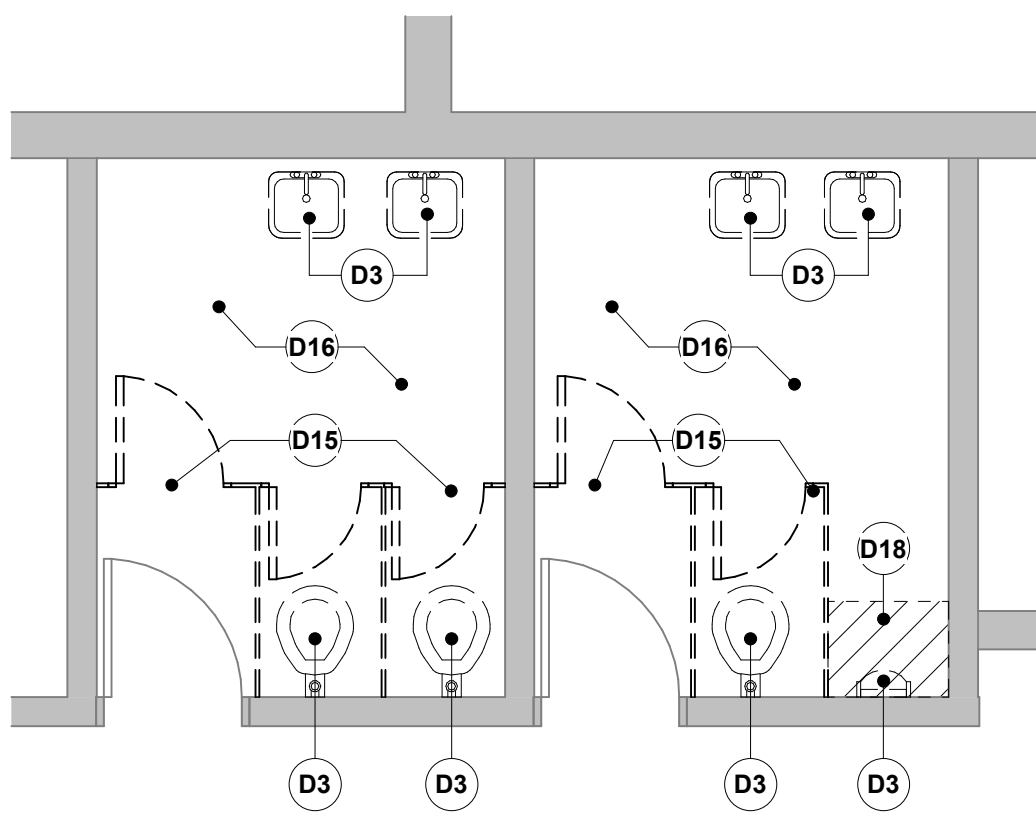


Demolition Notes	
Note	Description
D1	Demolish existing masonry wall - refer to Structural.
D2	Demolish existing door and frame
D3	Demolish plumbing fixtures - refer to Mechanical
D4	Hatch denotes area of existing carpet floor finish to be removed. Prepare slab to receive new carpet floor finish.
D5	Demolish existing millwork including sink - refer to Mechanical
D6	Demolish floor slab to allow for new ramp - refer to Structural.
D7	Demolish masonry wall to suit new opening - refer to Structural.
D8	Demolish existing wall-mounted handrail
D9	Demolish existing handrail
D10	Demolish portion of existing wood bench.
D11	Demolish existing wood arm rest.
D12	Refer to Structural for slab demo at level wheelchair spaces.
D13	Demolish existing exterior concrete sidewalk and stairs
D14	Retain existing wood benches. Remodel to suit new lengths, refer to Drawing 4 / A1.0
D15	Demolish existing door and frame
D16	Remove existing wall-mounted washroom accessories
D17	Existing floor slab to remain - refer to Structural
D18	Demolish existing tile floor.
D19	Reroute existing rain water leader - refer to Mechanical.
D20	Demolish existing terrazzo flooring and wall base, make good to receive new flooring.

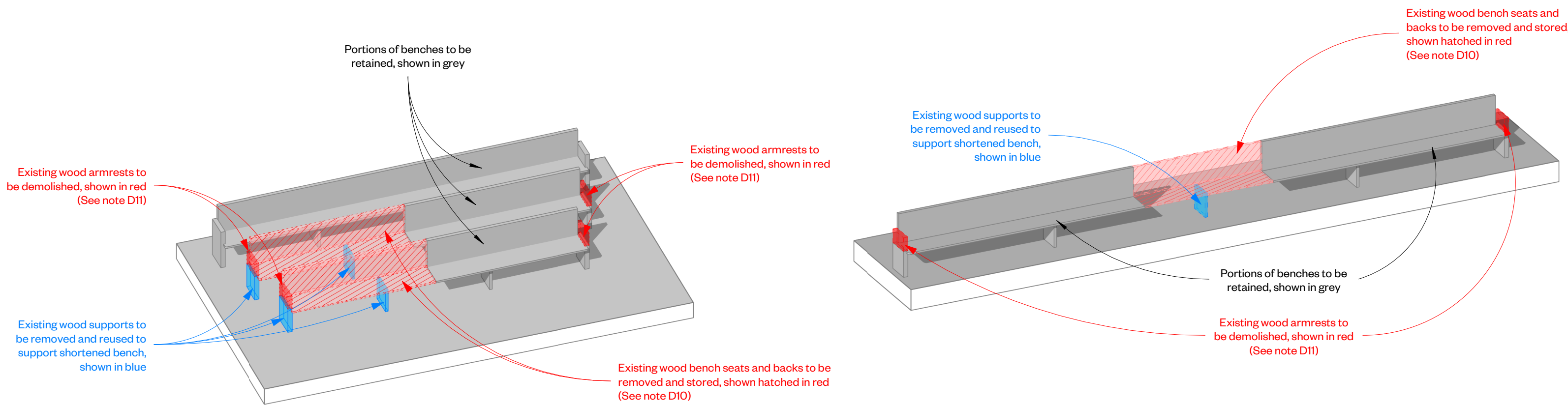
1 Demolition Key Plan
1 : 500



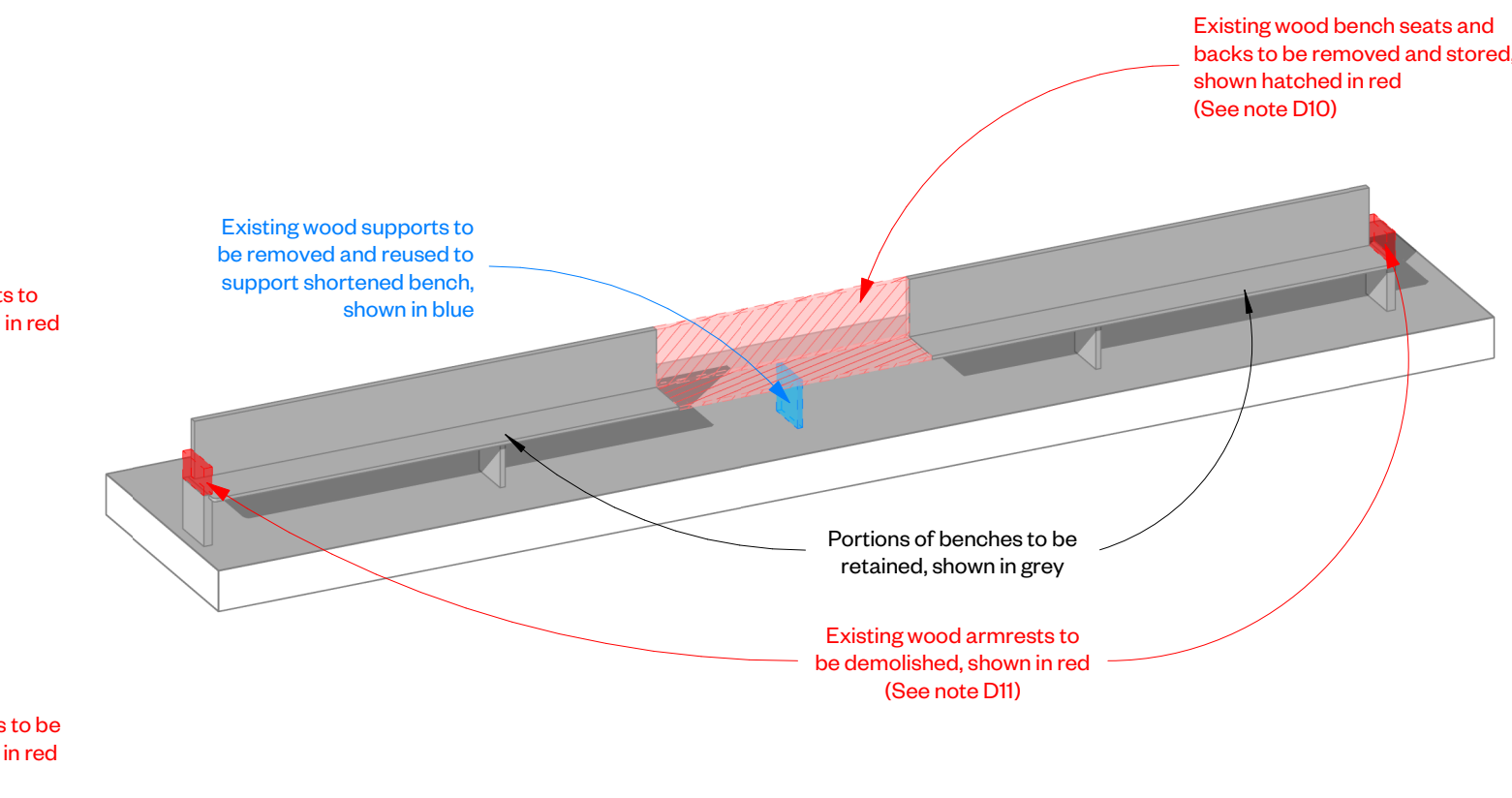
2 Demolition Plan - Universal WC
1 : 50



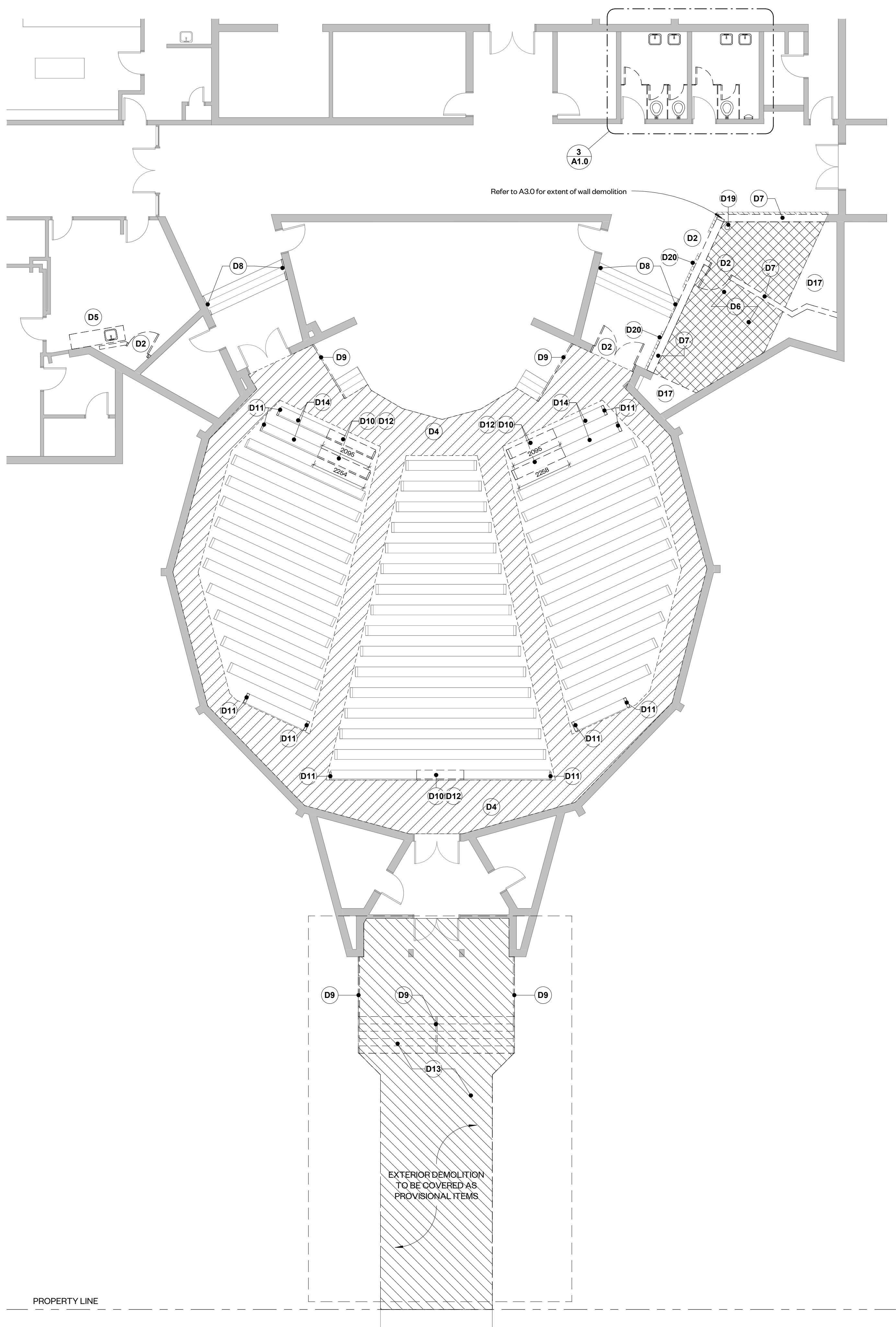
3 Demolition Plan - Male / Female Washrooms
1 : 50



4 3D View - Bench Demolition @ Front of Auditorium, typ.



5 3D View - Bench Demolition @ Back of Auditorium



6 Demolition Plan - Level 1 (Auditorium)
1 : 100

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Rev	Description	Date
2	Issued for Costing	2024-05-16
3	Issued for Permit	2026-02-27
4	Issued for Tender	2026-03-06

Demolition Legend

- Existing CMU partition to be demolished
- Existing wall partition system to be demolished
- Existing element to be demolished
- Approximate extent of flooring to be removed
- Approximate extent of concrete exterior stairs / sidewalk to be removed
- Approximate extent of concrete slab to be removed
- Existing door leaf and frame to be demolished

WORKSHOP

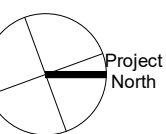
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Bennetto CC Auditorium
Upgrades

450 Hughson St
Hamilton, ON

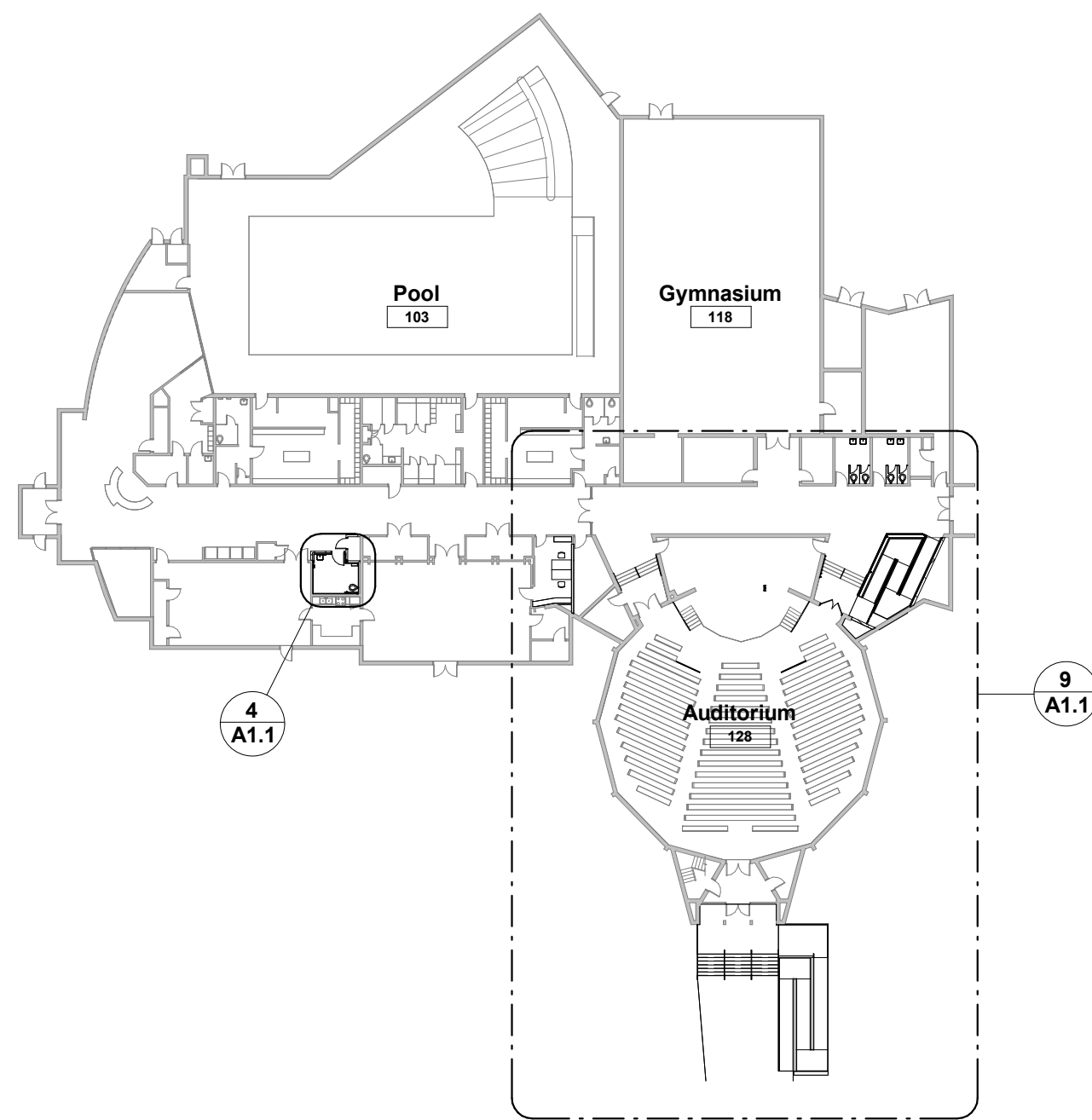
PROJECT CODE:	SCALE:
2504	As indicated
DATE:	STATUS:
February 2026	Issued for Tender

Demolition Plans



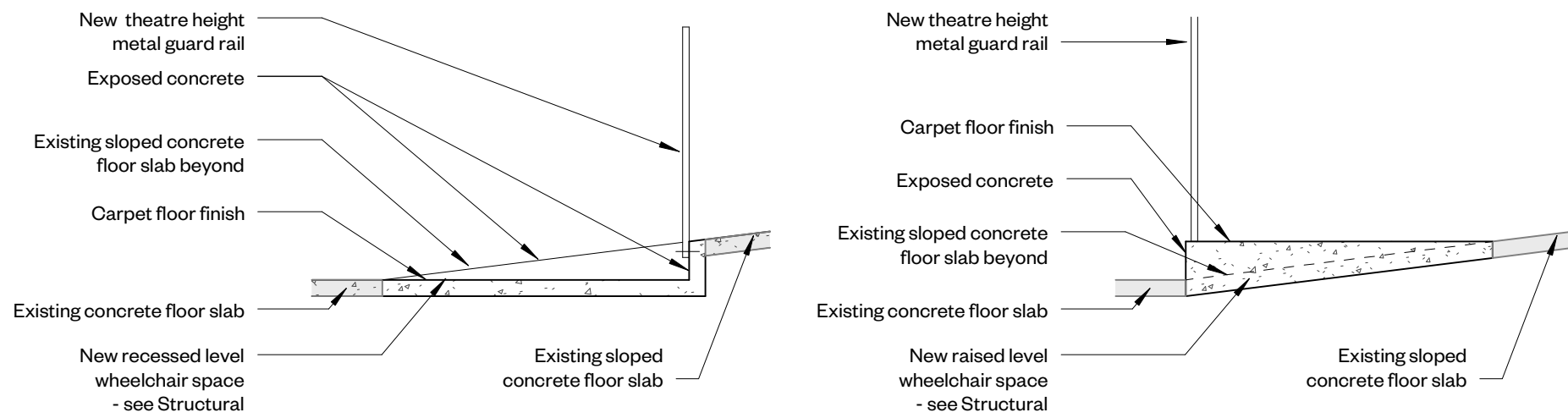
drawing number

A1.0



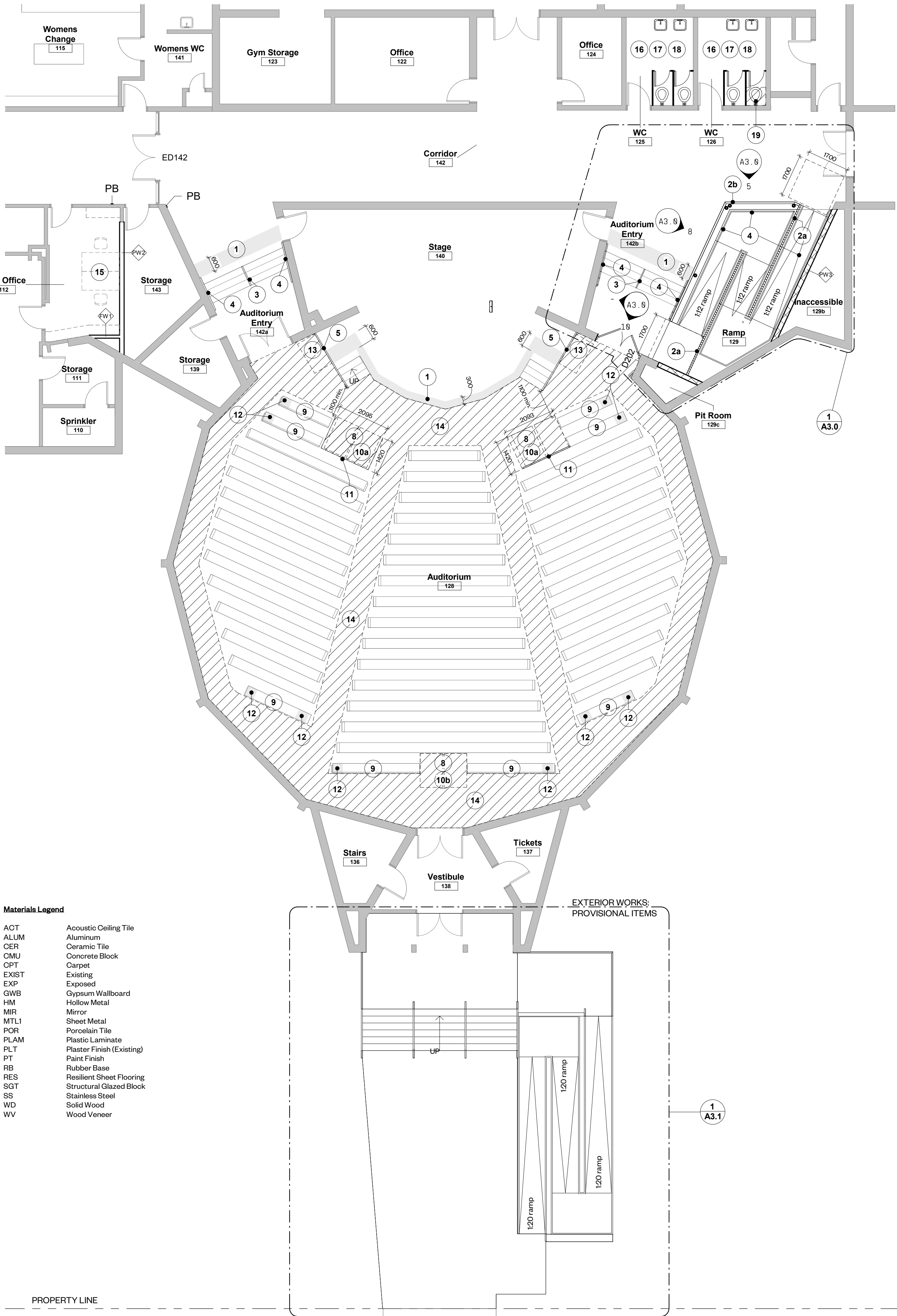
1 Proposed Key Plan
1 : 500

General Notes	
Note	Description
1	Tactile attention indicator studs, mounted to existing floor
2a	New gaurd rail with handrail, mounted to ramp floor (recessed and grouted)
2b	New guard rail, mounted to floor
3	New intermediate handrails, floor mounted
4	New handrails, wall-mounted
5	New guard rail with handrail, mounted to face of stage
6	Widened door
8	Designated wheelchair spaces
9	Modified existing benches, make good and refurbish - refer to A1.0
10a	Recessed levelled slab - see Structural
10b	Raised levelled slab - see Structural
11	New guard rail, mounted to auditorium floor (recessed and grouted)
12	Adaptable seating (existing arm rest removed) - refer to A1.0
13	Accessibility device storage area
14	New carpet floor finish. Provide edge trim at all edges to exposed polished concrete floor.
15	Furniture shown dashed. Supplied by others.
16	New washroom partitions.
17	New toilets and sinks - refer to Mechanical.



2 Section Thru Recessed Slab Wheelchair Spaces
1 : 50

3 Section Thru Rasied Slab Wheelchair Space
1 : 50



9 Proposed Plan - Level 1 (Auditorium)
1 : 100

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Rev	Description	Date
2	Issued for Costing	2024-05-16
3	Issued for Permit	2026-02-27
4	Issued for Tender	2026-03-06

Legend

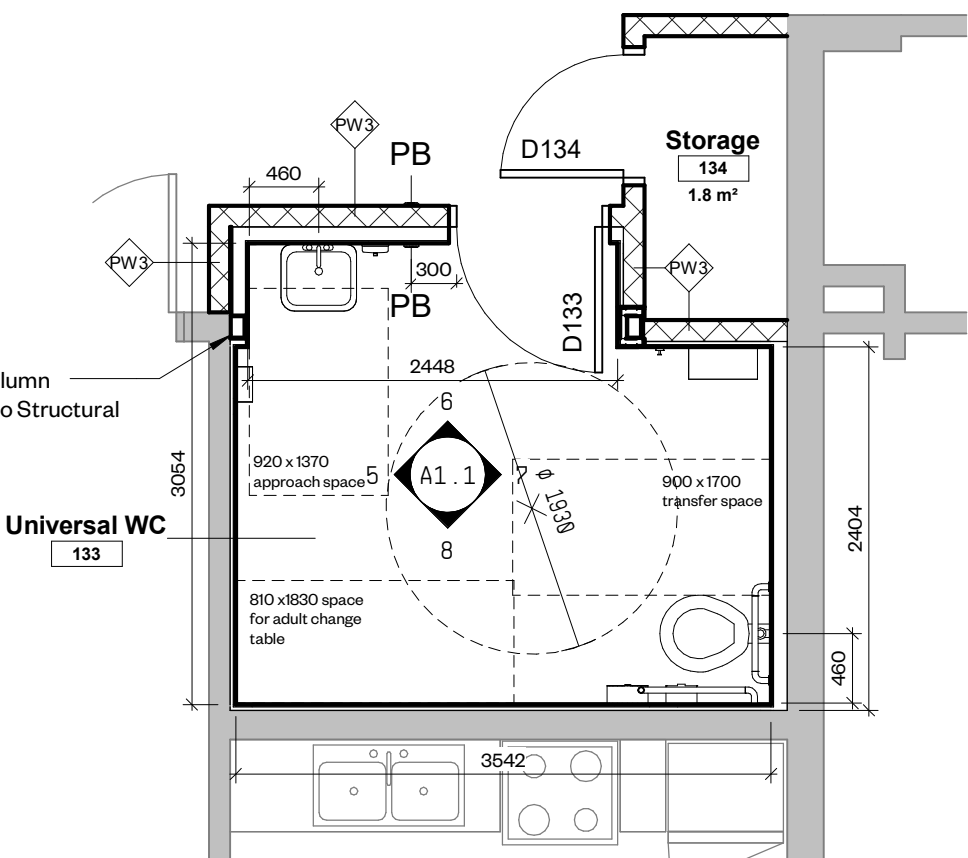
- Existing partition to remain
- New partition as scheduled
- New flooring as scheduled

Symbols Legend

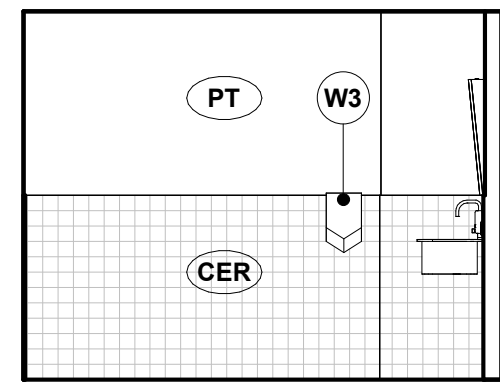
- Partition Tag - refer to Assembly Schedule
- Exterior Wall Tag - refer to Assembly Schedule
- Window tag - refer to Window Schedule
- Glazed Screen tag - refer to Screen Schedule
- New Door tag - refer to Door Schedule
- MW1 Millwork Tag
- (E) Existing
- N.I.C. Not in Contract

Materials Legend

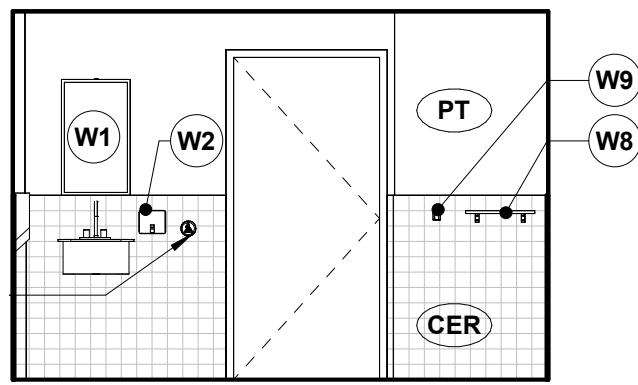
Note	Description
ACT	Acoustic Ceiling Tile
ALUM	Aluminum
CER	Ceramic Tile
CMU	Concrete Block
OPT	Carpet
EXIST	Existing
EXP	Exposed
GWB	Gypsum Wallboard
HM	Hollow Metal
MIR	Mirror
MTLI	Sheet Metal
POR	Porcelain Tile
PLAM	Plastic Laminate
PLT	Plaster Finish (Existing)
PT	Paint Finish
RB	Rubber Base
RES	Resilient Sheet Flooring
SGT	Structural Glazed Block
SS	Stainless Steel
WD	Solid Wood
WV	Wood Veneer



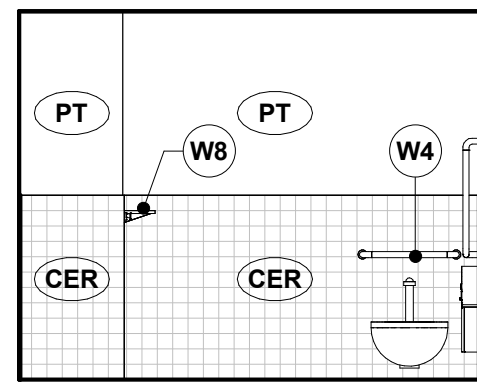
4 Detail Plan - Universal WC
1 : 50



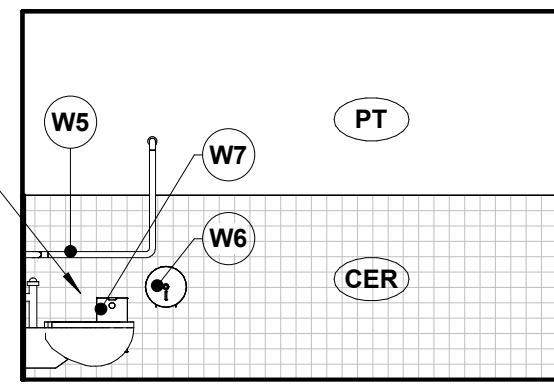
5 Elevation - Univ. WC W
1 : 50



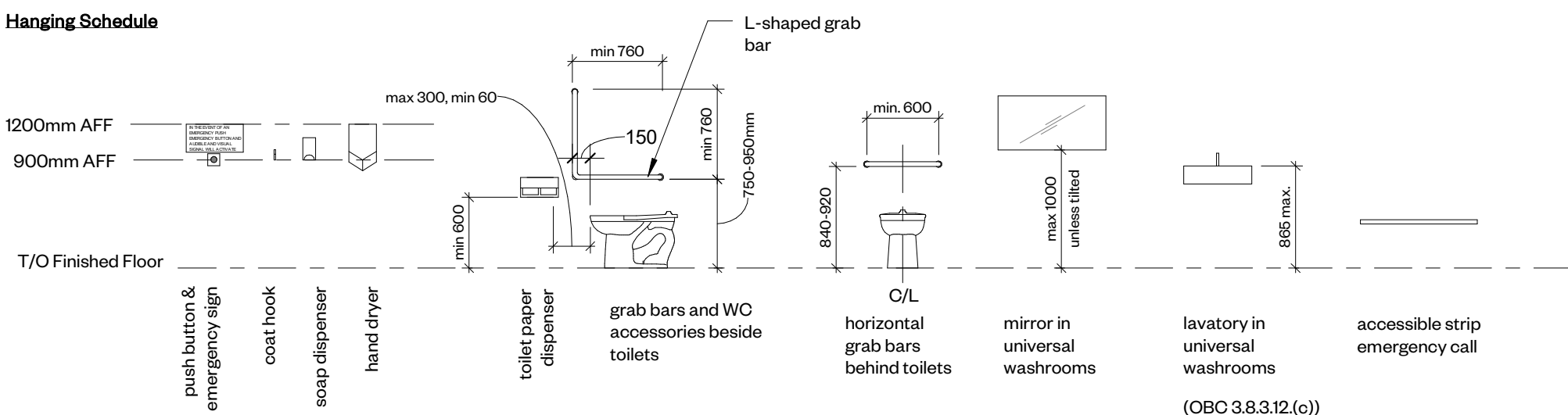
6 Elevation - Univ. WC N
1 : 50



7 Elevation - Univ. WC E
1 : 50

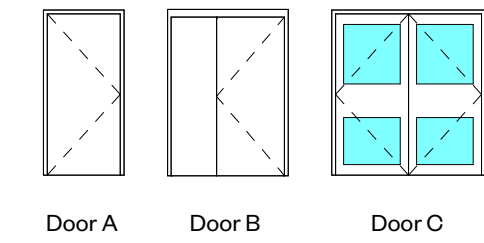


8 Elevation - Univ. WC S
1 : 50



- Notes:
- All controls (power door operator, elevator call buttons, fire alarms, switches, emergency call button and fire extinguishers, coat hooks etc.) to be between 900mm and 1200mm AFF.
 - Locations of all accessories and controls to be marked on site prior to installation for final sign off.

Door Schedule									
Door No.	Room	Type Mark	Height	Width	Door Mat'l	Finish	Frame Material	Frame Fin.	Power Door Operator
D133	Universal WC	A	2134	965	HM	PT	HM	PT	
D134	Closet	A	2134	813	HM	PT	HM	PT	
D202	Auditorium	B	2134	1829	HM	PT	HM	PT	Y
ED142	Corridor	O	2134	1829	EXIST	PT	EXIST	PT	Y



NOTE: All glazing to be tempered
NOTE: All fire rated assemblies to be fire rated glass
NOTE: All HM frames to be 2" profile

Room Finish Schedule						
Room No.	Room Name	Wall Finish	Floor Finish	Base Finish	Ceiling Finish	Comments
112	Staff Office	PT	EXIST.	RB	ACT	
125	WC	CER/PT	EXIST. TERRAZZO	EXIST. TERRAZZO	EXP/CMU	OER to 4" AFF
126	WC	CER/PT	EXIST. TERRAZZO	EXIST. TERRAZZO	EXP/CMU	OER to 4" AFF
128	Auditorium	EXIST	OPT	RB	EXIST.	
129	Ramp	PT	POR	POR	ACT	
133	Universal WC	PT/CER	POR	-	ACT	OER to 4" AFF
139	Storage	EXIST/PT	EXIST.	EXIST.	EXIST.	
140	Stage	PT	EXIST.	RB	EXIST.	
142	Corridor	EXIST/PT	EXIST.	EXIST.	EXIST.	
143	Storage	PT	EXIST.	RB	ACT	
134	Storage	PT	EXIST.	RB	ACT	
129b	Inaccessible	-	-	-	-	
142a	Auditorium Entry	EXIST/SGT/PT	EXIST. TERRAZZO	EXIST. TERRAZZO	GWB	
142b	Auditorium Entry	EXIST/SGT/PT	EXIST. TERRAZZO	EXIST. TERRAZZO	GWB	
129c	Pit Room	-	-	-	-	

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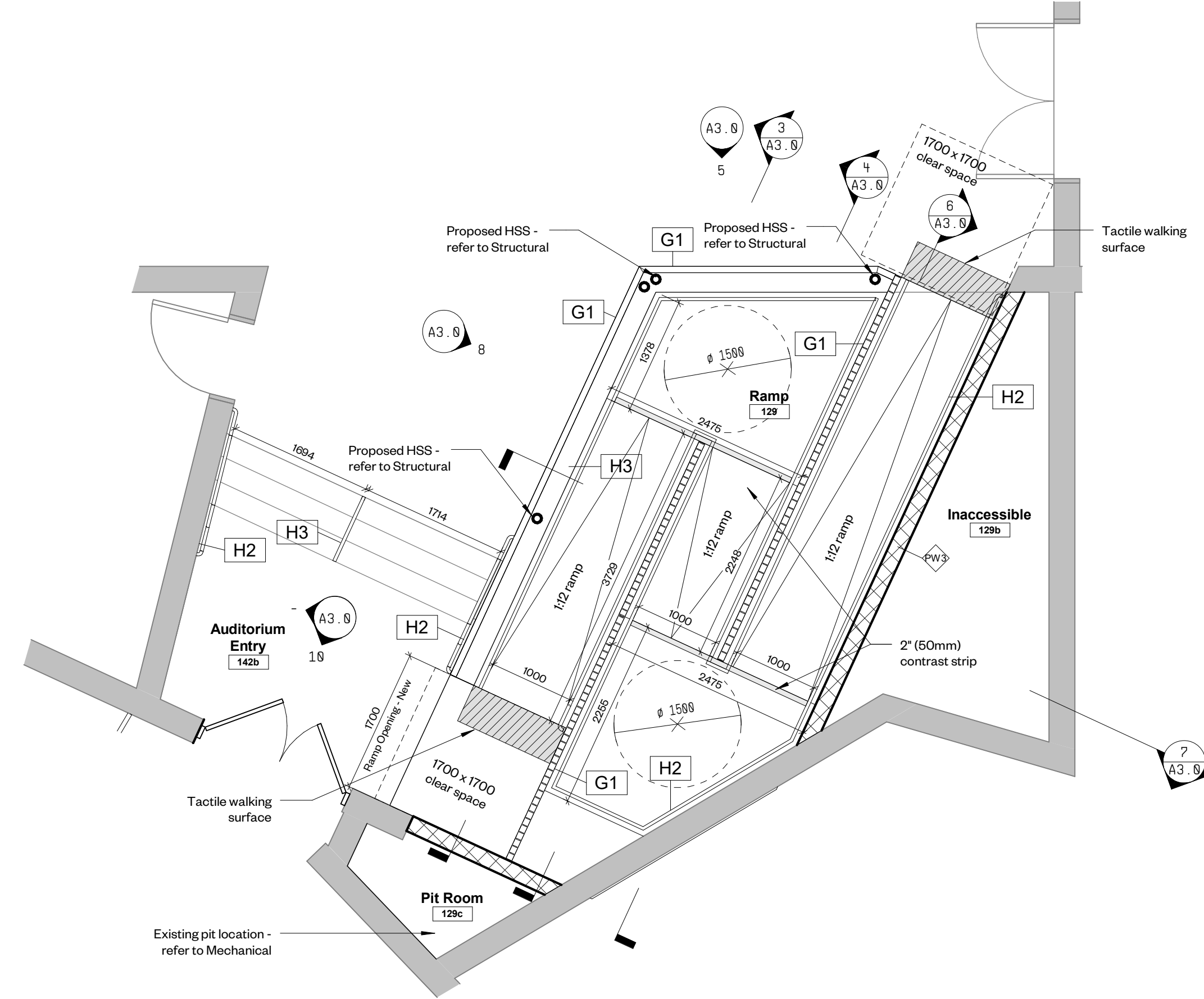
Bennetto CC Auditorium Upgrades

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Hamilton, ON

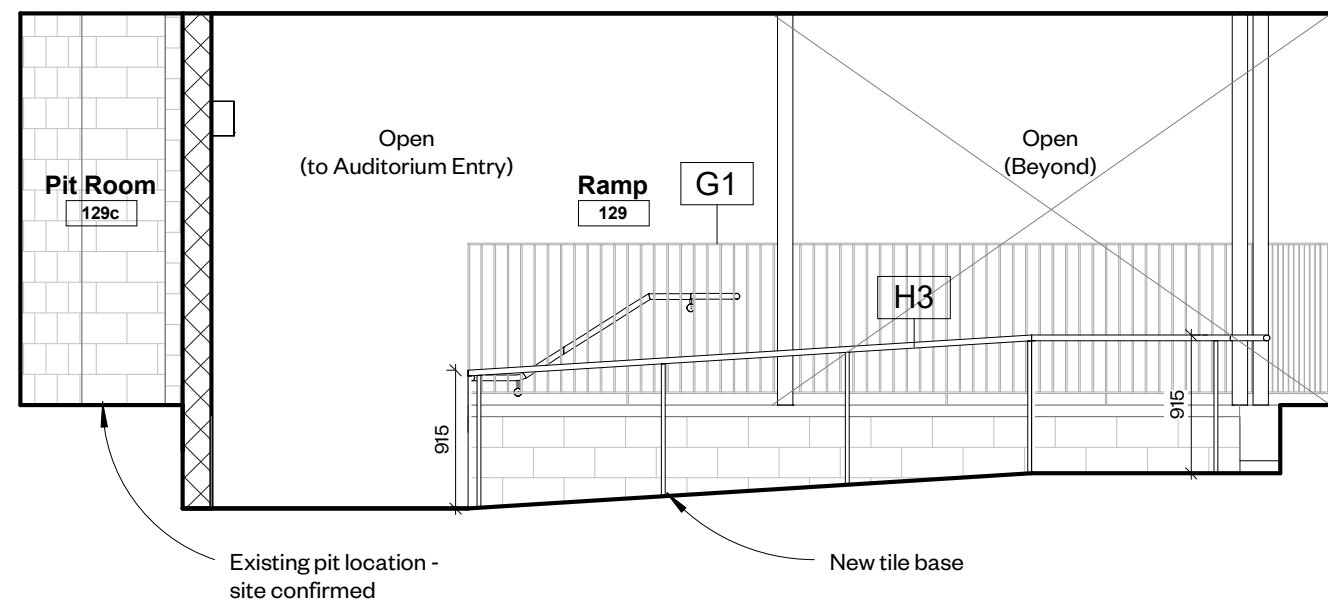
PROJECT CODE:	SCALE:
2504	As indicated
DATE:	STATUS:
February 2026	Issued for Tender

Proposed Plans & Schedules

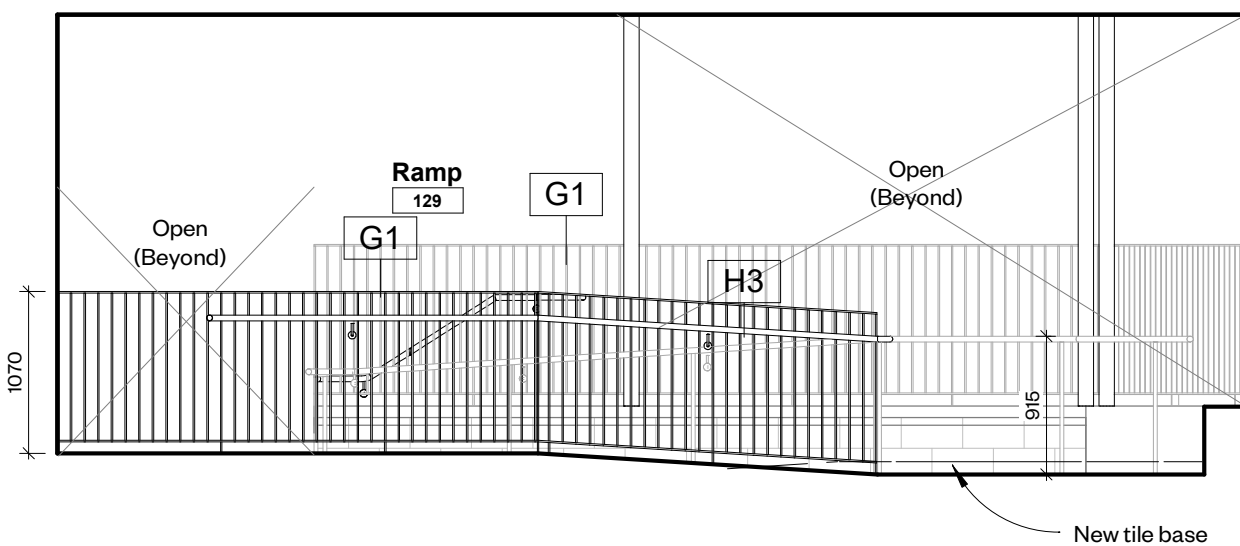




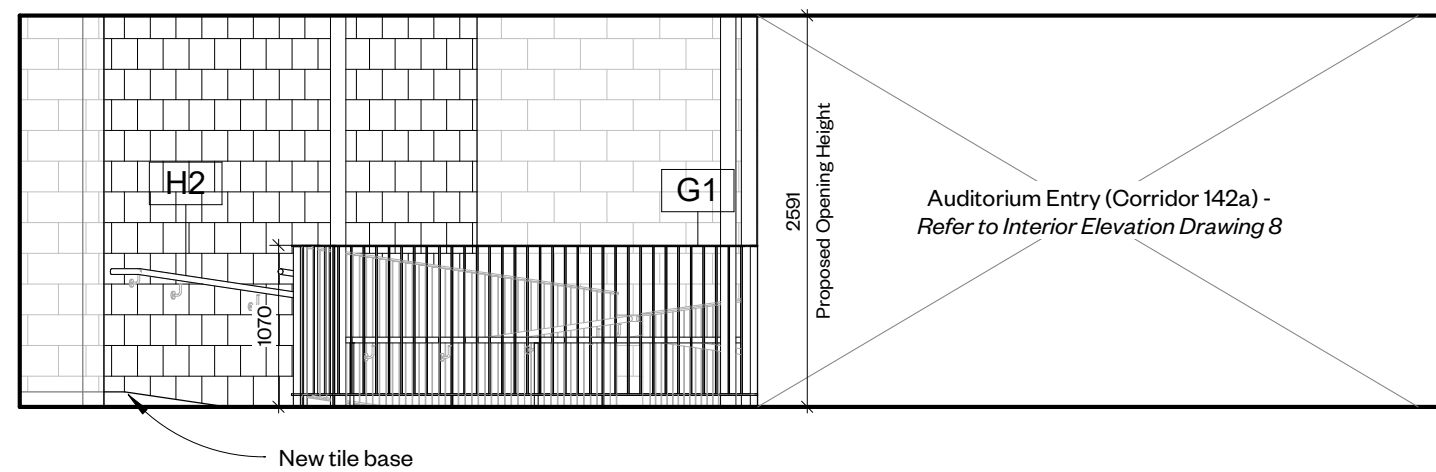
1 Detail Plan - Proposed Interior Ramp
1 : 50



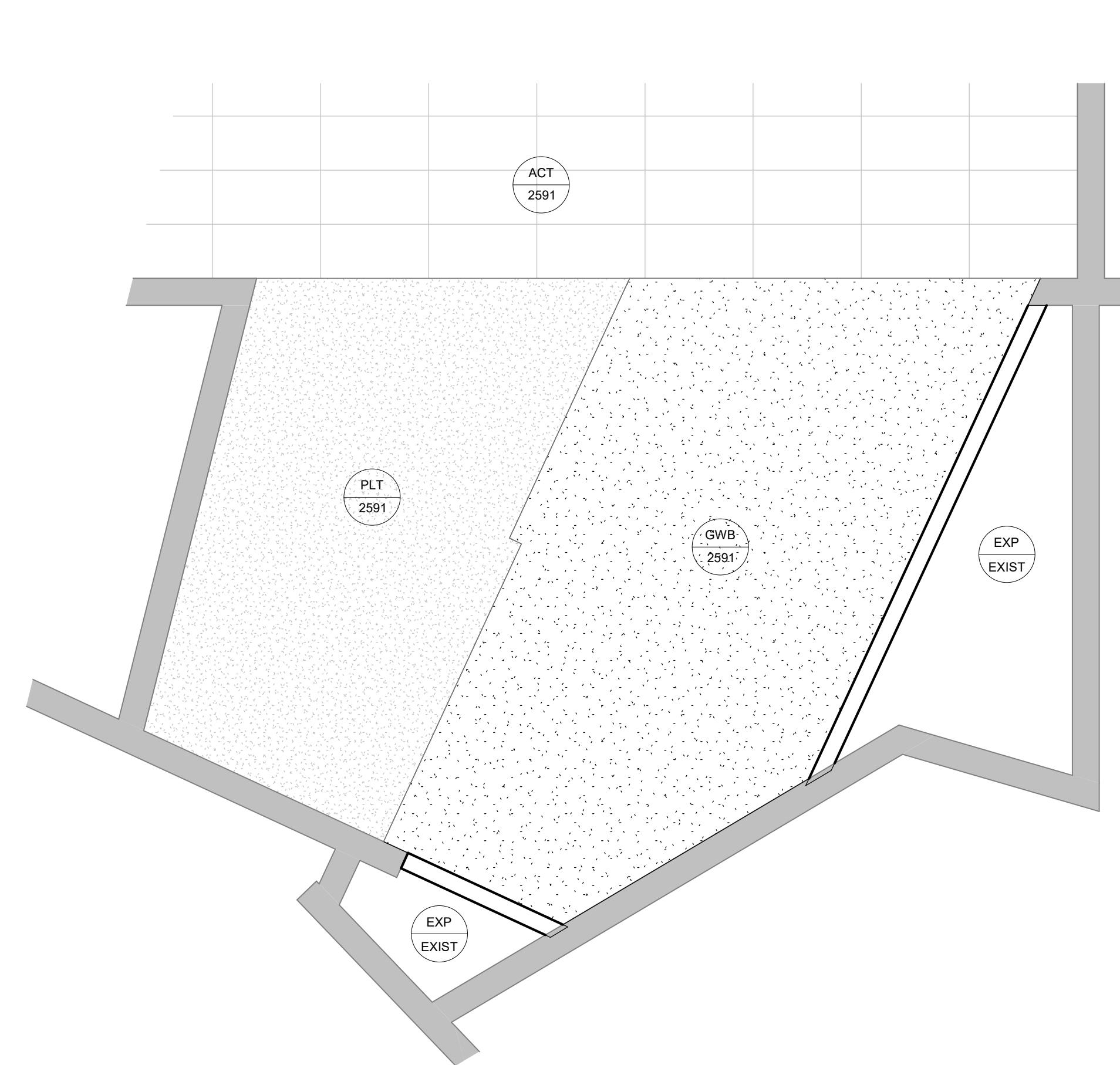
3 Detail Section - Lower Ramp Section
1 : 50



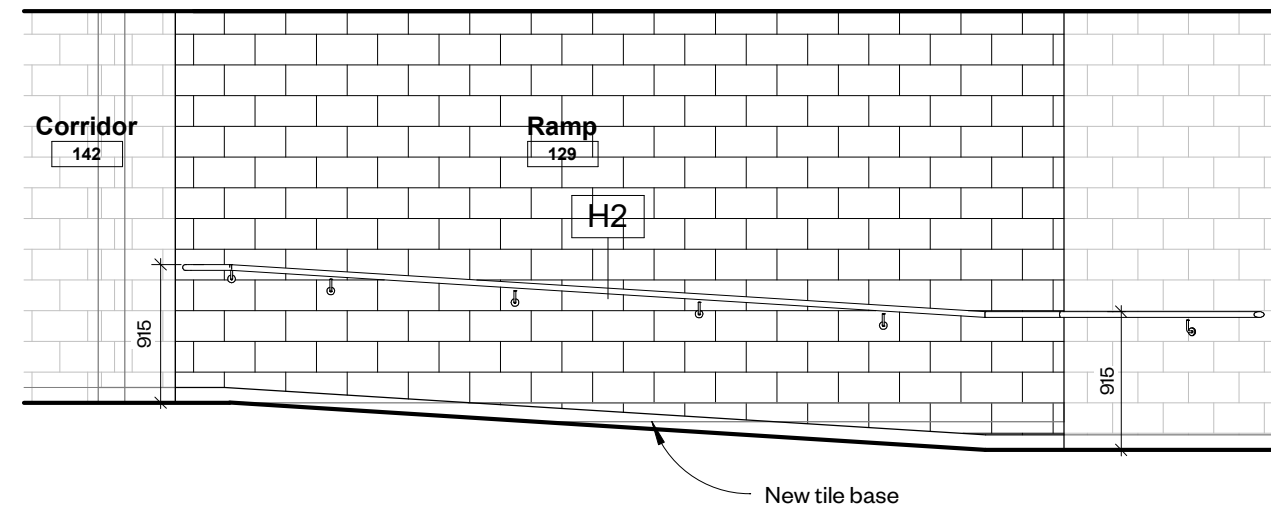
4 Detail Section - Middle Ramp Section
1 : 50



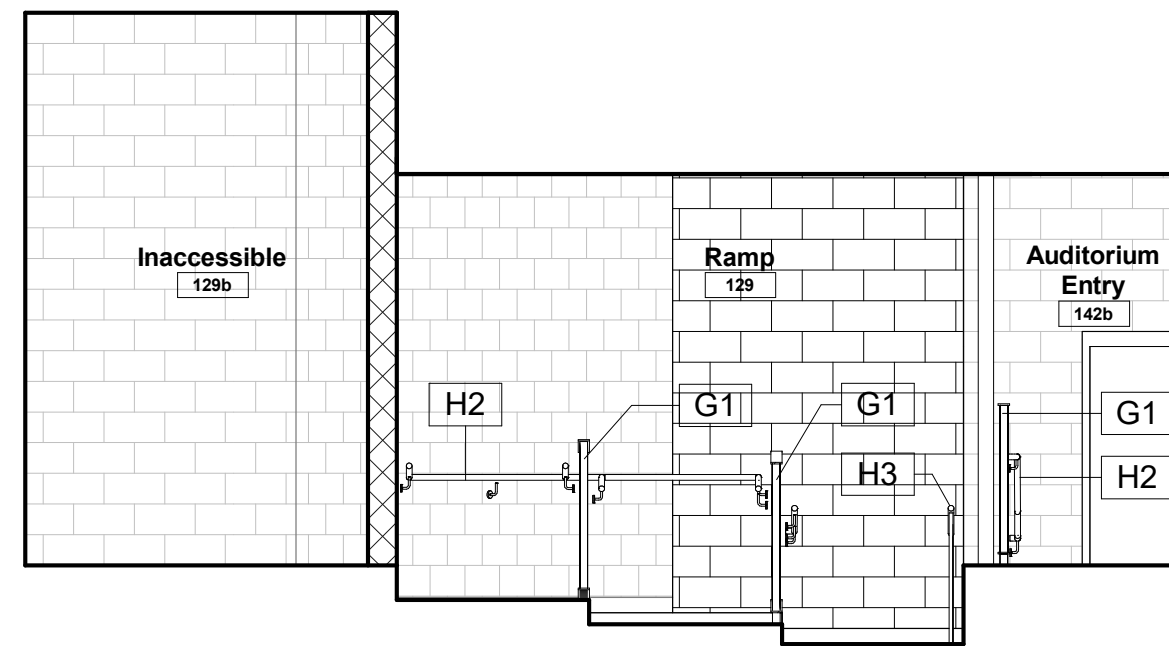
5 Interior Elevation - Proposed Ramp Wall Opening A
1 : 50



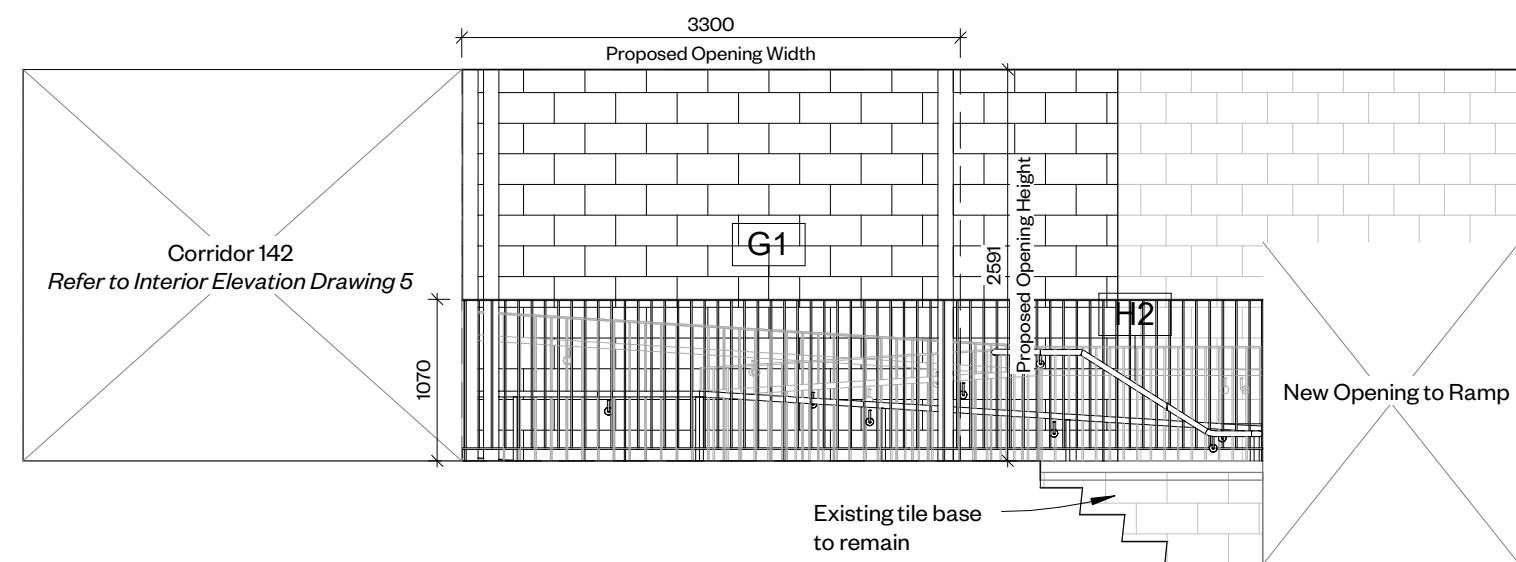
2 Level 01 RCP
1 : 50



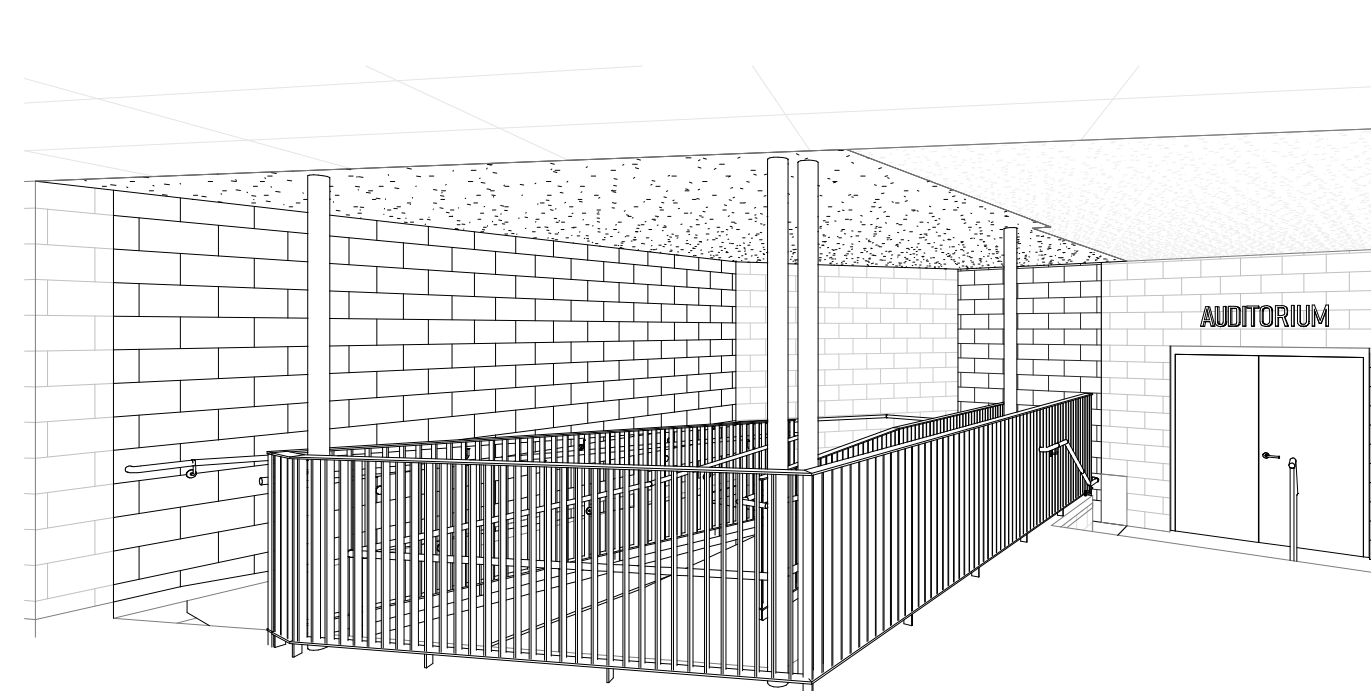
6 Detail Section - Upper Ramp Section
1 : 50



7 Detail Section - Ramp Cross-Section
1 : 50



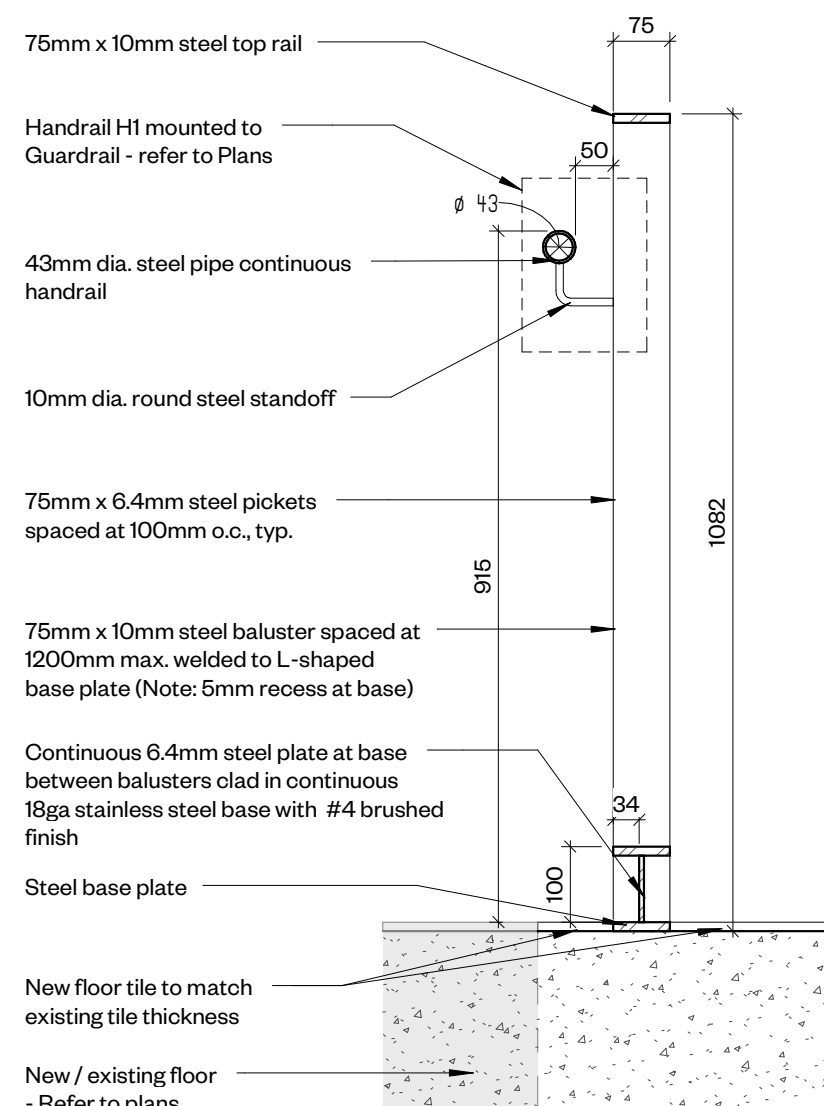
8 Interior Elevation - Proposed Ramp Wall Opening B
1 : 50



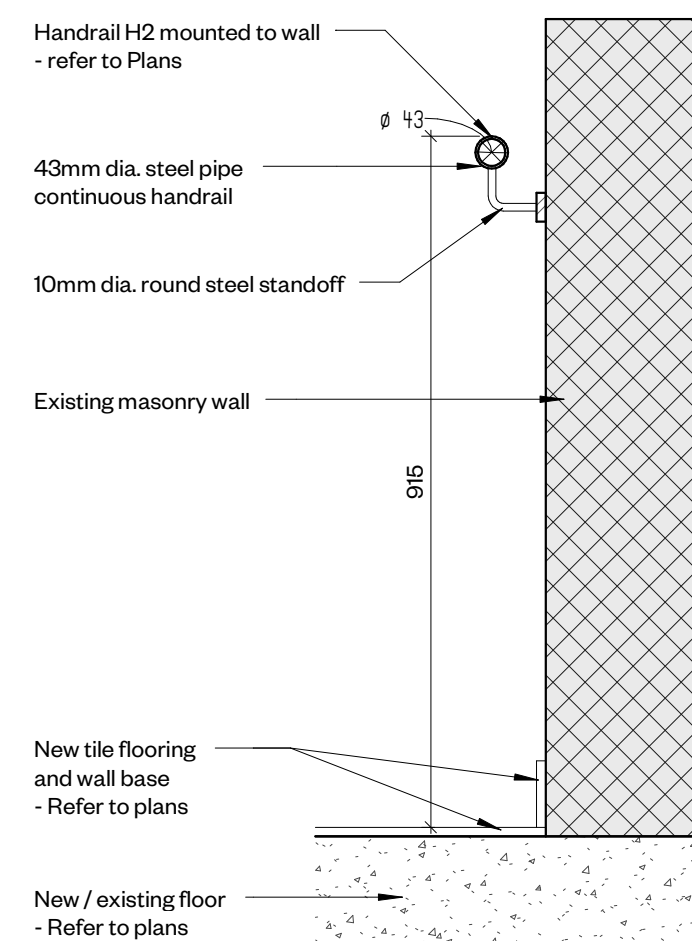
11 3D View - Proposed Ramp from Corridor
N.T.S.

All exposed edges & continuous welds to be ground smooth.

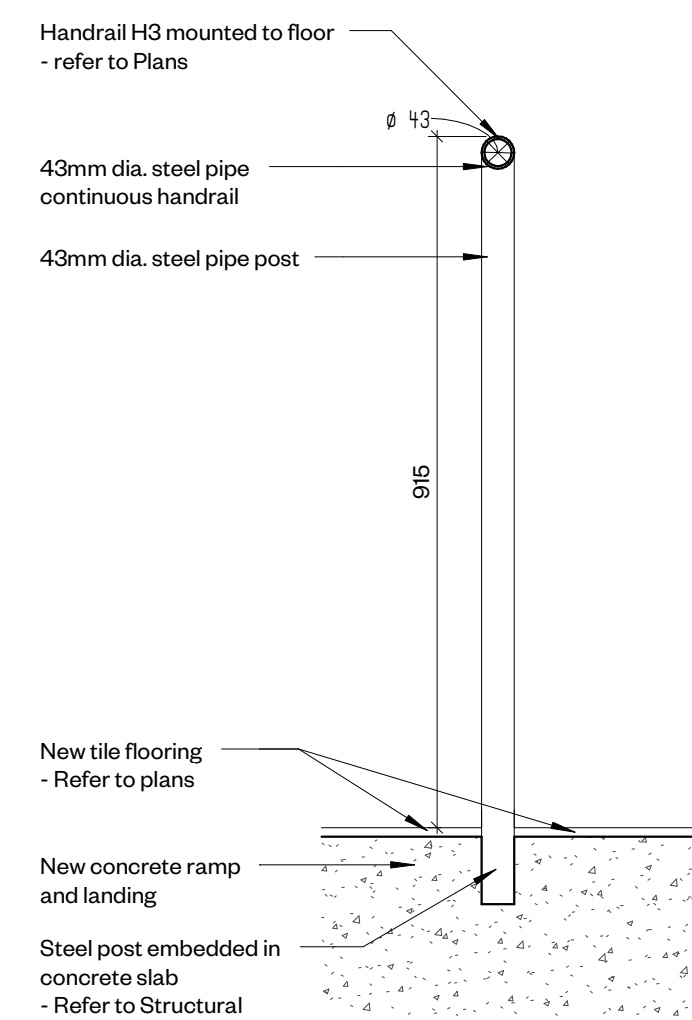
All steel to be painted.



12 Section Detail - Guardrail G1
1 : 10



13 Section Detail - Handrail H2
1 : 10

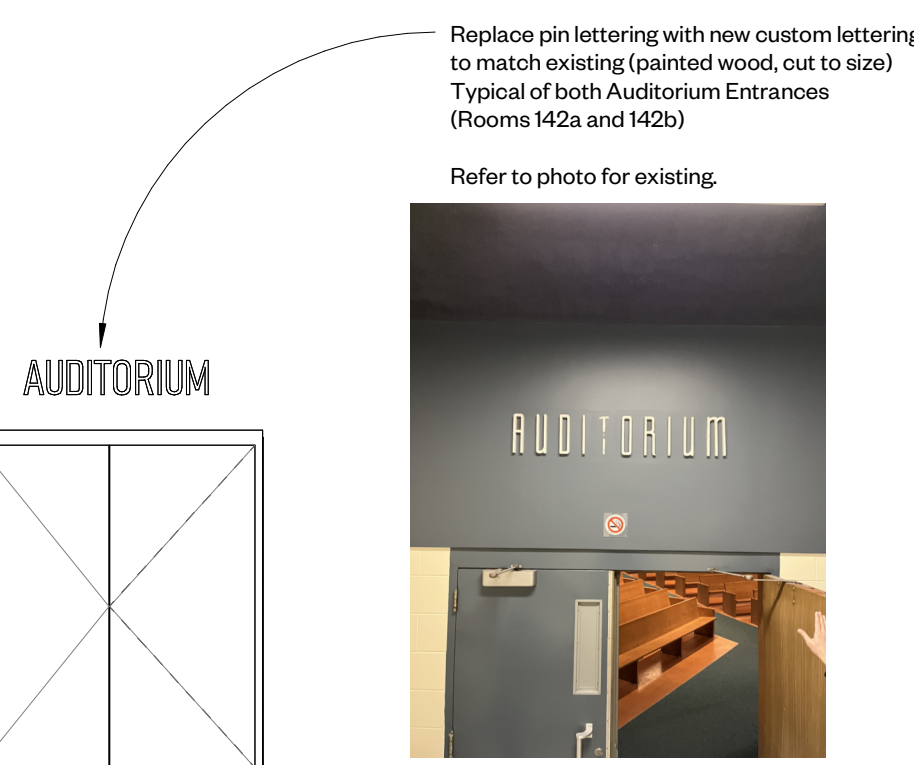


9 Section Detail - Handrail H3
1 : 10

General Notes	
Note	Description
1	Tactile attention indicator studs, mounted to existing floor
2a	New guard rail with handrail, mounted to ramp floor (recessed and grouted)
2b	New guard rail, mounted to floor
3	New intermediate handrails, floor mounted
4	New handrails, wall-mounted
5	New guard rail with handrail, mounted to face of stage
6	Widened door
8	Designated wheelchair spaces
9	Modified existing benches, make good and refurbish - refer to A10
10a	Recessed levelled slab - see Structural
10b	Raised levelled slab - see Structural
11	New guard rail, mounted to auditorium floor (recessed and grouted)
12	Adaptable seating (existing arm rest removed) - refer to A10
13	Accessibility device storage area
14	New carpet floor finish. Provide edge trim at all edges to exposed polished concrete floor.
15	Furniture shown dashed. Supplied by others.
16	New washroom partitions.
17	New toilets and sinks - refer to Mechanical.
18	New wall mounted washroom accessories (mirrors, hand towel dispenser, soap dispenser, toilet paper holder, san.napkin dispenser)
19	New tile floor finish around new toilet to replace existing
20	New exterior concrete stairs - refer to Structural
21	New exterior concrete ramp - refer to Structural
22	New exterior concrete platform - refer to Structural
23	Tactile attention indicator studs, mounted to concrete
24	New guard rail 1070mm tall with handrail, mounted to concrete (recessed and grouted)
25	New exterior concrete sidewalk
26	New masonry half-wall with cast stone cap and 6" concrete curb

Materials Legend

ACT	Acoustic Ceiling Tile
ALUM	Aluminum
CER	Ceramic Tile
CMU	Concrete Block
CPT	Carpet
EXIST	Existing
EXP	Exposed
GW	Gypsum Wallboard
HM	Hollow Metal
MIR	Mirror
MTL1	Sheet Metal
POR	Porcelain Tile
PLAM	Plastic Laminate
PLT	Plaster Finish (Existing)
PT	Paint Finish
RB	Rubber Base
RES	Resilient Sheet Flooring
SGT	Structural Glazed Block
SS	Stainless Steel
WD	Solid Wood
WV	Wood Veneer



10 Auditorium Entrance, typ.
1 : 50

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Rev	Description	Date
2	Issued for Costing	2024-05-16
3	Issued for Permit	2026-02-27
4	Issued for Tender	2026-03-06

Legend

Existing partition to remain

New partition as scheduled

New flooring as scheduled

Symbol Legend

PWX Partition Tag - refer to Assembly Schedule

EWX Exterior Wall Tag - refer to Assembly Schedule

WX Window tag - refer to Window Schedule

SX Glazed Screen tag - refer to Screen Schedule

DWX New Door tag - refer to Door Schedule

MW1 Millwork Tag

(E) Existing

N.I.C. Not in Contract

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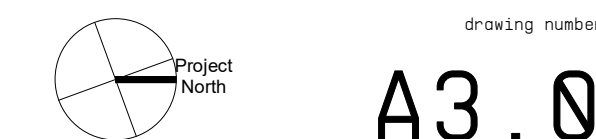
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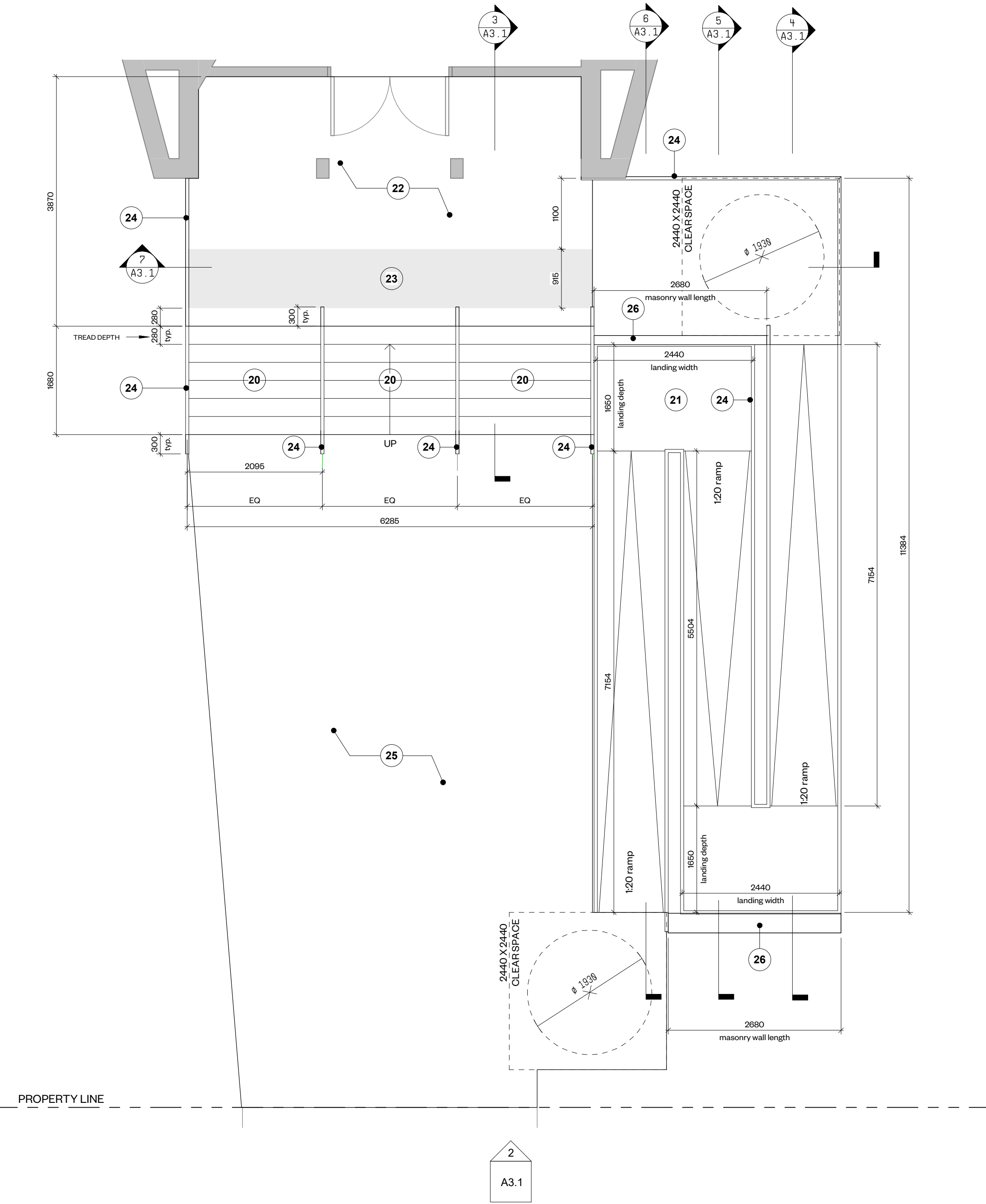
Bennetto CC Auditorium Upgrades

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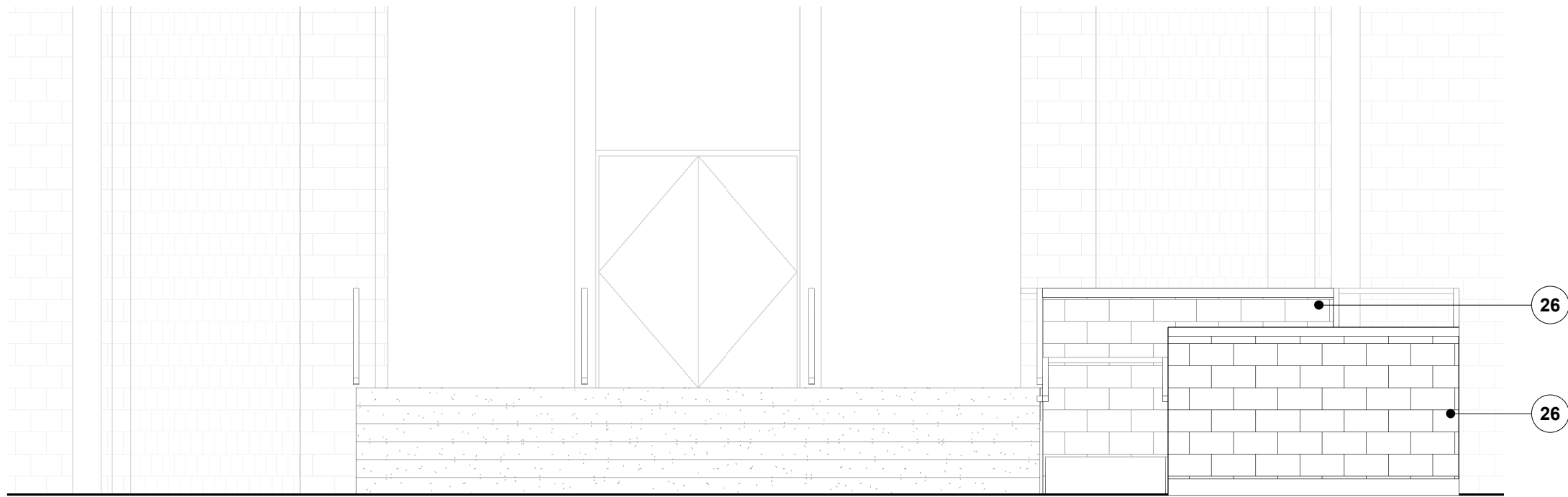
PROJECT CODE:	SCALE:
2504	As indicated
DATE:	STATUS:
February 2026	Issued for Tender

Details - Interior Ramp

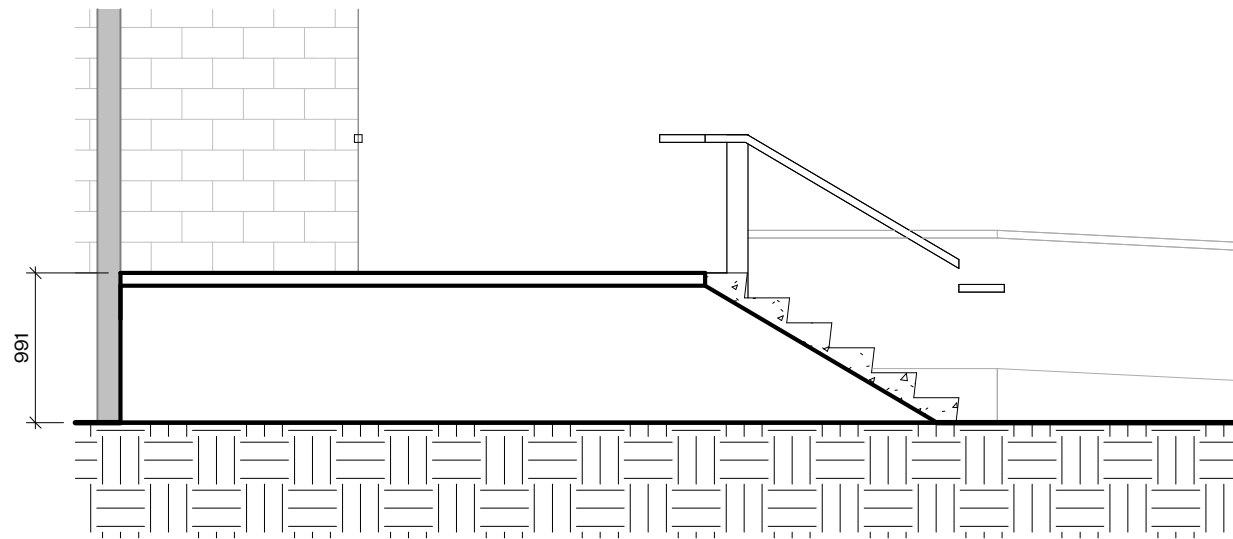




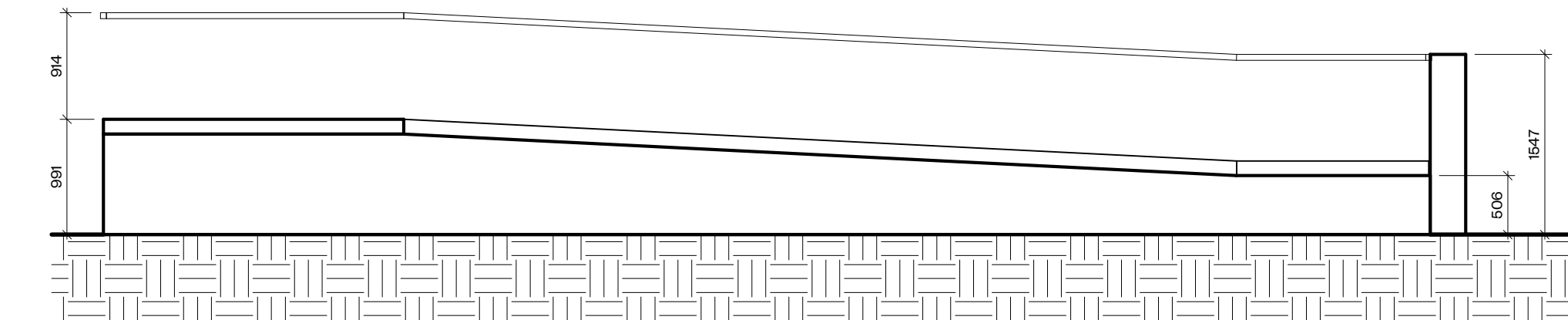
Detail Plan - Proposed Exterior Ramp and Stairs
(Provisional Items)
1 : 50



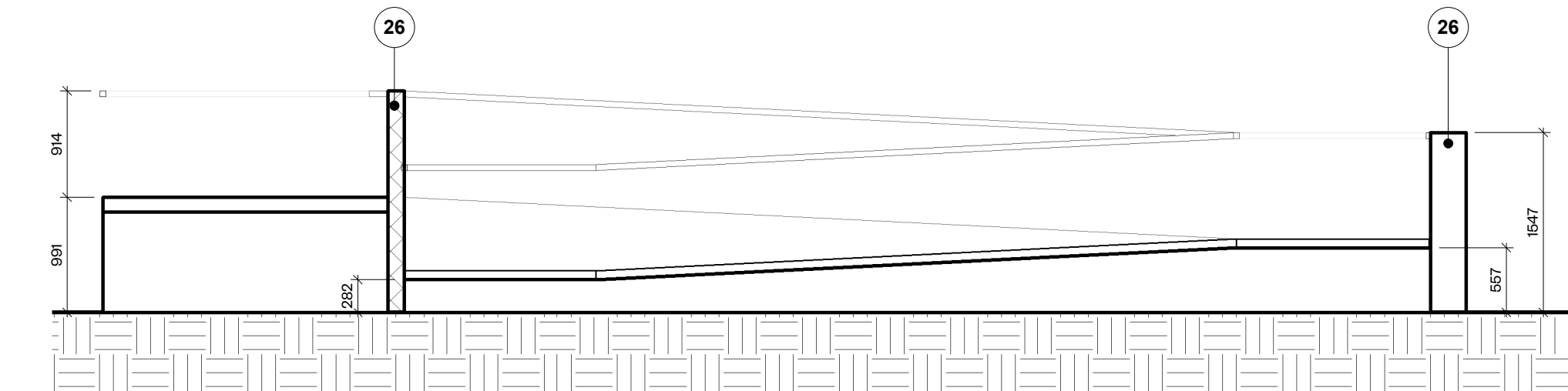
Exterior Elevation
1 : 50



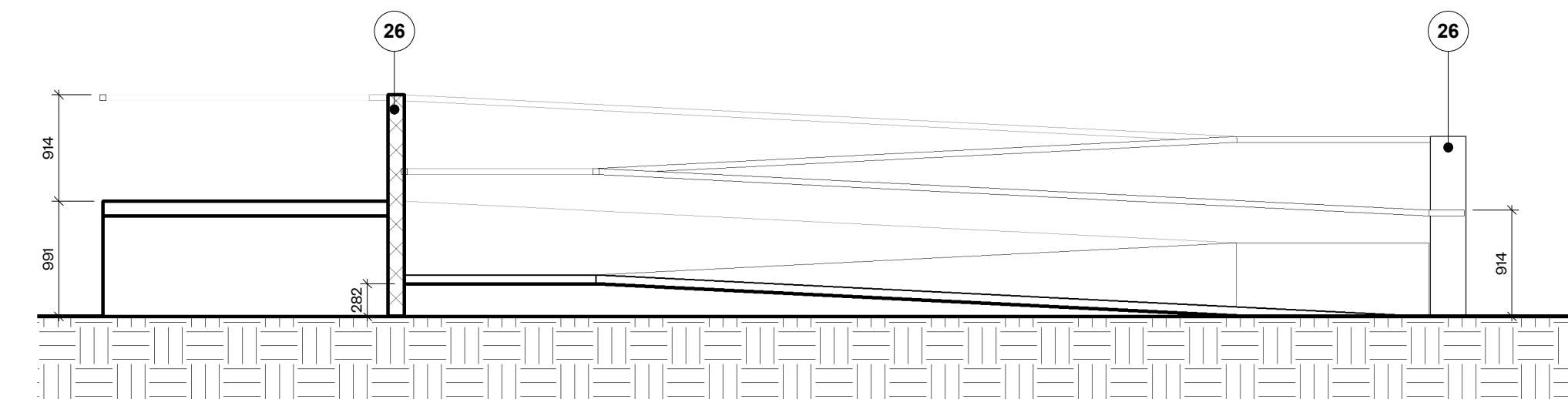
Proposed Exterior Stair - Section
1 : 50



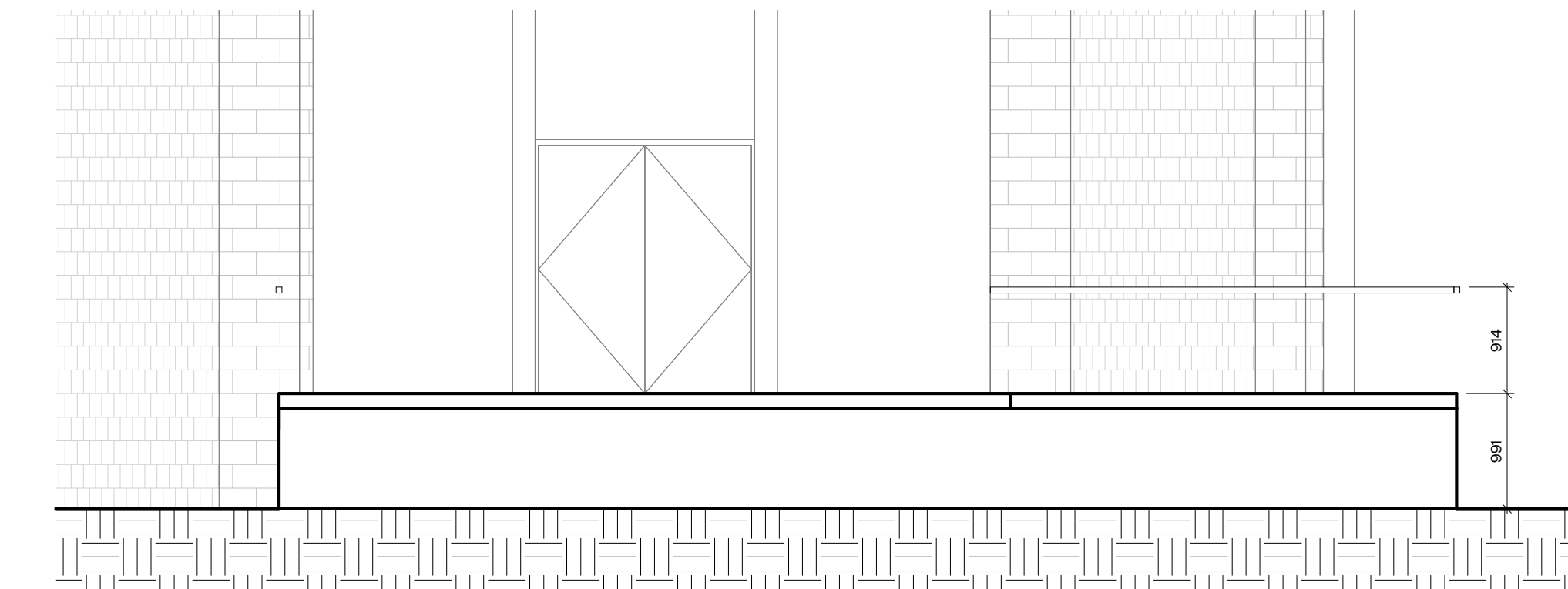
Proposed Exterior Ramp - Section 1
1 : 50



Proposed Exterior Ramp - Section 2
1 : 50



Proposed Exterior Ramp - Section 3
1 : 50



Proposed Exterior Stair and Ramp Landing - Section
1 : 50

General Notes	
Note	Description
18	New wall mounted washroom accessories (mirrors, hand towel dispenser, soap dispenser, toilet paper holder, san.napkin dispenser)
19	New tile floor finish around new toilet to replace existing
20	New exterior concrete stairs - refer to Structural
21	New exterior concrete ramp - refer to Structural
22	New exterior concrete platform - refer to Structural
23	Tactile attention indicator studs, mounted to concrete
24	New guard rail 1070mm tall with handrail, mounted to concrete (recessed and grouted)
25	New exterior concrete sidewalk
26	New masonry half-wall with cast stone cap and 6" concrete curb

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Bennetto CC Auditorium
Upgrades

458 Hughson St
Hamilton, ON

PROJECT CODE:	SCALE:
2604	1:60
DATE:	STATUS:
February 2026	Issued for Tender

Details - Exterior Ramp & Stairs

ELECTRICAL SPECIFICATIONS

APPROVED MANUFACTURERS LIST

DIVISION 26

DISCONNECT SWITCHES, LIGHTING AND POWER PANELS
EATON; SIEMENS; SCHNEIDER ELECTRIC, ABB

MOTOR CONTROLS, RELAYS, CONTACTORS, ETC.:
ALLEN-BRADLEY; SIEMENS; EATON; SCHNEIDER ELECTRIC

FUSES:
GOULD; BUSSMAN

WIRING DEVICES:
HUBBELL; PASS AND SEYMOUR; LEVITON

TIME SWITCHES AND PHOTO ELECTRIC CONTROLS:
TORK; PARAGON; INTERMATIC

LIGHTING CONTROLS:
LEGRAND/WATT STOPPER; LEVITON; SENSOR SWITCH/ACUITY; LUTRON; EATON; PHILIPS

MOTOR CONTROL CENTRES:
ALLEN-BRADLEY; SIEMENS; EATON; SCHNEIDER CANADA

INTERIOR LIGHT FIXTURES:
LITHONIA; COOPER; HUBBELL; PHILIPS

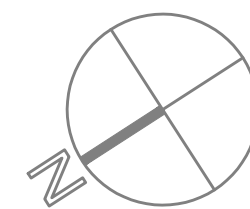
EXTERIOR LIGHT FIXTURES:
COOPER; HOLOPHANE; HUBBELL; LITHONIA; PHILIPS; CREE

EMERGENCY LIGHTING FIXTURES AND BATTERY UNITS:
THOMAS & BETTS; BEGHELLI; STANPRO; AIMLITE

EXIT SIGNS:
THOMAS & BETTS; BEGHELLI; STANPRO; AIMLITE

DIVISION 2B

FIRE ALARM SYSTEM:
SIMPLEX (MATCH EXISTING)



TRUE NORTH



CONSTRUCTION NORTH



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ENGINEERS

15 Foundry Street, Dundas, ON, L9H 2V6
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[illegible]

2	ISSUED FOR TENDER	2026-03-06	T.K.
1	ISSUED FOR PERMIT	2026-02-27	T.K.
NO.	ISSUED	DATE	BY

CLIENT

WORKSHOP ARCHITECTS
6 SOUSA MENDES ST.
TORONTO, ON
M6P 0A8

PROJECT:

BENNETTO CC AUDITORIUM UPGRADES

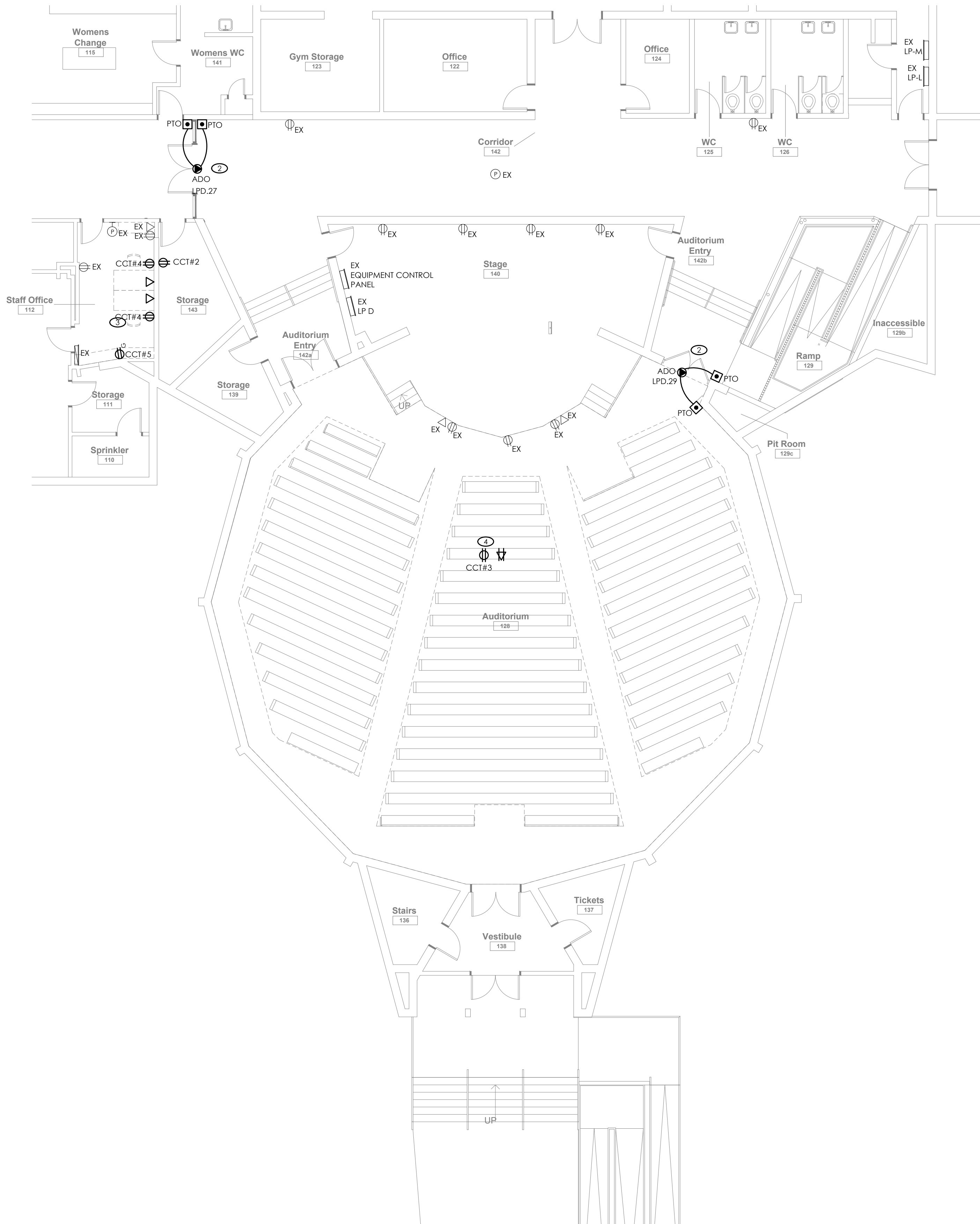
DRAWING TITLE:

SPECIFICATIONS #2/2

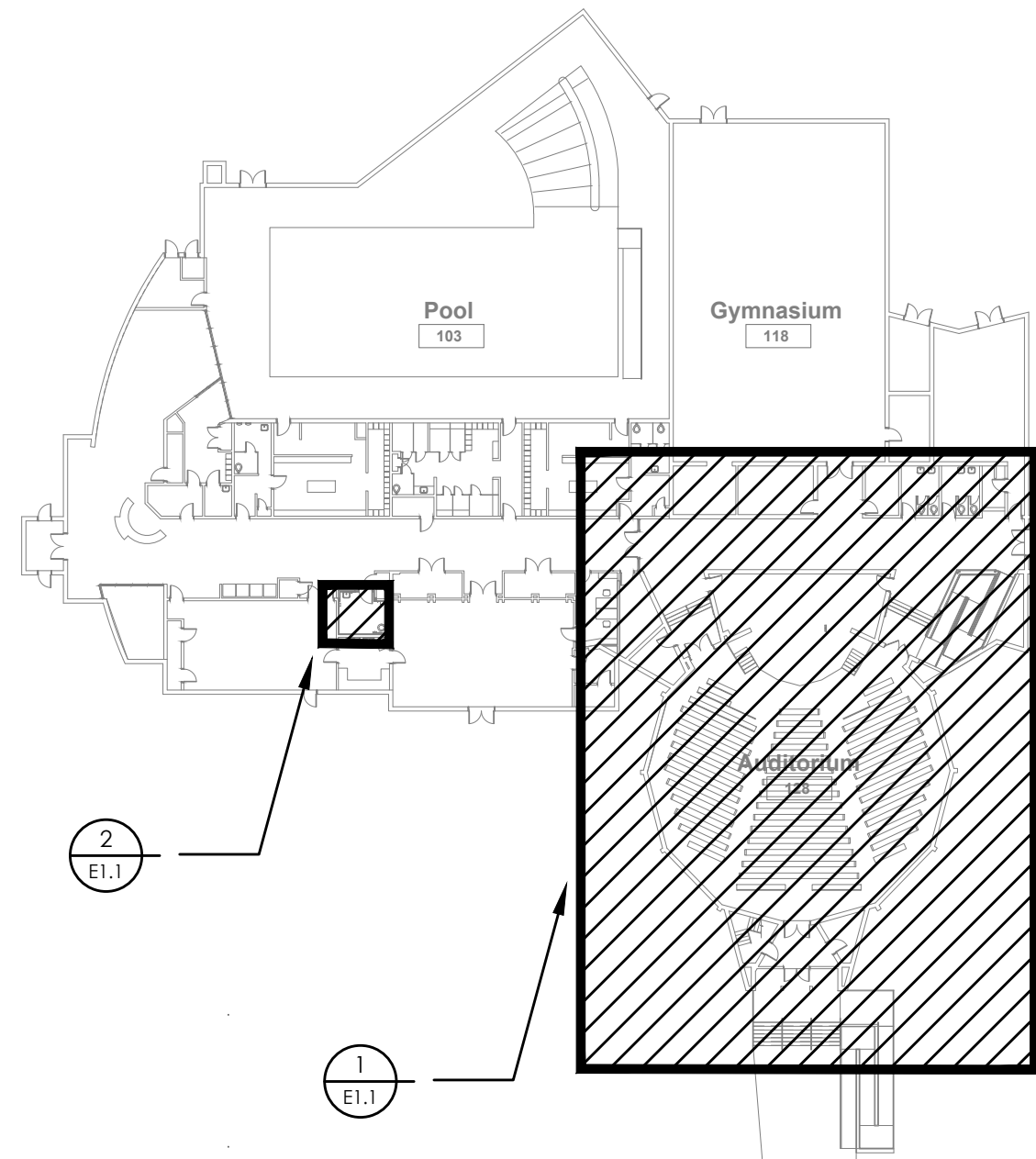
DRAWN BY: T.K.	SCALE: AS INDICATED
CHECKED BY: N.A.	DRAWING NUMBER:
DATE: APRIL 2025	EO.2
PROJECT NUMBER: 25-035	

DRAWING NOTES

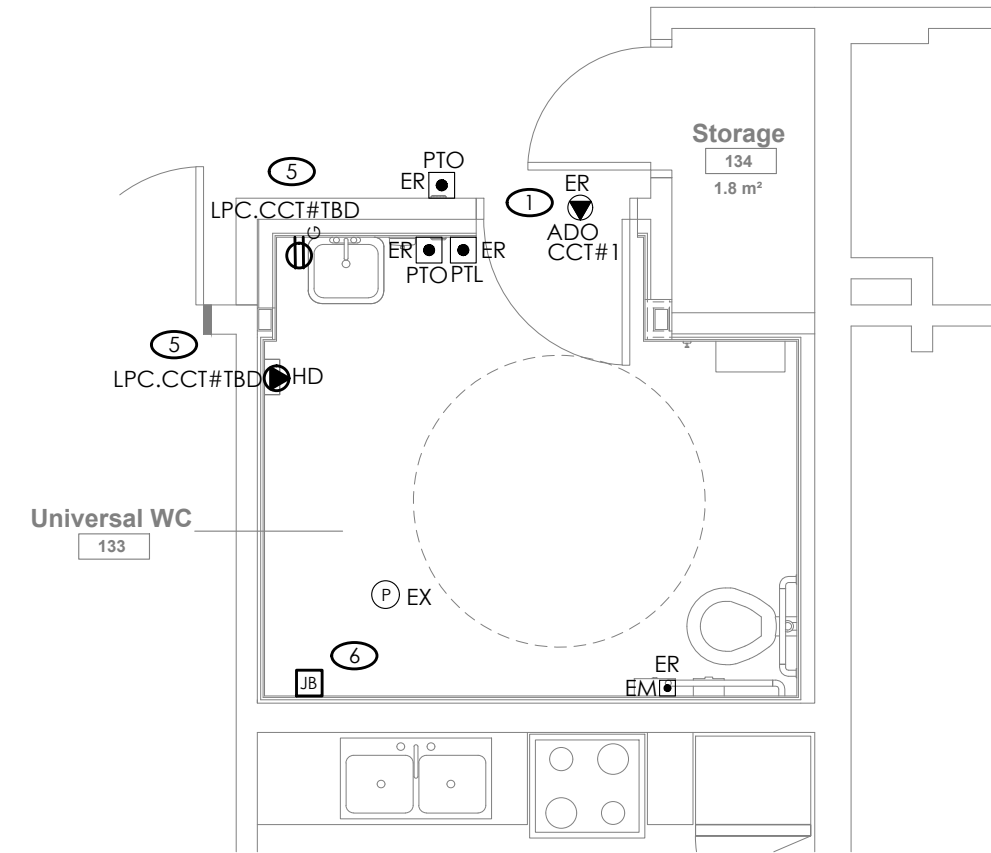
- RELOCATE EXISTING ADO SYSTEM TO NEW DOOR LOCATION. MODIFY WIRING AND CONTROLS AS REQUIRED FOR PROPER OPERATION.
- PROVIDE NEW AUTOMATIC DOOR OPERATOR WITH DEDICATED 120V POWER AND ACCESSIBLE PUSH-TO-OPEN BUTTONS. PROVIDE ALL WIRING/CONDUIT AND INSTALL IN ACCORDANCE WITH THE OBC REQUIREMENTS.
- PROVIDE NEW POWER OUTLETS AND CONNECT TO EXISTING RETAINED CIRCUITS. EXTEND WIRING AS REQUIRED.
- PROVIDE NEW RECEPTACLE AND DATA FOR PROJECTOR. CONNECT TO EXISTING CIRCUIT.
- CONNECT TO NEW CIRCUITS FROM PANEL LPC.
- PROVIDE ROUGH-INS FROM PANEL LPC TO FUTURE CHANGE TABLE.



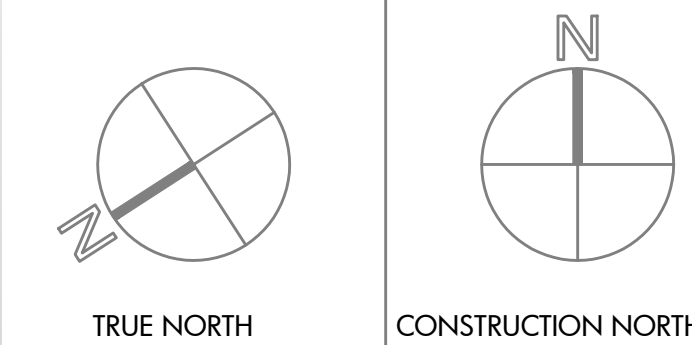
1 GROUND FLOOR POWER AND SYSTEMS PROPOSED PLAN
SCALE:1:100



KEY PLAN



2 UNIVERSAL WASHROOM PROPOSED PLAN
SCALE:1:50



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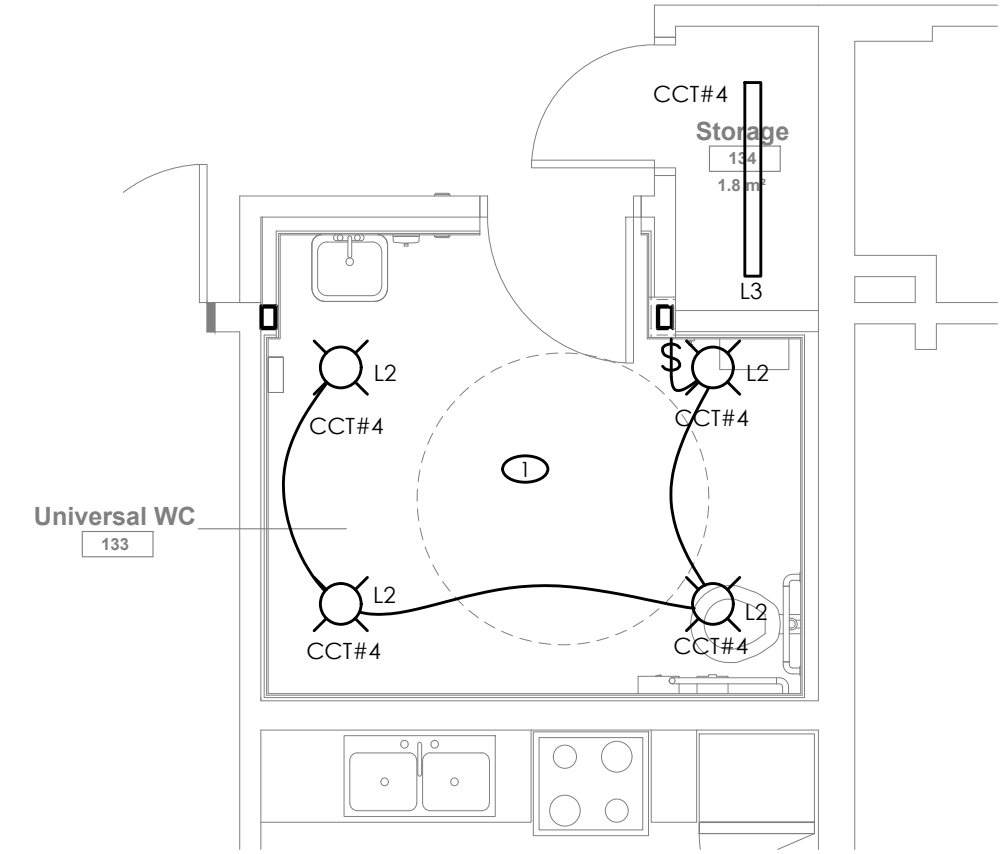
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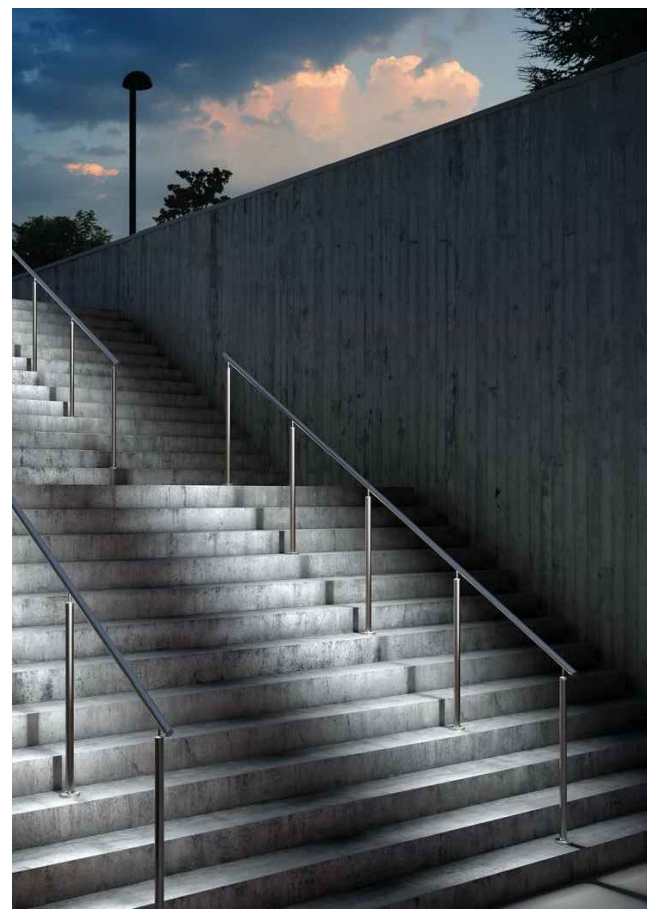
DRAWING TITLE:
GROUND FLOOR POWER AND
SYSTEMS PROPOSED
PLAN

DRAWN BY: T.K.	SCALE: AS INDICATED
CHECKED BY: N.A.	DRAWING NUMBER:
DATE: APRIL 2025	25-035
PROJECT NUMBER: 25-035	

E1.1

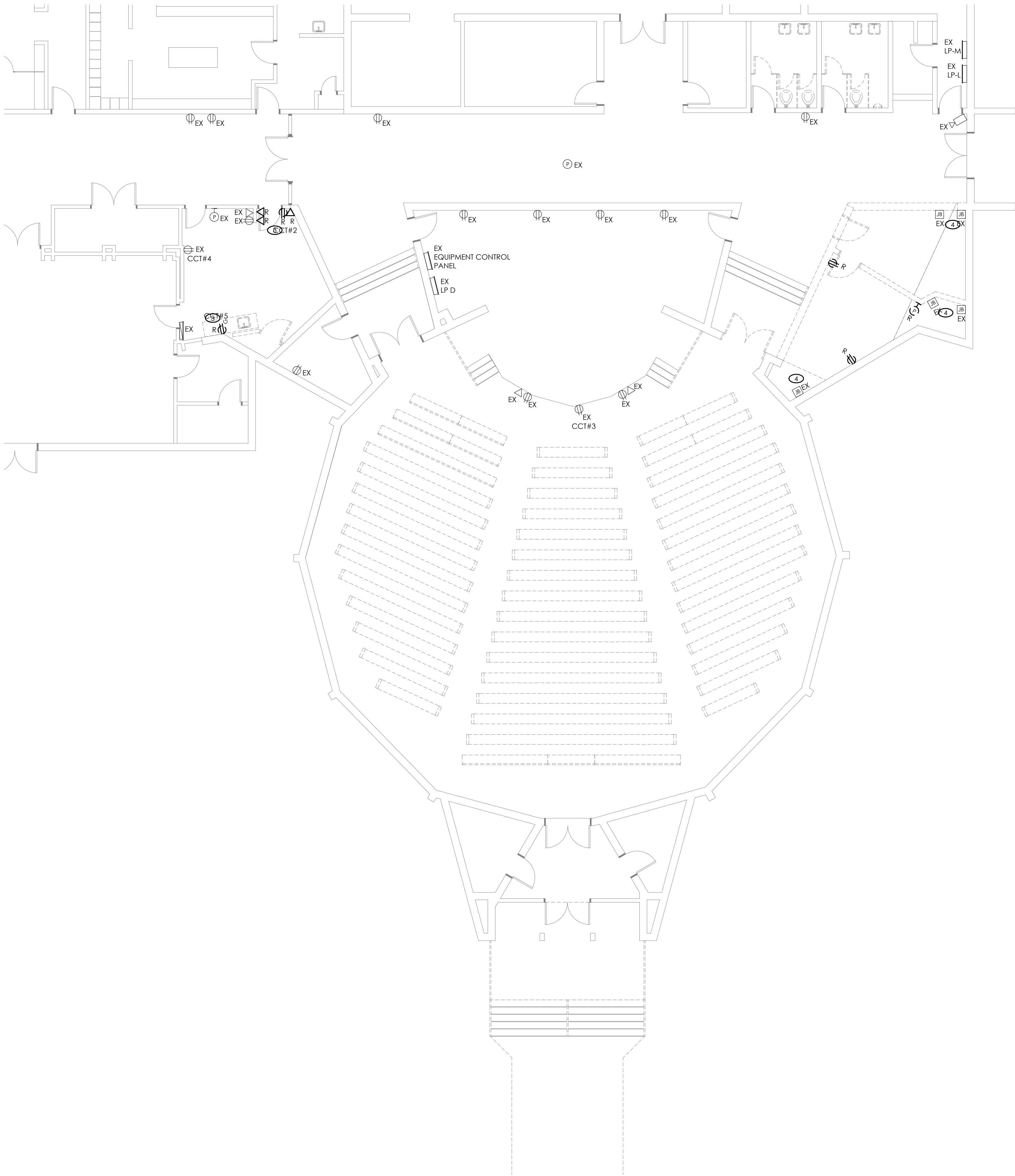


DRAWING NOTES	
①	PROVIDE NEW LIGHTING AND CONTROLS/ OCCUPANCY SENSOR. CONNECT TO EXISTING RETAINED CIRCUITS. MODIFY WIRING AS REQUIRED.
②	PROVIDE LIGHTING SYSTEM FOR THE STAIRS AND RAMP IN ACCORDANCE WITH CONCEPT SHOWN IN DETAIL 3. CONNECT TO EXISTING EXTERIOR LIGHTING CIRCUIT AND MODIFY WIRING AS REQUIRED. VERIFY CIRCUIT CAPACITY PRIOR TO CONNECTION.
③	CONNECT DEVICE TO EXISTING LOCAL INITIATING CIRCUIT. VERIFY UPON COMPLETION.

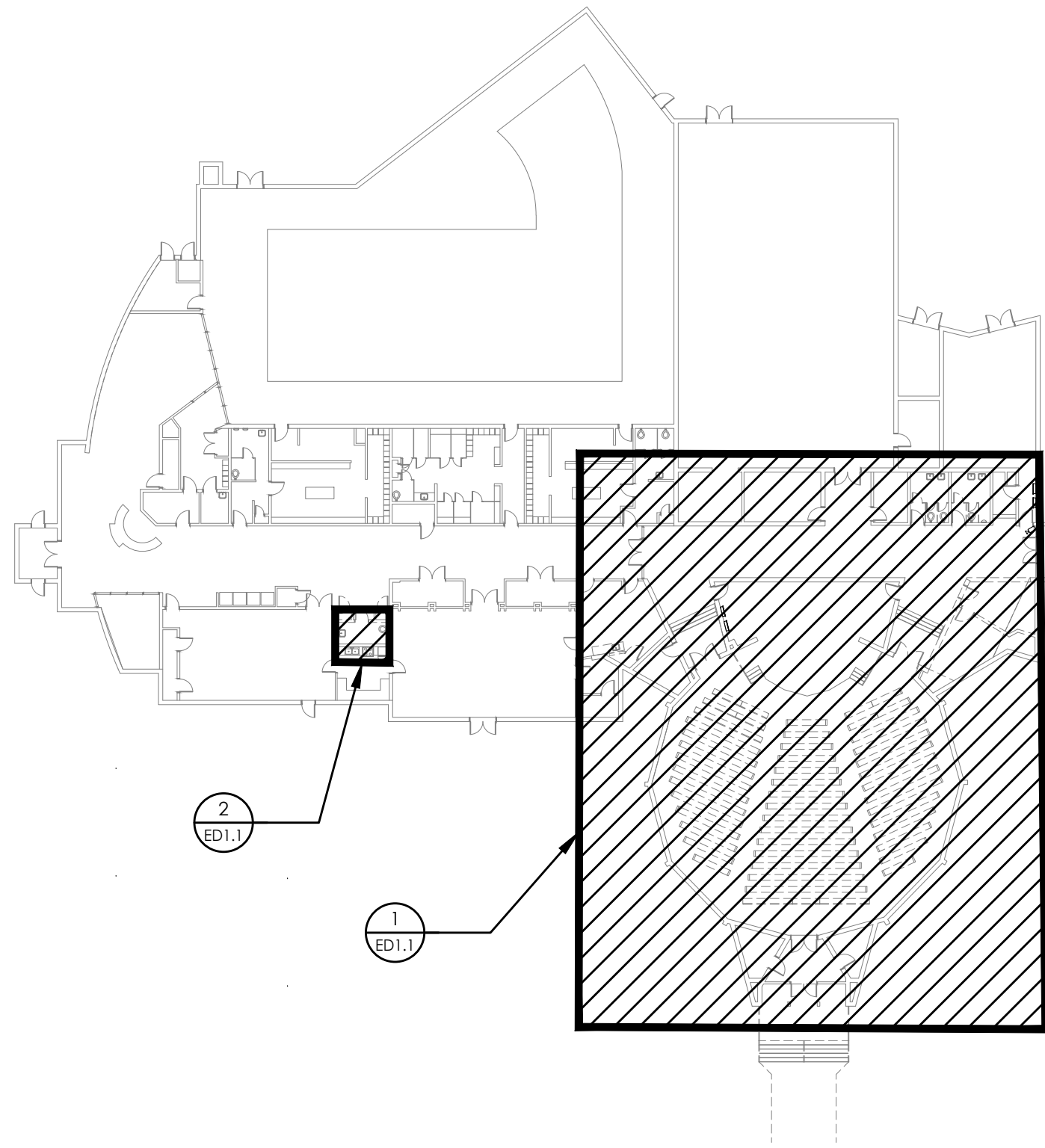


3 STAIRS LIGHTING CONCEPT
E2.1 SCALE: N.T.S.

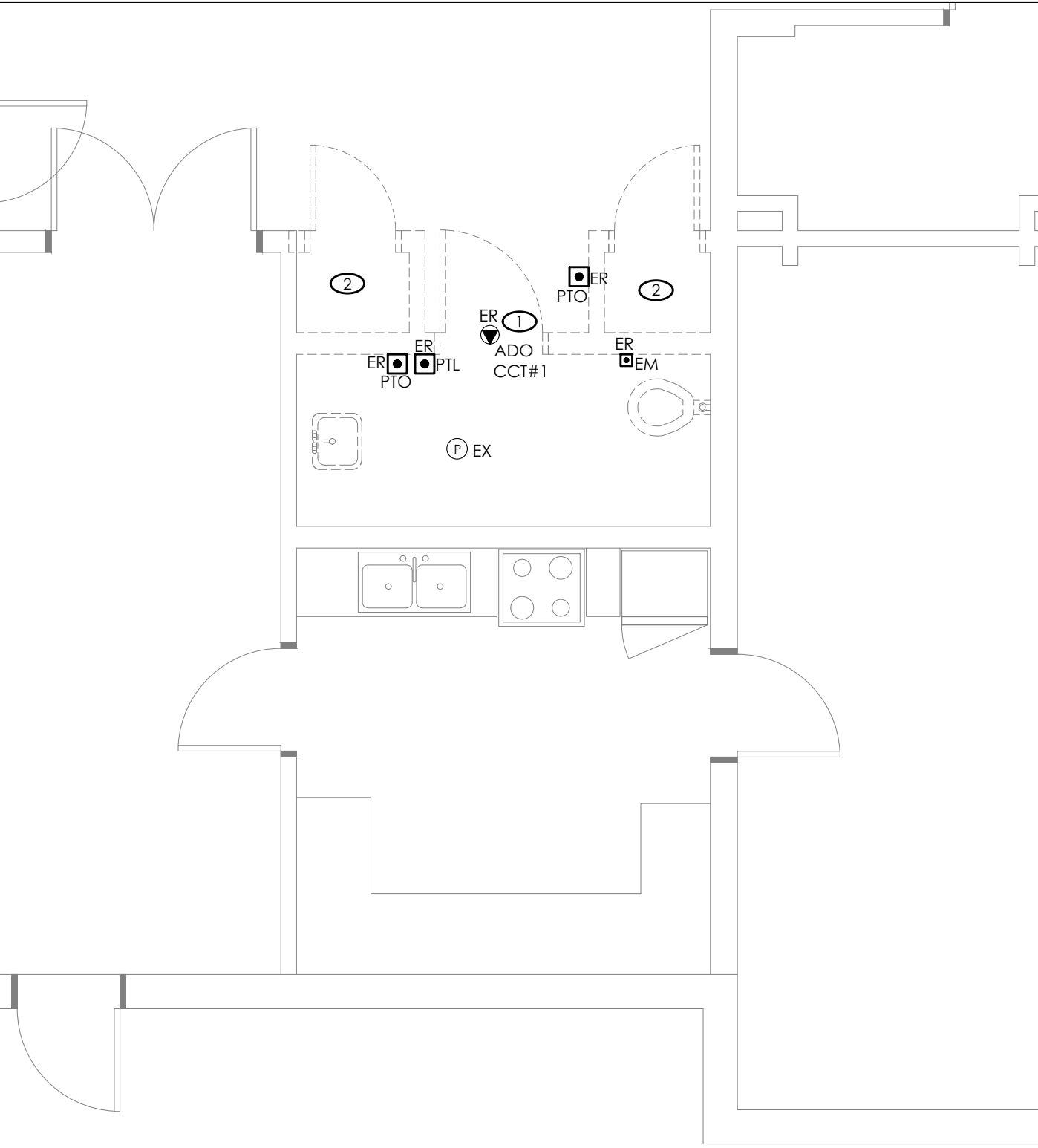
1 GROUND FLOOR LIGHTING AND FIRE ALARM PROPOSED PLAN
E2.1 SCALE:1:100



1 GROUND FLOOR POWER AND SYSTEMS DEMOLITION PLAN
ED1.1 SCALE:1:100

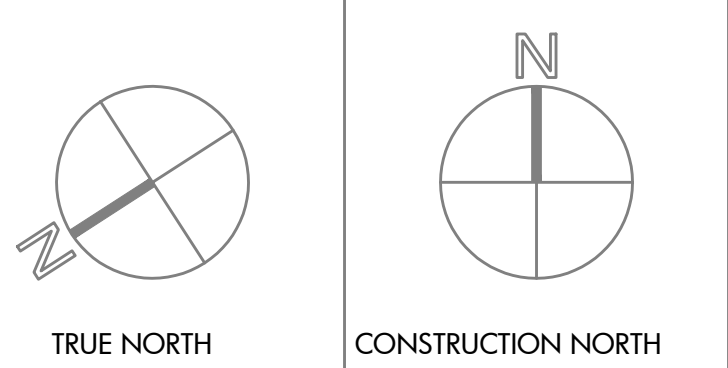


KEY PLAN



2 UNIVERSAL WASHROOM DEMOLITION PLAN
ED1.1 SCALE:1:50

- DRAWING NOTES**
- 1 REMOVE EXISTING AUTOMATIC DOOR OPERATOR SYSTEM INCLUDING ACTUATORS AND ASSOCIATED WIRING TO BE RELOCATED. MAKE SAFE ALL DISCONNECTED CIRCUITS TO BE REUSED.
 - 2 DEMOLISH ALL EXISTING LIGHTING, CONTROLS, RECEPTACLES AND FIRE ALARM DEVICES.
 - 3 DEMOLISH EXISTING RECEPTACLE AND DATA OUTLETS. RETAIN EXISTING CIRCUITS FOR REUSE. TERMINATE AND MAKE SAFE ALL WIRING PENDING RECONNECTION.
 - 4 CONTRACTOR TO FIELD VERIFY EXISTING SOURCE AND CIRCUIT SERVED BY THE JUNCTION BOXES. RETAIN AND REWORK EXISTING WIRING/ CONDUIT AS REQUIRED TO SUIT NEW LAYOUT. REMOVE EXISTING JUNCTION BOX AND WIRING WHERE NECESSARY.



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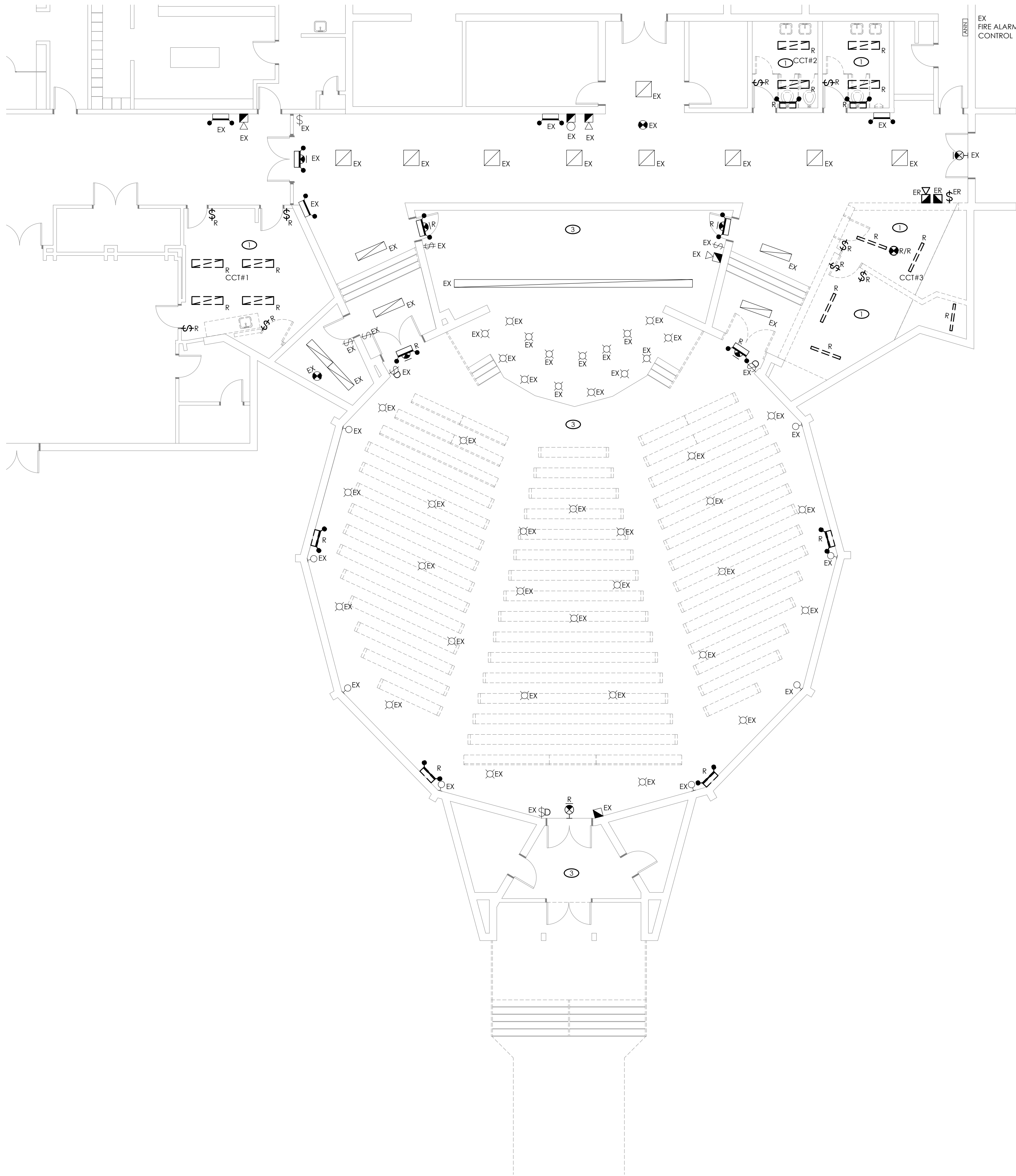
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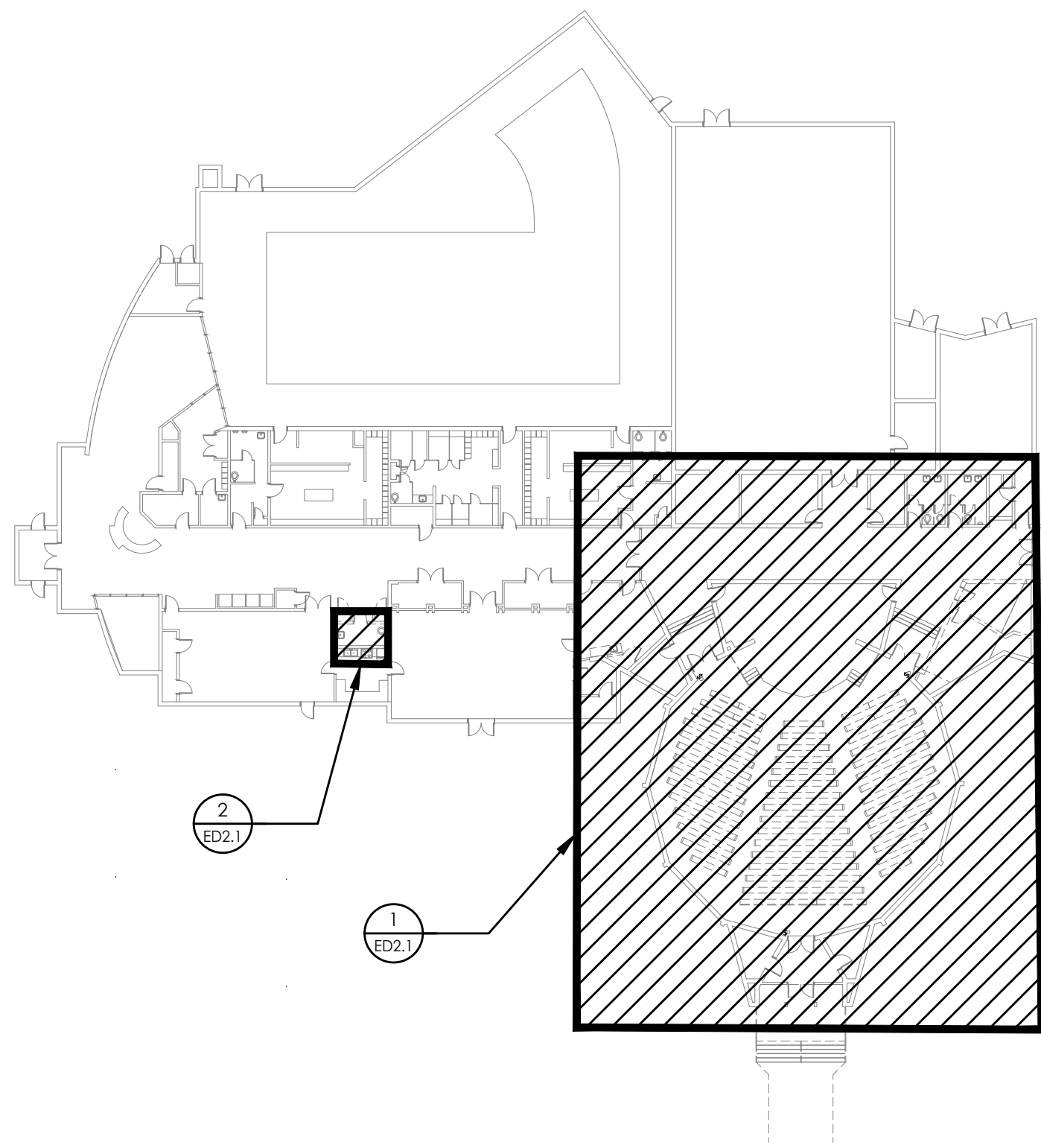
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DRAWING TITLE:
GROUND FLOOR POWER AND
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PLAN

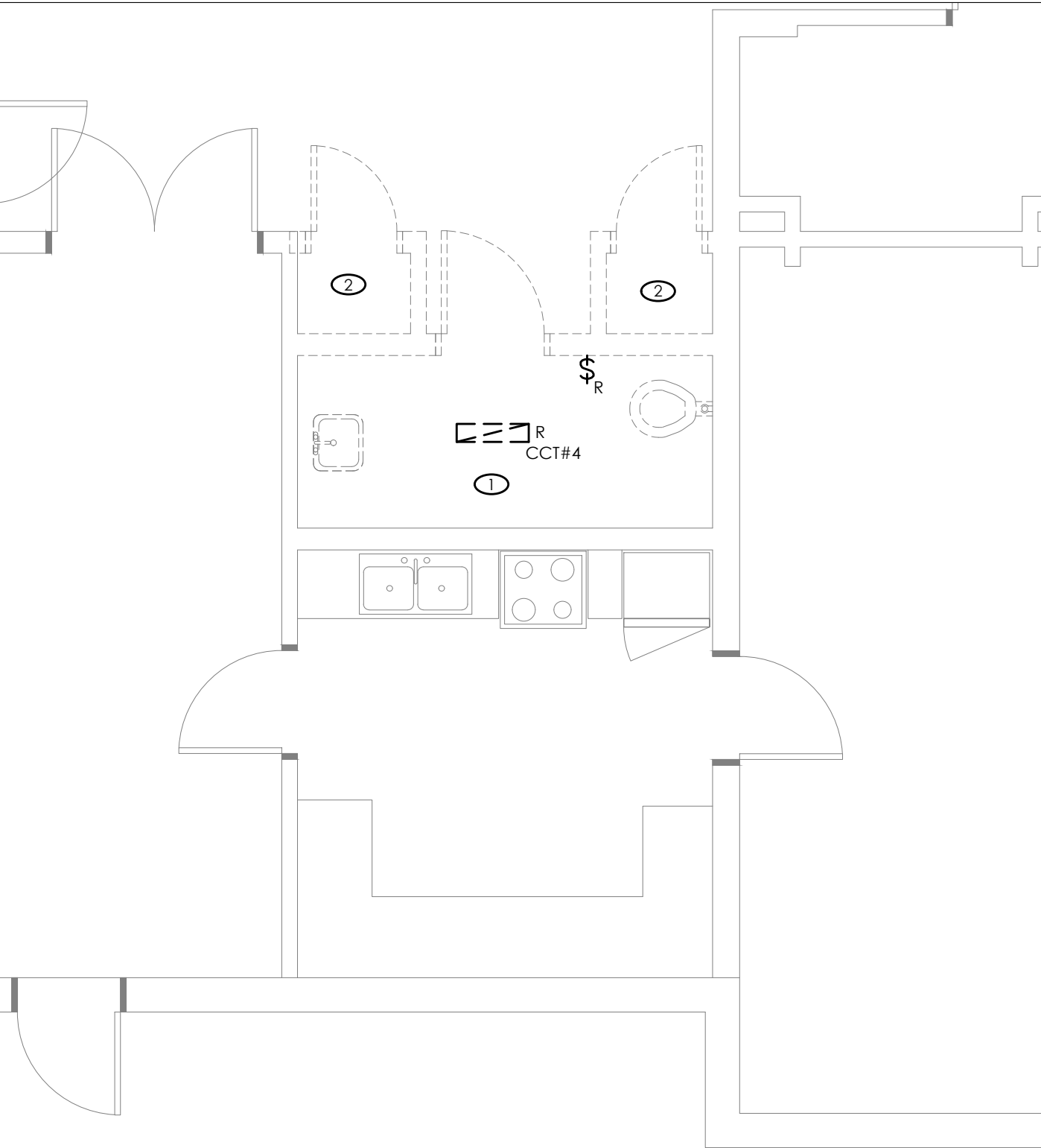
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CHECKED BY: N.A.	DRAWING NUMBER:
DATE: APRIL 2025	ED1.1
PROJECT NUMBER: 25-035	



1 GROUND FLOOR LIGHTING AND FIRE ALARM DEMOLITION PLAN
ED2.1 SCALE:1:100

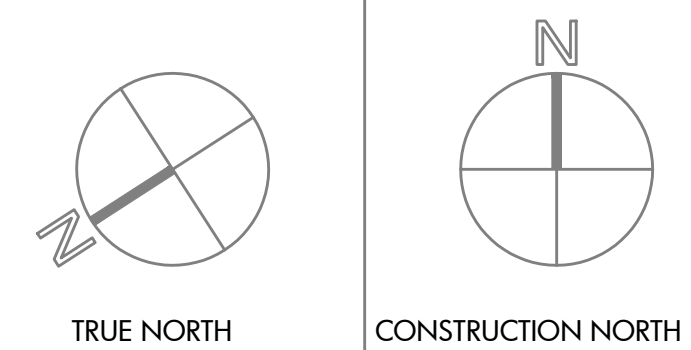


KEY PLAN



2 UNIVERSAL WASHROOM DEMOLITION PLAN
ED2.1 SCALE:1:50

- DRAWING NOTES
- 1 DEMOLISH EXISTING LIGHTING AND CONTROLS. RETAIN AND MAKE SAFE EXISTING CIRCUITS FOR FUTURE REUSE.
 - 2 DEMOLISH EXISTING LIGHTING, CONTROLS, RECEPTACLES AND FIRE DEVICES.
 - 3 DEMOLISH EXISTING EXIT SIGNS AND EMERGENCY LIGHTING.



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UPGRADES

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GROUND FLOOR LIGHTING
AND FIRE ALARM DEMOLITION
PLAN

DRAWN BY: T.K.	SCALE: AS INDICATED
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MECHANICAL DRAWING LIST

M0.0	LEAD SHEET (GENERAL NOTES, LEGEND & DRAWING LIST)
M0.1	GENERAL MECHANICAL SPECIFICATIONS
M0.2	PLUMBING SPECIFICATIONS
MD1.0	GROUND FLOOR DEMOLITION DRAINAGE PLAN
MD1.1	GROUND FLOOR DEMOLITION PLUMBING PLAN
M1.0	GROUND FLOOR PROPOSED DRAINAGE PLAN
M1.1	GROUND FLOOR PROPOSED PLUMBING PLAN
M2.0	MECHANICAL DETAILS

GENERAL NOTES

1. REFER TO SITE AND OWNER INSTRUCTIONS FOR PHASING AND STAGING.
2. THE CONTRACTOR SHALL CO-ORDINATE WITH THE STRUCTURAL TO PROVIDE OPENINGS AND SLEEVES THROUGH STRUCTURAL ELEMENTS WHERE REQUIRED.
3. PENETRATIONS OF CONCRETE SHALL BE SAW-CUT OR CORE BORED-IMPACT HAMMERS ARE NOT ALLOWED. SEAL ALL DUCTWORK & SLEEVES TO PREVENT LEAKAGE THRU FLOOR.
4. DO NOT SCALE DRAWINGS FOR INSTALLATION PURPOSES. OBTAIN ALL DIMENSIONS FROM ARCHITECTURAL PLANS, MANUFACTURER'S SHOP DRAWINGS, AND ON SITE INSPECTIONS.
5. MECHANICAL, DUCT, 2-1/4 AND ELECTRICAL TRADES SHALL WORK IN CONJUNCTION WITH ANOTHER SO AS TO AVOID INTERFERENCES BETWEEN PIPING, DUCTWORK, CONDUIT, LIGHTING FIXTURES, ETC.
6. WORK SHALL BE CO-ORDINATED THROUGH THE GENERAL CONTRACTOR PRIOR TO INSTALLATION OF ANY EQUIPMENT, DUCTWORK AND CONTROLS. CO-ORDINATE WITH ARCHITECTURAL ELEVATIONS FOR ARCHITECTURAL, MECHANICAL, AND ELECTRICAL SPACE ALLOCATIONS.
7. PROPERLY SUPPORT CEILING MOUNTED EQUIPMENT AND ANY OTHER EQUIPMENT INDEPENDENT CEILING SUPPORT SYSTEM. REFER TO ARCHITECTURAL DETAILS AND CO-ORDINATE WITH STRUCTURAL TRADE.
8. REFER TO ARCHITECTURAL FOR OWNER SUPPLIED EQUIPMENT. CONFIRM ALL MECHANICAL REQUIREMENTS AND PROVIDE TO SUIIT.
9. REVIEW ARCHITECTURAL, ELECTRICAL, AND STRUCTURAL DRAWINGS AND PROVIDE ON SITE INSPECTIONS TO DETERMINE FULL EXTENT OF PROJECT PRIOR TO SUBMITTING BID.
10. CONTRACTOR IS RESPONSIBLE FOR MAINTAINING ALL MECHANICAL SERVICES TO THE OCCUPIED AREA THROUGHOUT THE PHASING OF THE WORK. PROVIDE CONSTRUCTION VALVES, TEMPORARY DUCTWORK AND PIPING AS REQUIRED TO LIMIT THE SHUT DOWN OF SERVICES TO ONE TIME.
11. EXISTING MECHANICAL SERVICES SHOWN ON THESE DRAWINGS WERE TAKEN FROM THE ORIGINAL CONTRACT DRAWINGS AS LISTED BELOW. THE CONTRACTOR SHALL VERIFY EXIST AND LOCATION OF EXISTING SERVICES ON SITE AND SHALL REMOVE ALL REDUNDANT SERVICES IN THE AREAS OF CONSTRUCTION.
12. ALL DRAWINGS ARE INTEGRATED WITH THE SPECIFICATIONS WHICH ACCOMPANY THEM. NEITHER IS TO BE USED ALONE, ANY ITEM OR SUBJECT OMITTED FROM ONE BUT IMPLIED IN THE OTHER IS FULLY AND PROPERLY REQUIRED, WHEREVER DIFFERENCE OCCURS, THE MOST ONEROUS CONDITION GOVERNS.
13. PENETRATIONS OF EITHER FIRE OR SMOKE BARRIER RESISTANT WALLS SHALL BE SLEEVED & SEALED AGAINST THE PASSAGE OF FLAME OR SMOKE SUITSABLE NON-COMBUSTIBLE MATERIALS EQUAL TO THE CONSTRUCTION TO BE PENETRATED.
14. AVOID ANY DIRECT CONTACT BETWEEN ANY PIPING, DUCTING AND ELECTRICAL CONDUIT SYSTEMS TO PREVENT SHOCK TRANSMISSION.
15. IF ANY AREAS ARE AFFECTED BY THE NEW SCOPE OF WORK, CONTRACTOR TO CARRY COSTS FOR THE REMOVAL AND INSTALLATION OF THE EXISTING CEILING TILES. REFER TO ARCHITECTURAL FOR REFLECTED CEILING PLAN FOR SCOPE OF NEW CEILING.
16. INSTALLATION SHALL BE COMPLETE AND FULLY FUNCTIONAL. PROVIDE ALL LABOR, MATERIALS, TOOLS, SERVICES, EQUIPMENT, ETC. AS REQUIRED.
17. PROVIDE ACCESS FOR SERVING EQUIPMENT AS INDICATED, AS REQUIRED BY CODE AND AS RECOMMENDED BY THE MANUFACTURER.
18. PROVIDE ACCESS DOORS AS NECESSARY FOR ACCESS TO VALVES, DAMPERS, AND OTHER COMPONENTS REQUIRING MONITORING, INSPECTION, AND MAINTENANCE.
19. INSTALL EQUIPMENT, DUCTS, AND PIPES PARALLEL TO OR PERPENDICULAR TO BUILDING LINES. PROVIDE SPACE, UNIONS AND FLANGES FOR DISASSEMBLY, SERVING AND REMOVAL OF EQUIPMENT.
20. THE CONTRACTOR SHALL, WITH APPROVAL OF THE OWNER AND AT NO ADDITIONAL CONTRACT COST, REMOVE, REARRANGE AND/OR RELOCATE ANY OBSTRUCTIONS WHICH INTERFERE WITH INSTALLATION OF NEW WORK.
21. ALL SHUTDOWN OF ANY PORTION OF EXISTING BUILDING SYSTEMS SHALL BE PERFORMED WITH THE OWNER'S CONSENT. THE CONTRACTOR SHALL COORDINATE WITH THE OWNER FOR TIME AND DURATION OF SERVICE INTERRUPTIONS, INCLUDING COST OF PREMIUM TIME IN THE CONTRACT PRICE FOR WORK PERFORMED DURING NIGHTS, WEEK-ENDS OR OTHER TIME OUTSIDE NORMAL WORKING HOURS AS NECESSARY TO MAINTAIN MECHANICAL SERVICES IN OPERATION.
22. WHEN A CONFLICT OCCURS BETWEEN INSTALLATION DETAILS, DIAGRAMS, ETC. INDICATED IN THE CONTRACT DOCUMENTS AND MANUFACTURER'S INSTALLATION INSTRUCTIONS, THE MANUFACTURER'S INSTRUCTIONS SHALL GOVERN AND SHALL BE FOLLOWED.
23. ALL INSTALLATIONS SHALL BE IN ACCORDANCE WITH CODES, APPLICABLE STANDARDS, BULLETINS ETC., AND REQUIREMENTS OF ALL INSPECTION AUTHORITIES FOR THE CITY OF HAMILTON.
24. DUE TO INCONSISTENT RECORD OF EXISTING SERVICES NOT ALL SERVICES MAY BE SHOWN, OR IF SHOWN MAY NOT BE ACCURATE. IT IS CONTRACTORS RESPONSIBILITY TO FIELD CONFIRM ALL SERVICES.
25. CONTRACTOR IS TO VERIFY CONNECTION POINTS TO EXISTING SERVICES ON SITE.
26. CHECK AND VERIFY LOCATION OF ALL PIPES, DUCTS AND EQUIPMENT WITH ALL OTHER TRADES TO PREVENT INTERFERENCE. REMOVAL OR RELOCATION OF ANY SUCH WORK INTERFERING WITH WORK OF OTHER TRADES IS THE RESPONSIBILITY OF THE MECHANICAL TRADE CONCERNED UNLESS OTHERWISE APPROVED IN WRITING.
27. PROVIDE ACCESS DOOR FOR ALL VALVES LOCATED ABOVE DRY WALL CEILING.
28. IN ALL INSTANCES THE NEED FOR ACCESS DOOR IN GWB CEILINGS SHOULD BE AVOIDED IF POSSIBLE. WHERE INSTALLATION OF COMPONENTS WHICH REQUIRE ACCESS CANNOT BE AVOIDED, SUBMIT DIMENSIONED LAYOUT ON ARCHITECTURAL REFLECTED CEILING PLANS TO CONSULTANTS FOR APPROVAL PRIOR TO INSTALLATION OF COMPONENT.
29. BEFORE CUTTING ANY HOLES THROUGH THE EXISTING SLAB REFER TO STRUCTURAL DRAWINGS FOR GENERAL REQUIREMENTS.
30. PROVIDE SIGN IDENTIFYING LOCATION OF ALL VALVES INSTALLED IN CEILING SPACE.
31. CONTROLS TO BE AN EXTENSION OF EXISTING BAS.

GENERAL DEMOLITION NOTES

1. CONTRACTOR IS TO ENSURE THAT ALL EXISTING PIPING SERVING EXISTING AREAS REMAIN IN SERVICE UNTIL THESE AREAS ARE RECONNECTED TO NEW SERVICES. ONLY THEN OBSOLETE PIPING IS TO BE REMOVED AS SHOWN.
2. ALL DISTURBED SURFACES AFTER PIPE REMOVAL OR REROUTING TO BE FILLED-IN WITH APPROPRIATE MATERIAL TO MAINTAIN FIRE SEPARATION AND PATCHED TO MATCH EXISTING OR NEW.
3. CONTRACTOR IS TO ENSURE THAT ALL EXISTING REMOVED FIXTURES AND EQUIPMENT REMAIN THE PROPERTY OF THE OWNER.
4. AFTER PIPE/DUCT REMOVAL ALL EXISTING OPENINGS IN FIRE SEPARATION ARE TO BE FILLED-IN TO MAINTAIN INTEGRITY OF THAT FIRE SEPARATION.

GENERAL SITE SERVICE NOTES

1. CONTRACTOR IS TO VERIFY LOCATIONS OF ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION.
2. ALL EXISTING UTILITIES AND SERVICES ARE TO BE MAINTAINED AND SUPPORTED BY THE CONTRACTOR TO THE SATISFACTION OF THE OWNER OF THE UTILITY.

PLUMBING NOTES

1. CONTRACTOR IS TO CLEAR EXISTING DUCTWORK WHEN INSTALLING NEW PIPING. CLEARANCES TO BE VERIFIED ON SITE.
2. PROVIDE A CLEANOUT AT THE BOTTOM OF EVERY SOIL AND WASTE STACK THAT CONNECTS TO A HORIZONTAL DRAINAGE PIPE.
3. PROVIDE A CLEANOUT FROM EACH PLUMBING FIXTURE REQUIRED BY ONTARIO BUILDING CODE, PART 7 - PLUMBING.
4. ALL PLUMBING FIXTURES INCLUDING FLOOR DRAINS (HUB, FUNNEL FLOOR DRAINS) TO BE TRAPPED AND VENTED AS REQUIRED BY ONTARIO BUILDING CODE, PART 7 - PLUMBING.
5. FOR MOUNTING HEIGHT OF ALL PLUMBING FIXTURES REFER TO ARCHITECTURAL DRAWINGS.
6. PROVIDE ACCESS DOOR FOR ALL CLEANOUTS LOCATED ABOVE DRY WALL CEILING.
7. CONTRACTOR IS TO REMOVE ALL OBSOLETE PIPING WHEREVER POSSIBLE.
8. CONTRACTOR IS TO ENSURE THAT ALL EXISTING PIPING SERVING EXISTING AREAS REMAIN IN SERVICE UNTIL THESE AREAS ARE RECONNECTED TO NEW SERVICES. ONLY THEN OBSOLETE PIPING IS TO BE REMOVED AS SHOWN.
9. RECONNECT VENTS FROM EXISTING EQUIPMENT AND PLUMBING FIXTURES WHICH ARE TO REMAIN TO NEW VENTS AS REQUIRED.
10. WHENEVER COLD AND HOT WATER DISTRIBUTION TO LAVATORIES IS TO RUN UNDER COUNTER, PIPING DISTRIBUTION IS TO BE INSTALLED AS TIGHT TO UNDER SIDE OF THE COUNTER AS POSSIBLE.
11. ALL WATER, SANITARY, SEWER AND VENT COPPER PIPING WITH SOLDER JOINTS SHALL BE LEAD FREE. DO NOT INSTALL WATER LINES IN OUTSIDE WALL WHERE THEY MAY FREEZE, UNLESS BOTH THE WALL AND THE PIPES ARE PROPERLY INSULATED.
12. INSTALL SHUT-OFF VALVES AT EACH PLUMBING FIXTURE.
13. DEMOLITION AND REMOVAL OF PLUMBING AND DRAINAGE PIPING SHALL BE TAKEN BACK TO THE NEAREST WORKING MAIN AND BE CAPPED AS CLOSE TO THE WORKING MAIN AS POSSIBLE TO AVOID OR MINIMIZE THE NEED FOR PIPING. REFER TO CSA CODE Z817, SPECIAL REQUIREMENTS FOR PLUMBING INSTALLATIONS IN HEALTH CARE FACILITIES 6.4.1, 3.

LEGEND - PLUMBING

THIS LEGEND OF SYMBOLS REPRESENTS MANTECON PARTNERS INC. STANDARD/GENERIC LEGEND.
ALL SYMBOLS MAY NOT APPEAR ON DRAWINGS.

REFER	DESCRIPTION
— E —	EXISTING PIPING
— A —	ABANDONED PIPING
— —	DOMESTIC COLD WATER PIPING
— — —	DOMESTIC HOT WATER PIPING
— — — —	DOMESTIC HOT WATER RECIRC. PIPING
— ROS —	REVERSE OSMOSIS SUPPLY PIPING
— ROR —	REVERSE OSMOSIS RETURN PIPING
— S —	COLD SOFT WATER PIPING
— — V — —	VENT PIPING
— — — —	SANITARY PIPING ABOVE FLOOR
— — — —	SANITARY PIPING BELOW GRADE OR FLOOR
— S —	STORM PIPING ABOVE FLOOR
— S —	STORM PIPING BELOW GRADE OR FLOOR
— AW —	ACID WASTE PIPING
— AV —	ACID VENT PIPING
— C —	COMBINED SEWER PIPING
— CS —	CONDENSATE PIPING
— PC —	PUMPED CONDENSATE PIPING
— PD —	PUMPED DISCHARGE PIPING
— T —	TEMPERED WATER PIPING
— FM —	FORCEMAIN PIPING
— G —	GAS PIPING
— CA —	COMPRESSED AIR PIPING
— NP —	NON PORTABLE PIPING FOR IRRIGATION SYSTEM
— GW —	GRAY WATER PIPING
	PIPING TO BE REMOVED
	HEAT TRACED PIPING
	CONNECTION OF NEW AND EXISTING PIPING
	CAPPED PIPE
	FLOOR DRAIN
	FUNNEL FLOOR DRAIN
	HUB DRAIN
	AREA DRAIN
	FLOOR SINK DRAIN
	ROOM DRAIN
	ROOF DRAIN ABOVE
	CANOPY DRAIN
	BALCONY DRAIN
	ELEVATOR PIT DRAIN c/w BACK WATER VALVE
	CLEANOUT IN FLOOR
	CLEANOUT IN LINE OR STACK
	WATER METER
	GAS METER
	NON-FREEZE WALL HYDRANT c/w VACUUM BREAKER
	HOSE BIBB c/w VACUUM BREAKER
	ISOLATION VALVE
	THROTTLING VALVE
	CHECK VALVE
	RESILIENT CHECK VALVE
	CHECK VALVE c/w BALL DRIP VALVE

	STRAINER
	GAS VALVE
	REDUCED PRESSURE BACKFLOW PREVENTER
	DUAL CHECK W/ ATMOSPHERIC PORT BACKFLOW PREVENTER
	VACUUM BREAKER - PRESSURE TYPE
	PRESSURE REDUCING VALVE (WATER)
	VENT THROUGH ROOF
	3-WAY VALVE
	TEMPERATURE & PRESSURE RELIEF VALVE
	CONTROL VALVE
	UNION
	PRESSURE GAUGE
	THERMOMETER
	PUMP
	PIPE DOWN
	PIPE UP
	PIPE UP & DOWN
	PIPE TEE
	DENOTES EXISTING

The diagram consists of two circular compass roses side-by-side. The left rose has a thick line pointing towards the top-left, labeled with a 'Z' and the text 'TRUE NORTH' below it. The right rose has a thick line pointing straight up, labeled with an 'N' and the text 'CONSTRUCTION NORTH' below it.



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6 SOUSA MENDES ST.
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M6P 0A8

PROJECT:

BENNETTO CC AUDITORIUM UPGRADES

DRAWING TITLE:

LEAD SHEET

DRAWN BY:

15

CHECKED BY _____

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DATE:

APRIL 2025

PROJECT NUMBER:
25-035

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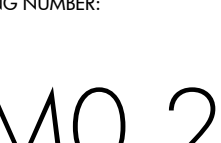
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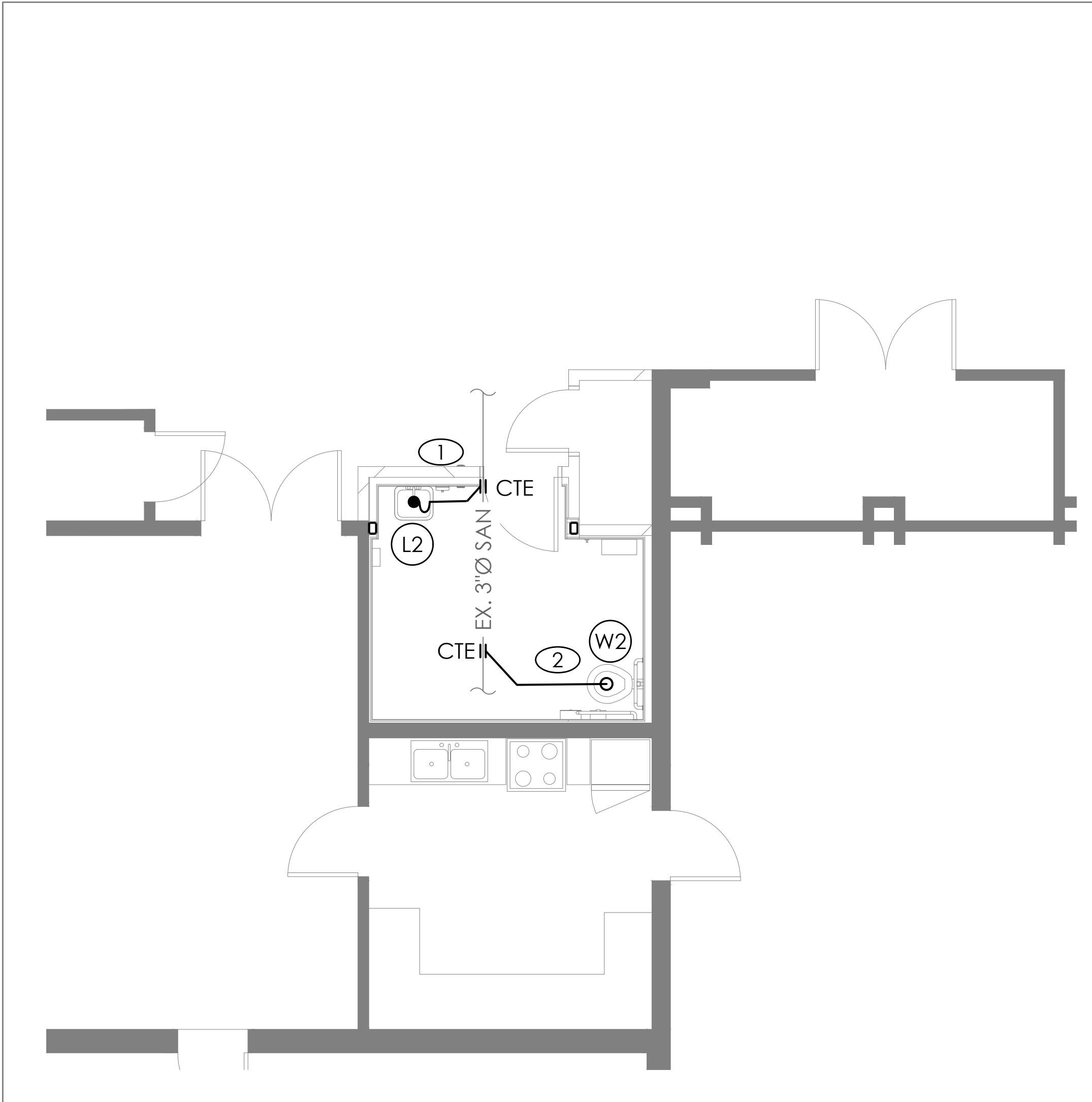
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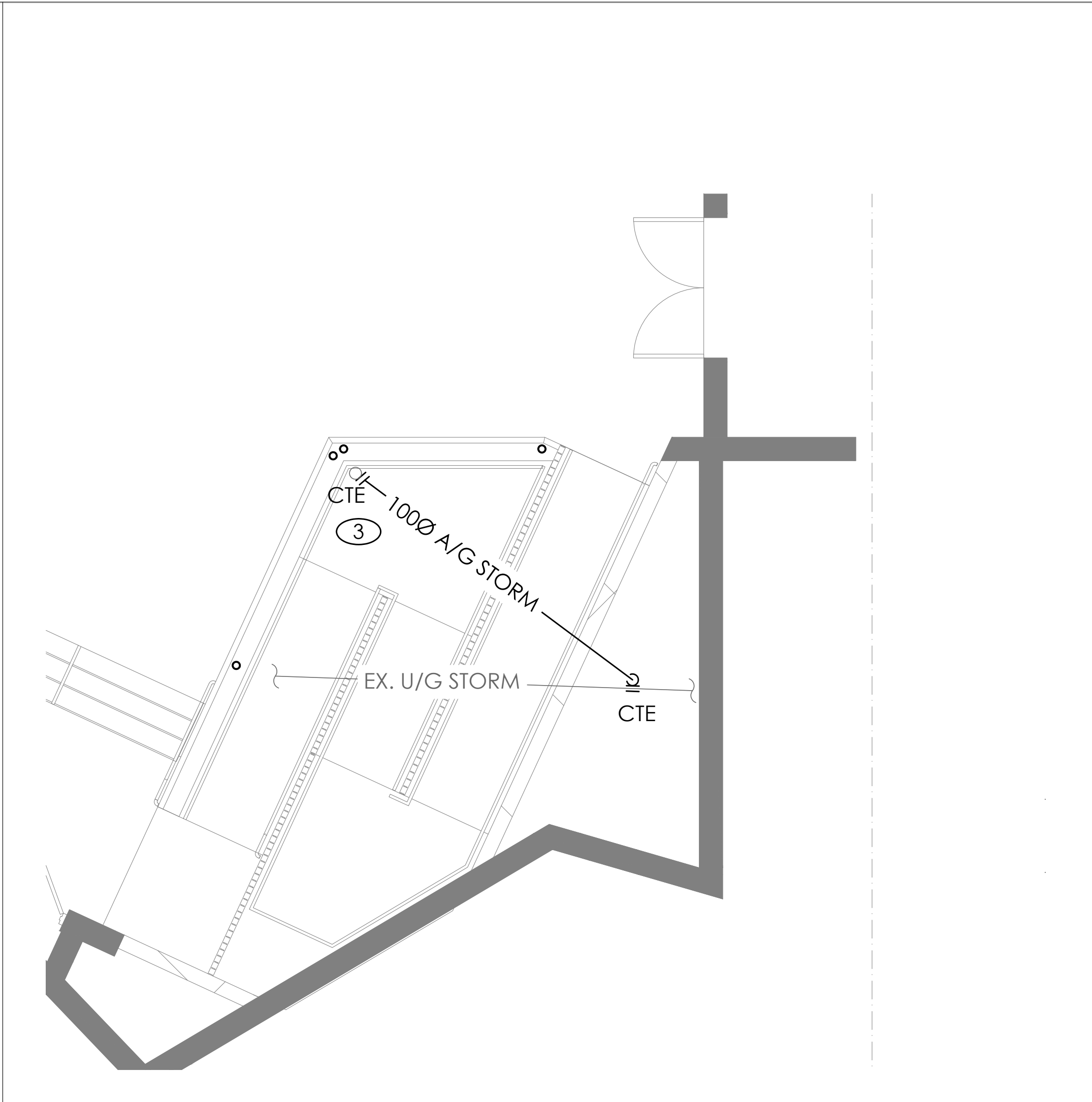
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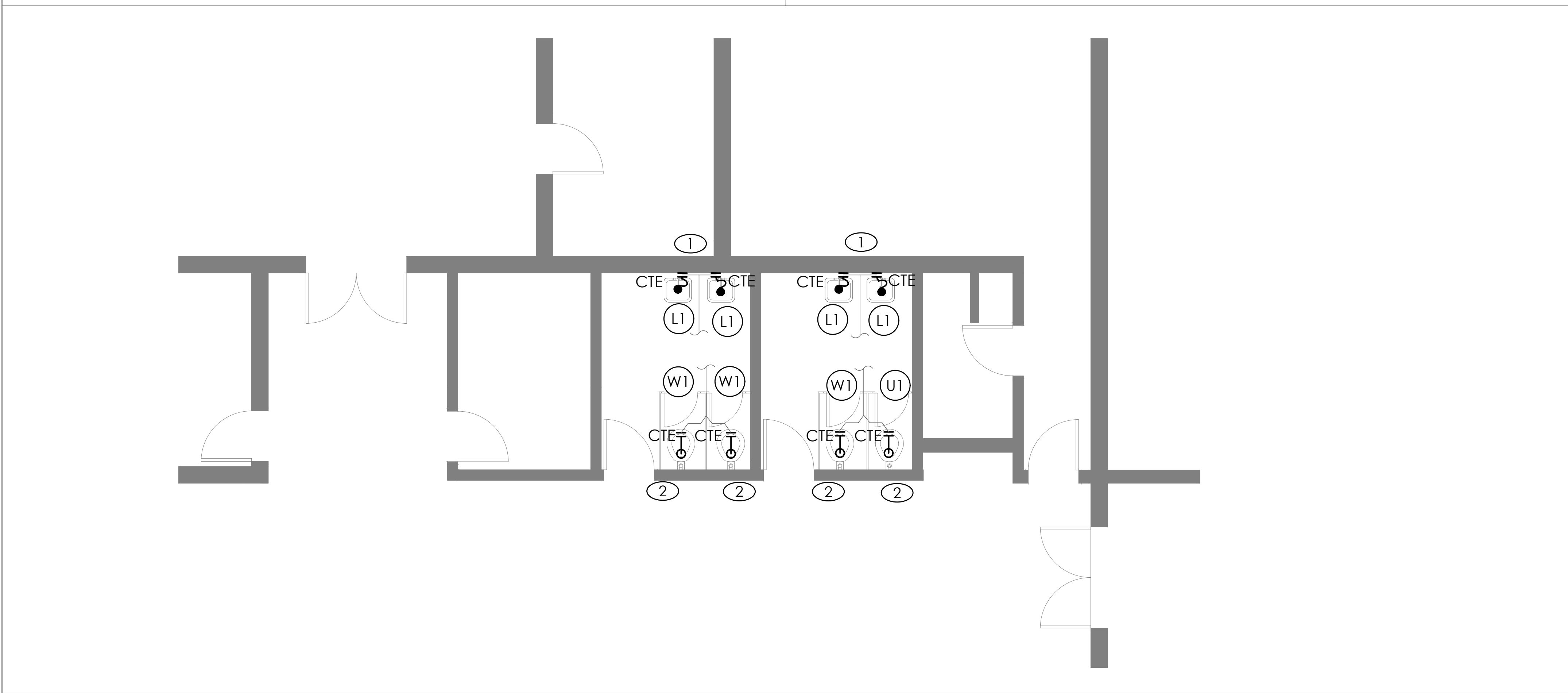
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but, as we saw,



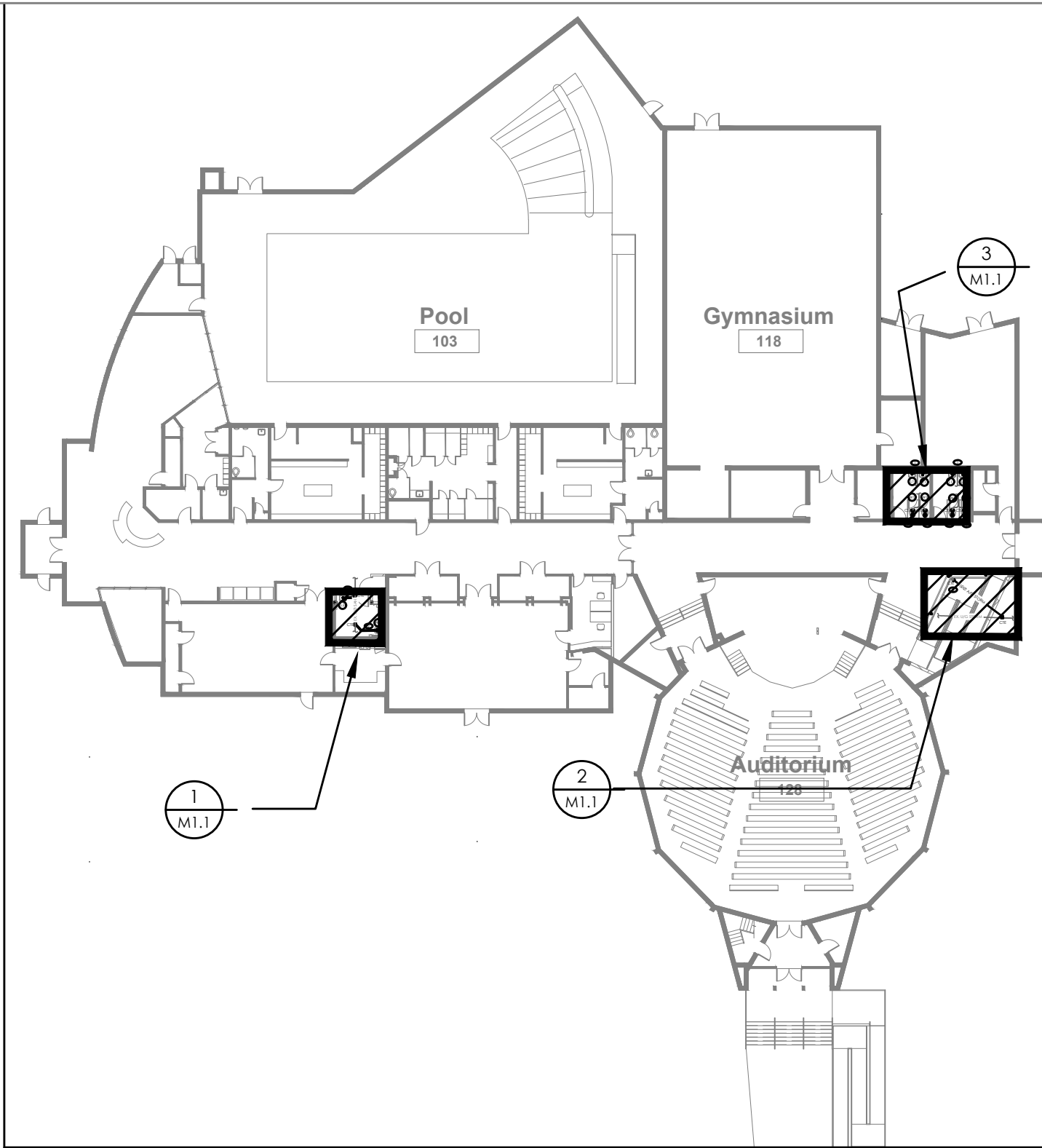
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SCALE:1:50



2 GROUND FLOOR PROPOSED DRAINAGE PLAN
SCALE:1:50



3 GROUND FLOOR PROPOSED DRAINAGE PLAN
SCALE:1:50



KEY PLAN

DRAWING NOTES

- CONNECT NEW SINK TO EXISTING SANITARY.
- CONNECT NEW W/C TO EXISTING SANITARY SYSTEM CONNECTIONS.
- CONNECT TO RAIN WATER LEADER ABOVE. ROUTE NEW STORM PIPING IN THE CEILING SPACE OVER THE RAMP. CONNECT TO EXISTING BELOW GROUND STORM PIPING. DEMOLISH THE EXISTING RAIN WATER LEADER IN COORDINATION WITH THE RAMP LAYOUT.

STRUCTURAL MECHANICAL ELECTRICAL CIVIL ENGINEERS

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3	ISSUED FOR TENDER	2026-03-06	A.C.
2	ISSUED FOR PERMIT	2026-02-27	A.C.
1	ISSUED FOR COSTING	2025-05-16	J.C.

CLIENT

WORKSHOP ARCHITECTS
6 SOUSA MENDES ST.
TORONTO, ON
M6P 0A8

PROJECT:

BENNETTO CC AUDITORIUM
UPGRADES

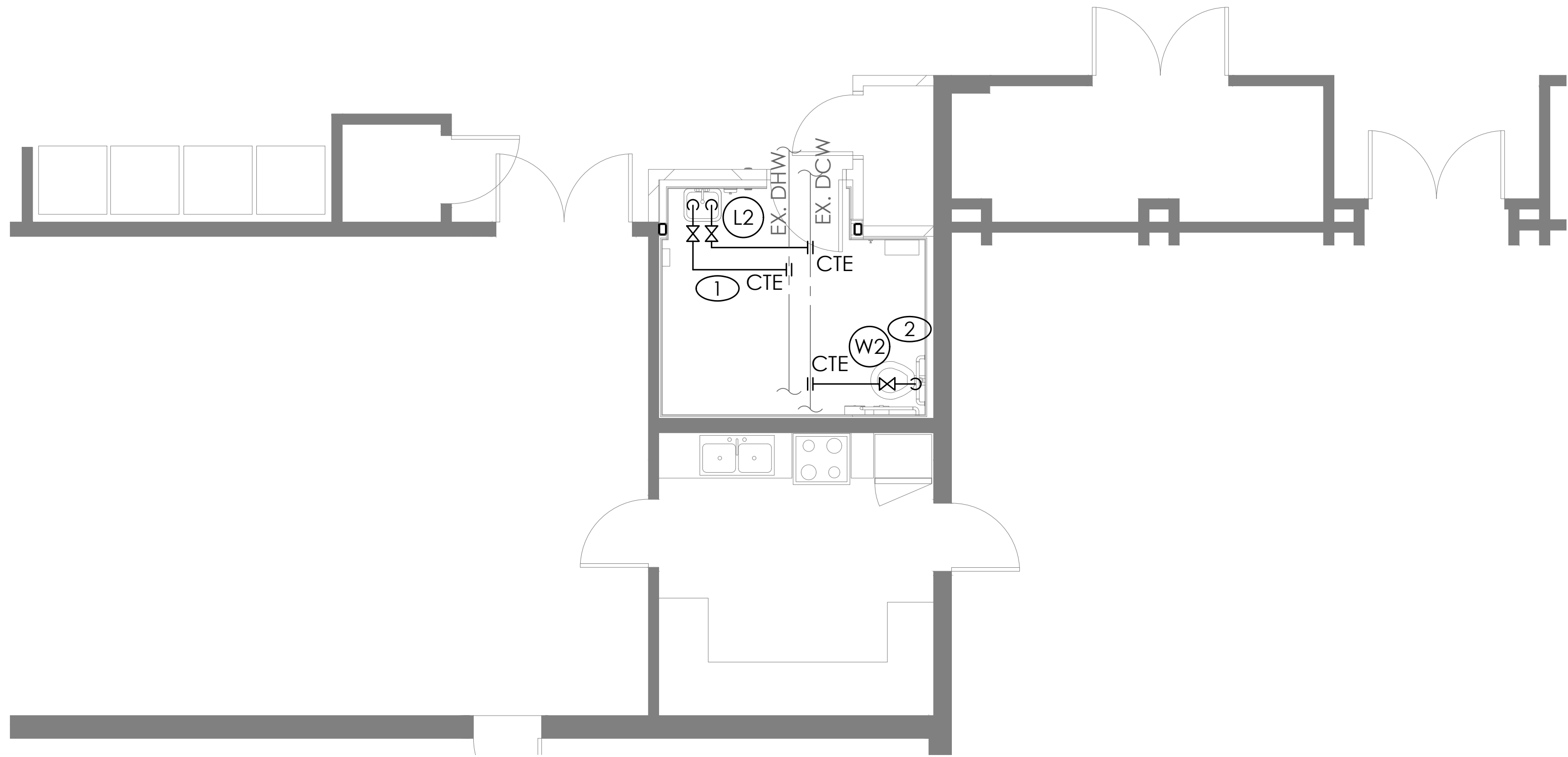
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GROUND FLOOR PROPOSED
DRAINAGE PLAN

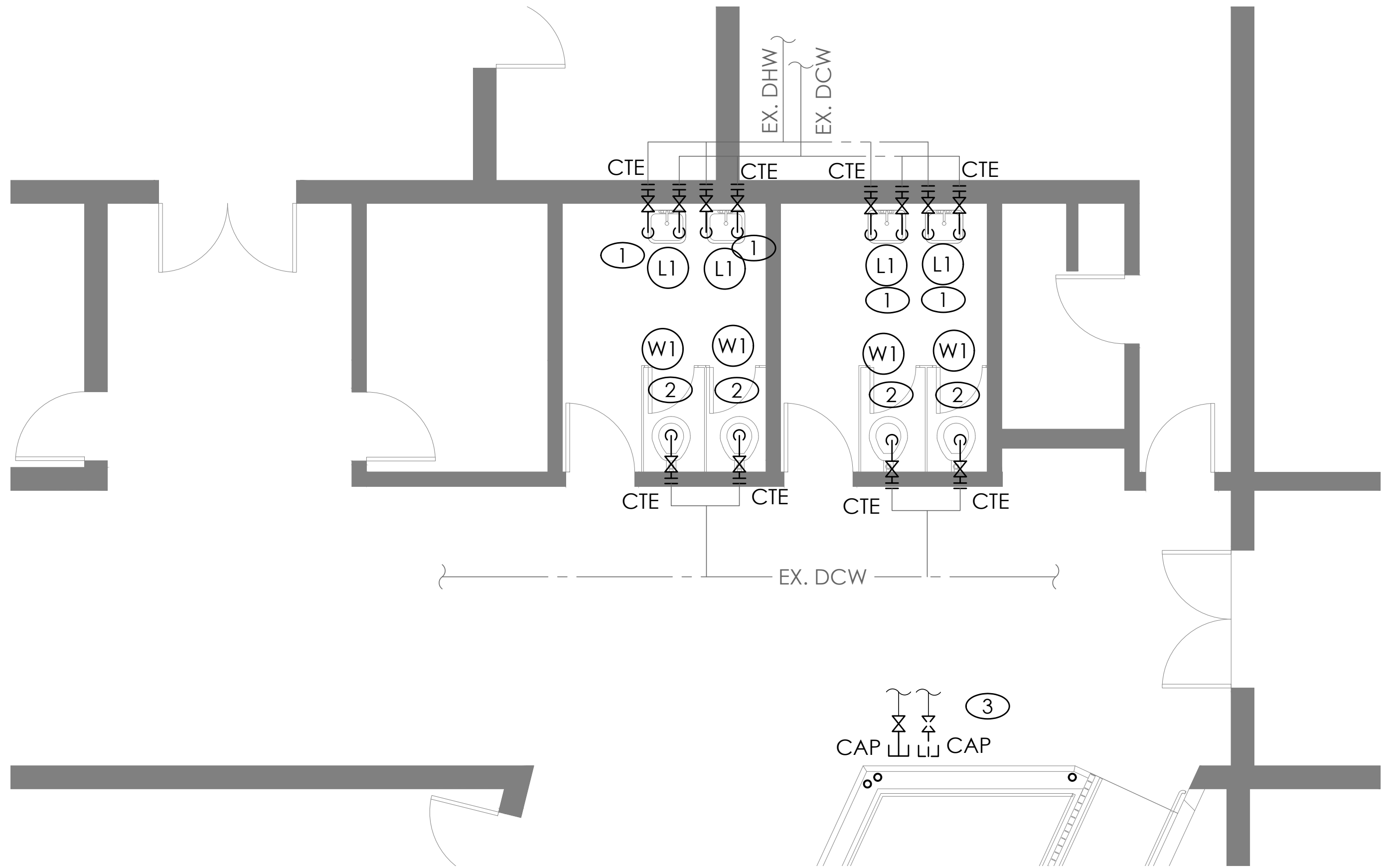
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J.C.	1:50
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F.B.	
DATE:	
APRIL 2025	
PROJECT NUMBER:	
25-035	

M1.0

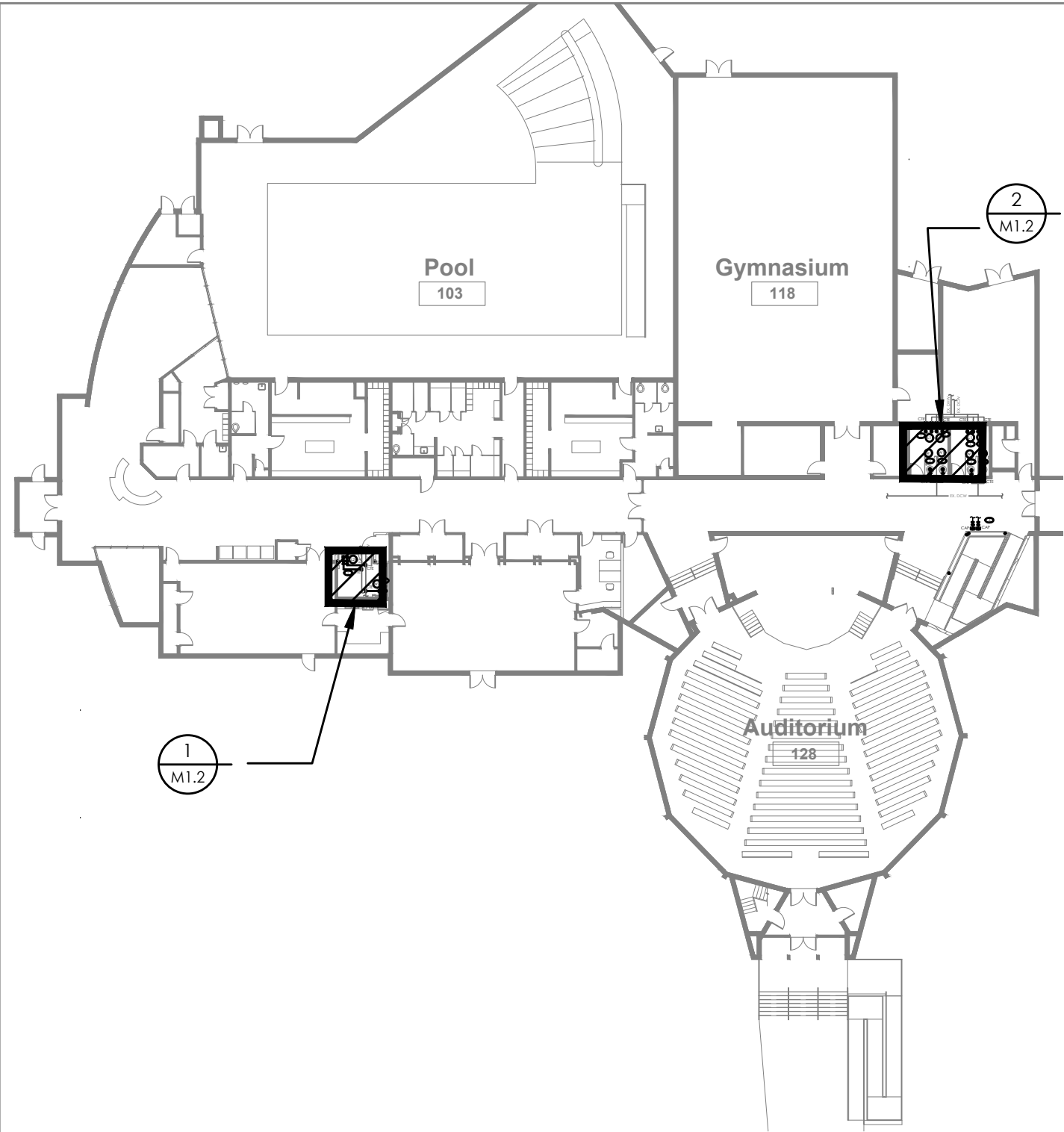
March 06, 2026 - 02:37pm Plotted by: acowman



1 GROUND FLOOR PROPOSED PLUMBING PLAN
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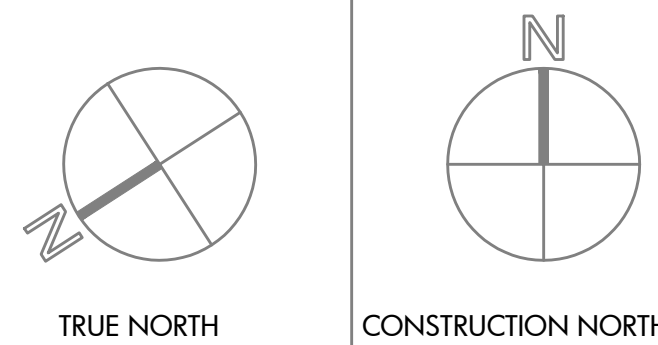
2 GROUND FLOOR PROPOSED PLUMBING PLAN
SCALE:1:50



KEY PLAN

DRAWING NOTES

- CONNECT NEW SINK TO EXISTING DCW AND DHW PIPING.
- CONNECT NEW W/C TO EXISTING DCW LINE.
- VALVE AND CAP THE EXISTING HYDRONIC HOT WATER PIPING IN THE HALLWAY.



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WORKSHOP ARCHITECTS
6 SOUSA MENDES ST.
TORONTO, ON
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PROJECT:
BENNETTO CC AUDITORIUM
UPGRADES

DRAWING TITLE:
GROUND FLOOR PROPOSED
PLUMBING PLAN

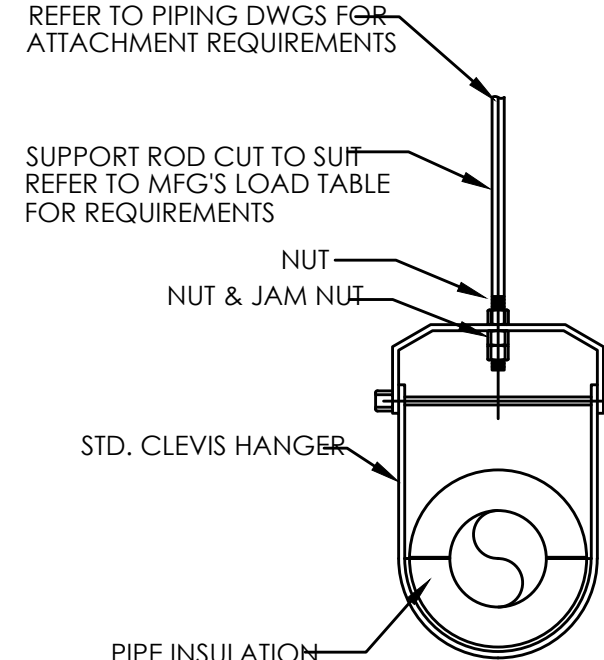
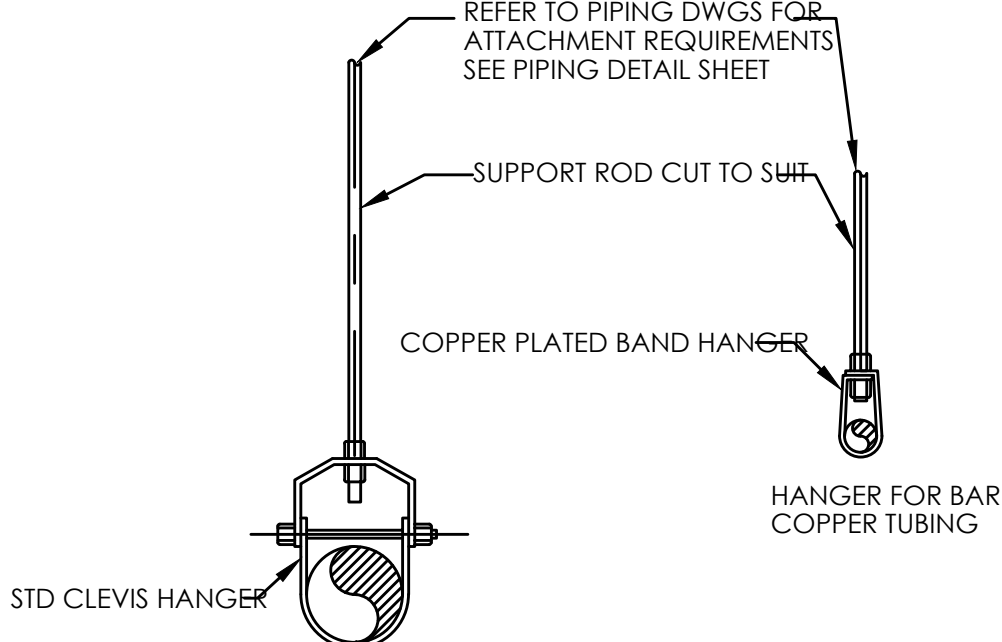
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J.C.
CHECKED BY:
F.B.
DATE:
APRIL 2025
PROJECT NUMBER:
25-035

SCALE:
1:50

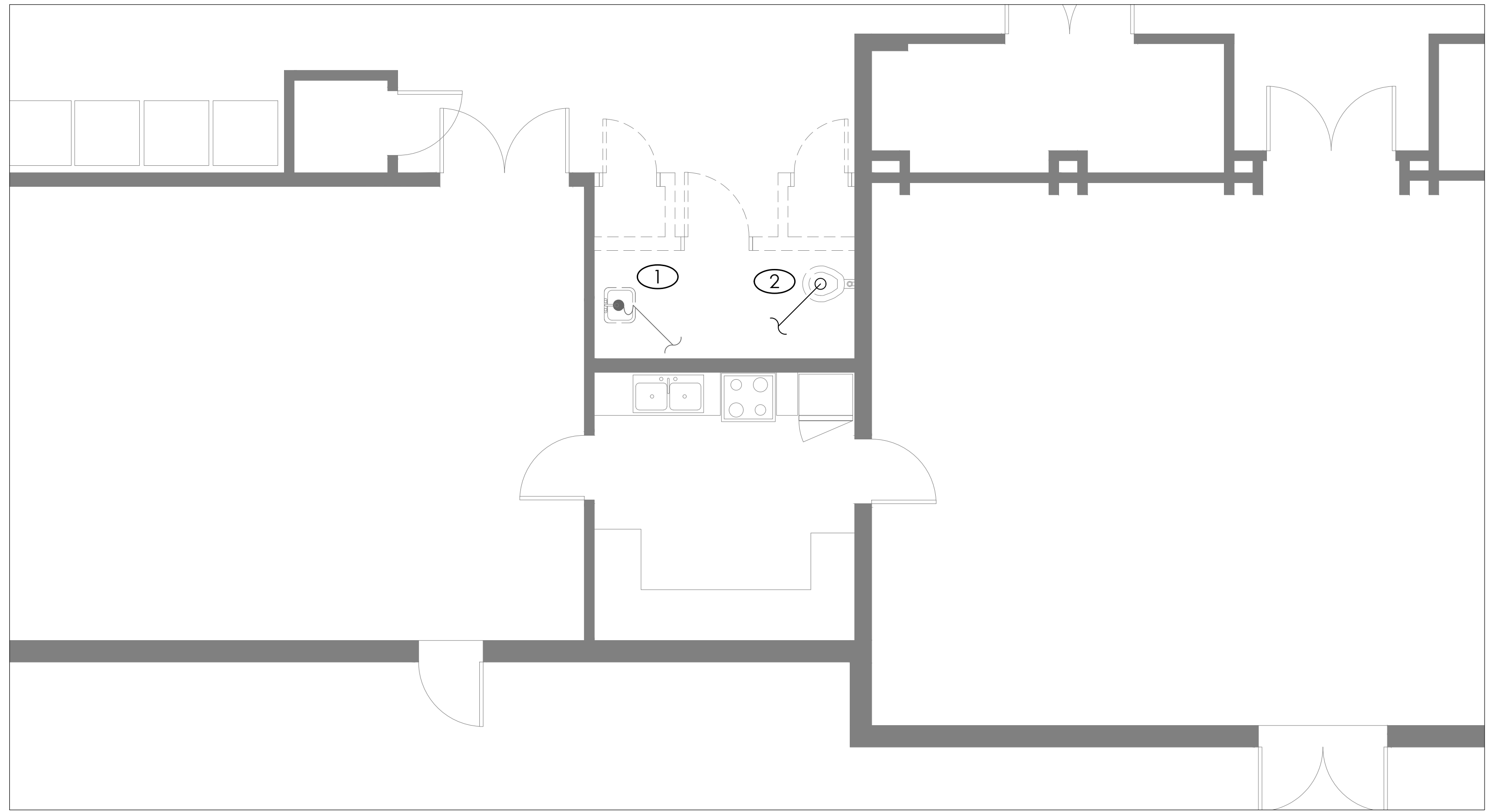
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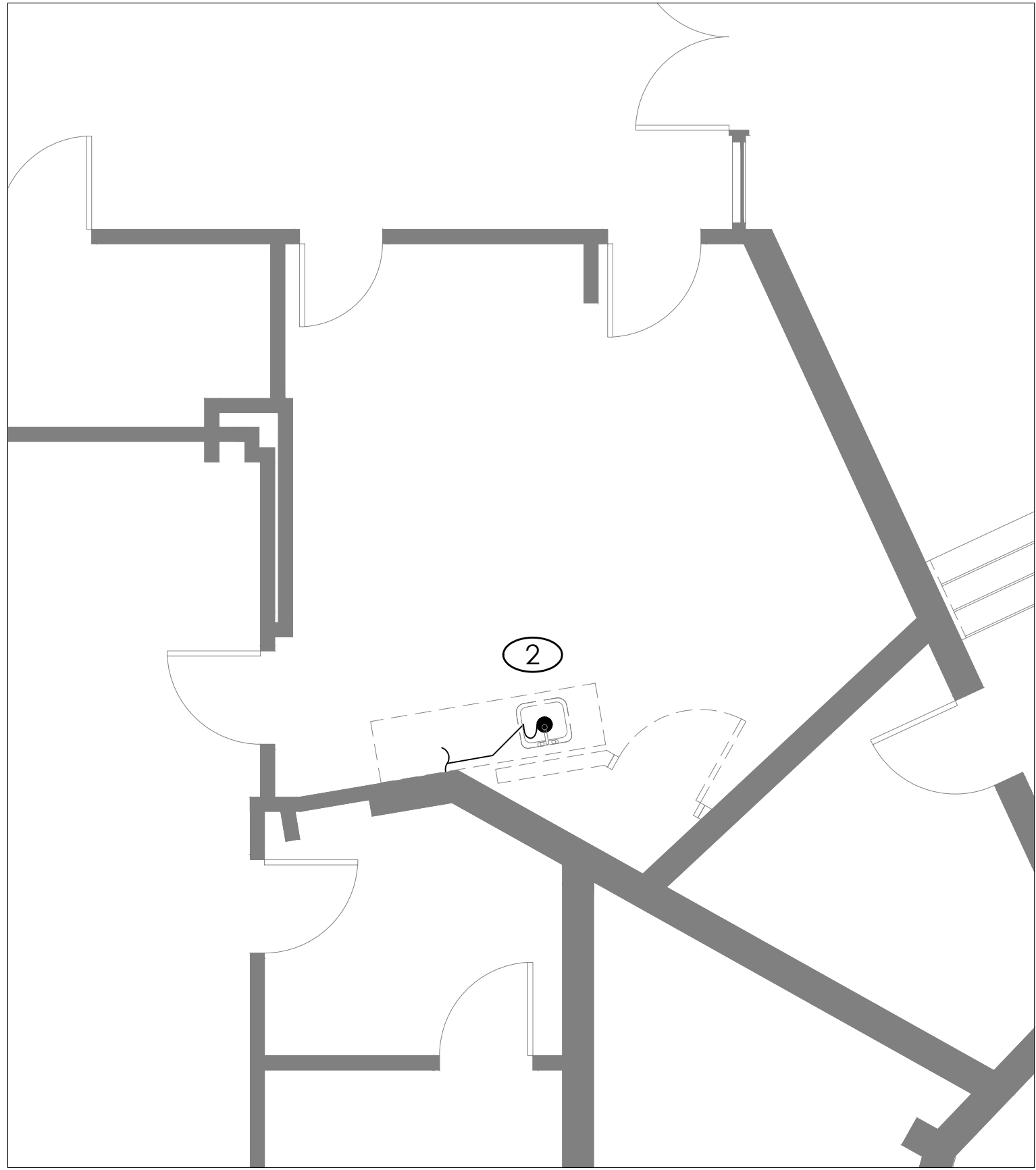
PLUMBING FIXTURE CONNECTION SCHEDULE					
REFER	DESCRIPTION	SANITARY	SANITARY VENT	DHWS	DCWS
(W1)	WALL HUNG, FLUSH VALVE WATERCLOSET	75Ø (3'Ø)	3ØØ (1-1/2'Ø)	-	25Ø (1'Ø)
(W2)	BARRIER FREE, WALL HUNG, FLUSH VALVE WATERCLOSET	75Ø (3'Ø)	3ØØ (1-1/2'Ø)	-	25Ø (1'Ø)
(L1)	WALL HUNG LAVATORY	32Ø (1-1/4'Ø)	32Ø (1-1/4'Ø)	13Ø (1/2'Ø)	13Ø (1/2'Ø)
(L2)	BARRIER FREE, WALL HUNG LAVATORY	32Ø (1-1/4'Ø)	32Ø (1-1/4'Ø)	13Ø (1/2'Ø)	13Ø (1/2'Ø)
(MV)	MIXING VALVE	-	-	13Ø (1/2'Ø)	13Ø (1/2'Ø)

[illegible]

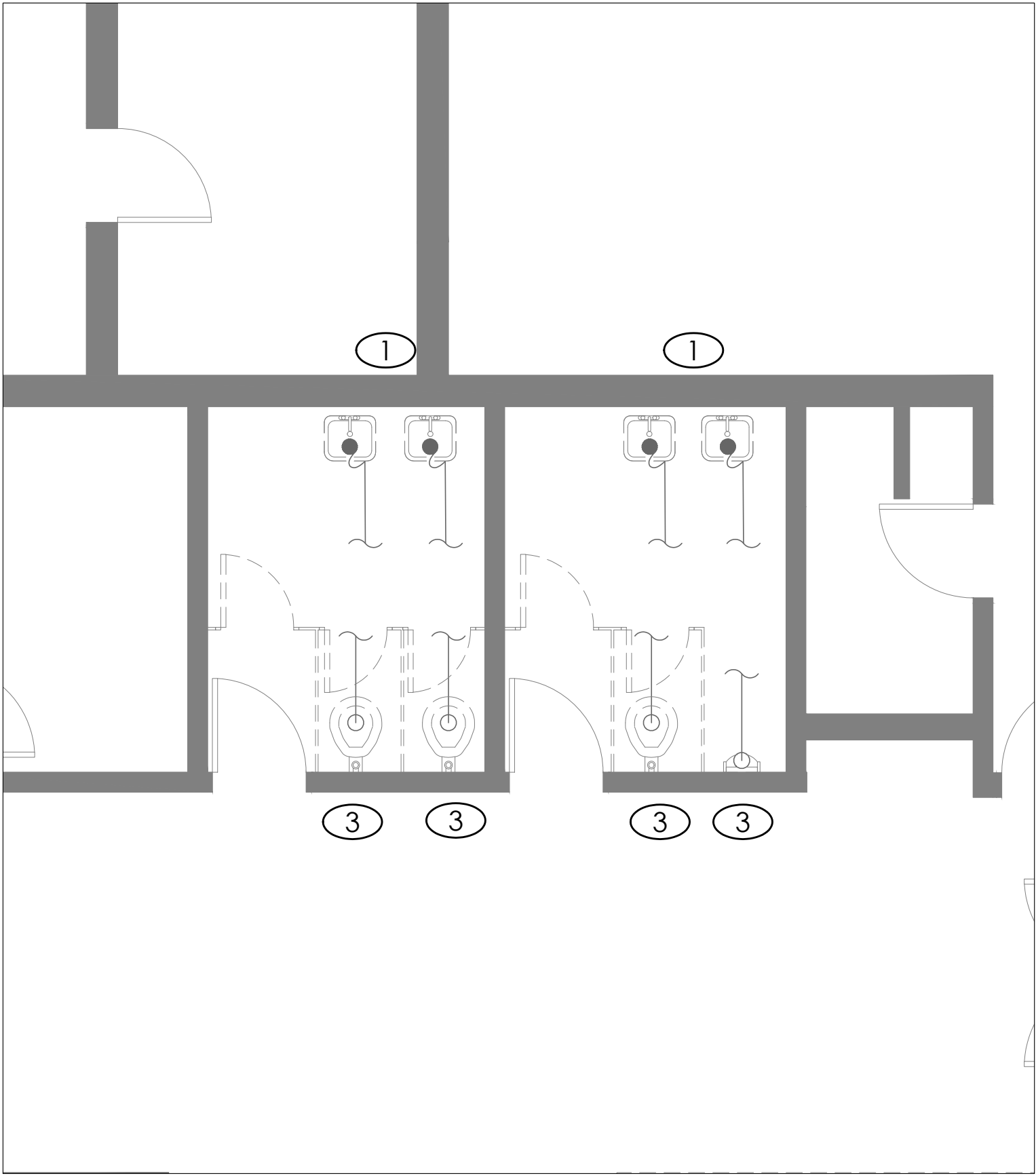
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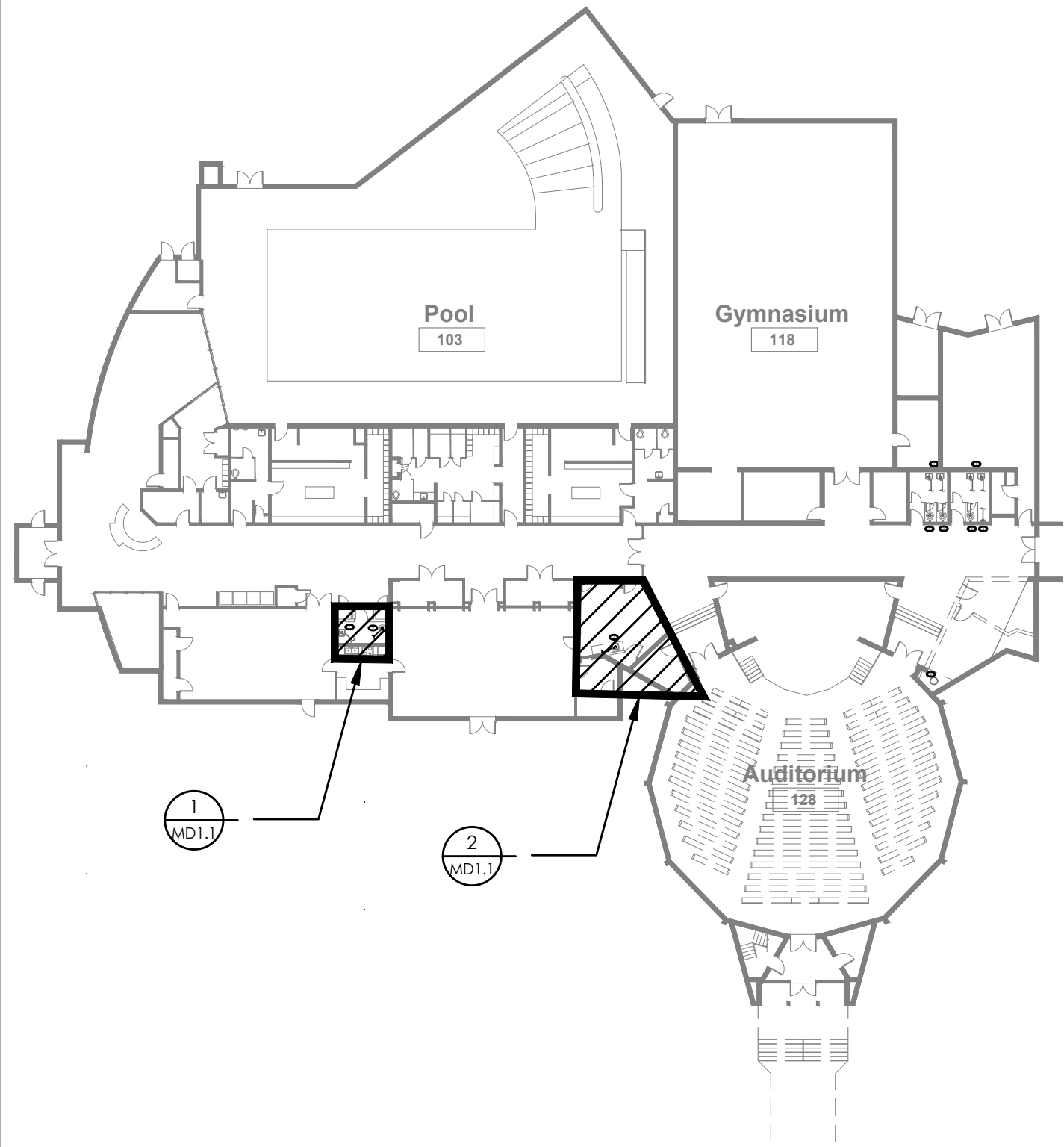
1 GROUND FLOOR DRAINAGE DEMOLITION PLAN
MD1.0 SCALE:1:50



2 GROUND FLOOR DRAINAGE DEMOLITION PLAN
MD1.0 SCALE:1:50



3 GROUND FLOOR DRAINAGE DEMOLITION PLAN
MD1.0 SCALE:1:50



KEY PLAN

DRAWING NOTES

- 1 EXISTING SINK TO BE REMOVED, EXISTING SANITARY CONNECTIONS TO REMAIN FOR NEW SINK.
- 2 DEMOLISH EXISTING SANITARY CONNECTION AND CAP.
- 3 EXISTING FIXTURE TO BE REMOVED, EXISTING SANITARY CONNECTIONS TO REMAIN FOR NEW FIXTURE.
- 4 EXISTING PIT TO REMAIN

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CLIENT

WORKSHOP ARCHITECTS
6 SOUSA MENDES ST.
TORONTO, ON
M6P 0A8

PROJECT:

BENNETTO CC AUDITORIUM
UPGRADES

DRAWING TITLE:

GROUND FLOOR DRAINAGE
DEMOLITION PLAN

DRAWN BY:

J.C.

CHECKED BY:

F.B.

DATE:

APRIL 2025

PROJECT NUMBER:

25-035

SCALE:

1:50

DRAWING NUMBER:

MD1.0

March 06, 2026 - 02:37pm Plotted by: acowman

File: J:\Drawings\25-035 - Bennetto Community Centre - Auditorium Accessibility Upgrades - Workshop Architecture\3-Working Documents\MD1.000 Ground Floor Drainage Demolition Plan.dwg



DRAWING NOTES

- ① EXISTING SINK TO BE REMOVED, EXISTING SANITARY CONNECTIONS TO REMAIN FOR NEW SINK.
- ② DEMOLISH EXISTING SANITARY CONNECTION AND CAP.
- ③ EXISTING FIXTURE TO BE REMOVED, EXISTING SANITARY CONNECTIONS TO REMAIN FOR NEW FIXTURE.
- ④ EXISTING PIT TO REMAIN



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NO.	ISSUED	DATE	BY

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6 SOUSA MENDES ST.
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M6P 0A8

PROJECT:

BENNETTO CC AUDITORIUM
UPGRADES

DRAWING TITLE:

GROUND FLOOR DRAINAGE DEMOLITION PLAN

DRAWN BY:

I.C.

CHECKED BY

F B

DATE:

APRIL 2025

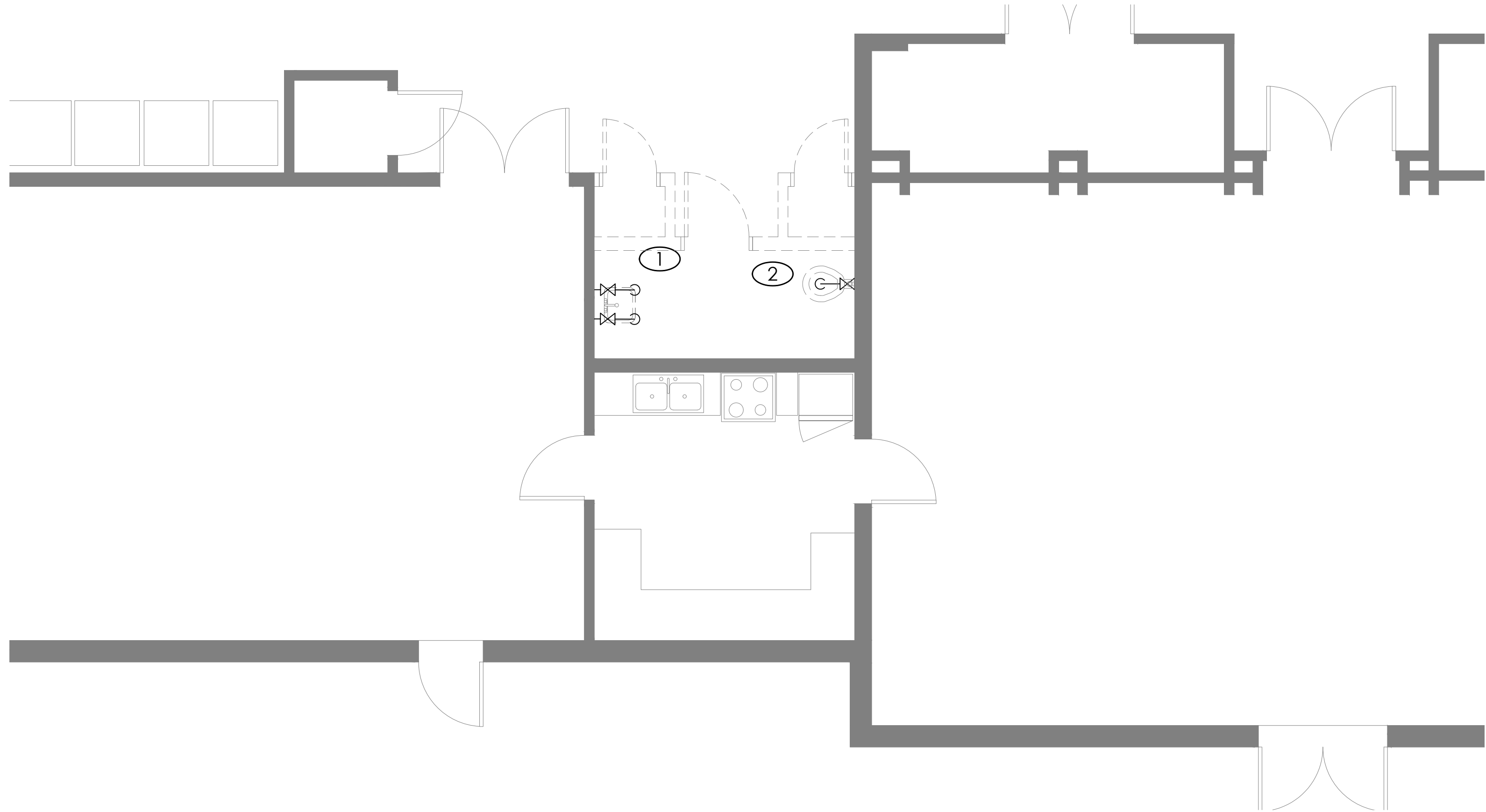
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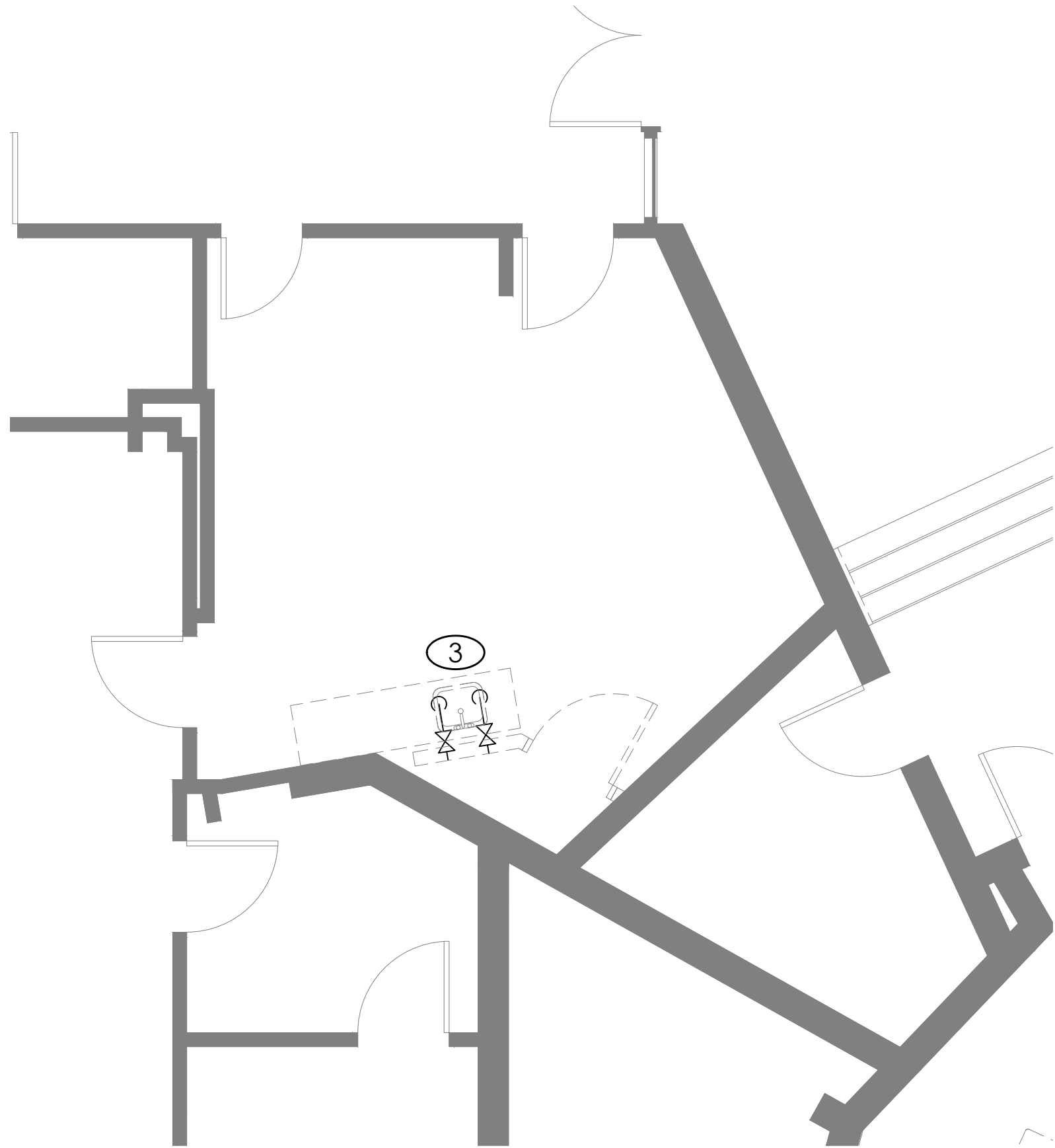
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	DRAWING NUMBER
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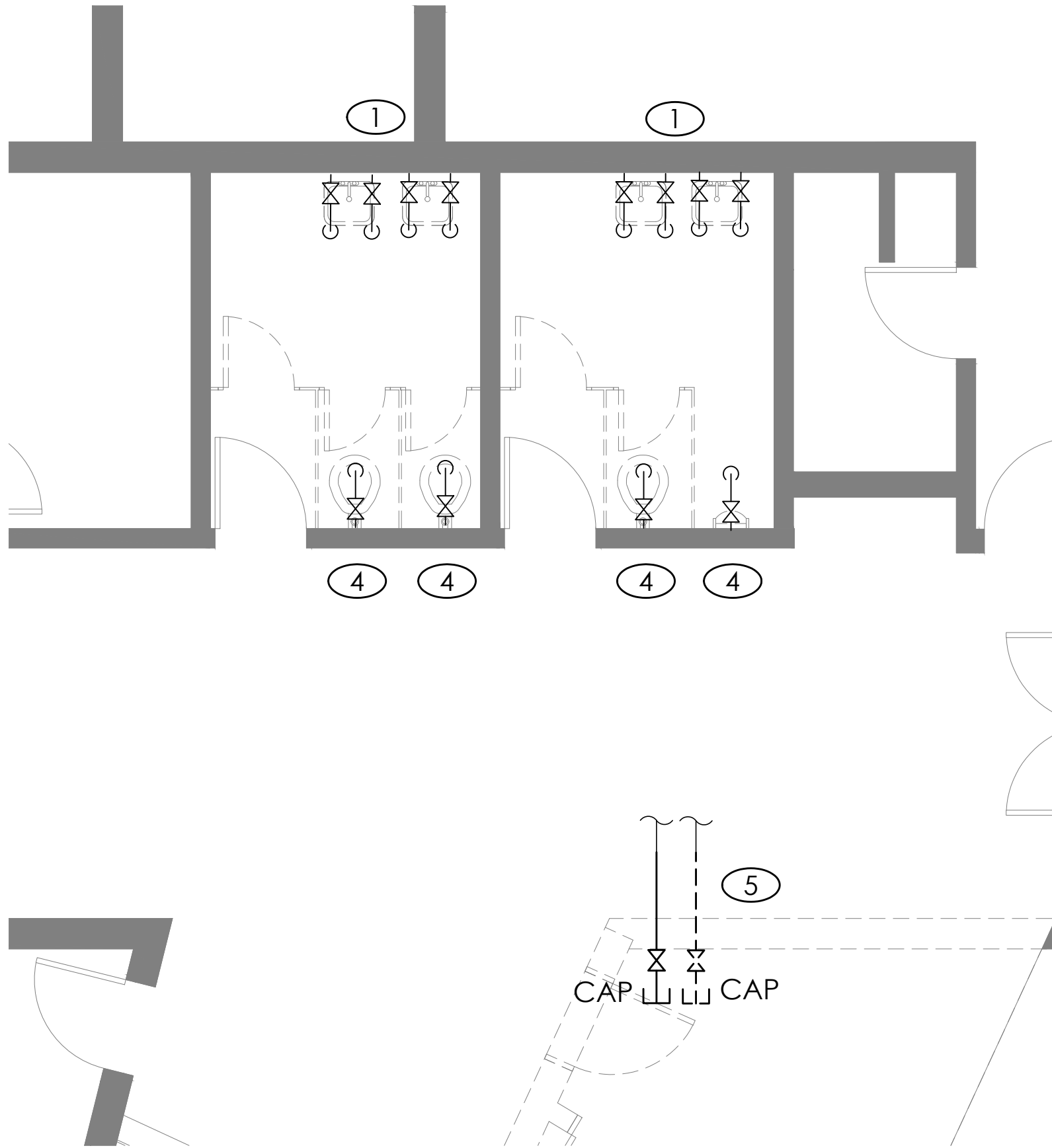
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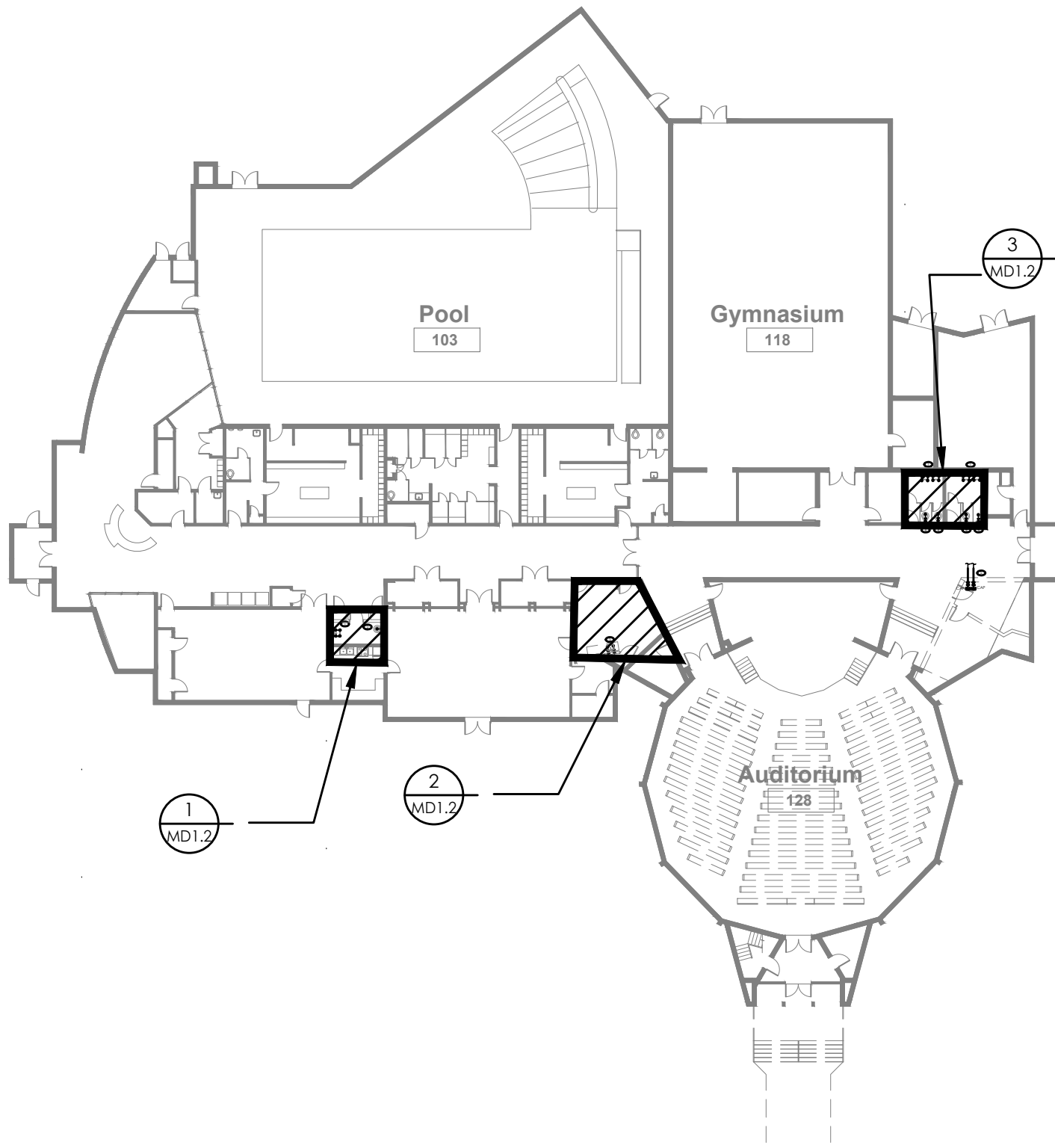
1 GROUND FLOOR PLUMBING DEMOLITION PLAN
SCALE:1:50



2 GROUND FLOOR PLUMBING DEMOLITION PLAN
SCALE:1:50



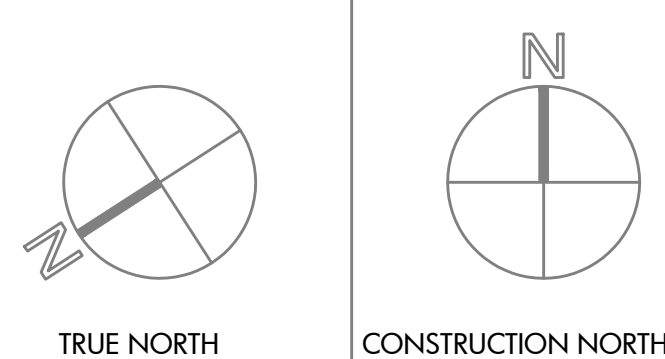
3 GROUND FLOOR PLUMBING DEMOLITION PLAN
SCALE:1:50



KEY PLAN

DRAWING NOTES

- 1 REMOVE SINK, EXISTING CONNECTIONS TO REMAIN TO SERVICE NEW SINK.
- 2 DEMOLISH EXISTING DCW CONNECTION AND CAP.
- 3 DEMOLISH EXISTING DCW AND DHW CONNECTIONS AND CAP.
- 4 REMOVE FIXTURE, EXISTING CONNECTIONS TO REMAIN TO SERVICE NEW FIXTURE.
- 5 DEMOLISH THE EXISTING HYDRONIC PIPING STUBBED INTO THE RAMP ROOM. DEMOLISH BACK TO THE HALLWAY, VALVE AND CAP.



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CLIENT
WORKSHOP ARCHITECTS
6 SOUSA MENDES ST.
TORONTO, ON
M6P 0A8

PROJECT:
BENNETTO CC AUDITORIUM
UPGRADES

DRAWING TITLE:
GROUND FLOOR PLUMBING
DEMOLITION PLAN

DRAWN BY: J.C.	SCALE: 1:50
CHECKED BY: F.B.	DRAWING NUMBER: MD1.2
DATE: APRIL 2025	
PROJECT NUMBER: 25-035	

STRUCTURAL DRAWING LIST

- S0.0 GENERAL NOTES
S1.0 PROPOSED PLANS AND DETAILS
S1.1 PROPOSED EXTERIOR RAMP AND STAIRS
S2.0 INTERIOR RAMP ROOF PLAN, SECTIONS & ELEVATIONS
S2.1 INTERIOR RAMP SECTIONS
S2.2 WASHROOM ELEVATION & SECTION DETAILS
S3.0 DETAILS
S4.0 TYP. DETAILS

DEMOLITION DRAWINGS

- SD1.0 DEMOLITION PLANS

GENERAL NOTES

1. THE GENERAL NOTES MUST BE READ IN CONJUNCTION WITH THE DESIGN DRAWINGS AND SPECIFICATIONS OF ENGINEERING AND ARCHITECTURAL DISCIPLINES WHICH FORM PART OF THIS CONTRACT. THIS INCLUDES DRAWING SPECIFICATIONS AND SKETCHES. SHOULD THERE BE CONTRADICTORY INFORMATION BETWEEN DRAWINGS, SKETCHES AND SPECIFICATIONS, THE ONE WHICH IS MOST STRINGENT TAKES PRECEDENCE.
2. REFER TO ARCHITECTURAL, MECHANICAL AND ELECTRICAL DRAWINGS FOR LOCATION AND SIZE OF OPENINGS, TRENCHES, PITS, EQUIPMENT, SLEEVES, DEPRESSIONS, GROOVES AND CHAMFERS NOT INDICATED ON STRUCTURAL DRAWINGS.
3. UNLESS SPECIFICALLY NOTED OTHERWISE ON THE DRAWINGS, NO PROVISION HAS BEEN MADE IN THE DESIGN FOR CONDITIONS OCCURRING DURING CONSTRUCTION. THE CONTRACTOR IS TO PROVIDE ALL NECESSARY BRACING AND SHORING REQUIRED FOR STRESSES AND INSTABILITY OCCURRING FROM ANY CAUSE DURING CONSTRUCTION. THE CONTRACTOR SHALL ACCEPT FULL RESPONSIBILITY FOR ALL SUCH MEASURES. IT SHALL ALSO BE THE RESPONSIBILITY OF THE CONTRACTOR TO PROVIDE ALL NECESSARY BRACING, SHORING, SHEET PILING OR OTHER TEMPORARY SUPPORTS TO SAFEGUARD ALL EXISTING OR ADJACENT STRUCTURES AFFECTED BY THE WORK.
4. ALL CONNECTIONS CONNECTED TO EXISTING STRUCTURE ARE TO BE SITE VERIFIED.
5. REVIEW OF SHOP DRAWINGS BY STRUCTURAL CONSULTANT IS ONLY TO ASSESS THAT SUBMITTED SHOP DRAWINGS REFLECT THE INTENT OF THE STRUCTURAL DESIGN.
6. REVIEW BY THE STRUCTURAL CONSULTANT SHALL NOT RELIEVE THE CONTRACTOR OF THE RESPONSIBILITY FORSEEN THAT THE WORK IS COMPLETE, ACCURATE AND IN CONFORMITY WITH THE STRUCTURAL DRAWINGS AND SPECIFICATIONS.
7. TYPICAL DETAILS SHALL BE USED WHERE SPECIFIC DETAILS ARE NOT SHOWN ON THE DRAWINGS.
8. ALL WORK REQUIRED, INCLUDING ANY DEMOLITION, SHALL BE CARRIED OUT IN A MANNER THAT WILL NOT DAMAGE THE EXISTING SITE OR STRUCTURE, ANY DAMAGE SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE.
9. ALL DESIGN, DETAILING, CONSTRUCTION, EXCAVATION AND SHORING, MUST CONFORM TO THE PRESENT ONTARIO BUILDING CODE, OCCUPATIONAL HEALTH AND SAFETY ACT AND REGULATIONS FOR CONSTRUCTION PROJECTS LATEST EDITION. ALL ASSOCIATED COST WITH THE DESIGN, SUPPLY AND INSTALLATION OF TEMPORARY SHORING IS THE RESPONSIBILITY OF THE GENERAL CONTRACTOR. GENERAL CONTRACTOR TO PROVIDE STAMPED, ENGINEERED SHORING DRAWINGS.
10. THE GENERAL CONTRACTOR IS RESPONSIBLE TO COORDINATE WORK OF ALL SUBCONTRACTORS.
11. THE GENERAL CONTRACTOR MUST REVIEW ALL DIMENSIONS PRIOR TO THE COMMENCEMENT OF ALL WORK AND MUST REPORT ALL DISCREPANCIES TO THE ENGINEER/ARCHITECT.
12. STRUCTURAL DRAWINGS SHALL BE READ IN CONJUNCTION WITH THE ARCHITECTURAL, CIVIL, MECHANICAL AND ELECTRICAL DRAWINGS.
13. PROVIDE STAMPED STRUCTURAL SHOP DRAWINGS AS NOTED IN THE FOLLOWING TABLE.
- | ITEMS | REQ'D SUBMITTAL? | ENGINEER'S STAMP REQ'D? | NOTES |
|--------------------------|------------------|-------------------------|-------|
| REBAR SHOP DWGS. | YES | NO | |
| CONC. MIX DESIGNS | YES | NO | |
| STRUCT. STEEL SHOP DWGS. | YES | YES | |
| TEMPORARY SHORING DWGS | YES | YES | |
14. PROJECTS WHICH INCLUDE ANY DEMOLITION AND OR RENOVATION WORK, THE GENERAL CONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL DIMENSIONS AND EXISTING CONSTRUCTION, SHOULD A DISCREPANCY ON EITHER BE FOUND REPORT FINDINGS TO ENGINEER/ARCHITECT.
15. ALL DETAILS SHOWN ARE SPECIFIC TO THE PROJECT. WHERE A LOCATION IS NOT SPECIFIED FOR A DETAIL, DETAILS IN THE DRAWINGS INCLUDING TYPICAL DETAILS WHICH CLOSELY RESEMBLES THE WORK, WILL APPLY.
16. ALL CODES AND REGULATIONS QUOTED ARE TO BE THE LATEST EDITION.

STRUCTURAL STEEL

1. STRUCTURAL STEEL DESIGN, FABRICATION AND ERECTION SHALL CONFORM TO THE LATEST EDITION OF:
C.S.A. S16-1: LIMIT STATES DESIGN OF STEEL STRUCTURES.
C.S.A. G40-20: GENERAL REQUIREMENTS FOR ROLLED OR WELDED STRUCTURAL QUALITY STEELS
C.S.A. G40-21: STRUCTURAL QUALITY STEELS
C.S.A. W59: WELDED STEEL CONSTRUCTION
C.S.A. S136: COLD FORMED STEEL STRUCTURAL MEMBERS
2. STRUCTURAL STEEL SHALL CONFORM TO C40.21 GRADE 350W FOR W SHAPES AND GRADE 300W FOR PLATES, ANGLES AND CHANNELS. SQUARE/RECTANGULAR HSS (HOLLOW STRUCT. SECTIONS) SHALL BE GRADE 350W, CLASS C. ROUND HSS SHALL BE ASTM A500 GRADE C.
3. UNLESS NOTED ON DRAWINGS, ALL BOLTS SHALL CONFORM TO A325 HIGH STRENGTH BOLTS IN BEARING M20 DIAMETER MINIMUM.
4. THE DESIGN OF BEAM SHEAR CONNECTIONS SHALL BE THE GREATER OF 50% OF THE BEAM SHEAR OR THE BEAM REACTION CALCULATED USING THE DESIGN LOADS SHOWN ON THE DRAWINGS, OR THE DESIGN SHEAR SHOWN. USE A MINIMUM OF TWO BOLTS.
5. WELDED CONNECTIONS SHALL BE UNDERTAKEN ONLY BY CERTIFIED WELDERS APPROVED BY C.W.B. TO THE REQUIREMENTS OF W47.1 DIVISION 1 AND 2. WELDING SHOULD BE DONE IN ACCORDANCE WITH W59. USE WELDING ELECTRODES WITH LOW HYDROGEN E480XX (E70XX) OR APPROVED EQUAL.
6. SHOULD THE FABRICATOR ELECT TO USE AN ALTERNATE ELECTRODE, THE ALTERNATE ELECTRODE SHALL MEET THE INTENT OF THE CONNECTION DESIGN AND MUST BE CERTIFIED BY A LICENSED WELDING ENGINEER IN THE PROVINCE OF ONTARIO. THE COST OF THE CERTIFICATION MUST BE BOURN BY THE CONTRACTOR.
7. WHEN WELDING TO EXISTING STEEL OR FIELD WELDING NEW STEEL, THE LOCATION OF THE WELD MUST BE FREE OF PAINT AND PRIMER.
8. CONNECTIONS FOR BRACING MEMBERS MUST BE DESIGNED FOR THE FULL TENSILE STRENGTH OF THE MEMBER, UNLESS LOADS ARE OTHERWISE INDICATED ON THE DRAWINGS.
9. ALL EXTERIOR EXPOSED STEEL INCLUDING MISCELLANEOUS EMBEDDED PLATES SUPPORTING SHELF ANGLES AND SHELF ANGLES SHALL BE HOT DIPPED GALVANIZED.

UNIT MASONRY

1. MASONRY DESIGN AND CONSTRUCTION SHALL CONFORM TO
C.S.A. S304.1: MASONRY DESIGN FOR BUILDINGS
C.S.A. A371: MASONRY CONSTRUCTION FOR BUILDINGS
C.S.A. A165: CSA STANDARDS FOR CONCRETE MASONRY UNITS
C.S.A. A179: MORTAR AND GROUT FOR UNIT MASONRY (LATEST EDITION)
2. ALL CONCRETE BLOCK SHALL HAVE A NET COMPRESSIVE STRENGTH OF 15 MPa (2200 PSI).
3. MASONRY WALLS SHALL HAVE TYPE 5 MORTAR.
4. GROUT SHALL BE IN ACCORDANCE WITH THE ABOVE NOTED STANDARDS.
5. PROVIDE THREE COURSES OF FULLY GROUTED MASONRY UNDER BEARING PLATES FOR STEEL BEAMS, UNLESS OTHERWISE NOTED.
6. PROVIDE LATERAL RESTRAINT AT THE TOP OF ALL NON-LOAD BEARING PARTITIONS. REFER TO TYPICAL DETAILS.
7. PROVIDE CONTROL JOINTS EVERY 7m AND AT ALL DISCONTINUITIES AND OPENINGS AND AS SHOWN ON THE ARCHITECTURAL DRAWINGS.
8. PROVIDE AND INSTALL HORIZONTAL REINFORCING IN ALL MASONRY WALLS, UNLESS INDICATED OTHERWISE ON DRAWINGS. PROVIDE 4.8mm GALVANIZED LADDER TYPE HORIZONTAL REINFORCING AT EVERY SECOND MORTAR JOINT IN MASONRY WALLS.
9. PROVIDE AND CONSTRUCT A SINGLE COURSE BOND BEAM AT THE TOP OF ALL NON BEARING WALLS. REINFORCE BOND BEAM WITH 2-10M CONTINUOUS. AT LOAD BEARING WALLS BOND BEAMS ARE 400mm DEEP WITH 2-15M CONTINUOUS.
10. PROVIDE 1-15M EVERY FOURTH CELL, VERTICAL REINFORCEMENT, IN ALL LOAD BEARING AND NON-LOAD BEARING WALLS AND SHEAR WALLS UNLESS GREATER REINFORCEMENT IS INDICATED ON THE DRAWINGS.
11. PROVIDE ADDITIONAL REINFORCING TO MATCH WALL REINFORCING AT ALL CORNERS, OPENINGS AND BENEATH ALL BEARING PLATES AND LINTELS.
12. PROVIDE AND INSTALL LINTELS OVER ALL OPENINGS IN ACCORDANCE WITH THE TYPICAL LINTEL SCHEDULE OR AS SHOWN ON THE DRAWING.

CONCRETE AND REINFORCING

1. CONCRETE MATERIALS AND METHODS OF CONCRETE CONSTRUCTION, TESTING AND STANDARD PRACTICES FOR CONCRETE SHALL BE IN ACCORDANCE WITH CSA STANDARD A23.1/A23.2 (LATEST EDITION).
2. CONCRETE DESIGN SHALL BE IN ACCORDANCE WITH THE DESIGN OF CONCRETE STRUCTURES CSA STANDARD A23.3 (LATEST EDITION).
3. SUPPLY AND PLACE CONCRETE IN ACCORDANCE TO TABLE 1
- | | LOCATION | MIN. COMPRESSIVE STRENGTH (f _c) AT 28 DAYS MPa (PSI) | SLUMP mm (in) | EXPOSURE CLASS | AIR CONTENT (%) |
|-------|---|--|------------------------|----------------|-----------------|
| FTGS | EXTERIOR AND INTERIOR RAMP FND. WALL FOOTINGS | 25 (3500) | 80 ± 30 (3 ± 1) | N | 0 |
| | EXTERIOR FND. WALLS | 35 (5000) | 80 ± 30 (3 ± 1) | C-1 | 5-8 |
| WALLS | INTERIOR FND. WALLS | 25 (3500) | 80 ± 30 (3 ± 1) | N | 0 |
| | INTERIOR SLAB ON GRADE RAMP | 25 (3500) | 80 ± 30 (3 ± 1) | N | 0 |
| SLABS | EXTERIOR SLAB ON GRADE RAMP, EXTERIOR STAIR LANDING | 32 (4650) | 40 ± 20 (1½ ± ¾) | C-2 | 5-8 |
| | SIDEWALK/CURBS PAVING SLABS, UNREINFORCED CONCRETE | 32 (4650) | 40 ± 20 (1½ ± ¾) | C-2 | 5-8 |
| OTHER | NON-SHRINKABLE GROUT | 30 | AS PER MANUF. RECOMEN. | N | 0 |
4. THE COMPRESSIVE STRENGTH OF THE CONCRETE IS BASED ON THE FOLLOWING CONDITIONS:
a) TYPE GU NORMAL PORTLAND CEMENT UNLESS OTHERWISE NOTED OR APPROVED
b) MAXIMUM SIZE OF AGGREGATE 20mm (¾") WASHED IRREGULAR CUT CLEAR STONE
c) SLUMP SHOWN ON THE TABLE IS SLUMP WITHOUT SLUMP AND ADMIXTURE. WHERE THE USE OF AN ADMIXTURE IS PREFERRED TO INCREASE THE SLUMP, THE SUPERPLASTICIZED CONCRETE SLUMP MUST REMAIN BELOW THE POINT AT WHICH SEGREGATION WILL OCCUR
5. REINFORCEMENT SHALL CONFORM TO CSA G30.3/G30.5 AND G30.18 (LATEST EDITION)
YIELD STRENGTH FOR CONCRETE AND MASONRY REINFORCEMENT, f_y=400MPa
YIELD STRENGTH FOR WELDED WIRE FABRIC f_y=360MPa
6. WHEN COLUMNS AND WALLS ARE POURED INTEGRALLY USE THE HIGHER STRENGTH CONCRETE OF THE ELEMENT WHICH SPECIFIED IN TABLE 1.
7. MINIMUM CONCRETE COVER FOR REINFORCING, WHERE NOT SHOWN ON DESIGN DRAWINGS SHALL BE AS FOLLOWS:
- a) ALL STEEL NOT CAST IN FORMS PERMANENTLY AGAINST EARTH OR ROCK AND IN A NON-CORROSIVE ENVIRONMENT, COVER SHALL BE 75mm (3").
b) ALL STEEL CAST IN FORMS SHALL FOLLOW TABLE 2 OR AS NOTED ON DRAWINGS.

STRUCTURAL ELEMENT	COVER mm (in)	STRUCTURAL ELEMENT	COVER mm (in)
CONCRETE POURED IN FORMS BUT EXPOSED TO WEATHER OR EARTH		CONCRETE NOT EXPOSED TO WEATHER OR EARTH	
-BARS LARGER THAN 15M	50 (2")	-SLABS AND WALLS	25 (1")
-BARS 15M AND SMALLER	38 (1½")	-BEAMS AND GIRDERS	38 (1½")
FTGS. & OTHER ELEMENTS POURED AGAINST EARTH	75 (3")	-COLUMNS MAIN STEEL	50 (2")

8. THE GENERAL CONTRACTOR MUST COORDINATE THE INSTALLATION OF MECHANICAL AND ELECTRICAL OPENINGS AND SLEEVES. THEY MUST FOLLOW THE GUIDE LINES BELOW:
- a) NO SLEEVES SHALL BE PLACED VERTICALLY OR HORIZONTALLY THROUGH BEAMS UNLESS APPROVED BY THE STRUCTURAL ENGINEER.
- b) NO OPENINGS SHALL BE MADE IN FLAT SLABS OR TWO WAY SLAB COLUMN STRIPS EXCEPT AS SHOWN ON THE DRAWINGS OR APPROVED BY THE STRUCTURAL ENGINEER.
- c) WHERE A CORE DRILL OR AN OPENING IS REQUIRED IN HARDENED CONCRETE THE GENERAL CONTRACTOR MUST SEEK THE APPROVAL OF THE STRUCTURAL ENGINEER.
- d) ELECTRICAL CONDUITS SHALL NOT PASS THROUGH COLUMNS AND ARE NOT TO RUN HORIZONTALLY IN WALLS.
- e) CONDUITS WITHIN SLABS MUST NOT HAVE A (OUTER) DIAMETER GREATER THAN ONE-QUARTER OF THE SLAB THICKNESS. SPACING BETWEEN CONDUITS MUST BE AT LEAST 3 TIMES THE OUTER DIAMETER (CLEAR SPACING). CONDUITS MUST BE PLACED WITHIN MIDDLE THIRD OF SLAB. CONDUITS SHALL BE LAID SUCH THAT ONLY SINGLE CROSS OVERS OCCUR WITHIN MAXIMUM 500mm OF ONE ANOTHER. ALL CONDUITS WITHIN SLAB ARE SUBJECT TO APPROVAL BY STRUCTURAL CONSULTANT.
9. REFER TO DESIGN DRAWINGS FOR TYPICAL DETAILS OF CONTROL JOINTS, EXPANSION JOINTS AND CONSTRUCTION JOINTS, UNLESS OTHERWISE NOTED ON THE DESIGN DRAWINGS. THE FOLLOWING MAXIMUM DISTANCE BETWEEN JOINTS MUST BE FOLLOWED:
- a) CONTROL JOINTS IN WALLS 6m (20') MAXIMUM
b) MAXIMUM POUR LENGTH FOR SLAB ON GRADE IS 30m (100').
c) ALL SAWCUTS MUST BE MADE WITHIN 24 HRS. FROM PLACING OF CONCRETE. THE DEPTH OF THE SAWCUT MUST BE 1/3 THE DEPTH OF THE SLAB.

DESIGN LOADS

GRAVITY LOADS

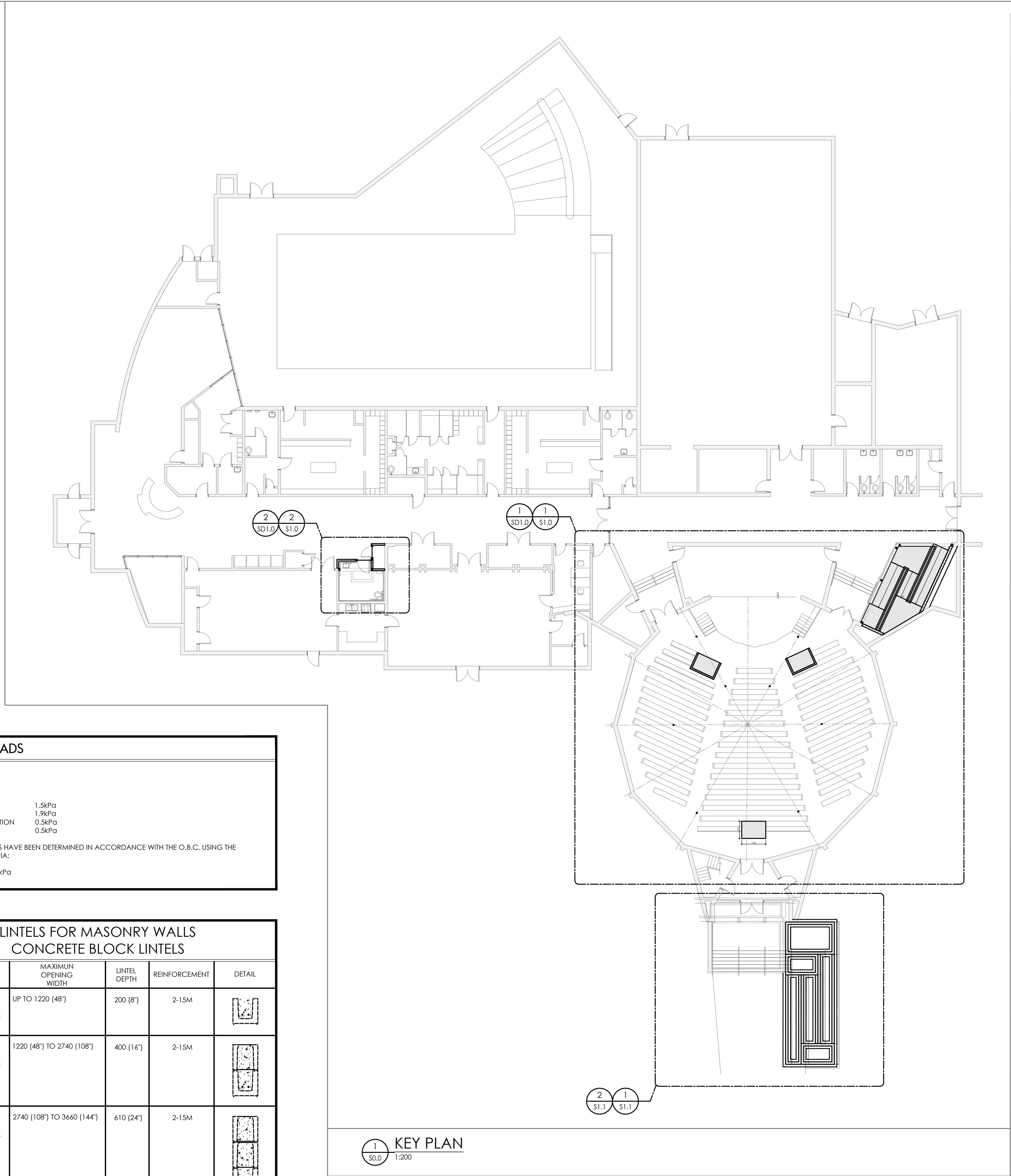
1. DEAD LOADS
- 150mm RAPIDEX 1.5kPa
200mm RAPIDEX 1.9kPa
ROOFING + INSULATION 0.5kPa
CEILING+M+E 0.5kPa
2. SNOW LOADS HAVE BEEN DETERMINED IN ACCORDANCE WITH THE O.B.C. USING THE FOLLOWING CRITERIA:
S_s = 1.1kPa S_r = 0.4kPa

LINTELS FOR MASONRY WALLS
CONCRETE BLOCK LINTELS

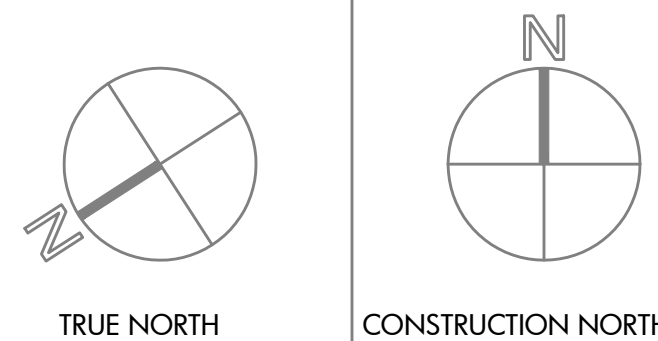
MASONRY TYPE	MAXIMUM OPENING WIDTH	LINTEL DEPTH	REINFORCEMENT	DETAIL
140 (5 1/2") BLOCK 190 (7 1/2") BLOCK 240 (9 1/2") BLOCK	UP TO 1220 (48")	200 (8")	2-15M	
140 (5 1/2") BLOCK 190 (7 1/2") BLOCK 240 (9 1/2") BLOCK	1220 (48") TO 2740 (108")	400 (16")	2-15M	
140 (5 1/2") BLOCK 190 (7 1/2") BLOCK 240 (9 1/2") BLOCK	2740 (108") TO 3660 (144")	610 (24")	2-15M	

NOTES

1. READ THIS SCHEDULE IN CONJUNCTION WITH THE ARCHITECTURAL, MECHANICAL AND ELECTRICAL DRAWINGS
2. PROVIDE A SUITABLE LINTEL FOR ALL OPENINGS IN MASONRY WALLS (MECH/ELECT.)
3. CONTROL JOINTS NOT TO BE LOCATED THROUGH LINTELS
4. DO NOT PASS DUCTS THROUGH REINFORCED MASONRY LINTELS
5. PROVIDE 300mm MIN. BEARING LENGTH EACH SIDE OF OPENING UNLESS NOTED OTHERWISE
6. CONCRETE STRENGTH f_c' = 20 MPa WITH 10mm MAX. AGGREGATE AND 3"±1" SLUMP
7. REINFORCING STEEL GRADE f_y = 400 MPa



KEY PLAN
S0.0 1:200



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3	ISSUED FOR TENDER	2026-03-06	D.N.
2	ISSUED FOR PERMIT	2026-02-27	D.N.
1	ISSUED FOR COSTING	2025-04-09	D.N.

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6 SOUSA MENDES ST.
TORONTO, ON
M6P 0A8

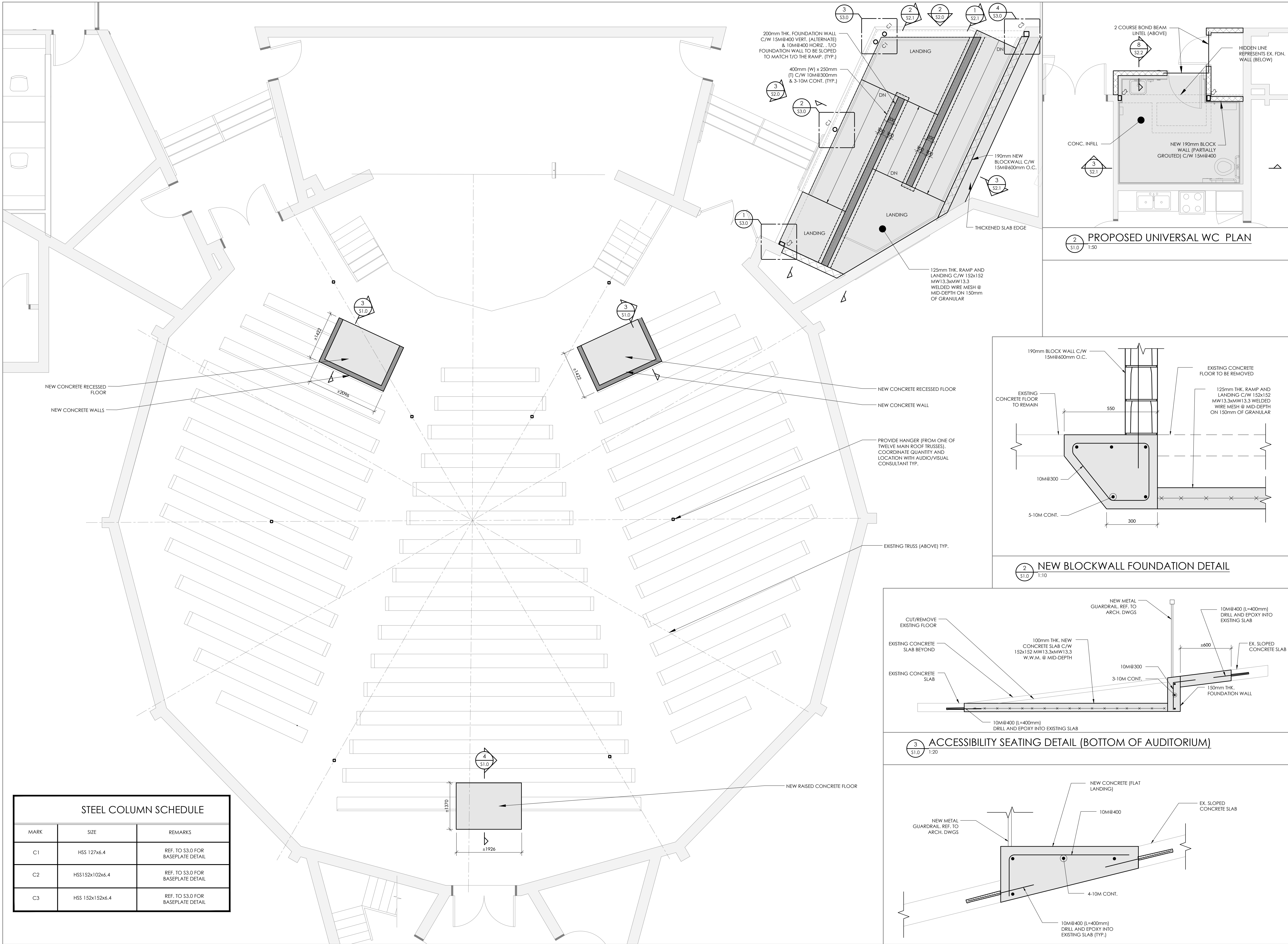
PROJECT:
BENNETTO CC AUDITORIUM
UPGRADES

DRAWING TITLE:
GENERAL NOTES & KEY PLAN

DRAWN BY:
D.N.
CHECKED BY:
S.M.
DATE:
APRIL 2025
PROJECT NUMBER:
25-035

SCALE:
AS NOTED
DRAWING NUMBER:

S0.0



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M6P 0A8

PROJECT:

BENNETTO CC AUDITORIUM
UPGRADES

DRAWING TITLE:

PROPOSED PLAN AND DETAILS

DRAWN BY:

A.M.

CHECKED BY:

S.M.

DATE:

APRIL 2025

PROJECT NUMBER:

25-035

SCALE:

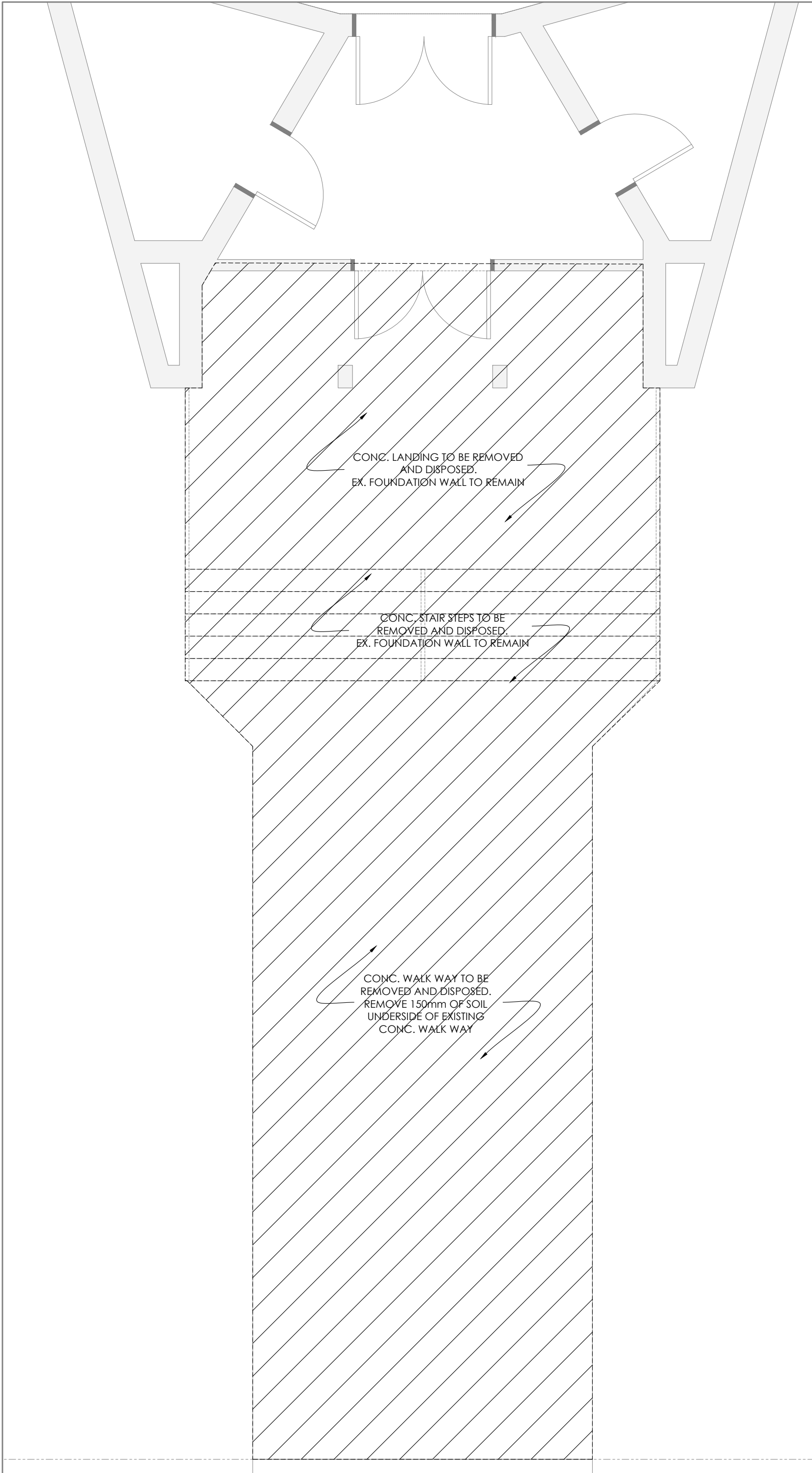
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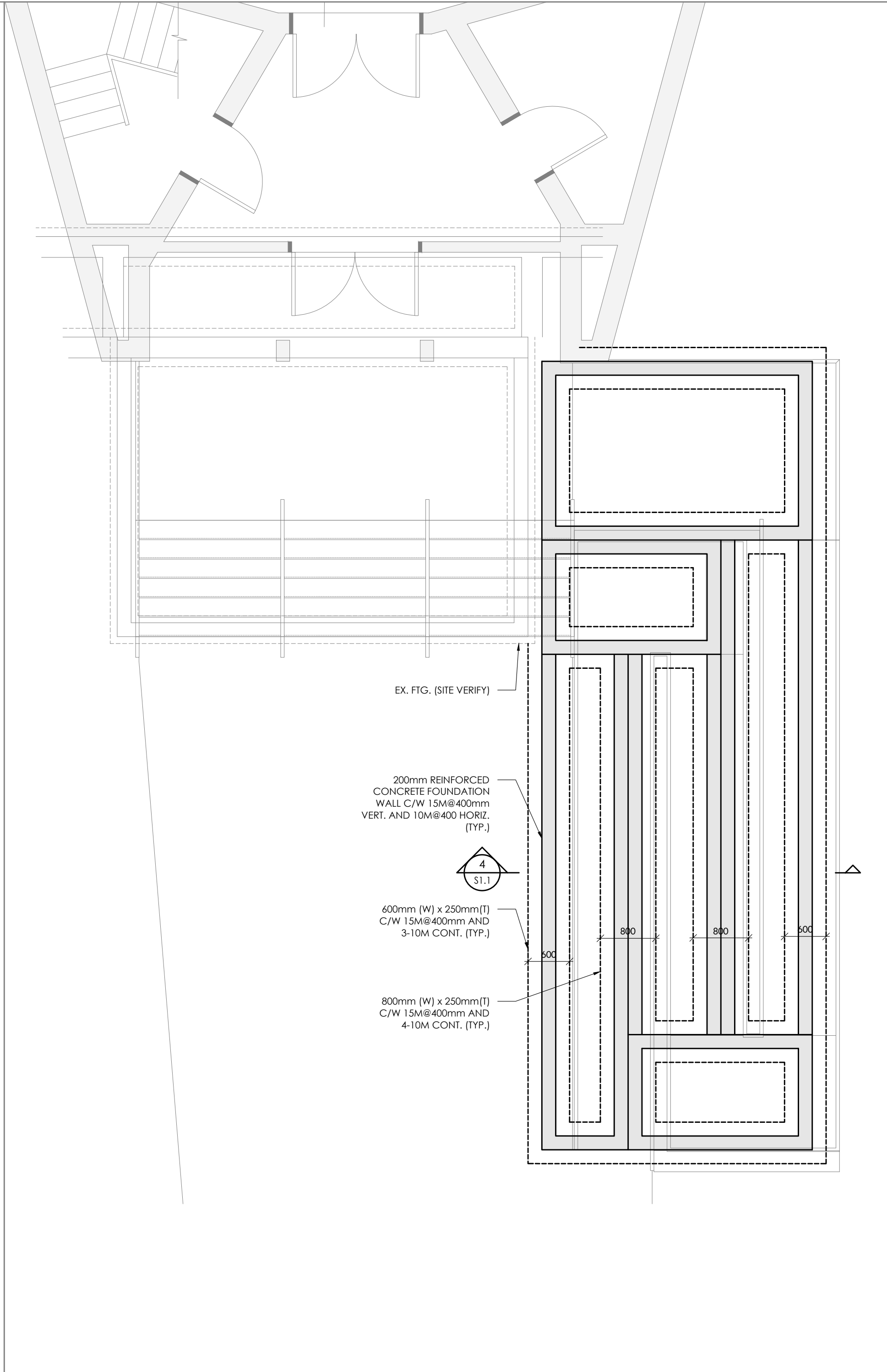
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March 06, 2026 - 05:32pm Plotted by: dnguyen

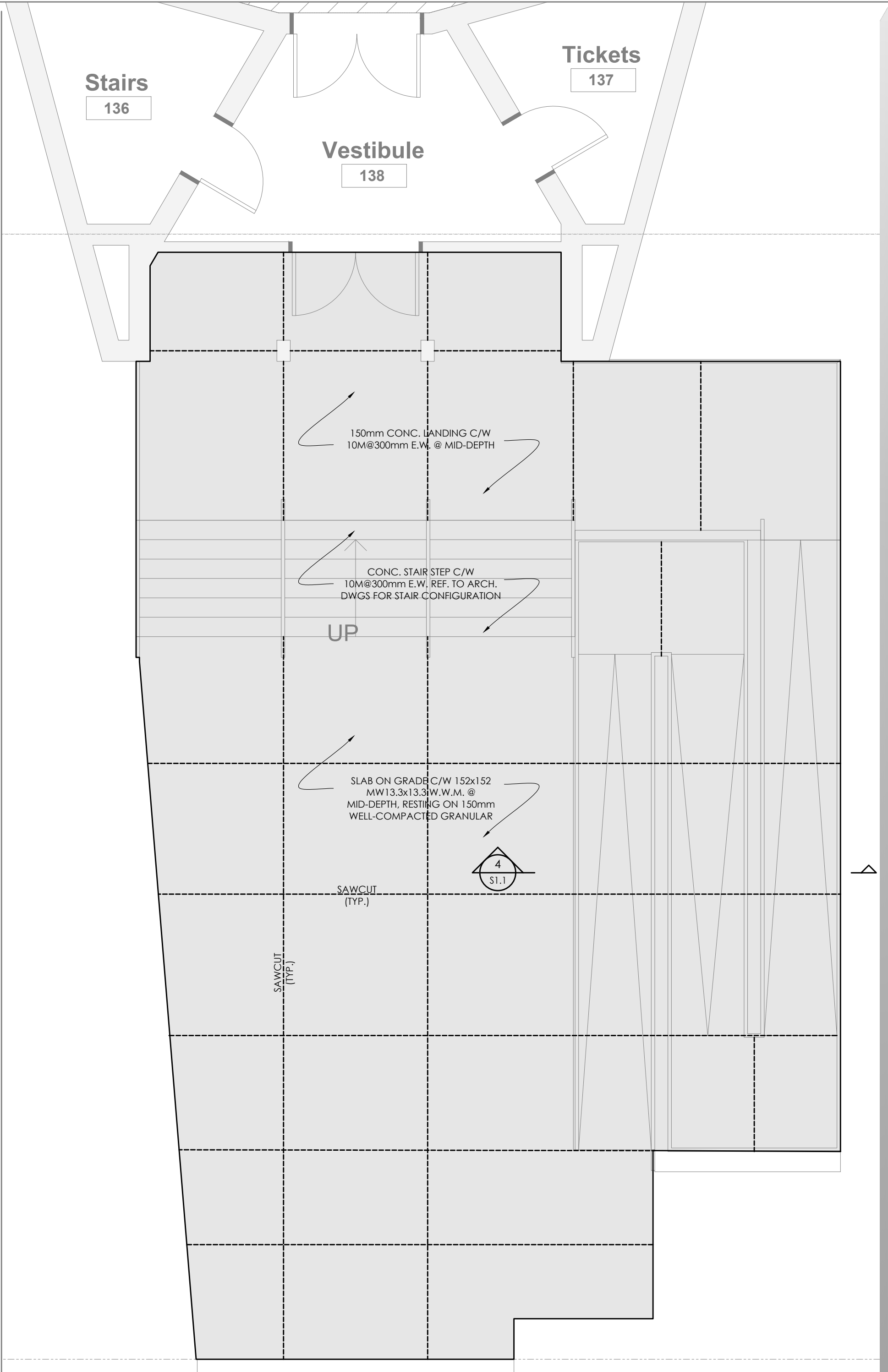
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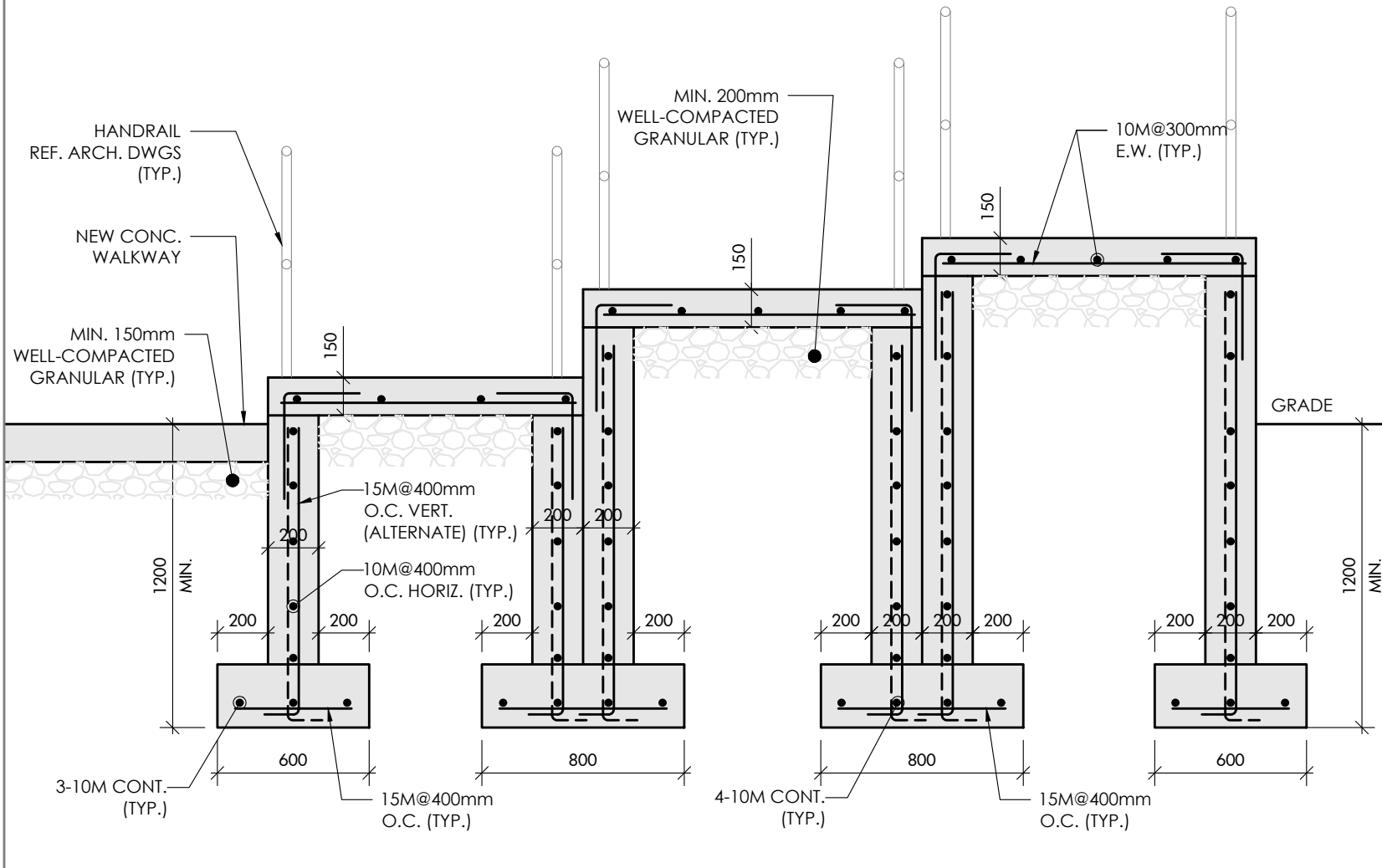
1 DEMOLITION WALKWAY AND STAIR PLAN
S1.1 1:50



2 PROPOSED RAMP FOUNDATION PLAN
S1.1 1:50



3 PROPOSED RAMP, STAIR AND WALKWAY PLAN
S1.1 1:50



4 SECTION
S1.1 1:25

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PROJECT:

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UPGRADES

DRAWING TITLE:

PROPOSED RAMP DETAILS

DRAWN BY:

A.M.

CHECKED BY:

S.M.

DATE:

APRIL 2025

PROJECT NUMBER:

25-035

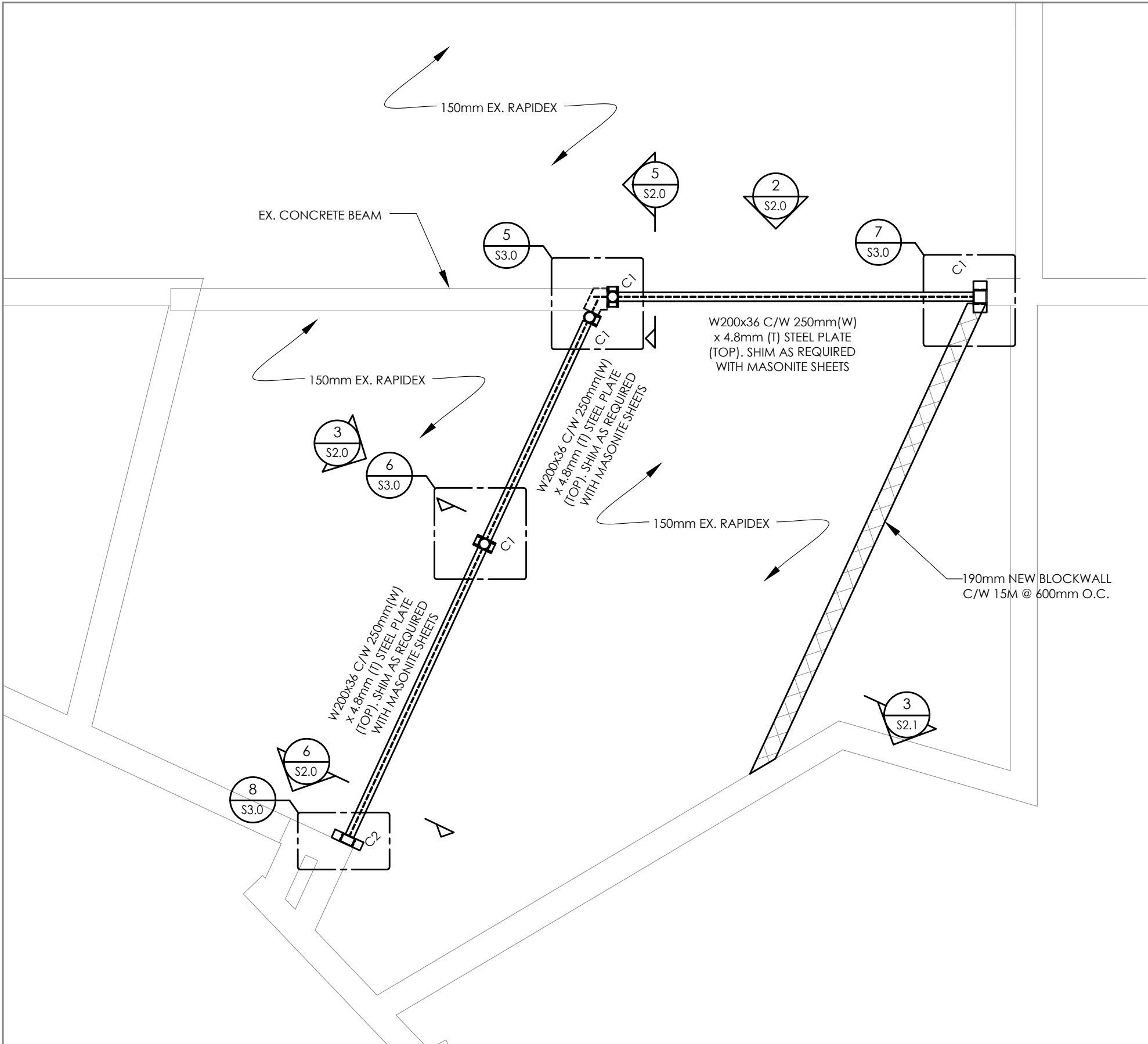
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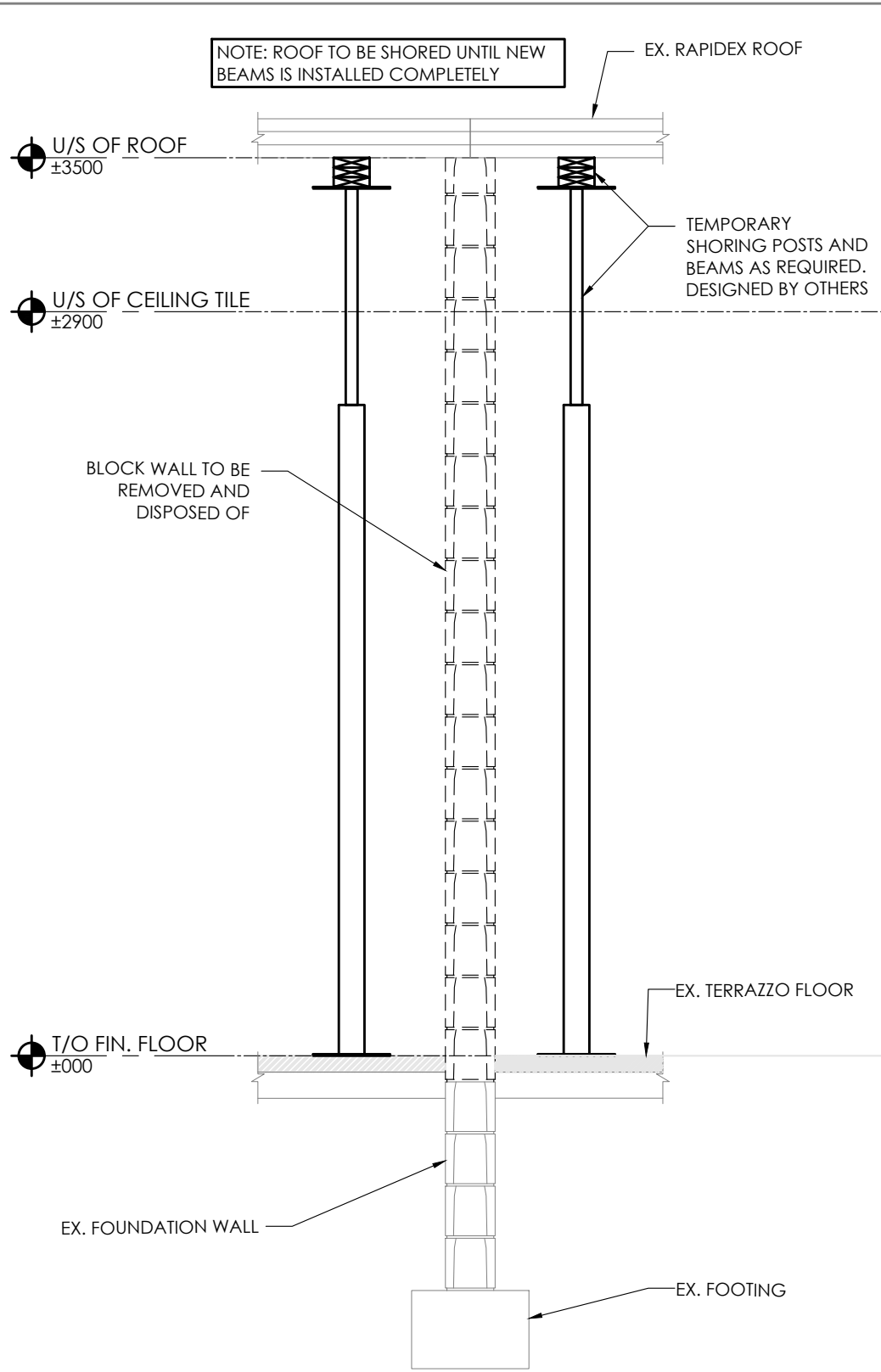
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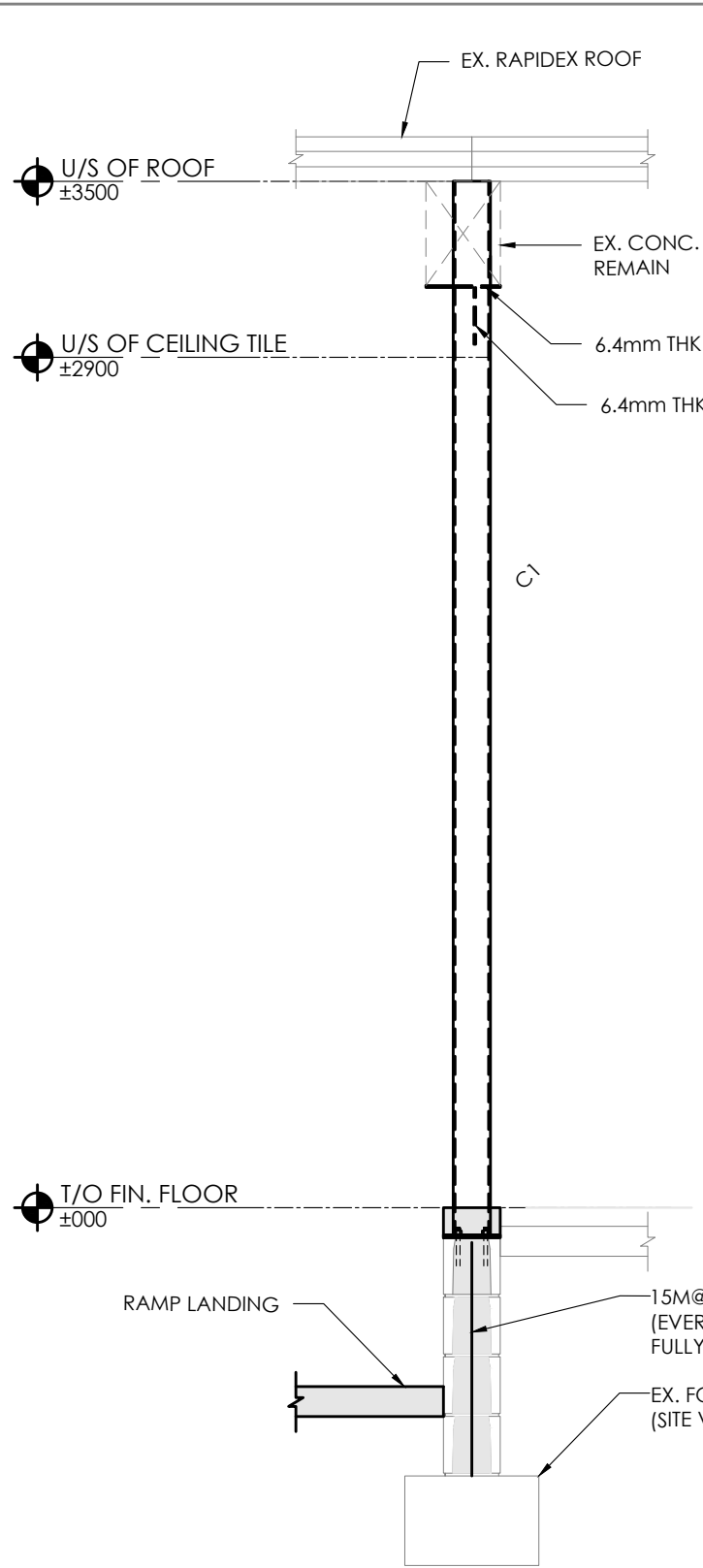
March 06, 2026 - 05:32pm Plotted by: dnguyen



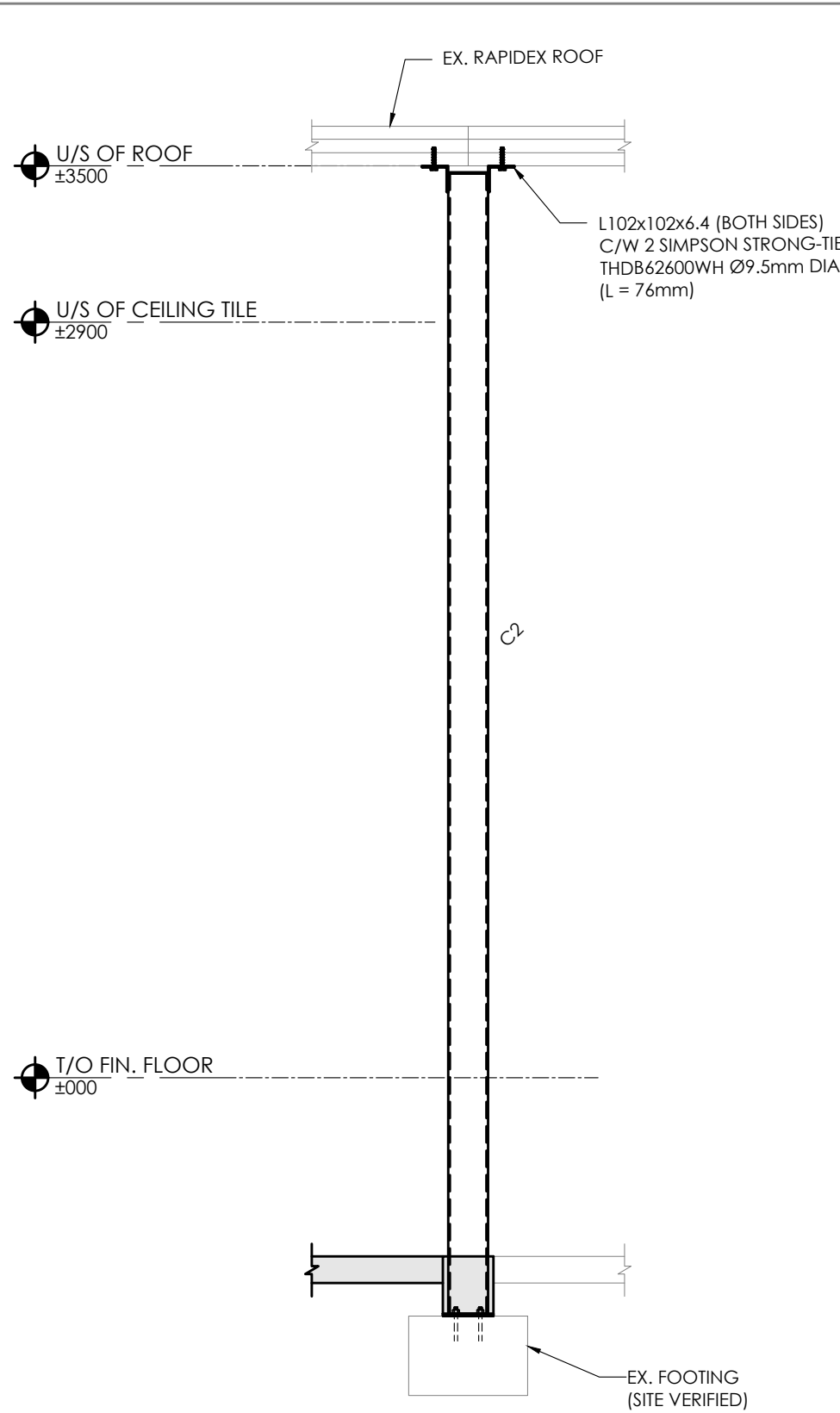
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S2.0 SCALE: 1:50



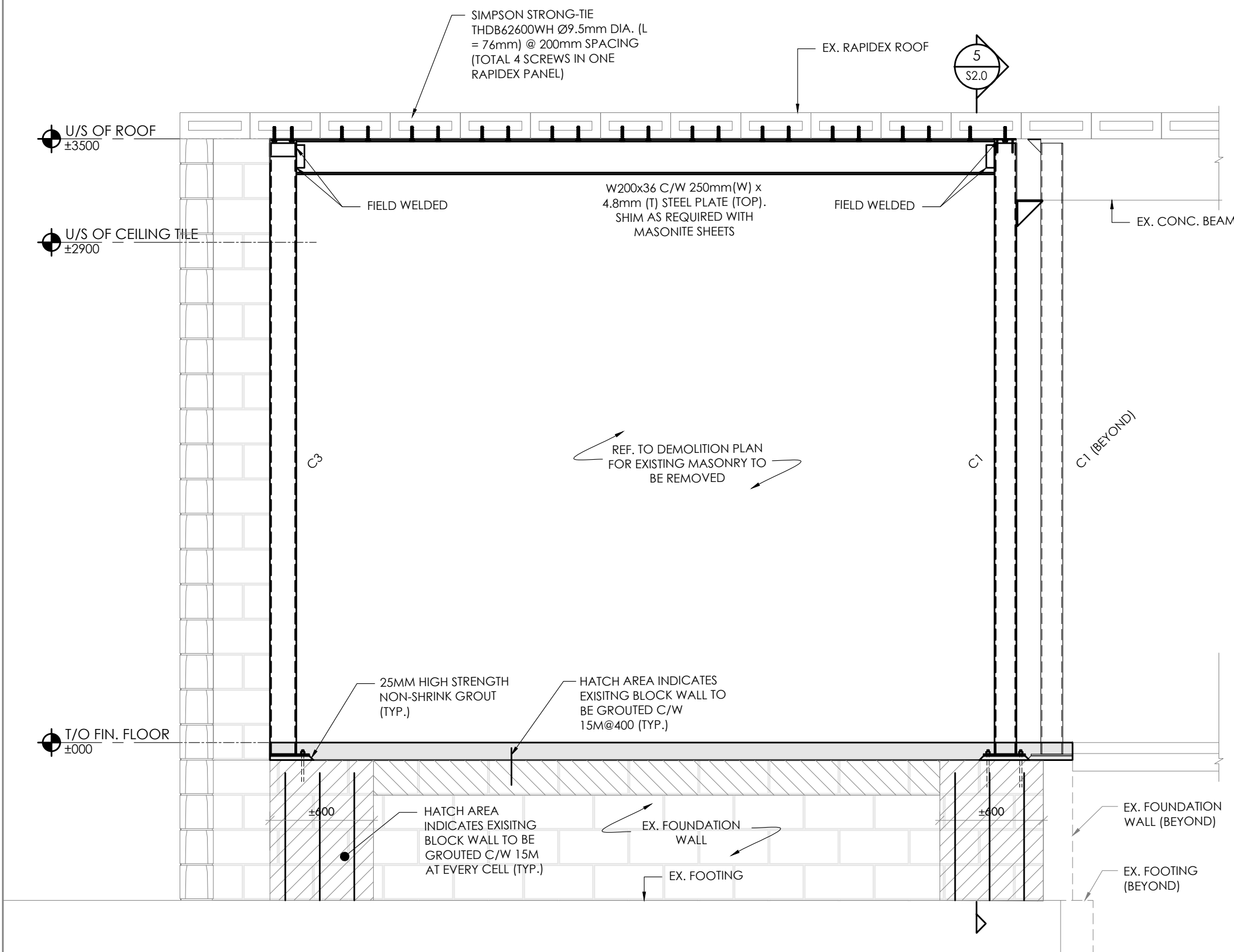
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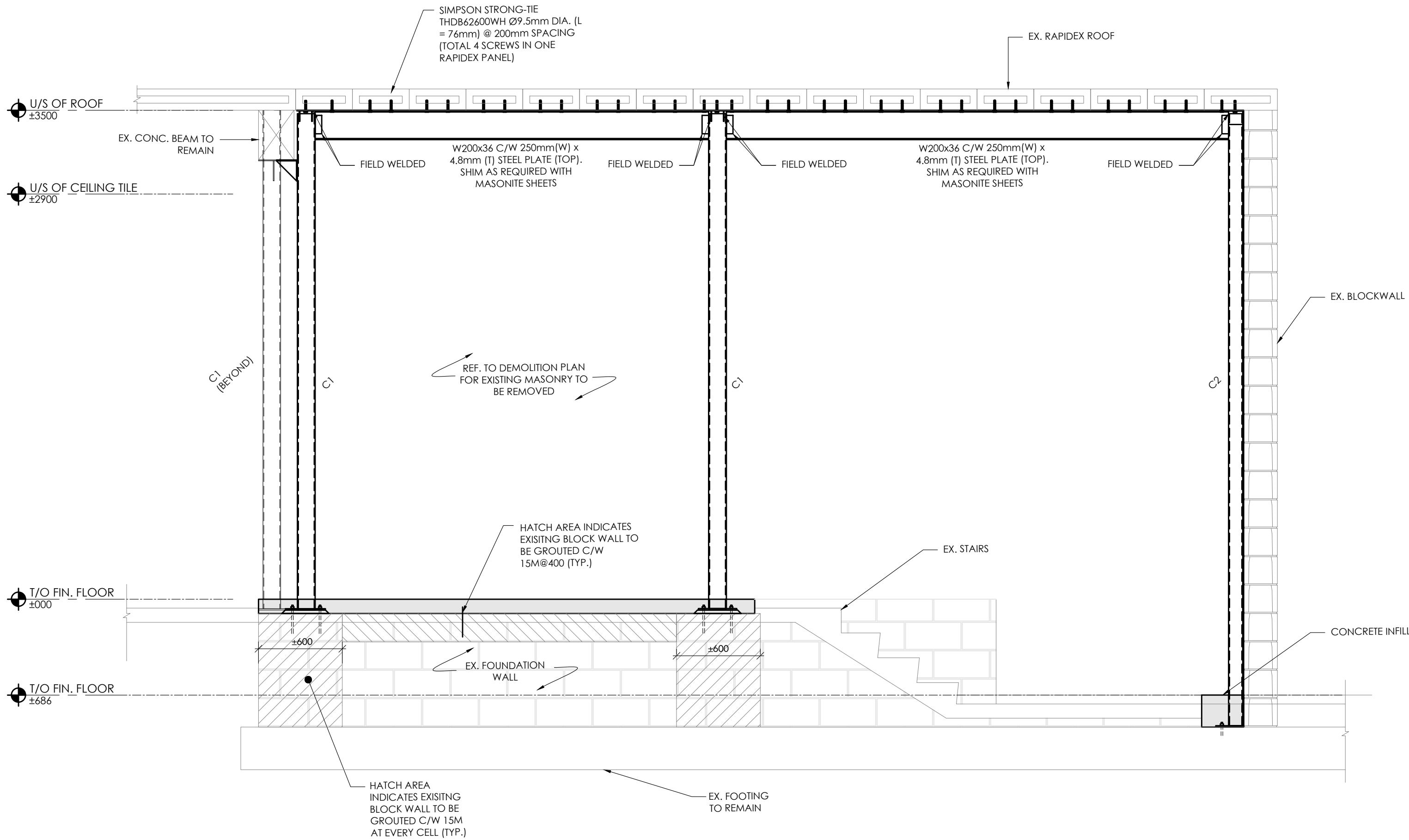
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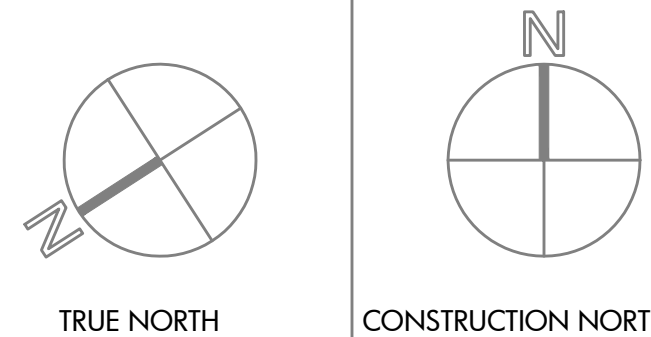
6 SECTION
S2.0 SCALE: 1:25



2 RAMP ELEVATION 1
S2.0 SCALE: 1:25



3 RAMP ELEVATION 2
S2.0 SCALE: 1:25



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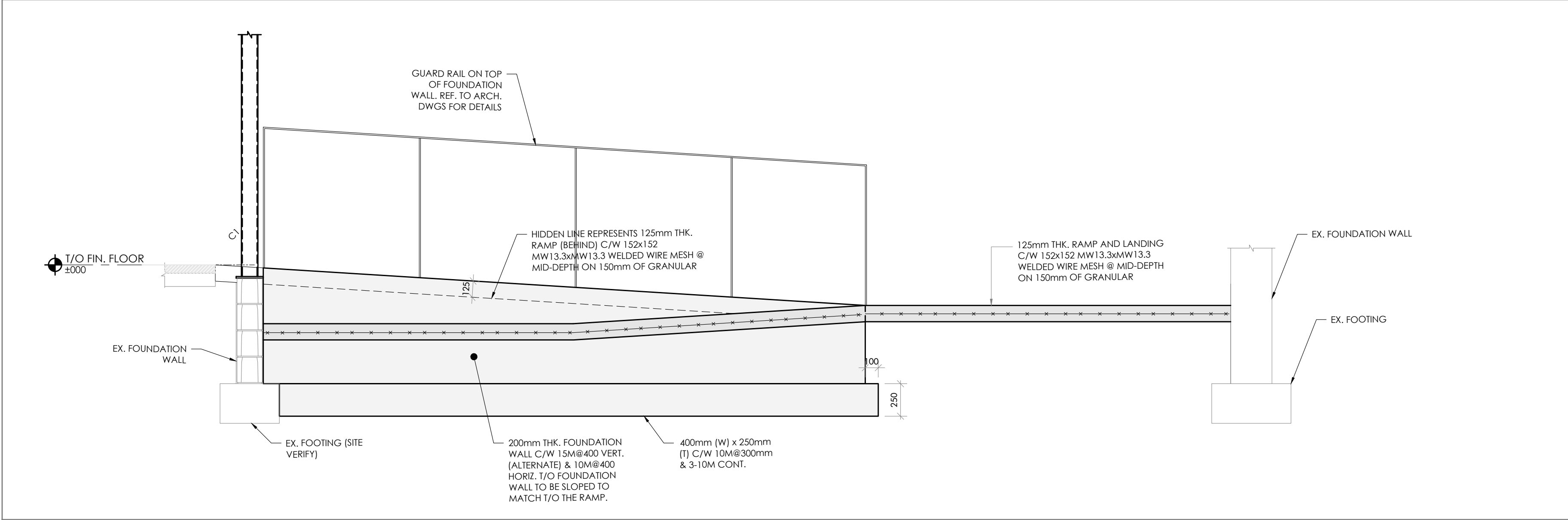
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PROJECT
**BENNETTO CC AUDITORIUM
UPGRADES**

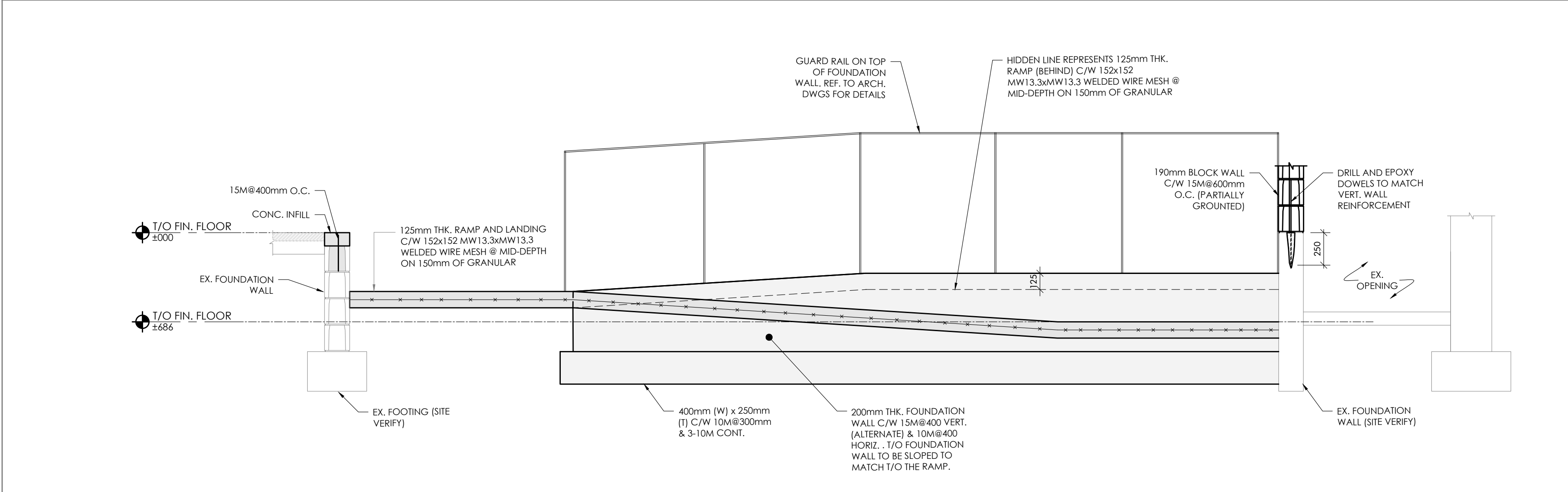
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A.M.
CHECKED BY:
S.M.
DATE:
APRIL 2025
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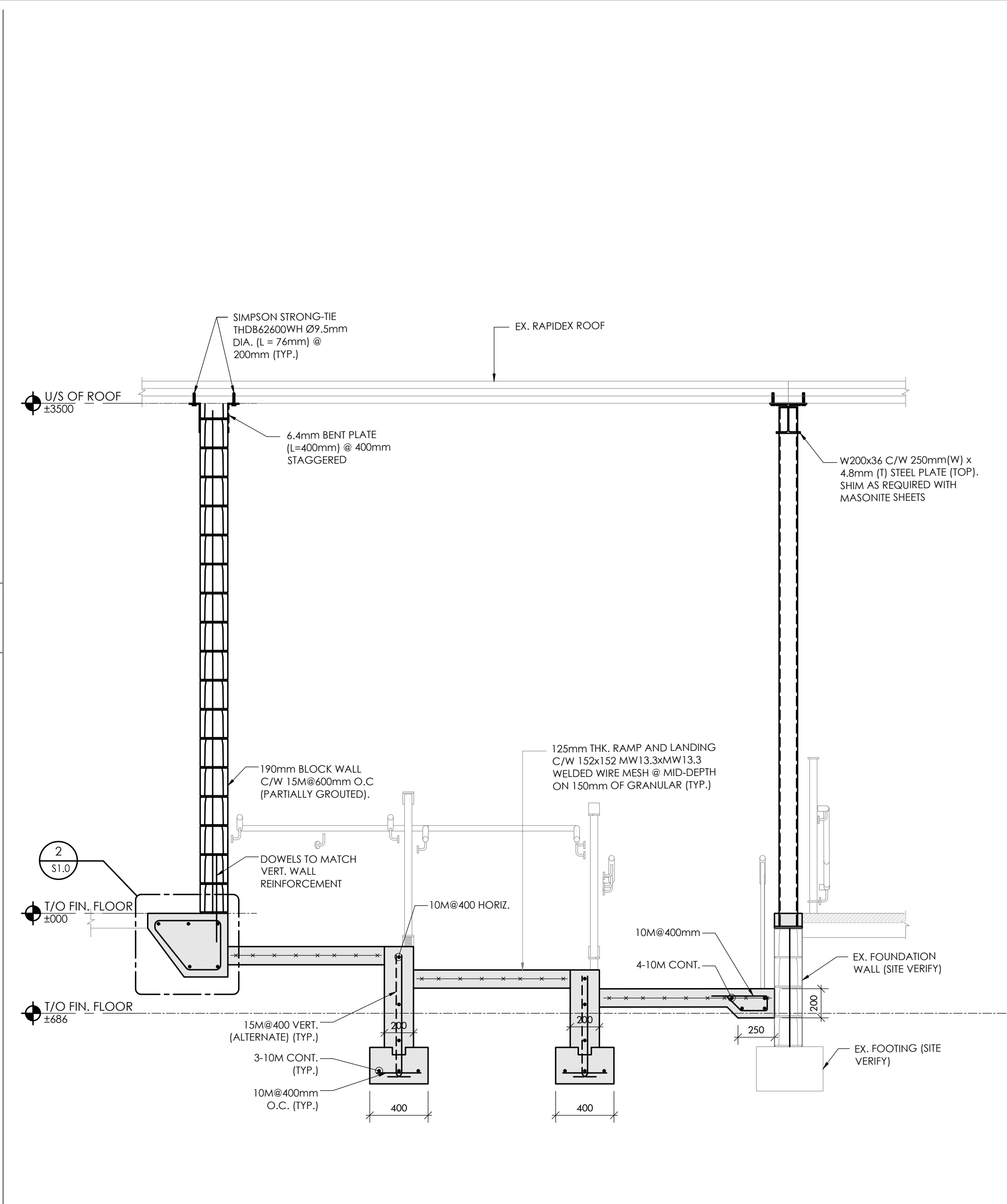
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1 SECTION
S2.1 SCALE: 1:25



2 SECTION
S2.1 SCALE: 1:25



3 SECTION
S2.1 SCALE: 1:25



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6 SOUSA MENDES ST.
TORONTO, ON
M6P 0A8

PROJECT:

BENNETTO CC AUDITORIUM
UPGRADES

DRAWING TITLE:

SECTIONS

DRAWN BY:
A.M.

CHECKED BY:
S.M.

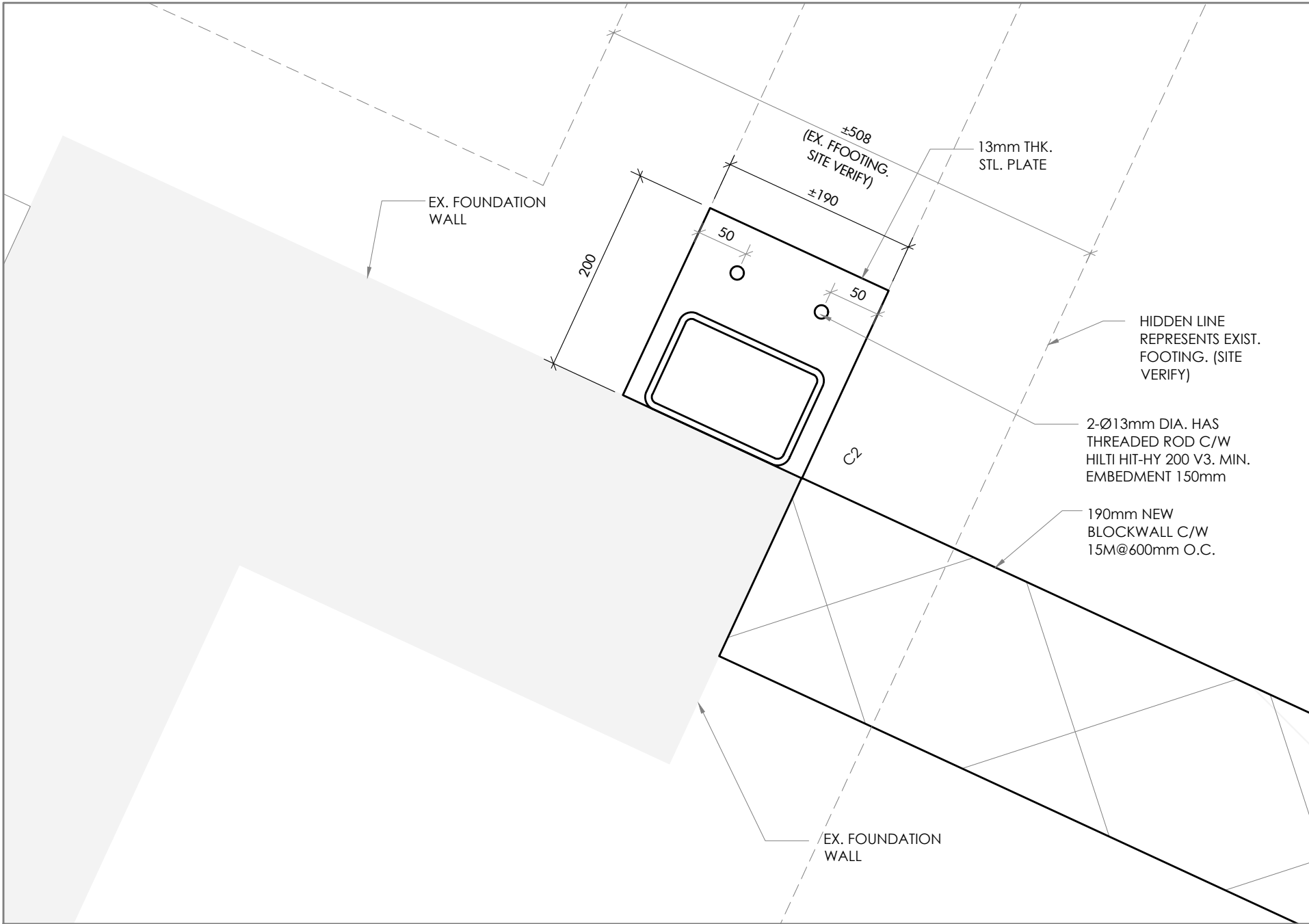
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PROJECT NUMBER:
25-035

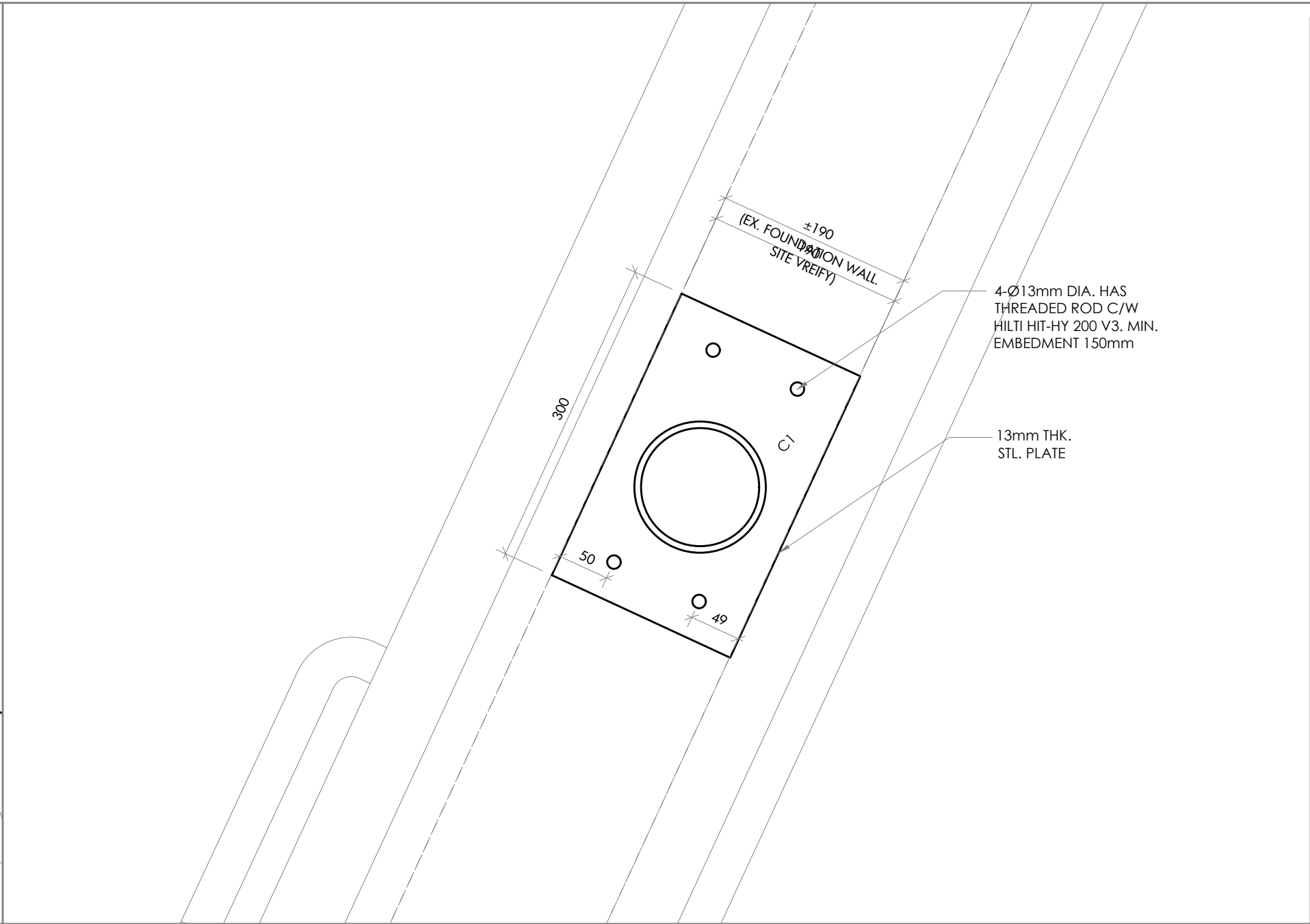
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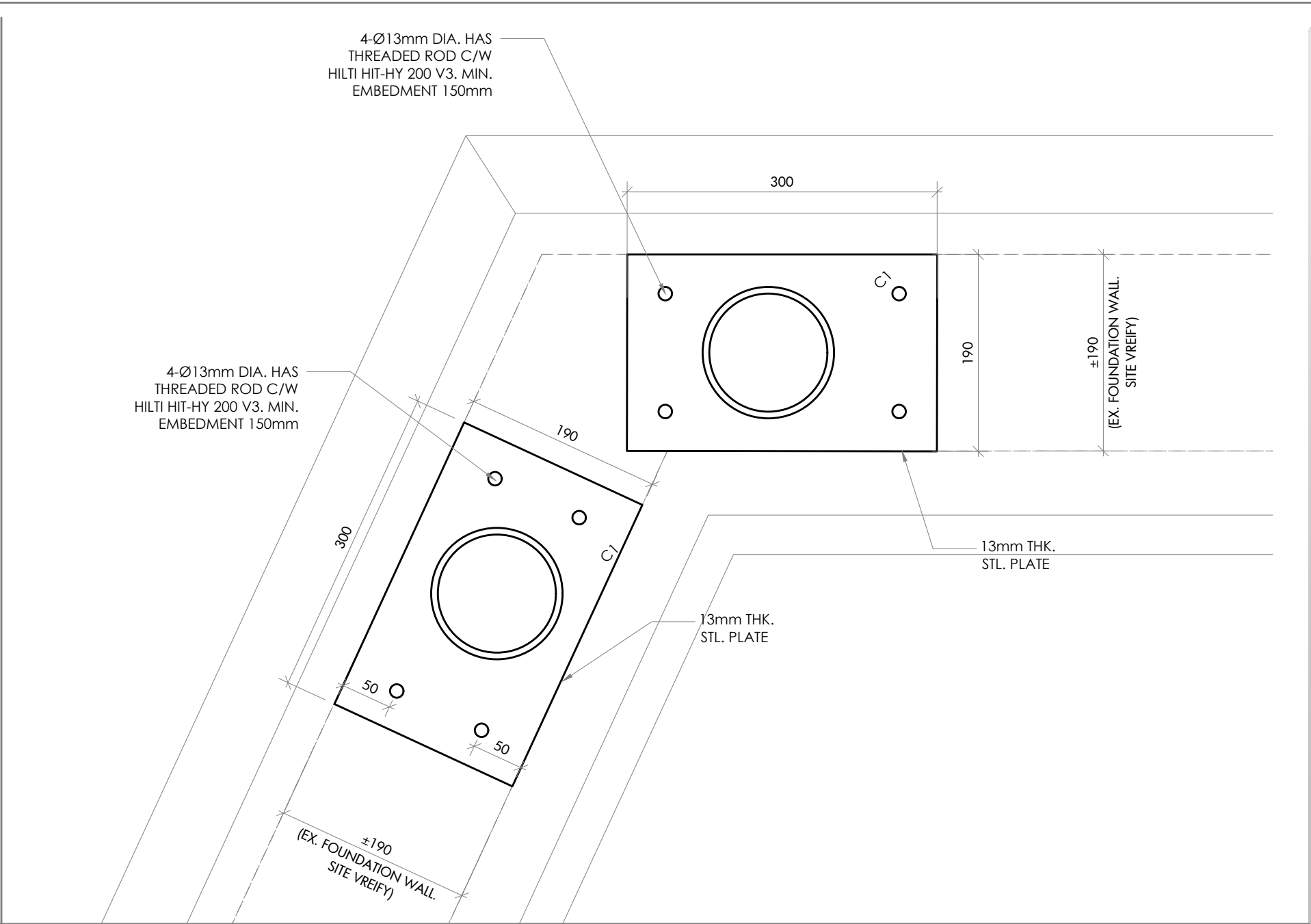
March 06, 2026 — 05:32pm Plotted by: dnguyen



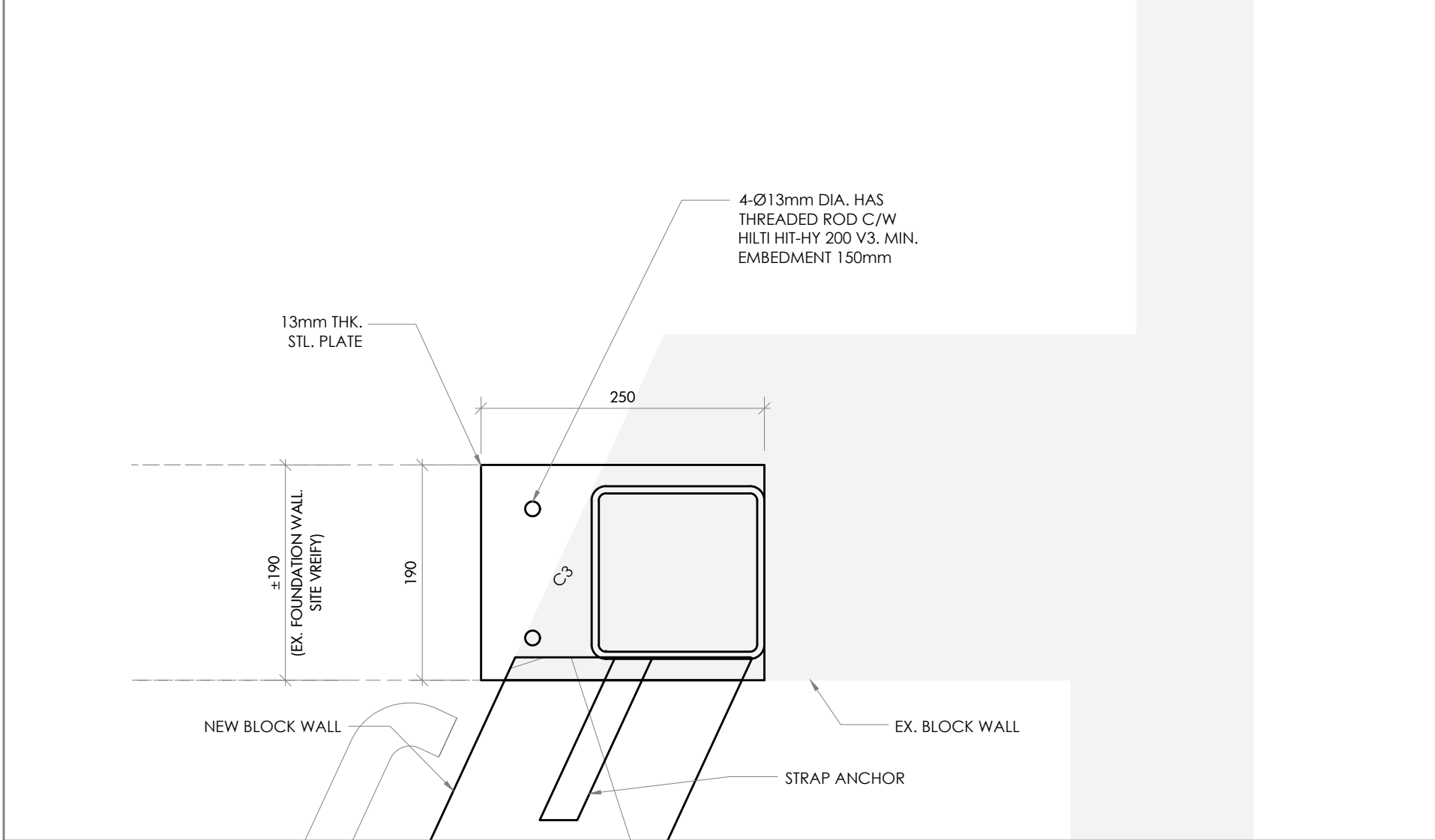
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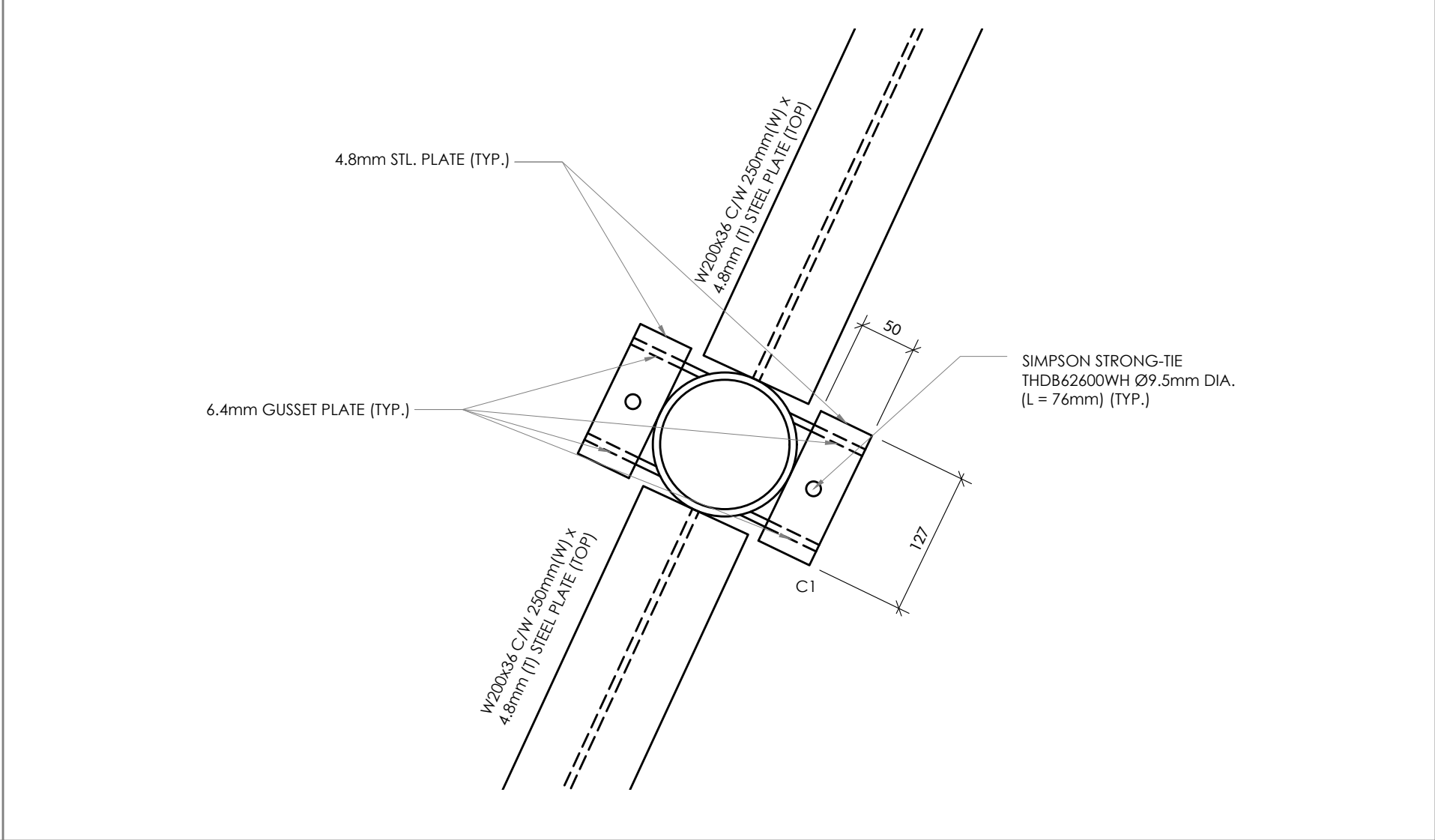
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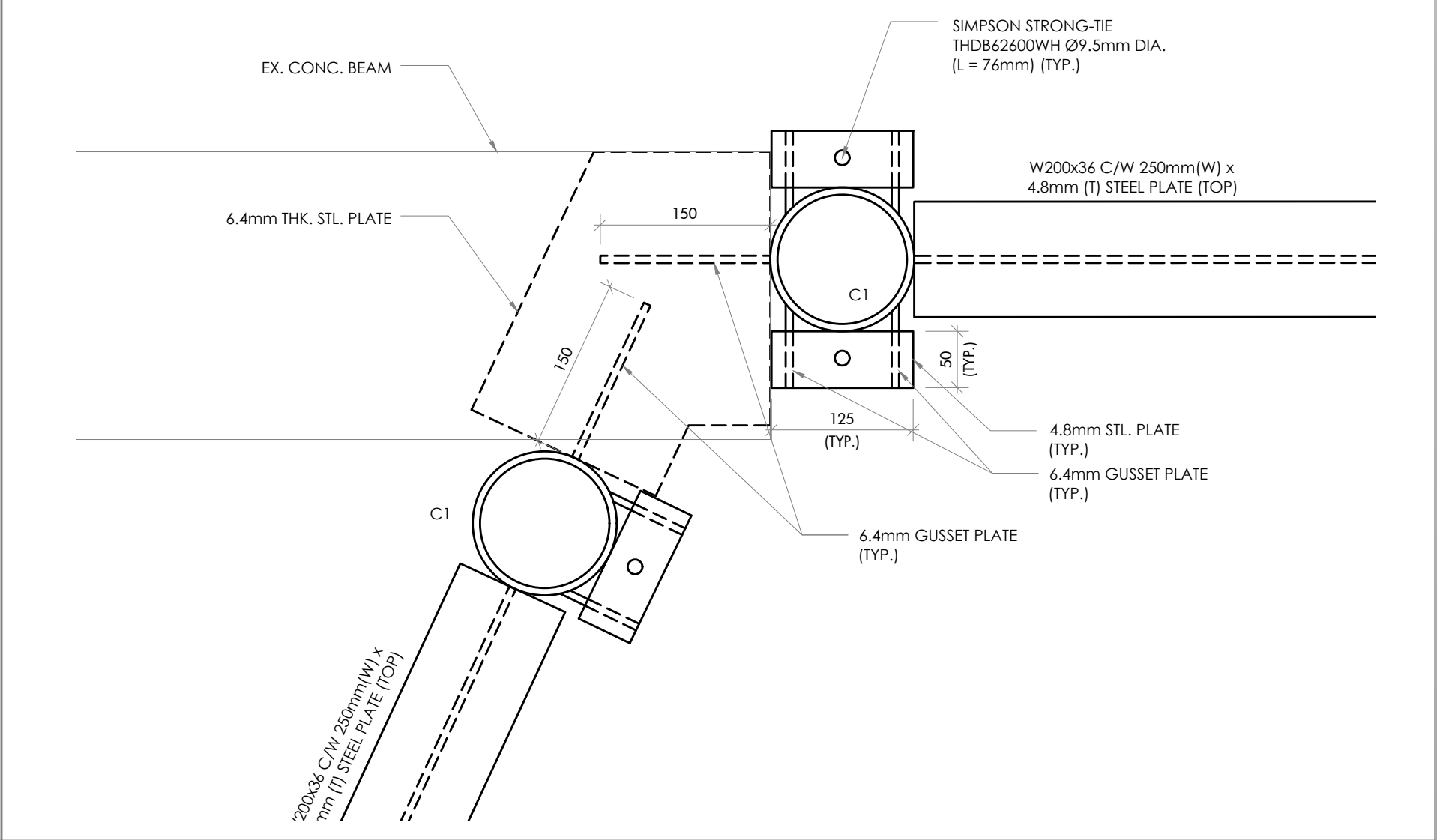
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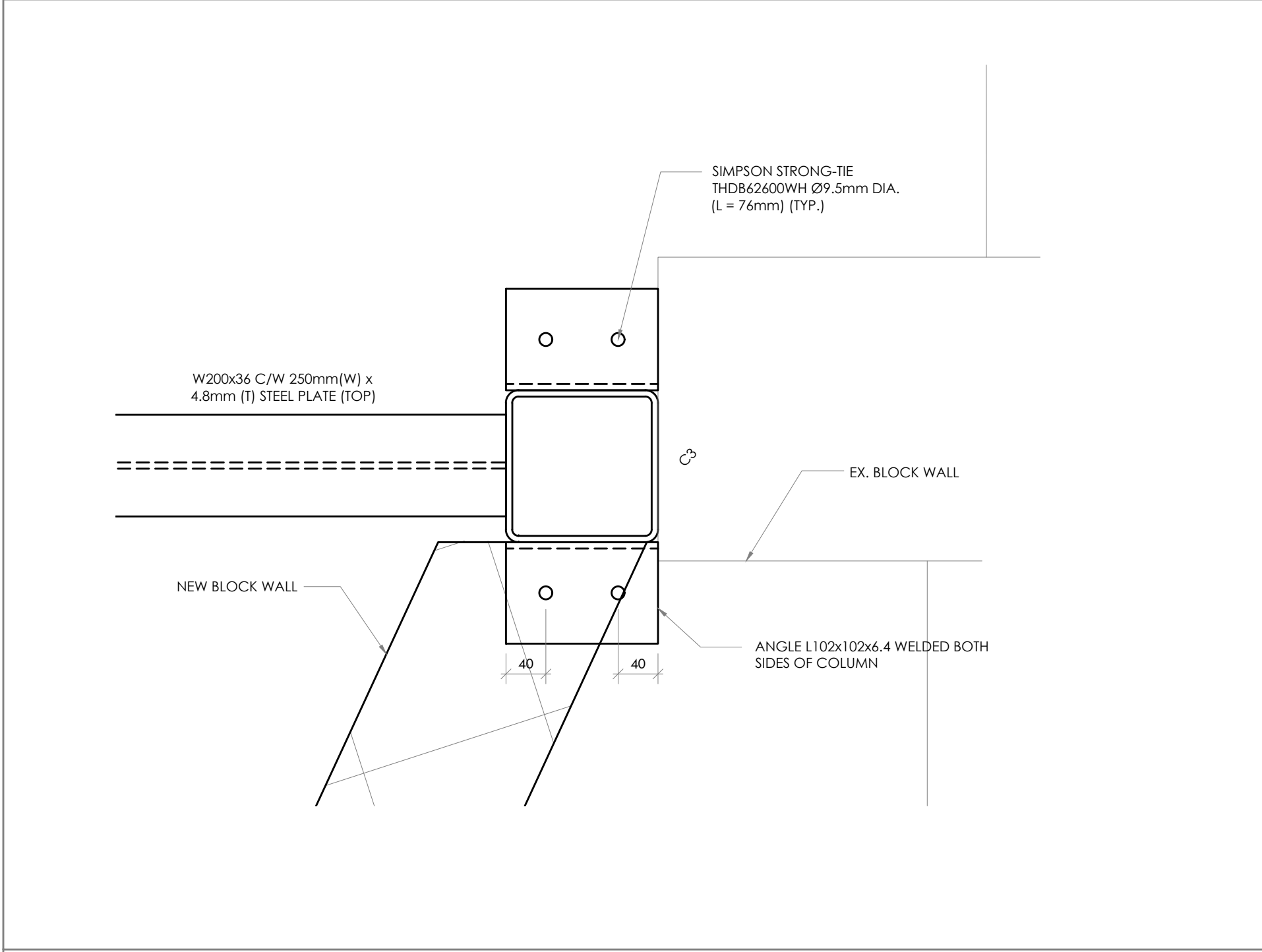
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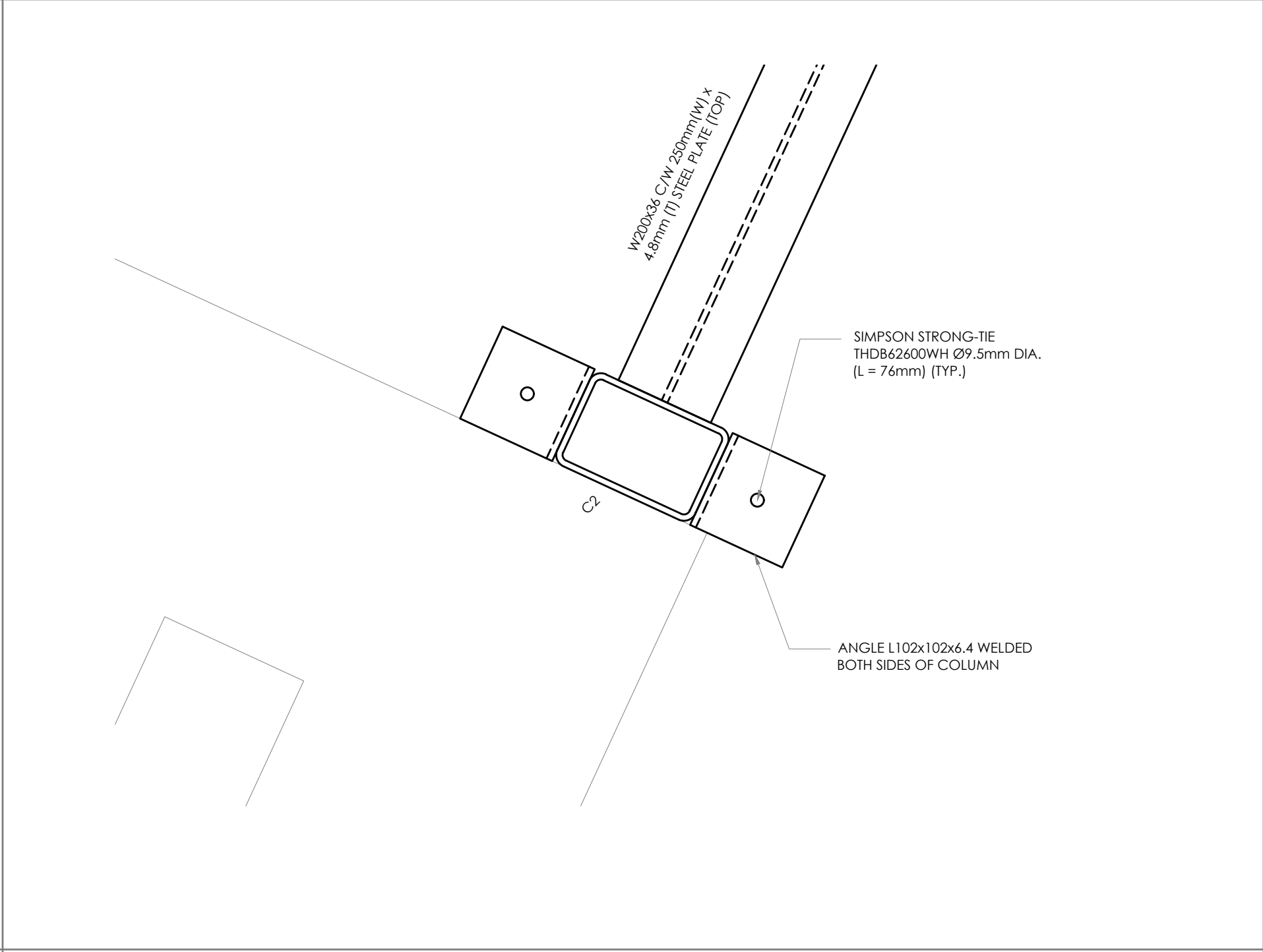
6 DETAIL
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5 DETAIL
S3.0 SCALE: 1:5



7 DETAIL
S3.0 SCALE: 1:5



8 DETAIL
S3.0 SCALE: 1:5



5 DETAIL
S3.0 SCALE: 1:5

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TORONTO, ON
M6P 0A8

PROJECT:

BENNETTO CC AUDITORIUM
UPGRADES

DRAWING TITLE:

DETAILS

DRAWN BY:
D.N.

CHECKED BY:
S.M.

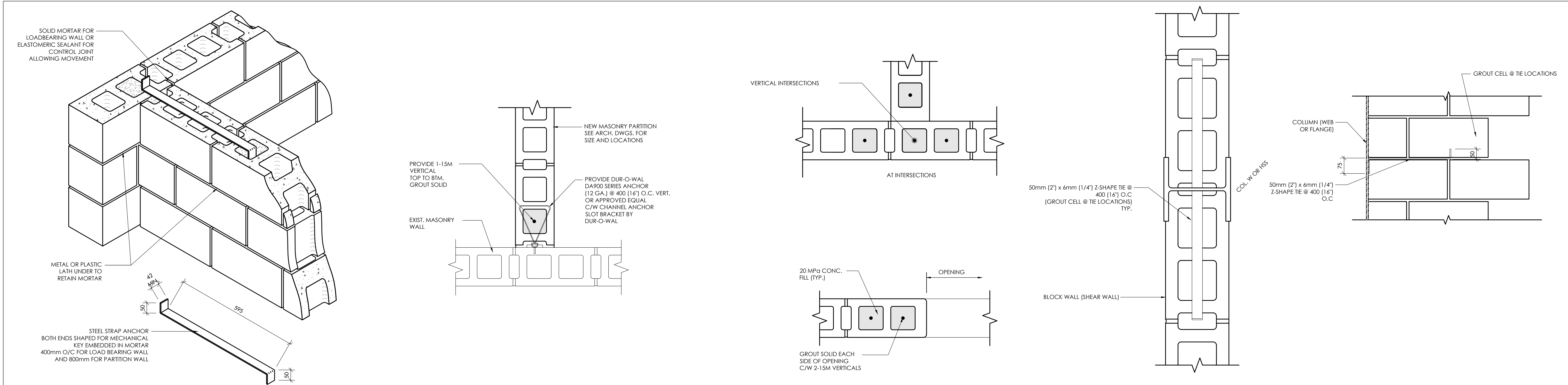
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APRIL 2025

PROJECT NUMBER:
25-035

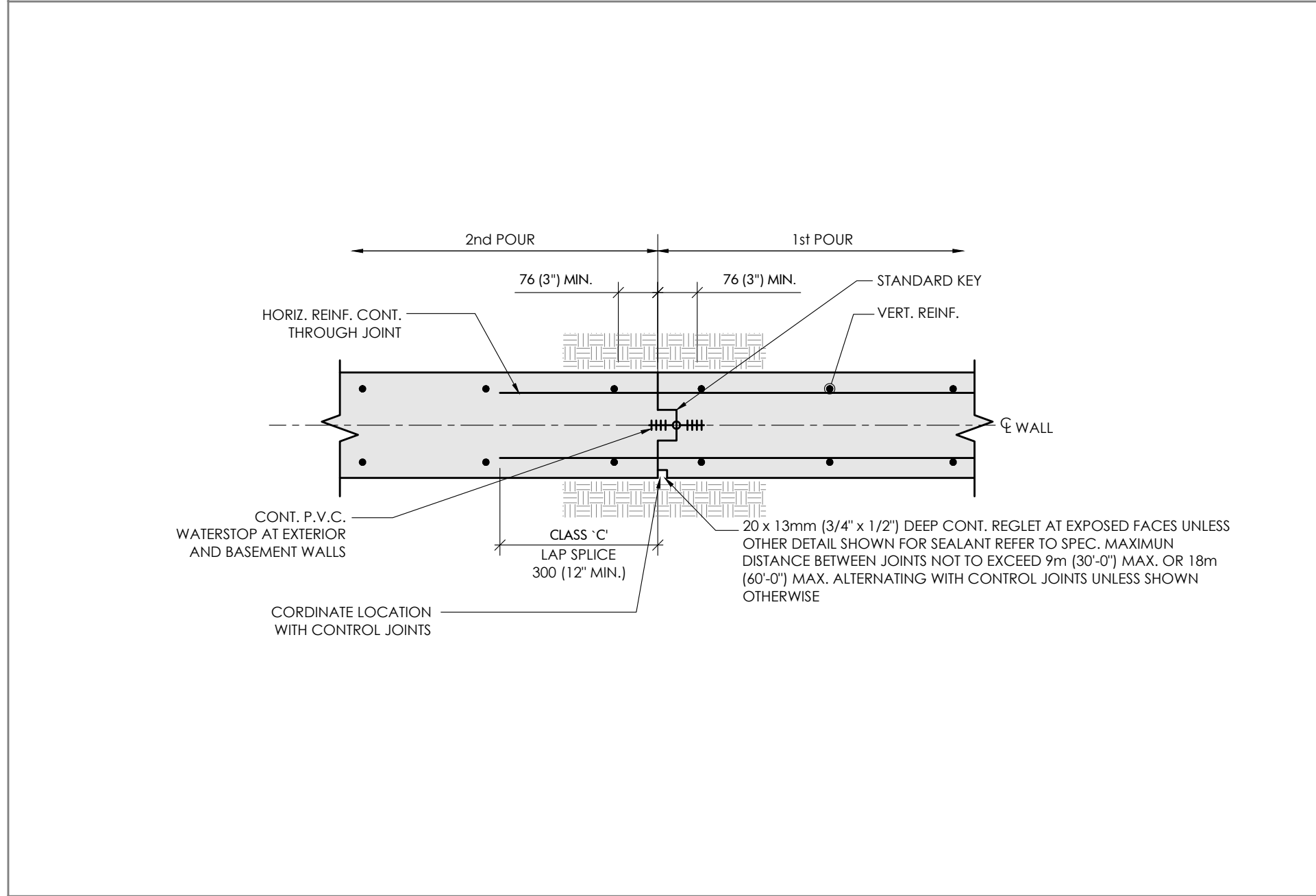
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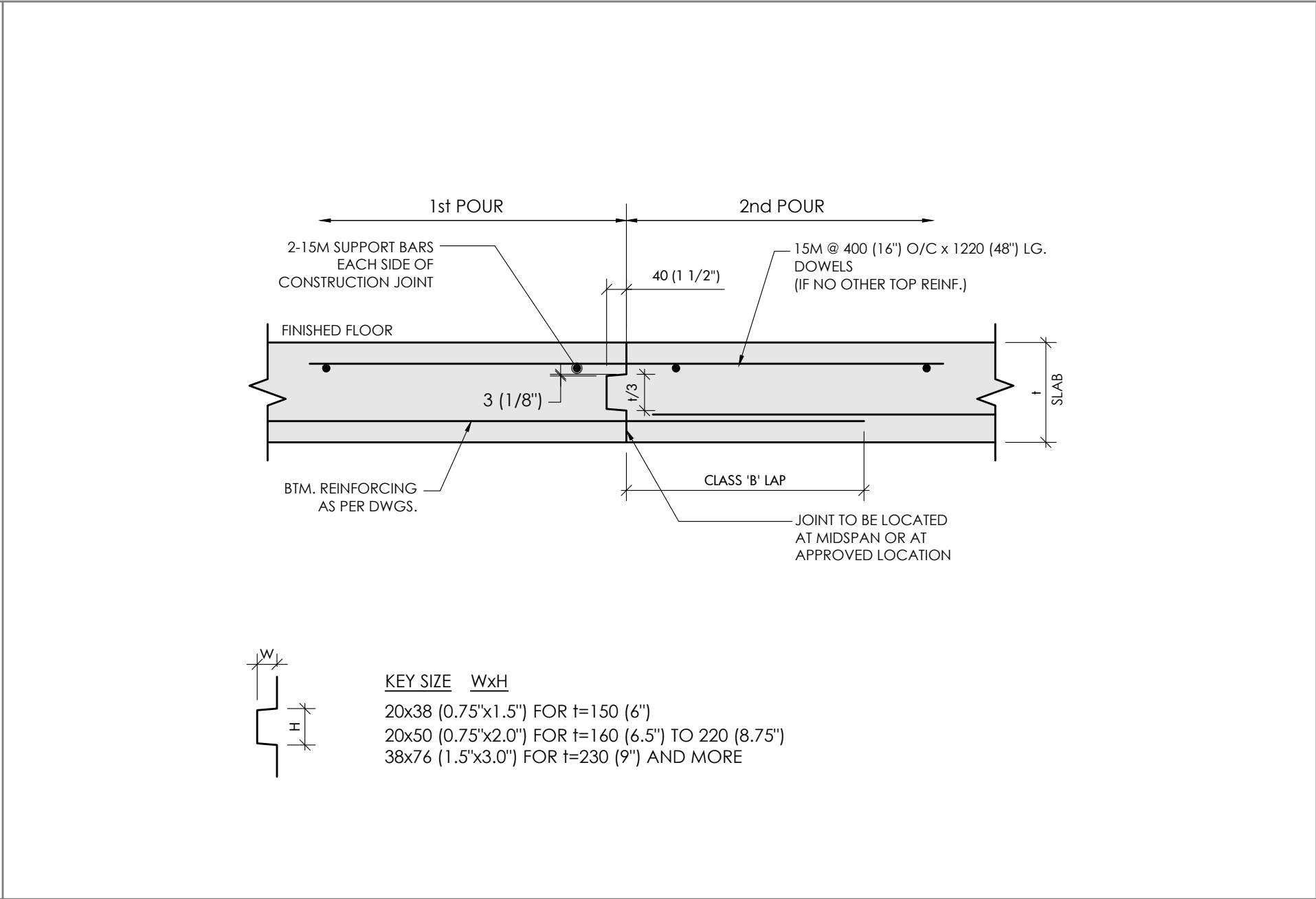
March 06, 2026 — 05:33pm Plotted by: dnguyen



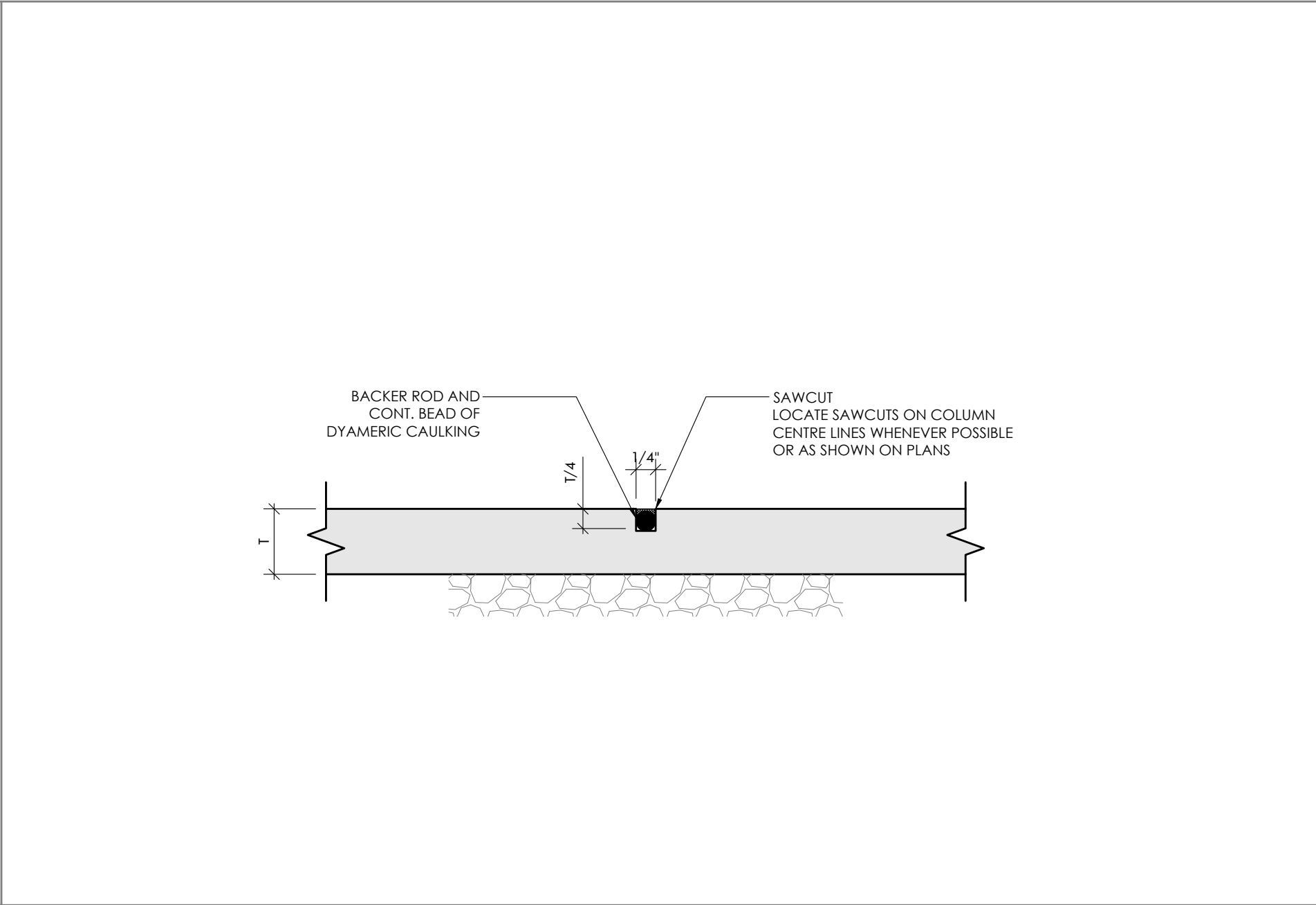
1 TYP. BLOCKWALL DETAIL
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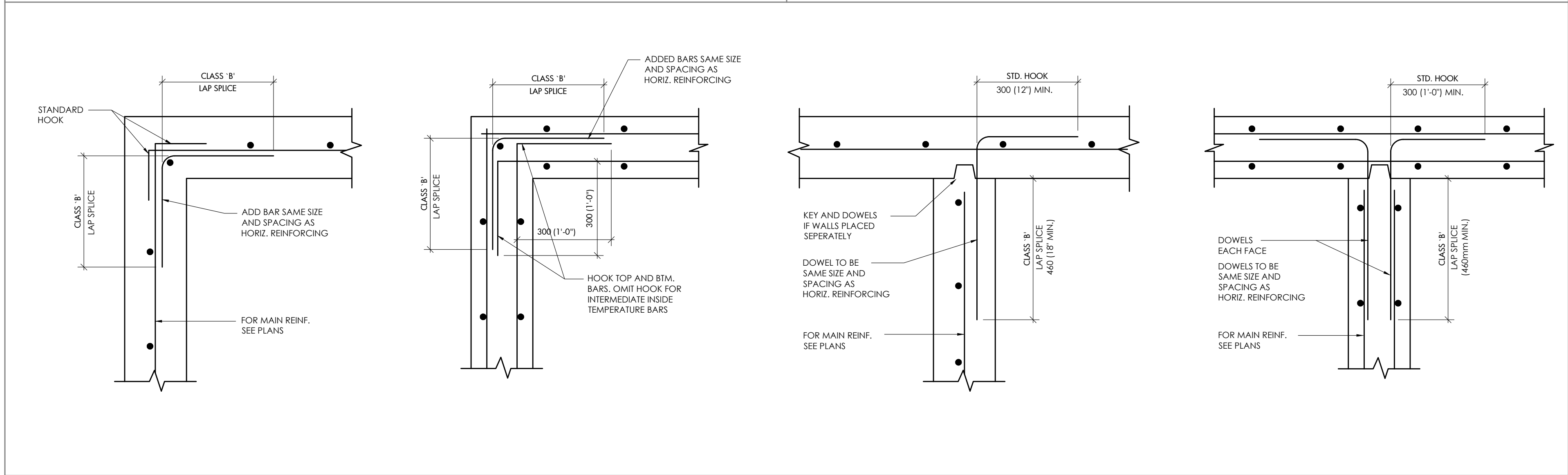
2 TYP. VERT. CONSTRUCTION JOINT IN WALL
SCALE: N.T.S.



3 TYP. CONSTRUCTION JOINT IN SLAB
SCALE: N.T.S.



5 TYP. SAWCUT CONTROL JOINT IN S.O.G.
SCALE: N.T.S.



4 TYP. VERT. CONSTRUCTION JOINT IN WALL
SCALE: N.T.S.

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6 SOUSA MENDES ST.
TORONTO, ON
M6P 0A8

PROJECT:
BENNETTO CC AUDITORIUM
UPGRADES

DRAWING TITLE:
DETAILS

DRAWN BY:
D.N.

CHECKED BY:
S.M.

DATE:
APRIL 2025

PROJECT NUMBER:
25-035

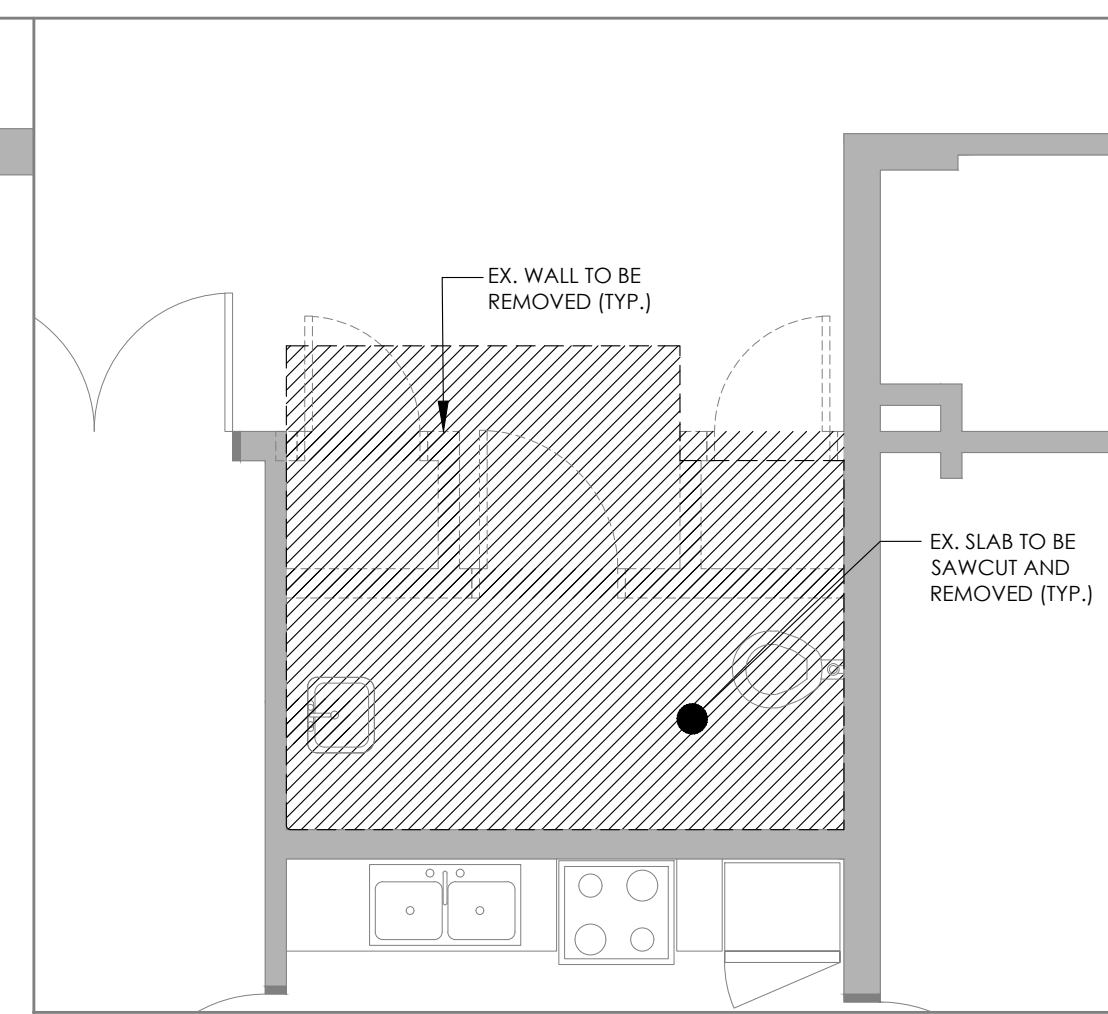
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DRAWING NUMBER:

S4.0

March 06, 2026 - 05:33pm Plotted by: dnguyen

File: C:\Users\dnguyen\AppData\Local\Temp\AcPublish_17048\S4.0 Typ. Details.dwg



C13-14-26 - Tender for Contractor Required for the Renovation of the Bennetto Community Centre Including Auditorium Accessibility Improvements, Auditorium Adequate Egress and Updating Universal Washroom

Opening Date: May 13, 2026 2:30 PM

Closing Date: June 9, 2026 3:00 PM

***** *IMPORTANT* *****

Bidders are advised to review and confirm their bids&tendersTM vendor account is set up in the bidder's correct LEGAL name.

This name must exactly match the name on all documentation required of the Successful Bidder, eg; insurance certificate, WSIB certificate.

Schedule of Prices

* Denotes a "MANDATORY" field

Do not enter \$0.00 dollars unless you are providing the line item at zero dollars to the City of Hamilton (unless otherwise specified).

If the line item and/or table is "**NON-MANDATORY**" and you are not bidding on it, leave the table and/or line item blank. Do not enter a \$0.00 dollar value.

Cost of Work

Line Item No.	Description	Lump Sum Price *
1	Cost of Work (excluding Provisional Items and Cash Allowances)	
Subtotal:		

Provisional Items

Line Item No.	Description	Provisional Item - Lump Sum Price *	
.1	Provisional Item: Demolish existing exterior handrail		*
.2	Provisional Item: Demolish existing exterior concrete sidewalk and stairs		*
.3	Provisional Item: Install new exterior concrete stairs		*
.4	Provisional Item: Install new exterior concrete ramp		*
.5	Provisional Item: Install new exterior concrete platform		
.6	Provisional Item: Install tactile attention indicator studs in concrete surface		*
.7	Provisional Item: Install new guard rail with handrail, mounted to concrete surface		
.8	Provisional Item: Install new concrete sidewalk		
.9	Provisional Item: Install new masonry half wall with cast stone cap and 6" concrete curb		
Subtotal:			

Cash Allowances

Item Number	Description	Lump Sum
1	SOURCE OF FILL: .1 The Consultant must approve the soils and granular materials for use. If testing is required, it is to be paid for by Cash Allowance.	\$95,000.0000
2.	INSPECTIONS AND TESTING: .1 The Contractor shall engage a third party testing and inspections consultant satisfactory to the Owner for the testing/inspections outlined below. Cost for testing/inspections consultant shall be paid for from the project cash allowance.	\$40,000.0000
Subtotal:		

Summary Table

Bid Form	Amount
Cost of Work	
Provisional Items	
Cash Allowances	\$ 135,000.00
Total Contract Price:	

Specifications

Bidder's Business Structure

The City of Hamilton reserves the right to verify the business name and structure of the bidder, whether or not this section is completed, to ensure that the bidder is an existing legal entity. If the bidder is not an existing legal entity, the Bid will be rejected.

Business Structure of Bidder *	If 'Corporation' Selected, Specify Where Incorporated:	If 'Other' Selected, Specify Business Structure:	Registered Business Name of Bidder (if applicable):

Business Attestation Form

Bidders must complete the following attestation confirming if the business meets the definition of a Canadian Business, U.S. Business, or a Non-U.S. Business as defined below.

Definitions

“Canadian Business” is a vendor (including a supplier, manufacturer, or distributor) of any business that provides Goods and/or Services on a permanent basis in Canada. The business:

- has Permanent Offices or production facilities in any province or territory within Canada; or
- has at least 70% of its workforce employed in Canada as of the bid closing date or contract award date, whichever comes first.

“U.S. Business” is a vendor (including a supplier, manufacturer, or distributor) of any business that provides Goods and/or Services on a permanent basis in the United States of America (“USA”). The business:

- has Permanent Offices or production facilities in any state or territory within the USA; and
- has at least 51% of its workforce employed in the USA as of the bid closing date or contract award date, whichever comes first.

“Non-U.S. Business” is a vendor (including a supplier, manufacturer, or distributor) of any business that does not meet the criteria of a U.S. Business or a Canadian Business.

“Permanent Office” is a fixed, physical place of business where business activities are conducted. Post office boxes, rental mailboxes, virtual offices, and home offices occupied by an employee will not be considered a fixed place of business.

	Select One *
Our business meets the definition of a:	

Documents

It is your responsibility to ensure the uploaded file(s) is/are not defective or corrupted and are able to be opened and viewed by the City. If the attached file(s) cannot be opened or viewed, your Bid shall be rejected.

BONDING UPLOAD SECTION

Each Bid submission must be accompanied by a **digital** bid bond.

The City will only accept submissions that include the bid bond in an electronically verifiable and enforceable (e-Bond) format.

A scanned PDF copy of the bond is not acceptable.

Instruction: After uploading the bid bond, ensure the uploaded bid bond is electronically verifiable and enforceable prior to submission of this Bid.

For additional information on Bid Security refer to the Request for Tenders document.

- Bid Bond * (mandatory)

Form of Tender

The bidder hereby acknowledges and agrees:

1. Submission of Bid

I/we the undersigned bidder, having examined the locality and site of the Work as well as all the Request for Tenders documents, hereby tenders and offers to furnish all material, labour, service, equipment, scaffolding and all incidentals, and to render all services and pay all applicable customs duties and taxes (other than any Value Added Taxes) and all other charges as specified and/or as necessary for performance and completion of the above referred to Work, all in full accordance with the Request for Tenders documents provided to the bidder by the City (receipt of which is hereby acknowledged) for the Base Bid Price (which is included in the "Contract Price" in the CCDC 2 – 2020 Stipulated Price Contract).

2. Base Bid Price

I/we confirm all prices provided in this Bid:

- are in Canadian funds
- include Provisional Items, if applicable
- include contingency allowances, if applicable
- include cash allowances, if applicable
- do not include Value Added Taxes

Any Value Added Taxes payable are for the account of the City and are in addition to the Base Bid Price stated in the Schedule of Prices.

I/we understand that if this Request for Tenders contains a contingency allowance, Provisional Item(s) or cash allowances, I/we are not entitled to payment thereof except for the extra or additional work carried out by me/us, as directed by the City and in accordance with the Contract and only to the extent of such extra or additional work and payment approved by the City.

3. Addenda

I/we have made any necessary inquiries with respect to Addenda issued by the City and have ensured that we have received, examined and provided for all Addenda to the Request for Tenders in this Bid.

4. Commencement and Completion

If awarded the Request for Tenders, I/we agree and undertake that:

- I/we will provide all necessary documents required as set forth prior to the commencement of the Work.
- I/we will commence the Work following receipt of a notice to proceed and otherwise in accordance with the Contract. I/We agree to have the Works "substantially performed" as described in the Construction Act (Ontario) and in accordance with the requirements set out in the Contract.
- In the event that I/we fail to perform the Contract as provided, I/we understand and agree that I/we shall be liable to liquidated damages and other remedies as specified in the contract documents.

5. Contract

I/we understand and agree that a binding contract shall come into being upon acceptance of this Bid by the City and the award of the Request for Tenders to me/us. The subsequent execution of the Contract for the Work is a formality and not a condition precedent to the existence of a binding contract.

6. Occupational Health and Safety

I/we understand and agree that the Work must be conducted in a safe manner. Accordingly, I/we confirm that I/we and all subcontractors used on the Work for the City of Hamilton will comply with all applicable laws, regulations and by-laws of Canada, the Province of Ontario and the City of Hamilton, including but not limited to the Occupational Health and Safety Act, and all applicable regulations thereunder. Further, without limiting any of the foregoing, I/we confirm that I/we have both a written occupational health and safety policy and program to implement that policy, and that all of our employees, subcontractors and any other persons performing the Work shall be appropriately trained, licensed and certified, as required to perform the Work.

7. Fair Wage Policy and Schedule

I/we agree to comply in all respects with the City of Hamilton's Fair Wage Policy and to be fully responsible for ensuring that all of my/our subcontractors also comply in all respects with said Fair Wage Policy.

8. Execution

If this Bid is accepted by the City and the Request for Tenders is awarded to me/us, I/we agree to provide and pay for the proof of insurance, WSIB clearance certificate, performance of contract security and a labour and material payment bond as required by the contract documents, my/our health & safety manual and any other document identified in the award letter as being required by the City prior to it being able to issue a purchase order, and to execute the Contract, in quadruplicate, all within 10 Business Days after the City has issued its award letter or within such longer time period as the City may specify.

9. Bid Security

I/we have submitted the Bid Security as specified in the Request for Tenders. The Bid Security shall be irrevocable for **90 CALENDAR DAYS** after the closing date and time of the Request for Tenders.

In the event of default or failure on my/our part to execute the Contract as required above and to provide the specified security required under the Request for Tenders and the Contract, I/we agree that the City may at its discretion do one or more of the following: declare the Bid Security forfeited, annul the award or terminate the Contract, accept the next lowest compliant Bid, advertise for new tenders, or carry out the Work in any manner deemed in the best interests of the City. In such a case, if required by the City, I/we shall pay the City the difference between the Base Bid Price and any greater sum that the City may be obligated to pay by reason of that default or failure, including the cost of any advertisement for new tenders.

10. Time Open for Acceptance

I/we agree and confirm that this Bid is irrevocable and is to continue open to acceptance by the City for a period of **90 CALENDAR DAYS** after the closing date and time of the Request for Tenders. The City may at any time within the above **90 CALENDAR DAY** period accept this Bid whether or not any other Bid has previously been accepted, upon notice of acceptance and award in writing to me/us, personally delivered or mailed to me/us by ordinary prepaid mail, to the address provided in the Bid submission, or delivered by fax to the fax number set forth in the Bid submission. Any notice mailed or faxed shall be deemed to have been received on the date mailed or faxed. Any notice personally delivered shall be deemed to have been received on the date the notice is personally delivered.

11. No Collusion / Conflict of Interest

I/we hereby declare that no person, firm or corporation other than me/us has any interest in this Bid or in the proposed Contract for which this Bid is made. I/We further declare that this Bid is made without any connection, comparison of figures or arrangements with, or knowledge of, any other person making a Bid for the same work and is in all respects fair and without collusion or fraud.

I/we confirm that we comply with Article 12 - Conflict of Interest, Lobbying and Collusion of the Instructions to Bidders and Article 4 – Joint Ventures of the Supplementary Instructions to Bidders.

I/we understand that, without limiting or restricting any other right or privilege of the City, the City may terminate the Contract where the bidder is in contravention with the City's Procurement Policy with respect to conflict of interest or vendor eligibility.

12. Interpretation

I/we confirm that we have received no oral information, instruction or advice from any officer, employee, agent or consultant of the City which changes the content of the Request for Tenders and all Addenda thereto.

I/we acknowledge and agree that we have not assumed that any information concerning our operations, business or personnel or any other information required to be provided by us when submitting our Bid is known to the City, regardless of whether such information may be actually previously known to the City or not. Further, we acknowledge and agree that all information to be provided by us is to be complete and full and in such detail as required.

13. Procurement Policy

In submitting a Bid in response to the Request for Tenders, I/we agree and acknowledge that I/we have read and will be bound by the terms and conditions of the City's Procurement Policy. I/We understand that the City's Procurement Policy can be viewed on the City's website at: <https://www.hamilton.ca/build-invest-grow/buying-selling-city/bids-and-tenders/procurement-policy-by-law>

14. Ontarians with Disabilities Act, 2001 and Accessibility for Ontarians with Disabilities Act, 2005

I/we confirm that I/we and all Subcontractors used on the Work for the City of Hamilton will comply with all applicable accessibility laws, regulations and by-laws of Canada, the Province of Ontario and the City of Hamilton, including but not limited to the Ontarians with Disabilities Act, 2001 (ODA), the Accessibility for Ontarians with Disabilities Act, 2005 (AODA), Ontario Regulation 429/07 (Accessibility Standards for Customer Service) and Ontario Regulation 191/11 (Integrated Accessibility Standards), throughout the term of the Contract. Without limiting the generality of the foregoing, I/we shall provide to the City, prior to commencing Work, a Statement of Acknowledgement that I/we have read and understand the City's AODA Integrated Accessibility Standards and Customer Service Standard Handbook (the "Handbook"), that I/we have provided the training required by the Handbook, and that I/we will comply with the requirements of the Handbook and applicable accessibility laws, regulations and by-laws. See City of Hamilton's AODA Integrated Accessibility Standards and Customer Service Standard Handbook at: <https://www.hamilton.ca/people-programs/equity-diversity-inclusion/accessibility-services/accessibility-guidelines-policies#policies-procedures>

15. Compliance with City of Hamilton By-laws

I/we declare that I/we are in compliance with all municipal by-laws as they pertain to the City of Hamilton in respect of the operation of my/our business and in respect of the Work described in the Request for Tenders. I/We understand and agree that if this statement is untrue or incorrect, the City of Hamilton shall be entitled at its sole discretion to reject this Bid, or if such untruth or incorrectness comes to light after this Bid is accepted, to terminate or refuse to enter into, as applicable, any Contract and to pursue any other legal recourse the City deems appropriate, and that such untruth or incorrectness shall be a default under the Contract.

16. Lump Sum Breakdown

I/we understand and agree that after the opening of the Bids, if I/we are one of the two apparent low bidders, if requested by the City we are required to submit to the Tender Coordinator, within two Business Days of the closing date of the Request for Tenders, the document entitled Lump Sum Breakdown of Base Bid Price. The breakdown shall be given on the breakdown pages provided in the Request for Tenders. I/We acknowledge and agree that the City may refuse to accept any breakdown which contains prices considered to be unbalanced and may request me/us to adjust the breakdown to correct such unbalancing, and I/we agree to do so upon such request of the City.

17. Provisional Items

I/we understand and agree that, after the award of the Request for Tenders, the City reserves the right to delete from the Base Bid Price one or more of the items identified in the Schedule of Prices as Provisional Items, without penalty or compensation to the Successful Bidder, for credit at the price shown in the table. All prices are inclusive of all duties and taxes applicable, except for Value Added Taxes.

I/we understand that I/we are required to complete the table in the Schedule of Prices for each Provisional Item listed. I/we understand that failure to do so will result in the rejection of this Bid by the City.

I/we agree that the Unit Prices provided for each Provisional Item include all costs required for complete execution of the item of work, including the bidder's office staff, site supervisory staff, project management costs, clerical and other costs for documentation, materials, labour, equipment, delivery, handling, statutory charges, overhead and profit, other related charges, inclusive of all other duties and taxes applicable, and similar charges on account of such item of work. Unit Prices entered shall exclude all Value Added Taxes.

I/we agree that if the quantity actually required for each item of work is more or less than estimated, the extended price for such item of work will be increased or decreased respectively using the same Unit Price or Lump Sum Price specified in the Schedule of Prices.

I/we agree that these Provisional Items are in addition to the requirements outlined in the Specifications. I/we understand that if I/we are awarded the Request for Tenders, I/we are not entitled to payment for any Provisional Item except for the extra or additional work carried out by me/us, as directed by the City and in accordance with the Contract and where payment was previously approved by the City.

18. Alternatives

I/we understand and agree that alternatives to specified equipment suppliers and/or equipment in the Request for Tenders will not be considered by the City prior to the award of the Request for Tenders.

19. Electronic Funds Transfer

I/we acknowledge and agree to provide the City with the information required for the City to make payment by EFT.

20. Business Type Attestation

I/we, the undersigned, on behalf of the Bidder, declare and confirm that I/we have thoroughly reviewed the definitions of the Business Type Attestation Form section and confirm the information completed is true. I/we acknowledge and understand, on behalf of the Bidder, that failure to provide this information accurately or truthfully may result in the disqualification of my Bid and any future bids I may have with the City of Hamilton. Additionally, it may result in termination of any resulting contract and the payment of any damages.

☐ I/WE agree to be bound by the terms and conditions and have authority to bind the Bidder and submit this Bid on behalf of the Bidder.

Conflict of Interest

Except with the prior express written consent of the City, **prior to submitting this Bid**, vendors are required to notify the City in writing, of any potential conflict of interest that may arise prior to the award of any contract and fully disclose any details thereof. Failure on the part of a vendor to declare a conflict of interest to the City and to obtain the City's prior express written consent to waive the conflict of interest shall result in the vendor being ineligible to Bid and shall form a basis for rejection of a Bid submitted to the City.

Do you have a potential conflict of interest? ☒ Yes ☐ No

Acknowledgement of Addenda

The Bidder acknowledges and agrees that any Addenda below form part of the bid document.

Please check the box in the column "**I have reviewed this addendum**" below to acknowledge each of the Addenda.

File Name	I have reviewed the below addendum and attachments (if applicable)	Pages
There have not been any addenda issued for this bid.		