25-050

Lakeview Washroom Renovation

Invermere, BC

District of Invermere

Lakeview Washroom Renovation

Issued for Tender

2025 10 29

berry architecture
+associates

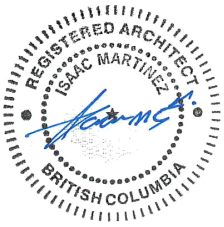
List of Sections

SECTION 00 01 07
SEALS PAGE

Part 1 General

1.1 ARCHITECTURAL STAMP

.1



2025-10-29

Part 2 Products

2.1 NOT USED

.1 Not Used

Part 3 Execution

3.1 NOT USED

.1 Not Used

END OF SECTION

SECTION 00 21 13
INSTRUCTIONS TO BIDDERS

Part 1 General

1.1 SCOPE OF WORK

.1 Interior renovations to Lakeview Washroom, located at 1110 6th Avenue, Invermere, BC.

1.2 BID CALL

.1 Bids will be received before 2:00:00 p.m. local time on November 13, 2025 (the “bid closing time”) at:

Berry Architecture + Associates

tendering@berryarchitecture.ca

.2 The official bid closing time will be determined by the email time stamp at the bid closing location.

.3 Bids received after the specified bid closing time will be returned unopened.

.4 The Owner reserves the right to extend the bid closing time or cancel the bid call by addendum.

.5 This bid call is by invitation only [to pre-qualified Bidders]. Submit bids only in the name indicated in the letter of invitation to bid. Bids submitted in a name different to that indicated in the invitation, or from Bidders not invited to bid, will be returned unopened, or if inadvertently opened, will be rejected as non-compliant. The following Bidders have been invited to bid:

.6 Bids will not be opened publicly with Bidders present.

.7 Bid results will be disclosed promptly to all Bidders. Such disclosure will not imply that the bids received are compliant or that a contract will be awarded to the lowest or any Bidder.

1.3 BID DOCUMENT AVAILABILITY

.1 Bid Documents are made available in electronic form only for the purpose of obtaining bids for this project. It does not confer a license to use the Bid Documents for any other purpose.

.2 Electronic copy Bid Documents may be accessed at BC Bids.

1.4 EXAMINATION OF BID DOCUMENTS

.1 Examine the Bid Documents and promptly notify the person designated to receive inquiries of any perceived errors, omissions, conflicts or discrepancies in the Bid Documents.

1.5 SITE EXAMINATION

.1 Bidders shall visit the site and familiarize themselves with conditions affecting the Work before submitting a bid.

1.6 PRE-BID MEETING AND SITE VISIT

.1 A pre-bid meeting and site visit at the Place of the Work has been scheduled for 3:00 p.m. local time on November 7, 2025.

.1 Contractor to notify Consultant of intention of attending the walk through a minimum of 24 hours before the site meeting.

.2 Send confirmation email to tendering@berryarchitecture.ca

.2 All prime contract Bidders are invited to attend but attendance is not mandatory.

.3 All major subcontract Bidders and suppliers are invited to attend but attendance is not mandatory.

.4 Issues arising from the pre-bid meeting and site visit will be addressed as required in an addendum to the Bid Documents. No meeting minutes will be issued. Bidders may not rely upon any information given verbally or otherwise at the pre-bid meeting and site visit and that is not confirmed by addendum.

1.7 BID FORM SUPPLEMENTS

.1 Submit the following Bid Form Supplements together with the Bid Form:

.1 Bid security as specified.

.2 Section 00 43 36 – Bid Form Supplement - List of Subcontractors.

.3 Section 00 07 63 Contract Security Requirements - Consent of Surety.

.2 The Owner may, after the bid closing time and before contract award, require any Bidder to submit additional supplementary information about any aspect of the Bidder's bid to verify compliance with the Bid Documents.

1.8 BID SECURITY

.1 Submit with the bid a CCDC 220 form of bid bond in an amount of not less than 10% of the bid price.

.2 The bid bond shall name the Owner as the obligee and shall be signed, sealed, and dated by both Bidder and surety.

.3 Upon request, bid bonds of unsuccessful Bidders will be returned after the successful Bidder has entered into a contract with the Owner and provided the specified contract security, or earlier at the Owner's discretion.

.4 In lieu of a bid bond, Bidders may submit a certified cheque or bank draft in an amount of not less than 10% of the bid price.

.5 Certified cheques and bank drafts will be returned to Bidders after the successful Bidder has entered into a contract with the Owner and has provided the specified contract security, or earlier at the Owner's discretion.

1.9 BIDDER DEFAULT AND FORFEITURE OF BID SECURITY

.1 If a Bidder whose bid is accepted by the Owner in writing, without conditions, and within the acceptance period specified in the Bid Documents, refuses or fails within 15 calendar days after the date of issuance of the written acceptance of the bid, to sign a formal agreement with the Owner for the performance of the Work and to provide contract performance security as specified in the Bid Documents, the Bidder will be liable to the Owner for the difference in money between the Bidder's bid price and the amount for which the Owner legally contracts with another party to perform the Work, if the latter amount is in excess of the former, up to the maximum amount of the bid security provided.

1.10 CONTRACT SECURITY

.1 Refer to Section 00 73 63 – Contract Security Requirements.

1.11 TAXES

.1 Include in bid price all taxes and customs duties in effect at the time of the bid closing, except for Value Added Taxes as defined in the CCDC standard form of contract.

1.12 CONTRACT TIME

.1 The Bidder, in submitting a bid, agrees to attain Substantial Performance of the Work by the date specified in the Bid Form, which will become the Contract Time under the Contract.

1.13 SUBSTITUTIONS

.1 Where the Bid Documents specify particular Products by proprietary name, Bidders shall base their bids on the named Products only. The Consultant will not consider requests for approval of substitutions during the bid period. Refer to Section 01 25 00 – Substitution Procedures for substitutions after contract award.

1.14 LIST OF SUBCONTRACTORS

.1 Complete and submit Section 00 43 36 – Bid Form Supplement – List of Subcontractors, indicating those Subcontractors or Suppliers whose bids have been received by the Bidder, which names the Bidder would be prepared to accept for the performance of the work indicated.

.2 The purpose of this requirement is to protect the interests of subcontract bidders and the integrity of the bidding process. Provided the List of Subcontractors has been properly completed and submitted, the information will not be used in evaluating the Bids to determine the lowest compliant bidder.

1.15 BID SUBMISSION

.1 Complete Bid Form, in its entirety, on the form provided and submit together with the required Bid Form Supplements, completed in their entirety, in a sealed opaque envelope, clearly identified on the outside with the following information:

.1 Name and address of Procurement Authority.

.2 Bidder's name and address.

.3 Project name.

.2 Bids will be received in electronic form only - emailed.

.3 Verbal, telephoned, fax, hardcopy or text message bids will not be accepted nor acknowledged.

1.16 BID MODIFICATION AND WITHDRAWAL

.1 A bid, including the Bid Form and Bid Form supplements, submitted in accordance with these bidding requirements may be modified or withdrawn, provided the modification or withdrawal request:

.2 For bid closing time purposes, the official time of receipt of emailed bid modifications or withdrawal requests will be the time of receipt automatically printed on the email.

.3 If a bid is withdrawn, a new bid may be submitted in accordance with the specified requirements, provided it is received before the bid closing time.

.4 When submitting a modification directing a change in a bid price, do not reveal the original amount nor the revised amount:

.1 on stipulated price bids, state only the amount to be added to or deducted from the original bid price.

.2 on unit price bids, state only the amount to be added to or deducted from each original unit price or lump sum in the Schedule of Prices. The Owner will adjust extended amounts and the total bid price as required by the modification.

.5 When submitting a second or more modifications related to a particular bid price, ensure that there is no ambiguity as to the intended bid price. The written modification shall clearly indicate whether:

.1 the bid price first submitted is being modified and any previous modifications are to be disregarded, or

.2 a revised bid price derived from a previous modification is being modified.

.6 State all addendum numbers received, if different from what was indicated on originally submitted Bid Form.

.7 The Owner will assume no responsibility or liability for modifications or withdrawals that are, for any reason, delayed, illegible, unclear as to intent, ambiguous, contrary to these instructions, or otherwise improperly received. The Owner may disregard improperly received modifications or withdrawals.

1.17 BIDDING IRREGULARITIES

.1 Bids with Bid Forms or required Bid Form Supplements that are improperly prepared, signed or submitted contrary to these Instructions to Bidders, or that contain added conditions or other irregularities of any kind, may, at the Owner's discretion, be rejected as non-compliant.

.2 The Owner may accept or waive a minor and inconsequential irregularity. The determination of what is, or is not, a minor and inconsequential irregularity, the determination of whether or not to accept or waive such an irregularity, and the final determination of whether the bid is compliant, will be at the Owner's sole discretion.

.3 The following irregularities relate to what are considered mandatory bidding requirements. These will not be considered minor and inconsequential and will cause the bid to be rejected as non-compliant:

.1 Bid or Bid Form Supplement is received after the specified bid closing time.

.2 Required Bid Form or Bid Form Supplement is missing.

.3 Bid Form or Bid Form Supplement is not in the form provided or required.

.4 Bid bond is improperly completed or executed, if such improper completion or execution may render the bid bond unenforceable.

.5 A bid price is illegible, ambiguous or unclear.

.6 One or more conditions are added to or submitted with the bid, the effect of which is a material modification of the Bid Documents.

.7 Failure to indicate in the Bid Form the addendum number(s) of all addenda received.

.8 Failure to comply with any other bidding requirement expressly characterized as mandatory in elsewhere in the Bid Documents.

1.18 BID ACCEPTANCE PERIOD

.1 Bids shall remain open to acceptance by the Owner and shall be irrevocable until another Bidder enters into a contract with the Owner for performance of the Work or until expiry of the bid acceptance period stated in the Bid Form, whichever occurs first.

.2 After bid closing and before expiry of the bid acceptance period stated in the Bid Form, the Owner may request all Bidders to agree to an extension of the originally specified bid acceptance period. In such case the bid acceptance period will be extended subject to the Bidder, whose bid the Owner wishes to accept, having agreed in writing to the extension.

1.19 BID ACCEPTANCE

.1 The lowest or any bid will not necessarily be accepted and the Owner may reject any and all bids.

.2 The Contract will be established if and when the successful Bidder receives from the Owner a written notification accepting the bid without any conditions. If the Owner's written notification accepting the bid contains, or is subject to, any conditions, the Contract will be established if and when the Bidder accepts all such conditions in writing or when the parties execute the agreement.

.3 If the lowest compliant bid exceeds the Owner's budget, and the Owner is unwilling or unable to award a contract at the bid price, the Owner may:

.1 negotiate, with the lowest compliant Bidder only, changes to the Bid Documents and a reduced bid price acceptable to the Owner, or

.2 invite the three lowest compliant Bidders (only) to re-bid on modified Bid Documents under a new bid call.

1.20 INTERPRETATION AND MODIFICATION OF BID DOCUMENTS

.1 If an inquiry requires an interpretation or modification of the Bid Documents, the response to that inquiry will be issued in the form of a written Addendum only, to ensure that all Bidders base their bids on the same information.

.2 Replies to inquiries or interpretations or modifications of the Bid Documents made by e-mail, verbally, or in any manner other than a written Addendum, will not form part of the Bid Documents and will not be binding.

1.21 ADDENDA

.1 Addenda may be issued to modify the Bid Documents in response to Bidder inquiries or as may be considered necessary.

.2 All addenda issued during the bid period will become part of the Bid Documents.

.3 No addenda will be issued later than 2 Working Days before the bid closing time.

.4 Each Bidder shall ascertain before bid submission that it has received all addenda issued during the bid period and shall indicate in the Bid Form the addendum number(s) of all addenda received.

1.22 INQUIRIES

.1 Direct all inquiries in writing, via e-mail to:

Berry Architecture + Associates
E-mail: tendering@berryarchitecture.ca

.2 Submit inquiries as early as possible in the bid period and not less than 3 Working Days before the bid closing time. Inquiries received after this time may not receive a response.

Part 2 Products - Not Used

Part 3 Execution - Not Used

END OF SECTION

SECTION 00 41 13
BID FORM

Part 1 General

1.1 BID FORM

.1

Project/Contract: Lakeview Washroom, Invermere, BC

From (Bidder):

_____
(business name)

_____
(street address or postal box number)

_____
(city/town, province, and postal code)

To (Owner): District of Invermere

We, the undersigned, having examined the Bid Documents for the above named project/contract, including Addendum Number(s) _____, and having visited the Place of the Work, hereby offer to perform the Work in accordance with the Bid Documents, for the stipulated [base bid] price of:

$ _____in Canadian dollars, excluding Value Added Taxes.
(amount in figures)

We, the undersigned, declare that:

1. we are qualified to perform the Work in accordance with the Bid Documents and our bid price covers all of our obligations and things necessary for the performance of the Work,

2. we agree to attain Substantial Performance of the Work by April 15, 2026.

3. we have arrived at this bid without collusion with any competitor,

4. all bid form supplements called for by the Bid Documents form an integral part of this bid, and

5. this bid is open to acceptance by the Owner for a period of 60 calendar days from the bid closing time.

Signatures

Signed and submitted by:

_____
(business name)

_____
(name and title of authorized signing representative)

_____
(signature of authorized signing representative)

_____
(name of witness, if business is sole proprietorship)

_____
(signature of witness, if business is sole proprietorship)

_____
(name and title of authorized signing representative)

_____
(signature of authorized signing representative)

Dated this _____ day of
_____, 2025.

Part 2 Products - Not Used

Part 3 Execution - Not Used

END OF SECTION

SECTION 00 43 36
BID FORM SUPPLEMENT - LIST OF CONTRACTORS

Part 1 General

1.1 FORM

.1 **Project/Contract: Lakeview Washroom**

From (Bidder):

_____

(business name)

We, the above named Bidder, have received bids from the Subcontractors or Suppliers named below for the items of work requested, and are prepared to accept these names for the performance of these items of work.

Submit within 24 hours of Bid Closing.

1.2 FORM

.1

Item of Work	Name of Subcontractor	Cost Breakdown

1.3 SIGNING

.1 Signatures

Signed and submitted by:

_____
(business name)

_____
(name and title of authorized signing representative)

_____
(signature of authorized signing representative)

_____
(name of witness, if business is sole proprietorship)

_____
(signature of witness, if business is sole proprietorship)

_____
(name and title of authorized signing representative)

_____
(signature of authorized signing representative)

Dated this _____ day of
_____, 20_____.

Part 2 Products - Not Used

Part 3 Execution - Not Used

END OF SECTION

SECTION 00 70 00
CONDITIONS OF CONTRACT

Part 1 General

1.1 FORM OF CONTRACT

.1 The form of Contract, including the Agreement, Definitions, and General Conditions is CCDC 2 – 2020, Stipulated Price Contract, subject to the modifications specified in Section 00 73 00 – Supplementary Conditions.

1.2 CONTRACT COPYRIGHT AND AVAILABILITY

.1 The CCDC form of Contract is a copyrighted document published by the Canadian Construction Documents Committee. It is incorporated into these Bid Documents by reference. It is available for purchase from any CCDC document outlet. Refer to ccdc.org.

1.3 CONTRACT PREPARATION FOR SIGNING

.1 The Consultant will prepare two copies of the form of Contract for signing by the Contractor and the Owner after notice of award. Each copy will be comprised of the CCDC form of Contract with a CCDC copyright seal affixed, with a completed Agreement form, and with other Contract Documents referenced or appended.

Part 2 Products - Not Used

Part 3 Execution - Not Used

END OF SECTION

SECTION 00 73 63
CONTRACT SECURITY REQUIREMENTS

Part 1 General

1.1 PERFORMANCE BOND

.1 Provide security for performance of the Contract in the form of a Performance Bond for 50% of the Contract Price.

.2 Bond shall be in accordance with the latest edition of the Canadian Construction Documents Committee (CCDC) Standard Form of Performance Bond, CCDC 221.

.3 Bond shall be issued by a duly licensed surety company authorized to transact the business of suretyship in the province or territory of the Place of the Work.

.4 Bond shall name Owner as the obligee and shall be signed, sealed, and dated by both Contractor and surety company.

.5 Submit bond to Owner within 14 days after contract award.

1.2 LABOUR AND MATERIAL PAYMENT BOND

.1 Provide security for payment of labour and material provided in the performance of the Work in the form of a Labour and Material Payment Bond for 50% of the Contract Price.

.2 Bond shall be in accordance with the latest edition of the Canadian Construction Documents Committee (CCDC) Standard Form of Labour and Material Payment Bond, CCDC 222.

.3 Bond shall be issued by a duly licensed surety company authorized to transact the business of suretyship in the province or territory of the Place of the Work.

.4 Bond shall name Owner as the obligee and shall be signed, sealed, and dated by both Contractor and surety company.

.5 Submit bond to the Owner within 14 days after contract award.

1.3 CERTIFIED CHEQUE OR BANK DRAFT

.1 The Contractor may provide, in lieu of the specified Performance Bond, security for performance of the Contract in the form of a certified cheque or bank draft for 10% of the Contract Price.

.2 The certified cheque or bank draft shall be in favour of Owner.

.3 Submit certified cheque or bank draft to the Owner within 14 days after contract award. Alternatively, and subject to mutual agreement, the Owner may retain as contract security a certified cheque or bank draft provided as bid security.

.4 The certified cheque or bank draft will be deposited and the monies will not be returned to the Contractor, in whole or in part, until satisfactory performance of all of the Contactor's obligations under the Contract, including those arising during the warranty period.

.5 Provided the Contractor has satisfactorily fulfilled all of its obligations under the Contract, the Owner will return to the Contractor the monies provided as contract security without interest, no later than 60 days after Substantial Performance of the Work.

Part 2 Products - Not Used

Part 3 Execution - Not Used

END OF SECTION

SECTION 01 11 00
SUMMARY OF WORK

Part 1 General

1.1 WORK OF THIS CONTRACT

.1 *Work* of this *Contract* comprises the following:

Interior renovations to the Lakeview Washroom.

.2 Municipal Address: 1110 6th Avenue, Invermere, BC.

1.2 DIVISION OF WORK

.1 Division of the *Work* among *Subcontractors* and *Suppliers* is solely *Contractor*'s responsibility. *Consultant* and *Owner* assume no responsibility to act as an arbiter to establish subcontract limits between Sections or Divisions of the *Work*.

1.3 SPECIFICATIONS LANGUAGE AND STYLE

.1 These specifications are written in the imperative mood and in streamlined form. The imperative language is directed to *Contractor*, unless stated otherwise.

.2 Complete sentences by reading "shall", " *Contractor* shall", "shall be", and similar phrases by inference. Where a colon (:) is used within sentences and phrases, read the words "shall be" by inference.

.3 Fulfill and perform all indicated requirements whether stated imperatively or otherwise.

.4 When used in the context of a *Product*, read the word “provide” to mean “supply and install to result in a complete installation ready for its intended use”.

1.4 CONTRACT DOCUMENTS FOR CONTRUCTION PURPOSES

.1 *Owner* will supply *Contractor* with a complete set of *Contract Documents* in electronic form before commencement of the *Work*. *Contractor* may print hard copies for construction purposes as required.

1.5 DOCUMENTS AT THE SITE

.1 Keep the following documents at *Place of the Work*, stored securely and in good order and available to *Owner* and *Consultant* in hard copy and electronic form:

.1 Current *Contract Documents*, including *Drawings*, *Specifications* and addenda.

.2 *Change Orders*, *Change Directives*, and *Supplementary Instructions*.

.3 Reviewed *Shop Drawings*, *Product* data and samples.

.4 Field test reports and records.

.5 Construction progress schedule.

.6 Meeting minutes.

.7 Manufacturer’s certifications.

.8 Permits, inspection certificates, and other documents required by authorities having jurisdiction.

.9 Current as-built drawings.

1.6 CONTRACTOR’S USE OF PREMISES

.1 Except as otherwise specified, *Contractor* has unrestricted use of *Place of the Work* from time of *Contract* award until *Substantial Performance of the Work*.

.2 Confine *Construction Equipment*, *Temporary Work*, storage of *Products*, waste products and debris, and all other construction operations to limits required by laws, ordinances, permits, and *Contract Documents*, whichever is most restrictive. Do not unreasonably encumber *Place of the Work*.

.3 Emergency Building Exits During Construction to be maintained.

.4 Smoking, vaping, drug use, and alcohol is not permitted on the site.

1.7 CONSULTANT PROJECT SOFTWARE

.1 Berry Architecture will be using a software called Part3 Technology, to administer Consultant construction administration paperwork.

.1 Project software (Part3 Technology) administered by the Consultant will be used for purposes of managing communication and documents during the construction stage between Consultants, the Owner, and the Contractor.

.2 Contractor to prepare submittals in PDF form and upload them to the Architect's web-based Project software website. Enter required data in a web-based software site to fully identify the submittal.

.3 Part3 Technology has the ability to connect to some Contractor's project management software (Procore).

Part 2 Products - Not Used

Part 3 Execution - Not Used

END OF SECTION

SECTION 01 25 00
SUBSTITUTION PROCEDURES

Part 1 General

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.

Part 2 Products - Not Used

Part 3 Execution - Not Used

END OF SECTION

SECTION 01 26 00
CONTRACT MODIFICATION PROCEDURES

Part 1 General

1.1 SCHEDULE OF LABOUR RATES

.1 Prior to the first application for payment, submit for the Consultant's review a schedule of labour rates for all trades and classifications of trades, such as journeymen, apprentices, and foremen that will be employed in the Work. Provide a breakdown of payroll burden component of labour rates.

.2 Labour rates shall reflect the salaries, wages, and benefits paid to personnel in the direct employ of the Contractor, Subcontractors, and sub-Subcontractors, stated as hourly rates, that will be used when:

.1 preparing price quotations for Change Orders, and

.2 determining the cost of work attributable to Change Directives.

.3 Labour rates stated in the schedule of labour rates shall be consistent with rates that will actually be paid, and payroll burden costs that will actually be incurred, in the normal performance of the Work, during regular working hours. Labour rates shall not include any additional overhead and profit component.

.4 Where collective agreements apply, the labour rates shall not exceed those established by collective agreement.

.5 Obtain the Owner's written acceptance of the schedule of labour rates before submitting the first Change Order quotation.

.6 Accepted schedule of labour rates will be used solely for evaluating Change Order quotations and cost of performing work attributable to Change Directives.

.7 The Contractor may request amendments to the accepted schedule of labour rates if changes in the labour rates that will actually be paid, or payroll burden cost that will actually be incurred, in the normal performance of the Work can be demonstrated. Obtain the Owner's written acceptance of such changes.

1.2 SCHEDULE OF EQUIPMENT RATES

.1 Prior to the first application for payment, submit for the Consultant's review a schedule of equipment rates for Contractor owned Construction Equipment.

.2 Equipment rates shall reflect the rates that will be used when:

.1 preparing price quotations for Change Orders, and

.2 determining the cost of work attributable to Change Directives.

.3 Equipment rates stated in the schedule shall be consistent with local equipment rental market rates and shall not include any additional overhead and profit component.

.4 Obtain the Owner's written acceptance of the schedule of equipment rates before submitting the first Change Order quotation.

.5 Accepted schedule of equipment rates will be used solely for evaluating Change Order quotations and cost of performing work attributable to Change Directives.

.6 The Contractor may request amendments to the accepted schedule of equipment rates if changes in local equipment rental market rates can be demonstrated. Obtain the Owner's written acceptance of such changes.

1.3 METHOD OF CONTRACT PRICE ADJUSTMENT - CHANGE ORDERS

.1 .1 Unless otherwise agreed, the adjustment of the Contract Price on account of a proposed change in the Work shall be based on a quotation for a fixed price increase or decrease to the Contract Price regardless of the Contractor's actual expenditures and savings.

1.4 CHANGE ORDER PROCEDURES

.1 Upon issuance by the Consultant to the Contractor of a proposed change in the Work, and unless otherwise requested in the proposed change or unless otherwise agreed:

.1 Submit to the Consultant a fixed price quotation for the proposed change in the Work within 5 days after receipt of the proposed change in the Work.

.2 If requested in the proposed change, provide a detailed breakdown of the price quotation including the following to the extent applicable, with appropriate supporting documentation:

.1 Estimated labour costs, including hours and applicable hourly rates based on the accepted schedule of labour rates.

.2 Estimated Product costs, including Supplier quotations, estimated quantities and unit prices.

.3 Estimated Construction Equipment costs.

.4 Enumeration of all other estimated costs included in the price quotation.

.5 Estimated credit amounts for labour and Products not required on account of the proposed change.

.6 Fees, not exceeding the applicable percentages for overhead and profit as specified in this Section.

.7 Where applicable, Subcontractor quotations, also including a detailed breakdown of all of the above.

.3 Include in the quotation the increase or decrease to the Contract Time, if any, for the proposed change, stated in number of days.

.4 Include in the quotation the number of days for which the quotation is valid.

.5 The quotation will be evaluated by the Consultant and the Owner and, if accepted by the Owner, be documented in the form of a signed Change Order.

1.5 FEES FOR OVERHEAD AND PROFIT – CHANGE ORDERS

.1 Where the Contractor's price quotation for a Change Order results in a net increase to the Contract Price, the Contractor's entitlement to a fee for overhead and profit in the quotation shall be as follows, as applicable:

.1 For work to be performed by the Contractor's own forces, 10% of the Contractor's price quotation before the Contractor's fee is applied.

.2 For work to be performed by a Subcontractor, 5% of the Subcontractor's price quotation including the Subcontractor's fee.

.2 Where a Subcontractor's price quotation for a Change Order results in a net increase to the Subcontractor's contract price, the Subcontractor's entitlement to a fee for overhead and profit in the quotation shall be as follows, as applicable:

.1 For work to be performed by the Subcontractor's own forces, 10% of the Subcontractor's price quotation before the Subcontractor's fee is applied.

.2 For work to be performed by a sub-Subcontractor, 5% of the sub-Subcontractor's price quotation including the sub-Subcontractor's fee.

.3 Where the Contractor's or a Subcontractor's price quotation for a Change Order results in a net decrease in price before adjustment for fees for overhead and profit, such a price quotation shall be for the net decrease without any adjustment for fees for overhead and profit.

1.6 1.7 METHOD OF CONTRACT PRICE ADJUSTMENT - CHANGE DIRECTIVES

.1 Unless the Owner and the Contractor reach an earlier agreement on the adjustment to the Contract Price by means of a Change Order that cancels the Change Directive, the adjustment in the Contract Price for change carried out by way of a Change Directive shall be determined as specified in the General Conditions of Contract after the change in the Work is completed.

1.7 CHANGE DIRECTIVE PROCEDURES

.1 If a Change Directive is issued for a change in the Work for which a proposed change was previously issued, but no Change Order has yet been signed, the Change Directive shall cancel the proposed change and any Contractor quotations related to that change in the Work.

.2 When proceeding with a change in the Work under a Change Directive, keep accurate records of daily time sheets for labour and Construction Equipment, and invoices for Product and Construction Equipment costs. Submit such records to the Consultant [daily] [weekly], until the Change Order superseding the Change Directive is issued.

1.8 FEES FOR OVERHEAD AND PROFIT – CHANGE DIRECTIVES

.1 The Contractor's entitlement to a fee for overhead and profit on the Contractor's expenditures and savings attributable to a Change Directive shall be as follows, as applicable:

.1 For work performed by the Contractor's own forces, 10% of the Contractor's net increase in costs.

.2 For work performed by a Subcontractor, 5% of the sum of the Subcontractor's net increase in costs plus the Subcontractor's fee.

.2 A Subcontractor's entitlement to a fee for overhead and profit on the Subcontractor's expenditures and savings attributable to a Change Directive shall be as follows, as applicable:

.1 For work performed by the Subcontractor's own forces, 10% of the Subcontractor's net increase in costs.

.2 For work performed by a Sub-subcontractor, 5% of the sum of the Sub-subcontractor's net increase in costs plus the Sub-subcontractor's fee.

.3 Where a Change Directive results in net savings on account of work not required to be performed and a net decrease in the Contractor's or Subcontractor's cost, the net savings to the Contractor or Subcontractor shall be calculated without any adjustment for fees for overhead and profit.

.4 When a Change Directive is ultimately recorded as a Change Order, there shall be no additional entitlement to fees for overhead and profit beyond those specified in this article.

1.9 SUPPLEMENTAL INSTRUCTIONS

.1 The Consultant may issue Supplemental Instructions to provide clarifications to the Contract Documents, provide additional information, or make minor variations in the Work not involving adjustment in the Contract Price or Contract Time.

.2 If the Contractor considers a Supplemental Instruction to require an adjustment in Contract Price or Contract Time, the Contractor shall promptly notify the Consultant and the Owner in writing and shall not proceed with any work related to the Supplemental Instruction pending receipt of a Change Order, a Change Directive, or, in accordance with the dispute resolution provisions of the General Conditions of Contract, a Notice in Writing of a dispute and instructions to proceed.

Part 2 Products - Not Used

Part 3 Execution - Not Used

END OF SECTION

SECTION 01 29 00
PAYMENT PROCEDURES

Part 1 General

1.1 SCHEDULE OF VALUES

.1 Prior to the first application for payment, submit for *Consultant*'s review an initial schedule of values. Modify the initial schedule of values if and as requested by *Consultant*. Obtain *Consultant*'s written acceptance of the initial schedule of values prior to the first application for payment.

.2 Together with the first and all subsequent applications for payment, submit updated versions of the schedule of values to indicate the values, to the date of application for payment, of work performed and *Products* delivered to *Place of the Work*.

.3 Provide the schedule of values in an electronic spreadsheet format that provides for inclusion of the following information:

.1 Identifying information including title and location of the *Work*, name of *Contractor*, number and date of application for payment, and period covered by the application for payment.

.2 A work breakdown structure based on C*ontractor, Subcontractor* and sub-*Subcontractor* work breakdown. Include separate line items for closeout procedures including closeout submittals, demonstration and training, start-up and testing, and commissioning.

.3 Provisions for approved *Change Orders* allowances, unit price work [a so that the breakdown amounts indicated in the schedule of values aggregate to the current total *Contract Price*. Also provide for indicating the estimated value of *Change Directives* within the schedule of values, separately from the current total *Contract Price*.

.4 For each item in the work breakdown structure, provide as a minimum the following information, under headings as indicated:

.1 Breakdown Amount: A dollar amount, including an appropriate pro rata portion of *Contactor*'s overhead and profit.

.2 Performed to Date: The value of *Work* performed and *Products* delivered to *Place of the Work* up to the date of the application for payment, stated as a percentage of the *Contract Price* and in dollars.

.3 Previously Performed: The value of *Work* performed and *Products* delivered to the *Place of the Work* for which payment has been previously certified, stated in dollars.

.4 Current Period: The value of *Work* performed and *Products* delivered to *Place of the Work* for which *Contractor* is currently applying for payment, stated in dollars.

.5 Balance to Complete: The value of *Work* not yet performed and *Products* not yet delivered to *Place of the Work*, stated in dollars.

1.2 CASH FLOW PROJECTION

.1 Prior to the first application for payment submit, for *Consultant*'s review, a forecast of approximate monthly progress payments for each month of the *Contract Time*.

1.3 WORKERS' COMPENSATION CLEARANCE

.1 Submit proof of workers' compensation clearance with each application for payment.

1.4 STATUTORY DECLARATIONS

.1 Submit a statutory declaration in the form of CCDC 9A – Statutory Declaration of Progress Payment Distribution by *Contractor* with each application for payment except the first.

Part 2 Products - Not Used

Part 3 Execution - Not Used

END OF SECTION

SECTION 01 31 19
PROJECT MEETINGS

Part 1 General

1.1 CONSTRUCTION START UP MEETING

.1 Promptly after *Contract* award, *Consultant* will establish the time and location of a construction start-up meeting to review and discuss administrative procedures and responsibilities. *Consultant* will notify *Contractor* at least 5 *Working Days* before the meeting.

.2 Senior representatives of *Owner*, *Consultant*, and *Contractor*, including *Contractor*'s project manager and site superintendent, shall be in attendance.

.3 *Consultant*'s representative will chair the meeting and record and distribute the minutes.

.4 Agenda will include following:

.1 Appointment of official representatives of *Owner*, *Contractor*, *Subcontractors*, *Consultant*, and subconsultants.

.2 *Project* communications.

.3 *Contract Documents* for construction purposes.

.4 Documents at the site.

.5 *Contractor*'s use of premises.

.6 *Owner*-supplied *Products*.

.7 Work restrictions.

.8 Cash allowances.

.9 *Contract* modification procedures.

.10 Payment procedures.

.11 Construction progress meetings.

.12 Construction progress schedule, including long lead time items.

.13 Submittals schedule and procedures.

.14 Quality requirements, including testing and inspection procedures.

.15 Contractor's mobilization.

.16 Temporary utilities.

.17 Existing utility services.

.18 Construction facilities.

.19 Temporary barriers and enclosures.

.20 Temporary controls.

.21 Field engineering and layout of work.

.22 Site safety.

.23 Site security.

.24 Cleaning and waste management.

.25 Closeout procedures and submittals.

.26 Other items.

1.2 CONSTRUCTION PROGRESS MEETINGS

.1 Schedule regular **monthly** construction progress meetings for the duration of the *Work*. *Consultant* will prepare meeting agendas, chair the meetings, and record and distribute the minutes.

.2 Location of Meetings:

.1 Electronic

.3 *Consultant* will record in the meeting minutes significant decisions and identify action items and action dates by attendees or the parties they represent.

.4 *Consultant* will distribute copies of minutes within three Working Days after each meeting to meeting attendees and any affected parties who may not be in attendance.

.5 Ensure that *Subcontractors* attend as and when appropriate to the progress of the *Work*.

.6 Agenda for each meeting shall include the following, as a minimum:

.1 Approval of minutes of previous meeting.

.2 Work progress since previous meeting.

.1 Contractor to provide a written progress update prior to the meeting.

.3 Field observations, including any problems, difficulties, or concerns.

.4 Construction progress schedule.

.5 Proposed changes in the *Work*.

.6 Requests for information.

.7 Site safety issues.

.8 Other business.

Part 2 Products - Not Used

Part 3 Execution - Not Used

END OF SECTION

SECTION 01 32 00
CONSTRUCTION PROGRESS DOCUMENTATION

Part 1 General

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, preparation and review of mock-ups, *Owner* decisions for cash allowances, shutdown or closure activities, delivery of *Owner* supplied Products, *Owner* performed work, 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 15 *Working Days* after *Contract* award.

.2 Submit schedule via e-mail and project web site 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..

.6 Include a written report with each updated progress schedule. Indicate work status to date comparing baseline to actual progress, current forecasts, identifying problem areas, anticipated delays and impact on schedule, and planned corrective actions.

1.3 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.

1.4 RECORDING ACTUAL SITE CONDITIONS ON AS-BUILT DRAWINGS

.1 Obtain a hard copy set of construction *Drawings* for the purpose of creating as-built drawings. Record information and maintain as-built drawings in clean, dry and legible condition.

.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.

1.5 PROGRESS PHOTOGRAPHS

.1 Arrange for weekly/monthly 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 or a project web site weekly.

.4 Do not use progress or any other *Project* photographs for promotional purposes without *Owner*’s written consent.

Part 2 Products - Not Used

Part 3 Execution - Not Used

END OF SECTION

SECTION 01 33 00
SUBMITTAL PROCEDURES

Part 1 General

1.1 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 imperial 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. If construction *Drawings* are used for this purpose, remove references to *Consultant*.

.9 Do not propose Substitutions or deviations from *Contract Documents* via *Shop Drawing*, *Product* data and sample submittals.

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 .1 *Shop Drawing* submittals shall include:

- .1 .1 Date and revision dates.
- .2 .1 *Project* title and number.
- .3 .1 Name and address of:
  - .1 .1 *Subcontractor*.
  - .2 .1 *Supplier*.
  - .3 .1 Manufacturer.

.4 .1 *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 .1 Details of appropriate portions of the *Work* as applicable:

.1 .1 Fabrication.

.2 .1 Layout, showing dimensions, including identified field dimensions, and clearances.

.3 .1 Setting or erection details.

.4 .1 Capacities.

.5 .1 Performance characteristics.

.6 .1 Standards.

.7 .1 Operating weight.

.8 .1 Wiring diagrams.

.9 .1 Single line and schematic diagrams.

.10 .1 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 5 *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*.

Part 2 Products - Not Used

Part 3 Execution - Not Used

END OF SECTION

SECTION 01 40 00
QUALITY REQUIREMENTS

Part 1 General

1.1 REFERENCE STANDARDS

.1 "Reference standards" means consensus standards, trade association standards, guides, and other publications expressly referenced in *Contract Documents*.

.2 Where an edition or version date is not specified, referenced standards shall be deemed to be the latest edition or revision issued by the publisher at the time of bid closing. However if a particular edition or revision date of a specified standard is referenced in an applicable code or other regulatory requirement, the regulatory referenced edition or version shall apply.

.3 Reference standards establish minimum requirements. If *Contract Documents* call for requirements that differ from a referenced standard, the more stringent requirements shall govern.

.4 If compliance with two or more reference standards is specified and the standards establish different or conflicting requirements, comply with the most stringent requirement. Refer uncertainties to *Consultant* for clarification.

.5 Within the *Specifications*, reference may be made to the following standards writing, testing, or certification organizations by their acronyms or initialisms:

.1 AA - Aluminum Association

.2 ACI - American Concrete Institute

.3 AISC - American Institute of Steel Construction

.4 ANSI - American National Standards Institute

.5 ASME - American Society of Mechanical Engineers

.6 ASTM - American Society for Testing and Materials

.7 AWMAC - Architectural Woodwork Manufacturers Association of Canada

.8 AWPA - American Wire Producers Association

.9 CaGBC - Canadian Green Building Council

.10 CGSB - Canadian General Standards Board

.11 CISC - Canadian Institute of Steel Construction

.12 CPCI - Canadian Prestressed Concrete Institute

.13 CSA - Canadian Standards Association

.14 CSSBI - Canadian Sheet Steel Building Institute

.15 CWB – Canadian Welding Bureau

.16 ICEA - Insulated Cable Engineers Association

.17 IEEE - Institute of Electrical and Electronics Engineers

.18 IGMAC – Insulating Glass Manufacturers Association of Canada

.19 LEED - Leadership in Energy and Environmental Design

.20 MPP – Master Painters Institute

.21 MSS - Manufacturers Standardization Society of the Valve and Fittings Industry

.22 NAAMM - National Association of Architectural Metal Manufacturers

.23 NEMA - National Electrical Manufacturers Association

.24 NFPA - National Fire Protection Association

.25 NHLA - National Hardwood Lumber Association

.26 NLGA - National Lumber Grades Authority

.27 SSPC – The Society for Protective Coatings

.28 TTMAC - Terrazzo, Tile and Marble Association of Canada

.29 ULC - Underwriters' Laboratories of Canada

Part 2 Products - Not Used

Part 3 Execution - Not Used

END OF SECTION

SECTION 01 41 00
REGULATORY REQUIREMENTS

Part 1 General

1.1 SECTION INCLUDES

.1 Laws, notices, permits and fees.

1.2 LAWS, NOTICES, PERMITS AND FEES

.1 The laws of the Place of the Work shall govern the Work.

.2 The Contractor shall obtain and pay for the building permit, permanent easements and rights of servitude. The Contractor shall be responsible for permits, licenses or certificates necessary for the performance of the Work that were in force at the date of executing the Agreement.

.3 Give the required notices and comply with the laws, ordinances, rules, regulations or codes which are or become in force during the performance of the Work and which relate to the Work, to the preservation of the public health and to construction safety.

.4 If the Contractor knowingly performs or allows work to be performed that is contrary to any laws, ordinances, rules, regulations or codes, the Contractor shall be responsible for and shall correct the violations thereof; and shall bear the costs, expenses and damages attributable to the failure to comply with the provisions of such laws, ordinances, rules, regulations or codes.

.5 Determine detailed requirements of authorities having jurisdiction.

.6 Pay construction damage deposits levied by municipality in connection with the issuance of a building permit.

1.3 HAZARDOUS MATERIAL DISCOVERY

.1 Asbestos: If material resembling asbestos is encountered in course of demolition work, immediately stop work and notify Consultant.

END OF SECTION

SECTION 01 51 00
TEMPORARY UTILITIES

Part 1 General

1.1 TEMPORARY UTILITIES - GENERAL

.1 Provide temporary utilities as specified and as otherwise necessary to perform the *Work* expeditiously.

.2 Remove temporary utilities after use.

1.2 TEMPORARY WATER SUPPLY

.1 Connect to and use *Owner*'s existing water supply for temporary use during construction, subject to existing available volume and pressure. Usage at no cost to *Contractor.*

.2 Arrange and pay for necessary water supply connections and disconnections.

1.3 TEMPORARY HEATING AND VENTILATION

.1 Arrange and pay for temporary heating and ventilation required during construction.

.2 *Contractor* may connect to and use *Owner*'s existing supply of natural gas for temporary use during construction, subject to existing available volume and pressure. Usage at no cost to *Contractor*.

.3 Vent construction heaters in enclosed spaces to the outside or use flameless type of construction heaters.

.4 Provide temporary heat for the *Work* as required to:

.1 Facilitate progress of *Work*.

.2 Protect the *Work* against dampness and cold.

.3 Prevent moisture condensation on surfaces, freezing, or other damage to finishes or stored *Products*.

.4 Maintain specified minimum ambient temperatures and humidity levels for storage, installation and curing of *Products*.

.5 After building is enclosed, maintain interior temperature of minimum 10 degrees C.

.5 Provide temporary ventilation for the *Work* as required to:

.1 Prevent accumulations of fumes, exhaust, vapours, gases and other hazardous, noxious, or volatile substances in enclosed spaces, as required to maintain a safe work environment meeting applicable regulatory requirements.

.2 Ventilate temporary sanitary facilities.

1.4 TEMPORARY ELECTRICAL POWER AND LIGHTING

.1 Connect to and use *Owner*'s existing electrical supply for temporary use during construction. Usage at no cost to *Contractor*.

.2 Arrange and pay for necessary connections and disconnections of temporary power and lighting in accordance with regulatory requirements.

1.5 EXISTING BUILDING HEATING, VENTILATION, POWER, AND LIGHTING

.1 Existing building heating, ventilation, power, and lighting may be relied upon and used during construction except during hours or days when the building is not operational.

Part 2 Products - Not Used

Part 3 Execution - Not Used

END OF SECTION

SECTION 01 52 00
CONSTRUCTION FACILITIES

Part 1 General

1.1 CONTRUCTION FACILITIES - GENERAL

.1 Provide temporary construction facilities as necessary for performance of the *Work* and in compliance with applicable regulatory requirements.

.2 Maintain temporary construction facilities in good condition for the duration of the *Work*.

.3 Remove temporary construction facilities from *Place of the Wor*k when no longer required.

1.2 CONSTRUCTION PARKING

.1 Parking will be permitted at *Place of the Work* at locations provided by the Owner, provided it does not disrupt continuing operation of the facilityn

1.3 VEHICULAR ACCESS

.1 Provide and maintain adequate access to *Place of the Work*.

.2 Existing roads at *Place of the Work* may be used for access to *Place of the Work*, provided *Contractor* assumes responsibility for any damage caused by construction traffic, and prevents or promptly cleans up any mud tracking or material spillage.

1.4 SITE OFFICES

.1 Provide a temperature controlled and ventilated office, with suitable lighting, of sufficient size to accommodate site meetings and furnished with drawing laydown table.

1.5 SANITARY FACILITIES

.1 Provide sanitary facilities for workers.

.2 Do not use permanent washroom facilities during construction.

.3 Keep sanitary facilities clean and fully stocked with the necessary supplies.

1.6 FIRE PROTECTION

.1 Provide and maintain temporary fire protection systems and equipment during construction.

Part 2 Products - Not Used

Part 3 Execution - Not Used

END OF SECTION

SECTION 01 56 00
TEMPORARY BARRIERS AND ENCLOSURES

Part 1 General

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 Wor*k 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 FENCING

.1 Erect temporary security and safety site fencing of type and height determined by *Contractor*, subject to applicable regulatory requirements.

.2 Erect temporary security and safety site fencing, minimum 2.0 m high, using self-supporting wire fence sections enclosing entire site. Maintain site fencing in good repair until removed.

.3 Provide lockable access gates as required to facilitate construction access.

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*.

Part 2 Products - Not Used

Part 3 Execution - Not Used

END OF SECTION

SECTION 01 61 00
COMMON PRODUCT REQUIREMENTS

Part 1 General

1.1 GENERAL

.1 Provide *Products* that are not damaged or defective, and suitable for purpose intended, subject to specified requirements. If requested by *Consultant*, furnish evidence as to type, source and quality of *Products* provided.

.2 Unless otherwise specified, maintain uniformity of manufacture for like items throughout.

.3 Permanent manufacturer's markings, labels, trademarks, and nameplates on *Products* are not acceptable in prominent locations, except where required by regulatory requirements or for operating instructions, or when located in mechanical or electrical rooms.

1.2 PRODUCT OPTIONS

.1 Subject to the provisions of Section 01 25 00 –Substitution Procedures:

.1 Wherever a *Product* or manufacturer is specified by a single proprietary name, provide the named *Product* only.

.2 Wherever more than one *Product* or manufacturer is specified by proprietary name for a single application, provide any one of the named *Products*.

.2 Wherever a *Product* is specified by reference to a standard only, provide any *Product* that meets or exceeds the specified standard. If requested by *Consultant*, submit information verifying that the proposed *Product* meets or exceeds the specified standard.

.3 Wherever a *Product* is specified by descriptive or performance requirements only, provide any *Product* that meets or exceeds the specified requirements. If requested by *Consultant*, submit information verifying that the proposed *Product* meets or exceeds the specified requirements.

1.3 PRODUCT AVAILABILITY AND DELIVERY TIMES

.1 Promptly upon Contract award and periodically during construction, review and confirm *Product* availability and delivery times. Order *Products* in sufficient time to meet the construction progress schedule and the *Contract Time*.

.2 If a specified *Product* is no longer available, promptly notify *Consultant*. *Consultant* will take action as required.

.3 If delivery delays are foreseeable, for any reason, promptly notify *Consultant*.

.1 If a delivery delay is beyond *Contractor*'s control, *Consultant* will provide direction.

.2 If a delivery delay is caused by something that was or is within *Contractor*'s control, *Contractor* shall propose actions to maintain the construction progress schedule for *Consultant*'s review and acceptance.

1.4 STORAGE, HANDLING, AND PROTECTION

.1 Store, handle, and protect *Products* during transportation to *Place of the Work* and before, during, and after installation in a manner to prevent damage, adulteration, deterioration and soiling.

.2 Comply with manufacturer's instructions for storage, handling and protection.

.3 Store packaged or bundled *Products* in original and undamaged condition with manufacturer's seals and labels intact. Do not remove from packaging or bundling until required in *Work*.

.4 Comply with the requirements of the workplace hazardous materials information system (WHMIS) regarding use, handling, storage, and disposal of hazardous materials, including requirements for labeling and the provision of material safety data sheets (MSDS).

.5 Store *Products* subject to damage from weather in weatherproof enclosures.

.6 Store sheet *Products* on flat, solid, supports and keep clear of ground. Slope to shed moisture.

.7 Remove and replace damaged *Products*.

Part 2 Products - Not Used

Part 3 Execution - Not Used

END OF SECTION

SECTION 01 71 00
EXAMINATION AND PREPARATION

Part 1 General

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.

Part 2 Products - Not Used

Part 3 Execution - Not Used

END OF SECTION

SECTION 01 73 00
EXECUTION

Part 1 General

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 Space anchors within individual load limit or shear capacity and ensure they provide positive permanent anchorage.

.4 Keep exposed fastenings to a minimum, space evenly and install neatly.

.5 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.

Part 2 Products - Not Used

Part 3 Execution - Not Used

END OF SECTION

SECTION 01 73 29
CUTTING AND PATCHING

Part 1 General

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 Efficiency, maintenance, or safety of any operational element.
- .3 Visual qualities of sight-exposed elements.
- .4 Warranty of *Products* affected.

.2 Include in request:

- .1 Location and description of affected work, including drawings or sketches as required.
- .2 Description of proposed work, and *Products* to be used.
- .3 Alternatives to cutting and patching.
- .4 Written permission of affected other contractors.
- .5 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 Where the *Work* involves breaking into or connecting to existing services, give *Owner* 48 hours notice for necessary interruption of mechanical or electrical services.

.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.

Part 2 Products - Not Used

Part 3 Execution - Not Used

END OF SECTION

SECTION 01 74 00
CLEANING AND WASTE MANAGEMENT

Part 1 General

1.1 REGULATORY REQUIREMENTS

.1 Comply with applicable regulatory requirements when disposing of waste materials.

.2 Obtain permits from authorities having jurisdiction and pay disposal fees where required for disposal of waste materials and recyclables.

1.2 GENERAL CLEANING REQUIREMENTS

.1 Provide adequate ventilation during use of volatile or noxious substances. Do not rely on building ventilation systems for this purpose.

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

.3 Prevent cross-contamination during the cleaning process.

.4 Notify the *Consultant* of the need for cleaning caused by *Owner* or other contractors.

1.3 PROGRESSIVE CLEANING AND WASTE MANAGEMENT

.1 Maintain the *Work* in a tidy and safe condition, free from accumulation of waste materials and construction debris.

.2 Provide appropriate, clearly marked, containers for collection of waste materials and recyclables.

.3 Remove waste materials and recyclables from work areas, separate, and deposit in designated containers at end of each *Working Day*. Collect packaging materials for recycling or reuse.

.4 Remove waste materials and recyclables from *Place of the Work* at regular intervals.

.5 Clean interior building areas prior to start of finish work and maintain free of dust and other contaminants during finishing operations.

.6 Schedule cleaning operations so that resulting dust, debris and other contaminants will not fall on wet, newly finished surfaces nor contaminate building systems.

.7 Clear snow and ice from public sidewalks as required to comply with applicable municipal regulatory requirements.

1.4 FINAL CLEANING

.1 Remove from *Place of the Work* surplus *Products*, waste materials, recyclables, *Temporary Work*, and *Construction Equipment* not required to perform any remaining work.

.2 Provide professional cleaning by a qualified, established cleaning company.

.3 Lock or otherwise restrict access to each room or area after completing final cleaning in that area.

.4 Re-clean as necessary areas that have been accessed by *Contractor*'s workers prior to *Owner* occupancy.

.5 Remove stains, spots, marks, and dirt from finished surfaces, electrical and mechanical fixtures, furniture fitments, walls, floors and ceilings.

.6 Clean and polish glass, mirrors, hardware, wall tile, stainless steel, chrome, porcelain enamel, baked enamel, plastic laminate, and all other finished surfaces, including mechanical and electrical fixtures. Replace broken, scratched or otherwise damaged glass.

.7 Remove dust from lighting reflectors, lenses, lamps, bulbs, and other lighting surfaces.

.8 Vacuum clean and dust exposed wall, floor, and ceiling surfaces, behind grilles, louvres and screens,

.9 Clean new mechanical, electrical, and other equipment. Replace filters for mechanical equipment if equipment is used during construction.

1.5 WASTE MANAGEMENT AND DISPOSAL

.1 Dispose of waste materials and recyclables at appropriate municipal landfills and recycling facilities in accordance with applicable regulatory requirements.

.2 Do not burn or bury waste materials at *Place of the Work*.

.3 Do not dispose of volatile and other liquid waste such as mineral spirits, oil, paints and other coating materials, paint thinners, cleaners, and similar materials together with dry waste materials or on the ground, in waterways, or in storm or sanitary sewers. Collect such waste materials in appropriate covered containers, promptly remove from *Place of the Work*, and dispose of at recycling facilities or as otherwise permitted by applicable regulatory requirements.

.4 Cover or wet down dry waste materials to prevent blowing dust and debris.

Part 2 Products - Not Used

Part 3 Execution - Not Used

END OF SECTION

SECTION 01 77 00
CLOSEOUT PROCEDURES

Part 1 General

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 *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* and the *Contractor* shall arrange a mutually satisfactory agreed date and time to jointly review the *Work*. The *Consultant* will advise the *Contractor* whether or not the *Work* is *Ready-for-Takeover*. Add additional items, if any, to the *Contractor*'s list of items to be completed or corrected. Provide the *Consultant* with a copy of the revised list.

.4 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.

.5 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*.

Part 2 Products - Not Used

Part 3 Execution - Not Used

END OF SECTION

SECTION 01 78 00
CLOSEOUT SUBMITTALS

Part 1 General

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* in hard copy and electronic format. Provide three hard copies.

1.2 OPERATION AND MAINTENANCE MANUAL FORMAT

.1 Organize data in the form of an instructional manual.

.2 Binders: vinyl, hard covered, three D-rings, loose leaf, 216 x 279 mm, with spine and face pockets.

.3 When multiple binders are used, correlate data into related consistent groupings. Identify contents of each binder on spine.

.4 Cover: Identify each binder with typed or printed title “Operation and Maintenance Manual”, name of Project or facility, and subject matter of contents.

.5 Arrange content by systems under Section numbers and sequence of Table f Contents.

.6 Provide tabbed fly leaf for each separate *Product* or system, with typed description of *Product* and major component parts of equipment.

.7 Text: Manufacturer's printed data, or typewritten data.

.8 Drawings: provide with reinforced punched binder tab. Bind in with text; fold larger drawings to size of text pages.

.9 Provide electronic copy of manual in PDF format.

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.

.3 For each *Product* or system, include complete contact information for *Subcontractors*, *Suppliers* and manufacturers, including local sources for supplies and replacement parts.

.4 *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.

.5 Reviewed *Shop Drawings*.

.6 Permits, certificates, letters of assurance and other relevant documents issued by or required by authorities having jurisdiction.

.7 Warranties.

.8 Operating and maintenance procedures, incorporating manufacturer's operating and maintenance instructions, in a logical sequence.

.9 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.

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 *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*, in electronic format.

.2 Mark revised drawings as "RECORD DRAWINGS".

.3 Submit completed record drawings in electronic form to *Consultant.*

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.

Part 2 Products - Not Used

Part 3 Execution - Not Used

END OF SECTION

SECTION 01 79 00
DEMONSTRATION AND TRAINING

Part 1 General

1.1 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 reports 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.

.4 Submit video record of demonstration and training together with report.

1.2 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*.

1.3 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.

Part 2 Products - Not Used

Part 3 Execution - Not Used

END OF SECTION

SECTION 01 91 00
GENERAL COMMISSIONING REQUIREMENTS

Part 1 General - Not Used

Part 2 Products - Not Used

Part 3 Execution - Not Used

END OF SECTION

SECTION 02 41 19
SELECTIVE DEMOLITION

Part 1 General

1.1 SECTION INCLUDES

.1 Alteration project procedures.

.2 Removal of designated building equipment and fixtures.

.3 Removal of designated construction.

.4 Identification of utilities.

1.2 ALTERATION PROJECT PROCEDURES

.1 Materials: As specified in Product sections; match existing Products and work for patching and extending work.

.2 Employ skilled and experienced installer to perform alteration work.

.3 Close openings in exterior surfaces to protect existing work from weather and extremes of temperature and humidity.

.4 Remove, cut, and patch Work in a manner to minimize damage and to provide means of restoring Products and finishes to specified condition.

.5 Refinish existing visible surfaces to remain in renovated rooms and spaces, to specified condition for each material, with a neat transition to adjacent finishes.

.6 Where new Work abuts or aligns with existing, provide a smooth and even transition. Patch Work to match existing adjacent Work in texture and appearance.

.7 When finished surfaces are cut so that a smooth transition with new Work is not possible, terminate existing surface along a straight line at a natural line of division and submit recommendation to Consultant for review.

.8 Where a change of plane of 6 mm or more occurs, submit recommendation for providing a smooth transition; to Consultant for review.

.9 Patch or replace portions of existing surfaces which are damaged, lifted, discoloured, or showing other imperfections.

.10 Finish surfaces as specified in individual Product sections.

1.3 ADMINISTRATIVE REQUIREMENTS

.1 Sequencing: Sequence work to requirements of Section 01 11 00.

.2 Scheduling: Schedule work to requirements of Section 01 31 00.

1.4 CLOSEOUT SUBMITTALS

.1 Section 01 78 00: Submission procedures.

.2 Record Documentation: Accurately record actual locations of subsurface obstructions and capped utilities.

1.5 SITE CONDITIONS

.1 Conduct demolition to minimize interference with adjacent and occupied building areas.

.2 Cease operations immediately if structure appears to be in danger and notify Consultant. Do not resume operations until directed.

Part 2 Products

2.1 DESCRIPTION

.1 Regulatory Requirements:

.1 Conform to applicable code for demolition work, dust control, products requiring electrical reconnection.

.2 Obtain required permits from authorities.

.3 Do not close or obstruct egress width to any building or site exit.

.4 Do not disable or disrupt building fire or life safety systems without three (3) days prior written notice to Owner.

.5 Conform to applicable regulatory procedures when discovering hazardous or contaminated materials.

Part 3 Execution

3.1 PREPARATION

.1 Provide, erect, and maintain temporary barriers at locations indicated.

.2 Erect and maintain weatherproof closures for exterior openings.

.3 Erect and maintain temporary partitions to prevent spread of dust, odours, and noise to permit continued Owner occupancy.

.4 Protect existing materials which are not to be demolished.

.5 Notify affected utility companies before starting work and comply with their requirements.

.6 Mark location and termination of utilities.

3.2 DEMOLITION

.1 Disconnect cap designated utilities within demolition areas.

.2 Demolish in an orderly and careful manner. Protect existing supporting structural members.

.3 Remove demolished materials from site except where specifically noted otherwise. Do not burn or bury materials on site.

.4 Remove materials as Work progresses. Upon completion of Work, leave areas in clean condition.

.5 Remove temporary Work.

END OF SECTION

SECTION 03 01 30.61
RESURFACING OF CAST-IN-PLACE CONCRETE

Part 1 General

1.1 REFERENCE STANDARDS

.1 ASTM C778-17 - Standard Specification for Standard Sand.

.2 ASTM C881/C881M-15 - Standard Specification for Epoxy-Resin-Base Bonding Systems for Concrete.

.3 ASTM C1059/C1059M-13 - Standard Specification for Latex Agents for Bonding Fresh To Hardened Concrete.

.4 ASTM D4381/D4381M-12 - Standard Test Method for Sand Content by Volume of Bentonitic Slurries.

.5 CSA-A23.1-19/A23.2-19 - Concrete Materials and Methods of Concrete Construction/Test Methods and Standard Practices for Concrete.

1.2 ADMINISTRATIVE REQUIREMENTS

.1 Section 01 31 00: Project management and coordination procedures.

Part 2 Products

2.1 MATERIALS

.1 Water for Blasting: Clean drinkable water, no visible impurities.

.2 Bonding Agent to Hardened Concrete: Cement/sand grout to CSA-A23.1/A23.2 with latex agent to ASTM C1059.

.3 Bonding Agent to Hardened Concrete: ASTM C881/C881M, epoxy resin.

Part 3 Execution

3.1 EXAMINATION

.1 Verify that surfaces are ready to receive work.

3.2 PREPARATION

.1 Prepare and protect adjacent work from damage.

3.3 CLEANING

.1 Clean concrete surfaces of dirt or other contamination; wire brush using water; rinse surface and allow to dry.

.2 Flush out cracks and voids with water to remove laitance and dirt. Chemically neutralize by rinsing with water.

END OF SECTION

SECTION 04 05 10
MASONRY MORTAR AND GROUT

Part 1 General

1.1 SECTION INCLUDES

.1 Mortar and grout for masonry.

1.2 REFERENCE STANDARDS

.1 ASTM C207-18 - Standard Specification for Hydrated Lime for Masonry Purposes.

.2 ASTM C494/C494M-19 - Standard Specification for Chemical Admixtures for Concrete.

.3 ASTM C780-19 - Standard Test Method for Preconstruction and Construction Evaluation of Mortars for Plain and Reinforced Unit Masonry.

.4 ASTM C1329/C1329M-16a - Standard Specification for Mortar Cement.

.5 ASTM C1489-15 - Standard Specification for Lime Putty for Structural Purposes.

.6 CAN/CSA-A179-14 (R2019) - Mortar and Grout for Unit Masonry.

.7 CAN/CSA-A371-14 (R2019) - Masonry Construction for Buildings.

.8 CSA-A3000-18 - Cementitious Materials Compendium.

.9 CSA-S304-14 (R2019) - Design of Masonry Structures.

1.3 CLOSEOUT SUBMITTALS

.1 Section 01 78 00: Submission procedures.

1.4 DELIVERY, STORAGE, AND HANDLING

.1 Section 01 61 00: Transport, handle, store, and protect products.

.2 Maintain packaged materials clean, dry, and protected against dampness, freezing, and foreign matter.

1.5 SITE CONDITIONS

.1 Maintain materials and surrounding air temperature to minimum 5 degrees C prior to, during, and forty-eight (48) hours after completion of masonry work.

.2 Cold and Hot Weather Requirements: CAN/CSA-A371.

Part 2 Products

2.1 MATERIALS

.1 Use same brands of materials and source of aggregate for entire project.

.2 Mortar and grout: CSA A179.

.3 Use aggregate passing 1.18 mm sieve where 6 mm thick joints are indicated.

.4 Mortar for interior masonry:

.1 Loadbearing: type S based on Property specifications.

.2 Non-Loadbearing: type N based on Property specifications.

.5 Following applies regardless of mortar types and uses specified above:

.1 Mortar for grouted reinforced masonry: type S based on Property specifications.

.2 Mortar for pointing: type S based on Proportion specifications.

.6 Non-Staining mortar: use non-staining masonry cement for cementitious portion of specified mortar type.

.7 Grout: to CSA A179, Table 3.

2.2 MIXES

.1 Colour and admixtures: mix grout to semi-fluid consistency.

.2 Pointing mortar: prehydrate pointing mortar by mixing ingredients dry, then mix again adding just enough water to produce damp unworkable mix that will retain its form when pressed into ball. Allow to stand for not less than 1 hour nor more than 2 hours then remix with sufficient water to produce mortar of proper consistency for pointing.

2.3 MORTAR MIXING

.1 Mix mortar ingredients to CAN/CSA-A179 in quantities needed for immediate use.

.2 Add admixtures to manufacturer's written instructions. Provide uniformity of mix and colouration.

.3 Do not use antifreeze liquids, calcium chloride, frost inhibitors based on calcium chloride, salts or other substances used for lowering the freezing point or accelerating setting time.

.4 If moisture is lost by evaporation, retemper as directed by the manufacturer.

.5 Use mortar within period specified by mortar manufacturer.

Part 3 Execution

3.1 EXAMINATION

.1 Section 01 71 00: Verify existing conditions before starting work.

.2 Request inspection of spaces to be grouted.

3.2 PREPARATION

.1 Apply bonding agent to existing concrete surfaces.

.2 Plug clean-out holes with brick masonry units. Brace masonry for wet grout pressure.

3.3 INSTALLATION

.1 Install mortar and grout to CAN/CSA-A179.

.2 Do masonry mortar and grout work in accordance with CSA A179 except where specified otherwise.

END OF SECTION

SECTION 04 05 19
MASONRY ANCHORAGE AND REINFORCING

Part 1 General

1.1 REFERENCE STANDARDS

.1 ASTM A1064/A1064M-18a - Standard Specification for Carbon-Steel Wire and Welded Wire Reinforcement, Plain and Deformed, for Concrete.

.2 ASTM A123/A123M-17 - Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products.

.3 ASTM A153/A153M-16a - Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware.

.4 ASTM A307-14e1 - Standard Specification for Carbon Steel Bolts and Studs, 60 000 PSI Tensile Strength.

.5 ASTM A580/A580M-18 - Standard Specification for Stainless Steel Wire.

.6 ASTM A666-15 - Standard Specification for Annealed or Cold-Worked Austenitic Stainless Steel Sheet, Strip, Plate, and Flat Bar.

.7 ASTM A780/A780M-09(2015) - Standard Practice for Repair of Damaged and Uncoated Areas of Hot-Dip Galvanized Coatings.

.8 ASTM A1018/A1018M-18 - Standard Specification for Steel, Sheet and Strip, Heavy-Thickness Coils, Hot-Rolled, Carbon, Commercial, Drawing, Structural, High-Strength Low-Alloy, High-Strength Low-Alloy with Improved Formability, and Ultra-High Strength.

.9 ASTM A1011/A1011M-18a - 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.

.10 ASTM C1242-19a - Standard Guide for Selection, Design, and Installation of Dimension Stone Attachment Systems.

.11 CSA-A23.1-19/A23.2-19 - Concrete Materials and Methods of Concrete Construction/Test Methods and Standard Practices for Concrete.

.12 CSA-G30.18-09 (R2014) - Carbon Steel Bars for Concrete Reinforcement.

.13 CSA-G40.20-13/G40.21-13 (R2018) - General Requirements for Rolled or Welded Structural Quality Steel/ Structural Quality Steel.

.14 CAN/CSA-A370-14 (R2018) - Connectors for Masonry.

.15 CAN/CSA-A371-14 (R2019) - Masonry Construction for Buildings.

.16 CSA-S304-14 (R2019) - Design of Masonry Structures.

1.2 CLOSEOUT SUBMITTALS

.1 Section 01 78 00: Submission procedures.

Part 2 Products

2.1 MATERIALS

.1 Steel Wire: ASTM A1064/A1064M .

.2 Steel Bars, Bars, Plates, Angles: CSA-G40.20/G40.21, Type W.

.3 Steel Bolts: ASTM A307, Type A.

.4 Stainless Steel Wire: ASTM A580/A580M, Type 304 or 316.

.5 Stainless Steel Sheet: ASTM A167, Type 304 or 316.

2.2 MASONRY CONNECTORS

.1 Single Wythe Joint Reinforcement (Type 1): CAN/CSA-A370, continuous Ladder type; cold drawn steel wire, hot dip galvanized to ASTM A123/A123M after fabrication, Fero Thermal Ties or an approved equal.

.2 Bar Reinforcing Steel: CSA-G30.18, Grade 300R, deformed billet bars, galvanized to ASTM A123/A123M.

.3 Hardware and Bolts: Hot dip galvanized to ASTM A153/A153M after fabrication.

2.3 FABRICATION

.1 Fabricate connectors to CAN/CSA-A370.

.2 Fabricate bar reinforcing to CSA-A23.1/A23.2.

.3 Fabricate reinforcing in accordance with CAN/CSA-A23.1 and Reinforcing Steel Manual of Standard Practice by the Reinforcing Steel Institute.

.4 Obtain Consultant's approval for locations of reinforcement splices other than shown on placing drawings.

.5 Upon approval of Consultant, weld reinforcement in accordance with CSA W186

.6 Ship reinforcement and connectors, clearly identified in accordance with drawings.

2.4 SOURCE QUALITY CONTROL

.1 Upon request, provide Consultant with certified copy of mill test report of reinforcement steel and connectors, showing physical and chemical analysis, minimum 2 weeks prior to commencing reinforcement work.

.2 Upon request inform Consultant of proposed source of material to be supplied.

Part 3 Execution

3.1 MANUFACTURER'S INSTRUCTIONS

.1 Compliance: comply with manufacturer's written data, including product technical bulletins, product catalogue installation instructions, product carton installation instructions, and data sheets.

3.2 GENERAL

.1 Supply and install masonry connectors and reinforcement in accordance with CSA-A370, CSA-A371, CAN/CSA-A23.1 and CSA-S304.1 unless indicated otherwise.

.2 Prior to placing concrete, mortar, grout, obtain Consultant's approval of placement of reinforcement and connectors.

.3 Supply and install additional reinforcement to masonry as indicated.

3.3 BONDING AND TYING

.1 Bond walls of two or more wythes using metal connectors in accordance with CSA-S304, CSA-A371 and as indicated.

.2 Tie masonry veneer to backing in accordance with NBC, CSA-S304.1, CSA-A371 and as indicated.

3.4 REINFORCED LINTELS AND BOND BEAMS

.1 Reinforce masonry lintels and bond beams as indicated.

.2 Place and grout reinforcement in accordance with CSA-S304.1, CSA-A371, and CSA-A179.

3.5 GROUTING

.1 Grout masonry in accordance with CSA-S304.1, CSA-A371 and CSA-A179 and as indicated.

3.6 ANCHORS

.1 Supply and install metal anchors as indicated.

3.7 LATERAL SUPPORT AND ANCHORAGE

.1 Supply and install lateral support and anchorage in accordance with CSA-S304.1 and as indicated.

3.8 MOVEMENT JOINTS

.1 Reinforcement will not be continuous across movement joints unless otherwise indicated.

3.9 FIELD BENDING

.1 Do not field bend reinforcement and connectors except where indicated or authorized by Consultant.

.2 When field bending is authorized, bend without heat, applying a slow and steady pressure.

.3 Replace bars and connectors which develop cracks or splits.

3.10 FIELD TOUCH-UP

.1 Touch up damaged and cut ends of epoxy coated or galvanized reinforcement steel and connectors with compatible finish to provide continuous coating.

3.11 CLEANING

.1 Upon completion of installation, remove surplus materials, rubbish, tools and equipment barriers.

END OF SECTION

SECTION 04 20 00
UNIT MASONRY

Part 1 General

1.1 RELATED REQUIREMENTS

.1 Section 04 05 13 - Mortar And Masonry Grout.

.2 Section 04 05 19 - Masonry Anchorage and Reinforcement.

1.2 REFERENCE STANDARDS

.1 ASTM C34-17 - Standard Specification for Structural Clay Load-Bearing Wall Tile.

.2 ASTM C56-13(2017) - Standard Specification for Structural Clay Nonloadbearing Tile.

.3 ASTM C73-17 - Standard Specification for Calcium Silicate Brick (Sand-Lime Brick).

.4 ASTM C126-19 - Standard Specification for Ceramic Glazed Structural Clay Facing Tile, Facing Brick, and Solid Masonry Units.

.5 ASTM C216-19 - Standard Specification for Facing Brick (Solid Masonry Units Made from Clay or Shale).

.6 ASTM C315-07(2016) - Standard Specification for Clay Flue Liners and Chimney Pots.

.7 ASTM C652-19b - Standard Specification for Hollow Brick (Hollow Masonry Units Made From Clay or Shale).

.8 ASTM C744-16 - Standard Specification for Prefaced Concrete and Calcium Silicate Masonry Units.

.9 CAN/CSA-A82-14 (R2018) - Fired Masonry Brick Made from Clay or Shale.

.10 CAN/CSA-A165 Series-14 (2019) - Standards on Concrete Masonry Units.

.11 CAN/CSA-A371-14 (R2019) - Masonry Construction for Buildings.

.12 CSA-S304-14 (R2019) - Design of Masonry Structures.

1.3 CLOSEOUT SUBMITTALS

.1 Section 01 78 00: Submission procedures.

Part 2 Products

2.1 CONCRETE BLOCK MASONRY UNITS

.1 Architectural Concrete Block Masonry Units: CAN/CSA-A165 Series, Classification H/7.5/C/M.

Part 3 Execution

3.1 INSTALLATION

.1 Install masonry units as specified in masonry Section 04 29 00.

END OF SECTION

SECTION 07 84 00
FIRESTOPPING

Part 1 General

1.1 SECTION INCLUDES

.1 Tested and listed firestopping system.

1.2 REFERENCE STANDARDS

.1 ASTM E84-20 - Standard Test Method for Surface Burning Characteristics of Building Materials.

.2 ASTM E119-19 - Standard Test Methods for Fire Tests of Building Construction and Materials.

.3 ASTM E814-13a (2017) - Standard Test Method for Fire Tests of Penetration Firestop Systems.

.4 ASTM E1966-15(2019) - Standard Test Method for Fire-Resistive Joint Systems.

.5 CAN/ULC-S101-14 - Standard Methods of Fire Endurance Tests of Building Construction and Materials.

.6 CAN/ULC-S102-18 - Standard Method of Test for Surface Burning Characteristics of Building Materials and Assemblies.

.7 CAN/ULC-S102.2-18 - Standard Method of Test for Surface Burning Characteristics of Flooring, Floor Coverings and Miscellaneous Materials and Assemblies.

.8 CAN/ULC-S115-18 - Standard Method of Fire Tests of Firestop Systems.

.9 FM (Factory Mutual) - FM 4991-2013 - Approval Standard for Firestop Contractors.

.10 FCIA (Firestop Contractors International Association) - Manual of Practice.

.11 NFPA 251 - Standard Methods of Tests of Fire Endurance of Building Construction and Materials, 2006 edition.

.12 OPL (Omega Point Laboratories).

.13 UL 263-2011 - Standard for Fire Tests of Building Construction and Materials (14th Edition).

.14 UL 1479-2015 - Standard for Fire Tests of Through-Penetration Firestops (4th Edition).

.15 UL 1709-2017 - Standard for Rapid Rise Fire Tests of Protection Materials for Structural Steel (5th Edition).

.16 UL 2079-2015 - Standard for Tests for Fire Resistance of Building Joint Systems (5th Edition).

.17 ULC-FR-17 - Fire Resistance Directory (2017 Edition).

.18 WHI (Intertek/Warnock Hershey).

1.3 ADMINISTRATIVE REQUIREMENTS

.1 Section 01 31 00: Project management and coordination procedures.

.2 Coordination: Coordinate with other work having a direct bearing on work of this section.

.3 Sequencing: Coordinate and sequence firestopping installation with all affected trades.

1.4 ACTION SUBMITTALS

.1 Section 01 33 00: Submission procedures.

.2 Product Data: Provide manufacturer's written data on product characteristics, performance, and limitation criteria.

.3 System Design Listings: Submit system design listings including illustrations from a qualified nationally recognized testing and inspection agency applicable to each firestop configuration.

.4 Unlisted Firestopping Systems: Obtain an Engineering Judgment (EJ) or Equivalent Fire Resistance Rated Assembly (EFRRA) from firestop manufacturer where no specific third party tested, listed and classified firestop system is available for a particular firestop configuration.

.5 Installation Data: Manufacturer's written special preparation and installation requirements and tested and listed firestop systems designs.

1.5 CLOSEOUT SUBMITTALS

.1 Section 01 78 00: Submission procedures.

1.6 QUALITY ASSURANCE

.1 Manufacturer Qualifications: Company specializing in manufacturing the Products specified in this section with minimum three (3) years documented experience.

.2 Contractor Qualifications: Company specializing in performing the work of this section and as follows:

.1 Minimum one (1) person employed at the firm who has passed the ULC Firestop Exam.

.2 ULC Qualified Firestop Contractor Program.

.3 FM approved in accordance with FM standard 4991 - Approval of Firestop Contractors.

.4 Licensed by the province or local authority where applicable.

.5 Completed not less than five (5) comparable scale projects.

.3 Single Source Responsibility: Obtain firestop systems for each type of penetration and construction situation from a single primary firestop systems manufacturer. Obtain firestop systems for complete project, from a single primary firestop systems manufacturer, to the greatest extent possible.

1.7 DELIVERY, STORAGE, AND HANDLING

.1 Section 01 61 00: Transport, handle, store, and protect products.

.2 Deliver firestopping products in original, unopened containers with labels intact and legible, identifying product and manufacturer.

.3 Store and handle firestopping materials to manufacturer's instructions.

1.8 SITE CONDITIONS

.1 Ambient Conditions:

.1 Do not apply materials when temperature of substrate material and ambient air is below 15 degrees C.

.2 Maintain this minimum temperature before, during, and for three (3) days after installation of materials.

.3 Provide ventilation to manufacturer's instructions in areas to receive solvent cured materials.

Part 2 Products

2.1 DESCRIPTION

.1 System Description:

.2 Tested and listed firestopping systems, Engineering Judgment (EJ), or Equivalent Fire Resistance Rated Assembly (EFRRA) consisting of a material or materials, the wall or floor assembly, and penetrating items or gaps, assembled or placed in spaces, gaps, joints and building perimeters, to restore the fire resistance rating and or smoke resistant properties of a fire resistance rated assembly or smoke resistant assembly.

.3 Regulatory Requirements:

.1 Conform to applicable code for fire resistance ratings and surface burning characteristics.

.2 Provide certificate of compliance from authority having jurisdiction indicating approval of materials, tested and listed systems or engineering judgments used.

2.2 PERFORMANCE / DESIGN CRITERIA

.1 Materials, accessories and application procedures listed by ULC, or tested to CAN/ULC-S115 to comply with applicable building code requirements.

.2 Firestopping Materials: CAN/ULC-S101, to achieve a fire rating as noted on Drawings.

.3 Surface Burning Characteristics: CAN/ULC-S102 or CAN/ULC-S102.2, as applicable.

.4 Smoke Resistance: For areas where smoke resistance is required, provide firestop systems with L-ratings of maximum 25.4l/sec/sq m opening area.

.5 Environmental Resistance: Systems to be resistant to environmental conditions they will be exposed to, as apparent at design stage.

2.3 MATERIALS

.1 Fire Stopping Systems and Materials: Tested and listed by ULC, cUL, WHI, or OPI, and conforming to construction type, penetrant type, annular space requirements and fire rating involved in each separate instance.

.2 Firestopping systems: as listed under ULC-FS-09 Firestop Systems and Components 2009 Edition, or as listed in WH Listings under "Through-Penetration Firestopping Systems".

.3 With VOC content less than the VOC limits of State of California's South Coast Air Quality Management District Rule #1168.

.4 Firestopping materials, whether used in a tested system or not, shall be:

.1 listed under ULC-FS-09 or under WH Listings,

.2 labelled with applicable ULC or WH label, and

.3 compatible with applicable substrates and openings.

.5 Provided that all other specified requirements can be met, use any of the following products, either singly or in combination:

.1 Elastomeric sealant.

.2 Elastomeric coating.

.3 Mineral fibre.

.4 Mortar.

.5 Intumescent putty.

.6 Poured-in-place silicone foam.

.7 Preformed silicone foam.

.8 Multi-cable transit system.

.9 Collars.

.10 Firestopping brick.

.11 Any other product which meets all other specified requirements.

2.4 ACCESSORIES

.1 Primer: Type recommended by firestopping manufacturer for specific substrate surfaces.

.2 Forming/Packing Material: Permanent type, suitable for application.

.3 Installation Accessories: Clips, collars, fasteners, temporary stops or dams, and other devices required to position and retain materials in place.

Part 3 Execution

3.1 EXAMINATION

.1 Section 01 71 00: Verify existing conditions before starting work.

.2 Verify opening configurations, penetrating items, substrates, and other conditions affecting performance of firestopping are ready to receive the work of this section.

.3 Verify tested and listed systems selected are applicable to the conditions encountered.

.4 Do not proceed with installation until unsatisfactory conditions have been corrected.

3.2 PREPARATION

.1 Clean substrate surfaces as recommended in manufacturer's written instructions, of dirt, dust, grease, oil, loose material, or other matter which may affect bond of firestopping material and performance of firestop system for fire or smoke resistant situations.

.2 Remove incompatible materials which may affect bond.

.3 Install backing materials to arrest liquid material leakage.

3.3 APPLICATION

.1 Apply primer and firestopping materials to manufacturer's written instructions.

.2 Install material at walls or partition openings which contain penetrating sleeves, piping, ductwork, conduit and other items, requiring firestopping to tested and listed system or engineering judgment.

.3 Apply firestopping material, thickness sufficient to achieve rating, to uniform density and texture.

.4 Compress fibred material to achieve a density of 40% of its uncompressed density.

.5 Place intumescent coating in sufficient coats to achieve rating required.

.6 Dam Material: Dam material to remain.

3.4 CLEANING

.1 Section 01 74 10: Cleaning installed work.

.2 Clean adjacent surfaces of firestopping materials.

3.5 PROTECTION

.1 Section 01 78 23: Protecting installed work.

.2 Protect adjacent surfaces from damage by material installation.

END OF SECTION

SECTION 07 92 00
JOINT SEALANTS

Part 1 General

1.1 SECTION INCLUDES

.1 Preparing substrate surfaces.

.2 Sealant and joint backing.

1.2 REFERENCE STANDARDS

.1 ASTM C834-17 - Standard Specification for Latex Sealants.

.2 ASTM C919-19 - Standard Practice for Use of Sealants in Acoustical Applications.

.3 ASTM C920-18 - Standard Specification for Elastomeric Joint Sealants.

.4 ASTM C1184-18e1 - Standard Specification for Structural Silicone Sealants.

.5 ASTM C1193-16 - Standard Guide for Use of Joint Sealants.

.6 ASTM C1311-14 - Standard Specification for Solvent Release Sealants.

.7 ASTM C1330-18 - Standard Specification for Cylindrical Sealant Backing for Use with Cold Liquid Applied Sealants.

.8 ASTM C1481-12(2017) - Standard Guide for Use of Joint Sealants with Exterior Insulation and Finish Systems (EIFS).

.9 ASTM E330/E330M-14 - Standard Test Method for Structural Performance of Exterior Windows, Doors, Skylights and Curtain Walls by Uniform Static Air Pressure Difference.

1.3 ADMINISTRATIVE REQUIREMENTS

.1 Section 01 31 00: Project management and coordination procedures.

.2 Coordination:

.1 Coordinate with other work having a direct bearing on work of this section.

.2 Coordinate the work with all sections referencing this section.

1.4 ACTION SUBMITTALS

.1 Section 01 33 00: Submission procedures.

.2 Product Data: Provide data indicating sealant chemical characteristics, performance criteria, substrate preparation, limitations and colour availability.

.3 Structural Sealant Joint Design: Provide calculations for structural bite, dead load support, glueline thickness, shear, and other parameters.

.4 Documentation identifying that VOC content is less than the VOC limits of State of California's South Coast Air Quality Management District(SCAQMD) Rule #1168, June 2006.

1.5 CLOSEOUT SUBMITTALS

.1 Section 01 78 00: Submission procedures.

1.6 QUALITY ASSURANCE

.1 Perform work to sealant and EIFS manufacturer's requirements for preparation of surfaces and material installation instructions.

.2 Perform sealant application work to ASTM C1193.

.3 Perform structural sealant application work to ASTM C1401.

.4 Perform acoustical sealant application work to ASTM C919.

.5 Manufacturer Qualifications: Company specializing in manufacturing the Products specified in this section with minimum three (3) years documented experience.

.6 Applicator Qualifications: Company specializing in performing the work of this section with minimum three (3) years documented experience and approved by the manufacturer.

1.7 SITE CONDITIONS

.1 Ambient Conditions:

.1 Maintain temperature and humidity recommended by the sealant manufacturer during and after installation.

1.8 WARRANTY

.1 Section 01 78 00: Warranties.

.2 Warranty: Provide a five (5) year warranty for failure to meet specified requirements including coverage for installed sealants and accessories which fail to achieve air tight seal, exhibit loss of adhesion or cohesion, or do not cure.

.3 Manufacturer's Warranty: Provide manufacturer's twenty (20) year material warranty for installed silicone sealant.

Part 2 Products

2.1 PERFORMANCE / DESIGN CRITERIA

.1 Sealant Design: Design structural sealant to withstand specified loads without breakage, loss, failure of seals, product deterioration, and other defects.

.2 Design installed sealant to withstand:

.1 Loads: Design and size to withstand dead and live loads caused by positive and negative wind pressure acting normal to plane of panel:

.1 As calculated in accordance with applicable code.

.2 As measured in accordance with ASTM E330/E330M.

.2 Movement from ambient temperature range of 49 degrees C.

.3 Movement and deflection of structural support framing.

.4 Water and air penetration.

2.2 SEALANTS

.1 Oil Based: Single component, resinous compound, elongation capability of 0% to 2% of joint width.

.2 Bituminous Based: Single component, asphalt compound, elongation capability of 0% to 2% of joint width.

.3 Acrylic Emulsion Latex: ASTM C834, Type OP; single component, non-staining, non-bleeding, non-sagging; colour as selected.

.1 Elongation Capability 2% to 5%.

.2 Service Temperature Range -17 to 71 degrees C.

.3 Shore A Hardness Range 15 to 40.

.4 Acrylic Sealant: ASTM C920; single component, solvent curing, non-staining, non-bleeding, non-sagging; colour: as selected

.1 Elongation Capability 7.5% to 12%.

.2 Service Temperature Range -28 to 82 degrees C.

.3 Shore A Hardness Range 25 to 50.

.5 Siliconized Acrylic Latex: ASTM C834; Type OP; single component, non-sagging, non-staining, non-bleeding, paintable; colour: as selected

.1 Elongation Capability 25%.

.2 Service Temperature Range -54 to 82 degrees C.

.3 Shore A Hardness Range 15 to 25.

.6 Butyl Sealant (Type F): ASTM C1311, single component, solvent release, non-skinning, non-sagging, black colour.

.1 Elongation Capability 7.5%.

.2 Service Temperature Range -28 to 82 degrees C.

.3 Shore A Hardness Range 10 to 30.

.7 Acoustic Sealant: ASTM C1311, Acoustic grade, single component, solvent release, non-skinning, non-sagging, Grey colour.

.1 Elongation Capability 7.5%.

.2 Service Temperature Range -28 to 82 degrees C.

.3 Shore A Hardness Range 10 to 30.

.8 Polysulfide Sealant: ASTM C920; two component, chemical curing, non-staining, non-bleeding, capable of continuous water immersion, non-sagging type; colour as selected.

.1 Elongation Capability 25%.

.2 Service Temperature Range -40 to 82 degrees C .

.3 Shore A Hardness Range 20 to 35.

.9 Polyurethane Sealant: ASTM C920; single component, chemical curing, non-staining, non-bleeding, capable of continuous water immersion type; colour as selected.

.1 Elongation Capability 25%.

.2 Service Temperature Range -40 to 82 degrees C.

.3 Shore A Hardness Range 20 to 35.

.10 Polyurethane Sealant: ASTM C920, Grade NS; multi-component, chemical curing, non-staining, non-bleeding, non-sagging type; colour as selected.

.1 Elongation Capability 25%.

.2 Service Temperature Range -40 to 82 degrees C.

.3 Shore A Hardness Range 20 to 35.

.11 Polyurethane Sealant: ASTM C920, jet fuel resistant, multi-component, chemical curing, non-staining, non-bleeding, non-sagging type; colour as selected.

.1 Elongation Capability 25%.

.2 Service Temperature Range -40 to 82 degrees C.

.3 Shore A Hardness Range 20 to 35.

.12 Silicone Sealant: ASTM C920; single component, chemical curing, non-sagging, non-staining, non-bleeding, fungus resistant; colour as selected.

.1 Elongation Capability 25%.

.2 Service Temperature Range -54 to 82 degrees C .

.3 Shore A Hardness Range 15 to 35.

.13 Silicone Sealant: ASTM C920; multi-component, neutral curing, non-sagging, non-staining, non-bleeding, mildew resistant; colour as selected.

.1 Elongation Capability 25%.

.2 Service Temperature Range -54 to 82 degrees C .

.3 Shore A Hardness Range 15 to 35.

.14 Sanitary Silicone Sealant: ASTM C920, Grade NS, Class 25, Use NT; single component, acetoxy curing, non-sagging, non-staining, mildew resistant; colour as selected.

.1 Elongation Capability 25%.

.2 Service Temperature Range -54 to 82 degrees C.

.3 Shore A Hardness Range 15 to 35.

.15 Silyl Terminated Polyether Technology (STPE)

.1 Solvent-free and low VOC, moisture cure polyether sealant (STPE) and contains no isocyanates.

2.3 ACCESSORIES

.1 Primer: Non-staining type, as recommended by sealant manufacturer to suit application.

.2 Joint Cleaner: Non-corrosive and non-staining type, recommended by sealant manufacturer; compatible with joint forming materials.

.3 Joint Backing: ASTM C1330, round, closed cell; polyethylene foam rod, oversized 30% to 50% larger than joint width.

.4 Bond Breaker: Pressure sensitive tape recommended by sealant manufacturer to suit application.

.5 Masking tape: Non-staining, non-absorbent type compatible with sealant and adjacent surfaces.

.6 Setting Blocks and Spacers: Compatible with silicone sealant and recommended by sealant manufacturer.

Part 3 Execution

3.1 EXAMINATION

.1 Section 01 71 00: Verify existing conditions before starting work.

.2 Verify that joint openings are clean, dry, and free of frost and ready to receive work.

.3 Verify that joint backing and release tapes are compatible with sealant.

3.2 PREPARATION

.1 Remove loose materials and foreign matter which might impair adhesion of sealant.

.2 Clean and prime joints to sealant manufacturer's written instructions.

.3 Perform preparation to ASTM C1193 for solvent release and latex base sealants.

.4 Perform preparation to sealant manufacturer's written instructions.

.5 Protect elements surrounding the work of this section from damage or disfiguration.

3.3 INSTALLATION

.1 Perform installation in accordance with ASTM C1193 for solvent release and latex base sealants.

.2 Install sealant to sealant manufacturer's written instructions.

.3 Measure joint dimensions and size materials to achieve required width/depth ratios.

.4 Install joint backing to achieve a neck dimension no greater than 1/3 of the joint width.

.5 Install bond breaker where joint backing is not used.

.6 Install sealant free of air pockets, foreign embedded matter, ridges, and sags.

.7 Apply sealant within recommended application temperature ranges. Consult manufacturer when sealant cannot be applied within these temperature ranges.

.8 Tool joints concave.

3.4 CLEANING

.1 Section 01 74 10: Cleaning installed work.

.2 Clean adjacent soiled surfaces.

3.5 PROTECTION

.1 Section 01 78 23: Protecting installed work.

.2 Remove masking tape and excess sealant.

.3 Protect sealants until cured, remove temporary glass supports.

3.6 SCHEDULE

.1 Interior Surfaces: Polyurethane, Sillicone, STPE.

.2 Paintable: Polyurethane.

.3 UV Resistance: Sillicone.

END OF SECTION

SECTION 09 91 00
PAINTING

Part 1 General

1.1 SECTION INCLUDES

.1 Surface preparation.

.2 Painting.

1.2 REFERENCE STANDARDS

.1 MPI (Master Painters Institute) – Architectural Painting Specifications Manual and Maintenance Repainting Manual.

1.3 ADMINISTRATIVE REQUIREMENTS

.1 Coordination: Coordinate with other Work having a direct bearing on Work of this section.

.2 Scheduling:

.1 Schedule painting operations to prevent disruption of and by other trades.

1.4 ACTION SUBMITTALS

.1 Section 01 33 00: Submission procedures.

.2 Product Data:

.1 Submit Product data on all specified finishing products.

.2 Submit two (2) copies of WHMIS MSDS - Material Safety Data Sheets.

.3 Samples:

.1 Submit two (2) samples, 150 mm in size illustrating selected colours and textures for each colour selected.

1.5 CLOSEOUT SUBMITTALS

.1 Section 01 78 00: Submission procedures.

.2 Record Documentation: Upon completion, provide itemized list of products used including the following:

.1 Manufacturer's name.

.2 Product name, type and use.

.3 Colour coding number.

.4 Manufacturer's Material Safety Data Sheets (MSDS).

1.6 QUALITY ASSURANCE

.1 Manufacturer Qualifications: Company specializing in manufacturing the Products specified in this section with minimum five (5) years documented experience.

.2 Installer Qualifications: Company specializing in performing the work of this section with minimum three (3) years documented experience.

.3 Conform to MPI Painting Manual requirements for materials, preparation and workmanship.

.4 Paint Products: Paint manufacturers and paint Products listed under the Approved Product List section of the MPI Painting Manual.

.5 Inspection and Testing: Painting and decorating Work to be inspected by paint inspection agency (inspector) acceptable to local MPI Accredited Quality Assurance Association.

1.7 DELIVERY, STORAGE, AND HANDLING

.1 Section 01 61 00: Transport, handle, store, and protect products.

.2 Deliver products to site in sealed and labeled containers showing manufacturer's name, type of paint, brand name, lot number, brand code, coverage, surface preparation, drying time, cleanup requirements, colour designation, and written instructions for mixing and reducing.

.3 Store paint materials at minimum ambient temperature of 7 degrees C and a maximum of 32 degrees C, in dry, ventilated area and as required by manufacturer's written instructions.

.4 Provide adequate fireproof storage lockers and warnings as required by authorities having jurisdiction for storing toxic and volatile/explosive/flammable materials.

1.8 SITE CONDITIONS

.1 Ambient Conditions:

.1 Do not perform painting or decorating Work when ambient air and substrate temperatures are below 10 degrees C for both interior and exterior work, or as required by paint product manufacturer.

.2 Do not perform painting or decorating Work when relative humidity is above 85% or when dew point is less than 5 degrees F variance between the air/surface temperature required by paint Product manufacturer.

.3 Provide suitable weatherproof covering and sufficient heating facilities to maintain minimum ambient air and substrate temperatures for twenty-four (24) hours before, during and after paint application.

.4 Do not perform painting and decorating Work when maximum moisture content of substrate exceeds:

.1 Wood: 15%.

.2 Plaster and Gypsum Wallboard: 12 %.

.3 Masonry, Concrete, and Concrete Unit Masonry: 12%.

.4 Concrete Floors: 8%.

.5 Conduct moisture tests using a properly calibrated electronic Moisture Meter, except test concrete floors for moisture using a simple cover patch test.

.6 Test concrete, masonry and plaster surfaces for alkalinity as required.

.7 Provide minimum lighting level of 323 lux (30 ft candles) is provided on surfaces to be painted or decorated.

1.9 WASTE MANAGEMENT AND DISPOSAL

.1 Dispose of waste materials in accordance with Local authorities having jurisdiction.

.2 Where paint recycling is available, collect waste paint by type and provide for delivery to recycling or collection facility.

.3 Place non-reusable materials defined as hazardous or toxic waste, including used sealant and adhesive tubes and containers, in containers or areas designated for hazardous waste.

Part 2 Products

2.1 DESCRIPTION

.1 Regulatory Requirements:

.1 Conform to applicable code for flame and smoke rating requirements for finishes, storage, mixing, application and disposal of paint and related waste materials.

2.2 MATERIALS

.1 Use only materials (primers, paints, coatings, varnishes, stains, lacquers, fillers) listed in the latest edition of the MPI Approved Product List (APL) on this project.

.2 Ancillary materials such as linseed oil, shellac, thinners, solvents to be of highest quality product and provided by an MPI listed manufacturer, and compatible with paint materials being used.

.3 Where possible, all materials to be lead and mercury free with low VOC content.

.4 Provide all material for each system from a single manufacturer.

.5 Fire Hazard: Flame spread and smoke developed ratings in accordance with applicable code.

.6 Patching Materials: Latex filler.

.7 Fastener Head Cover Materials: Latex filler.

2.3 MIXING AND TINTING

.1 Coatings: Ready-mixed and pre-tinted; re-mix all paint in containers prior to and during application to ensure break-up of lumps, complete dispersion of settled pigment, and colour and gloss uniformity.

.2 Paste, Powder or Catalyzed Paint: Mixed in accordance with manufacturer's written instructions.

.3 Accessory Materials: Linseed oil, shellac, turpentine, paint thinners and other materials not specifically indicated but required to achieve the finishes specified, of commercial quality.

.1 Do not exceed paint manufacturer's recommendations for addition of thinner. Do not use kerosene or any such organic solvents to thin water-based paints.

.2 Thin paint for spraying in accordance with paint manufacturer's instructions.

2.4 FINISH AND COLOUR

.1 Finish: To MPI Premium Grade finish requirements.

.2 Colours and Finishes: Colours will be provided during construction, will have 1 field colour and 2 accent colours.

.3 Colours shall be as selected by the Consultant from a manufacturer's full range of colours.

2.5 GLOSS/SHEEN RATINGS

.1 Paint gloss is defined as the sheen rating of applied paint with the following values:

.2

Gloss Level	Description	Gloss @ 60 degrees	Sheen @ 85 degrees
G1	Matte Finish (flat)	0 to 5	10 max.
G2	Velvet-Like Finish	0 to 10	10 to 35
G3	Eggshell Finish	10 to 25	10 to 35
G4	Satin-Like Finish	20 to 35	35 min.
G5	Traditional Semi-Gloss Finish	35 to 70	……
G6	Traditional Gloss	70 to 85	……
G7	High Gloss Finish	More than 85	……

.3 Gloss level ratings of painted surfaces as noted on Finish Schedule.

2.6 INTERIOR PAINT SYSTEMS

.1 Paint interior surfaces in accordance with the following MPI Painting Manual requirements.

.2 Concrete Horizontal Surfaces: (floors and stairs).

.1 INT 3.2A: Latex floor enamel low gloss finish.

.3 Concrete Masonry Units: (smooth and split face block and brick).

.1 INT 4.2D: High performance architectural latex, G7 finish.

.4 Structural Steel and Metal Fabrications: (columns, beams, joists, etc.).

.1 INT 5.1K: Epoxy-modified latex finish.

.2 INT 5.1L: Epoxy finish.

.3 INT 5.1N: Water based light industrial (over epoxy primer), G6 coating.

.4 INT 5.1X: Latex (over quick dry shop primer), G6 finish.

.5 Galvanized Metal: (doors, frames, railings, misc. steel, pipes, overhead decking, ducts, etc.).

.1 INT 5.3M: High performance architectural latex, G6 finish.

2.7 EXTERIOR PAINT SYSTEMS

.1 Galvanized Metal: (not chromate passivated; for high contact/high traffic areas (doors, frames, railings, misc. steel, pipes, etc.) and low contact/low traffic areas (overhead decking, ducts, gutters, flashing, etc.).

.1 EXT 5.3H: Latex (over water based primer), G6 finish.

Part 3 Execution

3.1 EXAMINATION

.1 Section 01 71 00: Verify existing conditions before starting work.

.2 Verify that substrate conditions are ready to receive work as instructed by the product manufacturer.

.3 Examine surfaces scheduled to be finished prior to commencement of work. Report any condition that may potentially affect proper application.

.4 Test shop applied primer for compatibility with subsequent cover materials.

.1 Apply paint finish in areas where dust is no longer being generated by related construction operations or when wind or ventilation conditions are such that airborne particles will not affect quality of finished surface.

.2 Apply paint to adequately prepared surfaces and to surfaces within moisture limits.

.3 Apply paint when previous coat of paint is dry or adequately cured.

3.2 PREPARATION

.1 Prepare surfaces in accordance with MPI requirements.

.2 Remove and store or mask miscellaneous hardware and surface fittings such as electrical plates, hardware, light fixture trim, escutcheons, and fittings prior to painting. Clean and replace upon completion of painting Work in each area. Remove doors before painting to paint bottom and top edges and re-hung.

.3 Protect adjacent surfaces and areas, including rating and instruction labels on doors, frames, equipment, piping, from painting operations with drop cloths, shields, masking, templates, or other suitable protective means.

.4 Correct defects and clean surfaces which affect work of this section. Start of finish painting of defective surfaces indicates acceptance of substrate and making good defects will be at no cost to Owner.

.5 Confirm preparation and primer used with fabricator of steel items.

.6 Seal with shellac and seal marks which may bleed through surface finishes.

.7 Impervious Surfaces: Remove mildew by scrubbing with solution of tri-sodium phosphate and bleach. Rinse with clean water and allow surface to dry.

.8 Aluminum Surfaces Scheduled for Paint Finish: Remove surface contamination by steam or high pressure water. Remove oxidation with acid etch and solvent washing. Apply etching primer immediately following cleaning.

.9 Asphalt, Creosote, or Bituminous Surfaces Scheduled for Paint Finish: Remove foreign particles to permit adhesion of finishing materials. Apply compatible sealer or primer.

.10 Insulated Coverings: Remove dirt, grease, and oil from canvas and cotton.

.11 Concrete Floors: Remove contamination; acid etch, and rinse floors with clear water. Verify required acid-alkali balance is achieved. Allow to dry.

.12 Gypsum Board Surfaces: Fill minor defects with filler compound. Spot prime defects after repair.

.13 Concrete and Unit Masonry Surfaces Scheduled to Receive Paint Finish: Remove dirt, loose mortar, scale, salt or alkali powder, and other foreign matter. Remove oil and grease with a solution of tri-sodium phosphate; rinse well and allow to dry. Remove stains caused by weathering of corroding metals with a solution of sodium metasilicate after thoroughly wetting with water. Allow to dry.

.14 Plaster Surfaces: Fill hairline cracks, small holes, and imperfections with latex patching plaster. Make smooth and flush with adjacent surfaces. Wash and neutralize high alkali surfaces.

.15 Uncoated Steel and Iron Surfaces: Remove grease, mill scale, weld splatter, dirt, and rust. Where heavy coatings of scale are evident, remove by power tool wire brushing or sandblasting; clean by washing with solvent. Apply a treatment of phosphoric acid solution, ensuring weld joints, bolts, and nuts are similarly cleaned. Spot prime paint after repairs.

.16 Shop Primed Steel Surfaces: Sand and scrape to remove loose primer and rust. Feather edges to make touch-up patches inconspicuous. Clean surfaces with solvent. Prime bare steel surfaces. Prime metal items including shop primed items.

.17 Interior Wood Items Scheduled to Receive Paint Finish: Wipe off dust and grit prior to priming. Seal knots, pitch streaks, and sappy sections with sealer. Fill nail holes and cracks after primer has dried; sand between coats.

.18 Interior Wood Items Scheduled to Receive Transparent Finish: Wipe off dust and grit prior to sealing, seal knots, pitch streaks, and sappy sections with sealer. Fill nail holes and cracks after sealer has dried; sand lightly between coats.

.19 Exterior Wood Scheduled to Receive Paint Finish: Remove dust, grit, and foreign matter. Seal knots, pitch streaks, and sappy sections. Fill nail holes with tinted exterior calking compound after prime coat has been applied.

.20 Exterior Wood Scheduled to Receive Transparent Finish: Remove dust, grit, and foreign matter; seal knots, pitch streaks, and sappy sections with sealer. Fill nail holes with tinted exterior calking compound after sealer has been applied.

.21 Metal Doors Scheduled for Painting: Seal top and bottom edges with primer.

3.3 APPLICATION

.1 Apply paint or stain in accordance with MPI Painting Manual Premium Grade finish requirements.

.2 Apply products to adequately prepared surfaces, within moisture limits and acceptable environmental conditions.

.3 Apply paint finish in areas where dust is no longer being generated or when wind or ventilation conditions will not affect quality of finished surface.

.4 Apply each coat to uniform finish.

.5 Tint each coat of paint progressively lighter to enable confirmation of number of coats.

.6 Unless otherwise approved, apply a minimum of four (4) coats of paint where deep or bright colours are used to achieve satisfactory results.

.7 Sand and dust between each coat to provide an anchor for next coat and to remove defects visible from a distance up to 1000 mm (39 inch).

.8 Vacuum clean surfaces free of loose particles. Use tack cloth just prior to applying next coat.

.9 Allow applied coat to dry before next coat is applied.

.10 Where clear finishes are required, tint fillers to match wood. Work fillers into the grain before set. Wipe excess from surface.

.11 Continue paint finish behind wall-mounted items such as white boards and tack boards.

.12 Prime concealed surfaces of interior woodwork with primer paint.

.13 Prime concealed surfaces of interior woodwork scheduled to receive stain or varnish finish with gloss varnish reduced 25% with mineral spirits.

3.4 CLEANING

.1 Section 01 74 10: Cleaning installed work.

.2 Collect waste material which may constitute a fire hazard, place in closed metal containers and remove daily from site.

END OF SECTION

SECTION 10 21 13.13
METAL TOILET COMPARTMENTS

Part 1 General

1.1 SECTION INCLUDES

.1 Metal toilet compartments, floor mounted and head rail braced.

.2 Urinal screens; wall mounted with floor to ceiling pilaster brace.

1.2 REFERENCE STANDARDS

.1 ASTM A167-99(2009) (Withdrawn) - Standard Specification for Stainless and Heat-Resisting Chromium-Nickel Steel Plate, Sheet, and Strip.

.2 ASTM A424/A424M-18 - Standard Specification for Steel, Sheet, for Porcelain Enameling.

.3 ASTM A653/A653M-19a - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.

.4 CSA-B651-18 - Accessible Design for the Built Environment.

1.3 ADMINISTRATIVE REQUIREMENTS

.1 Section 01 31 00: Project management and coordination procedures.

.2 Coordination:

.1 Coordinate with other Work having a direct bearing on work of this section.

.2 Coordinate the Work with placement of support framing and anchors in wall.

1.4 ACTION SUBMITTALS

.1 Section 01 33 00: Submission procedures.

.2 Product Data: Provide data on panel construction, hardware, and accessories.

.3 Shop Drawings: Indicate partition plan, elevation views, dimensions, details of wall, floor, and ceiling supports, door swings.

Part 2 Products

2.1 DESCRIPTION

.1 Regulatory Requirements:

.1 Conform to CSA-B651 for accessibility requirements for the handicapped.

2.2 MATERIALS

.1 Construction: Doors, Panels and Pilasters shall be constructed of two sheets of panel flatness zinc-coated steel, Galvanneal ASTM A653 GR33, laminated under pressure to a honeycomb core for sound deadening and rigidity. Formed edges to be welded together and inter-locked under tension with a roll-formed oval crown locking bar, mitred, welded and ground smooth at the corners. Honeycomb to have a maximum 25mm (1") cell size.

.2 Doors: Shall be 25mm (1") thick with cover sheets not less than 22-gauge (0.8mm).

.3 Panels: Shall be 25mm (1") thick with cover sheets not less than 22-gauge (0.8mm).

.4 Pilasters: Shall be 32mm (1.25") thick with cover sheets not less than 22-gauge (0.8mm). Pilaster tops shall be reinforced with a 20-gauge channel to create extra strength and twist-free rigidity along with minimizing damage by handling and/or shipping

.5 Headrail: Shall be 25mm (1") by 41mm (1.625") extruded anodized aluminum with double-ridge anti-grip design. Wall thickness to be 1.5mm (0.060") and shall be securely attached to wall and

pilasters with manufacturer's fittings in such a way as to make a strong and rigid installation. All joints in headrails shall be made at pilaster

.6 Hardware and Fittings: All panel and pilaster brackets and all door hardware shall be chrome plated zinc die castings. Fasteners are zinc plated 12 x 1-3/4” and 12 x 5/8” TR-27 6-lobe security screws. Doors shall be equipped with a gravity type hinge mounted on the lower pilaster hinge bracket. Door hinges shall be fully concealed within the thickness of the door and adjustable to permit the door to come to rest at any position when not latched. Each door to be fitted with a combined coat hook and bumper and a concealed latch, with face mortised flush with edge strip of door. Barrier-free doors shall include thumbturn lever to activate latch without fingertip grip application. Both standard and barrier-free latches shall have a turn slot designed to allow emergency access from exterior. The combined stop and keeper shall have a 19mm (0.75") diameter bumper locked in place. Threaded upper hinge pin shall have a metal core and self-lubricating nylon sleeve to ensure smooth, quiet operation. Pilaster shoes shall be a welded one-piece design made from polished stainless steel. Two-piece shoes that can disassemble when kicked are unacceptable.

2.3 FINISHES

.1 All sheet metal to be thoroughly cleaned, phosphated and finished with a high performance powder coating, electrostatically applied and oven cured to provide a uniform, smooth protective finish. Color shall be as selected from manufacturer’s standard color range.

Part 3 Execution

3.1 EXAMINATION

.1 Section 01 71 00: Verify existing conditions before starting work.

.2 Verify that field measurements are as indicated on Shop Drawings.

.3 Verify correct spacing of and between plumbing fixtures.

.4 Verify correct location of built-in framing, anchorage, and bracing.

3.2 INSTALLATION

.1 Install partitions to manufacturer's written instructions.

.2 Install partitions secure, rigid, plumb, and level.

.3 Maintain 10 to 13 mm space between wall and panels and between wall and end pilasters.

.4 Attached panel brackets securely to walls using anchor devices.

.5 Attach panels and pilasters to brackets with tamper proof through bolts and nuts. Locate head rail joints at pilaster centre lines.

.6 Install 760 mm wide x 1067 mm high stainless steel protective splash panels on partitions adjacent to urinals. Fasten with stainless steel screws spaced 200 mm on centre.

.7 Anchor urinal screen panels to walls with two (2) panel brackets and vertical upright consisting of pilaster anchored to floor and ceiling.

.8 Provide adjustment for floor variations with screw jack through steel saddles integral with pilaster. Conceal floor fastenings with pilaster shoes.

.9 Support pilasters from built-in framing using two (2) adjustable hanging studs providing vertical leveling. Conceal ceiling fastenings with pilaster shoe.

.10 Equip each door with two (2) hinges, one (1) door latch, one (1) coat hook and bumper, out-swinging door with pull.

.11 Install door strike and keeper with door bumper on each pilaster in alignment with door latch.

.12 Field touch-up of scratches or damaged enamel finish will not be permitted.

.13 Replace damaged or scratched materials with new materials.

3.3 ERECTION TOLERANCES

.1 Section 01 73 00: Tolerances.

.2 Maximum Variation From True Position: 6 mm.

.3 Maximum Variation From Plumb: 3 mm.

3.4 ADJUSTING

.1 Adjust and align hardware to uniform clearance at vertical edge of doors, not exceeding 5 mm.

.2 Adjust hinges to position doors in partial opening position when unlatched. Return out swinging doors to closed position.

.3 Adjust adjacent components for consistency of line or plane.

END OF SECTION

SECTION 10 28 00
TOILET, BATH, AND LAUNDRY ACCESSORIES

Part 1 General

1.1 REFERENCE STANDARDS

.1 ASTM A123/A123M-17 - Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products.

.2 ASTM A167-99(2009) (Withdrawn) - Standard Specification for Stainless and Heat-Resisting Chromium-Nickel Steel Plate, Sheet, and Strip.

.3 ASTM A269/A269-15a(R2019) - Standard Specification for Seamless and Welded Austenitic Stainless Steel Tubing for General Service.

.4 ASTM A1018/A1018M-18 - Standard Specification for Steel, Sheet and Strip, Heavy-Thickness Coils, Hot-Rolled, Carbon, Commercial, Drawing, Structural, High-Strength Low-Alloy, High-Strength Low-Alloy with Improved Formability, and Ultra-High Strength.

.5 ASTM B456-17 - Standard Specification for Electrodeposited Coatings of Copper Plus Nickel Plus Chromium and Nickel Plus Chromium.

.6 CSA-B651-18 - Accessible Design for the Built Environment.

.7 NEMA LD 3-2005 - High Pressure Decorative Laminates (HPDL).

1.2 ADMINISTRATIVE REQUIREMENTS

.1 Section 01 31 00: Project management and coordination procedures.

.2 Coordination:

.1 Coordinate with other work having a direct bearing on work of this section.

.2 Coordinate the work with the placement of reinforcement of toilet partitions to receive anchor attachments.

1.3 ACTION SUBMITTALS

.1 Section 01 33 00: Submission procedures.

.2 Product Data: Provide data on accessories describing size, finish, details of function, attachment methods.

.3 Installation Data: Manufacturer's special installation requirements including special procedures, and perimeter conditions requiring special attention.

Part 2 Products

2.1 MATERIALS

.1 Sheet Steel: ASTM A1008/A1008M.

.2 Stainless Steel Sheet: ASTM A167, Type 304.

.3 Tubing: ASTM A269, stainless steel.

.4 Adhesive: Two-component epoxy type, waterproof.

.5 Fasteners, Screws, and Bolts: Hot dip galvanized, tamper-proof.

.6 Expansion Shields: Fibre, lead, or rubber as recommended by accessory manufacturer for component and substrate.

2.2 FIXTURES

.1 Grab bars:

.1 Comply to ADA standards:
  .1 To be slip resistant.
  .2 Diameter: 30-40 mm.
  .3 Space: 35-45 mm between the wall and the grab bar.
  .4 Do not rotate the grab bar within their fitting.
  .5 Mounting heights to meet Code and Rick Hansen Foundation Accessibility Certification.
  .6 Size: as indicated on the architectural drawings.
  .7 Configuration: horizontal, 90 degree angled, and vertical mounting.
  .8 Finish: Stainless Steel.

.2 Soap Dispenser:
  .1 Automated Touchless Dispenser.
  .2 Manufacturer: Bradley; Model: Diplomat Liquid Soap Dispenser
    .1 https://www.bradleycorp.com/product/diplomat-liquid-soap-gel-sanitizer-dispenser
  .3 Quantity: Two in each male and female washroom.

.3 Paper Towel Dispenser:
  .1 Manufacturer: Bradley; Model: Automatic Roll Towel Dispenser.
    .1 https://www.bradleycorp.com/product/automatic-roll-towel-dispenser
  .2 Quantity: One in each male and female washroom.

.4 Toilet Tissue Dispenser:
  .1 Manufacturer: Bradley; Model: Jumbo Dual Roll Toilet Paper Dispenser.
  .2 https://www.bradleycorp.com/product/jumbo-dual-roll-toilet-paper-dispenser
  .3 One in each standard and barrier free washroom stall.

.5 Napkin Disposal:
  .1 Manufacturer: Bradley; Model: Satin Finish Surface Mounted Napkin Disposal 4781-11.
  .2 Quantity: One in each standard and barrier free washroom female stall.

.6 Robe Hooks:
  .1 Manufacturer: Richelieu, Contemporary Metal Hook - 171, Satin Nickel finish. Product number: NH17125185.
  .2 Quantity: One in each standard and barrier free washroom stall.

.7 Shelf:
  .1 Manufacturer: Bradley; Model: Fold-Down Utility Shelf.
  .2 Quantity: One in each barrier free washroom stall.

.8 Baby Change Table:
  .1 Manufacturer: Koala Kare; Model: Horizontal Baby Changing Station - Stainless Steel.
  .2 Quantity: One in each male and female washroom.

.9 Vanity Mirrors: equal to Bradley Channel Frame Mirror, Model 781 Series Float Glass Mirrors. Size: 24" by 36".
  .1 Quantities: Two in each washroom.

.10 Contractor to provide batteries for all automatic bathroom accessories.

.11 ASI, Bradley and Bobrick are acceptable substitutions.

.12 Substitutions: Refer to Section 01 25 00.

2.3 FABRICATION

.1 Weld and grind joints of fabricated components, smooth.

.2 Form exposed surfaces from single sheet of stock, free of joints. Form surfaces flat without distortion. Maintain surfaces without scratches or dents.

.3 Fabricate grab bars of tubing, free of visible joints, return to wall with end attachment flanges. Form bar with clear of wall surface. Knurl grip surfaces.

.4 Shop assemble components and package complete with anchors and fittings.

.5 Provide steel anchor plates, adapters, and anchor components for installation.

2.4 FINISHES

.1 Galvanizing: Hot-dip galvanized to appropriate grade for type and size of steel material indicated, coating thickness ASTM A123/A123M. Galvanize ferrous metal and fastening devices.

.2 Shop Primed Ferrous Metals: Pre-treat and clean, spray apply one coat primer and bake.

.3 Enamel: Pre-treat to clean condition, apply one (1) coat primer and minimum two (2) coats electrostatic baked enamel.

.4 Chrome/Nickel Plating: ASTM B456, Type SC 2, satin finish.

.5 Stainless Steel: No. 4 Satin finish.

.6 Back paint components where contact is made with building finishes to prevent electrolysis.

Part 3 Execution

3.1 EXAMINATION

.1 Section 01 71 00: Verify existing conditions before starting work.

.2 Verify that field measurements are as instructed by the manufacturer.

.3 Verify that site conditions are ready to receive work and dimensions are as instructed by the manufacturer.

.4 Verify exact location of accessories for installation.

.1 Verify locations with the Consultant and Owner.

3.2 PREPARATION

.1 Deliver inserts and rough-in frames to site for timely installation.

.2 Provide templates and rough-in measurements as required.

3.3 INSTALLATION

.1 Install accessories to manufacturer's written instructions, Building Code, Rick Hansen Foundation, Owner, and CSA-B651.

.2 Install plumb and level, securely and rigidly anchored to substrate.

END OF SECTION

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LAKEVIEW WASHROOM RENO

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ARCHITECTURAL SHEET LIST

Sheet Number	Sheet Name
A0.0	TITLE PAGE
A1.1	LIFE SAFETY PLAN
A2.0	SITE PLAN
A3.0	DEMO+NEW MAIN FLOOR PLAN
A3.1	ENLARGED FLOOR PLANS + ROOF PLAN
A4.0	EXTERIOR BUILDING ELEVATIONS
A11.0	SPECIFICATION

INTERIOR DESIGN SHEET LIST

Sheet Number	Sheet Name
ID4.0	INTERIOR ELEVATIONS

MECHANICAL SHEET LIST

Sheet Number	Sheet Name
M1	MECHANICAL PLAN
M2	MECHANICAL EQUIPMENT & SPECIFICATIONS

ELECTRICAL SHEET LIST

Sheet Number	Sheet Name
E1	POWER PLANS, NOTES & SPECS
E2	LIGHTING PLANS, NOTES, SPECS & SCHEDULES
E3	PANEL SCHEDULES

SITE CONTEXT

NOT FOR CONSTRUCTION

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SEALS

REGISTERED ARCHITECT
ISAAC MARTINEZ
BRITISH COLUMBIA

2025-10-30

KEY PLAN

REVISIONS + ISSUES

YYYY MM DD	ISSUED FOR
2025 07 28	INTERNAL REVIEW
2025 09 02	CLIENT REVIEW
2025 10 27	TENDER

PROJECT TITLE
LAKEVIEW WASHROOM RENO
1110 6th Ave INVERMERE, BC V0A 1K4

DRAWING TITLE
TITLE PAGE

SCALE:
DRAWN: BK
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JUL 25
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2025-10-28 1:27:03 PM

BRITISH COLUMBIA BUILDING CODE - 2024 EDITION REVIEW

LAKEVIEW WASHROOM RENO

Regulation:	Requirement:	Proposed:
Building Classification	3.2.2.64 Group F	
Building Height	One Storey	1 Storey
Building Area	Not more than 5600 sq.m. (Facing 1 Streets)	45 sq.m. Facing 1 Street

Regulation:	Requirement:	Proposed:
Construction 3.2.2.64.(2)	Combustible Construction or Non-Combustible Construction	Combustible and Non-Combustible
Sprinklers 3.2.2.64	Sprinklered or Non-Sprinklered	Non-Sprinklered

Regulation:	Requirement:	Proposed:
Suite Separation 3.3.1.1.(4)	no fire seperation is required between suites of buisness and personal services occupancy	
Janitor Rooms 3.3.1.22.(1)	... A room or space within a floor area for the storage of janitorial supplies shall be separated from the remainder of the building by a fire separation having a fire-resistance rating not less than 1 h.	Fire separation with a fire-resistance rating of 0h
Exits 3.4.4.1.(1)	... Every exit shall be separated from the remainder of the building by a fire separation having a fire-resistance rating not less than that required by subsection 3.2.2. but not less than 45 min.	Fire separation with a fire-resistance rating of 0h
Service Rooms 3.6.2.1.(1)	... Fuel-fired appliances shall be installed in service rooms separated from the remainder of the building by fire separations having a fire-resistance rating of not less than 1 h.	Fire separation with a fire-resistance rating of 0 h

Regulation:	Requirement:	Proposed:
Occupant Load 3.1.17.1.(2)	If a floor area or part thereof has been designed for an occupant load other than that determined from table 3.1.17.1., a permanent sign indicating that occupant load shall be posted in a conspicuous location.	Occupant Load: 10 People. Permanent Sign Required
Limiting Distance 3.2.3.1.(1)	... The area of unprotected openings in an exposed building face for the applicable limiting distance shall be not more than the value determined in accordance with the tables.	Refer to Life Safety Plan
Spatial Separation 3.2.3.7.(1) and (2)	... The fire-resistance rating, construction and cladding for exposing building faces of buildings or fire compartments ... shall comply with Table 3.2.3.7.	Refer to Life Safety Plan
Fire Alarm 3.2.4.1.(4)(h)	a lowhazard industrial occupancy with an occupant load not more than 75 above or below the first storey	Fire Alarm not required
Standpipe System 3.2.5.8.(1)(X)	... A standpipe system shall be installed in a building that is more than 3000 sq.m in 1 storey.	Standpipe System not Required
X Occupancy 3.3.X.X.(X)	Other uses cleaning and repair goods 4.60 per sqm	10
Number of Required Exits 3.4.2.1.(1)	... Every floor area intended for occupancy shall be served by at least 2 exits.	Refer to Life Safety Plan
Location of Exits 3.4.2.5.(1)(X)	Except for a high-hazard industrial occupancy, Sentence (1) need not apply if exits are placed along the perimeter of the floor area and are not more than 60 m apart, measured along the perimeter, provided each main aisle in the floor area leads directly to an exit.	Refer to Life Safety Plan
Water Closets 3.7.2.2.(X)	1-10 minimum # of water closets for each sex 1 1 Male and 1 Female water closets required	2 urinals and 2 stalls Male and 3 stalls Female
Barrier-Free Water Closet 3.8.2.8.(2)	Except as permitted by Sentence (3), where more than two water closets or a combination of more than one water closet and one urinal are provided in a washroom located in a storey to which an accessible path of travel is required in accordance with Article 3.8.2.3., at least one water-closet stall shall be accessible in accordance with Subsection 3.8.3. (See Note A-3.8.2.8.(1) to (4).)	2 Barrier Free Water Closet Provided
Power Door Operators 3.8.2.7.(1)(c)	... Except for doors provided with hold-open devices, doors equipped with a self-closing device shall be equipped with power door operators ... that allows persons to activate the opening of the doors in the intended direction of travel, where the doors are located c) in an entrance to an accessible washroom	Power door operators required. Refer to electrical plans

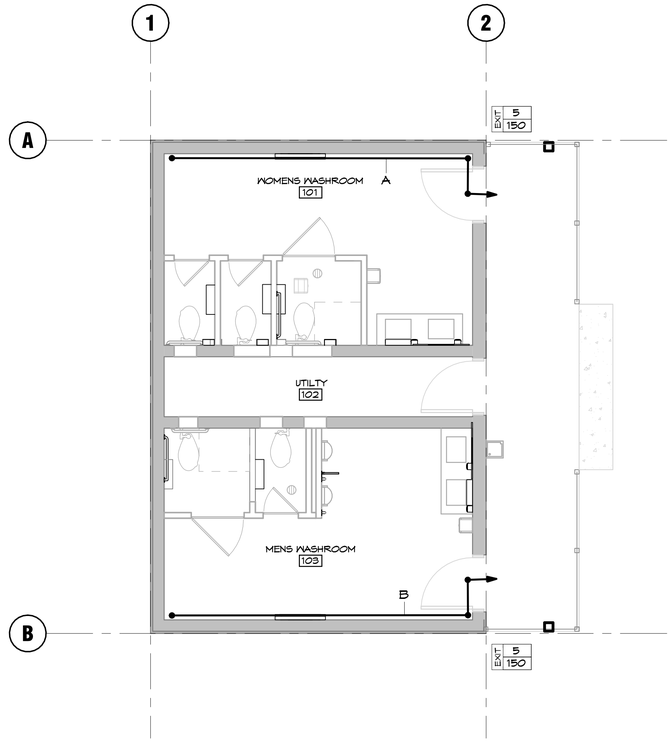
EXIT ROUTES

Mark	Length (mm)
A	6345
B	6345

LIFE SAFETY LEGEND

EXIT ROUTE

EXIT 0 / 0 — #EXITING / EXIT CAPACITY



B4 / A1.1 **LIFE SAFETY PLAN - MAIN FLOOR**

SCALE = 1 : 50

NOT FOR CONSTRUCTION

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SEALS

REGISTERED ARCHITECT ISAAC MARTINEZ BRITISH COLUMBIA

2025-10-30

KEY PLAN

REVISIONS + ISSUES

YYYY MM DD	ISSUED FOR
2025 07 28	INTERNAL REVIEW
2025 09 02	CLIENT REVIEW
2025 10 27	TENDER

PROJECT TITLE

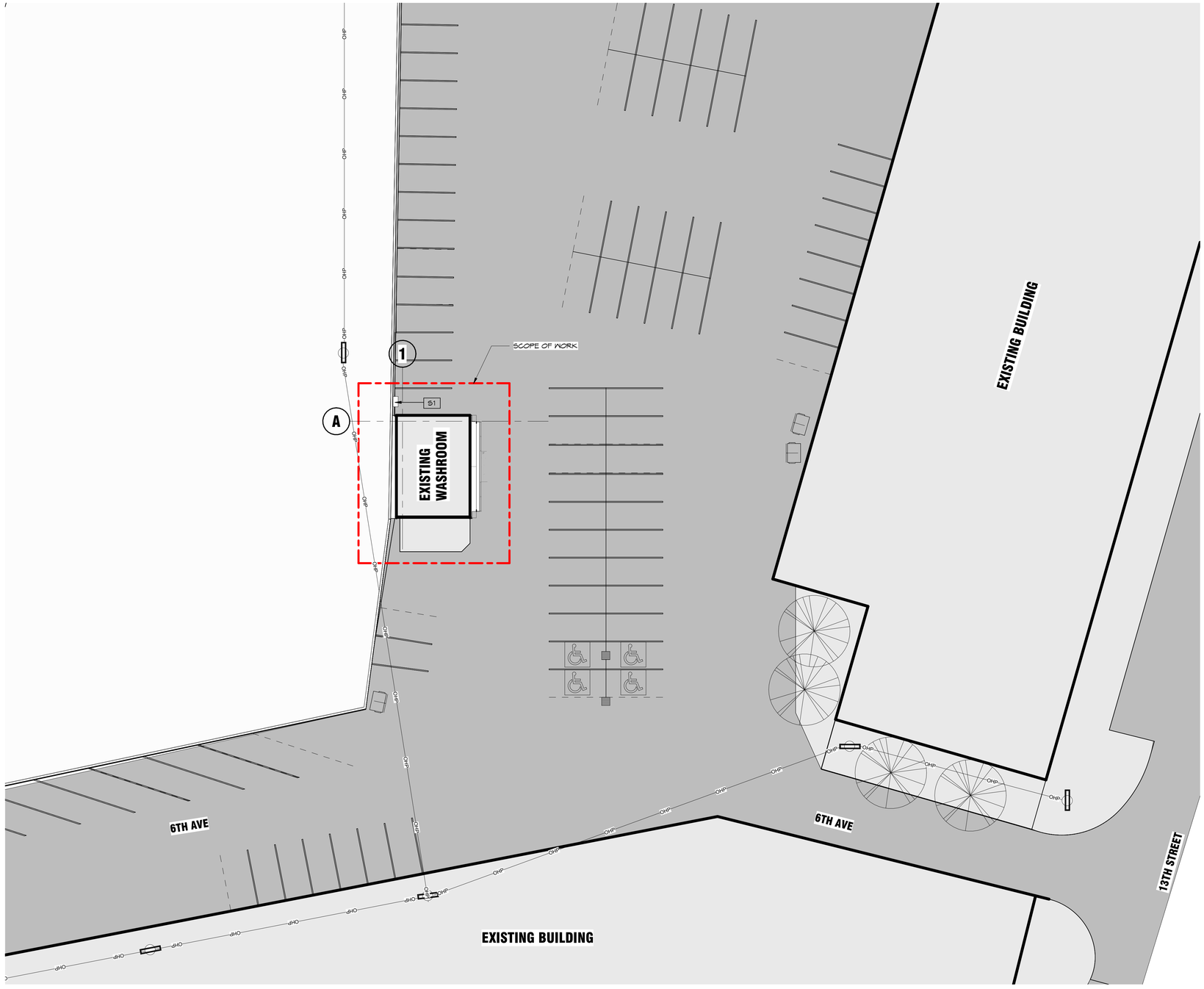
LAKEVIEW WASHROOM RENO
1110 6th Ave
INVERMERE, BC V0A 1K4

DRAWING TITLE

LIFE SAFETY PLAN

SCALE:	As indicated
DRAWN:	BK
CHECKED:	NL / RR
JUL 25	A1.1
25-050	

2025-10-28 1:27:04 PM



B2 / A2.0 **SITE PLAN**
SCALE = 1 : 200

SITE LEGEND

- EXISTING CONSTRUCTION
- OHP — OVERHEAD POWER LINE
- EXISTING POWER POLE
- EXISTING ASPHALT

KEYNOTE LEGEND,

Key Value	Keynote Text
S1	EXISTING E.V CHARGER TO REMAIN

NOT FOR CONSTRUCTION

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SEALS

REGISTERED ARCHITECT ISAAC MARTINEZ BRITISH COLUMBIA
2025-10-30

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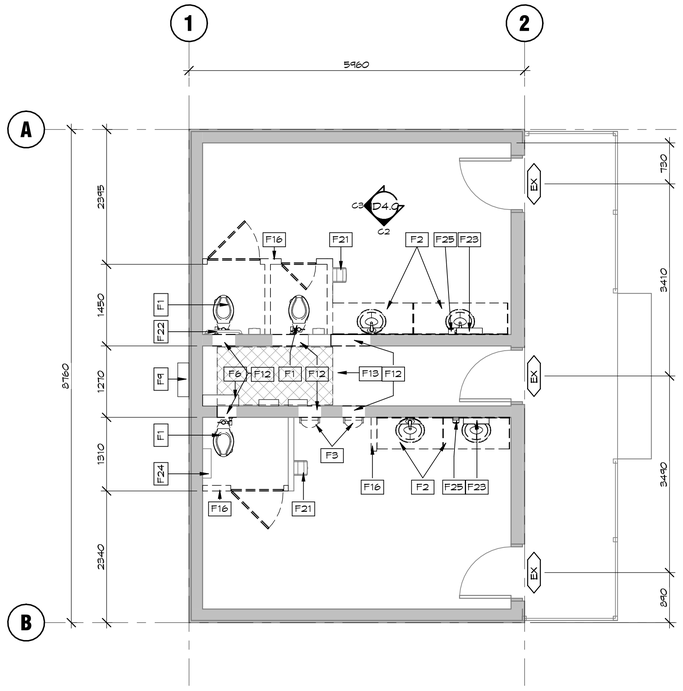
PROJECT TITLE
LAKEVIEW WASHROOM
RENO
1110 6th Ave
INVERMERE, BC V0A 1K4

DRAWING TITLE
SITE PLAN

SCALE: As indicated
DRAWN: BK
CHECKED: NL / RR
JUL 25
25-050
A2.0

2025-10-28 1:27:04 PM

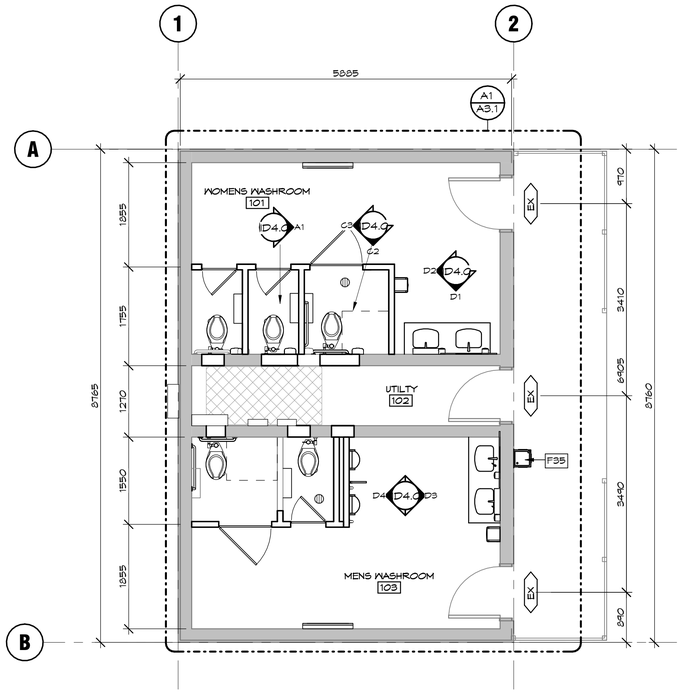


C1 A3.0 **DEMO MAIN FLOOR PLAN**

SCALE = 1 : 50

DEMOLITION PLAN LEGEND

- EXISTING CONSTRUCTION TO REMAIN
- EXISTING CONSTRUCTION TO BE REMOVED

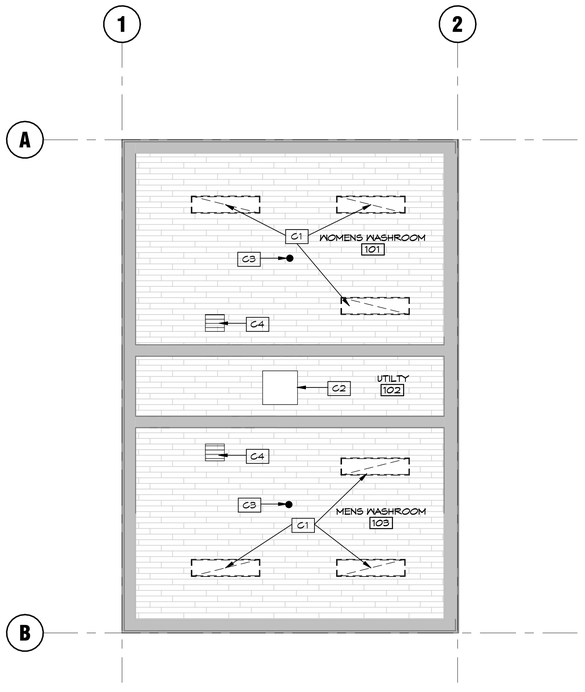


C3 A3.0 **NEW MAIN FLOOR PLAN**

SCALE = 1 : 50

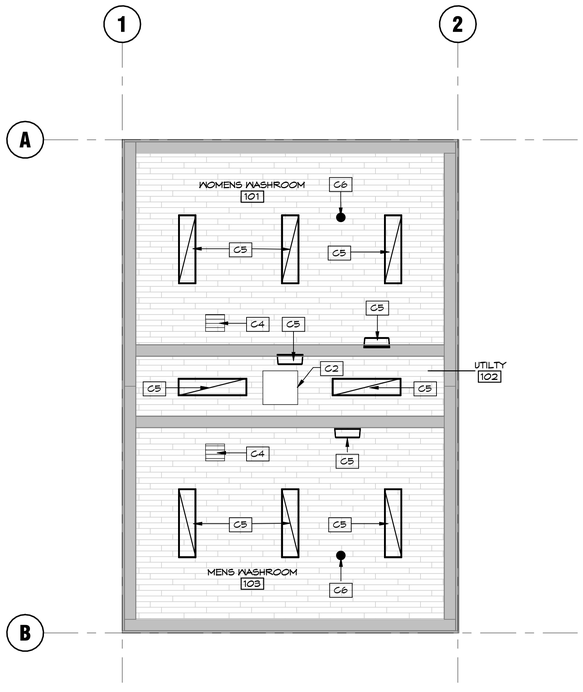
MODERNIZATION PLAN LEGEND

- EXISTING CONSTRUCTION TO REMAIN
- NEW CONSTRUCTION



A1 A3.0 **DEMO REFLECTED CEILING PLAN**

SCALE = 1 : 50



A3 A3.0 **NEW REFLECTED CEILING PLAN**

SCALE = 1 : 50

KEYNOTE LEGEND,

Key Value	Keynote Text
C1	REMOVE AND DISPOSE OF EXISTING LIGHT (SEE ELECTRICAL)
C2	EXISTING ATTIC HATCH TO REMAIN
C3	EXISTING MOTION SENSOR TO BE REMOVED (SEE ELECTRICAL)
C4	EXISTING VENT TO REMAIN
C5	NEW LIGHT (REFER TO ELECTRICAL)
C6	NEW SENSOR (REFER TO ELECTRICAL)
F1	REMOVE AND DISPOSE OF EXISTING TOILET
F2	REMOVE AND DISPOSE OF EXISTING PLUMBING FIXTURE AND MILLWORK
F3	REMOVE AND DISPOSE OF EXISTING URINAL
F6	EXISTING ELECTRICAL PANELS TO REMAIN
F9	EXISTING UTILITY BOX TO REMAIN
F12	CORE PORTION OF WALL, 1 CORE APPROXIMATELY 3", 1 CORE APPROXIMATELY 1" AT EACH LOCATION, COORDINATE EXACT SIZE WITH MECHANICAL
F13	SLAB REMOVAL, COORDINATE WITH MECHANICAL FOR SAW CUTTING OF SLAB +/- 2sqm
F16	DEMO WALL
F21	PAPER TOWEL DISPENSOR TO BE SALVAGED AND REINSTALLED
F22	GRAB BAR TO BE SALVAGED AND REINSTALLED
F23	MIRROR TO BE SALVAGED AND REINSTALLED
F24	TOILET PAPER HOLDER TO BE SALVAGED AND TURNED OVER TO OWNER
F25	SOAP DISPENSOR TO BE SALVAGED AND REINSTALLED
F35	WATER FOUNTAIN (SEE MECHANICAL)

DEMO NOTES

1. THE SEQUENCE OF DEMOLITION WILL BE COORDINATED BY THE GENERAL CONTRACTOR.
2. DEMOLITION DRAWINGS ARE TO BE READ IN CONJUNCTION WITH ALL OTHER DRAWINGS INCLUDING STRUCTURAL, MECHANICAL AND ELECTRICAL DRAWINGS.
3. ALL DIMENSIONS ARE APPROXIMATE AND REQUIRE SITE VERIFICATION. ALL EXISTING CONDITIONS ARE TO BE SITE CONFIRMED PRIOR TO COMMENCEMENT OF WORKS. ANY MAJOR DISCREPANCIES ARE TO BE IDENTIFIED AND ARCHITECT IS TO BE NOTIFIED.
4. ALL DIMENSIONS ARE TO FACE OF EXISTING WALLS AND CENTER LINE OF NEW WALLS AND DOORS UNLESS NOTED OTHERWISE.
5. PROTECT ALL EXISTING SURFACES TO REMAIN FROM DAMAGE DURING CONSTRUCTION. REPAIR AND MAKE GOOD ALL CONSTRUCTION RELATED DAMAGE. SURFACES ADJACENT TO DEMOLITION ITEMS TO BE REPAIRED AND MADE GOOD FOR NEW OWNER IDENTIFIED FINISHES.
6. GENERAL CONTRACTOR TO CO-ORDINATE ALL ARCHITECTURAL, STRUCTURAL, MECHANICAL AND ELECTRICAL DRAWINGS AND REPORT ANY DISCREPANCIES TO THE ARCHITECT PRIOR TO PROCEEDING.
7. GENERAL CONTRACTOR TO SALVAGE ALL WASHROOM ACCESSORIES I.E, SOAP DISPENSERS, GRAB BARS, T.P HOLDERS, NAPKIN DISPOSALS, GARBAGE CANS, PAPER TOWEL DISPENSERS

GENERAL NOTES

1. DO NOT SCALE DRAWINGS. CONFIRM ALL DIMENSIONS ON SITE AND REPORT DISCREPANCIES TO OWNER AND ARCHITECT.
2. CONTRACTOR TO COMPARE DRAWINGS TO SITE CONDITIONS AND REPORT DISCREPANCIES TO ARCHITECT.
3. ALL WORK COMPLIES WITH THE REQUIREMENTS OF THE LATEST EDITION OF THE NATIONAL BUILDING CODE OF BRITISH COLUMBIA AND LOCAL ORDINANCES.
4. COORDINATE ALL INFORMATION FROM ALL ARCHITECTURAL, STRUCTURAL, MECHANICAL, ELECTRICAL AND CIVIL CONSULTANTS DOCUMENTS. COORDINATE DIMENSIONS REQUIRED FOR THE FITTING OF ALL COMPONENTS AS NECESSARY TO ENSURE THEIR SOUND OPERATION UPON COMPLETION.
5. ALL WALL, FLOOR, AND ROOF ASSEMBLIES SHOWN ON THE CONSTRUCTION ASSEMBLY PAGE SHOW TRUE REPRESENTATION OF COMPLETED CONSTRUCTION ASSEMBLY. REFER TO SPECIFICATIONS FOR ADDITIONAL INFORMATION.
6. FURR-IN ALL EXPOSED MECHANICAL AND/OR ELECTRICAL COMPONENTS IN FINISHED AREAS, AND AS INDICATED.
7. SEE MECHANICAL AND ELECTRICAL FOR DIFFUSERS, GRILLES, FIXTURES, AND EQUIPMENT. CO-ORDINATE SIZES AND EXACT LOCATIONS TO SUIT ARCHITECTURAL REFLECTED CEILING PLANS AND/OR DETAILS.
8. CAULK AND SEAL AROUND ALL DUCTS AND PIPES PASSING THROUGH FIRE RATED PARTITIONS AND FLOOR ASSEMBLIES WITH APPROVED (ULC) MASTIC CAULKING.
9. CONTRACTOR TO PATCH AND MAKE GOOD ANY LOCATION THAT REQUIRES DEMOLITION TO FINISH SURFACES AS REQUIRED.
10. CONTRACTOR TO COORDINATE WITH OWNER FOR ALL ITEMS THAT ARE TO BE SALVAGED AND TURNED OVER TO OWNER DURING DEMOLITION WORK.
11 EXISTING WALLS NEED TO BE PATCHED AND PREPARED AT OLD ACCESSORY LOCATIONS FOR NEW FINISHES AND ACCESSORIES
12. ALL WALLS, FLOORS AND CEILINGS TO BE REPAINTED TO MATCH EXSITING EXCLUDING MECHANICAL ROOM

LEGEND

- EXISTING WOOD BOARD CEILING
- VARIOUS LIGHTING, REFER TO ELECTRICAL

GENERAL NOTES

REFER TO MECHANICAL AND ELECTRICAL DRAWINGS FOR DIFFUSERS, GRILLES, FIXTURES AND EQUIPMENT; CO-ORDINATE SIZES AND EXACT LOCATIONS WITH ARCHITECTURAL REFLECTED CEILING PLAN.

INSTALL CEILING ACCESS PANELS SUPPLIED BY MECHANICAL OR ELECTRICAL SUBTRADES. GENERAL CONTRACTOR TO PROVIDE ROOF ACCESS HATCH

NEW LIGHT FIXTURES AND LOCATION TO BE COORDINATED WITH ELECTRICAL CONTRACTOR

NOT FOR CONSTRUCTION

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SEALS

REGISTERED ARCHITECT ISAAC MARTINEZ BRITISH COLUMBIA

2025-10-30

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PROJECT TITLE

LAKEVIEW WASHROOM RENO
1110 6th Ave INVERMERE, BC V0A 1K4

DRAWING TITLE

DEMO+NEW MAIN FLOOR PLAN

SCALE:	As indicated
DRAWN:	BK
CHECKED:	NL / RR
JUL 25	A3.0
25-050	

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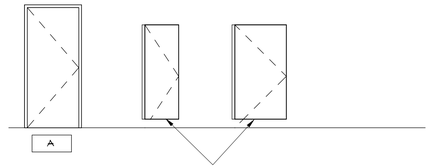
DOOR SCHEDULE

Dimension are Nominal Only, Contractor to Verify on Site

LOCATION			DOOR			DOOR				FRAME	
DOOR #	FROM ROOM	TO ROOM	ELEV.	WIDTH	HEIGHT	MATERIAL	FINISH	COLOUR	F.R. LABEL	MATERIAL	NOTES
EX	WOMENS WASHROOM	EXTERIOR	A	915	2135	EXISTING	PAINTED		20 min	PSF	DOOR TO BE REPAINTED, NEW BF OPERATOR
EX	UTILITY	EXTERIOR	A	915	2135	EXISTING	PAINTED		20 min	PSF	DOOR TO BE REPAINTED
EX	MENS WASHROOM	EXTERIOR	A	915	2135	EXISTING	PAINTED		20 min	PSF	DOOR TO BE REPAINTED, NEW BF OPERATOR

DOOR ELEVATIONS



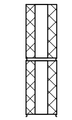
BATHROOM STALL DOORS (SEE SPECIFICATIONS)

KEYNOTE LEGEND,

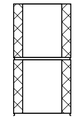
Key Value	Keynote Text
F4	NEW BABY CHANGE STAION (SEE SPECIFICATIONS)
F5	NEW LOW FLOW TOILET (REFER TO MECHANICAL)
F6	EXISTING ELECTRICAL PANELS TO REMAIN
F9	EXISTING UTILITY BOX TO REMAIN
F10	NEW SINK (REFER TO MECHANICAL)
F11	NEW URINAL (REFER TO MECHANICAL)
F14	WALL TO BE EXTENDED TO UNDER SIDE OF CEILING
F17	BATHROOM STALL DOOR (SEE SPECIFICATIONS)
F20	NEW HOSE BIB (REFER TO MECHANICAL)
F21	PAPER TOWEL DISPENSOR TO BE SALVAGED AND REINSTALLED
F23	MIRROR TO BE SALVAGED AND REINSTALLED
F25	SOAP DISPENSOR TO BE SALVAGED AND REINSTALLED
F27	PREP WALL AND PATCH FOR NEW SINKS
F28	PAINT INTERIOR AND EXTERIOR OF DOOR AND FRAME
F29	TOILET PAPER HOLDER (SEE SPECIFICATIONS)
F31	MIRROR (SEE SPECIFICATIONS)
F32	SOAP DISPENSER (SEE SPECIFICATIONS)
F34	NAPKIN DISPOSAL (SEE SPECIFICATIONS)

WALL ASSEMBLIES LEGEND

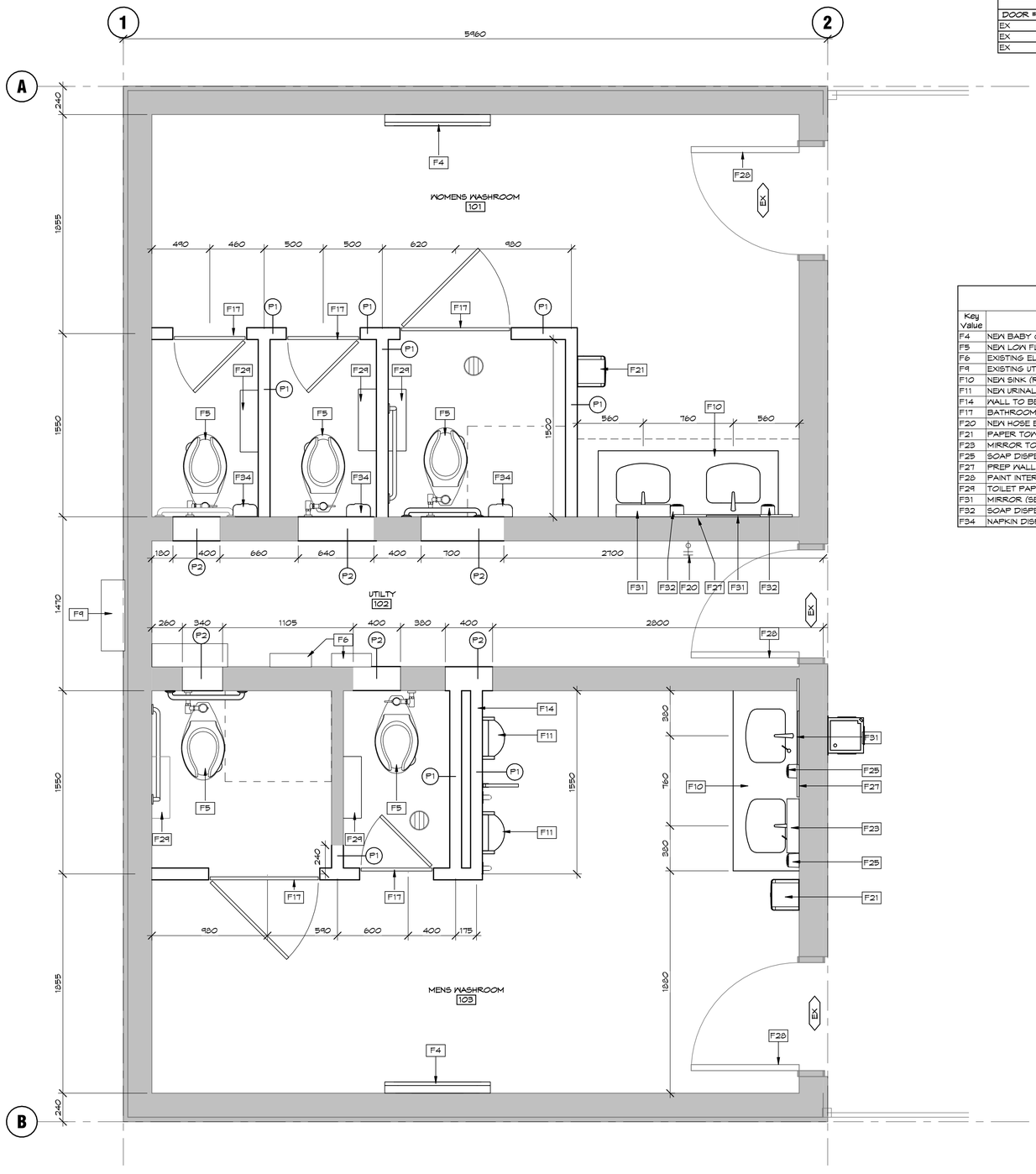
INTERIOR PARTITIONS



P1 INTERIOR PARTITION
CONCRETE MASONRY UNIT - TO MATCH EXISTING STALL PARTITIONS
FINISH
PAINTING TO MATCH EXISTING BOTH SIDES



P2 INTERIOR PARTITION
CONCRETE MASONRY UNIT - TO MATCH EXISTING
PAINTING TO MATCH EXISTING BOTH SIDES

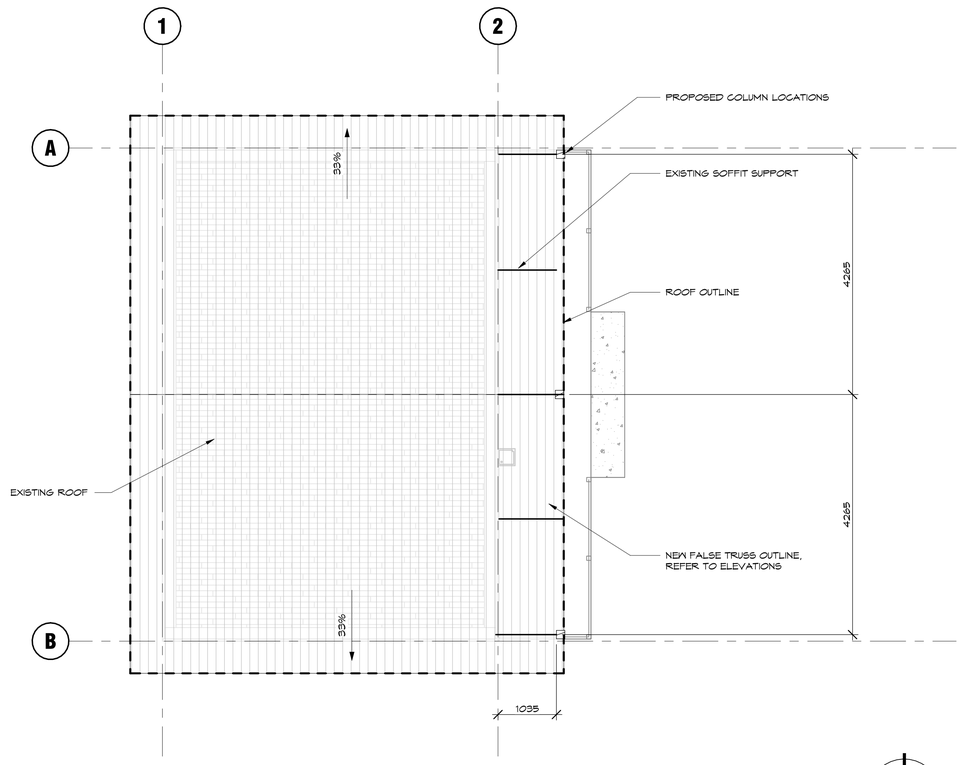


A1 / A3.1 **ENLARGED FLOOR PLAN**
SCALE = 1 : 20

MODERNIZATION PLAN LEGEND

EXISTING CONSTRUCTION TO REMAIN

NEW CONSTRUCTION



A4 / A3.1 **ROOF PLAN**
SCALE = 1 : 50

NOT FOR CONSTRUCTION

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SEALS

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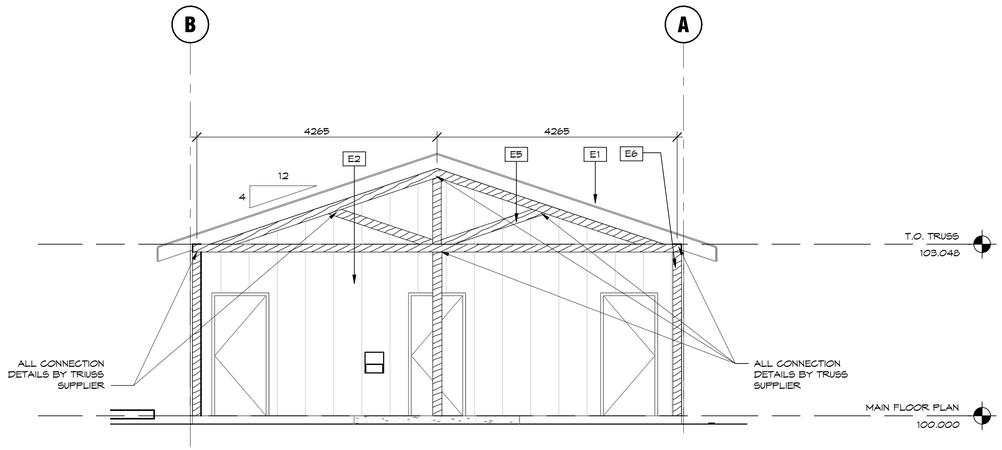
PROJECT TITLE
LAKEVIEW WASHROOM RENO
1110 6th Ave
INVERMERE, BC V0A 1K4

DRAWING TITLE
ENLARGED FLOOR PLANS + ROOF PLAN

SCALE: As indicated
DRAWN: BK
CHECKED: NL / RR
JUL 25
25-050
A3.1

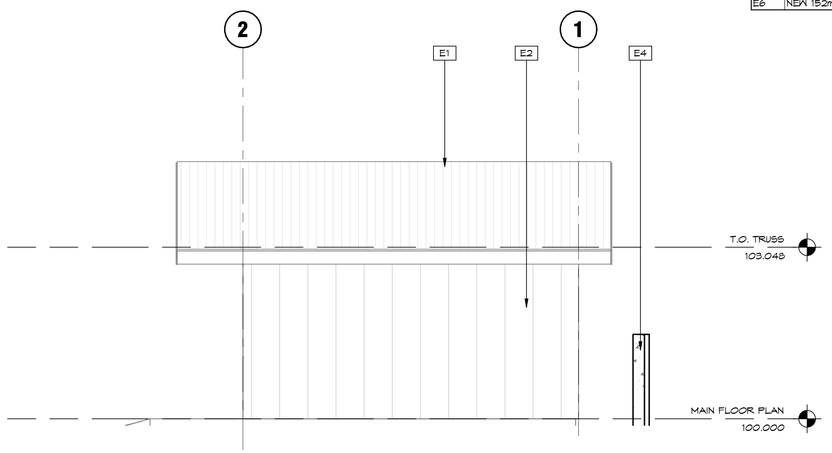
2025-10-28 1:27:06 PM

KEYNOTE LEGEND,	
Key Value	Keynote Text
E1	EXISTING STANDING METAL SEAM ROOF
E2	EXISTING BATTEN AND BOARD SIDING
E4	EXISTING RETAINING WALL
E5	NEW 152mm x 152mm TIMBER TRUSSES
E6	NEW 152mm x 152mm TIMBER COLUMNS



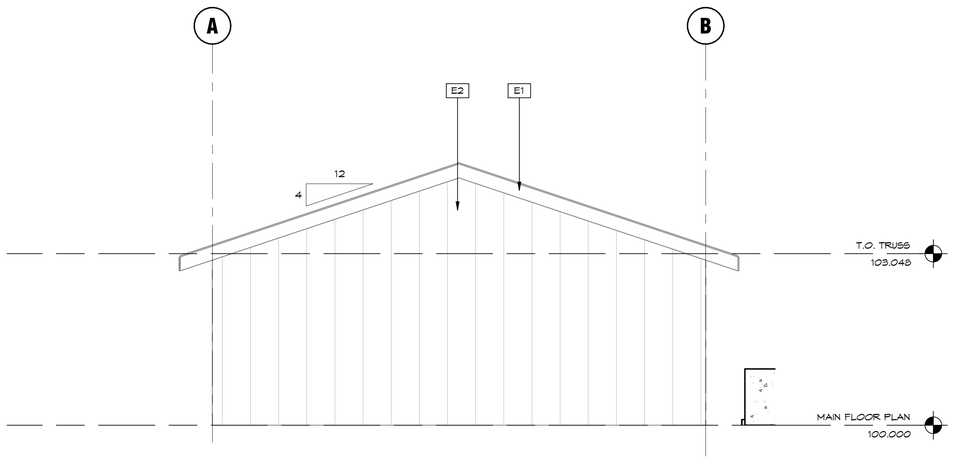
C1 / A4.0 **NORTH ELEVATION**

SCALE = 1 : 50



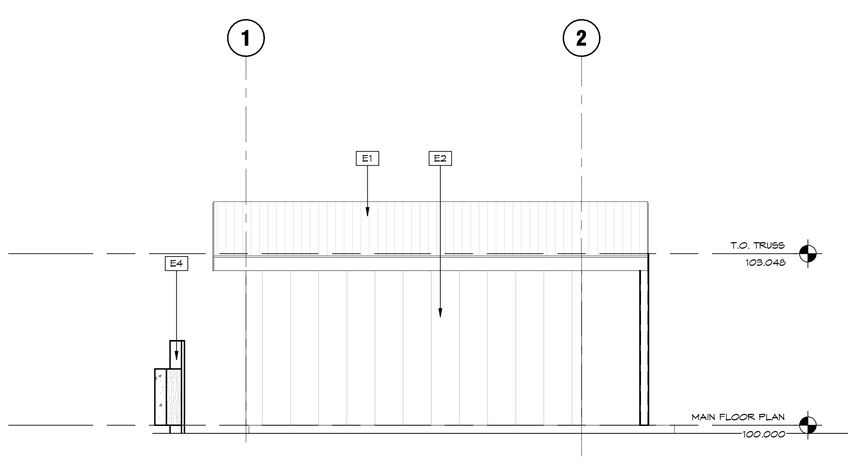
C4 / A4.0 **EAST ELEVATION**

SCALE = 1 : 50



A1 / A4.0 **SOUTH ELEVATION**

SCALE = 1 : 50



A4 / A4.0 **WEST ELEVATION**

SCALE = 1 : 50

NOT FOR CONSTRUCTION

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LAKEVIEW WASHROOM RENO
1110 6th Ave
INVERMERE, BC V0A 1K4

DRAWING TITLE

EXTERIOR BUILDING ELEVATIONS

SCALE: 1 : 50
DRAWN: BK
CHECKED: NL / RR
JUL 25
25-050
A4.0

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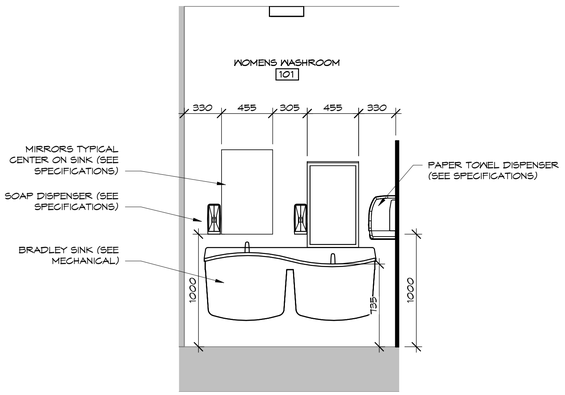
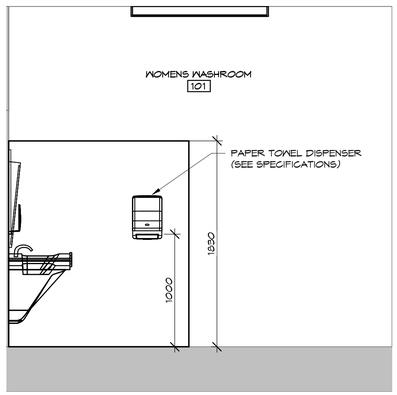


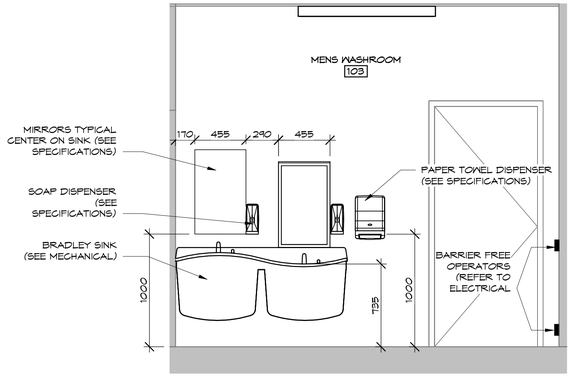
D1 / ID4.0 **WOMENS WASHROOM VANITY**

SCALE = 1 : 25



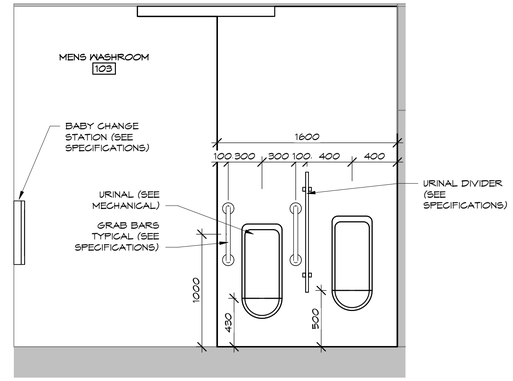
D2 / ID4.0 **WOMENS WASHROOM**

SCALE = 1 : 25



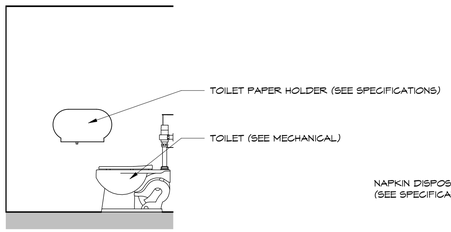
D3 / ID4.0 **MENS WASHROOM VANITY**

SCALE = 1 : 25



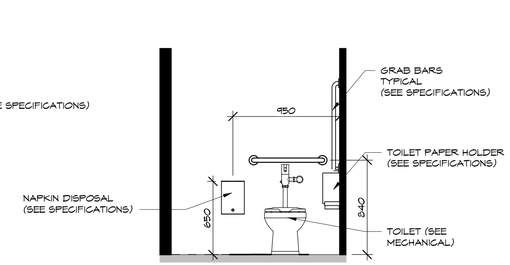
D4 / ID4.0 **URINAL ELEVATION**

SCALE = 1 : 25



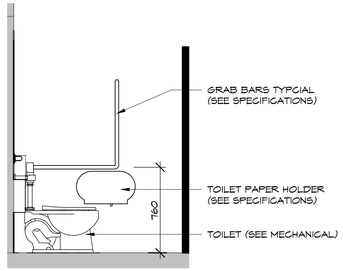
A1 / ID4.0 **WASHROOM STALL**

SCALE = 1 : 25



C2 / ID4.0 **BF STALL**

SCALE = 1 : 25



C3 / ID4.0 **BF STALL.**

SCALE = 1 : 25

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LAKEVIEW WASHROOM RENO
1110 6th Ave
INVERMERE, BC V0A 1K4

DRAWING TITLE

INTERIOR ELEVATIONS

SCALE: 1 : 25
DRAWN: Author
CHECKED: Checker
JUL 25
25-050

ID4.0

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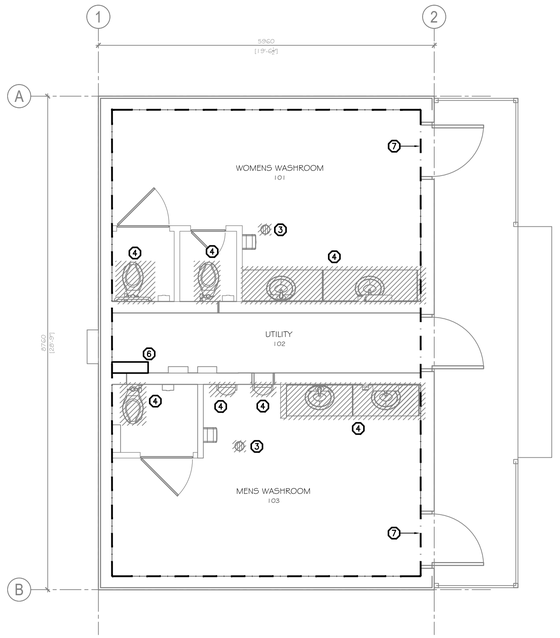
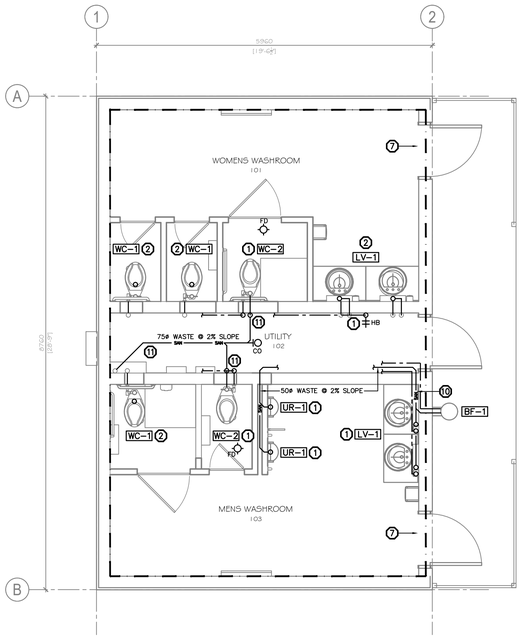
1 2 3 4 5



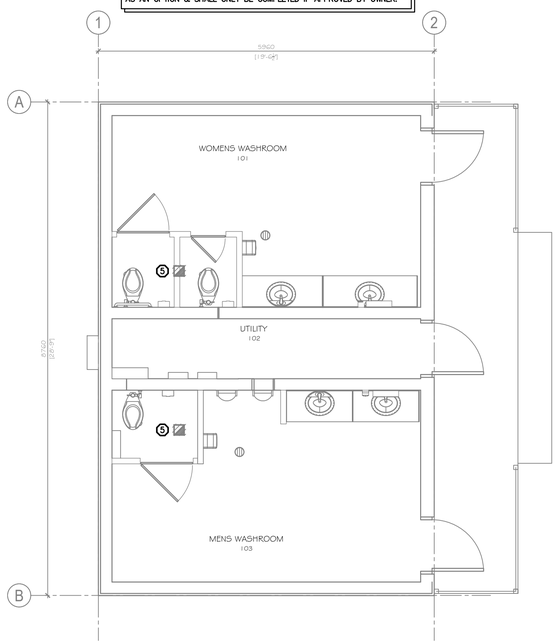
PLUMBING DEMOLITION PLAN
SCALE: 1:50



PLUMBING RENOVATION PLAN
SCALE: 1:50

NOTE:

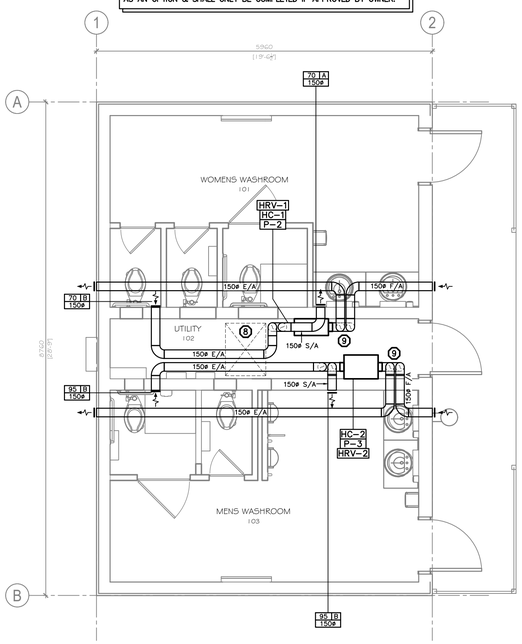
VENTILATION DEMOLITION & RENOVATION SCOPE (EXHAUST FAN & DUCTWORK REMOVAL, HRV, HEATING COIL & DUCTWORK INSTALLATION, ASSOCIATED CONTROL, ETC.) DEPICTED ON THESE DRAWING TO BE PRICED AS AN OPTION & SHALL ONLY BE COMPLETED IF APPROVED BY OWNER.



HVAC DEMOLITION PLAN
SCALE: 1:50

NOTE:

VENTILATION DEMOLITION & RENOVATION SCOPE (EXHAUST FAN & DUCTWORK REMOVAL, HRV, HEATING COIL & DUCTWORK INSTALLATION, ASSOCIATED CONTROL, ETC.) DEPICTED ON THESE DRAWING TO BE PRICED AS AN OPTION & SHALL ONLY BE COMPLETED IF APPROVED BY OWNER.



HVAC RENOVATION PLAN
SCALE: 1:50

GENERAL DEMOLITION NOTES:

1. ALL INFORMATION AND WORK SHOWN AS EXISTING WAS TAKEN FROM NOTES OF CURSORY FIELD VISITS BY THE ENGINEER AND FROM PAST CONSTRUCTION DOCUMENTS. EQUIPMENT AND DUCTWORK HAVE BEEN SHOWN IN AN APPROXIMATE WAY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ENGINEER. CONSEQUENTLY, THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING ALL WORK NECESSARY TO RENOVATE, ALTER, CHANGE, AND REPAIR EXISTING SYSTEMS BASED UPON THE ACTUAL FIELD CONDITIONS.
2. ALL DEMOLITION WORK SHALL BE PERFORMED WITH "DUE CARE AND DILIGENCE" SO AS TO PREVENT THE UNNECESSARY DESTRUCTION AND/OR DAMAGE TO SYSTEMS THAT SHALL REMAIN IN OPERATION AT THE CONCLUSION OF THIS WORK. DETERMINE THE EXACT LOCATION OF ALL EXISTING EQUIPMENT, DEVICES AND WIRING BEFORE COMMENCING WORK.
3. LOCATE AND PRESERVE ALL PORTIONS OF THE EXISTING PLUMBING & HVAC SYSTEMS WHICH SHALL REMAIN.
4. REMOVE AND REINSTALL (OR PROTECT IN PLACE) ALL EXISTING EQUIPMENT AND DEVICES TO REMAIN ON OR IN WALLS, CEILINGS AND FLOORS WHICH SHALL BE EXPOSED TO DEMOLITION AND CONSTRUCTION ACTIVITIES, AND WHICH MAY BE DAMAGED BY DUST, DEBRIS, ETC.
5. WHERE EXISTING EQUIPMENT AND DEVICES SHALL BE REMOVED, THE CONTRACTOR SHALL REMOVE ALL THE ASSOCIATED DUCTWORK, PIPING AND CONTROLS THAT SHALL NOT REMAIN IN OPERATION BACK TO THEIR RESPECTIVE SOURCE OR TO THE POINT ON A SHARED SYSTEM FROM WHERE THE EQUIPMENT OR DEVICE IS SERVED.
6. RELOCATE AS NECESSARY ALL EXISTING DUCTWORK, PIPING AND CONTROLS FOUND PASSING THROUGH THE AREA OF CONSTRUCTION, AND WHICH ARE PRESENTLY IN USE IN OTHER PORTIONS OF THE BUILDING UNAFFECTED BY THIS PROJECT PHASE, TO MAINTAIN THE CONTINUITY OF SERVICE AND GROUNDING, AND TO CONCEAL THEM ABOVE NEW CEILINGS.
7. ALL EXISTING DAMAGED DUCTWORK, GRILLES AND DEVICES WITHIN THE AREA OF CONSTRUCTION AND SHOWN TO REMAIN IN OPERATION SHALL BE REPLACED WITH NEW MATERIALS CONFORMING TO THESE CONTRACT DOCUMENTS.
8. ALL EQUIPMENT, DEVICES, AND MATERIALS REMOVED DURING DEMOLITION WORK AND NOT INDICATED TO BE REUSED OR TURNED OVER TO THE OWNER SHALL BECOME THE RESPONSIBILITY OF THE CONTRACTOR FOR DISPOSAL.

SYMBOLS LEGEND

- CEILING MOUNTED DUCTS
- FD — FLOOR DRAIN
- CO — CLEANOUT (FLOOR ACCESS)
- (T) — THERMOSTAT
- SAN — SANITARY WASTE PIPING
- DOMESTIC COLD WATER
- DOMESTIC HOT WATER
- DEMOLITION HATCH (PIPING, DUCTWORK, EQUIPMENT TO BE REMOVED)
- EXISTING PIPING, DUCTWORK & EQUIPMENT SHOWN LIGHT
- TYPE / V-2 1A / 300 (mm) — GRILLE/DIFFUSER TAG

HVAC GENERAL NOTES

1. MECHANICAL EQUIPMENT, DUCTS & PIPING ARE TO BE COORDINATED WITH STRUCTURAL JOISTS, BEAMS & CROSS BRACING.
2. PROVIDE FIRE DAMPERS AT ALL FIRE RATED PENETRATIONS AS REQUIRED BY CODE.
3. MAINTAIN AT LEAST 3000mm BETWEEN EXHAUST TERMINATIONS & AIR INTAKES, DOORS & OPERABLE WINDOWS.

PLUMBING GENERAL NOTES

1. PROVIDE ISOLATION VALVES AT ALL FIXTURES & EQUIPMENT.
2. VENT ALL PLUMBING AS PER NATIONAL PLUMBING CODE.
3. SIZE INDIVIDUAL LINES TO FIXTURES AS PER ROUGH IN SCHEDULE.
4. MAINTAIN AT LEAST 12FT BETWEEN PLUMBING VENT TERMINATIONS & AIR INTAKES.

DRAWING NOTES:

1. NEW FIXTURE TO BE INSTALLED IN NEW LOCATION. EXTEND DOMESTIC COLD OR TEMPERED WATER, SANITARY & VENT LINES (AS APPLICABLE) FROM NEAREST EXISTING SERVICES OF ADEQUATE SIZE. CONFIRM EXACT TIE-IN LOCATIONS ON SITE.
2. NEW FIXTURE TO REPLACE EXISTING. CONNECT TO EXISTING DOMESTIC COLD OR TEMPERED WATER, SANITARY & VENT SERVICES (AS APPLICABLE).
3. REMOVE EXISTING FLOOR DRAIN STRAINER & RETAIN BODY FOR INSTALLATION OF NEW STRAINER.
4. REMOVE EXISTING FIXTURE. RETAIN EXISTING SANITARY, VENT & DOMESTIC WATER SERVICES FOR CONNECTION TO NEW FIXTURE(S) AS REQUIRED.
5. REMOVE EXISTING EXHAUST FAN & ASSOCIATED DUCTWORK. PATCH & SEAL REMAINING WALL & CEILING PENETRATIONS AS REQUIRED.
6. EXISTING HYDRONIC HEATING SYSTEM (BOILER, PUMP, IN-FLOOR HEATING, SYSTEM FEEDER TANK, ETC.) TO REMAIN.
7. FACILITY HEATED BY EXISTING IN-FLOOR HEATING SYSTEM. X-RAY FLOOR TO LOCATE HEATING LINES PRIOR TO ANY SLAB DEMOLITION.
8. APPROXIMATE LOCATION OF EXISTING ATTIC ACCESS. COORDINATE DUCT & PIPE ROUTING AS REQUIRED TO AVOID CONFLICT. 150ø EXHAUST DUCTS TO RUN STACKED ALONG WALL AT HIGH LEVEL.
9. 150ø OUTSIDE AIR & EXHAUST FROM ATTIC SPACE TO CONNECT TO HRV. HRV TO BE WALL MOUNTED AT HIGH LEVEL. COORDINATE EXACT LOCATION ON SITE & MAINTAIN MANUFACTURER RECOMMENDED CLEARANCES.
10. ENCLOSE PIPING WITHIN AVAILABLE LAV STATION ENCLOSURE WHERE POSSIBLE. PIPING THAT REMAINS EXPOSED TO OCCUPANTS SHALL BE PROTECTED IN STAINLESS STEEL ENCLOSURE UNDER LAV STATION.
11. SCOPE EXISTING SANITARY LINES, X-RAY EXISTING SLAB & SELECTIVELY DEMOLISH SLAB AS REQUIRED TO RUN NEW WATER CLOSET WASTE LINES UNDERSLAB TO EXISTING MAINS. CONFIRM EXACT TIE-IN LOCATION & ROUTING ON SITE.

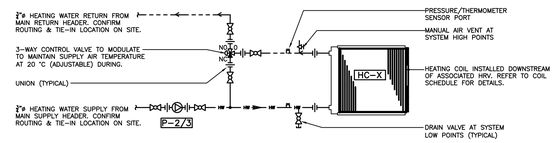
PLUMBING FIXTURES ROUGH IN SCHEDULE

PLUMBING FIXTURE	HOT WATER	COLD WATER	WASTE	VENT
LAVATORY	1/2"ø	1/2"ø	1 1/4"ø	1 1/4"ø
WATER CLOSET (F. VALVE)	--	1"ø	3"ø	2"ø
URINAL (WATERLESS)	--	--	2"ø	1 1/2"ø
FLOOR DRAIN	--	--	3"ø	1 1/2"ø
HOSE BIBB	--	3/4"ø	--	--
DRINKING FOUNTAIN	--	1/2"ø	1 1/4"ø	1 1/4"ø

NOTE: ALL PLUMBING FIXTURES TO INCLUDE ISOLATION VALVES

NOTE:

VENTILATION DEMOLITION & RENOVATION SCOPE (EXHAUST FAN & DUCTWORK REMOVAL, HRVS, HEATING COILS & DUCTWORK INSTALLATION, ASSOCIATED CONTROL, ETC.) DEPICTED ON THESE DRAWING TO BE PRICED AS AN OPTION & SHALL ONLY BE COMPLETED IF APPROVED BY OWNER.



PUMPED HEATING COIL SCHEMATIC
SCALE: NONE

berry architecture
+associates

CONSULTANT
KB ENGINEERING LIMITED
MECHANICAL / ELECTRICAL CONSULTANTS

SEALS
PROFESSIONAL ENGINEER
PROVINCE OF BRITISH COLUMBIA
S. J. DONOVAN
60382
Member ID: 60382 Permit #1001652
2025-10-20

KEYPLAN

REVISIONS & ISSUES

MON/DD/YY	ISSUED FOR
09/02/2025	75% REVIEW
10/20/2025	TENDER

PROJECT TITLE
LAKEVIEW WASHROOM RENO
1110 6TH AVE INVERMERE, BC V0A 1K4

DRAWING TITLE
MECHANICAL PLAN

SCALE:	AS INDICATED
DRAWN:	KM
CHECKED:	SD
AUG 25	M1
25.170	

PLUMBING FIXTURES & EQUIPMENT

TAG	DESCRIPTION	MANUFACTURER (OR EQUAL)	MODEL NO. (OR EQUAL)	DESCRIPTION
HB	HOSE BIBB	WATTS	—	¾"ø HOSE BIBB C/W INTEGRAL VACUUM BREAKER & 48" LONG HOSE
FD	FLOOR DRAIN	WATTS	FD-100	EPOXY COATED CAST IRON FLOOR DRAIN WITH ANCHOR FLANGE, REVERSIBLE CLAMPING COLLAR WITH PRIMARY AND SECONDARY WEEPHOLES, ADJUSTABLE ROUND HEEL PROOF NICKEL BRONZE STRAINER. REFER TO PLUMBING FIXTURE ROUGH-IN SCHEDULE FOR SIZE.
WC-1	BOTTOM OUTLET WATER CLOSET	AMERICAN STANDARD BEMIS	WATER CLOSET: 3463001.020 SEAT: 1955CT 000	FLOOR MOUNTED, BOTTOM OULET, REAR DOMESTIC WATER CONNECTION, 17" BOWL HEIGHT, WHITE VITREOUS CHINA, ELONGATED BOWL, C/W AUTOMATIC FLUSH VALVE & HARD-WIRED FLUSH VALVE POWER KIT (SLOAN SL ROYAL 140-1.28 TMO SWB ESS, SL-EL-154 OR EQUAL), OPEN FRONT SEAT
WC-2	REAR OUTLET WATER CLOSET	AMERICAN STANDARD BEMIS	WATER CLOSET: 3697001.020 SEAT: 1955CT 000	FLOOR MOUNTED, REAR OUTLET, REAR DOMESTIC WATER CONNECTION, 17" BOWL HEIGHT, WHITE VITREOUS CHINA, ELONGATED BOWL, C/W AUTOMATIC FLUSH VALVE & HARD-WIRED FLUSH VALVE POWER KIT (SLOAN SL ROYAL 140-1.28 TMO SWB ESS, SL-EL-154 OR EQUAL), OPEN FRONT SEAT
LV-1	LAVATORY	BRADLEY	FL-2H	ADA COMPLIANT TWO STATION LAVATORY SYSTEM C/W SOLID SURFACE COUNTERTOP (COLOUR: WHITE - TO BE CONFIRMED BY ARCHITECT DURING SHOP DRAWING REVIEWS) & INTEGRAL BOWL, INTEGRAL OVERFLOW & DECK MOUNTED HARD WIRED FAUCETS.
UR-1	URINAL	AMERICAN STANDARD	6154100.020	WALL-HUNG WATERLESS URINAL, VITREOUS CHINA, WHITE FINISH, WATERLESS (FLUSH FREE), 89 MM (3-1/2") OUTLET, INCLUDES DRAIN FLANGE COUPLER, ODOR BARRIER LIQUID, INSERT KEY, DRAIN INSERT, INCLUDES MOUNTING HARDWARE AND WALL BRACKET. OVERALL DIMENSIONS: 394 MM (15-1/2") PROJECTION FROM THE WALL, 403 MM (15-7/8") WIDE, 622 MM (24-1/2") HIGH. C/W SUITABLE WALL CARRIER & TWO-PIECE EXPANDABLE CLEANOUT PLUG FOR URINAL W/ STAINLESS STEEL COVER.
BF-1	BOTTLE FILL STATION	ELKAY	LK4405BFFRK	OUTDOOR SINGLE STATION BOTTLE FILLING STATION, COLOUR: BLACK, WALL MOUNTED, NON-FILTERED, NON-REFRIGERATED & FREEZE RESISTANT. FEATURES SHALL INCLUDE HEAVY DUTY VANDAL RESISTANT, LAMINAR FLOW, SEALED FREEZE RESISTANT, 300 SERIES STAINLESS, MECHANICAL BUTTON ACTIVATION. PRODUCT SHALL BE INTENDED FOR OUTDOOR APPLICATIONS.
ALL FIXTURES SHALL BE CSA APPROVED UNITS, AS SELECTED BY THE PLUMBING CONTRACTOR AND APPROVED BY THE OWNERS, AND SHALL INCLUDE ALL STANDARD FITTINGS AND ACCESSORIES TO SUIT.				

NOTE:

VENTILATION DEMOLITION & RENOVATION SCOPE (EXHAUST FAN & DUCTWORK REMOVAL, HRVS, HEATING COILS, CIRCULATOR PUMPS, DUCTWORK INSTALLATION & ASSOCIATED CONTROL, ETC.) DEPICTED ON THESE DRAWINGS & IN THE BELOW SCHEDULES TO BE PRICED AS AN OPTION & SHALL ONLY BE COMPLETED IF APPROVED BY OWNER.

GRILLE & DIFFUSER SCHEDULE

NOTES:
1. REFER TO REFLECTED CEILING PLANS EXACT LOCATION. PROVIDE ALL FRAMES AND ACCESSORIES AS REQUIRED FOR PROPER INSTALLATION.
2. COLOR TO BE SELECTED/CONFIRMED BY ARCHITECT FROM STANDARD COLORS.

GRILLE TYPE	DESCRIPTION	MOUNTING/CEILING FINISH	SIZE	COLOUR	MANUFACTURER (OR EQUAL)	MODEL NO.	COMMENTS
SUPPLY AIR							
A	LOUVERED SUPPLY GRILLE	STRUCTURAL BLOCK	AS NOTED	WHITE	EH PRICE	520	STEEL DOUBLE DEFLECTION GRILLE; ¾" BLADE SPACING; FRONT BLADES PARALLEL TO LONG DIMENSION; REFER TO DRAWINGS FOR SIZES & CAPACITIES
RETURN & EXHAUST AIR							
B	LOUVERED EXHAUST/RETURN GRILLE	STRUCTURAL BLOCK	AS NOTED	WHITE	EH PRICE	530	STEEL SINGLE DEFLECTION GRILLE; ¾" BLADE SPACING; REFER TO DRAWINGS FOR SIZES & CAPACITIES

HEATING COIL SCHEDULE

TAG	DESCRIPTION	MANUFACTURER	CAPACITY (kW)	FLUID TYPE	FLUID FLOW (L/s)	EFT (°C)	LFT (°C)	AIRFLOW (L/s)	EAT (°C)	LAT (°C)	CONTROLS / COMMENTS
HC-1	WOMEN'S WASHROOM HEATING COIL	OWNER SPECIFIED	2.25	50% PROPYLENE GLYCOL	0.042	130	100	70	-10	20	3-WAY CONTROL VALVE TO MODULATE TO CONTROL SUPPLY AIR TEMPERATURE AT 21°C
HC-2	MEN'S WASHROOM HEATING COIL	OWNER SPECIFIED	3	50% PROPYLENE GLYCOL	0.05	130	100	95	-10	20	3-WAY CONTROL VALVE TO MODULATE TO CONTROL SUPPLY AIR TEMPERATURE AT 21°C

PUMP SCHEDULE

TAG	DESCRIPTION	LOCATION	FLOWRATE (L/s)	SYSTEM HEAD (m)	ELECTRICAL (V/PH/HZ)	H.P.	MANUFACTURER (OR EQUAL)	MODEL #	CONTROLS / COMMENTS
P-2	HC-1 CIRCULATION PUMP	UTILITY	0.042	3.65	120/1/60	0.1	GRUNDFOS	TBC BY PUMP SUPPLIER	PUMP TO BE ENERGIZED WHEN HYDRONIC HEATING SYSTEM & ASSOCIATED HRV ARE ON
P-3	HC-2 CIRCULATION PUMP	UTILITY	0.05	3.65	120/1/60	0.1	GRUNDFOS	TBC BY PUMP SUPPLIER	PUMP TO BE ENERGIZED WHEN HYDRONIC HEATING SYSTEM & ASSOCIATED HRV ARE ON

HEAT RECOVERY VENTILATOR SCHEDULE

TAG	LOCATION	AIRFLOW (L/s)	FAN ESP (mm)	ELECTRICAL (V/PH/HZ)	INPUT CURRENT (A)	MCA (A)	MOCP (A)	MANUFACTURER (OR EQUAL)	MODEL NO.	CONTROLS / COMMENTS
HRV-1	UTILITY	70	12.7	120/1/60	1.40	6.88	15	FANTECH	ATMO 150H	HRV TO BE INTERLOCKED W/ LIGHTING IN AREA SERVED / C/W MOTORIZED INLET & OUTLET DAMPERS, SUPPLY/EXHAUST AIRSTREAM FILTRATION
HRV-2	UTILITY	95	12.7	120/1/60	3.92	6.88	15	FANTECH	ATMO 200H	HRV TO BE INTERLOCKED W/ LIGHTING IN AREA SERVED / C/W MOTORIZED INLET & OUTLET DAMPERS, SUPPLY/EXHAUST AIRSTREAM FILTRATION

PLUMBING FIXTURES ROUGH IN SCHEDULE

PLUMBING FIXTURE	HOT WATER	COLD WATER	WASTE	VENT
LAVATORY	1/2"ø	1/2"ø	1 1/4"ø	1 1/4"ø
WATER CLOSET (F. VALVE)	--	1"ø	3"ø	2"ø
URINAL (WATERLESS)	--	--	2"ø	1 1/2"ø
FLOOR DRAIN	--	--	3"ø	1 1/2"ø
HOSE BIBB	--	3/4"ø	--	--
DRINKING FOUNTAIN	--	1/2"ø	1 1/4"ø	1 1/4"ø

NOTE: ALL PLUMBING FIXTURES TO INCLUDE ISOLATION VALVES

MECHANICAL SPECIFICATIONS

MECHANICAL – GENERAL NOTES:
1. THE MECHANICAL CONTRACTOR SHALL PROVIDE A COMPLETE AND OPERATIONAL MECHANICAL SYSTEM, INCLUDING THE TOTAL HEATING, VENTILATION AND AIR CONDITIONING AND PLUMBING SYSTEMS, AS APPLICABLE, AND AS APPROVED BY THE ENGINEER.
2. THE SYSTEM, UNLESS OTHERWISE NOTED ON THE DRAWINGS OR ELSEWHERE IN THESE SPECIFICATIONS, SHALL INVOLVE THE HIGHEST QUALITY WORKMANSHIP AND CSA APPROVED MATERIALS, TO THE LATEST EDITIONS OF THE FOLLOWING CODES AND REGULATIONS, THE MOST STRINGENT OF WHICH TO GOVERN:
   A) NATIONAL AND/OR PROVINCIAL BUILDING CODE
   B) NATIONAL ENERGY CODE FOR BUILDINGS (NECB)
   C) NATIONAL AND/OR PROVINCIAL PLUMBING CODE
   D) NATIONAL AND/OR PROVINCIAL FIRE CODE
   E) ASHRAE HANDBOOK AND STANDARDS
   F) NATIONAL FIRE PREVENTION ASSOCIATION STANDARDS
   G) NATIONAL GAS INSTALLATION CODE
   H) ALL APPLICABLE LOCAL UTILITY CODES AND STANDARDS
3. THE MECHANICAL CONTRACTOR SHALL VISIT THE CONSTRUCTION SITE, IF AND WHEN APPLICABLE, TO REVIEW ALL THE CONDITIONS OF THE SITE THAT WILL HAVE ANY IMPACT, EITHER DIRECTLY OR INDIRECTLY, ON THE WORK. ALL LOCAL UTILITY LOCATIONS SHALL BE COORDINATED BY THE MECHANICAL CONTRACTOR.
4. REPORT ANY AND ALL DISCREPANCIES FOUND IN THE DESIGN DRAWINGS THAT CAN EFFECT THE WORK, AND REPORT SAME TO KB ENGINEERING LTD.
5. EACH CONTRACTOR, AS APPLICABLE, SHALL BE RESPONSIBLE FOR LAYING OUT HIS OWN WORK AND MAKING GOOD ANY DAMAGE CAUSED BY IMPROPER EXECUTION OF THAT WORK. CARRY ALL REQUIRED INSURANCE TO COVER THE WORK VALUE.
6. APPLY, COORDINATE AND PAY FOR ALL APPLICABLE PERMITS, INSPECTIONS AND FEES ASSOCIATED WITH THE MECHANICAL COMPONENT INSTALLATION, UNLESS SO OTHERWISE COVERED BY THE GENERAL CONTRACTOR.
7. COORDINATE WORK WITH THAT OF THE OTHER TRADES, IN PARTICULAR THAT OF DIVISION 26 (ELECTRICAL) TO ENSURE THE INTEGRITY OF THE WORK AND SITE. LEAVE THE SITE AT ALL TIMES IN A REASONABLY CLEAN AND SAFE CONDITION.
8. PROVIDE THE OWNER, VIA THE ENGINEER UNLESS OTHERWISE NOTED, WITH ONE (1) COMPLETE SET OF AS-BUILT DRAWINGS, COMPILED OVER THE COURSE OF THE WORK.
9. UPON COMPLETION OF THE WORK, PROVIDE THE OWNER WITH THREE (3) SETS OF EQUIPMENT OPERATION AND MAINTENANCE MANUALS, AS APPLICABLE. INCLUDE A ONE (1) YEAR WRITTEN WARRANTY ON ALL EQUIPMENT, PARTS AND LABOUR INCORPORATED INTO THE WORK, FOR A PERIOD TO COMMENCE AT THE DATE OF FINAL ACCEPTANCE BY THE OWNER OR ENGINEER, AS APPLICABLE.
10. THE CONTRACT DOCUMENTS CONSISTING OF THESE SPECIFICATIONS AND ASSOCIATED DRAWINGS ESTABLISH SCOPE, MATERIAL AND INSTALLATION QUALITY. THEY ARE NOT DETAILED INSTALLATION INSTRUCTIONS. THE CONTRACTOR SHALL FOLLOW MANUFACTURER INSTALLATION INSTRUCTIONS, SUPPLEMENTED BY DETAILS HEREIN WHEN INSTALLING ALL MATERIALS AND EQUIPMENT.
11. EQUIPMENT, PIPING, & DUCT INSULATION AND ASSOCIATED PROTECTION OF INSULATION AS PER NECB INSULATION SPECIFICATION(S).

MECHANICAL – SITE REVIEWS:
1. THE ENGINEER IS OBLIGATED TO PERFORM PERIODIC SITE REVIEWS OF MECHANICAL SYSTEMS THROUGHOUT CONSTRUCTION. THE FREQUENCY OF THESE SITE REVIEWS MAY DEPEND ON THE SIZE AND COMPLEXITY OF THE PROJECT, AND THE ENGINEER MAY CHOOSE TO CONDUCT THESE REVIEWS VIA PHOTOS AND/OR VIDEO IF APPLICABLE. THE GENERAL AND MECHANICAL CONTRACTORS SHALL COORDINATE WITH THE ENGINEER AS REQUIRED TO VERIFY IF A SITE REVIEW IS REQUIRED AT THE FOLLOWING MILESTONES AS A MINIMUM:
   A) COMPLETED BELOW GRADE PIPING AND DUCTWORK INSTALLATIONS, PRIOR TO BACKFILL
   B) COMPLETED ABOVE GRADE PIPING AND DUCTWORK INSTALLATIONS, PRIOR TO CONCEALMENT
   C) COMPLETED, COMMISSIONED AND BALANCED PLUMBING AND HVAC INSTALLATIONS
2. FAILURE TO SCHEDULE PERIODIC SITE REVIEWS MAY RESULT IN THE REQUIREMENT FOR COVERINGS TO BE REMOVED AT THE CONTRACTOR'S EXPENSE SO THAT WORK CAN BE VIEWED.

PLUMBING SYSTEMS – GENERAL NOTES:
1. PROVIDE COMPLETE SUPPLY, WASTE/DRAINAGE AND VENTING SYSTEMS TO SERVICE ALL EQUIPMENT AND PLUMBING FIXTURES NOTED ON THE DRAWINGS, AND ROUGH IN SYSTEMS TO ALL FUTURE EQUIPMENT AS DEPICTED. THE RESPONSIBILITY OF THE MECHANICAL TRADE SHALL EXTEND TO A MAXIMUM OF 2.0M (6') OUTSIDE THE BUILDING.
2. COORDINATE SITE SERVICE CONNECTIONS WITH THE CIVIL/SITE WORK CONTRACTOR, AS APPLICABLE. ALL 2" WATER SERVICE LINES SHALL BE INSTALLED SO THAT NO JOINTS ARE PRESENT UNDER THE FLOOR SLAB.
3. SUPPLY AND INSTALL WATER HAMMER ARRESTORS (ANCON SG OR EQUAL), MINIMUM 18" LONG AND THE LARGER OF 3/4" OR ONE PIPE SIZE GREATER THAN THE FEED LINE AT ALL HOT AND COLD SERVICE WATER LINES TO EACH FIXTURE OR FIXTURE GROUP.
4. PROVIDE VACUUM BREAKERS ON LINES SERVING EQUIPMENT OR FIXTURES WHERE ANY CONTAMINATION OF DOMESTIC SERVICE WATER MAY OCCUR, INCLUDING AT EACH HOSE BIBB.
5. PROVIDE APPROVED BACKFLOW PREVENTERS ON ALL POTABLE SERVICE WATER LINES WHERE POSSIBLE BACKFLOW OR CROSS CONTAMINATION MAY OCCUR, OR AS INDICATED. THE CENTERLINE OF APPROVED BACKFLOW PREVENTERS SHALL BE LOCATED 30" (750mm) TO 60" (1500mm) ABOVE THE FINISHED FLOOR. REDUCED PRESSURE BACKFLOW PREVENTERS SHALL BE INSTALLED IN THE HORIZONTAL POSITION, WHILE DOUBLE CHECK VALVE ASSEMBLIES MAY BE INSTALLED HORIZONTALLY OR VERTICALLY. TEST AND VERIFY ALL BACKFLOW PREVENTER ASSEMBLIES IN ACCORDANCE WITH CSA-B64 AND REQUIREMENTS OF THE AHJ.
6. INSTALL TRAP SEAL PRIMERS (WATTS MS-810, OR EQUAL) C/W INTEGRAL VACUUM BREAKERS AT ALL FLOOR DRAINS AS CALLED FOR IN THE PLUMBING CODE. OBTAIN PRIOR APPROVAL FROM THE ENGINEER IF OTHER FORMS OF TRAP SEAL PROTECTION ARE CONTEMPLATED, AS APPLICABLE.
7. SUPPLY AND INSTALL PRESSURE REDUCING VALVES TO LIMIT MAXIMUM STATIC PRESSURE AT PLUMBING FIXTURES TO 550KPA (80PSI) OR TO THE RATED MAXIMUM OPERATING PRESSURE OF DEVICES DOWNSTREAM, WHICHEVER IS LOWER.
8. SUPPLY AND INSTALL ISOLATION VALVES AT ALL FIXTURES AND EQUIPMENT.
9. SUPPLY AND INSTALL EXPANSION COUPLINGS AND/OR FITTINGS AT MAXIMUM OF 25' INTERVALS IN ALL HOT WATER HARD WALLED METALLIC PIPING, FOR BOTH DOMESTIC SERVICE AND SPACE-HEATING SYSTEMS.
10. ENSURE ALL PENETRATIONS THROUGH FIRE RATED ASSEMBLIES AND MEMBRANES ARE PROPERLY MAINTAINED; FILL ALL GAPS OF 1/4" OR LARGER WITH MINERAL WOOL AND SEALED WITH FIRE STOP SEALANTS AROUND PIPING PENETRATIONS.
11. SUPPLY AND INSTALL ALL REQUIRED FITTINGS, HANGERS, RODS OR FASTENERS NEEDED TO COMPLETE THE WORK – ALL TO LOCAL INDUSTRY STANDARDS, AND TO THE APPROVAL OF THE AUTHORITIES HAVING JURISDICTION.
12. LEAVE WORK AT ALL TIMES IN A SAFE AND REASONABLY CLEAN CONDITION.
13. INSULATE ALL PIPES AS NOTED, AND ACCORDING TO THE PLUMBING INSULATION SPECIFICATION BELOW COMPLIANT AS PER NECB

PIPING – DOMESTIC SERVICE WATER SYSTEMS:
1. ALL DOMESTIC COLD WATER (DCW), DOMESTIC HOT WATER (DHW) AND DOMESTIC HOT WATER RETURN (DHWR) SERVICE PIPING SHALL BE SIZED TO SUIT FIXTURES AND FIXTURE GROUP NEEDS.
2. ALL DOMESTIC SERVICE WATER SUPPLY PIPING BUILT BELOW GRADE SHALL BE TYPE 'K' SOFT COPPER TUBING, C/W FLARED JOINTS IF LESS THAN 2" DIAMETER; POLYETHYLENE OR CROSS LINKED POLYETHYLENE (PEX) FOR SIZES UP TO 3" DIAMETER; ALL PIPING OF 4" DIAMETER OR MORE SHALL BE C900 GRADE PVC WITH APPROVED MECHANICAL JOINTS AND FITTINGS.
3. ALL DOMESTIC SERVICE SUPPLY AND RETURN PIPING BUILT ABOVE GRADE SHALL BE TYPE 'L' HARD DRAWN COPPER TUBE, COMPLETE WITH LEAD FREE SOLDER JOINTS AND WROUGHT COPPER OR BRONZE FITTINGS IN ALL BUILDINGS OF NON-COMBUSTIBLE CONSTRUCTION MATERIALS, UP TO AND INCLUDING 3" DIAMETER. ALL FIXTURES OF 4" DIAMETER OR LARGER SHALL BE GALVANIZED STEEL WITH MATCHING FITTINGS AND THREADED JOINTS.
4. ALL DOMESTIC SERVICE SUPPLY AND RETURN PIPING BUILT ABOVE GRADE SHALL BE THAT AS NOTED IN (3) ABOVE, OR CROSS LINKED POLYETHYLENE (PEX) PIPING, RATED FOR DOMESTIC USES, IN BUILDINGS OF COMBUSTIBLE CONSTRUCTION MATERIALS. ENSURE ALL SURFACES IN CONTACT WITH THE PLASTIC PIPING ARE SMOOTH, OR OTHERWISE PROTECTED DEVICES ARE IN PLACE TO PREVENT CUTS AND DAMAGE TO THE PIPING. ONLY PEX UP TO AND INCLUDING 1.25" DIAMETER IS PERMITTED. ALL PIPING OF 1.5" DIAMETER OR LARGER SHALL BE COPPER OR STEEL AS NOTED IN (3) ABOVE.
5. TEST ALL SERVICE WATER SYSTEMS IN ACCORDANCE WITH THE TESTING SPECIFICATIONS.
6. INSULATE ALL DOMESTIC SERVICE WATER SYSTEMS IN ACCORDANCE WITH INSULATION SPECIFICATION BELOW AS PER NECB TABLE 6.2.3.1

VALVES – DOMESTIC SERVICE WATER SYSTEMS:
1. PROVIDE VALVES OF THE SAME TYPE BY THE SAME MANUFACTURER THROUGHOUT. VALVES SHALL INDICATE MANUFACTURER, CRN REGISTRATION NUMBER, PRESSURE RATING AND FLOW DIRECTION IF APPLICABLE. ALL VALVES SHALL BE DESIGNED FOR THE FLUIDS, PRESSURES, AND TEMPERATURES FOR WHICH THEY ARE USED. ALL DOMESTIC WATER VALVES ARE TO BE LEAD-FREE (CONTAINING NOT MORE THAN 0.25% WEIGHTED AVERAGE LEAD FOR WETTED SURFACES).
2. BALL VALVES (NIBCO T585/S585-80-LF, OR EQUAL) UP TO 2" (50mm): TWO-PIECE CAST BRONZE BODY, FULL STANDARD PORT, CHROME PLATED, SILICON BRONZE OR STAINLESS STEEL BALL, THREADED OR SOLDER CONNECTIONS, TFE SEAT & PACKING, LEVEL HANDLE, 4135KPA (600PSI) NON-SHOCK CWP PRESSURE RATING, LEAD-FREE.

INSULATION – DOMESTIC SERVICE WATER SYSTEMS:
1. ALL INSULATION AND RELATED MATERIALS SHALL HAVE A FLAME SPREAD RATING NOT TO EXCEED 25, AND A SMOKE DEVELOPMENT CLASSIFICATION NOT TO EXCEED 50.
2. ALL PIPING INSULATION SHALL BE OF A FIBROUS GLASS MATERIAL (OR EQUAL) WITH A K-VALUE IN THE RANGE OF 0.035-0.040 W/M°C @ RATING TEMPERATURE 38°C [100°F] IN CONDITIONED SPACE OR ELSE IN THE RANGE OF 0.046-0.049 W/M°C @ RATING TEMPERATURE 121°C [250°F] IN UN-CONDITIONED SPACE. INSULATION THICKNESS MAY BE VARIED SUCH THAT THE K-VALUE RANGE IS MET AS PER NECB 6.2.3.1(3) & 6.2.3.1(4). USE APPROPRIATE MATERIALS SUCH AS MANSON AK SERIES PIPING INSULATION (OR EQUAL).
3. ALL INSULATION SHALL BE INSTALLED BY INDUSTRY CERTIFIED INSULATION TRADES, OR AS OTHERWISE APPROVED BY THE ENGINEER, WITH TIGHTLY SEALED JOINTS, STRETCH-OUTS LIMITED SO AVERAGE COMPRESSION OF THE INSULATION <25% OF ITS NOMINAL THICKNESS, AND FREE OF NOTICEABLE DEFECTS.
4. THE FOLLOWING INSULATION SCHEDULE SHALL APPLY, AND BE CONSIDERED AS THE ACCEPTED MINIMAL LEVELS OF PROTECTION FOR DOMESTIC SERVICE WATER SYSTEMS AS PER NECB TABLE 6.2.3.1. ADDITIONAL INSULATION, IF NEEDED, SHALL BE SO NOTED ON THE DRAWINGS:
   (I) IN CONDITIONED SPACE: (II) IN UNCONDITIONED SPACE:
   A) HOT, COLD, & RECIRCULATING WATER PIPE RUNOUTS ≤Ø 50MM [2"]-(I) 25MM [1"] -(II) 38MM [1-1/2"]
   B) HOT, COLD & RECIRCULATING WATER PIPES ≤Ø 25MM [1"] -(I) 25MM [1"] -(II) 64MM [2-1/2"]
   C) HOT, COLD & RECIRCULATING WATER PIPES ≤Ø 50MM TO >32MM [2" TO 1-1/4"] -(I) 38MM [1-1/2"] -(II) 64MM [2-1/2"]
   D) HOT, COLD & RECIRCULATING WATER PIPES ≤Ø 102MM TO >64MM [4" TO 2-1/2"] -(I) 38MM [1-1/2"] -(II) 76MM [3"]

HVAC SYSTEMS – GENERAL NOTES:
1. SUPPLY AND INSTALL ALL REQUIRED HEATING, VENTILATION AND AIR-CONDITIONING SYSTEMS, WITH THE DESIGN CHARACTERISTICS NOTED IN THE EQUIPMENT SCHEDULE, (INCLUDING AIR DELIVERY AND EXTERNAL STATIC PRESSURES) TO MANUFACTURERS REQUIREMENTS.
2. THE SPECIFIED UNITS SHALL BE CONSIDERED AS A 'BASE' MODEL ONLY. ANY OTHER CSA APPROVED UNITS MADE BY OTHER MANUFACTURERS WILL BE ACCEPTED, UPON WRITTEN AUTHORIZATION OF THE ENGINEER, PROVIDED THE EQUIPMENT IS OF THE SAME OR EQUAL CAPABILITIES & EFFICIENCIES.
3. ALL UNITS DESIGNED TO HAVE A FRESH AIR RATIO IN WINTER DESIGN CONDITIONS OF MORE THAN 35% SHALL BE EQUIPPED WITH STAINLESS STEEL HEAT EXCHANGERS, AS APPLICABLE, UNLESS NOTED OTHERWISE ON THE DRAWINGS.
4. ALL HVAC EQUIPMENT SHALL BE OUTFITTED WITH ALL APPLICABLE ELECTRICAL RELAYS AND CONTACTORS NECESSARY TO SHUT DOWN FANS UPON THE ACTIVATION OF THE FIRE ALARM SYSTEM (AS APPLICABLE) BUILT INTO THE BUILDING. CONFIRM THE NEED FOR SUCH CONTROL ON THE ELECTRICAL AND/OR ARCHITECTURAL DRAWINGS.
5. ALL VENTS SHALL CONFORM TO 'C' VENT REQUIREMENTS, WHILE CHIMNEYS SHALL BE TYPE 'B' FLUES, ULC LABELED, C/W APPLICABLE RAIN CAPS AND ROOF FLASHINGS.
6. INSULATE ALL DUCTS & PLENUMS AS NOTED, AND ACCORDING IN THE HVAC INSULATION SPECIFICATION BELOW COMPLIANT AS PER NECB.
7. OFF-HOURS CONTROLS ARE PROVIDED FOR SYSTEMS 5 KW [17,000 BTU/H] OR MORE IN SIZE THAT ARE NOT INTENDED TO OPERATE CONTINUOUSLY. AUTOMATIC TEMPERATURE CONTROLS, ACCURATE WITHIN ±1° C, ARE PROVIDED FOR EACH HEATING SYSTEM. EACH DWELLING UNIT IS PROVIDED AT LEAST ON THERMOSTAT & A MEANS TO REDUCE THE HEATING OR COOLING IN SUCH DWELLING UNIT.
8. AIRFLOW CONTROL AREAS ARE DEFINED AND ZONED <2500M2 [27,000 SQ. FT.] IN ACCORDANCE WITH THE NECB.
9. CONTROL LOOP REQUIREMENTS FOR CHILLED AND HOT WATER TEMPERATURE RESET ARE MET AS PER NECB FOR SYSTEMS WITH A CAPACITY GREATER THAN 88 kW [300,000 BTU/H].

HVAC SYSTEMS – DUCTWORK:
1. ALL FORCED AIR DUCTWORK, INSTALLED ABOVE GRADES, SHALL BE MADE FROM MIN. 24GA GALVANIZED STEEL, LOCK-FORMED QUALITY, CONSTRUCTED AND INSTALLED IN ACCORDANCE WITH THE LATEST EDITION OF ASHRAE GUIDE AND DUCT CONSTRUCTION STANDARDS, ISSUED BY SMACNA, NFPA-90 & 90A, PROVINCIAL CODE AND ANY LOCAL REGULATIONS THAT APPLY, UNLESS NOTED OTHERWISE ON THE DRAWINGS.
2. INSTALL ALL NOTED SUPPLY, RETURN AND EXHAUST DUCTS AS NOTED ON THE DESIGN DRAWINGS. DO NOT CHANGE DUCT SIZES OR CONFIGURATIONS INDICATED WITHOUT PRIOR APPROVAL OF THE ENGINEER. FOR SIMPLICITY, ALL DUCTS SHALL BE ROUND UNLESS ARCHITECTURALLY DICTATED OTHERWISE.
3. SUPPLY AND INSTALL ALL REQUIRED FIRE DAMPERS AND FIRE STOP FLAPS AT FIRE RATED WALLS AND FLOOR ASSEMBLIES WHERE NOTED ON THE DRAWINGS. CONFIRM THE LOCATION OF ALL SUCH WALLS AND FLOORS ON THE ARCHITECTURAL DRAWINGS
4. SUPPLY AND INSTALL ALL REQUIRED BRANCH AND MAIN DUCT BALANCING DAMPERS AS DEPICTED ON THE DRAWINGS. INCLUDE TURNING VANES WITHIN MAIN DUCTS AND SUPPLY PLENUMS WHERE REQUIRED TO MINIMIZE STATIC PRESSURE AND REDUCE NOISE LEVELS. THE MECHANICAL CONTRACTOR SHALL BE RESPONSIBLE FOR ADDING ALL ADDITIONAL DAMPERS FOR BALANCING NEEDS TO ENSURE AIR BALANCE TO A 5% DESIGN TOLERANCE.
5. SEAL ALL DUCTS AS DESCRIBED IN THE ANSI/SMACNA 006 "HVAC DUCT CONTRUCTION STANDARDS – METAL AND FLEXIBLE," IN ACCORDANCE WITH NECB TALBE 5.2.2.3.
6. INSULATE ALL DUCTS AND PLENUMS AS NOTED, AND AS PER THE HVAC INSULATION SPECIFICATION BELOW COMPLIANT PER NECB.

INSULATION – HVAC SYSTEMS:
1. ALL INSULATION AND RELATED MATERIALS SHALL HAVE A FLAME SPREAD RATING NOT TO EXCEED 25, AND A SMOKE DEVELOPMENT CLASSIFICATION NOT TO EXCEED 50.
2. ALL DUCT/PIPING INSULATION SHALL BE OF A FIBROUS GLASS MATERIAL (OR EQUAL) WITH A THERMAL RESISTANCE OF:
   A) 0.58 Rsi (m2°C/W) [3.3 R (ft2 °F h/Btu)] FOR ΔT BETWEEN 5-22°C [41 – 72°F], AND
   B) 0.88 Rsi (m2°C/W) [5.0 R (ft2 °F h/Btu)] FOR ΔT >22°C [>72°F],
   C) EXCEPT WHEN DUCTS ARE OUTIDE THE BUILDING ENVELOPE, WHERE THEY SHALL BE INSULATED TO THE ***SAME LEVEL*** AS REQUIRED FOR WALLS.
3. ALL INSULATION SHALL BE INSTALLED BY INDUSTRY CERTIFIED INSULATION TRADES, OR AS OTHERWISE APPROVED BY THE ENGINEER, WITH TIGHTLY SEALED JOINTS, , STRETCH-OUTS LIMITED SO AVERAGE COMPRESSION OF THE INSULATION <25% OF ITS NOMINAL THICKNESS, FREE OF NOTICEABLE DEFECTS. USING APPROVED MATERIALS SUCH AS MANSON AK DUCT/PIPING INSULATION PRODUCTS (OR EQUAL).
4. ALL HVAC EQUIPMENT SUPPLY AND RETURN AIR PLENUMS, AS APPLICABLE, SHALL BE INTERNALLY LINED WITH APPROVED ACOUSTICAL INSULATION IN ALL SITUATIONS, OR AS OTHERWISE APPROVED BY THE ENGINEER.
5. THE FOLLOWING INSULATION SCHEDULE SHALL APPLY (AND WHERE IT IS INSUFFICIENT TO MEET NECB REQUIREMENTS THE MORE RESTRICTIVE CHOICE SHALL APPLY) AND BE CONSIDERED AS THE ACCEPTED MINIMAL LEVELS OF PROTECTION. ADDITIONAL INSULATION, IF NEEDED, SHALL BE SO NOTED ON THE DRAWINGS:
   A) EXHAUST DUCT TO OUTLETS (WITHIN 10' OF EXTERIOR) – 38MM [1.5"] EXTERNAL
   B) ROOFTOP UNIT PLENUMS – 25MM [1"] INTERNAL

IDENTIFICATION:
1. IDENTIFY (INCLUDING FLOW ARROWS) ALL PIPING & EQUIPMENT. FOR ALL NEW PLUMBING & HVAC SYSTEMS. FOR RENOVATIONS, BASE-BUILDING IDENTIFICATION STANDARDS SHALL BE USED WHERE THEY EXIST. OTHERWISE, BASIC REQUIREMENTS ARE SUMMARIZED BELOW.
2. IDENTIFICATION & COLOURS FOR PIPING:
   - DOMESTIC COLD WATER: "DCW", GREEN LABEL, WHITE LETTERING
   - DOMESTIC HOT WATER: "DHW", GREEN LABEL, WHITE LETTERING
   - TEMPERED DOMESTIC WATER: "DTW", GREEN LABEL, WHITE LETTERING
3. EQUIPMENT IDENTIFICATION: PROVIDE EACH PIECE OF EQUIPMENT WITH A LAMACOID PLATE STATING THE EQUIPMENT TAG. IN ADDITION TO THE LAMACOID, EACH PIECE OF EQUIPMENT SHALL BE COMPLETE WITH A FACTORY APPLIED NAMEPLATE INDICATING SIZE, MANUFACTURER, SERIAL NUMBER, ELECTRICAL & PERFORMANCE CHARACTERISTICS, ETC. PRESSURE VESSELS SHALL BE COMPLETE WITH A CRN NUMBER FOR INSTALLATION IN CANADA.

EXCAVATION AND BACKFILL:
1. UNLESS OTHERWISE AGREED AND ARRANGED FOR BY THE GENERAL CONTRACTOR, THE MECHANICAL CONTRACTOR SHALL BE RESPONSIBLE FOR ALL THE REQUIRED SITE EXCAVATION ASSOCIATED WITH THEIR PARTICULAR PORTION OF THE WORK.
2. PRIOR TO START OF EXCAVATION, CONFIRM SERVICE INVERT ELEVATIONS AND LOCATIONS. SET GRADES TO SUIT.
3. BACKFILL ALL UNDER-SLAB PIPING AND DUCTWORK WITH A MINIMUM OF 12" OF SAND OR OTHER APPROVED GRANULAR MATERIAL, AND COMPACT WITH A MECHANICAL TAMPER, OR WITH CONCRETE COVER AS SPECIFIED (SEE CONCRETE SPECIFICATIONS).
4. REMAINDER OF SYSTEM BACKFILL SHALL BE ARRANGED BY THE GENERAL, FOLLOWING THE APPLICABLE SPECIFICATIONS LISTED UNDER THE STRUCTURAL SECTIONS.
5. COORDINATE ALL EXCAVATION AND BACKFILLING OPERATIONS WITH ALL APPLICABLE TRADES, ESPECIALLY THE FOUNDATION AND ELECTRICAL CONTRACTORS.

CUTTING AND PATCHING:
1. CREATE OPENINGS AS REQUIRED FOR THE INSTALLATION OF PIPING AND DUCTWORK. OBTAIN WRITTEN APPROVAL FROM STRUCTURAL ENGINEER PRIOR TO DRILLING, CORING, CUTTING OR BURNING STRUCTURAL MEMBERS.
2. CUTTING PRACTICES SHALL BE LIMITED TO NEAT OPENINGS CREATED THROUGH RECOGNIZED DRILLING OR CORING PRACTICES.
3. COORDINATE PRE-CAST OPENINGS FOR MECHANICAL WORK THROUGH CONCRETE, OR FIELD-CUT WHERE APPROVED.
4. PATCH AND REPAIR BUILDING WHERE DAMAGED FROM CUTTING, CORING, EQUIPMENT INSTALLATION, IMPROPERLY LOCATED HOLES, ETC. SEAL AROUND NEWLY INSTALLED PIPING AS REQUIRED.

TESTING, ADJUSTING & BALANCING:
1. ALL EQUIPMENT WHERE SPECIFIED AND/OR CALLED FOR BY THE AUTHORITIES WHO HAVE JURISDICTION OVER THE WORK SHALL BE TESTED IN ACCORDANCE WITH THE GENERAL INDUSTRY STANDARDS TO DEMONSTRATE THEIR CAPABILITIES.
2. ALL PIPING SYSTEMS SHALL BE AIR TESTED FOR LEAKAGE PRIOR TO BEING COVERED IN ANY WAY, AS FOLLOWS, UNLESS OTHERWISE DIRECTED ON SITE BY THE ENGINEER OR OTHER AUTHORITY HAVING JURISDICTION OVER THAT PORTION OF THE WORK:
   A) TEST ALL DOMESTIC WATER LINES AT 700KPA (100PSI) OF PRESSURE FOR A PERIOD NOT LESS THAN TWO (2) HOURS WITH NO PRESSURE DROP.
3. ALL DUCTWORK SHALL BE CONFIGURED TO PROVIDE THE NOTED AIR FLOWS. BALANCE THE TOTAL AIR TO THE APPLICABLE RATIOS OF TOTAL AIR ACTUALLY MOVING THROUGH THE SYSTEM. NORMAL ACCEPTANCE OF AIR BALANCING SHALL BE +/-5%, OR AS OTHERWISE AGREED ON SITE BY THE ENGINEER. AIR BALANCING SHALL BE PERFORMED BY AN INDEPENDENT AGENCY SPECIALIZING IN THIS TYPE OF WORK.

SUPPORTS, ANCHORS AND SLEEVES:
1. SUPPLY AND INSTALL ALL REQUIRED SUPPORTS, HANGERS, AND APPLICABLE SLEEVES OF SUFFICIENT STRENGTH AND RIGIDITY TO SUIT THE PARTICULAR CONDITIONS ON SITE, WITHOUT SUBJECTING UNDUE STRESS ON THE BUILDING.
2. SUPPLY AND INSTALL ALL REQUIRED MOUNTING DEVICES WITH RESILIENT, VIBRATION REDUCING SPRINGS OR OTHER SOUND ATTENUATION EQUIPMENT FOR ALL UNITS SO INCLINED TO CAUSE A VIBRATION OR SOUND NUISANCE FOR THE OCCUPANTS.
3. PROVIDE CHROME PLATED FLOOR, CEILING AND WALL ESCUTCHEON PLATES AS IS REQUIRED IN 'FINISHED' AREAS, TO THE SATISFACTION OF THE ENGINEER.
4. ALL PIPING AND DUCT HANGERS/RODS SHALL BE OF APPROVED GALVANIZED STEEL, UNLESS OTHERWISE APPROVED BY THE ENGINEER. ENSURE A CHEMICAL BALANCE IS ACHIEVED FOR ALL CONNECTIONS.
5. ENSURE ALL SUPPORT STRUCTURES ARE SECURELY MOUNTED TO THE BUILDING.

ELECTRIC MOTORS AND WIRING:
1. COORDINATE ALL ELECTRICAL POWER AND CONTROL WIRING AS APPLICABLE WITH DIVISION 26 TRADES.
2. ALL ELECTRICAL INTERLOCKS OF MECHANICAL EQUIPMENT SHALL BE COMPLETED BY THE ELECTRICAL TRADES, AS COORDINATED BY THE MECHANICAL TRADES.
3. UNLESS OTHERWISE NOTED, ALL ELECTRICAL HEATING DEVICES SHALL BE SUPPLIED BY THE MECHANICAL TRADES AND INSTALLED BY THE ELECTRICAL TRADES. ALL CEILING MOUNTED CIRCULATION FANS SHALL BE NOTED ON THE MECHANICAL DRAWINGS, BUT SHALL BE SUPPLIED AND INSTALLED BY THE ELECTRICAL TRADES.
4. THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR THE SUPPLY AND SYSTEM INSTALLATION OF ALL REQUIRED MOTOR STARTERS AND APPLICABLE DISCONNECTS TO SERVE MECHANICAL EQUIPMENT.
5. ALL LOW VOLTAGE CONTROLS TO BE SUPPLIED & INSTALLED BY MECHANICAL TRADE.

INCORPORATED MATERIALS:
1. ALL MATERIALS INCORPORATED INTO THE WORK SHALL BE NEW ITEMS, WITH DESIGN CHARACTERISTICS AS NOTED ON THE EQUIPMENT SPECIFICATIONS, AND BE FREE OF DEFECTS, TO THE SATISFACTION OF THE ENGINEER, UNLESS REUSED MATERIALS ARE CLEARLY DEPICTED ON THE DRAWINGS.
2. ALL MATERIALS AND EQUIPMENT SHALL BE CSA APPROVED.
3. SUPPLY AND INSTALL LAMACOID LABELS IDENTIFYING ALL EQUIPMENT, SUCH AS HVAC UNITS, BOILERS, EXHAUST FANS, LARGE CIRCULATION PUMPS, AND CONTROL SYSTEMS OR CONTACTORS REQUIRED FOR THE APPLICABLE EQUIPMENT.

SHOP DRAWINGS:
1. PROVIDE TO THE ENGINEER AN ELECTRONIC (PDF) SET OF SHOP DRAWINGS OF ALL APPLICABLE MECHANICAL COMPONENTS TO BE INCORPORATED INTO THE WORK. REVIEWED SHOP DRAWINGS WILL BE RETURNED WITHIN SEVEN (7) WORKING DAYS TIME.
2. ALL SHOP DRAWINGS SENT TO THE ENGINEER MUST FIRST BE REVIEWED BY THE GENERAL & MECHANICAL CONTRACTORS FOR COMMENTS AND APPROVALS.
3. DO NOT ORDER ANY EQUIPMENT UNTIL THE SHOP DRAWINGS HAVE BEEN REVIEWED AND CONFIRMED BY THE GENERAL CONTRACTOR, MECHANICAL CONTRACTOR, AND THE ENGINEER.

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CONSULTANT

KB ENGINEERING LIMITED
MECHANICAL / ELECTRICAL CONSULTANTS

SEALS

PROFESSIONAL ENGINEER — PROVINCE OF BRITISH COLUMBIA — S. J. DONOVAN # 60382
Member ID: 60382 Permit #1001652
2025-10-20

KEYPLAN

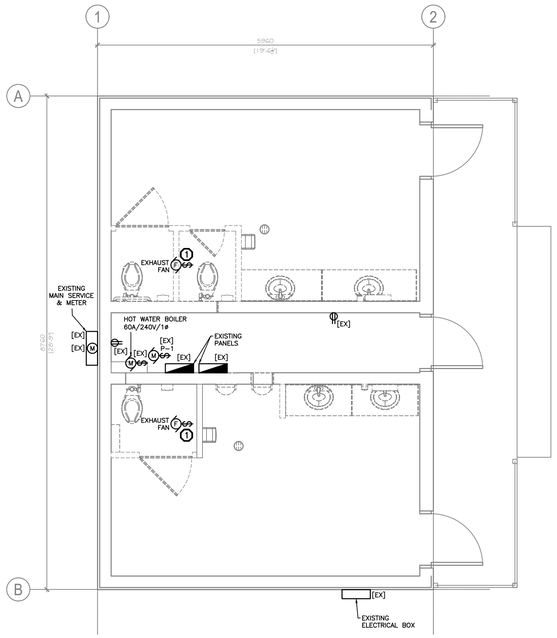
REVISIONS & ISSUES

MON/DD/YY	ISSUED FOR
09/02/2025	75% REVIEW
10/20/2025	TENDER

PROJECT TITLE
LAKEVIEW WASHROOM RENO
1110 6TH AVE
INVERMERE, BC V0A 1K4

DRAWING TITLE
MECHANICAL EQUIPMENT & SPECIFICATIONS

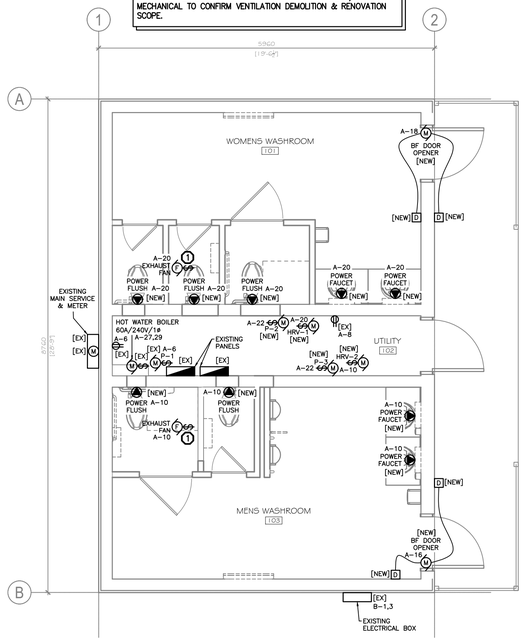
SCALE: AS INDICATED
DRAWN: KM
CHECKED: SD
AUG 25
25.170
M2



POWER DEMOLITION PLAN
SCALE: 1:50

NOTE:

VENTILATION EQUIPMENT (EXHAUST FAN REMOVAL, HRV-1 & 2, P-2 & 3, ASSOCIATED CONTROL) DEPICTED ON THIS DRAWING TO BE PRICED AS AN OPTION & SHALL ONLY BE COMPLETED IF APPROVED BY OWNER. ELECTRICAL CONTRACTOR TO COORDINATE W/ MECHANICAL TO CONFIRM VENTILATION DEMOLITION & RENOVATION SCOPE.



POWER RENOVATION PLAN
SCALE: 1:50

RENOVATION NOTES

1. RENOVATION / DEMO ABBREVIATION NOTES:
   a) EX – EXISTING TO REMAIN
   b) EL – ELIMINATE
   c) RL – RELOCATE EXISTING
   d) NEW – PROVIDE NEW
2. ELECTRICAL CONTRACTOR TO ASSESS ALL ELECTRICAL COMPONENTS NOTED ON THE DRAWING AS EXISTING (EX) TO CONFIRM WORKING CONDITION.
3. ELECTRICAL CONTRACTOR TO REPAIR / REPLACE EXISTING ELECTRICAL FIXTURES / COMPONENTS FOUND TO BE DEFICIENT.
4. ANY ADDITIONAL ELECTRICAL COMPONENTS FOUND ON SITE THAT ARE NOT NOTED ON THE DRAWINGS ARE TO BE EVALUATED AS NOTED ABOVE. IF EQUIPMENT IS LOCATED IN EXISTING WALLS THAT ARE TO BE REMOVED, EQUIPMENT IS TO BE REMOVED UNLESS IT'S FUNCTION IS REQUIRED FOR THE OPERATION OF OTHER EQUIPMENT WITH THE SPACE (IE FIRE ALARM COMPONENTS, JUNCTION BOXES). CONTACT OWNER / ENGINEER FOR DIRECTION.
5. ALL EXISTING CIRCUITS NO LONGER IN USE ARE TO BE REMOVED ALL THE WAY BACK TO THE PANEL.
6. PANEL SCHEDULE TO BE UPDATED TO REFLECT CURRENT SPACE CONDITION.
7. REPAIR ALL WALL / CEILING PENETRATIONS AS REQUIRED TO MAINTAIN FIRE RATINGS.

GENERAL NOTES

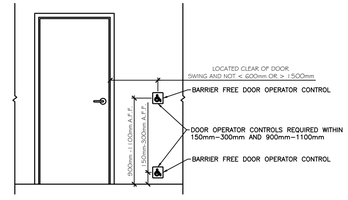
1. VERIFY ELECTRICAL REQUIREMENTS OF ALL OWNER-SUPPLIED EQUIPMENT WITH OWNER PRIOR TO ROUGH-IN.
2. CONFIRM ALL MECHANICAL EQUIPMENT ELECTRICAL SPECIFICATIONS AND BREAKER SIZES WITH MECHANICAL SHOP DRAWINGS PRIOR TO ROUGH-IN AND ORDERING OF EQUIPMENT.
3. CONFIRM ALL MECHANICAL EQUIPMENT LOCATIONS ON SITE PRIOR TO ROUGH-IN.
4. BARRIER FREE DOOR OPENER PUSH BUTTONS TO BE MOUNTED AT 12" A.F.F AND 36" A.F.F IN EACH LOCATION SHOWN ON DRAWING OR USE ONE FULL LENGTH 36" HIGH-LOW ACTUATOR.
5. BARRIER FREE DOOR OPERATOR & PUSH BUTTON SUPPLIED & INSTALLED BY OTHERS. ELECTRICAL CONTRACTOR RESPONSIBLE FOR PROVIDING POWER & MAKING CONNECTIONS.
6. WASHROOM EXHAUST FANS & HRVS TO BE INTERLOCKED WITH LIGHTS C/W OCCUPANCY SENSOR WITH 20 MINUTE SHUT OFF DELAY.

DRAWING NOTES:

1. EXISTING EXHAUST FANS TO BE REMOVED ONLY IF HRV VENTILATION EQUIPMENT OPTION IS APPROVED BY OWNER.

POWER DISTRIBUTION EQUIPMENT

- STANDARD WIRING
- (M) SERVICE METER
- SUB PANEL
- (M) MOTOR
- (F) ELECTRIC FAN
- DUPLEX RECEPTACLE
- (T) THERMOSTAT
- [D] BF DOOR OPENER PUSH BUTTON



BARRIER FREE DOOR OPERATOR CONTROL DETAIL
SCALE: NTS

POWER SPECIFICATIONS

ELECTRICAL – GENERAL NOTES:

1. THE ELECTRICAL CONTRACTOR SHALL PROVIDE A COMPLETE AND OPERATIONAL ELECTRICAL SYSTEM, AS APPROVED BY THE ENGINEER, USING HIGHEST QUALITY WORKMANSHIP AND CSA APPROVED MATERIALS BY LICENSED JOURNEYMEN AND QUALIFIED APPRENTICES, TO THE LATEST EDITION OF THE FOLLOWING CODES AND REGULATIONS, THE MOST STRINGENT TO APPLY:
   a) CANADIAN ELECTRICAL SAFETY CODE
   b) NATIONAL AND/OR PROVINCIAL BUILDING CODES
   c) NATIONAL FIRE PREVENTION ASSOCIATION STANDARDS
   e) UNDERWRITERS LABORATORIES OF CANADA STANDARDS
   f) LOCAL UTILITY CODES AND STANDARDS
2. THE ELECTRICAL CONTRACTOR SHALL VISIT THE CONSTRUCTION SITE, IF AND WHEN APPLICABLE, TO REVIEW THE CONDITIONS THAT WILL AFFECT HIS WORK, EITHER DIRECTLY OR INDIRECTLY, AND ACCOUNT FOR THE SAME IN THE TENDER.
3. REPORT ANY DISCREPANCIES IN THE DOCUMENTS TO KB ENGINEERING LTD. AS THEY RELATE TO THE SCOPE OF THE WORK PRIOR TO THE TENDER CLOSE, AS APPLICABLE. ALL NECESSARY ADDENDA SHALL BE ISSUED TO CLARITY THE DISCREPANCY WITHIN THE TIME FRAME NOTED IN THE TENDER DOCUMENTS.
4. EACH ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR LAYING OUT THEIR PORTION OF THE WORK AND MAKING GOOD ANY DAMAGE CAUSED BY THAT WORK.
5. CARRY ALL REQUIRED INSURANCE COVERING THE PROJECT AND WORKERS ON IT.
6. APPLY, PAY FOR AND ARRANGE FOR ALL APPLICABLE PERMITS, INSPECTIONS AND RELATED FEES ASSOCIATED WITH THE ELECTRICAL COMPONENTS OF THE WORK, UNLESS OTHERWISE DIRECTED BY THE GENERAL CONTRACTOR.
7. COORDINATE WORK WITH THAT OF OTHER TRADES, IN PARTICULAR THAT OF THE MECHANICAL DISCIPLINES, TO ENSURE A SMOOTH FUNCTIONING CONSTRUCTION SITE.
8. PROVIDE ALL REQUIRED LINE VOLTAGES, LOW VOLTAGE TRANSFORMATION AND RELATED SUPPORT TO DIVISION 15 TRADES FOR ALL MECHANICAL EQUIPMENT. THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ALL REQUIRED MOTOR STARTERS, CONTACTORS, RELAYS AND DISCONNECT SWITCHES NEEDED FOR THE MECHANICAL EQUIPMENT, AS WELL AS FOR THE SUPPLY AND INSTALLATION OF ALL APPLICABLE CIRCULATION FANS.
9. ALL CONTROL WIRING SHALL BE THE RESPONSIBILITY OF THE MECHANICAL TRADES, WITH POWER PROVIDED BY DIVISION 16, UNLESS OTHERWISE AGREED ON SITE.
10. PROVIDE THE OWNER WITH ONE (1) SET OF AS-BUILT DRAWINGS, AS COMPILED OVER THE COURSE OF THE WORK.
11. UPON COMPLETION OF THE WORK, PROVIDE THE OWNER WITH THREE (3) SETS OF EQUIPMENT OPERATION AND MAINTENANCE MANUALS AS APPLICABLE, AND ONE (1) SET OF FINAL INSPECTION CERTIFICATES FROM THE APPLICABLE AUTHORITIES HAVING JURISDICTION OVER THE WORK.
12. LEAVE THE SITE IN A SAFE AND REASONABLY CLEAN CONDITION AT ALL TIMES.

WIRING METHODS – GENERAL:

1. RUN ALL CIRCUITING CONDUCTORS IN ABOVE GRADE APPLICATIONS IN BUILDINGS CONSTRUCTED OF NON-COMBUSTIBLE MATERIALS WITHIN CONDUITS (RIGID STEEL OR EMT) OR VIA BX ARMOURED CABLES.
2. RUN ALL CIRCUITING CONDUCTORS IN ABOVE GRADE APPLICATIONS IN BUILDINGS CONSTRUCTED OF COMBUSTIBLE MATERIALS AS NOTED ABOVE IN (1) OR USING STANDARD LUMEX CABLES, PROVIDED THE WIRES ARE PHYSICALLY PROTECTED FROM DAMAGE AND CUTS.
3. RUN ALL CIRCUITING CONDUCTORS IN BELOW GRADE APPLICATIONS IN BUILDINGS WITHIN RIGID STEEL OR RIGID PVC CONDUITS, SIZED TO SUIT.
4. DO NOT RUN EXPOSED CONDUITS OUTSIDE OF FINISHED WALLS, CEILINGS OR FLOOR SYSTEMS, EXCEPT FOR STORAGE AND GENERAL SHOP AREAS, WITHOUT THE PRIOR APPROVAL OF THE ENGINEER.
5. SUPPLY AND INSTALL PULL BOXES OF SUFFICIENT SIZE NEEDED TO SUIT CIRCUIT CONDUCTORS IN CIRCUIT RUNS OF MORE THAN 25m (85') OR THAT HAVE MORE THAN THREE (3) 90 DEGREE BENDS.
6. SUPPORT ALL OUTLET BOXES INDEPENDENTLY OF SUPPORTS FOR CONDUITS, OR AS OTHERWISE APPROVED BY THE AUTHORITIES HAVING JURISDICTION.
7. ALL CONDUCTORS SHALL BE COPPER, EXCEPT WHERE NOTED. DO NOT USE ANY WIRE SMALLER THAN #14AWG, EXCEPT FOR CONTROLS AND MISCELLANEOUS LOW VOLTAGE REQUIREMENTS, OR AS PREVIOUSLY APPROVED BY THE ENGINEER.
8. ALL CONDUCTORS SIZE SHALL BE SIZED FOR NO MORE THEN A 3 PERCENT VOLTAGE DROP IN A FEEDER OR BRANCH CIRCUIT AND 5 PERCENT FROM THE SUPPLY SIDE OF THE CONSUMER'S SERVICE TO THE POINT OF UTILIZATION. ADVISE OF ANY DISCREPANCY TO KB ENGINEERING LTD.
9. SUPPLY AND INSTALL ALL REQUIRED VAPOUR BARRIER CONTINUATION DEVICES AT ALL APPLICABLE EXTERIOR WALLS OR OTHERS BUILT WITH A POLY BARRIER, TO INCLUDE THOSE IN ATTICS AND BASEMENT AREAS AS APPLICABLE.
10. UNLESS OTHERWISE NOTED ON THE DRAWINGS OR DIRECTED ON SITE, FOLLOW THE FOLLOWING MOUNTING HEIGHTS, AS MEASURED FROM THE FLOOR LEVEL TO BOTTOM OF DEVICE.
    a) SWITCHES – 1220mm (48")
    b) POWER OUTLETS, PHONE JACKS & VOICE/DATA OUTLETS – 305mm (12")
    c) COUNTER HEIGHT OUTLETS – 1120mm (44")
    d) THERMOSTATS & MECHANICAL CONTROLS – 1525mm (60")
    e) EMERGENCY LIGHTS – MIN. 2235mm (88") OR TO SUIT LOCAL RACKING
11. SUPPLY AND INSTALL ALL REQUIRED MOTOR STARTERS, RELAYS AND CONTACTORS NECESSARY TO COMPLETE THE INSTALLATION TO CODE AND ENSURE THAT ALL MECHANICAL EQUIPMENT FANS SHUT DOWN ON ACTIVATION OF FIRE ALARM SYSTEM AS APPLICABLE.
12. PROVIDE ALL REQUIRED GROUNDING OF ALL EQUIPMENT, TO E.S.C. STANDARDS.
13. RUN ALL NOTED EMPTY CONDUIT FOR FUTURE USES WITH PULL CORDS TO SUIT.
14. ALL WIRING WITHIN RETURN AIR PLENUM SPACES SHALL BE WITHIN EMT, RIGID STEEL CONDUITS, BX ARMOURED CABLES OR SHALL BE VIA FT4 RATED CABLES.
15. ALL WIRING SHALL BE INSULATION RATED FOR A MINIMUM OF 90°C, UNLESS NOTED.
16. ALL ISOLATED GROUND OUTLETS SHALL BE SO DESIGNATED VIA ORANGE COLOUR.

EXCAVATION & BACKFILL:

1. UNLESS OTHERWISE AGREED WITH THE GENERAL CONTRACTOR, THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR ALL REQUIRED EXCAVATION ASSOCIATED WITH THE ELECTRICAL WORK INSIDE THE BUILDING. THE GENERAL CONTRACTOR SHALL PROVIDE ALL REQUIRED EXCAVATION OUTSIDE THE BUILDING, AS WELL AS ALL REQUIRED BACKFILL AND COMPACTING THROUGHOUT THE JOB.
2. ALL TRENCHING AND BACKFILL SHALL BE COMPLETED FOLLOWING THE REQUIREMENTS OF THE LOCAL UTILITY COMPANY OR SITE AUTHORITY HAVING JURISDICTION. SUCH REQUIREMENTS SHALL INCLUDE THE NEED FOR CONCRETE PROTECTIVE COVERINGS AND ALL NOTIFICATION TAPES AND LABELS AS APPLICABLE.
3. COORDINATE ALL SUCH ACTIVITIES WITH BOTH THE FOUNDATION AND MECHANICAL CONTRACTORS AS REQUIRED TO COMPLETE THE WORK

INCORPORATED MATERIALS:

1. ALL MATERIALS INCORPORATED INTO THE WORK SHALL BE NEW, WITH DESIGN CHARACTERISTICS AS CALLED FOR ON THE DRAWINGS AND FREE OF DEFECTS, TO THE SATISFACTION OF THE ENGINEER.
2. ALL MATERIALS AND EQUIPMENT SHALL BE CSA APPROVED.
3. ALL MATERIALS AND EQUIPMENT CALLED FOR ON THE DRAWINGS SHALL BE INSTALLED. ALTERNATIVE BRANDS REQUESTED TO BE CONSIDERED AS EQUALS SHALL BE APPROVED BY THE ENGINEER PRIOR TO TENDER OR ORDERING, AS APPLICABLE.
4. SUPPLY AND INSTALL LAMACOIDS TO PROVIDE IDENTIFICATION OF ALL EQUIPMENT, SUCH AS PANELS, DISCONNECTS, CONTACTORS AND RELATED EQUIPMENT, TO THE SATISFACTION OF THE ENGINEER. LABEL ALL CIRCUITS IN PANELBOARDS.
5. UNLESS OTHERWISE NOTED OR APPROVED BY THE ENGINEER, ALL COVER PLATES FOR SWITCHES, RECEPTACLES ETC. IN AREAS TO BE FINISHED WITH DRYWALL SHALL BE WHITE BAKELITE, WHILE ALL OTHER AREAS SHALL BE STAINLESS STEEL.
6. STANDARD RECEPTACLES SHALL BE DUPLEX TYPE, POLARIZED U-GROUND, DOUBLE WIPING CONTACTS, TOTALLY ENCLOSED AND RATED AT 125V, 15A, COMPLETE WITH A WHITE FINISH.
7. ALL EXTERIOR OR OTHERWISE REQUIRED WEATHERPROOF OUTLET BOXES SHALL BE CAST CORROSION RESISTANT ENCLOSURES WITH GASKETED COVER PLATES, FLUSH MOUNTED, UNLESS NOTED OTHERWISE.

DISTRIBUTION EQUIPMENT:

1. SUPPLY AND INSTALL CSA APPROVED DISTRIBUTION EQUIPMENT, INCLUDING ALL REQUIRED SWITCHES, CT CABINETS, PANELS, COP'S, STARTERS, SPLITTER TROUGHS ET AL AS NOTED ON THE DRAWINGS AND/OR AS NEEDED TO SUIT PROJECT.
2. SUPPLY AND INSTALL ALL REQUIRED METER BASE EQUIPMENT TO SUIT PROJECT, AS DIRECTED BY LOCAL UTILITY COMPANY FOR METERING NEEDS.
3. SPLITTER TROUGHS, AS APPLICABLE, SHALL BE OF SUFFICIENT SIZE TO SUIT THE PARTICULAR COMPONENTS, WITH A MINIMUM OF 25% FUTURE EXPANSION, AND SHALL BE OF STEEL CONSTRUCTION, WITH HINGED, SCREWED ON COVERS.
4. ENSURE ALL SERVICE EQUIPMENT IS MOUNTED ON BACKER BOARDS OF 3/4" THICK PLYWOOD, OR OTHER APPROVED MATERIAL TO THE SATISFACTION OF THE LOCAL ELECTRICAL INSPECTOR AND THE ENGINEER.
5. SUPPLY AND INSTALL ALL REQUIRED DISCONNECT SWITCHES, WHETHER THEY ARE FUSIBLE OR NON-FUSIBLE, INDOORS OR WEATHERPROOF UNITS, AS SO NOTED ON THE DRAWINGS. CONFIRM NEEDS AS APPLICABLE WITH MECHANICAL TRADES.
6. EXCEPT FOR INDUSTRIAL APPLICATIONS, THE CONTRACTOR SHALL HAVE A CHOICE OF PROVIDING PANELS WITH BOLT-ON BREAKERS OR PLUG-IN BREAKERS. ALL PANELS FOR INDUSTRIAL BUILDINGS SHALL HAVE BOLT-ON BREAKERS, UNLESS PREVIOUSLY APPROVED BY THE ENGINEER.
7. IF REQUIRED, HALF SIZED "WAFER" BREAKERS SHALL BE ACCEPTABLE WITHIN ANY PLUG-IN BREAKER PANEL, PROVIDED THOSE BREAKERS DO NOT OCCUPY MORE THAN 33% OF THE TOTAL STANDARD BREAKER SPACES WITHIN THE APPLICABLE PANEL. ADD SUPPLEMENTAL PANELS AS REQUIRED TO SUIT CIRCUIT NEEDS.
8. ALL SUB-PANELS LOCATED OUTSIDE OF THE MAIN ELECTRICAL ROOM, SHALL BE RECESSED WITHIN THE PARTICULAR WALL CAVITY, UNLESS SAID WALL IS BUILT OF CONCRETE BLOCK OR POURED CONCRETE. SURFACE MOUNTED PANELS ARE OKAY FOR THESE AREAS. CONFIRM ALL LOCATIONS WITH THE ENGINEER.
9. LABEL ALL CIRCUIT BREAKERS IN A NEAT, AND LEGIBLE MANNER.

ELECTRIC MOTORS AND WIRING:

1. COORDINATE ALL ELECTRICAL POWER AND CONTROL WIRING AS APPLICABLE WITH DIVISION 16 TRADES. UNLESS OTHERWISE AGREED OR SPECIFIED, OPERATION POWER SUPPLY AND TRANSFORMATION SHALL BE THE RESPONSIBILITY OF THE ELECTRICAL TRADES, WHILE ALL CONTROLS AND ITS WIRING SHALL BE THE RESPONSIBILITY OF THE MECHANICAL TRADES.
2. ALL ELECTRICAL INTERLOCKS OF MECHANICAL EQUIPMENT SHALL BE COMPLETED BY THE ELECTRICAL TRADES, AS COORDINATED BY THE MECHANICAL TRADES.
3. UNLESS OTHERWISE NOTED, ALL ELECTRICAL HEATING DEVICES SHALL BE SUPPLIED BY THE MECHANICAL TRADES AND INSTALLED BY THE ELECTRICAL TRADES. ALL CEILING MOUNTED CIRCULATION FANS SHALL BE NOTED ON THE MECHANICAL DRAWINGS, BUT SHALL BE SUPPLIED AND INSTALLED BY THE ELECTRICAL TRADES.
4. THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR THE SUPPLY AND SYSTEM INSTALLATION OF ALL REQUIRED MOTOR STARTERS AND APPLICABLE DISCONNECTS TO SERVE MECHANICAL EQUIPMENT.

MISCELLANEOUS EQUIPMENT & MOTORS:

1. THE ELECTRICAL CONTRACTOR SHALL SUPPLY AND INSTALL ALL CONDUITS, CONDUCTORS, DISCONNECTS, SWITCHES AND RELATED EQUIPMENT AND SHALL COMPLETE ALL LINE VOLTAGE WIRING OF ALL MOTORS SUPPLIED BY THE MECHANICAL CONTRACTOR OR BY OTHERS.
2. EVERY MOTOR, FURNACE, CONDENSER, ETC., SHALL BE INSTALLED WITH A LOCKABLE DISCONNECT MEANS WITHIN FIVE (5) FEET OF THE MOTOR.
3. MANUAL MOTOR SWITCHES SHALL BE SUPPLIED AND INSTALLED COMPLETE WITH PILOT LIGHTS. MAGNETIC SWITCHES SHALL BE SUPPLIED AND INSTALLED COMPLETE WITH HAND OFF-AUTO SWITCH, THREE (3) OVERLOAD RELAYS AND PILOT LIGHTS.
4. PROVIDE A SEPARATE GROUNDING WIRE FOR EACH MOTOR CASE.
5. THE ELECTRICAL CONTRACTOR SHALL SUPPLY AND INSTALL ALL REQUIRED EQUIPMENT INTERLOCK CONTROL PANELS, WIRING AND RELATED SYSTEMS FOR MECHANICAL EQUIPMENT AND MOTORS AS CALLED FOR ON THE DRAWINGS. CONFIRM SETUP WITH MECHANICAL CONTRACTOR AS REQUIRED.

SHOP DRAWINGS:

1. PROVIDE TO THE ENGINEER AN ELECTRONIC (PDF) SET OF SHOP DRAWINGS OF ALL APPLICABLE MECHANICAL COMPONENTS TO BE INCORPORATED INTO THE WORK. REVIEWED DRAWINGS WILL BE RETURNED WITHIN SEVEN (7) WORKING DAYS TIME.
2. ALL SHOP DRAWINGS SENT TO THE ENGINEER MUST FIRST BE REVIEWED BY THE GENERAL CONTRACTOR FOR COMMENTS AND APPROVALS.
3. DO NOT ORDER ANY EQUIPMENT UNTIL THE SHOP DRAWINGS HAVE BEEN REVIEWED AND CONFIRMED BY BOTH THE GENERAL CONTRACTOR AND THE ENGINEER.

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MECHANICAL / ELECTRICAL CONSULTANTS

SEALS

KEYPLAN

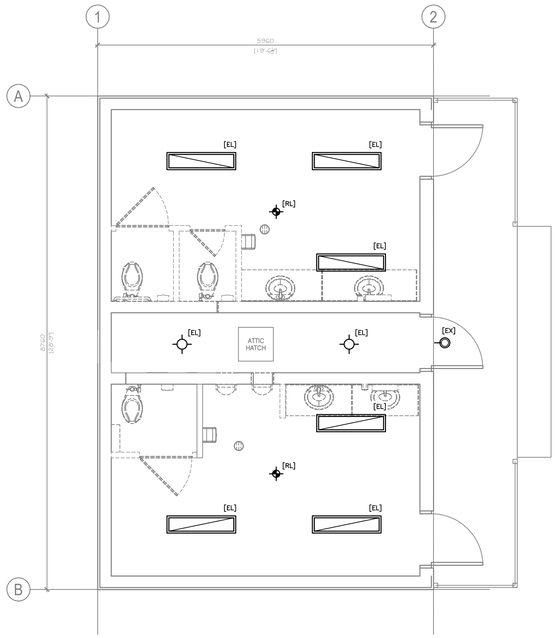
REVISIONS & ISSUES

MON/DD/YY	ISSUED FOR
08/22/2025	75% REVIEW
09/24/2025	TENDER

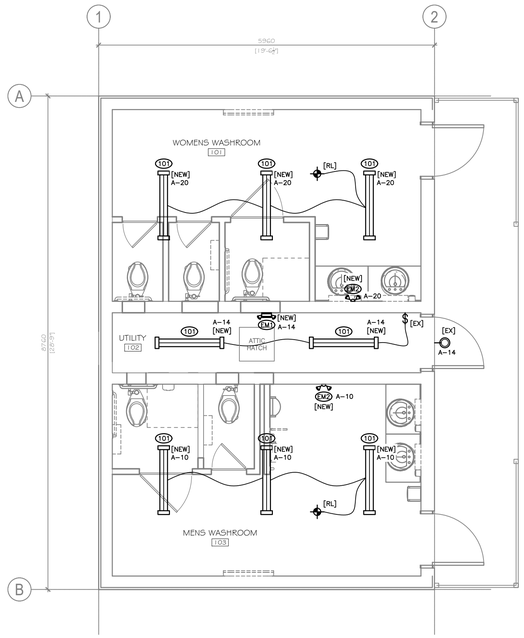
PROJECT TITLE
LAKEVIEW WASHROOM RENO
1110 6TH AVE
INVERMERE, BC V0A 1K4

DRAWING TITLE
POWER PLANS, NOTES & SPECS

SCALE:	AS INDICATED
DRAWN:	GR
CHECKED:	KB
AUG 25	E1
25.170	



LIGHTING DEMOLITION PLAN
SCALE: 1:50



LIGHTING RENOVATION PLAN
SCALE: 1:50

RENOVATION NOTES

1. RENOVATION / DEMO ABBREVIATION NOTES:
   a) EX – EXISTING TO REMAIN
   b) EL – ELIMINATE
   c) RL – RELOCATE EXISTING
   d) NEW – PROVIDE NEW
2. ELECTRICAL CONTRACTOR TO ASSESS ALL ELECTRICAL COMPONENTS NOTED ON THE DRAWING AS EXISTING (EX) TO CONFIRM WORKING CONDITION.
3. ELECTRICAL CONTRACTOR TO REPAIR / REPLACE EXISTING ELECTRICAL FIXTURES / COMPONENTS FOUND TO BE DEFICIENT.
4. ANY ADDITIONAL ELECTRICAL COMPONENTS FOUND ON SITE THAT ARE NOT NOTED ON THE DRAWINGS ARE TO BE EVALUATED AS NOTED ABOVE. IF EQUIPMENT IS LOCATED IN EXISTING WALLS THAT ARE TO BE REMOVED, EQUIPMENT IS TO BE REMOVED UNLESS IT'S FUNCTION IS REQUIRED FOR THE OPERATION OF OTHER EQUIPMENT WITH THE SPACE (IE FIRE ALARM COMPONENTS, JUNCTION BOXES). CONTACT OWNER / ENGINEER FOR DIRECTION.
5. ALL EXISTING CIRCUITS NO LONGER IN USE ARE TO BE REMOVED ALL THE WAY BACK TO THE PANEL.
6. PANEL SCHEDULE TO BE UPDATED TO REFLECT CURRENT SPACE CONDITION.
7. REPAIR ALL WALL / CEILING PENETRATIONS AS REQUIRED TO MAINTAIN FIRE RATINGS.

GENERAL NOTES

1. WASHROOM EXHAUST FANS TO BE INTERLOCKED WITH LIGHTS C/W OCCUPANCY SENSOR WITH 20 MINUTE SHUT OFF DELAY.
2. ALL LIGHTING IS DESIGNED FOR REQUIRED LIGHTING LEVELS. SUBSTITUTE FIXTURES MUST HAVE SAME LUMEN OUTPUT.
3. EMERGENCY LIGHTING SHALL BE ON THE SAME CIRCUIT AS LOCAL LIGHTING & TURN ON UPON LOSS OF POWER TO LOCAL LIGHTING CIRCUIT.

LIGHTING EQUIPMENT

- STANDARD WIRING
- EXISTING CEILING MOUNTED FIXTURE
- EXISTING SURFACE MOUNTED FIXTURE
- EXISTING EXTERIOR WALL MOUNTED FIXTURE
- STRIP FIXTURE
- 2 LAMP EMERGENCY LIGHT & BATTERY PACK
- WALL MTD., 2 LAMP REMOTE EMERG. LIGHT
- TOGGLE SWITCH
- CEILING MOUNTED MOTION DETECTOR

LIGHTING SPECIFICATIONS

ELECTRICAL – GENERAL NOTES:

1. THE ELECTRICAL CONTRACTOR SHALL PROVIDE A COMPLETE AND OPERATIONAL ELECTRICAL SYSTEM, AS APPROVED BY THE ENGINEER, USING HIGHEST QUALITY WORKMANSHIP AND CSA APPROVED MATERIALS BY LICENSED JOURNEYMEN AND QUALIFIED APPRENTICES, TO THE LATEST EDITION OF THE FOLLOWING CODES AND REGULATIONS, THE MOST STRINGENT TO APPLY:
   a) CANADIAN ELECTRICAL SAFETY CODE
   b) NATIONAL AND/OR PROVINCIAL BUILDING CODES
   c) NATIONAL FIRE PREVENTION ASSOCIATION STANDARDS
   e) UNDERWRITERS LABORATORIES OF CANADA STANDARDS
   f) LOCAL UTILITY CODES AND STANDARDS
2. THE ELECTRICAL CONTRACTOR SHALL VISIT THE CONSTRUCTION SITE, IF AND WHEN APPLICABLE, TO REVIEW THE CONDITIONS THAT WILL AFFECT HIS WORK, EITHER DIRECTLY OR INDIRECTLY, AND ACCOUNT FOR THE SAME IN THE TENDER.
3. REPORT ANY DISCREPANCIES IN THE DOCUMENTS TO KB ENGINEERING LTD. AS THEY RELATE TO THE SCOPE OF THE WORK PRIOR TO THE TENDER CLOSE, AS APPLICABLE. ALL NECESSARY ADDENDA SHALL BE ISSUED TO CLARITY THE DISCREPANCY WITHIN THE TIME FRAME NOTED IN THE TENDER DOCUMENTS.
4. EACH ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR LAYING OUT THEIR PORTION OF THE WORK AND MAKING GOOD ANY DAMAGE CAUSED BY THAT WORK.
5. CARRY ALL REQUIRED INSURANCE COVERING THE PROJECT AND WORKERS ON IT.
6. APPLY, PAY FOR AND ARRANGE FOR ALL APPLICABLE PERMITS, INSPECTIONS AND RELATED FEES ASSOCIATED WITH THE ELECTRICAL COMPONENTS OF THE WORK, UNLESS OTHERWISE DIRECTED BY THE GENERAL CONTRACTOR.
7. COORDINATE WORK WITH THAT OF OTHER TRADES, IN PARTICULAR THAT OF THE MECHANICAL DISCIPLINES, TO ENSURE A SMOOTH FUNCTIONING CONSTRUCTION SITE.
8. PROVIDE ALL REQUIRED LINE VOLTAGES, LOW VOLTAGE TRANSFORMATION AND RELATED SUPPORT TO DIVISION 15 TRADES FOR ALL MECHANICAL EQUIPMENT. THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ALL REQUIRED MOTOR STARTERS, CONTACTORS, RELAYS AND DISCONNECT SWITCHES NEEDED FOR THE MECHANICAL EQUIPMENT, AS WELL AS FOR THE SUPPLY AND INSTALLATION OF ALL APPLICABLE CIRCULATION FANS.
9. ALL CONTROL WIRING SHALL BE THE RESPONSIBILITY OF THE MECHANICAL TRADES, WITH POWER PROVIDED BY DIVISION 16, UNLESS OTHERWISE AGREED ON SITE.
10. PROVIDE THE OWNER WITH ONE (1) SET OF AS–BUILT DRAWINGS, AS COMPILED OVER THE COURSE OF THE WORK.
11. UPON COMPLETION OF THE WORK, PROVIDE THE OWNER WITH THREE (3) SETS OF EQUIPMENT OPERATION AND MAINTENANCE MANUALS AS APPLICABLE, AND ONE (1) SET OF FINAL INSPECTION CERTIFICATES FROM THE APPLICABLE AUTHORITIES HAVING JURISDICTION OVER THE WORK.
12. LEAVE THE SITE IN A SAFE AND REASONABLY CLEAN CONDITION AT ALL TIMES.

WIRING METHODS – GENERAL:

1. RUN ALL CIRCUITING CONDUCTORS IN ABOVE GRADE APPLICATIONS IN BUILDINGS CONSTRUCTED OF NON–COMBUSTIBLE MATERIALS WITHIN CONDUITS (RIGID STEEL OR EMT) OR VIA BX ARMOURED CABLES.
2. RUN ALL CIRCUITING CONDUCTORS IN ABOVE GRADE APPLICATIONS IN BUILDINGS CONSTRUCTED OF COMBUSTIBLE MATERIALS AS NOTED ABOVE IN (1) OR USING STANDARD LUMEX CABLES, PROVIDED THE WIRES ARE PHYSICALLY PROTECTED FROM DAMAGE AND CUTS.
3. RUN ALL CIRCUITING CONDUCTORS IN BELOW GRADE APPLICATIONS IN BUILDINGS WITHIN RIGID STEEL OR RIGID PVC CONDUITS, SIZED TO SUIT.
4. DO NOT RUN EXPOSED CONDUITS OUTSIDE OF FINISHED WALLS, CEILINGS OR FLOOR SYSTEMS, EXCEPT FOR STORAGE AND GENERAL SHOP AREAS, WITHOUT THE PRIOR APPROVAL OF THE ENGINEER.
5. SUPPLY AND INSTALL PULL BOXES OF SUFFICIENT SIZE NEEDED TO SUIT CIRCUIT CONDUCTORS IN CIRCUIT RUNS OF MORE THAN 25m (80') OR THAT HAVE MORE THAN THREE (3) 90 DEGREE BENDS.
6. SUPPORT ALL OUTLET BOXES INDEPENDENTLY OF SUPPORTS FOR CONDUITS; OR AS OTHERWISE APPROVED BY THE AUTHORITIES HAVING JURISDICTION.
7. ALL CONDUCTORS SHALL BE COPPER, EXCEPT WHERE NOTED. DO NOT USE ANY WIRE SMALLER THAN #14AWG, EXCEPT FOR CONTROLS AND MISCELLANEOUS LOW VOLTAGE REQUIREMENTS, OR AS PREVIOUSLY APPROVED BY THE ENGINEER.
8. ALL CONDUCTORS SIZE SHALL BE SIZED FOR NO MORE THEN A 3 PERCENT VOLTAGE DROP IN A FEEDER OR BRANCH CIRCUIT AND 5 PERCENT FROM THE SUPPLY SIDE OF THE THE CONSUMER'S SERVICE TO THE POINT OF UTILIZATION. ADVISE OF ANY DISCREPANCY TO KB ENGINEERING LTD.
9. SUPPLY AND INSTALL ALL REQUIRED VAPOUR BARRIER CONTINUATION DEVICES AT ALL APPLICABLE EXTERIOR WALLS OR OTHERS BUILT WITH A POLY BARRIER, TO INCLUDE THOSE IN ATTICS AND BASEMENT AREAS AS APPLICABLE.
10. UNLESS OTHERWISE NOTED ON THE DRAWINGS OR DIRECTED ON SITE, FOLLOW THE FOLLOWING MOUNTING HEIGHTS, AS MEASURED FROM THE FLOOR LEVEL.
    a) SWITCHES – 1220mm (48")
    b) POWER OUTLETS, PHONE JACKS & VOICE/DATA OUTLETS – 305mm (12")
    c) COUNTER HEIGHT OUTLETS – 1120mm (44")
    d) THERMOSTATS & MECHANICAL CONTROLS – 1525mm (60")
    e) EMERGENCY LIGHTS – MIN. 2293.5mm (88") OR TO SUIT LOCAL RACKING
11. SUPPLY AND INSTALL ALL REQUIRED MOTOR STARTERS, RELAYS AND CONTACTORS NECESSARY TO COMPLETE THE INSTALLATION TO CODE AND ENSURE THAT ALL MECHANICAL EQUIPMENT FANS SHUT DOWN ON ACTIVATION OF FIRE ALARM SYSTEM AS APPLICABLE.
12. PROVIDE ALL REQUIRED GROUNDING OF ALL EQUIPMENT, TO E.S.C. STANDARDS.
13. RUN ALL NOTED EMPTY CONDUIT FOR FUTURE USES WITH PULL CORDS TO SUIT.
14. ALL WIRING WITHIN RETURN AIR PLENUM SPACES SHALL BE WITHIN EMT, RIGID STEEL CONDUITS, BX ARMOURED CABLES OR SHALL BE VIA FT4 RATED CABLES.
15. ALL WIRING SHALL BE INSULATION RATED FOR A MINIMUM OF 90°C, UNLESS NOTED.
16. ALL ISOLATED GROUND OUTLETS SHALL BE SO DESIGNATED VIA ORANGE COLOUR.

EXCAVATION & BACKFILL:

1. UNLESS OTHERWISE AGREED WITH THE GENERAL CONTRACTOR, THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR ALL REQUIRED EXCAVATION ASSOCIATED WITH THE ELECTRICAL WORK INSIDE THE BUILDING. THE GENERAL CONTRACTOR SHALL PROVIDE ALL REQUIRED EXCAVATION OUTSIDE THE BUILDING, AS WELL AS ALL REQUIRED BACKFILL AND COMPACTING THROUGHOUT THE JOB.
2. ALL TRENCHING AND BACKFILL SHALL BE COMPLETED FOLLOWING THE REQUIREMENTS OF THE LOCAL UTILITY COMPANY OR SITE AUTHORITY HAVING JURISDICTION. SUCH REQUIREMENTS SHALL INCLUDE THE NEED FOR CONCRETE PROTECTIVE COVERINGS AND ALL NOTIFICATION TAPES AND LABELS AS APPLICABLE.
3. COORDINATE ALL SUCH ACTIVITIES WITH BOTH THE FOUNDATION AND MECHANICAL CONTRACTORS AS REQUIRED TO COMPLETE THE WORK

INCORPORATED MATERIALS:

1. ALL MATERIALS INCORPORATED INTO THE WORK SHALL BE NEW, WITH DESIGN CHARACTERISTICS AS CALLED FOR ON THE DRAWINGS AND FREE OF DEFECTS, TO THE SATISFACTION OF THE ENGINEER.
2. ALL MATERIALS AND EQUIPMENT SHALL BE CSA APPROVED.
3. ALL MATERIALS AND EQUIPMENT CALLED FOR ON THE DRAWINGS SHALL BE INSTALLED. ALTERNATIVE BRANDS REQUESTED TO BE CONSIDERED AS EQUALS SHALL BE APPROVED BY THE ENGINEER PRIOR TO TENDER OR ORDERING, AS APPLICABLE.
4. SUPPLY AND INSTALL LAMACOIDS TO PROVIDE IDENTIFICATION OF ALL EQUIPMENT, SUCH AS PANELS, DISCONNECTS, CONTACTORS AND RELATED EQUIPMENT, TO THE SATISFACTION OF THE ENGINEER. LABEL ALL CIRCUITS IN PANELBOARDS.
5. UNLESS OTHERWISE NOTED OR APPROVED BY THE ENGINEER, ALL COVER PLATES FOR SWITCHES, RECEPTACLES ETC. IN AREAS TO BE FINISHED WITH DRYWALL SHALL BE WHITE BAKELITE, WHILE ALL OTHER AREAS SHALL BE STAINLESS STEEL.
6. STANDARD RECEPTACLES SHALL BE DUPLEX TYPE, POLARIZED U–GROUND, DOUBLE WIPING CONTACTS, TOTALLY ENCLOSED AND RATED AT 125V, 15A, COMPLETE WITH A WHITE FINISH.
7. ALL EXTERIOR OR OTHERWISE REQUIRED WEATHERPROOF OUTLET BOXES SHALL BE CAST CORROSION RESISTANT CONDUITS WITH GASKETED COVER PLATES, FLUSH MOUNTED, UNLESS NOTED OTHERWISE.

EMERGENCY LIGHTING EQUIPMENT:

1. ALL EMERGENCY LIGHTING EQUIPMENT, INCLUDING LAMP FIXTURES AND BATTERY PACKS SHALL BE WIRED IN RIGID STEEL, EMT OR BX ARMOURED CABLES IN BUILDINGS OF NON–COMBUSTIBLE CONSTRUCTION.
2. ALL EMERGENCY LIGHTING EQUIPMENT, INCLUDING LAMP FIXTURES AND BATTERY PACKS SHALL BE WIRED AS NOTED IN (1) OR WITH APPROVED FIRE RATED CABLES IN BUILDINGS OF COMBUSTIBLE CONSTRUCTION.
3. SUPPLY AND INSTALL ALL REQUIRED FIXTURES AS NOTED ON THE DRAWINGS. PRIOR APPROVED ALTERNATES, VERIFIED BY THE ENGINEER, SHALL BE CONSIDERED ONLY ON A PROJECT TO PROJECT BASIS.
4. ALL FIXTURES SHALL HAVE 120/277V AC INPUT, AND 12V DC OUTPUT, UNLESS NOTED ON THE DRAWINGS. BATTERY PACKS SHALL BE 12V RECHARGEABLE SEALED LEAD DIOXIDE OR LEAD–CALCIUM TYPE, SIZED TO SUIT TOTAL CONNECTED LAMPS, FOR A MINIMUM 30 (OR 90) MINUTE OPERATION BEFORE REACHING 91% OF FULL CHARGE.
5. ALL LAMPS SHALL BE SUITED TO REQUIREMENTS NOTED IN FIXTURE SCHEDULE. AND SHALL BE DIRECTIONALLY TARGETED ON SITE TO THE APPROVAL OF THE ENGINEER.
6. PROVIDE SINGLE OR DUAL HEAD REMOTE LAMPS FED FROM APPLICABLE PACKS AS SO NOTED ON THE DRAWINGS.

GENERAL LIGHTING EQUIPMENT:

1. SUPPLY AND INSTALL ALL THE LIGHTING EQUIPMENT NOTED IN THE LIGHT FIXTURE SCHEDULE, OR PRIOR APPROVED EQUIVALENTS, C/W THE REQUIRED CONTROL SYSTEMS AND SWITCHES CALLED FOR.
2. EXCEPT FOR APPLICABLE LOW VOLTAGE FIXTURES, ALL LIGHTS SHALL BE RUN AT 120V OR 347V, AS NOTED IN THE SCHEDULE. UNLESS OTHERWISE CALLED FOR, ALL LIGHTING EQUIPMENT SHALL BE FED FROM STANDARD 15A CIRCUITS, OR IN COMBINATION CIRCUITS BY MEANS OF CONTACTORS. ALL SWITCHLEGS LOADED IN EXCESS OF 1400W SHALL BE WIRED FROM 20A CIRCUITS, USING A MINIMUM OF #12 WIRES.
3. ALL FLUORESCENT FIXTURES SHALL BE EQUIPPED WITH T8 LAMPS AND ELECTRONIC BALLASTS, UNLESS NOTED OTHERWISE.
4. SUPPLY AND INSTALL APPLICABLE LAMPS WITH ALL LIGHT FIXTURES, UNLESS NOTED OTHERWISE ON THE DRAWINGS.
5. UNLESS OTHERWISE NOTED, ALL EXTERIOR LIGHTS SHALL BE CONTROLLED VIA A SINGLE PHOTOCELL, TIME–CLOCK OR BOTH. USE MULTIPLE CONTROL DEVICES ONLY WHERE REQUIRED, OR ECONOMICALLY FEASIBLE TO DO SO. CONFIRM NEEDS WITH THE ENGINEER IS UNCLEAR.
6. SUPPLY AND INSTALL ALL REQUIRED SWITCHES, RELAYS, CONTACTORS, PHOTOCELLS AND TIME–CLOCKS FOR LIGHTING CONTROL. ALL NIGHT–LIGHT FIXTURES SHALL BE CONTROLLED AT THE SUPPLY PANEL CIRCUIT BREAKER.

SHOP DRAWINGS:

1. PROVIDE TO THE ENGINEER AN ELECTRONIC (PDF) SET OF SHOP DRAWINGS OF ALL APPLICABLE MECHANICAL COMPONENTS TO BE INCORPORATED INTO THE WORK. REVIEWED DRAWINGS WILL BE RETURNED WITHIN SEVEN (7) WORKING DAYS TIME.
2. ALL SHOP DRAWINGS SENT TO THE ENGINEER MUST FIRST BE REVIEWED BY THE GENERAL CONTRACTOR FOR COMMENTS AND APPROVALS.
3. DO NOT ORDER ANY EQUIPMENT UNTIL THE SHOP DRAWINGS HAVE BEEN REVIEWED AND CONFIRMED BY BOTH THE GENERAL CONTRACTOR AND THE ENGINEER.

LIGHTING SCHEDULE

TYPE	SYMBOL	DESCRIPTION	MANUFACTURER (OR EQUAL)	MODEL	VOLT	WATT	MOUNTING
101		4' LED LENSED STRIP LIGHT, WHITE, FROSTED DIFFUSER, 4000K	COOPER LIGHTING METALUX	4SNLED–LD5–47SL–LW–UNV–L840–CD1–U	120/277	41	SURFACE
EM1		2 LED LAMP EMERGENCY LIGHT WITH BATTERY PACK, MIN 30 MINUTE DURATION	AIMLITE	EBST 12 xx–2SM 3WLJ WHT	120	5	WALL
EM2		2 LED LAMP REMOTE EMERGENCY LIGHT	AIMLITE	RMSM2–6–12–3W–LJ–WHT	12	3	WALL/ CEILING

*EQUAL CSA APPROVED FIXTURES MAY BE USED UPON ENGINEER'S APPROVAL

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PROJECT TITLE
LAKEVIEW WASHROOM RENO
1110 6TH AVE INVERMERE, BC V0A 1K4

DRAWING TITLE
LIGHTING PLANS, NOTES, SPECS & SCHEDULES

SCALE:	AS INDICATED
DRAWN:	GR
CHECKED:	KB
AUG 25	E2
25.170	

EXISTING PANEL SCHEDULES

PANEL 'A' – 120/240V, 200A, 1ø 30 CCT

LOCATION: UTILITY ROOM					FEEDER: EXISTING		
#	BKR	CCT DESCRIPTION	A	B	CCT DESCRIPTION	BKR	#
1			•		EV CHARGER #1	50A	2
3				•			4
5			•		UTILITY ROOM RECEPTACLE	15A	6
7				•	UTILITY ROOM RECEPTACLE	15A	8
9			•		WASHROOM LIGHTS	15A	10
11				•	DOOR LOCKS & SECURITY	15A	12
13			•		OUTSIDE/UTILITY ROOM LIGHTS	15A	14
15				•			16
17			•				18
19				•			20
21			•				22
23				•			24
25			•				26
27	100A	EXISTING 100A BREAKER (HOT WATER BOILER)		•			28
29			•				30

PANEL 'B' – 120/240V, 200A, 1ø 30 CCT

LOCATION: UTILITY ROOM					FEEDER: EXISTING		
#	BKR	CCT DESCRIPTION	A	B	CCT DESCRIPTION	BKR	#
1	50A	OUTSIDE SUB PANEL	•		EV CHARGER #2	40A	2
3				•			4
5			•				6
7				•			8
9			•				10
11				•			12
13			•				14
15				•			16
17			•				18
19				•			20
21			•				22
23				•			24
25			•				26
27				•			28
29			•				30

NEW PANEL SCHEDULES

PANEL 'A' – 120/240V, 200A, 1ø 30 CCT

LOCATION: ELECTRICAL ROOM								FEEDER: EXISTING				
			LOAD (W)					LOAD (W)				
#	BKR	CCT DESCRIPTION	øA	øB	A	B	øA	øB	CCT DESCRIPTION	BKR	#
1				–	•		4800	–	EV CHARGER #1	50A	2
3			–			•	–	4800			4
5				–	•		480	–	UTILITY ROOM RECEPTACLE	15A	6
7			–			•	–	480	UTILITY ROOM RECEPTACLE	15A	8
9				–	•		1200	–	MEN'S WR LTS/HRV/PWR FLUSH & FAUCET	15A	10
11			–			•	–	360	DOOR LOCKS & SECURITY	15A	12
13				–	•		100	–	OUTSIDE/UTILITY ROOM LTS	15A	14
15			–			•	–	960	BF DOOR OPENER	15A	16
17				–	•		960	–	BF DOOR OPENER	15A	18
19			–			•	–	1200	WOMEN'S WR LTS/HRV/PWR FLUSH & FAUCET	15A	20
21				–	•		480	–	CIRCULATION PUMPS (P-2, P-3)	15A	22
23			–			•	–				24
25				–	•		–				26
27	100A	EXISTING 100A BREAKER (HOT WATER BOILER)	–	5000		•	–				28
29			5000	–	•			–			30
PHASE A TOTAL (W)						PHASE B TOTAL (W)					
13020						12800					
PANEL TOTAL LOAD (W)											
25820											

PANEL 'B' – 120/240V, 200A, 1ø 30 CCT

LOCATION: ELECTRICAL ROOM								FEEDER: EXISTING				
			LOAD (W)					LOAD (W)				
#	BKR	CCT DESCRIPTION	øA	øB	A	B	øA	øB	CCT DESCRIPTION	BKR	#
1	50A	OUTSIDE SUB PANEL	4800	–	•		3840	–	EV CHARGER #2	40A	2
3			–	4800		•	–	3840			4
5				–	•			–			6
7			–			•	–				8
9				–	•			–			10
11			–			•	–				12
13				–	•			–			14
15			–			•	–				16
17				–	•			–			18
19			–			•	–				20
21				–	•			–			22
23			–			•	–				24
25				–	•			–			26
27			–			•	–				28
29				–	•			–			30
PHASE A TOTAL (W)						PHASE B TOTAL (W)					
8640						8640					
PANEL TOTAL LOAD (W)											
17280											

NOTE:

VENTILATION EQUIPMENT (HRV-1 & 2, P-2 & 3, ASSOCIATED CONTROL) DEPICTED ON THIS DRAWING TO BE PRICED AS AN OPTION & SHALL ONLY BE COMPLETED IF APPROVED BY OWNER. ELECTRICAL CONTRACTOR TO COORDINATE W/ MECHANICAL TO CONFIRM VENTILATION DEMOLITION & RENOVATION SCOPE.

berry architecture +associates

CONSULTANT

KB ENGINEERING LIMITED
MECHANICAL / ELECTRICAL CONSULTANTS

SEALS

KEYPLAN

REVISIONS & ISSUES

MON/DD/YY	ISSUED FOR
08/22/2025	75% REVIEW
09/24/2025	TENDER

PROJECT TITLE
LAKEVIEW WASHROOM RENO
1110 6TH AVE
INVERMERE, BC V0A 1K4

DRAWING TITLE
PANEL SCHEDULES

SCALE: AS INDICATED
DRAWN: GR
CHECKED: KB
AUG 25
25.170

E3