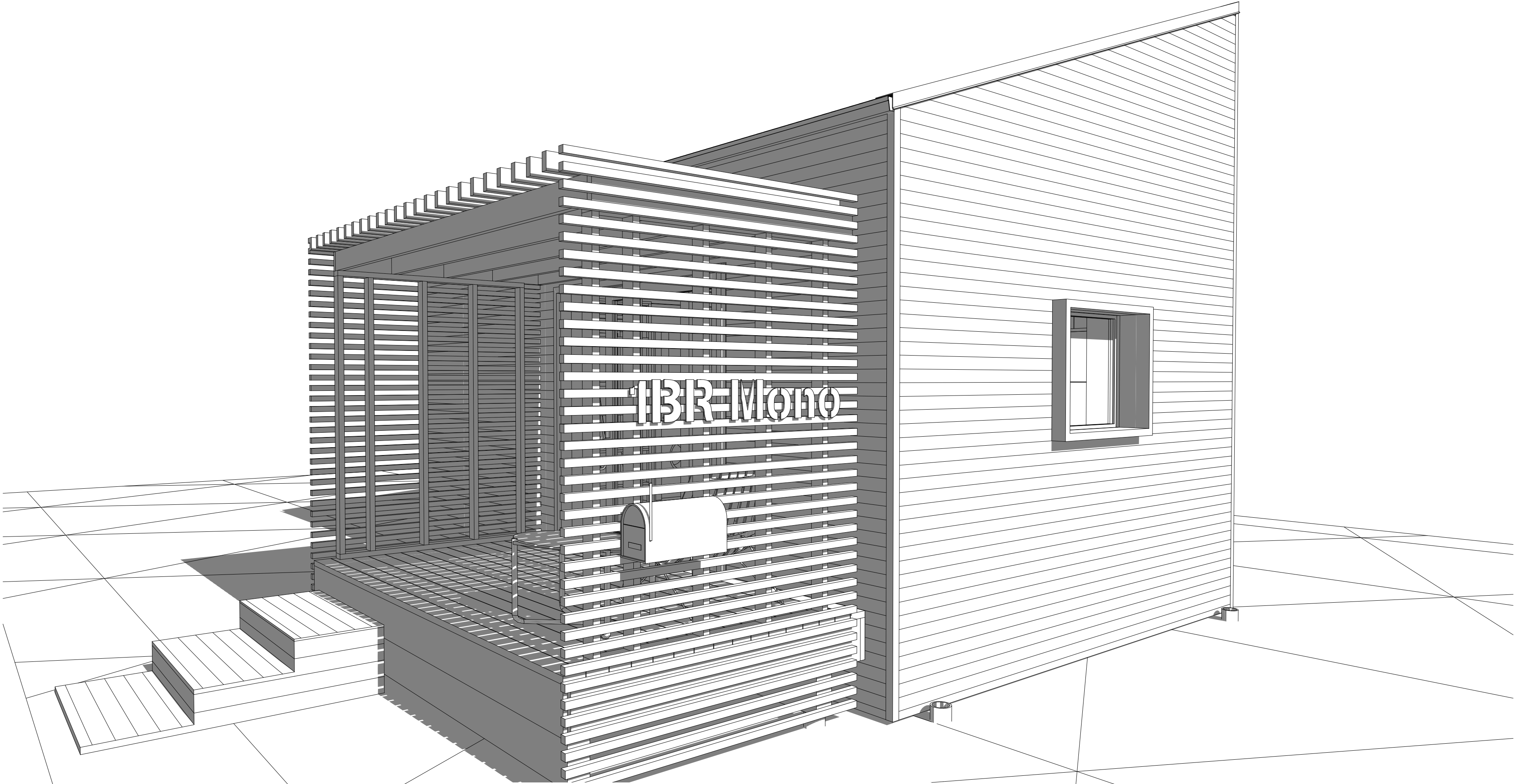


Construction Document Index

General Information		
A0.01	01 - WIP	Cover Sheet
A0.02	01 - WIP	Notes & Legends 1-6
A0.03	01 - WIP	Notes & Legends 7-12
A0.04	01 - WIP	Notes & Legends 13-18
A0.05	01 - WIP	Notes & Legends 19-24
A0.06	01 - WIP	Abbreviations
A0.07	01 - WIP	Legends
A0.08	01 - WIP	Construction Assemblies
A0.09	01 - WIP	Detailed Assemblies
A0.10	01 - WIP	Control Layers
A0.11	01 - WIP	Keynotes
A0.12	01 - WIP	OBC Matrix & Code Notes
A0.13	01 - WIP	SB12 & Energy
Site Plans		
A1.01	01 - WIP	Site Plan
Proposed Design Plans		
A2.41	01 - WIP	Design Floor Plan
A2.42	01 - WIP	Roof Plan
Proposed Construction Plans		
S2.43	01 - WIP	Foundation Framing Plans
S2.45	01 - WIP	Main Floor Framing Plans
S2.46	01 - WIP	Roof Framing Plans
A2.46	01 - WIP	Main Floor Plan
A2.47	01 - WIP	Main Floor Electrical Plans
A2.48	01 - WIP	Assembly Perspective
A2.49	01 - WIP	Assembly Perspective
A2.410	01 - WIP	Framing Perspective
Elevations		
A4.01	01 - WIP	North & South Elevations
A4.02	01 - WIP	East & West Elevations
S4.03	01 - WIP	Framing Elevations
S4.04	01 - WIP	Framing Elevations
Building Sections		
A5.01	01 - WIP	Building Sections
A5.02	01 - WIP	Building Sections
A5.03	01 - WIP	Building Sections
A5.04	01 - WIP	Building Sections
Wall Sections		
A5.05	01 - WIP	WALL SECTIONS
Details		
A6.01	01 - WIP	Details
A6.02	01 - WIP	Details
Interior Elevations		
A7.01	01 - WIP	Interior Elevations
Schedules		
A8.01	01 - WIP	Door & Window Schedule
A8.02	01 - WIP	Electrical Schedule
A8.04	01 - WIP	Room Finish Schedules
3D Documents		
A9.01	01 - WIP	3D Views
A9.02	01 - WIP	3D Views
A9.03	01 - WIP	3D Views
A9.04	01 - WIP	3D Views
A9.05	01 - WIP	3D Views
A9.06	01 - WIP	3D Views
3D Mechanical Documents		
M1.01	01 - WIP	G01 Sheet
M1.02	01 - WIP	M000 Sheet
M1.03	01 - WIP	M001 Sheet
M1.04	01 - WIP	M002 Sheet
M1.05	01 - WIP	M003 Sheet
M1.06	01 - WIP	M004 Sheet
M1.07	01 - WIP	M100 Sheet
M1.08	01 - WIP	M301 Sheet
M1.09	01 - WIP	M302 Sheet
M1.10	01 - WIP	F280
M1.11	01 - WIP	F280, F326



City of Barrie Review Notes

Additional Documentation

Zoning Data

Consultants

Review Stamp and Comments can be placed in this section below.

Appendix A

Assembly Reports: Construction-Assembly-based Building Science reports by UBAKUS.de have been appended to this set (not listed in drawings index). These include static dew-point and thermal resilience analysis as well as identify moisture risk avoidance strategies (adequate venting, vapour-open assemblies, etc).

Appendix B

Rough Openings Guide: One way to ensure compliance with CSA A440.4:19 (R2024) - required under OBC - for Door and Window installation is to plan for a fully-flashed rough-opening that window and doors can plug into. Our RO Guide shows the correct lapping sequence of a qualifying self-adhered WRB, to protect your investment, with a 'deep buck' approach using 3/4" plywood surrounds to best accommodate flashing and exterior insulation details.

Appendix C

Designer Information Sheet, Not Applicable for Architect/Engineer designed projects, where licensed professionals have directly sealed relevant sheets in this document set.

NOTE:

This DRAFT/WIP Document Set shall be sealed by both Architect/Engineer teams on permit application once a site and owner have been selected. All pages noted above and in the Construction Document Index shall form part of any/all related Contract Documentation.

Barrie Zone

Zoning Data will be added on customization once a site and contracting owner has been selected, and shall include all setbacks and noted restrictions for DADU units.

Structural Engineer

Bridgewood Engineering
4 McCloskey Rd, Peterborough, ON K9J 0G6
Contact: Nicolas Fond, P.Eng, Ing.
info@bridgewoodengineeringservices.com
416-838-7436

Civil Consultant

N/A

Geotechnical Engineer

N/A

Landscape

N/A

Ontario Land Surveyor

N/A

Mechanical Consultant

Delta-T Designs, Inc.
16 Winstar Rd - Unit 4
Oro-Medonte, On
L0L 2L0
Niss Feiner, CET, CHD, RASDT, RHDT, RVDT
niss@deltatdesigns.ca
705-791-9000

Planning Consultant

N/A

NOTE: These 'Issued for Review' plans are intended demonstrate to prospective **Builder/Owners** what the intended, pre-approved 'Permit-Ready' drawings will look like for applications with the City of barrie.

Owners must enter into an Agreement/Contract with the Architect (**Thomson Architecture, Inc.**), and Engineers of Record (Structural/Mechanical) and to complete zoning review and **Issued for Construction and Permit** plans for this model, which will be offered at a reasonable market rate for a site specific, **One Time Use** set of plans for a designated address.

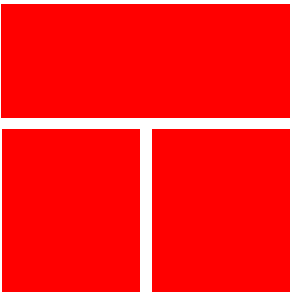
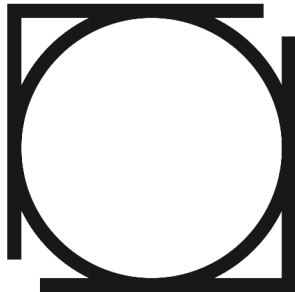
The owner may alternatively retain a planning consultant to review all matters of zoning, rezoning and planning-related Site Plan specific requirements. Civil Consultant submissions shall relate to all matters concerning site grading and drainage, building servicing, etc.

Additional details for interior design & finishes, fixture selections, etc. shall be provided on an as-needed basis per contract, but any departure from the plans as they are shall be charged at the Architects Standard Hourly rates.

BeHome Bachelor Shed

Issued for Certification Review 01 - WIP

Project Address: TBD



Ontario Association of Architects

Ordre des architectes de l'Ontario

thomson architecture inc

1017 Dominion Rd. Stanhope, ON K0M 1S0
cell: 705.935.0355 office: 705.935.0355
email: thomsonarch@icloud.com

BeHome Bachelor Shed
project no. 2023.011

Client:
City of Barrie
70 Collier St.
BarrieON L4M 4T5

Revision
01 - WIP
Cover Sheet

A0.01

GENERAL CONSTRUCTION NOTES & OUTLINE SPECIFICATIONS: 2025-06-18

All generic specifications noted below are typical and relevant to this project unless struck through. Notes on these pages apply to all other Architectural pages and sheets A0.00 through A0.13 containing these notes must be included in any subcontractor tender package together with all other relevant pages pertaining the subject scope of work. General and construction notes are intended to apply at all locations affected by the work. © Thomson Architecture, Inc. 2025

00 00 00 **General Construction Notes**

1. **Copyright:** Copyright of these drawings and text is reserved by the Architect. The drawings and all associated documents are an *Instrument of Service* and are property of the Architect. The drawings and the information contained therein may not be modified or reproduced in whole or in part without prior written permission of the Architect.
2. **Interpretation:** The Architect bears no responsibility for the interpretation of these documents by the Contractor. Upon written application, the Architect will provide written/graphic clarification or supplementary information regarding the intent of the Contract Documents. If Construction Administration services are included in the Architect's scope of work, The Architect will review Shop Drawings submitted by the Contractor for design conformance only.
3. **Dimensions:** Drawings are *not* to be scaled for construction. The Contractor is to verify all existing conditions and dimensions required to perform the work and report any discrepancies with the Contract Documents to the Architect before commencing or continuing with any work. Grid Dimensions are to centre of structural element unless noted otherwise. Dimensions shown in room labels and Finish Schedules are Net - to face of finished walls UNO. Dimensions of Doors and Windows in Schedule Sheets govern over Plans and Elevations, where centring dimensions are provided. Construction Tolerances are set at +/- 1mm (prefabrication tolerances) UNO. Framing dimensions may be to face or centre of structural elements, Contractor is expected to verify.
4. **Level of Detail:** Drawings shall be provided at the LOD as set out in the Standard OAA 800 or 600 Contract. For Schematic or Bronze Level Design, LOD shall be capped at a scale of 1:50. For Design Development or a Silver Level Design LOD shall be capped at a scale of 1:10 and for Gold and Platinum Level Design or Construction Documents, LOD shall be capped at a scale of 1:10 with number of drawings and type as indicated in the contract.
5. **Architectural Geometry:** Positions of exposed finished mechanical or electrical devices, fittings, and fixtures may be indicated on architectural drawings. The *positions* shown on the architectural drawings govern over the Mechanical and Electrical drawings but do not supersede sizes required by engineering. Those items not clearly located may be located as directed by the Architect.
6. **Issuance:** These drawings are not to be used for construction unless noted below as "**Issued: For Construction**" and sealed with signature by the Architect.
7. **OBC:** All work is to be carried out in conformance with the most current Building Code and Bylaws of the authorities having jurisdiction. All plumbing and drainage work to conform to current Ontario regulations. All electrical work to conform to Ontario Hydro Electrical Safety Code as amended.
8. **No Warranty:** The Architect of these plans and specifications gives no warranty or representation to any party about the constructibility of the building(s) represented by them. Any Contractor or Subcontractor must satisfy themselves when bidding (through the process of *Requests for Information* or RFIs) and at all times, to ensure that they can properly and completely construct the work represented by these plans for their bid price as they *otherwise are*, without significant or unreasonable extras or change orders/CCOs (Contemplated Change Orders) agreed to by all

a: 1017 Dominion Rd., Algonquin Highlands, ON K0M 1J1
e: thomsonarch@icloud.com
www: thomsonarchitecture.ca p: 705.935.0355

Thomson Architecture Inc.

2025 Outline Specifications | Version 2.1 | Page 1 of 3

parties to the Contract. A *Builder* must be a licensed and bonded contractor with registrations with HCRA/Tarion as required by the ONHWP where applicable and/or other providers of warranties, with WSIB and all safety clearances, and notices of insurance in place as required by law.

9. **Duty of Care:** The Architect has exercised the skill of a reasonable practitioner and has drafted these 2-Dimensional and in some instances 3-Dimensional representations of an Architectural work to a level of sufficiency and *Level of Detail (LOD)* representing the Architect's *Duty of Care* to both the owner and to the public.

An Architect's Duty of Care should not be confused with a *Standard of Perfection*, such as is rendered in automotive or aviation design. The LOD provided to the Owner is commensurate with the list of services provisioned for in the contract for Architectural Services (OAA800 or OAA600) related to any/all of the following: Issuance for a) Permit to Construct, b) Construction Documentation, c) Tendering, all representing an escalating LOD which requires an ever higher level of effort, scale, number of, and detail of drawings and specifications and a corresponding corresponding increase in fees to execute.

The Architect has provided the owner with the services negotiated and mutually agreed upon to be necessary for construction of the project as per the noted form of *Project Delivery* in the Architect's Contract. Unless provisioned in the contract, any expectation of or demand for;

- a) additional services such as the provision of a *LOD* between those enumerated in the Architect's Contract, or
- b) a "Historic" level of completeness of either the BIM model (ie. LOD 500) or,
- c) design to a *Standard of Perfection*, requiring exhaustive documentation, prototypes and/or mockups of assemblies, are considered unreasonable for construction in the Ontario market and such demands are likewise untenable.

Coordination: All Architectural drawings are to be read in conjunction with that of other consultant drawings for coordination of trades. For locations of work refer to structural, mechanical and electrical documents, in addition to architectural.

Making Good: Any disturbed areas subject to renovations or for testing are to be patched and made good with compatible and matching materials UNO.

Site Safety: The Contractor/Constructor is solely responsible for maintaining site safety in and around the construction site, and must comply with Occupational Health and Safety Act and Regulations for Construction Projects. The Contractor shall construct hoarding or fencing in compliance with the rules, regulations and practices required by the applicable construction safety legislation as required to protect the project, occupants and the general public. *Contractor to apply for Notice of Project with Ministry of Labour and provide Architect with notices of WSIB clearance and all insurance policies covering site safety.*

Quality of Work: All work is to be done in good workmanlike fashion and accord with best practices and manufacturer's instructions, Referring To Manufacturer Specifications (RTMS) for every material and product used on the project.

Garbage Removal: Contractor is to maintain the work site in a tidy condition and safely store and remove waste on a frequent basis.

Substitutions: Any substitutions to materials, assemblies or finishes at any time in the contract delivery process that deviates from contract documents must be approved by the Architect in writing (**per Architect's Act 49 (8)**).

Changes made by contractors with owner approval, but without Architect review or approval may result in a derogation from OBC compliance and may have significant implications on the structural, fire, life safety, accessibility,

a: 1017 Dominion Rd., Algonquin Highlands, ON K0M 1J1 Thomson Architecture Inc.
e: thomsonarch@icloud.com
www: thomsonarchitecture.ca p: 705.935.0355 2025 Outline Specifications | Version 2.1 | Page 2 of 34

quality, durability, performance, or intended design-function and maintenance aspects of the building, resulting in significant additional fees to re-design and coordinate with consultants to bring back into compliance with the OBC or the original design intent and may additionally result in delays, stop-work orders and orders to remedy, which must be undertaken at the owner's expense.

16. **Zoning Compliance:** Thomson Architecture (TAI) designs for compliance wherever possible, but full compliance can never be fully assured due to changing requirements and legislation that is constantly in flux and/or pending updates from the Planning Act at the Provincial level down to Official Plans and zoning by-laws at the local level which may or may not be under appeal or revision at any given time. We have also experienced differences in interpretation which may or may not be subjective or inadequately defined in nature, such as graphic or geometric descriptions of structures or setbacks that are described in by-laws with text but that may not be supported by illustrations. We have also encountered pre-existing conditions of adverse possession that have not been noted on existing surveys and need formal resolution with updated surveys and formal descriptions with updated legal definitions and even CoFA hearings to bring legal non-conforming conditions and uses up to date. This is why TAI requires updated surveys (never than 1997) prepared by a licensed and insured OLS to be provided by owners for all jobs *without exception*.
17. **Energy Performance & Sustainability:** Thomson Architecture, Inc. (TAI) undertakes Building Energy Modelling (BEM) on every project in order to benchmark expected performance with the Mechanical Consultant's own analysis, but this BEM does not guarantee that a finished building will meet the proposed targeted performance due to widely divergent user behaviours, assumptions in 'Ideal Weather Year' files and/or availability of localized weather files for the site in question, construction methods, contractor experience and other site, weather and climate factors that are beyond the control or predictive power of any software standard. Compliance packages and performance simulations are not intended to *predict* actual performance, but rather to set *targets* over a baseline or reference case or benchmark target (EUI) using the same methods: *actual experience will differ from these calculations due to variations such as occupancy, building operation and maintenance, weather, energy use not covered by this standard, changes in energy rates between design of the building and occupancy, and precision of the calculation tool* (**ASHRAE Standard 90.1-2013, 11.2 Informative Note**). The Architect is not liable to compensate the owner, occupant or any other person by reason of anything done by or on behalf of the owner in the reasonable exercise of its efforts to develop or reach BEM Energy Targets.

The Contractor may be asked (based on form of Construction Contract) to provide required documentation (incl. EPD sheets) for all sustainable products as identified in Product Specifications aka. Provide Manufacturer's Certificate: Certify that specified [products] meet or exceed [specified requirements] to the owner to form part of the Owner's Manual at project closeout.

18. *Optional* Resilience Measures (Draft 2025.06.18)

Resilience measures are broken to six categories, 1. Thermal, 2. Fire, 3. Wind and 4. Water 5. Electrical and 6. Biological. Resilience measures are taken to resist loads and forces in excess of the minimums set out in the OBC with an eye towards future weather scenarios as described at the website <http://climateatlas.ca>. In our professional opinion, the loads and requirements in the OBC have become obsolete as minimums.

a: 1017 Dominion Rd., Algonquin Highlands, ON K0M 1J1 Thomson Architecture Inc.
e: thomsonarch@icloud.com
www: thomsonarchitecture.ca p: 705.935.0355 2025 Outline Specifications | Version 2.1 | Page 3 of 34

03 31 00 Cast In Place Concrete & Foundations

Concrete - General

- a) Cast in place concrete construction shall conform to the requirements of CAS standard CAN3-A23.1-M84.
- b) All concrete shall have a min. compressive strength of 25 MPa at 28 days unless noted otherwise on plans.
- c) Provide 7% air entrainment for all concrete exposed to weather.
- d) Provide tooled joints or saw cuts to control cracking/expansion and broom finishes for all concrete slabs exposed to weather.
- e) All reinforcing steel to be deformed bars conforming to CSA G30.12-M Grade 400 unless noted otherwise.
- f) Cold weather concreting shall conform to CSA standard CAN3-A23.1-M84 and provide temporary enclosures and heating when required (allowance for all Winter conditions to be carried by contractor in price as req'd).
- g) Provide saw cuts as req'd by Structural or provide fibreglass reinforcement in slab admixture as alternate
- h) Any exterior concrete walkways, patios or balconies shall be sloped min. 2% away from the building to facilitate drainage and integrate drip edges where slab edges are exposed UNO
- i) Provide [analysis] [testing] of concrete.
- j) Test samples in accordance with CSA-A23.2.
- a) Three (3) concrete test cylinders will be taken for every [<57 or less cu m> <<65 cu yd>>] [<76 or less cu m> <<85 cu yd>>], [of each class] of concrete placed otherwise: **Core drilled samples as requested by Architect/Structural**
- b) One (1) additional test cylinder will be taken during cold weather concreting, and be cured on job site under same conditions as concrete it represents.
- c) One (1) slump test will be taken for each set of test cylinders taken.
- a) Indicate on Shop Drawings, bar sizes, spacings, locations, and quantities of reinforcing steel and wire fabric, bending and cutting schedules, and supporting and spacing devices
- b) Prepare Shop Drawings under seal of Professional Structural Engineer registered in the place where the Project is located.
- c) Provide formed openings where required for pipes, conduits, sleeves, and other work to be embedded in and passing through concrete members.
- d) Coordinate work of other sections involved in forming and setting openings, slots, chases, sleeves, bolts, anchors, and other inserts.

Foundations

- a) Footings shall be founded on native, inorganic, undisturbed soil capable of sustaining min 3,000 psf of allowable bearing pressure UNO (refer to structural engineering).
- b) Slope between stepped or adjacent footings shall be a max. of 7 vertical and 10 horizontal unless approved by soil engineer to be greater. Steps shall not exceed 2'-0" vertically.
- c) Exterior footings shall be founded at a level at least 5'-0" below fin. grade.
- d) Contractor to carry allowances for all geotechnical and concrete inspections and testing
- e) Contractor is responsible for all backfill and interim site grading ensuring that there is a positive slope away from the building and that access to the rear of the site is possible. Refer to civil consultant drawings for site grading.
- f) Install weep tile c/w with filter cloth at foundations over min. 6" compacted gravel base to limit soil fines and connect to CB or downslope of building or as directed by civil consultant UNO.

a: 1017 Dominion Rd., Algonquin Highlands, ON K0M 1J1 Thomson Architecture Inc.
e: thomsonarch@icloud.com
www: thomsonarchitecture.ca p: 705.935.0355 2025 Outline Specifications | Version 2.1 | Page 5 of 34

- g) Optional geotextile/filter-cloth over backfill gravel to limit soil fines from filling gravel matrix is considered best practice.
- s) Contractor to provide damp-proofing, dimple board and/or 100% clear draining granular backfill material to allow for free draining of meltwater, precipitation, groundwater and all other sources away from foundations and building interiors.
- t) Liquid-applied Sill sealer shall be applied to TOW of all foundations UNO, c/w closed cell foam capillary break over full width and length of sill plate, to be additionally caulked with moisture impervious caulking.

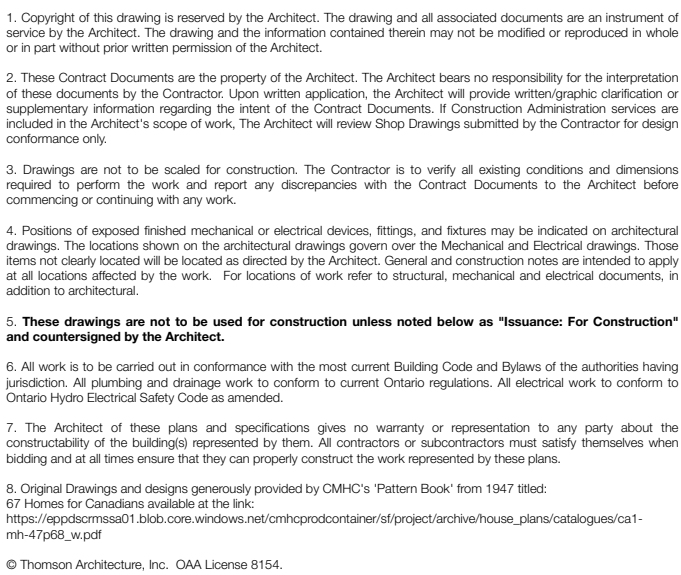
Slab on Grade (SOG)

- a) Bedding for slab on grade to be a min. 8" thick layer of granular 'A' or 3/4" crusher run limestone, compacted to 98% standard proctor density.
- b) Provide min. 10 mil polyethylene vapour barrier" between slab and granular bedding, or
- c) "Taped Ship-lapped XPS sub-slab insulation and/or 2lb closed-cell Spray in Place Polyurethane insulation is considered an acceptable adequate vapour barrier. Note Radon mitigation systems and provisions in updated NBC and OBC codes and install as required.
- d) All slabs on grade shall be reinforced with WWM 6x6x6/6 placed 1" clear from bottom of slab UNO
- e) Refer to OBC SB10 or SB12 for required R-values for insulation (ie. heated slabs w. radiant PEX floor require min. 2" SM/XPS or alternative min. R10 continuous insulation).
- f) Floor floated floors to be reinforced with fibreglass fibre admixture and treated with surface hardening agent and be sealed w. Mapei WR40 Sealer.
- g) Note: Passive Solar Designs require hydronic 'radiant PEX' lines to be continuous from South to North areas of slab to allow for passive solar gains to be distributed to North area of slab during daytime peak solar gains. MEP Consultant to provide second circuit for distribution pump so calls can come from thermostat (ie. as with fan-only control on conventional furnace) or from boiler calls. DO NOT zone North and South as separate, isolated zones.
- u) SOG with full frost-wall foundations with NO basement: Damp-proofing can be omitted provided that a rigid form of mineral wool or cellular glass insulation that acts as a capillary break and permits the free draining of groundwater may be used in lieu of damp-proofing. Interior and exterior weepers with filter cloth embedded in clean stone backfill shall be provided UNO.
- h) SOG as Thermal Battery: Where structural may show min. 4", Architectural best practice has shown that min. 5" slabs have superior performance characteristics wrt the 'thermal battery' effect, and risk reduction wrt puncture of radiant pex from fasteners overhead partition sills. Contractor to form to 5" thickness slabs even where 4" thickness is cited by Structural wherever in-floor hydronic systems are specified.

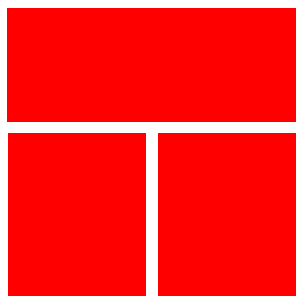
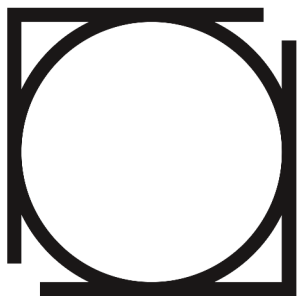
04 20 00 Concrete Unit Masonry Foundations

- Build masonry plumb, level, and true to line, with vertical joints in alignment.
- Lay out coursing and bond to achieve correct coursing heights and continuity of bond above and below openings, with minimum of cutting.
- Provide continuous control joints [as indicated].
- Break vertical mortar bond with extruded neoprene gasket.
- Control joint shall be primed to prevent drying out of caulking material.

a: 1017 Dominion Rd., Algonquin Highlands, ON K0M 1J1 Thomson Architecture Inc.
e: thomsonarch@icloud.com
www: thomsonarchitecture.ca p: 705.935.0355 2025 Outline Specifications | Version 2.1 | Page 6 of 34



Rev. ID	Transmittal Set Name	Change ID	Change Name	Date
01 - WIP	Issued for Certification Review			Work in Progress



Ontario Association
of Architects

Ordre des architectes
de l'Ontario

thomson architecture inc

1017 Dominion Rd. Stanhope, ON K0M 1S0
cell: 705.935.0355 office: 705.935.0355
email: thomsonarch@icloud.com

BeHome Bachelor Shed

project no. 2024.12

Site Address: TBD

Revision
01 - WIP
Notes & Legends 1-6

A0.02

a: 1017 Dominion Rd., Algonquin Highlands, ON K0M 1J1 Thomson Architecture Inc.
e: thomsonarch@icloud.com
www: thomsonarchitecture.ca p: 705.935.0355 2025 Outline Specifications | Version 2.1 | Page 4 of 3

a: 1017 Dominion Rd., Algonquin Highlands, ON K0M 1J1 Thomson Architecture Inc.
e: thomsonarch@icloud.com
www: thomsonarchitecture.ca p: 705.935.0355 2025 Outline Specifications | Version 2.1 | Page 5 of 34

a: 1017 Dominion Rd., Algonquin Highlands, ON K0M 1J1 Thomson Architecture Inc.
e: thomsonarch@icloud.com
www: thomsonarchitecture.ca p: 705.935.0355 2025 Outline Specifications | Version 2.1 | Page 6 of 34

- v) Provide moisture-resistant GWB at all partitions in wet areas not receiving tile, such as kitchens, bathrooms, janitor closets except where GWB forms part of a fire separation or UNO.
- w) Where varying thicknesses of GWB or other partitions about, faces shall be flush and plumb UNO.
- x) Tile Edging, Thresholds, Transition/ Reducer Strips, Stair Treads
- y) Mortar
- z) Adhesive
- aa) Grout
- bb) Sealer
- cc) Install ceramic tile [and thresholds] to TTMAC Details.

09 60 00 Hardwood Flooring

- a) Provide samples: Submit two (2) samples 12x12 inches in size illustrating wood grain, colour, and sheen.
- b) Provide Moisture Barrier: Black high density foam with 6 mil polyethylene moisture barrier film.
- c) Provide adhesive: Water resistive type as recommended by flooring manufacturer.
- d) Apply Subfloor Filler: Premix latex cementitious type where required.
- e) Provide expansion Space: Provide minimum <6 mm> <<1/4 inch>>expansion space at walls and other terminations of flooring, unless otherwise indicated on Drawings.
- f) Install transition/reducer strips [at centreline of door openings and where flooring terminates with other floor areas.
- g) Seal all flooring penetrations and perimeters at wet areas with silicone sealant.

10 30 00 Fireplaces And Stoves

- a) Fireplaces shall conform to OBC 9.22 [as per OBC 9.21.1.3]
- b) Direct vent gas fireplace vent to be a min 300mm [12"] from any opening and AFG.
- c) Direct venting gas furnace vent direct vent furnace terminal min.900mm [36"] from gas regulator min. 300mm[12"] AFG, from all openings, exhaust and intake vents.

22 10 00 Plumbing & Piping: Weeping Tile, Sumps, Drainage & Cutters, Rwl

- a) Use Polyvinyl Chloride Pipe: Perforated, plain end, 100mm/4 inches inside diameter; with required fittings.
- b) OR
- c) Corrugated Plastic Tubing: Flexible type, perforated; 100mm/4 inches diameter, with required fittings.
- d) Loosely butt pipe ends. Place 300mm/12 inch wide joint cover strip, around pipe diameter centred over joint.
- e) Place pipe with perforations facing down. Mechanically join pipe ends.
- f) Lay pipe to slope gradients with maximum variation from true slope of 3 mm in 3 m, 1/8 inch in 10 ft.
- g) Insulate any exposed pipes and ducts as required to limit condensate and heat trace any pipes subject to freezing.

22 40 00 Plumbing Fixtures (22) and Accessories (10)

- a) Install water closets in accordance with OBC section 3.8.3.9.
- b) Supply and install all fixtures, accessories and washroom components per Manufacturer's specifications.

- c) Where applicable; Supply and install all washroom accessories and fixtures noted. All barrier-free fixtures and accessories to be installed in accordance with OBC section 3.8.3.8. Securely anchor grab bars and other accessories to wall to resist all required loads (typ 1.3kN) and to meet OBC Section 3.8 "Barrier-Free Design" requirements.
- d) Provide 3/4" let-in (recessed) plywood support blocking in walls for wall mounted fixtures, accessories and grab bars (to withstand transferred weight required) between min. & max. mounting heights per OBC. Align wall mounted fixtures and accessories with wall tile joints, keeping within max and min dimensions per OBC.
- e) Insulate any exposed pipes or as required to limit condensate and heat trace any pipes subject to freezing.
- f) Supply and install all washroom components per Manufacturer's specifications.
- g) Where applicable; Supply and install all washroom accessories and fixtures noted.
- h) All barrier-free fixtures and accessories to be installed in accordance with OBC section 3.8.3.8.
- i) Securely anchor grab bars and other accessories to wall to resist all required loads (typ 1.3kN) and to meet OBC Section 3.8 "Barrier-Free Design" requirements.
- j) Provide 3/4" let-in (recessed) plywood support blocking in walls for wall mounted fixtures, accessories and grab bars (to withstand transferred weight required) between min. & max. mounting heights per OBC.
- k) Align wall mounted fixtures and accessories with wall tile joints, keeping within max and min dimensions per OBC.
- l) Blocking to be provided for future grab bars as noted.

Plumbing Penetrations & Access

- a) Flash and counter flash where plumbing piping passes through weather or waterproofed walls, floors and roofs.
- b) Flash vent and soil pipes projecting above finished roof surface. For pipes through outside walls turn flange back into wall and seal.
- c) Set sleeves in position in advance of concrete work. Arrange reinforcing around sleeves.
- d) Extend sleeves through floors 100 mm/4 inches above finished floor level. Seal opening perimeter with sealant and provide floor cover plate.
- e) Install chrome plated escutcheons where piping passes through finished surfaces.
- f) Provide and install access doors to concealed plumbing piping, flush with surrounding surface. Provide access doors for maintenance or adjustments purposes for valves, clean outs, traps, controls.

23 70 00 Centralized Ventilation Equipment

- a) HRV intake to be min. 1830mm[6'-0"] from all exhaust terminals. [refer to gas utilization code] [as per OBC 9.32.3.5 and 9.32.3.10]
- b) Washroom and kitchen mechanical exhaust to be connected to HRV, noting all req'd clearances (ie. min 6' from range)
- c) HRV to be installed, insulated and balanced by HRAI licensed professional and per HRAI and manufacturer specifications
- d) Adequate attic, crawlspace and/or cavity venting (per OBC) to be installed by contractor.
- e) HRV intake to be min. 1830mm [6'-0"] from all exhaust terminals. [refer to gas utilization code] [as per OBC 9.32.3.5 and 9.32.3.10]
- f) Washroom and kitchen mechanical exhaust to be connected to HRV, noting all req'd clearances (ie. min 6' from range)
- g) HRV/ERV to be installed, insulated and balanced by HRAI licensed professional and per HRAI and manufacturer specifications, CSA-F326-M91 and as per OBC 9.32.3.11&12 and OBC 6.2.1.6 (efficiency)

- h) Controls: Airthings Wave+ c/w Radon & CO2 monitoring, programmed with IFTTT trigger to call HRV operation via Ecobee4 Thermostats at levels over 600ppm to 450ppm or RH of 60% or greater, OAA
- i) Design for Relative Humidity targeting between 40-60% UNO.
- j) Drain Water Heat Recovery (DWHR) units (42% Efficiency) shall be installed as required by OBC SB12 3.1.1.12 at any/ all showers except where there is no vertical storey/crawlspace to accommodate the DWHR

28 40 00 Safety Detectors Install Safety Detectors In The Following Locations:

- a) Fire/Heat Detector: [Fixed temperature,] [Combination rate of rise and fixed temperature,] rated, self contained audible alarm, [120 VAC,] [Battery DC powered,] Locations:
- b) Kitchen.
- c) Sleeping area.
- d) Smoke Detector: [Ultraviolet] [Infrared] radiation type, self contained audible alarm, [120 VAC,] [Battery DC powered,] Locations:
- e) Near furnace.
- f) Main floor hallway.
- g) Upstairs hallway.
- h) Sleeping area.
- i) Carbon Dioxide Detector: Sensor activated, self contained audible alarm, [120 VAC,] [Battery DC powered,] Locations: Near furnace.
- j) Install at ceiling locations appropriate to optimum sensing.

26 10 00 Electrical

- a) All switches and outlets to be Lutron Decora OAA.
- b) All Electrical outlets shown on Drawings are approximate locations unless dimensioned.
- n) Outlet and switch heights per OBC.
- c) Do not install boxes back-to-back in walls, provide separation, except provide minimum 600 mm/24 inch separation in acoustic walls.
- d) Use multiple-gang boxes where more than one device are mounted together; [do not use sectional boxes].
- e) Install boxes in walls without damaging wall insulation.
- f) Install plastic air seal covers and apply acoustic sealant at all boxes at exterior walls and all ceilings with attic space above.
- g) Vertically align adjacent wall-mounted outlet boxes for switches, thermostats, and similar devices.
- h) Set floor boxes level and flush with finish flooring material.
- i) Install wall switches 1.2m/48 inches above floor, OFF position down.
- j) Install convenience receptacles 450mm/18 inches above floor, 150mm/6 inches above counter backsplash; grounding pole on bottom.
- k) Install galvanized steel plates on outlet boxes and junction boxes in unfinished areas, above accessible ceilings, and on surface mounted outlets.
- o) **Renovated Basement Suites Only:** Potlights to be removed and replaced with surface mounted fixtures (for fire protection) that shall accommodate Philips LED Edison base fixtures on dimmers. Switch and fixture locations to be coordinated on site with Finish Contractor and reviewed by architect

a: 1017 Dominion Rd., Algonquin Highlands, ON K0M 1J1

e: thomsonarch@icloud.com

www: thomsonarchitecture.ca p: 705.935.0355

2025 Outline Specifications | Version 2.1 | Page 25 of 34

Thomson Architecture Inc.

a: 1017 Dominion Rd., Algonquin Highlands, ON K0M 1J1

e: thomsonarch@icloud.com

www: thomsonarchitecture.ca p: 705.935.0355

2025 Outline Specifications | Version 2.1 | Page 26 of 34

Thomson Architecture Inc.

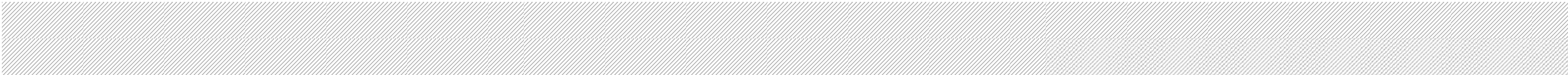
a: 1017 Dominion Rd., Algonquin Highlands, ON K0M 1J1

e: thomsonarch@icloud.com

www: thomsonarchitecture.ca p: 705.935.0355

2025 Outline Specifications | Version 2.1 | Page 27 of 34

Thomson Architecture Inc.



Water Control Checklist:

Contractor is to satisfy themselves that the Architect's Drawings indicate the following:

Design Stage

1. All wall and window systems comply with OBC, Insurer's & Warranty requirements of featuring at least two planes of drainage.
2. Primary building massing shall feature drainage planes designed to overlap and direct bulk water away from all building openings (ie. Doors, Windows, Mechanical Penetrations), and that bulk water shall not pool on walking surfaces or architectural elements unless designed for bulk water retention and freezing effects.
3. Fundamentals of Building Science is considered with respect to Airtightness (1.0ACH @50Pa or better is targeted, to be tested and confirmed)
4. Vapour Control and Diffusion (complete barriers and vents)
5. IAQ/EAQ Humidity Control (between 40-60% RH)
6. Drainage and Drying (preserve assembly moisture between 8-14% for interior wood and 12-18% exterior) per: https://cwc.ca/wp-content/uploads/2019/03/publications-BP1_MoistureAndWoodFrameBuildings.pdf)
7. Ventilation effects (min. req'd ACH with 100% fresh air and Heat Recovery >80%)
8. Prevention of unnecessary wetting (provision of Overhangs, Ledges, Flashings, Drip Edges).
9. Protection of exterior doors and windows from precipitation, capillarity, snow-accumulation/melt by means of flashings with drip edges, positioning, roof overhangs, partial exterior frame insulation (ie. Thermal Bucks).
10. Design shall provide minimum overhangs of 24" (610mm) except where inverter roofs/parapets used (TAI standard) or where 2 planes of drainage are otherwise provided to divert bulk water ingress and promote drying.
11. Groundwater control measures are complete, from foundation protection to diversion to Sump and Sump discharge locations, damp-proofing, capillary breaks at all concrete, and moisture barriers under crawlspace and vapour barriers under slabs.

Bid Stage

12. All roof drains, scuppers and diversion measures noted in sufficient quantity and size
13. Details of All Roof/Wall, Roof Curb and Parapet Details noting two planes of drainage where applicable are shown.
14. Ventilation and Drainage of all Wall Systems (Construction Assemblies Page: (A0.06) is noted.
15. Directionality of Drainage for all Roofs and Floors is noted.
16. Mechanical, Structural and other Sub-consultants to respect the Architect's design for prevention of prevention of bulk water ingress and vapour & humidity control.
17. Bulk water is designed to avoid pooling on walking surfaces or architectural elements

ACT	ACOUSTICAL CEILING TILES & T-BAR SUSPENSION SYSTEM	DMPF	DAMP-PROOFING	RD	ROOF DRAIN	TOFW	TOP OF FOUNDATION WALL
ALU	ALUMINUM	DIA	DIAMETER	RM	ROOM	TOJ	TOP OF JOIST
AFF	ABOVE FINISH FLOOR	DIM	DIMENSION	RTS	REFER TO STRUCTURAL	TOM	TOP OF MASONRY
AFG	ABOVE FINISHED GRADE	DPTN	DEMOUNTABLE PARTITION	RTMS	REFER TO MANUFACTURER SPECIFICATIONS	TOP	TOP OF PARAPET
AHJ	AUTHORITY HAVING JURISDICTION	DN	DOWN	TOS	TOP OF SLAB TOP OF STEEL	TYP	TYPICAL
APPROX	APPROXIMATE	DSA/T	DUAL-SIDED ADHESIVE/TAPE	RTFM	READ THE F*CKING MANUAL	U/S	UNDERSIDE
A/V	AUDIO VISUAL	DTL	DETAIL	RO	ROUGH OPENING	U/S SD	UNDERSIDE OF STRUCTURAL DECK
AVB	AIR/VAPOUR BARRIER aka. VAPOUR RESISTIVE MEMBRANE	DWGS	DRAWINGS	SCP	SCUPPER	UNO	UNLESS NOTED OTHERWISE
BAS	BUILDING AUTOMATION SYSTEM	ECR	EMBODIED CARBON RATIO (MTCO2e:MT)	SLNT	SEALANT	UR	URINAL
BD	BOARD	EIFS	EXTERIOR INSULATION & FINISH	SECT	SECTION	U/S B	UNDERSIDE OF BEAM
B/F	BARRIER FREE	SYSTEM		SW	SIDEWALK	U/S J	UNDERSIDE OF JOIST
BFF	BELOW FINISHED FLOOR	ELEC	ELECTRICAL	SI	SITE INSTRUCTION	U/S SD	UNDERSIDE OF STRUCTURAL DECK
BFG	BELOW FINISHED GRADE	ELEV	ELEVATOR	SIM	SIMILAR	VERT	VERTICAL
BHD	BULKHEAD	EPD	ENVIRONMENTAL PRODUCT DECLARATION (Data Sheets)	SIP PU	SPRAY IN PLACE POLYURETHANE	VEST	VESTIBULE
B/T	BETWEEN	EQ	EQUAL	INSULATION		VOC	VOLATILE ORGANIC COMPOUND
CCO	CONTEMPLATED CHANGE ORDER	EL	ELEVATION	SPF	SPRUCE/PINE/FIR	W/	WITH
CH	COAT HOOK	EXP	EXPOSED	SS	STAINLESS STEEL	WC	WATER CLOSET
CR	CARD READER	EXT	EXTERIOR	ST	STAIRS	WD	WOOD WOOD DOOR
C/W	COMPLETE WITH	EXST	EXISTING	SJ/OWWSJ	STEEL JOIST/OPEN WEB STEEL JOIST	WDMA	WINDOW & DOOR MANUFACTURERS ASSOCIATION
CB	CATCH BASIN	EXST GR	EXISTING GRADE	STOR	STORAGE	WGL	WIRED GLASS
CJ	CONTROL JOINT	EUI or TEUI	OPERATIONAL TOTAL ENERGY USE INTENSITY (kgCO2e/m2/yr)	STRUCT	STRUCTURAL	WH	WEEP HOLE - or - WALL HUNG
CI	CONTINUOUS INSULATION			SATC	SUSPENDED ACOUSTICAL TILE	W/O	WITHOUT
CIP	CAST-IN-PLACE CONCRETE	F2F	FLOOR TO FLOOR HEIGHT	TBV	TO BE VERIFIED BY CONTRACTOR	WPM	WATERPROOF MEMBRANE
CG	CORNER GUARD	FRR	FIRE RESISTANCE RATING	TMPD GL	TEMPERED GLASS	WP	WATERPROOFING
CL	CENTRE LINE	FD	FLOOR DRAIN	THK	THICKNESS	WP	WORKING POINT
CLG	CEILING	FF	FINISHED FLOOR	THERM	THERMAL GLAZING AS REQ'D BY OBC	WRB	WEATHER RESISTIVE BARRIER (Vapour-Open)
CNTR	COUNTER	FG	FINISH GRADE	THRES	THRESHOLD	WRC	WESTERN RED CEDAR
CoA	COMMITTEE OF ADJUSTMENT	FO	FINISHED OPENING	THRU	THROUGH	WT	WEEPING TILE C/W FILTER CLOTH
C/W	COMPLETE WITH	FHC	FIRE HOSE CABINET	TFA	TO FLOOR ABOVE		
C/C	CENTRE TO CENTRE	FHD	FIRE HYDRANT	TFB	TO FLOOR BELOW		
CMU	CONCRETE MASONRY UNIT	FP	FIRE PLACE	TJI	TRUSS JOIST/WOOD-I BEAM		
COMM	COMMUNICATION	FR	FIRE RATED	TO	TOP OF ____		
CC	CONCRETE	FSR	FLAME SPREAD RATING - or - FLOOR SPACE RATIO (%)	TOB	TOP OF BEAM		
COND	CONDITION	GA	GAUGE	TOC	TOP OF CONCRETE		
CPT	CARPET	GCA	GROSS CONSTRUCTION AREA	TOC FTG	TOP OF CONCRETE FOOTING		
CT 1	COUNTERTOP TYPE 1 (VARIABLE)	GFA	GROSS FLOOR AREA	TOC WALL	TOP OF CONCRETE WALL		
CTR	CENTRE	GHGlo	OPERATIONAL GREENHOUSE GAS INTENSITY (kgCO2e/m2/yr)	TOW	TOP OF WALL		
DF	DOUGLAS FIR			TFF	TOP OF FINISH FLOOR		
DHW	DOMESTIC HOT WATER HEATER			TOF	TOP OF FLOOR TOP OF FOOTING TOP OF FRAMING		

a: 104 Shirley Avenue, Barrie, ON L4N-1N4

e: andy@andythomson.ca

www: andythomson.ca c: 647.607.7920

2022 Outline Specifications | Version 2.0 | Page 30 of 33

Thomson Architecture Inc.

ABBREVIATIONS

a: 1017 Dominion Rd., Algonquin Highlands, ON K0M 1J1

e: thomsonarch@icloud.com

www: thomsonarchitecture.ca p: 705.935.0355

2025 Outline Specifications | Version 2.1 | Page 28 of 34

Thomson Architecture Inc.

a: 1017 Dominion Rd., Algonquin Highlands, ON K0M 1J1

e: thomsonarch@icloud.com

www: thomsonarchitecture.ca p: 705.935.0355

2025 Outline Specifications | Version 2.1 | Page 29 of 34

Thomson Architecture Inc.

1. Copyright of this drawing is reserved by the Architect. The drawing and all associated documents are an instrument of service by the Architect. The drawing and the information contained therein may not be modified or reproduced in whole or in part without prior written permission of the Architect.

2. These Contract Documents are the property of the Architect. The Architect bears no responsibility for the interpretation of these documents by the Contractor. Upon written application, the Architect will provide written graphic clarification or supplementary information regarding the intent of the Contract Documents. If Construction Administration services are included in the Architect's scope of work, the Architect will review Shop Drawings submitted by the Contractor for design conformance only.

3. Drawings are not to be scaled for construction. The Contractor is to verify all scaling conditions and dimensions required to perform the work and report any discrepancies with the Contract Documents to the Architect before commencing or continuing with any work.

4. Portions of repeated finished mechanical or electrical devices, fittings, and fixtures may be indicated on architectural drawings. The locations shown on the architectural drawings govern over the Mechanical and Electrical drawings. Those items not clearly indicated will be located as directed by the Architect. General and construction notes are intended to apply at all locations affected by the work. For locations of work refer to structural, mechanical and electrical documents, in addition to architectural.

5. These drawings are not to be used for construction unless noted below as "Issuance For Construction" and countersigned by the Architect.

6. All work is to be carried out in conformance with the most current Building Code and Rules of the authority having jurisdiction. All planning and design work to conform to current Ontario regulations. All electrical work to conform to Ontario Hydro Electrical Safety Code as amended.

7. The Architect of these plans and specifications gives no warranty or representation to any party about the constructability of the buildings represented by them. All contractors or subcontractors must satisfy themselves when bidding and at all times ensure that they can properly construct the work represented by these plans.

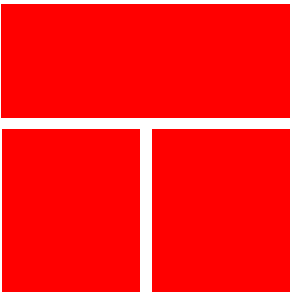
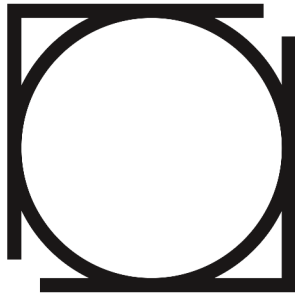
8. Original Drawings and designs generally provided by CMHC's "Pattern Book" from 1947 dated:

87. Pattern for Canadians available at the link: https://openaccess.library.utoronto.ca/bitstream/handle/1807/10300/1/CMHC_Pattern_Book.pdf

© Thomson Architecture, Inc. - CAA License B154

Rev. ID	Transmitted Set Name	Change ID	Change Name	Date
B1 - WIP	Issued for Certification Review			

Work in Progress



Ontario Association of Architects

Ordre des architectes de l'Ontario

thomson architecture inc

1017 Dominion Rd. Stanhope, ON K0M 1S0
cell: 705.935.0355 office: 705.935.0355
email: thomsonarch@icloud.com

BeHome Bachelor Shed

project no. 2024.12

Site Address: TBD

Revision
01 - WIP
Abbreviations

A0.06

SATC	SUSPENDED ACOUSTICAL TILE	U/S J	UNDERSIDE OF JOIST
CEILING		U/S SD	UNDERSIDE OF STRUCTURAL DECK
TBV	TO BE VERIFIED BY CONTRACTOR	VERT	VERTICAL
TMPD GL	TEMPERED GLASS	VEST	VESTIBULE
THK	THICKNESS	VOC	VOLATILE ORGANIC COMPOUND
THERM	THERMAL GLAZING AS REQ'D BY OBC	W/	WITH
THRES	THRESHOLD	WC	WATER CLOSET
THRU	THROUGH	WD	WOOD WOOD DOOR
TFA	TO FLOOR ABOVE	WDMA	WINDOW & DOOR MANUFACTURERS ASSOCIATION
TFB	TO FLOOR BELOW	WGL	WIRED GLASS
TJI	TRUSS JOIST/WOOD-I BEAM	WH	WEEP HOLE - or - WALL HUNG
TO	TOP OF ____	W/O	WITHOUT
TOB	TOP OF BEAM	WPM	WATERPROOF MEMBRANE
TOC	TOP OF CONCRETE	WP	WATERPROOFING
TOC FTG	TOP OF CONCRETE FOOTING	WP	WORKING POINT
TOC WALL	TOP OF CONCRETE WALL	WRB	WEATHER RESISTIVE BARRIER (Vapour-Open)
TOW	TOP OF WALL	WRC	WESTERN RED CEDAR
TFF	TOP OF FINISH FLOOR	WT	WEeping TILE C/W FILTER CLOTH
TOF	TOP OF FLOOR TOP OF FOOTING TOP OF FRAMING		
TOFW	TOP OF FOUNDATION WALL		
TOJ	TOP OF JOIST		
TOM	TOP OF MASONRY		
TOP	TOP OF PARAPET		
TOS	TOP OF SLAB TOP OF STEEL		
TYP	TYPICAL		
U/S	UNDERSIDE		
UNO	UNLESS NOTED OTHERWISE		
UR	URINAL		
U/S B	UNDERSIDE OF BEAM		

a:	1017 Dominion Rd., Algonquin Highlands, ON K0M 1J1	Thomson Architecture Inc.	a:	1017 Dominion Rd., Algonquin Highlands, ON K0M 1J1	Thomson Architecture Inc.
e:	thomsonarch@icloud.com		e:	thomsonarch@icloud.com	
www:	thomsonarchitecture.ca	2025 Outline Specifications Version 2.1 Page 31 of 34	www:	thomsonarchitecture.ca	2025 Outline Specifications Version 2.1 Page 32 of 34

a:	1017 Dominion Rd., Algonquin Highlands, ON K0M 1J1	Thomson Architecture Inc.	a:	1017 Dominion Rd., Algonquin Highlands, ON K0M 1J1	Thomson Architecture Inc.
e:	thomsonarch@icloud.com		e:	thomsonarch@icloud.com	
www:	thomsonarchitecture.ca	2025 Outline Specifications Version 2.1 Page 33 of 34	www:	thomsonarchitecture.ca	2025 Outline Specifications Version 2.1 Page 33 of 34

SYMBOLS LEGEND

C4

Drawing Title

1 : SCALE

0

20 mm

50mm

A#

D#

PAGE #

DWG #

DETAIL REFERENCE

D#

A#

BUILDING SECTION/ELEVATION REFERENCE

X

AY

WALL/PARTIAL SECTION

2

A#

D#

3

4

INTERIOR ELEVATION

#

DRAWING KEYNOTES

E01

EXISTING WALL AND DOOR TO REMAIN

E01

DEMOLISH WALL AND/OR DOOR

D01

NEW WALL AND DOOR

W1

NEW WALL TYPE

EW

EXISTING WALL TYPE

3000

ELEVATION OF NOTED ELEMENT

Room Name

001

A2C3

ROOM IDENTIFICATION
A = FLOOR FINISH TYPE
2 = BASE FINISH TYPE
C = WALL FINISH TYPE
3 = CEILING FINISH TYPE

9F AFF

SCO

Indicates Smoke & CO **alarms** - to be hard-wired and interconnected with battery backup (for Part 9 Buildings per **OBC 9.10.19**)

V

VENT STACK

FD

FLOOR DRAIN

SD

SINK/SHOWER DRAIN

LD

LAUNDRY DRAIN

TD

TOILET DRAIN

HB

HOSE BIB (FROST PROTECTED)

WT

WEEPING TILE C/W FILTER CLOTH

1. Copyright of this drawing is reserved by the Architect. The drawing and all associated documents are an instrument of service by the Architect. The drawing and the information contained herein may not be modified or reproduced in whole or in part without prior written permission of the Architect.

2. These Contract Documents are the property of the Architect. The Architect takes no responsibility for the interpretation of these documents by the Contractor. Upon written application, the Architect will provide written graphic clarification or supplementary information regarding the intent of the Contract Documents. If Construction Administration services are included in the Architect's scope of work, the Architect will review Shop Drawings submitted by the Contractor for design conformance only.

3. Drawings are not to be used for construction. The Contractor is to verify all existing conditions and dimensions required to perform the work and report any discrepancies with the Contract Documents to the Architect before commencing or continuing with any work.

4. Portions of repeated finished mechanical or electrical devices, fittings, and fixtures may be indicated on architectural drawings. The locations shown on the architectural drawings govern over the Mechanical and Electrical drawings. Those items not clearly located will be located as directed by the Architect. General and construction notes are intended to apply to all locations affected by the work. For locations of work refer to structural, mechanical and electrical documents, in addition to architectural.

5. These drawings are not to be used for construction unless noted below as "Issuance For Construction" and countersigned by the Architect.

6. All work is to be carried out in conformance with the most current Building Code and Orders of the authority having jurisdiction. All planning and change work to conform to current Ontario regulations. All electrical work to conform to Ontario Hydro Electrical Safety Code as amended.

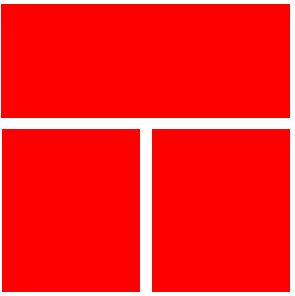
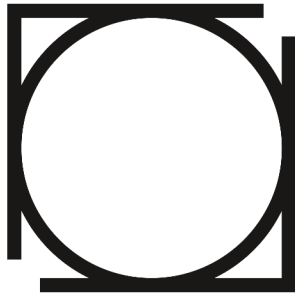
7. The Architect of these plans and specifications gives no warranty or representation to any party about the constructability of the buildings represented by them. All contractors or subcontractors must satisfy themselves when bidding and at all times ensure that they can properly construct the work represented by these plans.


8. Original Drawings and designs generally provided by CMHC's "Pattern Book" from 1947 dated:

8F Metals for Canadians available at the link:
https://cspdocuments01.blob.core.windows.net/cspdocs/containers/01project/archw/house_plans/catalogue.aspx?1-m4-41285-24-08

© Thomson Architecture, Inc. CSA License 8154

Rev. ID	Transmittal Set Name	Change ID	Change Name	Date
01 - WIP	Issued for Certification Review			Work in Progress





Ontario Association of Architects

Ordre des architectes de l'Ontario

thomson architecture inc

1017 Dominion Rd. Stanhope, ON K0M 1S0
cell: 705.935.0355 office: 705.935.0355
email: thomsonarch@icloud.com

BeHome Bachelor Shed

project no. 2024.12

Site Address: TBD

Revision
01 - WIP
Legends

A0.07

QUESTIONS:

- Question:** Pfeiffer's Pfeidrop II RQ is specified as a least-cost alternative High-performance wall, available from Structural Supply Restlers at \$80 per sq ft of Rq=12, 12" PWR covers all areas exposed to outside air and moisture.
- Trends:** EPSI is used in our office since 2002.
- Newly:** Simons to Vxvz by and with L&B&G&S&P&T by TAI have shown that condensation danger is bypassed by keeping sheathing always on the warm side.
- Issue:** The assembly can be specified in R10, R20 and R40 depending on the level of insulation required. The level of insulation can also be omitted, stating that the interior finish drive can contribute to most R-values up to the assembly.
- Applicability:** We specify this on ultra projects such as the Belknap D&A and AD&U projects (residential association dwellings), which were part of the first round of the CM&K Housing Supply Council.
- Regional:** This is an emerging trend, with low GWP and ease of construction, combined with cost cut, could be a potential solution for a wide range of economy projects where fire resistance is less of a concern and mixed or combustible construction is permitted.
- Issue:** Some contractors are confused about the difference between EPSI and EPSI+RQ, while in R20 and R40 walls, these two materials are identical.
- Issue:** Some inspectors question omission of an interior 'poly' PWR. With exterior insulation this is not needed, we provide inspectors with documents by BSC&Q&C&P&T, etc., explain the rational, but we add that 3 coats of latex paint can also be considered acceptable.
- Issue:** The contractor has been asked to provide a detailed drawing of the framing wall at the corners of each stud to assist with alignments and ensure the air and WRB layers. Many kinds of taping material have been tested. TP (plywood) dried under is preferred by some contractors over Tex-Surf for strength/flexibility and was added to provide full border coverage. Top and bottom of studs must always be covered to prevent gaps in the WRB.

a) [\\$10/ea](https://www.homedepot.com/product/3d-x-12-inch-side-drain-water-head-gas-nugged-structural-sheer/101867720)

b) [\\$270/50 = \\$5.40 ea, \\$4.47 in 125 pack\)](https://www.homedepot.com/product/powder-free-3d-x-3-inch-x-12-inch-clad-side-drain-general-construction-structural-sheer/101808301)

NOTE: Disclaimer...

Rev. ID	Transmittal Set Name	Change ID	Change Name	Date
01 - WIP	Issues for Certification Review			Work in Progress

The logos of the Ontario Association of Architects and the Ordre des architectes de l'Ontario are displayed. The OAA logo consists of a stylized black circle with a square frame. The OAA logo consists of three red squares arranged in a 2x2 grid, with the bottom-right square missing. The OAA logo is a black and white QR code. The OAA logo consists of the text "Ontario Association of Architects" and "Ordre des architectes de l'Ontario" in a serif font, separated by a horizontal line.

thomson architecture inc

1017 Dominion Rd. Stanhope, ON K0M 1S0
cell: 705.935.0355 office: 705.935.0355
email: thomsonarch@icloud.com

BeHome Bachelor Shed

project no. 2024.12

Site Address: TBD

Revision
01 - WIP
Detailed Assemblies

A0.09

INTERIORS



JUST SAY NO TO TUCK TAPE

Use only premium tapes
specified at appropriate
locations, RTMS



JUST SAY NO TO POLY

Use only premium
membranes specified at
appropriate locations,
RTMS



SIGA RISSAN

Use Rissan at all Interior
AVB Penetrations and
seams, RTMS



SIGA MAJREX

Use Majrex (Smart AVB)
for all Interior AVB
Applications, RTMS

EXTERIORS



JUST SAY NO TO TUCK TAPE

Use only premium tapes
specified at appropriate
locations, RTMS



JUST SAY NO TO TYVEK

Use only premium
membranes specified at
appropriate locations,
RTMS



SIGA WIGLUV

Use Rissan at all
Exterior WRB
Penetrations and
seams, RTMS



SIGA MAJVEST

Use Majrex (Smart AVB)
for all Exterior WRB
Applications, RTMS

1. Copyright of this drawing is reserved by the Architect. The drawing and associated documents are an instrument of service of the Architect and shall remain the confidential property of the Architect and shall not be modified or reproduced or used in any part without prior written permission of the Architect.

2. These Contract Documents are the property of the Architect. The Architect bears no responsibility for the interpretation or application of these documents by anyone other than the Architect. The Architect shall not be held responsible for any supplementary information regarding the intent of the Contract Documents. If construction Administration services are provided, the Architect shall not be held responsible for the construction management or construction administration services provided by the contractor. The Architect will not be held responsible for the Contractor's design or construction.

3. Drawings are not to be scaled or cut off. The Contractor is to verify all existing conditions and dimensions and to coordinate all work with the Architect. The Contractor is to coordinate all work with the Architect before construction or continuing with any work.

4. Photos of exposed structural members or electrical devices, fittings, and fixtures may be included on architectural drawings. The Contractor shall be responsible for the protection of these items and for the repair of any damage to all locations depicted on the drawings. For locations of work that are structural, mechanical and electrical devices, the Contractor shall be responsible for the protection of these items and for the repair of any damage to all locations depicted on the drawings.

5. These drawings are not to be used for construction unless noted herein as "Issued for Construction" and countersigned by the Architect.

6. All work is to be carried out in conformance with the most current Building Code and Bylaws of the Authority having jurisdiction. All guidelines and standards to conform to current Division regulations, all electrical work to conform to Ontario Electrical Code and all work to conform to current Division regulations are assumed.

7. The Architect's plans and specifications give no warranty, no representation or to any party about the completeness or accuracy of the drawings. The drawings are to be used as a guide only. The Contractor shall be responsible for all dimensions that they may require from the work represented by these drawings.

8. Original Drawings and design documents provided by CMR's "Pattern Book" from 1964-2004.
© 1964-2004 CMR
http://www.representations4u.com/wordpress/wp-content/uploads/2014/05/CMR-Pattern-Book-1964-2004.pdf

© Thomas Architect Inc. 01A-1000-0105

Rev. ID	Transmittal Set Name	Change ID	Change Name	Date
01 - WIP	Issued for Certification Review			Work in Progress

Work in Progress



thomson architecture inc

1017 Dominion Rd. Stanhope, ON K0M 1S0
cell: 705.935.0355 office: 705.935.0355
email: thomsonarch@icloud.com

BeHome Bachelor Shed

project no. 2024.12

Site Address: TBD

Revision
01 - WIP
Control Layers

A0.10

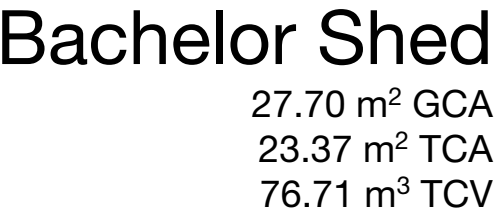
This site plan has been provided by the **Owner/Applicant** for reference only and has no legal value.

For Zoning Compliance and Site Plan Design, Refer to Planning Consultant submissions.

Property Line Dimensions are as noted in Documents provided by owner. The Architect bears no responsibility for the accuracy of dimensions provided. If a current legal survey is required for the purpose of submitting for a Permit to Construct, the owner must contract an OLS Surveyor to furnish these dimensions to the AHJ's satisfaction. The Architect can subsequently provide or update site dimensions for submission as required.

NOT TO SCALE

Rev. ID	Transmittal Set Name	Change ID	Change Name	Date
01 - WIP	Issued for Certification Review			Work in Progress

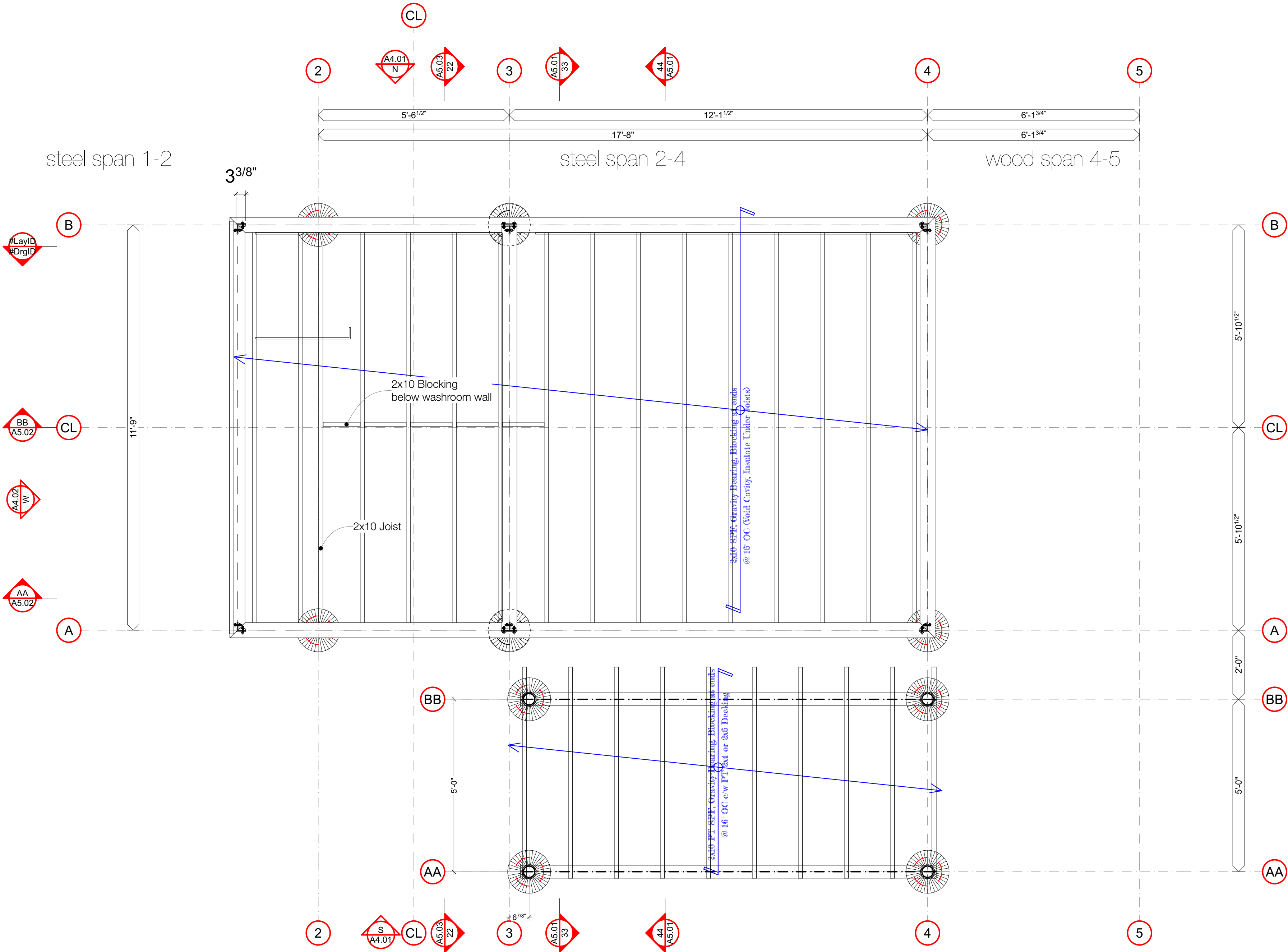


project no. 2024.12

Site Address: TBD

A2.41

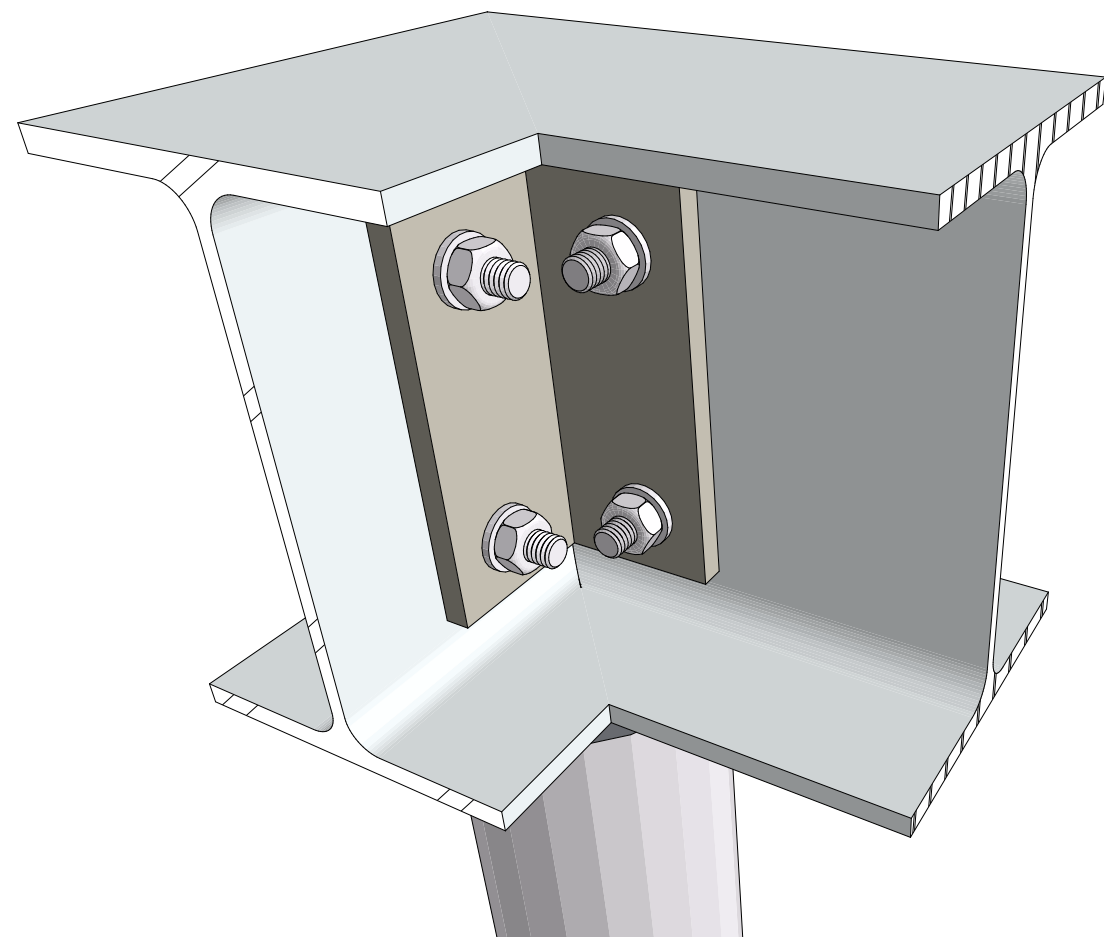
- DESIGN LOADS:
1. DESIGN LOADS ARE UNFACTORED UNLESS NOTED OTHERWISE.
- A. CLIMATIC DESIGN DATA (Barrie, ON):
- Ss= 2.5 kPa
- Sr= 0.4 kPa
- Wind 1/50 = 0.36 kPa (7.5 psf)
- Sa (0.2) = 0.108
- B. ROOF (SNOW)= 0.55*2.5 + 0.4 = 1.775 kPa (37.1 psf)
- ROOF (DEAD)= 0.75 kPa (15 psf)
- C. FLOOR (LIVE)= 1.9 kPa (40 psf)
- FLOOR (DEAD)= 0.75 kPa (15 psf)



3
S2.43

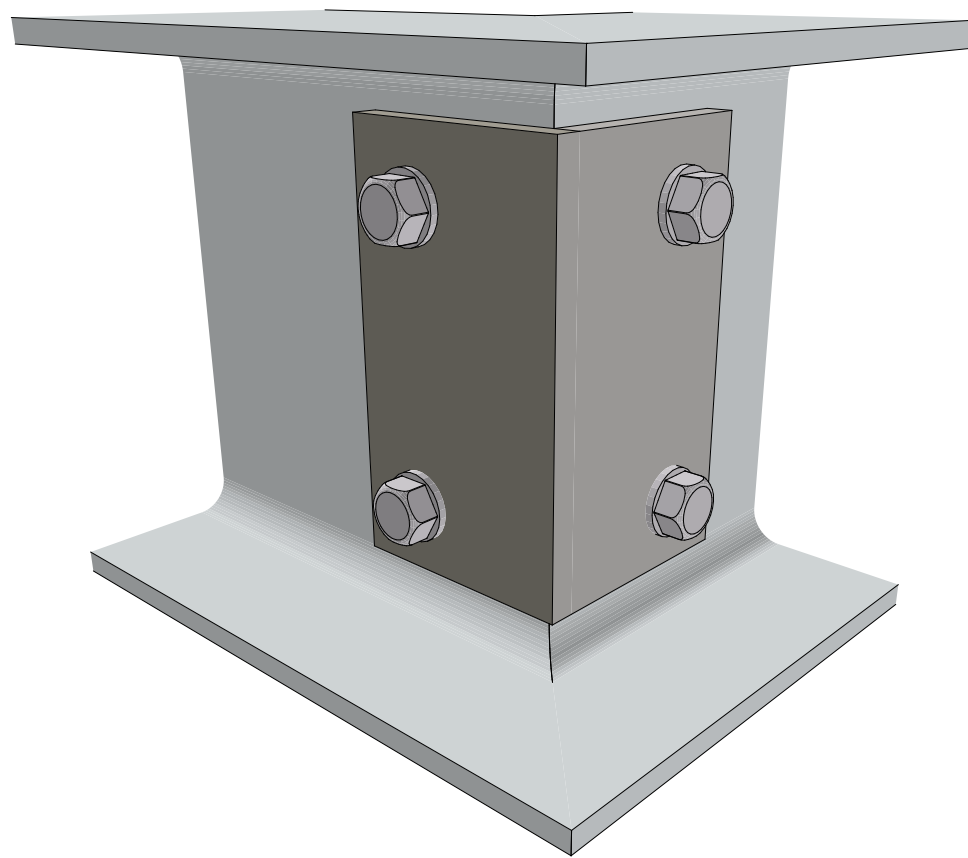
House Main Floor Plan

Scale: 1:24



15 Mitred Steel Connection

NOT TO SCALE



16 Mitred Steel Outside Corner

NOT TO SCALE

Mitred W8x18 Steel Beams (GV or Primed+Painted)

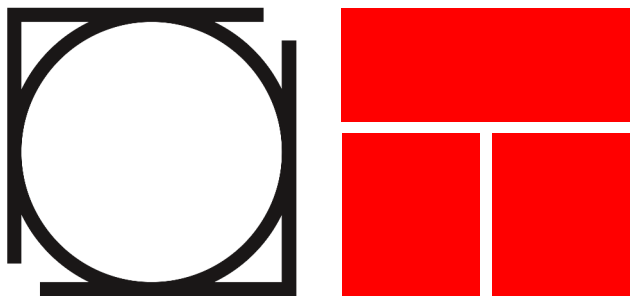
3/8" GV Steel Angle Fastened w. 2x 1/2" GV Steel Bolts per Leg spaced min. 1" from edges. Angles to Exterior and Exterior. Cut Steel to Mitre cleanly. Prime + Paint or GV Treat all finished surfaces.

Wood Alternate also possible (5-ply PT 2x12 in GV Steel saddles in Helical Pier Caps). However this Detailing will push decks above 24" AFG, which will then required they have full guards and railings. In this sense the steel may be more economical.

1. Copyright of this drawing is reserved by the Architect. The drawing and all associated documents are an instrument of service by the Architect. The drawing and the information contained herein may not be modified or reproduced in whole or in part without prior written permission of the Architect.
2. These Contract Documents are the property of the Architect. The Architect takes no responsibility for the interpretation of these documents by the Contractor. Upon written application, the Architect will provide written graphic clarification or supplementary information regarding the intent of the Contract Documents. If Construction Administration services are included in the Architect's scope of work, the Architect will review Shop Drawings submitted by the Contractor for design conformance only.
3. Drawings are not to be scaled for construction. The Contractor is to verify all setting conditions and dimensions required to perform the work and report any discrepancies with the Contract Documents to the Architect before commencing or continuing with any work.
4. Positions of repeated finished mechanical or electrical devices, fittings, and fixtures may be indicated on architectural drawings. The locations shown on the architectural drawings govern over the Mechanical and Electrical drawings. Those items not clearly located will be located as directed by the Architect. General and construction notes are intended to apply to all locations affected by the work. For locations of work refer to structural, mechanical and electrical documents, in addition to architectural.
5. These drawings are not to be used for construction unless noted below as "Issuance For Construction" and countersigned by the Architect.
6. All work is to be carried out in accordance with the most current Building Code and Rules of the authority having jurisdiction. All planning and change work to conform to current Ontario regulations. All electrical work to conform to Ontario Hydro Electrical Safety Code as amended.
7. The Architect of these plans and specifications gives no warranty or representation to any party about the constructability of the buildings represented by them. All contractors or subcontractors must satisfy themselves when bidding and at all times ensure that they can properly construct the work represented by these plans.
8. Original Drawings and designs generally provided by CMHC's "Pattern Book" from 1947-1968.
9. Notes for Contractors available at the link: <https://open.canada.ca/data/en/open/download?dataset=cmhc-pattern-book-1947-1968&format=pdf>
- © Thomson Architecture, Inc. - CAA License B154

Rev. ID	Transmittal Set Name	Change ID	Change Name	Date
01 - WIP	Issued for Certification			
	Rev			

Work in Progress



Ontario Association of Architects

Ordre des architectes de l'Ontario

thomson architecture inc

1017 Dominion Rd. Stanhope, ON K0M 1S0
cell: 705.935.0355 office: 705.935.0355
email: thomsonarch@icloud.com

BeHome Bachelor Shed

project no. 2024.12

Site Address: TBD

Revision
01 - WIP
Foundation Framing Plans

S2.43

Rev. ID	Transmittal Set Name	Change ID	Change Name	Date
01 - WIP	Issues for Certification Review			Work in Progress

01 - WIP
Issued for Certification Review

Work in Progress



1017 Dominion Rd. Stanhope, ON K0M 1S0
cell: 705.935.0355 office: 705.935.0355
email: thomsonarch@icloud.com

Revision
01 - WIP
Main Floor Plan

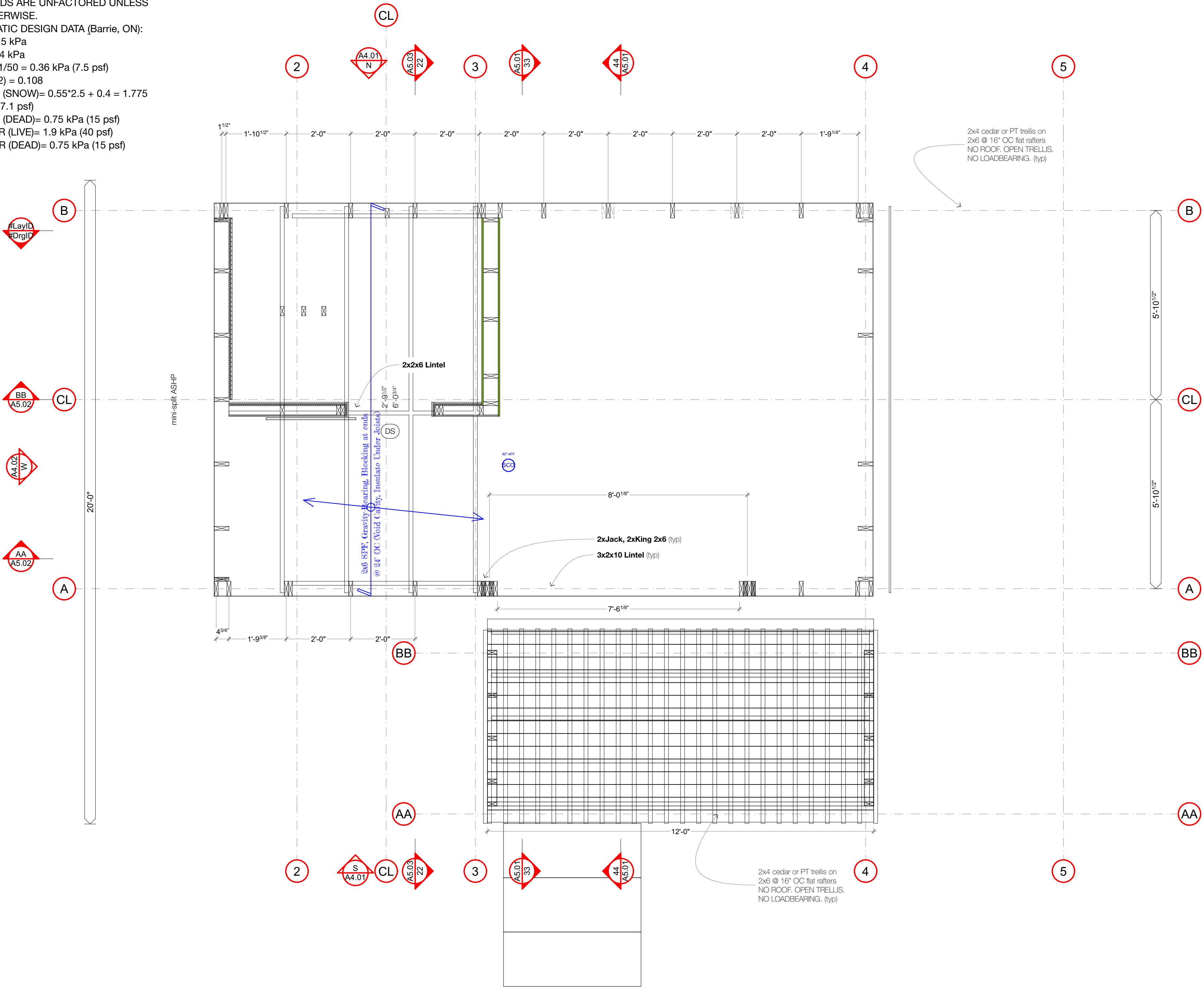
A2.46

Rev. ID	Transmittal Set Name	Change ID	Change Name	Date
01 - WIP	Issued for Certification Review			Work in Progress

Revision
01 - WIP
Main Floor Framing Plans

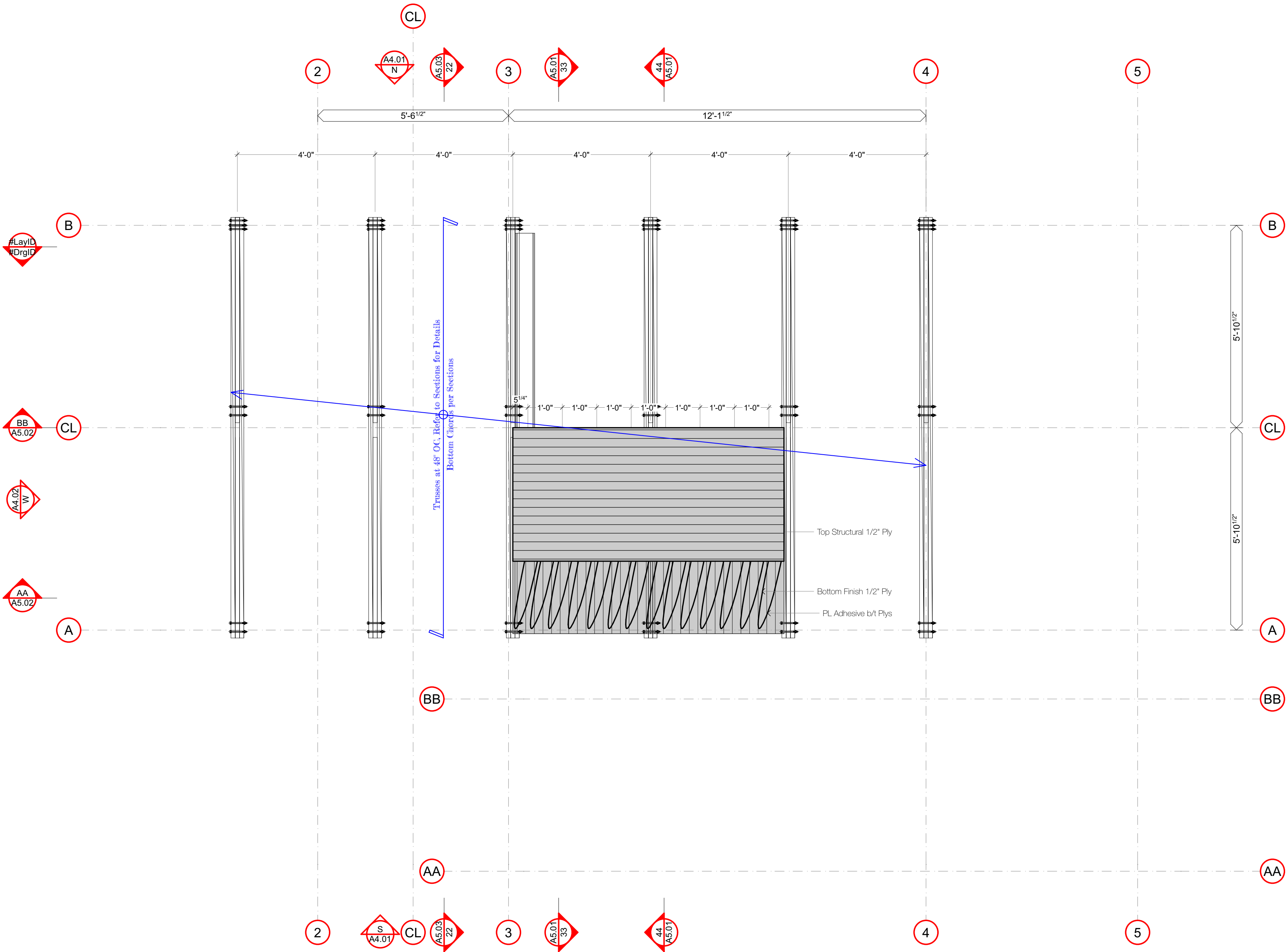
\$2.45

hrv inlet



DESIGN LOADS:

1. DESIGN LOADS ARE UNFACTORED UNLESS NOTED OTHERWISE.
- A. CLIMATIC DESIGN DATA (Barrie, ON):
- Ss= 2.5 kPa
- Str= 0.4 kPa
- Wind 1/50 = 0.36 kPa (7.5 psf)
- Sa (0.2) = 0.108
- B. ROOF (SNOW)= 0.55*2.5 + 0.4 = 1.775 kPa (37.1 psf)
- ROOF (DEAD)= 0.75 kPa (15 psf)
- C. FLOOR (LIVE)= 1.9 kPa (40 psf)
- FLOOR (DEAD)= 0.75 kPa (15 psf)



1. Copyright of this drawing is reserved by the Architect. The drawing and all associated documents are an instrument of service by the Architect. The drawing and the information contained herein may not be modified or reproduced in whole or in part without prior written permission of the Architect.

2. These Contract Documents are the property of the Architect. The Architect takes no responsibility for the interpretation of these documents by the Contractor. Upon written application, the Architect will provide written graphic clarification or supplementary information regarding the intent of the Contract Documents. If Construction Administration services are included in the Architect's scope of work, the Architect will review Shop Drawings submitted by the Contractor for design conformance only.

3. Drawings are not to be scaled for construction. The Contractor is to verify all setting conditions and dimensions required to perform the work and report any discrepancies with the Contract Documents to the Architect before commencing or continuing with any work.

4. Positions of repeated finished mechanical or electrical devices, fittings, and fixtures may be indicated on architectural drawings. The locations shown on the architectural drawings govern over the Mechanical and Electrical drawings. Those items not clearly located will be located as directed by the Architect. General and construction notes are intended to apply to all locations affected by the work. For locations of work refer to structural, mechanical and electrical documents, in addition to architectural.

5. These drawings are not to be used for construction unless noted below as "Issuance: For Construction" and countersigned by the Architect.

6. All work is to be carried out in accordance with the most current Building Code and Rules of the authority having jurisdiction. All plumbing and drainage work to conform to current Ontario regulations. All electrical work to conform to Ontario Hydro Electrical Safety Code as amended.

7. The Architect of these plans and specifications gives no warranty or representation to any party about the constructability of the building(s) represented by them. All contractors or subcontractors must satisfy themselves when bidding and at all times ensure that they can properly construct the work represented by these plans.

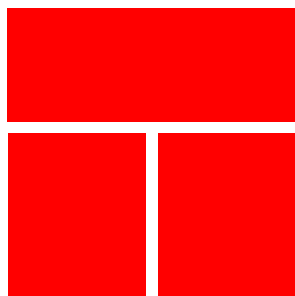
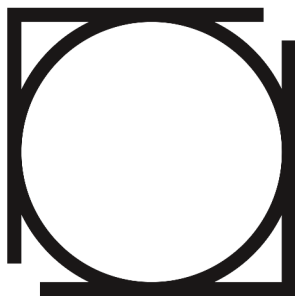
8. Original Drawings and designs generously provided by CMHC's "Pattern Book" from 1947-1960.

9. Notes for Contractors available at the link: <https://open.canada.ca/data/en/open/dataset/ontario-architectural-drawings>

10. Thomson Architecture, Inc. - CAA License B154

Rev. ID	Transmittal Set Name	Change ID	Change Name	Date
01 - WIP	Issue for Certification			

Work in Progress



Ontario Association
of Architects
Ordre des architectes
de l'Ontario

thomson architecture inc

1017 Dominion Rd. Stanhope, ON K0M 1S0
cell: 705.935.0355 office: 705.935.0355
email: thomsonarch@icloud.com

BeHome Bachelor Shed

project no. 2024.12

Site Address: TBD

Revision
01 - WIP
Roof Framing Plans

Rev. ID	Transmittal Set Name	Change ID	Change Name	Date
01 - WIP	Issued for Certification Review			Work in Progress

01 - WIP

Issues for Certification Review

Work in Progress


















1017 Dominion Rd. Stanhope, ON K0M 1S0
cell: 705.935.0355 office: 705.935.0355
email: thomsonarch@icloud.com

project no. 2024.12

Site Address: TBD

Revision
01 - WIP
Main Floor Electrical Plans

A2.47^s

ACE Switch, Outlet, Electrical + Mechanical Schedule															
Key	ID	Name	QTY	Cost	Description	Manufacturer	Housing/Accessories	Part #	Trim #	Energy Data				Mounting	Notes
										VOLTS	WATTS	HRS	W-H		
	OUTLET		3	150.00	Standard Outlet					110.00	0.00		100.00		
	SWITCH 1	\$	4	150.00	Single Gang Switchbox					110.00	0.00		---		
	CAB/TEL/DAT	CABLE	1	100.00	Cable/Telephone/Data					12.00	0.00		24.00		
	DHW	DHW	1	500.00	Electric Tank					110.00	0.00		14400.00	In-Cabinet	
	MW	GFI	1	150.00	Ground Fault Interrupt for Microwave					110.00	0.00		100.00		
	GFI	GFI	6	200.00	Ground Fault Interrupt					110.00	0.00		100.00		
	FR	GFI	1	200.00	Ground Fault Interrupt for Fridge					110.00	0.00		100.00		
	FAN OUTLET	J	1	150.00	Standard Octagon Junction					110.00	0.00		0.00		
	RADIANT PANEL...	Panel Rad	1	400.00	Instantaneous Radiant Heater					110.00	0.00		480.00		
	QUAD	Q	2	200.00	Quad Outlet					110.00	0.00		100.00		
	RANGE	R	1	200.00	220A Range Receptacle					220.00	0.00		1800.00		
	SMOKE	SCO	1	200.00	Smoke + CO Detector					12.00	0.00		12.00	U/S Decking	
	CAB/TEL/DAT	TEL	1	100.00	Cable/Telephone/Data					12.00	0.00		24.00		
	GFI	WP	1	200.00	Weather Protected Outdoor GFI					110.00	0.00		100.00		
	GFI	WP	1	200.00	Weather Protected Outdoor GFI					110.00	0.00		2.00		
			26	5050.00					18142.00						

1. Copyright of this drawing is reserved by the Architect. The drawing and all information contained herein may not be modified or reproduced in whole or in part without prior written permission of the Architect.

2. These Contract Documents are the property of the Architect. The Architect takes no responsibility for the interpretation of these documents by the Contractor. Upon written application, the Architect will provide written graphic clarification or supplementary information regarding the intent of the Contract Documents. If Construction Administration services are included in the Architect's scope of work, The Architect will review Shop Drawings submitted by the Contractor for design conformance only.

3. Drawings are not to be used for construction. The Contractor is to verify all existing conditions and dimensions required to perform the work and report any discrepancies with the Contract Documents to the Architect before commencing or continuing with any work.

4. Positions of repeated finished mechanical or electrical devices, fittings, and fixtures may be indicated on architectural drawings. The locations shown on the architectural drawings govern over the Mechanical and Electrical drawings. Those items not clearly located will be located as directed by the Architect. General and construction notes are intended to apply at all locations affected by the work. For locations of work refer to structural, mechanical and electrical documents, in addition to architectural.

5. These drawings are not to be used for construction unless noted below as "Issuance For Construction" and countersigned by the Architect.

6. All work is to be carried out in conformance with the most current Building Code and Bylaws of the authority having jurisdiction. All plumbing and drainage work to conform to current Ontario regulations. All electrical work to conform to Ontario Hydro Electrical Safety Code as amended.

7. The Architect of these plans and specifications gives no warranty or representation to any party about the constructability of the building represented by them. All contractors or subcontractors must satisfy themselves when bidding and at all times ensure that they can properly construct the work represented by these plans.

8. Original Drawings and designs generously provided by CMHC's "Pattern Book" from 1947-1982.

© 1998 for Canadians available at the link:
https://open.canada.ca/en/open-government-licence/licence/11444-41382_2008

© Thomson Architecture, Inc. - CAA License 8154

Rev. ID

Transmittal Set Name

Change ID

Change Name

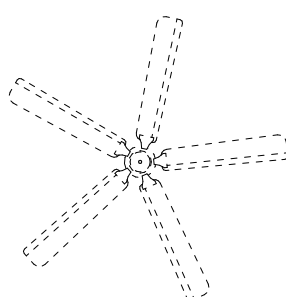



Date

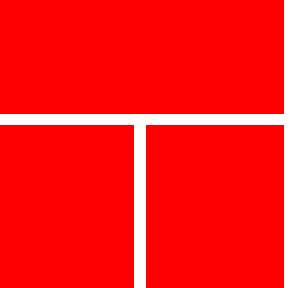
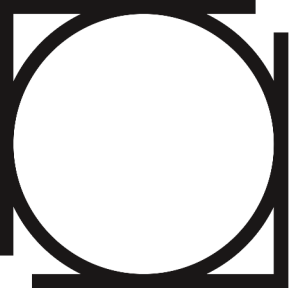
01 - WIP


Issued for Certification Review

Work in Progress

Work in Progress

ACE Light Fixture Schedule																	
Key	Name	ID	QTY	Unit Cost	Bulb	Description	Housing/Accessories	Lens	Manufa...	Part #	Trim #	Energy Data				Position/Mounting	NOTES
												VOLTS	WATTS	HRS	W-H		
	---	FAN	1	600.00	MR16-L...	Contemporary	24" Extension	UV	G Squa...	00-00	00-00	110.00	40.00		238.36	Ceiling	Straight Blades
	M	MILLWORK	7	20.00	XENON ...	Millwork	Lucite Bezel					110.00	3.00		18.00	Millwork Underside	
	STRIP	LED STRIP	1	45.00	LED	Pendant	Tulip Glass	Removed	Juno			110.00	7.00		42.00	Bulkhead	
	W	LED SCONCE	6	90.00	LED MR16	Potlight (Halogen)	Lucite Bezel					110.00	3.00		18.00		
			15	1325.00									514.36				





Ontario Association of Architects
Ordre des architectes de l'Ontario

thomson **architecture** inc

1017 Dominion Rd. Stanhope, ON K0M 1S0
cell: 705.935.0355 office: 705.935.0355
email: thomsonarch@icloud.com

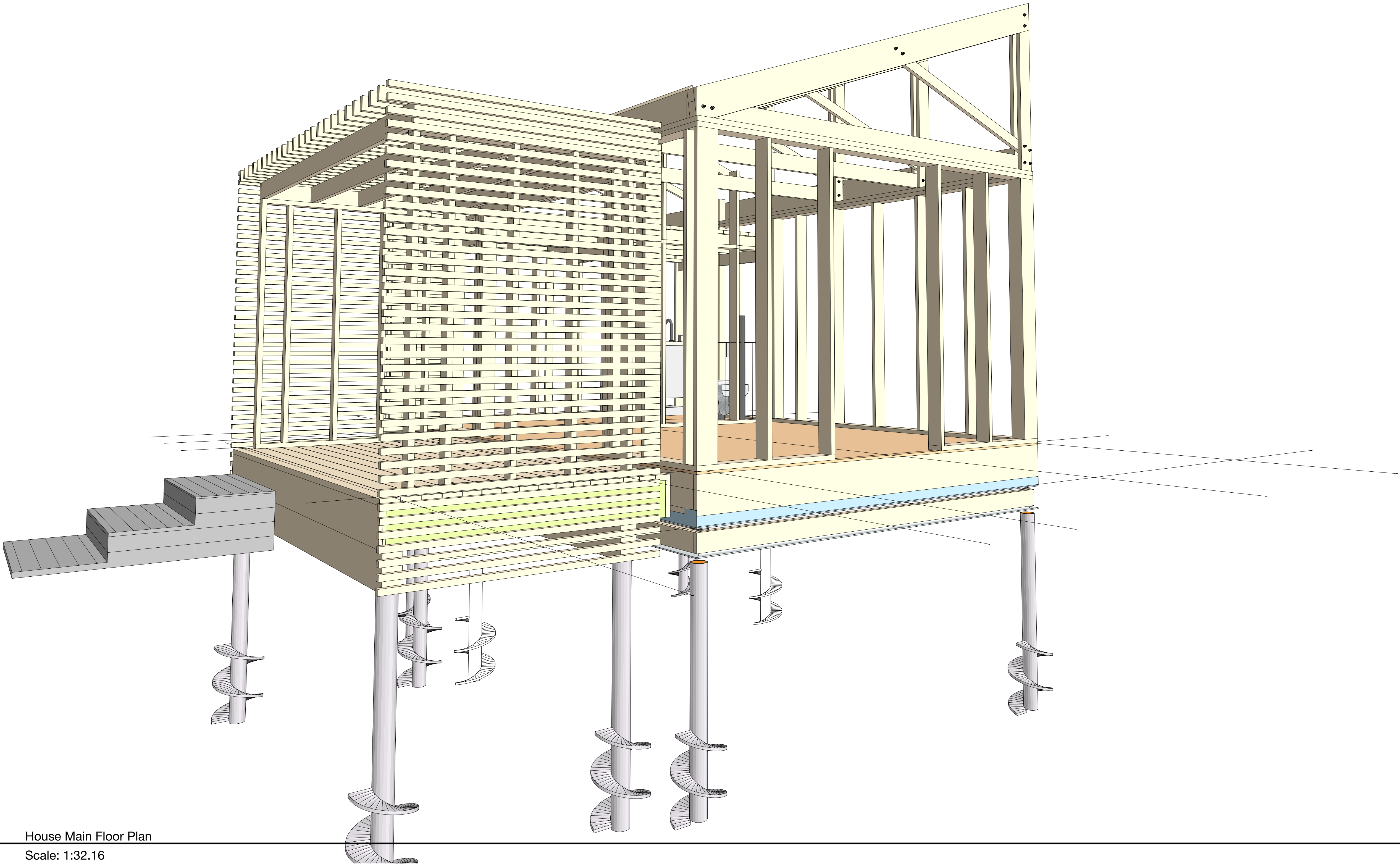
BeHome Bachelor Shed

project no. 2024.12

Site Address: TBD

Revision
01 - WIP
Electrical Schedule

A8.02



1. Copyright of this drawing is reserved by the Architect. The drawing and all associated documents are an instrument of service by the Architect. The drawing and the information contained therein may not be modified or reproduced in whole or in part without prior written permission of the Architect.

2. These Contract Documents are the property of the Architect. The Architect takes no responsibility for the interpretation of these documents by the Contractor. Upon written application, the Architect will provide written graphic clarification or supplementary information regarding the intent of the Contract Documents. If Construction Administration services are included in the Architect's scope of work, the Architect will review Shop Drawings submitted by the Contractor for design conformance only.

3. Drawings are not to be used for construction. The Contractor is to verify all existing conditions and dimensions required to perform the work and report any discrepancies with the Contract Documents to the Architect before commencing or continuing with any work.

4. Positions of repeated fastened mechanical or electrical devices, fittings, and fixtures may be indicated on architectural drawings. The locations shown on the architectural drawings govern over the Mechanical and Electrical drawings. Those items not clearly located will be located as directed by the Architect. General and construction notes are intended to apply to all locations affected by the work. For locations of work refer to structural, mechanical and electrical documents, in addition to architectural.

5. These drawings are not to be used for construction unless noted below as "Issuance For Construction" and countersigned by the Architect.

6. All work is to be carried out in conformance with the most current Building Code and Bylaws of the authority having jurisdiction. All plumbing and drainage work to conform to current Ontario regulations. All electrical work to conform to Ontario Hydro Electrical Safety Code as amended.

7. The Architect of these plans and specifications gives no warranty or representation to any party about the constructability of the buildings represented by them. All contractors or subcontractors must satisfy themselves when bidding and at all times ensure that they can properly construct the work represented by these plans.

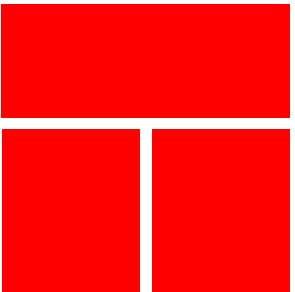
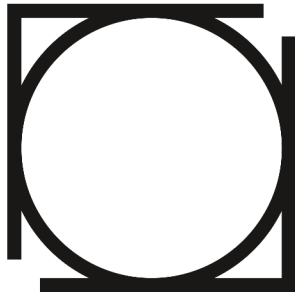
8. Original Drawings and designs generously provided by CMHC's "Platinum Book" from 1947-1960.

© 1998, for Canadians available at the link:
<https://open.canada.ca/en/open-government-licence/licence/11441386-2626-4928-b010-11441386-2626>

© Thomson Architecture, Inc. CAA License B154

Rev. ID	Transmittal Set Name	Change ID	Change Name	Date
01 - WIP	Issue for Certification			

Work in Progress



Ontario Association
of Architects
Ordre des architectes
de l'Ontario

thomson **architecture** inc

1017 Dominion Rd. Stanhope, ON K0M 1S0
cell: 705.935.0355 office: 705.935.0355
email: thomsonarch@icloud.com

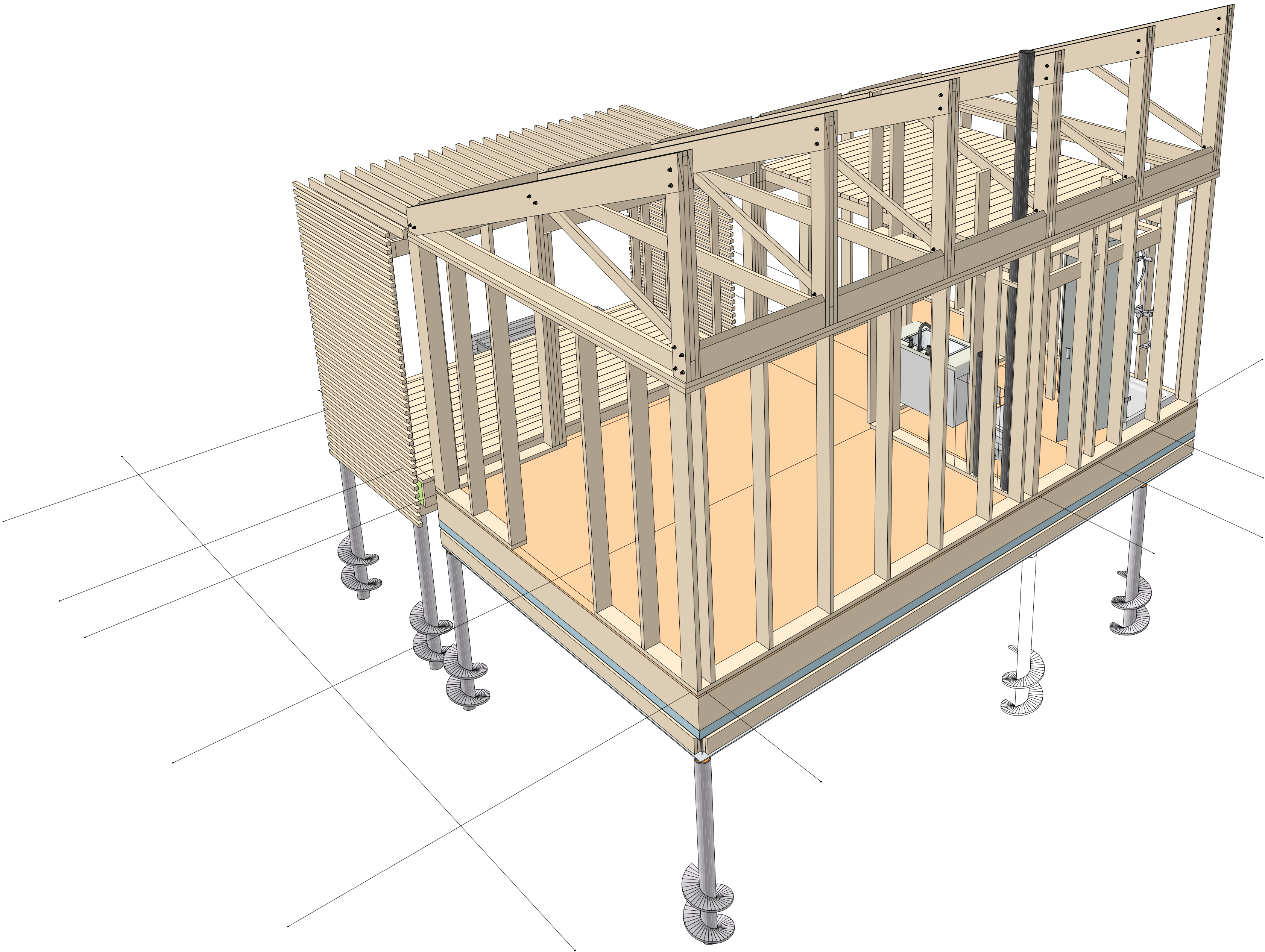
BeHome Bachelor Shed

project no. 2024.12

Site Address: TBD

Revision
01 - WIP
Assembly Perspective

A2.48



1. Copyright of this drawing is reserved by the Architect. The drawing and all associated documents are an instrument of service by the Architect. The drawing and the information contained herein may not be modified or reproduced in whole or in part without prior written permission of the Architect.

2. These Contract Documents are the property of the Architect. The Architect bears no responsibility for the interpretation of these documents by the Contractor. Upon written application, the Architect will provide photographic clarification or supplementary information regarding the intent of the Contract Documents. If Construction Administration services are included in the Architect's scope of work, the Architect will review Shop Drawings submitted by the Contractor for design conformance only.

3. Drawings are not to be used for construction. The Contractor is to verify all existing conditions and dimensions required to perform the work and report any discrepancies with the Contract Documents to the Architect before commencing or continuing with any work.

4. Positions of repeated fastened mechanical or electrical devices, fittings, and fixtures may be indicated on architectural drawings. The locations shown on the architectural drawings govern over the Mechanical and Electrical drawings. Those items not clearly located will be located as directed by the Architect. General and construction notes are intended to apply at all locations affected by the work. For locations of work refer to structural, mechanical and electrical documents, in addition to architectural.

5. These drawings are not to be used for construction unless noted below as "Issuance: For Construction" and countersigned by the Architect.

6. All work is to be carried out in conformance with the most current Building Code and Bylaws of the authority having jurisdiction. All plumbing and drainage work to conform to current Ontario regulations. All electrical work to conform to Ontario Hydro Electrical Safety Code as amended.

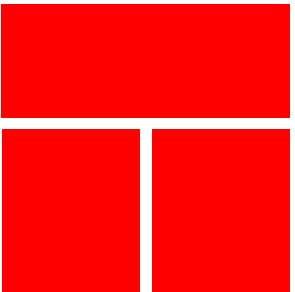
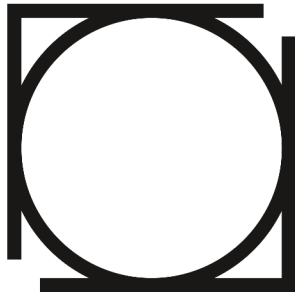
7. The Architect of these plans and specifications gives no warranty or representation to any party about the constructability of the buildings represented by them. All contractors or subcontractors must satisfy themselves when bidding and at all times ensure that they can properly construct the work represented by these plans.

8. Original Drawings and designs generously provided by CMHC's "Pattern Book" from 1947 titled:
67 Homes for Canadians available at the link:
https://open.canada.ca/data/en/open/download?dataset=cmhc-prod-container&project=archw-house_plans&catalogue=vc&1-104-41246-24-000

© Thomson Architecture, Inc. CAA License B154

Rev. ID	Transmittal Set Name	Change ID	Change Name	Date
01 - WIP	Issue for Certification			

Work in Progress



Ontario Association
of Architects
Ordre des architectes
de l'Ontario

thomson **architecture** inc

1017 Dominion Rd. Stanhope, ON K0M 1S0
cell: 705.935.0355 office: 705.935.0355
email: thomsonarch@icloud.com

BeHome Bachelor Shed

project no. 2024.12

Site Address: TBD

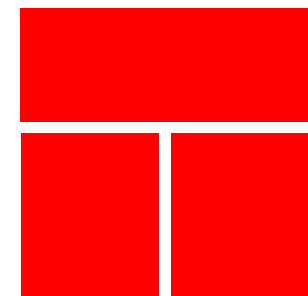
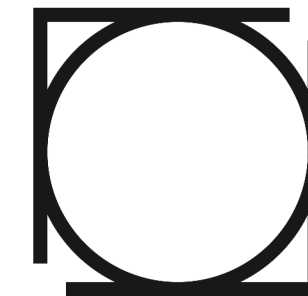
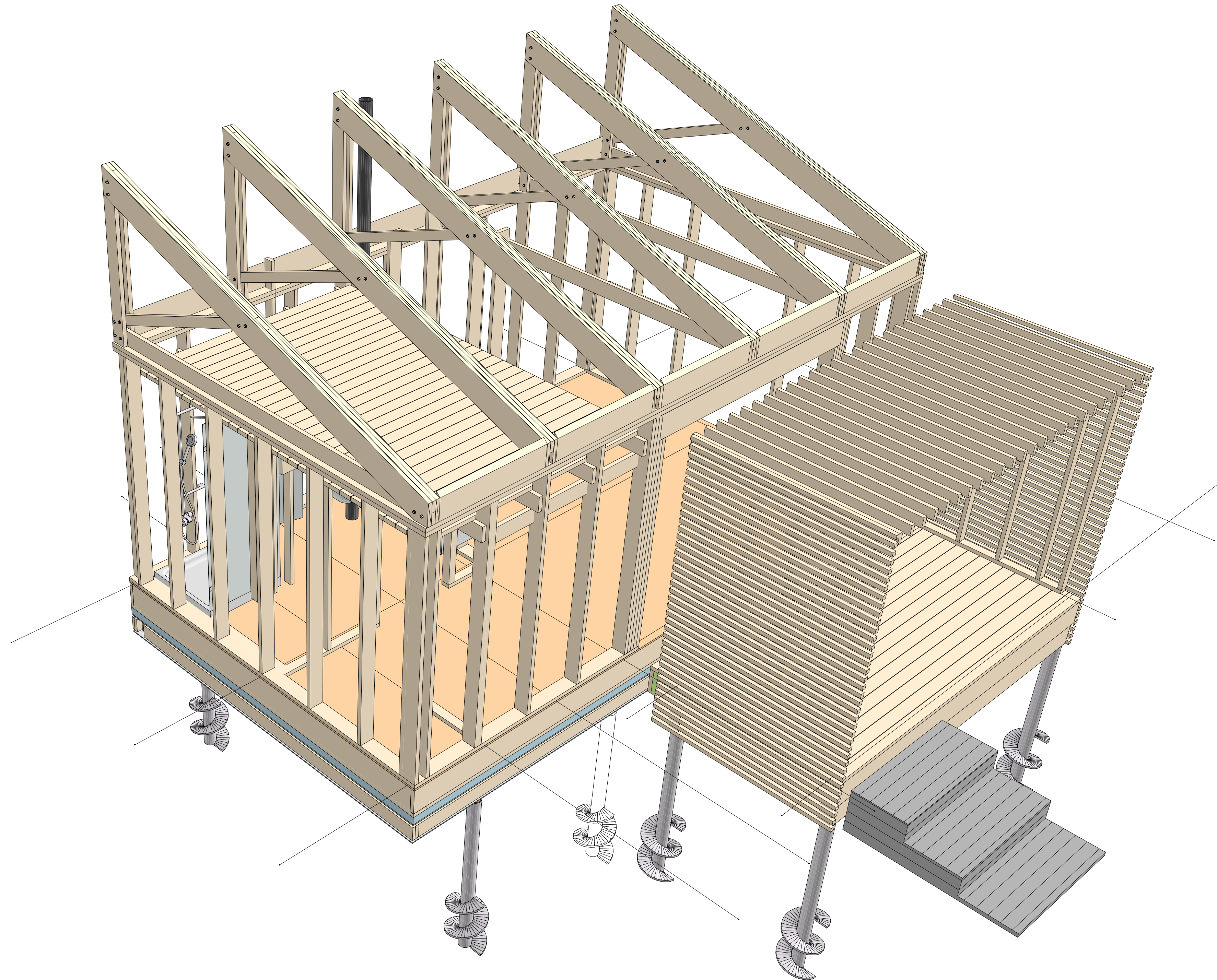
Revision
01 - WIP
Assembly Perspective

A2.49

Rev. ID	Transmittal Set Name	Change ID	Change Name	Date
01 - WIP	Issued for Certification Review			Work in Progress

01 - WIP
Issued for Certification Review

Work in Progress



thomson architecture inc

BeHome Bachelor Shed

Site Address: TBD

Revision
01 - WIP
Framing Perspective

A2.410

Rev. ID	Transmittal Set Name	Change ID	Change Name	Date
01 - WIP	Issued for Certification Review			Work in Progress

01 - WIP

Issues for Certification Review

Work in Progress

A horizontal bar representing a DNA probe of length 4'. The bar is divided into four segments labeled 0, 1', 2', and 4' from left to right. Segment 0 is white, segment 1' is black, segment 2' is white, and segment 4' is black. The segments are separated by thin white lines.

A horizontal bar representing a DNA molecule of length 4'. The bar is divided into four segments by vertical lines. The segments are labeled from left to right as 0, 1', 2', and 4'. The segments are colored as follows: 0 is white, 1' is black, 2' is white, and 4' is black.

1017 Dominion Rd. Stanhope, ON K0M 1S0
cell: 705.935.0355 office: 705.935.0355
email: thomsonarch@icloud.com

project no. 2024.12

Site Address: TBD

Revision
01 - WIP
North & South Elevations

A4.01

1. Copyright of this drawing is reserved by the Architect. The drawing and all associated documents are an instrument of service by the Architect. The drawing and the information contained herein may not be modified or reproduced in whole or in part without prior written permission of the Architect.

2. These Contract Documents are the property of the Architect. The Architect bears no responsibility for the interpretation of these documents by the Contractor. Upon written application, the Architect will provide written graphic clarification or supplementary information regarding the intent of the Contract Documents. If Construction Administration services are included in the Architect's scope of work, the Architect will review Shop Drawings submitted by the Contractor for design conformance only.

3. Drawings are not to be scaled for construction. The Contractor is to verify all setting conditions and dimensions required to perform the work and report any discrepancies with the Contract Documents to the Architect before commencing or continuing with any work.

4. Positions of repeated fastened mechanical or electrical devices, fittings, and fixtures may be indicated on architectural drawings. The locations shown on the architectural drawings govern over the Mechanical and Electrical drawings. Those items not clearly located will be located as directed by the Architect. General and construction notes are intended to apply to all locations affected by the work. For locations of work refer to structural, mechanical and electrical documents, in addition to architectural.

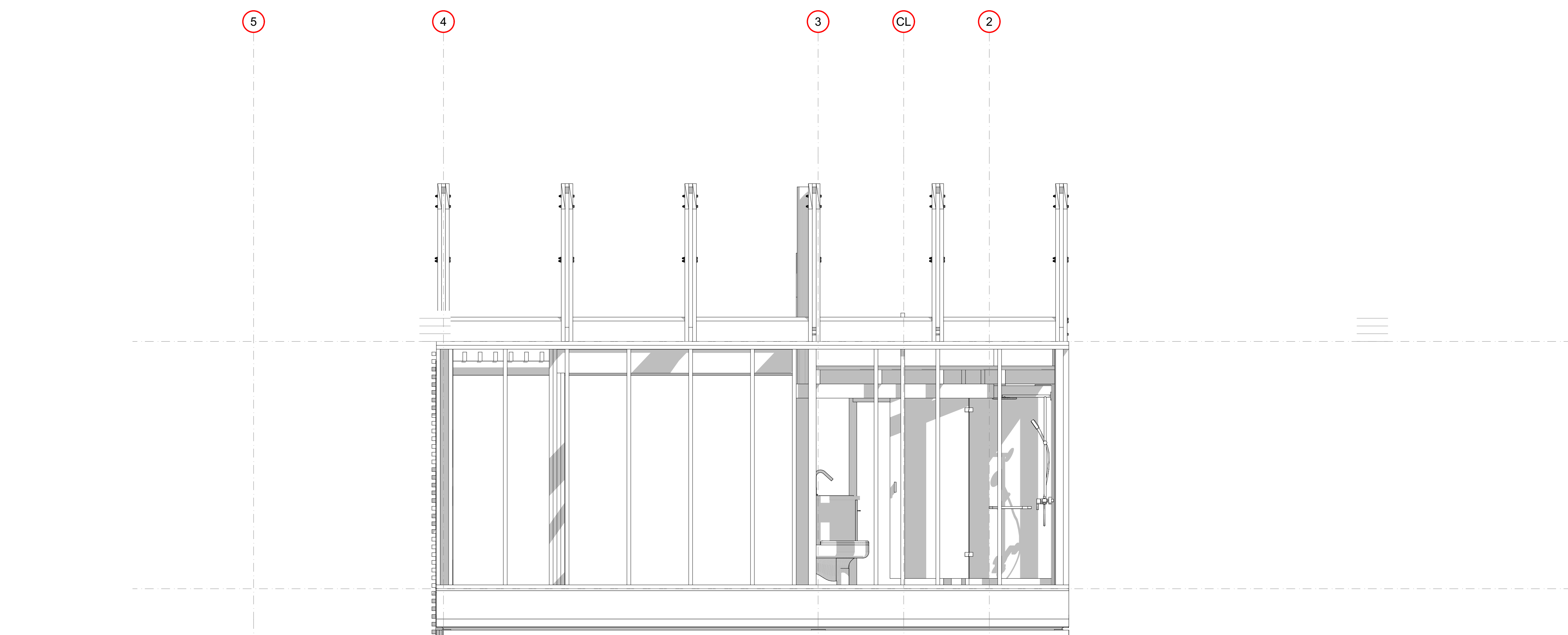
5. These drawings are not to be used for construction unless noted below as "Issuance For Construction" and countersigned by the Architect.

6. All work is to be carried out in conformance with the most current Building Code and Bylaws of the authority having jurisdiction. All plumbing and drainage work to conform to current Ontario regulations. All electrical work to conform to Ontario Hydro Electrical Safety Code as amended.

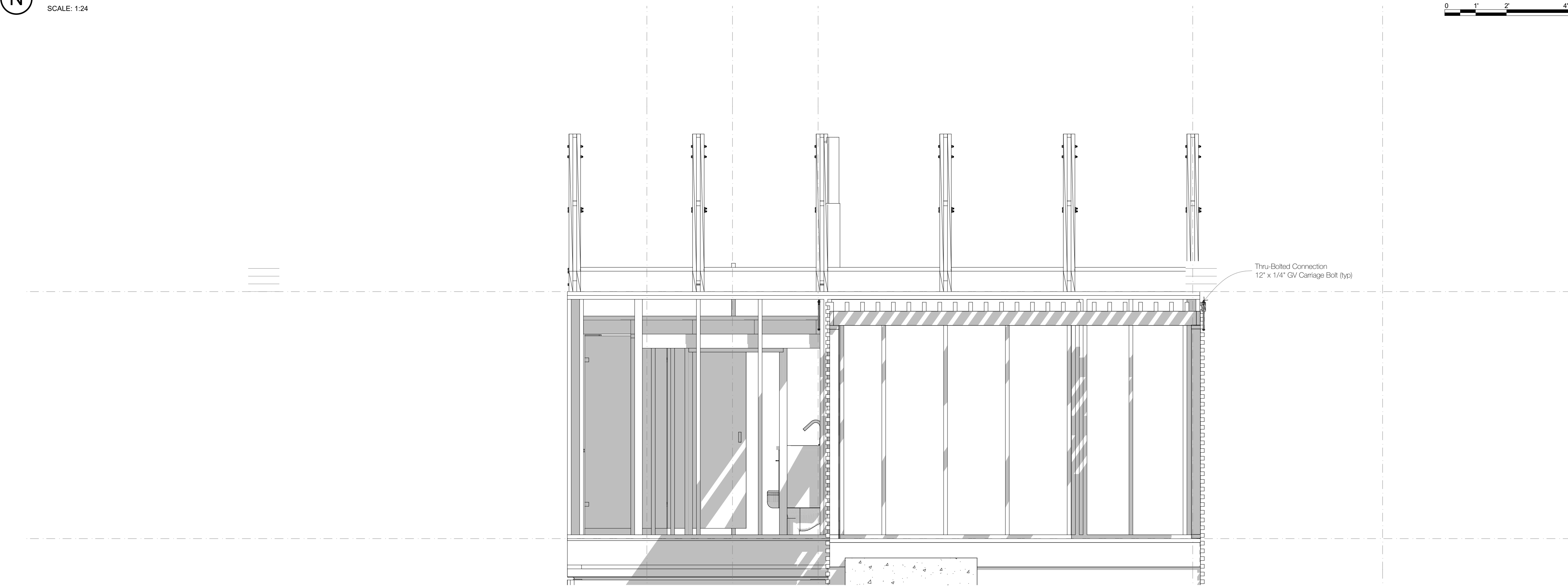
7. The Architect of these plans and specifications gives no warranty or representation to any party about the constructability of the building(s) represented by them. All contractors or subcontractors must satisfy themselves when bidding and at all times ensure that they can properly construct the work represented by these plans.

8. Original Drawings and designs generously provided by CMHC's "Pattern Book" from 1947-1960.

© 1998, 2008, 2010, 2012, 2014, 2016, 2018, 2020, 2022, 2024, 2026, 2028, 2030, 2032, 2034, 2036, 2038, 2040, 2042, 2044, 2046, 2048, 2050, 2052, 2054, 2056, 2058, 2060, 2062, 2064, 2066, 2068, 2070, 2072, 2074, 2076, 2078, 2080, 2082, 2084, 2086, 2088, 2090, 2092, 2094, 2096, 2098, 2100, 2102, 2104, 2106, 2108, 2110, 2112, 2114, 2116, 2118, 2120, 2122, 2124, 2126, 2128, 2130, 2132, 2134, 2136, 2138, 2140, 2142, 2144, 2146, 2148, 2150, 2152, 2154, 2156, 2158, 2160, 2162, 2164, 2166, 2168, 2170, 2172, 2174, 2176, 2178, 2180, 2182, 2184, 2186, 2188, 2190, 2192, 2194, 2196, 2198, 2200, 2202, 2204, 2206, 2208, 2210, 2212, 2214, 2216, 2218, 2220, 2222, 2224, 2226, 2228, 2230, 2232, 2234, 2236, 2238, 2240, 2242, 2244, 2246, 2248, 2250, 2252, 2254, 2256, 2258, 2260, 2262, 2264, 2266, 2268, 2270, 2272, 2274, 2276, 2278, 2280, 2282, 2284, 2286, 2288, 2290, 2292, 2294, 2296, 2298, 2300, 2302, 2304, 2306, 2308, 2310, 2312, 2314, 2316, 2318, 2320, 2322, 2324, 2326, 2328, 2330, 2332, 2334, 2336, 2338, 2340, 2342, 2344, 2346, 2348, 2350, 2352, 2354, 2356, 2358, 2360, 2362, 2364, 2366, 2368, 2370, 2372, 2374, 2376, 2378, 2380, 2382, 2384, 2386, 2388, 2390, 2392, 2394, 2396, 2398, 2400, 2402, 2404, 2406, 2408, 2410, 2412, 2414, 2416, 2418, 2420, 2422, 2424, 2426, 2428, 2430, 2432, 2434, 2436, 2438, 2440, 2442, 2444, 2446, 2448, 2450, 2452, 2454, 2456, 2458, 2460, 2462, 2464, 2466, 2468, 2470, 2472, 2474, 2476, 2478, 2480, 2482, 2484, 2486, 2488, 2490, 2492, 2494, 2496, 2498, 2500, 2502, 2504, 2506, 2508, 2510, 2512, 2514, 2516, 2518, 2520, 2522, 2524, 2526, 2528, 2530, 2532, 2534, 2536, 2538, 2540, 2542, 2544, 2546, 2548, 2550, 2552, 2554, 2556, 2558, 2560, 2562, 2564, 2566, 2568, 2570, 2572, 2574, 2576, 2578, 2580, 2582, 2584, 2586, 2588, 2590, 2592, 2594, 2596, 2598, 2600, 2602, 2604, 2606, 2608, 2610, 2612, 2614, 2616, 2618, 2620, 2622, 2624, 2626, 2628, 2630, 2632, 2634, 2636, 2638, 2640, 2642, 2644, 2646, 2648, 2650, 2652, 2654, 2656, 2658, 2660, 2662, 2664, 2666, 2668, 2670, 2672, 2674, 2676, 2678, 2680, 2682, 2684, 2686, 2688, 2690, 2692, 2694, 2696, 2698, 2700, 2702, 2704, 2706, 2708, 2710, 2712, 2714, 2716, 2718, 2720, 2722, 2724, 2726, 2728, 2730, 2732, 2734, 2736, 2738, 2740, 2742, 2744, 2746, 2748, 2750, 2752, 2754, 2756, 2758, 2760, 2762, 2764, 2766, 2768, 2770, 2772, 2774, 2776, 2778, 2780, 2782, 2784, 2786, 2788, 2790, 2792, 2794, 2796, 2798, 2800, 2802, 2804, 2806, 2808, 2810, 2812, 2814, 2816, 2818, 2820, 2822, 2824, 2826, 2828, 2830, 2832, 2834, 2836, 2838, 2840, 2842, 2844, 2846, 2848, 2850, 2852, 2854, 2856, 2858, 2860, 2862, 2864, 2866, 2868, 2870, 2872, 2874, 2876, 2878, 2880, 2882, 2884, 2886, 2888, 2890, 2892, 2894, 2896, 2898, 2900, 2902, 2904, 2906, 2908, 2910, 2912, 2914, 2916, 2918, 2920, 2922, 2924, 2926, 2928, 2930, 2932, 2934, 2936, 2938, 2940, 2942, 2944, 2946, 2948, 2950, 2952, 2954, 2956, 2958, 2960, 2962, 2964, 2966, 2968, 2970, 2972, 2974, 2976, 2978, 2980, 2982, 2984, 2986, 2988, 2990, 2992, 2994, 2996, 2998, 3000, 3002, 3004, 3006, 3008, 3010, 3012, 3014, 3016, 3018, 3020, 3022, 3024, 3026, 3028, 3030, 3032, 3034, 3036, 3038, 3040, 3042, 3044, 3046, 3048, 3050, 3052, 3054, 3056, 3058, 3060, 3062, 3064, 3066, 3068, 3070, 3072, 3074, 3076, 3078, 3080, 3082, 3084, 3086, 3088, 3090, 3092, 3094, 3096, 3098, 3100, 3102, 3104, 3106, 3108, 3110, 3112, 3114, 3116, 3118, 3120, 3122, 3124, 3126, 3128, 3130, 3132, 3134, 3136, 3138, 3140, 3142, 3144, 3146, 3148, 3150, 3152, 3154, 3156, 3158, 3160, 3162, 3164, 3166, 3168, 3170, 3172, 3174, 3176, 3178, 3180, 3182, 3184, 3186, 3188, 3190, 3192, 3194, 3196, 3198, 3200, 3202, 3204, 3206, 3208, 3210, 3212, 3214, 3216, 3218, 3220, 3222, 3224, 3226, 3228, 3230, 3232, 3234, 3236, 3238, 3240, 3242, 3244, 3246, 3248, 3250, 3252, 3254, 3256, 3258, 3260, 3262, 3264, 3266, 3268, 3270, 3272, 3274, 3276, 3278, 3280, 3282, 3284, 3286, 3288, 3290, 3292, 3294, 3296, 3298, 3300, 3302, 3304, 3306, 3308, 3310, 3312, 3314, 3316, 3318, 3320, 3322, 3324, 3326, 3328, 3330, 3332, 3334, 3336, 3338, 3340, 3342, 3344, 3346, 3348, 3350, 3352, 3354, 3356, 3358, 3360, 3362, 3364, 3366, 3368, 3370, 3372, 3374, 3376, 3378, 3380, 3382, 3384, 3386, 3388, 3390, 3392, 3394, 3396, 3398, 3400, 3402, 3404, 3406, 3408, 3410, 3412, 3414, 3416, 3418, 3420, 3422, 3424, 3426, 3428, 3430, 3432, 3434, 3436, 3438, 3440, 3442, 3444, 3446, 3448, 3450, 3452, 3454, 3456, 3458, 3460, 3462, 3464, 3466, 3468, 3470, 3472, 3474, 3476, 3478, 3480, 3482, 3484, 3486, 3488, 3490, 3492, 3494, 3496, 3498, 3500, 3502, 3504, 3506, 3508, 3510, 3512, 3514, 3516, 3518, 3520, 3522, 3524, 3526, 3528, 3530, 3532, 3534, 3536, 3538, 3540, 3542, 3544, 3546, 3548, 3550, 3552, 3554, 3556, 3558, 3560, 3562, 3564, 3566, 3568, 3570, 3572, 3574, 3576, 3578, 3580, 3582, 3584, 3586, 3588, 3590, 3592, 3594, 3596, 3598, 3600, 3602, 3604, 3606, 3608, 3610, 3612, 3614, 3616, 3618, 3620, 3622, 3624, 3626, 3628, 3630, 3632, 3634, 3636, 3638, 3640, 3642, 3644, 3646, 3648, 3650, 3652, 3654, 3656, 3658, 3660, 3662, 3664, 3666, 3668, 3670, 3672, 3674, 3676, 3678, 3680, 3682, 3684, 3686, 3688, 3690, 3692, 3694, 3696, 3698, 3700, 3702, 3704, 3706, 3708, 3710, 3712, 3714, 3716, 3718, 3720, 3722, 3724, 3726, 3728, 3730, 3732, 3734, 3736, 3738, 3740, 3742, 3744, 3746, 3748, 3750, 3752, 3754, 3756, 3758, 3760, 3762, 3764, 3766, 3768, 3770, 3772, 3774, 3776, 3778, 3780, 3782, 3784, 3786, 3788, 3790, 3792, 3794, 3796, 3798, 3800, 3802, 3804, 3806, 3808, 3810, 3812, 3814, 3816, 3818, 3820, 3822, 3824, 3826, 3828, 3830, 3832, 3834, 3836, 3838, 3840, 3842, 3844, 3846, 3848, 3850, 3852, 3854, 3856, 3858, 3860, 3862, 3864, 3866, 3868, 3870, 3872, 3874, 3876, 3878, 3880, 3882, 3884, 3886, 3888, 3890, 3892, 3894, 3896, 3898, 3900, 3902, 3904, 3906, 3908, 3910, 3912, 3914, 3916, 3918, 3920, 3922, 3924, 3926, 3928, 3930, 3932, 3934, 3936, 3938, 3940, 3942, 3944, 3946, 3948, 3950, 3952, 3954, 3956, 3958, 3960, 3962, 3964, 3966, 3968, 3970, 3972, 3974, 3976, 3978, 3980, 3982, 3984, 3986, 3988, 3990, 3992, 3994, 3996, 3998, 4000, 4002, 4004, 4006, 4008, 4010, 4012, 4014, 4016, 4018, 4020, 4022, 4024, 4026, 4028, 4030, 4032, 4034, 4036, 4038, 4040, 4042, 4044, 4046, 4048, 4050, 4052, 4054, 4056, 4058, 4060, 4062, 4064, 4066, 4068, 4070, 4072, 4074, 4076, 4078, 4080, 4082, 4084, 4086, 4088, 4090, 4092, 4094, 4096, 4098, 4100, 4102, 4104, 4106, 4108, 4110, 4112, 4114, 4116, 4118, 4120, 4122, 4124, 4126, 4128, 4130, 4132, 4134, 4136, 4138, 4140, 4142, 4144, 4146, 4148, 4150, 4152, 4154, 4156, 4158, 4160, 4162, 4164, 4166, 4168, 4170, 4172, 4174, 4176, 4178, 4180, 4182, 4184, 4186, 4188, 4190, 4192, 4194, 4196, 4198, 4200, 4202, 4204, 4206, 4208, 4210, 4212, 4214, 4216, 4218, 4220, 4222, 4224, 4226, 4228, 4230, 4232, 4234, 4236, 4238, 4240, 4242, 4244, 4246, 4248, 4250, 4252, 4254, 4256, 4258, 4260, 4262, 4264, 4266, 4268, 4270, 4272, 4274, 4276, 4278, 4280, 4282, 4284, 4286, 4288, 4290, 4292, 4294, 4296, 4298, 4300, 4302, 4304, 4306, 4308, 4310, 4312, 4314, 4316, 4318, 4320, 4322, 4324, 4326, 4328, 4330, 4332, 4334, 4336, 4338, 4340, 4342, 4344, 4346, 4348, 4350, 4352, 4354, 4356, 4358, 4360, 4362, 4364, 4366, 4368, 4370, 4372, 4374, 4376, 4378, 4380, 4382, 4384, 4386, 4388, 4390, 4392, 4394, 4396, 4398, 4400, 4402, 4404, 4406, 4408, 4410, 4412, 4414, 4416, 4418, 4420, 4422, 4424, 4426, 4428, 4430, 4432, 4434, 4436, 4438, 4440, 4442, 4444, 4446, 4448, 4450, 4452, 4454, 4456, 4458, 4460, 4462, 4464, 4466, 4468, 4470, 4472, 4474, 4476, 4478, 4480, 4482, 4484, 4486, 4488, 4490, 4492, 4494, 4496, 4498, 4500, 4502, 4504, 4506, 4508, 4510, 4512, 4514, 4516, 4518, 4520, 4522, 4524, 4526, 4528, 4530, 4532, 4534, 4536, 4538, 4540, 4542, 4544, 4546, 4548, 4550, 4552, 4554, 4556, 4558, 4560, 4562, 4564, 4566, 4568, 4570, 4572, 4574, 4576, 4578, 4580, 4582, 4584, 4586, 4588, 4590, 4592, 4594, 4596, 4598, 4600, 4602, 4604, 4606, 4608, 4610, 4612, 4614, 4616, 4618, 4620, 4622, 4624, 4626, 4628, 4630, 4632, 4634, 4636, 4638, 4640, 4642, 4644, 4646, 4648, 4650, 4652, 4654, 4656, 4658, 4660, 4662, 4664, 4666, 4668, 4670, 4672, 4674, 4676, 4678, 4680, 4682, 4684, 4686, 4688, 4690, 4692, 4694, 4696, 4698, 4700, 4702, 4704, 4706, 4708, 4710, 4712, 4714, 4716, 4718, 4720, 4722, 4724, 4726, 4728, 4730, 4732, 4734, 4736, 4738, 4740, 4742, 4744, 4746, 4748, 4750, 4752, 4754, 4756, 4758, 4760, 4762, 4764, 4766, 4768, 4770, 4772, 4774, 4776, 4778, 4780, 4782, 4784, 4786, 4788, 4790, 4792, 4794, 4796, 4798, 4800, 4802, 4804, 4806, 4808, 4810, 4812, 4814, 4816, 4818, 4820, 4822, 4824, 4826, 4828, 4830, 4832, 4834, 4836, 4838, 4840, 4842, 4844, 4846, 4848, 4850, 4852, 4854, 4856, 4858, 4860, 4862, 4864, 4866, 4868, 4870, 4872, 4874, 4876, 4878, 4880, 4882, 4884, 4886, 4888, 4890, 4892, 4894, 4896, 4898, 4900, 4902, 4904, 4906, 4908, 4910, 4912, 4914, 4916, 4918, 4920, 4922, 4924, 4926, 4928, 4930, 4932, 4934, 4936, 4938, 4940, 4942, 4944, 4946, 4948, 4950, 4952, 4954, 4956, 4958, 4960, 4962, 4964, 4966, 4968, 4970, 4972, 4974, 4976, 4978, 4980, 4982, 4984, 4986, 4988, 4990, 4992, 4994, 4996, 4998, 5000, 5002, 5004, 5006, 5008, 5010, 5012, 5014, 5016, 5018, 5020, 5022, 5024, 5026, 5028, 5030, 5032, 5034, 5036, 5038, 5040, 5042, 5044, 5046, 5048, 5050, 5052, 5054, 5056, 5058, 5060, 5062, 5064, 5066, 5068, 5070, 5072, 5074, 5076, 5078, 5080, 5082, 5084, 5086, 5088, 5090, 5092, 5094, 5096, 5098, 5100, 5102, 5104, 5106, 5108, 5110, 5112, 5114, 5116, 5118, 5120, 5122, 5124, 5126, 5128, 5130, 5132, 5134, 5136, 5138, 5140, 5142, 5144, 5146, 5148, 5150, 5152, 5154, 5156, 5158, 5160, 5162, 5164, 5166, 5168, 5170, 5172, 5174, 5176, 5178, 5180, 5182, 5184, 5186, 5188, 5190, 5192, 5194, 5196, 5198, 5200, 5202, 5204, 5206, 5208, 5210, 5212, 5214, 5216, 5218, 5220, 5222, 5224, 5226, 5228, 5230, 5232, 5234, 5236, 5238, 5240, 5242, 5244, 5246, 5248, 5250, 5252, 5254, 5256, 5258, 5260, 5262, 5264, 5266, 5268, 5270, 5272, 5274, 5276, 5278, 5280, 5282, 5284, 5286, 5288, 5290, 5292, 5294, 5296, 5298, 5300, 5302, 5304, 5306, 5308, 5310, 5312, 5314, 5316, 5318, 5320, 5322, 5324, 5326, 5328, 5330, 5332, 5334, 5336, 5338, 5340, 5342, 5344, 5346, 5348, 5350, 5352, 5354, 5356, 5358, 5360, 5362, 5364, 5366, 5368, 5370, 5372, 5374, 5376, 5378, 5380, 5382, 5384, 5386, 5388, 5390, 5392, 5394, 5396, 5398, 5400, 5402, 5404, 5406, 5408, 5410, 5412, 5414, 5416, 5418, 5420, 5422, 5424, 5426, 5428, 5430, 5432, 5434, 5436, 5438, 5440, 5442, 5444, 5446, 5448, 5450, 5452, 5454, 5456, 5458, 5460, 5462, 5464, 5466, 5468, 5470, 5472, 5474, 5476, 5478, 5480, 5482, 5484, 5486, 5488, 5490, 5492, 5494, 5496, 5498, 5500, 5502, 5504, 5506, 5508, 5510, 5512, 5514, 5516, 5518, 5520, 5522, 5524, 5526, 5528, 5530, 5532, 5534, 5536, 5538, 5540, 5542, 5544, 5546, 5548, 5550, 5552, 5554, 5556, 5558, 5560, 5562, 5564, 5566, 5568, 5570, 5572, 5574, 5576, 5578, 5580, 5582, 5584, 5586, 5588, 5590, 5592, 5594, 5596, 5598, 5600, 5602, 5604, 5606, 5608, 5610, 5612, 5614, 5616, 5618, 5620, 5622, 5624, 5626, 5628, 5630, 5632, 5634, 5636, 5638, 5640, 5642, 5644, 5646, 5648, 5650, 5652, 5654, 5656, 5658, 5660, 5662, 5664, 5666, 5668, 5670, 5672, 5674, 5676, 5678, 5680, 5682, 5684, 5686, 5688, 5690, 5692, 5694, 5696, 5698, 5700, 5702, 5704, 5706, 5708, 5710, 5712, 5714, 5716, 5718, 5720, 5722, 5724, 5726, 5728, 5730, 5732, 5734, 5736, 5738, 5740, 5742, 5744, 5746, 5748, 5750, 5752, 5754, 5756, 5758, 5760, 5762, 5764, 5766, 5768, 5770, 5772, 5774, 5776, 5778, 5780, 5782, 5784, 5786, 5788, 5790, 5792, 5794, 5796, 5798, 5800, 5802, 5804, 5806, 5808, 5810, 5812, 5814, 5816, 5818, 5820, 5822, 5824, 5826, 5828, 5830, 5832, 5834, 5836, 5838, 5840, 5842, 5844, 5846, 5848, 5850, 5852, 5854, 5856, 5858, 5860, 5862, 5864, 5866, 5868, 5870, 5872, 5874, 5876, 5878, 5880, 5882, 5884, 5886, 5888, 5890, 5892, 5894, 5896, 5898, 5900, 5902, 5904, 5906, 5908, 5910, 5912, 5914, 5916, 5918, 5920, 5922, 5924, 5926, 5928, 5930, 5932, 5934, 5936, 5938, 5940, 5942, 5944, 5946, 5948, 5950, 5952, 5954, 5956, 5958, 5960, 5962, 5964, 5966, 596



N North House Elevation
SCALE: 1:24



S South House Elevation
SCALE: 1:24

1. Copyright of this drawing is reserved by the Architect. The drawing and all associated documents are an instrument of service by the Architect. The drawing and the information contained herein may not be modified or reproduced in whole or in part without prior written permission of the Architect.

2. These Contract Documents are the property of the Architect. The Architect bears no responsibility for the interpretation of these documents by the Contractor. Upon written application, the Architect will provide written graphic clarification or supplementary information regarding the intent of the Contract Documents. If Construction Administration services are included in the Architect's scope of work, the Architect will review Shop Drawings submitted by the Contractor for design conformance only.

3. Drawings are not to be scaled for construction. The Contractor is to verify all setting conditions and dimensions required to perform the work and report any discrepancies with the Contract Documents to the Architect before commencing or continuing with any work.

4. Positions of repeated fastened mechanical or electrical devices, fittings, and fixtures may be indicated on architectural drawings. The locations shown on the architectural drawings govern over the Mechanical and Electrical drawings. Those items not clearly located will be located as directed by the Architect. General and construction notes are intended to apply at all locations affected by the work. For locations of work refer to structural, mechanical and electrical documents, in addition to architectural.

5. These drawings are not to be used for construction unless noted below as "Issuance For Construction" and countersigned by the Architect.

6. All work is to be carried out in conformance with the most current Building Code and Rules of the authority having jurisdiction. All plumbing and drainage work to conform to current Ontario regulations. All electrical work to conform to Ontario Hydro Electrical Safety Code as amended.

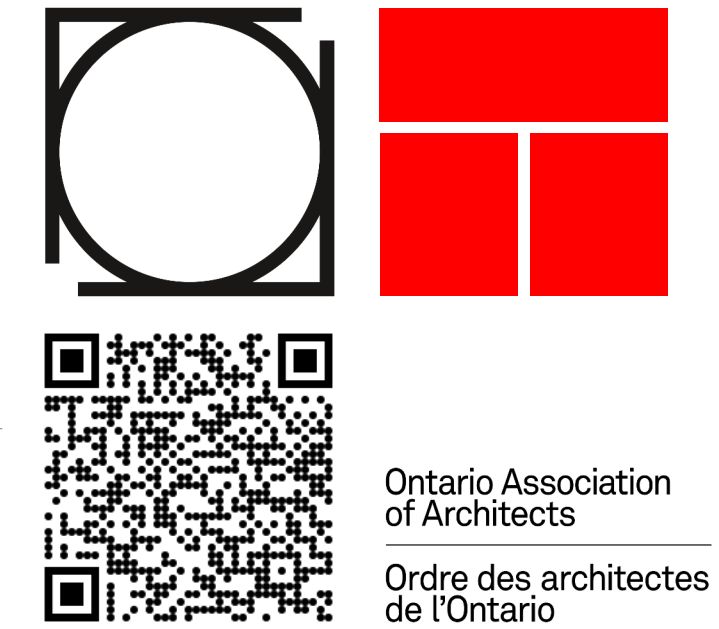
7. The Architect of these plans and specifications gives no warranty or representation to any party about the constructability of the building represented by them. All contractors or subcontractors must satisfy themselves when bidding and at all times ensure that they can properly construct the work represented by these plans.

8. Original Drawings and designs generously provided by CMHC's "Pattern Book" from 1947 titled:
©1947 Pattern for Canadians available at the link:
<https://open.canada.ca/en/open-government-licence/licence/11441386-3648-4138-9638-11441386-3648>

© Thomson Architecture, Inc. CAA License 8154

Rev. ID	Transmittal Set Name	Change ID	Change Name	Date
01 - WIP	Issue for Certification			

Work in Progress



thomson **architecture** inc

1017 Dominion Rd. Stanhope, ON K0M 1S0
cell: 705.935.0355 office: 705.935.0355
email: thomsonarch@icloud.com

BeHome Bachelor Shed

project no. 2024.12

Site Address: TBD

Revision
01 - WIP
Framing Elevations

\$4.03

1. Copyright of this drawing is reserved by the Architect. The drawing and all associated documents are an instrument of service by the Architect. The drawing and the information contained herein may not be modified or reproduced in whole or in part without prior written permission of the Architect.

2. These Contract Documents are the property of the Architect. The Architect bears no responsibility for the interpretation of these documents by the Contractor. Upon written application, the Architect will provide written graphic clarification or supplementary information regarding the intent of the Contract Documents. If Construction Administration services are included in the Architect's scope of work, the Architect will review Shop Drawings submitted by the Contractor for design conformance only.

3. Drawings are not to be scaled for construction. The Contractor is to verify all setting conditions and dimensions required to perform the work and report any discrepancies with the Contract Documents to the Architect before commencing or continuing with any work.

4. Portions of repeated finished mechanical or electrical devices, fittings, and fixtures may be indicated on architectural drawings. The locations shown on the architectural drawings govern over the Mechanical and Electrical drawings. Those items not clearly located will be located as directed by the Architect. General and construction notes are intended to apply to all locations affected by the work. For locations of work refer to structural, mechanical and electrical documents, in addition to architectural.

5. **These drawings are not to be used for construction unless noted below as "Issuance: For Construction" and countersigned by the Architect.**

6. All work is to be carried out in conformance with the most current Building Code and Bylaws of the authority having jurisdiction. All plumbing and drainage work to conform to current Ontario regulations. All electrical work to conform to Ontario Hydro Electrical Safety Code as amended.

7. The Architect of these plans and specifications gives no warranty or representation to any party about the constructability of the building represented by them. All contractors or subcontractors must satisfy themselves when bidding and at all times ensure that they can properly construct the work represented by these plans.

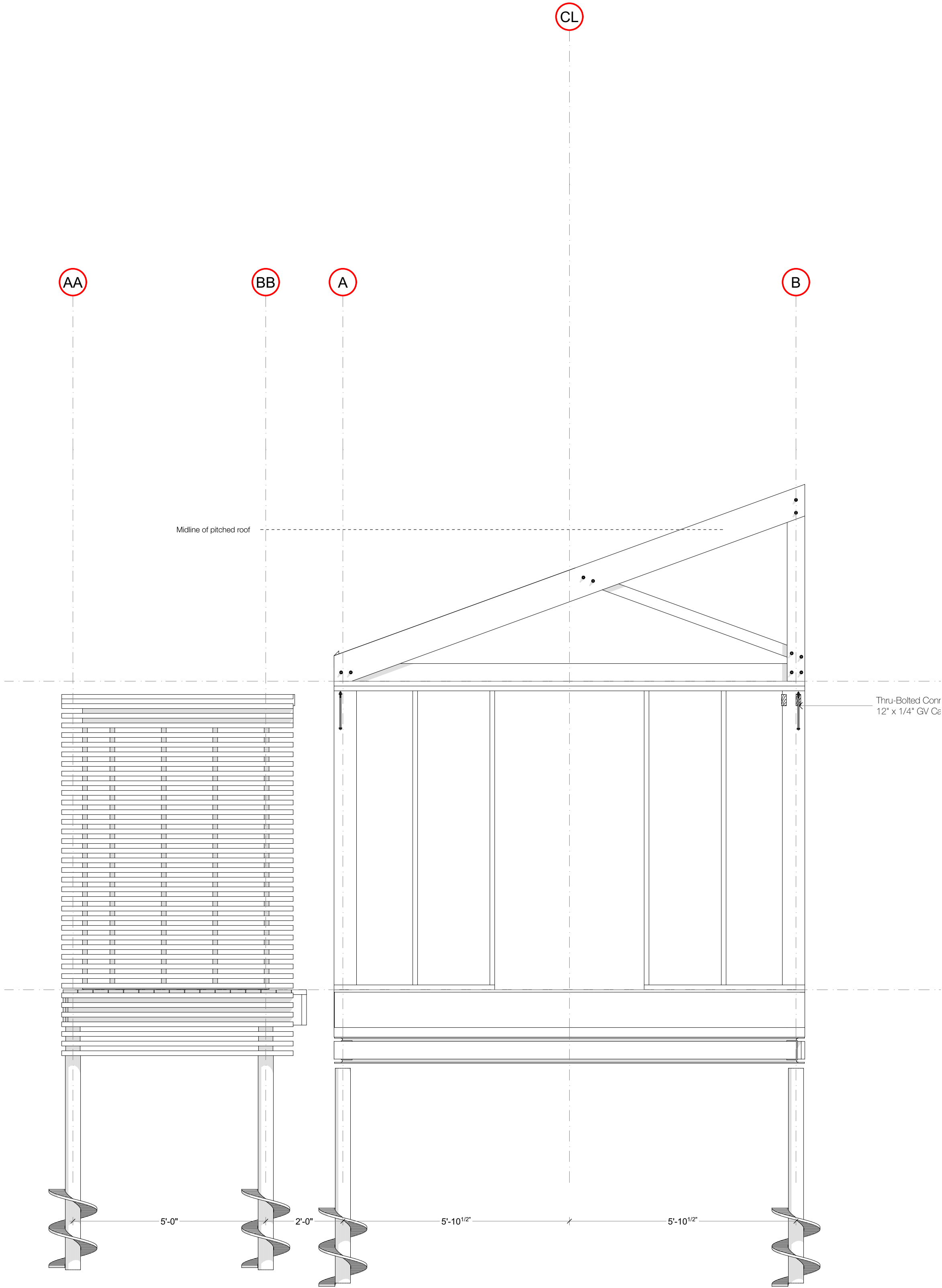
8. Original Drawings and designs generously provided by CMHC's "Pattern Book" from 1947-1960.

© 1998, for Canadians available at the link:
<https://open.canada.ca/en/open-government-licence/licence/1141386>

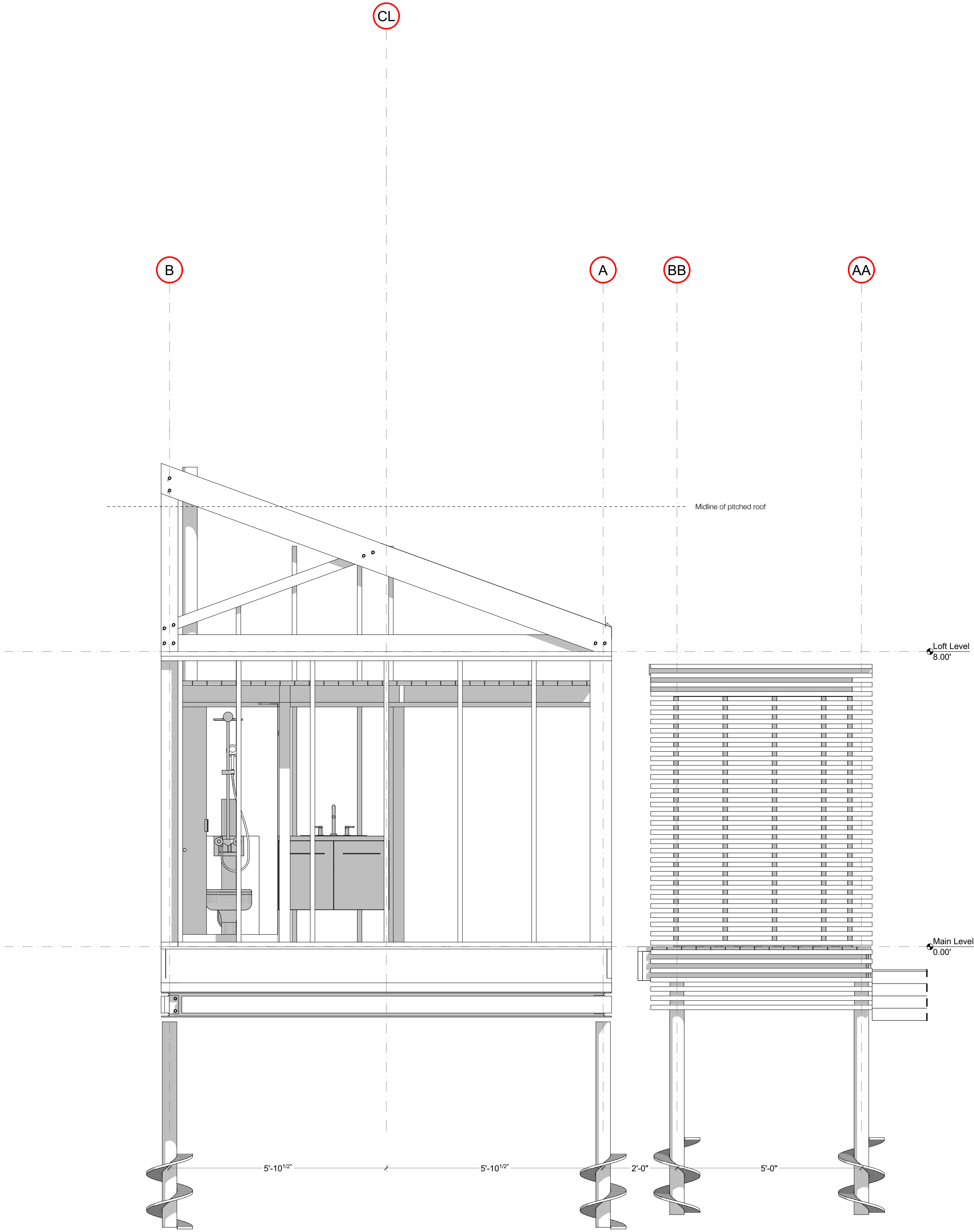
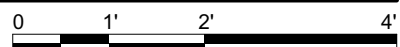
© Thomson Architecture, Inc. - CAA License B154

Rev. ID	Transmittal Set Name	Change ID	Change Name	Date
01 - WIP	Issued for Certification			
	Work in Progress			

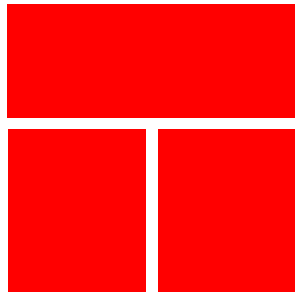
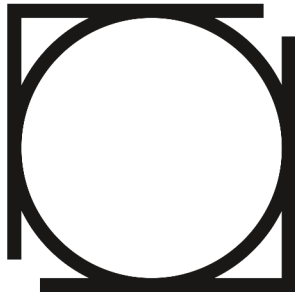
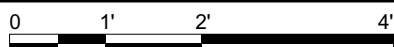
Work in Progress



E East House Elevation
SCALE: 1:24



W West House Elevation
SCALE: 1:24



Ontario Association
of Architects
Ordre des architectes
de l'Ontario

thomson **architecture** inc

1017 Dominion Rd. Stanhope, ON K0M 1S0
cell: 705.935.0355 office: 705.935.0355
email: thomsonarch@icloud.com

BeHome Bachelor Shed

project no. 2024.12

Site Address: TBD

Revision
01 - WIP
Framing Elevations

S4.04

1. Copyright of this drawing is reserved by the Architect. The drawing and all associated documents are an instrument of service by the Architect. The drawing and the information contained herein may not be modified or reproduced in whole or in part without prior written permission of the Architect.

2. These Contract Documents are the property of the Architect. The Architect takes no responsibility for the interpretation of these documents by the Contractor. Upon written application, the Architect will provide written graphic clarification or supplementary information regarding the intent of the Contract Documents. If Construction Administration services are included in the Architect's scope of work, the Architect will review Shop Drawings submitted by the Contractor for design conformance only.

3. Drawings are not to be scaled for construction. The Contractor is to verify all setting conditions and dimensions required to perform the work and report any discrepancies with the Contract Documents to the Architect before commencing or continuing with any work.

4. Positions of repeated fastened mechanical or electrical devices, fittings, and fixtures may be indicated on architectural drawings. The locations shown on the architectural drawings govern over the Mechanical and Electrical drawings. Those items not clearly located will be located as directed by the Architect. General and construction notes are intended to apply to all locations affected by the work. For locations of work refer to structural, mechanical and electrical documents, in addition to architectural.

5. These drawings are not to be used for construction unless noted below as "Issuance: For Construction" and countersigned by the Architect.

6. All work is to be carried out in conformance with the most current Building Code and Bylaws of the authority having jurisdiction. All plumbing and drainage work to conform to current Ontario regulations. All electrical work to conform to Ontario Hydro Electrical Safety Code as amended.

7. The Architect of these plans and specifications gives no warranty or representation to any party about the constructability of the building represented by them. All contractors or subcontractors must satisfy themselves when bidding and at all times ensure that they can properly construct the work represented by these plans.

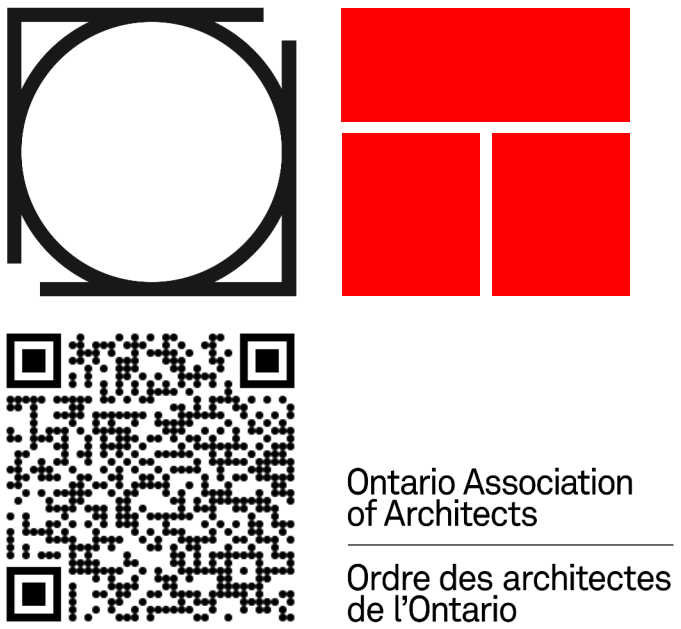
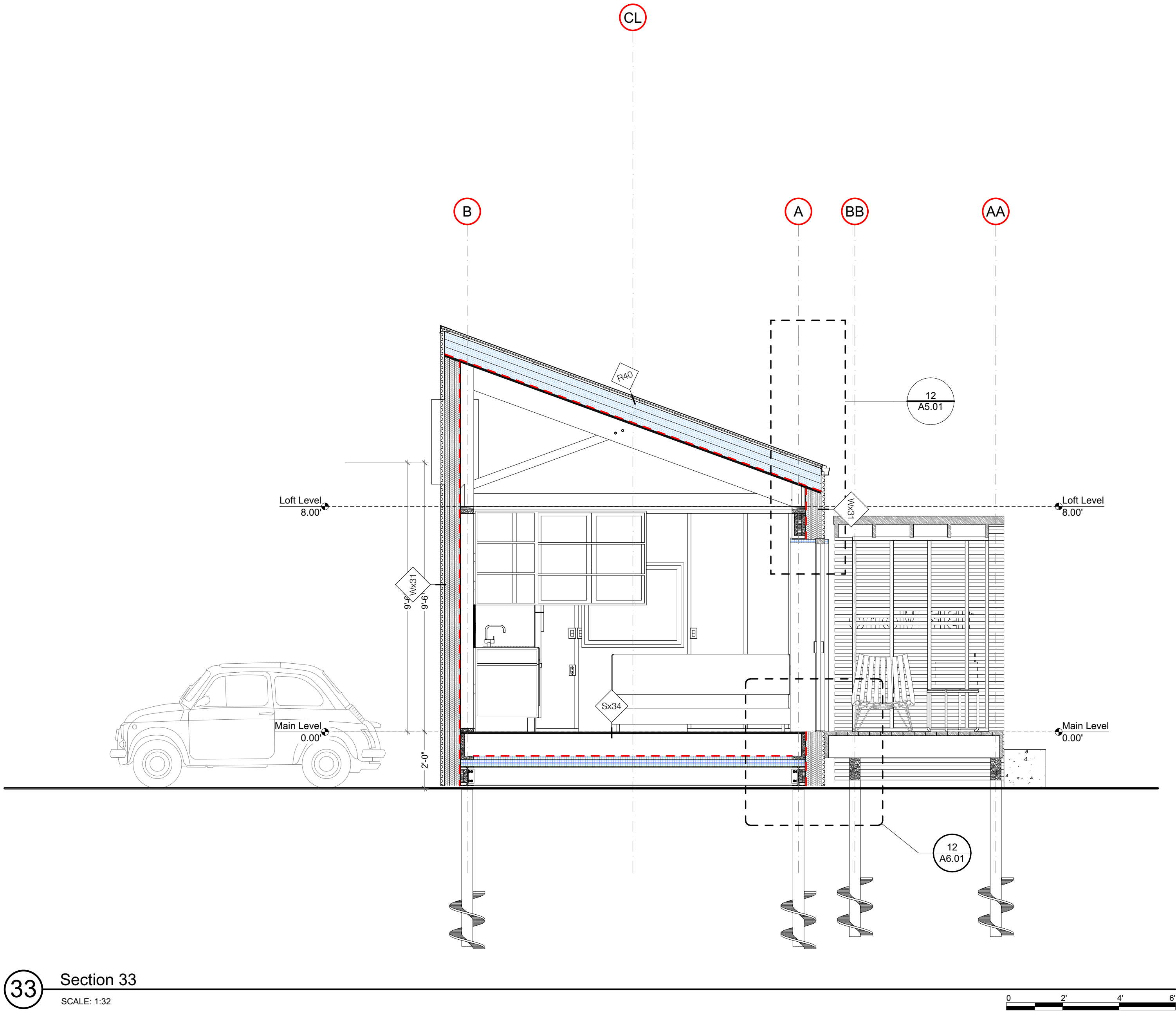
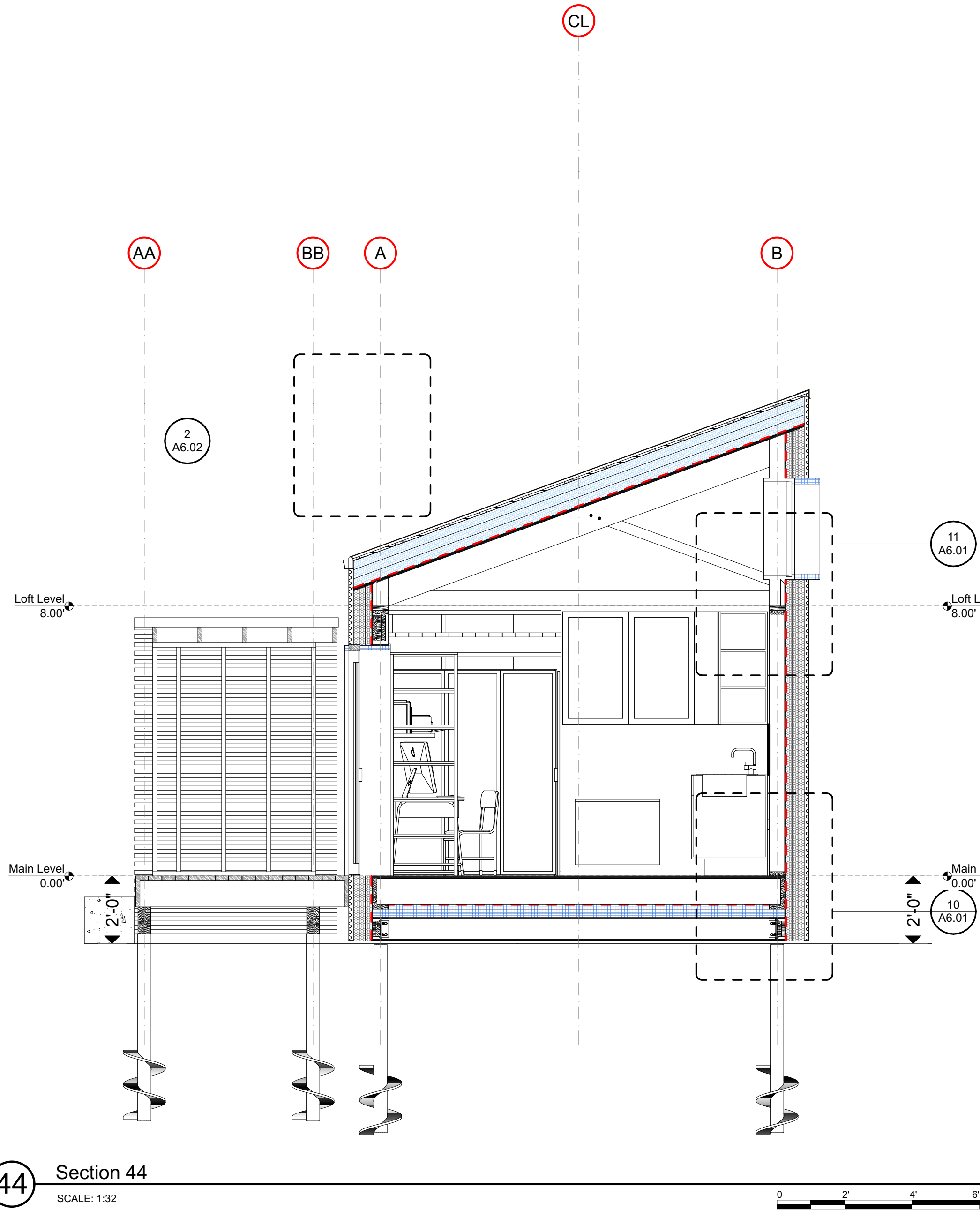
8. Original Drawings and designs generously provided by CMHC's "Platinum Book" from 1947-1960.

9. Notes for Contractors available at the link:
https://openhouse2017.blob.core.windows.net/omhpcprocontent/01project/archivhouse_planscatalogue/revcat1-mh-41386-2018.pdf

© Thomson Architecture, Inc. - CAA License B15A

Rev. ID	Transmittal Set Name	Change ID	Change Name	Date
01 - WIP	Issued for Certification			Work in Progress

Work in Progress



thomson architecture inc

1017 Dominion Rd. Stanhope, ON K0M 1S0
cell: 705.935.0355 office: 705.935.0355
email: thomsonarch@icloud.com

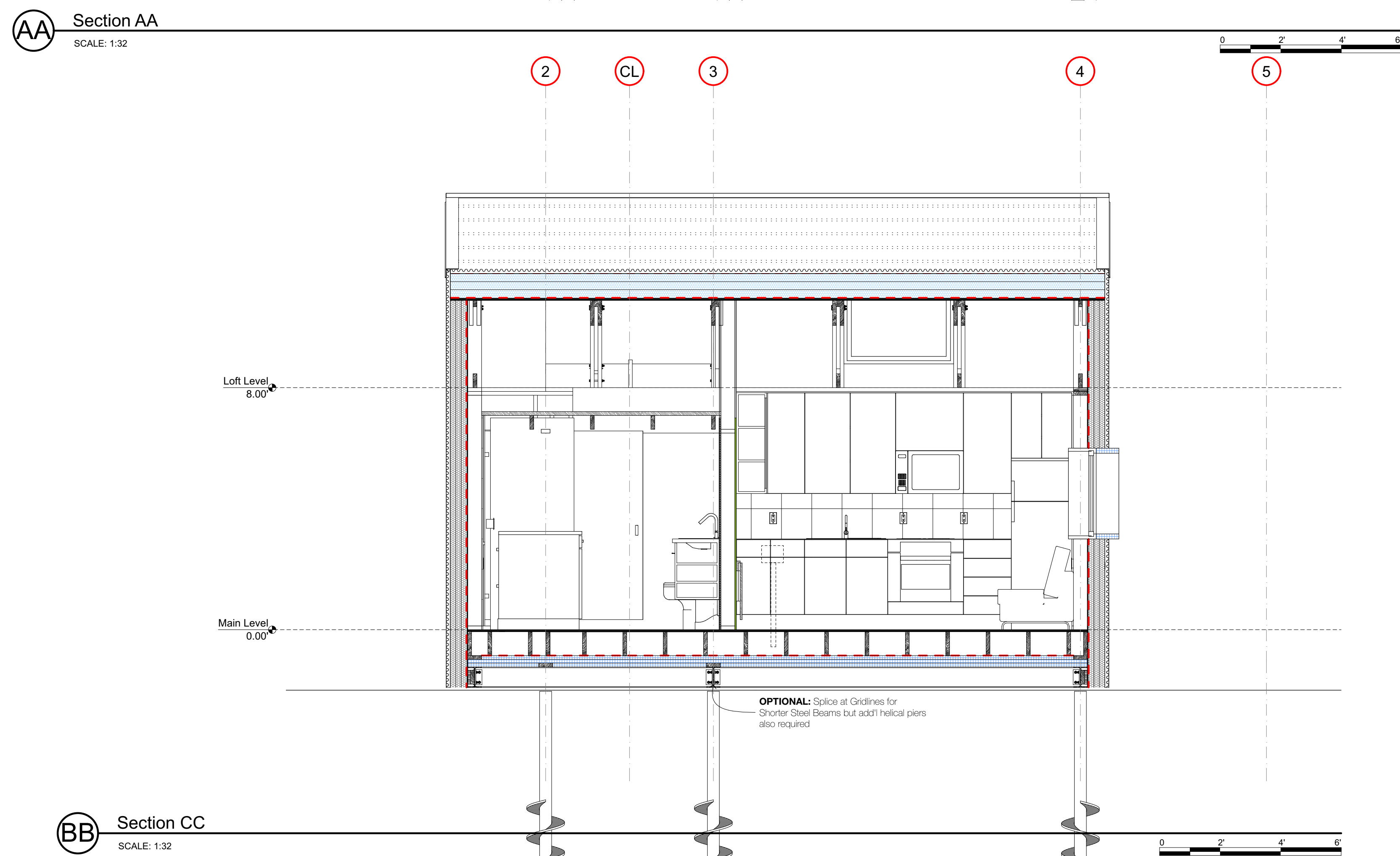
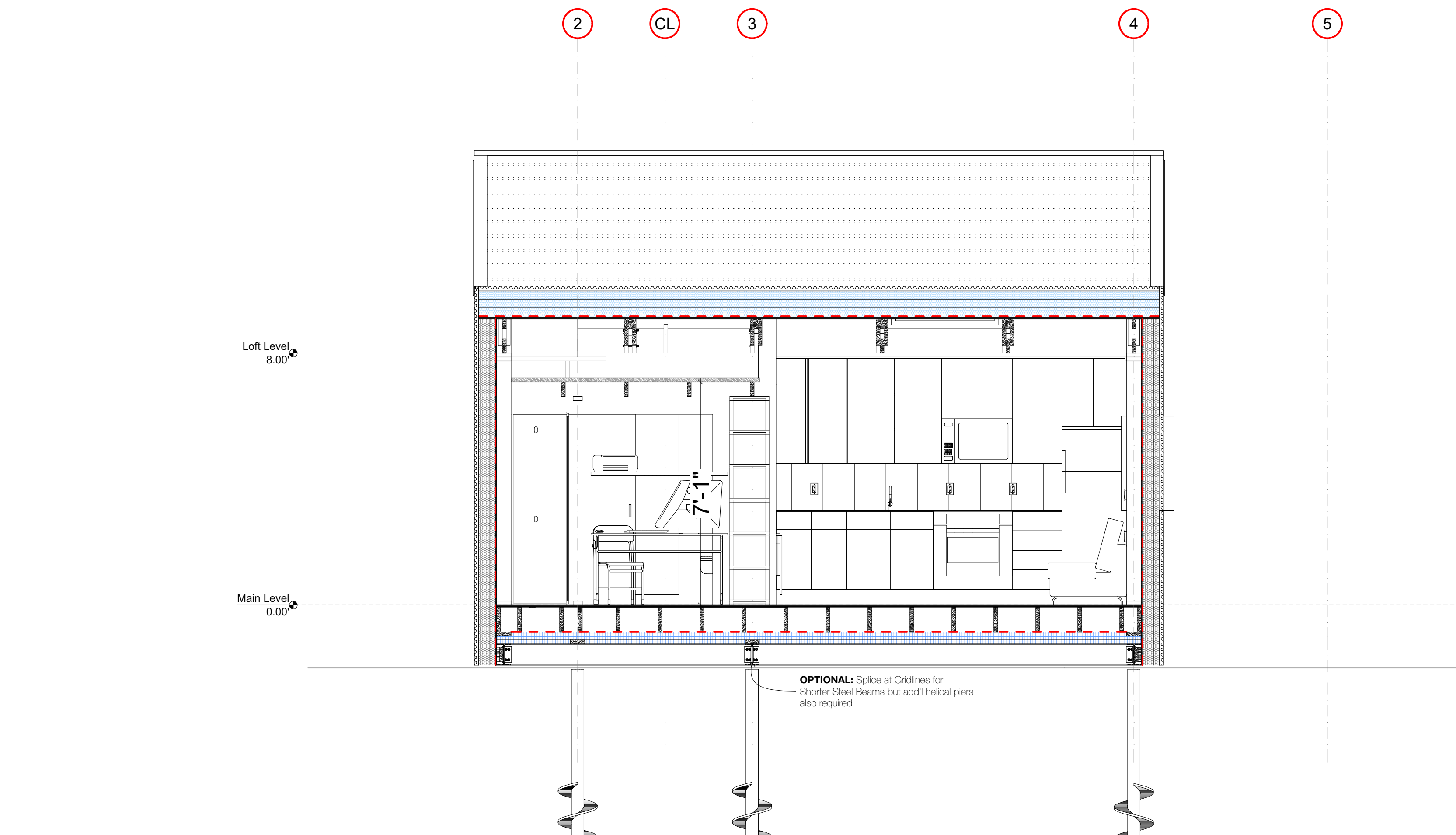
BeHome Bachelor Shed

project no. 2024.12

Site Address: TBD

Revision
01 - WIP
Building Sections

A5.01

[illegible]

Rev. ID	Transmittal Set Name	Change ID	Change Name	Date
01 - WIP	Issued for Certification Review			Work in Progress

01 - WIP

Issues for Certification Review

Work in Progress



thomson architecture inc

1017 Dominion Rd. Stanhope, ON K0M 1S0
cell: 705.935.0355 office: 705.935.0355
email: thomsonarch@icloud.com

BeHome Bachelor Shed

project no. 2024.12

Site Address: TBD

Revision
01 - WIP
Building Sections

Ab.02

1. Copyright of this drawing is reserved by the Architect. The drawing and all associated documents are an instrument of service by the Architect. The drawing and the information contained herein may not be modified or reproduced in whole or in part without prior written permission of the Architect.

2. These Contract Documents are the property of the Architect. The Architect bears no responsibility for the interpretation of these documents by the Contractor. Upon written application, the Architect will provide written graphic clarification or supplementary information regarding the intent of the Contract Documents. If Construction Administration services are included in the Architect's scope of work, the Architect will review Shop Drawings submitted by the Contractor for design conformance only.

3. Drawings are not to be scaled for construction. The Contractor is to verify all existing conditions and dimensions required to perform the work and report any discrepancies with the Contract Documents to the Architect before commencing or continuing with any work.

4. Positions of repeated fastened mechanical or electrical devices, fittings, and fixtures may be indicated on architectural drawings. The locations shown on the architectural drawings govern over the Mechanical and Electrical drawings. Those items not clearly located will be located as directed by the Architect. General and construction notes are intended to apply to all locations affected by the work. For locations of work refer to structural, mechanical and electrical documents, in addition to architectural.

5. These drawings are not to be used for construction unless noted below as "Issuance For Construction" and countersigned by the Architect.

6. All work is to be carried out in conformance with the most current Building Code and Bylaws of the authority having jurisdiction. All plumbing and drainage work to conform to current Ontario regulations. All electrical work to conform to Ontario Hydro Electrical Safety Code as amended.

7. The Architect of these plans and specifications gives no warranty or representation to any party about the constructability of the buildings represented by them. All contractors or subcontractors must satisfy themselves when bidding and at all times ensure that they can properly construct the work represented by these plans.

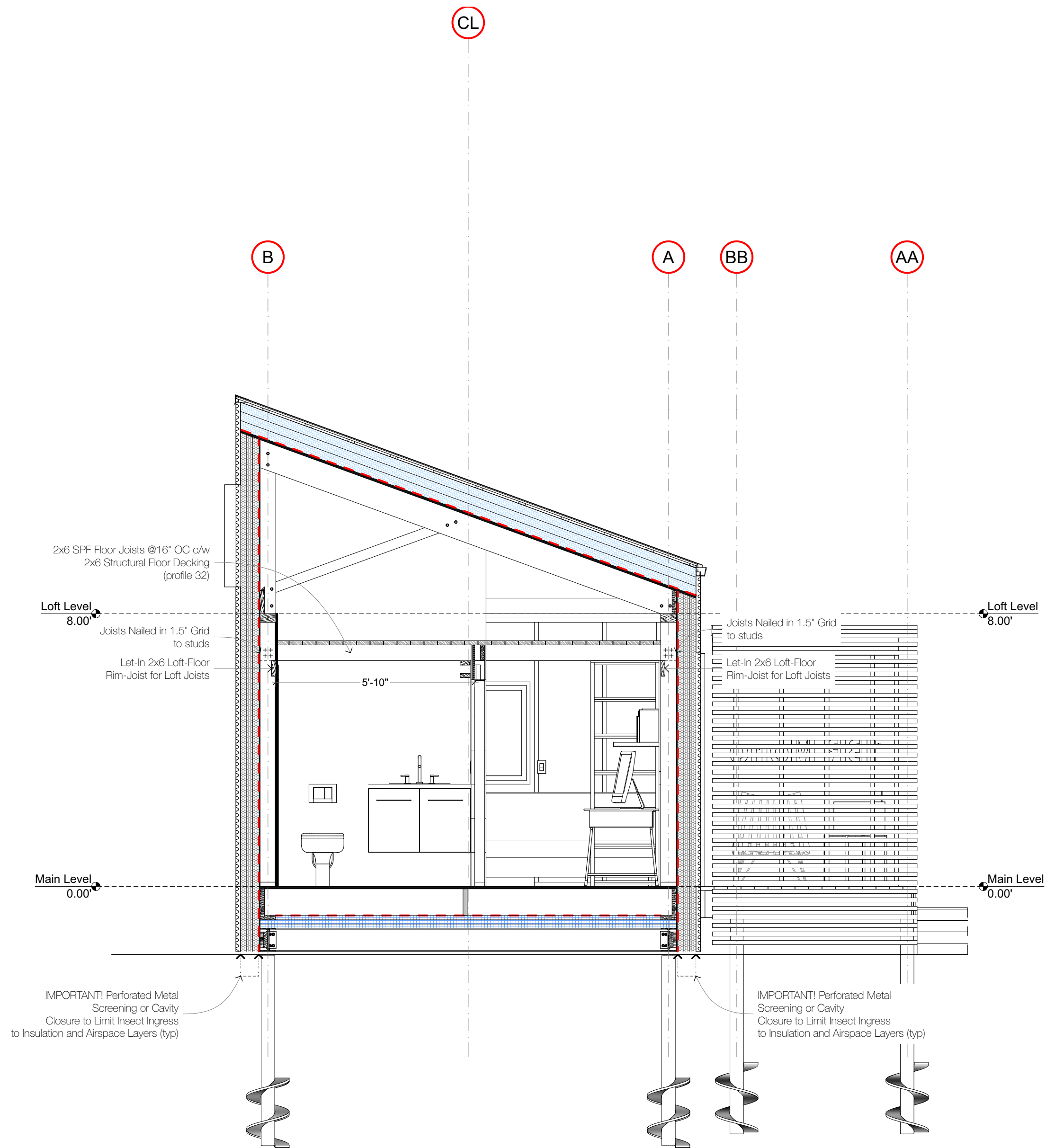
8. Original Drawings and designs generously provided by CMHC's "Pattern Book" from 1947-1960.

67. Notes for Contractors available at the link:
https://openhousecmhc21.blob.core.windows.net/cmhcprodocuments/project/archw/house_plans/catalogue/evsca1-mh-41386-2x408

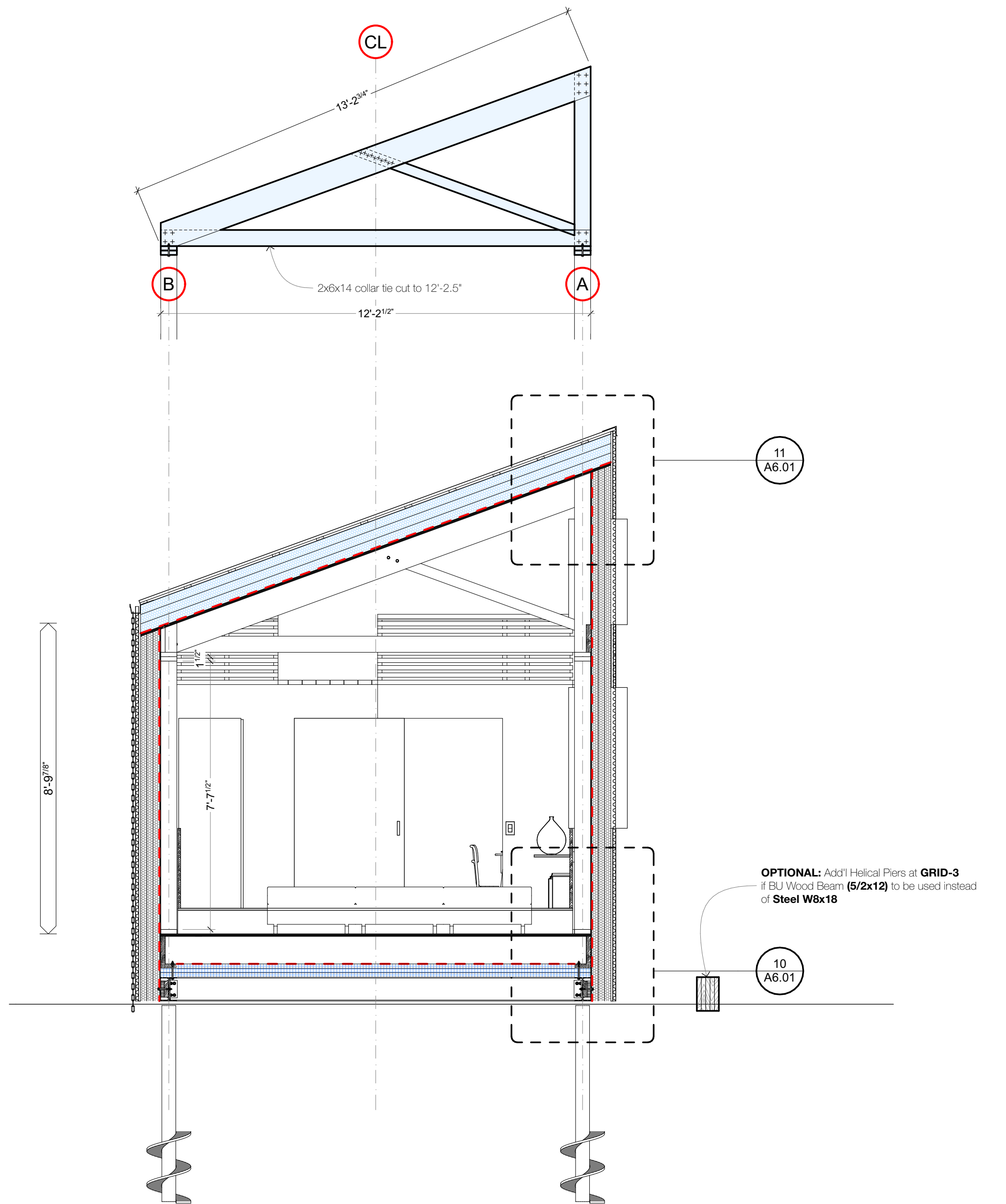
© Thomson Architecture, Inc. - CAA License B154

Rev. ID	Transmittal Set Name	Change ID	Change Name	Date
01 - WIP	Issue for Certification			
	Rev			

Work in Progress



22 Section 22
SCALE: 1:32



11 Section 11
SCALE: 1:32



thomson architecture inc

1017 Dominion Rd. Stanhope, ON K0M 1S0
cell: 705.935.0355 office: 705.935.0355
email: thomsonarch@icloud.com

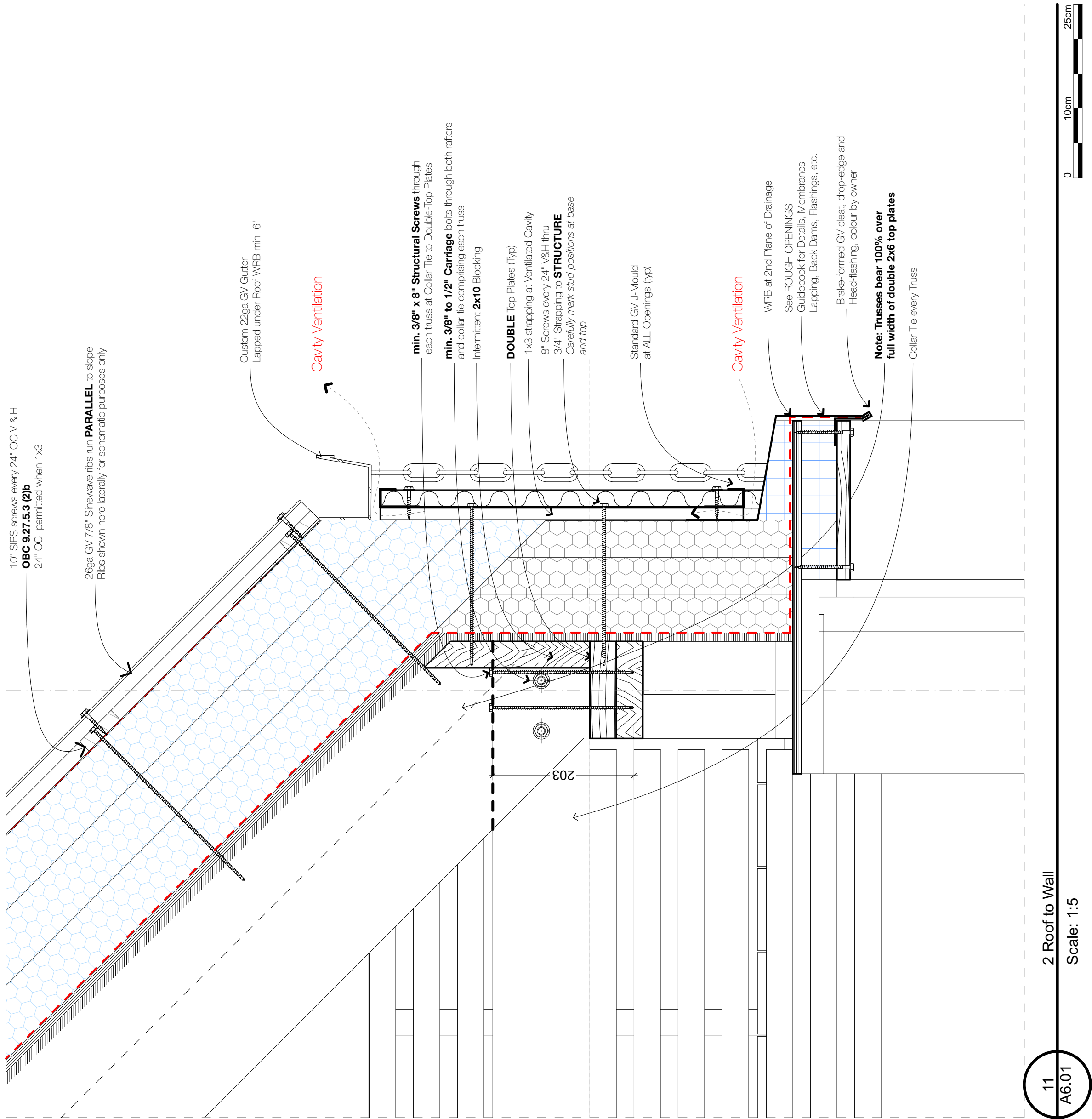
BeHome Bachelor Shed

project no. 2024.12

Site Address: TBD

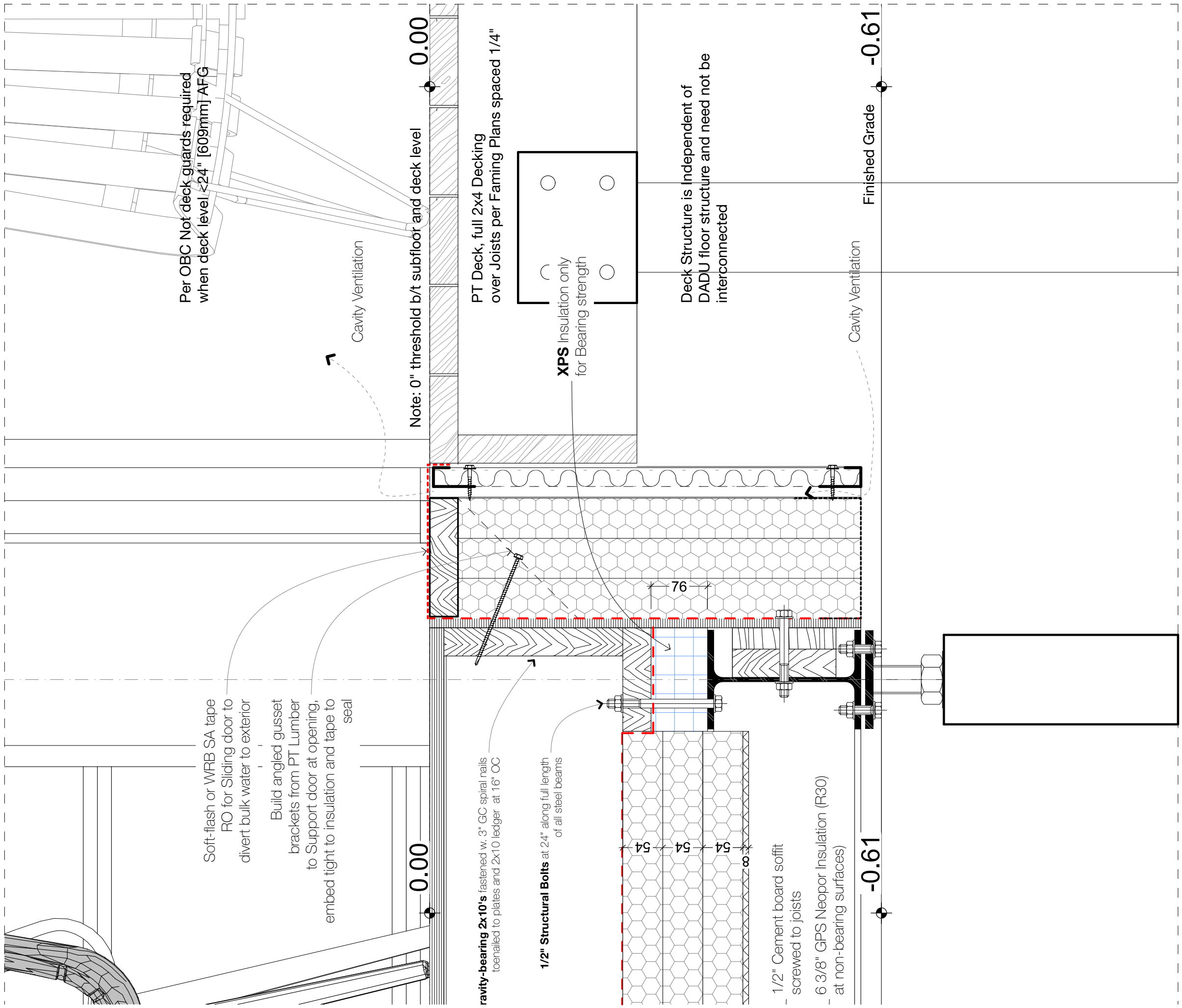
Revision
01 - WIP
Building Sections

A5.03



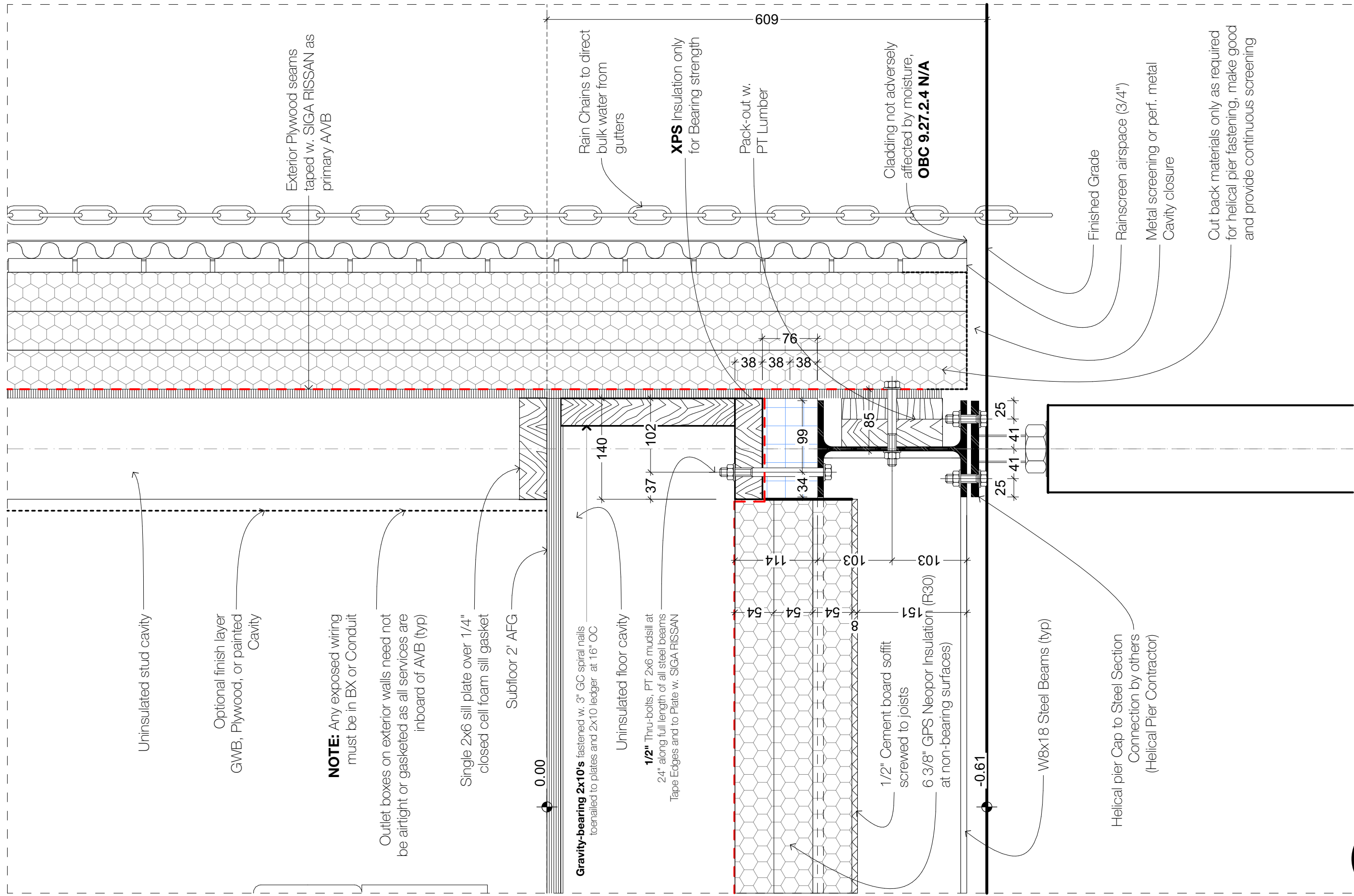
11
A6.01

2 Roof to Wall
Scale: 1:5



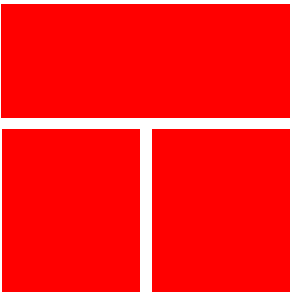
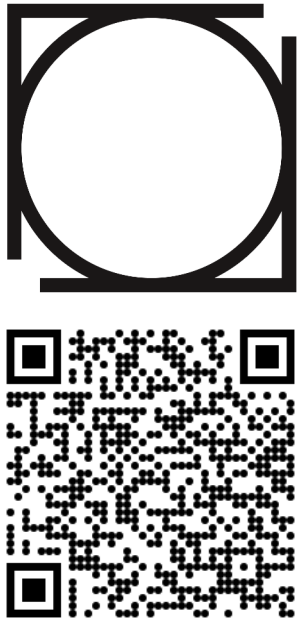
12
A6.01

4 Slider to Deck
Scale: 1:5



10
A6.01

Wall to Floor
Scale: 1:5



Ontario Association
of Architects
Ordre des architectes
de l'Ontario

thomson **architecture** inc

1017 Dominion Rd. Stanhope, ON K0M 1S0
cell: 705.935.0355 office: 705.935.0355
email: thomsonarch@icloud.com

BeHome Bachelor Shed

project no. 2024.12

Site Address: TBD

Revision
01 - WIP
Details

A6.01

1. Copyright of this drawing is reserved by the Architect. The drawing and all associated documents are an instrument of service by the Architect. The drawing and the information contained therein may not be modified or reproduced in whole or in part without prior written permission of the Architect.

2. These Contract Documents are the property of the Architect. The Architect bears no responsibility for the interpretation of these documents by the Contractor. Upon written application, the Architect will provide written graphic clarification or supplementary information regarding the intent of the Contract Documents. If Construction Administration services are included in the Architect's scope of work, the Architect will review Shop Drawings submitted by the Contractor for design conformance only.

3. Drawings are not to be scaled for construction. The Contractor is to verify all existing conditions and dimensions required to perform the work and report any discrepancies with the Contract Documents to the Architect before commencing or continuing with any work.

4. Positions of repeated tested mechanical or electrical devices, fittings, and fixtures may be indicated on architectural drawings. The locations shown on the architectural drawings govern over the Mechanical and Electrical drawings. Those items not clearly located will be located as directed by the Architect. General and construction notes are intended to apply to all locations affected by the work. For locations of work refer to structural, mechanical and electrical documents, in addition to architectural.

5. These drawings are not to be used for construction unless noted below as "Issuance For Construction" and countersigned by the Architect.

6. All work is to be carried out in conformance with the most current Building Code and Rules of the authority having jurisdiction. All planning and change work to conform to current Ontario regulations. All electrical work to conform to Ontario Hydro Electrical Safety Code as amended.

7. The Architect of these plans and specifications gives no warranty or representation to any party about the constructability of the buildings represented by them. All contractors or subcontractors must satisfy themselves when bidding and at all times ensure that they can properly construct the work represented by these plans.

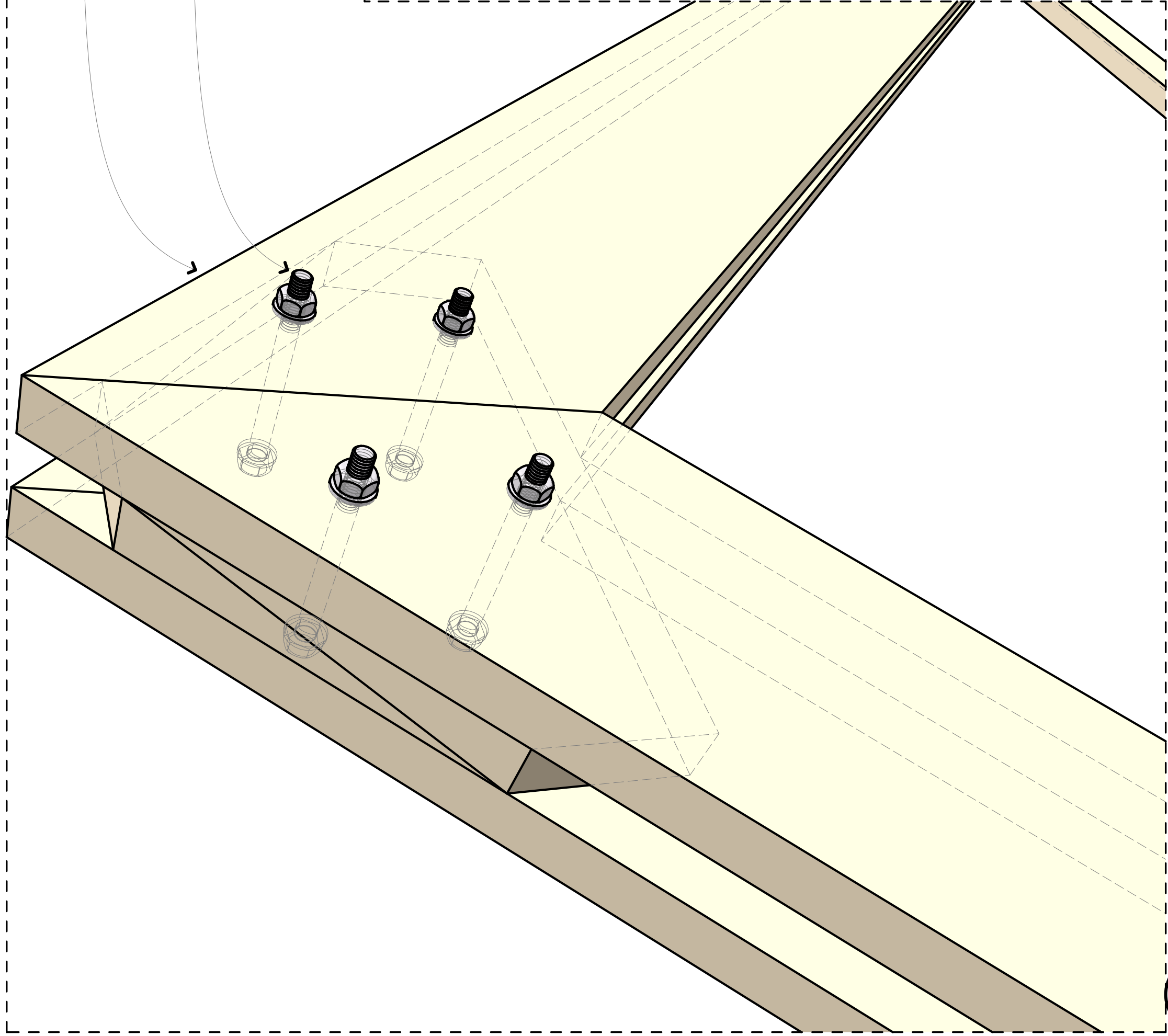
8. Original Drawings and designs generously provided by CMHC's "Pattern Book" from 1947-1960.

9. Permit for Construction available at the link: https://openrecords211.b3b3.com/onlineapp/net/cmhcprodcustomer/01project/archhivehouse_plans/catalogue/revcat1-m4-41385_20240601

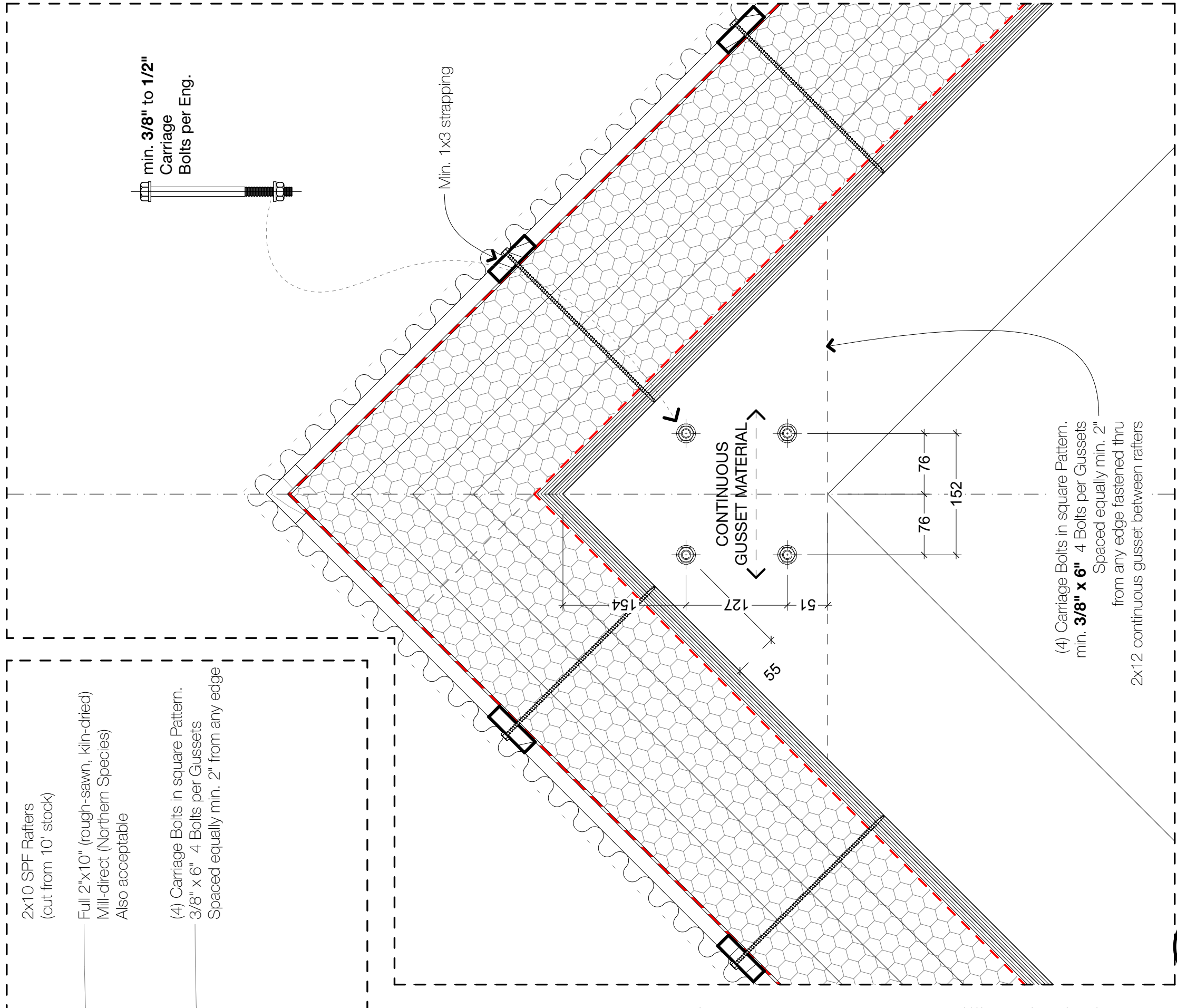
© Thomson Architecture, Inc. - CAA License B154

Rev. ID	Transmitted Set Name	Change ID	Change Name	Date
01 - WIP	Issued for Certification Review			

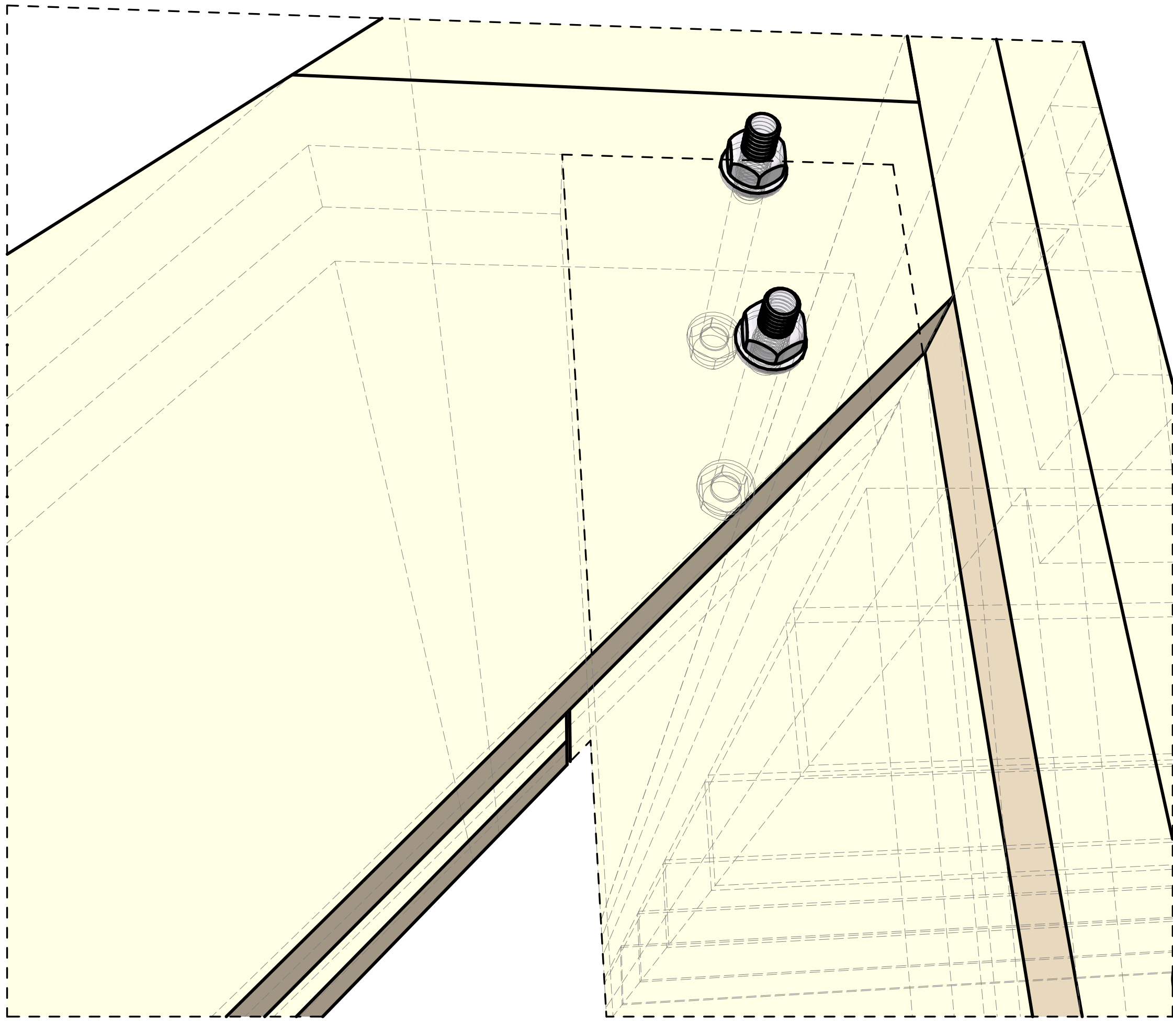
Work in Progress



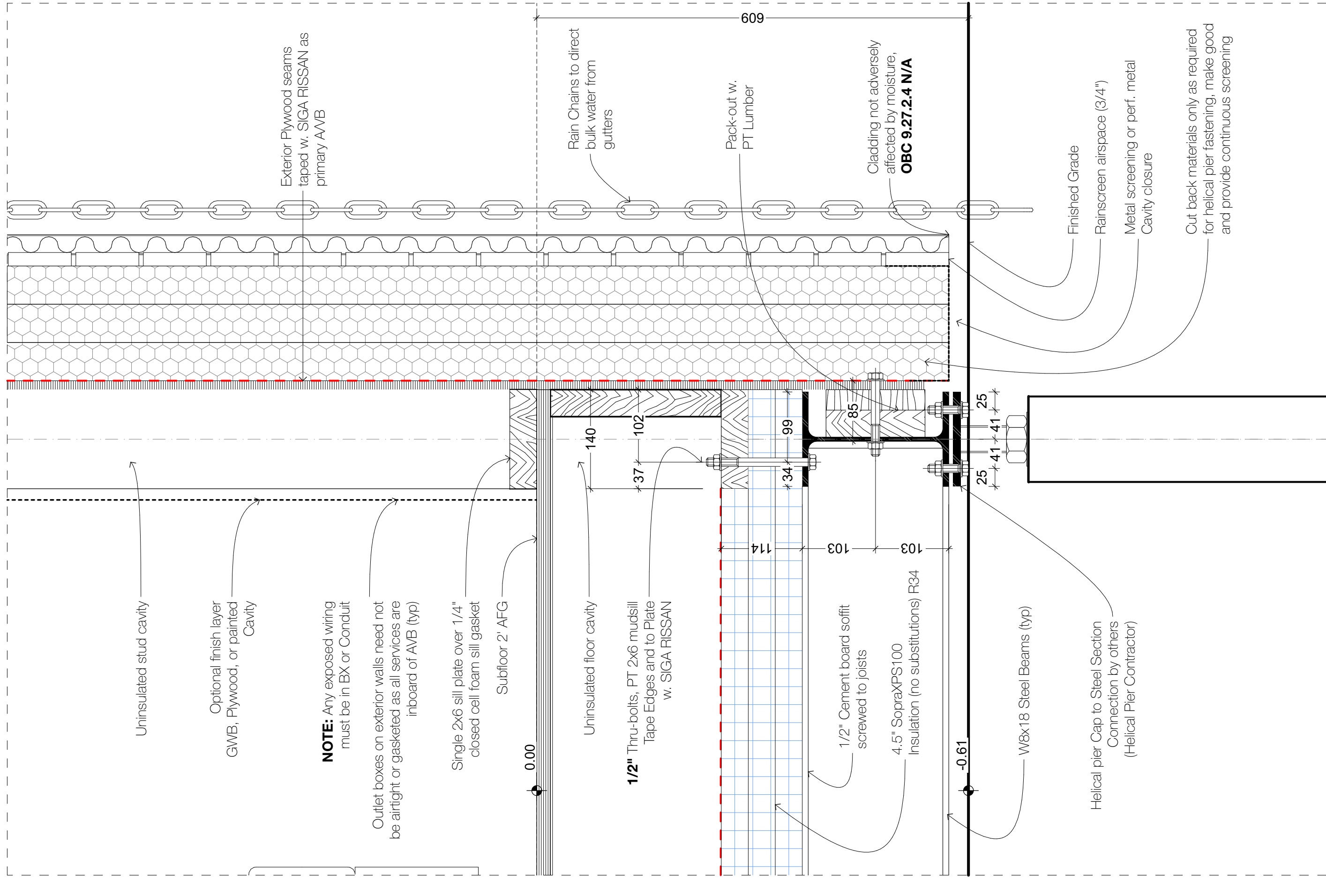
3
A6.02
13 Roof Truss Gusset
Scale: 1:50



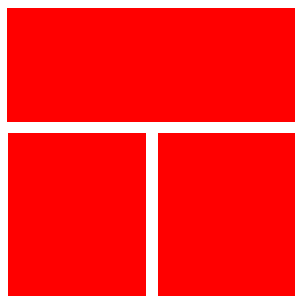
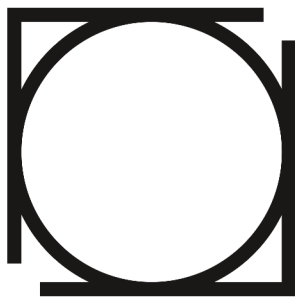
2
A6.02
3 Ridge of Truss
Scale: 1:50



4
A6.02
14 Roof Truss Bottom Chord
Scale: 1:50



1
A6.02
1 Wall to Floor
Scale: 1:50



Ontario Association
of Architects
Ordre des architectes
de l'Ontario

thomson **architecture** inc

1017 Dominion Rd. Stanhope, ON K0M 1S0
cell: 705.935.0355 office: 705.935.0355
email: thomsonarch@icloud.com

BeHome Bachelor Shed

project no. 2024.12

Site Address: TBD

Revision
01 - WIP
Details

A6.02

1. Copyright of this drawing is reserved by the Architect. The drawing and all associated documents are an instrument of service by the Architect. The drawing and the information contained herein may not be modified or reproduced in whole or in part without prior written permission of the Architect.

2. These Contract Documents are the property of the Architect. The Architect takes no responsibility for the interpretation of these documents by the Contractor. Upon written application, the Architect will provide written graphic clarification or supplementary information regarding the intent of the Contract Documents. If Construction Administration services are included in the Architect's scope of work, the Architect will review Shop Drawings submitted by the Contractor for design conformance only.

3. Drawings are not to be scaled for construction. The Contractor is to verify all existing conditions and dimensions required to perform the work and report any discrepancies with the Contract Documents to the Architect before commencing or continuing with any work.

4. Portions of repeated tested mechanical or electrical devices, fittings, and fixtures may be indicated on architectural drawings. The locations shown on the architectural drawings govern over the Mechanical and Electrical drawings. Those items not clearly indicated will be located as directed by the Architect. General and construction notes are intended to apply at all locations affected by the work. For locations of work refer to structural, mechanical and electrical documents, in addition to architectural.

5. These drawings are not to be used for construction unless noted below as "Issuance for Construction" and countersigned by the Architect.

6. All work is to be carried out in accordance with the most current Building Code and Rules of the jurisdiction having jurisdiction. All planning and design work to conform to current Ontario regulations. All electrical work to conform to Ontario Hydro Electrical Safety Code as amended.

7. The Architect of these plans and specifications gives no warranty or representation to any party about the constructability of the buildings represented by them. All contractors or subcontractors must satisfy themselves when bidding and at all times ensure that they can properly construct the work represented by these plans.

8. Original Drawings and design generally provided by CMHC's "Pattern Book" from 1947-1960.

9. Notes for Contractors available at the link: <https://open.canada.ca/data/en/dataset/5b1b1b1b-1b1b-4b1b-1b1b-1b1b1b1b1b1b>

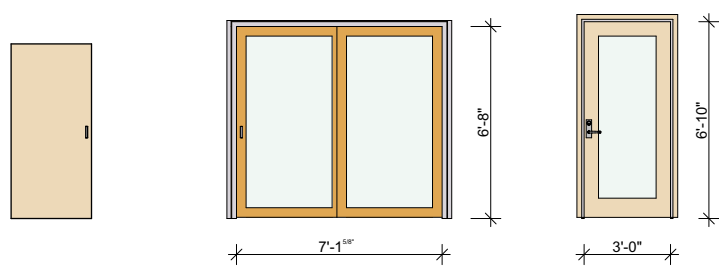
© Thomson Architecture, Inc. CAA License B154

Rev. ID Transmittal Set Name Change ID Change Name Date
01 - WIP Issuance for Construction
Revision Work in Progress

Work in Progress

DOOR SCHEDULE																									
ID	ZONE	QTY	FROM	TO	DOOR PANEL								DOOR FRAME				HARDWARE						CASING IN	CASING OUT	NOTES/REMARKS
					WDTH	HT	THCK	FRR	STC	PANEL TYPE	PANEL MAT'L	FINISH	GLAZING	FRAME	FRAME FINISH	THRESHOLD	THRESHOLD TYPE	Hardware Key Side Room #	HARDWARE	OPERATION	HANDLE INSIDE	HANDLE OUTSIDE			
DS	101	1	3PC	<Undefined>	2'-8"	6'-0"	0¾"			---	06 Pine V			06 Pine V		☐				Off	Knob 12		☐	☐	custom 3/4" birch ply rail surface slider
DS	103	1	<Undefined>	B/R	3'-0"	6'-0¾"	0¾"			---	06 Pine V			06 Pine V		☐				Off	Knob 12		☐	☐	custom 3/4" birch ply rail surface slider
DX 02	100	1	SRO	<Undefined>	7'-1"	6'-8"	1¾"			---	06 Oak Veneer			06 Oak Veneer		☒				Knob 12	Knob 12		☒	☒	Triple-glazed thermally broken Full-Glass L&S ...
DX-01	100	1	SRO	<Undefined>	3'-0"	6'-10"	1¾"	-	-	---	06 Pine H	PT	-	06 Pine H		☒		HD.8		Handle 8	Handle 5		☒	☒	Triple-glazed thermally broken Full-Glass Swin...

DOOR LEGEND



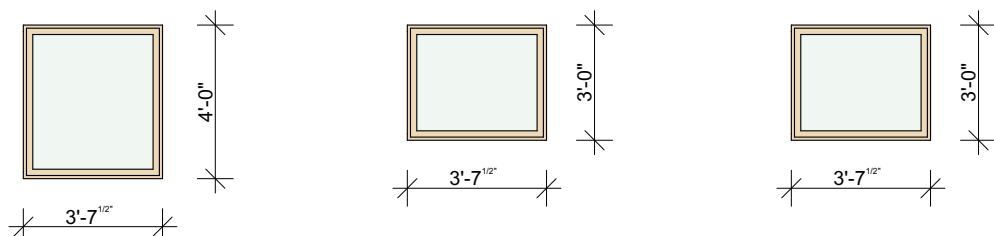
DS

DX 02

DX-01

WINDOW & SCREEN SCHEDULE																		
ID	ZONE	QTY	OPENS FROM	WIDTH	HEIGHT	SILL HT.	STC	FRR	MANUFACTURER	OPERATION	NOTES/REMARKS	Finish	Frame Type	Glazing	MAX. U-value (SI)	Hinges	Hardware Set	Jamb Detail
W01	103	1	<Undefined>	3'-7 ¹² "	4'-0"	0.91		N/R				Ano Aluminum Exterior/Wood Interior	---	TRIPLE LOW-E, ARGON c/w NC Edge Spacers				
W02	103	1	<Undefined>	3'-7 ¹² "	3'-0"	1.76		N/R				Ano Aluminum Exterior/Wood Interior	---	TRIPLE LOW-E, ARGON c/w NC Edge Spacers				
W02	100	1	<Undefined>	3'-7 ¹² "	3'-0"	1.76		N/R				Ano Aluminum Exterior/Wood Interior	---	TRIPLE LOW-E, ARGON c/w NC Edge Spacers				
3																		

WINDOW LEGEND



WO-

W02

W02

DOOR KEY

D	SINGLE LEAF
D2	DOUBLE DOOR
D-PCKT	POCKET DOOR
D-X..	SINGLE LEAF EXTERIOR DOOR
D-XSL	EXTERIOR SLIDER

HMF	HOLLOW METAL FRAME (NON-THERMAL)
IMF	INSULATED METAL FRAME (THERMALLY-BROKEN)

SCW	SOLID CORE WOOD LEAF
SCWG	SOLID CORE WOOD LEAF W.
GLAZED INSERT	
SCWGT	SOLID CORE WOOD LEAF
W. GLAZED	INSERT & TRANSOM
SCWGL	SOLID CORE WOOD LEAF
W. GLAZED	INSERT &
SIDELIGHT & TRANSOM	

HMC HOLLOW METAL CORE LEAF
IMC INSULATED METAL CORE LEAF
(THERMALLY-BROKEN)

*D2X-IMCG EXISTING DOOR W. NEW
HARDWARE
THERM GLAZING ELEMENTS PER
OBC, REFER TO NOTE
BELOW

NOTE: All Exterior-Facing Doors and Windows shall conform with Energy Performance Requirements as noted in the Ontario Building Code Matrix for this project (refer to page A0.03 of this set)

Contractor to supply & install Screen Doors at
Exterior Swing and Sliding doors UNO

WINDOW KEY

W1 FIXED STOREFRONT UNIT
WI INTERIOR WINDOW WALL
R ROLLING SCREEN
ANO ANODIZED ALUMINUM EXTERIOR
c/w WOOD INTERIOR

HARDWARE KEY

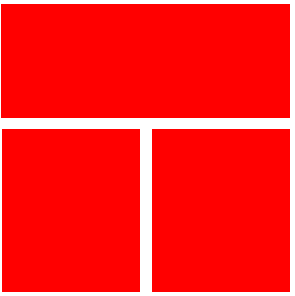
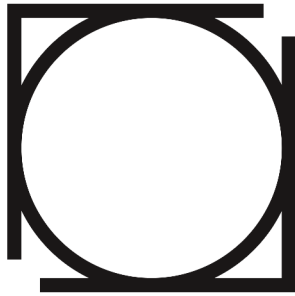
DB LIST)	DEADBOLT (SEE HW MASTER
Knob 12	Lever-style multipoint Ext. Lockable
Handle 5	Lever Style Ext. Lockable
Handle 8	Lever Style Thumb-Turn Lock

NOTE: All Exterior-Facing Doors and Windows shall conform with Energy Performance Requirements as noted in the Ontario Building Code Matrix for this project (refer to page A0.03 of this set) UNO

[illegible]

Rev. ID	Transmittal Set Name	Change ID	Change Name	Date
01 - WIP	Issued for Certification Review			Work in Progress

Work in Progress



Ontario Association
of Architects

Ordre des architectes
de l'Ontario

thomson architecture inc

1017 Dominion Rd. Stanhope, ON K0M 1S0
cell: 705.935.0355 office: 705.935.0355
email: thomsonarch@icloud.com

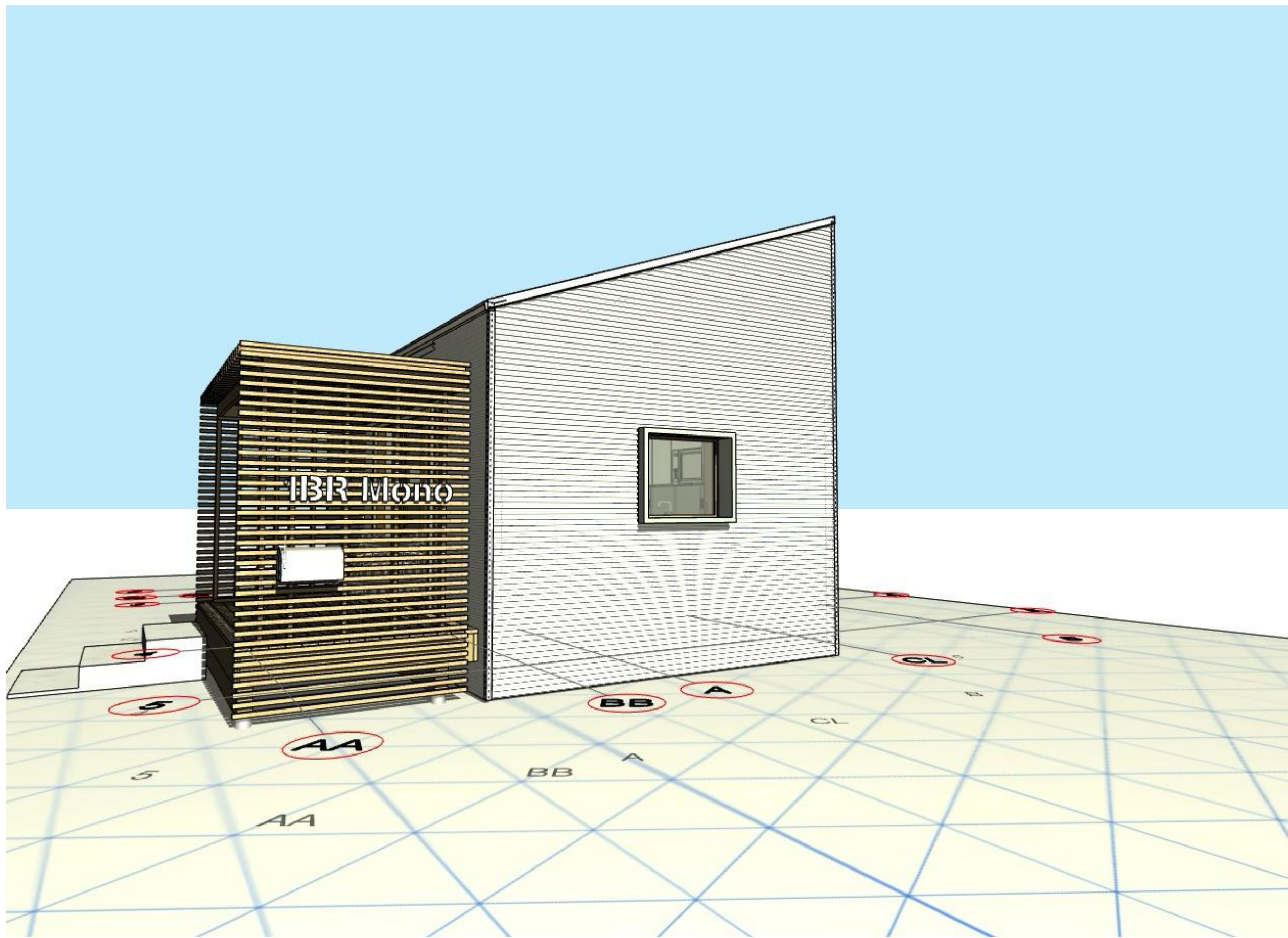
BeHome Bachelor Shed

project no. 2024.12

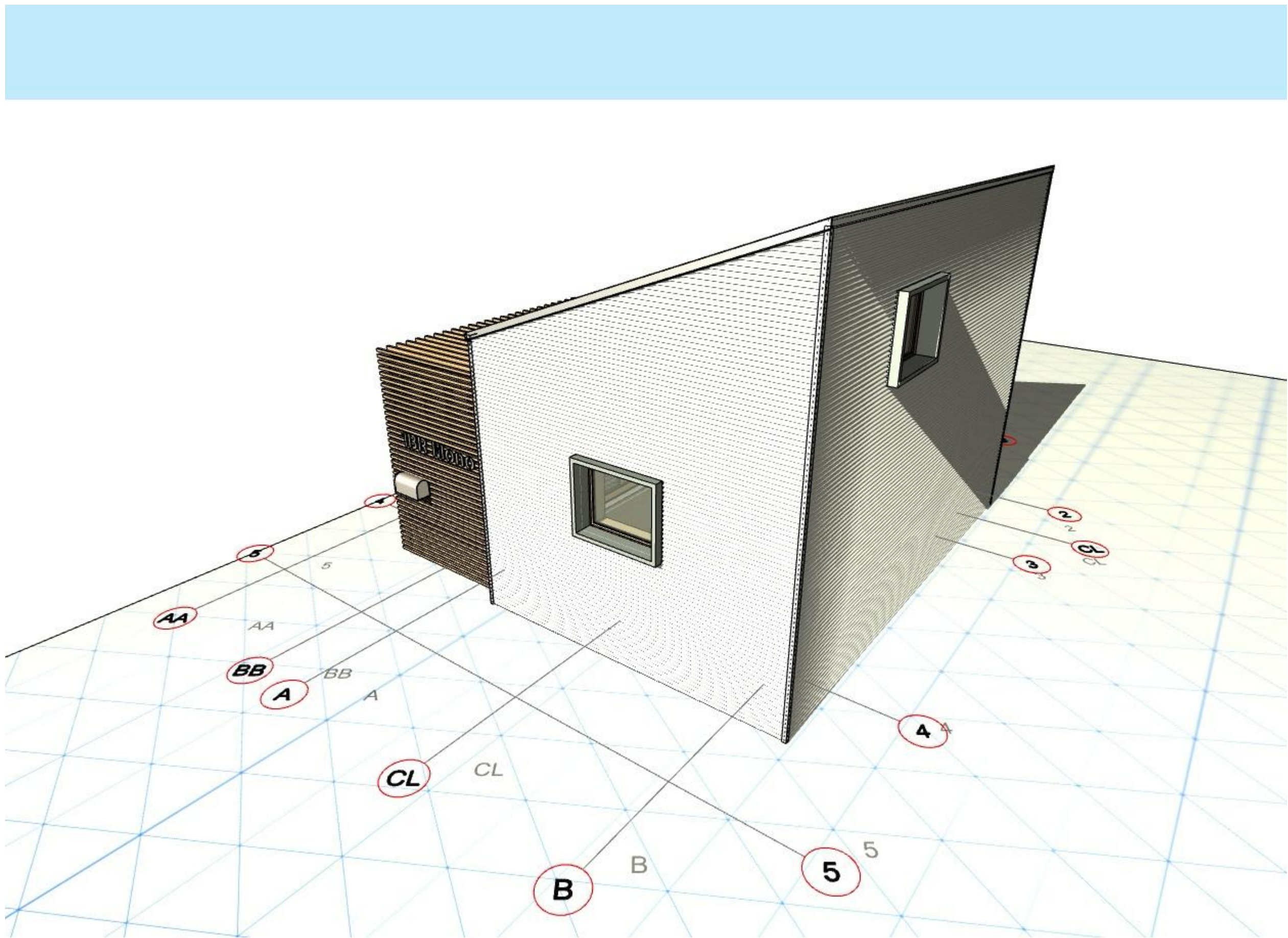
Site Address: TBD

Revision
01 - WIP
Door & Window Schedule

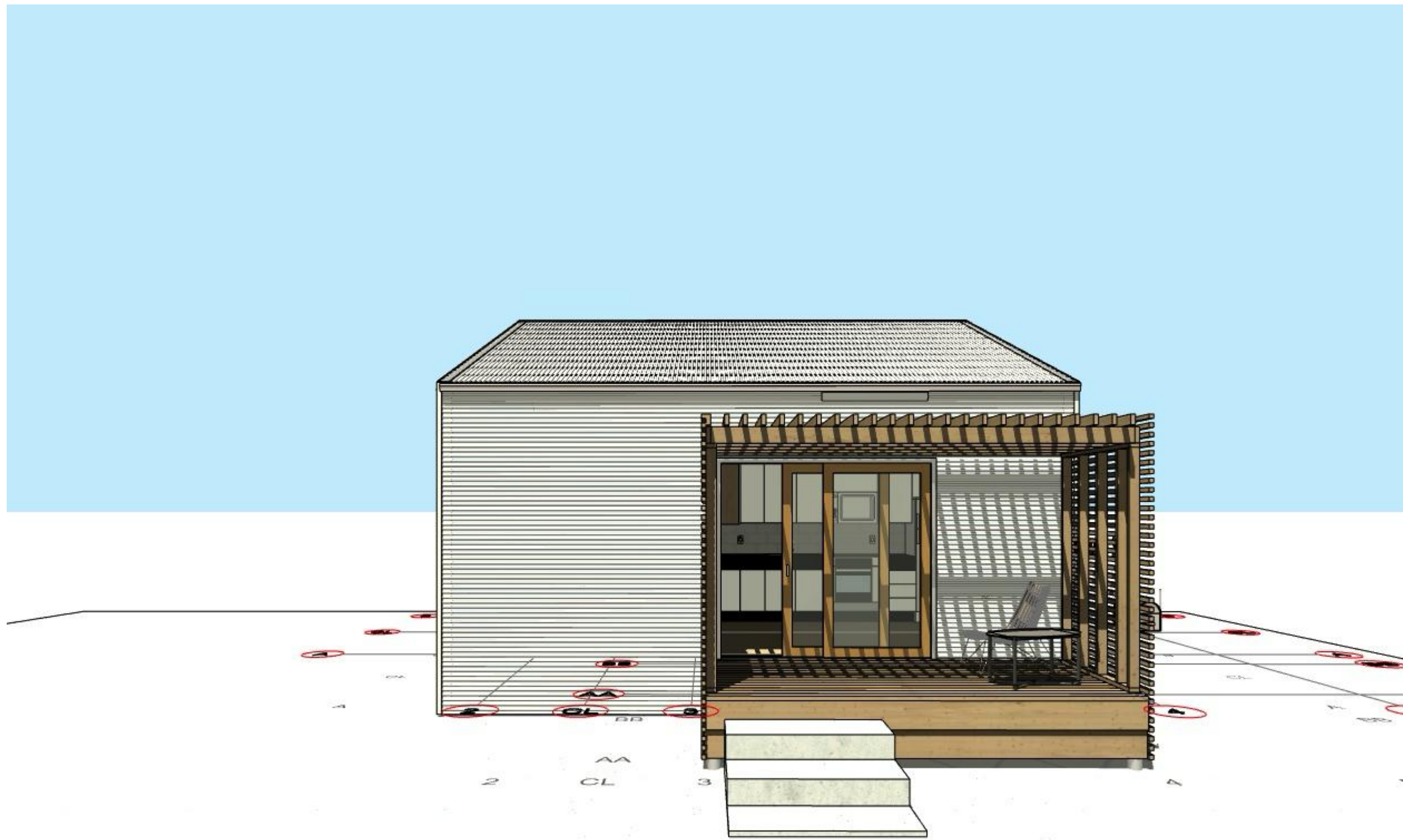
A8.01



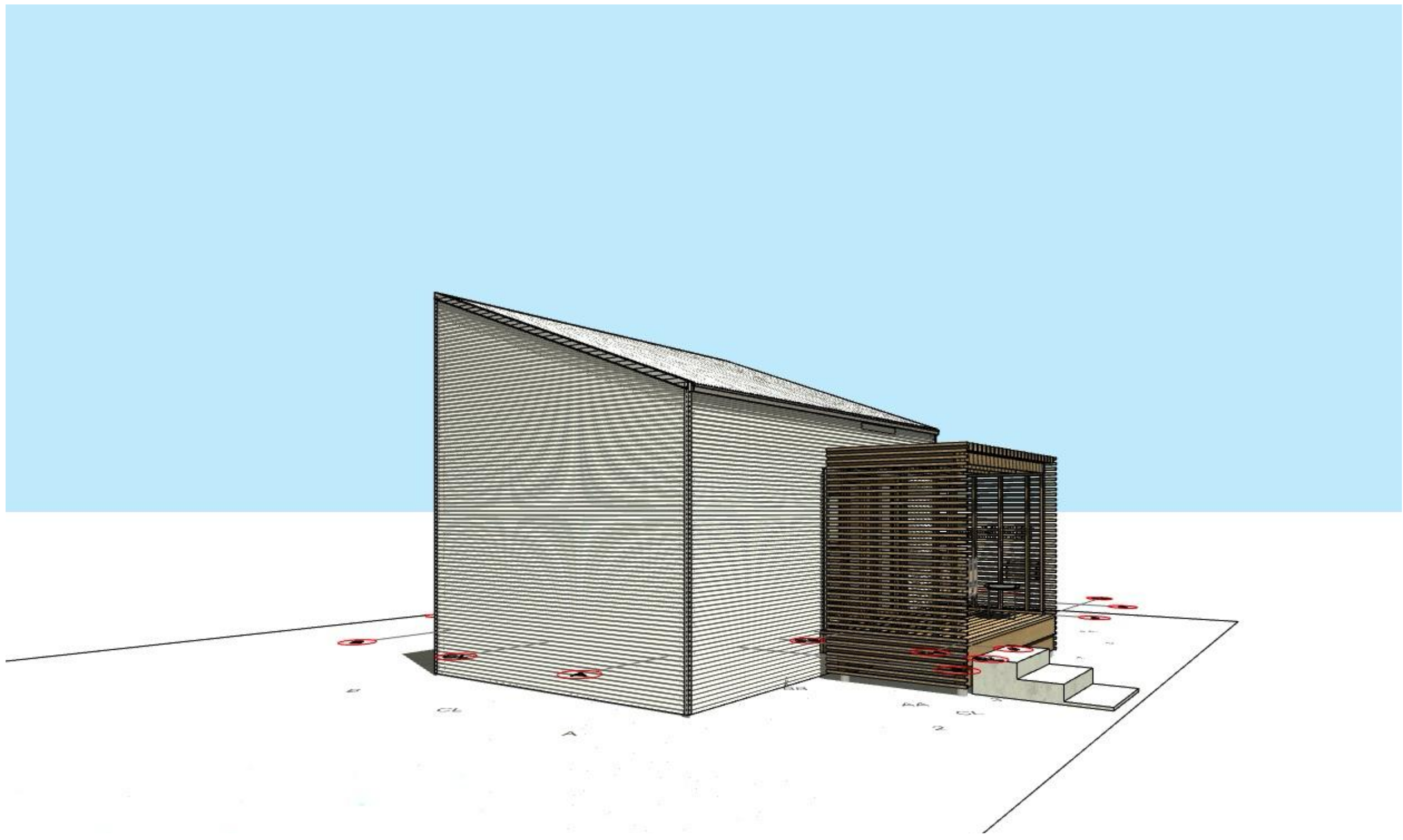
1 Camera
NOT TO SCALE



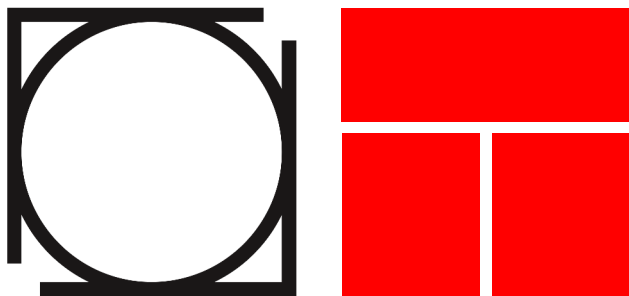
5 Camera
NOT TO SCALE



2 Camera
NOT TO SCALE



3 Camera
NOT TO SCALE



Ontario Association
of Architects
Ordre des architectes
de l'Ontario

thomson **architecture** inc

1017 Dominion Rd. Stanhope, ON K0M 1S0
cell: 705.935.0355 office: 705.935.0355
email: thomsonarch@icloud.com

BeHome Bachelor Shed
project no. 2023.011

Client:
City of Barrie
70 Collier St.
BarrieON L4M 4T5

Revision
01 - WIP
3D Views

A9.01



12 Camera
NOT TO SCALE



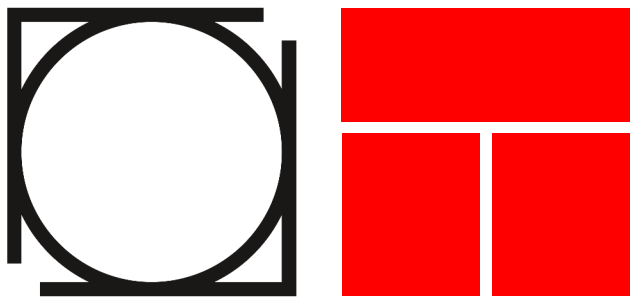
11 Camera
NOT TO SCALE



7 Camera
NOT TO SCALE



6 Camera
NOT TO SCALE



Ontario Association
of Architects
Ordre des architectes
de l'Ontario

thomson **architecture** inc

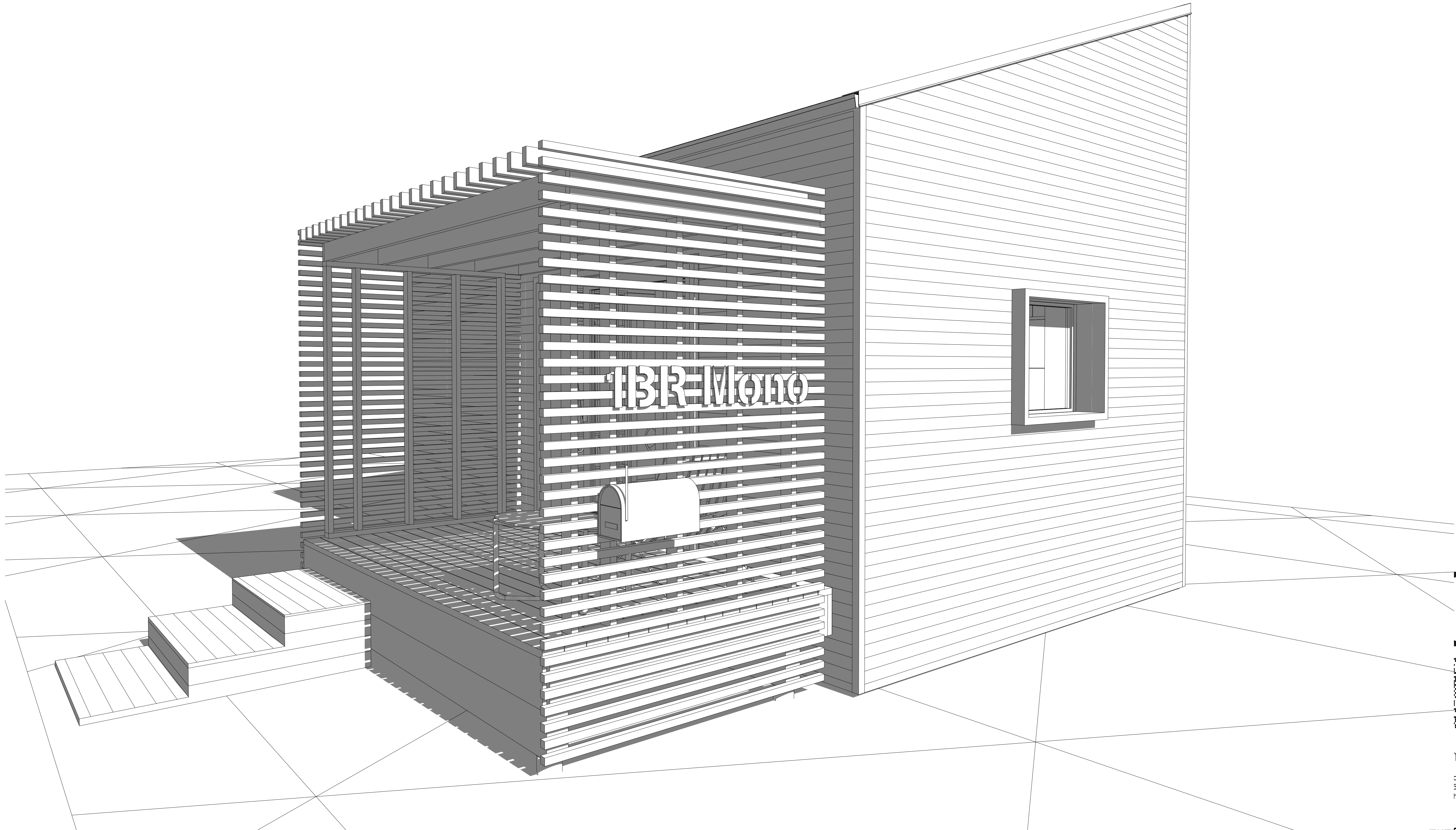
1017 Dominion Rd. Stanhope, ON K0M 1S0
cell: 705.935.0355 office: 705.935.0355
email: thomsonarch@icloud.com

BeHome Bachelor Shed
project no. 2023.011

Client:
City of Barrie
70 Collier St.
BarrieON L4M 4T5

Revision
01 - WIP
3D Views

A9.02



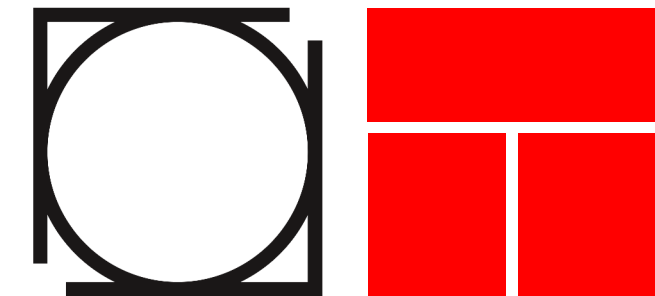
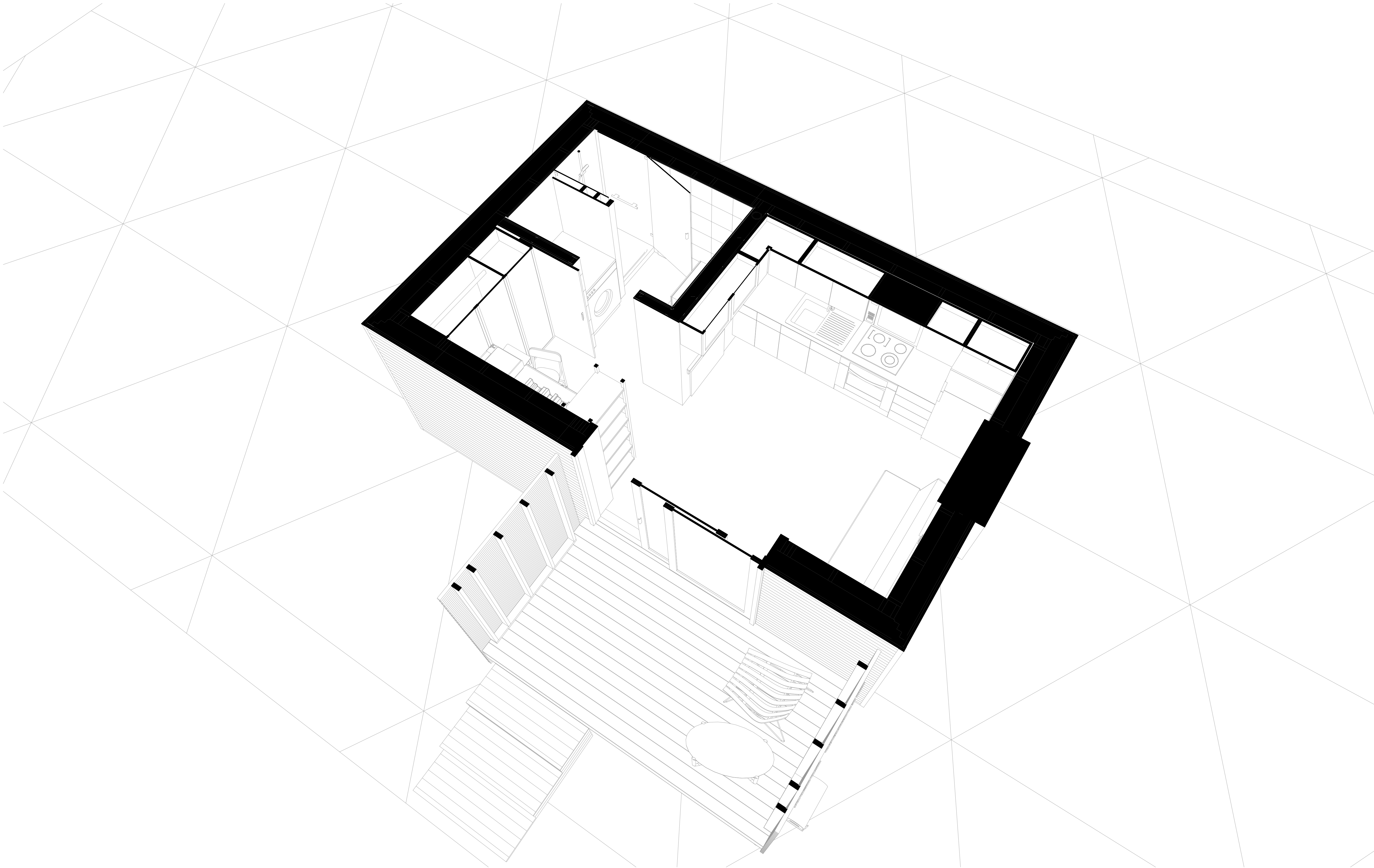
homson **architecture** inc

10 Dominion Rd. Stanhope, ON K0M 1S0
5.935.0355 office: 705.935.0355
homsonarch@icloud.com

Benome Bachelor Shed
project no. 2023.011

Client:
City of Barrie
70 Collier St.
BarrieON L4M 4T5

Revision
01 - WIP
3D Views



Ontario Association
of Architects
Ordre des architectes
de l'Ontario

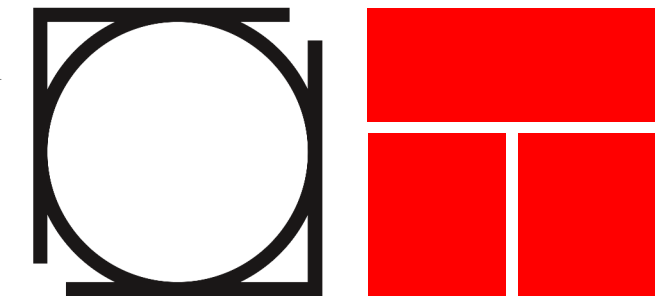
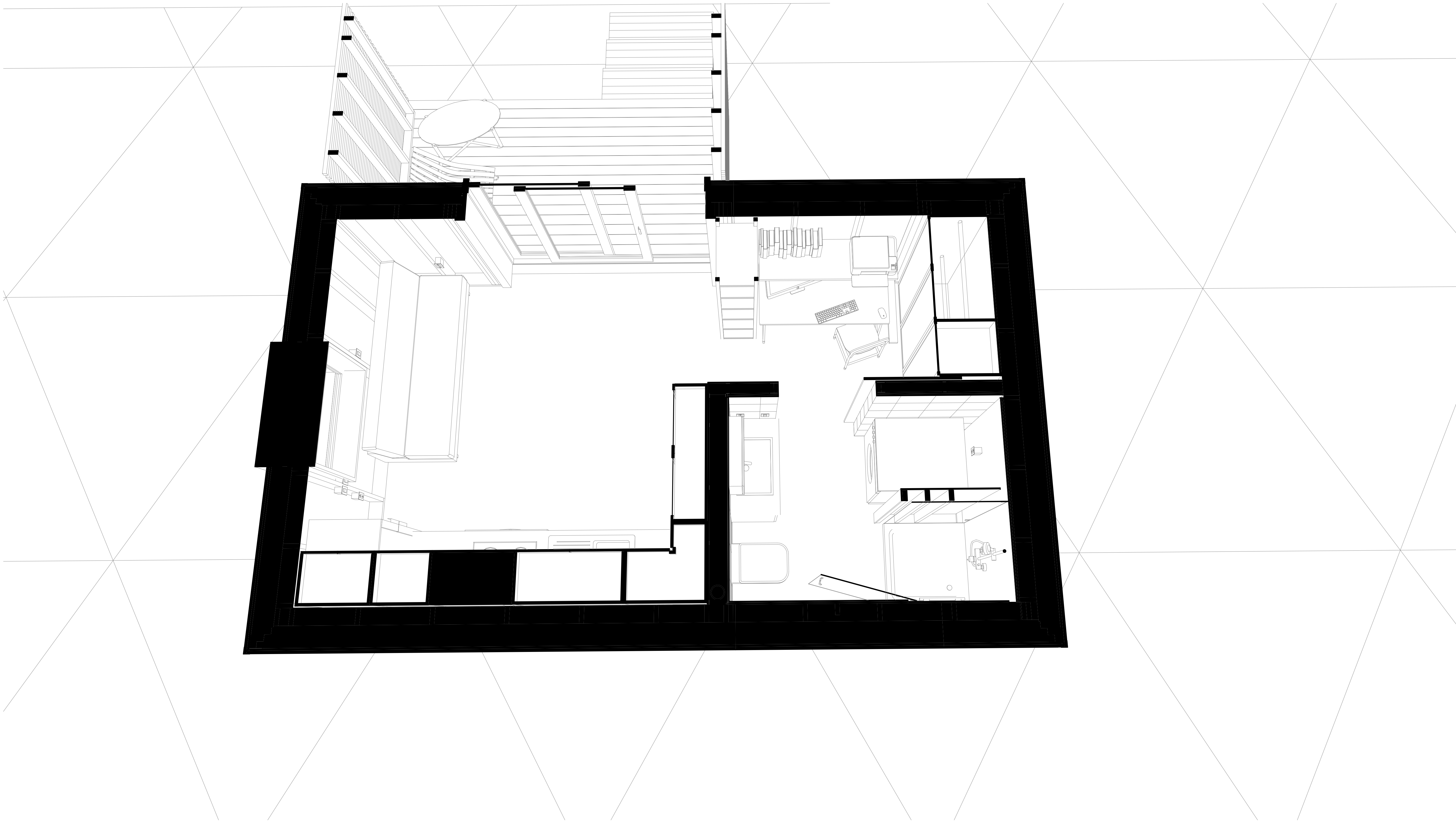
thomson **architecture** inc

1017 Dominion Rd. Stanhope, ON K0M 1S0
cell: 705.935.0355 office: 705.935.0355
email: thomsonarch@icloud.com

BeHome Bachelor Shed
project no. 2023.011

Client:
City of Barrie
70 Collier St.
BarrieON L4M 4T5

Revision
01 - WIP
3D Views



Ontario Association
of Architects
Ordre des architectes
de l'Ontario

thomson **architecture** inc

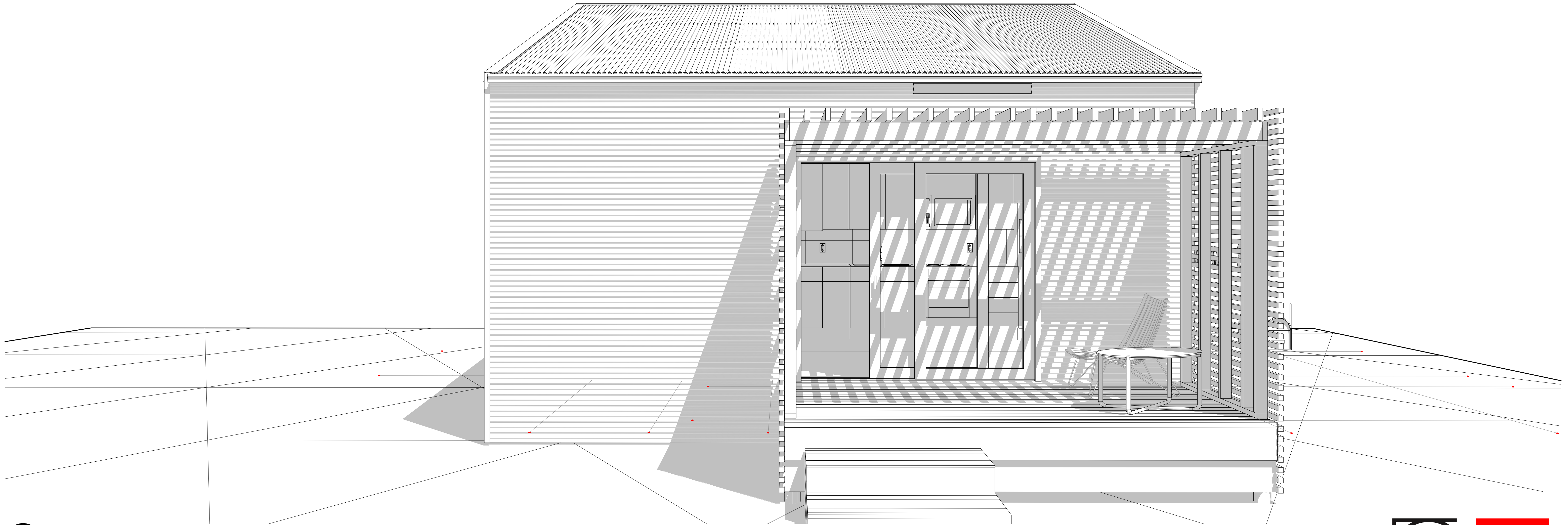
1017 Dominion Rd. Stanhope, ON K0M 1S0
cell: 705.935.0355 office: 705.935.0355
email: thomsonarch@icloud.com

BeHome Bachelor Shed
project no. 2023.011

Client:
City of Barrie
70 Collier St.
BarrieON L4M 4T5

Revision
01 - WIP
3D Views

A9.05



1
A9.06

House Main Floor Plan
Scale: 1:29.91



Ontario Association
of Architects
Ordre des architectes
de l'Ontario

thomson **architecture** inc

1017 Dominion Rd. Stanhope, ON K0M 1S0
cell: 705.935.0355 office: 705.935.0355
email: thomsonarch@icloud.com

BeHome Bachelor Shed
project no. 2023.011

Client:
City of Barrie
70 Collier St.
BarrieON L4M 4T5

Revision
01 - WIP
3D Views

A9.06

Barrie Single DADU

Barrie, Ontario

PROJECT NO. 2025-12

Designed & Drafted by:



Mechanical Sheet List	
M000	Specifications
M001	Specifications
M002	Specifications
M003	Specifications
M004	Specifications
M100	Plumbing Drawings
M301	HVAC Drawings
M302	HVAC Drawings

General Notes

This drawing is the property of Delta-T Designs Inc. and is to be reproduced without permission.

The contractor shall verify all dimensions on site and repo discrepancies to Delta-T Designs Inc. once discovered an prior to proceeding with the work.

All changes shall be approved by Delta-T Designs Inc. pri executions.

Under no circumstances shall the contractor proceed in uncertainty.

This drawing expresses the intent of the designer only, ar the responsibility of the contractor to verify all site conditic prior to providing aquote, and/or commencing work.

If there is an inconsistency between what is drawn, and w site conditions allow, it is the responsibility of the installing contractor to notify the designer prior to proceeding. Delta- Designs Inc shall not be held liable for any issues that ma arise due to the contractor not requesting clarification beforehand.

Drawings are scaled for Arch D - 24x36

Designer Seal

P.Eng Seal (If Required)

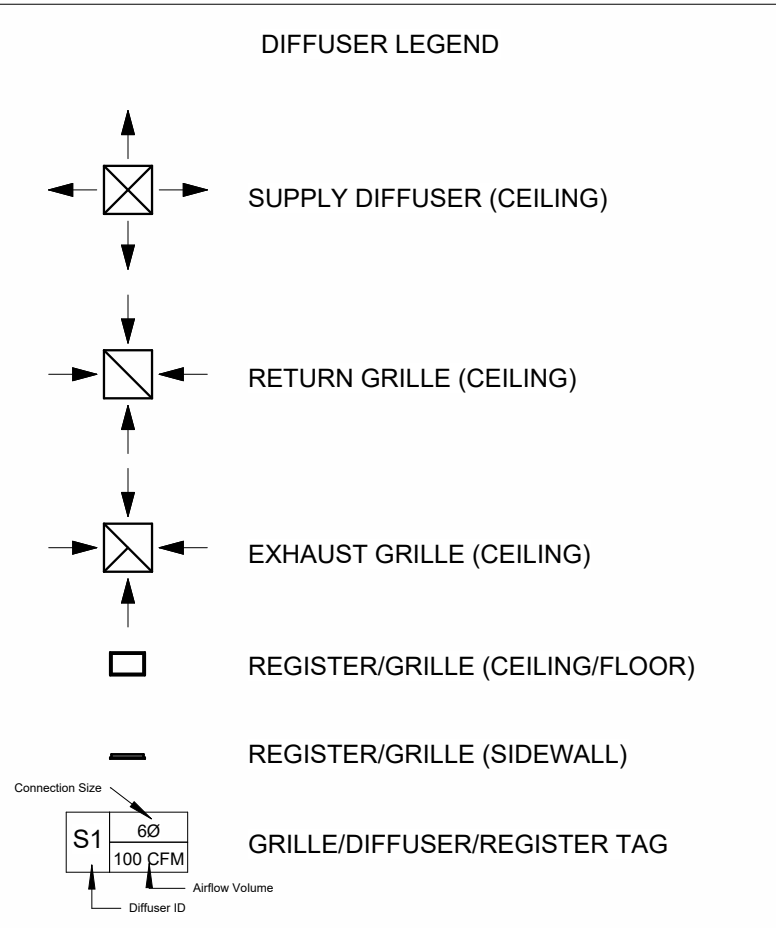
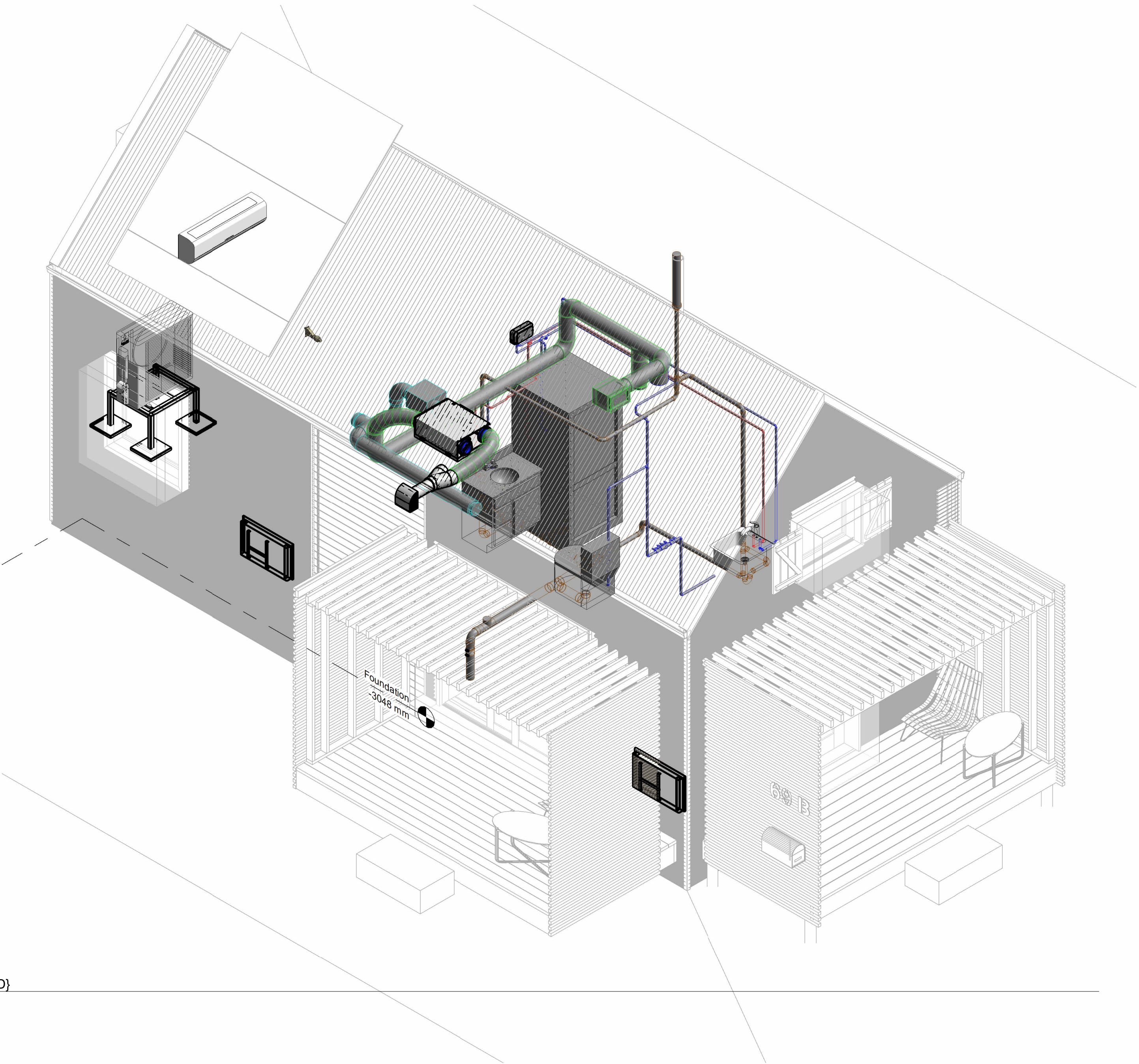
P.Eng Contact Info (If Required)

Revision Schedule

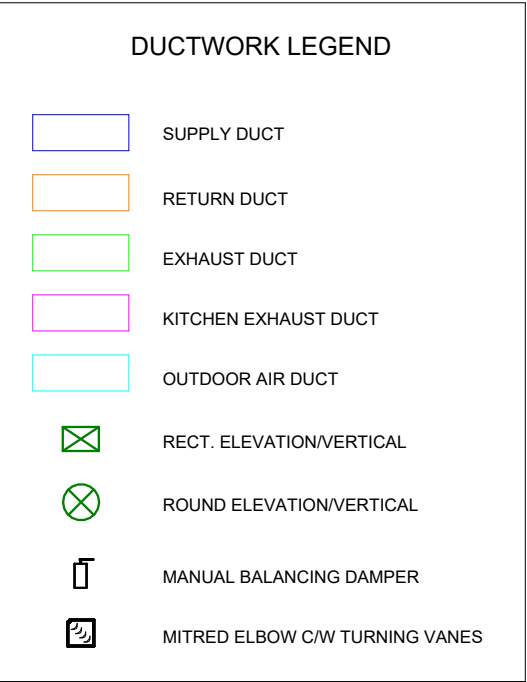
Revision Number	Revision Description	Revis Dat
1	Issued for Coordination	May 15 2025
2	Updated for Coordination	June 1 2025
3	WIP	June 1 2025

PROJECT ABBREVIATIONS

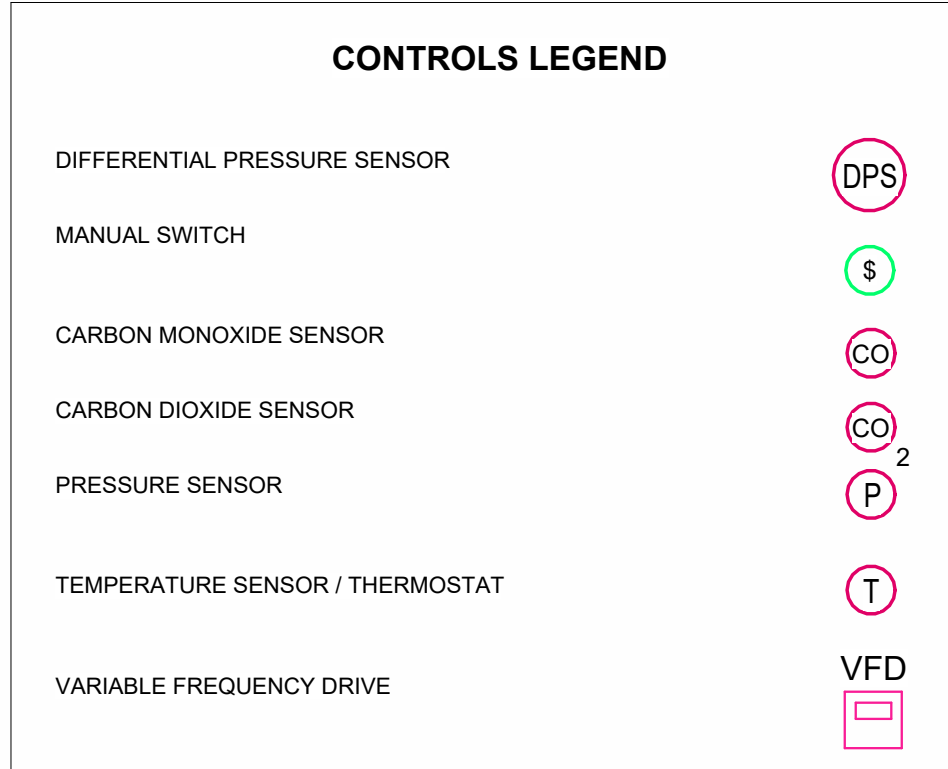
AFF	ABOVE FINISHED FLOOR	MAX	MAXIMUM
AGT	AVERAGE GLYCOL TEMPERATURE	MBH	THOUSAND BTU's PER HOUR
AHAP	AS HIGH AS POSSIBLE	MIN	MINIMUM
AHU	AIR HANDLING UNIT	MISC	MISCELLANEOUS
APPROX	APPROXIMATE	NC	NORMALLY CLOSED
AS	AIR SEPARATOR	NO	NORMALLY OPEN
BFP	BACKFLOW PREVENTOR	NO.	NUMBER
CA	COMPRESSED AIR	NPCW	NON POTABLE COLD WATER
CFM	CUBIC FEET PER MINUTE	O2	OXYGEN
CGR	CHILLED GLYCOL RETURN	OA	OUTSIDE AIR
CGS	CHILLED GLYCOL SUPPLY	OC	ON CENTER
CIRC	CIRCULATION	OED	OPEN ENDED DUCT
CH	CHILLER	ORD	OVERFLOW ROOF DRAIN
CO	CARBON MONOXIDE	ORL	OVERFLOW RAIN LEADER
CO2	CARBON DIOXIDE	OSA	OUTSIDE AIR SUPPLY
CONT	CONTINUATION, CONTINUED	P	PUMP
CP	CIRCULATING PUMP	PCR	PUMPED CONDENSATE RETURN
CTE	CONNECT TO EXISTING	PD	PRESSURE DROP
CU	COPPER	PDI	PLUMBING & DRAINAGE INSTITUTE
CW	COLD WATER	PG	PROPYLENE GLYCOL
C/W	COMPLETE WITH	PHC	PRE HEAT COIL
CWR	CHILLED WATER RETURN	POC	POINT OF CONNECTION
CWS	CHILLED WATER SUPPLY	PSIG	POUNDS PER SQUARE INCH GAUGE
(D)	DEMOLISH	PSI	POUNDS PER SQUARE INCH
DCVA	DUAL CHECK VALVE ASSEMBLY	PW	PUMPED WASTE
DDC	DIRECT DIGITAL CONTROLS	RA	RETURN AIR
DEMO	DEMOLISH	RCP	RADIANT CEILING PANEL
Ø / DIA	DIAMETER	RD	ROOF DRAIN
DN	DOWN	RECIRC	RECIRCULATION
DX	DIRECT EXPANSION	RFL	REFRIGERANT LIQUID
(E)	EXISTING	RFM	RADIANT FLOOR MANIFOLD
EA	EXHAUST AIR	RFS	REFRIGERANT SUCTION
EBB	ELECTRIC BASEBOARD	RHC	REHEAT HEATING COIL
EF	EXHAUST FAN	RL	RAINLEADER
EGT	ENTERING GLYCOL TEMPERATURE	RPBP	REDUCED PRESSURE ZONE BACKFLOW PREVENTER
ENT	ENTERING	RTU	ROOF TOP UNIT
ET	EXPANSION TANK	RV	REFRIGERANT VAPOR
EUH	ELECTRIC UNIT HEATER	RWL	RAIN WATER LEADER
EWT	ENTERING WATER TEMPERATURE	RZ	RADIANT ZONE
ERV	ENERGY RECOVERY VENTILATOR	SA	SUPPLY AIR
FCO	FLOOR CLEANOUT	SANI	SANITARY PIPING
FCU	FAN COIL UNIT	STORM	STORM PIPING
FD	FIRE DAMPER	SCH	SCHEDULE
FD	FLOOR DRAIN	SD	STORM DRAIN
FE	IRON	SF	SQUARE FEET
FM	FORCED MAIN	SF	SUPPLY FAN
FT	FEET	SGR	SNOWMELT GLYCOL RETURN
FT	FINNED TUBE	SGS	SNOWMELT GLYCOL SUPPLY
FSD	FIRE SMOKE DAMPER	SH	STEAM HUMIDIFIER
GAL	GALLONS	SMZ	SNOWMELT ZONE
GALV	GALVANIZED	SP	STATIC PRESSURE
GI	GREASE INTERCEPTOR	SS	STAINLESS STEEL
GMT	GLYCOL MAKE-UP TANK	TA	TRANSFER AIR
GPM	GALLONS PER MINUTE	TEMP	TEMPERATURE
HB	HOSE BIBB	TDH	TOTAL DEVELOPED HEAD
HC	HEATING COIL	TSP	TRAP SEAL PRIMER
HGR	HEATING GLYCOL RETURN	TYP	TYPICAL
HGS	HEATING GLYCOL SUPPLY	UH	UNIT HEATER
HRV	HEAT RECOVERY VENTILATOR	UL	UNDERWRITER'S LABORATORY
HW	HOT WATER	UON	UNLESS OTHERWISE NOTED
HWC	HOT WATER CIRCULATION	UPC	UNIFORM PLUMBING CODE
HWR	HEATING WATER RETURN	VAV	VARIABLE AIR VOLUME
HWS	HEATING WATER SUPPLY	VFD	VARIABLE FREQUENCY DRIVE
HX	HEAT EXCHANGER	VTR	VENT THROUGH ROOF
IBC	INTERNATIONAL BUILDING CODE	V	VENT
ID	INSIDE DIAMETER	W	WASTE
IFC	INTERNATIONAL FIRE CODE	W/	WITH
IFGC	INTERNATIONAL FUEL GAS CODE	WC	WATER CLOSET
IMC	INTERNATIONAL MECHANICAL CODE	W.C.	WATER COLUMN
IN	INCHES	WCO	WALL CLEANOUT
LAV	LAVATORY	WH	WATER HEATER
LF	LINEAR FEET	WHA	WATER HAMMER ARRESTOR
LGT	LEAVING GLYCOL TEMP	WPD	WATER PRESSURE DROP
LHGR	LOW TEMP HEATING GLYCOL RETURN	WRT	WITH RESPECT TO
LHGS	LOW TEMP HEATING GLYCOL SUPPLY	YCO	YARD CLEANOUT
LHWR	LOW TEMP HEATING WATER RETURN		
LHWS	LOW TEMP HEATING WATER SUPPLY		
LVG	LEAVING		
LWT	LEAVING WATER TEMPERATURE		



Diffuser Legend
NTS



Ductwork Legend
NTS



Controls Legend
NTS



Delta-T Designs Inc.
16 Winstar Rd Unit 4
Oro-Medonte, Ontario
L0L 2L0

705.791.9000
niss@deltatdesigns.ca

Client Name

TBD

Project Number

2025-12

Project Name & Address

Barrie Single Dedicated Accessory
Dwelling Unit

Barrie, Ontario

Sheet Name

Cover Sheet

Drawn By

Al

Reviewed By

Che

Sheet Number


G01

pec 1
1/16" = 1'-0"

DIVISION 01 – GENERAL REQUIREMENTS	
SECTION 013000	
ADMINISTRATIVE REQUIREMENTS	
PART 1 GENERAL	
1.1	SECTION INCLUDES
1	General administrative requirements.
2	Coordination Drawings.
3	Submittals for review, information, and project closeout.
4	Number of copies of submittals.
5	Requests for Information (RFI) procedures.
6	Submittal procedures.
1.2	GENERAL ADMINISTRATIVE REQUIREMENTS
1	Comply with requirements of Section 017000 - Execution and Closeout Requirements for coordination of execution of administrative tasks with timing of construction activities.
2	Make the following types of submittals to Consultant:
1	Requests for Information (RFI).
2	Requests for substitution.
3	Shop Drawings, product data, and samples.
4	Test and inspection reports.
5	Design data.
6	Coordination Drawings.
7	Correction Punch List and Final Correction Punch List for Substantial Performance.
8	Closeout submittals.
PART 2 PRODUCTS - Not Used	
PART 3 EXECUTION	
3.1	COORDINATION DRAWINGS
1	Provide information required by Project Coordinator for preparation of coordination Drawings.
2	Review Drawings prior to submission to Consultant.
3.2	REQUESTS FOR INFORMATION (RFI)
1	Definition: A request seeking one of the following:
1	An interpretation, amplification, or clarification of some requirement of Contract Documents arising from inability to determine from them the exact material, process, or system to be installed, or when the elements of construction are required to occupy the same space (interference); or when an item of work is described differently at more than one place in the Contract Documents.
2	A resolution to an issue which has arisen due to site conditions and affects design intent.
2	Whenever possible, request clarifications at the next appropriate project progress meeting, with response entered into meeting minutes, rendering unnecessary the issuance of a formal RFI.
3	Preparation: Prepare an RFI immediately upon discovery of a need for interpretation of the Contract Documents. Failure to submit a RFI in a timely manner is not a legitimate cause for claiming additional costs or delays in execution of the work.
1	Prepare a separate RFI for each specific item.
1	Review, coordinate, and comment on requests originating with subcontractors and/or materials suppliers.
2	Do not forward requests which solely require internal coordination between subcontractors.
4	Reason for the RFI: Prior to initiation of an RFI, carefully study all Contract Documents to confirm that information sufficient for their interpretation is definitely not included.
1	Unacceptable Uses for RFIs: Do not use RFIs to request the following:
1	Approval of submittals (use procedures specified elsewhere in this section).
2	Improper RFIs: Requests not prepared in compliance with requirements of this section, and/or missing key information required to render an actionable response. They will be returned without a response, with an explanatory notation.
3.3	SUBMITTALS FOR REVIEW
1	When the following are specified in individual sections, submit them for review:
1	Product data.
2	Shop Drawings.
2	Submit to Consultant for review for the limited purpose of checking for compliance with information given and the design concept expressed in the Contract Documents.
3	After review, provide copies and distribute in accordance with SUBMITTAL PROCEDURES article below 017800 - Closeout Submittals.
3.4	SUBMITTALS FOR INFORMATION
1	When the following are specified in individual sections, submit them for information:
1	Design data.
2	Certificates.
3	Test reports.
4	Inspection reports.
5	Manufacturer's instructions.
6	Manufacturer's site reports.
7	Other types indicated.
2	Submit for Consultant's knowledge as contract administrator or for Owner.
3.5	SUBMITTALS FOR PROJECT CLOSEOUT
1	Submit Correction Punch List for Substantial Performance.
2	Submit Final Correction Punch List for Substantial Performance.
3	When the following are specified in individual sections, submit them at project closeout in compliance with requirements of Section 017800 - Closeout Submittals:
1	Project record documents.
2	Operation and maintenance data.
3	Warranties.
4	Bonds.
5	Other types as indicated.
4	Submit for Owner's benefit during and after project completion.
3.6	NUMBER OF COPIES OF SUBMITTALS
1	Digital Documents: Submit one digital copy in PDF format; a digitally-marked up file will be returned. Create PDFs at native size and right-side up; illegible files will be rejected.
3.7	SUBMITTAL PROCEDURES
1	General Requirements:
1	Use a single transmittal for related items.
2	Submit separate packages of submittals for review and submittals for information, when included in the same specification section.
3	Sequentially identify each item. For revised submittals use original number and a sequential numerical suffix.
4	Identify variations from Contract Documents and product or system limitations that may be detrimental to successful performance of the completed work.
5	Distribute revised submittals. Instruct parties to promptly report inability to comply with requirements.
2	Product Data Procedures:
1	Submit only information required by individual specification sections.
2	Collect required information into a single submittal.
3	Submit concurrently with related shop drawing submittal.
4	Do not submit (Material) Safety Data Sheets for materials or products.
3	Shop Drawing Procedures:
1	Prepare accurate, drawn-to-scale, original shop drawing documentation by interpreting the Contract Documents and coordinating related work.
2	Generic, non-project-specific information submitted as Shop Drawings do not meet the requirements for Shop Drawings.
4	Samples Procedures:
1	Transmit related items together as single package.
2	Identify each item to allow review for applicability in relation to Shop Drawings showing installation locations.
3.8	SUBMITTAL REVIEW
1	Submittals for Review: Consultant will review each submittal, and approve, or take other appropriate action.
2	Submittals for Information: Consultant
3	Consultant's actions will be reflected by marking each returned submittal using virtual stamp on digital submittals.
4	Consultant's and consultant's actions on items submitted for review:
1	Authorizing purchasing, fabrication, delivery, and installation:
1	In General Conformance with Design: Indicates that submittal has no notes, marks or changes; work affected by submittal can proceed.
2	In General Conformance with Design as Noted: Indicates that submittal has notes, marks or changes that do not affect the submittal review process; work affected by submittal can proceed without resubmission.
2	Not Authorizing fabrication, delivery, and installation:
1	Revise and Resubmit: Indicates that there is an error or concern within the submittal of a significant nature; work affected by the submittal cannot proceed and requires resubmission except as follows:
1	Resubmit revised item, with review notations acknowledged and incorporated.
END OF SECTION 013000	
SECTION 014100	
REGULATORY REQUIREMENTS	
PART 1 GENERAL	
1.1	SUMMARY
1	This Section references to laws, by laws, ordinances, rules, regulations, codes, orders of Authority Having Jurisdiction, and other legally enforceable requirements applicable to Work and that are, or become, in force during performance of Work.
1.2	SUMMARY OF GOVERNING BUILDING CODES AND STANDARDS
1	OBC - Ontario Building Code (Regulation 163/24); 2024.
1.3	REFERENCES TO REGULATORY REQUIREMENTS
1	Perform Work in accordance with (the referenced Building Code) including amendments up to closing date; and other codes of provincial or local application provided that in case of conflict or discrepancy, the more stringent requirements will prevail.
2	Specific design and performance requirements listed in Specifications or indicated on Drawings may exceed minimum requirements established by referenced Building Code; these requirements will govern over the minimum requirements listed in Building Code and will meet or exceed the requirements of the:
1	Contract Documents;

2. Specified standards and referenced documents.	
PART 2 PRODUCTS - NOT USED	
PART 3 EXECUTION - NOT USED	
END OF SECTION 014100	
SECTION 014216	
DEFINITIONS	
PART 1 GENERAL	
1.1	SUMMARY
1	This section supplements the definitions contained in the General Conditions.
2	Other definitions are included in individual specification sections.
1.2	DEFINITIONS
1	Supply: To procure, deliver, unload, and inspect for damage.
2	Install: To inspect, assemble, erect, apply, place, finish, cure, protect, clean, start up, and make ready for use.
3	Product: Material, machinery, components, equipment, fixtures, and systems forming the work result. Not materials or equipment used for preparation, fabrication, conveying, or erection and not incorporated into the work result. Products may be new, never before used, or re-used materials or equipment.
4	Provide: To supply and install.
PART 2 PRODUCTS - NOT USED	
PART 3 EXECUTION - NOT USED	
END OF SECTION 014216	
SECTION 017800	
CLOSEOUT SUBMITTALS	
PART 1 GENERAL	
1.1	SECTION INCLUDES
1	Project Record Documents.
2	Operation and Maintenance Data.
3	Warranties and Bonds.
1.2	RELATED REQUIREMENTS
1	See Section 013000 - Administrative Requirements, for submittal procedures.
2	Individual Product Sections: Specific requirements for operation and maintenance data.
3	Individual Product Sections: Warranties required for specific products or Work.
1.3	SUBMITTALS
1	See Section 013000 - Administrative Requirements, for submittal procedures.
2	Project Record Documents: Submit documents to Owner & Consultant.
3	Operation and Maintenance Data:
1	Submit two copies of preliminary draft or proposed formats and outlines of contents before start of Work. Consultant will review draft and return one copy with comments.
2	For equipment or component parts of equipment put into service during construction and operated by Owner, submit completed documents within ten days after acceptance.
3	Submit one copy of completed documents 15 days prior to final inspection. This copy will be reviewed and returned after final inspection, with Consultant comments. Revise content of all document sets as required prior to final submission.
4	Submit two sets of revised final documents in final form within 10 days after final inspection.
4	Warranties and Bonds:
1	For equipment or component parts of equipment put into service during construction with Owner's permission, submit documents within 10 days after acceptance.
2	Make other submittals within 10 days after Date of Substantial Performance, prior to final Application for Payment.
3	For items of Work for which acceptance is delayed beyond Date of Substantial Performance, submit within 10 days after acceptance, listing the date of acceptance as the beginning of the warranty period.
PART 2 PRODUCTS - Not Used	
PART 3 EXECUTION	
3.1	PROJECT RECORD DOCUMENTS
1	Maintain on site one set of the following record documents; record actual revisions to the Work:
1	Drawings.
2	Specifications.
3	Addenda.
4	Change Orders and other modifications to the Contract.
5	Reviewed Shop Drawings, product data, and samples.
6	Manufacturer's instruction for assembly, installation, and adjusting.
2	Ensure entries are complete and accurate, enabling future reference by Owner.
3	Store record documents separate from documents used for construction.
4	Record information concurrent with construction progress.
5	Specifications: Legibly mark and record at each product section description of actual products installed, including the following:
1	Manufacturer's name and product model and number.
2	Product substitutions or alternates utilized.
3	Changes made by Addenda and modifications.
6	As-Built Drawings: Drawings prepared and updated by the contractor throughout the Work, indicating a compilation of construction changes indicated in the original Contract Documents. Legibly mark each item to record actual construction including:
1	Site changes of dimension and detail.
2	Details not on original Contract Drawings.
3.2	OPERATION AND MAINTENANCE DATA
1	Product Data: Mark each sheet to clearly identify specific products and component parts, and data applicable to installation. Delete inapplicable information.
2	Drawings: Supplement product data to illustrate relations of component parts of equipment and systems, to show control and flow diagrams. Do not use Project Record Documents as maintenance Drawings.
3	Typed Text: As required to supplement product data. Provide logical sequence of instructions for each procedure, incorporating manufacturer's instructions.
3.3	OPERATION AND MAINTENANCE DATA FOR EQUIPMENT AND SYSTEMS
1	For Each Item of Equipment and Each System:
1	Description of unit or system, and component parts.
2	Identify function, normal operating characteristics, and limiting conditions.
3	Include performance curves, with engineering data and tests.
4	Complete nomenclature and model number of replaceable parts.
2	Where additional instructions are required, beyond the manufacturer's standard printed instructions, have instructions prepared by personnel experienced in the operation and maintenance of the specific products.
3	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.
4	Maintenance Requirements: Include routine procedures and guide for preventative maintenance and trouble shooting; disassembly, repair, and reassembly instructions; and alignment, adjusting, balancing, and checking instructions.
5	Provide servicing and lubrication schedule, and list of lubricants required.
6	Include manufacturer's printed operation and maintenance instructions.
7	Include sequence of operation by controls manufacturer.
8	Provide original manufacturer's parts list, illustrations, assembly Drawings, and diagrams required for maintenance.
9	Provide control diagrams by controls manufacturer as installed.
10	Provide charts of valve tag numbers, with location and function of each valve, keyed to flow and control diagrams.
11	Include test and balancing reports.
12	Additional Requirements: As specified in individual product specification sections.
3.4	ASSEMBLY OF OPERATION AND MAINTENANCE MANUALS
1	Assemble operation and maintenance data into durable manuals for Owner's personnel use, with data arranged in the same sequence as, and identified by, the specification sections.
2	Where systems involve more than one specification section, provide separate tabbed divider for each system.
3	Binders: Commercial quality, 216 by 280 mm (8-1/2 by 11 inch) three D side ring binders with durable plastic covers; 50 mm (2 inch) maximum ring size. When multiple binders are used, correlate data into related consistent groupings.
4	Cover: Identify each binder with typed or printed title OPERATION AND MAINTENANCE INSTRUCTIONS; identify title of Project; identify subject matter of contents.
5	Tables of Contents: List every item separated by a divider, using the same identification as on the divider tab; where multiple volumes are required, include all volumes Tables of Contents in each volume, with the current volume clearly identified.
6	Dividers: Provide tabbed dividers for each separate product and system; identify the contents on the divider tab; immediately following the divider tab include a description of product and major component parts of equipment.
7	Text: Manufacturer's printed data, or typewritten data on 20 pound paper.
8	Drawings: Provide with reinforced punched binder tab. Bind in with text; fold larger Drawings to size of text pages.
3.5	WARRANTIES AND BONDS
1	Obtain warranties and bonds, executed in duplicate by responsible Subcontractors, suppliers, and manufacturers, within 10 days after completion of the applicable item of work. Except for items put into use with Owner's permission, leave date of beginning of time of warranty until Date of Substantial Performance is determined.
2	Verify that documents are in proper form, contain full information, and are notarized.
3	Co-execute submittals when required.
4	Retain warranties and bonds until time specified for submittal.
END OF SECTION 017800	
SECTION 017900	
DEMONSTRATION AND TRAINING	
PART 1 GENERAL	
1.1	SUMMARY
1	Demonstration of products and systems where indicated in specific specification sections.

2	Training of Owner personnel in operation and maintenance is required for:
1	HVAC systems and equipment.
2	Plumbing equipment.
1.2	RELATED REQUIREMENTS
1	Section 019113 - General Commissioning Requirements: Additional requirements applicable to demonstration and training.
1.3	SUBMITTALS
1	See Section 013000 - Administrative Requirements, for submittal procedures.
1.4	QUALITY ASSURANCE
1	Instructor Qualifications: Familiar with design, operation, maintenance and troubleshooting of the relevant products and systems.
2	Provide as instructors the most qualified trainer of those contractors and/or installers who actually supplied and installed the systems and equipment.
2	Where a single person is not familiar with all aspects, provide specialists with necessary qualifications.
PART 2 PRODUCTS - NOT USED	
PART 3 EXECUTION	
3.1	DEMONSTRATION - GENERAL
1	Demonstration conducted during system start-up do not qualify as demonstrations for the purposes of this section, unless approved in advance by Owner.
2	Operating Equipment and Systems: Demonstrate operation in all modes, including start-up, shut-down, seasonal changeover, emergency conditions, and troubleshooting, and maintenance procedures, including scheduled and preventive maintenance.
1	Perform demonstrations not less than two weeks prior to Substantial Performance.
2	For equipment or systems requiring seasonal operation, perform demonstration for other season within six months.
3	Non-Operating Products: Demonstrate cleaning, scheduled and preventive maintenance, and repair procedures.
1	Perform demonstrations not less than two weeks prior to Substantial Performance.
END OF SECTION 017900	
DIVISION 22 - PLUMBING	
SECTION 220529	
HANGERS AND SUPPORTS FOR PLUMBING PIPING AND EQUIPMENT	
PART 1 GENERAL	
1.1	SECTION INCLUDES
1.2	REFERENCE STANDARDS
1	ASTM A123/A123M - Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products; 2024.
2	ASTM A153/A153M - Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware; 2016a.
3	ASTM B633 - Standard Specification for Electroplated Coatings of Zinc on Iron and Steel; 2019.
4	MFMA-4 - Metal Framing Standards Publication; 2004.
PART 2 PRODUCTS	
2.1	SUPPORT AND ATTACHMENT COMPONENTS
1	General Requirements:
1	Provide all required hangers, supports, anchors, fasteners, fittings, accessories, and hardware as necessary for the complete installation of plumbing work.
2	Provide products listed, classified, and labeled as suitable for the purpose intended, where applicable.
3	Where support and attachment component types and sizes are not indicated, select in accordance with manufacturer's application criteria as required for the load to be supported. Include consideration for vibration, equipment operation, and shock loads where applicable.
4	Do not use wire, chain, perforated pipe strap, or wood for permanent supports unless specifically indicated or permitted.
5	Steel Components: Use corrosion resistant materials suitable for the environment where installed.
1	Zinc-Plated Steel: Electroplated in accordance with ASTM B633.
2	Galvanized Steel: Hot-dip galvanized after fabrication in accordance with ASTM A123/A123M or ASTM A153/A153M.
2.2	Metal Channel (Strut) Framing Systems:
1	Provide factory-fabricated continuous-slot metal channel (strut) and associated fittings, accessories, and hardware required for site-assembly of supports.
2	Comply with MFMA-4.
3	Hanger Rods: Threaded zinc-plated steel unless otherwise indicated.
1	Minimum Size, Unless Otherwise Indicated or Required:
1	Equipment Supports: 15 mm (1/2 inch) diameter.
2	Piping up to 1 inch (25 mm) nominal: 8 mm (5/16 inch) diameter.
3	Piping larger than 1 inch (25 mm) nominal: 10 mm (3/8 inch) diameter.
4	Anchors and Fasteners:
1	Unless otherwise indicated and where not otherwise restricted, use the anchor and fastener types indicated for the specified applications.
PART 3 EXECUTION	
3.1	INSTALLATION
1	Install products in accordance with manufacturer's instructions.
2	Provide independent support from building structure. Do not provide support from piping, ductwork, conduit, or other systems.
3	Unless specifically indicated or approved by Consultant, do not provide support from suspended ceiling support system or ceiling grid.
4	Unless specifically indicated or approved by Consultant, do not provide support from roof deck.
5	Do not penetrate or otherwise notch or cut structural members without approval of Consultant.
6	Equipment Support and Attachment:
1	Use metal fabricated supports or supports assembled from metal channel (strut) to support equipment as required.
2	Use metal channel (strut) secured to studs to support equipment surface-mounted on hollow and walls when wall strength is not sufficient to resist pull-out.
3	Use metal channel (strut) to support surface-mounted equipment in wet or damp locations to provide space between equipment and mounting surface.
4	Securely fasten floor-mounted equipment. Do not install equipment such that it relies on its own weight for support.
7	Secure fasteners according to manufacturer's recommended torque settings.
8	Remove temporary supports.
END OF SECTION 220529	
SECTION 220553	
IDENTIFICATION FOR PLUMBING PIPING AND EQUIPMENT	
PART 1 GENERAL	
1.1	SECTION INCLUDES
1	Namesplates.
2	Tags.
3	Pipe markers.
PART 2 PRODUCTS	
2.1	IDENTIFICATION APPLICATIONS
1	Piping: Pipe markers.
2	Pumps: Namesplates.
2.2	NAMESPLATES
1	Description: Laminated three-layer plastic with engraved letters.
1	Letter Colour: White.
2	Background Colour: Black.
3	Plastic: Conform to ASTM D709.
2.3	PIPE MARKERS
1	Plastic Pipe Markers: Factory fabricated, flexible, semi-rigid plastic, preformed to fit around pipe or pipe covering; minimum information indicating flow direction arrow and identification of fluid being conveyed.
2	Plastic Tape Pipe Markers: Flexible, vinyl film tape with pressure sensitive adhesive backing and printed markings.
PART 3 EXECUTION	
3.1	PREPARATION
1	Degrease and clean surfaces to receive adhesive for identification materials.
3.2	INSTALLATION
1	Install plastic namesplates with corrosion-resistant mechanical fasteners, or adhesive. Apply with sufficient adhesive to ensure permanent adhesion and seal with clear lacquer.
2	Install plastic tape pipe markers complete around pipe in accordance with manufacturer's instructions.
END OF SECTION 220553	
SECTION 220719	
PLUMBING PIPING INSULATION	
PART 1 GENERAL	
1.1	SECTION INCLUDES
1.2	REFERENCE STANDARDS
1	ASTM C177 - Standard Test Method for Steady-State Heat Flux Measurements and Thermal Transmission Properties by Means of the Guarded-Hot-Plate Apparatus; 2019.
2	ASTM C795 - Standard Specification for Thermal Insulation for Use in Contact with Austenitic Stainless Steel; 2008 (Reapproved 2018).
3	ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials; 2022.
4	ASTM E86/E86M - Standard Test Methods for Gravimetric Determination of Water Vapor Transmission of Materials; 2022.
5	CAN/ULC S102.2 - Method of Test for Surface Burning Characteristics of Flooring, Floor Coverings, and Miscellaneous Materials and Assemblies; 2018.
6	CAN/ULC S702.1 - Standard for Mineral Fibre Thermal Insulation for Buildings, Part 1: Material Specification; 2021.
7	TIAC - Best Practices Guide; Current.
PART 2 PRODUCTS	
2.1	REGULATORY REQUIREMENTS
1	Surface Burning Characteristics: Comply with CAN/ULC S102.2 or ASTM E84 where permitted by Authority Having Jurisdiction for flame-spread rating and smoke developed classification.
2.2	GLASS FIBRE
1	Insulation: CAN/ULC S702.1 and ASTM C795; rigid molded, noncombustible.
1	K _{sf} (R _{sf}) Value: ASTM C177, 0.035 at 24 degrees C (0.24 at 75 degrees F).
2	Maximum Service Temperature: 454 degrees C (850 degrees F).

General Notes		
This drawing is the property of Delta-T Designs Inc. and is to be reproduced without permission.		
The contractor shall verify all dimensions on site and repo discrepancies to Delta-T Designs Inc. once discovered an prior to proceeding with the work.		
All changes shall be approved by Delta-T Designs Inc. pri executions.		
Under no circumstances shall the contractor proceed in uncertainty.		
This drawing expresses the intent of the designer only, ar the responsibility of the contractor to verify all site conditic prior to providing aquote, and/or commencing work.		
If there is an inconsistency between what is drawn, and w site conditions allow, it is the responsibility of the installing contractor to notify the designer prior to proceeding. Delta- Designs Inc shall not be held liable for any issues that ma arise due to the contractor not requesting clarification beforehand.		
Drawings are scaled for Arch D - 24x36		
Designer Seal		P.Eng Seal (If Required)
P.Eng Contact Info (If Required)		
Revision Schedule		
Revision Number	Revision Description	Revis Dat
1	Issued for Coordination	May 15 2025
2	Updated for Coordination	June 1 2025
3	WIP	June 1 2025
		
Delta-T Designs Inc. 16 Winstar Rd Unit 4 Oro-Medonte, Ontario L0L 2L0 705.791.9000 niss@deltatdesigns.ca		
Client Name	TBD	
Project Number	2025-12	
Project Name & Address	Barrie Single Dedicated Accessory Dwelling Unit Barrie, Ontario	
Sheet Name	Specifications	
Drawn By	At	
Reviewed By	Che	
Sheet Number	M000	

3 Maximum Moisture Absorption: 0.2 percent by volume

2 Vapour Barrier Jacket: White Kraft paper with glass fiber yarn, bonded to aluminumized film; moisture vapour transmission when tested in accordance with ASTM E96/TESTM of 0.029 ng/Pa s m (0.02 perm-inches).

PART 3 EXECUTION

3.1 CUTTING

1 Verify that piping has been tested before applying insulation materials.

2 Verify that surfaces are clean and dry, with foreign material removed.

3.2 INSTALLATION

1 Install in accordance with manufacturer's instructions.

2 Install in accordance with TIAAC Best Practices Guide.

3 Exposed Piping: Locate insulation and cover seams in least visible locations.

4 Insulated pipes conveying fluids below ambient temperature: Insulate entire system including fittings, valves, unions, flanges, strainers, flexible connections, pump bodies, and expansion joints.

5 Glass fiber insulated pipes conveying fluids above ambient temperature:

1 Provide vapour barrier jackets, factory-applied or site-applied. Secure with self-sealing longitudinal laps and butt strips with pressure sensitive adhesive. Secure with outside clench expanding staples and vapour barrier mastic.

2 Insulate fittings, joints, and valves with moulded insulation of like material and thickness as adjacent pipe. Finish with glass cloth and vapour barrier adhesive or PVC fitting covers.

6 Exterior Applications: Provide vapour barrier jacket. Insulate fittings, joints, and valves with insulation of like material and thickness as adjoining pipe, and finish with glass mesh reinforced vapour barrier cover. Cover with aluminum jacket in accordance with TIAAC CPF-5 with seams located on bottom side of horizontal piping.

7 Buried Piping: Provide factory fabricated assembly with inner all-purpose service jacket with self-sealing lap, and asphalt impregnated open mesh glass fabric, with 0.025 mm (one mil) thick aluminum foil sandwiched between three layers of bituminous compound, outer surface faced with a polyester film.

8 Heat Traced Piping: Insulate fittings, joints, and valves with insulation of like material, thickness, and finish as adjoining pipe. Size large enough to enclose pipe and heat tracer. Cover with aluminum jacket with seams located on bottom side of horizontal piping.

END OF SECTION 220719

SECTION 221005 PLUMBING PIPING	
PART 1 GENERAL	
1.1 SECTION INCLUDES	
1. System pipe and pipe fittings.	
1. Sanitary sewer.	
2. Domestic water.	
3. Valves.	
2. Specialties:	
1. Flow controls.	
2. Water pressure reducing valves.	
3. Relief valves.	
3. Connections for piping systems.	
1.2 RELATED REQUIREMENTS	
1. Section 08100 - Access Doors and Panels.	
REFERENCE STANDARDS	
1. ANSI Z21.22 - American National Standard for Relief Valves and Automatic Gas Shutoff Devices for Hot Water Supply Systems; 2015.	
2. ASME B16.26 - Cast Copper Alloy Fittings for Flared Copper Tubes; 2024.	
3. ASME B31.9 - Building Services Piping; 2014.	
4. ASME BPVC-IV - Boiler and Pressure Vessel Code, Section IV - Rules for Construction of Heating Boilers; 2023, with Errata (2024).	
5. ASTM B42 - Standard Specification for Seamless Copper Pipe, Standard Sizes; 2020.	
6. ASTM B88 - Standard Specification for Seamless Copper Water Tube; 2020.	
7. ASTM B88M - Standard Specification for Seamless Copper Water Tube (Metric); 2020.	
8. ASTM B811 - Standard Specification for Liquid and Paste Fluxes for Soldering of Copper and Copper Alloy Tube; 2016.	
9. ASTM B828 - Standard Practice for Making Copper Joints by Soldering of Copper and Copper Alloy Tube and Fittings; 2016.	
10. ASTM D2255 - Standard Specification for Solvent Cement for Acrylonitrile-Butadiene-Styrene (ABS) Plastic Pipe and Fittings; 2022.	
11. ASTM D2564 - Standard Specification for Solvent Cements for Poly(Vinyl Chloride) (PVC) Plastic Piping Systems; 2020.	
12. ASTM D2665 - Standard Specification for Poly(Vinyl Chloride) (PVC) Plastic Drain, Waste, and Vent Pipe and Fittings; 2020.	
13. ASTM D2729 - Standard Specification for Poly(Vinyl Chloride) (PVC) Sewer Pipe and Fittings; 2021.	
14. ASTM D2855 - Standard Practice for the Two-Step (Primer & Solvent) Cement Method of Joining Poly (Vinyl Chloride) (PVC) or Chlorinated Poly (Vinyl Chloride) (CPVC) Pipe and Piping Components with Taped Solvents; 2020.	
15. ASTM D3654 - Standard Specification for Type PSM Poly(Vinyl Chloride) (PVC) Sewer Pipe and Fittings; 2021.	
16. ASTM F477 - Standard Specification for Elastomeric Seals (Gaskets) for Joining Plastic Pipe; 2014 (Reapproved 2021).	
17. ASTM F628 - Standard Specification for Acrylonitrile-Butadiene-Styrene (ABS) Schedule 40 Plastic Drain, Waste, and Vent Pipe with a Cellular Core; 2022.	
18. ASTM F376 - Standard Specification for Crosslinked Polyethylene (PEX) Tubing; 2022, with Editorial Revision.	
19. ASTM F377 - Standard Specification for Crosslinked Polyethylene (PEX) Plastic Hot- and Cold-Water Distribution Systems; 2022.	
20. ASTM F1960 - Standard Specification for Cold Expansion Fittings with PEX Reinforcing Rings for Use with Cross-Linked Polyethylene (PEX) and Polyethylene of Raised Temperature (PE-RT) Tubing; 2021.	
21. AWWA C651 - Disinfecting Water Mains; 2014.	
22. AWWA C900 - Polyvinyl Chloride (PVC) Pressure Pipe, 4 in. Through 12 in. (100 mm Through 300 mm), for Water Transmission and Distribution; 2016.	
23. CAN/CSA B35 - Water Pressure Reducing Valves for Domestic Water Supply Systems; 2010 (Reaffirmed 2020).	
24. CAN/CSA B1800 - Thermoplastic Nonpressure Piping Compendium; 2021.	
25. CSA B137 Series - Thermoplastic Pressure Piping Compendium; 2017.	
26. NSF 61 - Drinking Water System Components - Health Effects; 2017.	
27. NSF 372 - Drinking Water System Components - Lead Content; 2020.	
28. PPI TR-4 - PPI Listing of Hydrostatic Design Basis (HDB), Hydrostatic Design Stress (HDS), Strength Design Basis (SDB), Pressure Design Basis (PDB), and Minimum Required Strength (MRS) Ratings For Thermoplastic Piping Materials or Pipe; 2017.	
1.4 QUALITY ASSURANCE	
1. Perform work in accordance with applicable codes.	
2. Comply with ASME B31.9.	
3. Valves: Manufacturer's name and pressure rating marked on valve body	
4. Identify pipe with marking including size, ASTM material classification, ASTM specification, potable water certification, water pressure rating.	

PART 2 PRODUCTS	
2.1	<p>GENERAL REQUIREMENTS</p> <p>1. Possible Water Supply Systems: Provide piping, pipe fittings, and solder and flux (if used), that comply with NSF 61 and NSF 372 for maximum lead content; label pipe and fittings.</p>
2.2	<p>SANITARY SEWER PIPING, BURIED BEYOND 1500 MM (5 FEET) OF BUILDING</p> <p>1. ABS Pipe: ASTM F626.</p> <p>1. Fittings: ABS.</p> <p>2. Joints: Solvent welded with ASTM D2235 cement.</p> <p>2. PVC Pipe: ASTM D3034, DR-35.</p> <p>1. Fittings: PVC.</p> <p>2. Joints: Push-on, using ASTM F477 elastomeric gaskets.</p>
2.3	<p>SANITARY SEWER PIPING, BURIED WITHIN 1500 MM (5 FEET) OF BUILDING</p> <p>1. ABS Pipe: ASTM F626.</p> <p>1. Fittings: ABS.</p> <p>2. Joints: Solvent welded with ASTM D2235 cement.</p> <p>2. PVC Pipe: ASTM D2665 or ASTM D3034.</p> <p>1. Fittings: PVC.</p> <p>2. Joints: Solvent welded, with ASTM D2564 solvent cement.</p>
2.4	<p>SANITARY SEWER PIPING, ABOVE GRADE</p> <p>1. ABS Pipe: ASTM F626.</p> <p>1. Fittings: ABS.</p> <p>2. Joints: Solvent welded with ASTM D2235 cement.</p> <p>2. PVC Pipe: CAN/CSA B1800 or ASTM D2729.</p> <p>1. Fittings: PVC.</p> <p>2. Joints: Solvent welded, with ASTM D2564 solvent cement.</p>
2.5	<p>DOMESTIC WATER PIPING, BURIED BEYOND 1500 MM (5 FEET) OF BUILDING</p> <p>1. Copper Pipe: ASTM B42, annealed.</p> <p>1. Fittings: ASME B16.26, cast bronze.</p> <p>2. Joints: Flared.</p> <p>2. PVC Pipe: AWWA C900 and CSA B137 Series.</p>
2.6	<p>DOMESTIC WATER PIPING, BURIED WITHIN 1500 MM (5 FEET) OF BUILDING</p> <p>1. Copper Pipe: ASTM B42, annealed.</p> <p>1. Fittings: ASME B16.26, cast bronze.</p> <p>2. Joints: Flared.</p> <p>2. Cross-Linked Polyethylene (PEX) Pipe: ASTM F876 or ASTM F877.</p> <p>1. PPI TR-4 Pressure Design Basis:</p> <p>2. Fittings: Brass and copper.</p> <p>3. Fittings: Brass and engineered polymer (EP) ASTM F1960.</p> <p>4. Joints: Mechanical compression fittings.</p> <p>5. Joints: ASTM F1960 cold-expansion fittings.</p>
2.7	<p>DOMESTIC WATER PIPING, ABOVE GRADE</p> <p>1. Copper Tube: ASTM B88 (ASTM B88M), Type K (A), Drawn (H).</p> <p>1. Mechanical Press Sealed Fittings: Double pressed type, NSF 61 and NSF 372 approved or certified, utilizing EPDM, non toxic synthetic rubber sealing elements.</p> <p>2. Cross-Linked Polyethylene (PEX) Pipe: ASTM F876 or ASTM F877.</p>

1 PPI TR-4 Pressure Design Basis:
2 Fittings: Brass and engineered polymer (EP) ASTM F1960.
3 Joints: Mechanical compression fittings.
4 Joints: ASTM F1960 cold-expansion fittings.

2.8 **BALL VALVES**
2.9 **PIPPING SPECIALTIES**

1 Flow Controls:
2 1 Construction: Class 125, Brass or bronze body with union on inlet and outlet, temperature and pressure test plug on inlet and outlet, blowdown/backflush
drain.
3 Calibration: Control flow within 5 percent of selected rating, over operating pressure range of 10 times minimum pressure required for control, maximum
minimum pressure 24 kPa (3.5 psi).
2 Water Pressure Reducing Valves:
3 1 Up to 50 mm (2 inches):
4 1 ANSI/CISA B356, bronze body, stainless steel, and thermoplastic internal parts, fabric reinforced diaphragm, strainer, threaded single union ends.
3 Relief Valves
4 1 Pressure:
5 1 ANSI Z21.22, AGA certified, bronze body, teflon seat, steel stem and springs, automatic, direct pressure actuated.
2 Temperature and Pressure:
3 1 ANSI Z21.22, AGA certified, bronze body, teflon seat, stainless steel stem and springs, automatic, direct pressure actuated, temperature relief
maximum 98.9 degrees C (210 degrees F), capacity ASME BPVC-V certified and labelled.

PART 3 EXECUTION

EXAMINATION

1. Verify that excavations are to required grade, dry, and not over-excavated.

PREPARATION

1. Ream pipe and tube ends. Remove burrs.

2. Remove scale and dirt, on inside and outside, before assembly.

3. Prepare piping connections to equipment with flanges or unions.

INSTALLATION

1. Install in accordance with manufacturer's instructions.

2. Provide non-conducting dielectric compounds wherever joining dissimilar metals.

3. Route piping in orderly manner and maintain gradient. Route parallel and perpendicular to walls.

4. Install piping to maintain headroom, conserve space, and not interfere with use of space.

5. Group piping wherever practical at common elevations.

6. Provide clearance in hangers and from structure and other equipment for installation of insulation and access to valves and fittings.

7. Provide access where valves and fittings are not exposed.

1. Coordinate size and location of access doors with General Contractor.

8. Where pipe support members builded to structure building framing, scrape, brush clean, and apply one coat of zinc rich primer to welding.

9. Provide support for utility meters in accordance with requirements of utility companies.

10. Copper Pipe and Tube: Make soldered joints in accordance with ASTM B828, using specified solder, and flux meeting ASTM B813; in potable water systems use flux also complying with NSF 61 and NSF 372.

11. PVC Pipe: Make solvent-welded joints in accordance with ASTM D2855.

12. Flexible pipes passing through partitions, walls and floors.

APPLICATION

1. Install unions downstream of valves and at equipment or apparatus connections.

2. Install gate valves for shut-off and to isolate equipment, part of systems, or vertical risers.

3. Provide spring loaded check valves on discharge of water pumps.

4. Provide flow controls in water recirculating systems where indicated.

DISINFECTION OF DOMESTIC WATER PIPING SYSTEM

1. Prior to starting work, verify system is complete, flushed and clean.

2. Ensure acidity (pH) of water to be treated is between 7.4 and 7.6 by adding alkali (caustic soda or soda ash) or acid (hydrochloric).

3. Inject disinfectant, free chlorine in liquid, powder, tablet or gas form, throughout system to obtain 50 to 80 mg/L residual.

4. Bleed water from outlets to ensure distribution and test for disinfectant residual at minimum 15 percent of outlets.

5. Maintain disinfectant in system for 24 hours.

6. If final disinfectant residual tests less than 25 mg/L, repeat treatment.

7. Flush disinfectant from system until residual equal to that of incoming water or 1.0 mg/L.

8. Take samples no sooner than 24 hours after flushing, from 10 percent of outlets and from water entry, and analyze in accordance with AWWA C651.

SERVICE CONNECTIONS

1. Provide new sanitary sewer services. Before commencing work check invert elevations required for sewer connections, confirm inverts and ensure that these can be properly connected with slope for drainage and cover to avoid freezing.

2. Provide new water service complete with approved reduced pressure backflow preventer and water meter with by-pass valves, pressure reducing valve, and sand strainer.

END OF SECTION 271005

END OF SECTION 221005

SECTION 221005 PLUMBING FIXTURES

PART 1 GENERAL

1.1 SECTION INCLUDES

1. Tank type water closets.
2. Dual flush water closets.
3. Lavatories.
4. Sinks.
5. Bathtubs and showers.
6. Showers.
7. Hose bib boxes.

1.2 REFERENCE STANDARDS

1. ASME A112.6.1M - *Supports for Off-the-Floor Plumbing Fixtures for Public Use*; 1997 (Reaffirmed 2017).
2. ASME A112.18.1 / CSA B125.1 - *Plumbing Supply Fittings*; 2018, with Errata.
3. ASME A112.19.1 / CSA B45.2 - *Enamelled Cast Iron and Enamelled Steel Plumbing Fixtures*; 2018.
4. ASME A112.19.2 / CSA B45.1 - *Ceramic Plumbing Fixtures*; 2018, with Errata.
5. ASME A112.19.3 / CSA B45.4 - *Stainless Steel Plumbing Fixtures*; 2017, with Errata.
6. ASME A112.19.14 - *Six Liter Water Closets Equipped with Dual Flushing Device*; 2013 (Reaffirmed 2018).
7. ASME A112.1070 / ASSE 1070 / CSA B125.70 - *Performance Requirements for Water Temperature Limiting Devices*; 2020.
8. NSF/ANSI/CAN 61 - *Drinking Water System Components - Health Effects*; 2021.
9. NSF 372 - *Drinking Water System Components - Lead Content*; 2020.
10. ULC (DRI) - *Online Certifications Directory (Canada)*; Current Edition.

1.3 SUBMITTALS

1. See Section 013000 - Administrative Requirements for submittal procedures.
2. Product Data: Provide catalog illustrations of fixtures, sizes, rough-in dimensions, utility sizes, trim, and finishes.

PART 2 PRODUCTS

2.1 GENERAL REQUIREMENTS

1. Potable Water Systems: Provide plumbing fittings and faucets that comply with NSF/ANSI/CAN 61 and NSF 372 for maximum lead content; label pipe and fittings.
2. Water Efficiency: Provide water closets, urinals, lavatory faucets, and showersheads that comply with local water efficiency legislation.

2.2 REGULATORY REQUIREMENTS

1. Comply with applicable codes for installation of plumbing systems.
2. Comply with ULC (DRI) requirements, where permitted by Authority Having Jurisdiction.

2.3 TANK TYPE WATER CLOSETS

1. Floor-Mounted Bowl:
 1. ASME A112.19.2 / CSA B45.1 - siphon jet, vitreous china, 420 mm (16.5 inches) high, close-coupled closet combination with elongated rim, insulated vitreous china closet tank with fittings and lever flushing valve, bolt caps, vandalproof cover locking device.
 2. Water Consumption: 6 L (1.6 gal) per flush, maximum.
2. Toilet Seats:
 1. Plastic: Solid, white, elongated, open front, slow-closing hinged seat cover, and brass bolts with covers.

2.4 DUAL FLUSH WATER CLOSETS

1. ASME A112.19.14; high efficiency and low consumption, vitreous china, dual flush, tank type.
 1. Flush System: Pressure-assisted, wash down with a half-flush consumption of 4 L (1.1 gal) per flush.
 2. Bowl: Elongated.
 3. Rough in: 305 mm (12 inch).
 4. Seat: Manufacturer's standard or recommended elongated closed front seat with lid.

2.5	<p>Color: White.</p> <p>LAVATORIES</p> <p>Wall-hung Basin:</p> <ul style="list-style-type: none"> .1 Vitreous China: ASME A112.19.2 / CSA B45.1; white, round basin with splash lip, front overflow, soap depression, and hanger. Size as indicated on drawings with 100 mm (4 inch) centerset spacing. .2 Carrier: <ul style="list-style-type: none"> .1 ASME A112.6 IJC, cast iron and steel frame with tubular legs, lugs for floor and wall attachment, threaded studs for fixture hanger, bearing plate and studs. <p>Drop-In Basin:</p> <ul style="list-style-type: none"> .1 Vitreous China: ASME A112.19.2 / CSA B45.1; self-draining, with front rim, front overflow, soap depression, seal of putty, calking, or concealed vinyl gasket, and white finish. Size as indicated on drawings with 100 mm (4 inch) centerset spacing. <p>Under-Mount Basin:</p> <ul style="list-style-type: none"> .1 Vitreous China: ASME A112.19.2 / CSA B45.1; white, round shape, front overflow, soap depression, seal of putty, calking, or concealed vinyl gasket, and white finish. Size as indicated on drawings. <p>Pedestal Basin:</p>
-----	---

.1 Vitreous China: ASME A112.19.2 / CSA B45.1; white, round shape, integral rear splash rim, front overflow, and steel hanger. Size as indicated on Drawings with 200 mm (8 inch) centroid spacing.

.5 Supply Faucet:

- .1 ASME A112.18.1 / CSA B125.1; chrome plated combination supply fitting with pop-up waste, water economy aerator with maximum flow of 8.3 lpm (2.2 gpm), indexed handles.

.6 Thermostatic Mixing Valve:

- .1 ASME A112.1070 / ASSE 1070 / CSA B125.70 listed with combination stop, strainer, and check valves, and flexible stainless steel connectors.

SINKS

.1 Single Compartment Bowl: ASME A112.19.3 / CSA B45.4; Type 302 stainless steel, self rimming and undercoated, with ledge back drilled for trim.

- .1 Drain: 38 mm (1-1/2 inch)

.2 Double Compartment Bowl: ASME A112.19.3 / CSA B45.4; Type 302 stainless steel, self rimming and undercoated, with ledge back drilled for trim.

- .1 Drain: 38 mm (1-1/2 inch) chromed brass drain.

BATH TUBS AND SHOWERS

.1 Bathtub: ASME A112.19.1 / CSA B45.2 enamelled cast iron bathtub with slip resistant surface, contoured front apron, 1500 mm (60 inches) long, _____ colour.

- .2 Bath Trim: ASME A112.18.1 / CSA B125.1; concealed over rim supply with spout and indexed handles, lever operated pop-up waste and overflow.

.3 Bath and Shower Trim: ASME A112.18.1 / CSA B125.1; concealed shower and over rim supply with diverter spout, indexed handles, bent shower arm with adjustable spray ball joint showerhead with maximum 9.5 liters per minute (2.5 gallons per minute) flow and escutcheon, lever operated pop-up waste and overflow.

- .4 Bath and Shower Trim: ASME A112.18.1 / CSA B125.1; concealed shower and over rim supply with diverter spout, pressure balanced mixing valve, bent shower arm with adjustable spray ball joint showerhead with maximum 9.5 liters per minute (2.5 gallons per minute) flow and escutcheon, lever operated pop-up waste and overflow.

HOSE BIB BOXES

.1 Material: 316 stainless steel.

- .2 Finish: Satin.
- .3 Mount in wall fully recessed.
- .4 Provide with one-valve supply.
- .5 Provide with NPT PVC ball valves and fittings.
- .6 Provide with internal hose drain bracket and waste outlet.

PART 3 EXECUTION

3.1 EXAMINATION

- .1 Verify that walls and floor finishes are prepared and ready for installation of fixtures.
- .2 Verify that electric power is available and of the correct characteristics.
- .3 Confirm that millwork is constructed with adequate provision for the installation of countertop lavatories and sinks.

3.2 PREPARATION

- .1 Rough-in fixture piping connections in accordance with minimum sizes indicated in fixture rough-in schedule for particular fixtures.

3.3 INSTALLATION

- .1 Install each fixture with trap, easily removable for servicing and cleaning.
- .2 Provide chrome-plated rigid or flexible supplies to fixtures with loose key stops, reducers, and escutcheons.
- .3 Install components level and plumb.
- .4 Install and secure fixtures in place with wall supports and bolts.

3.4 INTERFACE WITH WORK OF OTHER SECTIONS

- .1 Review millwork Shop Drawings. Confirm location and size of fixtures and openings before rough-in and installation.

3.5 PROTECTION

- .1 Protect installed products from damage due to subsequent construction operations.
- .2 Do not permit use of fixtures by construction personnel.
- .3 Repair or replace damaged products before Date of Substantial Performance.

END OF SECTION 224000	DIVISION 23 - HEATING, VENTILATING, AND AIR CONDITIONING (HVAC)	SECTION 230517
	SLEEVES AND SLEEVE SEALS FOR HVAC PIPING	
PART 1 GENERAL	SECTION INCLUDES	
1.1	1. Pipe sleeves.	
	2. Manufactured sleeve-seal systems.	
1.2	REFERENCE STANDARDS	
	1. ASTM E814 - Standard Test Method for Fire Tests of Penetration Firestop Systems; 2013a (Reapproved 2017).	
1.3	QUALITY ASSURANCE	
	1. Manufacturer Qualifications: Company specializing in manufacturing the Products specified in this section with minimum three years documented experience.	
	2. Clean equipment, pipes, valves, and fittings of grease, metal cuttings, and sludge that may have accumulated from the installation and testing of the system.	
PART 2 PRODUCTS		
2.1	PIPE SLEEVES	
	1. Vertical Piping:	
	1. Sleeve Length: 25 mm (1 inch) above finished floor.	
	2. Provide sealant for watertight joint.	
	2. Pipe Passing Through Below Grade Exterior Walls:	
	1. Zinc coated or cast iron pipe.	
	2. Provide watertight space with link rubber or modular seal between sleeve and pipe on both pipe ends.	
	3. Pipe Passing Through Mechanical, Laundry, and Animal Room Floors above Basement:	
	1. Galvanized steel pipe or black iron pipe with asphalt coating.	
	2. Connect sleeve with floor plate except in mechanical rooms.	
	4. Clearances:	
	1. Provide allowance for insulated piping.	
	2. Wall, Floor, Partitions, and Beam Flanges: 25 mm (1 inch) greater than external; pipe diameter.	
	3. All Rated Openings: Caulked tight with fire stopping material in compliance with ASTM E814 in accordance with Section 078400 to prevent the spread of fire, smoke, and gases.	
PART 3 EXECUTION		
3.1	INSTALLATION	
	1. Route piping in orderly manner, plumb and parallel to building structure. Maintain gradient.	
	2. Install piping to conserve building space, to not interfere with use of space and other work.	
	3. Install piping and pipe sleeves to allow for expansion and contraction without stressing pipe, joints, or connected equipment.	
	4. Provide sleeves when penetrating footings, floors, walls, and partitions. Seal pipe including sleeve penetrations to achieve fire resistance equivalent to fire separation required.	
	5. When installing more than one piping system material, ensure system components are compatible and joined to ensure the integrity of the system. Provide necessary joining fittings. Ensure flanges, union, and couplings for servicing are consistently provided.	
END OF SECTION 230517		

SECTION 230529
HANGERS AND SUPPORTS FOR HVAC PIPING AND EQUIPMENT

PART 1 GENERAL

1.1 **SECTION INCLUDES**

1.2 **SUPPORT AND ATTACHMENT components for equipment, piping, and other HVAC/hydraulic work:**

1. ASTM A123/A123M - Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products; 2024.

2. ASTM A153/A153M - Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware; 2016a.

3. ASTM A181/A181M - Standard Specification for Carbon Steel Forgings, for General - Purpose; 2022.

4. ASTM A36/A36M - Standard Specification for Carbon Structural Steel; 2019.

5. ASTM B653 - Standard Specification for Electrodeposited Coatings of Zinc on Iron and Steel; 2019.

6. MFMA-4 - Metal Framing Standards Publication; 2004.

7. MSS SP-58 - Pipe Hangers and Supports - Materials, Design, Manufacture, Selection, Application, and Installation; 2009.

1.3 **QUALITY ASSURANCE**

1. Comply with applicable building code.

2. Maintain at the project site a copy of each referenced document that prescribes execution requirements.

PART 2 PRODUCTS

2.1 **SUPPORT AND ATTACHMENT COMPONENTS**

1. **General Requirements:**

1. Provide all required hangers, supports, inlets, fasteners, fittings, accessories, and hardware as necessary for the complete installation of plumbing work.

2. Provide products listed, classified, and labeled as suitable for the purpose intended, where applicable.

3. Where support and attachment component types and sizes are not indicated, select in accordance with manufacturer's application criteria as required for the load to be supported. Include consideration for vibration, equipment operation, and shock loads where applicable.

4. Do not use wire, chain, perforated pipe strap, or wood for permanent supports unless specifically indicated or permitted.

5. **Steel Components:** Use corrosion resistant materials suitable for the environment where installed.

1. **Zinc-Plated Steel:** Electroplated in accordance with ASTM B653.

2. **Galvanized Steel:** Hot-dip galvanized after fabrication in accordance with ASTM A123/A123M or ASTM A153/A153M.

2. **Metal Channel (Strut) Framing Systems:** Factory-fabricated continuous-sold metal channel (strut) and associated fittings, accessories, and hardware required for site-assembly of supports.

1. Comply with MFMA-4.

2. **Channel Material:**

1. Outdoor and Damp or Wet Indoor Locations: Use galvanized steel.

3. **Minimum Channel Thickness:** Steel sheet, 12 gauge; 2.66 mm (12 gauge; 0.1046 inch).

3. **Hanger Rods:** Threaded zinc-plated steel unless otherwise indicated.

1. **Minimum Size:** Unless otherwise indicated or Required:

<p style="text-align: center;"><u>General Notes</u></p> <p>This drawing is the property of Delta-T Designs Inc. and is to be reproduced without permission.</p> <p>The contractor shall verify all dimensions on site and report discrepancies to Delta-T Designs Inc. once discovered an prior to proceeding with the work.</p> <p>All changes shall be approved by Delta-T Designs Inc. prior executions.</p> <p>Under no circumstances shall the contractor proceed in uncertainty.</p> <p>This drawing expresses the intent of the designer only, as the responsibility of the contractor to verify all site conditions prior to providing quote, and/or commencing work.</p> <p>If there is an inconsistency between what is drawn, and w site conditions allow, it is the responsibility of the installing contractor to notify the designer prior to proceeding. Delta-Designs Inc shall not be held liable for any issues that may arise due to the contractor not requesting clarification beforehand.</p>	
Drawings are scaled for Arch D - 24x36	
Designer Seal	P. Eng Seal (If Required)

Revision Schedule		
Revision Number	Revision Description	Revised Date
1	Issued for Coordination	May 15, 2025
2	Updated for Coordination	June 1, 2025
3	WIP	June 1, 2025



**Delta-T
Design**

Delta-T Designs Inc.
16 Winstar Rd Unit 4
Oro-Medonte, Ontario
L0L 2L0

705.791.9000
niss@deltatdesigns.ca

Client Name

TBD

Project Number

2025_12

2025-12	
Project Name & Address	
Barrie Single Detached Accessory Dwelling Unit	
Barrie, Ontario	
Sheet Name	
Specifications	
Drawn By	Alt
Reviewed By	Chen
Sheet Number	
M001	

$$\frac{\text{Spec 2}}{3/16'' = 1'-0'}$$

Spec 3
3/16" = 1'-0"

SECTION 230593 TESTING, ADJUSTING, AND BALANCING FOR HVAC	
1.1 SECTION INCLUDES	
1. TAB procedure for air distribution systems.	
2. Testing, adjustment, and balancing of hydronic and refrigerating systems.	
1.2 REFERENCE STANDARDS	
1. AABC (NSTSB) - AABC National Standards for Total System Balance, 7th Edition; 2016.	
2. ASHRAE Std 111 - Measurement, Testing, Adjusting, and Balancing of Building HVAC Systems; 2024.	
3. SMACNA (TAB) - HVAC Systems Testing, Adjusting, and Balancing; 2002.	
PART 2 PRODUCTS - Not Used	
PART 3 EXECUTION	
3.1 GENERAL REQUIREMENTS	
1. Perform total system balance in accordance with one of the following:	
1. AABC (NSTSB), AABC National Standards for Total System Balance.	
2. ASHRAE Std 111, Practices for Measurement, Testing, Adjusting and Balancing of Building Heating, Ventilation, Air-Conditioning, and Refrigeration Systems.	
3. SMACNA (TAB).	
2. Begin work after completion of systems to be tested, adjusted, or balanced and complete work prior to Substantial Performance of the project.	
3. Where HVAC systems and/or components interface with life safety systems, including fire and smoke detection, alarm, and control, coordinate scheduling and testing and inspection procedures with the authorities having jurisdiction.	
4. TAB Agency Qualifications:	
1. Company specializing in the testing, adjusting, and balancing of systems specified in this section.	
2. Having minimum of three years documented experience.	
3. Certified by one of the following:	
1. AABC, Associated Air Balance Council: www.aabc.com/afse , upon completion submit AABC National Performance Guaranty.	
2. NEBB, National Environmental Balancing Bureau: www.nebb.org/afde .	
3. TABB, The Testing, Adjusting, and Balancing Board of National Energy Management Institute: www.tabbcertified.org/afse .	
5. TAB Supervisor and Technician Qualifications: Certified by same organization as TAB agency.	
EXAMINATION	
1. Verify that systems are complete and operable before commencing work. Ensure the following conditions:	
1. Systems are started and operating in a safe and normal condition.	
2. Temperature control systems are installed complete and operable.	
3. Proper thermal overload protection is in place for electrical equipment.	
4. Final filters are clean and in place. If required, install temporary media in addition to final filters.	
5. Duct systems are clean of debris.	
6. Fans are rotating correctly.	
7. Fire and volume dampers are in place and open.	
8. Air coil fins are cleaned and combed.	
9. Access doors are closed and duct end caps are in place.	

		1. Equipment Supports: 13 mm (1/2 inch) diameter.	
		2. Piping up to 25 mm nominal: 6 mm (1/4 inch) diameter.	
4.	Pipe Supports:		
1.	Liquid Temperatures Up To 50 degrees C (122 degrees F):		
1.	Overhead Support: MSS SP-58 Types 1, 3, through 12.		
2.	Support From Below: MSS SP-58 Types 35 through 38.		
5.	Beam Clamps: MSS SP-58 Types 19 through 23, 25 or 27 through 30 based on required load.		
1.	Material: ASTM A36/A36M carbon steel or ASTM A181/A181M forged steel.		
2.	Provide clamps with hardened steel cap-point set screws and lock-wnuts for anchoring in place.		
6.	Riser Clamps:		
1.	Provide copper plated clamps for copper tubing support.		
2.	For insulated pipe runs, provide two bolt-type clamps designed for installation under insulation.		
7.	Anchors and Fasteners:		
1.	Unless otherwise indicated and where not otherwise restricted, use the anchor and fastener types indicated for the specified applications.		
PART 3 EXECUTION			
3.1 INSTALLATION			
1.	Install products in accordance with manufacturer's instructions.		
2.	Provide independent support from building structure. Do not provide support from piping, ductwork, conduit, or other systems.		
3.	Unless specifically indicated or approved by Consultant, do not provide support from suspended ceiling support system or ceiling grid.		
4.	Unless specifically indicated or approved by Consultant, do not provide support from roof deck.		
5.	Do not penetrate or otherwise notch or cut structural members without approval of Structural Engineer.		
6.	Equipment Support and Attachment:		
1.	Use metal fabricated supports or supports assembled from metal channel (strut) to support equipment as required.		
2.	Use metal channel (strut) secured to studs to support equipment surface-mounted on hollow stud walls when wall strength is not sufficient to resist pull-out.		
3.	Use metal channel (strut) to support surface-mounted equipment in wet or damp locations to provide space between equipment and mounting surface.		
4.	Securely fasten floor-mounted equipment. Do not install equipment such that it relies on its own weight for support.		
7.	Secure fasteners according to manufacturer's recommended torque settings.		
8.	Remove temporary supports.		
END OF SECTION 230529			

SECTION 230553 IDENTIFICATION FOR HVAC PIPING AND EQUIPMENT	
1.1 SECTION INCLUDES	
1. Nameplates.	
2. Tags.	
3. Stencils.	
4. Pipe markers.	
1.2 RELATED REQUIREMENTS	
1. Section 09113 - Interior Painting: Identification painting.	
1.3 REFERENCE STANDARDS	
1. ASTM D709 - Standard Specification for Laminated Thermosetting Materials; 2017.	
PART 2 PRODUCTS	
2.1 IDENTIFICATION APPLICATIONS	
1. Air Handling Units: Nameplates.	
2. Control Panels: Nameplates.	
3. Ductwork: Stencilled painting.	
4. Piping: Pipe markers.	
5. Pumps: Nameplates.	
6. Relays: Tags.	
7. Thermostats: Nameplates.	
8. Valves: Tags and ceiling tacks where located above lay-in ceiling.	
9. Water Treatment Devices: Nameplates.	
2.2 NAMEPLATES	
1. Letter Colour: White.	
2. Background Colour: Black.	
3. Plastic: Conform to ASTM D709.	
2.3 TAGS	
1. Plastic Tags: Laminated three-layer plastic with engraved black letters on light contrasting background colour. Tag size minimum 40 mm (1-1/2 inch) diameter.	
2. Metal Tags: Brass with stamped letters; tag size minimum 40 mm (1-1/2 inch) diameter with smooth edges.	
3. Valve Tag Chart: Typewritten letter size list in anodized aluminum frame.	
2.4 STENCILS	
1. Stencils: With clean cut symbols and letters of following size:	
1. 20-30 mm (3/4 to 1-1/4 inch) Outside Diameter of Insulation or Pipe: 200 mm (8 inch) long colour field, 13 mm (1/2 inch) high letters.	
2. 40-50 mm (1-1/2 to 2 inch) Outside Diameter of Insulation or Pipe: 200 mm (8 inch) long colour field, 20 mm (3/4 inch) high letters.	
3. 65-150 mm (2-1/2 to 6 inch) Outside Diameter of Insulation or Pipe: 300 mm (12 inch) long colour field, 30 mm (1-1/4 inch) high letters.	
2.5 PIPE MARKERS	
1. Plastic Pipe Markers: Factory fabricated, flexible, semi-rigid plastic, preformed to fit around pipe or pipe covering; minimum information indicating flow direction arrow and identification of fluid being conveyed.	
PART 3 EXECUTION	
3.1 PREPARATION	
1. Degrease and clean surfaces to receive adhesive for identification materials.	
3.2 INSTALLATION	
1. Install nameplates with corrosion-resistant mechanical fasteners, or adhesive. Apply with sufficient adhesive to ensure permanent adhesion and seal with clear lacquer.	
2. Install tags with corrosion resistant chain.	
3. Apply stencil painting in accordance with Section 09113.	
4. Install plastic tape pipe markers complete around pipe in accordance with manufacturer's instructions.	
5. Install ductwork with stencilled painting. Identify with air handling unit identification number and area served. Locate identification at air handling unit, at each side of penetration of structure or enclosure, and at each obstruction.	
END OF SECTION 230553	

SECTION 230593 TESTING, ADJUSTING, AND BALANCING FOR HVAC	
1.1 SECTION INCLUDES	
1. TAB procedure for air distribution systems.	
2. Testing, adjustment, and balancing of hydronic and refrigerating systems.	
1.2 REFERENCE STANDARDS	
1. AABC (NSTSB) - AABC National Standards for Total System Balance, 7th Edition; 2016.	
2. ASHRAE Std 111 - Measurement, Testing, Adjusting, and Balancing of Building HVAC Systems; 2024.	
3. SMACNA (TAB) - HVAC Systems Testing, Adjusting, and Balancing; 2002.	
PART 2 PRODUCTS - Not Used	
PART 3 EXECUTION	
3.1 GENERAL REQUIREMENTS	
1. Perform total system balance in accordance with one of the following:	
1. AABC (NSTSB), AABC National Standards for Total System Balance.	
2. ASHRAE Std 111, Practices for Measurement, Testing, Adjusting and Balancing of Building Heating, Ventilation, Air-Conditioning, and Refrigeration Systems.	
3. SMACNA (TAB).	
2. Begin work after completion of systems to be tested, adjusted, or balanced and complete work prior to Substantial Performance of the project.	
3. Where HVAC systems and/or components interface with life safety systems, including fire and smoke detection, alarm, and control, coordinate scheduling and testing and inspection procedures with the authorities having jurisdiction.	
4. TAB Agency Qualifications:	
1. Company specializing in the testing, adjusting, and balancing of systems specified in this section.	
2. Having minimum of three years documented experience.	
3. Certified by one of the following:	
1. AABC, Associated Air Balance Council: www.aabc.com/afse , upon completion submit AABC National Performance Guaranty.	
2. NEBB, National Environmental Balancing Bureau: www.nebb.org/afde .	
3. TABB, The Testing, Adjusting, and Balancing Board of National Energy Management Institute: www.tabbcertified.org/afse .	
5. TAB Supervisor and Technician Qualifications: Certified by same organization as TAB agency.	
EXAMINATION	
1. Verify that systems are complete and operable before commencing work. Ensure the following conditions:	
1. Systems are started and operating in a safe and normal condition.	
2. Temperature control systems are installed complete and operable.	
3. Proper thermal overload protection is in place for electrical equipment.	
4. Final filters are clean and in place. If required, install temporary media in addition to final filters.	
5. Duct systems are clean of debris.	
6. Fans are rotating correctly.	
7. Fire and volume dampers are in place and open.	
8. Air coil fins are cleaned and combed.	
9. Access doors are closed and duct end caps are in place.	

		10. Air outlets are installed and connected.	
		11. Duct system leakage is minimized.	
		12. Hydronic systems are flushed, filled, and vented.	
		13. Pumps are rotating correctly.	
		14. Proper strainer baskets are clean and in place.	
		15. Service and balance valves are open.	
		2. Submit site reports. Report defects and deficiencies that will or could prevent proper system balance.	
		3. Beginning of work means acceptance of existing conditions.	
3.3.	ADJUSTMENT TOLERANCES		
1.	Air Handling Systems: Adjust to within plus or minus 5 percent of design for supply systems and plus or minus 10 percent of design for return and exhaust systems.		
2.	Air Outlets and Inlets: Adjust total to within plus 10 percent and minus 5 percent of design to space. Adjust outlets and inlets in space to within plus or minus 10 percent of design.		
3.	Hydronic Systems: Adjust to within plus or minus 10 percent of design.		
3.4.	TAB PROCEDURE FOR AIR DISTRIBUTION SYSTEMS		
1.	Adjust air handling and distribution systems to provide required or design supply, return, and exhaust air quantities at site altitude.		
2.	Make air quantity measurements in ducts by Pitot tube traverse of entire cross sectional area of duct.		
3.	Measure air quantities at air inlets and outlets.		
4.	Adjust distribution system to obtain uniform space temperatures free from objectionable drafts and noise.		
5.	Use volume control devices to regulate air quantities only to extend that adjustments do not create objectionable air motion or sound levels. Effect volume control by duct internal devices such as dampers and splitters.		
6.	Vary total system air quantities by adjustment of fan speeds. Provide drive changes required. Vary branch air quantities by damper regulation.		
7.	Provide system schematic with required and actual air quantities recorded at each outlet or inlet.		
8.	Measure static air pressure conditions on air supply units, including filter and coil pressure drops, and total pressure across the fan. Make allowances for 50 percent loading of filters.		
9.	Adjust outside air automatic dampers, outside air, return air, and exhaust dampers for design conditions.		
10.	Measure temperature conditions across outside air, return air, and exhaust dampers to check leakage.		
3.5.	TAB PROCEDURE FOR WATER DISTRIBUTION SYSTEMS		
1.	Adjust water systems to provide required or design quantities.		
2.	Use calibrated Venturi tubes, orifices, or other metered fittings and pressure gauges to determine flow rates for system balance. Where flow metering devices are not installed, base flow balance on temperature difference across various heat transfer elements in the system.		
3.	Adjust systems to provide specified pressure drops and flows through heat transfer elements prior to thermal testing. Perform balancing by measurement of temperature differential in conjunction with air balancing.		
4.	Effect system balance with automatic control valves fully open to heat transfer elements.		
5.	Effect adjustment of water distribution systems by means of balancing coils, valves, and fittings. Do not use service or shut-off valves for balancing unless indexed for balance point.		
6.	Where available pump capacity is less than total flow requirements or individual system parts, full flow in one part may be simulated by temporary restriction of flow to other parts.		
END OF SECTION 230593			

SECTION 230713 DUCT INSULATION	
1.1 SECTION INCLUDES	
1. Duct insulation.	
2. Duct liner.	
3. Insulation jackets.	
1.2 REFERENCE STANDARDS	
1. ASTM C518 - Standard Test Method for Steady-State Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus; 2021.	
2. ASTM C553 - Standard Specification for Mineral Fiber Blanket Thermal Insulation for Commercial and Industrial Applications; 2013 (Reapproved 2019).	
3. ASTM C612 - Standard Specification for Mineral Fiber Insulation and Board Thermal Insulation; 2014 (Reapproved 2019).	
4. ASTM C916 - Standard Specification for Adhesives for Duct Thermal Insulation; 2020.	
5. ASTM C1071 - Standard Specification for Fibrous Glass Duct Lining Insulation (Thermal and Sound Absorbing Material); 2019.	
6. ASTM E96/E96M - Standard Practice for Gravimetric Determination of Water Vapor Transmission of Materials; 2022.	
7. ASTM G21 - Standard Practice for Determining Resistance of Synthetic Polymeric Materials to Fungi; 2015, with Editorial Revision (2021).	
8. CAN/ULC S102 - Method of Testing for Surface Burning Characteristics of Building Materials and Assemblies; 2018.	
9. CAN/ULC S702.1 - Standard for Mineral Fiber Thermal Insulation for Buildings, Part 1: Material Specification; 2021.	
10. SMACNA (DCS) - HVAC Duct Construction Standards Metal and Flexible; 2005 (Revised 2009).	
11. TLAC - Best Practices Guide; Current.	
12. UL 723 - Standard for Test for Surface Burning Characteristics of Building Materials; Current Edition, Including All Revisions.	
1.3 QUALITY ASSURANCE	
1. Applicator Qualifications: Company specializing in performing the type of work specified in this section, documented experience.	
PART 2 PRODUCTS	
2.1 REGULATORY REQUIREMENTS	
1. Surface Burning Characteristics: Flame spread index/Smoke developed index of 25/50, maximum, when tested in accordance with CAN/ULC S102 or UL 723.	
2. Comply with TLAC Mechanical Insulation Best Practices Guide and CAN/ULC S702.1.	
2.2 GLASS FIBRE, FLEXIBLE	
1. Insulation: ASTM C553, flexible, noncombustible blanket.	
1. Ksi (K) value: 0.052 at 24 degrees C (0.36 at 75 degrees F), when tested in accordance with ASTM C518.	
2. Maximum Service Temperature: 649 degrees C (1200 degrees F).	
3. Maximum Water Vapor Absorption: 5.0 percent by weight.	
2. Vapor Barrier Jacket:	
1. Kraft paper with glass fibre yarn and bonded to aluminized film.	
2. Moisture Vapor Permeability: 0.029 ng/Pa s m (0.02 perm inch), when tested in accordance with ASTM E96/E96M.	
3. Secure with pressure sensitive tape.	
3. Vapor Barrier Tape:	
1. Kraft paper reinforced with glass fibre yarn and bonded to aluminized film, with pressure sensitive rubber based adhesive.	
2.3 GLASS FIBRE, RIGID	
1. Insulation: ASTM C612, rigid, noncombustible blanket.	
1. Ksi (K) Value: 0.035 at 24 degrees C (0.24 at 75 degrees F), when tested in accordance with ASTM C518.	
2. Maximum Service Temperature: 232 degrees C (450 degrees F).	
3. Maximum Water Vapor Absorption: 5.0 percent.	
4. Maximum Density: 128 kg/cu m (8.0 lb/cu ft).	
2. Vapor Barrier Jacket:	
1. Kraft paper with glass fibre yarn and bonded to aluminized film.	
2. Moisture Vapor Permeability: 0.029 ng/Pa s m (0.02 perm inch), when tested in accordance with ASTM E96/E96M.	
3. Secure with pressure sensitive tape.	
3. Vapor Barrier Tape:	
1. Kraft paper reinforced with glass fibre yarn and bonded to aluminized film, with pressure sensitive rubber based adhesive.	
2.4 DUCT LINER	
1. Glass Fibre Insulation: Non-corrosive, incombustible glass fibre complying with ASTM C1071; flexible blanket, rigid board, and preformed round liner board; impregnated surface and edges coated with poly vinyl acetate polymer, acrylic polymer, or black composite.	
1. Fungal Resistance: No growth when tested according to ASTM G21.	
2. Apparent Thermal Conductivity: Maximum of 0.045 at 24 degrees C (0.31 at 75 degrees F).	
3. Service Temperature: Up to 121 degrees C (250 degrees F).	
4. Rated Velocity on Coated Air Side for Air Erosion: 25.4 m/s (5,000 fpm), minimum.	
5. Minimum Noise Reduction Coefficients:	
1. 13 mm (1/2 inch) Thickness: 0.30.	
2. 25 mm (1 inch) Thickness: 0.45.	
2. Adhesive: Waterproof, fire-retardant type, ASTM C916.	
PART 3 EXECUTION	
3.1 EXAMINATION	
1. Verify that ducts have been tested before applying insulation materials.	
2. Verify that surfaces are clean, foreign material removed, and dry.	
3.2 INSTALLATION	
1. Install in accordance with manufacturer's instructions.	
2. Install in accordance with TLAC guidelines.	
3. Insulated ducts conveying air below ambient temperature:	
1. Provide insulation with vapour barrier jackets.	
2. Finish with tape and vapour barrier jacket.	
3. Continue insulation through walls, sleeves, hangers, and other duct penetrations.	
4. Insulate entire system including fittings, joints, flanges, fire dampers, flexible connections, and expansion joints.	
4. Insulated ducts conveying air above ambient temperature:	
1. Provide with or without standard vapour barrier jacket.	
2. Insulate fittings and joints. Where service access is required, bevel and seal ends of insulation.	
5. Ducts Exposed in Mechanical Equipment Rooms or Finished Spaces (below 3 meters above finished floor) (below 10 feet above finished floor): Finish with canvas jacket sized for finish painting.	
6. External Duct Insulation Application:	
1. Secure insulation with vapour barrier with wires and seal jacket joints with vapour barrier adhesive or tape to match jacket.	
2. Secure insulation without vapour barrier with staples, tape, or wires.	
3. Install without sag on underside of duct. Use adhesive or mechanical fasteners where necessary to prevent sagging. Lift duct off trapeze hangers and insert spacers.	
4. Seal vapour barrier penetrations by mechanical fasteners with vapour barrier adhesive.	
5. Stop and point insulation around access doors and damper operators to allow operation without disturbing wrapping.	

		7. Duct and Plenum Liner Application:	
		1. Adhesive insulation with adhesive for 90 percent coverage.	
		2. Secure insulation with mechanical liner fasteners. Refer to SMACNA (DCS) for spacing.	
		3. Seal and smooth joints. Seal and coat transverse joints.	
		4. Seal liner surface penetrations with adhesive.	
		5. Duct dimensions indicated are net inside dimensions required for air flow. Increase duct size to allow for insulation thickness.	
END OF SECTION 230713			
SECTION 230719			
HVAC PIPING INSULATION			
PART 1 GENERAL			
1.1	SECTION INCLUDES		
1.	Piping insulation.		
2.	Jackets and accessories.		
3.	Engineered wall outlet seals and refrigerant piping insulation protection.		
1.2	REFERENCE STANDARDS		
1.	ASTM C117 - Standard Test Method for Steady-State Heat Flux Measurements and Thermal Transmission Properties by Means of the Guarded-Hot-Plate Apparatus; 2019.		
2.	ASTM C534/C534M - Standard Specification for Preformed Flexible Elastomeric Cellular Thermal Insulation in Sheet and Tubular Form; 2020a.		
3.	ASTM C795 - Standard Specification for Thermal Insulation for Use in Contact with Austenitic Stainless Steel; 2008 (Reapproved 2018).		
4.	ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials; 2022.		
5.	ASTM E96/E96M - Standard Test Methods for Gravimetric Determination of Water Vapor Transmission of Materials; 2022.		
6.	ASTM E283 - Standard Test Method for Determining the Rate of Air Leakage Through Exterior Windows, Curtain Walls, and Doors Under Specified Pressure Differences Across the Specimen; 2004 (Reapproved 2012).		
7.	ASTM E331 - Standard Test Method for Water Penetration of Exterior Windows, Skylights, Doors, and Curtain Walls by Uniform Static Air Pressure Difference; 2000 (Reapproved 2016).		
8.	ASTM E2178 - Standard Test Method for Determining Air Leakage Rate and Calculation of Air Permeance of Building Materials; 2021a.		
9.	ASTM G153 - Standard Practice for Operating Enclosed Carbon Arc Light Apparatus for Exposure of Nonmetallic Materials; 2013 (Reapproved 2021).		
10.	CAN/ULC S102 - 2 - Method of Test for Surface Burning Characteristics of Flooring, Floor Coverings, and Miscellaneous Materials and Assemblies; 2018.		
11.	CAN/ULC S702.1 - Standard for Mineral Fibre Thermal Insulation for Buildings, Part 1: Material Specification; 2021.		
PART 2 PRODUCTS			
2.1	REGULATORY REQUIREMENTS		
1.	Surface Burning Characteristics: Comply with CAN/ULC S102.2 or ASTM E84 where permitted by Authority Having Jurisdiction for flame-spread rating and smoke developed classification.		
2.2	GLASS FIBRE, RIGID		
1.	Insulation: CAN/ULC S702.1 and ASTM C795; rigid molded, noncombustible.		
1.	Ksi (K) Value: ASTM C177; 0.035 at 24 degrees C (0.24 at 75 degrees F).		
2.	Maximum Service Temperature: 454 degrees C (850 degrees F).		
3.	Maximum Moisture Absorption: 0.2 percent by volume.		
2.	Vapour Barrier Jacket: White kraft paper with glass fibre yarn, bonded to aluminized film; moisture vapour transmission when tested in accordance with ASTM E96/E96M (0.029 ng/Pa s m (0.02 perm-inch)).		
3.	Tie Wire: 1.22 mm (0.048 inch) stainless steel with twisted ends on maximum 300 mm (12 inch) centers.		
2.3	FLEXIBLE ELASTOMERIC CELLULAR INSULATION		
1.	Insulation: Preformed flexible elastomeric cellular rubber insulation complying with ASTM C534/C534M Grade 1; use molded tubular material wherever possible.		
1.	Minimum Service Temperature: Minus 40 degrees C (Minus 40 degrees F).		
2.	Maximum Service Temperature: 82 degrees C (180 degrees F).		
3.	Connection: Waterproof vapour barrier adhesive.		
2.4	JACKETS		
1.	PVC Plastic.		
1.	Jacket: One piece molded type fitting covers and sheet material, off-white colour.		
1.	Minimum Service Temperature: minus 18 degrees C (0 degrees F).		
2.	Maximum Service Temperature: 66 degrees C (150 degrees F).		
3.	Moisture Vapour Permeability: 0.0029 ng/Pa s m (0.002 perm-inch), maximum, when tested in accordance with ASTM E96/E96M.		
4.	Thickness: 0.25 mm (0.10 mil).		
5.	Connections: Brush on welding adhesive.		
2.5	ENGINEERED WALL OUTLET SEALS AND REFRIGERANT PIPING INSULATION PROTECTION		
1.	Pipe Penetration Wall Seal: Seals HVAC piping wall penetrations with compression gasket wall mounted rigid plastic outlet cover.		
1.	Outlet Cover Colour: Gray.		
2.	Water Penetration: Comply with ASTM E331.		
3.	Air Leakage: Comply with ASTM E283.		
4.	Air Permeance: Comply with ASTM E2178.		
2.	Insulation Protection System: Refrigerant piping insulation PVC protective cover.		
1.	PVC Insulation Cover Colour: _____ with full-length vapour fastener.		
2.	Weatherization and Ultraviolet Exposure Protection: Comply with ASTM G153.		
3.	Water/Vapour Permeability: Comply with ASTM E96/E96M.		
PART 3 EXECUTION			
3.1	EXAMINATION		
1.	Verify that piping has been tested before applying insulation materials.		
2.	Verify that surfaces are clean and dry, with foreign material removed.		
3.2	INSTALLATION		
1.	Install in accordance with manufacturer's instructions.		
2.	Install in accordance with NAIMA National Insulation Standards.		
3.	Exposed Piping: Locate insulation and cover seams in least visible locations.		
4.	Insulated pipes conveying fluids below ambient temperature: insulate entire system including fittings, valves, unions, flanges, strainers, flexible connections, pump bodies, and expansion joints.		
5.	Glass fibre insulated pipes conveying fluids below ambient temperature:		
1.	Provide vapour barrier jackets, factory-applied or site-applied; secure with self-sealing longitudinal laps and butt strips with pressure sensitive adhesive.		
2.	Secure with outward clinch expanding staples and vapour barrier mastic.		
3.	Insulate fittings, joints, and valves with molded insulation of like material and thickness as adjacent pipe. Finish with glass cloth and vapour barrier adhesive or PVC fitting covers.		
6.	For hot piping conveying fluids 60 degrees C (140 degrees F) or less, do not insulate flanges and unions at equipment, but bevel and seal ends of insulation.		
7.	Glass fibre insulated pipes conveying fluids above ambient temperature:		
1.	Provide standard jackets, with or without vapour barrier, factory-applied or site-applied. Secure with self-sealing longitudinal laps and butt strips with pressure sensitive adhesive. Secure with outward clinch expanding staples.		
2.	Insulate fittings, joints, and valves with insulation of like material and thickness as adjoining pipe. Finish with glass cloth and adhesive or PVC fitting covers.		
8.	Continue insulation through walls, sleeves, pipe hangers, and other pipe penetrations. Finish at supports, protrusions, and interruptions.		
9.	Pipe Exposed in Mechanical Equipment Rooms or Finished Spaces (less than 3 meters (10 feet) above finished floor): Finish with canvas jacket sized for finish painting.		
END OF SECTION 230719			
SECTION 230913			
INSTRUMENTATION AND CONTROL DEVICES FOR HVAC			
PART 1 GENERAL			
1.1	SECTION INCLUDES		
1.	Control panels.		
2.	Control Valves:		
1.	Ball valves and actuators.		
2.	Electronic operators.		
3.	Dampers.		
4.	Damper Operators:		
1.	Electric operators.		
5.	Humidistats:		
1.	Room humidistats.		
6.	Input/Output Sensors:		
1.	Temperature sensors.		
2.	Humidity sensors.		
3.	Low-limit temperature cutoff switch (freeze-stat).		
4.	Line voltage thermostats.		
5.	Room thermostat accessories.		
5.	Outdoor reset thermostats.		
6.	Immersion thermostats.		
7.	Airstream thermostats.		
8.	Time clocks.		
9.	Sensors with transmitters:		
1.	Room pressure monitors.		
1.2	RELATED REQUIREMENTS		
1.	Section 260581 - Wiring Connections: Electrical characteristics and wiring connections.		
2.	Section 262726 - Wiring Devices: Elevation of exposed components.		

- 1.3 REFERENCE STANDARDS
- 1 AMCA 500-D - Laboratory Methods of Testing Dampers for Rating; 2012.
 - 2 ANSI/FCI 70-2 - Control Valve Seat Leakage; 2013.
 - 3 NEMA DC 3 - Residential Controls - Electrical Wall-Mounted Room Thermostats; 2013.
- 1.4 SUBMITTALS
- 1 See Section 013000 - Administrative Requirements for submittal procedures.
 - 2 Product Data: Provide description and engineering data for each control system component. Include sizing as requested. Provide data for each system component and software module.
 - 3 Shop Drawings: Indicate complete operating data, system Drawings, wiring diagrams, and written detailed operational description of sequences. Submit schedule of valves indicating size, flow, and pressure drop for each valve. For automatic dampers indicate arrangement, velocities, and static pressure drops for each system.

PART 2 PRODUCTS

- 2.1 EQUIPMENT - GENERAL
- 1 Products Requiring Electrical Connection: Listed and classified as suitable for the purpose specified and indicated by an organization recognized by Standards Council of Canada and acceptable to authorities having jurisdiction. Listed.
- 2.2 CONTROL PANELS
- 1 Unitized cabinet type for each system under automatic control with relays and controls mounted in cabinet and temperature indicators, pressure gauges, pilot lights, push buttons and switches flush on cabinet panel face.

- 2.3 CONTROL VALVES
- 1 Ball Valves and Actuators:
 - 1 Service: Use for brine (50 percent glycol), chilled water, or hot water.
 - 2 Flow Characteristics: Include 2-way and 3-way diverting operation configured to fail normally closed (NC).
 - 3 Replacements in Kind: Provide pressure-independent type.
 - 4 Rangeability: 500 to 1.
 - 5 ANSI Rating: Class 150.
 - 6 Leakage: Class IV (0.1 percent of rated capacity) per ANSI/FCI 70-2.
 - 7 Actuator Requirements:
 - 1 Assembly: Factory-mounted.
 - 2 Input: 0 to 10 VDC configured for proportional control.
 - 1 Accessories: Provide with valve position indicator and manual override.

- 2.4 DAMPERS
- 1 Performance: Test in accordance with AMCA 500-D.
 - 1 Frames: Galvanized steel, welded or riveted with corner reinforcement, minimum 12 gauge, 2.66 mm (12 gauge, 0.1046 inch).
 - 3 Blades: Galvanized steel, maximum blade size 200 mm (8 inches) wide, 1,200 mm (48 inches) long, minimum 22 gauge, 0.76 mm (22 gauge, 0.0299 inch), attached to minimum 13 mm (1/2 inch) shafts with set screws.

- 2.5 DAMPER OPERATORS
- 1 General: Provide smooth proportional control with sufficient power for air velocities 20 percent greater than maximum design velocity and to provide tight seal against maximum system pressures. Provide spring return for two position control and for fail safe operation.
 - 2 Electric Operators:
 - 1 Spring return, adjustable stroke motor having oil immersed gear train, with auxiliary and switch.

- 2.6 HUMIDISTATS
- 1 Room Humidistats:
 - 1 Wall mounted, proportioning type.
 - 2 Throttling Range: Adjustable 2 percent relative humidity.
 - 3 Operating Range: 30 to 80 percent.
 - 4 Minimum Temperature: 43 degrees C (110 degrees F).

- 2.7 INPUT/OUTPUT SENSORS
- 1 Temperature Sensors:
 - 1 Use thermistor or RTD type temperature sensing elements with characteristics resistant to moisture, vibration, and other conditions consistent with the application without affecting accuracy and life expectancy.
 - 2 Temperature Sensing Device: Compatible with project DDC controllers.
 - 2 Static Pressure (Air Pressure) Sensors:
 - 1 Unidirectional with ranges not exceeding 150 percent of maximum expected input.
 - 2 Temperature compensation with typical thermal error on 0.06 percent of full scale in temperature range of 5 to 40 degrees C (40 to 100 degrees F).
 - 3 Accuracy: One percent of full scale with repeatability 0.3 percent.
 - 4 Output: 0 to 5 VDC with power at 12 to 28 VDC.

- 2.8 THERMOSTATS
- 1 Electric Room Thermostats:
 - 1 Type: NEMA DC 3, 24 volts, with setback/setup temperature control.
- 2.9 TIME CLOCKS
- 1 Seven day programming switch timer with synchronous timing motor and seven day dial, continuously charged Ni-cad battery driven power failure 8-hour carry over and multiple switch trippers to control systems for minimum of two and maximum of eight signals per day with two normally open and two normally closed output switches.

- 2.10 SENSORS WITH TRANSMITTERS
- 1 Room Pressure Monitor:
 - 1 Type: Externally-powered, remote differential pressure transmitter interconnected via tubing or cables to pick-up sensors located inside wall-section fitted module.
 - 2 Transmitter: Five percent accuracy, adjustable zero and span, 100 to 1 turndown, 0.1 percent of calibrated span linearity, 30 to 50 millisecond response time, minimum overpressure of 150 percent over highest range value, alphanumeric indicating display, wired or wireless connectivity for configuration, and terminal strip with enclosed electronic components.
 - 3 Differential Pressure Monitoring Range: 0 to 124.4 Pa (0 to 0.5 in.-wc), bidirectional.

- PART 3 EXECUTION
- 3.1 EXAMINATION
- 1 Verify existing conditions before starting work.
 - 2 Verify that systems are ready to receive work.
 - 3 Beginning of installation means installer accepts existing conditions.
 - 4 Sequence work to ensure installation of components is complementary to installation of similar components in other systems.
 - 5 Coordinate installation of system components with installation of mechanical systems equipment such as air handling units and air terminal units.
 - 6 Ensure installation of components is complementary to installation of similar components.
 - 7 Coordinate installation of system components with installation of mechanical systems equipment such as air handling units and air terminal units.

- 3.2 INSTALLATION
- 1 Install in accordance with manufacturer's instructions.
 - 2 Check and verify location of thermostats with plans and room details before installation. Locate 1,500 mm (60 inches) above floor. Align with lighting switches and luminaires. See Section 262726.
 - 3 Provide control and electrical wiring in accordance with Section 260583. Electrical material and installation shall be in accordance with appropriate requirements of Division 26.

END OF SECTION 23013

PART 1 GENERAL

- 1.1 SECTION INCLUDES
- 1 Piping
 - 2 Moisture and liquid indicators.
 - 3 Valves.
 - 4 Strainers.
 - 5 Expansion valves.
 - 6 Engineered wall seals and insulation protection.

- 1.2 REFERENCE STANDARDS
- 1 ASHRAE Std 15 - Safety Standards for Refrigeration Systems; 2013.
 - 2 ASME B16.22 - Wrought Copper and Copper Alloy Solder-Joint Pressure Fittings; 2018.
 - 3 ASME B31.5 - Refrigeration Piping and Heat Transfer Components; 2016.
 - 4 ASME B31.9 - Building Services Piping; 2014.
 - 5 ASTM B280 - Standard Specification for Seamless Copper Tube for Air Conditioning and Refrigeration Field Service; 2020.
 - 6 AWS A5.8M(A5.8 - Specification for Filter Metals for Brazing and Braze Welding; 2011 (Amended 2012).
 - 7 CSA B52 - Mechanical Refrigeration Code; 2018.
 - 8 CSA W55.3 - Certification of Companies for Resistance Welding of Steel and Aluminum; 2008 (Reaffirmed 2018).
 - 9 CSA W117 - Safety in Welding, Cutting, and Allied Processes; 2019.
 - 10 MSS SP-58 - Pipe Flanges and Supports - Materials, Design, Manufacture, Selection, Application, and Installation; 2009.
 - 11 UL 207 - Standard for Refrigerant-Containing Components and Accessories, Nonelectrical; Current Edition, Including All Revisions.

- 1.3 QUALITY ASSURANCE
- 1 Qualifier/Qualifications: Company specializing in performing the type of work specified in this section, with minimum 3 years of documented experience.

PART 2 PRODUCTS

- 2.1 SYSTEM DESCRIPTION
- 1 Where more than one piping system material is specified ensure system components are compatible and joined to ensure the integrity of the system is not jeopardized. Provide necessary joining fittings, flange flanges, unions, and couplings for servicing are consistently provided.
 - 2 Provide pipe hangers and supports in accordance with ASME B31.5 unless indicated otherwise.
 - 3 Liquid Indicators:
 - 1 Use line size liquid indicators in main liquid line leaving condenser.
 - 4 Valves:
 - 1 Use service valves on suction and discharge of compressors.
 - 5 Filter/Driers:
 - 1 Use a filter-drier immediately ahead of liquid-line controls, such as thermostatic expansion valves, solenoid valves, and moisture indicators.
- 2.2 REGULATORY REQUIREMENTS

- 1 Comply with ASME B31.9, CSA W55.3, CSA W117 and CSA B52 for installation of piping system.
 - 2 Welding Materials and Procedures: Comply with CSA B52 and applicable provincial regulations.
 - 3 Welder Certification: In accordance with the requirements of the Authority Having Jurisdiction.
 - 4 Products Requiring Electrical Connection: Listed and classified by UL as suitable for the purpose indicated.
- 2.3 PIPING
- 1 Copper Tube: ASTM B260, H58 hard drawn or O60 soft annealed.
 - 1 Fittings: ASME B16.22 wrought copper.
 - 2 Joints: Braze: AWS A5.8M(A5.8 B Cup silver/ phosphorus/copper alloy.
 - 3 Mechanical Press Solder Fittings: Double pressed type complying with UL 207 and CSA B52.
 - 2 Pipe Supports and Anchors:
 - 1 Provide hangers and supports that comply with MSS SP-58.
 - 1 Type of hanger or support for a particular situation is not indicated, select appropriate type using MSS SP-58 recommendations.
 - 2 Hangers for Pipe Sizes 50 mm (2 inches) and Over: Carbon steel, adjustable, clevis.
 - 3 Multiple or Tapered Hangers: Steel channels with voided spaces and hanger rods.
 - 4 Wall Support for Pipe Sizes to 75 mm (3 inches): Cast iron hook.
 - 5 Vertical Support: Steel riser clamp.
 - 6 Copper Pipe Support: Carbon steel ring, adjustable, copper plated.
 - 7 Hanger Rods: Mild steel threaded both ends, threaded one end, or continuous threaded.
 - 8 Inserts: Malleable iron case of galvanized steel shell and expander plug for threaded connection with lateral adjustment, top slot for reinforcing rods, lugs for anchoring to forms, size inserts to suit threaded hanger rods.

- 2.4 MOISTURE AND LIQUID INDICATORS
- 1 Indicators: Single port type, UL 125 with copper or brass body, flared or solder ends, sight glass, color coded paper moisture indicator with removable element cartridge and plastic cap; for maximum temperature of 93 degrees C (200 degrees F) and maximum working pressure of 3,450 kPa (500 psi).
- 2.5 VALVES
- 1 Service Valves:
 - 1 Forged brass body with copper ends, brass caps, removable valve core, integral ball check valve, flared or solder ends, for maximum pressure of 3,450 kPa (500 psi).

- 2.6 STRAINERS
- PART 3 EXECUTION
- 3.1 PREPARATION
- 1 Remove pipe and tube ends. Remove burrs. Bevel plain end and ferrous pipe.
 - 2 Remove scale and dirt on inside and outside before assembly.
 - 3 Prepare piping connections to equipment with flanges or unions.
- 3.2 INSTALLATION
- 1 Install refrigeration specialties in accordance with manufacturer's instructions.
 - 1 Route piping in orderly manner, with plumbing parallel to building structure, and maintain gradient.
 - 3 Install piping to conserve building space and avoid interference with use of space.
 - 3 Group piping whenever practical at common elevations and locations. Slope piping one percent in direction of air return.
 - 5 Install piping to allow for expansion and contraction without stressing pipe, joints, or connected equipment.
 - 6 Arrange piping to return oil to compressor. Provide traps and loops in piping, and provide double risers as required. Slope horizontal piping 0.40 percent in direction of flow.
 - 7 Provide clearance for installation of insulation and access to valves and fittings.
 - 8 Flood piping system with nitrogen when brazing.
 - 9 Follow ASHRAE Std 15 procedures for charging and purging of systems and for disposal of refrigerant.
 - 10 Provide replaceable cartridge filter-driers, with isolation valves and valved bypass.

END OF SECTION 23200

- SECTION 23300
- HVAC DUCTS AND CASINGS
- 1.1 SECTION INCLUDES
- 1 Metal ductwork.
 - 2 Nonmetal ductwork.
 - 3 Casing and plenums.
 - 4 Kitchen hood ductwork.
 - 5 Duct cleaning.
- 1.2 REFERENCE STANDARDS
- 1 ASHRAE (FUND) - ASHRAE Handbook - Fundamentals, Most Recent Edition Cited by Refering Code or Reference Standard.
 - 2 ASTM A36/A36M - Standard Specification for Carbon Structural Steel; 2019.
 - 3 ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process; 2020.
 - 4 CAN/ULC S102 - Method of Testing for Surface Burning Characteristics of Building Materials and Assemblies; 2018.
 - 5 NFPA 90A - Standard for the Installation of Air-Conditioning and Ventilating Systems; 2018.
 - 6 SMACNA (DCS) - HVAC Duct Construction Standards Metal and Flexible; 2005 (Revised 2009).

- PART 2 PRODUCTS
- 2.1 DUCT ASSEMBLIES
- 1 Regulatory Requirements: Conformer downwind to comply with NFPA 90A standards.
 - 2 Ducts: Galvanized steel, unless otherwise indicated.
 - 3 Low Pressure Supply (Heating Systems): 125 Pa (1/2 in.-wc) pressure class, galvanized steel.
 - 3 Low Pressure Supply (System with Cooling Coils): 125 Pa (1/2 in.-wc) pressure class, galvanized steel.
 - 5 General Exhaust: 125 Pa (1/2 inch w.g.) pressure class, galvanized steel.
 - 6 Kitchen Cooking Hood Exhaust: 105 Pa (1/2 in.-wc) pressure class, galvanized steel.
 - 7 Outside Air Intake: 125 Pa (1/2 in.-wc) pressure class, galvanized steel.
 - 8 Transfer Air and Sound Boots: 125 Pa (1/2 in.-wc) pressure class, fibrous glass.

- 2.2 MATERIALS
- 1 Galvanized Steel for Ducts: Hot-dipped galvanized steel sheet, ASTM A653/A653M F5 Type B, with G60/Z180 coating.
 - 2 Joint Sealants and Sealants: Non-hardening, water resistant, mildew and mold resistant.
 - 1 Type: Heavy mastic or liquid nee used alone or with tape, suitable for joint configuration and compatible with substrates, and recommended by manufacturer for pressure class of ducts.
 - 2 VOC Content: Not more than 250 g/L, excluding water.
 - 3 Surface Burning Characteristics: Flame spread index of zero and smoke developed index of zero, when tested in accordance with CAN/ULC S102.

- 2.3 DUCTWORK FABRICATION
- 1 Fabricate and support in accordance with SMACNA (DCS) and as indicated.
 - 2 No variation of duct configuration or size permitted except by written permission. Size round duct installed in place of rectangular ducts in accordance with ASHRAE (FUND) Handbook - Fundamentals.
 - 3 Provide duct material, gauges, reinforcing, and sealing for operating pressures indicated.
 - 4 Provide tuning vane of perforated metal with glass fibre insulation when acoustical lining is indicated.
 - 5 Increase duct sizes gradually, not exceeding 15 degrees divergence wherever possible, maximum 30 degrees divergence upstream of equipment and 45 degrees convergence downstream.
 - 6 Fabricate continuously welded round and oval duct fittings in accordance with SMACNA (DCS).
 - 7 Where ducts are connected to exterior wall louvers and duct outlet is smaller than louver face, provide blank-out panels sealing louvre area around duct. Use same material as duct, painted black on exterior side, seal to louver frame and duct.
- 2.4 MANUFACTURED DUCTWORK AND FITTINGS
- 1 Flat Oval Ducts: Machine made from round spiral lockseam duct.
 - 1 Manufacture in accordance with SMACNA (DCS).
 - 2 Fittings: Manufacture at least two gauges heavier metal than duct.
 - 3 Provide duct material, gauges, reinforcing, and sealing for operating pressures indicated.
 - 2 Spiral Ducts: Round spiral lockseam duct with galvanized steel outer wall.
 - 1 Manufacture in accordance with SMACNA (DCS).
 - 3 Round Ducts: Round lockseam duct with galvanized steel outer wall.
 - 1 Manufacture in accordance with SMACNA (DCS).
 - 4 Flexible Ducts: Two ply vinyl film supported by helically wound spring steel wire.
 - 1 Insulation: Fibreglass insulation with polyethylene vapour barrier film.
 - 2 Pressure Rating: 2.50 kPa (10 in.-wc) positive and 250 Pa (1.0 in.-wc) negative.
 - 3 Maximum Velocity: 20.3 m/sec (4000 fpm).
 - 4 Temperature Range: Minus 23 degrees C to 71 degrees C (Minus 10 degrees F to 160 degrees F).

- PART 3 EXECUTION
- 3.1 INSTALLATION
- 1 Install, support, and seal ducts in accordance with SMACNA (DCS).
 - 2 Install in accordance with manufacturer's instructions.
 - 3 Dering construction provide temporary closures of metal or taped polyethylene on open ductwork to prevent construction dust from entering ductwork system.
 - 4 Flexible Ducts: Connect to metal ducts with adhesive.
 - 5 Duct sizes indicated are inside clear dimensions. For lined ducts, maintain sizes inside lining.
 - 6 Locate ducts with sufficient space around equipment to allow normal operating and maintenance activities.
 - 7 Use crimp joints with or without bead for joining round duct sizes 200 mm (8 inch) and smaller with crimp in direction of air flow.
 - 8 Use double nuts and lock washers on threaded rod supports.
 - 9 Connect terminal units to supply ducts directly or with 300 mm (one foot) maximum length of flexible duct. Do not use flexible duct to change direction.
 - 10 At exterior wall louvers, seal duct to louver frame and install blank-out panel.
- 3.2 CLEANING
- 1 Clean duct system and force air at high velocity through duct to remove accumulated dust. To obtain sufficient air, clean half the system at a time. Protect equipment that could be harmed by excessive dirt with temporary filters, or bypass during cleaning.

END OF SECTION 23300

SECTION 23300

AIR DUCT ACCESSORIES

- PART 1 GENERAL
- SECTION INCLUDES
- 1 Air turning devices/extractors.
 - 2 Backdraft dampers - metal.
 - 3 Backdraft dampers - fabric.
 - 4 Combination fire and smoke dampers.
 - 5 Duct access doors.
 - 6 Fire dampers.
 - 7 Flexible duct connectors.
 - 8 Smoke dampers.
 - 9 Volume control dampers.
 - 10 Low leakage (Class 1A) control dampers.
 - 11 Miscellaneous products:
 - 1 Damper operators.
 - 2 Damper position switch.
 - 3 Duct opening closure flap.
- 1.2 RELATED REQUIREMENTS
- 1 Section 233100 - HVAC Ducts and Casings.
 - 2 Section 233513 - Integrated Automation Actuators and Operators: Damper operators.
 - 3 Section 233516 - Integrated Automation Sensors and Transmitters: Damper position switch.
- 1.3 REFERENCE STANDARDS
- 1 NFPA 90A - Standard for the Installation of Air-Conditioning and Ventilating Systems; 2018.
 - 2 NFPA 92 - Standard for Smoke Control Systems; 2018.
 - 3 NFPA 96 - Standard for Ventilation Control and Fire Protection of Commercial Cooking Operations; 2017.
 - 4 SMACNA (DCS) - HVAC Duct Construction Standards Metal and Flexible; 2005 (Revised 2009).
 - 5 UL 31 - Safety Heat Responsive Links for Fire-Protection Service; Current Edition, Including All Revisions.
 - 6 UL 555 - Standard for Fire Dampers; Current Edition, Including All Revisions.
 - 7 UL 555C - Standard for Safety Ceiling Dampers; 2014.

- PART 2 PRODUCTS
- 2.1 AIR TURNING DEVICES/EXTRACTORS
- 1 Multi-blade device with blades aligned in short dimension; steel construction; with individually adjustable blades, mounting straps.
- 2.2 BACKDRAFT DAMPERS - METAL
- 1 Multi-Blade, Parallel Action Gravity Balanced Backdraft Dampers: Galvanized steel, with center pivoted blades of maximum 150 mm (6 inch) width, with felt or flexible vinyl sealed edges, linked together in rattle-free manner with 90 degree stop, steel ball bearings, and plated steel pivot pins; adjustment device to permit setting for varying differential static pressure.
- 2.3 BACKDRAFT DAMPERS - FABRIC
- 1 Fabric Backdraft Dampers: Factory-fabricated.
 - 1 Blades: Neoprene coated fabric material.
 - 2 Backbones: 12 mm (1/2 inch) nominal mesh of galvanized steel or aluminum.
 - 3 Maximum Velocity: 1000 fpm (5 mps) face velocity.
- 2.4 COMBINATION FIRE AND SMOKE DAMPERS
- 2.5 DUCT ACCESS DOORS
- 1 Fabrication: Rigid and close-fitting of galvanized steel with sealing gaskets and quick fastening locking devices. For insulated ducts, install minimum 25 mm (1 inch) thick insulation with sheet metal outer cover.
 - 1 Less Than 300 mm (12 inches) Square: Secure with sash locks.
 - 2 Up to 450 mm (18 inches) Square: Provide two hinges and two sash locks.

- 2.6 FIRE DAMPERS
- 1 Fabricate in accordance with NFPA 90A and UL 555, and as indicated.
 - 2 Ceiling (Rathlum) Dampers: Galvanized steel, 22 gauge, 0.76 mm (22 gauge, 0.0299 inch) frame and 16 gauge, 1.52 mm (16 gauge, 0.0598 inch) flap, two layers 1.2 mm (0.125 inch) ceramic fibre on top side and one layer on bottom side for round flaps, with locking clip.
 - 1 Boot Fitting: Factory-provided el type (90 degree). Include site-provided collar.
 - 2 Rated for low service in compliance with UL 555C.
 - 3 Curtain Type Dampers: Galvanized steel with interlocking blades. Provide stainless steel closure springs and latches for horizontal installations. Configure with blades out of air stream except for 250 Pa (1.0 in.-wc) pressure class ducts up to 300 mm (12 inches) in height.
- 2.7 FLEXIBLE DUCT CONNECTORS
- 1 Fabricate in accordance with SMACNA (DCS) and as indicated.
 - 2 Flexible Duct Connections: Fabric crimped into metal edging strip.
- 2.8 SMOKE DAMPERS
- 2.9 VOLUME CONTROL DAMPERS
- 1 Fabricate in accordance with SMACNA (DCS) and as indicated.
 - 2 Splitter Dampers:
 - 1 Material: Same gauge as duct to 600 mm (24 inches) size in either direction, and two gauges heavier for sizes over 600 mm (24 inches).
 - 2 Blade: Fabricate of single thickness sheet metal to streamline shape, secured with continuous hinge or rod.
 - 3 Operator: Minimum 6 mm (1/4 inch) diameter rod in self aligning, universal joint action, flanged bolting with set screw.
 - 3 Single Blade Dampers:
 - 1 Fabricate for duct sizes up to 150 by 750 mm (6 by 30 inch).
 - 2 Blade: 24 gauge, 0.61 mm (24 gauge, 0.0239 inch), minimum.
- 2.10 LOW LEAKAGE (CLASS 1A) CONTROL DAMPERS
- 1 Maximum Leakage Allowed: 15.2 L/sec sq m at 0.25 kPa (3 cfm/sq ft 1 inch wg).
 - 2 Frame:
 - 1 Material: 12 gauge galvanized steel.
 - 2 Free-area: Single cross section.
 - 3 Blade:
 - 1 Type: Multi-blade such as V or 3V for low to medium pressure.
 - 2 Operation: Opposed type.
 - 3 Maximum Individual Blade Height: 203 mm (8 inches).
- 2.11 MISCELLANEOUS PRODUCTS
- 1 Damper manual operators supplied in compliance with Section 233513.
 - 2 Damper position switch supplied in compliance with Section 233516.
 - 3 Duct Opening Closure Film: Mold-resistant, self-adhesive film to keep debris out of ducts during construction.
 - 1 Thickness: 0.05 mm (2 mils).
 - 2 High tack water based adhesive.
 - 3 UV stable light blue colour.
 - 4 Elongation Before Break: 325 percent, minimum.

- PART 3 EXECUTION
- 3.1 INSTALLATION
- 1 Install accessories in accordance with manufacturer's instructions, NFPA 90A, and follow SMACNA (DCS). See Section 233100 for duct construction and pressure class.
 - 2 Provide backdraft dampers on exhaust fan or exhaust ducts nearest to outside and where indicated.
 - 3 Provide duct access doors for inspection and cleaning before and after filters, coils, fans, automatic dampers, at fire dampers, combination fire and smoke dampers, and elsewhere as indicated. Provide for cleaning kitchen exhaust ducts in accordance with NFPA 96. Provide minimum 200 by 200 mm (8 by 8 inch) size for hand access, size for shoulder access, and as indicated. Provide 100 by 100 mm (4 by 4 inch) for balancing dampers only. Review locations prior to fabrication.
 - 4 Provide fire dampers, combination fire and smoke dampers, and smoke dampers at locations indicated, where ducts and outlets pass through fire rated components, and where required by Authorities Having Jurisdiction. Install with required perimeter mounting angles, sleeves, breakaway duct connections, corrosion resistant springs, bearings, bushings and hinges.
 - 5 Install smoke dampers and combination fire and fire dampers in accordance with NFPA 92.
 - 6 Demonstrate re-setting of fire dampers to Owner's representative.
 - 7 At fan and motorized equipment associated with ducts, provide flexible duct connections immediately adjacent to the equipment.
 - 8 At equipment supported by vibration isolators, provide flexible duct connections immediately adjacent to the equipment.
 - 9 Provide balancing dampers at points on supply, return, and exhaust systems where branches are taken from larger ducts as required for air balancing. Install minimum 2 inch widths from duct take-off.
 - 10 Use splitter dampers only where indicated.
 - 11 Provide balancing dampers at duct take-off to diffusers, grilles, and registers, regardless of whether dampers are specified as part of the diffuser, grille, or register assembly.

END OF SECTION 23300

SECTION 23700

AIR OUTLETS AND INLETS

- PART 1 GENERAL
- SECTION INCLUDES
- 1 Registers/grilles:
 - 1 Floor-mounted, supply register/grilles.
 - 2 Ceiling-mounted, exhaust and return register/grilles.
 - 3 Ceiling-mounted, supply register/grilles.
 - 4 Wall-mounted, supply register/grilles.
 - 5 Wall-mounted, exhaust and return register/grilles.
 - 2 Duct-mounted supply and return registers/louvers.
 - 3 Door grilles.

General Notes

This drawing is the property of Delta-T Designs Inc. and is to be reproduced without permission.

The contractor shall verify all dimensions on site and repo discrepancies to Delta-T Designs Inc. once discovered an prior to proceeding with the work.

All changes shall be approved by Delta-T Designs Inc. pri executions.

Under no circumstances shall the contractor proceed in uncertainty.

This drawing expresses the intent of the designer only, ar the responsibility of the contractor to verify all site conditic prior to providing aquote, and/or commencing work.

If there is an inconsistency between what is drawn, and w site conditions allow, it is the responsibility of the installing contractor to notify the designer prior to proceeding. Delta- Designs Inc shall not be held liable for any issues that ma arise due to the contractor not requesting clarification beforehand.

Drawings are scaled for Arch D - 24x36		
Designer Seal		P.Eng Seal (If Required)
P.Eng Contact Info (If Required)		
Revision Schedule		
Revision Number	Revision Description	Revis Dat
1	Issued for Coordination	May 15 2025
2	Updated for Coordination	June 1 2025
3	WIP	June 1 2025
<div><div><div>Delta-T Design</div><div>Delta-T Designs Inc. 16 Winstar Rd Unit 4 Oro-Medonte, Ontario L0L 2L0 705.791.9000 niss@deltatdesigns.ca</div></div></div>		
Client Name		
TBD		
Project Number		
2025-12		
Project Name & Address		
Barrie Single Dedicated Accessory Dwelling Unit		
Barrie, Ontario		
Sheet Name		
Specifications		
Drawn By		
Au		
Reviewed By		
Che		
Sheet Number		
M003		

Spec 4
1/8" = 1'-0"

4	Louvers:	2	Provide refrigerant lines internal to units and between indoor and outdoor units, factory cleaned, dried, pressurized and sealed, with insulated suction line.
5	1 Combination louvers.	2	Performance Requirements: See Drawings for additional requirements.
1.2	Goose necks.	3	Electrical Characteristics:
1	RELATED REQUIREMENTS	1	Disconnect Switch: Field installed weatherproof disconnect.
1	Section 099123 - Interior Painting: Painting of ducts visible behind outlets and inlets.	INDOOR AIR HANDLING UNITS FOR DUCTLESS SYSTEMS	
1.3	REFERENCE STANDARDS	1	Indoor Units: Self-contained, packaged, factory assembled, pre-wired unit consisting of cabinet, supply fan, evaporator coil, and controls; wired for single power connection with control transformer.
1	SMACNA (ASMM) - Architectural Sheet Metal Manual; 2012.	1	1 Location: High-wall.
2	SMACNA (DCS) - HVAC Duct Construction Standards Metal and Flexible; 2005 (Revised 2009).	2	2 Filter return air with washable, antioxidant pre-filter and a pleated anti-allergy enzyme filter.
1.4	SUBMITTALS	2	Evaporator Coils: Copper tube aluminum fin assembly, galvanized or polymer drain pan sloped in all directions to drain, drain connection, refrigerant piping connections, restricted distributor or thermostatic expansion valve.
1	See Section 013000 - Administrative Requirements for submittal procedures.	1	1 Construction and Ratings: In accordance with AHRI 210/240 and UL 207.
2	Product Data: Provide data for equipment required for this project. Review outlets and inlets as to size, finish, and type of mounting prior to submission. Submit schedule of outlets and inlets showing type, size, location, application, and noise level.	2	2 Manufacturer: System manufacturer.
PART 2 PRODUCTS		3	Remote Actuators:
2.1	CEILING SUPPLY REGISTERS/GRILLES	2.3	OUTDOOR UNITS
1	Type: Streamlined and individually adjustable curved blades to discharge air along face of grille, two-way deflection.	1	Outdoor Units: Self-contained, packaged, pre-wired unit consisting of cabinet, with compressor and condenser.
2	Frame: 32 mm (1-1/4 inch) margin with countersunk screw mounting and gasket.	1	1 Comply with AHRI 210/240.
3	Construction: Made of aluminum extrusions with factory enamel finish.	2	2 Cabinet: Galvanized steel with baked enamel finish, easily removed and secured access doors with safety interlock switches, glass fiber insulation with reflective liner.
4	Color: As indicated.	3	3 Construction and Ratings: In accordance with AHRI 210/240 with testing in accordance with ASHRAE Std 23.1 and UL 207.
5	Damper: Integral, gang-operated, opposed blade type with removable key operator, operable from face.	2	2 Air Cooled Condenser: Aluminum fin and copper tube coil, AHRI 520 with direct drive axial propeller fan resiliently mounted, galvanized fan guard.
2.2	CEILING EXHAUST AND RETURN REGISTERS/GRILLES	3	3 Accessories: Filter drier, high pressure switch (manual reset), low pressure switch (automatic reset), service valves and gauge ports, thermometer well (in liquid line).
1	Type: Streamlined blades, 19 mm (3/4 inch) minimum depth, 19 mm (3/4 inch) maximum spacing, with blades set at 45 degrees, vertical face.	1	1 Provide thermostatic expansion valves.
2	Frame: 32 mm (1-1/4 inch) margin with countersunk screw mounting.	WALL SUPPLY REGISTERS/GRILLES	
3	Fabrication: Steel with 20 gauge, 0.91 mm (20 gauge, 0.0359 inch) minimum frames and 22 gauge, 0.76 mm (22 gauge, 0.0299 inch) minimum blades, steel and aluminum with 20 gauge, 0.91 mm (20 gauge, 0.0359 inch) minimum frame, or aluminum extrusions, with factory baked enamel finish.	1	1 Control by room thermostat to maintain room temperature setting.
4	Color: As indicated.	2	2 Low Ambient Kit: Provide refrigerant pressure switch to cycle condenser fan on when condenser refrigerant pressure is above 1965 kPa (285 psig) and off when pressure drops below 965 kPa (140 psig) for operation to minus 18 degrees C (0 degrees F).
5	Damper: Integral, gang-operated opposed blade type with removable key operator, operable from face.	2.4	ACCESSORY EQUIPMENT
2.4	WALL EXHAUST AND RETURN REGISTERS/GRILLES	1	1 Room Thermostat: Wall-mounted, electric solid state microcomputer based room thermostat with remote sensor to maintain temperature setting; low-voltage, with following features:
1	Type: Streamlined blades, 19 mm (3/4 inch) minimum depth, 19 mm (3/4 inch) maximum spacing, with spring or other device to set blades, vertical face.	1	1 System selector switch (heat-off-cool) and fan control switch (auto-on).
2	Fabrication: Steel frames and blades, with factory baked enamel finish.	2	2 Automatic switching from heating to cooling.
3	Color: As indicated on the Drawings.	3	3 Preferential rate control to minimize overshoot and deviation from setpoint.
2.5	FLOOR SUPPLY REGISTERS/GRILLES	4	4 Short cycle protection.
1	Individually adjustable blades, wide stamped border, single or double blade damper with set screw adjustment.	5	5 Programming based on weekdays, Saturday and Sunday.
2.6	DOOR GRILLES	6	6 Selection features including degree F or degree C display, 12 or 24 hour clock, keyboard disable, remote sensor, fan on-auto.
1	Type: V-shaped louvers of 20 gauge, 0.91 mm (20 gauge, 0.0359 inch) thick steel, 25 mm (1 inch) deep on 13 mm (1/2 inch) centers.	7	7 Battery replacement without program loss.
2	Frame: 20 gauge, 0.91 mm (20 gauge, 0.0359 inch) steel with auxiliary frame to give finished appearance on both sides of door, with factory prime coat finish.	8	8 Thermostat Display:
3	Fabrication: 16 gauge, 0.0598 inch (1.52 mm) thick galvanized steel thick galvanized steel welded assembly, with factory prime coat finish.	1	1 Time of day.
2.7	GOOSENECKS	2	2 Actual room temperature.
1	Type: 100 mm (4 inch) deep frame with adjustable, corrosive resistant blades blades on 45-degree slope with center baffle and return bend, heavy channel frame, 13 mm (1/2 inch) square mesh screen over intake or exhaust end.	3	3 Programmed temperature.
2	Fabrication: 16 gauge, 0.0598 inch (1.52 mm) thick galvanized steel thick galvanized steel welded assembly, with factory prime coat finish.	4	4 Programmed time.
2.8	GOOSENECKS	5	5 Day of week.
1	Fabricate in accordance with SMACNA (DCS) of minimum 18 gauge, 1.21 mm (18 gauge, 0.0598 inch) galvanized steel.	6	6 System Mode Indication: Heating, Cooling, Fan Auto, Off, and On, Auto or On, Off.
2	Mount on minimum 300 mm (12 inch) high curb base where size exceeds 230 mm by 230 mm (9 inch by 9 inch).	PART 3 EXECUTION	
PART 3 EXECUTION		3.1	EXAMINATION
3.1	INSTALLATION	1	1 Verify that substrates are ready for installation of units and openings are as indicated on Shop Drawings.
1	Install in accordance with manufacturer's instructions.	2	2 Verify that proper power supply is available and in correct location.
2	Comply with SMACNA (ASMM) for flashing/counter-flashing of roof penetrations and supports for roof curbs and roof mounted equipment.	3	3 Verify that proper fuel supply is available for connection.
3	Check location of outlets and inlets and make necessary adjustments in position to comply with architectural features, symmetry, and lighting arrangement.	3.2	INSTALLATION
4	Install diffusers to ductwork with air tight connection.	1	1 Install in accordance with manufacturer's instructions and requirements of local authorities having jurisdiction.
5	Provide balancing dampers on duct take-off to diffusers, and grilles and registers, despite whether dampers are specified as part of the diffuser, or grille and register assembly.	2	2 Install in accordance with NFPA 90A and NFPA 90B.
6	Paint ductwork visible behind air outlets and inlets matte black. Refer to Section 099123.	3	3 Install refrigeration systems in accordance with CSA B52 and ASHRAE Std 15.
END OF SECTION 233700		END OF SECTION 238126.13	

SECTION 237223	
PACKAGED AIR TO-AIR ENERGY RECOVERY UNITS	
PART 1 GENERAL	
1.1	SECTION INCLUDES
1	1 Energy recovery units.
2	2 Filters.
3	3 Vibration isolation.
4	4 Accessories.
1.2	WARRANTY
1	1 See Section 017800 - Closeout Submittals for additional warranty requirements.
PART 2 PRODUCTS	
2.1	ENERGY RECOVERY UNITS
1	1 Energy Recovery Units for Spot Ventilation or Whole House Ventilation: Prefabricated packaged system designed by manufacturer with exchange capillary core.
1	1 Access: Hinged and/or screwed access panels on front.
2	2 Suspension brackets at the unit base.
3	3 Framing: Galvanized steel body.
4	4 Provide a ceiling grille or access panel.
5	5 Provide with MERV 15 filters on supply and exhaust air ducts.
6	6 Provide exterior wall cap.
7	7 Permanent name plate listing manufacturer mounted inside door near electrical panel.
2.2	ACCESSORIES
1	1 Remote Indicating Panel: Provide remote indication of status of unit power on, wheel rotation alarm, outside air dirty filter and return air dirty filter.
PART 3 EXECUTION	
3.1	EXAMINATION
1	1 Verify that structure is ready for installation of unit, that openings in deck for ductwork, if required, are correctly sized and located, and that mechanical and electrical utilities supplying unit are of correct capacities and are accessible.
3.2	INSTALLATION
1	1 Provide openings for suitable ductwork connection.
3.3	SYSTEM STARTUP
1	1 Provide services of manufacturer's authorized representative to provide start up of unit.
3.4	CLEANING
1	1 Clean filters, air plenums, interior and exposed-to-view surfaces prior to Substantial Performance.
END OF SECTION 237223	

SECTION 238126.13	
SMALL-CAPACITY SPLIT-SYSTEM AIR CONDITIONERS	
PART 1 GENERAL	
1.1	SECTION INCLUDES
1	1 Air-source heat pumps.
2	2 Air-cooled condensing units.
3	3 Indoor air handling (fan and coil) unit for ductless systems.
4	4 Controls.
1.2	RELATED REQUIREMENTS
1	1 Section 260583 - Wiring Connections: Electrical characteristics and wiring connections and installation and wiring of thermostats and other controls components.
1.3	REFERENCE STANDARDS
1	1 AHRI 210/240 - Standard for Performance Rating of Unitary Air-Conditioning and Air-Source Heat Pump Equipment; 2008, Including All Addenda.
2	2 AHRI 520 - Performance Rating of Positive Displacement Condensing Units; 2004.
3	3 ASHRAE Std 15 - Safety Standard for Refrigeration Systems; 2013.
4	4 ASHRAE Std 23.1 - Methods of Testing for Rating the Performance of Positive Displacement Refrigerant Compressors and Condensing Units that Operate at Subcritical Temperatures of the Refrigerant; 2010.
5	5 CSA B52 - Mechanical Refrigeration Code; 2018.
6	6 NFPA 90A - Standard for the Installation of Air-Conditioning and Ventilating Systems; 2018.
7	7 NFPA 90B - Standard for the Installation of Warm Air Heating and Air-Conditioning Systems; 2018.
8	8 UL 207 - Standard for Refrigerant-Containing Components and Accessories, Nonelectrical; Current Edition, Including All Revisions.
1.4	SUBMITTALS
1	1 See Section 013000 - Administrative Requirements for submittal procedures.
2	2 Product Data: Provide rated capacities, weights, accessories, electrical nameplate data, and wiring diagrams.
3	3 Shop Drawings: Indicate assembly, required clearances, and location and size of field connections.
4	4 Design Data: Indicate refrigerant pipe sizing.
PART 2 PRODUCTS	
2.1	SYSTEM DESIGN
1	1 Split-System Heating and Cooling Units: Self-contained, packaged, matched factory-engineered and assembled, pre-wired indoor and outdoor units; UL listed.
1	1 Heating and Cooling: Air-source electric heat pump located in outdoor unit with evaporator; auxiliary electric heat.

General Notes

This drawing is the property of Delta-T Designs Inc. and is to be reproduced without permission.

The contractor shall verify all dimensions on site and repo discrepancies to Delta-T Designs Inc. once discovered an prior to proceeding with the work.

All changes shall be approved by Delta-T Designs Inc. pri executions.

Under no circumstances shall the contractor proceed in uncertainty.

This drawing expresses the intent of the designer only, ar the responsibility of the contractor to verify all site conditic prior to providing aqute, and/or commencing work.

If there is an inconsistency between what is drawn, and w site conditions allow, it is the responsibility of the installing contractor to notify the designer prior to proceeding. Delta- Designs Inc shall not be held liable for any issues that ma arise due to the contractor not requesting clarification beforehand.

Drawings are scaled for Arch D - 24x36	
Designer Seal	P.Eng Seal (If Required)
P.Eng Contact Info (If Required)	

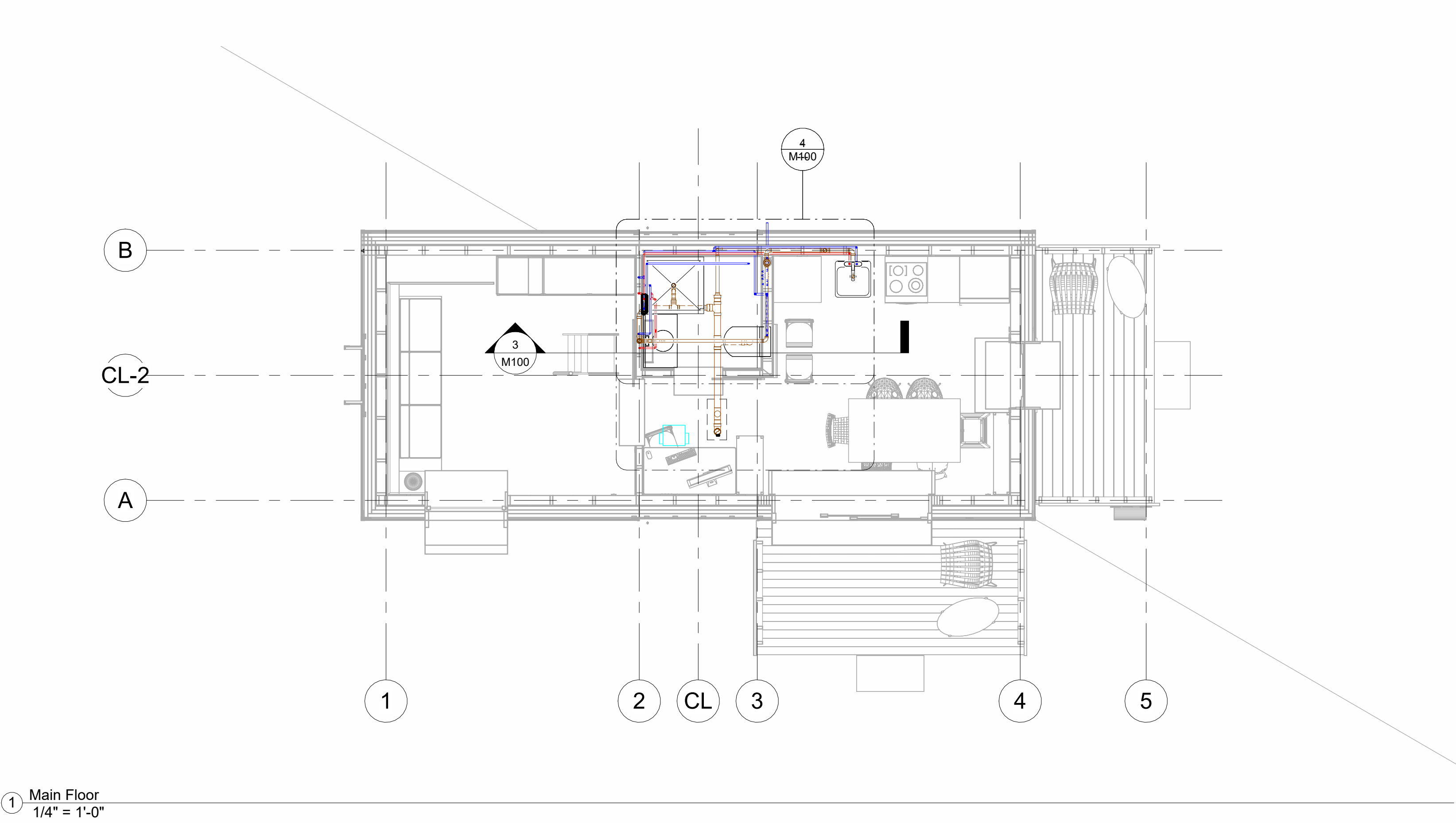
Revision Schedule		
Revision Number	Revision Description	Revis Dat
1	Issued for Coordination	May 15 2025
2	Updated for Coordination	June 1 2025
3	WIP	June 1 2025



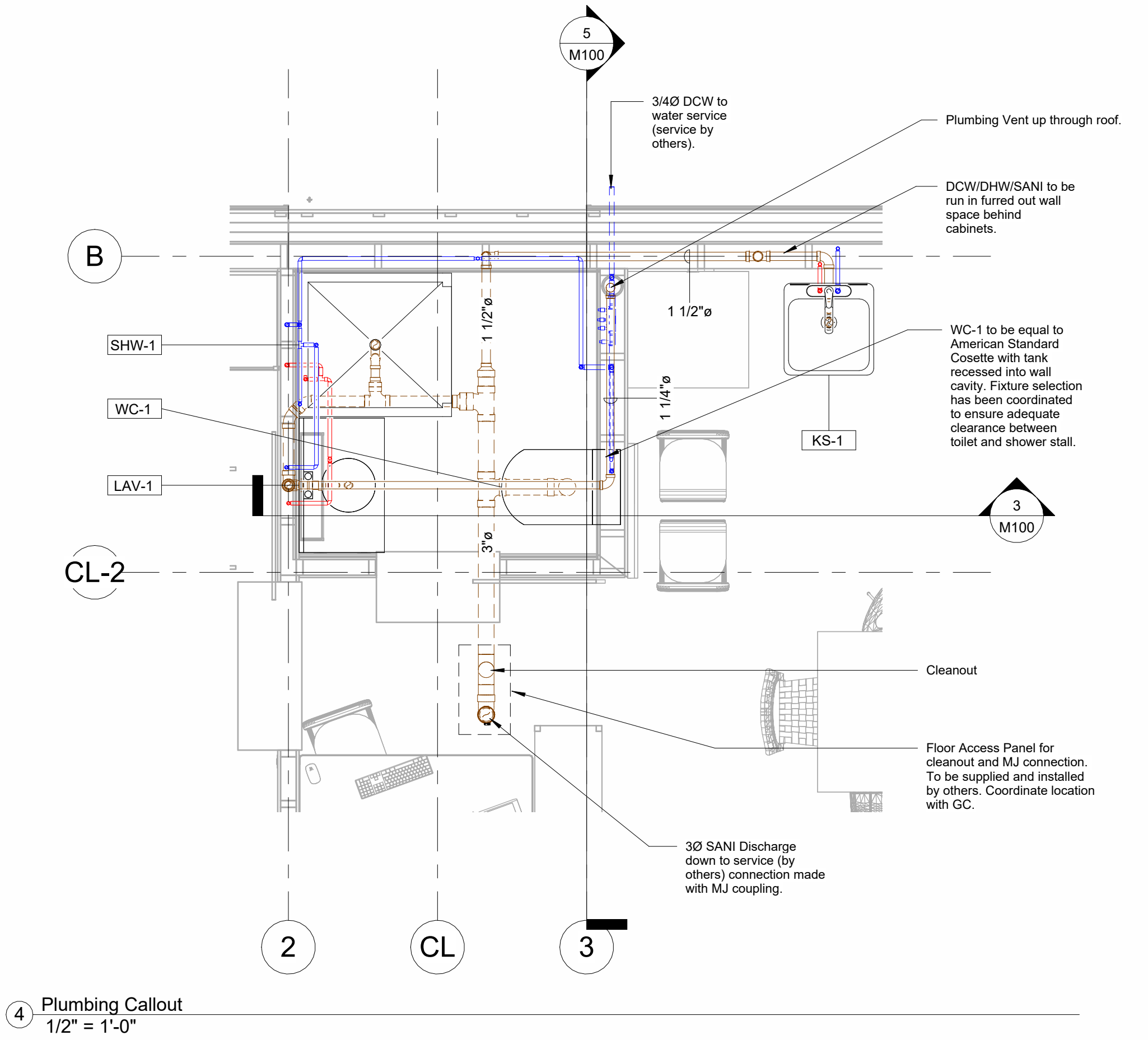
Delta-T Designs Inc.
16 Winstar Rd Unit 4
Oro-Medonte, Ontario
L0L 2L0

705.791.9000
niss@deltatdesigns.ca

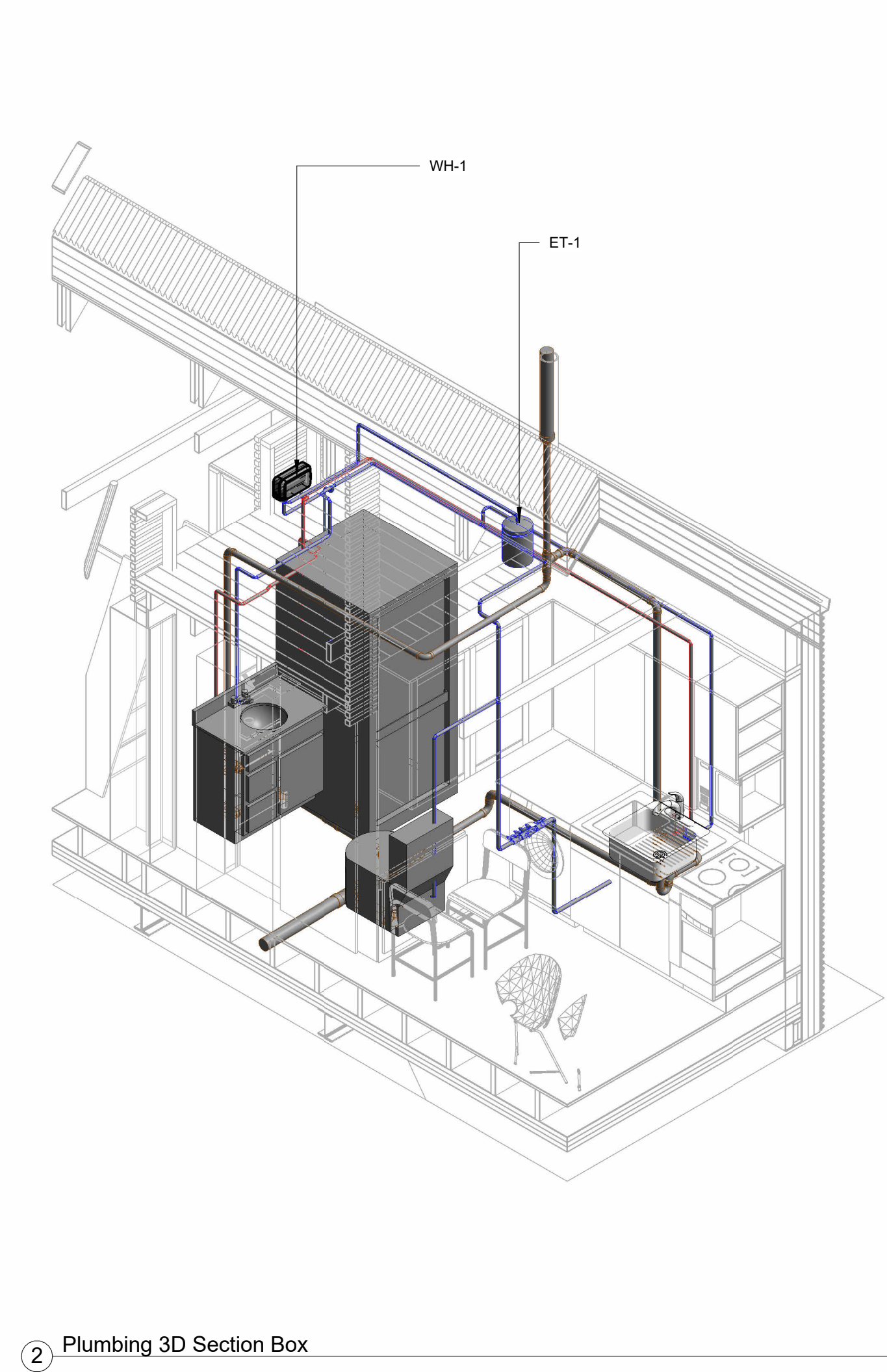
Client Name	TBD
Project Number	2025-12
Project Name & Address	Barrie Single Dedicated Accessory Dwelling Unit Barrie, Ontario
Sheet Name	Specifications
Drawn By	Al
Reviewed By	Che
Sheet Number	M004



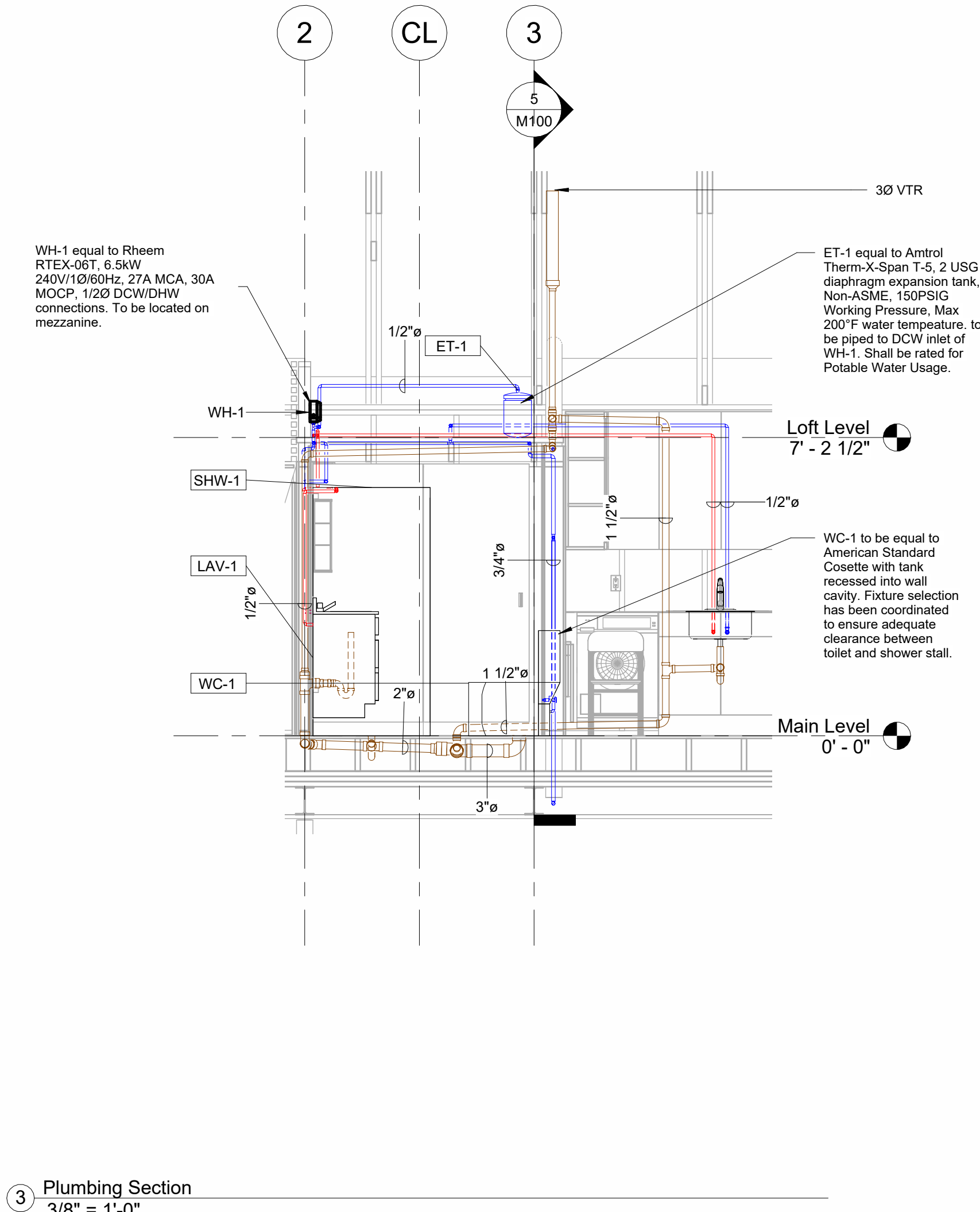
1 Main Floor
1/4" = 1'-0"



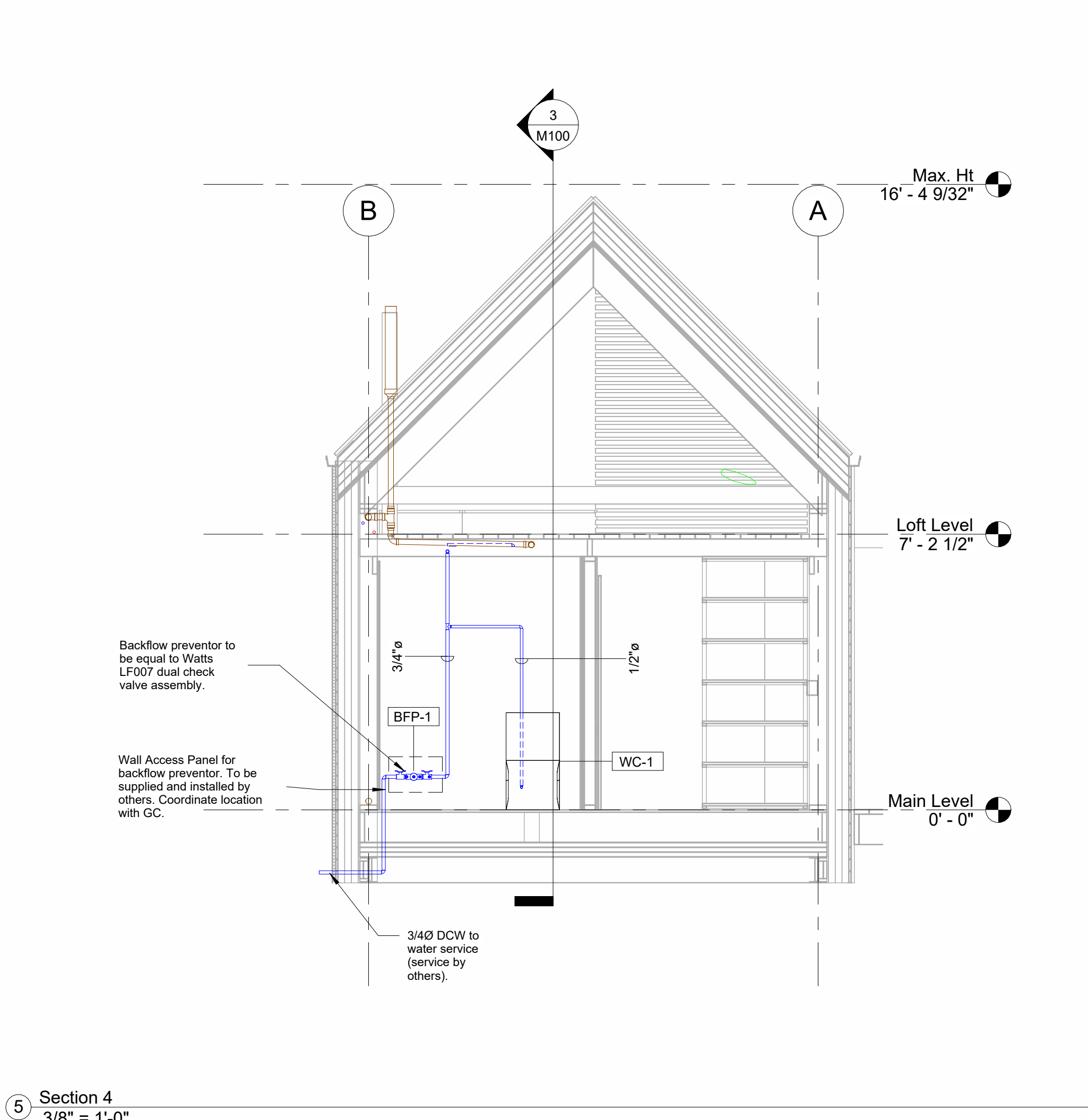
4 Plumbing Callout
1/2" = 1'-0"



2 Plumbing 3D Section Box



3 Plumbing Section
3/8" = 1'-0"



5 Section 4
3/8" = 1'-0"

General Notes

This drawing is the property of Delta-T Designs Inc. and is to be reproduced without permission.

The contractor shall verify all dimensions on site and report discrepancies to Delta-T Designs Inc. once discovered and prior to proceeding with the work.

All changes shall be approved by Delta-T Designs Inc. prior to execution.

Under no circumstances shall the contractor proceed in the absence of the designer.

This drawing expresses the intent of the designer only, and the responsibility of the contractor to verify all site conditions prior to providing a quote, and/or commencing work.

If there is an inconsistency between what is drawn, and the site conditions allow, it is the responsibility of the installing contractor to notify the designer prior to proceeding. Delta-T Designs Inc. shall not be held liable for any issues that may arise due to the contractor not requesting clarification beforehand.

Drawings are scaled for Arch D - 24x36

Designer Seal

P. Eng Seal (If Required)

P. Eng Contact Info (If Required)

Revision Schedule

Revision Number	Revision Description	Revision Date
1	Issued for Coordination	May 15, 2025
2	Updated for Coordination	June 1, 2025
3	WIP	June 1, 2025

Delta-T Designs Inc.

16 Winstar Rd Unit 4

Oro-Medonte, Ontario

L0L 2L0

705.791.9000

niss@deltatdesigns.ca

Client Name

TBD

Project Number

2025-12

Project Name & Address

Barrie Single Dedicated Accessory Dwelling Unit

Barrie, Ontario

Sheet Name

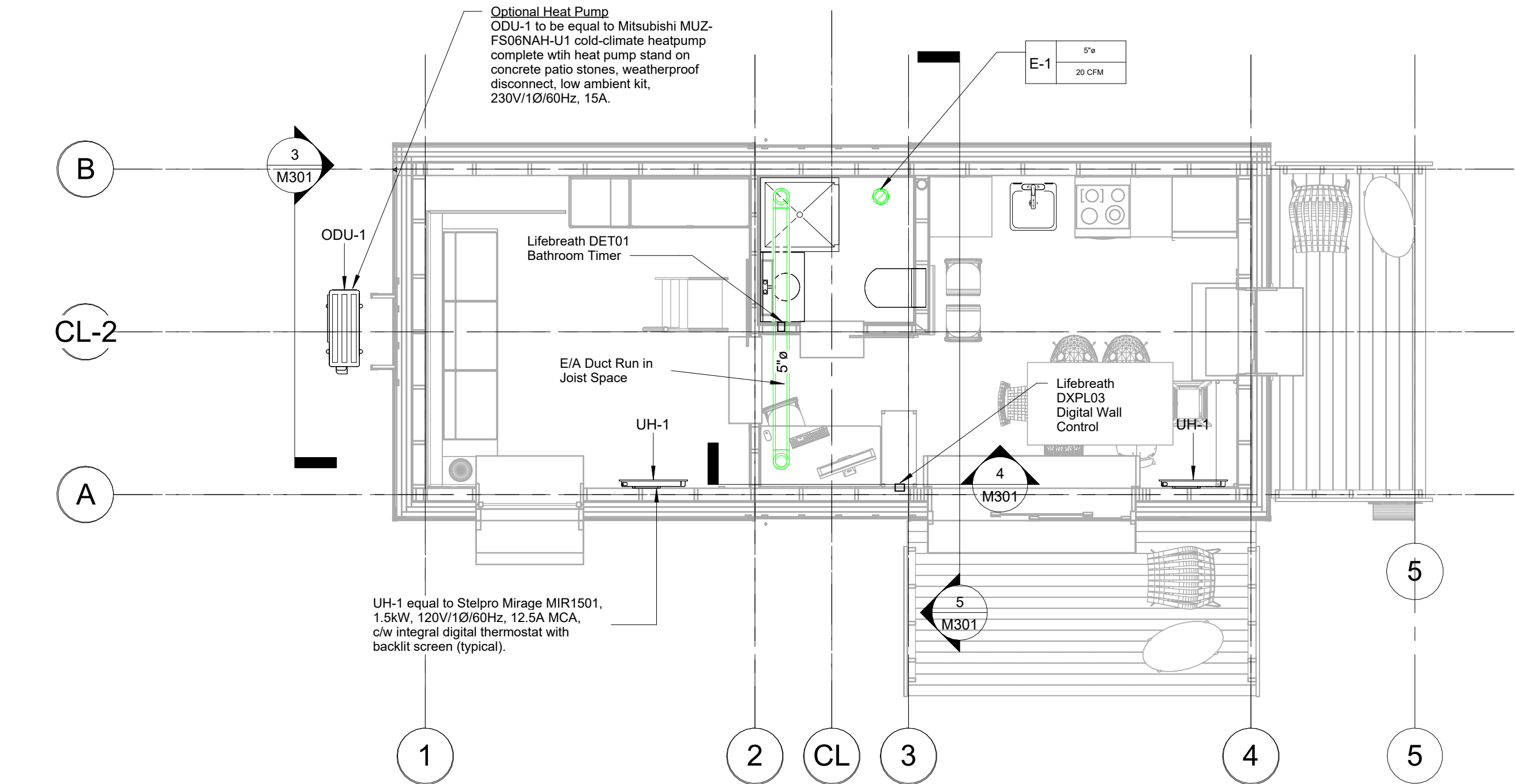
Plumbing Drawings

Drawn By

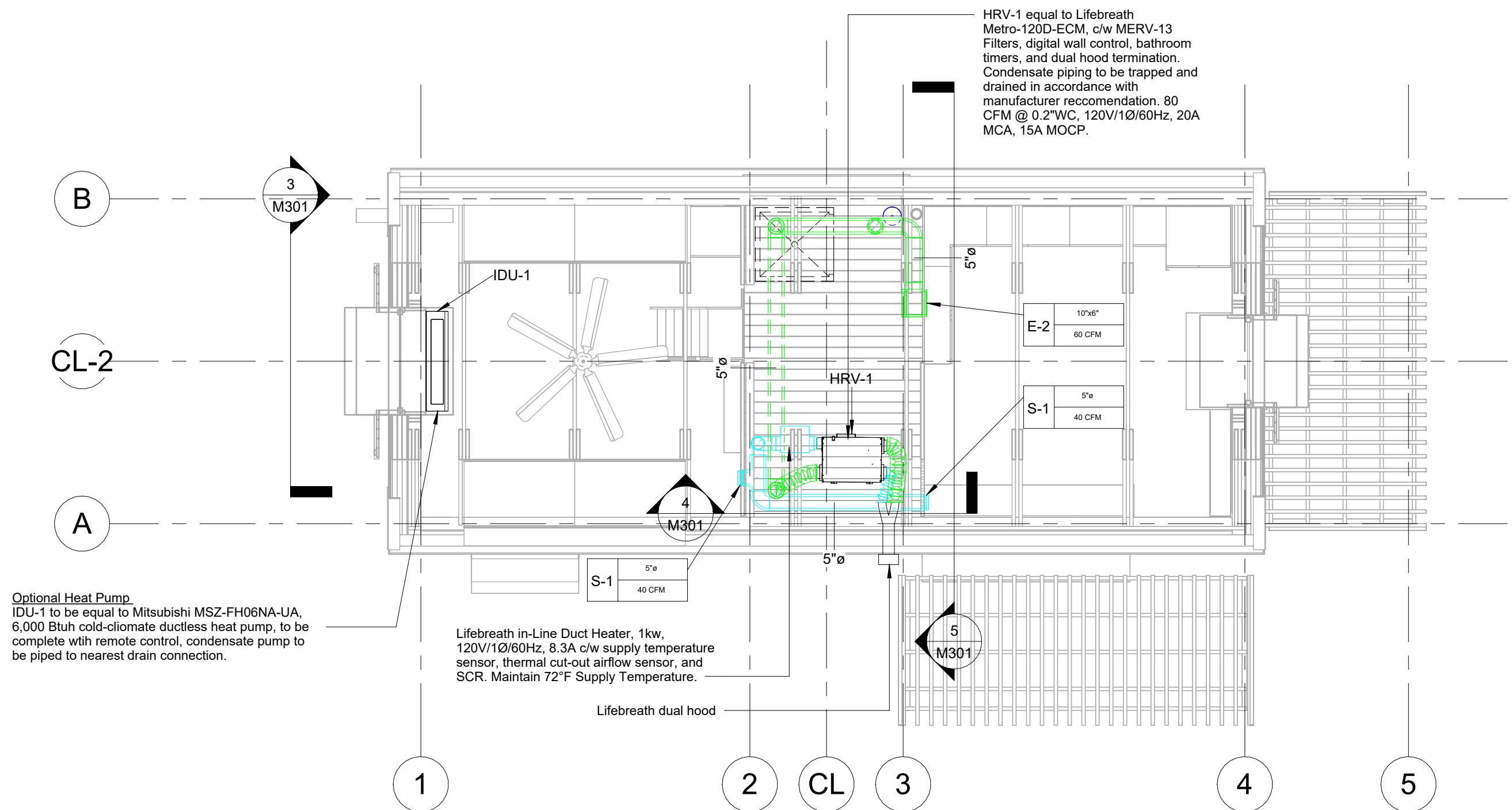
Reviewed By

Sheet Number

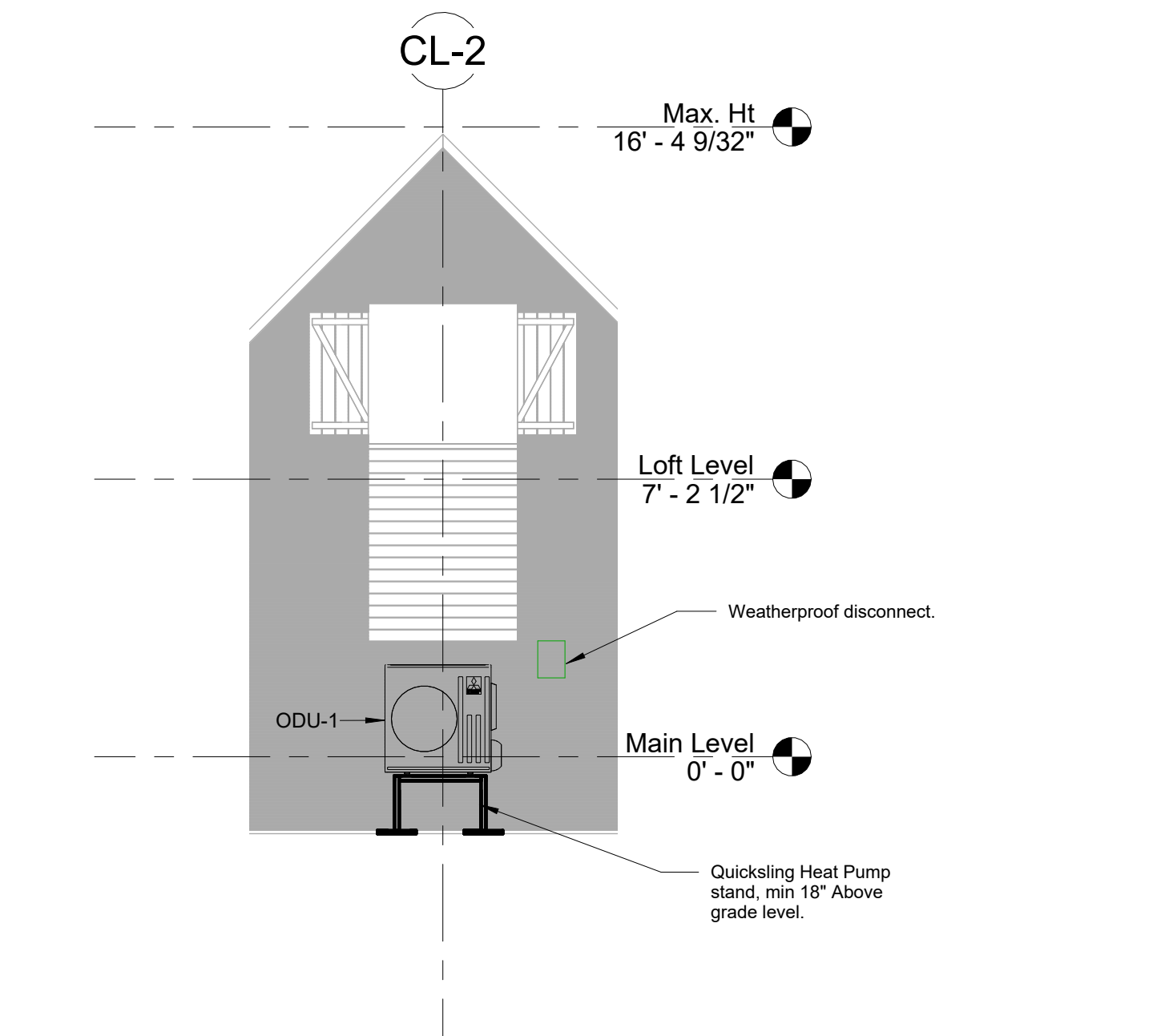
M100



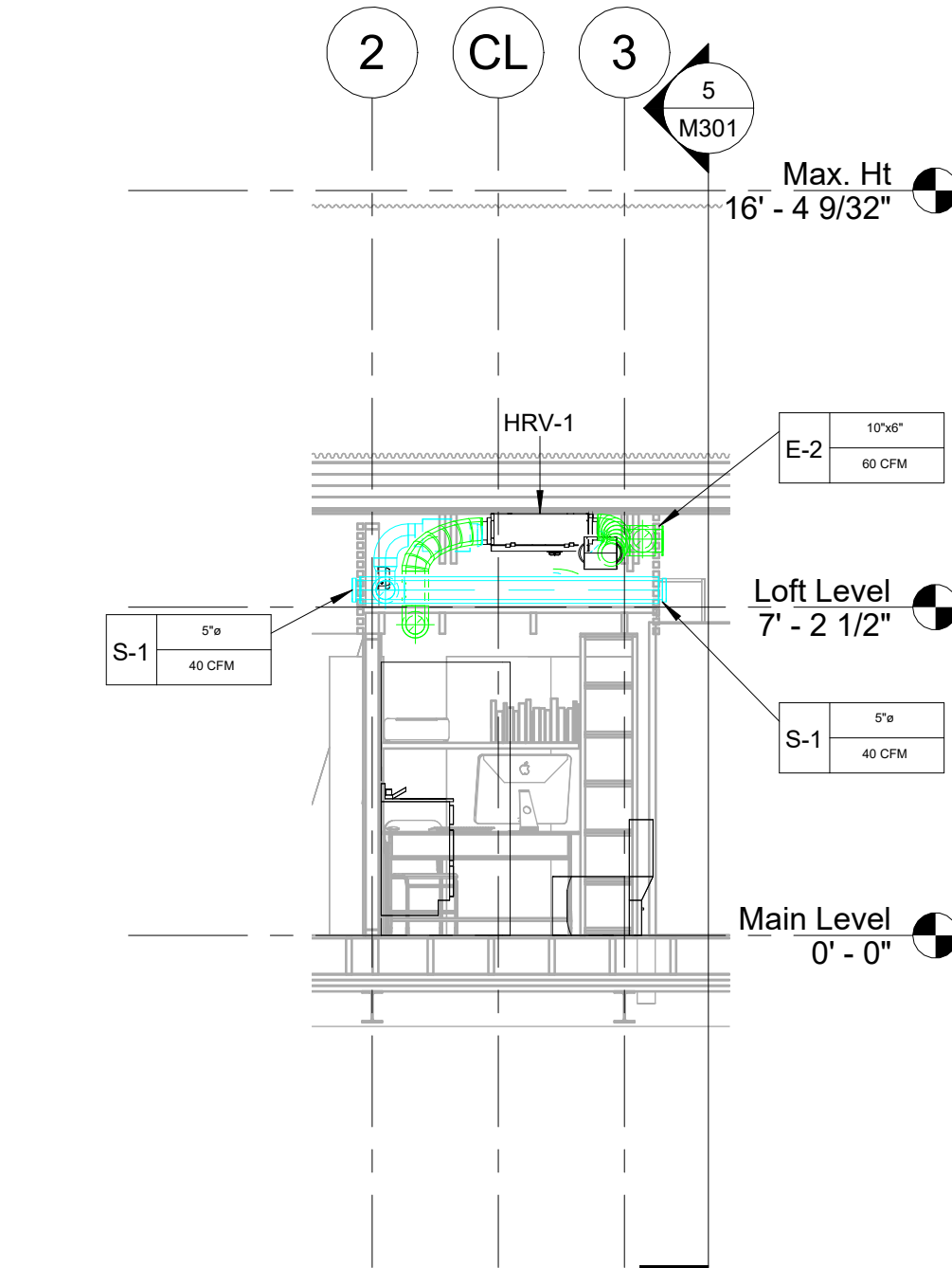
① HVAC Main Level
1/4" = 1'-0"



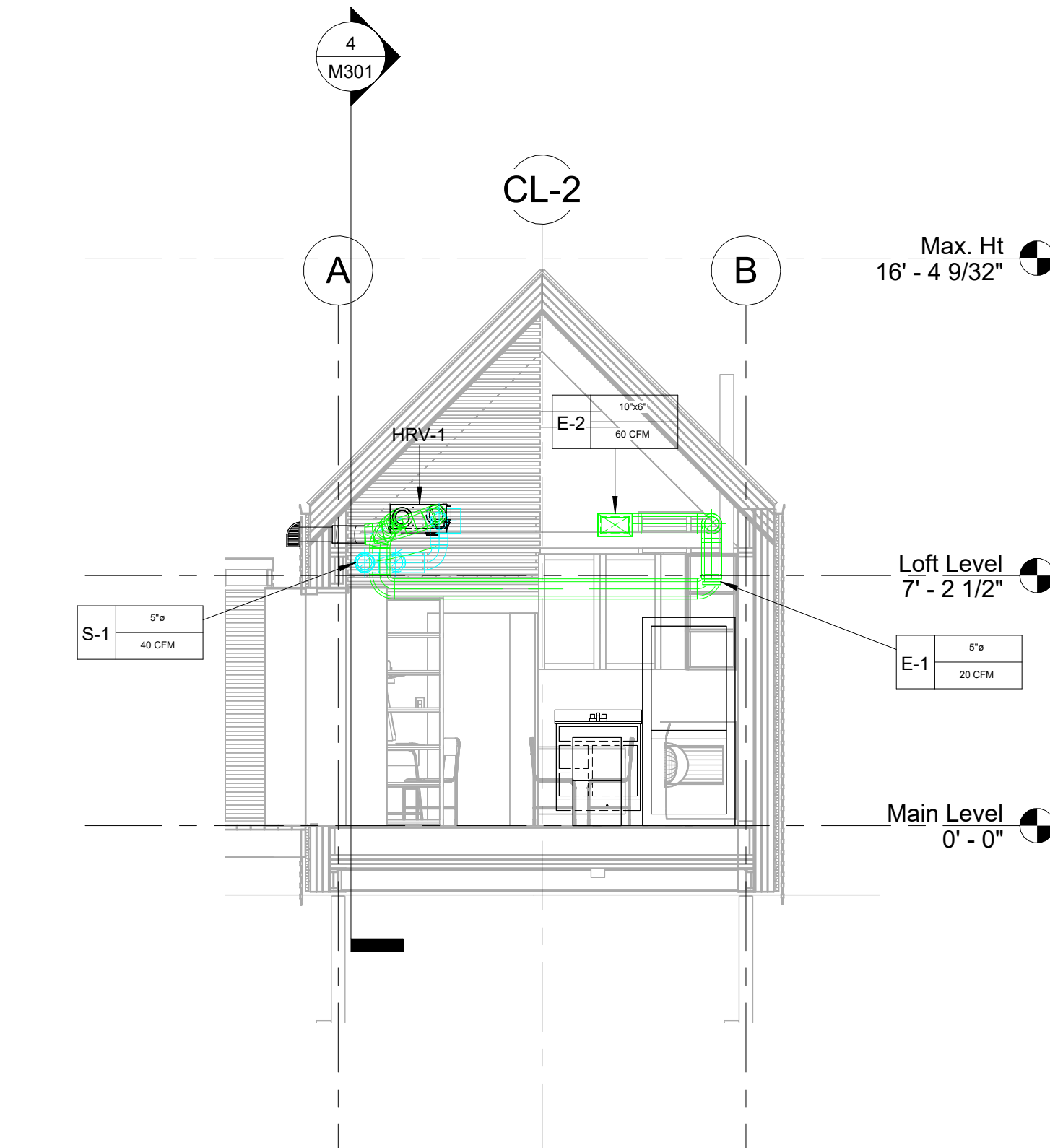
② Loft Level
1/4" = 1'-0"



③ Section 1
1/4" = 1'-0"



④ Section 2
1/4" = 1'-0"



⑤ Section 3
1/4" = 1'-0"

General Notes

This drawing is the property of Delta-T Designs Inc. and is to be reproduced without permission.

The contractor shall verify all dimensions on site and report discrepancies to Delta-T Designs Inc. once discovered and prior to proceeding with the work.

All changes shall be approved by Delta-T Designs Inc. prior to execution.

Under no circumstances shall the contractor proceed in the absence of the designer.

This drawing expresses the intent of the designer only, and the responsibility of the contractor to verify all site conditions prior to providing quotes, and/or commencing work.

If there is an inconsistency between what is drawn, and the site conditions allow, it is the responsibility of the installing contractor to notify the designer prior to proceeding. Delta-T Designs Inc. shall not be held liable for any issues that may arise due to the contractor not requesting clarification beforehand.

Drawings are scaled for Arch D - 24x36

Designer Seal

P.Eng Seal (If Required)

P.Eng Contact Info (If Required)

Revision Schedule		
Revision Number	Revision Description	Revision Date
1	Issued for Coordination	May 15, 2025
2	Updated for Coordination	June 1, 2025
3	WIP	June 1, 2025

Delta-T Designs Inc.

16 Winstar Rd Unit 4

Oro-Medonte, Ontario

L0L 2L0

705.791.9000

niss@deltatdesigns.ca

Client Name

TBD

Project Number

2025-12

Project Name & Address

Barrie Single Dedicated Accessory Dwelling Unit

Barrie, Ontario

Sheet Name

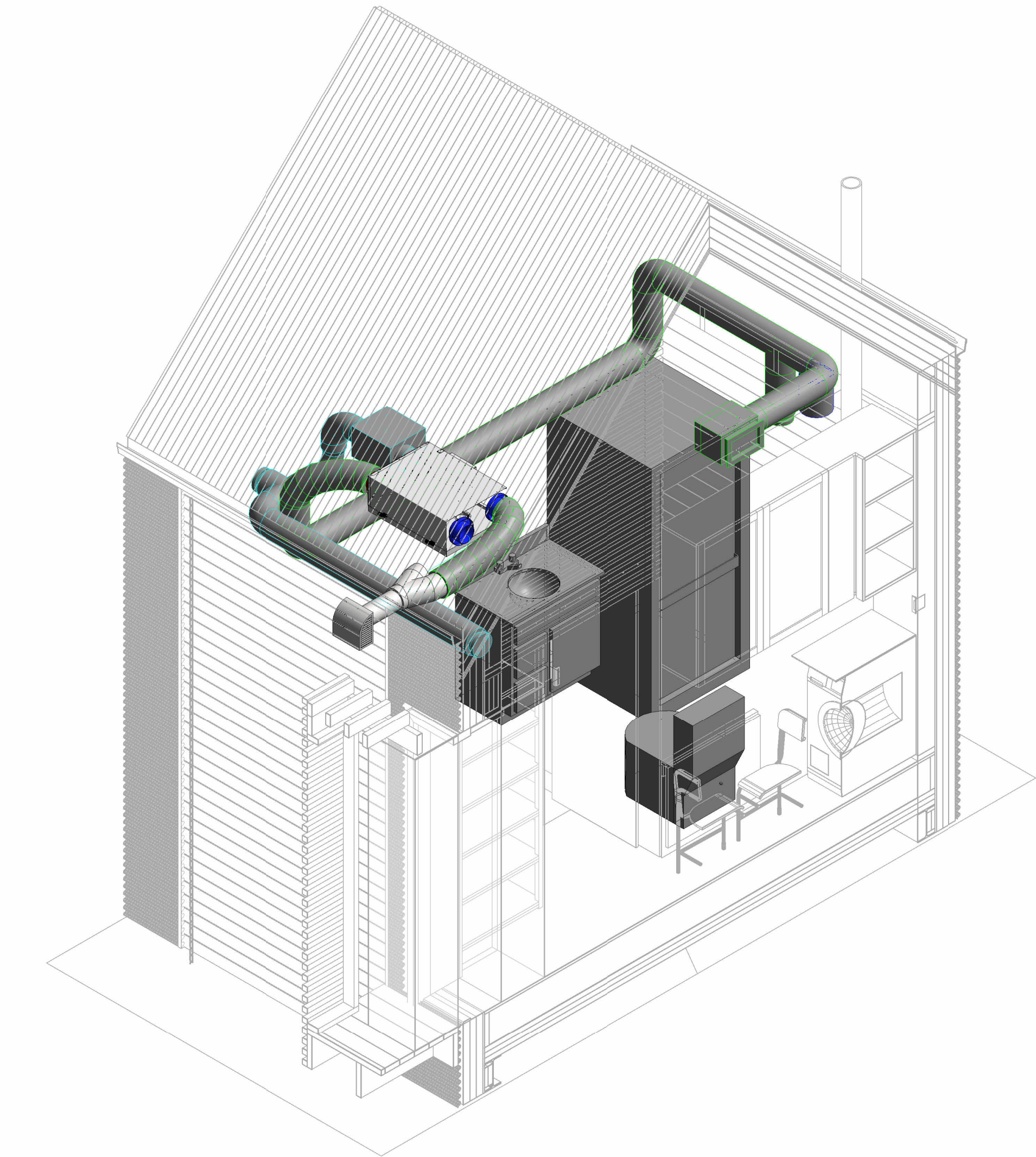
HVAC Drawings

Drawn By

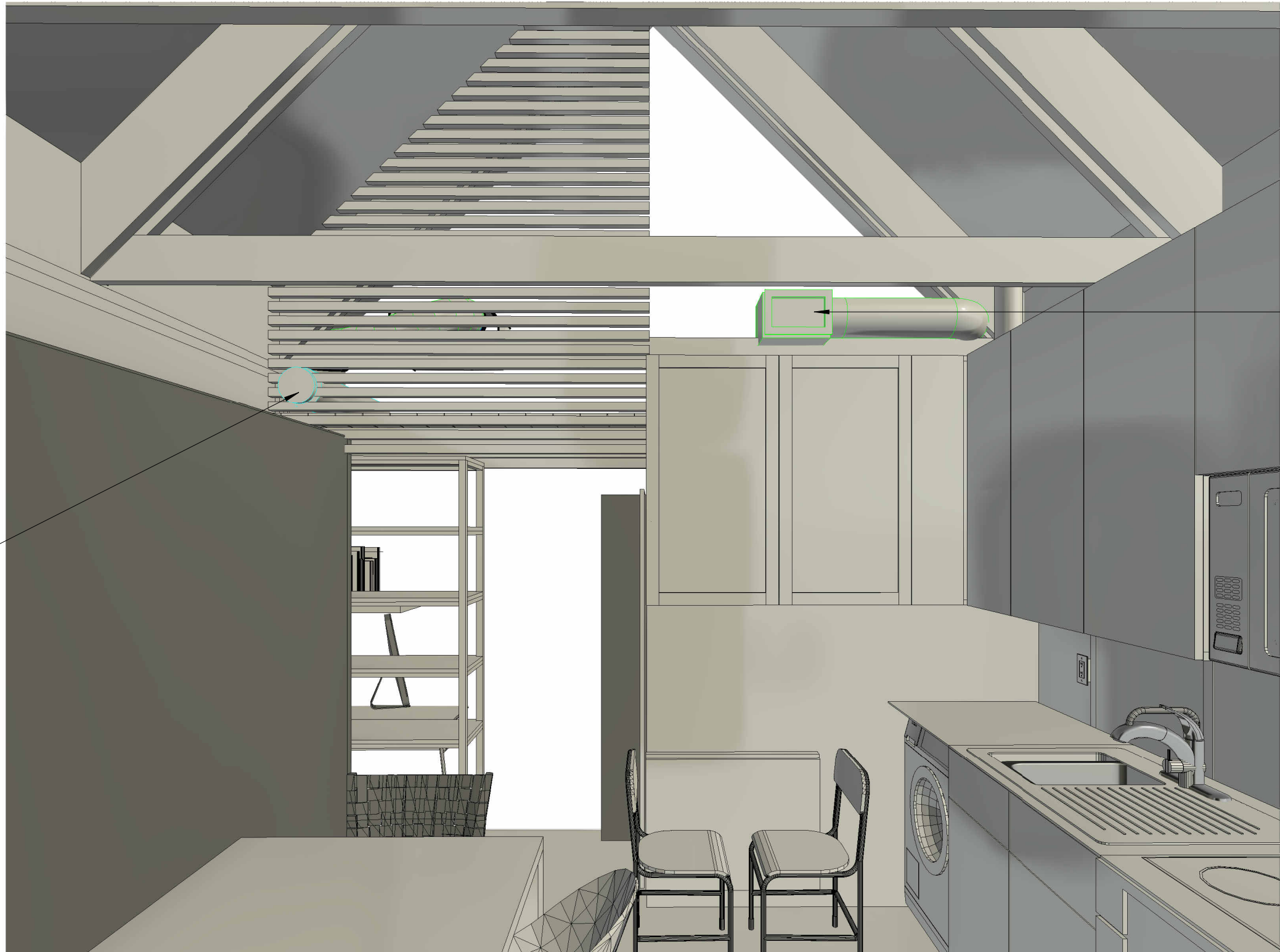
Reviewed By

Sheet Number

M301



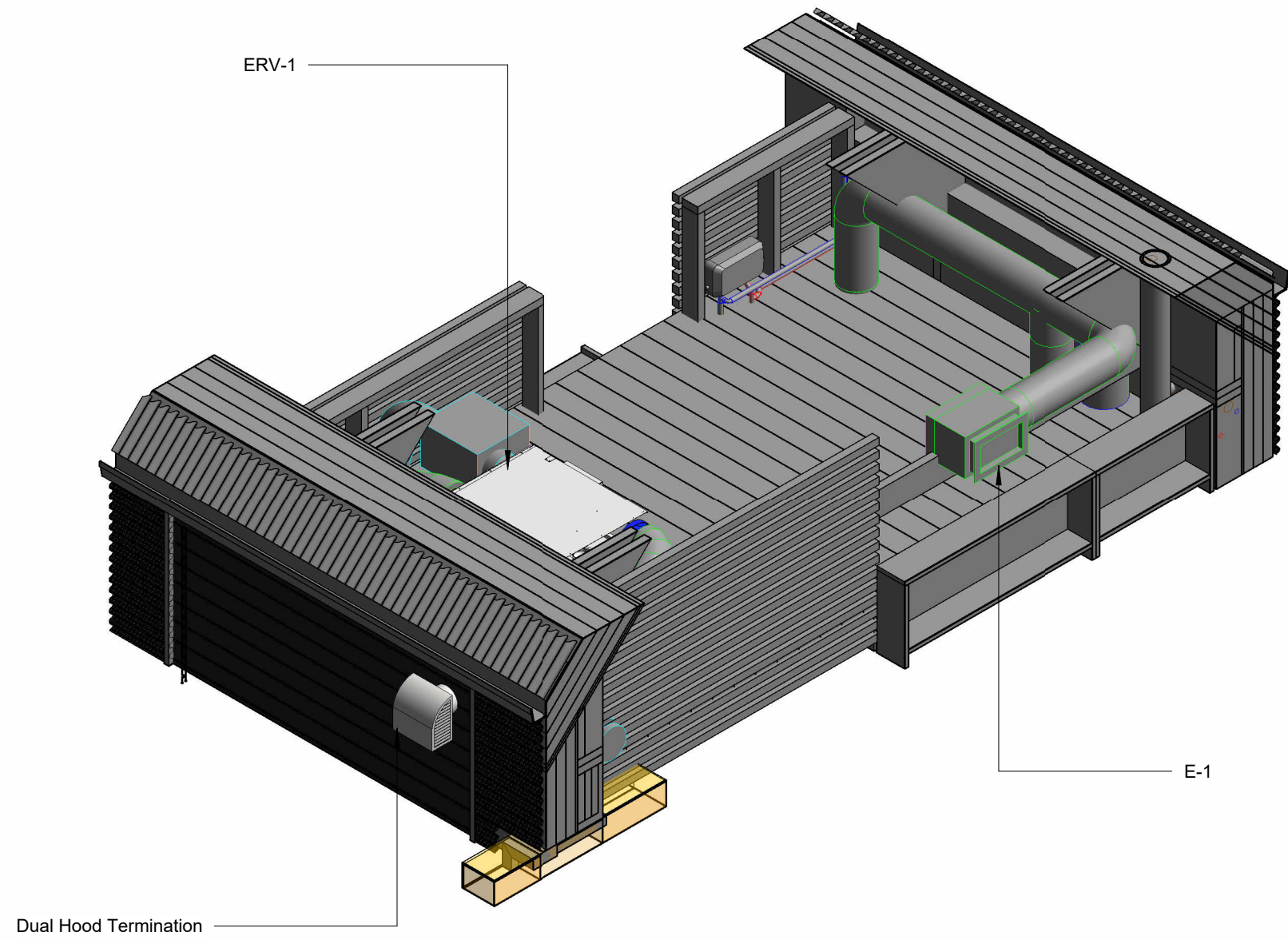
1 HVAC 3D Section



2 3D View 1



3 3D View 2



4 Mechanical Loft 3D

General Notes

This drawing is the property of Delta-T Designs Inc. and is to be reproduced without permission.

The contractor shall verify all dimensions on site and report discrepancies to Delta-T Designs Inc. once discovered and prior to proceeding with the work.

All changes shall be approved by Delta-T Designs Inc. prior to execution.

Under no circumstances shall the contractor proceed in the absence of the designer.

This drawing expresses the intent of the designer only, and the responsibility of the contractor to verify all site conditions prior to providing accurate, and/or commencing work.

If there is an inconsistency between what is drawn, and what site conditions allow, it is the responsibility of the installing contractor to notify the designer prior to proceeding. Delta-T Designs Inc. shall not be held liable for any issues that may arise due to the contractor not requesting clarification beforehand.

Drawings are scaled for Arch D - 24x36

Designer Seal P.Eng Seal (If Required)

P.Eng Contact Info (If Required)

Revision Schedule		
Revision Number	Revision Description	Revision Date
1	Issued for Coordination	May 15, 2025
2	Updated for Coordination	June 1, 2025
3	WIP	June 1, 2025

Delta-T Design

Delta-T Designs Inc.
16 Winstar Rd Unit 4
Oro-Medonte, Ontario
L0L 2L0

705.791.9000
niss@deltatdesigns.ca

Client Name TBD

Project Number 2025-12

Project Name & Address
Barrie Single Dedicated Accessory Dwelling Unit
Barrie, Ontario

Sheet Name
HVAC Drawings

Drawn By

Reviewed By

Sheet Number

M302

Heat loss and gain calculation summary sheet

CSA-F280/M2
Standard Form No. 1

These documents issued for the use of
Delta-T Designs Inc.
and may not be used by any other persons without authorization. Documents for permit and/or construction are signed in red.

Project no:
2025-12 Rev-2

Building location

Model:
Address:
City and Province:
Barrie
On

Site:
Lot:
Postal code:

Calculations based on

Dimensional information based on:

Attachment: Detached

Number of stories: 1

Weather location: Barrie, ON, CA

H5/7

Recovery %: 75 %

Front facing: North

Air tightness: Present (1961-) (ACH=3.57)

Wind exposure: Light local shielding

Internal shading: (none)

Occupants: 2

Assumed? No

Assumed? Yes

Heating design conditions

Outdoor temp: -11 °F
Indoor temp: 72 °F
Mean soil temp: 0 °F

Cooling design conditions

Outdoor temp: 82 °F
Indoor temp: 75 °F
Latitude: 44 °N
Strorage: 19 °F

Above grade walls

Style A: r-13.5 in - firm wall, mtl ext, r-13 cav ins, 1/2" wood int frsh, r-20 ext bd ins, 2"x4" wood frm, 16" o.c. stud

Style B:

Style C:

Style D:

Below grade walls

Style A:

Style B:

Style C:

Style D:

Floors on soil

Style A: 12K0 (Rf/dg ceiling, asphalt shingles roof mat, wd cons, r-6 deck ins, 1" finish)

Style B:

Style C:

Exposed floors

Style A: 15A17 (Rf floor, frm flr, 10" thkns, vinyl flr frsh, r-30 cav ins, amb ovr)

Style B:

Doors

Style A:

Style B:

Windows

Style A: e - 3 glazing, dr lowe out, 1/2" gap, insulated vinyl frm mat, dr lowe mid, argon gas, 1/4" thk, dr innr, 5 ft overhang (4 ft window ht, 0.5 ft sep.), 11 ft head ht

Style B: e - 3 glazing, dr lowe out, 1/2" gap, insulated vinyl frm mat, dr lowe mid, argon gas, 1/4" thk, dr innr, 5 ft overhang (7 ft window ht, 0.5 ft sep.), 11 ft head ht

Style C: s - e - 3 glazing, dr lowe out, 1/2" gap, insulated vinyl frm mat, dr lowe mid, argon gas, 1/4" thk, dr innr, 6.07 ft head ht

Style D: s - 3 glazing, dr lowe out, 1/2" gap, insulated vinyl frm mat, dr lowe mid, argon gas, 1/4" thk, dr innr, 5 ft overhang (7 ft window ht, 0.5 ft sep.), 6.07 ft head ht

Skylights

Style A:

Style B:

Attached documents:

Notes:

Orientation is unknown. Will be sited anywhere in Barrie.

Calculations performed by

Name:

Company: Delta-T Designs Inc.

Address: 16 Winstar Rd, Unit 4

City and Province: Oro-Medonte On

Postal code: L0L 2L0

Telephone: 705-791-9000

Fax:

Email: niss@deltatdesigns.ca

H&N cert.#:

9049

Delta-T
Designs

Load Short Form
Entire Building
Delta-T Designs Inc.

Cert.#: 9049

16 Winstar Rd, Unit 4, Oro-Medonte, On L0L 2L0 Phone: 705-791-9000 Email: niss@deltatdesigns.ca License: BCN #38852, OACETT #693546

Job: 2025-12 Rev-2

Date: May 14, 2025

By:

Project Information

For: Barrie DADU Singles
Barrie, On

Design Information

Outside db (°F)

Inside db (°F)

Design TD (°F)

Daily range

Inside humidity (%)

Moisture difference (grlb)

Htg

-11

72

83

-

30

33

Clg

82

75

7

M

50

24

Method

Expos. categ

Const. categ

Number of stories

Infiltration

F280-12

Light local shielding

Present (1961-) (ACH=3.57)

1.0

HEATING EQUIPMENT

Make

Trade

Model

AHRI ref

Efficiency

Heating input

Heating output

Temperature rise

Actual air flow

Air flow factor

Static pressure

Space thermostat

80 AFUE

0 Btuh

0 Btuh

0 °F

347 cfm

0.032 cfm/Btuh

0 in H2O

COOLING EQUIPMENT

Make

Trade

Cond

Coil

AHRI ref

Efficiency

Sensible cooling

Latent cooling

Total cooling

Actual air flow

Air flow factor

Static pressure

Load sensible heat ratio

0 SEER

0 Btuh

0 Btuh

0 Btuh

347 cfm

0.044 cfm/Btuh

0 in H2O

0.77

Delta-T
Designs

Loads for Multiple Orientations
Entire Building
Delta-T Designs Inc.

Cert.#: 9049

16 Winstar Rd, Unit 4, Oro-Medonte, On L0L 2L0 Phone: 705-791-9000 Email: niss@deltatdesigns.ca License: BCN #38852, OACETT #693546

Job: 2025-12 Rev-2

Date: May 14, 2025

By:

Project Information

For: Barrie DADU Singles
Barrie, On

Design Conditions

Location:

Barrie, ON, CA

Elevation: 968 ft

Latitude: 44°N

Indoor:

Indoor temperature (°F)

Design TD (°F)

Relative humidity (%)

Moisture difference (grlb)

Heating

72

83

30

32.5

Cooling

75

7

50

24.0

Outdoor:

Dry bulb (°F)

Daily range (°F)

Wet bulb (°F)

Wind speed (mph)

Heating

-11

-

-

15.0

Cooling

82

19 (M)

70

7.5

Infiltration:

Front Door

North

Northeast

East

Southeast

South

Southwest

West

Northwest

Sensible Load (Btuh)

Latent Load (Btuh)

Total Load (Btuh)

Heating AVF (cfm)

Cooling AVF (cfm)

6856

2362

9218

347

347

7219

2486

9705

365

365

7148

2462

9611

362

362

7369

2538

9907

373

373

6681

2301

8983

336

336

7856

2706

10562

396

396

7330

2654

9855

371

371

7706

2654

10361

390

390

Building Orientation Cooling Load

15000

10000

5000

0

N

NE

E

SE

S

SW

W

NW

Current Orientation:

Front Door faces North

Highest Cooling Load:

Front Door faces Southwest

Delta-T
Designs

Building Analysis
Entire Building
Delta-T Designs Inc.

Cert.#: 9049

16 Winstar Rd, Unit 4, Oro-Medonte, On L0L 2L0 Phone: 705-791-9000 Email: niss@deltatdesigns.ca License: BCN #38852, OACETT #693546

Job: 2025-12 Rev-2

Date: May 14, 2025

By:

Project Information

For: Barrie DADU Singles
Barrie, On

Design Conditions

Location:

Barrie, ON, CA

Elevation: 968 ft

Latitude: 44°N

Indoor:

Indoor temperature (°F)

Design TD (°F)

Relative humidity (%)

Moisture difference (grlb)

Heating

72

83

30

32.5

Cooling

75

7

50

24.0

Outdoor:

Dry bulb (°F)

Daily range (°F)

Wet bulb (°F)

Wind speed (mph)

Heating

-11

-

-

15.0

Cooling

82

19 (M)

70

7.5

Infiltration:

Method

Expos. categ

Const. categ

Number of stories

F280-12

Light local shielding

Present (1961-) (ACH=3.57)

1.0

Heating

Component

Btuh/ft²

Btuh

% of load

Walls

2.5

1439

13.3

Glazing

13.1

1538

14.2

Doors

0

0

0

Ceilings

8.7

3740

34.5

Floors

1.4

458

4.2

Infiltration

15.9

1858

17.2

Ducts

0

0

0

Hydronic

0

0

0

Humidification

0

0

0

Ventilation

1797

0

16.6

Adjustments

0

0

0

Total

10830

100.0

Cooling

Component

Btuh/ft²

Btuh

% of load

Walls

0.1

73

0.9

Glazing

24.4

2854

36.3

Doors

0

0

0

Ceilings

3.6

1533

19.5

Floors

0.0

13

0.2

Infiltration

0.3

38

0.5

Ducts

0

0

0

Ventilation

153

0

1.9

Internal gains

3208

40.7

0

Blower

0

0

0

Adjustments

0

0

0

Total

7872

100.0

Latent Cooling Load = 2362 Btuh

Overall U-value = 0.063 Btuh/ft²-F, Window / Floor Area = 36.7 %

WARNING: window to floor area ratio = 36.7% - more than 25%.

Delta-T
Designs

Component Constructions
Entire Building
Delta-T Designs Inc.

Cert.#: 9049

16 Winstar Rd, Unit 4, Oro-Medonte, On L0L 2L0 Phone: 705-791-9000 Email: niss@deltatdesigns.ca License: BCN #38852, OACETT #693546

Job: 2025-12 Rev-2

Date: May 14, 2025

By:

Project Information

For: Barrie DADU Singles
Barrie, On

Design Conditions

Location:

Barrie, ON, CA

Elevation: 968 ft

Latitude: 44°N

Indoor:

Indoor temperature (°F)

Design TD (°F)

Relative humidity (%)

Moisture difference (grlb)

Heating

72

83

30

32.5

Cooling

75

7

50

24.0

Outdoor:

Dry bulb (°F)

Daily range (°F)

Wet bulb (°F)

Wind speed (mph)

Heating

-11

-

-

15.0

Cooling

82

19 (M)

70

7.5

Infiltration:

Method

Expos. categ

Const. categ

Number of stories

F280-12

Light local shielding

Present (1961-) (ACH=3.57)

1.0

Construction descriptions

Or

Area
ft²

R-value
R²/FBtuh

R-value
R²/FBtuh

Insul R
R²/FBtuh

A/R
Btuh/°F

Htg TD/R
Btuh/°F

Loss Clg TD/R
Btuh/°F

Gain
Btuh

Walls

Firm wall, mtl ext, r-13 cav ins, 1/2" wood int frsh, r-20 ext bd ins, 2"x4" wood frm, 16" o.c. stud

n

232

33.4

33.0

6.9

2.49

578

0.01

2

e

83

33.4

33.0

2.5

2.49

205

0.30

25

s

162

33.4

33.0

4.8

2.49

403

0.09

15

w

102

33.4

33.0

3.0

2.49

253

0.30

31

all

578

33.4

33.0

17.3

2.49

1439

0.13

73

Partitions

(none)

Windows

3 glazing, dr lowe out, 1/2" gap, insulated vinyl frm mat, dr lowe mid, argon gas, 1/4" thk, dr innr, 3 glazing, dr lowe out, 1/2" gap, insulated vinyl frm mat, dr lowe mid, argon gas, 1/4" thk, dr innr, 5 ft overhang (4 ft window ht, 0.5 ft sep.), 11 ft head ht

e

12

6.3

0

1.9

13.1

158

19.7

236

e

21

6.3

0

3.3

13.1

276

31.1

653

3 glazing, dr lowe out, 1/2" gap, insulated vinyl frm mat, dr lowe mid, argon gas, 1/4" thk, dr innr, 3 glazing, dr lowe out, 1/2" gap, insulated vinyl frm mat, dr lowe mid, argon gas, 1/4" thk, dr innr, 5 ft overhang (7 ft window ht, 0.5 ft sep.), 11 ft head ht

e

21

6.3

0

3.3

13.1

276

31.1

653

3 glazing, dr lowe out, 1/2" gap, insulated vinyl frm mat, dr lowe mid, argon gas, 1/4" thk, dr innr, 3 glazing, dr lowe out, 1/2" gap, insulated vinyl frm mat, dr lowe mid, argon gas, 1/4" thk, dr innr, 5 ft overhang (7 ft window ht, 0.5 ft sep.), 11 ft head ht

e

21

6.3

0

3.3

13.1

276

31.1

653

3 glazing, dr lowe out, 1/2" gap, insulated vinyl frm mat, dr lowe mid, argon gas, 1/4" thk, dr innr, 3 glazing, dr lowe out, 1/2" gap, insulated vinyl frm mat, dr lowe mid, argon gas, 1/4" thk, dr innr, 5 ft overhang (7 ft window ht, 0.5 ft sep.), 11 ft head ht

e

21

6.3

0

3.3

13.1

276

31.1

653

3 glazing, dr lowe out, 1/2" gap, insulated vinyl frm mat, dr lowe mid, argon gas, 1/4" thk, dr innr, 3 glazing, dr lowe out, 1/2" gap, insulated vinyl frm mat, dr lowe mid, argon gas, 1/4" thk, dr innr, 5 ft overhang (7 ft window ht, 0.5 ft sep.), 11 ft head ht

e

21

6.3

0

3.3

13.1

276

31.1

653

3 glazing, dr lowe out, 1/2" gap, insulated vinyl frm mat, dr lowe mid, argon gas, 1/4" thk, dr innr, 3 glazing, dr lowe out, 1/2" gap, insulated vinyl frm mat, dr lowe mid, argon gas, 1/4" thk, dr innr, 5 ft overhang (7 ft window ht, 0.5 ft sep.), 11 ft head ht

e

21

6.3

0

3.3

13.1

276

31.1

653

3 glazing, dr lowe out, 1/2" gap, insulated vinyl frm mat, dr lowe mid, argon gas, 1/4" thk, dr innr, 3 glazing, dr lowe out, 1/2" gap, insulated vinyl frm mat, dr lowe mid, argon gas, 1/4" thk, dr innr, 5 ft overhang (7 ft window ht, 0.5 ft sep.), 11 ft head ht

e

21

6.3

0

3.3

13.1

276

31.1

653

3 glazing, dr lowe out, 1/2" gap, insulated vinyl frm mat, dr lowe mid, argon gas, 1/4" thk, dr innr, 3 glazing, dr lowe out, 1/2" gap, insulated vinyl frm mat, dr lowe mid, argon gas, 1/4" thk, dr innr, 5 ft overhang (7 ft window ht, 0.5 ft sep.), 11 ft head ht

e

21

6.3

0

3.3

13.1

276

31.1

653

3 glazing, dr lowe out, 1/2" gap, insulated vinyl frm mat, dr lowe mid, argon gas, 1/4" thk, dr innr, 3 glazing, dr lowe out, 1/2" gap, insulated vinyl frm mat, dr lowe mid, argon gas, 1/4" thk, dr innr, 5 ft overhang (7 ft window ht, 0.5 ft sep.), 11 ft head ht

e

21

6.3

0

3.3

13.1

276

31.1

653

3 glazing, dr lowe out, 1/2" gap, insulated vinyl frm mat, dr lowe mid, argon gas, 1/4" thk, dr innr, 3 glazing, dr lowe out, 1/2" gap, insulated vinyl frm mat, dr lowe mid, argon gas, 1/4" thk, dr innr, 5 ft overhang (7 ft window ht, 0.5 ft sep.), 11 ft head ht

e

21

6.3

0

3.3

13.1

276

31.1

653

3 glazing, dr lowe out, 1/2" gap, insulated vinyl frm mat, dr lowe mid, argon gas, 1/4" thk, dr innr, 3 glazing, dr lowe out, 1/2" gap, insulated vinyl frm mat, dr lowe mid, argon gas, 1/4" thk, dr innr, 5 ft overhang (7 ft window ht, 0.5 ft sep.), 11 ft head ht

e

21

6.3

0

3.3

13.1

276

31.1

653

3 glazing, dr lowe out, 1/2" gap, insulated vinyl frm mat, dr lowe mid, argon gas, 1/4" thk, dr innr, 3 glazing, dr lowe out, 1/2" gap, insulated vinyl frm mat, dr lowe mid, argon gas, 1/4" thk, dr innr, 5 ft overhang (7 ft window ht, 0.5 ft sep.), 11 ft head ht

e

21

6.3

0

3.3

13.1

276

31.1

653

3 glazing, dr lowe out, 1/2" gap, insulated vinyl frm mat, dr lowe mid, argon gas, 1/4" thk, dr innr, 3 glazing, dr lowe out, 1/2" gap, insulated vinyl frm mat, dr lowe mid, argon gas, 1/4" thk, dr innr, 5 ft overhang (7 ft window ht, 0.5 ft sep.), 11 ft head ht

e

21

6.3

0

3.3

13.1

276

31.1

653

3 glazing, dr lowe out, 1/2" gap, insulated vinyl frm mat, dr lowe mid, argon gas, 1/4" thk, dr innr, 3 glazing, dr lowe out, 1/2" gap, insulated vinyl frm mat, dr lowe mid, argon gas, 1/4" thk, dr innr, 5 ft overhang (7 ft window ht, 0.5 ft sep.), 11 ft head ht

e

21

6.3

0

3.3

13.1

276

31.1

653

3 glazing, dr lowe out, 1/2" gap, insulated vinyl frm mat, dr lowe mid, argon gas, 1/4" thk, dr innr, 3 glazing, dr lowe out, 1/2" gap, insulated vinyl frm mat, dr lowe mid, argon gas, 1/4" thk, dr innr, 5 ft overhang (7 ft window ht, 0.5 ft sep.), 11 ft head ht

e

21

6.3

0

3.3

13.1

276

31.1

653

3 glazing, dr lowe out, 1/2" gap, insulated vinyl frm mat, dr lowe mid, argon gas, 1/4" thk, dr innr, 3 glazing, dr lowe out, 1/2" gap, insulated vinyl frm mat, dr lowe mid, argon gas, 1/4" thk, dr innr, 5 ft overhang (7 ft window ht, 0.5 ft sep.), 11 ft head ht

e

21

6.3

0

3.3

13.1

276

31.1

653

3 glazing, dr lowe out, 1/2" gap, insulated vinyl frm mat, dr lowe mid, argon gas, 1/4" thk, dr innr, 3 glazing, dr lowe out, 1/2" gap, insulated vinyl frm mat, dr lowe mid, argon gas, 1/4" thk, dr innr, 5 ft overhang (7 ft window ht, 0.5 ft sep.), 11 ft head ht

e

21

6.3

0

3.3

13.1

276

31.1

653

3 glazing, dr lowe out, 1/2" gap, insulated vinyl frm mat, dr lowe mid, argon gas, 1/4" thk, dr innr, 3 glazing, dr lowe out, 1/2" gap, insulated vinyl frm mat, dr lowe mid, argon gas, 1/4" thk, dr innr, 5 ft overhang (7 ft window ht, 0.5 ft sep.), 11 ft head ht

e

21

6.3

0

3.3

13.1

276

31.1

653

3 glazing, dr lowe out, 1/2" gap, insulated vinyl frm mat, dr lowe mid, argon gas, 1/4" thk, dr innr, 3 glazing, dr lowe out, 1/2" gap, insulated vinyl frm mat, dr lowe mid, argon gas, 1/4" thk, dr innr, 5 ft overhang (7 ft window ht, 0.5 ft sep.), 11 ft head ht

e

21

6.3

0

3.3

13.1

276

31.1

653

3 glazing, dr lowe out, 1/2" gap, insulated vinyl frm mat, dr lowe mid, argon gas, 1/4" thk, dr innr, 3 glazing, dr lowe out, 1/2" gap, insulated vinyl frm mat, dr lowe mid, argon gas, 1/4" thk, dr innr, 5 ft overhang (7 ft window ht, 0.5 ft sep.), 11 ft head ht

e

21

6.3

0

3.3

13.1

276

31.1

653

3 glazing, dr lowe out, 1/2" gap, insulated vinyl frm mat, dr lowe mid, argon gas, 1/4" thk, dr innr, 3 glazing, dr lowe out, 1/2" gap, insulated vinyl frm mat, dr lowe mid, argon gas, 1/4" thk, dr innr, 5 ft overhang (7 ft window ht, 0.5 ft sep.), 11 ft head ht

e

21

6.3

0

3.3

13.1

276

31.1

653

3 glazing, dr lowe out, 1/2" gap, insulated vinyl frm mat, dr lowe mid, argon gas, 1/4" thk, dr innr, 3 glazing, dr lowe out, 1/2" gap, insulated vinyl frm mat, dr lowe mid, argon gas, 1/4" thk, dr innr, 5 ft overhang (7 ft window ht, 0.5 ft sep.), 11 ft head ht

e

21

6.3

0

3.3

13.1

276

31.1

653

3 glazing, dr lowe out, 1/2" gap, insulated vinyl frm mat, dr lowe mid, argon gas, 1/4" thk, dr innr, 3 glazing, dr lowe out, 1/2" gap, insulated vinyl frm mat, dr lowe mid, argon gas, 1/4" thk, dr innr, 5 ft overhang (7 ft window ht, 0.5 ft sep.), 11 ft head ht

e

21

6.3

0

3.3

13.1

276

31.1

653

3 glazing, dr lowe out, 1/2" gap, insulated vinyl frm mat, dr lowe mid, argon gas, 1/4" thk, dr innr, 3 glazing, dr lowe out, 1/2" gap, insulated vinyl frm mat, dr lowe mid, argon gas, 1/4" thk, dr innr, 5 ft overhang (7 ft window ht, 0.5 ft sep.), 11 ft head ht

e

21

6.3

0

3.3

13.1

276

31.1

653

3 glazing, dr lowe out, 1/2" gap, insulated vinyl frm mat, dr lowe mid, argon gas, 1/4" thk, dr innr, 3 glazing, dr lowe out, 1/2" gap, insulated vinyl frm mat, dr lowe mid, argon gas, 1/4" thk, dr innr, 5 ft overhang (7 ft window ht, 0.5 ft sep.), 11 ft head ht

e

21

6.3

0

3.3

13.1

276

31.1

653

3 glazing, dr lowe out, 1/2" gap, insulated vinyl frm mat, dr lowe mid, argon gas, 1/4" thk, dr innr, 3 glazing, dr lowe out, 1/2" gap, insulated vinyl frm mat, dr lowe mid, argon gas, 1/4" thk, dr innr, 5 ft overhang (7 ft window ht, 0.5 ft sep.), 11 ft head ht

e

21

6.3

0

3.3

13.1

276

31.1

653

3 glazing, dr lowe out, 1/2" gap, insulated vinyl frm mat, dr lowe mid, argon gas, 1/4" thk, dr innr, 3 glazing, dr lowe out, 1/2" gap, insulated vinyl frm mat, dr lowe mid, argon gas, 1/4" thk, dr innr, 5 ft overhang (7 ft window ht, 0.5 ft sep.), 11 ft head ht

e

21

6.3

0

3.3

13.1

276

31.1

653

3 glazing, dr lowe out, 1/2" gap, insulated vinyl frm mat, dr lowe mid, argon gas, 1/4" thk, dr innr, 3 glazing, dr lowe out, 1/2" gap, insulated vinyl frm mat, dr lowe mid, argon gas, 1/4" thk, dr innr, 5 ft overhang (7 ft window ht, 0.5 ft sep.), 11 ft head ht

e

21

6.3

0

3.3

13.1

276

31.1

653

3 glazing, dr lowe out, 1/2" gap, insulated vinyl frm mat, dr lowe mid, argon gas, 1/4" thk, dr innr, 3 glazing, dr lowe out, 1/2" gap, insulated vinyl frm mat, dr lowe mid, argon gas, 1/4" thk, dr innr, 5 ft overhang (7 ft window ht, 0.5 ft sep.), 11 ft head ht

e

21

6.3

0

3.3

13.1

276

31.1

653

3 glazing, dr lowe out, 1/2" gap, insulated vinyl frm mat, dr lowe mid, argon gas, 1/4" thk, dr innr, 3 glazing, dr lowe out, 1/2" gap, insulated vinyl frm mat

