

PROPOSED FOUNDATION

SCALE: 1:48

ENGINEER STAMP

**WADDELL
ENGINEERING LTD.**
119 PINEBUSH RD. CAMBRIDGE ON
PH. 519-267-6789
FAX. 1-866-388-9659
INFO@WADDELLENG.COM

PROJECT #:
20-06-027

The undersigned has reviewed and takes responsibility for this design, and has the qualifications and meets the requirements set out in the Ontario Building Code to be a designer.

QUALIFICATION INFORMATION
Required unless design is exempt under Division C-3.2.5.1 of the 2012 O.B.C.

[Signature]
John Vanderwoerd BCIN 21611

REGISTRATION INFORMATION
Required unless design is exempt under Division C-3.2.4.1 of the 2012 O.B.C.
Firm Name: Vanderwoerd Drafting & Design
BCIN 38975

**VANDERWOERD
DRAFTING & DESIGN**

John Vanderwoerd, M.A.A.T.O.
34 Duke Street, Arthur, Ontario N0G 1A0
www.home-design-bcin.ca
519-848-2128

CONTRACTOR
Wellington Landscaping

STARTING DATE: June 3, 2020
LAST REVISION DATE: Jul 21, 2020

CUSTOMER:
Dave & Gale VanVeen
94 Maple Street
Guelph, On

PROJECT:
Garage Addition

DRAWING TITLE:
Proposed Foundation

DRAWING #: 20-176
PAGE #: 1 of 10

SCALE: 1:48

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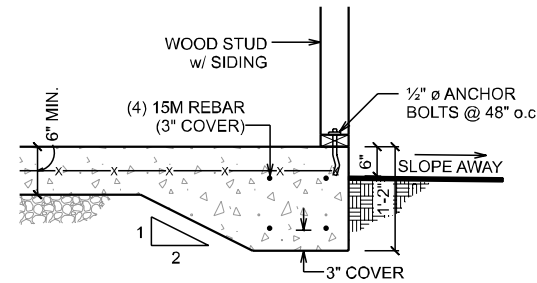
GENERAL NOTES:

FOUNDATIONS:

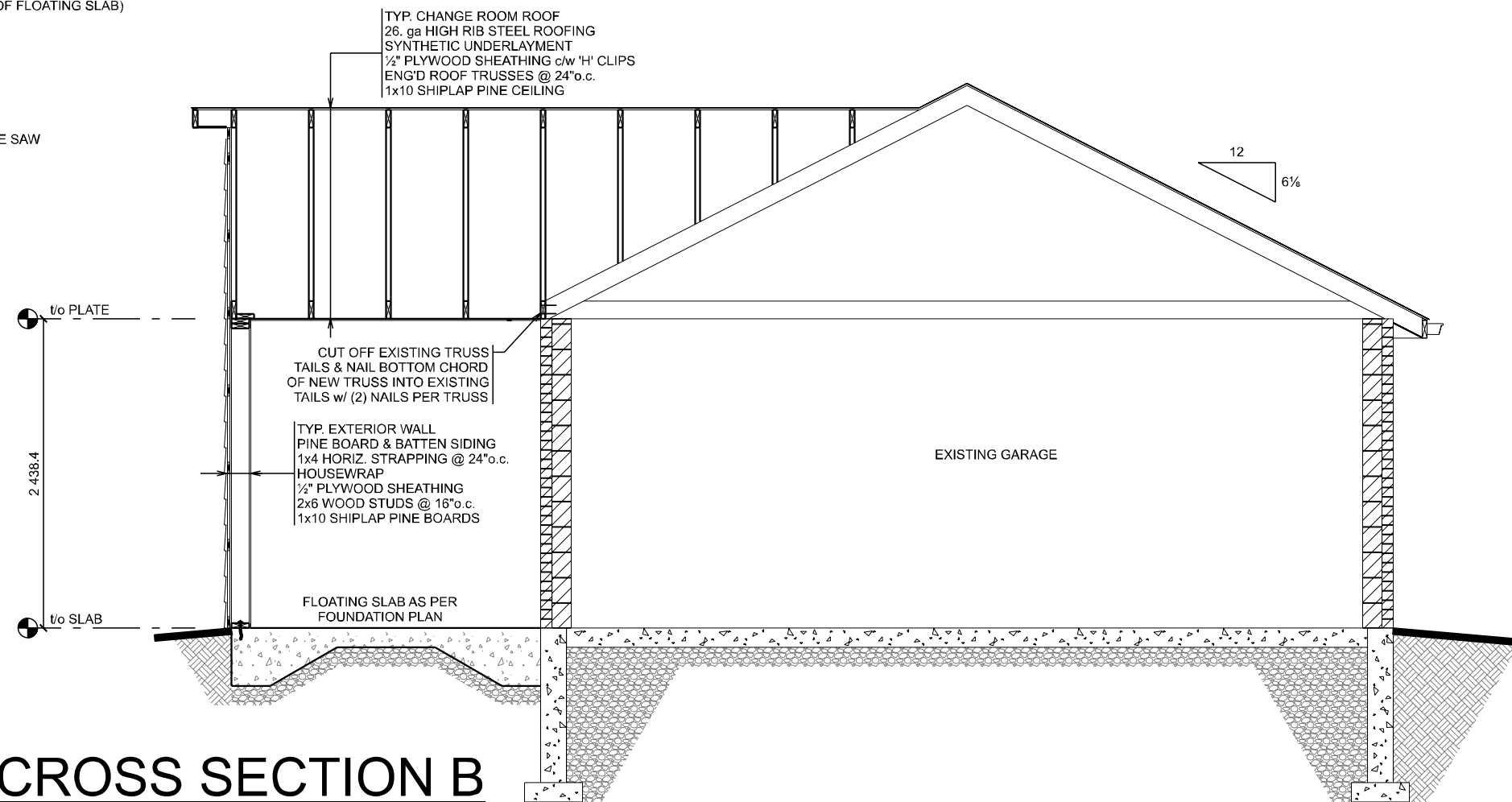
1. REMOVE ALL TOPSOIL AND ORGANIC MATERIAL FROM THE BUILDING AREA
2. SUBGRADE SHALL BE RATED FOR 1500 P.S.F. (75 kPa) AND NOT HIGHLY FROST SUSCEPTIBLE
3. PROVIDE INSULATION AS PER CANADIAN FOUNDATION ENGINEERING MANUAL
4. UNDER SLAB INSULATION: IF NOT INSTALLED, CLIENT/ CONTRACTOR ACCEPTS THE POTENTIAL OF CRACKING/HEAVING OVER TIME (IF BUILDING IS NOT HEATED) OR HEAT LOSS (IF BUILDING IS HEATED)
5. PERIMETER INSULATION: IF NOT INSTALLED, CLIENT/ CONTRACTOR ACCEPTS THE POTENTIAL OF CRACKING/HEAVING OVER TIME.

CONCRETE:

1. ALL CONCRETE ON THIS PROJECT SHALL HAVE A MINIMUM OF 28 DAYS COMPRESSIVE STRENGTH OF 32 MPa WITH 6% AIR ENTRAINMENT AND 0.45 MAX WATER TO CEMENT RATIO.
2. ALL REINFORCEMENT TO BE GRADE 400
3. REBAR SPLICE LENGTH 18" LAP (15 M BARS) WELDED WIRE MESH 9" LAP
4. ALL CONCRETE WORK SHALL BE CARRIED OUT IN ACCORDANCE TO THE LATEST EDITION OF THE ONTARIO BUILDING CODE, CAN/CSA-A23.1/A23.2-M90 AND LOCAL BY-LAWS.
5. CONCRETE COVER SHALL BE AS FOLLOWS:
 - A) 3" WHERE CONCRETE IS IN CONTACT WITH EARTH (I.E. FOOTINGS)
 - B) 2" WHERE IN FORMS TO WEATHER OR EARTH (I.E. SIDE OF FLOATING SLAB)
6. SLAB TO BE ON MIN. 6" COMPACTED GRANULAR FILL ON ORIGINAL SOIL
7. GRADE MUST SLOPE TO DRAIN AWAY FROM BUILDING
8. SLAB ON GRADE SHALL BE COMPACTED TO 98% SPDD
9. SAW CUT SLAB TO 1/4 DEPTH THE SLAB THICKNESS. SPACE SAW CUTS @ 15'-0" o.c.
10. SLAB IS NOT TO BE POURED ON FROZEN GROUND.



TYPICAL EDGE DETAIL
SCALE: 1/2" = 1'-0"



B
12

CROSS SECTION B
SCALE: 1:48

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BCIN 38975

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John Vanderwoerd, M.A.A.T.O.
34 Duke Street, Arthur, Ontario N0G 1A0
www.home-design-bcin.ca
519-848-2128

CONTRACTOR
Wellington Landscaping

STARTING DATE: June 3, 2020
LAST REVISION DATE: Jul 21, 2020

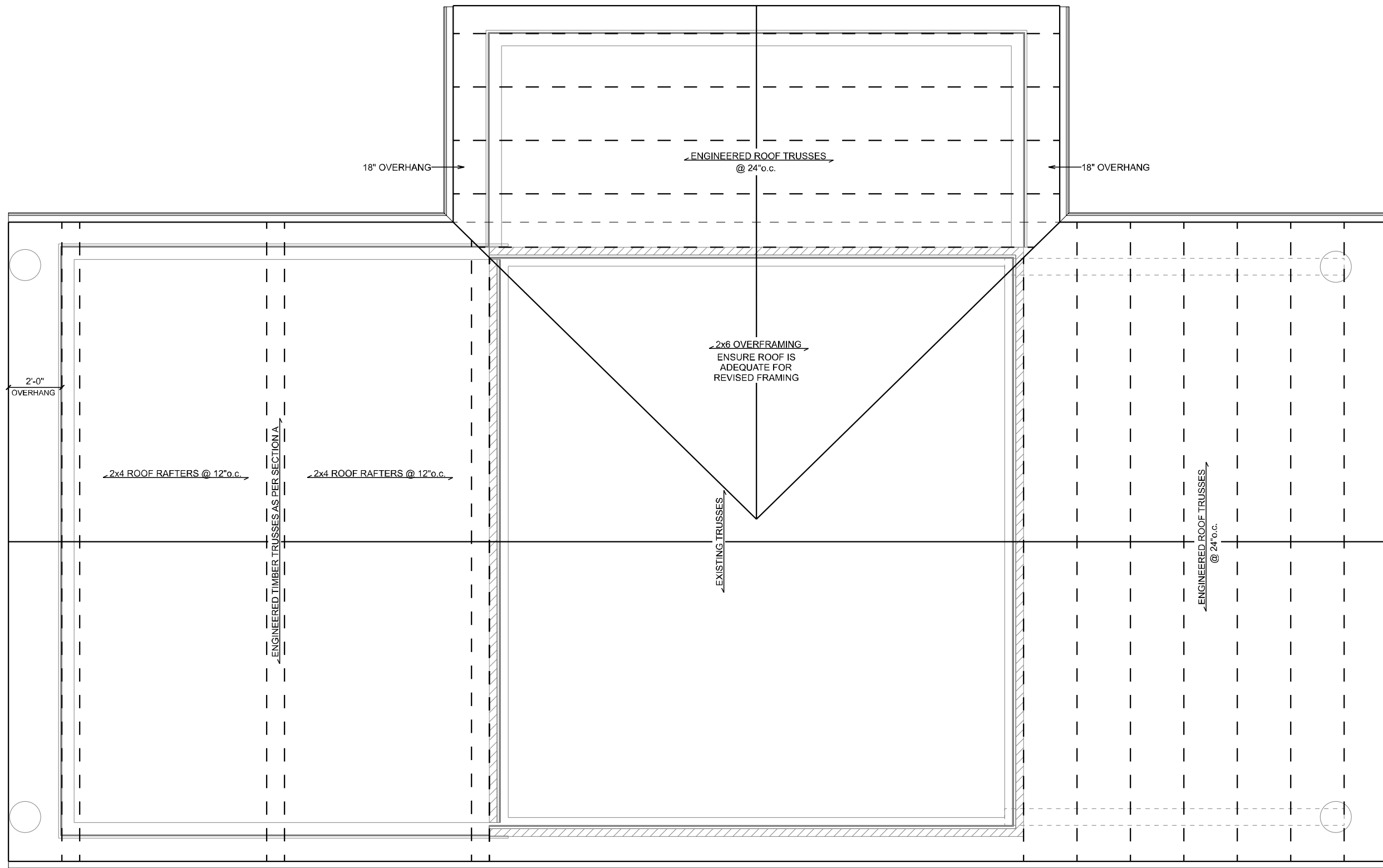
CUSTOMER:
Dave & Gale VanVeen
94 Maple Street
Guelph. On

PROJECT:
Garage Addition

DRAWING TITLE:
Foundation Notes & Detail

DRAWING #: 20-176
PAGE #: 2 of 10
SCALE: As Noted


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PROPOSED ROOF PLAN

SCALE: 1/4" = 1'-0"

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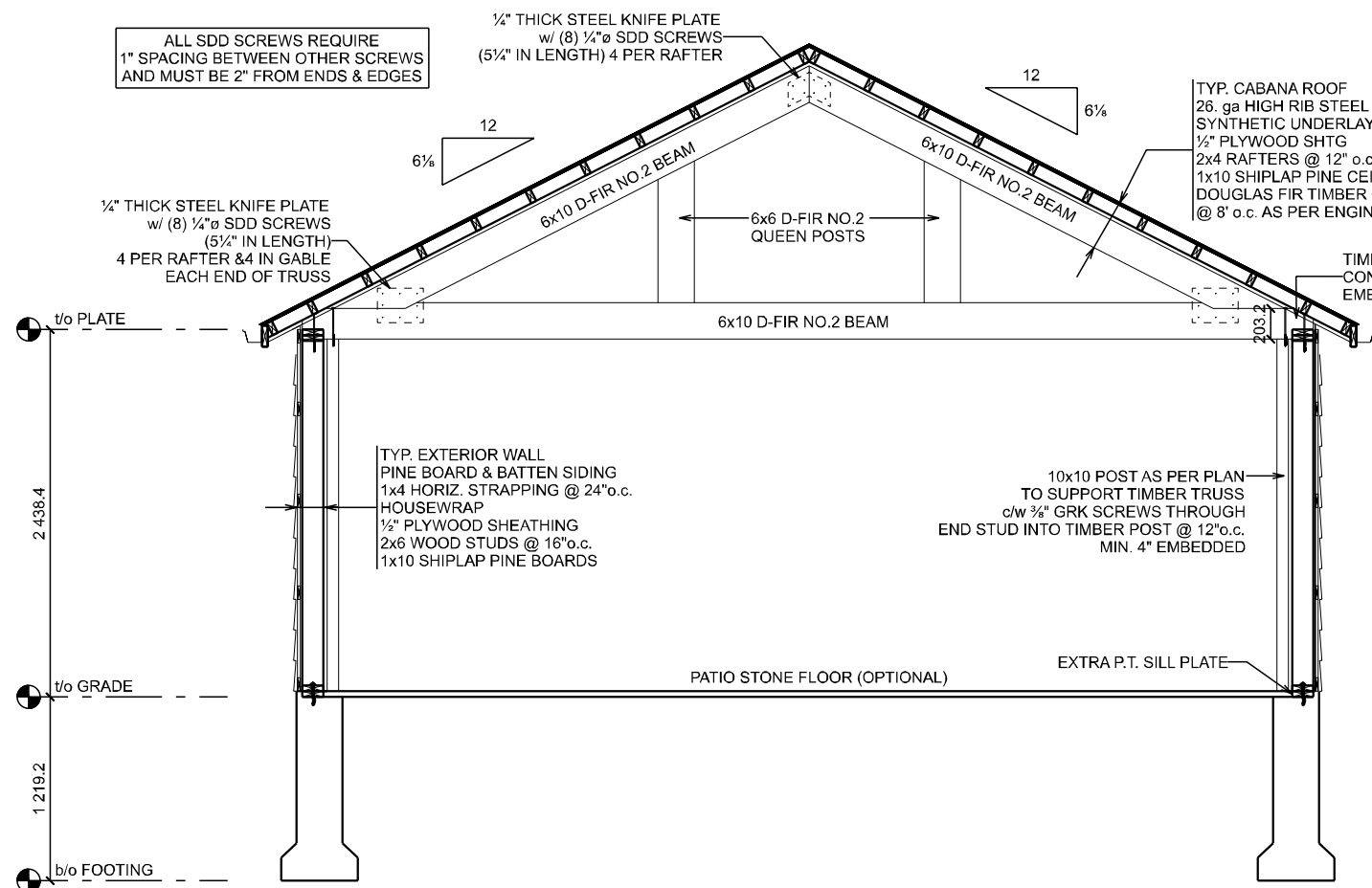
CUSTOMER:
Dave & Gale VanVeen
94 Maple Street
Guelph, On

PROJECT:
Garage Addition

DRAWING TITLE:
Roof Plan

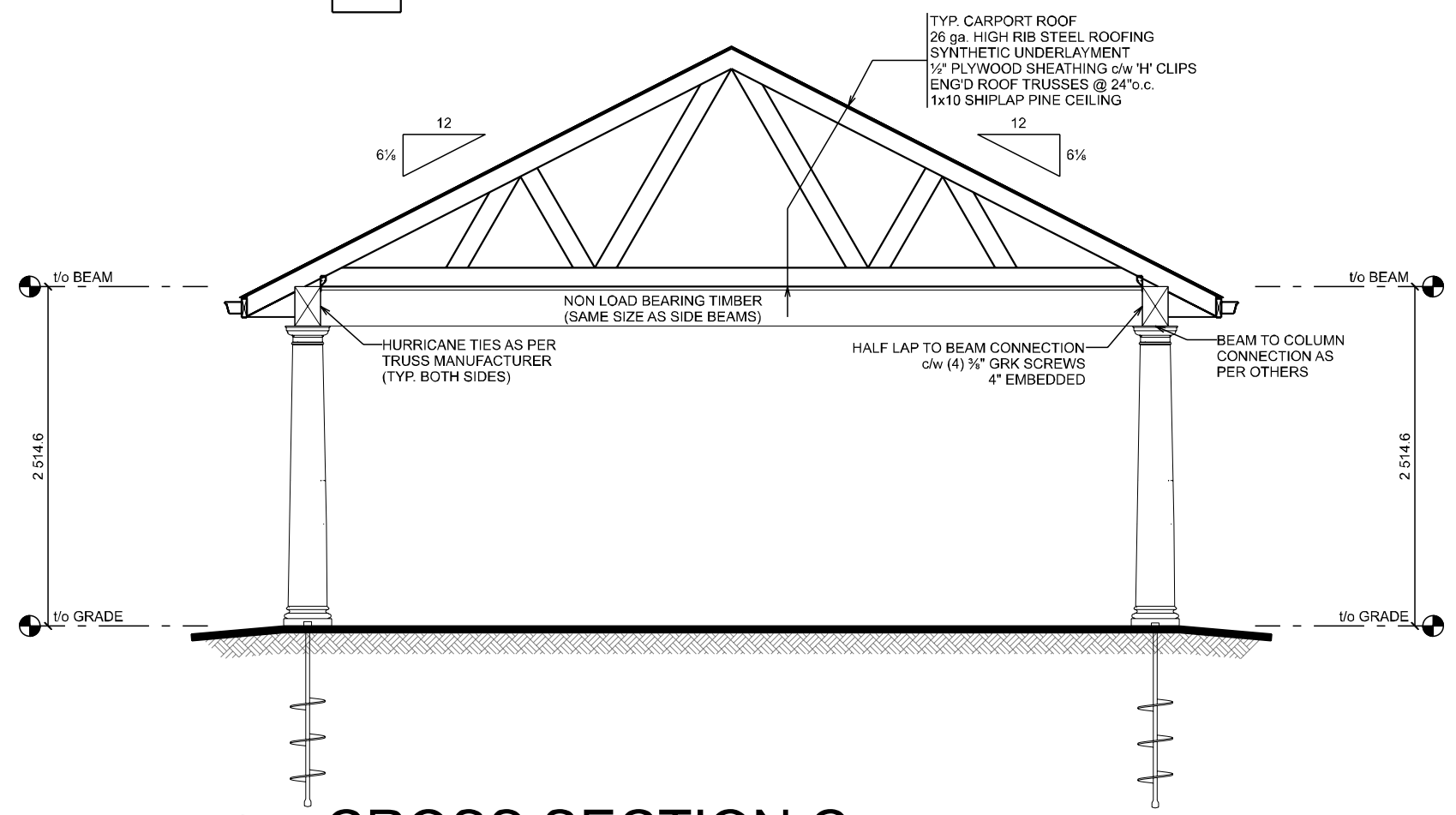
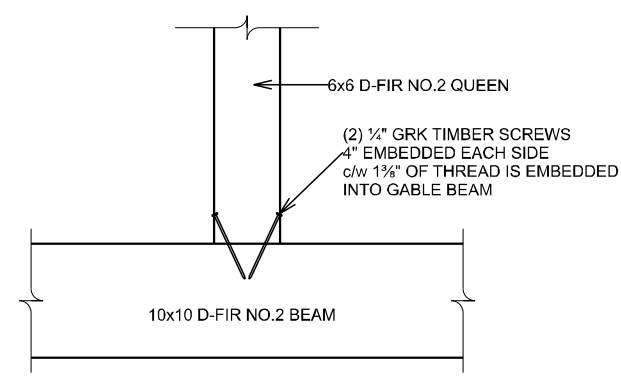
DRAWING #: 20-176	PAGE #: 4 of 10
SCALE: 1/4" = 1'-0"	

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A
15
CROSS SECTION A
SCALE: 1:48

QUEEN POST CONNECTION DETAIL
SCALE: 3/4" = 1'-0"



C
15
CROSS SECTION C
SCALE: 1:48

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Dave & Gale VanVeen
94 Maple Street
Guelph, On

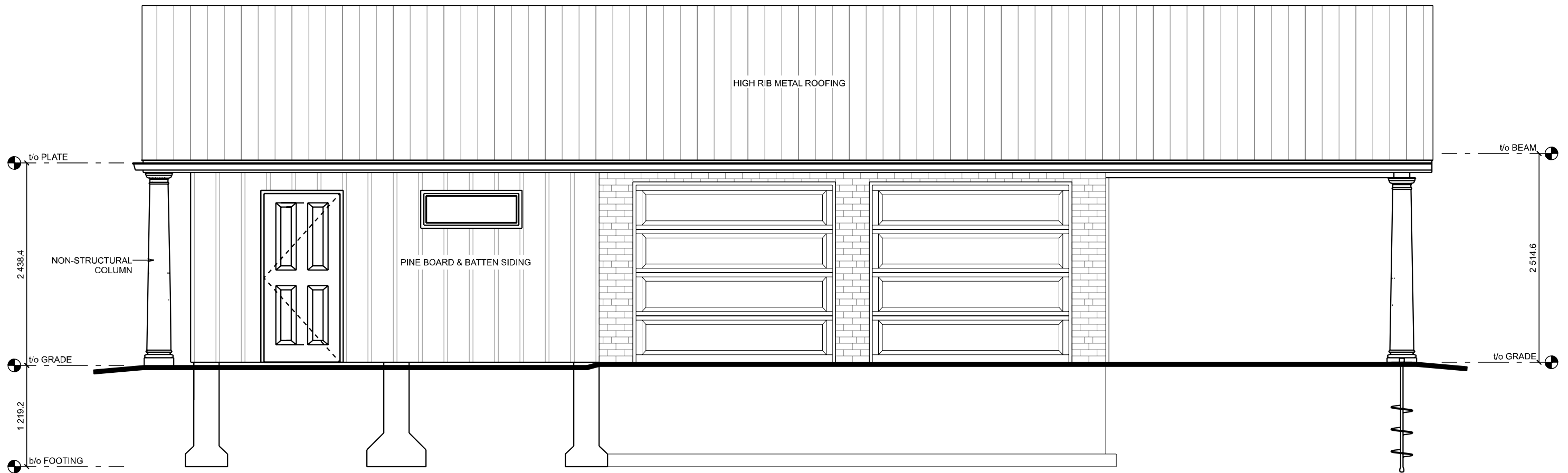
PROJECT:
Garage Addition

DRAWING TITLE:
Cross Section A&C

DRAWING #: 20-176	PAGE #: 5 of 10
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SCALE:
As Noted

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FRONT ELEVATION

SCALE: 1:48

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www.home-design-bcin.ca
519-848-2128

Dave & Gale VanVeen
94 Maple Street
Guelph, On

DRAWN BY:
JOHN VANDERWOERD,
M.A.A.T.O. BCIN: 21611

PROJECT:
Garage Addition

DRAWING TITLE:
Front Elevation

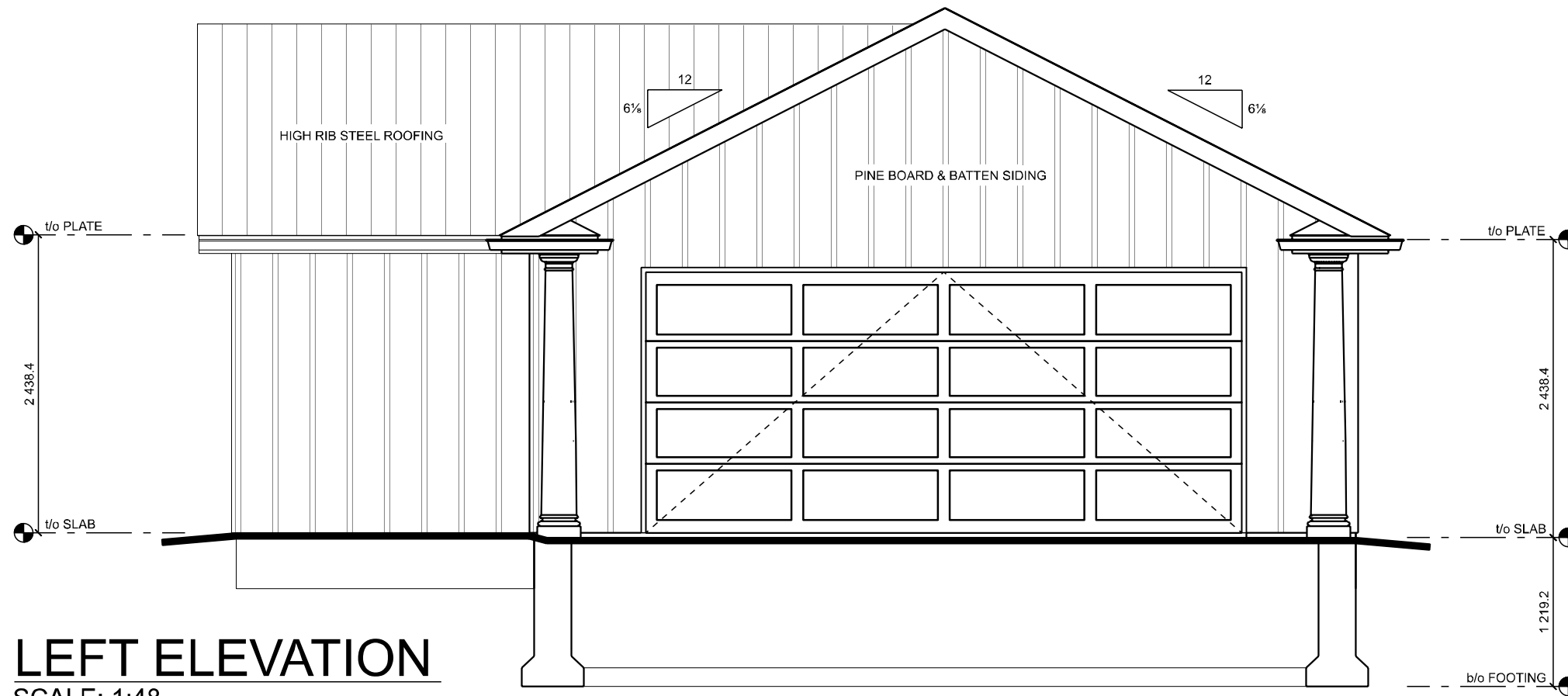
STARTING DATE:
June 3, 2020

DRAWING #:
20-176

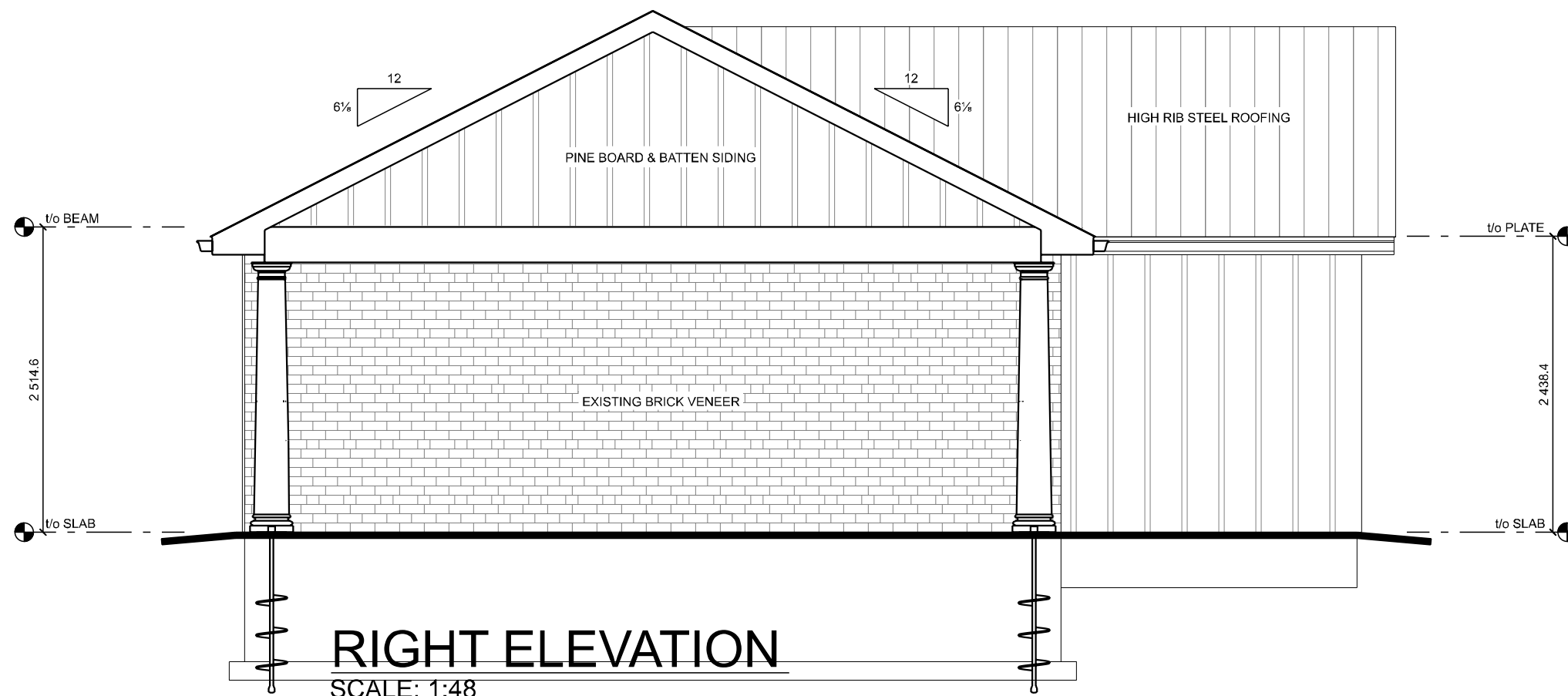
SCALE:
1:48

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Jul 21, 2020

PAGE #:
6 of 10



LEFT ELEVATION
SCALE: 1:48



RIGHT ELEVATION
SCALE: 1:48

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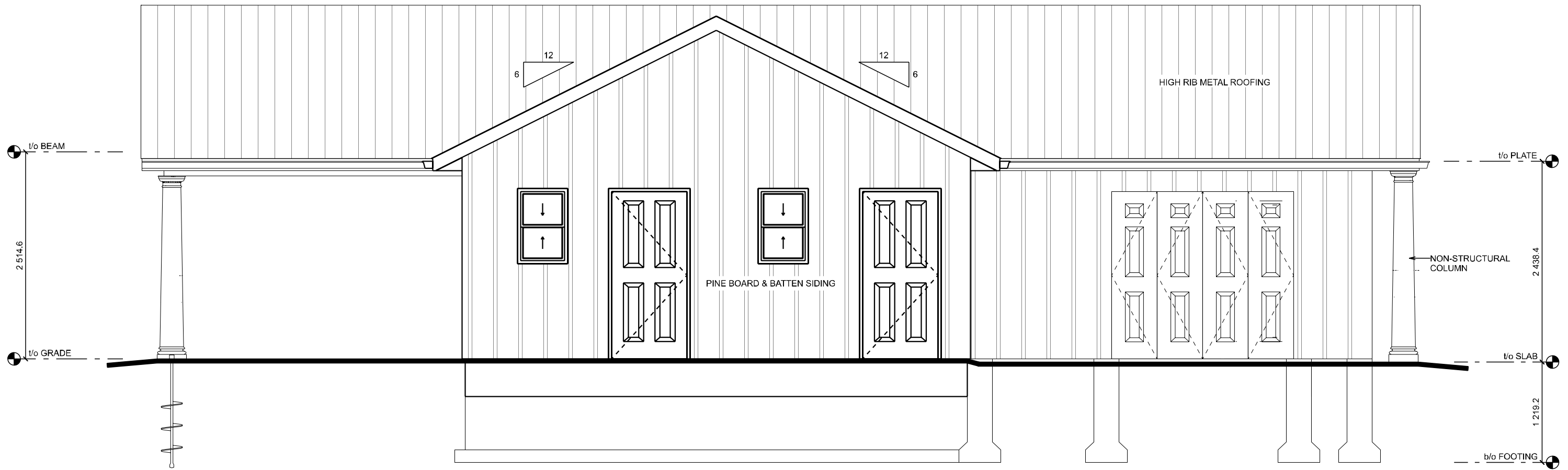
CUSTOMER:
Dave & Gale VanVeen
94 Maple Street
Guelph, On

PROJECT:
Garage Addition

DRAWING TITLE:
Side Elevations

DRAWING #: 20-176	PAGE #: 7 of 10
SCALE: 1:48	

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REAR ELEVATION
SCALE: 1:48

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94 Maple Street
Guelph, On

DRAWN BY:
JOHN VANDERWOERD,
M.A.A.T.O. BCIN: 21611

PROJECT:
Garage Addition

DRAWING TITLE:
Rear Elevation

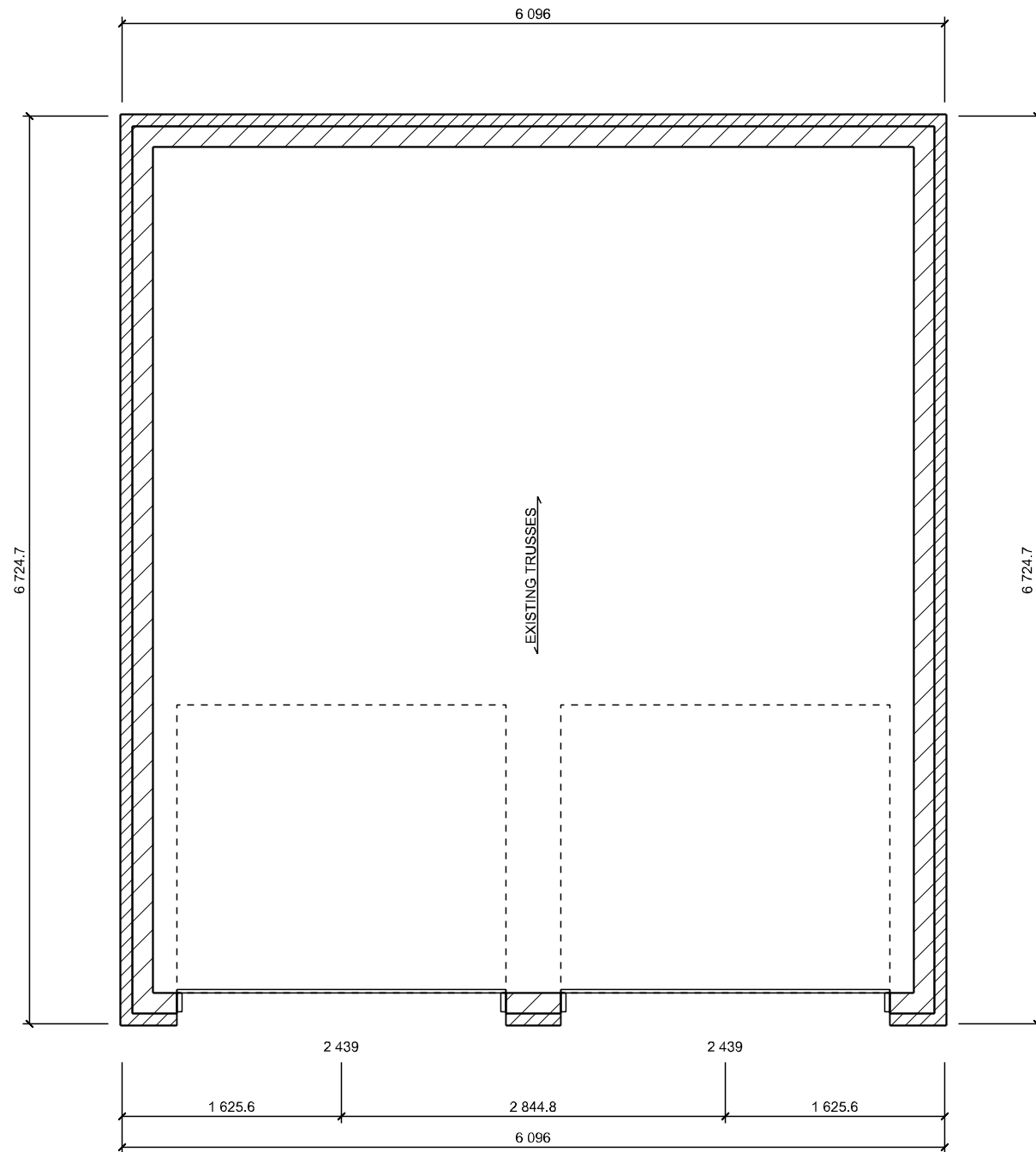
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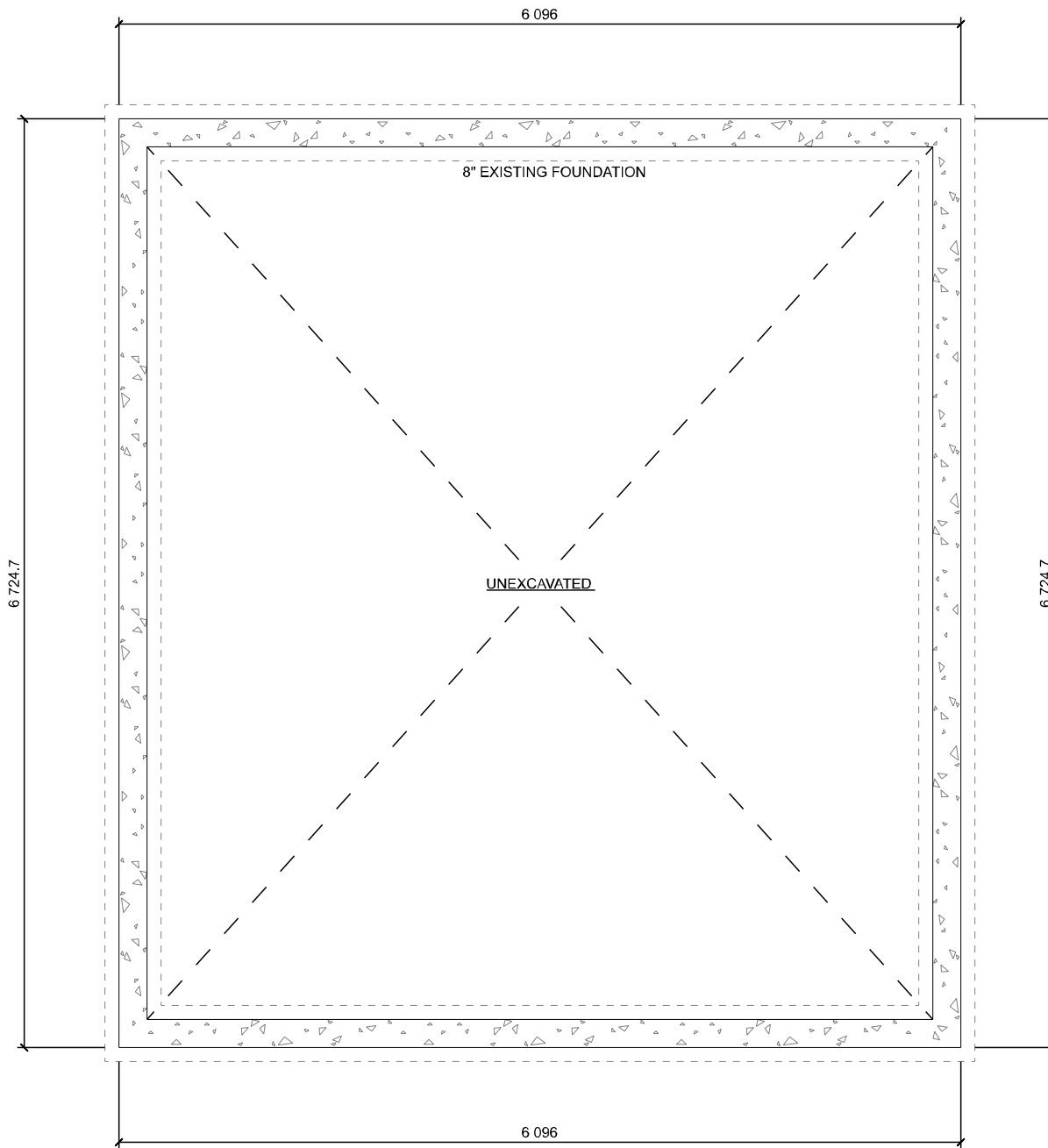
DRAWING #:
20-176

PAGE #:
8 of 10

SCALE:
1:48



EXISTING FLOOR PLAN
SCALE: 1:48



EXISTING FOUNDATION PLAN
SCALE: 1:48

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DRAWING TITLE:
Existing

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9.3.1. Concrete
 9.3.1.1. General
 (1) Except as provided in Sentence (2), unreinforced and nominally reinforced concrete shall be designed, mixed, placed, cured and tested in accordance with the requirements for "R" class concrete stated in Clause 8.13 of CSA A23.1, "Concrete Materials and Methods of Concrete Construction".
 (2) Unreinforced and nominally reinforced site-batched concrete shall be designed, mixed, placed and cured in accordance with Articles 9.3.1.2. to 9.3.1.9.

9.3.1.2. Cement
 (1) Cement shall meet the requirements of CAN/CSA-A3001, "Cementitious Materials for Use in Concrete".

9.3.1.3. Concrete in Contact with Sulfate Soil
 (1) Concrete in contact with sulfate soil, which is deleterious to normal cement, shall conform to the requirements in Clause 15.5 of CAN/CSA-A23.1, "Concrete Materials and Methods of Concrete Construction".

9.3.1.4. Aggregates
 (1) Aggregates shall,
 (a) consist of sand, gravel, crushed rock, crushed air-cooled blast furnace slag, expanded shale or expanded clay conforming to CAN/CSA-A23.1, "Concrete Materials and Methods of Concrete Construction", and
 (b) be clean, well-graded and free of injurious amounts of organic and other deleterious material.

9.3.1.5. Water
 (1) Water shall be clean and free of injurious amounts of oil, organic matter, sediment or any other deleterious material.
 9.3.1.6. Compressive Strength
 (1) Except as provided elsewhere in this Part, the compressive strength of unreinforced concrete after 28 days shall be not less than,
 (a) 32 MPa for garage floors, carport floors and all exterior flatwork,
 (b) 20 MPa for interior floors other than those for garages and carports, and
 (c) 15 MPa for all other applications.
 (2) Concrete used for garage and carport floors and exterior steps shall have air entrainment of 5 to 8%.

9.3.1.7. Concrete Mixes
 (1) For site-batched concrete, the concrete mixes described in Table 9.3.1.7. shall be considered acceptable if the ratio of water to cementing materials does not exceed,
 (a) 0.45 for garage floors, carport floors and all exterior flatwork,
 (b) 0.65 for interior floors other than those for garages and carports, and
 (c) 0.70 for all other applications.
 (2) The size of aggregate in unreinforced concrete mixes referred to in Sentence (1) shall not exceed,
 (a) 1/5 the distance between the sides of vertical forms, or
 (b) 1/3 the thickness of flatwork.

9.3.1.8. Admixtures
 (1) Admixtures shall conform to ASTM C260, "Air-Entraining Admixtures for Concrete", or ASTM C494 / C494M, "Chemical Admixtures for Concrete", as applicable.
 9.3.1.9. Cold Weather Requirements
 (1) When the air temperature is below 5°C, concrete shall be,
 (a) kept at a temperature of not less than 10°C or more than 25°C while being placed, and
 (b) maintained at a temperature of not less than 10°C for 72 h after placing.
 (2) No frozen material or ice shall be used in concrete described in Sentence (1).

9.20.13.12. Drips Beneath Window Sills
 (1) Except for wall openings located less than 150 mm above ground level, where a concealed flashing is not installed beneath window and door sills, such sills shall be provided with an outward slope and a drip located not less than 25 mm from the wall surface.

9.23 Wood Frame Construction
 9.23.2.1. Strength and Rigidity
 (1) All members shall be so framed, anchored, fastened, tied and braced to provide the necessary strength and rigidity.

9.23.3. Fasteners
 9.23.3.1. Standards for Nails and Screws
 (1) Unless otherwise indicated, nails specified in this Section shall be common steel wire nails or common spiral nails, conforming to CSA B111, "Wire Nails, Spikes and Staples".
 (2) Wood screws specified in this Section shall conform to ANSI/ASME B18.6.1., "Wood Screws (Inch Series)".

9.23.3.2. Length of Nails
 (1) All nails shall be long enough so that not less than half their required length penetrates into the second member.
 9.23.3.3. Prevention of Splitting
 (1) Splitting of wood members shall be minimized by staggering the nails in the direction of the grain and by keeping nails well in from the edges.

9.23.3.4. Nailing of Framing
 (1) Except as provided in Sentence (2), nailing of framing shall conform to Table 9.23.3.4.

9.23.16. Wall Sheathing
 9.23.16.1. Required Sheathing
 (1) Exterior walls and gable ends shall be sheathed when the exterior cladding requires intermediate fastening between supports or if the exterior cladding requires solid backing.
 9.23.16.2. Thickness, Rating and Material Standards
 (1) Where wall sheathing is required, it shall conform to Table 9.23.16.2.A. or Table 9.23.16.2.B
 9.23.16.5. Joints in Panel-Type Sheathing
 (1) A gap of not less than 2 mm shall be left between sheets of plywood, OSB, waferboard or fibreboard.

9.27.4. Caulking
 9.27.4.1. Required Caulking
 (1) Caulking shall be provided where required to prevent the entry of water into the structure.
 (2) Caulking shall be provided between masonry, siding or stucco and the adjacent door and window frames or trim, including sills unless such locations are completely protected from the entry of rain.
 (3) Caulking shall be provided at vertical joints between different cladding materials unless the joint is suitably lapped or flashed to prevent the entry of rain.

9.27.4.2. Materials
 (1) Caulking shall be,
 (a) a non-hardening type suitable for exterior use,
 (b) selected for its ability to resist the effects of weathering, and
 (c) compatible with and adhere to the substrate to which it is applied.
 (2) Caulking shall conform to,
 (a) CGSB 19-GP-5M, "Sealing Compound, One Component, Acrylic Base, Solvent Curing",
 (b) CAN/CGSB-19.13-M, "Sealing Compound, One Component, Elastomeric, Chemical Curing",
 (c) CGSB 19-GP-14M, "Sealing Compound, One Component, Butyl-Polyisobutylene Polymer Base, Solvent Curing", or
 (d) CAN/CGSB-19.24-M, "Multicomponent, Chemical Curing Sealing Compound".

9.23.15. Roof Sheathing
 9.23.15.1. Required Roof Sheathing
 (1) Except as provided in Section 9.26., continuous lumber or panel-type roof sheathing shall be installed to support the roofing.

9.23.15.2. Material Standards
 (1) Wood-based panels used for roof sheathing shall conform to the requirements of,
 (a) CSA O121-M, "Douglas Fir Plywood",
 (b) CSA O151, "Canadian Softwood Plywood",
 (c) CSA O153-M, "Poplar Plywood",
 (d) CAN/CSA-O325.0, "Construction Sheathing", or
 (e) CSA O437.0, "OSB and Waferboard".
 9.23.15.3. Direction of Installation
 (1) Plywood roof sheathing shall be installed with the surface grain at right angles to the roof framing.
 (2) OSB roof sheathing conforming to CAN/CSA-O325.0, "Construction Sheathing", or to O-1 and O-2 grades as specified in CSA O437.0, "OSB and Waferboard", shall be installed with the direction of face orientation at right angles to the roof framing members.

9.23.15.4. Joints in Panel-Type Sheathing
 (1) Panel-type sheathing board shall be applied so that joints perpendicular to the roof ridge are staggered where,
 (a) the sheathing is applied with the surface grain parallel to the roof ridge, and
 (b) the thickness of the sheathing is such that the edges are required to be supported.
 (2) A gap of not less than 2 mm shall be left between sheets of plywood, OSB or waferboard.

9.23.15.6. Edge Support
 (1) Except as permitted in Sentence (2), where panel-type roof sheathing requires edge support, the support shall consist of,
 (a) metal H clips, or
 (b) not less than 38 mm by 38 mm blocking securely nailed between framing members.
 (2) The supports referred to in Sentence (1) are not required when tongued-and-grooved edged panel-type sheathing board is used.
 9.23.15.7. Thickness or Rating
 (1) The thickness or rating of roof sheathing on a flat roof used as a walking deck shall conform to either Table 9.23.14.5.A. or Table 9.23.14.5.B. for subfloors.

9.34.2.6. Garages and Carports
 (1) A lighting outlet with fixture shall be provided for an attached, built-in or detached garage or carport.
 (2) Except as provided in Sentence (3), lighting outlets required in Sentence (1) shall be controlled by a wall switch near the doorway.
 (3) Where the lighting outlet and fixture required in Sentence (1) are ceiling mounted above an area not normally occupied by a parked car, or are wall mounted, a fixture with a built-in switch is permitted to be used.
 (4) Where a carport is lighted by a light at the entrance to a dwelling unit, additional carport lighting is not required.

9.15.3.9. Step Footings
 (1) Where step footings are used,
 (a) the vertical rise between horizontal portions shall not exceed 600 mm, and
 (b) the horizontal distance between risers shall be not less than 600 mm.

9.15.4.6. Extension above Ground Level
 (1) Exterior foundation walls shall extend not less than 150 mm above finished ground level.

9.15.6. Parging and Finishing of Foundation Walls
 9.15.6.1. Foundation Walls Below Ground
 (1) Concrete block foundation walls shall be parged on the exterior face below ground level as required in Section 9.13.
 9.15.6.2. Foundation Walls Above Ground
 (1) Exterior surfaces of concrete block foundation walls above ground level shall have tooled joints, or shall be rendered, parged or otherwise suitably finished.

9.15.4. Foundation Walls
 9.15.4.2. Foundation Wall Thickness and Required Lateral Support
 (1) Except as required in Sentence (2), the thickness of foundation walls made of unreinforced concrete block or solid concrete and subject to lateral earth pressure shall conform to Table 9.15.4.2.A. for walls not exceeding 2.5 m in unsupported height.
 (4) Where average stable soils are encountered and wind loads on the exposed portion of the foundation are no greater than 0.70 kPa, the thickness and reinforcing of foundation walls made of reinforced concrete block and subject to lateral earth pressure shall conform to Table 9.15.4.2.B. and Sentences (5) to (10).
 (5) For concrete block walls required to be reinforced, continuous vertical reinforcement shall,
 (a) be provided at wall corners, wall ends, wall intersections, at changes in wall height, at the jambs of all openings and at movement joints,
 (b) extend from the top of the footing to the top of the foundation wall,
 (c) where foundation walls are laterally unsupported at the top, have not less than 600 mm embedment into the footing, and
 (d) where foundation walls are laterally supported at the top, have not less than 50 mm embedment into the footing, if the floor slab does not provide lateral support at the wall base.
 (6) Where foundation walls are laterally unsupported, the footing shall be designed according to Part 4 to resist overturning and sliding, if the maximum height of finished ground above the basement floor or crawl space ground cover exceeds 1.50 m.
 (7) At the base of concrete block walls required to be reinforced and where the height of finished ground above the basement floor or crawl space ground cover exceeds 2.0 m, not less than one 15M intermediate vertical bar reinforcement shall be installed midway between adjacent continuous vertical reinforcement, and shall,
 (a) extend to not less than 600 mm above the top of the footing, and
 (b) have not less than 50 mm embedment into the footing, if the floor slab does not provide lateral support at the wall base.

(8) For concrete block walls required to be reinforced, a continuous horizontal bond beam containing at least one 15M bar shall be installed,
 (a) along the top of the wall,
 (b) at the sill and head of all openings greater than 1.20 m in width, and
 (c) at structurally connected floors.
 (9) In concrete block walls required to be reinforced, all vertical bar reinforcement shall be installed along the centre line of the wall.
 (10) In concrete block walls required to be reinforced, ladder or truss type lateral reinforcement not less than 3.8 mm (No. 9 ASWG) shall be installed in the bed joint of every second masonry course.

9.15.4.3. Foundation Walls Considered to be Laterally Supported at the Top
 (1) Sentences (2) to (4) apply to lateral support for walls described in Sentence 9.15.4.2.(1).
 (2) Foundation walls shall be considered to be laterally supported at the top if,
 (a) such walls support solid masonry superstructure,
 (b) the floor joists are embedded in the top of the foundation walls, or
 (c) the floor system is anchored to the top of the foundation walls with anchor bolts, in which case the joists may run either parallel or perpendicular to the foundation walls.
 (3) Unless the wall around an opening is reinforced to withstand earth pressure, the portion of the foundation wall beneath an opening shall be considered laterally unsupported, if,
 (a) the opening is more than 1.2 m wide, or
 (b) the total width of the openings in the foundation wall constitutes more than 25% of the length of the wall.
 (4) For the purposes of Sentence (3), the combined width of the openings shall be considered as a single opening if the average width is greater than the width of solid wall between them.

Table 9.23.16.2.B.
Rating For Wall Sheathing When Applying CAN/CSA-O325.0
 Forming Part of Sentence 9.23.16.2.(1)

Item	Column 1 Maximum Spacing of Supports, mm	Column 2 Panel Mark
1.	406	W16
2.	508	W20
3.	610	W24

Table 9.23.3.4.
Nailing for Framing
 Forming Part of Sentence 9.23.3.4.(1)

Item	Column 1 Construction Detail	Column 2 Minimum Length of Nails, mm	Column 3 Minimum Number or Maximum Spacing of Nails
1.	Floor joist to plate - toe nail	82	2
2.	Wood or metal strapping to underside of floor joists	57	2
3.	Cross bridging to joists	57	2 at each end
4.	Double header or trimmer joists	76	300 mm (o.c.)
5.	Floor joist to stud (balloon construction)	76	2
6.	Ledger strip to wood beam	82	2 per joist
7.	Joist to joist splice (See also Table 9.23.13.8.)	76	2 at each end
8.	Header joist end nailed to joists along perimeter	101	3
9.	Tail joist to adjacent header joist (end nailed) around openings	82	5
		101	3
10.	Each header joist to adjacent trimmer joist (end nailed) around openings	82	5
		101	3
11.	Stud to wall plate (each end) toe nail or end nail	62	4
		82	2
12.	Doubled studs at openings, or studs at walls or wall intersections and corners	76	750 mm (o.c.)
13.	Doubled top wall plates	76	600 mm (o.c.)
14.	Bottom wall plate or sole plate to joists or blocking (exterior walls) ⁽¹⁾	82	400 mm (o.c.)
15.	Interior walls to framing or subflooring	82	600 mm (o.c.)
16.	Horizontal member over openings in non-loadbearing walls - each end	82	2
17.	Lintels to studs	82	2 at each end
18.	Ceiling joist to plate - toe nail each end	82	2
19.	Roof rafter, roof truss or roof joist to plate - toe nail	82	3
20.	Rafter plate to each ceiling joist	101	2
21.	Rafter to joist (with ridge supported)	76	3
22.	Rafter to joist (with ridge unsupported)	76	See Table 9.23.13.8.
23.	Gusset plate to each rafter at peak	57	4
24.	Rafter to ridge board - toe nail - end nail	82	3
25.	Collar tie to rafter - each end	76	3
26.	Collar tie lateral support to each collar tie	57	2
27.	Jack rafter to hip or valley rafter	82	2
28.	Roof strut to rafter	76	3
29.	Roof strut to loadbearing wall - toe nail	82	2
30.	38 mm x 140 mm or less plank decking to support	82	2
31.	Plank decking wider than 38 mm x 140 mm to support	82	3
32.	38 mm edge laid plank decking to support (toe nail)	76	1
33.	38 mm edge laid plank to each other	76	450 mm (o.c.)

Table 9.23.16.2.A.
Wall Sheathing Thickness and Specifications
 Forming Part of Sentence 9.23.16.2.(1)

Item	Column 1 Type of Sheathing	Column 2 Minimum Thickness, mm ⁽¹⁾ With Supports 406 mm o.c. With Supports 610 mm o.c.	Column 3	Column 4 Material Standards
1.	Fibreboard (insulating)	9.5	11.1	CAN/ULC-S706
2.	Gypsum Sheathing	9.5	12.7	CAN/CSA-A82.27-M ASTM C1177 / C1177M ASTM C1396 / C1396M See Table 9.3.2.1.
3.	Lumber	17.0	17.0	CAN/ULC-S702
4.	Mineral Fibre, Rigid Board, Type 2	25	25	CAN/ULC-S702
5.	OSB, O-2 Grade	6.0	7.5	CSA O437.0
6.	OSB, O-1 Grade, and Waferboard, R-1 Grade	6.35	7.9	CSA O437.0
7.	Phenolic, faced	25	25	CAN/CSB-51.25-M
8.	Plywood (exterior type)	6	25	CSA O121-M CSA O151 CSA O153-M
9.	Polystyrene, Types 1 and 2	38	38	CAN/ULC-S701
10.	Polystyrene, Types 3 and 4	25	25	CAN/ULC-S701
11.	Polyurethane and Polyisocyanurate Type 1, faced	38	38	CAN/ULC-S704
12.	Polyurethane and Polyisocyanurate Types 2 and 3, faced	25	25	CAN/ULC-S704

ENGINEER STAMP



PROJECT #:
20-06-027

The undersigned has reviewed and takes responsibility for this design, and has the qualifications and meets the requirements set out in the Ontario Building Code to be a designer.
QUALIFICATION INFORMATION
 Required unless design is exempt under Division C-3.2.5.1 of the 2012 O.B.C.

 John Vanderwoerd BCIN 21611
REGISTRATION INFORMATION
 Required unless design is exempt under Division C-3.2.4.1 of the 2012 O.B.C.
 Firm Name: Vanderwoerd Drafting & Design
 BCIN 38975

VANDERWOERD
 DRAFTING & DESIGN
 John Vanderwoerd, M.A.A.T.O.
 34 Duke Street, Arthur, Ontario N0G 1A0
 www.home-design-bcin.ca
 519-848-2128

Dave & Gale VanVeen
 94 Maple Street
 Guelph, On
 DRAWN BY:
JOHN VANDERWOERD,
 M.A.A.T.O. BCIN: 21611

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