Date: 18/3/19
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General Notes

Dimensions provided shall take preference over scale. Contractor to verify all dimensions of Building Designer and Consultants drawings prior to work commencement.
Any discrepancies are to be reported immediately. Any notes elsewhere on the plans that exceed the requirements stated in the general notes take precedence.
Prior to any alterations or modifications of plans or details on site, Contractor(s), tradesperson(s), or homeowner(s) must contact the Building Designer to confirm Building Code requirements and to maintain accuracy and completeness of the plans.

All references to the "British Columbia Building Code" (B.C.B.C.) are for its most current edition or published revision thereto, as approved by ministerial order by the Province of British Columbia. Any reference to a dated edition or revision is to be assumed for the equivalent requirement in the most current edition. All work shall comply with the current edition of the "British Columbia Building Code", the rules and customs of best trade practice to be executed by skilled tradespersons, well equipped and adequately supervised. All references to the BCBC is to Division B of the British Columbia Building code unless otherwise noted.

Surveyor and/or Contractor to confirm all aspects of siting and placement of structure on lot. Designer not responsible for placement. In the event that the proposed new or existing structure does not conform to the requirements of the B.C. Building Code an engineer(s) may be necessary and such services are for the owner's account.

All materials to be of best quality, complying with the applicable sections of the current C.S.A., C.G.S.B. and B.C.B.C. standards. All materials shall be used strictly according to manufacturers printed directions, where not inconsistent with this specification; no dilution permitted except where specified.

Demolition

Contractor is liable to maintain the strength and stability of existing structure where renovations and/or additions are proposed. Including but not limited to providing and installing all shoring and props to uphold existing construction. All demolition work must comply with the requirements presented in part 8 of the B.C.B.C. and with WORKSAFEBC.

Structural Design

Structural is based on criteria stated in Part 9 of the BCBC B.C. Building Code.
Design live loads as follows:

Design main floor load	- 41.8 p.s.f. -	2.00 kPa
Design bedroom floor load	- 41.8 p.s.f. -	2.00 kPa
Design decks and balconies	- 62.7 p.s.f. -	3.00 kPa
Design roof load	- 62.7 p.s.f. -	3.00 kPa

For heavier snow loading, drawings must be revised.
All interior and exterior wall bracing to resist lateral loads to comply with B.C.B.C 9.23.13. and to be designed by structural engineer unless noted elsewhere. Structural Engineering and truss manufactures drawings to take precedence over structural design stated within.

Concrete

All concrete used for footings and foundations is to be not less than 15 MPa @ 28 days unless otherwise noted.
All concrete used for floors is to be not less than 20 MPa @ 28 days unless otherwise noted.
All concrete used for carport, garage floors and exterior steps to be a min. 32 MPa @ 28 days.
Exterior stairs, garage and carport slabs air entrainment of 5-8% required.
All foundations and footings to be carried down to solid undisturbed bearing.

Rough Carpentry

All construction and materials to comply with the "approved" current issue and amendments of C.W.C. and B.C.B.C. Pre-Manufactured homes and walls to comply with B.C.B.C. and C.S.A. requirements.
All structural framing members are sized for standard grade No. 2 better Spruce-Pine-Fir (in accordance with N.L.G.A. standard grading rules for Canadian Lumber) except where specifically noted otherwise.
Framing contractor is to provide backing for all plumbing accessories, shelving, curtain rods, cabinets, etc.
Contractor shall be responsible for the proper setting out of all work and ensure no eccentrical loads occur.

Electrical Panel

Electrical Facilities to comply with B.C.B.C. 9.34 and 9.36.
All electrical facilities, panels, lighting and any fixed equipment shall comply with the Canadian Electrical Code, BCBC 9.34 and 9.36. and shall be installed by a certified electrician.
A registered professional to design and/or verify work as required by the local authority having jurisdiction.

Fire Safety

All concealed spaces to be fireblocked in compliance with B.C.B.C. 9.10.16. Fire block materials to comply with B.C.B.C. 9.10.16.3.

All rated partition walls to have solid blocking installed over within floor joist cavity.
Contractor to ensure all rated partition walls to run uninterrupted to underside of roof sheathing.
Rated wall assemblies must run continuous behind tub surrounds and stairs and must contain solid fire blocking continuous at interface with rated horizontal floor assemblies.
No combustible plumbing is to be installed in rated wall assemblies.
All penetrations in rated wall assemblies to be fire protected and caulked.
All doors, dampers & other closures in fire separations must comply with B.C.B.C. 9.10.13.

All duct chases must not penetrate rated wall assemblies and are to be directed to exterior within self-contained suite.

Crawl spaces

Crawl spaces to comply with 9.18.
Heated crawl space ventilation to comply with B.C.B.C. 9.32.3.7
Contractor to ensure heated crawl space is vented into primary living space above by two (2) grille of the size noted in Mechanical subsection. If heated crawl space is divided into two (2) or more compartments, each heated compartment shall be vented by grilles of the size(s) noted below. Heated crawl space to have continuous 64mm (2 1/2") Extruded Polystyrene insulation around entire perimeter.

Crawl space access to be a 500mm x 700mm (20" x 28") hatch type access placed in either the laundry room, mud room, walk in closet, or in a location specified on the plans.

Doors, Windows, And Skylights

All windows, doors, and skylights to meet the requirements laid forth in B.C.B.C. 9.7. and 9.36.

All manufactured windows, doors and skylights to comply B.C.B.C 9.4.7.1.(1)(a) and with AAMA/WDMA/CSA 101/I.S.2/A440,"NAFS-North American Fenestration Standard/Specification for Windows, Doors, and Skylights", & A440S1-09 "Canadian Supplement to... ...NAFS..."

The following window requirements are derived from B.C.B.C. Table C-5 as per B.C.B.C 9.7.4.3. and are to be used to satisfy the requirements of "NAFS":
Langford, CLASS R, DP 960, PG 20, WATER RESIST. 220, A2.

Minimum Thermal Resistance ratings of windows as per B.C.B.C 9.36.

Windows and Doors	- U 0.32 -	1.80 USI
Front Entrance Door	- U 0.46 -	2.60 USI
Glass Block	- U 0.51 -	2.90 USI
Skylight	- U 0.51 -	2.90 USI
Skylight shaft walls	- R 15.79 -	2.78 RSI
Overhead Garage Doors	- R 6.25 -	1.10 RSI

Site built doors and windows to comply with B.C.B.C 5.10.2. and 9.36.2.7.(3)
Flashing to be above all doors and windows not directly protected by eaves.
Limited Water doors are to be used for exterior garage utility doors and the door(s) separating the residence and the garage, and wherever allowed by B.C.B.C. 9.7.4.2.(2)
All interior doors to clear finish flooring by 12mm (1/2") to allow for unobstructed air distribution.

Insulation and Vapour Barrier

Insulation to be continuous around all openings. Effective R.S.I values are calculated using the Parallel Path Method, with all parts of the assembly taken into account. Any deviation from listed assemblies must be reported to the Building Designer for R.S.I. value recalculation
Refer to section notes for assemblies and to the Thermal Resistance of Wall, Ceiling, and Floor Assemblies calculations listed later on page.
Insulation values not to be decreased below required levels at any point around major penetrations, wall-floor connections, window/door headers, behind electrical breaker boxes, or around plumbing or ducting in walls. Refer to B.C.B.C. 9.36. for exceptions.

Insulation Values are based of those in B.C.B.C. 9.36 for Zone 4 (<3000 Heating Degree Days in Celsius Degree-Days):

Trusses or Ratter with Ceiling Joists Roofs (attic spaces)	- R 39.24 -	6.91 RSI
Floors over unheated/exterior spaces	- R 26.52 -	4.67 RSI
Floors over Garages	- R 25.61 -	4.51 RSI
Cathedral Vaults or Flat roofs	- R 26.51 -	4.67 RSI
Exterior Walls above grade	- R 15.79 -	2.78 RSI
Between Garage and Primary Residence	- R 14.88 -	2.62 RSI
Foundation Walls below grade or < 600mm above grade	- R 11.30 -	1.99 RSI
Heated Concrete Slabs (beneath entire slab)	- R 13.17 -	2.32 RSI
Concrete Floor Slabs ≤ 600mm below grade	- R 11.13 -	1.96 RSI
Concrete Floor Slabs > 600mm below grade	- N/A -	N/A

All "rigid insulation" to be extruded polystyrene insulation. If contractor/builder uses expanded polystyrene insulation they must use equivalent RSI values as shown in the insulation table on this page and is to ensure correct RSI values are used.
0.98 RSI (R 5.56) of to be installed between concrete foundation wall and concrete slab connections to provide a thermal break where applicable. Window Headers to be insulated with extruded polystyrene insulation. All trimmer joists to be have 64mm (2 1/2") extruded polystyrene insulation; or R20 fibre glass batt insulation.

Vapour Barriers to comply with B.C.B.C 9.25.4.
Tape all seams of extruded polystyrene insulation, fill with spray applied insulation at perimeters to prevent air spaces where required. Extruded Polystyrene to comply with the requirements of B.C.B.C 9.25.4.2.(6) to fulfill the requirements of a vapour barrier.
6 MIL polyethylene vapor barrier to be supplied uninterrupted around all openings. Polyethylene vapour barrier to be structurally supported, by being attached to studs, light fixtures, and plugs. Contractor to supply blocking as required.

Mechanical

Plumbing installation shall comply with B.C.B.C. Part 7, B.C.B.C. 9.31, 9.36.4, and the "Canadian Electrical Code".
Plumbing contractor is to allow for (min.) 2 exterior hose bibs at convenient locations.
Contractor to provide 1 hot water heater, of type listed below, inside the main residence or in location shown on plans. Hot water heater to be secured to structure with metal straps designed to resist lateral loads.

Hot Water Heater (Primary Residence): (Tankless Type-Gas) See B.C.B.C. Table 9.36.4.2
Input ≤ 73.2 kW, Performance Standard(s): CAN/CSA-P.7
Performance Requirement(s): Ef ≥ 0.8
Input > 73.2 kW, Performance Standard(s): ANSI Z21.10.3/CSA 4.3 and DOE 10 CFR, Part 431, Subpart G
Performance Requirement(s): Et ≥ 80%

Hot Water Heater (Secondary Suite): (Storage Type-Electric) See B.C.B.C. Table 9.36.4
Size:152l (40 imp. gal.), Input 240VAC, ≤12kW, Performance Standard(s): CAN/CSA-C191
Performance Requirement(s): Standby loss (max.): 55 (Top Inlet), 70 (Bottom Inlet)

Heating and/or air conditioning systems are to comply with B.C.B.C. 9.32.3. and 9.36.3.
All duct sizes, fans and ventilation requirements to be verified prior to installation and to install to manufacturers specs. Heat pump (Air Cooled) and gas-fired ducted furnace combination system to be installed in primary residence. Heat pump and gas-fired furnace combination system to be installed and to comply with B.C.B.C. 9.36.3. and provide supply air to the primary residence in compliance with B.C.B.C. 9.32.3.4.(2).

Heat Pump (split system): See B.C.B.C. Table 9.36.3.10.
Heating or Cooling Capacity: ≤ 19 kW
Standard: CAN/CSA-C656
Performance Requirements: SEER = 14.5, EER = 11.5
HSPF = 7.1 (region 5 in standard)

Heat pump (all systems): See B.C.B.C. Table 9.36.3.10.
Heating or Cooling Capacity: > 19 kW
Standard: CAN/CSA-C746
Performance Requirements: See Level 2 in standard

Gas-fired ducted furnace: See B.C.B.C. 9.36.3.10.
Heating or Cooling Capacity: ≤ 117.23 kW
Standard: ANSI Z83.8/CSA- 2.6
Performance Requirements: Et ≥ 81%

All Fans and ducts are to meet the minimum requirements of the B.C.B.C. and manufacture.
Fan and duct sizes provided are minimums as per the BCBC 9.32. for the spaces. Mechanical tradesperson to verify actual sizes, speeds and location of fans and ducts on site.

Kitchen fan: See B.C.B.C. Table 9.32.3.6., Table 9.32.3.8.(3),
47 Litres per second intermittent @ 50pa external static pressure
Duct size (Diameter): 125mm rigid, 150mm flexible.
Duct shall be noncombustible, corrosion resistant and cleanable, equipped with a grease filter at air intake, and not exceed 12m and 2 elbows. (Equivalent length of 28m)

Fan 1 (Bathroom Fan) See B.C.B.C. Table 9.32.3.6., Table 9.32.3.8.(3),
23 Litre per second intermittent or 9 Litre per second continuous @ 50pa External static pressure.
Duct size (Diameter): 100mm rigid, 125mm flexible.
Intermittent control to be wall mounted on/off switch.
Duct not to exceed 16m and 2 elbows. (Equivalent length of 32m)

Fan 2 (Principal Exhaust Fan) See B.C.B.C. Table 9.32.3.5. Table 9.32.3.8.(3),
Main Residence: 28 Litre per second continuous @ 50pa External static pressure
Size (Diameter):125mm rigid, 100mm flexible.
Size (Area): 123cm2 rigid, 79cm2 flexible.
Duct not to exceed 5m and 0 elbows. (Equivalent length of 15m)
Fan to run continuously, with on/off switch wall mounted beside the electrical breaker panel.
Contractor to ensure switch is labelled "PRINCIPAL VENTILATION EXHAUST FAN".
If fan is mounted in a bathroom contractor to ensure fan includes control for both a standard bathroom fan as well as for the principal ventilation located in separate places.
Fan to have a sound rating of 1.0 sones.

Fan 3 (Secondary Suite HRV Exhaust Fan) See B.C.B.C. Table 9.32.3.5.
14 Litres per second continuous @ 50pa External static pressure supply and exhaust air.
A licensed mechanical tradesperson(s) to size and install ducts for HRV.
HRV to provide a minium of 14 litre per second continuous exhaust vent.
Fan to have a sound rating of 1.0 sones.

Vent 1: 96 cm² clear unobstructed area Crawlspace Air Transfer Grilles

Secondary Suites

Secondary suites to comply with B.C.B.C. 9.37.

Secondary suite to be heated by independent electric baseboard heating system.
Secondary suite to have a separate Heat Recovery Ventilator (HRV) to be installed to provide ventilation to all floors. Fire separation between primary dwelling and secondary suite to have a 1 hour F.R.R. unless noted elsewhere. Door(s) between primary dwelling and secondary suite are to be 45 Minute F.R.R. Solid Core Wood Door and to be gas tight with a self closing device. Door(s) to have bolt lock hardware installed with bolt turn on the property owner side.

All duct chases must not penetrate rated wall assemblies and are to be directed to exterior within self-contained suite. Any ducts that penetrate the rated wall assembly are to be fitted with fire dampers and a duct-type smoke detector to prevent the circulation of smoke in compliance with B.C.B.C. 9.37.2.17.(1).

Water line to have separate shut off valves for main and suite. No combustible plumbing to penetrate the underside of any rated ceiling assemblies.

Thermal Resistance of Wall, Ceiling, and Floor Assemblies.

All Thermal resistance calculations where done using the parallel path method as described in B.C.B.C A-9.36.2.4.(1)

$$RSI_{parallel} = \frac{100}{\frac{\%\text{ area of framing}}{RSI_f} + \frac{\%\text{ area of cavity}}{RSI_c}}$$

Common Building Materials

The following is a list of building materials called for in the plans. The RSI Values shown are based of those provided in B.C.B.C. Table A-9.36.2.4.(1)D and have either been pre-calculated using the listed thickness shown or by the per mm rate multiplied by the thickness.

Siding

Concrete Fibre Siding (Horizontal Lap, Panel, or Shingle Panel):	0.03 RSI
25mm Thick Cedar Siding (tongue and groove or butt joint):	0.26 RSI
400mm Wood Shingle Siding with 190mm Exposure:	0.15 RSI
Metal or vinyl Siding over sheathing:	0.11 RSI
51mm (2") Thick Pre-Manufactured Stone Veneer:	0.02 RSI
19mm (3/4") Thick Stucco Finish	0.02 RSI

Structural Framing Members

38mm Spruce-Pine-Fir Studs or Joists (on flat):	0.32 RSI
38mm×89mm (2×4) Spruce-Pine-Fir Studs or Joists:	0.76 RSI
38mm×140mm (2×6) Spruce-Pine-Fir Studs or Joists:	1.19 RSI
38mm×185mm (2×8) Spruce-Pine-Fir Studs or Joists:	1.56 RSI
38mm×235mm (2×10) Spruce-Pine-Fir Studs or Joists:	2.00 RSI
38mm×286mm (2×12) Spruce-Pine-Fir Studs or Joists:	2.43 RSI
241mm (9 1/2") Wood I Spruce-Pine-Fir Joists:	2.05 RSI
302mm (11 7/8") Wood I Spruce-Pine-Fir Joists:	2.57 RSI
200mm (8") Cast in Place Concrete Foundation Wall:	0.08 RSI

Air Films and Air Cavities

Exterior Air Film (ceiling, floors and walls):	0.03 RSI
Interior Air Film (Ceiling):	0.11 RSI
Interior Air Film (Floor):	0.16 RSI
Interior Air Film (Wall):	0.12 RSI
9.5mm (3/8") Wall (Rainscreen) Air Cavity:	0.15 RSI
13mm (1/2") Wall Air Cavity:	0.16 RSI
13mm (1/2") Ceiling (Resilient Metal Channel) Air Cavity:	0.15 RSI

Interior Wall and Ceiling Finishes

12.7mm (1/2") Gypsum Board (X-Type or Regular):	0.08 RSI
15.9mm (5/8") Gypsum Board (X-Type or Regular):	0.09 RSI

Miscellaneous materials

Permeable (#15 Roofing) Felt:	0.01 RSI
12.7mm (1/2") Lime Based Mortar:	0.01 RSI

Sheathing

12.5mm (1/2") Plywood (Generic Softwood) Sheathing:	0.11 RSI
15.2mm (5/8") Plywood (Generic Softwood) Sheathing:	0.14 RSI
18.5mm (3/4") Plywood (Generic Softwood) Sheathing:	0.16 RSI
12.5mm (1/2") Oriented Strandboard Sheathing:	0.12 RSI
15.5mm (5/8") Oriented Strandboard Sheathing:	0.15 RSI
15.9mm (5/8") Gypsum Sheathing:	0.10 RSI

Insulation

R12 Fibre Glass Batt Insulation:	2.11 RSI
R19 Fibre Glass Batt Insulation (R20 Compressed):	3.34 RSI
R20 Fibre Glass Batt Insulation:	3.52 RSI
R28 Fibre Glass Batt Insulation:	4.93 RSI
R31 Fibre Glass Batt Insulation:	5.46 RSI
R40 Fibre Glass Batt Insulation:	7.04 RSI
Glass Fibre Loose fill Insulation for attics (Per mm):	0.01875 RSI
12.7mm (1/2") Extruded Polystyrene (Type 2, 3, and 4)	0.44 RSI
25mm (1") Extruded Polystyrene (Type 2, 3, and 4)	0.88 RSI
38mm (1 1/2") Extruded Polystyrene (Type 2, 3, and 4)	1.28 RSI
51mm (2") Extruded Polystyrene (Type 2, 3, and 4)	1.71 RSI
64mm (2 1/2") Extruded Polystyrene (Type 2, 3, and 4)	2.15 RSI
77mm (3") Extruded Polystyrene (Type 2, 3, and 4)	2.59 RSI
89mm (3 1/2") Extruded Polystyrene (Type 2, 3, and 4)	2.99 RSI
100mm (4") Extruded Polystyrene (Type 2, 3, and 4)	3.36 RSI
12.7mm (1/2") Expanded Polystyrene (Type 3)	0.38 RSI
25mm (1") Expanded Polystyrene (Type 3)	0.76 RSI
38mm (1 1/2") Expanded Polystyrene (Type 3)	1.14 RSI
51mm (2") Expanded Polystyrene (Type 3)	1.53 RSI
64mm (2 1/2") Expanded Polystyrene (Type 3)	1.92 RSI
77mm (3") Expanded Polystyrene (Type 3)	2.25 RSI
89mm (3 1/2") Expanded Polystyrene (Type 3)	2.31 RSI
100mm (4") Expanded Polystyrene (Type 3)	3.00 RSI
57mm (2 1/4") Spray Applied Polyurethane Foam (medium density):	2.05 RSI
152mm (6") Spray Applied Polyurethane Foam (medium density):	5.46 RSI
184mm (7 1/4") Spray Applied Polyurethane Foam (medium density):	6.44 RSI

Assembly Calculations for Effective RSI Values.

Raised Heel Wood Trusses @ 610mm with 368mm (14 1/2") Fibre Glass Loose Fill Insulation.

$RSI_{parallel} = \frac{100}{\frac{\%}{RSI_f} + \frac{\%}{RSI_c}}$ → RSI = $\frac{100}{\frac{7}{0.76} + \frac{93}{1.67}}$ → RSI = $\frac{100}{9.21 + 55.69}$ → RSI = $\frac{100}{64.90}$ → RSI = 1.54

279mm (11") Fibre Glass Loose Fill Insulation:	5.23 RSI
38mm×89mm (2×4) Bottom Truss Chord @ 610mm (24") with 89mm (3 1/2") Fibre Glass Loose Fill Insulation:	1.54 RSI
6 mil Polyethylene Vapour Barrier	0.00 RSI
15.9mm (5/8") Gypsum Board (X-Type or Regular):	0.08 RSI
Interior Air Film (Ceiling):	0.11 RSI
Total	6.96 RSI

Raised Heel Wood Trusses @ 610mm (24") with R40 Batt Insulation

RSI = $\frac{100}{\frac{\%}{RSI_f} + \frac{\%}{RSI_c}}$ → RSI = $\frac{100}{\frac{7}{0.76} + \frac{93}{2.11}}$ → RSI = $\frac{100}{9.21 + 44.08}$ → RSI = $\frac{100}{53.29}$ → RSI = 1.87

R28 Fibre Glass Batt Insulation:	4.93 RSI
38mm×89mm (2×4) Bottom Truss Chord @ 610mm (24") with with R12 Fibre Glass Batt Insulation:	1.87 RSI
6 mil Polyethylene Vapour Barrier	0.00 RSI
15.9mm (5/8") Gypsum Board (X-Type or Regular):	0.08 RSI
Interior Air Film (Ceiling):	0.11 RSI
Total	6.99 RSI

Floor Cantilever, 38mm×235mm (2×10) Floor Joists @ 406mm (16") with R31 Fibre Glass Batt Insulation

$RSI_{parallel} = \frac{100}{\frac{\%}{RSI_f} + \frac{\%}{RSI_c}}$ → RSI = $\frac{100}{\frac{13}{2.00} + \frac{87}{5.46}}$ → RSI = $\frac{100}{6.50 + 15.93}$ → RSI = $\frac{100}{22.43}$ → RSI = 4.46

Interior Air Film (Floor):	0.11 RSI
15.2mm (5/8") Plywood (Generic Softwood) Sheathing:	0.14 RSI
38mm×235mm (2×10) Joist @ 406mm (16") with R31 Batt Insulation:	4.46 RSI
15.9mm (5/8") Gypsum Board (X-Type or Regular):	0.09 RSI
Exterior Air Film (ceiling, floors and walls):	0.03 RSI
Total	4.82 RSI

Assembly Calculations for Effective RSI Values.

Exterior 38mm×140mm (2x6) Stud Wall @ 406mm (16") with R19 Fibre Glass Batt Insulation, and Clad with Concrete Fibre Siding

$RSI_{parallel} = \frac{100}{\frac{\%}{RSI_f} + \frac{\%}{RSI_c}}$ → RSI = $\frac{100}{\frac{23}{1.19} + \frac{77}{3.34}}$ → RSI = $\frac{100}{19.33 + 23.05}$ → RSI = $\frac{100}{42.38}$ → RSI = 2.36

Exterior Air Film (ceiling, floors and walls):	0.03 RSI
Concrete Fibre Siding (Horizontal Lap, Panel, or Shingle Panel):	0.03 RSI
9.5mm (3/8") Wall (Rainscreen) Air Cavity:	0.15 RSI
12.5mm (1/2") Plywood (Generic Softwood) Sheathing:	0.11 RSI
38mm×140mm (2×6) Studs @ 406mm (16") with R-19 Batt Insulation:	2.36 RSI
6 mil Polyethylene Vapour Barrier	0.00 RSI
12.7mm (1/2") Gypsum Board (X-Type or Regular):	0.08 RSI
Interior Air Film (Wall):	0.12 RSI
Total	2.88 RSI

Exterior 38mm×140mm 2x6 Stud Wall @ 406mm (16") with R19 Fibre Glass Batt Insulation, and Clad with 51mm Thick (2") Pre-Manufactored Stone Veneer

$RSI_{parallel} = \frac{100}{\frac{\%}{RSI_f} + \frac{\%}{RSI_c}}$ → RSI = $\frac{100}{\frac{23}{1.19} + \frac{77}{3.34}}$ → RSI = $\frac{100}{19.33 + 23.05}$ → RSI = $\frac{100}{42.38}$ → RSI = 2.36

Exterior Air Film (ceiling, floors and walls):	0.03 RSI
51mm (2") Thick Pre-Manufactured Stone Veneer:	0.02 RSI
12.7mm (1/2") Lime Based Mortar:	0.01 RSI
9.5mm (3/8") Wall (Rainscreen) Air Cavity:	0.15 RSI
12.5mm (1/2") Plywood (Generic Softwood) Sheathing:	0.11 RSI
38mm×140mm (2×6) Studs @ 406mm (16") with R-19 Batt Insulation:	2.36 RSI
6 mil Polyethylene Vapour Barrier	0.00 RSI
12.7mm (1/2") Gypsum Board (X-Type or Regular):	0.08 RSI
Interior Air Film (Wall):	0.12 RSI
Total	2.88 RSI

Wall between Garage and Primary Residence, 38mm×140mm (2x6) Stud Wall @ 406mm (16") with R19 Fibre Glass Batt Insulation

$RSI_{parallel} = \frac{100}{\frac{\%}{RSI_f} + \frac{\%}{RSI_c}}$ → RSI = $\frac{100}{\frac{23}{1.19} + \frac{77}{3.34}}$ → RSI = $\frac{100}{19.33 + 23.05}$ → RSI = $\frac{100}{42.38}$ → RSI = 2.36

Exterior Air Film (ceiling, floors and walls):	0.03 RSI
15.9mm (5/8") Gypsum Board (X-Type or Regular):	0.09 RSI
38mm×140mm (2×6) Studs @ 406mm (16") with R-19 Batt Insulation:	2.36 RSI
6 mil Polyethylene Vapour Barrier	0.00 RSI
12.7mm (1/2") Gypsum Board (X-Type or Regular):	0.08 RSI
Interior Air Film (Wall):	0.12 RSI
Total	2.68 RSI

Floor between Secondary Suite and Garage, 38mm×235mm (2×10) @ 406mm (16") with R31 Fibre Glass Batt Insulation

$RSI_{parallel} = \frac{100}{\frac{\%}{RSI_f} + \frac{\%}{RSI_c}}$ → RSI = $\frac{100}{\frac{13}{2.00} + \frac{87}{5.46}}$ → RSI = $\frac{100}{6.50 + 15.93}$ → RSI = $\frac{100}{22.43}$ → RSI = 4.46

Interior Air Film (Floor):	0.11 RSI
15.2mm (5/8") Plywood (Generic Softwood) Sheathing:	0.14 RSI
38mm×235mm (2×10) Joist @ 406mm (16") with R31 Batt Insulation:	4.46 RSI
2 Layers 15.9mm (5/8") Gypsum Board (X-Type):	0.18 RSI
Exterior Air Film (ceiling, floors and walls):	0.03 RSI
Total	4.92 RSI

PROFESSIONAL SEALS

CONSULTANTS

LIST OF DRAWINGS

ISSUED/REVISED

No.	DATE	ISSUED/REVISED
01	03/18/19	For B.P. Submission
02		
03		
04		
05		
06		
07		
08		

General Contractor and or Owner to verify and thoroughly review all aspects of plan prior to commencement and setting out of all work. Any discrepancies are to be reported to Building Designer immediately. Building Designer not liable for changes made to plan on site or failure to report discrepancies. Refer to General notes included on plan.

Structural Engineer to review plan (where required), and specify structure as deemed necessary. It is the responsibility of the owner or contractor to verify and commission all engineering requirements with municipal building departments prior to starting work.

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PH: 250.382.7374
FAX: 250.382.7364
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DRW'G NO. 7580-35
SHT. NO. A1 OF A9
DATE Mar. 18, 2019
SCALE As Shown
DRAWN N.S.
REVIEWED BY J.T.E.

PROJECT
Proposed Residence:
Langdon Weir Construction Ltd.
Lot 35 Latoria Rise
3511 Paperbark Cres.
Langford, B.C.

Date: 18/3/19
Time: 3:26:22 PM

SKETCH PLAN OF PROPOSED CIVIC: 3511 PAPERBARK CRES. LOT 35, SECTION 70, METCHOSIN DISTRICT

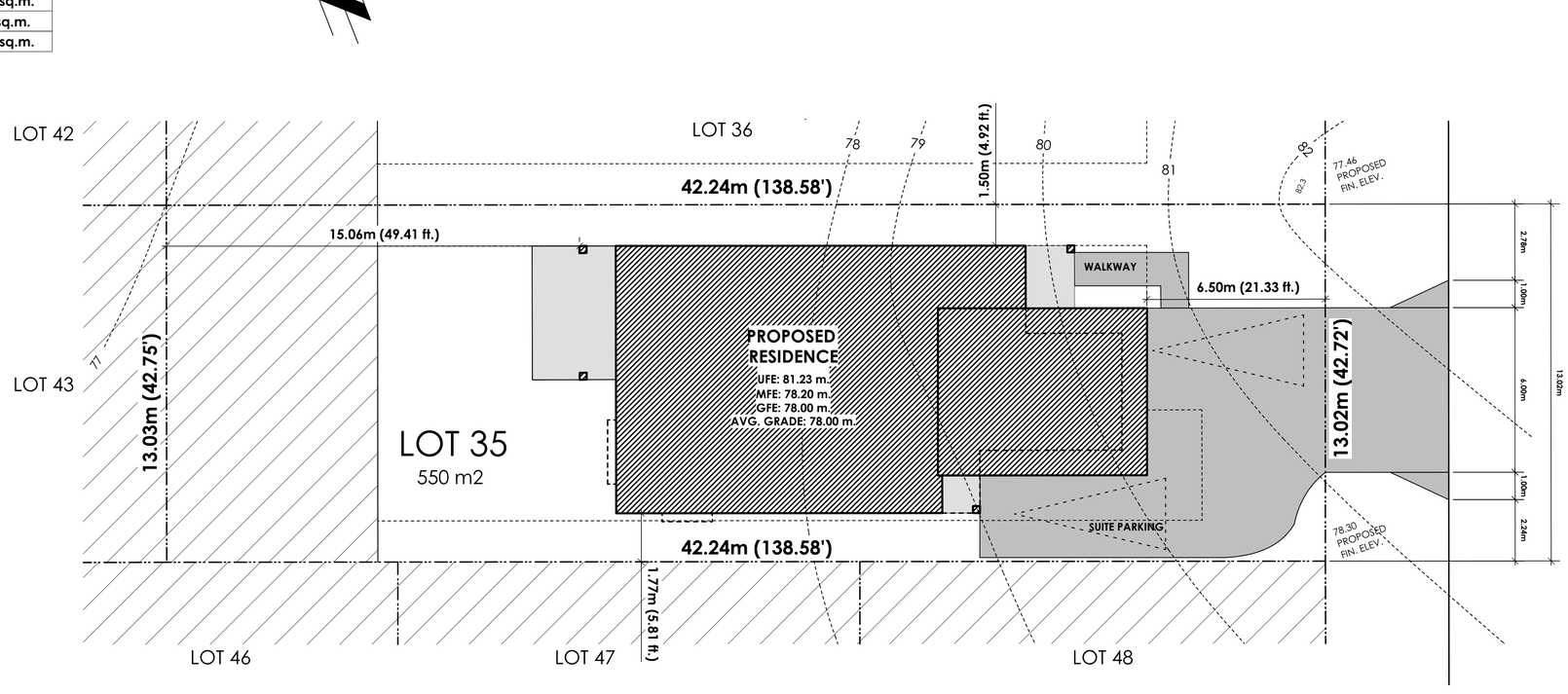
Parcel Identifiers: 029-862-281

SITE DATA	RR-6A	LOT 35
ITEMS	PERMITTED	PROPOSED
LOT AREA		550.14 sq.m.
LOT COVERAGE	50.00 %	32.97 %
HEIGHT	9.00 m.	7.22 m.
SETBACKS		
- FRONT (EAST)	4.50 m.	6.50 m.
- REAR (WEST)	5.50 m.	15.06 m.
- SIDE (NORTH)	1.50 m.	1.50 m.
- SIDE (SOUTH)	1.50 m.	1.77 m.
- GARAGE	5.50 m.	6.50 m.
FLOOR AREA		
- UPPER		158.25 sq.m.
- MAIN		124.86 sq.m.
- GARAGE		44.13 sq.m.
TOTAL FLOOR AREA		327.24 sq.m.

LEGEND

Elevations are geodetic referred to Lanford Integrated Survey

- denotes Green Space



1 / A2 **Siteplan**
Scale: 1:100

PROFESSIONAL SEALS

CONSULTANTS

LIST OF DRAWINGS

A1	General Notes
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A3	Elevations Front & Right
A4	Elevations Left & Rear
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A8	Upper Floor Plan
A9	Section
D1	Rainscreen Details
D2	Rainscreen Details

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Langdon Weir Construction Ltd.
Lot 35 Latoria Rise
3511 Paperbark Cres.
Langford, B.C.

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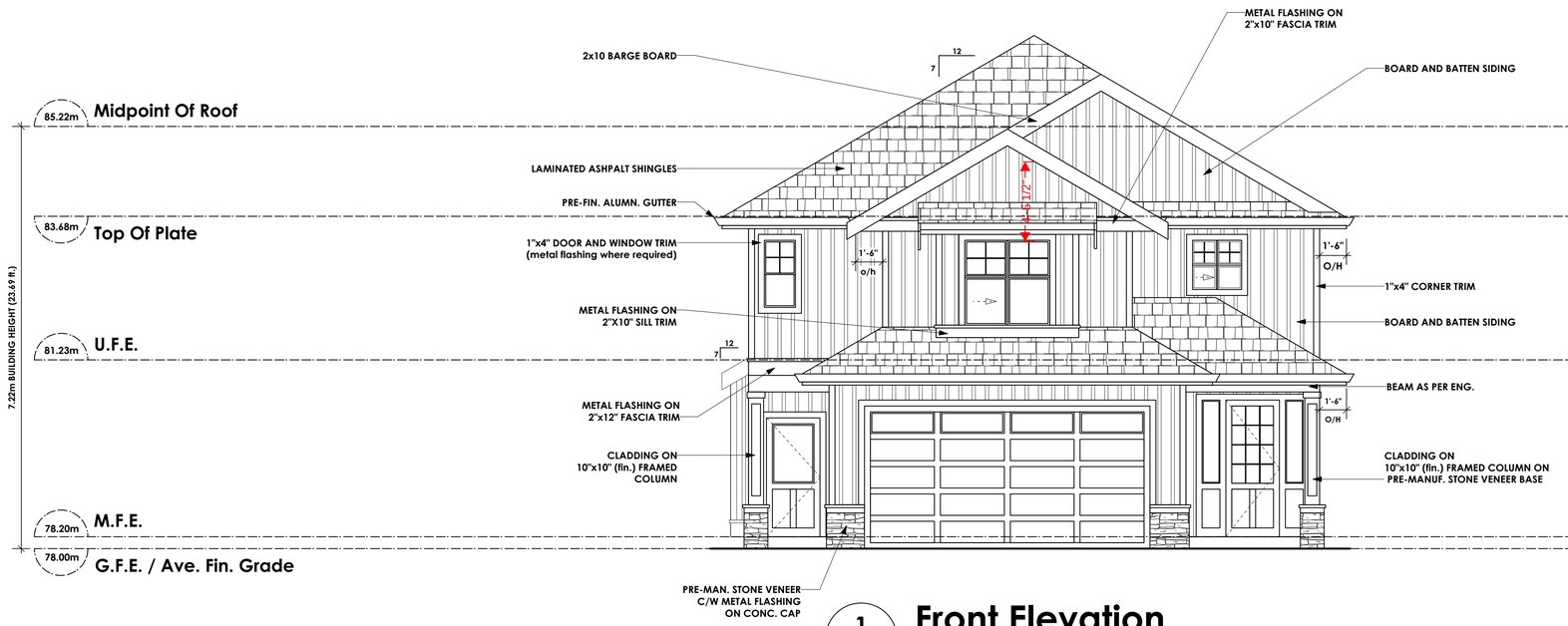
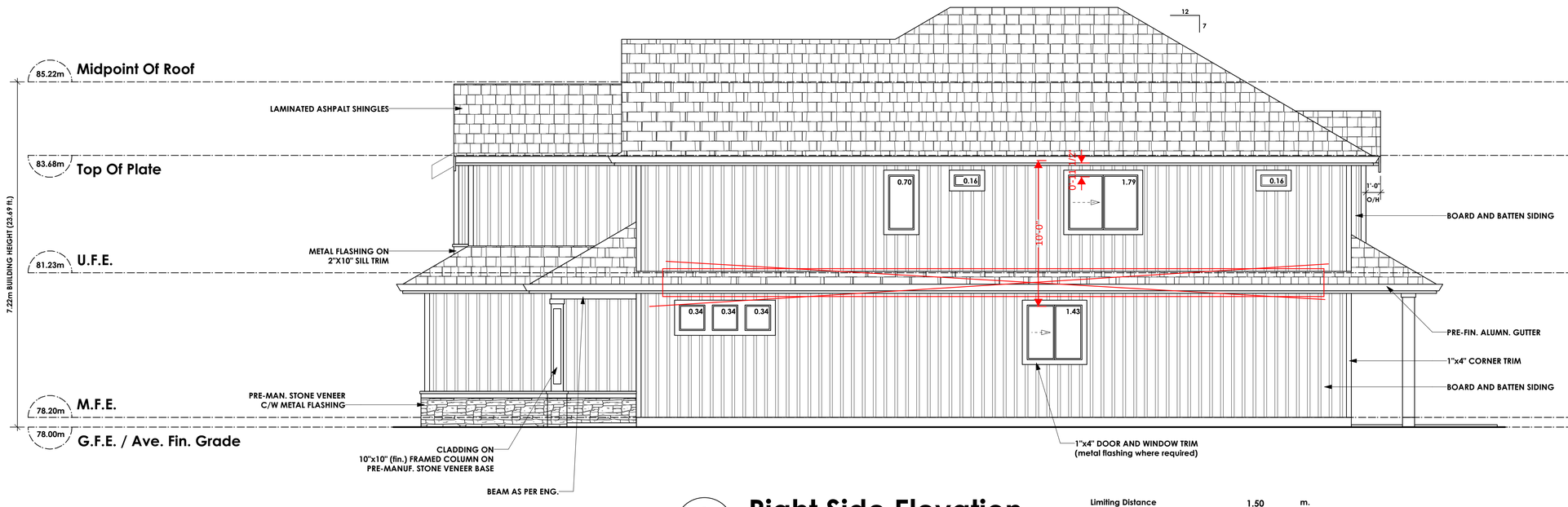


1 / A3 **Front Elevation**
Scale: 1/4" = 1'-0"



2 / A3 **Right Side Elevation**
Scale: 1/4" = 1'-0"

Limiting Distance	1.50	m.
Exposed Building Face	84.88	sq.m.
Allowable Openings	8	%
Allowable Opening Area	6.79	sq.m.
Proposed Openings	5.26	sq.m.

PROFESSIONAL SEALS

CONSULTANTS

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SHT. NO.	A3 OF A9
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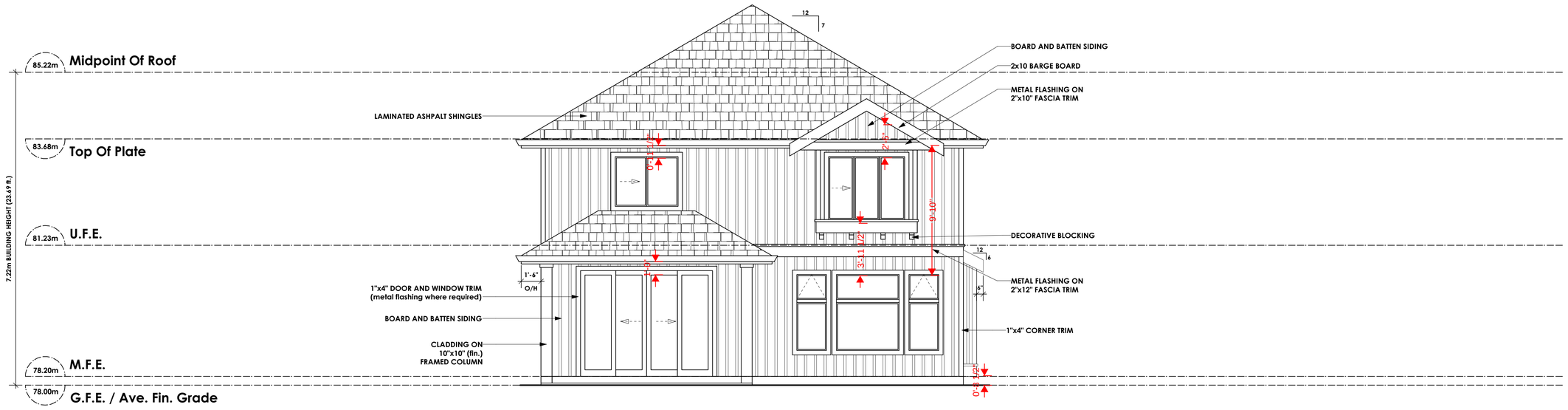
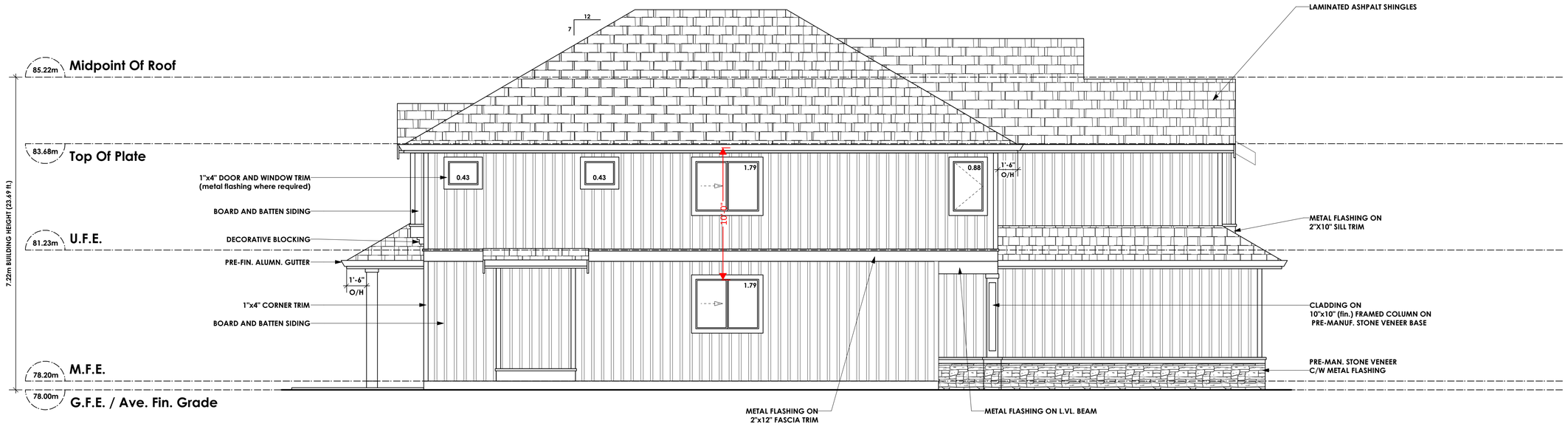


1 / A4 Rear Elevation

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



2 / A4 Left Side Elevation

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

Limiting Distance	1.77	m.
Exposed Building Face	70.93	sq.m.
Allowable Openings	8	%
Allowable Opening Area	5.67	sq.m.
Proposed Openings	5.32	sq.m.

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CONSULTANTS

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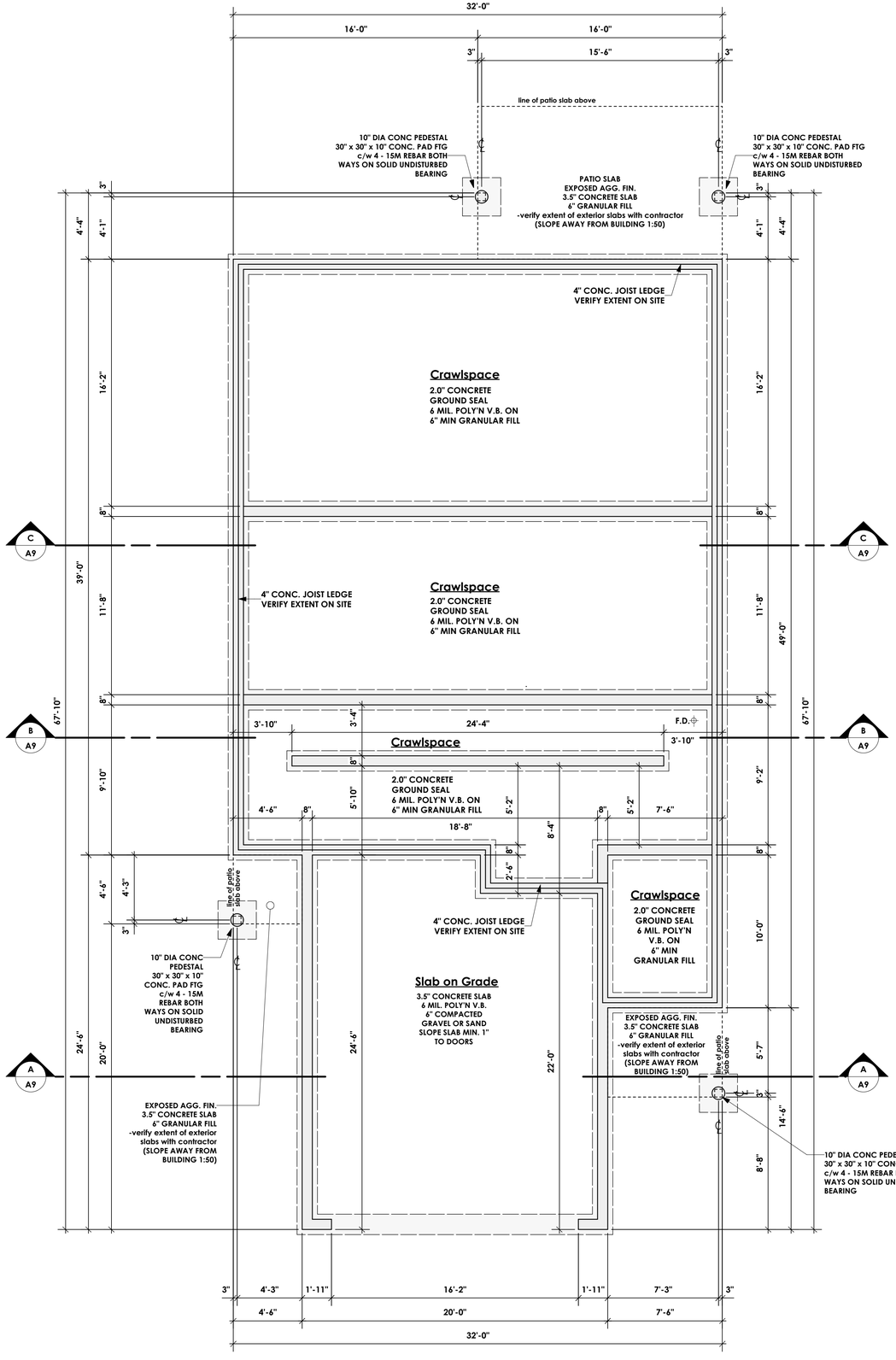

1
A5

Foundation Plan

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

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WALL LEGEND

REFER TO SECTION NOTES FOR ASSEMBLIES

- W1 — 2"X6" STUD EXTERIOR WALL
- W2 — 2"X4" STUD INTERIOR WALL
- W3 — W 1a RATED WALL 2"X4" OR 2"X6" STUD 1.0 HR. FRR
- 2 1/2" EXTRUDED POLYSTYRENE RIGID INSULATION
- 2" X 6" CRAWLSPACE FRAMING
- 8" THK. FNDN WALL
- 16" X 8" CONCRETE STRIP FOOTING
- SOLID BLOCKING
- B/U WD POST (LOAD ABOVE)
- POINT LOAD

DOOR SCHEDULE

A	8/0 X 6/8 (2438 X 2032)
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C	5/0 X 6/8 (1524 X 2032)
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E	3/0 X 6/8 (914 X 2032)
F	2/10 X 6/8 (864 X 2032)
G	2/8 X 6/8 (813 X 2032)
H	2/6 X 6/8 (762 X 2032)
J	2/4 X 6/8 (711 X 2032)
K	2/0 X 6/8 (610 X 2032)
L	1/6 X 6/8 (508 x 2032)

Mechanical Exhaust Fans

- F1 — 23 L/s (50 CFM) intermittent OR 9 L/s (20 CFM) continuous
- F2 — 28 L/s (60 CFM) continuous
- F3 — 14 L/s (30 CFM) continuous
- V1 — 96 cm² Crawlspace Air Transfer Grille

Refer to general notes

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CONSULTANTS

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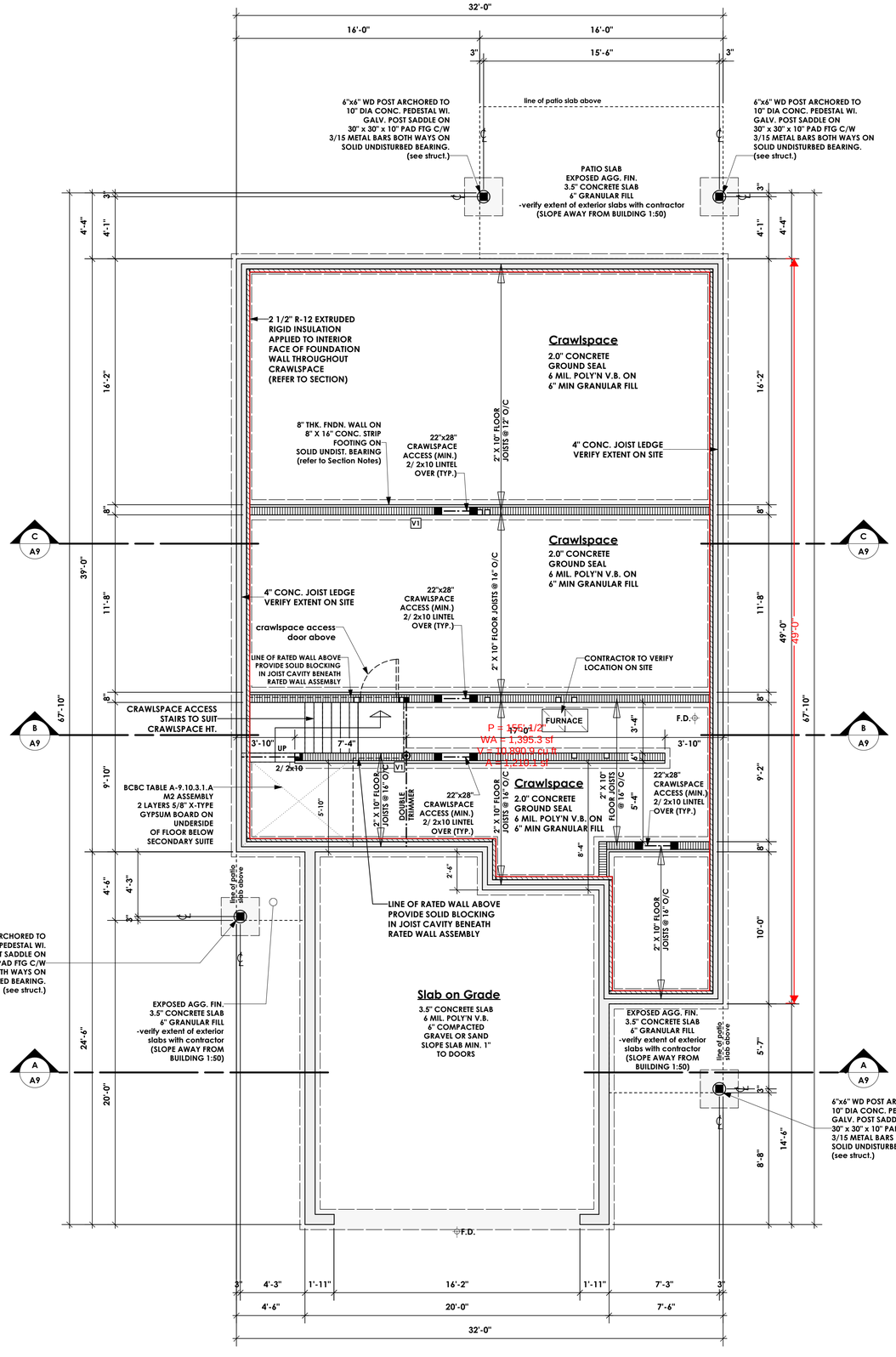

1 / A6 Crawlspace Plan

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

Crawlspace 1242.59 sq.ft. (115.44 sq.m.)

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- 8" THK. FNDN WALL
- 16" X 8" CONCRETE STRIP FOOTING
- SOLID BLOCKING
- B/U WD POST (LOAD ABOVE)
- POINT LOAD

DOOR SCHEDULE

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E	3/0 X 6/8 (914 X 2032)
F	2/10 X 6/8 (864 X 2032)
G	2/8 X 6/8 (813 X 2032)
H	2/6 X 6/8 (762 X 2032)
J	2/4 X 6/8 (711 X 2032)
K	2/0 X 6/8 (610 X 2032)
L	1/6 X 6/8 (508 x 2032)

Mechanical Exhaust Fans

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- V1 — 96 cm² Crawlspace Air Transfer Grille

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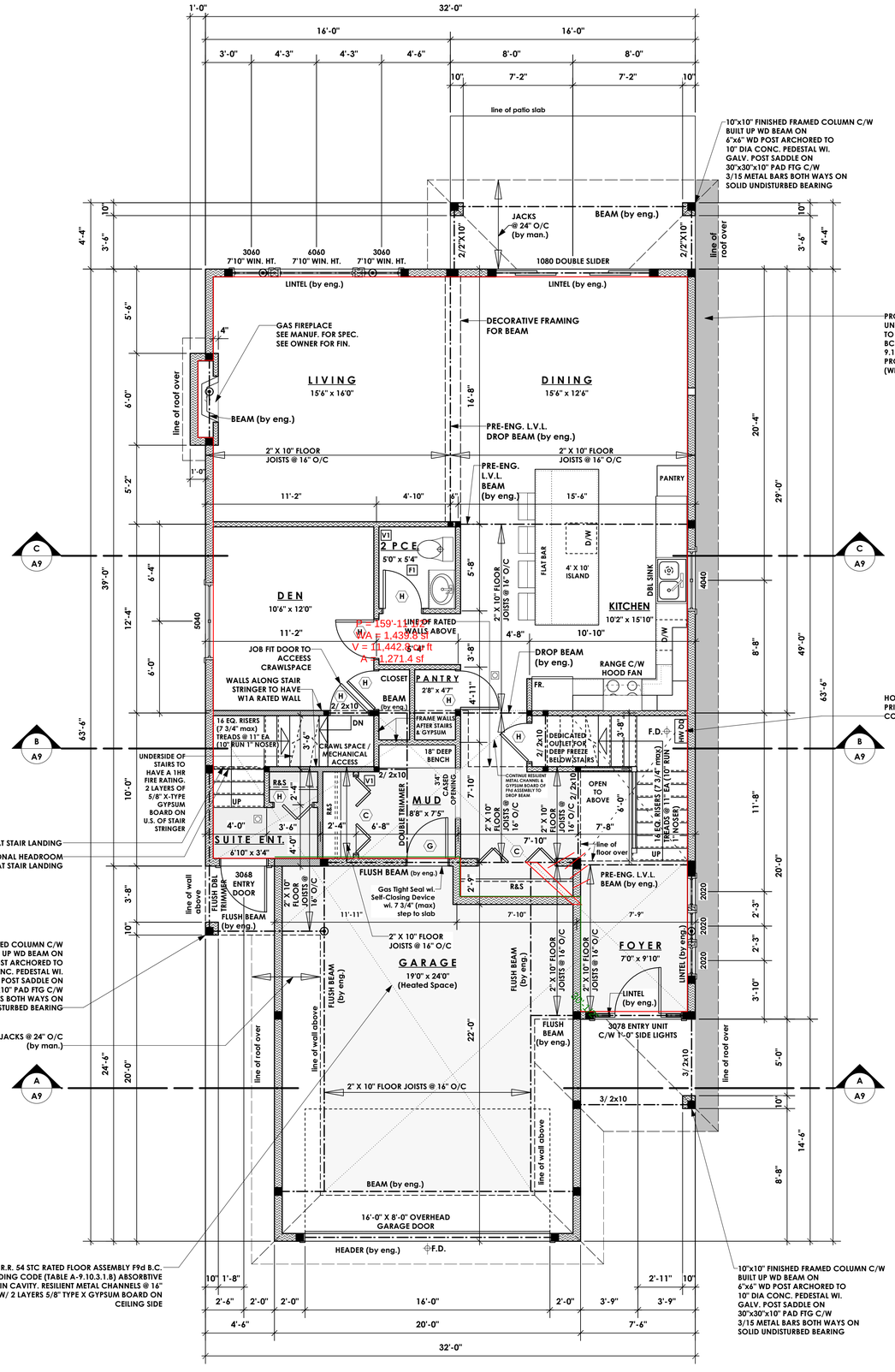

1 / A7 Main Floor Plan

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

Primary Living 1257.01 sq.ft. (116.78 sq.m.)
Secondary 86.97 sq.ft. (8.08 sq.m.)
Total 1343.98 sq.ft. (124.86 sq.m.)

Garage 475.01 sq.ft. (44.13 sq.m.)

Interconnected Smoke detectors to comply with B.C.B.C 9.10.19. Interconnected Carbon Monoxide detectors to comply with B.C.B.C. 9.32.4.2.

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G	2/8 X 6/8 (813 X 2032)
H	2/6 X 6/8 (762 X 2032)
J	2/4 X 6/8 (711 X 2032)
K	2/0 X 6/8 (610 X 2032)
L	1/6 X 6/8 (508 x 2032)

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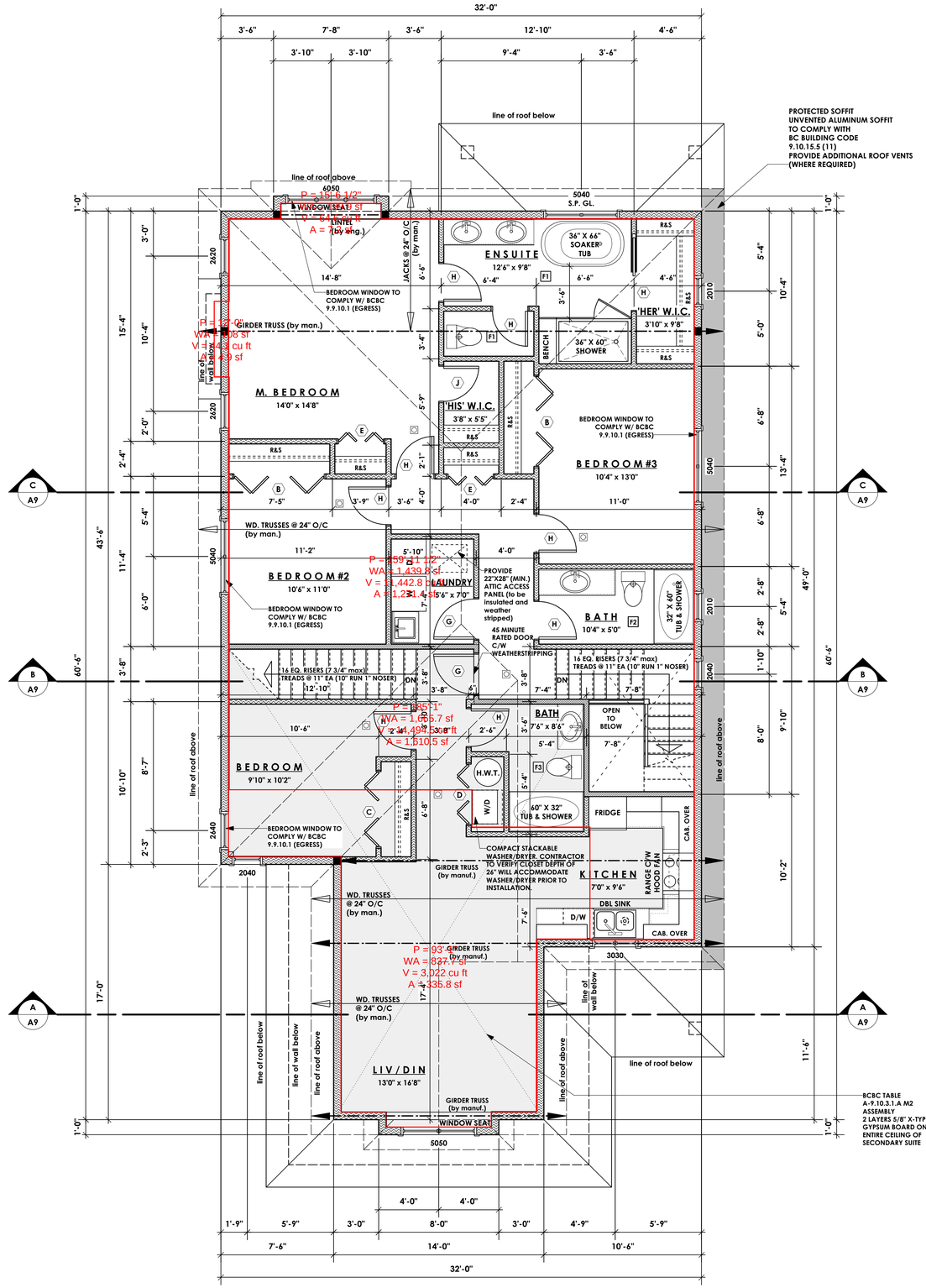

1 / A8 Upper Floor Plan

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

Primary Living 1037.96 sq.ft. (96.43 sq.m.)
Secondary 665.42 sq.ft. (61.82 sq.m.)
Total 1703.38 sq.ft. (158.25 sq.m.)

Interconnected Smoke detectors to comply with B.C.B.C 9.10.19. Interconnected Carbon Monoxide detectors to comply with B.C.B.C. 9.32.4.2.

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- B/U WD POST (LOAD ABOVE)
- POINT LOAD

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F	2/10 X 6/8 (864 X 2032)
G	2/8 X 6/8 (813 X 2032)
H	2/6 X 6/8 (762 X 2032)
J	2/4 X 6/8 (711 X 2032)
K	2/0 X 6/8 (610 X 2032)
L	1/6 X 6/8 (508 x 2032)

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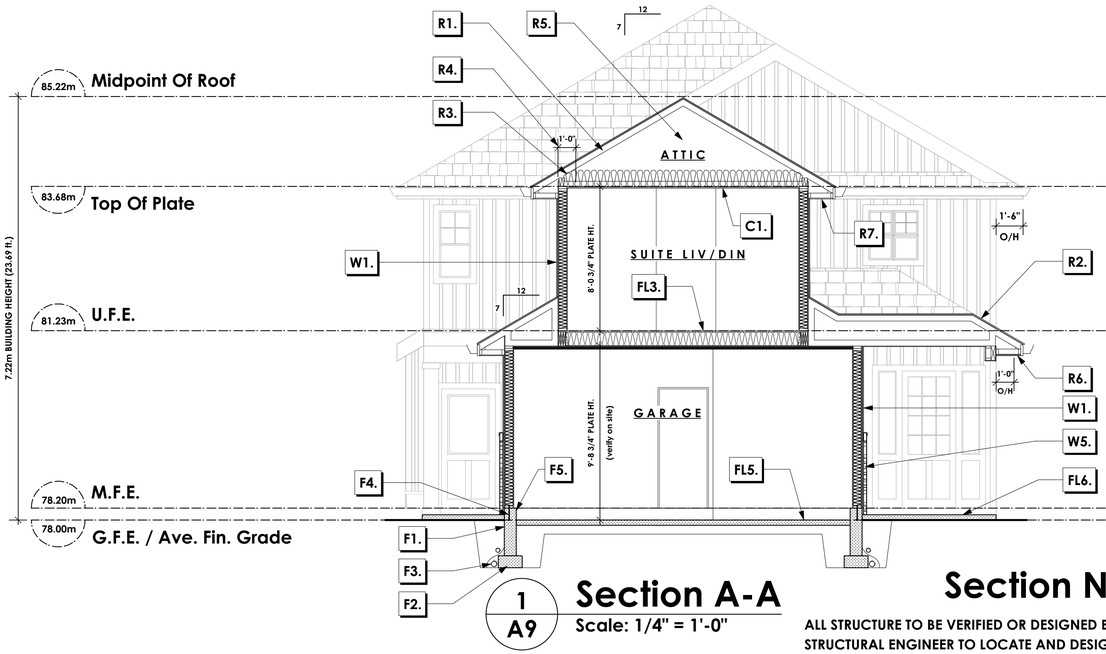
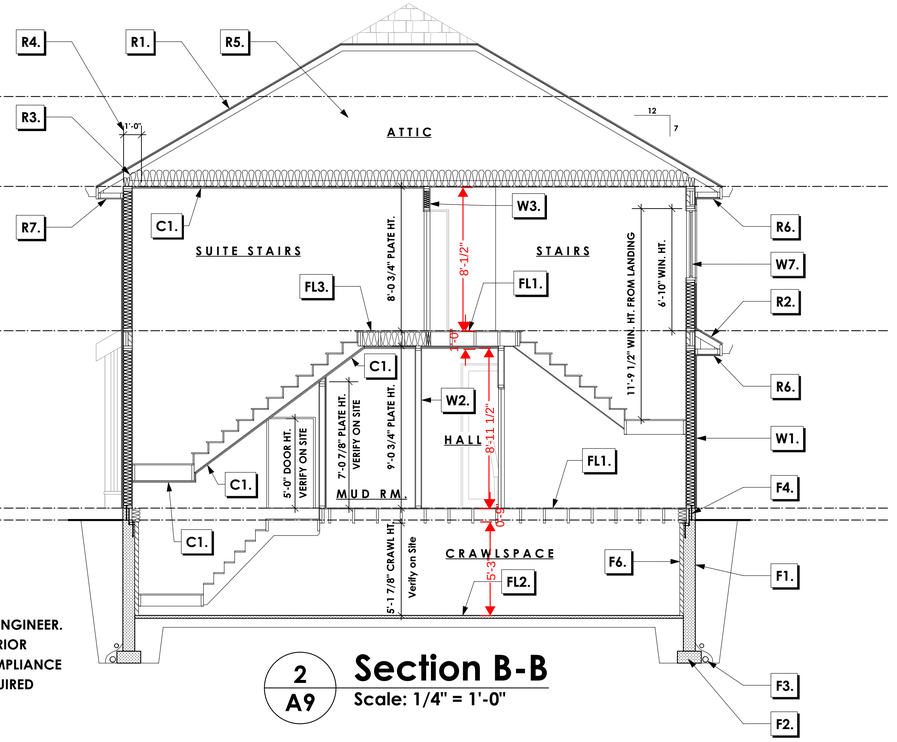
DRWG NO. 7580-35
SHT. NO. A8 OF A9
DATE Mar. 18, 2019
SCALE As Shown
DRAWN N.S.
REVIEWED BY J.T.E.

PROJECT
Proposed Residence:
Langdon Weir Construction Ltd.
Lot 35 Latoria Rise
3511 Paperbark Cres.
Langford, B.C.

Date: 18/3/19
Time: 3:26:25 PM



1 / A9 **Section A-A**
Scale: 1/4" = 1'-0"



2 / A9 **Section B-B**
Scale: 1/4" = 1'-0"

Section Notes

ALL STRUCTURE TO BE VERIFIED OR DESIGNED BY A STRUCTURAL ENGINEER. STRUCTURAL ENGINEER TO LOCATE AND DESIGN REQUIRED EXTERIOR AND INTERIOR WALL BRACING TO RESIST LATERAL LOADS IN COMPLIANCE WITH B.C. BUILDING CODE 9.23.13.2 AND SUPPLY DETAILS IF REQUIRED

Walls

W1. CONC. FIBRE SIDING (James Hardie or eq.) ON
9.5mm (3/8") AIR SPACE / STRAPPING
3/8"×2" BORATE TREATED PLYWOOD STRAPPING
HOUSE WRAP (A.B.) (TYVEK OR EQ.)
1/2" PLYWOOD SHEATHING OR EQ. ON
2×6 STUDS @ 16" O/C
R-20 INSULATION
6 MIL. POLYETHYLENE VAPOUR BARRIER
1/2" GYPSUM BOARD
(refer to details on D1)

W2. INTERIOR PARTITION
1/2" GYPSUM BOARD ON EACH SIDE
OF 2×4 STUDS @ 16" o/c OR
2×6 STUDS @ 16" o/c (if noted)

W3. B.C. BUILDING CODE (A-9.10.3.1.A)
RATED WALL ASSEMBY W1a
1 LAYER 5/8" X-TYPE GYPSUM BOARD ON
EACH SIDE OF 2×4 STUDS @ 16" O/C OR
2×6 STUDS @ 16" O/C (if noted) c/w
3 1/2" FIBRE GLASS SOUND BATTS
FRICTION FITTED AND SOLID FILLED
1 HR. F.R.R 36 S.T.C
(between secondary suite & primary living)

W4. 5/8" X-TYPE GYPSUM BOARD ON
2×6 STUDS @ 16" o/c c/w
R-20 INSULATION
6MIL. POLY'N V.B
1/2" GYPSUM BOARD
(between garage & primary living)
(not shown in section)

W5. PRE-MANUFACTURED STONE VENEER
(installed to manuf. spec)
LIME BASED MORTAR SETTING BED ON
LIME BASED MORTAR SCRATCH COAST ON
METAL LATHE INSTALLED HORIZONTALLY
OVERLAP HORIZONTAL AND VERTICAL SEAMS 1"
SEMI-RIGID BACK BOARD
(HAL-TEX RAINBOARD OR EQ.)
9.5mm (3/8") AIR SPACE / STRAPPING
3/8"×2" BORATE TREATED PLYWOOD STRAPPING
HOUSE WRAP (A.B.) (TYVEK OR EQ.)
1/2" PLYWOOD SHEATHING OR EQ. ON
2×6 STUDS @ 16" (as required)

W6. 10"x10" FINISHED FRAMED COLUMN C/W
6" X 6" POST ANCHORED TO
10" DIA CONC PEDESTAL
30" x 30" x 10" CONC. PAD FTG
c/w 4 - 15M REBAR BOTH
WAYS ON SOLID UNDISTURBED BEARING
(not shown in section)

W7. DOUBLE GLAZING
ENERGY STAR LOW "E" RATING IN
THERMAL BREAK FRAMES
2/2"X10" LINTEL OVER (@ bearing walls only)
(TYPICAL, wi. 2 1/2" XPS insulation)
FLASHING OVER @ EXTERIOR
(glazing in all exterior doors & within 3 ft.
of exterior doors to be shatterproof (SP))
WINDOW REQUIREMENTS DERIVED FROM BCBC
TABLE C-5 AS PER BCBC 9.7.4.3. AND ARE TO BE
USED TO SATISFY THE REQUIREMENTS OF
AAMA/WDMA/CSA 101/I.S.2/A440, "NAFS":
Langford, CLASS R, DP 960, PG 20, WATER RESIST. 220, A2,
RATINGS MUST BE CLEARLY LABELED ON ALL
WINDOW UNITS UPON INSTALLATION FOR INSPECTION.

Floors

FL1. FINISHED FLOORING ON
5/8" T&G PLYWOOD OR EQ.
(nailed & glued to floor struct. below) ON
2"X10" FLOOR JOISTS @ 12" OR 16" O/C
C/W 2×2 X-BRIDGING @ 7.0' O/C (max)
1/2" GYPSUM BOARD
(no gypsum in crawlspace)

FL2. 2" CONCRETE SEAL
6 MIL. POLY'N V.B.
6" COMPACTED GRAVEL OR SAND

FL3. F9d RATED FLOOR ASSEMBLY
(BCBC table A-9.10.3.1.B)
FINISH FLOORING ON
5/8" T&G PLYWOOD OR EQ.
(nailed & glued to floor struct. below)
2"X10" FLOOR JOISTS @ 16" O/C
C/W CROSS BRIDGING @ 82" O/C (min.)
C/W R-31 F/G BATT INSULATION
RESILIENT CHANNELS @ 16" O/C
2 LAYERS 5/8" X-TYPE GYPSUM BOARD
FRR: 1.0 hr, STC: 52
(between secondary suite & primary living/garage)

FL4. FINISHED FLOORING ON
5/8" T&G PLYWOOD OR EQ.
(nailed & glued to floor struct. below) ON
2"X10" FLOOR JOISTS @ 12" OR 16" O/C
C/W 2×2 X-BRIDGING @ 7.0' O/C (max)
PROVIDE R-31 F/G BATT INSULATION IN
JOIST CAVITY C/W
VENTED SOFFIT (to owners spec's)
TO ALL SUSPENDED FLOOR AREAS
(not shown in section)

FL5. 3 1/2" CONCRETE SLAB
6 MIL. POLY'N V.B.
6" COMPACTED GRAVEL OR SAND
SLOPE TO DOORS 1"

FL6. EXPOSED AGG. FIN.
3.5" CONCRETE SLAB
6" COMPACTED GRAVEL OR SAND
SLOPE 2% AWAY FROM HOUSE
(patio and porches)

Roofs

R1. LAMINATED ASPHALT SHINGLES ON
1/2" PLYWOOD SHEATHING OR EQUAL C/W "H" CLIPS
WD TRUSSES (DESIGNED BY MANUF.)
14 1/2" FIBREGLASS LOOSE FILL INSULATION
(ALLOW FOR SETTLING) OR
R-40 FIBREGLASS BATT INSULATION
6 MIL POLY'N V.B.
5/8" GYPSUM BOARD

R2. LAMINATED ASPHALT SHINGLES ON
1/2" PLYWOOD SHEATHING OR EQUAL C/W "H" CLIPS
WD TRUSSES (DESIGNED BY MANUF.)
VENTED ALUMINUM SOFFIT

R3. PROVIDE 2 1/2" (63mm) CLEAR BETWEEN
INSULATION AND SHEATHING.
(min. R-20 @ roof-wall connection)

R4. EAVE PROTECTION
CONT. UP ROOF SLOPE FOR 12"
PAST EXTERIOR WALL.

R5. PROVIDE 1 SQ.FT. ATTIC VENT PER
300 SQ.FT. OF INSULATED AREA MIN.
25% OF REQUIRED TO BE @ TOP AND BOTTOM
(to comply wi. B.C. bldg. code 9.19.1)

R6. PRE- FN. ALUMINUM FASCIA GUTTER
2"X8" FASCIA BD.
2"X4" SUB. FASCIA BD.
UNVENTED ALUMINUM SOFFIT
TO COMPLY WI.
B.C. BLDG. CODE 9.10.15.5.(11)
(verify material)

R7. PRE- FN. ALUMINUM FASCIA GUTTER
2"X8" FASCIA BD.
2"X4" SUB. FASCIA BD.
VENTED ALUMINUM SOFFIT
(see contractor)

Ceiling

C1. BCBC TABLE A-9.10.3.1.A
M2 ASSEMBLY
2/ 5/8" X-TYPE GYPSUM BOARD
6 MIL POLY'N V.B.
ON U.S. OF WD. TRUSSES
(on rated ceiling in suite)
1.0 F.R.R

Foundation Walls

F1. DAMPROOFING (where required) ON
8" THK. CONC. FOUNDATION WALL
C/W 15 M BARS @ 24" o/c B/W

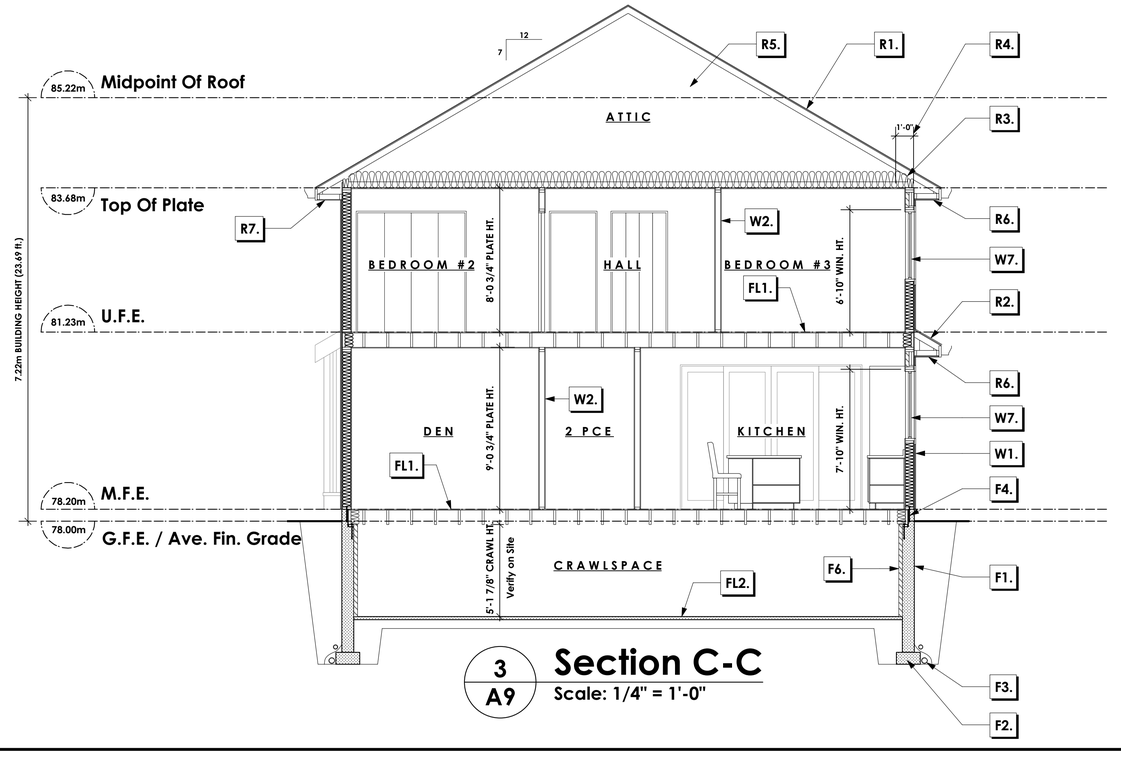
F2. 16"X 8" CONC. FOOTINGS
C/W 2 (TWO) 15m BARS CONT. 3 IN. FROM BOTT.
ON UNDISTURBED SOIL (SOLID BEARING)

F3. 4" PERIMETER DRAIN
3" TIGHT PIPE FOR RWL
DRAIN ROCK

F4. ANCHOR BOLTS @ 4.0 FT. o/c MAX
c/w SILL GASKETS

F5. STEP DOWN TO GARAGE SLAB
MAY VARY, VERIFY EXTENT ON SITE

F6. 2 1/2" EXTRUDED POLYSTYRENE RIGID INSULATION
APPLIED TO CONC. FDN. WALL (crawl space only)
INSULATION TO EXTEND TO TOP OF
2" CONC. GROUND SEAL



3 / A9 **Section C-C**
Scale: 1/4" = 1'-0"

PROFESSIONAL SEALS

CONSULTANTS

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DRWG NO.	7580-35
SHT. NO.	A9 OF A9
DATE	Mar. 18, 2019
SCALE	As Shown
DRAWN	N.S.
REVIEWED BY	J.T.E.

PROJECT

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Langdon Weir Construction Ltd.
Lot 35 Latoria Rise
3511 Paperbark Cres.
Langford, B.C.

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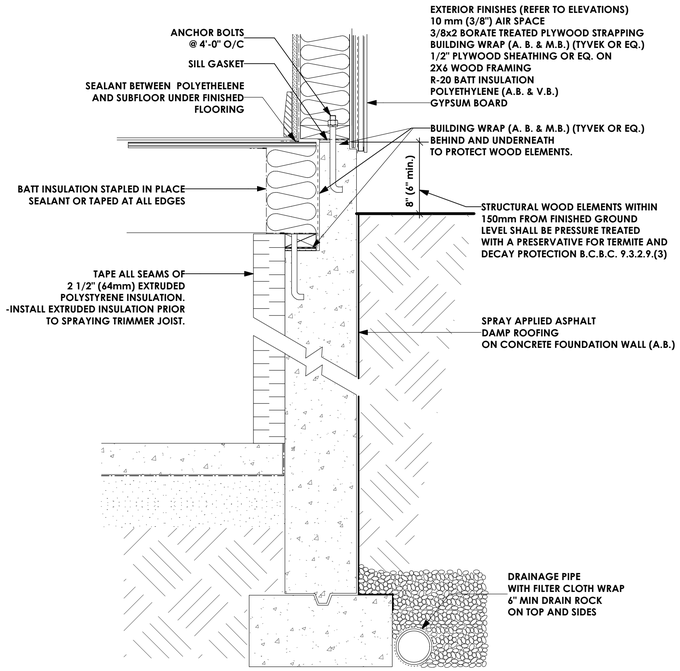
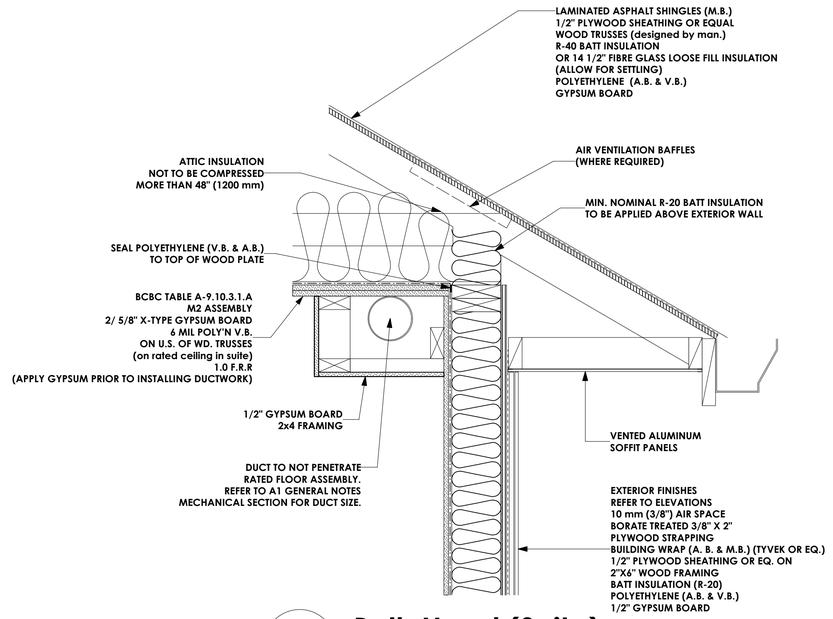
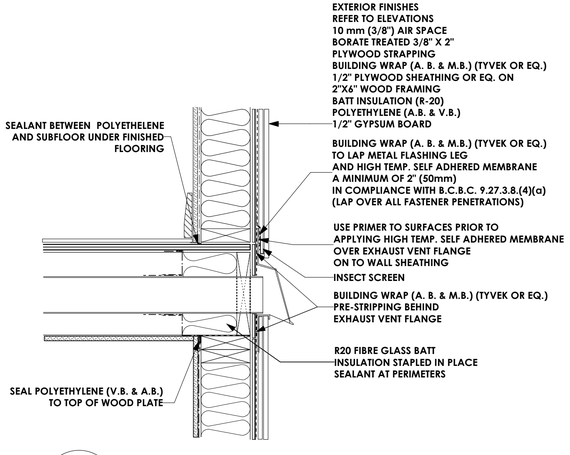


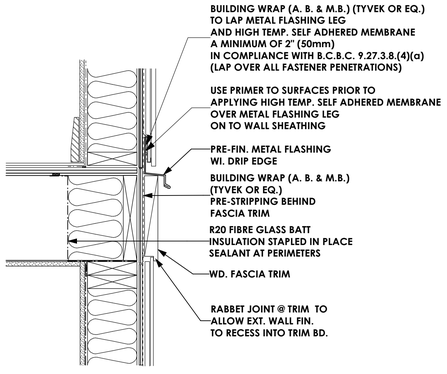
1 / D1 Concrete Joist Ledge
Scale: 1 1/2" = 1'-0"



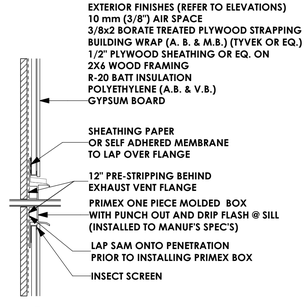
2 / D1 Bulk Head (Suite)
Scale: 1 1/2" = 1'-0"



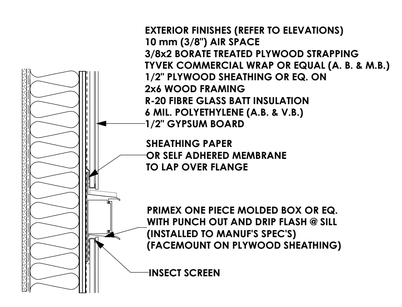
3 / D1 Wall Exhaust Vent
Scale: 1 1/2" = 1'-0"
PRIMEX CAP (OR EQ.) REFER TO MANUF. FOR SPECIFICATIONS & INSTALLATION



4 / D1 Trimmer Joist
Scale: 1 1/2" = 1'-0"



5 / D1 Pipes
Scale: 1 1/2" = 1'-0"
PRIMEX BOX REFER TO MANUF. FOR SPECIFICATIONS & INSTALLATION



6 / D1 Electrical Fixtures
Scale: 1 1/2" = 1'-0"
PRIMEX BOX REFER TO MANUF. FOR SPECIFICATIONS & INSTALLATION

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CONSULTANTS

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DRW'G NO. 7580-35
SHT. NO. D1 OF D2
DATE Mar. 18, 2019
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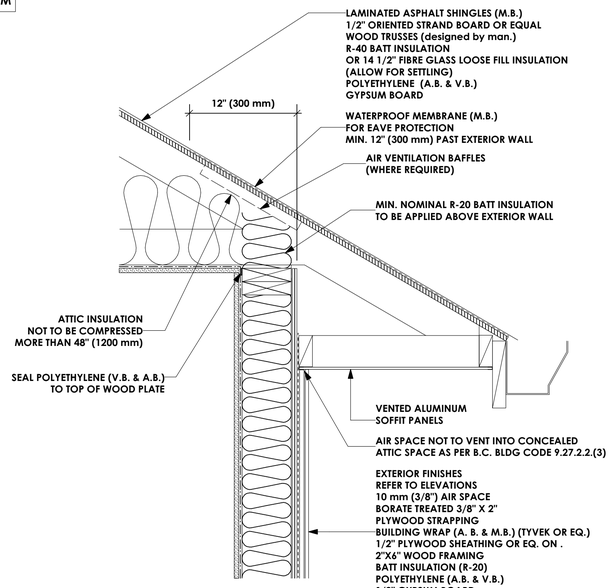
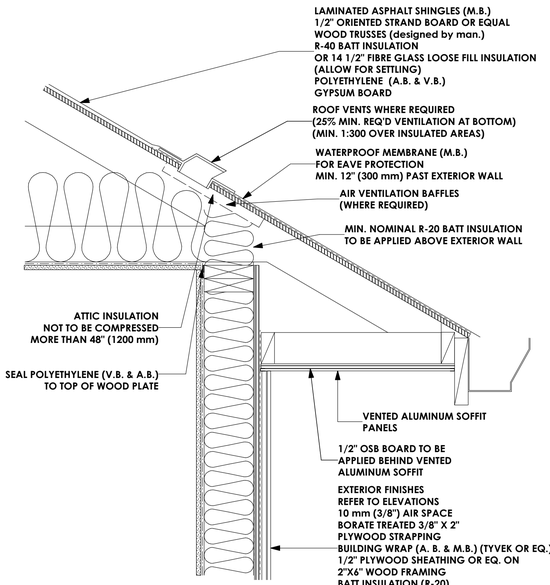
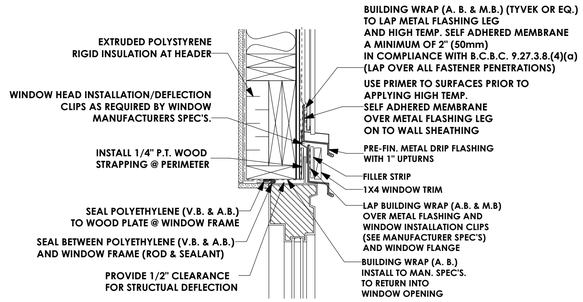


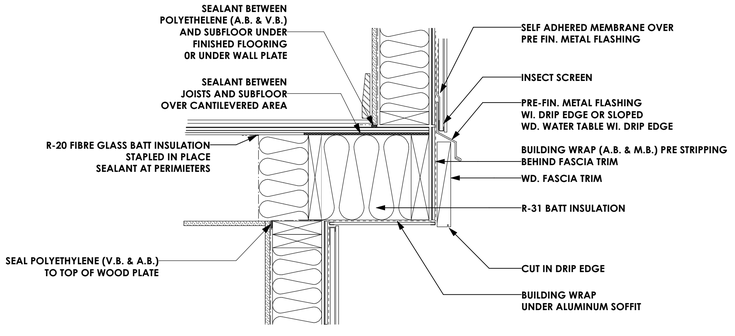
1 D2 **Water Shedding Roof / Wall**
Scale: 1 1/2" = 1'-0"



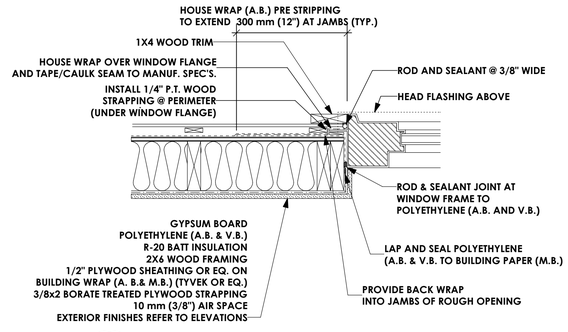
2 D2 **Soffit Protection**
Scale: 1 1/2" = 1'-0"
BC BUILDING CODE 9.10.15.5 (11)
(USE PROVIDED DETAIL WHEN ROOF OVERHANG
IS WITHIN 1.20M OF PROPERTY LINE)



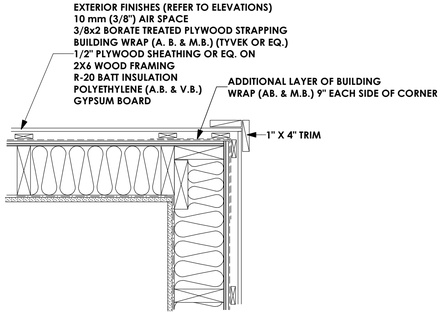
3 D2 **Window Head**
Scale: 1 1/2" = 1'-0"



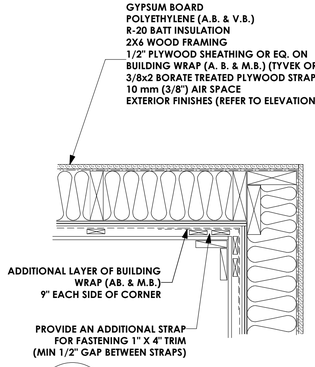
4 D2 **Cantilevered Floor**
Scale: 1 1/2" = 1'-0"



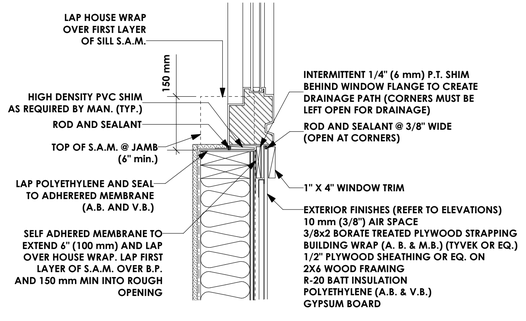
5 D2 **Window Jamb**
Scale: 1 1/2" = 1'-0"



6 D2 **Exterior Corner**
Scale: 1 1/2" = 1'-0"



7 D2 **Interior Corner**
Scale: 1 1/2" = 1'-0"



8 D2 **Window Sill**
Scale: 1 1/2" = 1'-0"

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