



CORPORATION OF THE TOWNSHIP OF ESQUIMALT

Municipal Hall, 1229 Esquimalt Road, Esquimalt, B.C. V9A 3P1
Telephone (250) 414-7100 Fax (250) 414-7111

APC Meeting: April 21, 2020

STAFF REPORT

DATE: March 12, 2020

TO: Chair and Members of the Advisory Planning Commission

FROM: Karen Hay, Planner
Bill Brown, Director of Development Services

SUBJECT: REZONING APPLICATION
481 South Joffre Street [PID 003-150-909, Lot 4, Section 11, Esquimalt District, Plan 4729]

RECOMMENDATION:

The Esquimalt Advisory Planning Commission recommends that the application for rezoning, authorizing a new detached accessory dwelling unit [DADU], “garden suite” to be constructed behind the existing single family dwelling, sited in accordance with the BCLS Site Plan prepared by Brent Mayenburg, Wey Mayenburg Land Surveying Inc., stamped “Received February 20, 2020”, and incorporating the height and massing consistent with the architectural plans prepared by Adapt Design, stamped “Received February 7, 2020” be forwarded to Council with a recommendation to either **approve, approve with conditions, or deny the application; including reasons for the chosen recommendation.**

BACKGROUND:

Purpose of the Application

The applicant is requesting a change in zoning from Two Family/Single Family Residential [RD-3] to a Comprehensive Development District, to create a development where the existing single family dwelling is retained and a new detached accessory dwelling unit [DADU], “garden suite” is added in the rear yard of the property.

This site is located within Development Permit Area No. 1 – Natural Environment, Development Permit Area No. 3 – Enhanced Design Control Residential, Development Permit Area No. 7 – Energy Conservation and Greenhouse Gas Reduction, and Development Permit Area No. 8 – Water Conservation of the Esquimalt Official Community Plan Bylaw, 2018, No. 2922. Should this rezoning application be approved, a Development Permit would be required to ensure that the application is generally consistent with the Development Permit Area guidelines, before a building permit could be issued for the construction of a structure.

Evaluation of this application should focus on issues relevant to zoning such as the appropriateness of the proposed uses, height, density, massing, proposed unit sizes,

siting, setbacks, lot coverage, useable open space, parking, how the building relates to adjacent and surrounding sites and whether the proposal is generally appropriate and consistent with the overall direction contained within the Official Community Plan.

Context

Applicant: John Sorenson, J. Sorenson Design Build

Owner: Lynn Mitchell

Designer: Adapt Design

Property Size: Metric: 682.3 m² Imperial: 7344.2 ft²

Existing Land Use: Single Family Residential

Surrounding Land Uses:

North: Single Family Residential

South: Single Family Residential

West: Single Family Residential

East: Multiple Family Residential

Existing Zoning: Two Family/ Single Family Residential [RD-3]

Proposed Zoning: CD [Comprehensive Development District]

Existing OCP Designation: Low Density Residential [No change proposed]

Zoning

Esquimalt currently does not have any regulations for DADU's. A staff report was presented to the Esquimalt Committee of the Whole on March 9, 2020 that suggests some possible future regulations (<https://esquimalt.ca.legistar.com/View.ashx?M=A&ID=6400&GUID=A823F291-9805-4E87-8ABF-77048A6366D3>)(Appendix C). These proposed regulations are largely based on regulations found in neighbouring municipalities and still require further evaluation by Esquimalt residents.

The subject property is a fairly large lot where the current zoning allows a two family dwelling to be constructed. The owner is willing to forgo the opportunity to build the two family dwelling in favour of a smaller dwelling unit in the rear yard. The proposed Comprehensive Development District zone would contain the following uses: single family residential, detached accessory dwelling unit [DADU], home occupation, boarding, and urban hens.

F.A.R., Lot Coverage, Siting, Setbacks, etc.: The following chart compares the requirements of the RD-3 [Two Family /Single Family Residential Zone] with the proposal.

	RD-3 Principal building	RD-3 Accessory Building	Proposed CD Zone
Minimum Parcel Size	530 m ²	--	682.3 m ²
Floor area ratio (FAR)	0.35	--	0.32
Lot coverage	30% (all buildings)	10%	17 % / 8%
Building height	7.3 m	3.6 m	5.2 m

	RD-3 Principal building	RD-3 Accessory Building	Proposed CD Zone
Setbacks			
• Front	7.5 m	Behind principal building	6.4 m (behind principal for DADU)
• Rear	7.5 m	1.5 m	3.75 m for DADU
• Side	3.0 m/1.5 m	1.5 m / 1.5 m	1.55 m / 11.0 m
Building massing	Articulation to reduce apparent height and volume	--	2 nd storey is built into the roof line, and has dormers
Building separation	na	2.5 m	8.71 m
Off street parking	1 space per dwelling unit	--	1 space (Potential for 2 nd in front yard)

The existing house is 90 m² (970 ft²) and the proposed accessory dwelling unit is 60 m² (650 ft²). Floor Area Ratio measures the size of a building (or for all buildings on a lot) as a ratio to the size of the lot on which the buildings sit. The proposed FAR at 0.32 complies with the permitted FAR in the RD-3 zone. Many of the single unit infill developments in Esquimalt have been built with a FAR close to 0.35. The proposed siting for this unit complies with accessory building siting.

The existing home does not have a secondary suite and one is not proposed for this application but some jurisdictions do allow both accessory dwelling units and secondary suites on a single property. The proposed garden suite is two storeys, in many jurisdictions garden suites are a single storey with a height similar to an accessory building. The DADU occupies 17% of the rear yard (area behind the principal building), which would comply with a regulation found in other jurisdictions where a DADU cannot cover more than 25% of a rear yard. A 'rear yard coverage' measurement is designed to preserve open space/ permeable area and could make allowance for some outdoor recreation space for both units.

A covenant could be registered against the title of the property; limiting the development from future subdivision, disallowing short-term rentals and a secondary suite being added to the house.

Parking

Parking Bylaw 1992, No. 2011 requires one parking space per dwelling unit, and that in residential zones the parking spaces shall be located no closer to the front lot line than the front face of the principal building. Currently the plans show one parking space behind the front face of the principal building. Due to the age of the principal building it could have one parking space in the front yard. A location in the front yard that was previously a parking space and is now a patio could be parking in the future.

Official Community Plan (OCP)

The proposed development for a single family dwelling and an accessory dwelling is consistent with the Proposed Land Use Designation of 'Low Density Residential'; therefore an amendment

to the OCP is not necessary. The following OCP objectives and policies can be useful in evaluating this proposal.

OCP Section 5.1 General: Anticipated Housing Needs in the Next Five Years states an objective to support expansion of housing types within Esquimalt while addressing concerns such as tree protection, parking, traffic, noise, effects on neighbouring properties, and neighbourhood character.

- Policy - Support the inclusion of secondary suites within present and proposed low density residential land use designated areas.
- Policy - Support the inclusion of detached accessory dwelling units on appropriate low density residential land use designated areas where only one principal dwelling unit exists.
- Policy - Support the development of a variety of housing types and designs to meet the anticipated housing needs of residents. This may include non-market and market housing options that are designed to accommodate young and multi-generational families, the local workforce, as well as middle and high income households.
- Policy - Encourage the development of rental accommodation designed for a variety of demographic household types, including young families.

5.2 Low Density Residential Redevelopment

OBJECTIVE: Strive for redevelopment and infill development that improves and enhances the appearance and livability of neighbourhoods and the community as a whole.

- Policy - Proposed redevelopment or infill within present low density residential land use designated areas should be built to high quality design and landscaping standards and respond sensitively to existing neighbourhood amenities.
- Policy - Consider the inclusion of secondary suites in infill developments where it is demonstrated that neighbourhood impacts can be mitigated.
- Policy - Support the inclusion of detached accessory dwelling units on appropriate low density residential land use designated areas where only one principal dwelling unit exists.

Comments from Other Departments

The plans for this proposal were circulated to other departments and the following comments were received by the submission deadline:

Community Safety Services (Building Inspection): Project will be subject to review for current BC Building Code and municipal bylaw compliance at the time of a Building Permit application.

Engineering Services: Engineering staff have completed a preliminary evaluation of the Works and Services that would be required for the proposed development. According to Subdivision and Development Control Bylaw, 1997, No. 2175, including all schedules, the developer may be required to provide all works and services up to the road centre line. Staff confirms that the design appears achievable on the site and that new drain and sewage services maybe required for both buildings. The applicant is responsible for retaining the services of a qualified professional for the design and construction supervision of all works and services, including construction costs, engineering fees, administrative costs and contingency allowance, as indicated in Bylaw 2175. Additional comments provided when detailed engineering drawings submitted.

Parks Services: Tree protection fencing will need to be erected at the dripline for all trees, and possibly the neighbour's trees. Tree cutting permits are required for all trees that may be removed.

Fire Services: Please ensure suite address is visible from the street.

Public Notification

As this is a rezoning application, should it proceed to a Public Hearing, notice would be mailed to tenants and owners of properties within 100m (328 ft) of the subject property. A sign indicating that the property is under consideration for a change in zoning has been placed on the South Joffre Street frontage of the property and would be updated to reflect the date, time and location of the Public Hearing. Additionally, notice of the Public Hearing would be placed in two editions of the Victoria News.

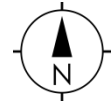
Applicant's submission

The applicant has indicated that they canvassed the neighbourhood and have indicated the majority of residents are 'in favor' of their development proposal. As per the Development Application and Procedures and Fees Bylaw No. 2791, 2012, the applicant will need to host a meeting and invite residents and owners of property within 100 metres of the subject parcel; to be completed prior to consideration by Council. The owner has a meeting scheduled at the site for March 21, 2020, 2 to 4 pm.

ALTERNATIVES:

1. Forward the application for Rezoning to Council with a **recommendation of approval including reasons for the recommendation.**
2. Forward the application for Rezoning to Council with a **recommendation of approval including specific conditions and including reasons for the recommendation.**
3. Forward the application for Rezoning to Council with a **recommendation of denial including reasons for the recommendation.**

481 South Joffre Street - air photo



40. TWO FAMILY/SINGLE FAMILY RESIDENTIAL [RD-3]

The intent of this Zone is to accommodate Single Family or Two Family Dwelling Units on individual Parcels of land.

(1) **Permitted Uses**

The following Uses and no others are permitted:

- (a) Single Family Residential
- (b) Two Family Residential
- (c) Home Occupation
- (d) Boarding: subject to the requirements of Section 30.3
- (e) Urban Hens: subject to the requirements of Section 30.4 of this bylaw.

(2) **Parcel Size**

The minimum Parcel Size for Parcels created by subdivision shall be 668 square metres.

(3) **Minimum Lot Width**

The minimum width of Parcels created by subdivision shall be 18.3 metres, measured at the Front Building Line.

(4) **Floor Area Ratio**

- (a) For parcels 800 square metres in area and larger, the Floor Area Ratio for Two Family Dwellings shall not exceed 0.35.
- (b) For parcels under 800 square metres in area the Floor Area Ratio for Two Family Dwellings shall not exceed 0.4.

(5) **Floor Area**

The minimum Floor Area for the First Storey of a Principal Building shall be 88 square metres.

(6) **Building Height**

- (a) No Principal Building shall exceed a Height of 7.3 metres.
- (b) No Accessory Building shall exceed a Height of 3.6 metres.
- (c) When developing a front to back Two Family Dwelling, the back Dwelling Unit shall be no higher than the highest point of the existing Dwelling Unit. A Two Family Dwelling is considered back to front if more than 75% of the floor area of the back Dwelling Unit is behind the rear wall of the front Dwelling Unit.

(7) **Building Width**

The minimum width of any Single Family or Two Family Dwelling shall be 7 metres.

(8) **Lot Coverage**

- (a) All Principal Buildings, Accessory Buildings and Structures combined shall not cover more than 30% of the Area of a Parcel.
- (b) All Accessory Buildings and Structures combined shall not exceed 10% of the Area of a Parcel.

(8.1) **Building Massing** [*Amendment, 2018, Bylaw No. 2938*]

- (1) Second and Third Storey Setback: The front face of the second and third storey(s) shall be set back a minimum of 1.5 metres from the front face of the First Storey of the Principal Building.
- (2) Design Guideline: Articulation of building elements is encouraged, to add visual interest and reduce apparent building height and volume.



(9) **Siting Requirements**

(a) **Principal Building**

- (i) Front Setback: No Principal Building shall be located within 7.5 metres of the Front Lot Line.
- (ii) Side Setback: No Principal Building shall be located within 1.5 metres of an Interior Side Lot Line, with the total Setback of all Side Yards not to be less than 4.5 metres. In the case where a Parcel is not served by a rear lane, one (1) Side Yard shall not be less than 3 metres. In the case of a Corner Lot, no Principal Building shall be located within 3.6 metres of an Exterior Side Lot Line.
- (iii) Rear Setback: No Principal Building shall be located within 7.5 metres of a Rear Lot Line.

(b) **Accessory Building**

- (i) Front Setback: No Accessory Building shall be located in front of the front face of the Principal Building.
- (ii) Side Setback: No Accessory Building shall be located within 1.5 metres of an Interior Side Lot Line nor 3.6 metres of an Exterior Side Lot line.
- (iii) Rear Setback: No Accessory Building shall be located within

1.5 metres of a Rear Lot line.

- (iv) Building Separation: No Accessory Building shall be located within 2.5 metres of a Principal Building.

(c) **Garage Setback [Amendment, 2018, Bylaw No. 2938]**

Detached Garages, and that portion of a Principal Building used as a Garage, shall be set back a minimum of 1.5 metres from the front face of the Principal Building.

(10) **Common Wall Requirements**

In Two Family Dwellings the common wall overlap between the habitable areas of the two Dwelling Units shall be not less than 50%.

(11) **Fencing**

Subject to Section 22, no fence shall exceed a Height of 1.2 metres in front of the front face of the Principal Building and 2 metres behind the front face of the Principal Building.

(12) **Off Street Parking**

Off street parking shall be provided in accordance with the requirements of Parking Bylaw, 1992, No. 2011 (as amended).

(13) **Driveway Width**

The maximum width of a driveway surface on a Two Family Residential lot shall be a total of 5.5 metres. This applies to a double-wide driveway, or the combined width of two (2) single lane driveways serving a Two Family Dwelling.



Lynn Mitchell
481 South Joffre Street
Victoria V9A 6C7

24 October 2019

MAYOR AND COUNCIL
Township of Esquimalt
1229 Esquimalt Road
Victoria V9A 3P1

Dear Mayor Desjardins and Members of Council:

I am a long-term resident of this community and love it here. I have watched the community grow and become more vibrant and I have great hopes for it's future. I also have extended family who own and rent in Esquimalt and more hoping to move here.

This brings me to the purpose of this letter:

As we know housing is scarce and expensive, out of reach for many. The focus on density is important and necessary. I support it wholeheartedly as long as it's well designed and inclusive of the surrounding neighbourhoods.

I live in a modest home of 960sf on a typical large lot with duplex zoning. Because of the position of the existing structure a duplex would be very difficult. My property is not zoned for an additional suite. With these limitations in mind, I would like to add to my living space (for extended family) in the form of a small two storey cottage in the northeast corner of my lot.

There are multiple reasons for the two storey design (with the second floor actually being in the roofline):

1. The footprint would be small and save green space;
2. Existing mature trees would be protected;
3. It would not overlook any neighbours;
4. It would be distant (enough) from the existing house and,
5. It would allow enough living space to house my family.

I am retired and as I age having family on the property as a community but also with independence is very important to me. I see this as a common trend.

I am on good terms with my neighbours and have spoken to them about this idea and have not had any negative feedback. In fact, most heartily encourage it as it would hardly be seen from the street.

Directly behind me is a three storey apartment building with a parking lot next to my fence. I am definitely overlooked by this building hence the trees I have planted screening.

Further south is a four storey apartment. On my north side is a property in foreclosure and likely to be developed and beside it the huge Large and Co. duplex which sits in the backyard of an existing house on Lyall. I am not sure what rezoning took place there.

My proposed suite is tiny (800sf) and will add beauty to the neighbourhood.

I welcome your support and rezoning approval.

Kindest regards
Lynn Mitchell
(property owner)



Completed checklists form part of the application package reviewed by staff and ultimately, Council. New buildings and developments have impacts that last well beyond the construction period. Reducing the consumption of natural resources and increasing resilience to a changing climate are part of the challenge of building more sustainably. This checklist will help you identify and present how your project will help the Township meet its goals of becoming carbon neutral by 2050.

Applicant's Name JOHN SORESENSEN

Site Address 481 SOUTH TOFFEE



1.0 Certification		Please check
1.1	Step Code (Please indicate level) <input type="checkbox"/> 1 <input checked="" type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5	
1.2	EnerGuide rating	
1.3	LEED	
1.4	Passive House	
1.6	Living building	
1.7	Other (Built Green BC, R-2000, Green Shores etc.)	
2.0 Siting		
2.1	New buildings > 10 m ² are located > 20 m from the high water mark (HWM) of the Gorge Waterway.	Required
2.2	New buildings >10 m ² are located at least 10 m from the HWM from the outer coastline.	Required
2.3	Flood Construction Level has been established using sea level rise projections for the life of the building.	
2.4	Habitats of threatened and endangered species have been protected from impacts of development.	
2.5	Buildings are located within disturbed or developed areas.	✓
3.0 Shoreline Protection Measures		
3.1	Landscaping within 10 m of the high water mark consists primarily of native plant and tree species.	Required
3.2	A conservation covenant has been signed to protect sensitive ecosystems within 10 m of the shoreline.	
3.3	At least one native tree capable of (now or in the future) supporting the nest of a Bald Eagle, Osprey etc. has been retained or is planted within 30 m of the high water mark (HWM).	
3.4	Removal of at least 30% of hardened shoreline and replacement with erosion control measures designed to improve the habitat of the shoreline.	
3.5	Light from building and landscaping does not cast over water.	
3.6	Wildlife habitat has been incorporated into seawall design.	

4.0 Stormwater Absorption and Treatment		Please Check
4.1	An on-site stormwater retention system has been designed to retain at least the first 3 cm of rainfall from each rain event.	
4.2	Stormwater will be treated for pollutants prior to release to the stormdrain system or to a surface water source.	
4.3	The project features a green roof.	
4.4	The total amount of impervious surface is not greater than 20%.	
5.0 Water Conservation		
5.1	The irrigation system has been designed to reduce potable water use by 50% compared to conventional systems.	
5.2	Waterless urinals will be used.	
5.3	Water features use re-circulating water systems.	
5.4	Rainwater will be collected for irrigation purposes.	
5.5	Toilet and kitchen sink drains are separate from other drains to the point of exit.	
5.6	An approved greywater reuse system will be installed.	
6.0 Trees/Landscaping		
6.1	The project is designed to protect as many native and significant trees as possible.	✓
6.2	There will be no net loss of trees.	✓
6.3	Trees will be planted in soil volumes calculated to support the full grown size of the tree.	✓
6.4	At least 25% of replacement trees are large canopy trees.	✓
6.5	Topsoil will be protected from compaction, or stockpiled and reused.	✓
6.6	Erosion control measures have been designed and installed to prevent erosion of topsoil.	
7.0 Biodiversity		
7.1	New landscaping is predominantly native plant and tree species.	✓
7.2	Invasive species will be removed from landscaped areas.	
7.3	At least two biodiversity features have been incorporated into the new or existing landscaping (see section 18.5.3 of the OCP for ideas).	
8.0 Energy Conservation		
8.1	The building is pre-plumbed for solar hot water.	Required
8.2	Install a greywater heat recovery unit.	
8.3	Passive cooling is supported through flow-through ventilation design, low E windows, solar shades, shade trees etc.	✓
8.4	Passive heating is supported via building orientation, window design and thermal mass.	✓
8.5	The building will have necessary structural support and conduit for Solar PV.	✓
8.6	Obtain minimum of 20% of building energy consumption through community based or on-site renewables, such as district energy, waste heat recovery, geothermal, solar PV, solar hot water.	
8.7	Heating uses a low carbon heating source, such as air source heat pump.	

9.0 Transportation		Please Check
9.1	Building will have a car share or bus pass program for residents.	
9.2	Enhanced facilities for bicyclists such as showers, lockers, storage etc.	
9.3	Charging infrastructure for E-bikes will be provided.	
9.4	EV charging conduit supplied to 100% of residential parking units.	✓
9.5	30% of residential parking spaces include an electrical outlet or EV charging equipment.	
9.6	Adequate space in the electrical system to provide EV charging for 100% of parking stalls.	
9.7	For commercial buildings, Level 2 or Level 3 EV charging provided for employees and/or visitors.	
10.0 Materials/Waste		
10.1	Employs at least 3 advanced framing techniques described in the CHBA builder's manual to reduce unnecessary lumber and sheathing.	
10.2	Uses at least two materials which are certified for recycled content.	
10.3	Uses engineered structural material for two major applications (>10% of floor area).	✓
10.4	5 major building elements made from >50% recycled content.	
10.5	Use foundation, floor and >50% of walls from existing building.	
10.6	Deconstruct at least 50% of existing building for material salvage.	✓
10.7	Use at least five major materials or systems produced in BC.	✓
10.8	Use certified sustainably harvested wood for one major structural or finishing application (eg framing, plywood, floors)	✓
10.9	Eliminate use of wood from threatened trees.	✓
10.10	Recycling area provided within residential suites.	
10.11	Recycling collection area for multi-family buildings.	
10.12	Pickup of compostables provided in multi-family units.	
10.13	Construction waste management practices used to reduce and separate waste and divert at least 50% from the landfill.	✓

Please include a brief description of how this project contributes to a reduction in greenhouse gas emissions and moves the municipality closer to its ultimate target of becoming carbon neutral by 2050 (use another page if needed).



481 Joffre St. South, Esquimalt, BC
Arborist Report & Tree Protection Plan
January 2020

Prepared for:
Ms. Lynn Mitchell
481 Joffre St. South
Esquimalt, BC V9A 6C7



Prepared by:

Charles Noseworthy, Regional Inventory Arborist
ISA Certified Arborist #PN-8020A, ISA Tree Risk Assessment Qualified

Provided by:

Trent Skaar, Arborist Representative
ISA Certified Arborist #PN-5533A, ISA Tree Risk Assessment Qualified



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Arborist Report and Tree Protection Plan

- Site Address:** 481 Joffre St. South, Esquimalt, BC V9A 6C7
- Inspection Date:** January 20th 2020
- Project Arborist:** Charles Noseworthy (ISA Cert Arb #PN-8020A, Certified Tree Risk Assessor)
- Inspection Brief:** Carry out an inspection of the trees on the property. Report on the condition of the trees, their suitability for retention and the measures required to protect any retained trees during the proposed construction activity.
- Background:** The property contains a single residential home, with an extended rear yard and shed located on a concrete pad to the northeast of the house. The owner intends to remove the shed and install a carriage house in the backyard along the north side of the property.
- Supporting Documents:** The following documents were supplied by Adapt Design to aid in the inspection of the trees and the production of this report:
1. *Site plan.* Survey plan of property with proposed layout and existing trees. Received February 3rd 2020

Tree #	Species	Diameter cm	Height m	Crown Radius m	Condition	Comments	Recommendations	Protection Distance m
1	Hawthorne (<i>Crataegus oxyacantha</i>)	23	8	3	G	Outside of construction zone.	Protect and retain.	1.4
2	Magnolia (<i>Magnolia spp.</i>)	14	8	2	G	Outside of construction zone.	Protect and retain.	0.9
3	Paper birch (<i>Betula papyrifera</i>)	17	8	2	G	Outside of construction zone.	Protect and retain.	1.0
4	Dogwood (<i>Cornus spp.</i>)	13	5	2	G	Outside of construction zone.	Protect and retain.	0.8
5	Blue spruce (<i>Picea pungens</i>)	33	18	2	G	Large surface structural root. Close to area of excavation.	Protect and retain.	2.0
6	Weeping Katsura (<i>Cercidiphyllum japonicum</i> 'pendulum')	12	3	3	G	Inside footprint of building.	Remove or transplant.	.75
7	Japanese maple (<i>Acer palmatum</i>)	8,5,5	7	2	G	Outside of construction zone.	Protect and retain.	0.5
8	Western red-cedar (<i>Thuja plicata</i>)	30,25,20	9	5	F	Previously topped, former hedge. Close to area of excavation.	Protect and retain.	1.8
9	Northern catalpa (<i>Catalpa speciosa</i>)	14	5	3	G	Close to area of excavation.	Protect and retain.	0.9
10	Lilac (<i>Syringa spp.</i>)	8,6,4	4	2	G	Close to area of excavation.	Protect and retain.	0.5
11	Red maple (<i>Acer rubrum</i>)	58	16	7	F	Root zone within footprint of house.	Remove/retain pending a decision by the project arborist.	3.5

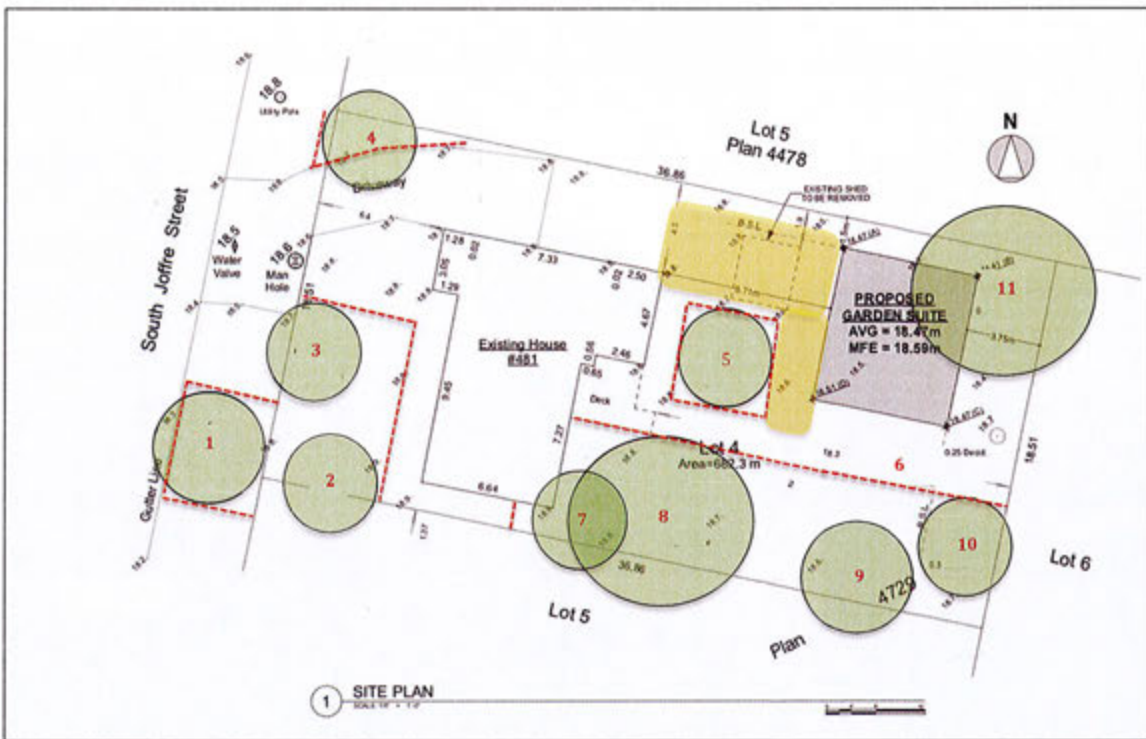
Notes:

- Some measurements were estimated due to constraints such as access or visibility
- Diameter was measured at 1.4 metres above ground level. Multi-stem trees had all stems measured.
- Tree protection distances given as radius from the main trunk
- Condition: G=Good; F=Fair; P=Poor; D=Dead




Method Statement for Tree Protection and Management:

- Tree #1-4 and #7-10 are to be surrounded by tree protection fencing, to create a protected root zone, (following the guidelines of the Township of Esquimalt) with the fences being positioned according to the site plan in Appendix A.
- Tree #5 requires tree protection fencing to be installed to create a protected root zone, (following the guidelines of the Township of Esquimalt) with the fences being positioned according to the site plan in Appendix A. In addition, the area of exposed surface roots of this tree must be covered in a 20cm layer of bark mulch with a layer of ¾ inch plywood, to protect the soil from compaction by heavy equipment, following the positioning in Appendix A.
- Tree #6 is to be removed or transplanted to another location on the property pending a decision by the property owner.
- Tree #11 is to be removed unless the project arborist deems that there was minimal impact to the root zone during the excavation process to install the foundation of the carriage home. If the location of the carriage home can be moved outside of the dripline then there is a greater likelihood the tree can be retained. It shall be the prerogative of the project arborist to determine if the tree should be retained or removed based on the observed damage to the roots during the construction process.
- Tree protection must be installed before construction commences and must remain in place until all activity has been completed. Tree protection fences must not be breached or moved without consulting the Project Arborist. Materials, equipment etc. must not be stored within the tree protection zones.
- If construction activity is required within a tree protection zone, it must first be discussed with the Project Arborist. Any such construction activity must be carried out by hand to avoid damage to the roots and/or compaction of the soil. An airspade should be used to expose roots before excavation takes place.
- Depending on the weather during the construction period, irrigation may be required. Entire root zones should be watered heavily and infrequently (once every 7 days). Any exposed roots must be covered with burlap and kept moist.
- Deep root fertilization of retained trees may be required after construction for 1-2 years depending on impact to root zone from construction.
- Compaction of soil in the root zones should be alleviated with an airspade as soon as practically possible.
- Tree replacements may be required by the Township of Esquimalt as a condition of tree removal permits.
- While the assessor is a qualified tree risk assessor this report is not to be considered a risk assessment.
- Please note it is the responsibility of the property owner to ensure that the Project Arborist is on site during any work in proximity to trees and to sign off on the tree protection fencing.

Appendix A: Site Plans



Survey of the entire property showing trees at the front and rear.

-  Tree to be retained approximate dripline.
-  Protective fencing approximate position.
-  Plywood and mulch application to protect root zone.

Appendix B: Photographs





Tree #11 protected red maple.



Tree #5 protected blue spruce.



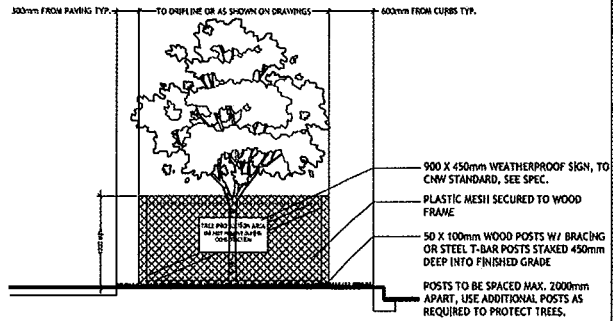
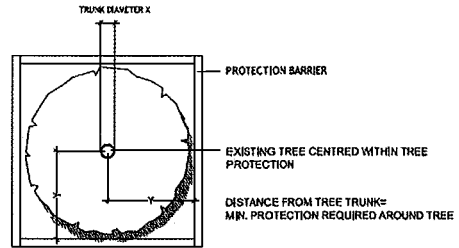
Root zone and exposed surface root of spruce is to be covered in mulch and plywood.



Katsura to be removed or transplanted.

Appendix C: Tree Protection Recommendations

TRUNK DIAMETER X (cm)	MINIMUM PROTECTION REQUIRED AROUND TREE- DISTANCE FROM TRUNK Y (m)
20 cm	1.2 m
25 cm	1.5 m
30 cm	1.8 m
35 cm	2.1 m
40 cm	2.4 m
45 cm	2.7 m
50 cm	3.0 m
55 cm	3.3 m
60 cm	3.6 m
75 cm	4.5 m
90 cm	5.0 m
100 cm	6.0 m



Tree Protection Fencing
NTS

Site Plan Of:
Lot 4, Section 11,
Esquimalt District, Plan 4729.
P.I.D. 003-150-909



Scale = 1:250

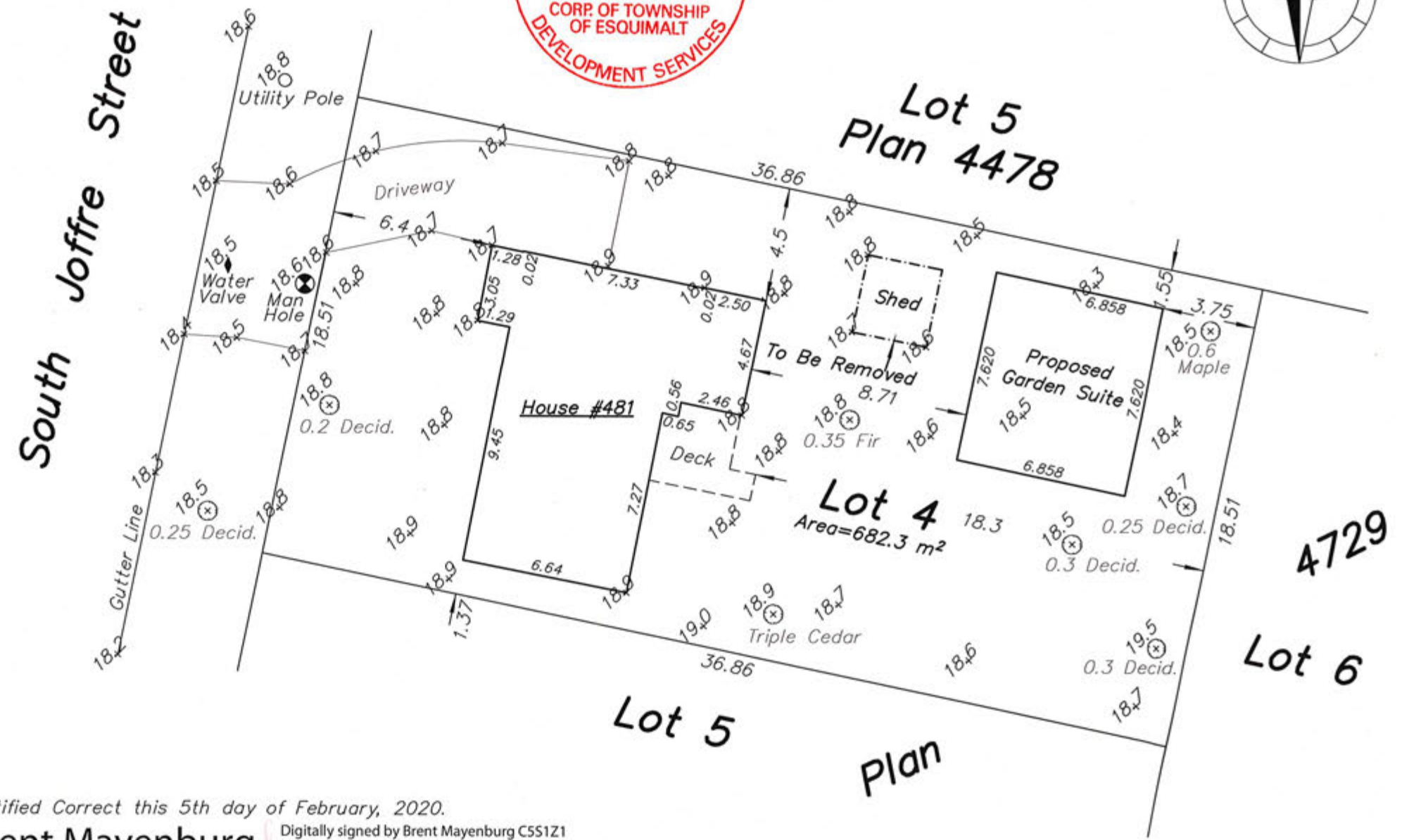
Dated this 5th day of February, 2020.

Distances and elevations shown are in metres.

Elevations are based on geodetic datum CVD28BC and derived from OCM 84H0168.

This site plan is for building and design purposes and is for the exclusive use of our client.

This document shows the relative location of the surveyed structures and features with respect to the boundaries of the parcel described above. This document shall not be used to define property lines or property corners.



Wey Mayenburg Land Surveying Inc.
www.weysurveys.com
 #4-2227 James White Boulevard
 Sidney, BC V8L 1Z5
 Telephone (250) 656-5155
 File: 190213\SIT\GH

Certified Correct this 5th day of February, 2020.
Brent Mayenburg
C5S1Z1
 Digitally signed by Brent Mayenburg C5S1Z1
 DN: c=CA, cn=Brent Mayenburg C5S1Z1, o=BC
 Land Surveyor, ou=Verify ID at
www.juricert.com/LKUP.cfm?id=C5S1Z1
 Date: 2020.02.07 09:18:55 -08'00'
 B.C.L.S. (Not valid unless originally signed & sealed)

GENERAL NOTES

GENERAL NOTES

ALL MATERIALS AND CONSTRUCTION METHODS TO CONFORM TO THE CURRENT EDITION OF THE BRITISH COLUMBIA BUILDING CODE (BCBC), GOOD CONSTRUCTION PRACTICE, AS WELL AS ANY OTHER LOCAL BUILDING CODES OR BYLAWS WHICH MAY TAKE PRECEDENCE.

ALL MEASUREMENTS ON SITE BY BUILDER PRIOR TO CONSTRUCTION COMMENCEMENT OF CONSTRUCTION OR ANY PART THEREOF CONSTITUTES ACCEPTANCE OF THE DRAWINGS/SITE CONDITIONS AND MEANS DIMENSIONS & ELEVATIONS HAVE BEEN VERIFIED & ARE ACCEPTABLE.

IF ANY DISCREPANCIES ARISE, THEY SHOULD BE REPORTED TO THE DESIGNER.

DIMENSIONS SHALL TAKE PRECEDENCE OVER SCALE.

FRAMING LUMBER SHALL BE GRADED #2 OR BETTER UNLESS OTHERWISE SPECIFIED.

ALL INTERIOR FINISHES, CASINGS, WINDOW TYPES AND MILLWORK TO OWNERS APPROVAL.

STAIR TREADS TO BE PLYWOOD OR OTHER ENGINEERED PRODUCT AND SECURED WITH SCREWS AND SUB-FLOOR ADHESIVE.

TEMPORARY HEAT REQUIRED PRIOR TO DRYWALL INSTALLATION TO ASSIST IN DRYING OF FRAMEWORK. MOISTURE CONTENT OF FRAMEWORK MUST NOT EXCEED 19%.

SITE PLAN

LAYOUT TO BE CONFIRMED BY A CURRENTLY REGISTERED BRITISH COLUMBIA LEGAL LAND SURVEYOR.

ALL SET BACKS TO BE CONFIRMED BY THE OWNER AND BUILDER.

ALL GRADE ELEVATIONS ARE THE RESPONSIBILITY OF THE OWNER AND BUILDER.

VERIFY EXISTING AND PROPOSED GRADES PRIOR TO CONSTRUCTION.

FOUNDATION

THE BUILDER IS RESPONSIBLE FOR LOCATING THE FOOT PRINT OF THE STRUCTURE IN THE PROPER PLACE AS PER PLANS.

CONCRETE FOUNDATION WALLS NOT SUBJECT TO SURCHARGE SHALL BE INSTALLED ON COMPACTED, UNDISTURBED, INORGANIC STABLE SOILS BELOW THE DEPTH OF FROST PENETRATION WITH AN ALLOWABLE BEARING PRESSURE OF 75 kPa OR GREATER. IF SOFTER CONDITIONS APPLY, THE BEARING CAPACITY AND SIZE OF FOOTINGS ARE TO BE DESIGNED BY A QUALIFIED ENGINEER.

THE SILL PLATE IS TO BE FASTENED TO THE FOUNDATION WALL WITH NOT LESS THAN 12.7mm Ø ANCHOR BOLTS SPACED NOT MORE THAN 2.4m O.C. OR FOR BRACED WALL PANELS 2 18mm Ø ANCHOR BOLTS PER BRACED WALL PANEL 500mm FROM THE ENDS OF THE FOUNDATION AND SPACED 1.7m O.C. EMBEDDED 100mm DEEP.

ALL LUMBER IN CONTACT WITH CONCRETE SHALL BE TREATED OR PROTECTED BY A MOISTURE RESISTANT GASKET.

IT IS THE RESPONSIBILITY OF THE OWNER/CONTRACTOR TO HAVE SITE SOIL CONDITIONS INSPECTED AND ADVISE THE DESIGNER OF ANY SOIL CONDITIONS WHICH MAY REQUIRE ENGINEERING.

ALL FOUNDATION WALLS ARE 200mm THICK 20MPa CONCRETE UNLESS OTHERWISE SPECIFIED.

FOUNDATION WALLS MAY BE A MAXIMUM OF 4' HIGH FROM GRADE TO UNDERSIDE OF FLOOR IF LATERALLY UNSUPPORTED AT TOP. ALL OTHER CONCRETE FOUNDATION WALLS TO BE ENGINEERED.

FRAMING

ALL ENGINEERED COMPONENTS TO BE SIZED BY SUPPLIER.

ALL SPANS AND LOADINGS SHALL CONFORM TO THE CURRENT VERSION OF THE BCBC. VERIFICATION OF ALL COMPONENTS IS THE RESPONSIBILITY OF THE OWNER/BUILDER. ANY COMPONENTS WHICH CANNOT BE DESIGNED WITH THE BCBC SHALL BE DESIGNED BY A QUALIFIED ENGINEER.

TRUSSES AND LAYOUT ARE TO BE ENGINEERED AND INSTALLED ACCORDING TO MANUFACTURERS SPECIFICATIONS.

IT IS ASSUMED THAT THE CONTRACTOR IS FAMILIAR WITH THE 2018 BCBC AND INDUSTRY STANDARDS FOR WOOD FRAME CONSTRUCTION. NOT EVERY DETAIL OF WOOD FRAMING IS SHOWN ON THESE DRAWINGS.

ALL LINTELS DOUBLE 2X10 S.S. SPF FOR CLEAR SPANS UP TO 9' UNLESS OTHERWISE NOTED.

EXTERIOR WALL THICKNESS SHOWN ARE MEASURED FROM OUTSIDE OF EXTERIOR SHEATHING TO INSIDE OF DRYWALL.

INTERIOR WALL THICKNESS SHOWN ARE MEASURED FROM OUTSIDE OF DRYWALL TO OUTSIDE OF DRYWALL.

ROOM MEASUREMENTS SHOWN ARE TO THE NEAREST INCH. DIMENSIONS SHOWN ARE TO THE NEAREST 1/2".

CONFIRM ALL VANITY'S, BATHTUBS, SHOWERS AND KITCHEN CUPBOARDS WITH OWNER PRIOR TO FRAMING AS THESE MAY REQUIRE MODIFICATIONS TO THE ROOM SIZES.

TYPICAL DOOR AND WINDOW HEADER HEIGHT*

8' CEILINGS: 68"
9' CEILINGS: 70"
10' CEILINGS: VARIES

ROOFING

ALL ROOFING SHALL BE APPLIED TO THE MANUFACTURERS SPECIFICATIONS AND SHALL INCLUDE EAVE PROTECTION FROM ICE DAMMING AND SNOW BUILD UP.

PLUMBING AND ELECTRICAL

ANY PLUMBING AND ELECTRICAL SHOWN ON THESE PLANS IS FOR ILLUSTRATIONAL PURPOSES ONLY AND MUST BE DESIGNED AND INSTALLED BY A QUALIFIED PROFESSIONAL.

FLASHING

ALL PENETRATIONS THROUGH THE ROOF WILL REQUIRE FLASHING.

ALL ROOFING TO INCLUDE STEP FLASHING.

ALL EXPOSED OPENINGS TO INCLUDE FLASHING.

ALL FLASHING END DAMS TO BE 25mm (1") HIGH.

DOORS

FRAME OPENING TO BE 1 1/2" WIDER THAN DOOR FRAME OPENING 1/2" WIDER THAN BIFOLD DOORS AND FRAME HEIGHT IS 81.5"

ALL INTERIOR DOORS TO BE 80" TALL U.L.O. PROVIDE MIN. 2-STUOS AT EACH SIDE OF JAMB FRAMING.

FENESTRATION

ALL WINDOWS, DOORS & SKYLIGHTS TO CONFORM TO NAFS-08 AND THE CANADIAN SUPPLEMENT TO NAFS.

FENESTRATION PERFORMANCE REQUIREMENTS:
CLASS R - PG 30 - +VE/-VE DP = 1440Pa/1440Pa - WATER PENETRATION RESISTANCE = 260Pa - CANADIAN AIR INFILTRATION/EXFILTRATION = A2

WINDOW/DOOR LABELS TO BE LEFT IN PLACE UNTIL FINAL INSPECTION.

SUPPLY AND INSTALL ALL WINDOW TYPES, INTERIOR CASINGS AND MILLWORK TO OWNERS APPROVAL.

ALL WINDOWS ADJACENT TO BATH TUBS TO BE SAFETY GLASS.

GUARDS/HANDRAILS

INSTALL GRASPABLE HANDRAIL TO ALL INTERIOR STAIRS AT 34" TO 38" ABOVE STAIR NOSING.

INSTALL GUARDS AT ALL BALCONIES, DECKS AND PORCHES GREATER THAN 2' ABOVE GRADE. INSTALL GUARD AT 42" HEIGHT WHERE SURFACE IS GREATER THAN 6' ABOVE ADJACENT SURFACE, OTHERWISE 36" GUARDRAIL ALLOWABLE.

TOPLESS GLASS GUARDS TO BE ENGINEERED WITH SEALED DRAWINGS.

VENTILATION

PROVIDE ATTIC AND CRAWLSPACE ACCESS AND VENTILATION IN ACCORDANCE WITH BCBC.

PROVIDE HEATING, MECHANICAL VENTILATION, AND AIR CONDITIONING WHERE REQUIRED IN ACCORDANCE WITH BCBC AND LOCAL BYLAWS.

MECHANICAL CONTRACTOR TO PROVIDE MECHANICAL CHECKLIST COMPLETE WITH FAN & DUCT SIZES PRIOR TO FRAMING INSPECTION.

MISC.

SMOKE/CARBON MONOXIDE ALARMS TO BE PROVIDED ON EVERY FLOOR AND ARE TO BE HARDWIRED AND WITHIN 5m OF EACH BEDROOM IN EVERY SUITE AND INTERCONNECTED TO ALL FLOORS. SMOKE ALARMS TO ALSO BE PROVIDED IN EVERY BEDROOM. ALL SMOKE ALARM LOCATIONS WILL HAVE BOTH PHOTOELECTRIC AND IONIC DETECTION SYSTEMS.

BEDROOM WINDOWS FOR EGRESS SHALL HAVE OPENINGS WITH AREAS NOT LESS THAN 3.8m² WITH NO DIMENSION LESS THAN 18".

IT IS THE RESPONSIBILITY OF THE CONTRACTOR AND/OR OWNER TO CHECK AND VERIFY ALL ASPECTS OF THESE PLANS PRIOR TO START OF CONSTRUCTION OR DEMOLITION.

ADAPT DESIGN DOES NOT ACCEPT RESPONSIBILITY FOR THE FOLLOWING:

-INFORMATION PROVIDED ON EXISTING BUILDINGS OR SITE

-CONFORMITY OF PLANS TO SITE

-ERRORS AND/OR OMISSIONS

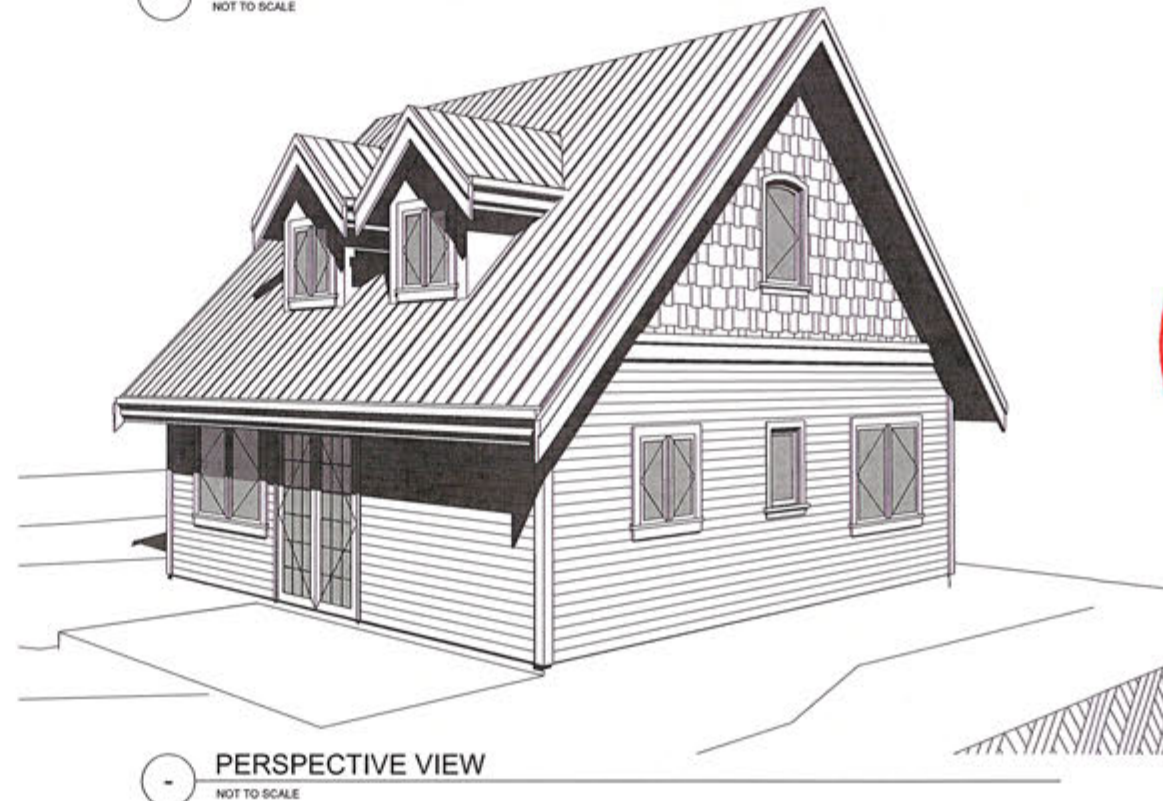
-ANY HOUSE BUILT FROM THESE PLANS

THESE PLANS REMAIN THE PROPERTY OF ADAPT DESIGN AND CAN BE RECLAIMED AT ANY TIME.



PERSPECTIVE VIEW

NOT TO SCALE



PERSPECTIVE VIEW

NOT TO SCALE

COVER SHEET & GENERAL INFO

A-001	COVER SHEET	<input type="checkbox"/>
A-002	SITE PLAN	<input type="checkbox"/>
A-003	LANDSCAPE PLAN	<input type="checkbox"/>

PLANS

A-101	PR. FLOOR PLANS	<input type="checkbox"/>
A-102	EX. FLOOR PLANS	<input type="checkbox"/>

ELEVATIONS

A-201	ELEVATIONS	<input type="checkbox"/>
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SECTIONS

A-301	CROSS SECTION	<input type="checkbox"/>
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Issued

ADAPT
DESIGN

1500 Shorncliffe Road Victoria BC Canada
250.893.1127
www.adaptdesign.ca

481 SOUTH
JOFFRE ST
GARDEN SUITE

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RECEIVED

FEB 07 2020

CORP. OF TOWNSHIP
OF ESQUIMALT
DEVELOPMENT SERVICES

ISSUED FOR
REZONE

ISSUED:

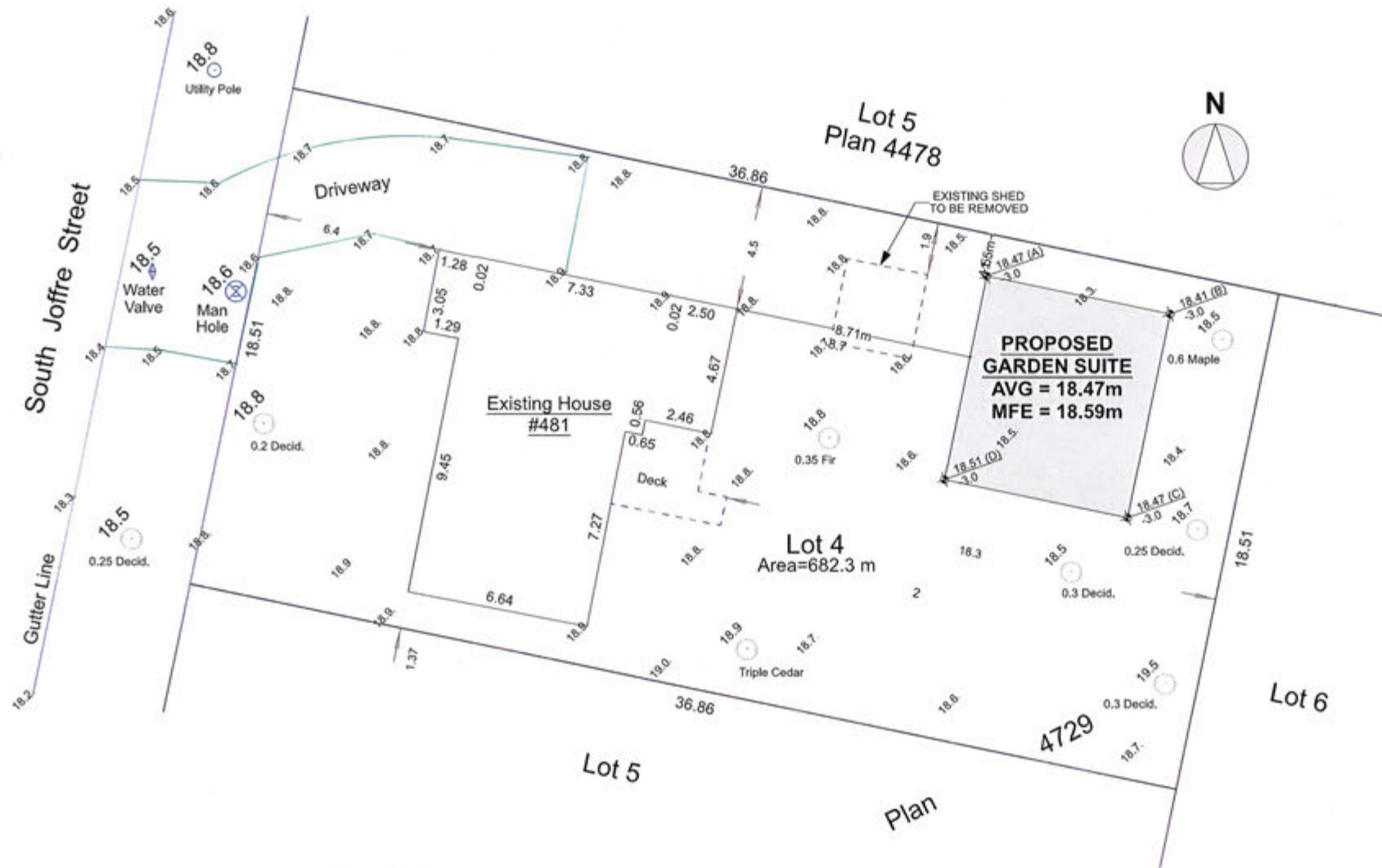
COVER SHEET

A-001

Form 2018-03-04

PROJECT:
REZONE TO CREATE NEW GARDEN SUITE

GRADE POINTS	
A =	18.47m
B =	18.41m
C =	18.47m
D =	18.51m
73.86m/4 = 18.47m	



1 SITE PLAN
SCALE: 1:100



Property Information	
Project Type: NEW GARDEN SUITE	
Site Address: Site Plan of Lot 4, Section 11, Esquimalt District, Plan 4729.	
Zoning: Site Specific	
Setbacks:	
Proposed Garden Suite:	
Rear	3.75m
Side	1.5m
Height	5.2m
Ex. House	8.71m
Existing House:	
Rear	18.3m
Side	4.5m
Front	6.4m
Floor Area:	
Proposed Garden Suite:	
Main Floor	512 SF (47.59 SM)
Second Floor	272 SF (25.28 SM)
Total	784 SF (72.87 SM)
Existing House:	
Main Floor	963 SF (89.48 SM)
Second Floor	936 SF (86.96 SM)
Lot Coverage:	
Lot Area:	7,344 SF (682.30 SM)
Comb. Bld. Footprint	1,475 SF (137.07 SM)
Lot Coverage:	20.1%
Rear Yard Open Site Space	86.4%

Applicable Codes	
-BC Building Code Current Edition (2018)	
Energy	
Compliance path: Step Code	
Requirements applicable to this project: Level 2	
Ventilation	
BCBC 9.32	





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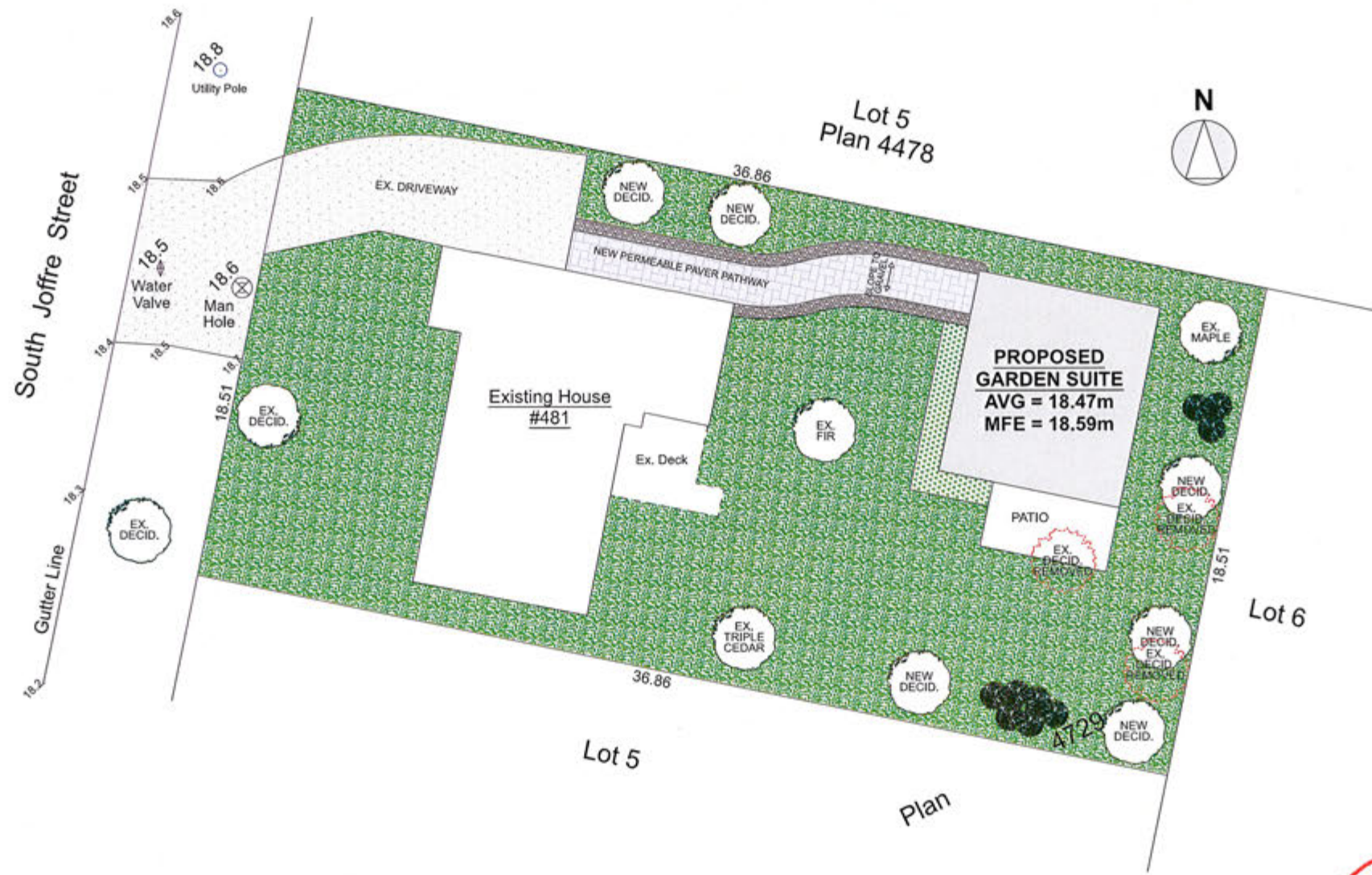
ISSUED FOR REZONE

ISSUED:

SITE PLAN

LANDSCAPE LEGEND	
SYMBOL	DESCRIPTION
	ASPHALT
	PERMEABLE PAVERS
	GRAVEL
	HERBACEOUS BORDERS
<p>PLANTING AREA TO CONSIST OF:</p> <p>Trees/tall shrubs Azara Microphylla - Azara Pittosporum Tenuifolium - Kohuhu</p> <p>Medium height shrubs Holodiscus discolor - Ocean spray Ribes sanguineum - Red currant Philadelphus lewisii - Mock orange Mahonia aquifolium - Tall oregon grape</p> <p>Groundcover Polystichum munitum - Sword ferns Arctostaphylos uva ursi - Kinnikinnick Vaccinium ovatum - Evergreen huckleberry</p>	

TREE LEGEND	
	EXISTING TREE RETAINED OR PROPOSED NEW TREE
	EXISTING TREE REMOVED
	SHRUBS
<p>SEE ARBORIST REPORT FOR FURTHER INFORMATION INCLUDING TREE PROTECTION FENCING</p>	



1 LANDSCAPE PLAN
SCALE: 1:100

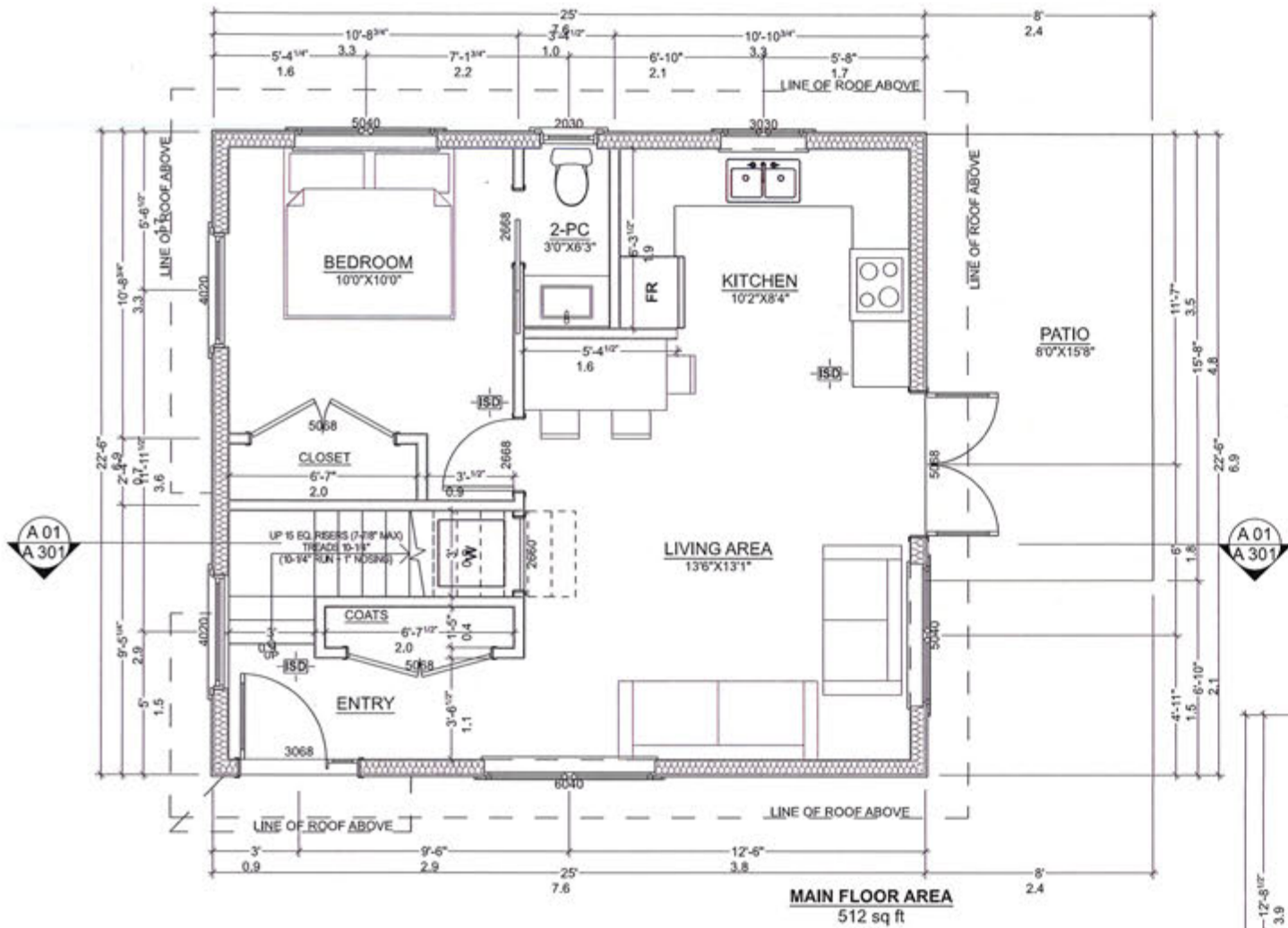


ISSUED FOR REZONE

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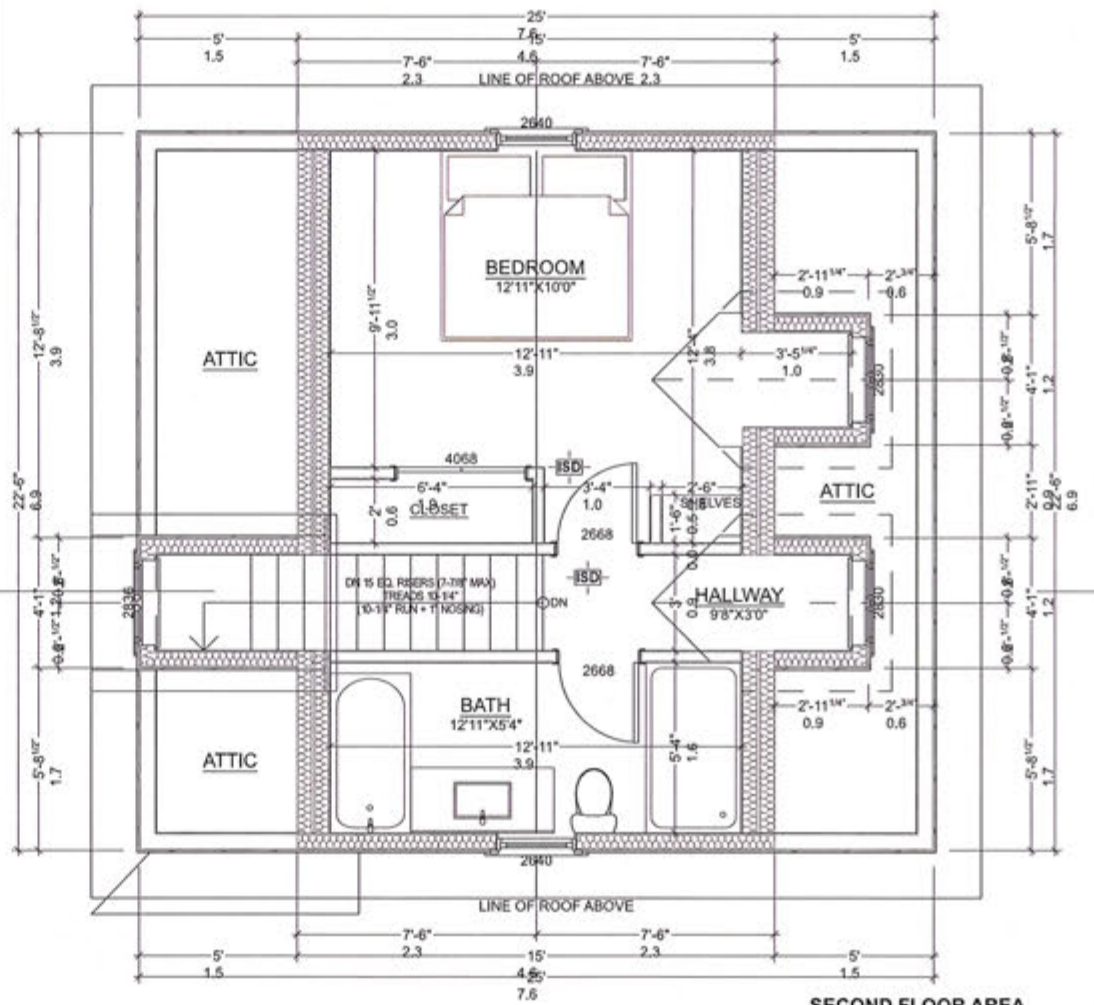
LANDSCAPE PLAN

A-003



1 MAIN FLOOR PLAN
SCALE 3/8" = 1'-0"

MAIN FLOOR AREA
512 sq ft



2 SECOND FLOOR PLAN
SCALE 3/8" = 1'-0"

SECOND FLOOR AREA
272 sq ft

PLAN LEGEND

- 2x4 PARTITION WALL
- 2x6 PARTITION WALL
- 2x6 GARAGE WALL
- 2x6 EXTERIOR WALL
- FOUNDATION WALL
- FOUNDATION AND FROST WALL
- COLUMN
- BEAM
- FLOOR DRAIN
- DIMENSION PLACEMENT
- ROOM SIZES ARE INTERIOR DIMENSIONS WIDTH X DEPTH
- HARDWIRED INTERCONNECTED CO DETECTOR
- HARDWIRED INTERCONNECTED IONIC SMOKE DETECTOR
- HARDWIRED PHOTOELECTRIC SMOKE DETECTOR
- BATH/INK VENTILATION RATE 25 US INTERMITTENT
- KITCHEN FAN VENTILATION RATE 47 US INTERMITTENT
- CONTINUOUS PRINCIPAL EXHAUST FAN VENTILATION RATE 25 PER TS 32.3.4 - 6.33.3.5
- FRESH AIR SUPPLY
- PASSIVE AIR INLET



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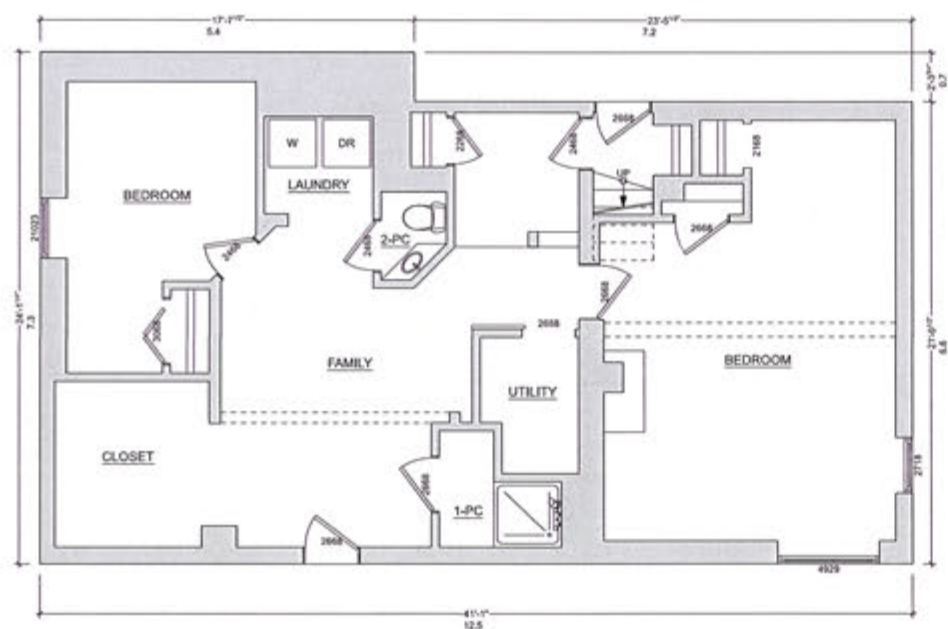


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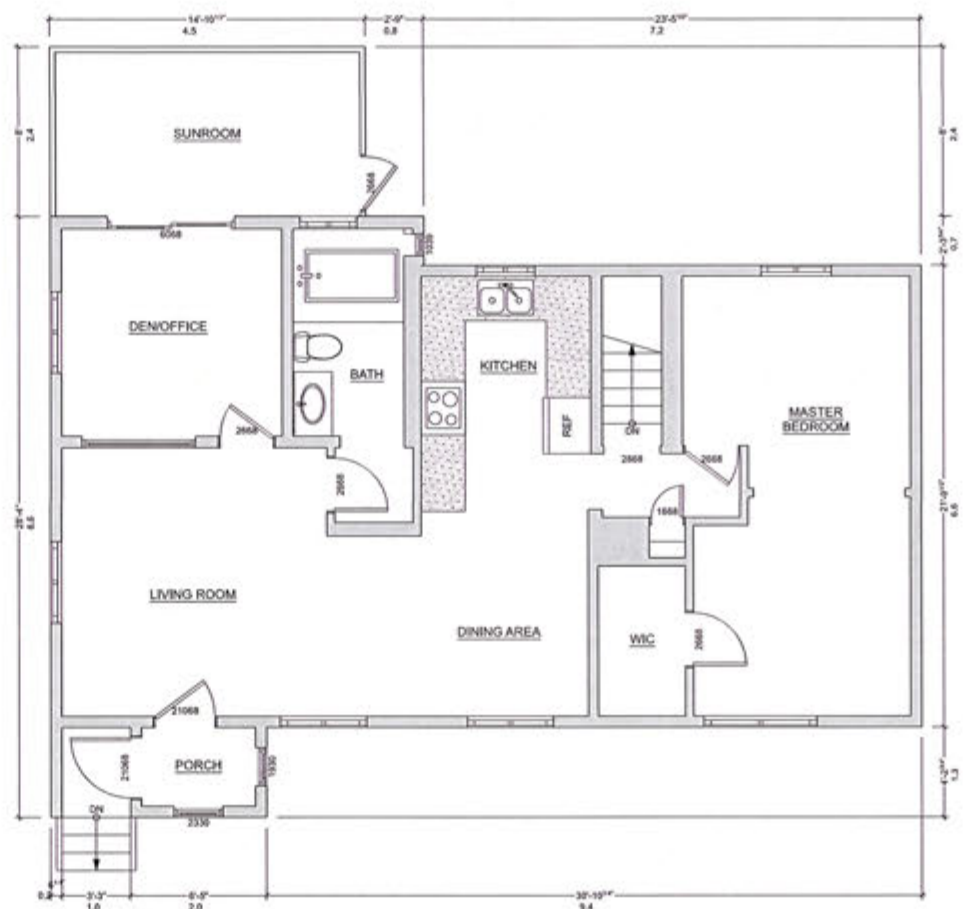
ISSUED:

PR. FLOOR PLANS

A-101



1 LOWER FLOOR PLAN



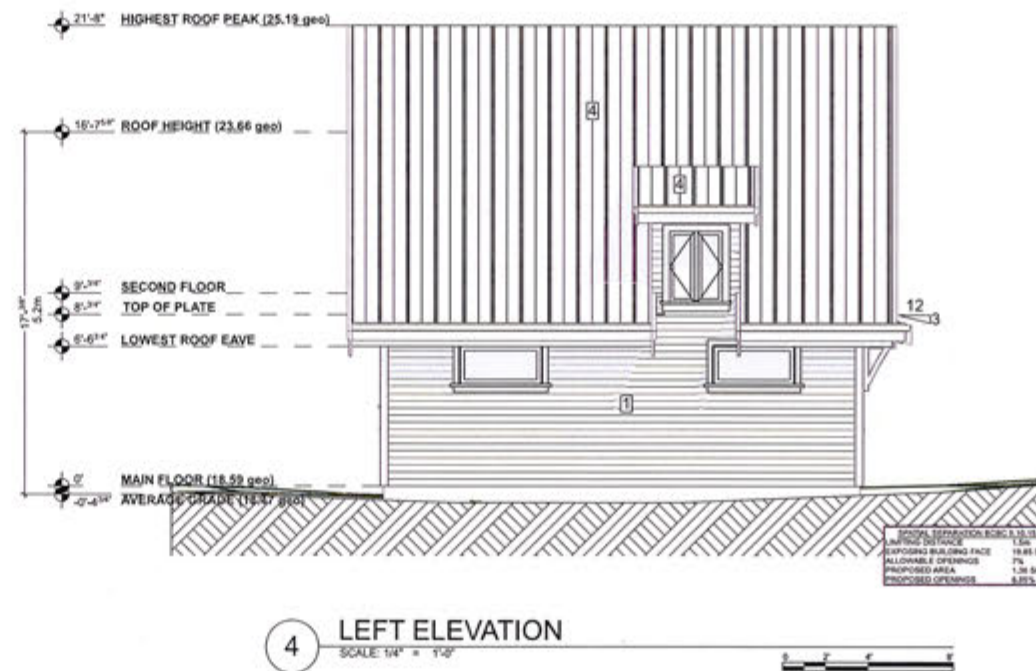
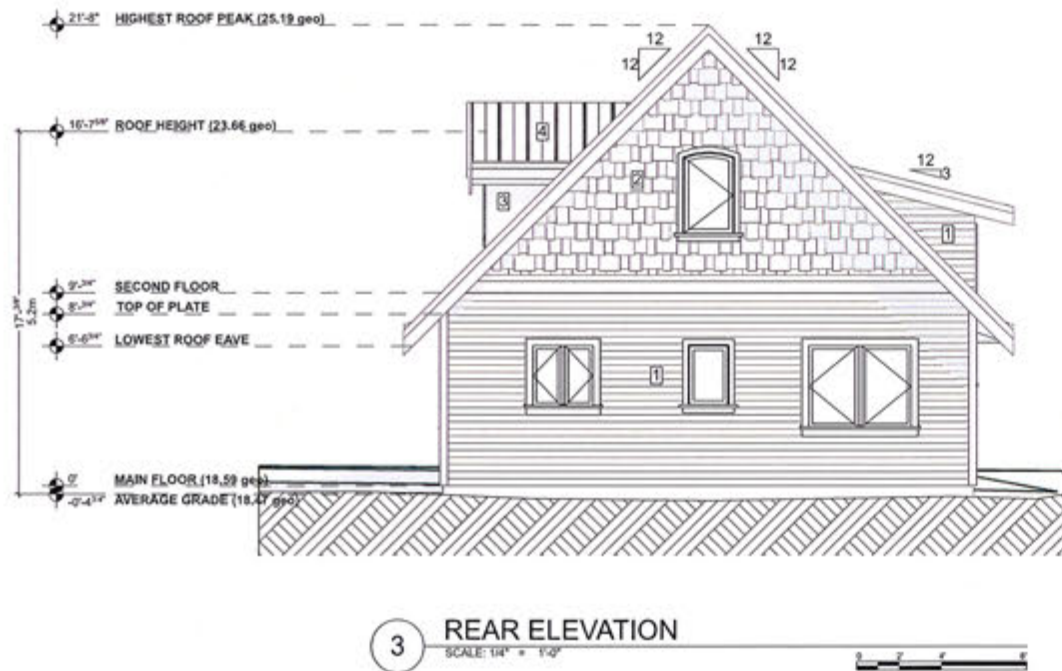
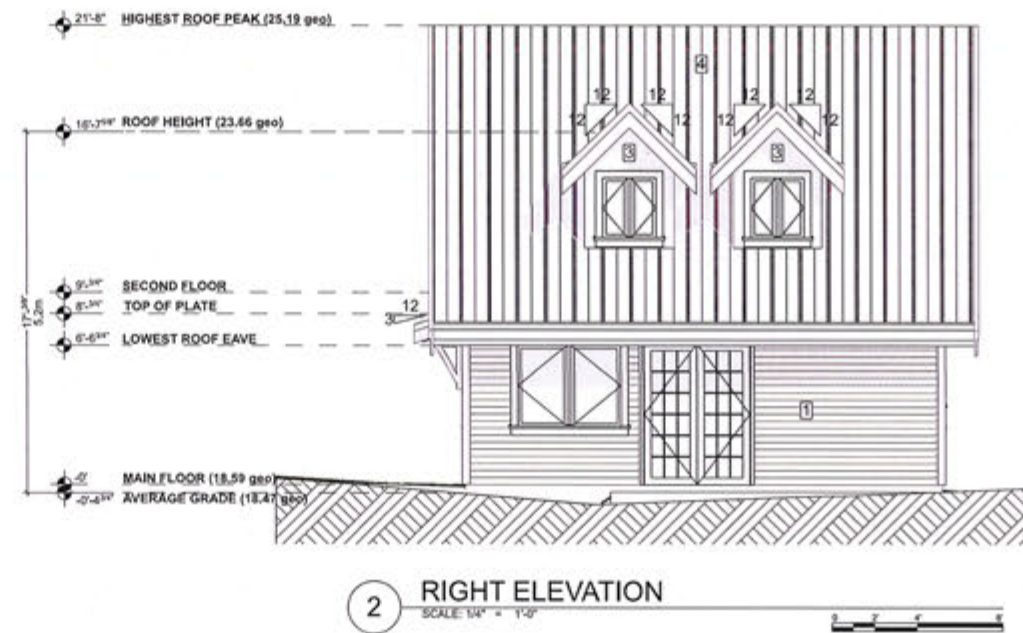
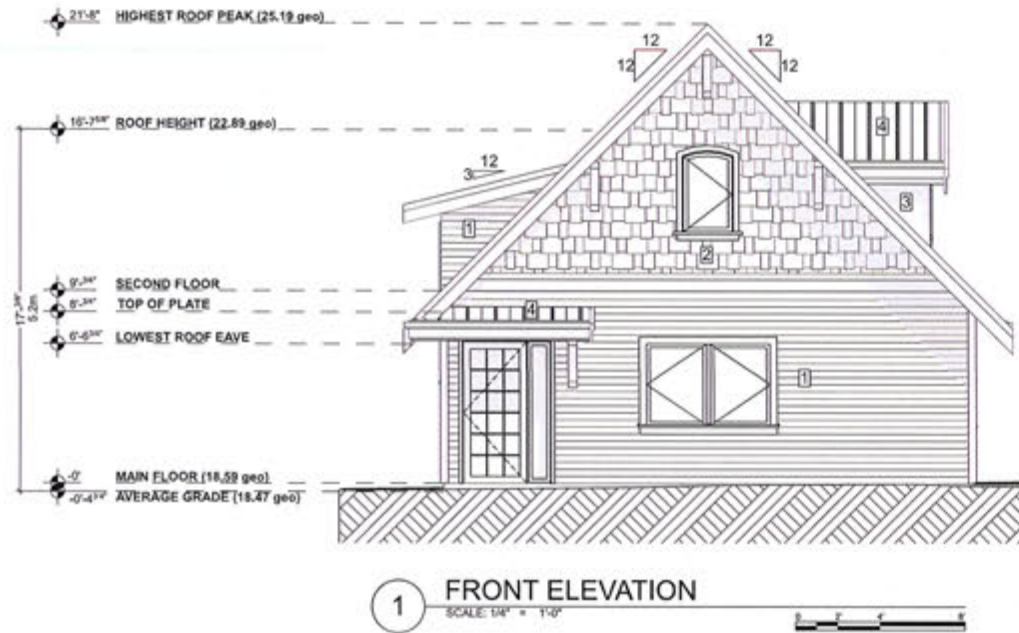
2 MAIN FLOOR PLAN



ISSUED FOR REZONE

ISSUED:

EX. FLOOR PLANS



EXTERIOR CLADDING LEGEND

- 1 CEMENT BOARD LAP SIDING
- 2 HARDIESHINGLE PAINTED
- 3 STUCCO ACRYLIC FINISH
- 4 STANDING SEAM METAL ROOFING

ADDITIONAL EXTERIOR FINISHINGS

OUTLETS	8" CONTINUOUS ALUMINUM (PROPOSED)
DOORS	6" CONTINUOUS ALUMINUM (PROPOSED)
WINDOWS	6" CONTINUOUS ALUMINUM (PROPOSED)
ROOFING	24" CORRUGATED GALV. STEEL (PROPOSED)
SKYLIGHT	24" CORRUGATED GALV. STEEL (PROPOSED)
FLASHING	24" CORRUGATED GALV. STEEL (PROPOSED)
TRIM	24" CORRUGATED GALV. STEEL (PROPOSED)
FINISHES	24" CORRUGATED GALV. STEEL (PROPOSED)

NOTE: FINISHES SHALL BE AS PER OWNER'S SPECIFICATIONS AND SUBJECT TO LOCAL CODES REQUIREMENTS. CONTRACTOR TO VERIFY ALL S.D. FROM TO ORDERED WORK. PLEASE OVER ALL INTERIOR TRANSITIONAL DOOR AND WINDOW HEADERS ALL COLORING AS PER OWNER.

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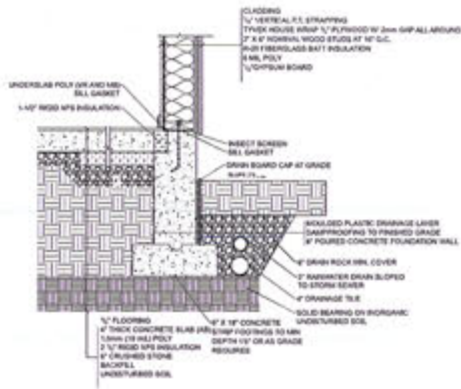
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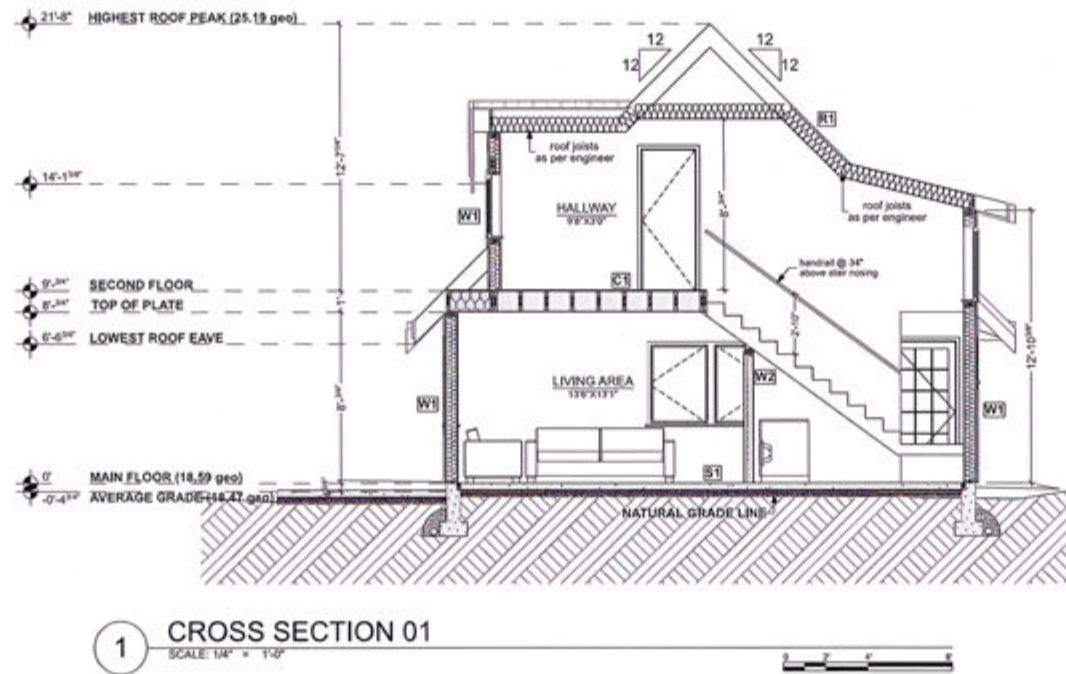


ISSUED FOR REZONE

ISSUED:



SLAB ON GRADE



1 CROSS SECTION 01
SCALE: 1/4" = 1'-0"

SECTION LEGEND

CEILING TYPES

C1 - INTERIOR FLOOR
FINISHED FLOORING
1/2" T&G PLYWOOD
FLOOR JOISTS AS PER ENGINEER
CROSS BRACING
1/2" GYPSUM BOARD PAINTED

ROOF TYPES

R1 - JOIST ROOF
STANDING SEAM METAL ROOFING
1/2" PLYWOOD CW R CLIPS
2M CROSS PURLINS
R28 FG BATT INSULATION
6 MIL. POLY (AV)S
1/2" GYPSUM BOARD PAINTED
ROOF VENTED 1:150

SLAB TYPES

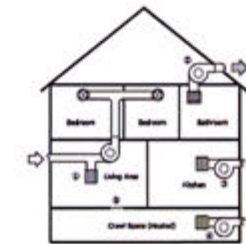
S1 - FLOOR SLAB
4" THICK CONCRETE SLAB
6 MIL. POLY
3-1/2" XPS RIGID INSULATION 4' PERIMETER
2" THERMAL BREAK @ SLAB EDGE
COMPACTED 1/2" M&S
UNDISTURBED SOIL

WALL TYPES

W1 - EXTERIOR WALL
CLADDING AS PER ELEVATIONS
1/2" P.T. STRAPPING FASTENED TO FRAMING
TYVEK HOUSE WRAP (MB)
1/2" OSB SHEATHING DRAS PER ENGINEER
2X6" STUDS @ 16" O.C.
R-19 (COMPRESSED) BATT INSULATION
6 MIL. POLY (AV)S
1/2" GYPSUM BOARD PAINTED

W2 - INTERIOR WALL

1/2" GYPSUM BOARD PAINTED
2M STUDS @ 16" OC
R-13 BATT INSULATION (OPTIONAL)
1/2" GYPSUM BOARD PAINTED



BCBC 9.32 MECHANICAL VENTILATION REQUIREMENTS
CENTRAL RECIRCULATION VENTILATION SYSTEM
CRV DRAWS SUPPLY AIR FROM AN EXTERIOR INLET CONNECTED UPSTREAM OF THE FAN
CRV DRAWS AIR FROM EACH BEDROOM & DELIVERS IT TO A COMMON AREA
PRINCIPAL EXHAUST FANAS SHOWN ON PLANS
CONTRACTOR TO SUPPLY BUILDING OFFICIAL WITH MECHANICAL VENTILATION CHECKLIST ON OR PRIOR TO FRAMING INSPECTION

MECHANICAL VENTILATION REQUIREMENTS

BCBC 9.36 PRESCRIPTIVE PATH CLIMATE ZONE 4	
ASSEMBLY DESCRIPTION	
EFF. RSI	
TRUSS CEILING	6.91 RSI
CATHEDRAL CEILING & FLAT ROOF	4.67 RSI
EXTERIOR WALLS	2.78 RSI
FLOORS OVER GARAGE/UNHEATED SPACE	4.51 RSI
WALL @ GARAGE	2.52 RSI
HEATED CONCRETE SLABS	2.32 RSI
CONCRETE SLABS	1.98 RSI
FOUNDATION WALL BELOW GRADE	1.99 RSI

EXTERIOR WALL EFFECTIVE THERMAL RESISTANCE	
INTERIOR AIR FILM	0.12 RSI
GYPSUM BOARD	0.08 RSI
2X6 STUD	1.19 RSI
7/8" OSB SHEATHING	0.11 RSI
AIR SPACE	0.15 RSI
WOOD SIDING	0.18 RSI
OUTSIDE AIR FILM	0.03 RSI
TOTAL EFF. R VALUE =	1.86 RSI @ 23% WALL AREA
INTERIOR AIR FILM	0.12 RSI
GYPSUM BOARD	0.08 RSI
R28 INSULATION	3.52 RSI
7/8" OSB SHEATHING	0.11 RSI
AIR SPACE	0.15 RSI
WOOD SIDING	0.18 RSI
OUTSIDE AIR FILM	0.03 RSI
TOTAL EFF. R VALUE =	4.19 RSI @ 77% WALL AREA
EFFECTIVE THERMAL RESISTANCE =	3.27 RSI
REQUIRED EFFECTIVE THERMAL RESISTANCE =	2.78 RSI

VAULTED CEILING EFFECTIVE THERMAL RESISTANCE	
INTERIOR AIR FILM	0.11 RSI
GYPSUM BOARD	0.08 RSI
2X10 RAFTERS	2.0 RSI
EXTERIOR AIR FILM	0.03 RSI
TOTAL EFF. R VALUE =	2.22 RSI @ 13% CEILING
INTERIOR AIR FILM	0.11 RSI
GYPSUM BOARD	0.08 RSI
R20 BATT INSULATION	3.52 RSI
R12 BATT INSULATION	2.11 RSI
OUTSIDE AIR FILM	0.03 RSI
TOTAL EFF. R VALUE =	5.85 RSI @ 87% CEILING
EFF. THERMAL RESISTANCE =	4.82 RSI
REQUIRED EFF. THERMAL RESISTANCE =	4.67 RSI

TRUSS ROOF EFFECTIVE THERMAL RESISTANCE	
INTERIOR AIR FILM	0.11 RSI
GYPSUM BOARD	0.08 RSI
3-1/2" BOTTOM CHORD	0.76 RSI
OUTSIDE AIR FILM	0.03 RSI
TOTAL EFF. R VALUE @ 11% =	0.99 RSI
INTERIOR AIR FILM	0.11 RSI
GYPSUM BOARD	0.08 RSI
3-1/2" BLOWN INSULATION	1.67 RSI
OUTSIDE AIR FILM	0.03 RSI
TOTAL EFF. R VALUE @ 89% =	1.89 RSI
EFFECTIVE THERMAL INSULATION @ CAVITY =	1.71 RSI
12" BLOWN FG ABOVE FRAMING =	5.63 RSI
TOTAL EFF. THERMAL RESISTANCE =	7.34 RSI
REQUIRED EFF. THERMAL RESISTANCE =	6.91 RSI

FLOOR OVER UNHEATED SPACE EFFECTIVE THERMAL RESISTANCE	
INTERIOR AIR FILM	0.11 RSI
FLOORING	0.12 RSI
1/2" SHEATHING	0.16 RSI
2X10 JOISTS	2.8 RSI
EXTERIOR AIR FILM	0.03 RSI
WOOD SOFFIT	0.12 RSI
TOTAL EFF. R VALUE =	2.54 RSI @ 13% FLOOR AREA
INTERIOR AIR FILM	0.11 RSI
FLOORING	0.12 RSI
1/2" SHEATHING	0.16 RSI
R28 BATT INSULATION	4.93 RSI
EXTERIOR AIR FILM	0.03 RSI
WOOD SOFFIT	0.12 RSI
TOTAL EFF. R VALUE =	5.47 RSI @ 87% FLOOR AREA
EFF. THERMAL RESISTANCE =	4.25 RSI
REQUIRED EFF. THERMAL RESISTANCE =	4.67 RSI

FLOORS OVER GARAGE EFFECTIVE THERMAL RESISTANCE	
INTERIOR AIR FILM	0.16 RSI
WOOD FLOORING	0.12 RSI
SUB FLOOR	0.16 RSI
R28 INSULATION	4.93 RSI
GYPSUM BOARD	0.08 RSI
INTERIOR AIR FILM	0.11 RSI
TOTAL EFF. R VALUE =	5.56 RSI @ 87%
INTERIOR AIR FILM	0.16 RSI
WOOD FLOORING	0.12 RSI
SUB FLOOR	0.16 RSI
2X10 FLOOR JOISTS	1.99 RSI
GYPSUM BOARD	0.08 RSI
INTERIOR AIR FILM	0.03 RSI
TOTAL EFF. R VALUE =	2.46 RSI @ 13%
EFF. THERMAL RESISTANCE =	4.77 RSI
REQUIRED EFF. THERMAL RESISTANCE =	4.51 RSI

EXTERIOR WALL EFFECTIVE THERMAL RESISTANCE	
INTERIOR AIR FILM	0.12 RSI
GYPSUM BOARD	0.08 RSI
2X6 STUD	1.19 RSI
7/8" OSB SHEATHING	0.11 RSI
AIR SPACE	0.15 RSI
WOOD SIDING	0.18 RSI
OUTSIDE AIR FILM	0.03 RSI
TOTAL EFF. R VALUE =	1.86 RSI @ 23% WALL AREA
INTERIOR AIR FILM	0.12 RSI
GYPSUM BOARD	0.08 RSI
R28 INSULATION	3.52 RSI
7/8" OSB SHEATHING	0.11 RSI
AIR SPACE	0.15 RSI
WOOD SIDING	0.18 RSI
OUTSIDE AIR FILM	0.03 RSI
TOTAL EFF. R VALUE =	4.19 RSI @ 77% WALL AREA
EFFECTIVE THERMAL RESISTANCE =	3.27 RSI
REQUIRED EFFECTIVE THERMAL RESISTANCE =	2.78 RSI

WALL @ GARAGE EFFECTIVE THERMAL RESISTANCE	
INTERIOR AIR FILM	0.12 RSI
GYPSUM BOARD	0.08 RSI
POLYETHYLENE	N/A
2X6 STUD	1.19 RSI
GYPSUM BOARD	0.08 RSI
INTERIOR AIR FILM	0.12 RSI
TOTAL EFF. R VALUE =	1.59 RSI @ 23% WALL AREA
INTERIOR AIR FILM	0.12 RSI
GYPSUM BOARD	0.08 RSI
POLYETHYLENE	N/A
R28 INSULATION	3.52 RSI
GYPSUM BOARD	0.08 RSI
INTERIOR AIR FILM	0.12 RSI
TOTAL EFF. R VALUE =	3.82 RSI @ 77% WALL AREA
EFFECTIVE THERMAL RESISTANCE =	2.83 RSI
REQUIRED EFFECTIVE THERMAL RESISTANCE =	2.82 RSI

BASEMENT SLAB ABOVE FROST LINE EFFECTIVE THERMAL RESISTANCE	
INTERIOR AIR FILM (FLOOR)	0.16 RSI
CONCRETE SLAB	0.04 RSI
RADIANT IN FLOOR HEATING	N/A
2-1/2" XPS	2.15 RSI
EFF. THERMAL INSULATION =	2.35 RSI (R13.3)
REQUIRED EFF. THERMAL INSULATION =	1.96 RSI (R13.2)
EFFECTIVE THERMAL RESISTANCE =	2.35 RSI
REQUIRED EFF. THERMAL RESISTANCE =	2.32 RSI

THERMAL BREAK BETWEEN SLAB AND FOUNDATION WALL EFFECTIVE INSULATION	
1-1/2" XPS	1.33 RSI
50% REQUIRED HEATED CONCRETE SLAB	2.35 RSI X
50% =	1.18 RSI REQUIRED
EFF. THERMAL INSULATION =	1.32 RSI
REQUIRED EFF. THERMAL INSULATION =	1.18 RSI
CRAWLSPACE FOUNDATION WALLS EFFECTIVE INSULATION	
INTERIOR AIR FILM (FLOOR)	0.16 RSI
CONCRETE SLAB	0.04 RSI
RADIANT IN FLOOR HEATING	N/A
2-1/2" XPS	2.15 RSI
EFF. THERMAL RESISTANCE =	2.35 RSI
REQUIRED EFF. THERMAL RESISTANCE =	1.99 RSI

FOUNDATION WALL BELOW GRADE INTERIOR FURRING WALL	
200mm CONCRETE	0.08 RSI
1/2" AIR SPACE	0.16 RSI
2X4 @ 24" OC FRAMING (13%)	0.76 RSI
R12 FG BATT (87%)	2.11 RSI
1/2" GYPSUM BOARD	0.08 RSI
INTERIOR AIR FILM	0.12 RSI
ACTUAL EFF. THERMAL INSULATION =	2.22 RSI
REQUIRED EFF. THERMAL INSULATION MIN. =	1.99 RSI
FOUNDATION WALL BELOW GRADE EXTERIOR INSULATION	
200mm CONCRETE	0.08 RSI
R12 FOIL BACK INSULATION	2.15 RSI
INTERIOR AIR FILM	0.12 RSI
ACTUAL EFF. THERMAL RESISTANCE =	2.35 RSI
REQUIRED EFF. THERMAL RESISTANCE MIN. =	1.99 RSI



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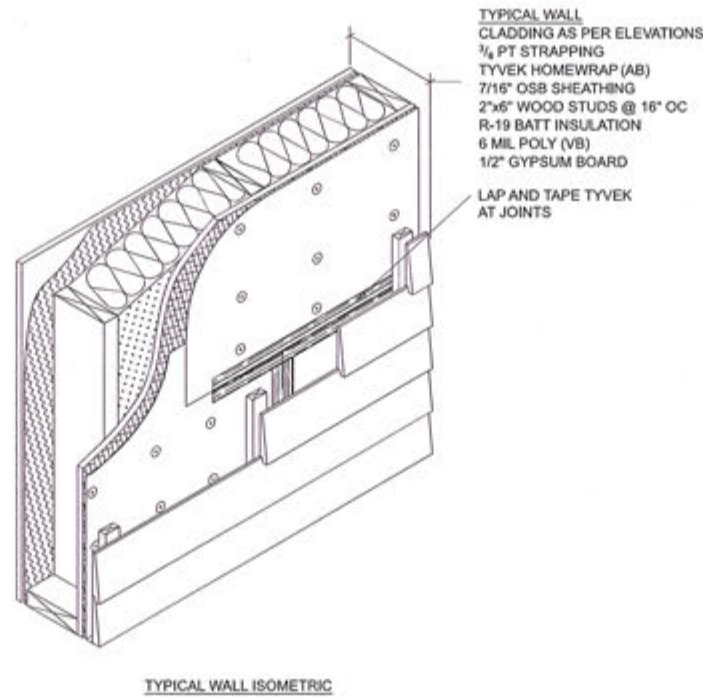
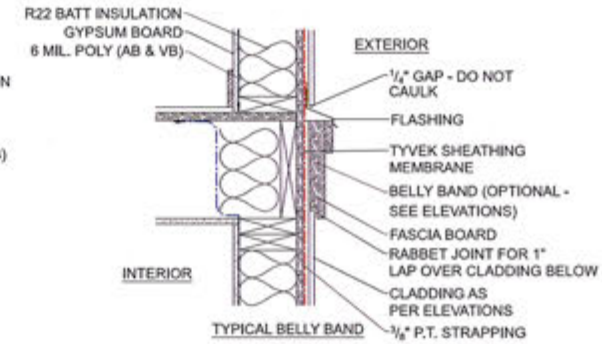
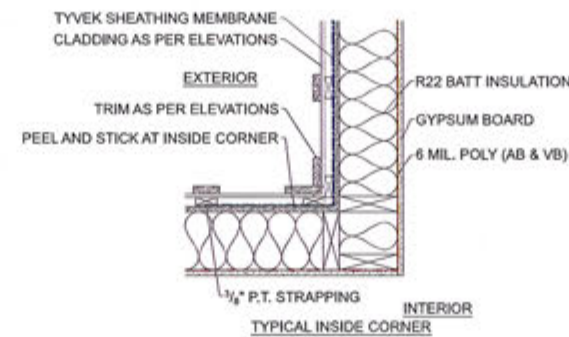
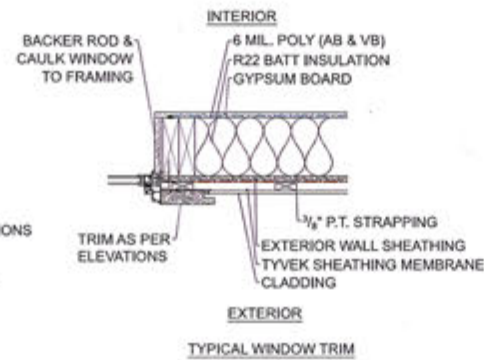
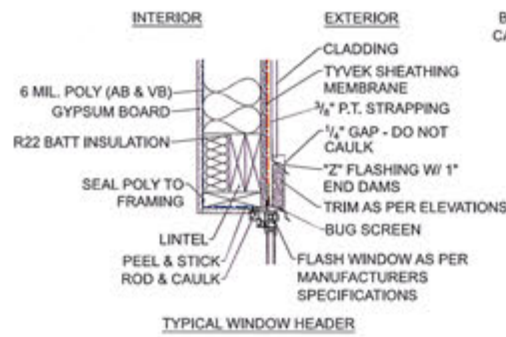
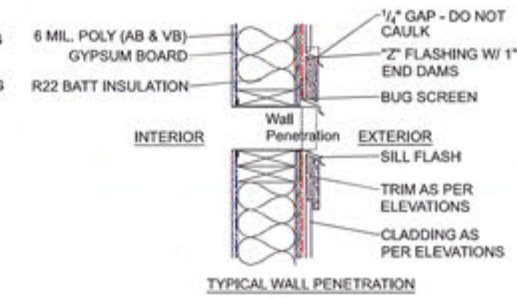
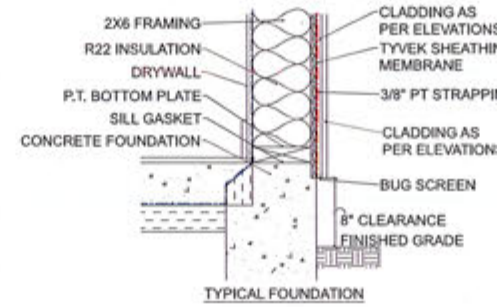
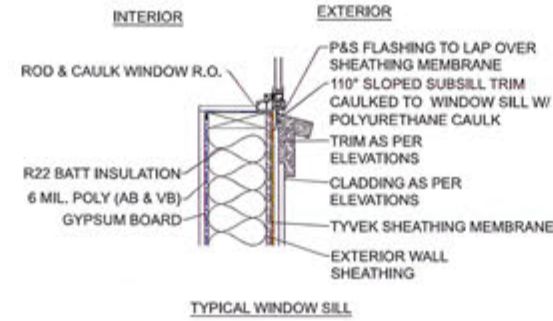
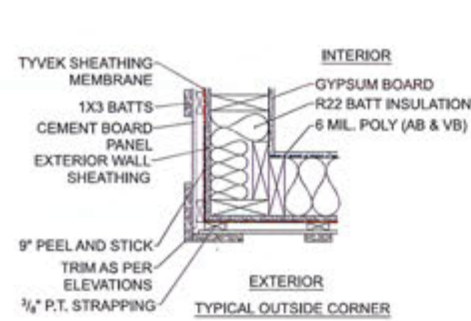
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