

E.1.a.b 1344 Thurlow Road: Development Permit Application No. 000571 and Development Variance Permit Application No. 00237

Moved By Councillor Alto
Seconded By Councillor Andrew

1. That subject to clarification on proposed tree retention and planting, to the satisfaction of the Director of Parks, Recreation and Facilities, that Council, after giving notice and allowing an opportunity for public comment at a meeting of Council, consider the following motion:

“That Council authorize the issuance of Development Variance Permit Application No. 00237 for 1344 Thurlow Road in accordance with:

1. Plans date stamped September 29, 2021.
2. Development meeting all Zoning Regulation Bylaw requirements, except for the following variances:
 1. reduce the minimum lot width from 15m to 14.28m for the regular lot fronting onto Thurlow Road.
 2. reduce the minimum front setback from 7.5m to 3.0m
3. The Development Variance Permit lapsing two years from the date of this resolution.”

2. At the same meeting that Development Variance Permit Application No. 00237 is considered, if it is approved, that Council consider the following motion:

“That Council authorize the issuance of Development Permit Application No. 000571 for 1344 Thurlow Road, in accordance with:

1. Plans date stamped September 29, 2021.
2. Development meeting all Zoning Regulation Bylaw requirements.
3. Registration of a legal agreement securing parking access for the regular lot via the panhandle driveway, to the satisfaction of the Director of Sustainable Planning and Community Development.
4. The Development Permit lapsing two years from the date of this resolution.”

CARRIED UNANIMOUSLY

E.2 1344 Thurlow Road: Development Permit Application No. 000571 and Development Variance Permit Application No. 00237

Committee received a report dated January 13, 2022 from the Director of Sustainable Planning and Community Development regarding the concurrent Development Permit and Development Variance Permit applications for the property located at 1344 Thurlow Road. The first proposal, a Development Permit application, is to allow the subdivision of a lot into two separate lots: one regular lot and one panhandle lot, and for the development of a single-family dwelling on the panhandle lot. The concurrent proposal, a Development Variance Permit Application, is for the construction of a new single-family dwelling with secondary suite on the regular lot. The proposed variances are to reduce the lot width and reduce the front setback, and the report recommends that it move forward to an Opportunity for Public Comment.

Moved By Councillor Alto
Seconded By Councillor Andrew

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CARRIED UNANIMOUSLY

4. The Development Permit lapsing two years from the date of this resolution.”

LEGISLATIVE AUTHORITY

This report discusses a Development Permit (DP) Application and concurrent Development Variance Permit (DVP) Application. Relevant DP considerations include the consistency with the design guidelines for the form, character, exterior finishing, and landscaping associated with the panhandle lot development, while the relevant DVP considerations related to the impact of the variances associated with the subdivision and development of the regular lot.

Development Permit Application (panhandle subdivision and development)

In accordance with Section 489 of the *Local Government Act*, Council may issue a Development Permit in accordance with the applicable guidelines specified in the *Official Community Plan, 2012* (OPC). A Development Permit may vary or supplement the *Zoning Regulation Bylaw* but may not vary the use or density of the land from that specified in the Bylaw.

Pursuant to Section 491 of the *Local Government Act*, where the purpose of the designation is the establishment of objectives for the form and character of intensive residential development, a Development Permit may include requirements respecting the character of the development including landscaping, and the siting, form, exterior design and finish of buildings and other structures.

Development Variance Permit Application (regular lot)

In accordance with Section 498 of the *Local Government Act*, Council may issue a Development Variance Permit that varies a *Zoning Regulation Bylaw* provided the permit does not vary the use or density of land from that specified in the *Zoning Regulation Bylaw*.

EXECUTIVE SUMMARY

The purpose of this report is to present Council with information, analysis and recommendations for the concurrent Development Permit and Development Variance Permit applications for the property located at 1344 Thurlow Road. The first proposal, a Development Permit application, is to allow the subdivision of a lot into two separate lots: one regular lot and one panhandle lot, and for the development of a single-family dwelling on the panhandle lot. The concurrent proposal, a Development Variance Permit Application, is for the construction of a new single-family dwelling with secondary suite on the regular lot. The proposed variances are to reduce the lot width and reduce the front setback.

The following points were considered in assessing these Applications:

- the subdivision and panhandle lot proposal are generally consistent with the *Official Community Plan, 2012* (OCP) in terms of providing compatible infill development in Traditional Residential areas
- the proposed panhandle lot and single-family dwelling is generally consistent with the design principles of the *Small Lot House Design Guidelines* in responding to the character of the site and neighbourhood
- the development supports the housing objectives expressed in the *Fairfield Neighbourhood Plan*

- the proposed lot width variance and front setback variance are considered supportable as the siting of the building is generally consistent with the existing streetscape and would not negatively impact adjacent properties.

BACKGROUND

Description of Proposal

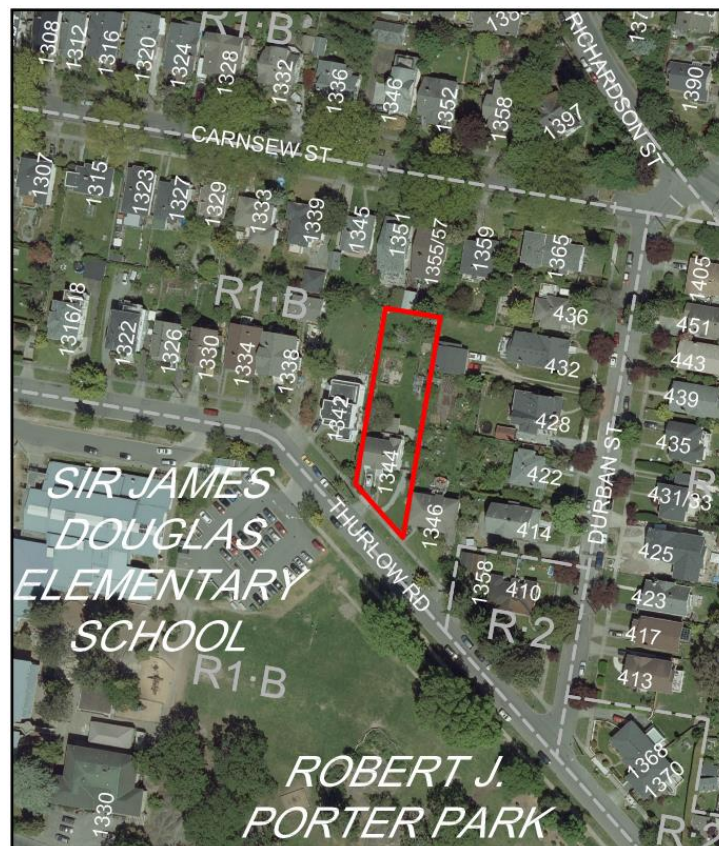
The proposal is to subdivide the property to create two lots under the current R1-B Zone, Single Family Dwelling District, creating one regular lot (460m²) and one panhandle lot (647.5m² excluding the panhandle driveway). A new one-storey single-family dwelling would be constructed on the panhandle lot and a new two-storey single-family dwelling with a secondary suite would be constructed on the regular lot. The panhandle access would provide vehicle access for both lots, which would be secured with an easement agreement.

The proposed variances are related to:

- reducing the lot width of the regular lot from 15m to 14.28m
- reducing the front setback for the single-family dwelling on the regular lot from 7.5m to 3.0m.

Land Use Context

The area is characterized by single-family dwellings. Sir James Douglas School and Robert J. Porter Park are located on the opposite side of Thurlow Road.



Existing Site Development and Development Potential

The site is presently developed as a single-family dwelling. Under the current R1-B Zone, the property could be developed as a single-family dwelling with either a secondary suite or garden suite.

Data Tables

Development Permit Application (panhandle subdivision and development)

The following data table compares the proposed panhandle lot with Schedule H - Panhandle Lot Regulations of the *Zoning Regulation Bylaw*.

Zoning Criteria	Proposal	Panhandle Regulations
Site area (m ²) – minimum	647.55 (excluding the panhandle driveway)	600.00 (excluding the panhandle driveway)
Lot width (m) – minimum	18.28	18.00
Total floor area (m ²) – maximum	151.00	280.00
Height (m) – maximum	4.39	5.00
Storeys – maximum	1	1
Site coverage (%) – maximum	25	25
Setbacks (m) – minimum		
Front	8.10	7.50
Rear	5.06	4.00
Side (east)	4.07	4.00
Side (west)	4.00	4.00
Parking – minimum	1	1

Development Variance Permit Application (regular lot)

The following data table compares the proposed regular lot with the R1-B Zone. An asterisk is used to identify where the proposal does not meet the requirements of the existing Zone.

Zoning Criteria	Proposal	Panhandle Regulations
Site area (m ²) – minimum	460.00	460.00
Lot width (m) – minimum	14.28*	15.00
Total floor area (m ²) – maximum	202.10	300.00
Height (m) – maximum	6.67	7.60
Storeys – maximum	2	2
Site coverage (%) – maximum	29.60	25
Setbacks (m) – minimum		
Front	3.00*	7.50
Rear	7.50	7.50
Side (east)	1.50	1.50
Side (west)	3.03	3.00
Combined side yards	4.53	4.50
Parking – minimum	1	1

Active Transportation

The applicant has not identified any active transportation impacts associated with this application.

Public Realm

No public realm improvements beyond City standard requirements are proposed in association with this Development Permit Application.

Community Consultation

Consistent with the *Community Association Land Use Committee (CALUC) Procedures for Processing Rezoning and Variance Applications*, on December 16, 2019 the application was referred for a 30-day comment period to the Fairfield Gonzales CALUC. At the time of writing this report, a letter from the CALUC had not been received.

This application proposes variances, therefore, in accordance with the City's *Land Use Procedures Bylaw*, it requires notice, sign posting and a meeting of Council to consider the variances.

ANALYSIS

Development Permit Application (panhandle subdivision and development)

Official Community Plan: Design Guidelines

In the *Official Community Plan, 2012* (OCP), panhandle lot developments are included in Development Permit Area 15B: Intensive Residential – Panhandle Lot. The applicable design guidelines are the *Advisory Design Guidelines for Buildings, Signs and Awnings (1981)*, as well as the *Small Lot House Design Guidelines (2002)*.

The proposed house is consistent with the design guidelines and meets the more stringent height, setback and site coverage standards for a panhandle lot. The one-storey height and setbacks from the neighbouring properties, as well as the location of habitable rooms, minimizes the impacts on the privacy and overshadowing of yards.

Development Variance Permit Application (regular lot):

The proposed new residential, single-family dwelling on the front lot (Lot A) is not subject to any Development Permit Area guidelines; however, the impact of the variances are assessed below.

Variances

Lot width

The proposed subdivision to create a panhandle lot reduces the lot width of the regular lot to 14.28m. The variance is considered supportable because the proposed house on the regular lot meets the side setback requirements of the R1-B Zone. In addition, the panhandle access, which provides driveway access to both lots, would add to the apparent width of the regular lot as viewed from Thurlow Road.

Front Yard Setback

The application requests a variance for the regular lot to reduce the front yard setback from 7.5m to 3m. For irregular shaped lots such as the subject site, the *Zoning Regulation Bylaw* measures the front setback from a theoretical boundary which is based on the largest rectangle that fits within the lot. The proposed setback of 3m is measured to this theoretical boundary, while the building would be setback approximately 7m from the street boundary at its closest point. The proposed siting also maintains the established streetscape along this portion of Thurlow Road. Therefore, the requested variance is considered supportable.

Fairfield Neighbourhood Plan

The *Fairfield Neighbourhood Plan* encourages consideration of a diversity of housing forms to add choice while fitting with the existing neighbourhood. The Plan provides specific form and character guidelines for Traditional Residential infill to ensure new development is contextually appropriate. The guidelines support siting and building orientation that provides street fronting dwellings, front and rear landscaping, access to sunlight and avoids privacy impacts on neighbouring properties. The guidelines also encourage the use of high-quality, durable exterior materials that are contextually appropriate. The proposal is considered consistent with these guidelines.

Housing

The application, if approved, would create three new residential units, which would increase the overall supply of housing in the area by two units.

Accessibility

No accessibility improvements are proposed beyond what is required through the *British Columbia Building Code*.

Sustainability

As indicated in the applicant's letter dated January 25, 2022 the following sustainability features are associated with this application:

- deconstruction of the existing single-family dwelling
- permeable paving of the driveway surface
- insulated concrete form construction for the lower level of the single-family dwelling on the regular lot.

Tree Preservation Bylaw and Urban Forest Master Plan

The goals of the *Urban Forest Master Plan* include protecting, enhancing, and expanding Victoria's urban forest and optimizing community benefits from the urban forest in all neighbourhoods. This application was received after October 24, 2019, and before July 1, 2021, so it falls under *Tree Preservation Bylaw No. 05-106* consolidated November 22, 2019.

Ten trees have been inventoried by the project arborist in the attached Arborist Report. This includes five bylaw-protected trees (two on-site and three off-site), one municipal tree, and four undersized trees (two on-site and two off-site).

Two on-site fruit trees are proposed for removal: one bylaw protected pear tree and one unprotected apple tree. An apple tree and a plum tree are proposed to be planted on the panhandle lot as bylaw-protected replacement trees. The Arborist Report states that one additional unprotected mulberry tree (#n.t.5) will be transplanted to an alternate location on site but this is not shown on the plans (the table below lists this tree as removed). In addition, two un-inventoried trees (linden and ash) are listed as "transplanted" in the Arborist Report and on the landscape plan. It is unclear if these are intended to be new trees or transplanted from elsewhere on site. The appropriate language has been added to the recommendation to have clarification on the transplanted trees prior to scheduling an Opportunity for Public Comment.

Tree Impact Summary Table

Tree Status	Total # of Trees	Trees to be REMOVED	NEW Trees	NET CHANGE (new trees minus total to be removed)
Subject property trees, protected	2	1	2	+1
Subject property trees, unprotected	2	2	0	-2

Tree Status	Total # of Trees	Trees to be REMOVED	NEW Trees	NET CHANGE (new trees minus total to be removed)
City trees	1	0	1	+1
Neighbouring trees, protected	3	0	0	0
Neighbouring trees, unprotected	2	0	0	0
Total	10	3	3	0

Subject Property - Bylaw Protected Trees Proposed for Removal:

ID#	Species	DBH	Health	Structural Condition	Reason for Removal/ Comments
#759	Pear	60 cm (multi-stem)	fair	fair	Excavation conflict

CONCLUSIONS

The proposed development is consistent with the design guidelines for DPA 15B: Intensive Residential – Panhandle Lot, the panhandle lot regulations in the *Zoning Regulation Bylaw*, and minimizes privacy and overshadowing impacts on neighbouring properties. The requested variances would have minimal impact on the neighbouring properties and are considered supportable. It is recommended that Council consider supporting the applications.

ALTERNATE MOTION

That Council decline Development Permit with Variance Application No. 000571 and Development Variance Permit Application No. 00237 for the property located at 1344 Thurlow Road.

Respectfully submitted,

Alec Johnston
Senior Planner
Development Services Division

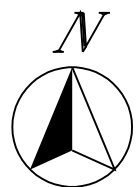
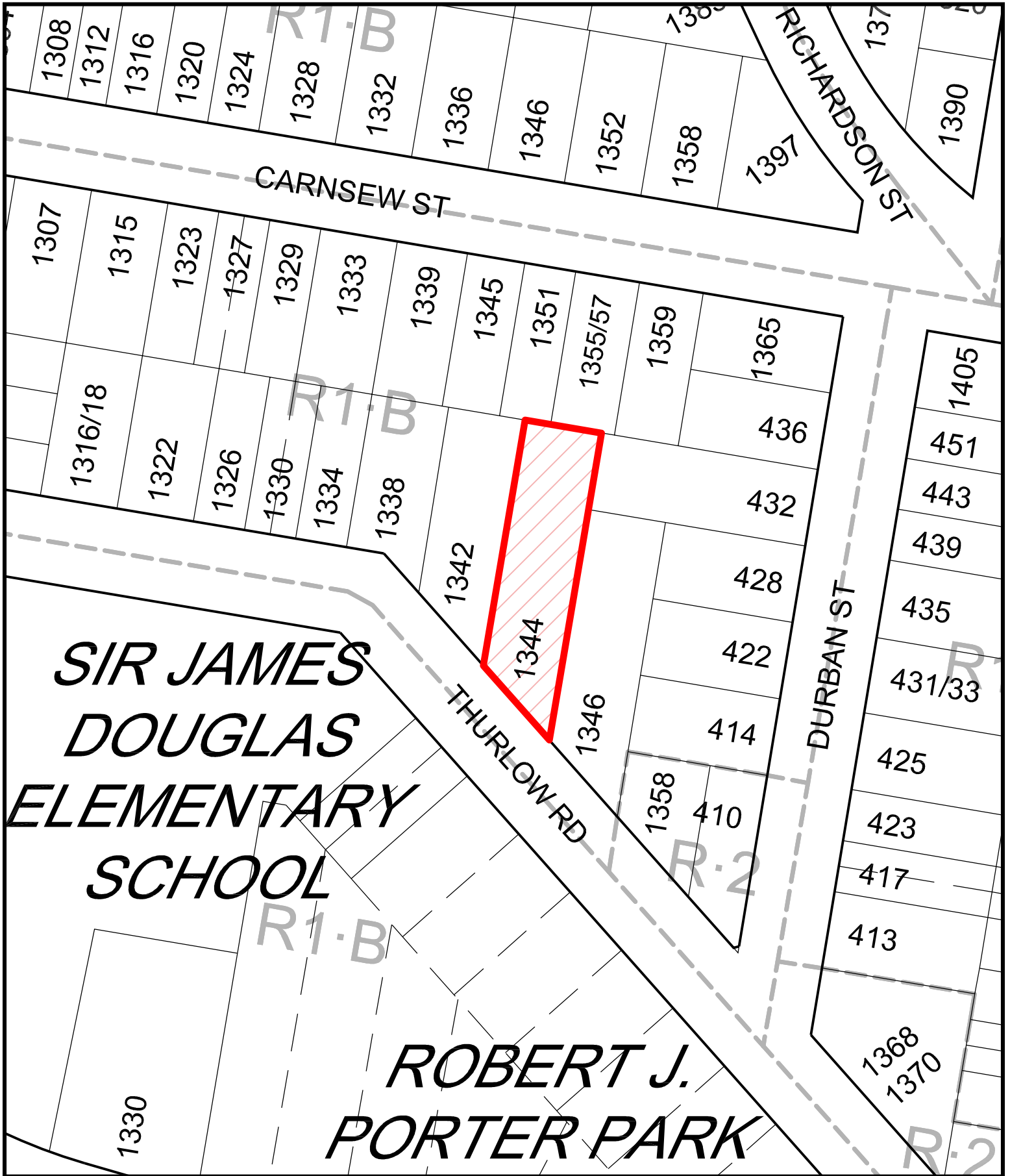
Karen Hoese, Director
Sustainable Planning and Community
Development Department

Report accepted and recommended by the City Manager.

List of Attachments

- Attachment A: Subject Map
- Attachment B: Aerial Map
- Attachment C: Plans date stamped September 29, 2021

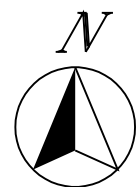
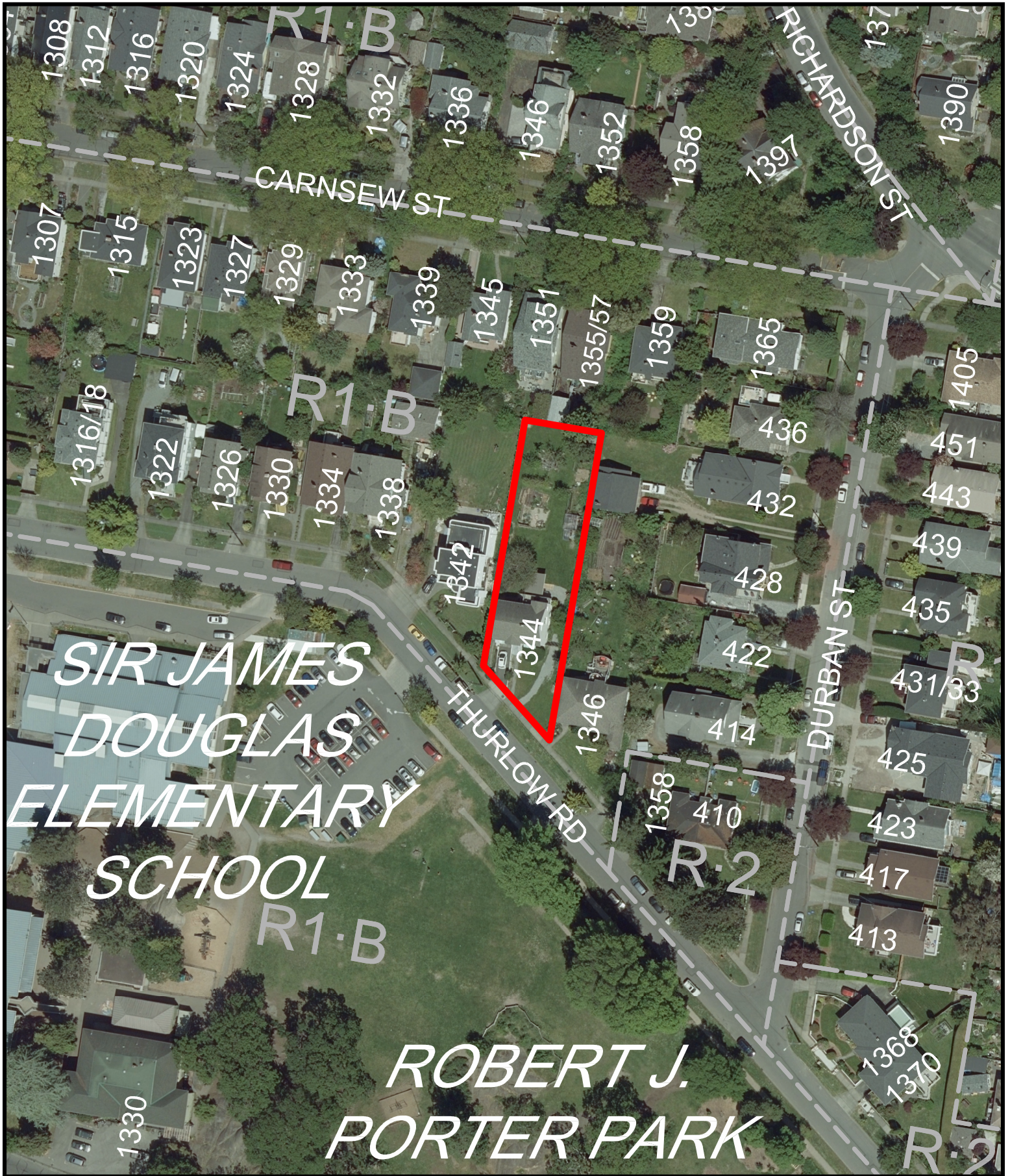
- Attachment D: Letter from applicant to Mayor and Council dated January 25, 2022
- Attachment E: Arborist report dated December 17, 2019 and amended September 24, 2021.



1344 Thurlow Road
 Development Permit #000571 and
 Development Variance Permit #00237

ATTACHMENT A





1344 Thurlow Road
Development Permit #000571 and
Development Variance Permit #00237

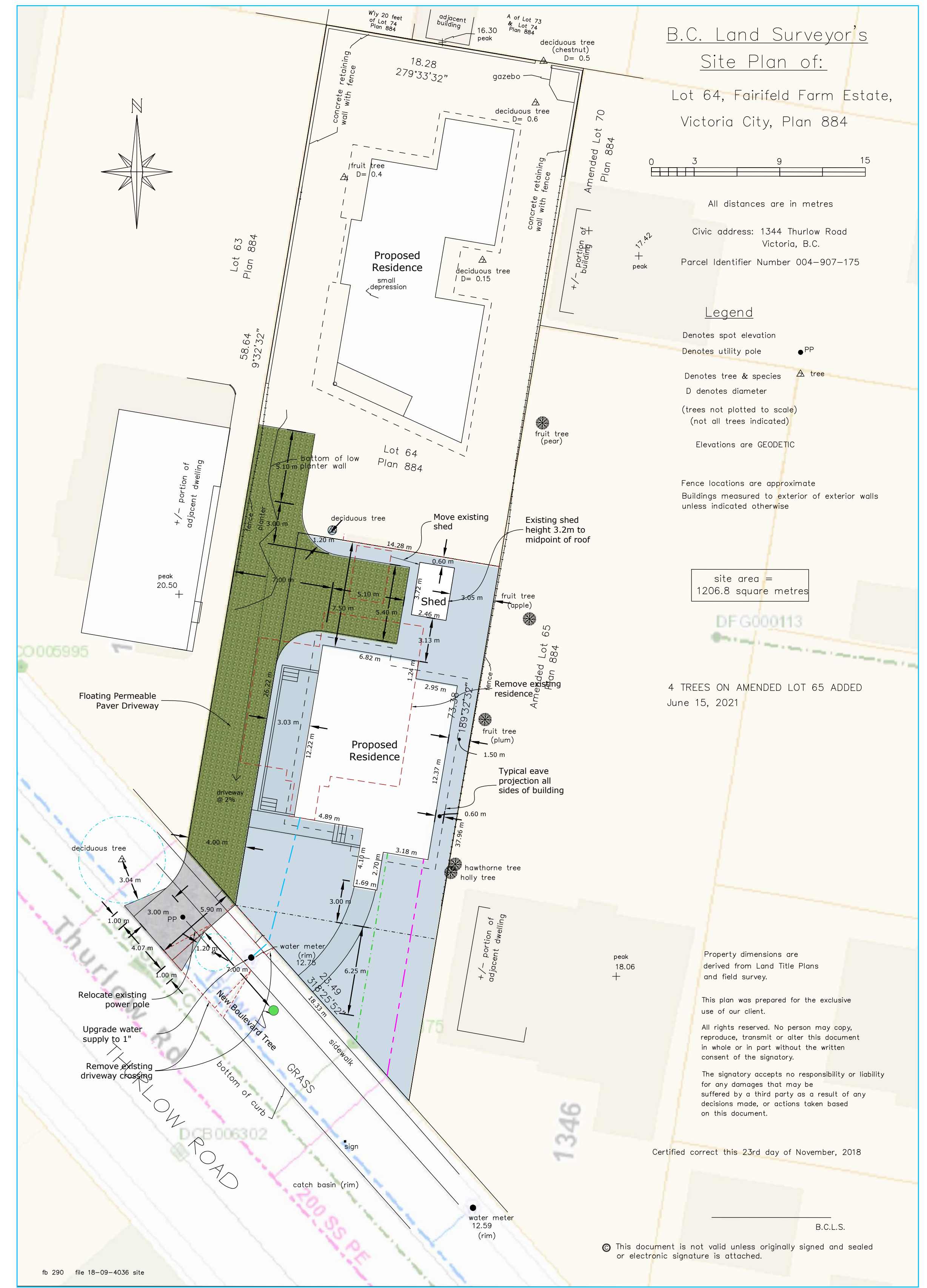
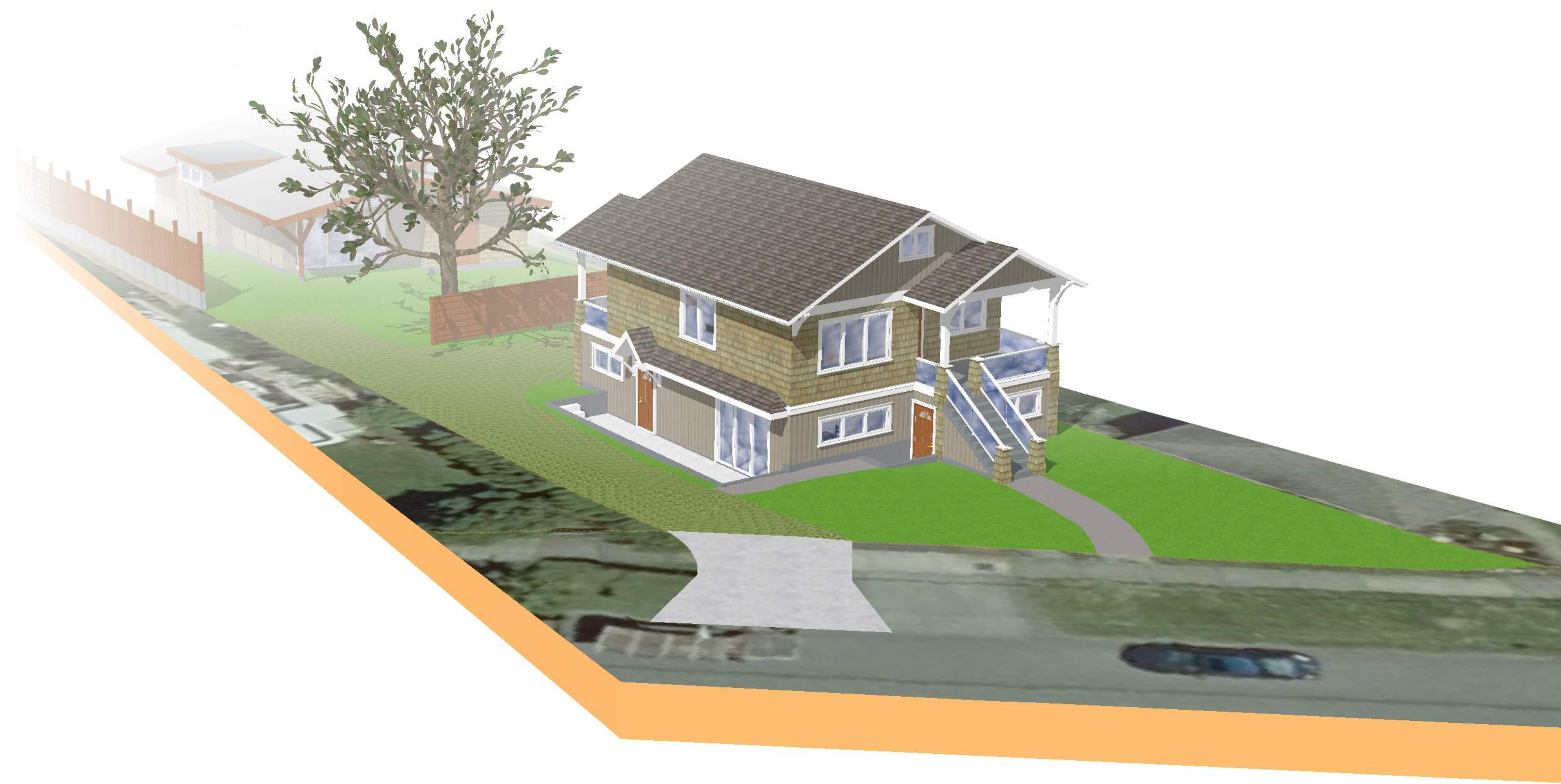
ATTACHMENT B



1344 Thurlow Road

New House Construction

Variance Application



Proposed Scope of Work
 Construct two-storey building for permitted use a single family residential dwelling with a secondary suite.

Site Data
 1344 Thurlow Road
 Lot 64, plan 884, Section FFLD
 City of Victoria
 Zone = R1-B

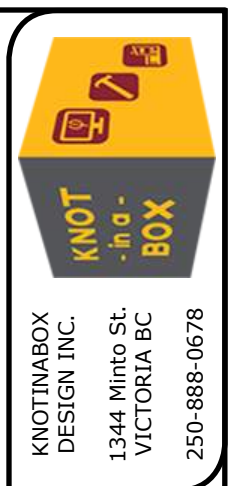
Lot Information	Required	Existing/Proposed
Lot Area	460 m ²	460 m ²
Lot Width	15 m	14.28 m*
Total Floor Area	280 m ²	202.1 m ²
Lower Floor	-	109.4 m ²
Upper Floor	-	92.7 m ²
Heights		
Average Grade	-	11.90 m
Building Height	7.6 m	6.67 m
Max. # of Storeys	2	2
Setbacks		
Front Lot Line	7.5 m	3.0 m*
Interior Side Lot Line	1.5 m & 3.0 m	1.5 m & 3.0 m
Combined Side Lot Line	4.5 m	4.5 m
Rear Lot Line	7.5 m	7.5 m
Eave Projections	0.75 m	0.6 m
Site Coverage	40%	29.6%
Parking Spaces	1	1

Proposed Variances*	Proposed	Variance Required
Lot Width	14.28 m	0.72 m
Front Lot Line Setback	3.0 m	4.5 m

- General Notes**
- Contractor to verify all dimensions and details before commencement of work
 - Noted dimensions shall take precedence over scaled drawings
 - Where noted by "Eng." or "Engineered" all structural shall be engineered by a certified structural engineer
 - All work shall conform to current residential standards and the 2018 BC Building Codes and local building codes or bylaws which may take precedence
 - Provide attic and crawlspaces with ventilation and access in accordance with B.C.B.C. 2018 part 9
 - Install smoke detectors in accordance with B.C.B.C. 2018 part 9
 - Provide heating, mechanical, ventilation, and air conditioning where required in accordance with local building code and by-laws, mechanical contractor to supply mechanical checklist prior to final framing
 - Provide electrical engineering by approved and certified contractor, receptacles and appliance locations to be approved by owner/contractor
 - Designer does not assume liability for errors or omissions on these plans unless advised before proceeding with construction

Revisions

Received Date:
 September 29, 2021



REVISIONS

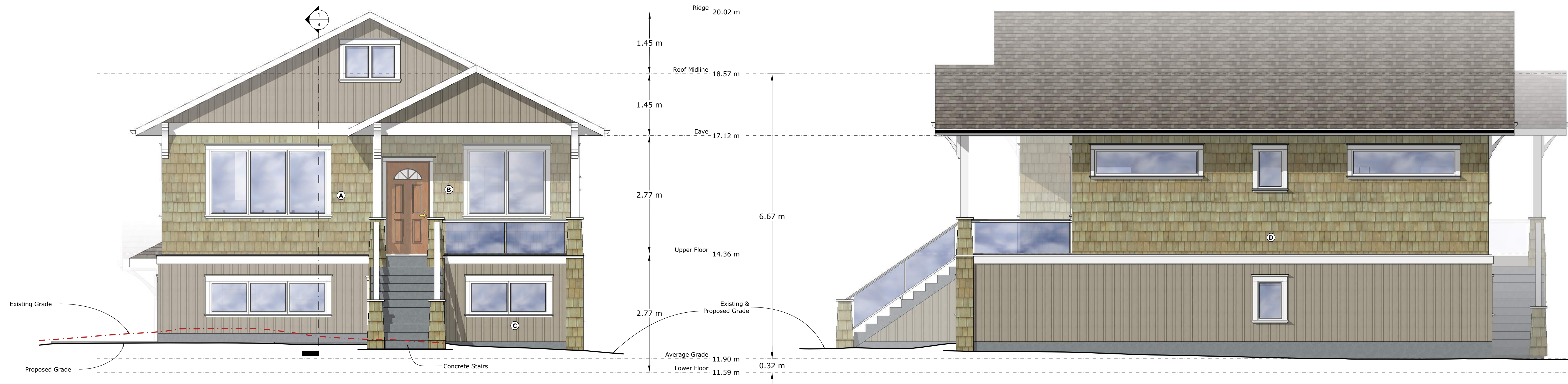
Rev. #	Date	Description
1.0	2019.09.25	Final Release
2.0	2020.04.12	DR & LDR for Review
3.0	2020.04.12	DR & LDR for Review
4.0	2021.01.15	Application Review Response
5.0	2021.09.29	Application Review Response

PROJECT
 1344 Thurlow Road

DRAWING TITLE
 Front - Cover Page

Drawn by: **A. Spruit**
 Checked by: **T. Martin**
 Approved by:

DATE: **2021 06 23**
 SCALE: **1:200**
 01



South Elevation

East Elevation

Limiting Distance Data

Point	Exposing Building Face Area	Unprotected Opening Area	Percentage of Building Face	Limiting Distance	Max. Allowable Unprotected Area
A	35.67 m ²	5.17 m ²	14.4%	6.75 m	69%
B	12.94 m ²	2.79 m ²	21.6%	7.97 m	88%

Limiting Distance Data

Point	Exposing Building Face Area	Unprotected Opening Area	Percentage of Building Face	Limiting Distance	Max. Allowable Unprotected Area
C	6.11 m ²	1.39 m ²	22.7%	5.38 m	39%
D	55.84 m ²	4.09 m ²	7.3%	1.5 m	7.9% (interpolated)

Limiting Distance Data

Point	Exposing Building Face Area	Unprotected Opening Area	Percentage of Building Face	Limiting Distance	Max. Allowable Unprotected Area
E	26.93 m ²	3.62 m ²	13.4%	8.72 m	100%
F	20.37 m ²	3.78 m ²	18.6%	9.33 m	100%

Limiting Distance Data

Point	Exposing Building Face Area	Unprotected Opening Area	Percentage of Building Face	Limiting Distance	Max. Allowable Unprotected Area
G	61.63 m ²	10.03 m ²	16.3%	5.03 m	23.5% (interpolated)

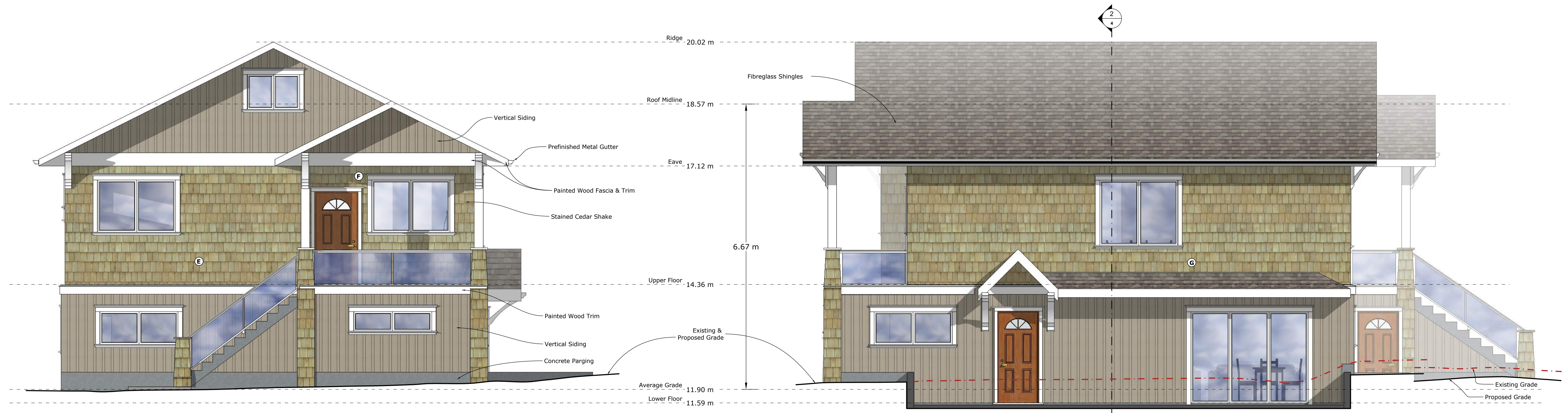
Rev. #	Date	Description
1.0	2019.09.25	Final Release
2.0	2020.04.12	DR & DCP Review Comments
3.0	2021.01.15	Client Change
4.0	2021.01.15	Application Review Response
5.0	2021.09.23	Application Review of Site Building
6.0	2021.09.23	Application Review of Site Building

PROJECT
1344 Thurlow Road

DRAWING TITLE
Front - Elevations

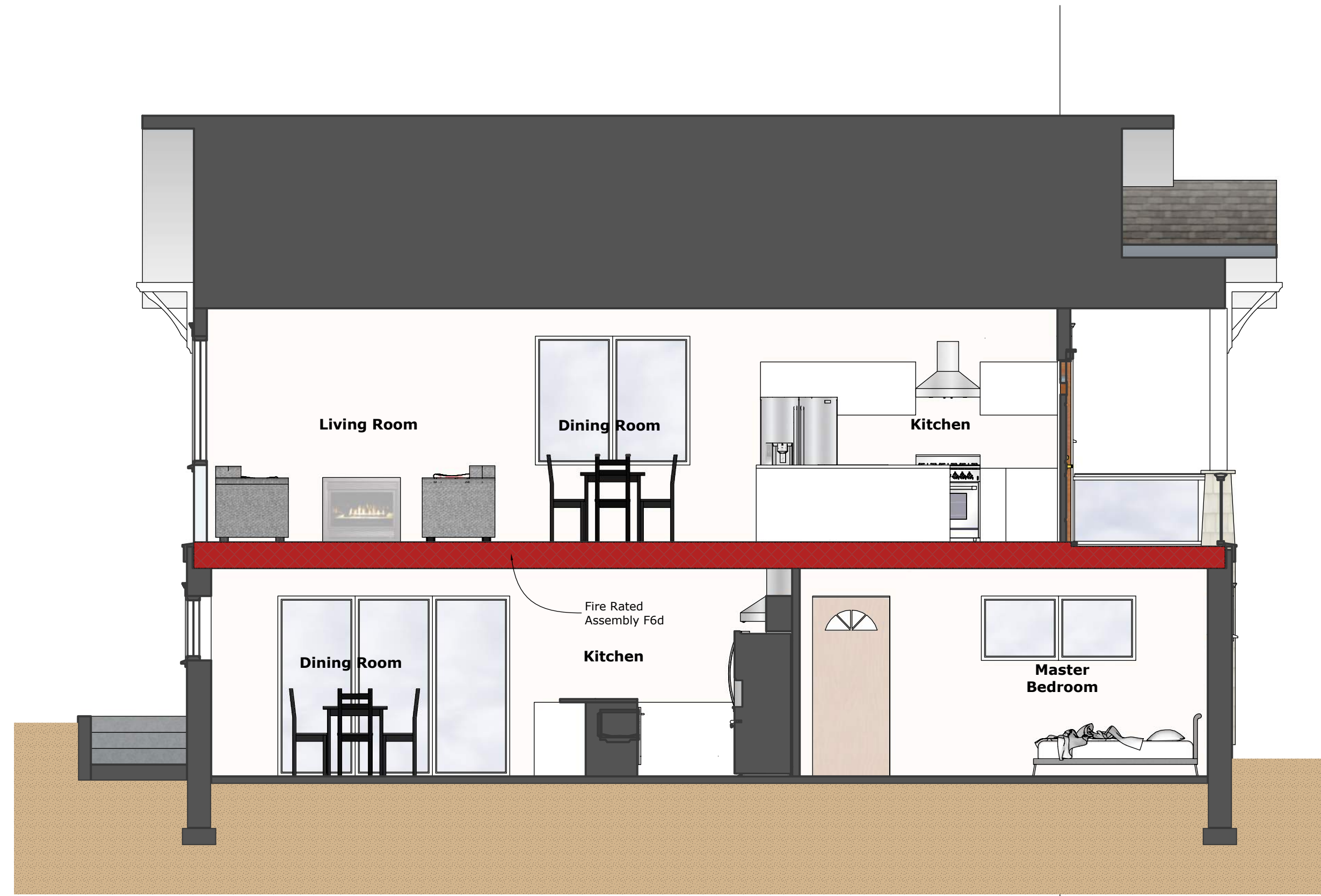
Drawn by: **A. Spruit**
Checked by: **T. Martin**
Approved by:

DATE: **2021 06 23**
SCALE: **1/4" = 1'**



North Elevation

West Elevation

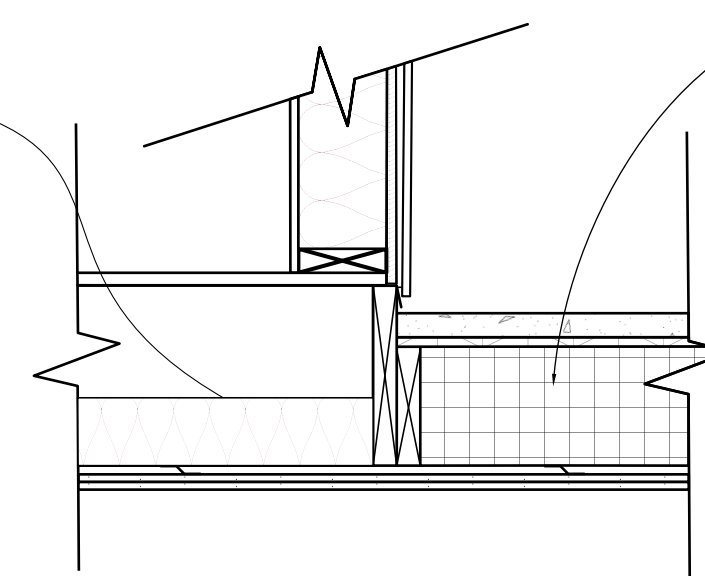


Section 1
Scale: 1/4" = 1'

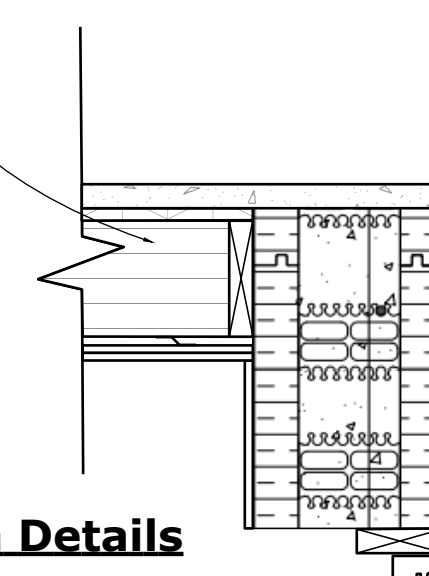
WINDOW SCHEDULE						
Mark	Qty.	Size	Type	Material	Notes	
A	3	6'0" x 2'6"	Casement	Vinyl / Glass	See NAFS	
B	1	2'0" x 3'0"			for all windows	
C	1	9'0" x 2'6"				
D	1	6'0" x 4'0"				
E	1	8'0" x 2'0"				
F	1	9'0" x 5'0"				
G	1	6'0" x 5'0"				

DOOR SCHEDULE						
Mark	Qty.	Size	Swing	Type	Material	Notes
1	2	3'0" x 7'0"	RH	Exterior Panel	Wood / Glass	See NAFS
2	1	2'6" x 6'8"	RH	Interior panel	Wood	
3	3	2'8" x 6'8"	RH	Interior panel	Wood	
4	2	2'8" x 6'8"	LH	Interior panel	Wood	
5	1	6'0" x 6'8"		Bi-fold	Wood	
6	2	8'0" x 6'8"		Bi-fold	Wood	
7	4	9'0" x 7'0"		Exterior Sliding	Vinyl / Glass	See NAFS
8	1	5'0" x 6'8"		Bi-fold	Wood	
9	1	3'0" x 6'8"		Bi-fold	Wood	
10	1	4'0" x 6'8"		Bi-fold	Wood	

5/8" Plywood
2"x12" joists @ 16" oc
R12 batt insulation
Ceiling resilient bar @ 2" oc
2x 5/8" Type X drywall

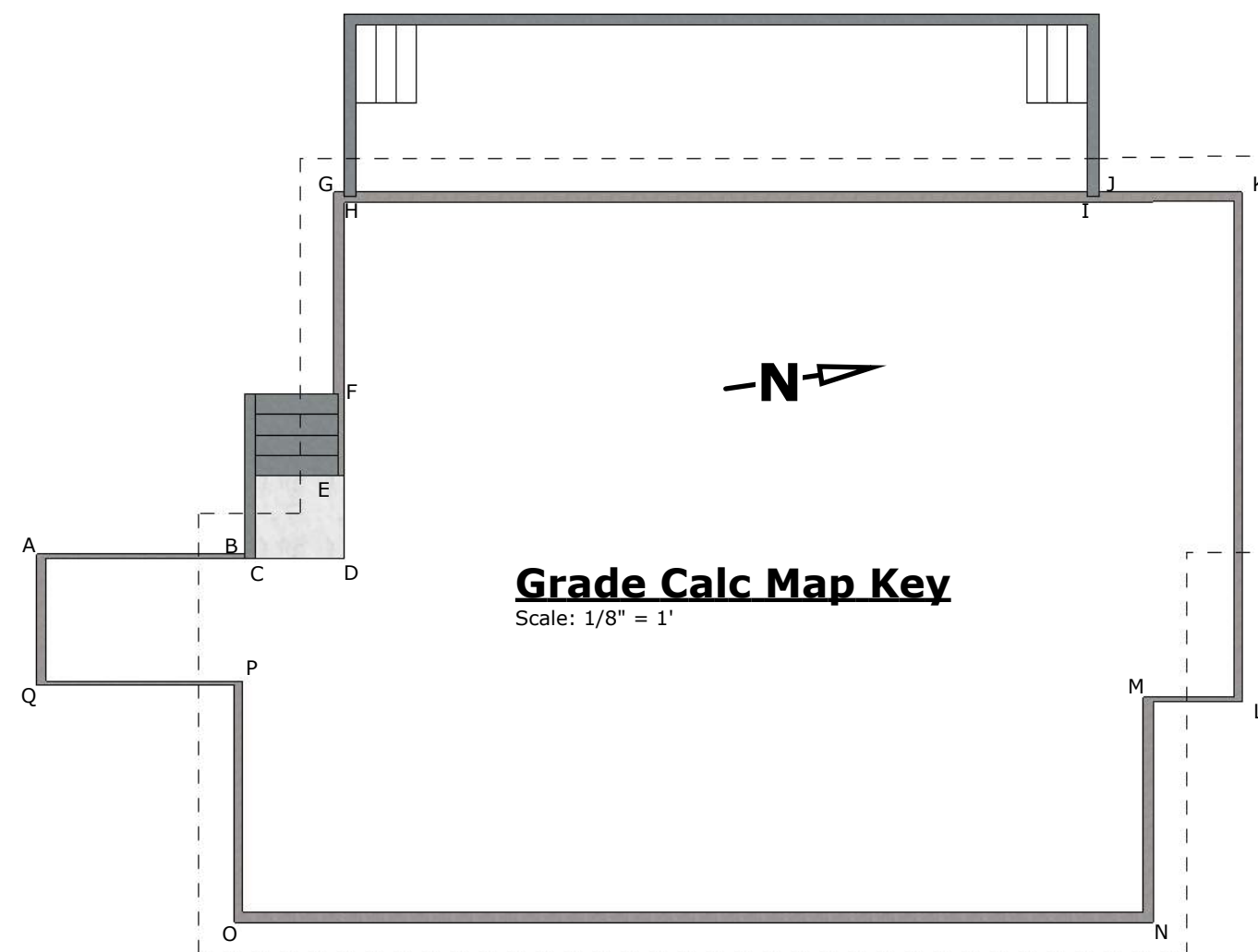


1 1/2" Concrete
6 mil poly
3/4" plywood
2"x8" joists @ 16" oc
R28 2lb closed cell spray foam insulation
Ceiling resilient bar @ 2" oc
2x 5/8" Type X drywall

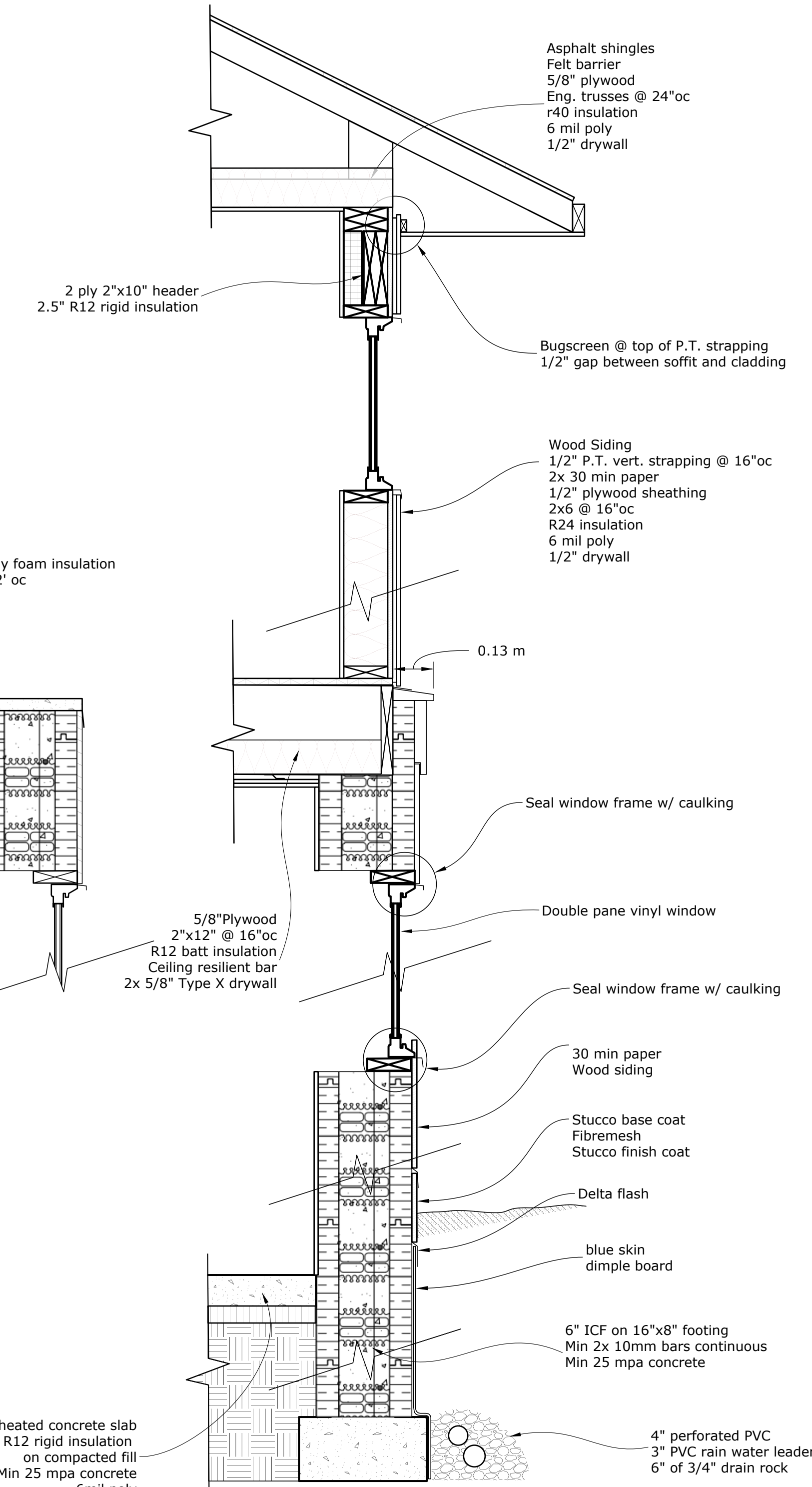


Typical Construction Details
Deck Over Living Space
Scale: 1" = 1'

Grade Calculations						
Segment	Height 1	Height 2	Avg. Height	Distance	Points	
A-B	12.176	12.099	12.137	2.946	35.757	
C-D	11.536	11.536	11.536	1.137	13.116	
D-E	11.536	11.536	11.536	1.137	13.116	
E-F	11.536	12.247	11.891	1.118	13.294	
F-G	12.247	12.267	12.257	2.718	33.314	
H-I	11.460	11.460	11.460	10.923	125.177	
J-K	12.090	12.058	12.074	2.064	24.920	
K-L	12.058	11.896	11.977	6.883	82.437	
L-M	11.896	11.906	11.901	1.219	14.507	
M-N	11.906	11.891	11.898	3.035	36.111	
N-O	11.891	12.075	11.983	12.510	149.907	
O-P	12.075	12.269	12.172	3.258	39.656	
P-Q	12.269	12.170	12.219	2.711	33.127	
Q-A	12.170	12.176	12.173	1.689	20.560	
Avg. Grade	11.903		TOTALS	53.348	635.005	



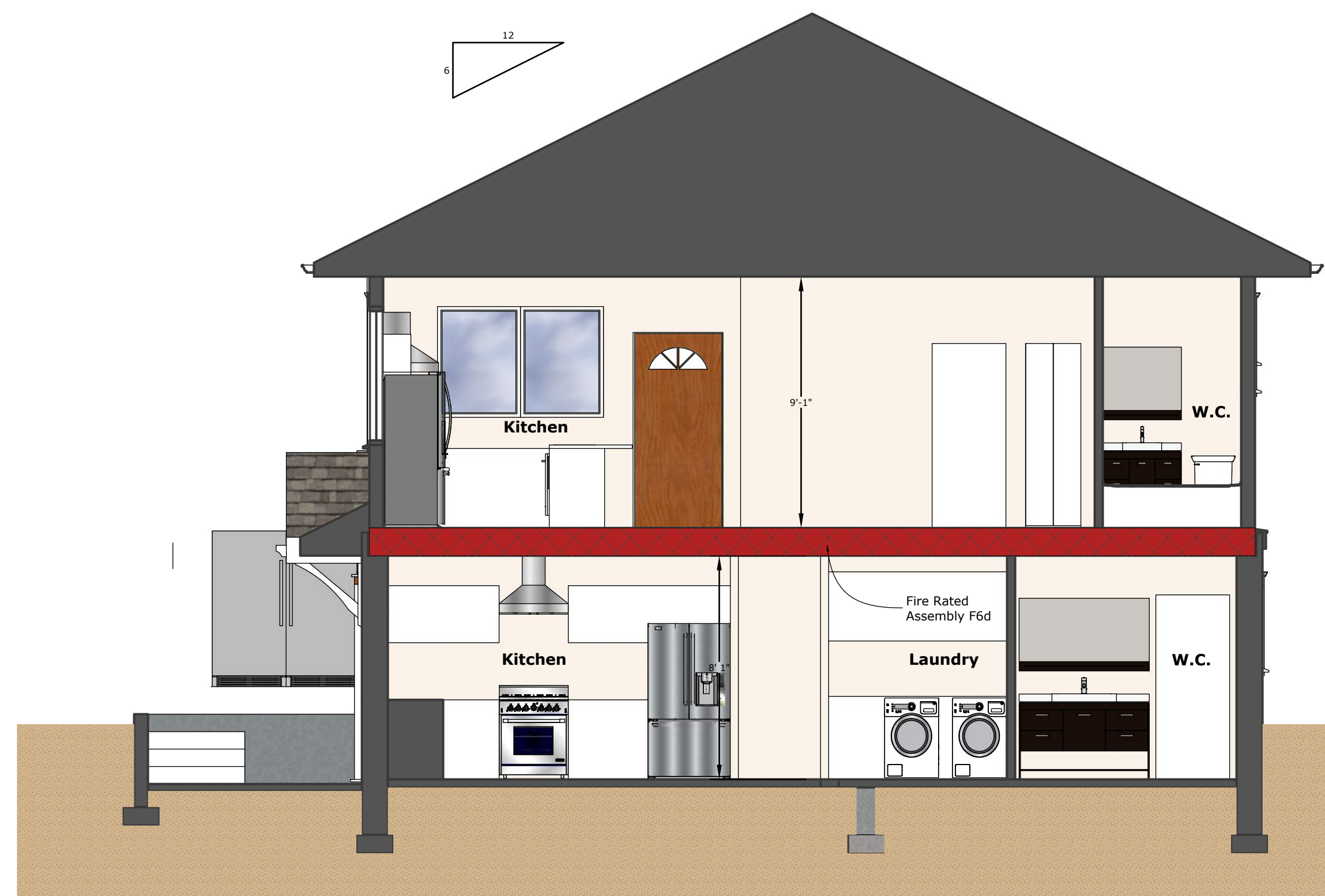
Grade Calc Map Key
Scale: 1/8" = 1'



Typical Construction Details
Scale: 1" = 1'

NAFS

- All windows and exterior doors:
- Minimum performance grade = 25
- Minimum design pressure (+/-) = 1200 Pa
- Minimum water pressure = 260 Pa
- Minimum air infiltration = A2
- Maximum U-value = 1.80 W/m²K



Section 2
Scale: 1/4" = 1'

Rev. #	Date	Description
1.0	2019.09.25	Final Release
2.0	2020.04.12	DR & DCP for Review
3.0	2020.04.12	DR & DCP for Review
4.0	2021.01.15	Application Review Response
5.0	2021.09.23	Application Review Response

PROJECT
1344 Thurlow Road

DRAWING TITLE
Front - Sections & Details

Drawn by: **A. Spruit**
Checked by: **T. Martin**
Approved by:

DATE: **2021 06 23**
SCALE: **Per DWG**

1344 Thurlow Road

New House Construction

Development Permit Application



Proposed Scope of Work

Construct a one-storey building for permitted use a single family residential dwelling

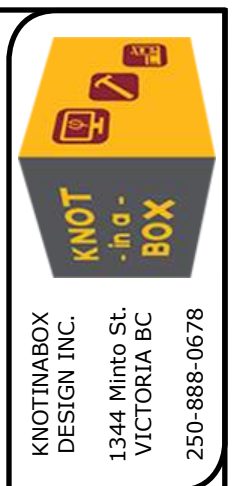
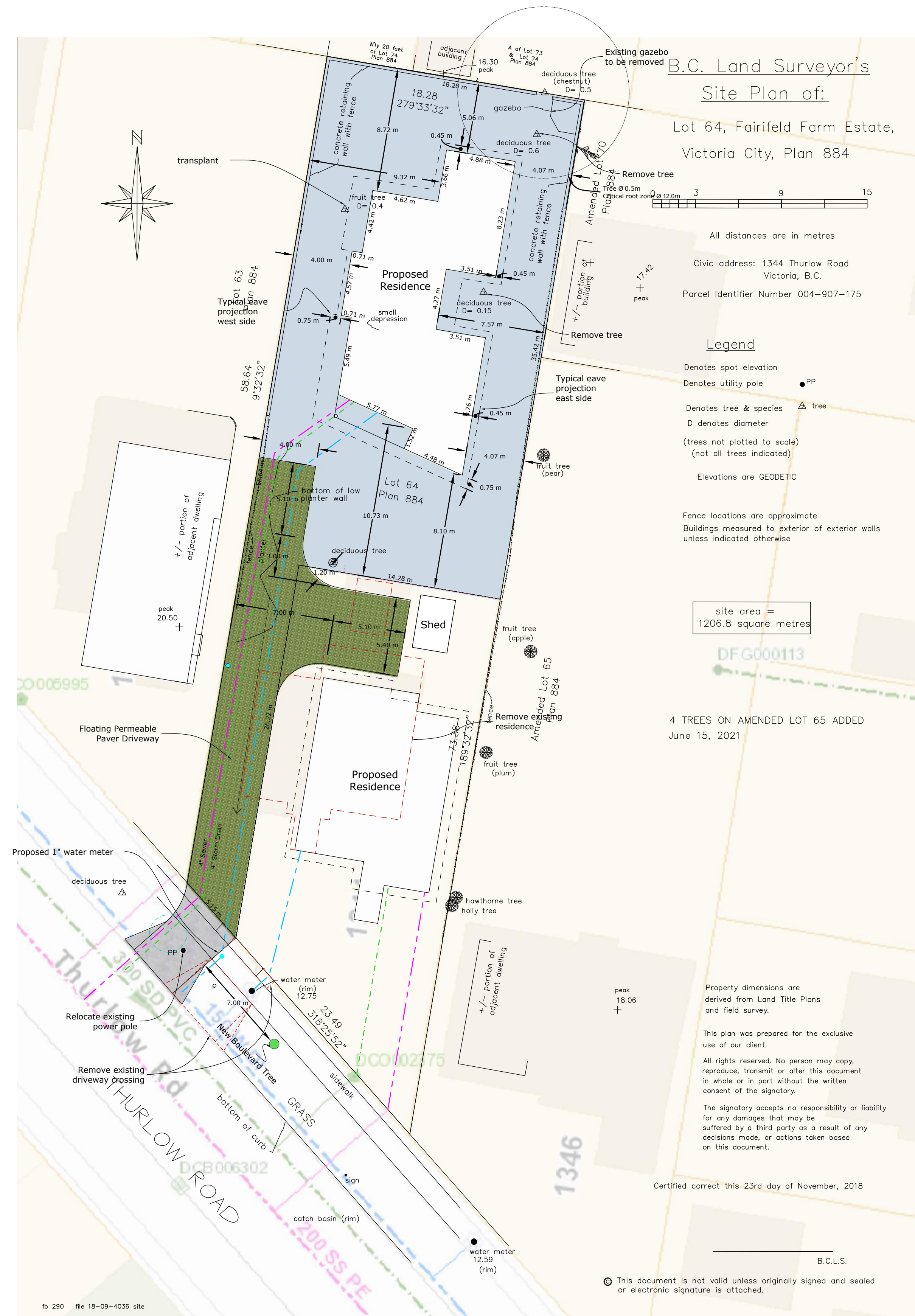
Site Data

1344 Thurlow Road
 Lot 64, Plan 884, Section FFLD
 City of Victoria
 Zone = R1-B

Lot Information	Required	Existing/Proposed
Lot Area	600 m ²	647.55 m ²
Lot Width	18 m	18.28 m
Total Floor Area	280 m ²	151.0 m ²
Main Floor	-	151.0 m ²
Heights		
Average Grade	-	11.86 m
Building Height	5.0 m	4.39 m
Max. # of Storeys	1	1
Setbacks		
Walls w/ Windows	7.5 m	8.72 m, 7.57 m, 10.73 m, & 9.32 m
Walls w/o Windows	4.0 m	5.06 m, 4.07 m, 8.10m, & 4.00 m
Eave Projections	0.75 m	0.30 m & 0.61 m
Site Coverage	25%	25.0%
Parking Spaces	1	1

General Notes

- Contractor to verify all dimensions and details before commencement of work
- Noted dimensions shall take precedence over scaled drawings
- Where noted by "Eng." or "Engineered" all structural shall be engineered by a certified structural engineer
- All work shall conform to current residential standards and the 2018 BC Building Codes and local building codes or bylaws which may take precedence
- Provide attic and crawlspaces with ventilation and access in accordance with B.C.B.C. 2018 part 9
- Install smoke detectors in accordance with B.C.B.C. 2018 part 9
- Provide heating, mechanical, ventilation, and air conditioning where required in accordance with local building code and by-laws,mechanical contractor to supply mechanical checklist prior to final framing
- Provide electrical engineering by approved and certified contractor, receptacles and appliance locations to be approved by owner/contractor
- Designer does not assume liability for errors or omissions on these plans unless advised before proceeding with construction



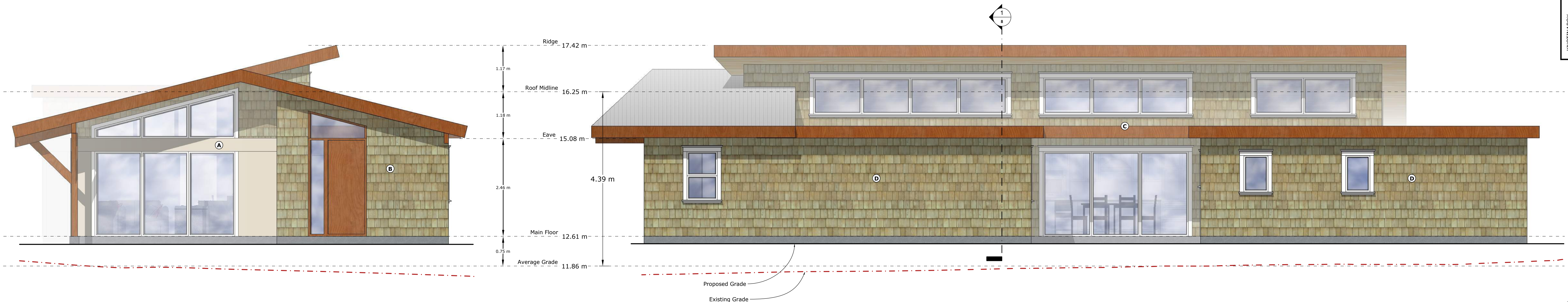
KNOT DESIGN INC.
 1344 Minto St.
 VICTORIA BC
 250-888-0678

PROJECT
1344 Thurlow Road

DRAWING TITLE
Rear - Cover Page

Drawn by: **A. Spruit**
 Checked by: **T. Martin**
 Approved by:

DATE: **2021 06 23**
 SCALE: **1:200**



South Elevation

East Elevation

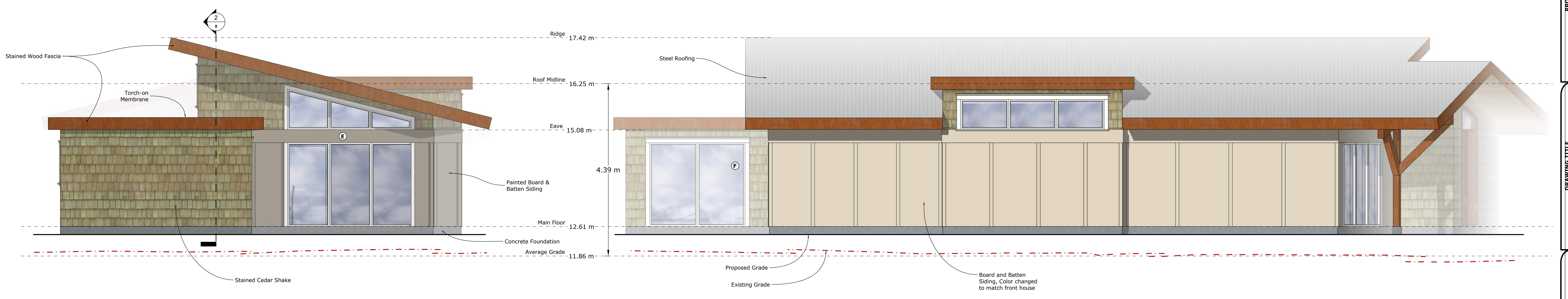
Limiting Distance Data

A	Exposing Building Face Area	21.04 m ²
	Unprotected Opening Area	10.36 m ²
	Percentage of Building Face	49.2%
	Limiting Distance	10.37 m
	Max. Allowable Unprotected Area	100%
B	Exposing Building Face Area	14.86 m ²
	Unprotected Opening Area	1.48 m ²
	Percentage of Building Face	10.0%
	Limiting Distance	8.10 m
	Max. Allowable Unprotected Area	100%

C	Exposing Building Face Area	36.44 m ²
	Unprotected Opening Area	17.84 m ²
	Percentage of Building Face	49.0%
	Limiting Distance	7.57 m
	Max. Allowable Unprotected Area	69%
D	Exposing Building Face Area	48.39 m ²
	Unprotected Opening Area	2.04 m ²
	Percentage of Building Face	4.2%
	Limiting Distance	4.07 m
	Max. Allowable Unprotected Area	28%

E	Exposing Building Face Area	19.02 m ²
	Unprotected Opening Area	8.73 m ²
	Percentage of Building Face	45.9%
	Limiting Distance	8.72 m
	Max. Allowable Unprotected Area	100%
F	Exposing Building Face Area	9.78 m ²
	Unprotected Opening Area	5.20 m ²
	Percentage of Building Face	53.2%
	Limiting Distance	9.34 m
	Max. Allowable Unprotected Area	100%

G	Exposing Building Face Area	16.96 m ²
	Unprotected Opening Area	2.79 m ²
	Percentage of Building Face	16.5%
	Limiting Distance	4.0 m
	Max. Allowable Unprotected Area	39%



North Elevation

West Elevation

Rev. #	Date	Description
1.0	2019.09.25	Final Release
2.0	2020.04.02	DR & DCP Revisions
3.0	2020.04.02	DR & DCP Revisions
4.0	2021.10.15	Application Review Response
5.0	2021.09.23	Application Review Response

PROJECT
 1344 Thurlow Road

DRAWING TITLE
 Rear - Elevations

Drawn by: **A. Spruit**
 Checked by: **T. Martin**
 Approved by:

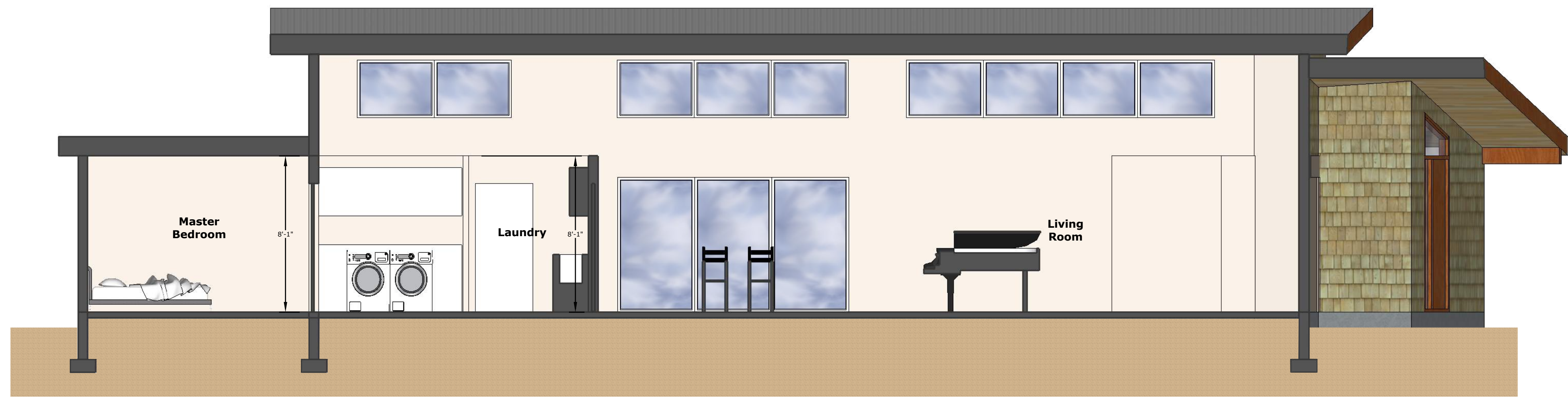
DATE: **2021 06 23**
 SCALE: **1/4" = 1'**

Rev. #	Date	Description
1.0	2019.09.25	Final Release
2.0	2020.04.12	DR & DCP Review
3.0	2020.04.12	Client Change
4.0	2021.10.15	Application Review Response
5.0	2021.09.23	Application Review (See Building Code)

PROJECT
 1344 Thurlow Road

DRAWING TITLE
 Rear - Sections & Details

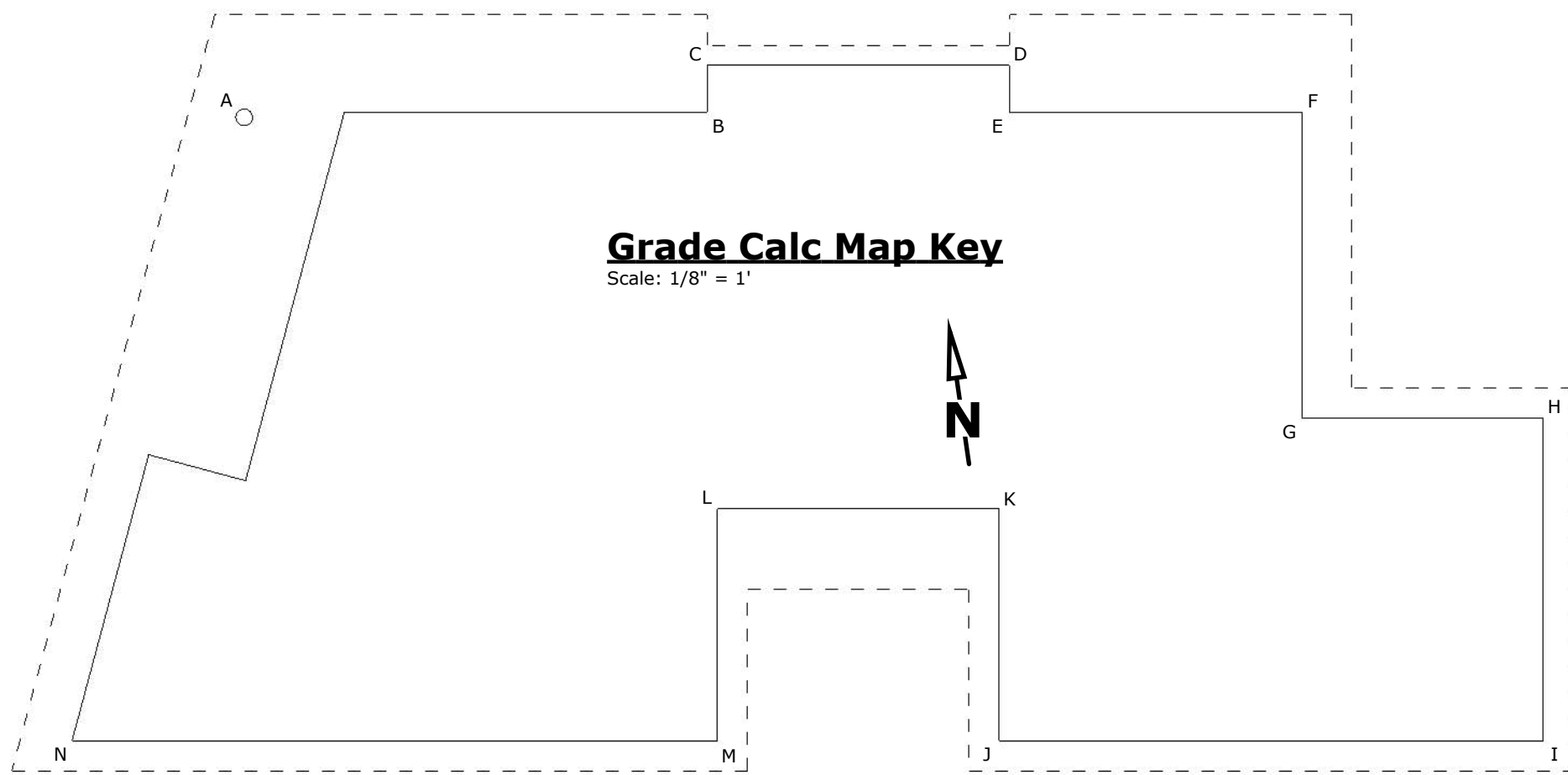
Drawn by: **A. Spruit**
 Checked by: **T. Martin**
 Approved by:
 DATE: **2021 06 23**
 SCALE:
 Per DWG



Section 2
 Scale: 1/4" = 1'

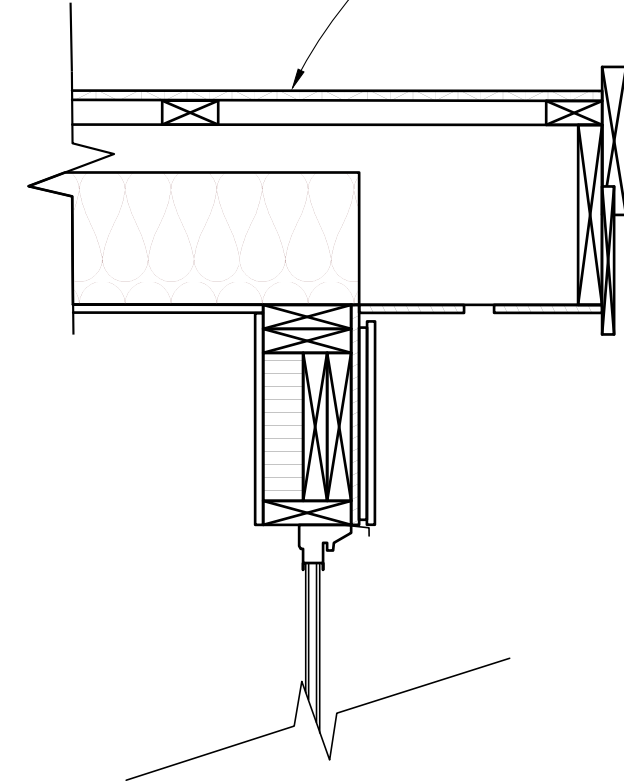
DOOR SCHEDULE						
Mark	Qty.	Size	Swing	Type	Material	Notes
1	1	7'6" x 7'0"		Exterior sliding	Vinyl / Glass	See NAFS
2	1	8'8" x 8'0"		Garage	Aluminum	See NAFS
3	1	2'8" x 7'0"	RH	Interior panel		* Self closing
4	1	2'10" x 6'8"	RH	Ext. panel w/ lights	Wood / Glass	See NAFS
5	1	4'0" x 6'8"		Bi-fold	Wood	
6	2	2'6" x 6'8"	LH	Interior panel		
7	4	2'6" x 6'8"	RH	Interior panel		
8	1	5'0" x 6'8"		Bi-fold	Wood	
9	1	6'0" x 6'8"		Bi-fold	Wood	
10	1	6'0" x 8'0"		Exterior French	Wood / Glass	See NAFS
11	1	4'0" x 6'8"		Bi-fold	Wood	
12	1	2'8" x 6'8"	RH	Interior panel		
13	1	3'0" x 6'8"	LH	Interior panel		
14	1	2'4" x 6'8"	LH	Interior panel		

WINDOW SCHEDULE					
Mark	Qty.	Size	Type	Material	Notes
A	2	5'0" x 2'0"	Casement	Vinyl / Glass	See NAFS
B	1	4'0" x 1'6"			for all windows
C	2	2'0" x 2'0"			
D	1	5'0" x 6'0"			
E	1	7'6" x 1'2"			
F	1	7'6" x 7'0"			
G	1	4'0" x 4'6"			
H	1	5'0" x 6'0"			
I	2	2'0" x 4'6"	Casement		
J	1	12'0" x 2'6"	Fixed	Vinyl / Glass	

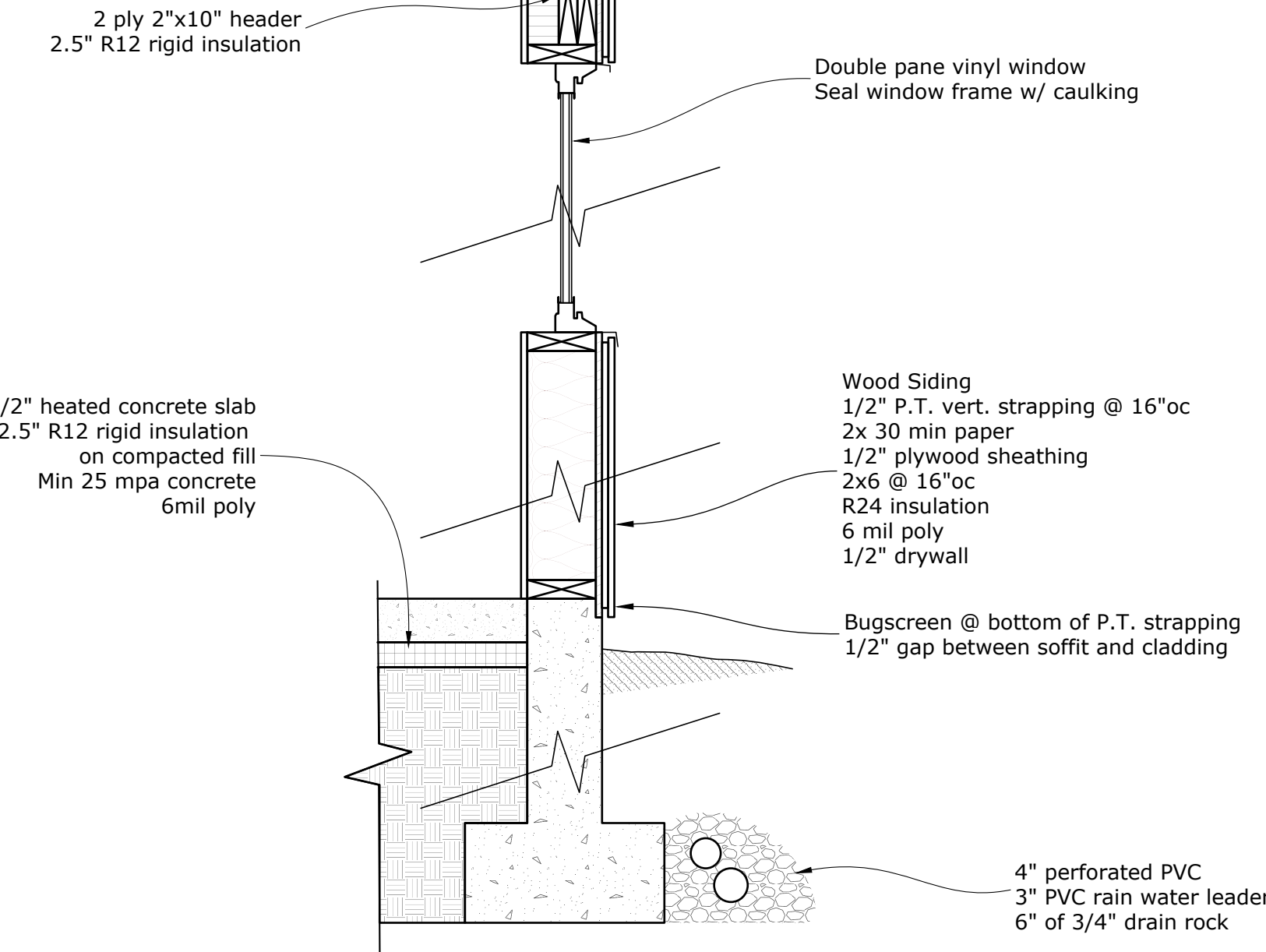
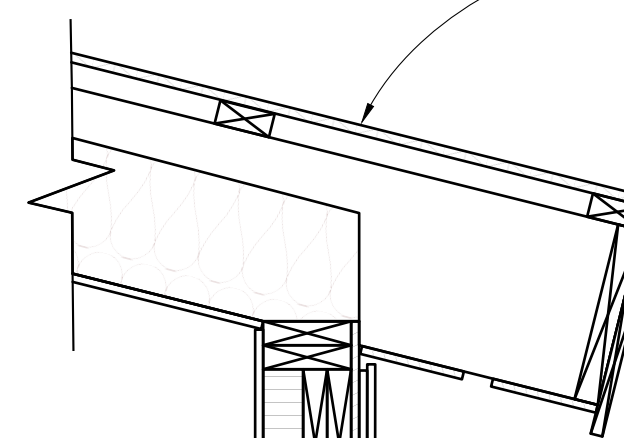


Grade Calculations					
Segment	Height 1	Height 2	Avg. Height	Distance	Points
A-B	11.869	11.849	11.859	6.553	77.712
B-C	11.849	11.922	11.885	0.711	8.450
C-D	11.922	11.923	11.923	4.572	54.511
D-E	11.924	11.923	11.923	0.711	8.477
E-F	11.923	12.024	11.973	4.420	52.922
F-G	12.024	11.928	11.976	4.623	55.365
G-H	11.928	11.982	11.955	3.658	43.731
H-I	11.982	11.971	11.976	4.877	58.409
I-J	11.971	11.840	11.905	8.230	97.982
J-K	11.840	11.864	11.852	3.505	41.541
K-L	11.864	11.789	11.826	4.267	50.463
L-M	11.789	11.808	11.798	3.505	41.353
M-N	11.808	11.642	11.725	9.756	114.389
N-A	11.642	11.869	11.755	9.835	115.615
Avg. Grade				TOTALS	820.926

Torch-on roofing
 Felt barrier
 5/8" plywood
 2"x4" purlin @ 24"oc
 2"x12" roof joists @ 24" oc
 R30 batt insulation
 6 mil poly
 1/2" drywall



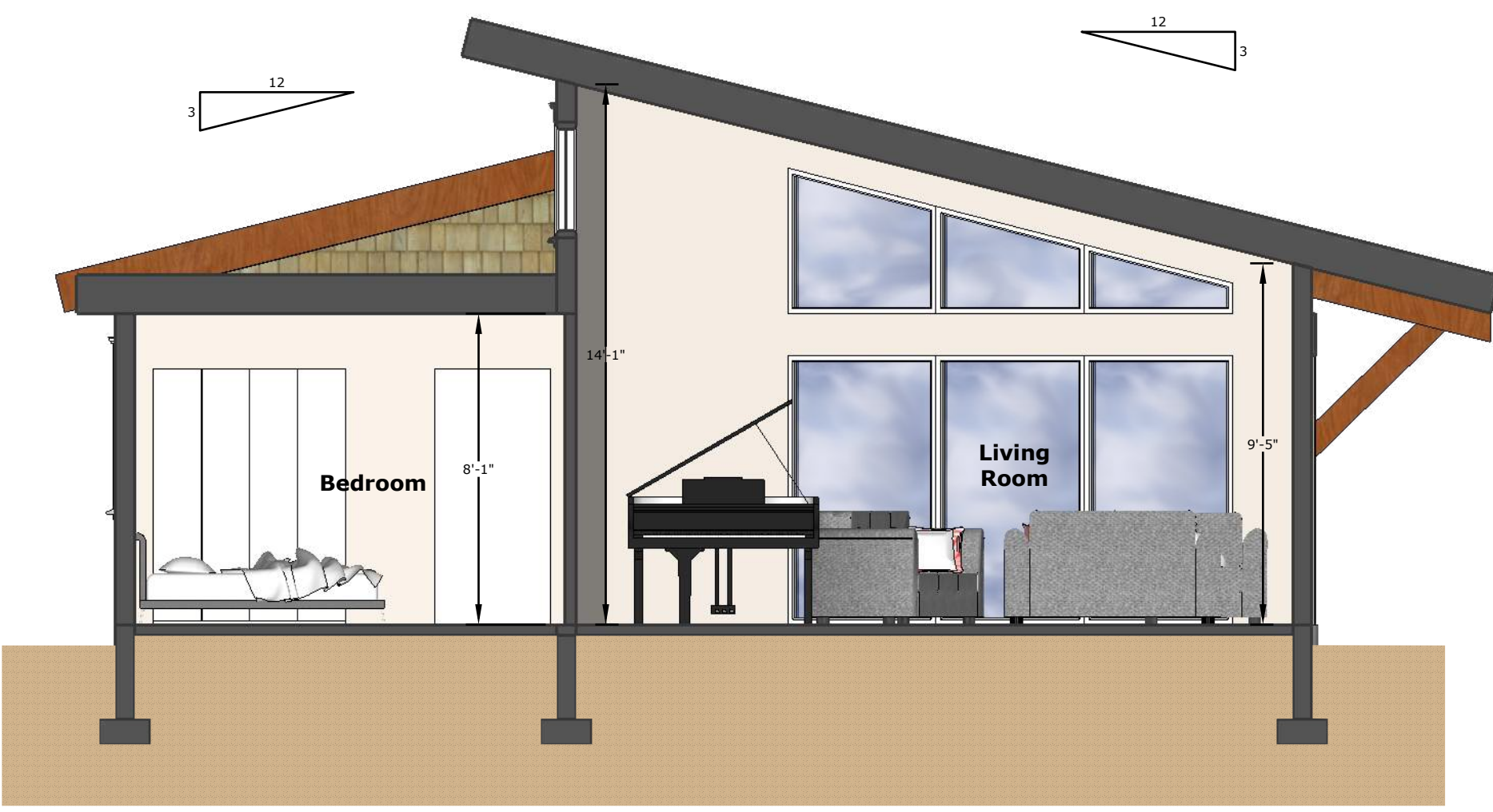
Metal roofing
 Felt barrier
 5/8" plywood
 2"x4" purlin @ 24"oc
 2"x12" roof joists @ 16" & 24" oc
 R30 batt insulation
 6 mil poly
 1/2" drywall



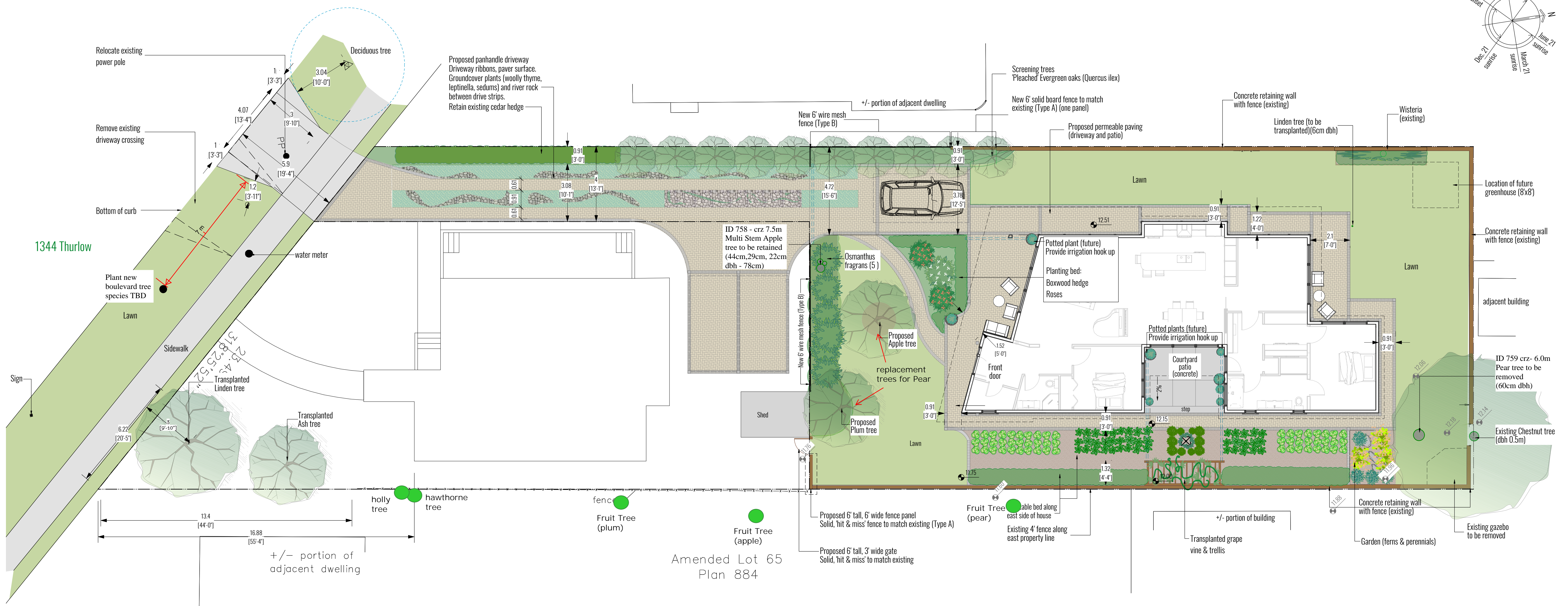
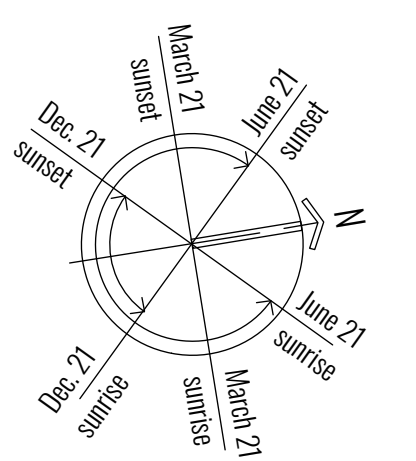
Typical Construction Details
 Scale: 1" = 1'

NAFS

- All windows and exterior doors:
 - Minimum performance grade = 30
 - Minimum design pressure (+/-) = 1440 Pa
 - Minimum water pressure = 220 Pa
 - Minimum air infiltration = A2
 - Maximum U-value = 1.80 W/m²K



Section 1
 Scale: 1/4" = 1'

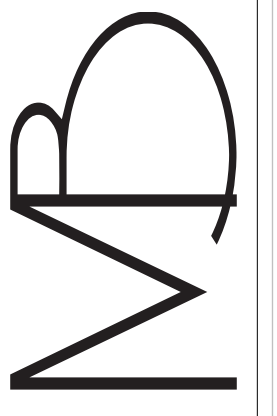


PROJECT:
Westlake Residence
1344 Thurlow Road
Victoria, BC

13.03.20 - Rancher entry, driveway
27.04.20 - Rancher entry, paving
27.06.20 - Remove existing gazebo
23.06.21 added neighbour trees

3079 Albany St, Victoria
PHONE: (250) 589-0614

MELISSA BARON LANDSCAPE DESIGN
All drawings and images copyrighted by
Melissa Baron © 2020
Designed & Drawn by Melissa Baron



LANDSCAPE PLAN
April 2020

L1

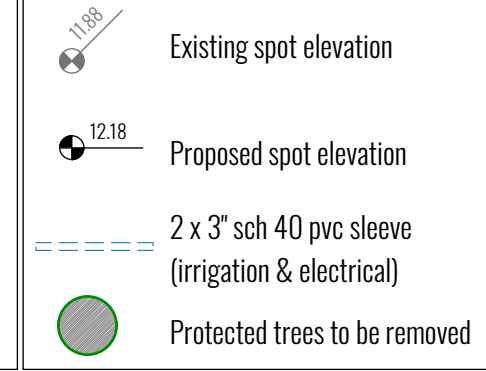
Proposed Plant Schedule

Buxus hybrid 'Green Velvet'	Green Velvet Boxwood	1 gal	11
Carex dolichostachya 'Kaga Nishiki'	Gold Fountains Sedge	1 gal	5
Leptinella squalida 'Platts Black'	Brass buttons	4" pot	50
Malus spp. Dwarf	Dwarf Apple tree	10 gal	3
Osmanthus fragrans	Fragrant Tea Olive	5 gal	5
Ophiopogon japonicus 'Nana'	Dwarf Mondo Grass	4" pot	10
Ophiopogon planiscapus 'Nigrescens'	Black Mondo Grass	4" pot	5
Polystichum setiferum	Soft-Shield Fern	1 gal	3
Primula japonica	Candelabra Primrose	1 gal	8
Prunus domestica	Plum species	7 gal	1
Quercus ilex	Holly Oak	10 gal	10
Rosa odorata	Hybrid tea rose	3 gal	3
Sedum spp.	Sedums	4" pot	30
Thymus pseudolanuginosus	Woolly thyme	4" pot	60

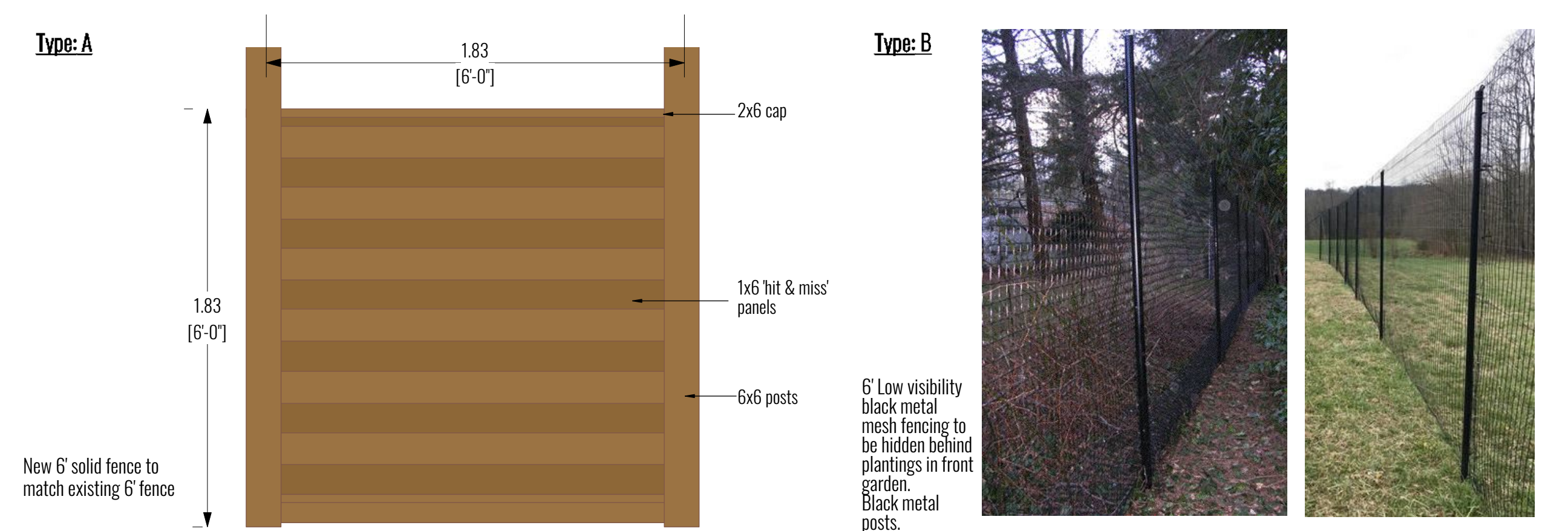
Ribbon driveways with paver surface. A mix of river rock and groundcover plantings between strips. Plant species include Thymus pseudolanuginosus, Leptinella and sedum species.



- NOTES:
1) Drawing is for concept layout planning for Development Permit submission only, not for construction.
2) Automatic irrigation system to be included in landscape installation. Irrigation System installed to current IABC Standards, by certified installers.
3) Plant material and installation to conform to the current edition of the Canadian Landscape Standard.
4) All dimensions are in meters unless otherwise noted.
5) Refer to Architectural Site Plan for site notes and dimensions not listed on this drawing.



Proposed Fencing



Protected Site Trees

Botanical Name	Common Name	DBH (cm)	Status
Aesculus hippocastanum	Horse Chestnut tree	50	retain
Malus spp	Apple tree	78	remove
Pyrus spp	Pear tree	60	remove



Talbot Mackenzie & Associates

Consulting Arborists

1344 Thurlow Road, Victoria

Construction Impact Assessment & Tree Preservation Plan

Prepared For: Elisabeth Westlake
1344 Thurlow Road
Victoria, BC V8S 1L6

Prepared By: Talbot, Mackenzie & Associates
Graham Mackenzie
ISA Certified # PN-0428A
TRAQ – Qualified

Date of Issuance: December 17, 2019
Amended May 25, 2020
Amended November 12, 2020
Amended September 24, 2021

Box 48153 RPO - Uptown Victoria, BC V8Z 7H6
Ph: (250) 479-8733
Fax: (250) 479-7050
Email: tmtreehelp@gmail.com



Talbot Mackenzie & Associates

Consulting Arborists

Jobsite Property: 1344 Thurlow Road, Victoria, BC

Date of Site Visits: November 28, 2019, July 16, 2021

Site Conditions: No ongoing construction activity.

Summary: There are two bylaw protected fruit trees on the property, one of which will require removal to accommodate the proposed construction activity. There is one bylaw protected fruit tree on the neighbour's property that although the majority of the critical root zone can likely be preserved, it will require significant pruning to accommodate the proposed new house at the front of the property. The tree has been pruned drastically in the past, resulting in most of the canopy extending onto the subject property, we do not believe that any limbs larger than 10 cm diameter will require pruning to accommodate the construction activity. It should be possible to minimize any potential impacts on the remaining trees on the property, the trees on the neighbouring property and municipal boulevard by following the recommendations within this report. As part of the proposal existing trees are going to be transplanted and new trees and shrubs are to be planted as shown in the attached landscape plan.

Scope of Assignment:

- Inventory the existing bylaw protected trees and any trees on municipal or neighbouring properties that could potentially be impacted by construction or that are within three metres of the property line
- Review the proposal to demolish the existing house, subdivide the property, construct two new residences and upgrade and install new services.
- Comment on how construction activity may impact existing trees
- Prepare a tree retention and construction damage mitigation plan for those trees deemed suitable to retain given the proposed impacts

Methodology:

- We visually examined the trees on the property and prepared an inventory in the attached Tree Resource Spreadsheet.
- Each by-law protected tree was identified using a numeric metal tag attached to its lower trunk. Municipal trees and neighbours' trees were not tagged.
- Information such as tree species, DBH (1.4m), crown spread, critical root zone (CRZ), health, structure, and relative tolerance to construction impacts were included in the inventory.
- The conclusions reached were based on the information provided within the plans provided by Knot in a Box Design Inc.

- A Tree Management Plan was created using the Landscape Plan provided.

Limitations:

- No exploratory excavations have been conducted and thus the conclusions reached are based solely on critical root zone calculations and our best judgement using our experience and expertise. The location, size and density of roots are often difficult to predict without exploratory excavations and therefore the impacts to the trees may be more or less severe than we anticipate.

Summary of Tree Resource: There are two bylaw protected fruit trees on the property, one of which 759 will require removal to accommodate the proposed construction activity. It should be possible to minimize any potential impacts to the remaining trees on the property, trees on the neighbouring property and municipal boulevard by following the recommendations within this report. As part of the proposal two non bylaw protected trees are going to be transplanted and new trees are to be planted along with the additional landscape plantings shown in the attached landscape plan.

Trees to be Removed

The following bylaw protected trees will require removal due to construction related impacts: Pear tree 759.

Potential Impacts on Trees to be Retained and Mitigation Measures

- **Arborist Supervision:** All excavation occurring within the critical root zones of protected trees or neighbours trees should be completed under supervision by the project arborist. This includes (but is not limited to) the following activities within CRZs:
 - Excavation for the house on the proposed front lot, which will be close to existing trees on the neighbouring property Nt1 – Nt3. Efforts should be made to minimize any over excavation in this area.
 - Installation of temporary driveway if required within the critical root zone of tree 758.
 - Any proposed excavation for services or driveway preparation within the critical root zone of apple tree 758.
 - Any proposed excavation within the critical root zone of bylaw protected horse chestnut Nt6
- **Pruning Roots:** Any severed roots must be pruned back to sound tissue to reduce wound surface area and encourage rapid compartmentalization of the wound. Backfilling the excavated area around the roots should be done as soon as possible to keep the roots moist and

aid in root regeneration. Exposed roots should be kept moist until the area is backfilled, especially if excavation occurs during a period of drought. This can be accomplished in a number of ways, including wrapping the roots in burlap or installing a root curtain of wire mesh lined with burlap, and keeping the area moist throughout the construction process.

- **Barrier Fencing:** The areas surrounding the trees to be retained should be isolated from the construction activity by erecting protective barrier fencing. Where possible, the fencing should be erected at the perimeter of the critical root zones.

The barrier fencing must be a minimum of 4 feet in height, of solid frame construction that is attached to wooden or metal posts. A solid board or rail must run between the posts at the top and the bottom of the fencing. This solid frame can then be covered with plywood, or flexible snow fencing. The fencing must be erected prior to the start of any construction activity on site (i.e. demolition, excavation, construction), and remain in place through completion of the project. Signs should be posted around the protection zone to declare it off limits to all construction related activity. The project arborist must be consulted before this fencing is removed or moved for any purpose.

- **Minimizing Soil Compaction:** In areas where construction traffic must encroach into the critical root zones of trees to be retained, efforts must be made to reduce soil compaction where possible by displacing the weight of machinery and foot traffic. This can be achieved by one of the following methods:

- Installing a layer of hog fuel or coarse wood chips at least 20 cm in depth and maintaining it in good condition until construction is complete.
- Placing medium weight geotextile cloth over the area to be used and installing a layer of crushed rock to a depth of 15 cm over top.
- Placing two layers of 19mm plywood.
- Placing steel plates.

- **Mulching:** Mulching can be an important proactive step in maintaining the health of trees and mitigating construction related impacts and overall stress. Mulch should be made from a natural material such as wood chips or bark pieces and be 5-8cm deep. No mulch should be touching the trunk of the tree. See “methods to avoid soil compaction” if the area is to have heavy traffic.

- **New Services:** The services shown on the plans provided are located where we anticipate there will likely be some root pruning necessary on apple tree 758. We recommend that the project arborist be onsite to prune any roots that are in direct conflict with the service installation and preserve any roots that are possible to retain. The services for the front lot are shown in the front yard where no bylaw protected trees are located.

- **Landscaping and Irrigation Systems:** The planting of new trees and shrubs should not damage the roots of retained trees. The installation of any in-ground irrigation system must take into account the critical root zones of the trees to be retained. Prior to installation, we

recommend the irrigation technician consult with the project arborist about the most suitable locations for the irrigation lines and how best to mitigate the impacts on the trees to be retained. This may require the project arborist supervise the excavations associated with installing the irrigation system. Excessive frequent irrigation and irrigation which wets the trunks of trees can have a detrimental impact on tree health and can lead to root and trunk decay.

- **Arborist Role:** It is the responsibility of the client or his/her representative to contact the project arborist for the purpose of:
 - Locating the barrier fencing
 - Reviewing the report with the project foreman or site supervisor
 - Locating work zones, where required
 - Supervising any excavation within the critical root zones of trees to be retained
 - Reviewing and advising of any pruning requirements for machine clearances

- **Review and Site Meeting:** Once the project receives approval, it is important that the project arborist meet with the principals involved in the project to review the information contained herein. It is also important that the arborist meet with the site foreman or supervisor before any site clearing, tree removal, demolition, or other construction activity occurs and to confirm the locations of the tree protection barrier fencing.

Please do not hesitate to call us at (250) 479-8733 should you have any further questions.

Thank you,



Graham Mackenzie
ISA Certified # PN-0428
TRAQ – Qualified

Talbot Mackenzie & Associates
ISA Certified Consulting Arborists

Encl. 1-page tree resource spreadsheet, 1-page Tree Management Plan, 1-page barrier fencing specifications, 2-page tree resource spreadsheet methodology and definitions

Disclosure Statement

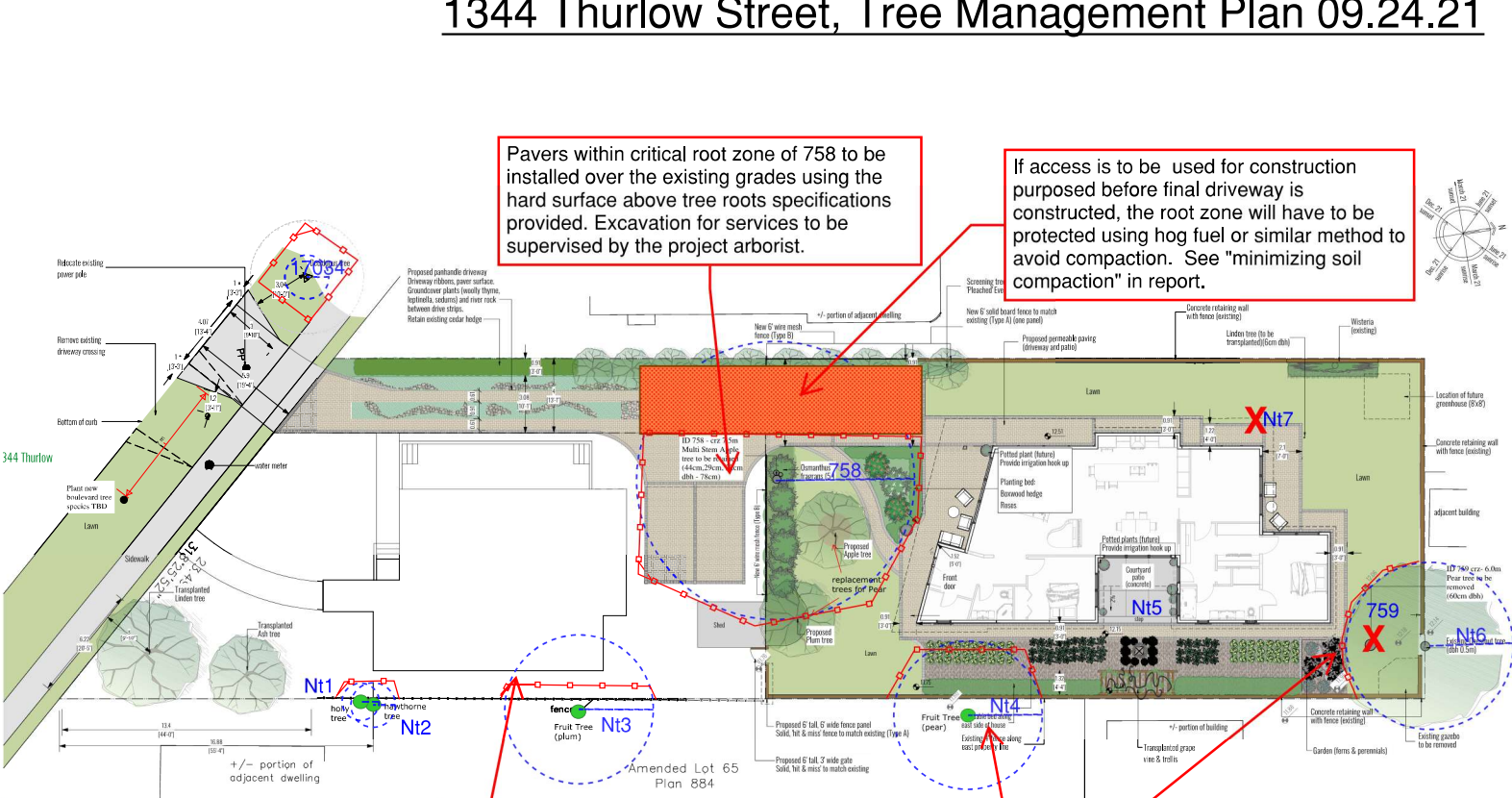
The tree inventory attached to the Tree Preservation Plan can be characterized as a limited visual assessment from the ground and should not be interpreted as a “risk assessment” of the trees included.

Arborists are professionals who examine trees and use their training, knowledge and experience to recommend techniques and procedures that will improve their health and structure or to mitigate associated risks.

Trees are living organisms, whose health and structure change, and are influenced by age, continued growth, climate, weather conditions, and insect and disease pathogens. Indicators of structural weakness and disease are often hidden within the tree structure or beneath the ground. It is not possible for an Arborist to identify every flaw or condition that could result in failure or can he/she guarantee that the tree will remain healthy and free of risk.

Remedial care and mitigation measures recommended are based on the visible and detectable indicators present at the time of the examination and cannot be guaranteed to alleviate all symptoms or to mitigate all risk posed.

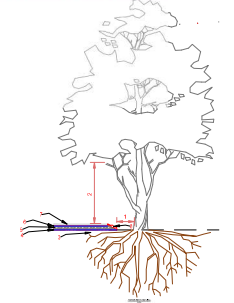
1344 Thurlow Street, Tree Management Plan 09.24.21



Legend

- Tree to be retained CRZ radius (m) with tag #
- Proposed barrier fencing
- Tree to be removed
- Temporary access for construction using hog fuel or similar.

HARD SURFACE ABOVE TREE ROOTS DETAIL



HARD SURFACE ABOVE TREE ROOTS NOTES

1. Minimum CRZ radius shall be 1.5m for trees with a DBH of 10cm or less and 2.0m for trees with a DBH of 10cm or more.
2. Retain any existing permeable pavement within the CRZ of trees to be retained. Replace with permeable pavement if necessary.
3. Excavate the CRZ of trees to be retained to a minimum depth of 150mm below the existing ground level. Excavate and backfill with permeable pavement to a minimum depth of 150mm below the existing ground level.
4. Install a 150mm thick layer of permeable pavement over the CRZ of trees to be retained.
5. Install a 150mm thick layer of permeable pavement over the CRZ of trees to be retained.
6. Install a 150mm thick layer of permeable pavement over the CRZ of trees to be retained.
7. The CRZ of trees to be retained shall be marked with a red 'X' on the ground.
8. All signs, change orders and other documents shall be signed by the Arborist or the Project Manager.

Arborist to supervise excavation within critical root zone of tree N13. any roots encountered to be pruned to sound tissue to encourage new root growth. Clearance pruning to be limited to limbs under 10 cm in diameter.

Arborist to supervise any excavation within critical root zones of trees to be retained.

TREE PROTECTION NOTES

Tree protection barrier: The areas surrounding the trees to be retained should be isolated from the construction activity by erecting protective barrier fencing. Where possible, the fencing should be erected at the perimeter of the critical root zone. The barrier fencing to be erected must be a minimum of 1200mm in height, of solid frame construction that is attached to wooden or metal posts. A solid board or rail must run between the posts at the top and the bottom of the fencing. This solid frame can then be covered with flexible snow fencing. The fencing must be erected prior to the start of any construction activity on site (i.e. demolition, excavation, construction), and remain in place through completion of the project. Signs should be posted around the protection zone to declare it off limits to all construction related activity. The project arborist must be consulted before this fencing is removed or moved for any purpose.

Arborist supervision: All excavation occurring within the critical root zones of protected trees must be completed under the supervision of the project arborist. Any severed or severely damaged roots must be pruned back to sound tissue to reduce wound surface area and encourage rapid compartmentalization of the wound.

Demolition: The demolition of the existing houses, driveways, and any services that must be removed or abandoned must take the critical root zone of the trees to be retained into account. If any excavation or machine access is required within the critical root zones of trees to be retained, it must be completed under the supervision of the project arborist. If temporarily removed for demolition, barrier fencing must be erected immediately after the supervised demolition.

Methods to avoid soil compaction: In areas where construction traffic must encroach into the critical root zones of trees to be retained, efforts must be made to reduce soil compaction where possible by displacing the weight of machinery and foot traffic. This can be achieved by one of the following methods:

- Installing a layer of hog fuel or coarse wood chips at least 20cm in depth and maintaining it in good condition until construction is complete.
- Placing medium weight geotextile cloth over the area to be used and installing a layer of crushed rock to a depth of 15cm over top.
- Placing two layers of 19mm plywood.
- Placing steel plates.

Mulching: Mulching can be an important proactive step in maintaining the health of trees and mitigating construction related impacts and overall stress. Mulch should be made from a natural material such as wood chips or bark pieces and be 5-8cm deep. No mulch should be touching the trunk of the tree. See "methods to avoid soil compaction" if the area is to have heavy traffic.

Pruning: We recommend that any pruning of bylaw-protected trees be performed to ANSI A300 standards and Best Management Practices.

Paved surfaces above tree roots: Where paved areas cannot avoid encroachment within critical root zones of trees to be retained, construction techniques, such as floating permeable paving, may be required. The "paved surfaces above tree roots" detail above offers a compromise to full depth excavation (which could impact the health or structural stability of the tree). The objective is to avoid root loss and to instead raise the paved surface above the existing grade (the amount depending on how close roots are to the surface and the depth of the paving material and base layers). Final grading plans should take this potential change into account. This may also result in soils which are high in organic content being left intact below the paved area. To allow water to drain into the root systems below, we also recommend that the surface

be made of a permeable material (instead of conventional asphalt or concrete) such as permeable asphalt, paving stones, or other porous paving materials and designs such as those utilized by Grasspave, Gravelpave, Grasscrete and open-grid systems.

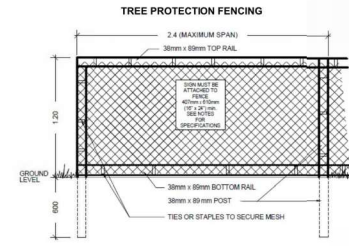
Blasting and rock removal: Care must be taken to ensure that the area of blasting does not extend beyond the necessary footprints and into the critical root zones of surrounding trees. The use of small low-concussion charges and multiple small charges designed to pre-shear the rock face will reduce fracturing, ground vibrations and overall impact to the surrounding environment. Only explosives of low phototoxicity and techniques that minimize tree damage should be used. Provisions must be made to ensure that blasted rock and debris are stored away from the critical root zones of trees.

Scaffolding: This assessment has not included impacts from potential scaffolding including canopy clearance pruning requirements. If scaffolding is necessary and this will require clearance pruning of retained trees, the project arborist should be consulted. Depending on the extent of pruning required, the project arborist may recommend that alternatives to full scaffolding be considered such as hydraulic lifts, ladders or platforms. Methods to avoid soil compaction may also be recommended (see "Minimizing Soil Compaction" section).

Landscaping and irrigation systems: The planting of new trees and shrubs should not damage the roots of retained trees. The installation of any in-ground irrigation system must take into account the critical root zones of the trees to be retained. Prior to installation, we recommend the irrigation technical consult with the project arborist about the most suitable locations for the irrigation lines and how best to mitigate the impacts on the trees to be retained. This may require the project arborist supervise the excavations associated with installing the irrigation system. Excessive frequent irrigation and irrigation which wets the trunks of trees can have a detrimental impact on the tree health and can lead to root and trunk decay.

Arborist's role: It is the responsibility of the client or his/her representative to contact the project arborist for the purpose of:

- Locating the barrier fencing.
- Reviewing the report with the project foreman or site supervisor.
- Locating work zones and machine access corridors where required.
- Supervising excavation for any areas within the critical root zones of trees to be retained including any proposed retaining wall footings and review any proposed fill areas near trees to be retained.



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**Tree Resource Spreadsheet
1344 Thurlow Road**

Tree ID	Common Name	Latin Name	DBH (cm) ~ approximate	Crown Spread (diameter in metres)	CRZ (radius in metres)	Relative Tolerance	Health	Structure	Remarks and Recommendations	Retention Status
n.t.1	Holly	<i>Ilex aquifolium</i>	9.0	3.0	1.0	Good	Good	Fair	Located on neighbouring property	Retain
n.t.2	English Hawthorn	<i>Crataegus laevigata</i>	12.0	3.0	1.2	Good	Fair	Fair	Located on neighbouring property	Retain
n.t.3	Plum	<i>Prunus species</i>	15, 25, 15	3.0	4.0	Good	Fair	Poor	Located on neighbouring property, heavily topped	Retain
n.t.4	Pear	<i>Pyrus species</i>	25, 15, 15	5.0	4.0	Moderate	Fair	Fair	Located on neighbouring property	Retain
n.t.5	Mullberry	<i>Morus species</i>	15.0	4.0	2.0	Moderate	Fair	Fair	heavy lean, owner will try and transplant	to be transplanted
759	Pear	<i>Pyrus species</i>	42, 30	6.0	6.0	Moderate	Fair	fair	Ganoderma on trunk, 1 large stem previously removed.	X
n.t.6	Horse chestnut	<i>Aesculus hippocastanum</i>	45.0	8.0	4.5	Good	Good	Fair	Co-dominant tree, located mostly on neighbours property, but possibly shared.	Retain
n.t.7	Apple	<i>Malus species</i>	29.5	4.0	3.0	Good	Poor	Poor	Previously topped, very poor health and structure.	X
758	Apple	<i>Malus species</i>	43, 28, 25	9.0	7.5	Good	Fair	fair	Mature tree, high crown	Retain
17034	Persian Ironwood	<i>Parrotia persia</i>	8.0	2.0	1.0	Moderate	Good	fair	Boulevard tree no impacts anticipated.	Retain

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Tree Resource Spreadsheet Methodology and Definitions

Tag: Tree identification number on a metal tag attached to tree with nail or wire, generally at eye level. Trees on municipal or neighboring properties are not tagged.

NT: No tag due to inaccessibility or ownership by municipality or neighbour.

DBH: Diameter at breast height – diameter of trunk, measured in centimetres at 1.4m above ground level. For trees on a slope, it is taken at the average point between the high and low side of the slope.

* Measured over ivy

~ Approximate due to inaccessibility or on neighbouring property

Crown Spread: Indicates the diameter of the crown spread measured in metres to the dripline of the longest limbs.

Relative Tolerance Rating: Relative tolerance of the tree species to construction related impacts such as root pruning, crown pruning, soil compaction, hydrology changes, grade changes, and other soil disturbance. This rating does not take into account individual tree characteristics, such as health and vigour. Three ratings are assigned based on our knowledge and experience with the tree species: Poor (P), Moderate (M) or Good (G).

Critical Root Zone: A calculated radial measurement in metres from the trunk of the tree. It is the optimal size of tree protection zone and is calculated by multiplying the DBH of the tree by 10, 12 or 15 depending on the tree's Relative Tolerance Rating. This methodology is based on the methodology used by Nelda Matheny and James R. Clark in their book "Trees and Development: A Technical Guide to Preservation of Trees During Land Development."

- 15 x DBH = Poor Tolerance of Construction
- 12 x DBH = Moderate
- 10 x DBH = Good

To calculate the critical root zone, the DBH of multiple stems is considered the sum of 100% of the diameter of the largest stem and 60% of the diameter of the next two largest stems. It should be noted that these measures are solely mathematical calculations that do not consider factors such as restricted root growth, limited soil volumes, age, crown spread, health, or structure (such as a lean).

Health Condition:

- Poor - significant signs of visible stress and/or decline that threaten the long-term survival of the specimen
- Fair - signs of stress
- Good - no visible signs of significant stress and/or only minor aesthetic issues

Structural Condition:

- Poor - Structural defects that have been in place for a long period of time to the point that mitigation measures are limited
- Fair - Structural concerns that are possible to mitigate through pruning
- Good - No visible or only minor structural flaws that require no to very little pruning

Retention Status:

- X - Not possible to retain given proposed construction plans
- Retain - It is possible to retain this tree in the long-term given the proposed plans and information available. This is assuming our **recommended mitigation measures are followed**
- Retain * - See report for more information regarding potential impacts
- TBD (To Be Determined) - The impacts on the tree could be significant. However, in the absence of exploratory excavations and in an effort to retain as many trees as possible, we recommend that the final determination be made by the supervising project arborist at the time of excavation. The tree might be possible to retain depending on the location of roots and the resulting impacts, but concerned parties should be aware that the tree may require removal.
- NS - Not suitable to retain due to health or structural concerns