

# Ned Nelson Architect

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11773 Sunrise Drive Northeast  
Bainbridge Island, Washington 98110  
425.444.6782

January 20, 2023

TO: City of Mercer Island

RE: permit #1905-249 revisions submittal

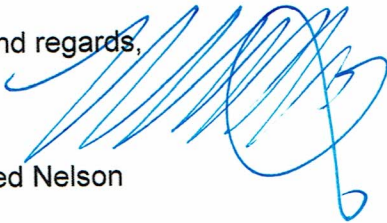
Narrative: phase 1 permit issued. Footprint of garage has not changed. Revisions include adding a small bathroom within the exterior walls of the approved garage, adding pin pile support and grade beam, adding ledger support for roof trusses, and deleting wood deck around new pool, and substituting lawn. Also there are minor field revisions to sewer and storm drainage due to site conflicts.

A 1-1/4" water meter will be added as part of the phase two of this project, and the entire project will be fire protected, including the garage in phase 1. The cover sheet for phase 1 shows that this meter be installed during the phase 1 portion. We request that the meter requirement be moved to phase 2.

Please don't hesitate to call with any questions.

Kind regards,

Ned Nelson



# CITY OF MERCER ISLAND

## COMMUNITY PLANNING & DEVELOPMENT

9611 SE 36TH STREET | MERCER ISLAND, WA 98040

PHONE: 206.275.7605 | [www.mercergov.org](http://www.mercergov.org)



## REVISION/DEFERRED SUBMITTAL FORM

Site Address 8922 SE 62<sup>ND</sup> ST Permit Number 1905-249

### CONTACT INFORMATION

Name: NED NELSON  
 Phone Number: 425 444 6792  
 Email Address: nednelson@msn.com

- Description of revision:
1. Provide pin pile support/grade beam for garage foundation
  2. Provide ledger support for trusses
  3. Change exterior wall from 2x8 to 2x6.
  4. Add small pool bath to interior of garage
  5. Relocate utility piping based on field conflicts
  6. Replace proposed wood deck surrounding pool with lawn.

Check all boxes that apply

<input checked="" type="checkbox"/>	This is a revision to an already issued permit.		
<input type="checkbox"/>	This is a revision or modification to a plan currently in review.		
<input type="checkbox"/>	This is a deferred submittal to an already issued permit.		
<input type="checkbox"/>	The Proposed Change Increases or Decreases the Project Valuation.		
	Updated Valuation is Now: <u>\$70,000 ESTIMATE LABOR/MATL</u>		
<input type="checkbox"/>	Changes to Building Footprint*	<input type="checkbox"/>	Trees Retained/Removed
<input type="checkbox"/>	Add/Reduce Floor Area*	<input type="checkbox"/>	Changes to Tree Protection
<input checked="" type="checkbox"/>	Framing Changes	<input type="checkbox"/>	Site Plan Changes*
<input checked="" type="checkbox"/>	Structural Changes	<input checked="" type="checkbox"/>	Changes to Hardscape*
<input type="checkbox"/>	Other	<input checked="" type="checkbox"/>	Stormwater Revision
		<input checked="" type="checkbox"/>	Sewer Revision
		<input checked="" type="checkbox"/>	Water Revision
		<input type="checkbox"/>	Rockery/Retaining Wall

\* include updated Site Development Worksheet w/ submittal

### Instructions:

1. Consider how the revision impacts the architectural, structural and civil plan sets.
  - a. Updated all affected plan sheets and cloud changes.
  - b. Merge updated plan sheets into a single pdf file.
  - c. Bookmark each sheet with sheet number and description. I.e: A1 – Site Plan
2. On page two of this form, list each sheet number that has changes and briefly describe those changes. Provide additional sheets if necessary.
3. Review associated City Forms and update as needed. I.e: an updated Site Development Worksheet or Residential Fire Area Square Footage Calculation may be required.
4. Upload this form along with the revised plans, and any relevant forms or supplemental documents to the File Transfer Site. See instructions for the upload on page two.

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## FTP SITE INSTRUCTIONS

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- A. Please upload to the File Transfer Site <https://sftp.mercergov.org> (user name: guest, password: eplan)
- B. Click on the inbox to open
- C. Create a new folder (use your permit number or project address as the folder name)
- D. Click on your new folder to open
- E. Upload the files into the new folder

Indicate each sheet number that has changes and briefly describe changes that were made:

- Cover sheet: request 1.25" water meter be part of phase 2 permit #2202-128 under current review
- Sheet A1: scope of work/delete proposed wood deck, replace with lawn
- Sheet A2: utility locations revised to match C2 / section C/A2 shows lawn revision
- Sheet A2.2: hardscape calculation/ delete proposed wood deck, replace with lawn
- Sheet A3: add small bathroom / revise foundation to grade beam and pin pile per Geotech field review / add ledger support for trusses
- Sheet A4: future opening to phase two shown on west elevation
- Sheet A5: sections show added ledger and grade beam / interior bath section added
- Sheet A6: delete sonotube deck support, deck framing
- Sheet C2: storm and sewer lines relocated

### ~~NARRATIVE~~

Revision submittal form

Residential Water Meter Sizing Worksheet

Grade beam detail with structural stamp

Ledger support for trusses with structural stamp

~~SITE DEVELOPMENT WORKSHEET~~

~~FIRE FORM~~

# CITY OF MERCER ISLAND



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 Inspection Requests: Online: [www.mybuildingpermit.com](http://www.mybuildingpermit.com) VM: 206.275.7730

### Residential Water Meter Sizing Worksheet

Owner's Name: GREG / JENNIFER HEADRICK  
 Site Address: 8822 SE 62ND ST.

Main Permit #  
 Water Permit #

Fixture Type	Number of Fixtures		Total Fixtures	Fixture Units	Total Units
	New <small>(For replacement, list as existing)</small>	Existing			
Bathtub or Combination Bath/Shower			0	x 4	= 0
3/4" Bathtub Fill Valve (Soaker Tubs)			0	x 10	= 0
Shower (per head)	1		0	x 2	= 0
Sink		4	0	x 1	= 0
Toilet		3	0	x 2.5	= 0
Bidet			0	x 1	= 0
Kitchen Sink		1	0	x 1.5	= 0
Dishwasher			0	x 1	= 0
Bar Sinks & Ice Makers		1	0	x 4	= 0
Clothes Washer		1	0	x 1.5	= 0
Laundry Sink			0	x 0.5	= 0
Drinking Fountain			0	x 2.5	= 0
Hose Bibs (first)		2	0	x 1	= 0
Each additional			0	x 1	= 0
Lawn Sprinkler Heads-Max # In Use at One Time			0	x 0	= 0.00
Other:					
				<b>TOTAL UNITS</b>	<b>= 0</b>

<i>For Official Use Only</i>	
<b>REQUIRED SERVICE SIZE</b>	
Requirements are based per 2018 U.P.C., Chapter 6, Table 610.4	
Existing Meter Size:	Meter Number:
Upsize: <input type="checkbox"/> Yes <input type="checkbox"/> No If yes the code requires:	<input type="checkbox"/> 5/8" <input type="checkbox"/> 3/4" <input type="checkbox"/> 1" <input type="checkbox"/> 1 1/2" <input type="checkbox"/> 2" <input type="checkbox"/> Larger:
Map Page & Hydrant #:	Required Supply Line Size:
Distance from meter to farthest Fixture outlet (in feet):	Required Service Line Size: (from water main to meter)
Known Static Pressure: (Otherwise use 65lb/in)	REQUIRED METER SIZE:
Height difference (in feet):	* Pressure Reducing valve required: <input type="checkbox"/> Yes <input type="checkbox"/> No
Minus if Building Higher - x .5	
Building Design P.S.I.	

\*Pressure Reducing valve is required if the known water pressure is in excess of 80 psi.

# CITY OF MERCER ISLAND

Fire Marshal's Office

3030 78<sup>th</sup> Ave SE | MERCER ISLAND, WA 98040

PHONE: 206.275.7966 | [www.mercerisland.gov](http://www.mercerisland.gov)



REV. 1-1-

## 2023 FIRE AREA AND VALUATION FORM

Project Type:	<input type="checkbox"/> New Single Family	<input type="checkbox"/> Alteration	<input checked="" type="checkbox"/> Addition	<input type="checkbox"/> ADU/DADU
Project Address:	8822 62 <sup>nd</sup> ST MI (792 S.F.) <del>DETACHED GARAGE</del>			
Contact Name:	NED NELSON		Phone No.	425-444-6782
Owner Name:	GREG / JENNIFER HEADRICK			

Gross floor area shall be that area in square feet under the roof line of the structure including all usable area whether heated or not, above and below grade. This includes the garage and any unheated storage rooms or attachments including covered decks. If it is *usable space*, then it is included in the **Gross** square footage calculation. *This is not the same calculation for floor area ratio.*

For all construction types, add all the interior wall measurements of each floor and the basement and total that figure.

### CONSTRUCTION VALUATION TYPE (verified with permit application)

<b>Good</b> \$197.10 sq/ft	<b>*Very Good (most common)</b> \$251.85 sq/ft	<b>Very Good Custom</b> \$306.59 sq/ft	<b>Luxury Custom</b> \$416.09 sq/ft
Select One:		Select One Here	* Hit enter when done

### NEW CONSTRUCTION (ONLY FOR NEW CONSTRUCTION- otherwise "N/A")

<input type="checkbox"/> N/A	<table border="1"> <thead> <tr> <th>Measurements</th> <th>Square Footage</th> </tr> </thead> <tbody> <tr><td>Main Floor interior</td><td></td></tr> <tr><td>Lower Floor Interior</td><td></td></tr> <tr><td>Other Floors interior</td><td></td></tr> <tr><td>Basement interior</td><td></td></tr> <tr><td>Attached Garage interior</td><td></td></tr> <tr><td>Covered Decks interior</td><td></td></tr> <tr><td>Other interior</td><td></td></tr> <tr> <td><b>TOTALS</b></td> <td><b>0</b></td> </tr> </tbody> </table>	Measurements	Square Footage	Main Floor interior		Lower Floor Interior		Other Floors interior		Basement interior		Attached Garage interior		Covered Decks interior		Other interior		<b>TOTALS</b>	<b>0</b>
Measurements	Square Footage																		
Main Floor interior																			
Lower Floor Interior																			
Other Floors interior																			
Basement interior																			
Attached Garage interior																			
Covered Decks interior																			
Other interior																			
<b>TOTALS</b>	<b>0</b>																		

# ADDITION or ALTERATION

Does this house have an existing Fire Sprinkler System? Yes  No  / NFPA 72 Alarm System Yes  No

Current Square Footage	Existing Square Footage	Standardized Value	Addition/Final Square Footage
Main Floor interior		x 0 sq/ft 0	
Lower Floor Interior		x 0 sq/ft 0	
Other Floors interior		x 0 sq/ft 0	
Basement interior		x 0 sq/ft 0	
Attached Garage interior		x 43.31 sq/ft 0	
Covered Decks interior		x 43.31 sq/ft 0	
Other interior		x 0 sq/ft 0	
<b>TOTALS</b>	<b>0</b>	<b>0</b>	<b>0</b>

SCOPE THIS PERMIT- DETACHED GARAGE 120' FROM EXISTING HOME + 50,000.  
 Construction Cost \$ \_\_\_\_\_

## Official Use

Verified Cost \$ \_\_\_\_\_

Higher of Verified or Cost \$ \_\_\_\_\_ / Value 0 \_\_\_\_\_ = % 0.00%

Valuation Ratio

Exempt structure - detached garage or similar structure less than 750 sf.

Less than 10% (fire review not required)

10 - 49% (monitored Household Fire Alarm System per NFPA 72 Chapter 29, if fire deficiency)

50% or greater (substantial alteration)

### 2018 INT'L FIRE CODE

**901.4.4 Additional Fire Protection Systems.** In occupancies of a hazardous nature, where special hazards exist in addition to the normal hazards of the occupancy, or where the fire code official determines that access for fire apparatus is unduly difficult, the fire code official shall have the authority to require additional safeguards. Such safeguards include, but shall not be limited to, the following:

- Automatic fire detection systems,
- Fire alarm systems,
- Automatic fire-extinguishing systems,
- Standpipe systems, or
- Portable or fixed extinguishers.

Fire protection equipment required under this section shall be installed in

accordance with this code and the applicable referenced standards.

### 2018 INT'L RESIDENTIAL CODE

**AV107.1 Fire Sprinklers.** An approved automatic fire sprinkler system shall be installed in new one-family and two-family dwellings and townhouses in accordance with Appendix U.

**AV107.2 Fire Sprinklers in Existing Buildings.** An approved automatic fire sprinkler system shall be installed throughout the residence in existing one-family and two-family dwellings (and townhouses) in accordance with Appendix U when undergoing a remodel or addition when the construction value of all additions, alterations or repairs performed within

a sixty-month period exceeds 50% of the value of the residence. Value shall be determined by a method approved by the fire code official.

**AV107.3 Household Fire Alarm System.** An approved household fire alarm system shall be installed throughout the residence in existing one-family and two-family dwellings (and townhouses) that have deficiencies in fire flow, hydrants or access. This system shall be installed in accordance with NFPA 72 Chapter 29 when undergoing a remodel or addition when the construction value of all additions, alterations or repairs performed within a sixty-month period is within 10% to 50% of the value of the residence. Value shall be determined by a method approved by the fire code official.

# CITY OF MERCER ISLAND

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SEE P. 2

REV. 1-20-23

### SITE DEVELOPMENT INFORMATION

Worksheet for single family residential development

REVISED 5/15/2020

#### PROJECT INFORMATION

Permit Number: \_\_\_\_\_ Parcel Number: 865050-0040  
 Site Address: 2922 62<sup>ND</sup> ST. Phone Number: 206-275-7600  
 Owner Name: GREG & JENNIFER HEADRICK Date: 5.28.2019  
 Signature & phone number of individual who completed this worksheet:  
 \_\_\_\_\_ 425-444-6782  
 Signature NED NELSON Phone Number

#### GENERAL INFORMATION

Will any large trees be removed as a result of this development activity? Yes  No   
*Large tree- trees with diameter of greater than or equal to 10 inches.*  
 Do you have an Accessory Dwelling Unit? New ADU  Existing ADU  No   
 Will you be adding air conditioning to the proposed development? Yes  No

*This is a worksheet and is not a substitute for the Mercer Island Development Regulations. Please consult the Mercer Island City Code. The City may require additional information to be supplies to document compliance with regulations.*

#### LOT SLOPE

According to the Mercer Island City Code, slope is a measurement of the average incline of the lot or other piece of land calculated by subtracting the lowest elevation of the property from the highest elevation, and dividing the resulting number by the shortest horizontal distance between these two points. The resulting product is multiplied by 100.

#### LOT SLOPE CALCULATIONS

Highest Elevation Point of Lot: \_\_\_\_\_ 312.9 Feet  
 Lowest Elevation Point of Lot: \_\_\_\_\_ 298.4 Feet  
 Elevation Difference: \_\_\_\_\_ 14.5 Feet  
 Horizontal Distance Between High and Low Points: \_\_\_\_\_ 208.5 Feet  
 Lot Slope\* \_\_\_\_\_ 6.95 %

\*Lot slope is the elevation difference divided by horizontal distance multiplied by 100.

**LOT COVERAGE**

For single family residential development, "lot coverage" is the area of a lot that may be covered by a combination of the buildings and vehicular driving surfaces. The maximum lot coverage for a specific lot is based upon the lots slope (see above). The area of the lot that cannot be used for lot coverage is "required landscaping area"; the landscaping area is typically improved with either hardscape (see below) or softscape. *Please note: Lot coverage is not the same as impervious surface calculations used for drainage review.*

Lot Slope	Maximum Lot Coverage (House, driving surfaces, and accessory buildings)	Required Landscaping Area
Less than 15%	40%	60%
15% to less than 30%	35%	65%
30% to 50%	30%	70%
Greater than 50% slope	20%	80%

**LOT COVERAGE CALCULATIONS**

A. Allowed Lot Coverage	<u>40</u>	% of Lot
B. Allowed Lot Coverage Area	<u>10,572</u>	Square Feet
C. Gross Lot Area	<u>27,481</u>	Square Feet
D. Net Lot Area	<u>26,431</u>	Square Feet
E. Main Structure Roof Area	<u>3,170</u>	Square Feet
F. Accessory Building Roof Area	REV. <u>533</u>	Square Feet
G. Vehicular Use (driveway, access easements, parking)	REV. <u>3,746</u>	Square Feet
H. Total Existing Lot Coverage Area	REV. <u>7,419</u>	Square Feet
I. (Total Lot Coverage Area Removed)	REV. <u>1,421</u>	Square Feet
J. Total New Lot Coverage Area	REV. <u>1,839</u>	Square Feet
K. Total Project Lot Coverage Area = (H-I) + J	REV. <u>7,867</u>	Square Feet
L. Proposed adjustment for single story	<u>—</u>	Square Feet
M. Proposed adjustment for flag lot	<u>—</u>	Square Feet
N. Proposed Lot Coverage = (K/D)x100	<u>29.7</u>	% of Lot

**HARDSCAPE**

For single family residential development, hardscape is the solid, hard, elements or structures that are incorporated into landscaping. The hardscape includes, but is not limited to, structures, paved areas, stairs, walkways, decks, patios, and similar constructed elements. The hardscape within the landscaping area consists of materials such as wood, stone, concrete, gravel, permeable pavements or pavers, and similar materials. Hardscape does not include solid, hard elements or structures that are covered by a minimum of two feet of soil intended for softscape (for example, a septic tank covered with at least two feet of soil and planted shrubs is not hardscape). The hardscape does not include driving surfaces or buildings.

Up to 9% of the net lot area may consist of hardscape areas. In addition, unused lot coverage may also be improved with hardscape.

What is the total square footage of all hardscape on property? REV. ~~2696~~ Square Feet

What is the total square footage of all decks on property? REV. ~~1,416~~ Square Feet

*2696 - 1760 = 936 SF \**  
*PROPOSED WOOD DECK REPLACED WITH LAWN/TOPSOIL.*



**ALLOWED ADJUSTMENTS**

A one-time reduction in the required landscaping area and an increase in the allowed maximum lot coverage is allowed if:

- A. The total reduction in required landscaping area shall not exceed 5%, and the total increase in maximum lot coverage shall not exceed 5%; and
- B. The reduction in required landscaping area is associated with:
  1. A development proposal that will result in a single-story dwelling with wheelchair accessible entry, and may also include a single-story accessory building; or
  2. A development proposal on a flag lot that, after optimizing driveway routing and minimizing driveway width, requires a driveway that is more than the 25% of the allowed lot coverage. The allowed reduction in the required landscaping area and increase in the maximum lot coverage shall not exceed 5% or the area of the driveway in excess of 25% of the lot coverage, whichever is less.

For example, a development proposal with a driveway that occupies 27% of the allowed lot coverage, may increase the total lot coverage by 2%
- C. A recorded notice on title, covenant, easement, or other documentation in a form approved by the city, shall be required. The notice on title or other documentation shall describe the basis for the reduced landscaping area and increase in lot coverage.

Does this project include a proposed adjustment?

Yes  No

**BUILDING AREA**

All building areas must be identified and labeled on the site plan. Please distinguish all new construction from existing areas on both your drawing and in the calculations you complete below.

Will you be excluding a portion of the basement floor area?

Yes  No

If yes, you must provide basement floor area calculations, with your building permit application, that show how you determined what portion of the basement will be excluded. Refer to page 5.

**BUILDING AREA CALCULATIONS**

Building Area	Existing Area	Removed Area	New/Addition Area	Total
	Sq. Ft.	Sq. Ft.	Sq. Ft.	Sq. Ft.
Upper Floor				
Main Floor	1702			1702
Gross Basement Area	REV 1642			1642
Garage/ Carport	480		792	1272
<b>Total Floor Area</b>	REV 3824			
Accessory Buildings	376	376		
Basement Area Excluded				
150% GFA Modifier*			396	396
200% GFA Modifier*				
Staircase GFA Modifier*				
<b>TOTAL Building Area</b>				

\*Enter the actual room area

\*CEILING < 12' (REV.)

4616 S.F.

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**GROSS FLOOR AREA (GFA)**

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For single family residential development, GFA is the total square footage of floor area, bounded by the exterior faces of the building(s). The GFA includes the floor area of the main building, accessory buildings, garages, attached roofed decks on the second or third story of a single family home, stair cases, etc. The GFA does not include second- or third-story uncovered decks or uncovered rooftop decks.

**Allowed GFA**

- A. R-8.4: 5,000 square feet or 40% of the lot area, whichever is less.
- B. R-9.6: 8,000 square feet or 40% of the lot area, whichever is less.
- C. R-12: 10,000 square feet or 40% of the lot area, whichever is less.
- D. R-15: 12,000 square feet or 40% of the lot area, whichever is less.
- E. All zones: Lots with a lot area of 7,500 square feet or less, the lesser of 3,000 square feet or 45% of the lot area.
- F. All zones: If an accessory dwelling unit is proposed, the 40% allowed GFA may be increased by the lesser of 5 percentile points, or the floor area of the accessory dwelling unit. Provided, this allowance shall not result in a GFA of more than 4,500 square feet or 45% of the lot area, whichever is less.

**GFA Modifiers \***

- A. The GFA calculation for a floor with a ceiling height of 12 to 16 feet, is 150% of the area of the floor.
- B. The GFA calculation for a floor with a ceiling height of more than 16 feet, is 200% of the area of the floor.
- C. The GFA calculation for a stair case shall be counted as a single floor for the first two stories accessed by the stair case. For each additional story above two stories, the stair case shall count as a single floor area.

*\*Floor plans shall identify rooms with a ceiling height of more than 12 feet and rooms with a ceiling height of more than 16 feet.*

**GROSS FLOOR AREA CALCULATIONS**

A. Lot Area	<u>27,481</u>	Square Feet
B. Allowed Gross Floor Area (refer to "Allowed GFA")	<u>8000</u>	Square Feet
C. Proposed Gross Floor Area	REV. <u>4616</u>	Square Feet

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**BUILDING HEIGHT**

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All building height measurements must be taken from existing grade or finished grade, whichever is lower. Existing grade refers to ground surface as it exists at the proposed building perimeter before grading or other alterations take place. Finished grade refers to the ground surface as it exists at the building perimeter after grading or other alterations take place.

Single family new construction and additions are limited to a maximum height of 30 ft. above the Average Building Elevation (ABE) – see section on next pages. The height is measured to the top of the structure. On the downhill side of a sloping lot, the wall façade height is also limited to a height of 30 feet measured from existing or finished grade (whichever is lower) to the top of the exterior wall facade supporting the roof framing, rafters, trusses, etc.

A topographic survey is required at permit application when the proposed building height is within 2 ft. of the allowable building height. The survey must include a statement that attests the average contour elevation within the vicinity of the building footprint to be accurate within 6 inches vertically and horizontally from actual elevations.

## BUILDING HEIGHT CALCULATIONS

- A. Average Building Elevation (ABE) calculations located on sheet #:  
 B. Allowable Building Height (ABE + 30 ft.)  
 C. Proposed Building Height (17' MAX FOR DETACHED GARAGE)  
 D. Benchmark Elevation\*  
 E. Describe Benchmark Location (must be undisturbed throughout project)  
 F. Sloping lot (Downhill side)- maximum height of top of exterior wall façade above lowest existing grade (30-ft max)  
 G. ABE and Allowable Building Height Shown on elevations plan sheet #  
 H. Topo-survey Accuracy Attested on Plan Sheet #

A 2  
 $309.73 + 30$  Feet  
 $309.73 + 16.75$  Feet  
 312.9 Feet  
 N. CORNER AT 62nd ST  
 N/A Feet  
 A 4  
 SURVEY INCLUDED

Note: survey must attest to accuracy when proposed building height is within 2 feet of the allowable building height. Please see page 7 for more information on calculating Average Building Elevation (ABE)

\*The benchmark elevation is a fixed elevation point on or off site that will not be disturbed during development activity and is used to verify the final building height.

## BASEMENT FLOOR AREA CALCULATION

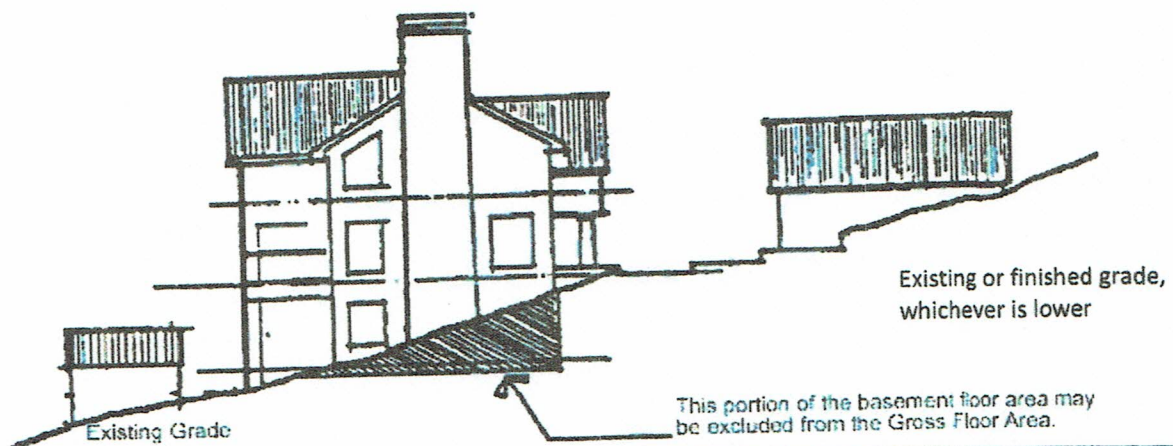
The Mercer Island Development Code allows for the portion of the basement floor area which is below grade to be excluded from the Gross Floor Area. That portion of the basement which will be excluded is calculated as shown:

Portion of Excluded Basement Floor Area = Total Basement Area x

$$\frac{\sum (\text{Wall Segment Coverage} \times \text{Wall Segment Length})}{\text{Total of all Wall Segment lengths}}$$

Where the terms are defined as follows:

- Total Basement Area:** The total amount of all basement floor area.  
**Wall Segment** The portion of an exterior wall below existing or finished grade, whichever is lower.  
**Coverage:** It is expressed as a percentage. Refer to example below.  
**Wall Segment Length:** The horizontal length of each exterior wall in feet.



## EXAMPLE OF BASEMENT FLOOR AREA CALCULATION

This example illustrates how a portion of the basement floor area may be excluded from the Gross Floor Area. In order to complete this example, the following information is needed:

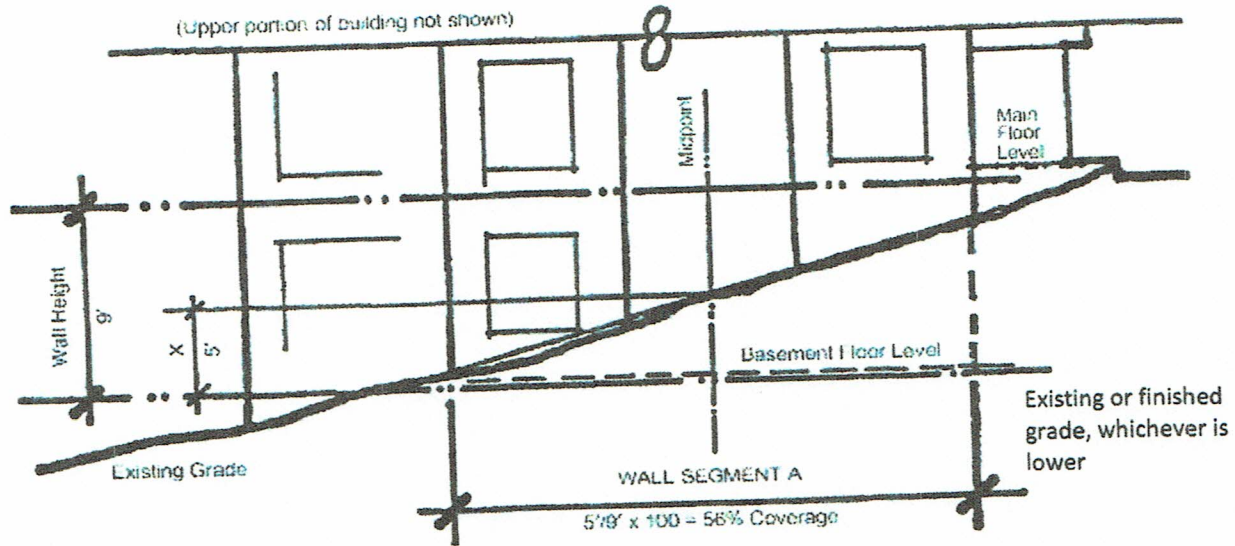
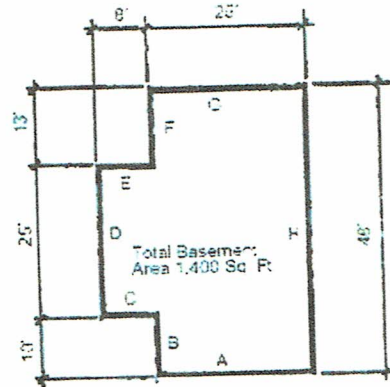
- A topographic map of the existing (e) grades and showing proposed finished (f) grades.
- Building plans showing dimensions of all exterior wall segments and floor areas.
- Building elevations showing the location of existing and finished grades in relation to basement level.

**Step One**

Determine the number and lengths of the Wall Segments.

**Step Two**

Determine the Wall Segment Coverage (in %) for each Wall Segment. In most cases this will be readily apparent, for example a downhill elevation which is entirely above existing and finished grade. In other cases, where the existing contours are complex, an averaging system shall be used. Refer to illustration.



**Step Three**

Multiply each Wall Segment Length by the percentage of each Wall Segment Coverage and add these results together. Divide that number by the sum of all Wall Segment Lengths. This calculation will result in a percentage of basement wall which is below grade. (This calculation is most easily completed by compiling a table of the information as illustrated below.)

Wall Segment	Length x	Coverage=	Result
A	25'	56%	14%
B	10'	0%	0%
B	8'	0%	0%
D	25'	0%	0%
E	8'	0%	0%
F	13'	0%	0%
G	25'	60%	15%
H	48'	100%	48%
<b>Totals</b>	<b>162'</b>	<b>NA</b>	<b>77%</b>

**Step Four**

Multiply the Total Basement Floor Area by the above percentage to determine the Excluded Basement Floor Area. Portion of Excluded Basement Floor Area Calculation below

$$1,400 \text{ Sq. Ft.} \times \frac{(25' \times 56\% + 10' \times 0\% \dots 25' \times 60\% + 48' \times 100\%)}{162'}$$

$$= 1,400 \text{ Sq. Ft.} \times 47.53\%$$

$$= 665.42 \text{ Sq. Ft. Excluded from the Gross Floor Area}$$

**CALCULATING AVERAGE BUILDING ELEVATION (ABE)**

No part of a structure may exceed 30 feet in height above the "Average Building Elevation" to the top of the structure, except that on the downhill side of a sloping lot the structure shall not extend to a height greater than 30 feet measured from existing or finished grade to the top plate of the roof; provided the roof ridge does not exceed 30 feet in height above the "Average Building Elevation." ABE is defined as: The elevation established by averaging the elevation at existing or finished grade, whichever is lower, at the center of all exterior walls of the completed building.

**NOTE:**  
**INCOMPLETE**  
**AVERAGE BUILDING**  
**ELEVATION**  
**INFORMATION**  
**COULD**  
**SUBSTANTIALLY**  
**DELAY THE**  
**PROCESSING OF**  
**YOUR APPLICATION**

**AVERAGE BUILDING ELEVATION FORMULA:**

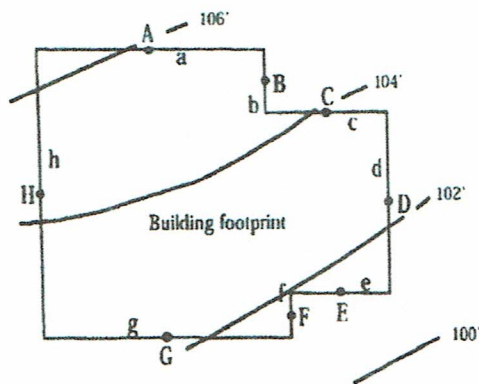
$$\frac{(\text{Mid-point Elevation of Individual Wall Segment}) \times (\text{Length of Individual Wall Segment})}{(\text{Total Length of Wall Segments})}$$

—OR—

$$\frac{(A \times a) + (B \times b) + (C \times c) + (D \times d) + (E \times e) + (F \times f) + (G \times g) + (H \times h)}{a + b + c + d + e + f + g + h}$$

**WHERE:** A,B,C,D... = Lower of Finished or Existing Ground Elevation at Midpoint of Wall Segment

**AND:** a,b,c,d... = Length of Wall Segment Measured on Outside Wall



MIDPOINT ELEVATION	WALL SEGMENT LENGTH
A = 105.9 feet	a = 30 feet
B = 104.7 feet	b = 9 feet
C = 103.7 feet	c = 17 feet
D = 102.7 feet	d = 25 feet
E = 101.6 feet	e = 13 feet
F = 101.7 feet	f = 6 feet
G = 102.2 feet	g = 34 feet
H = 104.5 feet	h = 40 feet

**ABE CALCULATION:**

$$\frac{(105.9)(30) + (104.7)(9) + (103.7)(17) + (102.2)(25) + (101.6)(13) + (101.7)(6) + (102.2)(34) + (104.5)(40)}{30 + 9 + 17 + 25 + 13 + 6 + 34 + 40}$$

$$\frac{18023'}{174'} = 103.6' \text{ Average Building Elevation (ABE)}$$

*NOTE: This example is not to scale. Site plans submitted to the building department must be to scale.*

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**BEFORE SUBMITTING YOUR CONSTRUCTION DRAWINGS, CHECK TO SEE THAT YOU HAVE PROVIDED THE INFORMATION BELOW.**

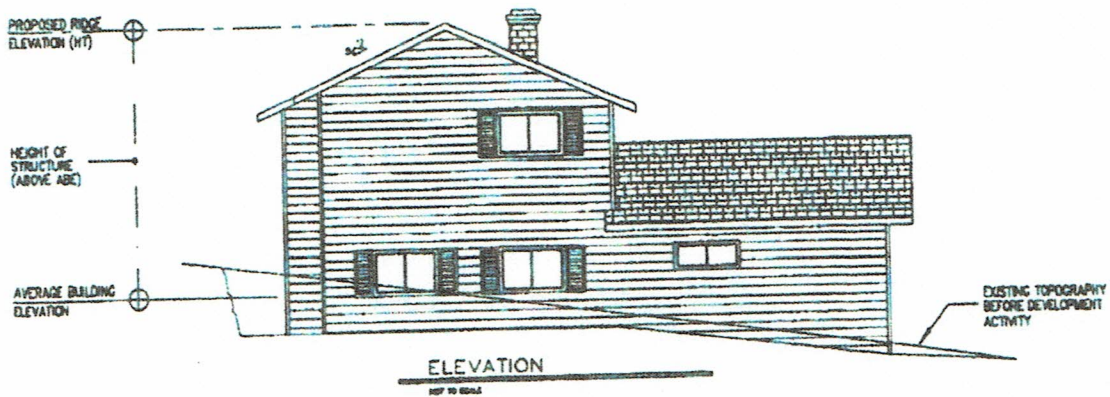
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- The site plan and the elevation drawings must be drawn to scale, for example 1" = 20', and based on a survey.
- Clearly show existing topography on your site plan. Topography should be shown in 2' increments.
- Submit (with the site plan) your average building elevation calculations using the formula provided on page 6.
- Indicate on an elevation drawing where the average building elevation strikes the building and the proposed ridge elevation (see below for example).
- Elevation drawings for all sides of the building.
- Indicate on the site plan the elevation of the finished floor or garage slab.
- Indicate the elevation and location of a fixed point (benchmark) within the ADJACENT RIGHT-OF-WAY or other point approved by the Building Official. The benchmark elevation and location must be provided and cannot be a part of the proposed structure. Note: Benchmark must be established, verified by a licensed surveyor and remain during construction so height can be verified when completed.
- For additions, you must provide an average building elevation calculation for the entire structure.
- If a portion of the basement floor area will be excluded from the gross floor area, provide the exclusion calculations with your site plan. The formula for basement area exclusions is shown on page 5.
- Indicate ceiling heights greater than 12' and greater than 16' on floor plans.

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**CROSS-SECTION REPRESENTATION OF ABE**

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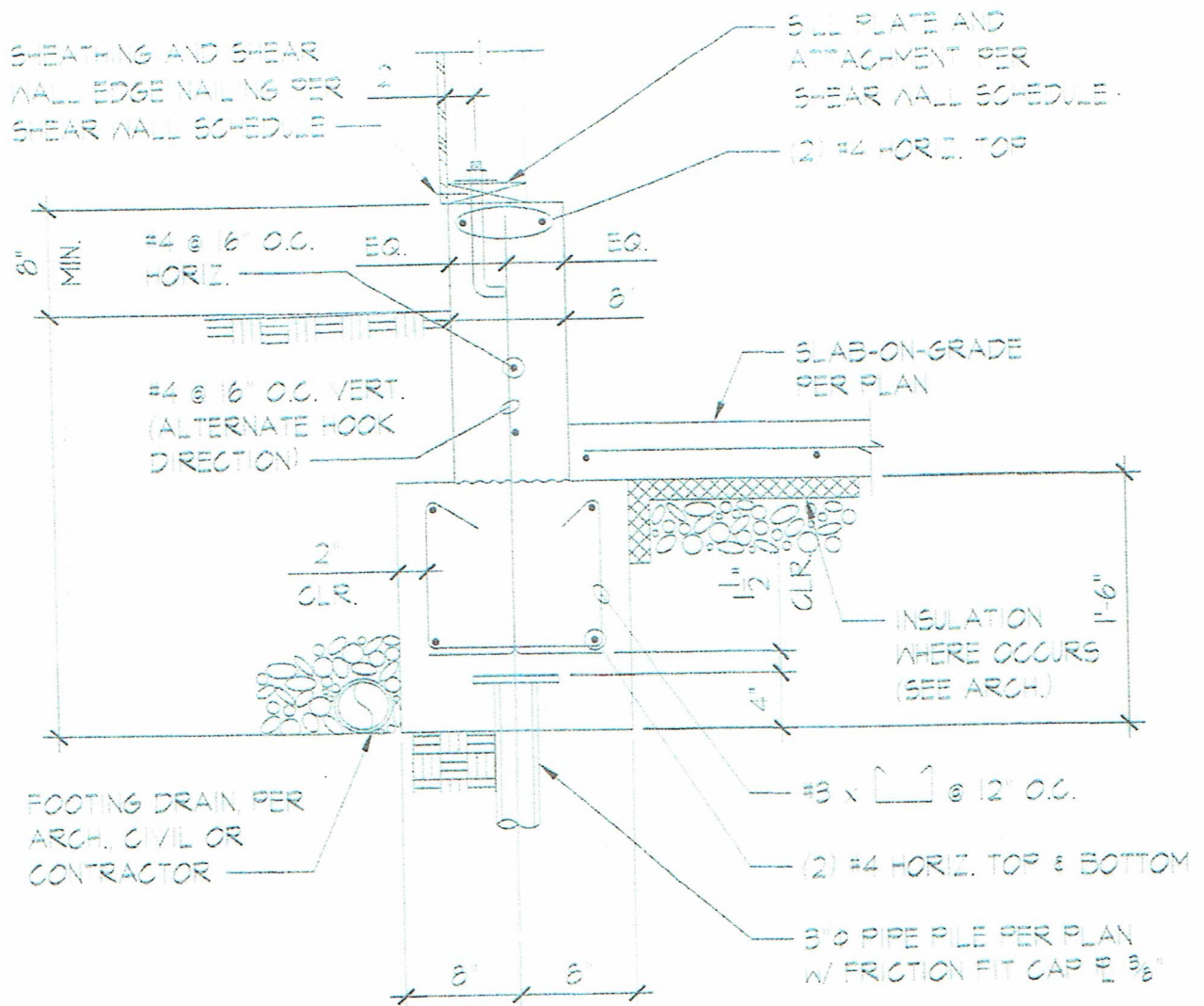


# Ned Nelson Architect

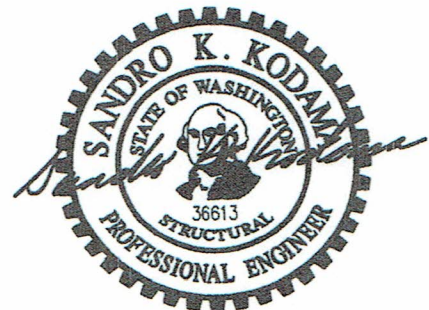
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project: Headrick Residence - 8822 S.E. 62<sup>nd</sup> Street, Mercer Island, WA 98040 1-5-23



2315 REGISTERED ARCHITECT  
NED H. NELSON, JR.  
STATE OF WASHINGTON

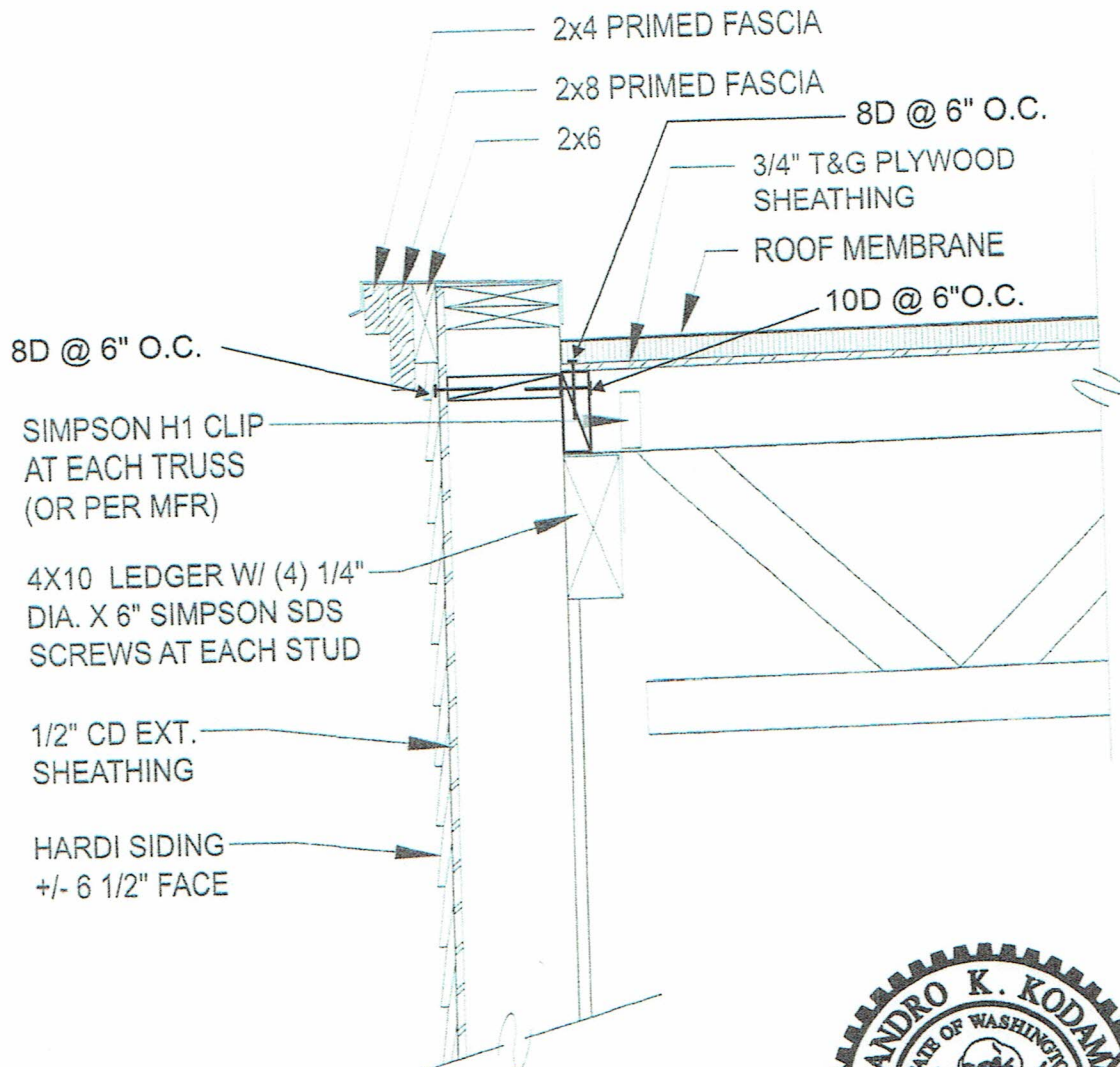


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