

**PROJECT INFORMATION**

ZONING DISTRICT	R-8.6
PROPERTY OWNER	HUANG DONGDONG
PARCEL NUMBER	531510-0281
LOT AREA	7,909 S.F.
OCCUPANCY CLASSIFICATION	R-3 / U
CONSTRUCTION TYPE	V-B

**LEGAL DESCRIPTION**

MC GILVRAS ISLAND ADD E 119.70 FT LESS N 66 FT  
Plat Block: 4  
Plat Lot: 12

**STRUCTURAL LOT COVERAGE**

NO CHANGE TO LOT COVERAGE

**IMPERVIOUS SURFACE COVERAGE**

NO CHANGE TO IMPERVIOUS SURFACE

**FLOOR AREA SUMMARY**

(E) LOWER FLOOR	1,040 SF
(E) UPPER FLOOR	1,152 SF
CONVERT (E) SHOP TO ADU	794 SF
<b>TOTAL FLOOR AREA</b>	<b>2,986 SF</b>

**ADU FLOOR AREA**

ALLOWED ADU FLOOR AREA	220-900 SF
PROPOSED ADU	794 SF

**PARKING SUMMARY**

REQUIRED PARKING < 3000 SF	2 STALLS
PROVIDED PARKING	2 STALLS

**BUILDING HEIGHT**

NO CHANGE TO BUILDING HEIGHT

**TREE TABLE**

NO TREE PROPOSED TO BE REMOVED

**SCOPE OF WORK**

1. CREATE NEW BEDROOM FROM EXISTING LIVING ROOM (UPPER FLOOR) AND EXISTING FAMILY ROOM (LOWER FLOOR), TWO NEW BEDROOMS ADDED
2. RELOCATE MAIN ENTRY TO MIDDLE OF THE BUILDING
3. CONVERT EXISTING WORKSHOP TO ADU

**CODE COMPLIANCE**

- 2018 INTERNATIONAL RESIDENTIAL CODE
- 2018 INTERNATIONAL MECHANICAL CODE
- 2018 UNIFORM PLUMBING CODE
- 2018 INTERNATIONAL FIRE CODE
- 2018 NATIONAL ELECTRICAL CODE
- 2018 WASHINGTON STATE ENERGY CODE

(ALL CODES ABOVE INCLUDE WASHINGTON STATEWIDE AMENDMENTS)

**ABBREVIATIONS**

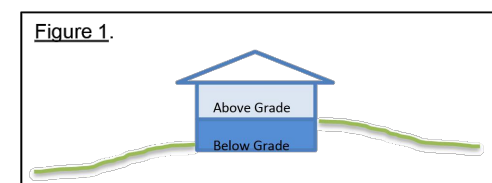
BLKG	BLOCKING	HORIZ	HORIZONTAL
CL	CLEAR	MAX	MAXIMUM
CLR	CLEAR	MFR	MANUFACTURER
CONT	CONTINUOUS	MIN	MINIMUM
CS	CASEMENT WINDOW	OF	OVER
DBL	DOUBLE	O.C.	ON CENTER
DS	DOWNSPOUT	SD	SMOKE DETECTOR
EL	ELEVATION	SG	SAFETY GLASS
EQ	EQUAL	SF	SQUARE FEET
EXIST / (E)	EXISTING	SIM	SIMILAR
FTG	FOOTING	SLD	SLIDING WINDOW
FX	FIXED WINDOW	TYP	TYPICAL
HDR	HEADER	UNO	UNLESS NOTED OTHERWISE
HDWD	HARDWOOD	w/	WITH
HGR	HANGER		

**Simple Heating System Size: Washington State**

This heating system sizing calculator is based on the Prescriptive Requirements of the 2018 Washington State Energy Code (WSEC) and ACCA Manuals J and S. This tool will calculate heating loads only. ACCA procedures for sizing cooling systems should be used to determine cooling loads.

Please complete the green drop-downs and boxes that are applicable to your project. As you make selections in the drop-downs for each section, some values will be calculated for you. If you do not see the selection you need in the drop-down options, please contact the WSU Energy Program at energycode@energy.wsu.edu or (360) 956-2042 for assistance.

<b>Project Information</b>	<b>Contact Information</b>
2273 Home Remodel 2273 74th Ave Se Mercer Island 98040	Mei Yang meiyang173@gmail.com
<b>Heating System Type:</b>	<input type="radio"/> All Other Systems <input checked="" type="radio"/> Heat Pump
To see detailed instructions for each section, place your cursor on the word "Instructions"	
<b>Design Temperature</b>	Design Temperature Difference (ΔT) 45
Instructions: Mercer Island	1.7° Indoor (70 degrees) - Outdoor Design Temp
<b>Area of Building</b>	
<b>Conditioned Floor Area</b>	794
Instructions: Conditioned Floor Area (sq ft)	
<b>Average Ceiling Height</b>	8.0
Instructions: Average Ceiling Height (ft)	6,352
<b>Conditioned Volume</b>	6,352
Instructions: Conditioned Volume	
<b>Glazing and Doors</b>	U-Factor X Area = UA
Instructions: U-Factor X Area = UA	0.250 X 142 = 35.50
<b>Skylights</b>	U-Factor X Area = UA
Instructions: U-Factor X Area = UA	0.50 X 0 = ---
<b>Insulation</b>	U-Factor X Area = UA
<b>Attic</b>	U-Factor X Area = UA
Instructions: R-49	0.028 X 794 = 20.64
<b>Single Rafter or Joist Vaulted Ceilings</b>	U-Factor X Area = UA
Instructions: Select R-Value	No selection ---
<b>Above Grade Walls (see Figure 1)</b>	U-Factor X Area = UA
Instructions: R-21 Intermediate	0.056 X 782 = 43.79
<b>Floors</b>	U-Factor X Area = UA
Instructions: R-38	0.025 X --- = ---
<b>Below Grade Walls (see Figure 1)</b>	U-Factor X Area = UA
Instructions: Select R-value	No selection ---
<b>Slab Below Grade (see Figure 1)</b>	F-Factor X Length = UA
Instructions: Select conditioning	No selection ---
<b>Slab on Grade (see Figure 1)</b>	F-Factor X Length = UA
Instructions: R-10 Fully Insulated	0.360 X 782 = 281.52
<b>Location of Ducts</b>	Duct Leakage Coefficient
Instructions: Conditioned Space	1.00
<b>Sum of UA</b>	381.46
<b>Envelope Heat Load</b>	Sum of UA x ΔT 17,166 Btu / Hour
<b>Air Leakage Heat Load</b>	Sum of UA x ΔT 3,087 Btu / Hour
<b>Building Design Heat Load</b>	Volume x 0.6 x ΔT x 0.018 20,253 Btu / Hour
<b>Building and Duct Heat Load</b>	Air leakage + envelope heat loss 20,253 Btu / Hour
<b>Ducts in unconditioned space: sum of building heat loss x 1.10</b>	22,278 Btu / Hour
<b>Ducts in conditioned space: sum of building heat loss x 1</b>	20,253 Btu / Hour
<b>Maximum Heat Equipment Output</b>	25,318 Btu / Hour
<b>Building and duct heat loss x 1.40 for forced air furnace</b>	31,485 Btu / Hour
<b>Building and duct heat loss x 1.25 for heat pump</b>	25,318 Btu / Hour



**Alterations Worksheet - 2018 Washington State Energy Code**

<b>Project Information</b>	<b>Contact Information</b>
2273 Home Remodel (Primary Residence) 2273 74th Ave Se Mercer Island 98040	MEI YANG MEIYANG173@GMAIL.COM

The WSEC requirements for alterations are located in Chapter 5 of the code text. Alterations (remodels) do not need to obtain energy credits from Table R406.3

Additions must meet the requirements for new construction. This includes nonconditioned space being altered to become conditioned space.

Will the wall cavities be exposed?  Yes  No

If yes: Exposed wall cavities must be insulated -  
2 X 4 wall studs require R-15 insulation  
2 X 6 wall studs require R-21 insulation

Will the roof/ceiling framing cavities or attic be exposed?  Yes  No

If yes: Exposed roof/ceiling assemblies must be insulated -  
Vaulted ceilings: Insulate to the full depth of the framing member while allowing for the minimum 1" ventilated space  
Flat ceilings: Install R-49 insulation or what the attic space can accommodate based on the roof pitch

Will the floor framing cavities be exposed?  Yes  No

If yes: Exposed floor cavities must be insulated to R-30

Are the windows and/or doors being replaced?  Yes  No

(includes both window or door and frames)  
If yes: New windows and doors must have an area weighted average U-factor of <= 0.30

Will the heating or cooling system be replaced?  Yes  No

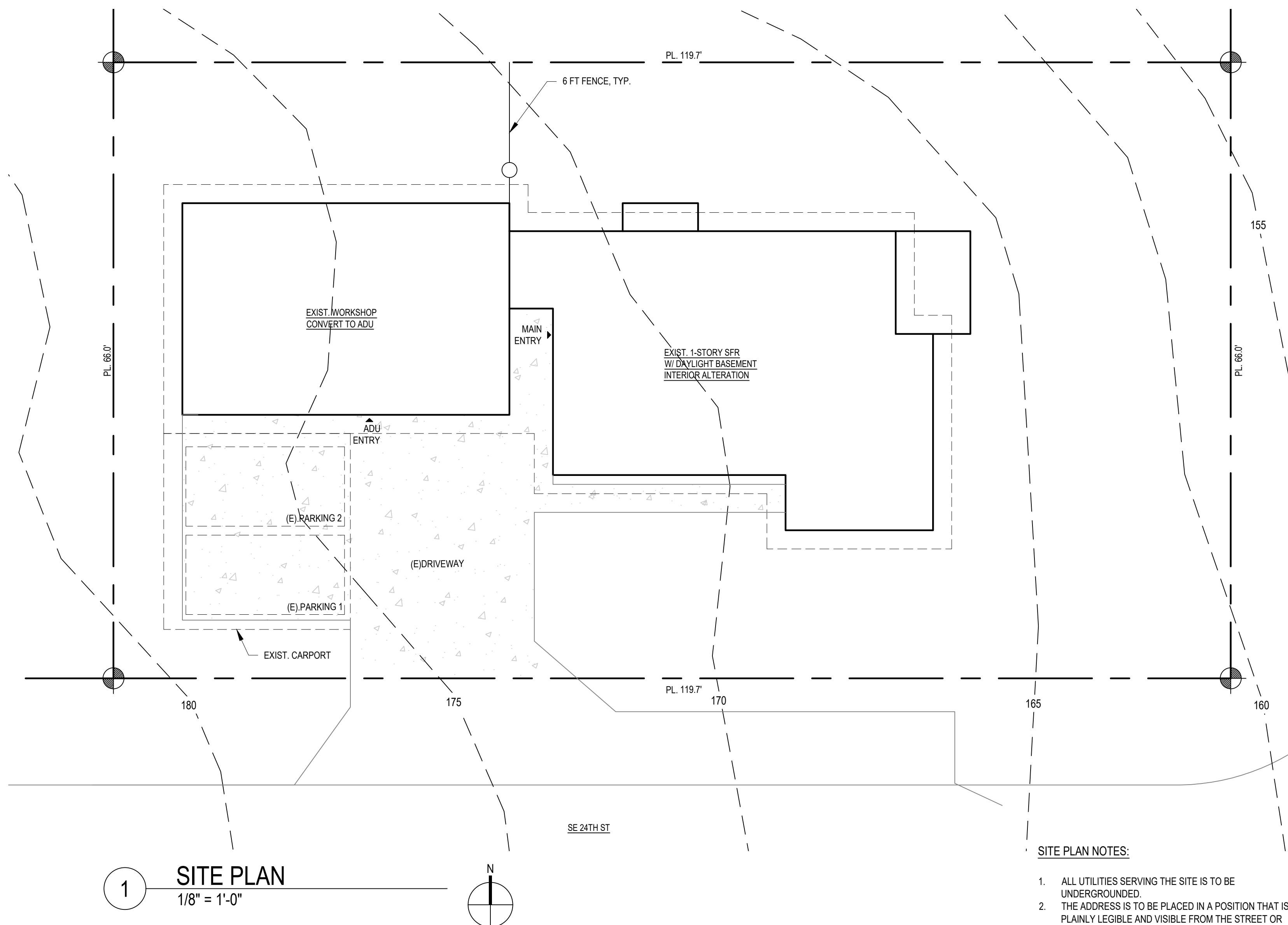
If yes: New equipment must meet current requirements and ducts need to be tested

Will the hot water system be altered?  Yes  No

If yes: New water heating equipment must meet current code requirements

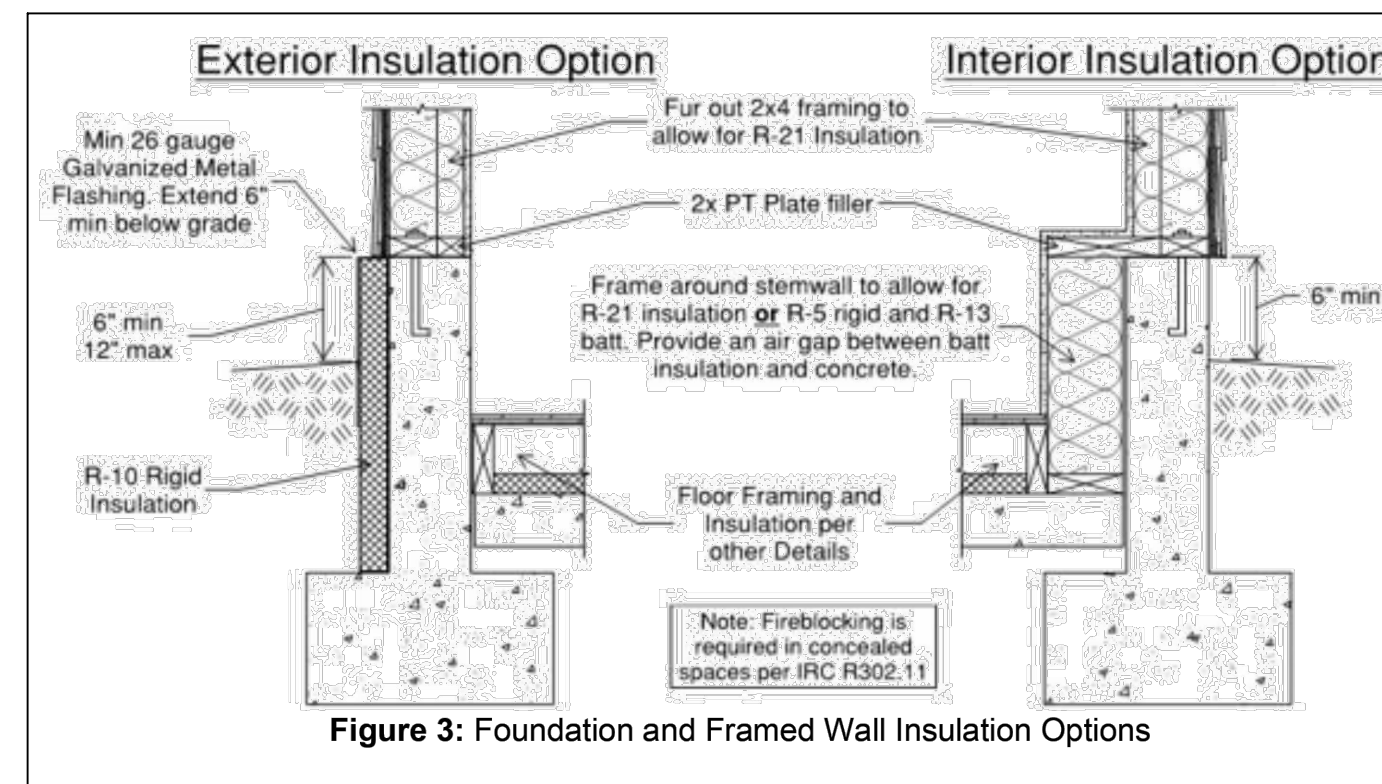
Are more than 50% of the light fixtures being changed?  Yes  No

If yes: 90% of all lamps must be high efficacy (LED or CFL)

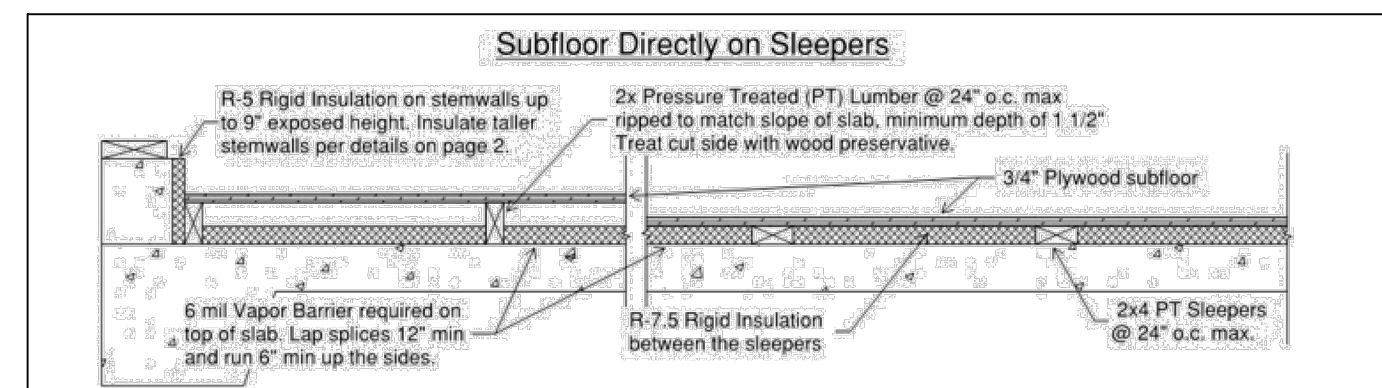


1 SITE PLAN  
1/8" = 1'-0"

CONTRACTOR TO VERIFY ALL OF EXISTING CONDITIONS PRIOR TO CONSTRUCTION. REPORT TO ARCHITECT FOR ANY DISCREPANCIES FOUND.



1 WALL ASSEMBLY  
NTS



1 FLOOR ASSEMBLY  
NTS

NO.	DATE	DESCRIPTION OF REVISIONS
	01/4/2024	PERMIT SET

SITE PLAN

**SITE PLAN NOTES:**

1. ALL UTILITIES SERVING THE SITE IS TO BE UNDERGROUND.
2. THE ADDRESS IS TO BE PLACED IN A POSITION THAT IS PLAINLY LEGIBLE AND VISIBLE FROM THE STREET OR ROAD FRONTING THE PROPERTY.

SHEET NUMBER

A1.0

**2273 HOME REMODEL**  
2273 74TH AVE SE  
MERCER ISLAND WA 98040

**MJZ DESIGN**  
425.922.5926  
mjz.design.wa@gmail.com

**PLAN NOTES:**

- USE CONVENTIONAL FRAMING AND SHEATHING U.N.O.
- ALL INTERIOR WALLS TO BE 2x4 FRAMING U.N.O.
- ALL DOOR JAMBS TO BE SET OFF WALLS 6" TYP. U.N.O.
- ALL DIMENSIONS ARE TO FACE OF FRAMING U.N.O.
- ALL WINDOW HEADS TO BE 8'-0" TO FINISH FLOOR AT THIS FLOOR, U.N.O.
- ALL EXHAUST FANS ARE TO VENTED TO OUTSIDE.
- DOOR HT. AT THIS FLOOR IS 6'-8", TYP.
- ALL SMOKE DETECTORS MUST BE PROVIDED w/ PRIMARY POWER FROM BUILDING WIRING, PROVIDED w/ BATTERY BACKUP, AND BE INTERCONNECTED.
- CEILING HEIGHT = 88"
- ESCAPE (EGRESS) WINDOW MUST HAVE A CLEAR OPENABLE AREA OF 5.7 S.F. w/ A MINIMUM NET CLEAR HEIGHT OF 24" AND WIDTH DIMENSION OF 20". THE SILL HEIGHT MUST NOT BE MORE THAN 44" ABOVE THE FLOOR.
- ALL EXTERIOR COLUMNS, BEAMS, AND JOISTS THAT ARE EXPOSED TO THE WEATHER MUST BE PRESSURE-TREATED.
- A MINIMUM OF 90% OF PERMANENTLY INSTALLED LIGHTING MUST BE HIGH-EFFICIENCY LAMPS WA ENERGY CODE R404.1

**ENERGY REQUIREMENTS (PERSPECTIVE):**

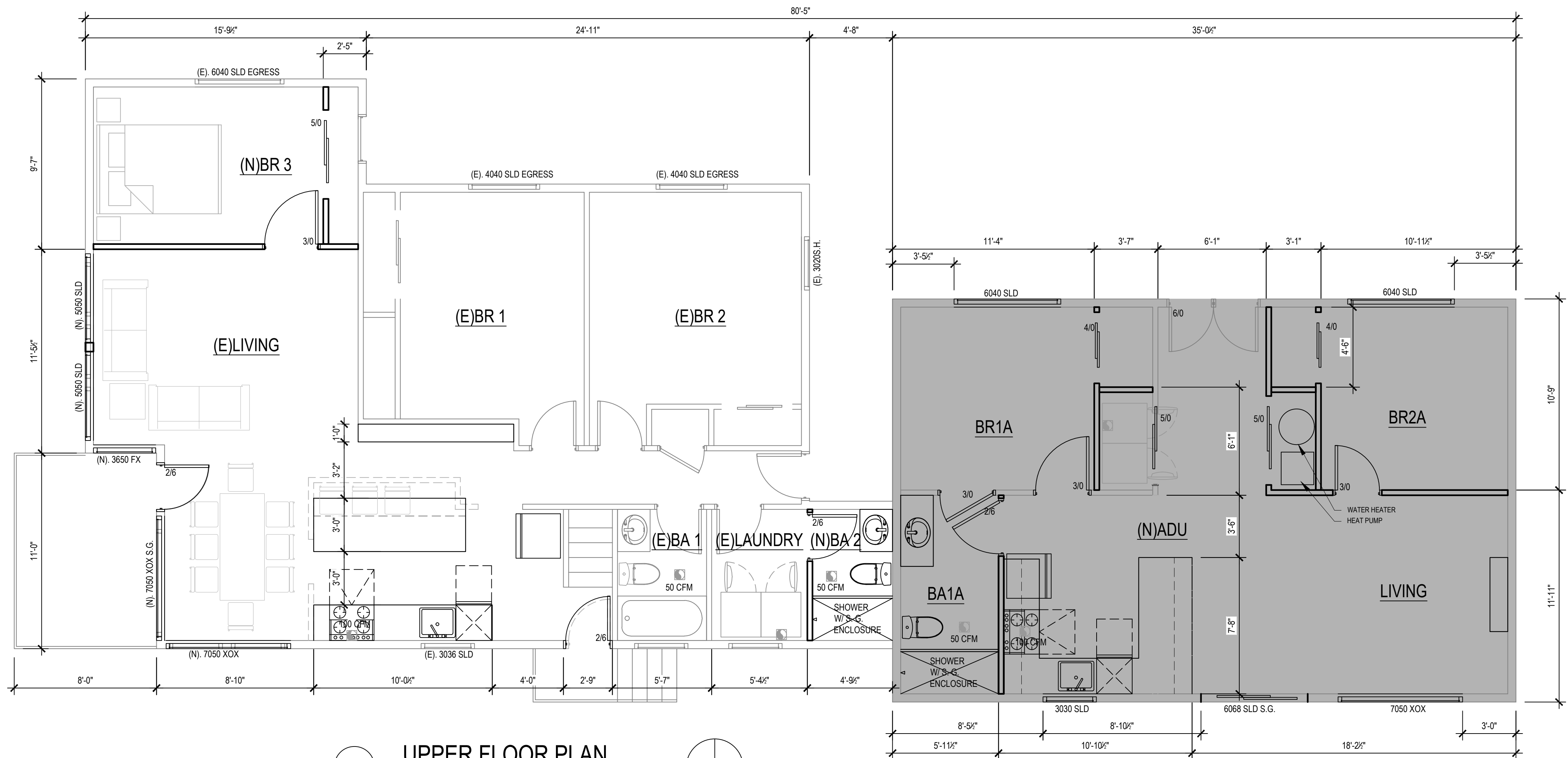
ADDITIONS LESS THAN 1500 SQUARE FEET 3.0 CREDIT REQUIRED

3.0 ENERGY CREDITS AS SELECTED AND LISTED BELOW:

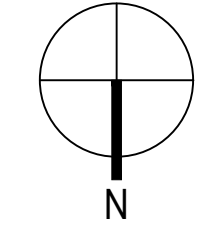
4. FUEL NORMALIZATION CREDITS : 0.5 CREDIT FOR HEATING SYSTEM BASED ON ELECTRIC RESISTANCE WITH A DUCTLESS MINI-SPLIT HEAT PUMP SYSTEM IN ACCORDANCE WITH SECTION R403.7.1 INCLUDING THE EXCEPTION

1.4 EFFICIENT BUILDING ENVELOPE: 1 CREDIT PRESCRIPTIVE COMPLIANCE IS BASED ON TABLE R402.1.1 WITH THE FOLLOWING MODIFICATIONS:  
 VERTICAL FENESTRATION U = 0.25  
 WALL R-21 PLUS R-4 CI  
 FLOOR R-39  
 BASEMENT WALL R-21 INT PLUS R-5 CI  
 SLAB ON GRADE R-10 PERIMETER AND UNDER ENTIRE SLAB  
 BELOW GRADE SLAB R-10 PERIMETER AND UNDER ENTIRE SLAB

3.4 HIGH EFFICIENCY HVAC EQUIPMENT OPTIONS: 1.5 CREDIT DUCTLESS MINI-SPLIT HEAT PUMP SYSTEM ZONAL CONTROL: IN HOMES WHERE THE PRIMARY SPACE HEATING SYSTEM IS ZONAL ELECTRIC HEATING, A DUCTLESS MINI-SPLIT HEAT PUMP SYSTEM WITH A MINIMUM HSPF OF 10.0 SHALL BE INSTALLED AND PROVIDE HEATING TO THE LARGEST ZONE OF THE HOUSING UNIT.



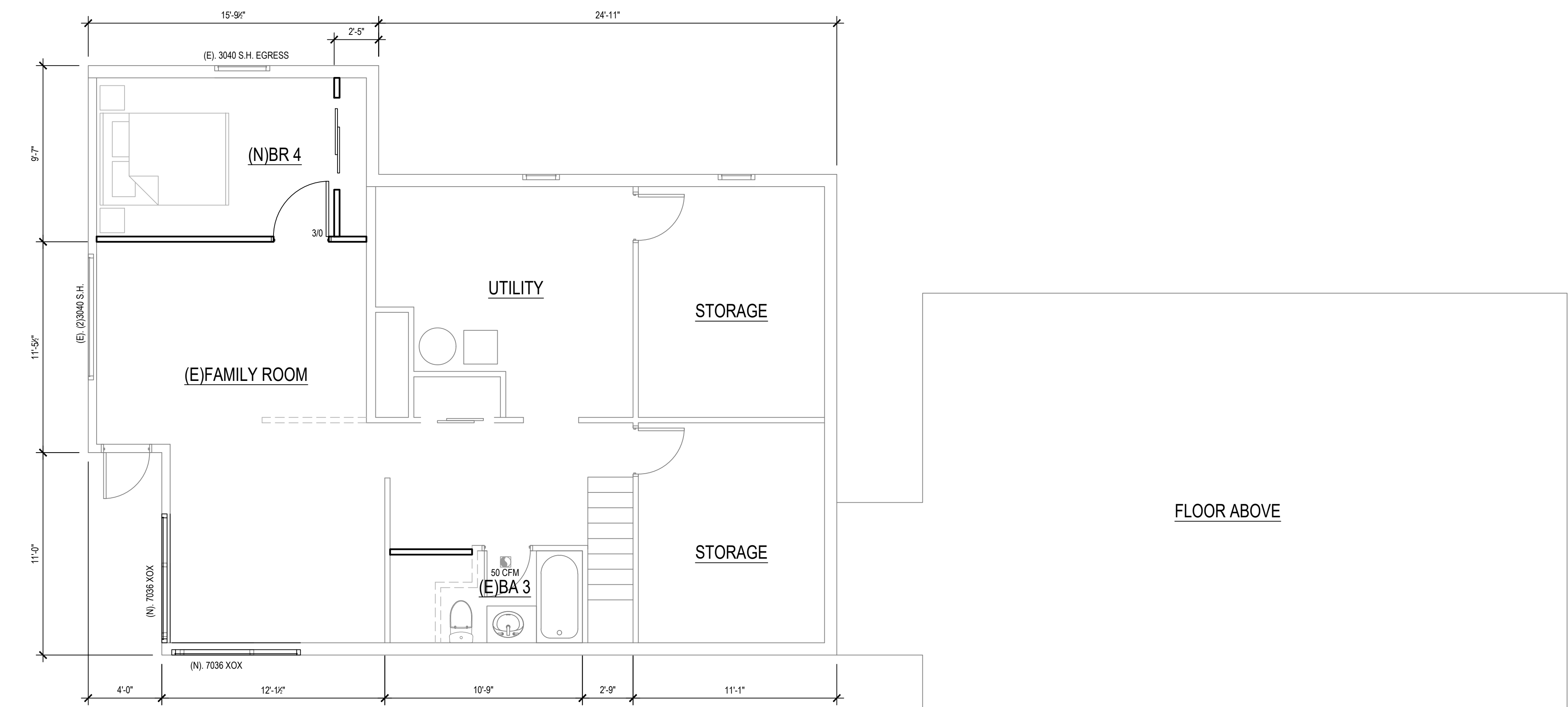
1 UPPER FLOOR PLAN  
1/4" = 1'-0"



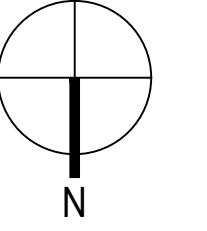
**WHOLE HOUSE VENTILATION SYSTEM CONTROLS:**  
 ALL VENTILATION SYSTEM CONTROLS SHALL BE READILY ACCESSIBLE. INTERMITTENTLY OPERATED SYSTEMS SHALL HAVE A MANUAL CONTROL, AS WELL AS AN AUTOMATIC CONTROL, SUCH AS A CLOCK TIMER. THE AUTOMATIC CONTROL TIMER SHALL BE SET TO OPERATE THE WHOLE HOUSE FAN SYSTEM FOR AT LEAST 8 HOURS A DAY. IRC M1507.3.2

FIREBLOCKING SHALL BE PROVIDED IN WOOD-FRAME CONSTRUCTION IN THE FOLLOWING LOCATIONS:

- IN CONCEALED SPACES OF STUD WALLS AND PARTITIONS, INCLUDING FURRED SPACES AND PARALLEL ROWS OF STUDS OR STAGGERED STUDS, AS FOLLOWS:
  - VERTICALLY AT THE CEILING AND FLOOR LEVELS.
  - HORIZONTALLY AT INTERVALS NOT EXCEEDING 10 FEET (3048 MM).
- AT ALL INTERCONNECTIONS BETWEEN CONCEALED VERTICAL AND HORIZONTAL SPACES SUCH AS OCCUR AT SOFFITS, DROP CEILINGS AND COVE CEILINGS.
- IN CONCEALED SPACES BETWEEN STAIR STRINGERS AT THE TOP AND BOTTOM OF THE RUN. ENCLOSED SPACES UNDER STAIRS SHALL COMPLY WITH SECTION R302.7.
- AT OPENINGS AROUND VENTS, PIPES, DUCTS, CABLES AND WIRES AT CEILING AND FLOOR LEVEL, WITH AN APPROVED MATERIAL TO RESIST THE FREE PASSAGE OF FLAME AND PRODUCTS OF COMBUSTION. THE MATERIAL FILLING THIS ANNULAR SPACE SHALL NOT BE REQUIRED TO MEET THE ASTM E 136 REQUIREMENTS.



1 LOWER FLOOR PLAN  
1/4" = 1'-0"



- SYMBOL**
- EXHAUST VENT
  - SMOKE DETECTOR
  - SMOKE/CO ALARM
  - NEW WALL
  - EXIST WALL
  - DEMO WALL
  - ADU

**2273 HOME REMODEL**  
 2273 74TH AVE SE  
 MERCER ISLAND WA 98040

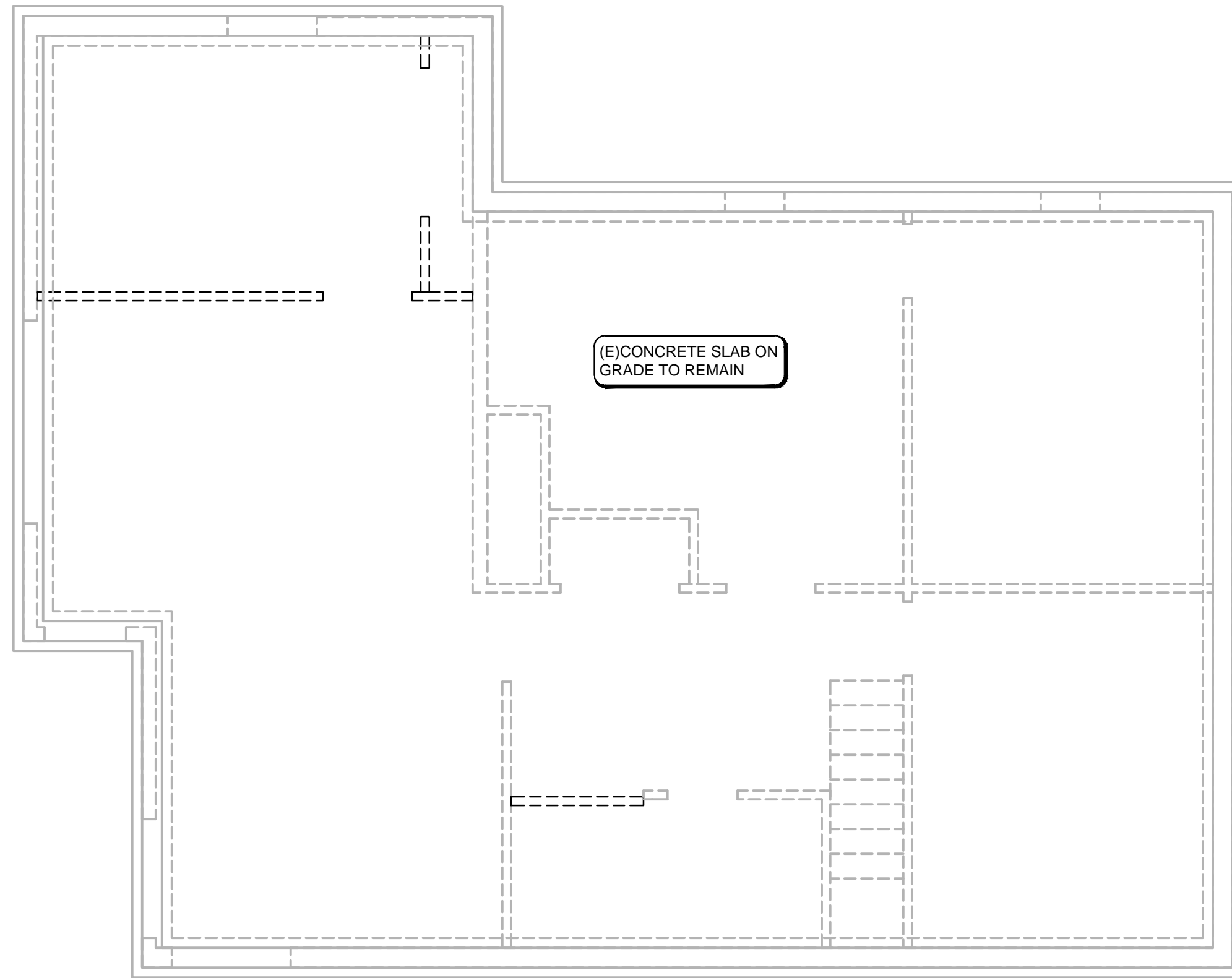
**MJZ DESIGN**  
 425.922.5926  
 mjz.design.wa@gmail.com

NO.	DATE	DESCRIPTION OF REVISIONS
0142024		PERMIT SET

MAIN FLOOR PLAN

SHEET NUMBER  
**A2.0**



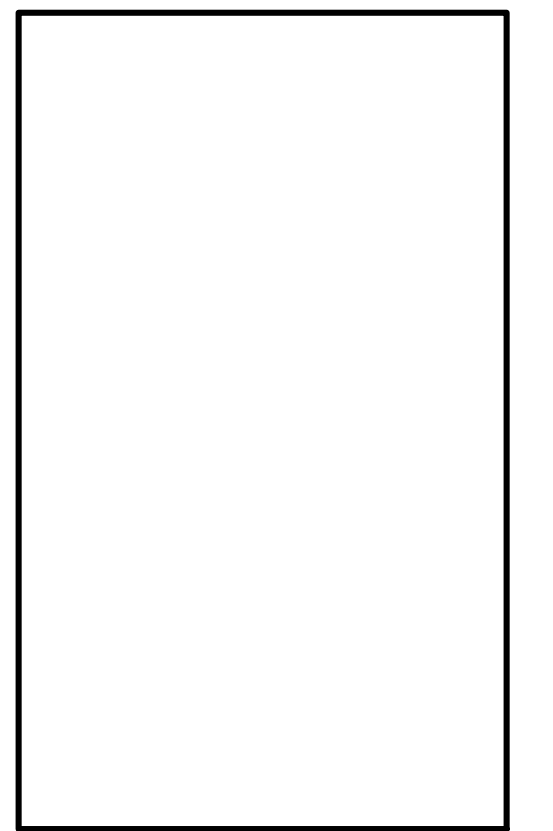
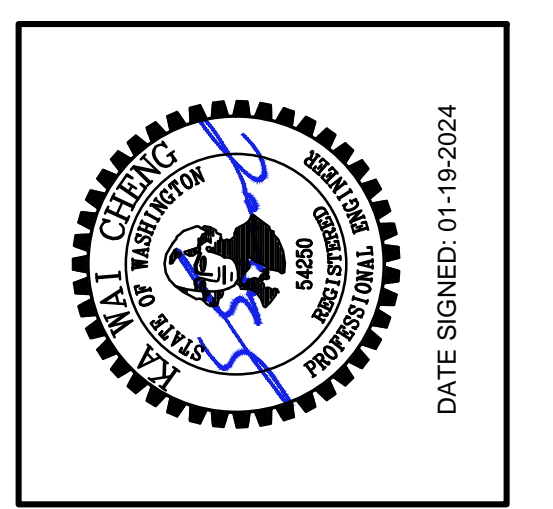


**FOUNDATION AND LOWER FLOOR PLAN** 

1/4" = 1'-0"

1. DO NOT SCALE DRAWINGS.
2. VERIFY ALL DIMENSIONS IN FIELD. REFER TO ARCHITECTURAL PLAN FOR WALL LAYOUT.
3. FOOTINGS SHALL BE PLACED ON UNDISTURBED NATIVE SOIL OR STRUCTURAL FILL COMPACTED TO 95% MAXIMUM WET DENSITY PLACED IN MAX. 12" LIFTS.
4. BOTTOM OF ALL FOOTINGS SHALL BE 18" MINIMUM BELOW LOWEST ADJACENT GRADE, U.N.O.
5. TYPICAL EXTERIOR WALL TO BE DETAILED AS SHEAR WALL TYPE W6 PER SHEAR WALL SCHEDULE, U.N.O.

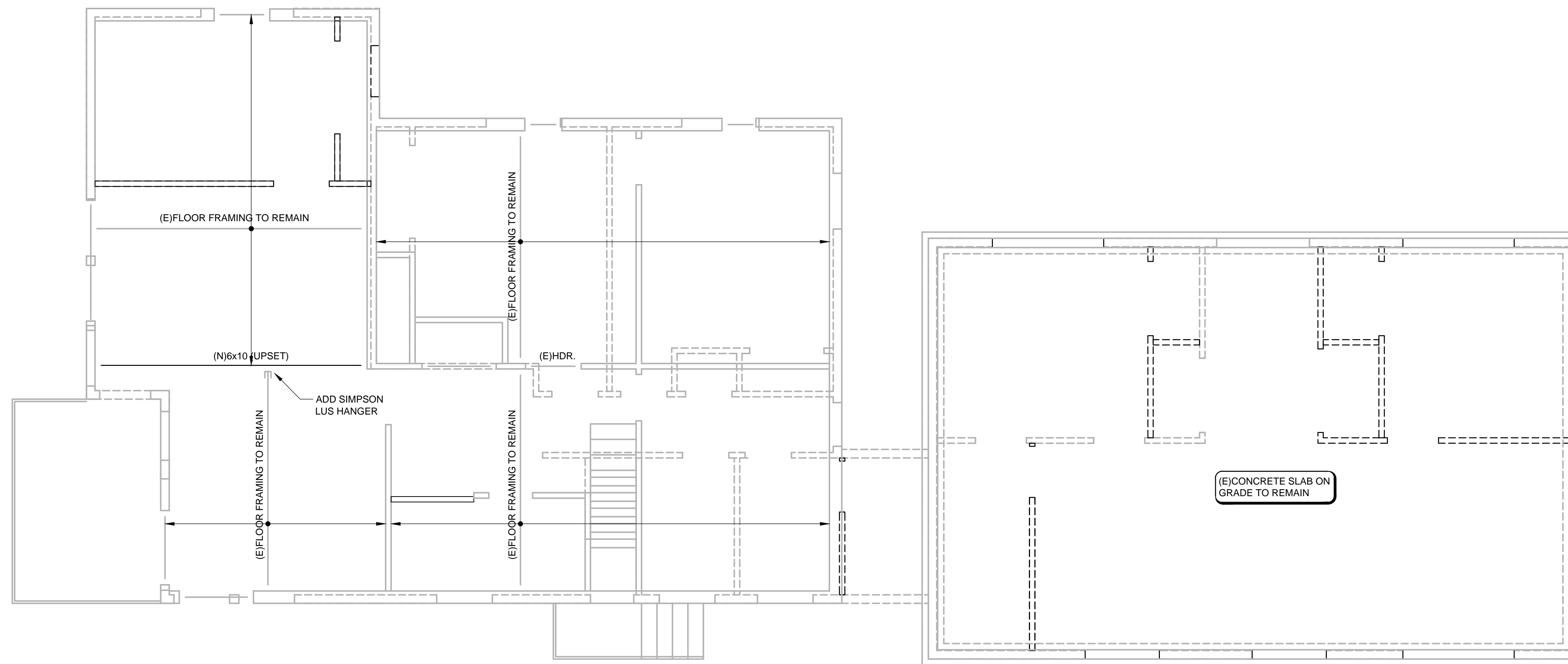
NO.	DRAWING SUBMITTALS / REVISIONS	DATE
	SUBMIT FOR PERMIT	01-19-2024
	SUBMIT FOR BID	
	SUBMIT FOR CONSTRUCTION	



FOUNDATION AND LOWER FLOOR PLAN

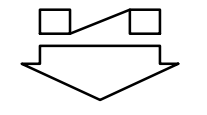
**HUANG RESIDENCE REMODEL**  
 2273 74TH AVE. SE,  
 MERCER ISLAND, WA 98040

CHECKED: KWC  
 DATE: 01-08-2024  
 SHEET NO:  
**S1.1**



CONTRACTOR TO FIELD VERIFY ALL EXISTING FRAMING SHOWN ON THIS PLAN DRAWING, INCLUDING INFORMATION FOR ALL FRAMING MEMBER SIZE, SPAN LENGTH, SPAN ORIENTATION AND ON-CENTER SPACING. NOTIFY E.O.R. IMMEDIATELY FOR ANY DISCREPANCY.

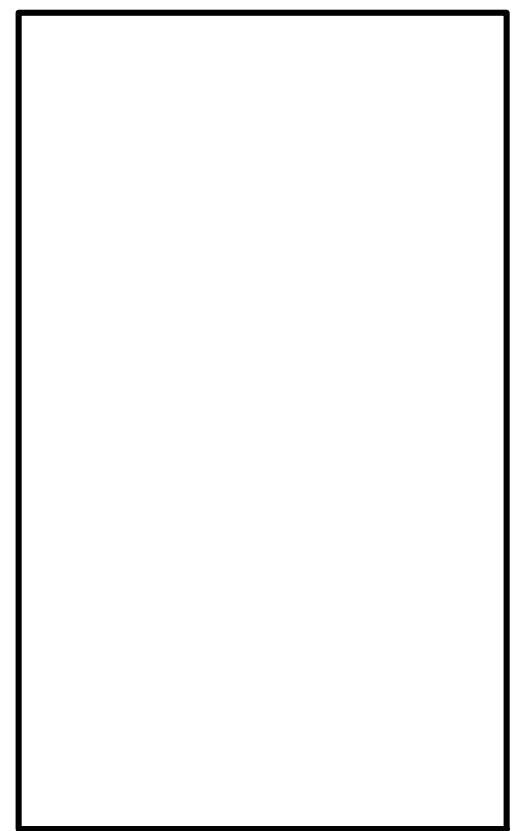
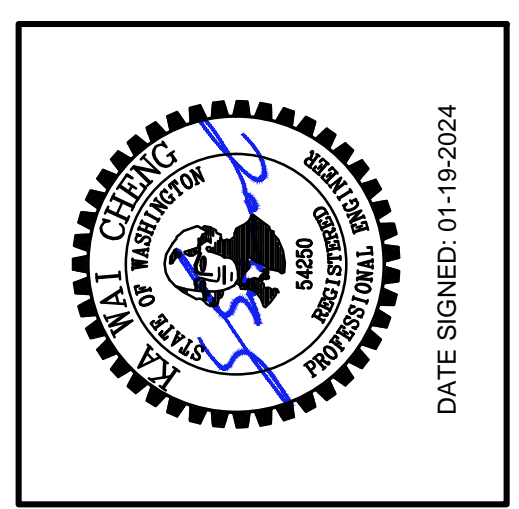
## MAIN FLOOR FRAMING PLAN



1/4" = 1'-0"

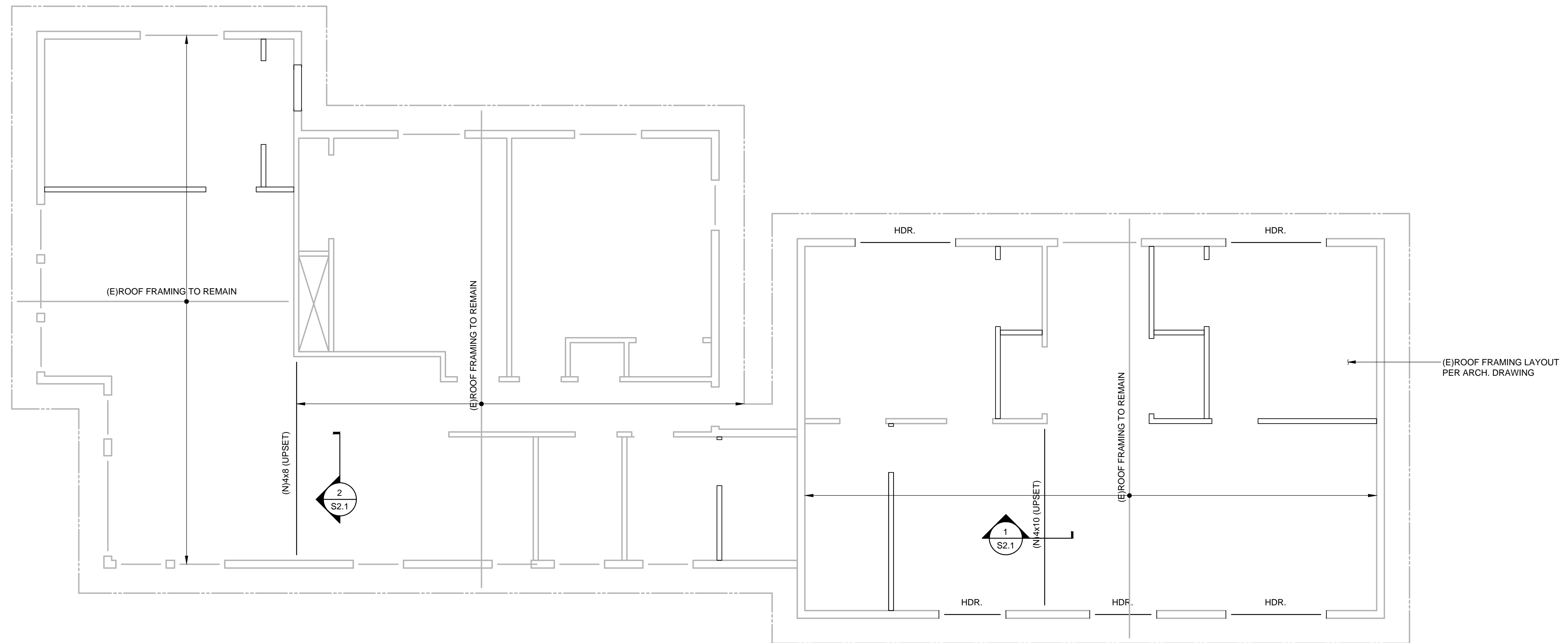
1. DO NOT SCALE DRAWINGS
2. VERIFY ALL DIMENSIONS IN FIELD. REFER TO ARCHITECTURAL PLAN FOR WALL LAYOUT.
3. TYPICAL FLOOR FRAMING CONSISTS OF 3/4" T&G PLYWOOD SHEATHING ON FLOOR JOISTS. NAIL ALL SUPPORTED PANEL EDGES WITH 10d NAILS @ 6"oc & ALL INTERMEDIATE SUPPORTS WITH 10d NAILS @ 12"oc. PROVIDE BLOCKING FOR ALL EDGES.
4. TYPICAL EXTERIOR WALL SHALL BE FRAMED WITH 2x6 DF STUDS @ 16"oc, U.N.O. TYPICAL INTERIOR WALL SHALL BE FRAMED WITH 2x4 DF STUDS @ 16"oc U.N.O. REFER TO ARCHITECTURAL DRAWINGS FOR ADDITIONAL INFORMATION PERTAINING TO WALL THICKNESS.
5. TYPICAL EXTERIOR WALL HEADERS SHALL BE FRAMED WITH (2) PILES OF 2x10 DF#2. TYPICAL INTERIOR WALL HEADERS SHALL BE FRAMED WITH (2) PILES OF 2x8 DF#2, U.N.O.
6. TYPICAL EXTERIOR WALL TO BE DETAILED AS SHEAR WALL TYPE W6 PER SHEAR WALL SCHEDULE, U.N.O.
7. ALL WOOD FRAMING USED IN EXTERIOR APPLICATIONS AND EXPOSE TO THE WEATHER SHALL BE PRESSURE TREATED.

NO.	DRAWING SUBMITTALS / REVISIONS	DATE
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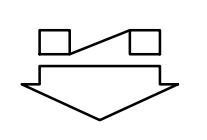
**HUANG RESIDENCE REMODEL**  
 2273 74TH AVE. SE.  
 MERCER ISLAND, WA 98040

CHECKED: KWC
DATE: 01-08-2024
SHEET NO:
<b>S1.2</b>



CONTRACTOR TO FIELD VERIFY ALL EXISTING FRAMING SHOWN ON THIS PLAN DRAWING, INCLUDING INFORMATION FOR ALL FRAMING MEMBER SIZE, SPAN LENGTH, SPAN ORIENTATION AND ON-CENTER SPACING. NOTIFY E.O.R. IMMEDIATELY FOR ANY DISCREPANCY.

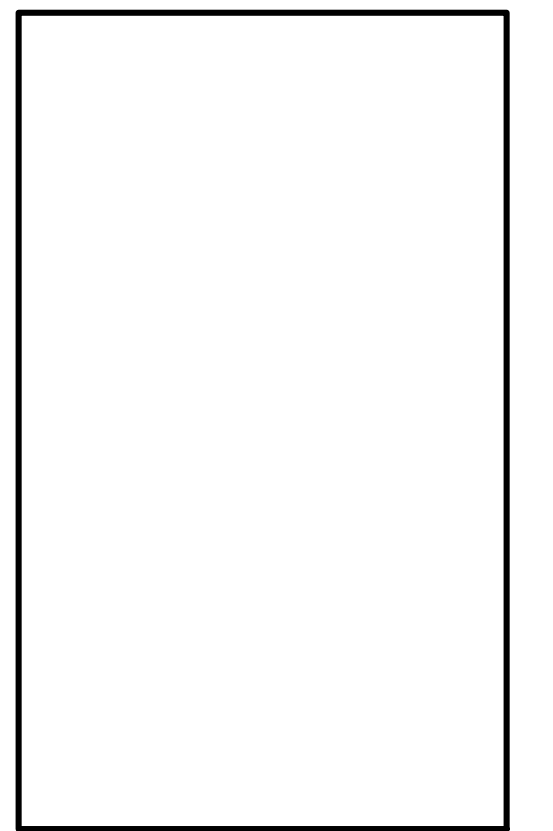
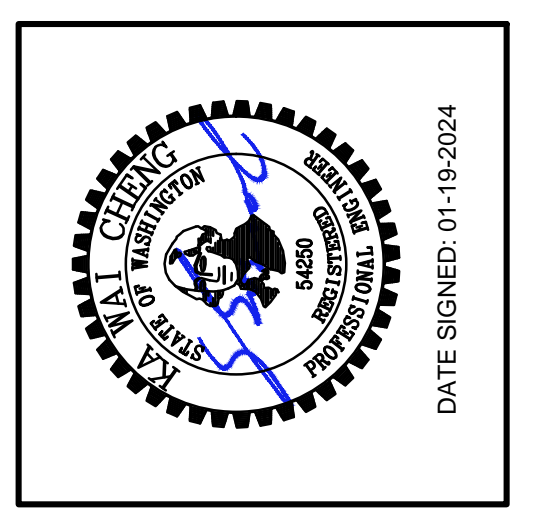
## ROOF FRAMING PLAN



1/4" = 1'-0"

1. DO NOT SCALE DRAWINGS
2. VERIFY ALL DIMENSIONS IN FIELD. REFER TO ARCHITECTURAL PLAN FOR WALL LAYOUT.
3. TYPICAL ROOF FRAMING CONSISTS OF 5/8" PLYWOOD ON ENGINEERED WOOD TRUSSES OR RAFTERS. NAIL ALL SUPPORTED PANEL EDGES WITH 10d NAILS @ 6"oc & ALL INTERMEDIATE SUPPORTS WITH 10d NAILS @ 12"oc
4. TYPICAL EXTERIOR WALL SHALL BE FRAMED WITH 2x6 DF STUDS @ 16"oc U.N.O. TYPICAL INTERIOR WALL SHALL BE FRAMED WITH 2x4 DF STUDS @ 16"oc U.N.O. REFER TO ARCHITECTURAL DRAWINGS FOR ADDITIONAL INFORMATION PERTAINING TO WALL THICKNESS.
5. TYPICAL EXTERIOR WALL HEADERS SHALL BE FRAMED WITH (2) PILES OF 2x10 DF#2. TYPICAL INTERIOR WALL HEADERS SHALL BE FRAMED WITH (2) PILES OF 2x8 DF#2, U.N.O.
6. TYPICAL EXTERIOR WALL TO BE DETAILED AS SHEAR WALL TYPE W6 PER SHEAR WALL SCHEDULE, U.N.O.

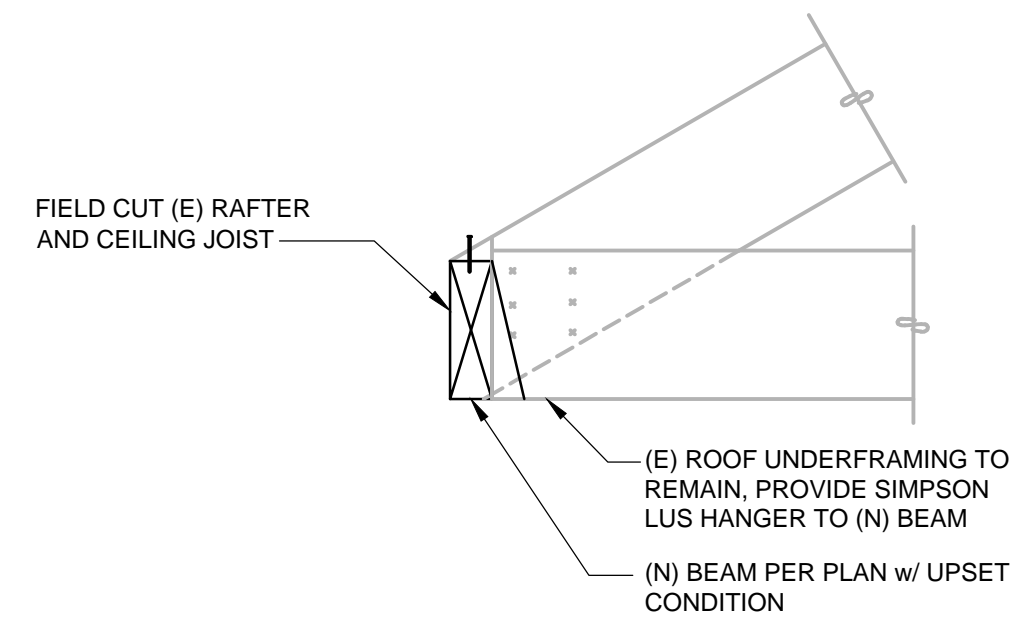
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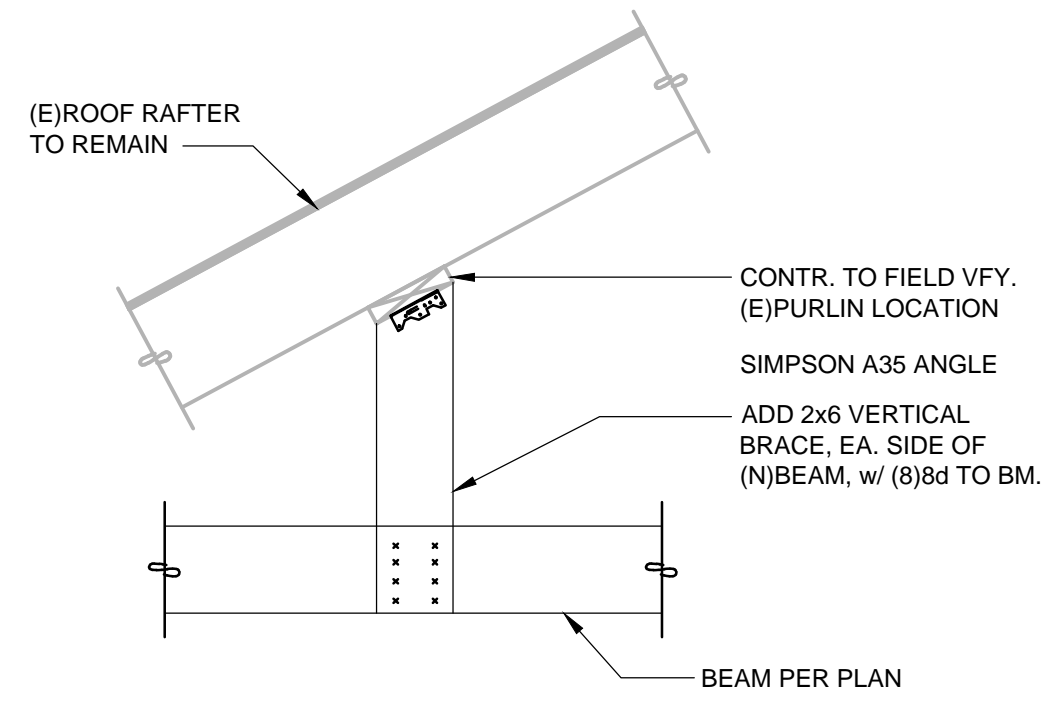
**HUANG RESIDENCE REMODEL**  
 2273 74TH AVE. SE.  
 MERCER ISLAND, WA 98040

SHEET CONTENTS:  
 ROOF FRAMING PLAN

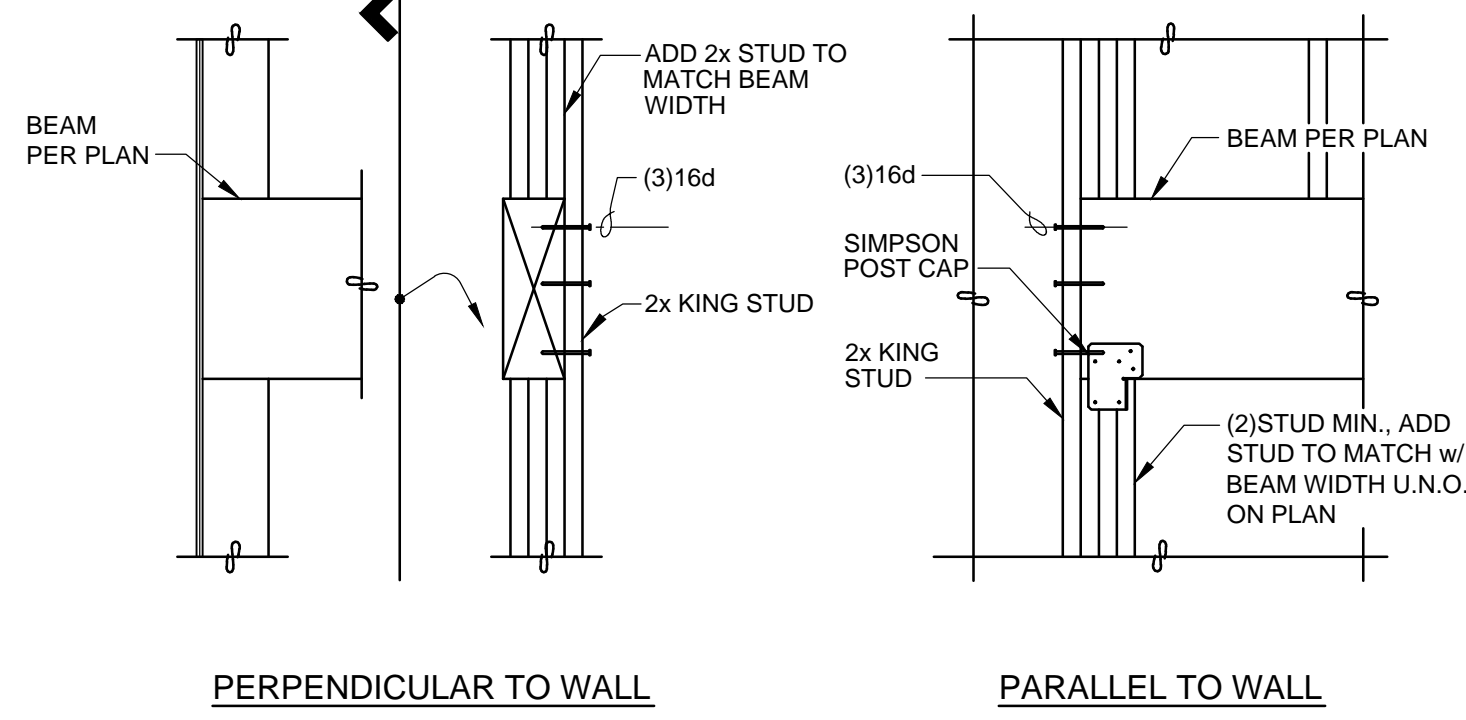
CHECKED: KWC
DATE: 01-08-2024
SHEET NO:
<b>S1.3</b>



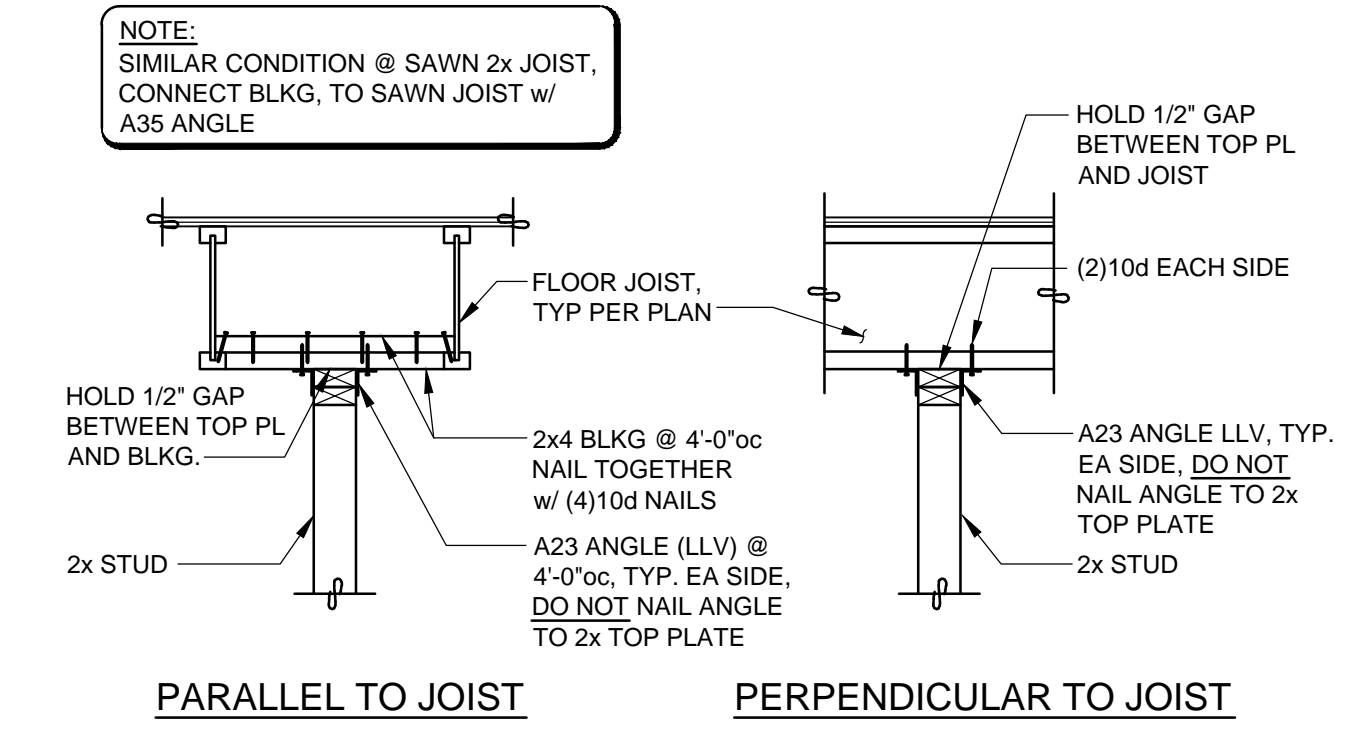
1 SECTION  
3/4" = 1'-0"



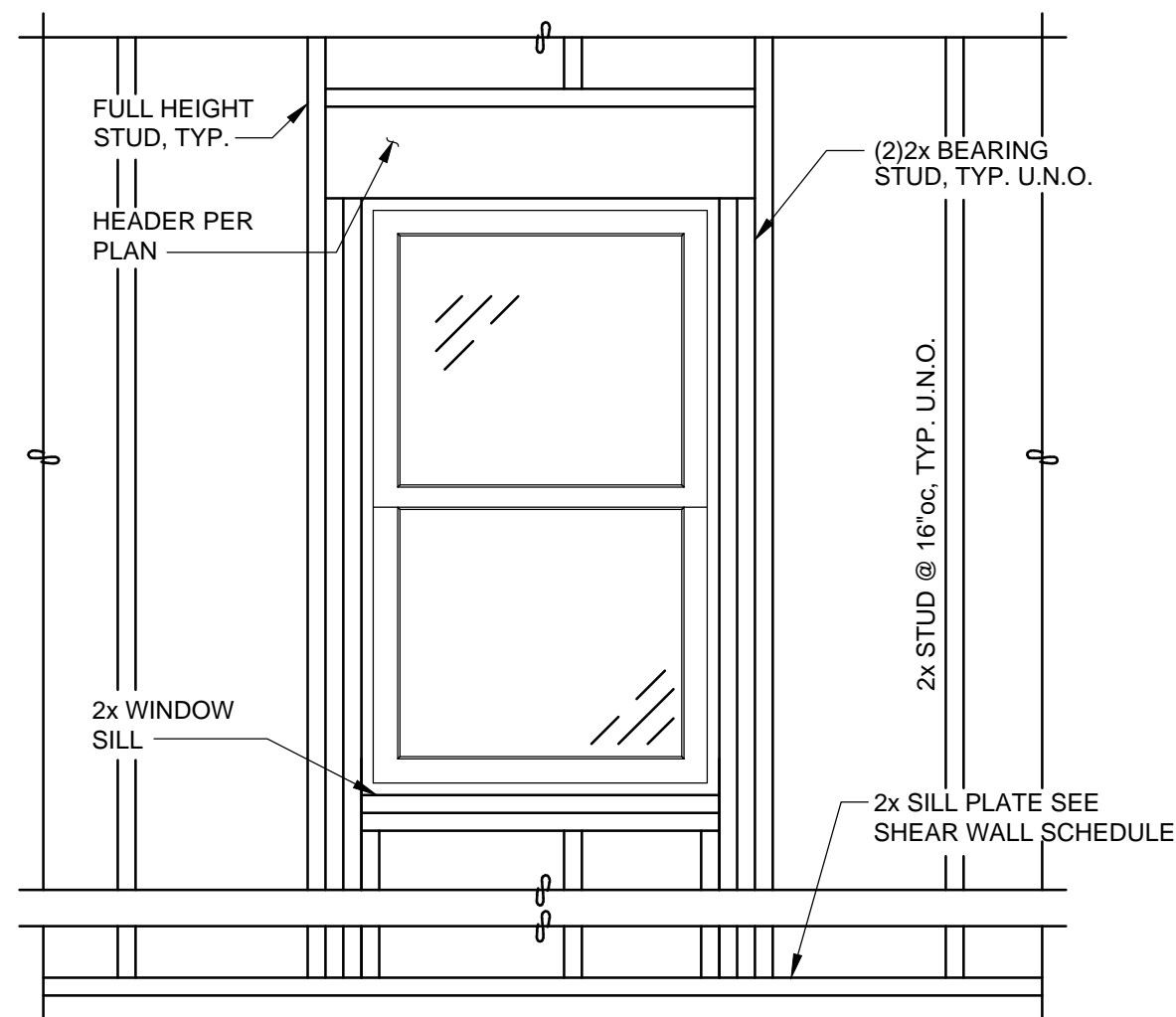
2 SECTION  
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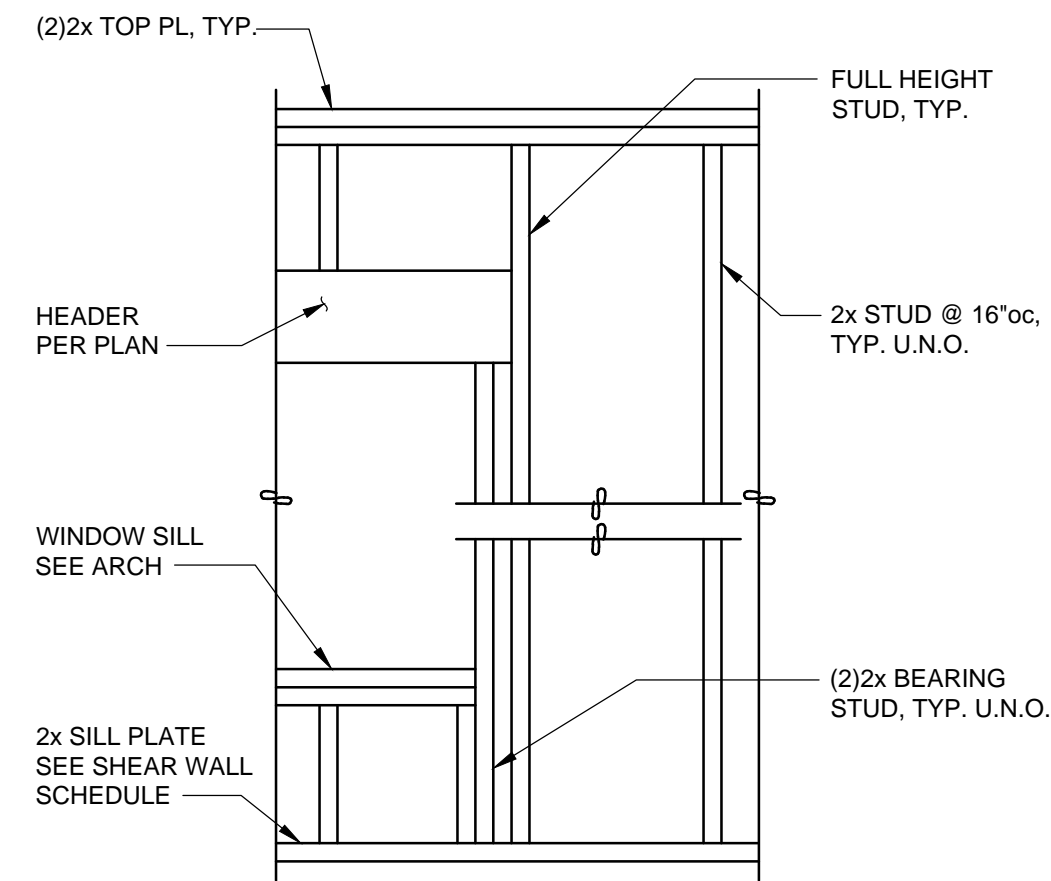
3 SECTION  
3/4" = 1'-0"



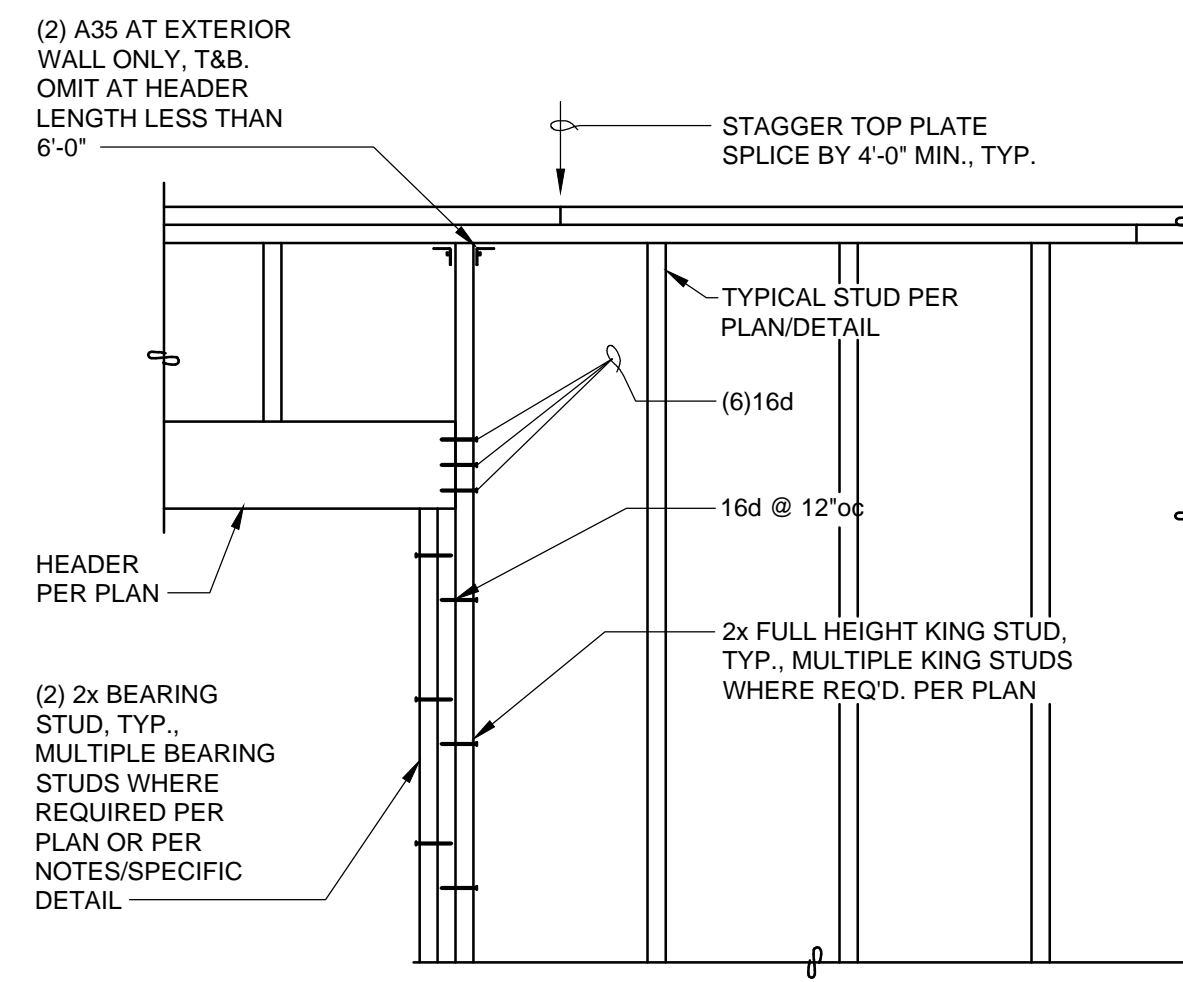
4 SECTION  
3/4" = 1'-0"



5 SECTION  
3/4" = 1'-0"

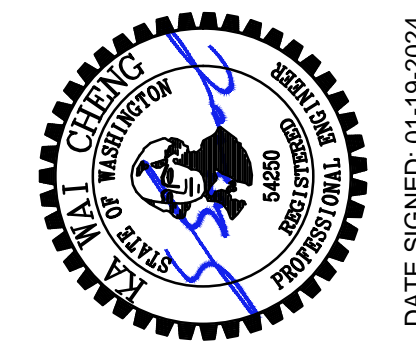


6 SECTION  
3/4" = 1'-0"

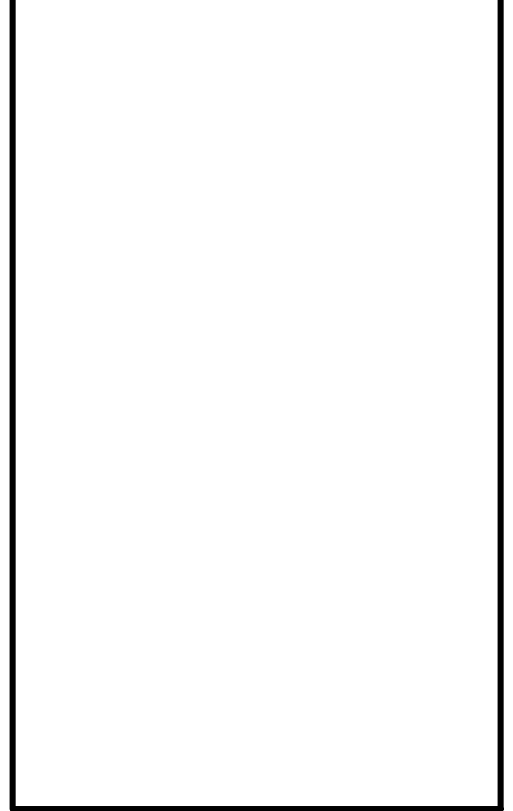


7 SECTION  
3/4" = 1'-0"

NO.	DRAWING SUBMITTALS / REVISIONS	DATE
	SUBMIT FOR PERMIT	01-19-2024
	SUBMIT FOR BID	
	SUBMIT FOR CONSTRUCTION	



DATE SIGNED: 01-19-2024



STRUCTURAL SECTIONS

**HUANG RESIDENCE REMODEL**  
2273 74TH AVE. SE.  
MERCER ISLAND, WA 98040

CHECKED: KWC
DATE: 01-08-2024
SHEET NO:
<b>S2.1</b>