

BUILDING CODE ANALYSIS

SUMMARY OF THE PROJECT:

1-STORY ADDITION TOWARDS THE REAR OF AN EXISTING SFR. CONSTRUCT A ROOF OVER THE EXISTING REAR PATIO. INTERIOR ALTERATION OF AFFECTED AREAS.

BUILDING DEPARTMENT CONTACT:

COMMUNITY PLANNING AND DEVELOPMENT
9611 SE 36TH ST.
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APPLICABLE BUILDING CODES:

2021 INTERNATIONAL BUILDING CODE (IBC)
2021 INTERNATIONAL RESIDENTIAL CODE (IRC)
2021 NATIONAL ELECTRICAL CODE (NEC)
2021 INTERNATIONAL MECHANICAL CODE (IMC)
2021 UNIFORM PLUMBING CODE (UPC)
2021 INTERNATIONAL PLUMBING CODE (IPC)
2021 INTERNATIONAL FIRE CODE (IFC)
2021 ACCESSIBILITY STANDARDS
2021 WASHINGTON STATE ENERGY CODE - RESIDENTIAL

ENERGY CODE DATA:

2021 WASHINGTON STATE ENERGY CODE - RESIDENTIAL
PRESCRIPTIVE ENERGY CODE COMPLIANCE FOR ALL CLIMATE ZONES IN WASHINGTON
SINGLE FAMILY - NEW & ADDITIONS (EFFECTIVE MARCH 15, 2024)

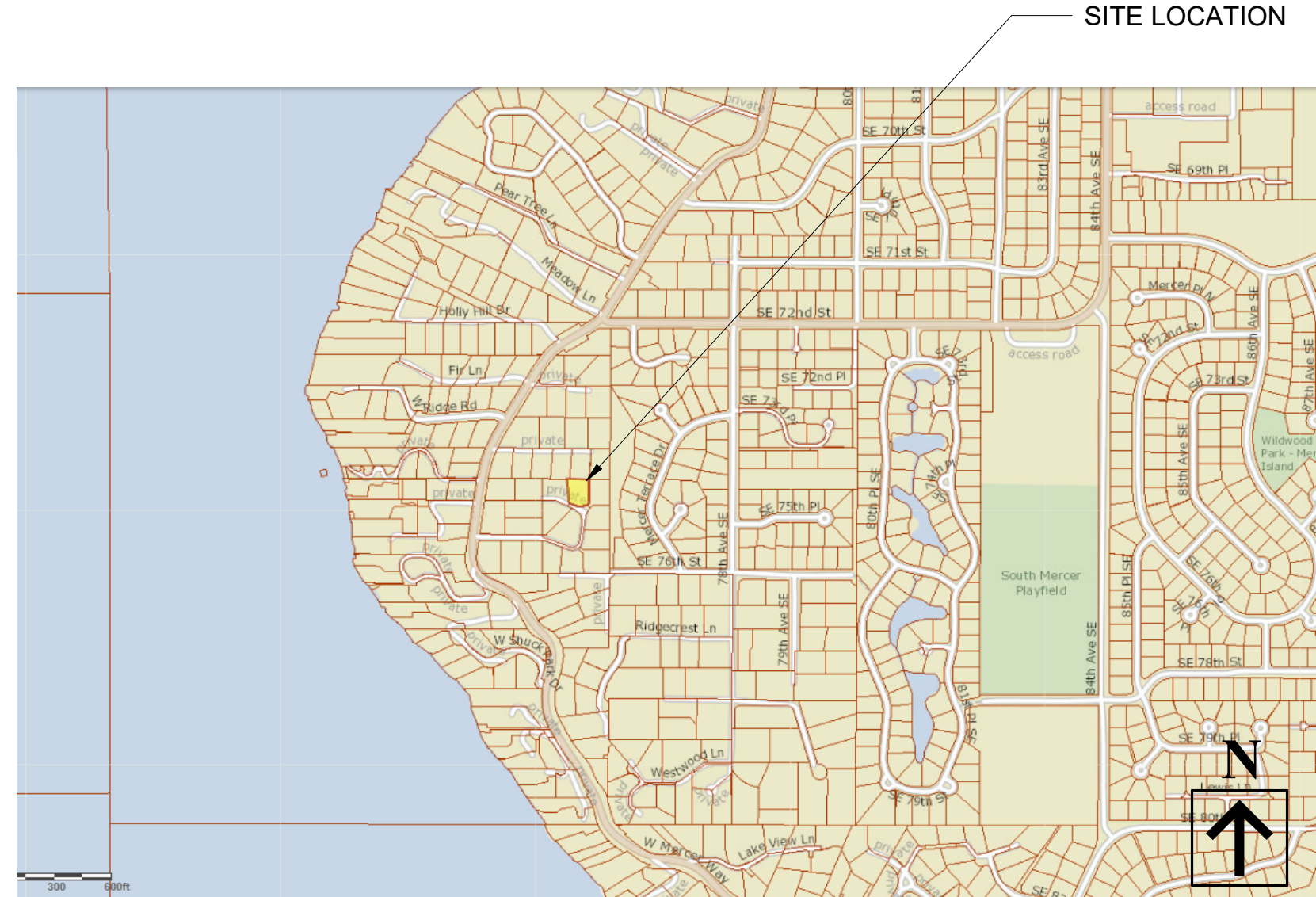
PROJECT CLASSIFICATION: 1. SMALL DWELLING UNIT: 5.0 CREDITS REQUIRED

HEATING OPTION:	4 HEAT PUMP	2.0 CREDITS
ENERGY OPTION:	3.7 HIGH EFFICIENCY HVAC	3.0 CREDITS

TOTAL CREDITS CLAIMED	5.0 CREDITS
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3.7 DATA: LG 9K LA090HYV3 SINGLE ZONE HSPF 13.5

VICINITY MAP



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S1	STRUCTURAL GENERAL NOTES

DEFERRED SUBMITTAL:

PROJECT DIRECTORY

OWNER: JAMES & BROOKE ALDRICH 7443 MERCER WAY MERCER ISLAND, WA 98040	DESIGNER: DAN V. GARVIDA GARVIDA DESIGN GROUP, LLC 12613 SE 237TH PLACE KENT, WA 98031 206.590.1232 DAN.GARVIDADESIGN@OUTLOOK.COM	STRUCTURAL ENGINEER: ROLAND HEIMISCH TECINSTRUCT, LLC 4111 164TH ST. SW, UNIT 51 LYNNWOOD, WA 98087 206.553.9076 RHEIMISCH@YAHOO.COM	GENERAL CONTRACTOR: TO BE DETERMINED
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PROPERTY INFORMATION

PARCEL #: 926640-0040	ZONING: R-15	LOT SIZE #: 15,195 SF (0.35 ACRES)	LEGAL DESCRIPTION: WEST FIRS ADD T&G&W UND INT PRIVATE ROAD PLAT BLOCK: PLAT LOT: 4
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MONITORED HOUSEHOLD FIRE ALARM PER NFPA 72:

NFPA 72 (CHAPTER 29) - MONITORED HOUSEHOLD FIRE ALARM SYSTEM IN COMPLIANCE WITH NFPA 72 AND CoMI STANDARDS SHALL BE INSTALLED THROUGHOUT THE RESIDENCE. A SEPARATE FIRE PERMIT IS REQUIRED.

APPROVAL INFORMATION SECTION

G-100

GENERAL NOTES:

2021 IRC M1504.3 Exhaust Openings

Air exhaust openings shall terminate as follows:

- 1. Not less than 3 feet from property lines.
- 2. Not less than 3 feet from gravity air intake openings, operable windows and doors.
- 3. Not less than 10 feet from mechanical air intake openings except where the exhaust opening is located not less than 3 feet above the air intake opening. Openings shall comply with Sections R303.5.2 and R303.6.

2021 UPC 507.2 Seismic Provisions.

- 1. Water heaters shall be anchored or strapped to resist horizontal displacement due to earthquake motion.
- 2. Strappings shall be at points within the upper one-third and lower one-third of its vertical dimensions. At the lower point, a distance of not less than four (4) inches (102 mm) shall be maintained from the controls to the strapping.

2021 WSEC R404.1 Lighting Equipment

- 1. All permanently installed lighting fixtures, excluding kitchen appliance lighting fixtures, shall contain only high-efficacy lighting sources.

2021 WSEC R403.5.3 Hot Water Pipe Insulation

- 1. Insulation for service hot water pipe, both within and outside the conditioned space, shall have a minimum thermal resistance (R-value) of R-3.

Exception: Pipe insulation is permitted to be discontinuous where it passes through studs, joists or other structural members and where the insulated pipes pass other piping, conduit or vents, provided the insulation is installed tight to each obstruction.

2021 IRC M1502.3 Clothes Dryer Exhaust Duct Termination

- 1. Exhaust ducts shall terminate on the outside of the building.
- 2. Exhaust duct terminations shall be in accordance with the dryer manufacturer's installation instructions. If the manufacturer's instructions do not specify a termination location, the exhaust duct shall terminate not less than 3 feet (914 mm) in any direction from openings into buildings, including openings in ventilated soffits.
- 3. Exhaust duct terminations shall be equipped with a backdraft damper. Screens shall not be installed at the duct termination.

2021 UPC 504.6 Temperature, Pressure, and Vacuum Relief Devices

- 1. Temperature, pressure, and vacuum relief devices or combinations thereof, and automatic gas shutoff devices shall be installed in accordance with the terms of their listings and the manufacturer's installation instructions.
- 2. A shutoff valve shall not be placed between the relief valve and the water heater or on discharge pipes between such valves and the atmosphere. The hourly British thermal units (Btu) (kW*h) discharge capacity or the rated steam relief capacity of the device shall be not less than the input rating of the water heater.
- 3. Discharge piping shall be installed in accordance with Section 608.5.

2021 IRC R317.3.1 Fasteners for Preservative-Treated Wood

- 1. Fasteners, including nuts and washers, for preservative-treated wood shall be of hot-dipped, zinc-coated galvanized steel, stainless steel, silicon bronze or copper. Staples shall be of stainless steel. Coating types and weights for connectors in contact with preservative-treated wood shall be in accordance with the connector manufacturer's recommendations. In the absence of manufacturer's recommendations, not less than ASTM A653 type G185 zinc-coated galvanized steel, or equivalent, shall be used.

Exceptions:

- 1. 1/2-inch-diameter (12.7 mm) or greater steel bolts.
- 2. Fasteners other than nails, staples and timber rivets shall be permitted to be of mechanically deposited zinc-coated steel with coating weights in accordance with ASTM B695, Class 55 minimum.
- 3. Plain carbon steel fasteners in SBX/DOT and zinc borate preservative-treated wood in an interior, dry environment shall be permitted.

2021 UPC 909.0 Special Venting for Island Fixtures.

- 1. 909.1 General. Traps for island sinks and similar equipment shall be roughed in above the floor and shall be permitted to be vented by extending the vent as high as possible, but not less than the drainboard height and then returning it downward and connecting it to the horizontal sink drain immediately downstream from the vertical fixture drain. The return vent shall be connected to the horizontal drain through a wyebranch fitting and shall, in addition, be provided with a foot vent taken off the vertical fixture vent by means of a wye branch immediately below the floor and extending to the nearest partition and then through the roof to the open air, or shall be permitted to be connected to other vents at a point not less than 6 inches (152 mm) above the flood-level rim of the fixtures served. Drainage fittings shall be used on the vent below the floor level, and a slope of not less than 1/4 inch per foot (20.8 mm/m) bac to the drain shall be maintained. The return bend used under the drainboard shall be a one-piece fitting or an assembly of a 45 degree (0.79 rd), a 90 degree (1.57 rad), and a 45 degree (0.79 rad) elbow in the order named. Pipe sizing shall be as elsewhere required in this code. The island sink drain, upstream of the returned vent, shall serve no other fixtures. An accessible cleanout shall be installed in the vertical portion of the foot vent.

2021 UPC 807.3 Domestic Dishwashing Machine.

- 1. No domestic dishwashing machine shall be directly connected to a drainage system or food waste disposer without the use of an approved dishwasher air gap fitting on the discharge side of the dishwashing machine. Listed air gaps shall be installed with the flood-level (FL) marking at or above the flood level of the sink or drainboard, whichever is higher.

Ventilation:

M1505.4.2 System controls. The whole-house mechanical ventilation system shall be provided with controls that comply with the following:

- 1. The whole house ventilation system shall be controlled with manual switches, timers or other means that provide for automatic operation of the ventilation system that are readily accessible by the occupant;
- 2. Whole-house mechanical ventilation system shall be provided with controls that enable manual override off of the system by the occupant during periods of poor outdoor air quality. Controls shall include permanent text or a symbol indicating their function. Recommended control permanent labeling to include text similar to the following: "Leave on unless outdoor air quality is very poor." Manual controls shall be readily accessible by the occupant;
- 3. Whole house ventilation systems shall be configured to operate continuously except where intermittent off controls and sizing are provided per Section M1505.4.3.2.

M1505.4.3 Mechanical ventilation rate. The whole-house mechanical ventilation system shall provide outdoor air at a continuous rate as determined in accordance with Table M1505.4.3(1) or Equation 15-1.

Equation 15-1

Ventilation rate in cubic feet per minute = (0.01 × total square foot area of house) + [7.5 × (number of bedrooms + 1)] but not less than 30 cfm for each dwelling unit

Table M1505.4.3(1)
Whole-House Mechanical Ventilation Airflow Rate

Dwelling Unit Floor Area (square feet)	Number of Bedrooms				
	0 - 1	2	3	4	5 or more
	Airflow in cfm				
< 500	30	30	35	45	50
501 - 1,000	30	35	40	50	55
1,001 - 1,500	30	40	45	55	60
1,501 - 2,000	35	45	50	60	65
2,001 - 2,500	40	50	55	65	70
2,501 - 3,000	45	55	60	70	75
3,001 - 3,500	50	60	65	75	80
3,501 - 4,000	55	65	70	80	85
4,001 - 4,500	60	70	75	85	90
4,501 - 5,000	65	75	80	90	95

M1505.4.3.1 Ventilation quality adjustment. The minimum whole house ventilation rate from Section 1505.4.3 shall be adjusted by the system coefficient in Table M1505.4.3(2) based on the system type not meeting the definition of a *balanced whole house ventilation* system and/or not meeting the definition of a *distributed whole house ventilation* system.

$$Q_v = Q_r \times C_{system}$$
(Equation 15-2)

Where:

- Q_v = Quality-adjusted ventilation airflow rate in cubic feet per minute (cfm).
- Q_r = Ventilation airflow rate, cubic feet per minute (cfm) from 15-1 or Table M1505.4.3(1).
- C_{system} = System coefficient from Table 1505.4.3(2).

Table M1505.4.3(2)
System Coefficient (C_{system})

System Type	Distributed	Not Distributed
Balanced	1.0	1.25
Not balanced	1.25	1.5

M1505.4.3.2 Intermittent off operation. Whole-house mechanical ventilation systems shall be provided with advanced controls that are configured to operate the system with intermittent off operation shall operate for a least two hours in each four-hour segment. The whole house ventilation airflow rate determined in accordance with Section M1505.4.3 as corrected by Section M1505.4.3.1 is multiplied by the factor determined in accordance with Table M1505.4.3(3).

Table M1505.4.3(3)
Intermittent Off Whole House-Mechanical Ventilation Rate Factors^{a, b}

Run-time % in Each 4-hour Segment	50%	66%	75%	100%
Factor ^a	2	1.5	1.3	1.0

- a. For ventilation system run-time values between those given, the factors are permitted to be determined by interpolation.
- b. Extrapolation beyond the table is prohibited.

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ALDRICH RESIDENCE

ADDITION AND INTERIOR ALTERATION

JAMES & BROOKE ALDRICH
7446 W MERCER WAY
MERCER ISLAND, WA 98040
PARCEL #:926640-0040

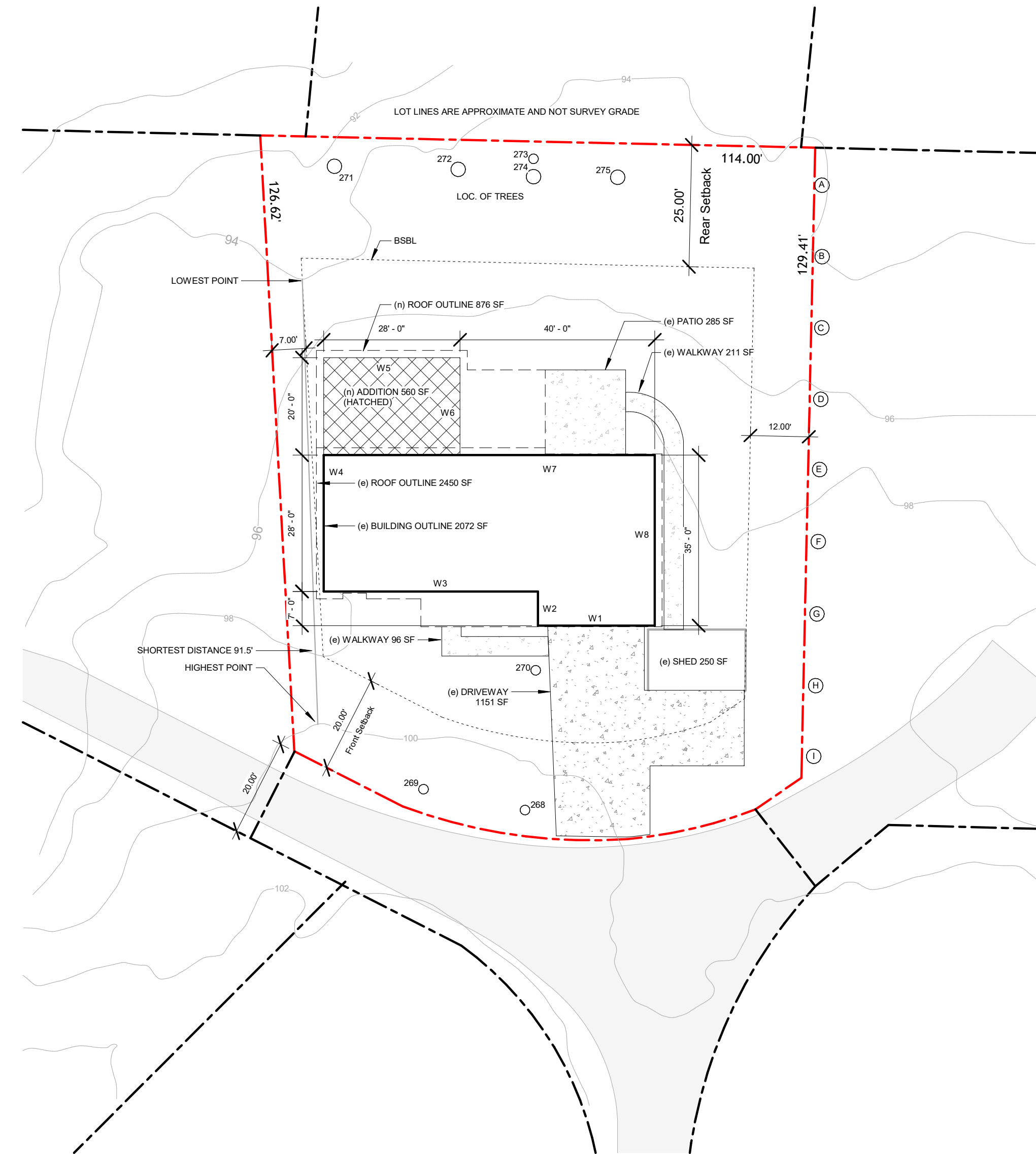
GENERAL NOTES

REVISIONS:

Project #: 2025-006
Date: 02/05/2025
Drawn by: Dan Garvida
Checked by: Aldrich

G-200

Scale: AS NOTED



1 SITE PLAN
SCALE: 1" = 20'-0"

PARCEL DATA			
Parcel	929640-0040	Jurisdiction	MERCER ISLAND
Name	ALDRICH JAMES III+BROOKE	Levy Code	1031
Site Address	7448 W MERCER WAY 98040	Property Type	R
Residential Area	034-007 (SE Appraisal District)	Plat Block / Building Number	
Property Name		Plat Lot / Unit Number	4
		Quarter-Section-Township-Range	SW-25-24-4
Legal Description			
WEST FIRS ADD TGW UND INT PRIVATE ROAD			
Plat Block:			
Plat Lot: 4			
LAND DATA			
Highest & Best Use As If Vacant	SINGLE FAMILY	Percentage Unusable	
Highest & Best Use As Improved	PRESENT USE	Unbuildable	NO
Present Use	Single Family(Res Use/Zone)	Restrictive Size Shape	NO
Land SqFt	15,195	Zoning	R-15
Acres	0.35	Water	WATER DISTRICT
		Sewer/Septic	PUBLIC
		Road Access	PRIVATE
		Parking	ADEQUATE
		Street Surface	PAVED
Views		Waterfront	
Rainier		Waterfront Location	
Territorial		Waterfront Footage	0
Olympics		Lot Depth Factor	0
Cascades		Waterfront Bank	
Seattle Skyline		Tide/Shore	
Puget Sound		Waterfront Restricted Access	
Lake Washington		Waterfront Access Rights	NO
Lake Sammamish		Poor Quality	NO
Lake/River/Creek		Proximity Influence	NO
Other View		Nuisances	
Designations		Topography	
Historic Site		Traffic Noise	
Current Use	(none)	Airport Noise	
Nbr Bldg Sites		Power Lines	NO
Adjacent to Golf Fairway	NO	Other Nuisances	NO
Adjacent to Greenbelt	NO	Problems	
Other Designation	NO	Water Problems	NO
Deed Restrictions	NO	Transportation Concurrence	NO
Development Rights Purchased	NO	Other Problems	NO
Easements	NO	Environmental	
Native Growth Protection Easement	NO	Environmental	NO
DNR Lease	NO		

PROJECT INFORMATION:

DESCRIPTION OF PROJECT:
1-STORY ADDITION TOWARDS THE REAR OF AN EXISTING SFR. CONSTRUCT A ROOF OVER THE EXISTING REAR PATIO. INTERIOR ALTERATION OF AFFECTED AREAS.

OWNER:
JAMES & BROOKE ALDRICH
7448 W MERCER WAY
MERCER ISLAND, WA 98040

LOT DESCRIPTION:
WEST FIRS ADD TGW UND INT PRIVATE ROAD
PLAT BLOCK:
PLAT LOT: 4

ZONING:
R-15

PARCEL ID:
926640-0040

AREA OF COVERAGE:
LOT AREA: = 15,195 SF (0.35 ACRES)

GROSS FLOOR AREAS:
MAIN FLOOR, EXISTING = 1,530 SF
SECOND FLOOR, EXISTING = 1,230 SF
GARAGE, ATTACHED, EXISTING = 500 SF
ADDITION, NEW = 560 SF

TOTAL FLOOR AREA = 3,820 SF (25.14%)

LOT COVERAGE:
BUILDING, PRIMARY DWELLING, EXISTING = 2,450 SF
ADDITION, NEW WITH ROOF OVERHANG = 876 SF
DRIVEWAY, EXISTING = 1,151 SF
STORAGE SHED, EXISTING = 250 SF

TOTAL LOT COVERAGE = 4,727 SF (31.11%)

HARDSCAPE AREA:
UNCOVERED PATIO, EXISTING = 285 SF
WALKWAY, EXISTING = 307 SF

TOTAL HARDSCAPE = 592 SF (3.90%)

IMPERVIOUS SURFACE:
BUILDING WITH ROOF OVERHANG, EXISTING = 2,450 SF
DRIVEWAY, EXISTING = 1,151 SF
WALKWAY, EXISTING = 307 SF
PATIO, BACK, EXISTING = 285 SF
STORAGE SHED, EXISTING = 250 SF
ADDITION, NEW WITH ROOF OVERHANG = 876 SF

TOTAL IMPERVIOUS SURFACE = 5,319 SF (35.00%)

LOT SLOPE CALCULATIONS

Highest Elevation Point of Lot:	100	Feet
Lowest Elevation Point of Lot:	94	Feet
Elevation Difference:	6	Feet
Horizontal Distance Between High and Low Points:	91.5	Feet
Lot Slope*	6.6	%

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

AVERAGE BUILDING ELEVATION CALCULATION (ABE):

SEGMENT	LENGTH	ELEVATION	PRODUCT
W1	24.00 @	99.5	2,388
W2	7.25 @	99.5	721
W3	44.00 @	99.5	4,378
W4	48.00 @	99.3	4,766
W5	28.00 @	99.0	2,772
W6	20.00 @	99.5	1,990
W7	40.00 @	99.5	3,980
W8	35.00 @	99.0	3,465
TOTAL	246.25		24,460
ABE		99.3 OR 99'-4"	

APPROVAL INFORMATION SECTION

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ALDRICH RESIDENCE
ADDITION AND INTERIOR ALTERATION

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PARCEL #:926640-0040

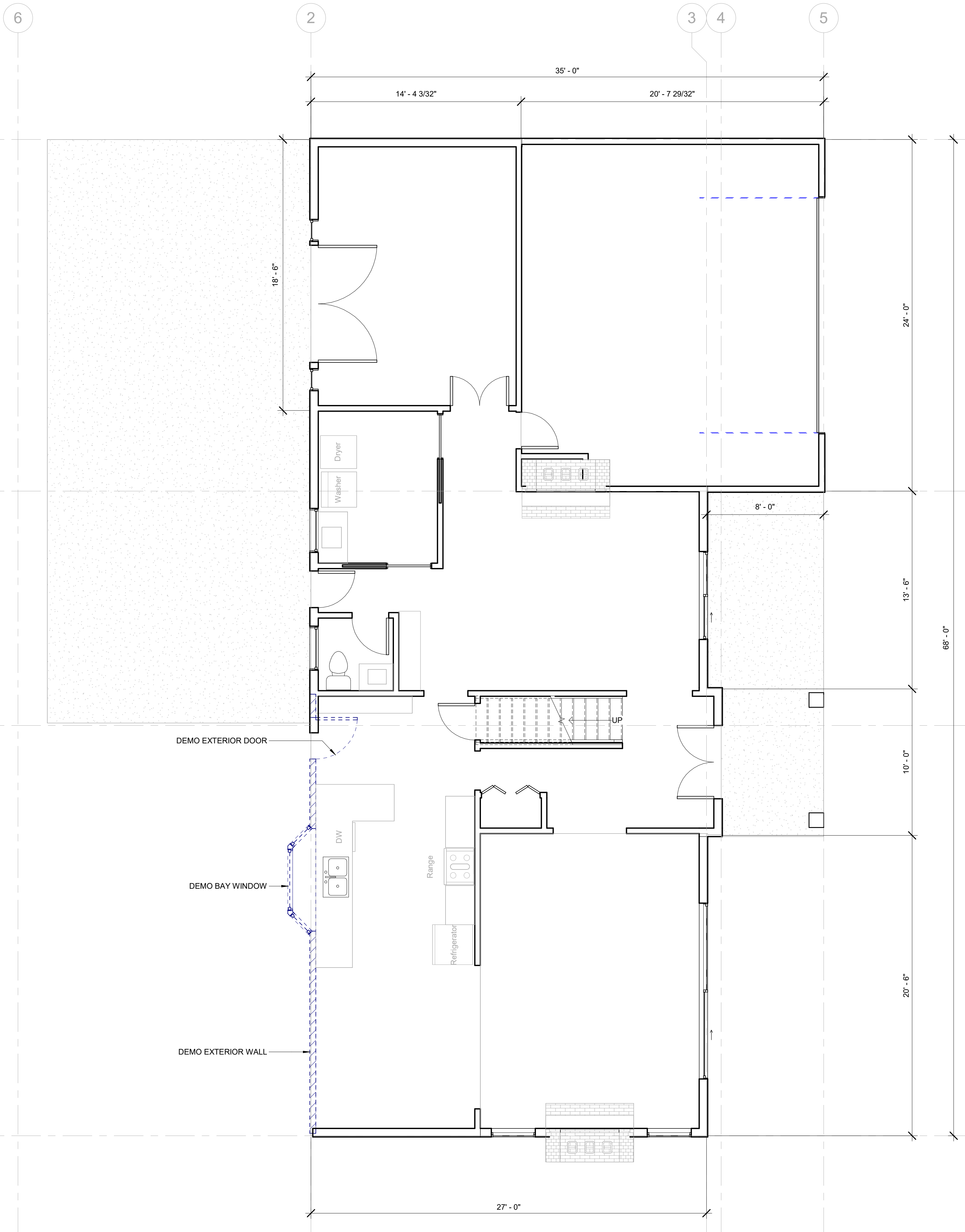
SITE PLAN & PROJECT INFORMATION

REVISIONS:

Project #: 2025-006
Date: 02/05/2025
Drawn by: Dan Garvida
Checked by: Aldrich

C-100

Scale: AS NOTED



1 1ST FLOOR PLAN - EXISTING AND DEMO PLANS
SCALE: 1/4" = 1'-0"

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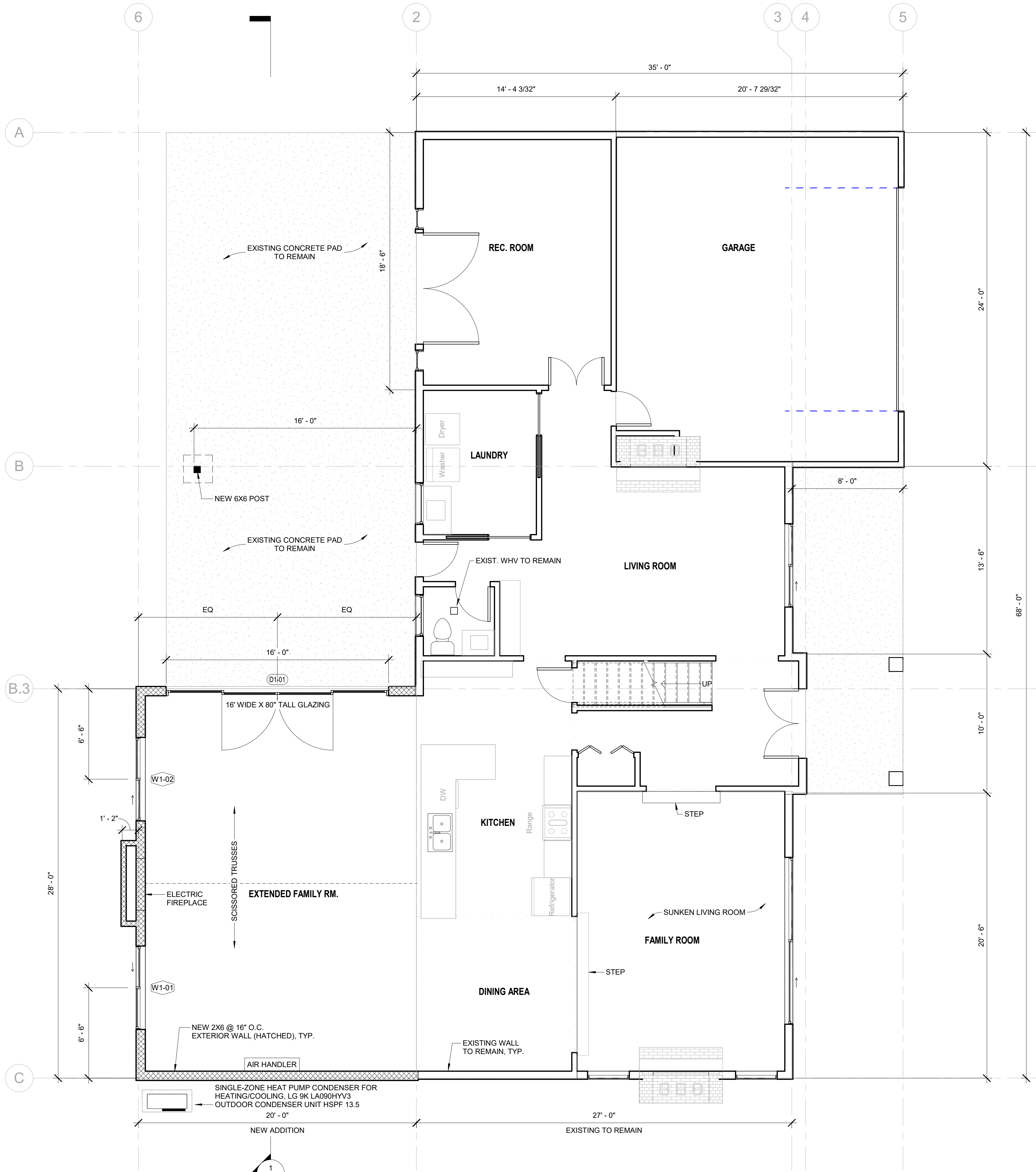
ALDRICH RESIDENCE
ADDITION AND INTERIOR ALTERATION
JAMES & BROOKE ALDRICH
7446 W MERCER WAY
MERCER ISLAND, WA 98040
PARCEL #: 926640-0040

MAIN FLOOR PLAN - EXISTING AND DEMO

REVISIONS:	

Project #: 2025-006
Date: 03/21/2025
Drawn by: Dan Garvida
Checked by: Aldrich

A-100
Scale: AS NOTED



DOOR SCHEDULE			
Mark	Width	Height	Comments
D1-01	4' - 0"	6' - 8"	NEW, EXTERIOR DOOR, WOOD FRAME

WINDOW SCHEDULE			
Mark	Width	Height	Comments
W1-01	6' - 0"	5' - 0"	NEW, VINYL FRAME, SLIDING-DOUBLE, U-0.30
W1-02	6' - 0"	5' - 0"	NEW, VINYL FRAME, SLIDING-DOUBLE, U-0.30

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MERCER ISLAND, WA 98040
PARCEL #: 926640-0040

MAIN FLOOR PLAN - PROPOSED NEW

REVISIONS:	

Project #: 2025-006
Date: 03/21/2025
Drawn by: Dan Garvida
Checked by: Aldrich

A-101

Scale: AS NOTED



ALDRICH RESIDENCE
ADDITION AND INTERIOR ALTERATION
JAMES & BROOKE ALDRICH
7446 W MERCER WAY
MERCER ISLAND, WA 98040
PARCEL #: 926640-0040

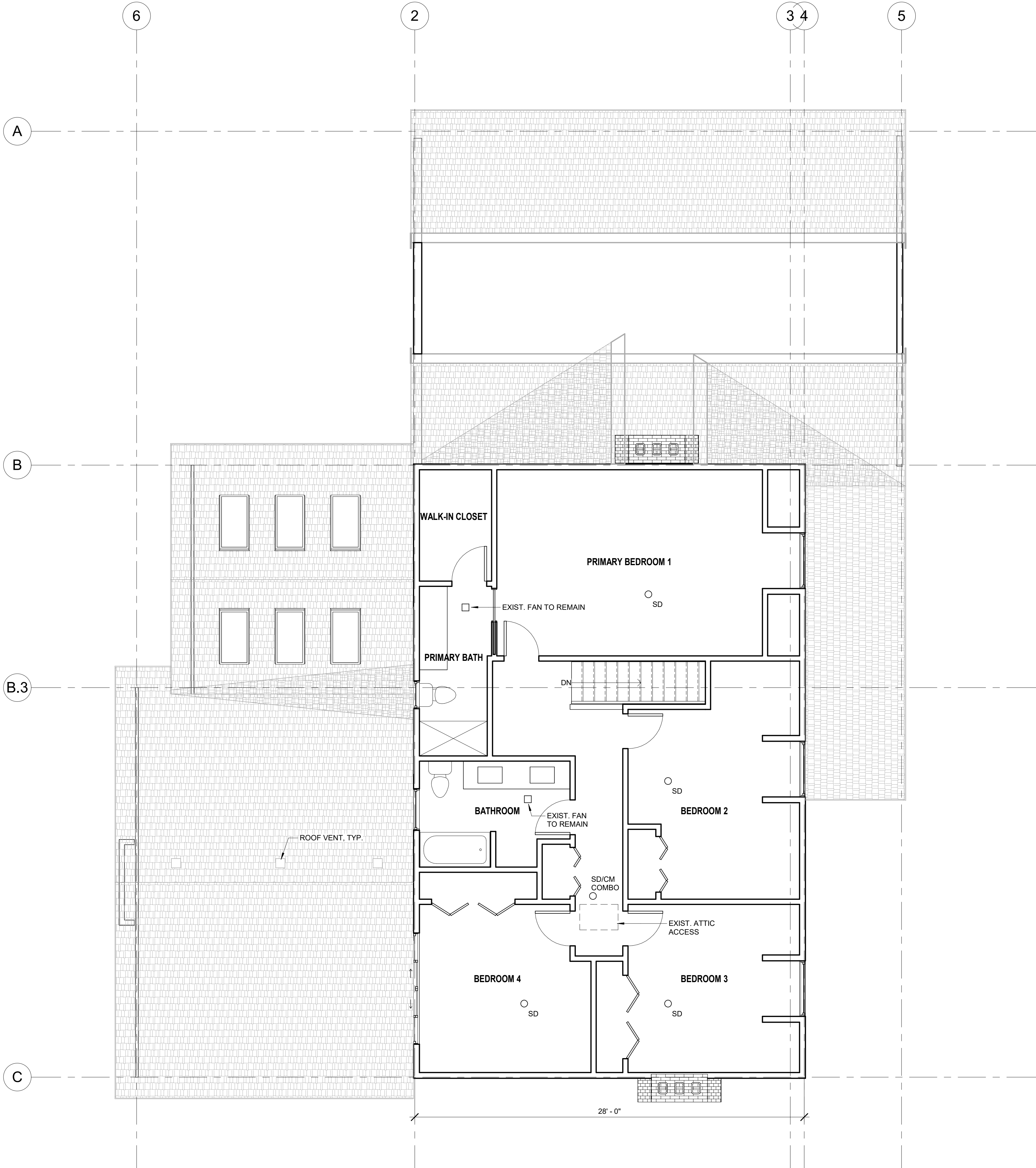
2ND FLOOR PLAN - EXISTING TO REMAIN

REVISIONS:

Project #: 2025-006
Date: 03/21/2025
Drawn by: Dan Garvida
Checked by: Aldrich

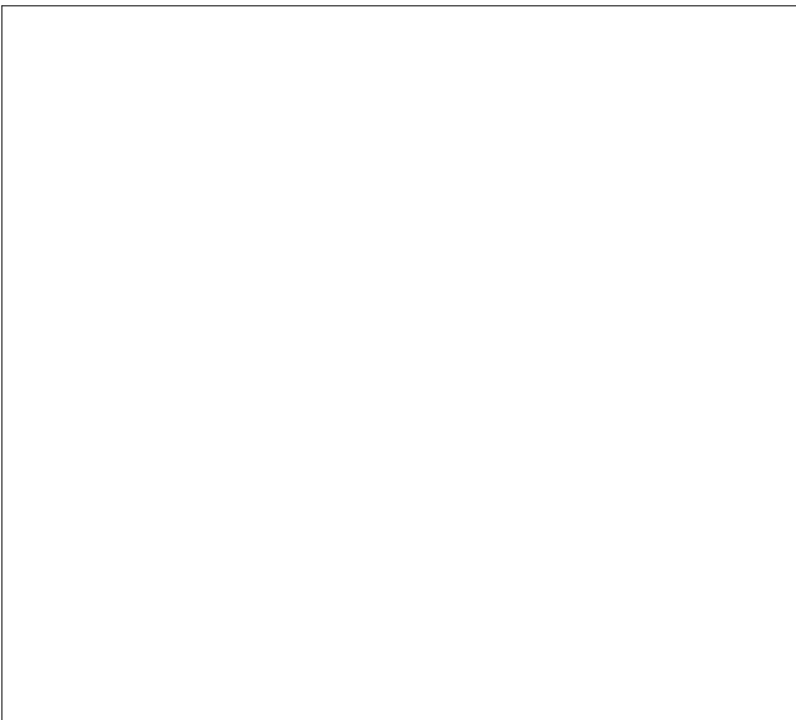
A-102

Scale: AS NOTED



1 2ND FLOOR PLAN - EXISTING TO REMAIN
SCALE: 1/4" = 1'-0"

APPROVAL INFORMATION SECTION



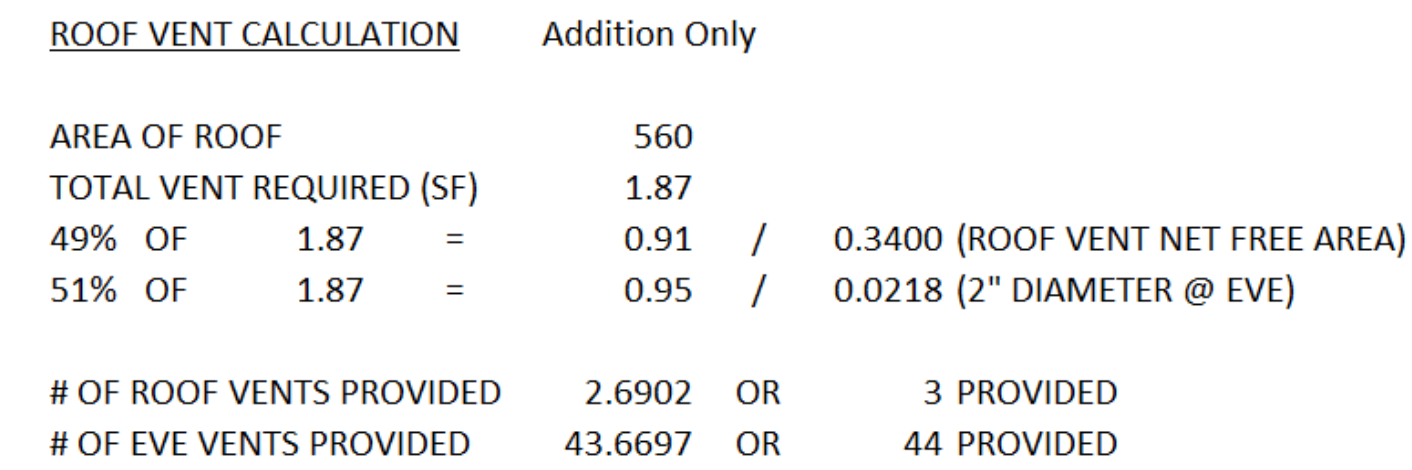
JAMES & BROOKE ALDRICH
7448 W MERCER WAY
MERCER ISLAND, WA 98040
PARCEL #:926640-0040

ROOF PLAN

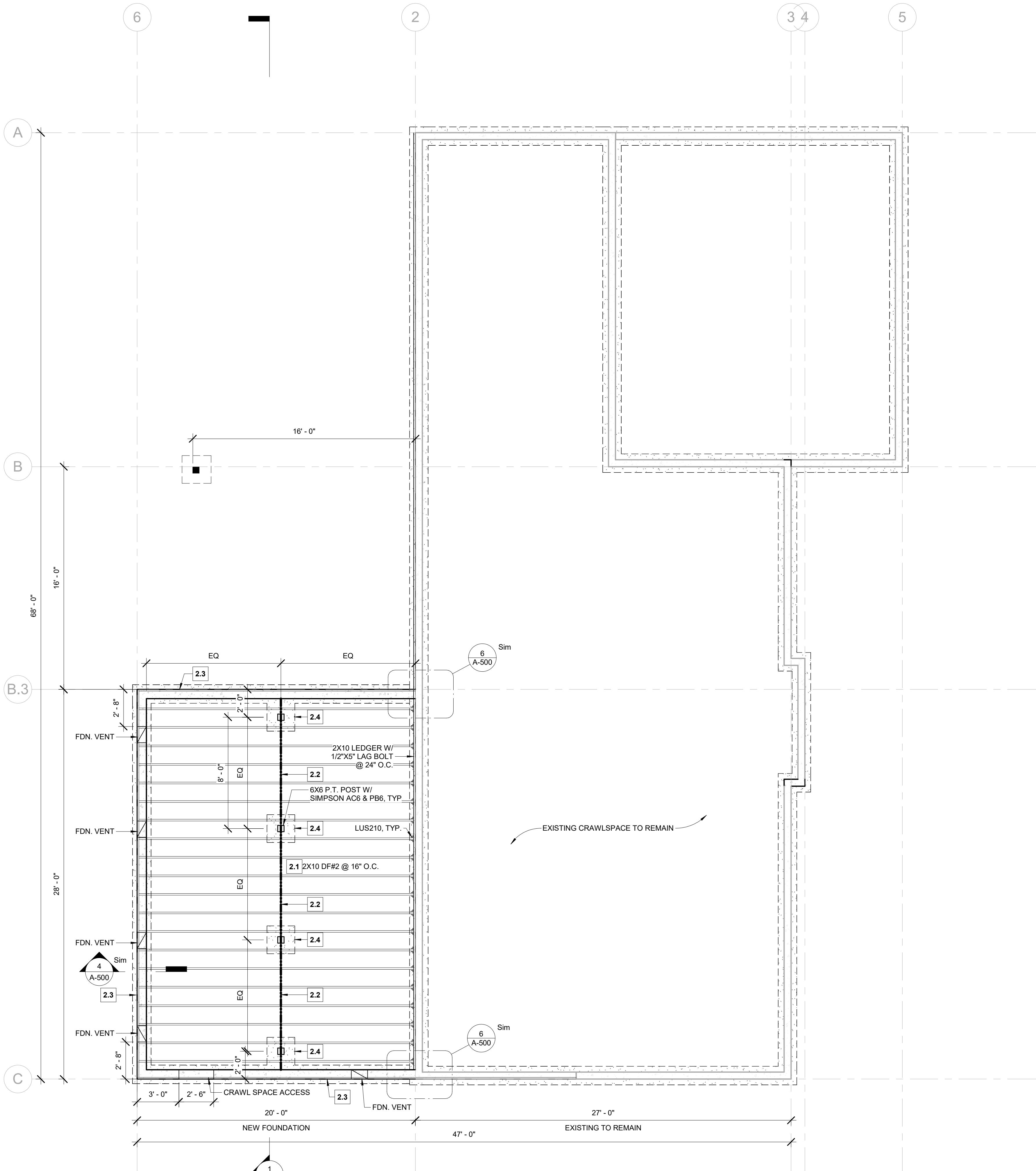
Project #:	2025-006
Date:	02/05/2025
Drawn by:	Dan Garvida
Checked by:	Aldrich

A-103

Scale: AS NOTED



1 ROOF PLAN
SCALE: 1/4" = 1'-0"



1 FOUNDATION & 1ST FLOOR FRAMING PLAN
SCALE: 1/4" = 1'-0"

FOUNDATION VENTS CALCULATION: Addition
(FOR EVERY 150 SF OF SPACE IN THE CRAWLSPACE)

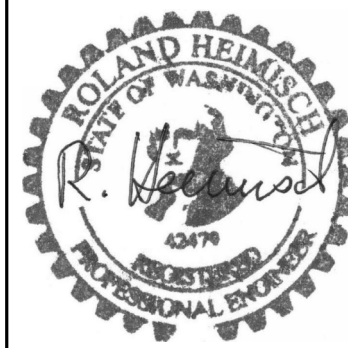
AREA OF FOUNDATION:	560 SF
REQUIRED VENTS:	3.73 SF
FOUNDATION VENT NET FREE AREA	0.910 SF
REQUIRED VENTS:	4.10
NUMBER OF VENTS PROVIDED	5

STRUCTURAL MEMBERS:

KEY LIST:

Floor Level

Key No. 2.1	Floor Joist, F No. 2, 2x10", @ 16" o.c.
Key No. 2.2	Beam, DF No. 2, 6x10"
Key No. 2.3	Continuous Footing, fc = 2,500 psi, 16x8" With 2 - #4 Horizontal. Min Overlap = 18"
Key No. 2.4	Spread Footing, fc = 2,500 psi, 24x24x8" With 3-#4 Ea. Way



ALDRICH RESIDENCE
ADDITION AND INTERIOR ALTERATION

JAMES & BROOKE ALDRICH
7446 W MERCER WAY
MERCER ISLAND, WA 98040
PARCEL #: 926640-0040

FOUNDATION 1ST FLOOR FRAMING
PLAN

REVISIONS:

Project #:	2025-006
Date:	02/05/2025
Drawn by:	Dan Garvida
Checked by:	Aldrich

A-200

Scale: AS NOTED

6

2

3 4

5

A

B

B.3

C

PRE-MANUFACTURED
GABLE END

1.1 PRE-MANUFACTURES TRUSSES
@ 24" O.C.

1.2 PRE-MANUFACTURES TRUSSES
@ 24" O.C.

NEW ROOF

NEW ROOF

1.5

2X6 OVERFRAME
CRICKET

GIRDER TRUSS

EXISTING ROOF TO REMAIN

20' - 0"
NEW ADDITION

48' - 0"

28' - 0"

1 ROOF FRAMING PLAN

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

ROOF VENT CALCULATION

Addition Only

AREA OF ROOF	560			
TOTAL VENT REQUIRED (SF)	1.87			
49% OF	1.87	=	0.91	/ 0.3400 (ROOF VENT NET FREE AREA)
51% OF	1.87	=	0.95	/ 0.0218 (2" DIAMETER @ EVE)

# OF ROOF VENTS PROVIDED	2.6902	OR	3 PROVIDED
# OF EVE VENTS PROVIDED	43.6697	OR	44 PROVIDED

STRUCTURAL MEMBERS:

Roof Level

Key No. 1.1	Manufactured Scissored Trusses, @ 24" o.c.
Key No. 1.2	Manufactured Common Trusses, @ 24" o.c.
Key No. 1.3	Glulam WS, 24F-1.8E, 5-1/2x9-1/2"
Key No. 1.4	Post, HF No. 2, 6x6", P.T.
Key No. 1.5	Glulam WS, 24F-1.8E, 5-1/2x13-1/2"
Key No. 1.6	Header, DF No. 2, 4x6"

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ADDITION AND INTERIOR ALTERATION

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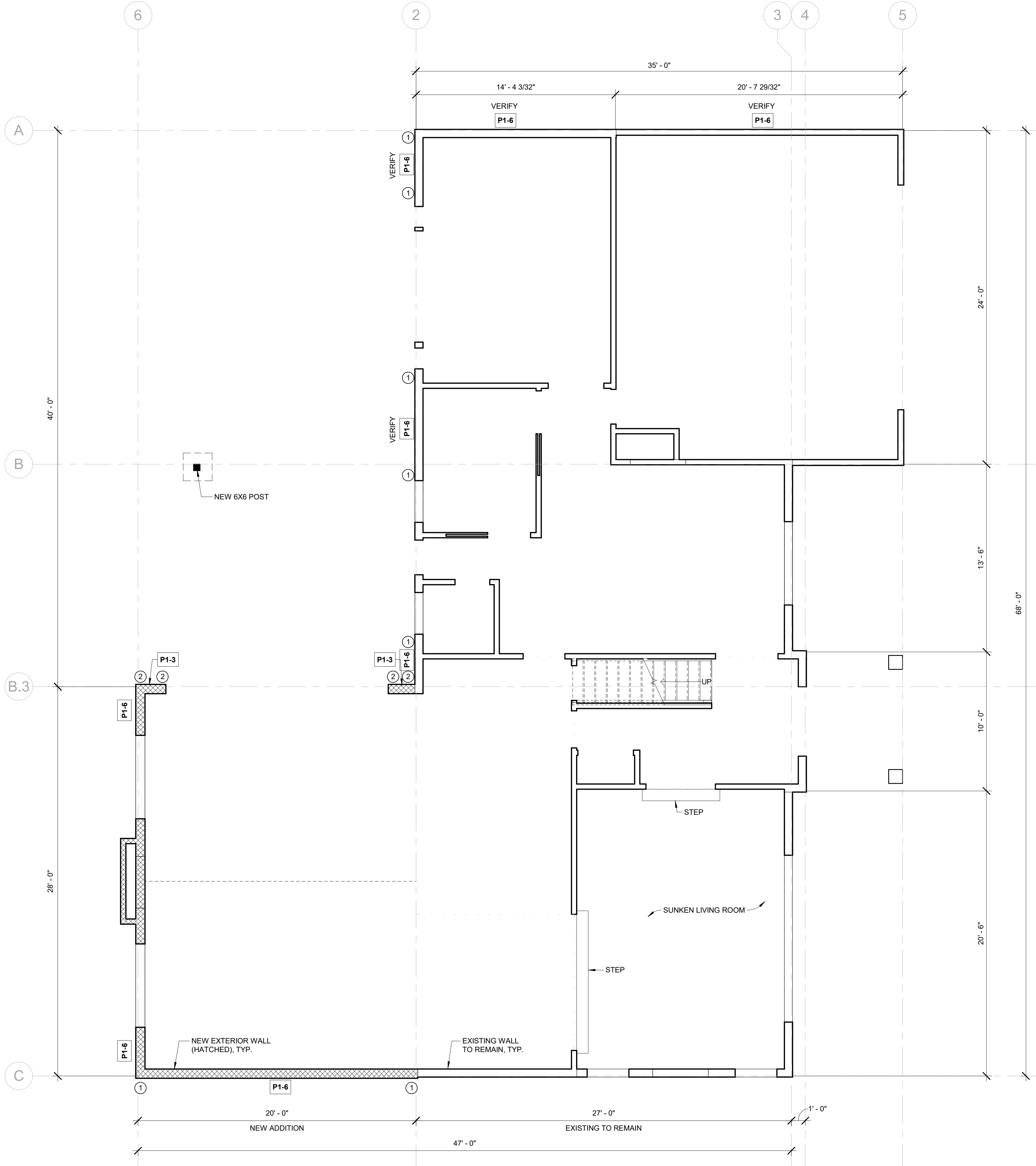
ROOF FRAMING PLANS

REVISIONS:

Project #:	2025-006
Date:	02/05/2025
Drawn by:	Dan Garvida
Checked by:	Aldrich

A-201

Scale: AS NOTED



1 1ST FLOOR PLAN - SHEAR WALL PLAN
SCALE: 1/4" = 1'-0"

Project: 7448 W Mercer Way, Mercer Island, WA 98040

Shear Wall Types								
SW type	OSB	Nails	Nails edge @ (in o.c.)	Nails field @ (in o.c.)	Boundary Member	Seismic list x .94 (to adjust for HF)	Wind x 1.4	Anchor Bolt 5/8" @ (in o.c.)
P1-6	7/16"	8d	6"	12"	2x	225	315	48"
P1-3	7/16"	8d	3"	12"	3x	425	590	30"
Roof	7/16"	8d	6"	12"	2x	226	316	
Floor	3/4" CDX	10d	6"	12"	2x	300	420	
Holdowns		Callout	HD	All T (lbs)	Wood Member	Bolt dia	Embedment w/ Epoxy SET-G3	
		1	HDU2	2215	(2) 2x	5/8"	7"	
		2	HDU4	3285	(2) 2x	5/8"	9"	



ALDRICH RESIDENCE
ADDITION AND INTERIOR ALTERATION

JAMES & BROOKE ALDRICH
7448 W MERCER WAY
MERCER ISLAND, WA 98040
PARCEL #: 926640-0040

SHEAR WALL, SCHEDULE, AND
HOLDDOWN

REVISIONS:

Project #: 2025-006
Date: 02/05/2025
Drawn by: Dan Garvida
Checked by: Aldrich

A-202

Scale: AS NOTED



ALDRICH RESIDENCE
ADDITION AND INTERIOR ALTERATION
JAMES & BROOKE ALDRICH
7448 W MERCER WAY
MERCER ISLAND, WA 98040
PARCEL #: 926640-0040

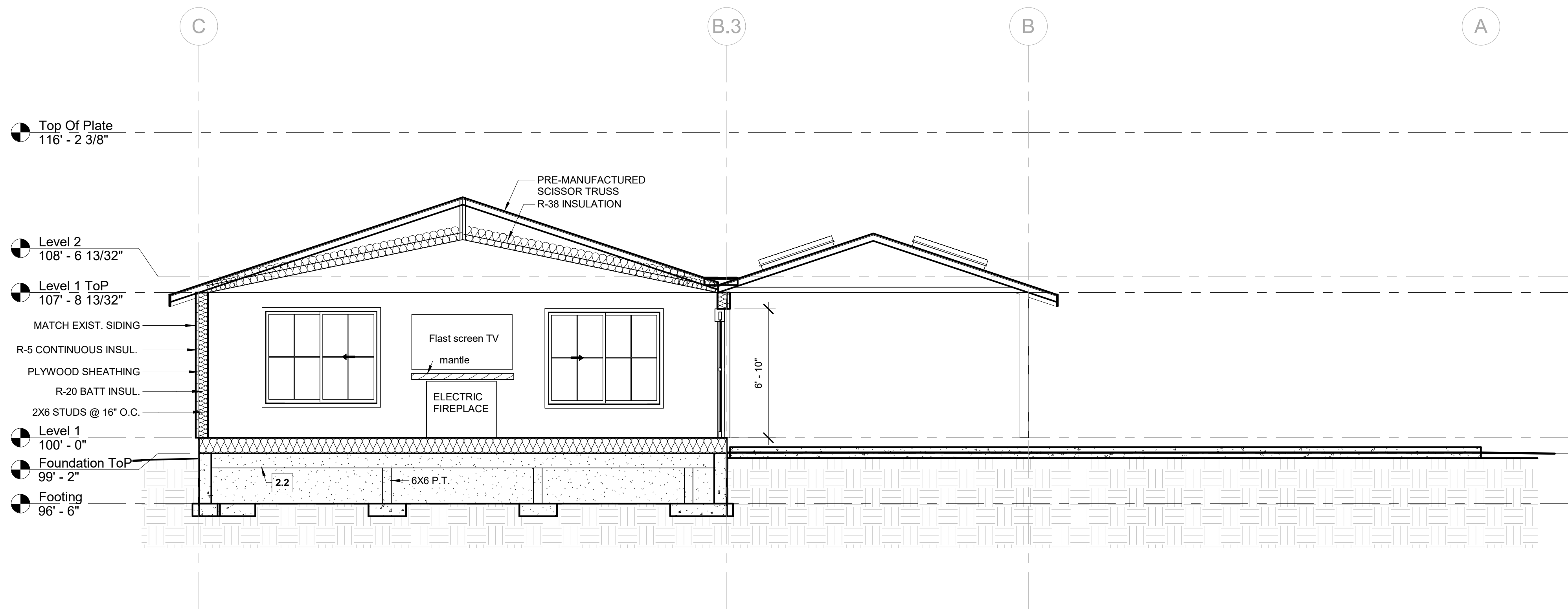
SECTION VIEWS

REVISIONS:

Project #:	2025-006
Date:	02/05/2025
Drawn by:	Dan Garvida
Checked by:	Aldrich

A-300

Scale: AS NOTED



1 SECTION THRU NEW ADDITION
SCALE: 1/4" = 1'-0"

APPROVAL INFORMATION SECTION



ALDRICH RESIDENCE
ADDITION AND INTERIOR ALTERATION
JAMES & BROOKE ALDRICH
7446 W MERCER WAY
MERCER ISLAND, WA 98040
PARCEL #: 926640-0040

ELEVATIONS - NORTH AND EAST

REVISIONS:

Project #: 2025-006
Date: 02/05/2025
Drawn by: Dan Garvida
Checked by: Aldrich

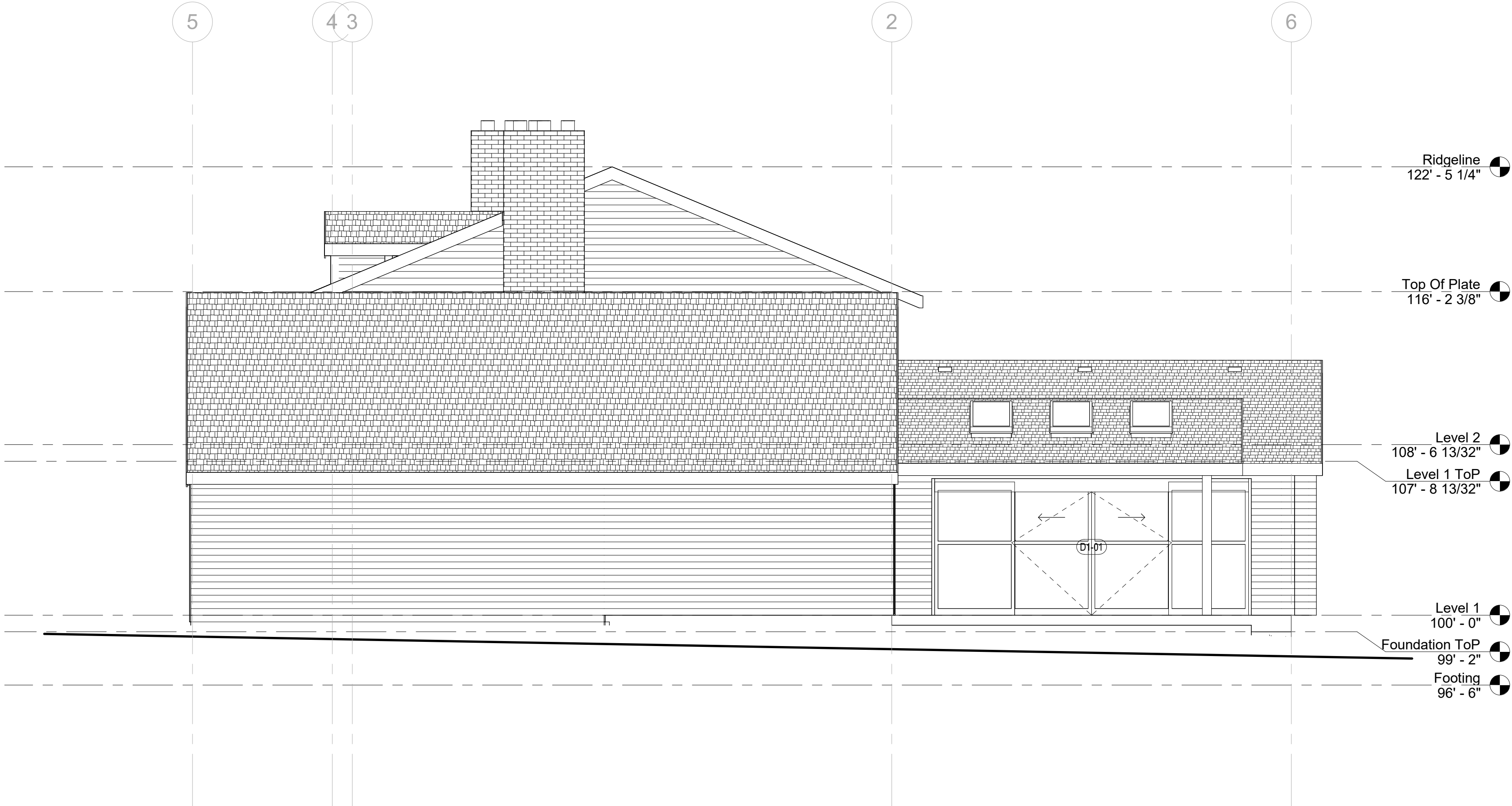
A-400

Scale: AS NOTED

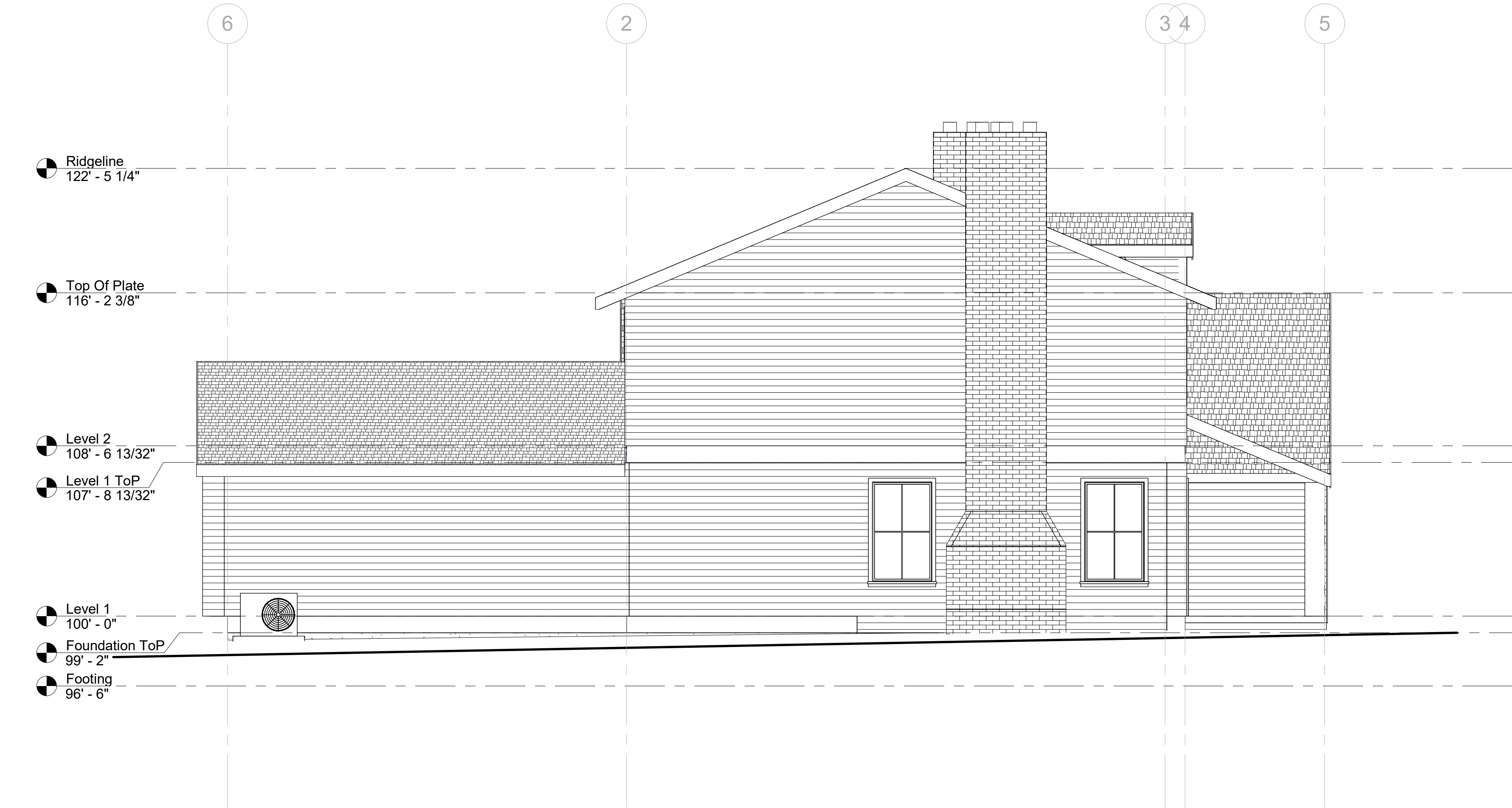
APPROVAL INFORMATION SECTION



1 NORTH (REAR) ELEVATION
SCALE: 1/4" = 1'-0"



2 EAST (RIGHT) ELEVATION
SCALE: 1/4" = 1'-0"



1 WEST (LEFT) ELEVATION
SCALE: 1/4" = 1'-0"



2 SOUTH (FRONT) ELEVATION
SCALE: 1/4" = 1'-0"



ALDRICH RESIDENCE
ADDITION AND INTERIOR ALTERATION
JAMES & BROOKE ALDRICH
7446 W MERCER WAY
MERCER ISLAND, WA 98040
PARCEL #: 926640-0040

ELEVATIONS - SOUTH AND WEST

REVISIONS:

Project #: 2025-006
Date: 02/05/2025
Drawn by: Dan Garvida
Checked by: Aldrich

A-401

Scale: AS NOTED



ALDRICH RESIDENCE
ADDITION AND INTERIOR ALTERATION

JAMES & BROOKE ALDRICH
7448 W MERCER WAY
MERCER ISLAND, WA 98040
PARCEL #:926640-0040

TYPICAL WALLS & MICS. DETAILS

REVISIONS:

Project #:	2025-006
Date:	02/05/2025
Drawn by:	Dan Garvida
Checked by:	Aldrich

A-500

Scale: AS NOTED

GENERAL STRUCTURAL NOTES

1. ALL MATERIALS, WORKMANSHIP, DESIGN, AND CONSTRUCTION SHALL CONFORM TO THE DRAWINGS, SPECIFICATIONS, THE INTERNATIONAL BUILDING CODE (IBC, 2021 EDITION) AND MODIFICATIONS TO THE INTERNATIONAL BUILDING CODE BY THE LOCAL JURISDICTION.

2. DESIGN LOAD CRITERIA

DEAD LOADS

ROOF15 PSF

FLOORS15 PSF

DECKS8 PSF

EXTERIOR WALLS10 PSF

INTERIOR WALLS8 PSF

LIVE LOADS

ROOF25 PSF

FLOOR / LIVING SPACE40 PSF

DECKS / BALCONIES60 PSF

SNOWLOADS

GROUND LOAD25 PSF

ROOF SNOW LOAD25 PSF

WIND

ULTIMATE DEIGN WIND SPEED110 MPH

WIND EXPOSUREB

IMPORTANCE FACTORlw = 1.0

ADJUSTMENT FACTORλ = 1.0

WIND SPEED UP FACTOR1.0

SEISMIC

SEISMIC USE GROUPII

IMPORTANCE FACTOR Ie1.0

SITE CLASSD

SEISMIC DESIGN CATEGORYD

RESPONSE FACTORR = 6.5

MAPPED ACCELERATIONSs = 1.65

(PER USGS)S1 = 0.63

BASE SHEARV = 7,000

SEISMIC RESPONSE COEFFICIENTCs = 0.18

SOIL PRESSURE:

ALL SOIL PRESSURE1,500 PSF
3. STRUCTURAL DRAWINGS SHALL BE USED IN CONJUNCTION WITH ARCHITECTURAL DRAWINGS FOR BIDDING AND CONSTRUCTION. CONTRACTOR SHALL VERIFY DIMENSIONS AND CONDITIONS FOR COMPATIBILITY AND SHALL NOTIFY ARCHITECT AND STRUCTURAL ENGINEER OF ANY DISCREPANCIES PRIOR TO CONSTRUCTION.

4. CONTRACTOR SHALL VERIFY ALL EXISTING DIMENSIONS, MEMBER SIZES, AND CONDITIONS PRIOR TO COMMENCING WORK. ALL DIMENSIONS OF EXISTING CONSTRUCTION SHOWN ON THE DRAWINGS ARE INTENDED AS GUIDELINES ONLY AND MUST BE VERIFIED.

5. CONTRACTOR SHALL PROVIDE TEMPORARY BRACING FOR THE STRUCTURE AND STRUCTURAL COMPONENTS UNTIL ALL FINAL CONNECTIONS HAVE BEEN COMPLETED IN ACCORDANCE WITH THE PLANS.

6. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL SAFETY PRECAUTIONS AND THE METHODS, TECHNIQUES, SEQUENCES OR PROCEDURES REQUIRED TO PERFORM THE CONTRACTORS WORK. THE STRUCTURAL ENGINEER HAS NO OVERALL SUPERVISORY AUTHORITY OR ACTUAL AND/OR DIRECT RESPONSIBILITY FOR THE SPECIFIC WORKING CONDITIONS AT THE SITE AND/OR FOR ANY HAZARDS RESULTING FROM THE ACTIONS OF ANY TRADE CONTRACTOR. THE STRUCTURAL ENGINEER HAS NO DUTY TO INSPECT, SUPERVISE, NOTE, CORRECT, OR REPORT ANY HEALTH OR SAFETY DEFICIENCIES OF THE OWNER, CONTRACTORS, OR OTHER SITE ENTITIES OR PERSONS AT THE PROJECT SITE.

7. CONTRACTOR-INITIATED CHANGES SHALL BE SUBMITTED IN WRITING TO THE ARCHITECT AND STRUCTURAL ENGINEER FOR APPROVAL PRIOR TO FABRICATION OR CONSTRUCTION. CHANGES SHOWN ON SHOP DRAWINGS ONLY WILL NOT SATISFY THIS REQUIREMENT.

8. DRAWINGS INDICATE GENERAL AND TYPICAL DETAILS OF CONSTRUCTION. WHERE CONDITIONS ARE NOT SPECIFICALLY INDICATED BUT ARE OF SIMILAR CHARACTER TO DETAILS SHOWN, SIMILAR DETAILS OF CONSTRUCTION SHALL BE USED, SUBJECT TO REVIEW AND APPROVAL BY THE ARCHITECT AND THE STRUCTURAL ENGINEER.

9. ALL STRUCTURAL SYSTEMS WHICH ARE TO BE COMPOSED OF COMPONENTS TO BE FIELD ERECTED SHALL BE SUPERVISED BY THE SUPPLIER DURING MANUFACTURING, DELIVERY, HANDLING, STORAGE AND ERECTION IN ACCORDANCE WITH INSTRUCTIONS PREPARED BY THE SUPPLIER.
- FOUNDATIONS
10. ALL FOOTINGS AND FOUNDATIONS SHALL BE SUPPORTED BY COMPETENT NATIVE SOIL 18" BELOW FINISHED GRADE FOR EXTERIOR SIDE AND 12" FOR INTERIOR FOOTINGS, FREE OF ORGANIC MATERIALS. OVEREXCAVATION MIGHT BE NEEDED TO REACH THE COMPETENT SOIL.

11. FOOTINGS AND FOUNDATION EXCAVATION SHALL BE FREE OF LOOSE SOILS, SLOUGHS, DEBRIS, AND FREE OF WATER AT ALL TIMES.

12. FOUNDATION WALL BACKFILL SHALL BE PLACED SIMULTANEOUSLY ON BOTH SIDES OF WALL PROVIDING 4" PERFORATED PIPE (AS REQUIRED) FOR SUBSURFACE DRAINAGE.
13. U.N.O. IN AN APPROVED GEOTECHNICAL REPORT, THE FOLLOWING METHOD FOR BACKFILL PLACEMENT AND COMPACTION IS TO BE USED:

EXCEPT FOR BACKFILL AGAINST BELOW-GRADE WALLS OR RETAINING WALLS, ALL OTHER STRUCTURAL FILL AND STRUCTURAL BACKFILL MATERIALS SHALL BE PLACED IN RELATIVELY HORIZONTAL LOOSE LIFTS NOT EXCEEDING 10 INCHES IN THICKNESS AND COMPACTED TO AT LEAST 95 PERCENT OF THE MODIFIED PROCTOR (ASTM D1557) MAXIMUM DENSITY AT MOISTURE CONTENTS WITHIN TWO (2) PERCENT OF OPTIMUM. THE SPECIFIED COMPACTION DENSITY AND MOISTURE CONTENT OF EACH LIFT MUST BE VERIFIED BY INSPECTION, PRIOR TO PLACEMENT OF SUBSEQUENT LIFTS. BACKFILL AGIANST BELOW-GRADE WALLS AND RETAINING WALLS SHOULD BE COMPACTED AS DESCRIBED ABOVE TO ONLY 90 PERCENT OF THE MAXIMUM DRY DENSITY AS DETERMINED BY ASTM D1557.

14. FOOTING SIZE SHALL BE AS INDICATED ON DRAWINGS OR MIN. AS PER IBC SECTION 1806.

15. WHERE THE SURFACE IS SLOPED MORE THAN OE (1) FOOT IN TEN (10) FEET THE FOUNDATION SHALL BE LEVEL OR STEPPED SO THAT BOTH, TOP AND BOTTOM, OF SUCH FOUNDATION ARE LEVEL PER IBC.

16. WHERE STRUCTURAL COLUMNS AND POSTS ARE EXPOSED TO WATER SPLASH ABOVE, A CONCRETE SURFACE OR TO THE WEATHER, PROVIDE A MIN. OF 1" ABOVE CONCRETE SURFACE, OR 8" ABOVE THE EXPOSED EARTH PER IBC.
- CONCRETE
17. CONCRETE SHALL BE MIXED, PROPORTIONED, CONVEYED AND PLACED IN ACCORDANCE WITH IBC SECTION 1905, 1906, AND ACI 301. STRENGTH AT AGE 28 DAYS AND MIX CRITERIA SHALL BE AS FOLLOWS, U.N.O.:

MEMBER TYPE	PSI	MAX AGGR	MAX W/C
(IN)			RATIO
SLABS ON GRADE	2,500	1	0.45
FOUNDATIONS	2,500	1	0.45
WALLS	2,500	1	0.50
COLUMNS, ELEVATED SLABS & BEAMS	4,500	¾	0.40

18. CONCRETE MIX FOR FOUNDATION AND SLAB:
CEMENT: 5.5 SACK TYPE I NORMAL PORTLAND CEMENT
1,210 LBS OF WET SAND
1,925 LBS GRAVEL

19. REINFORCING STEEL SHALL CONFORM TO ASTM A615, GRADE 60, FY = 60,000 PSI, UNLESS NOTED OTHERWISE. WELDED WIRE FABRIC SHALL CONFORM TO ASTM-185.

20. DETAILING OF REINFORCING STEEL (INCLUDING HOOKS AND BENDS) SHALL BE IN ACCORDANCE WITH ACI 318-14. LAP ALL REINFORCEMENTS IN ACCORDANCE WITH "THE REINFORCING SPLICE AND DEVELOPMENT LENGTH SCHEDULE". PROVIDE CORNER BARS AT ALL WALL AND FOOTING INTERSECTIONS. LAP ADJACENT MATS OF WELDED WIRE FABRIC A MINIMUM OF 8" AT SIDES AND ENDS.

21. NO BARS PARTIALLY EMBEDDED IN HARDENED CONCRETE SHALL BE FIELD BENT UNLESS SPECIFICALLY SO DETAILED AND APPROVED BY THE STRUCTURAL ENGINEER.

22. CONCRETE PROTECTION (COVER) FOR REINFORCING STEEL SHALL BE AS FOLLOWS:

FOOTINGS AND OTHER UNFORMED SURFACES	
CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH	3"
FORMED SURFACES EXPOSED TO EARTH OR WEATHER	
(NO. 6 BARS OR LARGER)	2"
(NO 5 BARS OR SMALLER)	1-1/2"
COLUMN TIES OR SPIRALS AND BEAM STIRRUPS	1-1/2"
SLABS AND WALLS:	GREATER OF BAR DIAMETER + 1/8 OR 3/4"

23. CAST-IN-PLACE CONCRETE: SEE ARCHITECTURAL DRAWINGS FOR EXACT LOCATIONS AND DIMENSIONS OF DOOR AND WINDOW OPENINGS IN ALL CONCRETE WALLS. SEE MECHANICAL DRAWINGS FOR SIZE AND LOCATION OF MISCELLANEOUS MECHANICAL OPENINGS THROUGH CONCRETE WALLS .

24. NON-SHRINK GROUT SHALL BE FURNISHED BY AN APPROVED MANUFACTURER AND SHALL BE MIXED AND PLACED IN STRICT ACCORDANCE WITH THE MANUFACTURER'S PUBLISHED RECOMMENDATIONS. GROUT STRENGTH SHALL BE AT LEAST EQUAL TO THE MATERIAL ON WHICH IT IS PLACED (2,500 PSI MIN).
- FLOOR SLABS
25. INTERIOR CONCRETE SLAB-ON-GRADE FLOORS SHOULD BE UNDERLAIN BY CAPILARY BREAK CONSISTING OF AT LEAST 4 INCHES PEA GRAVEL OR COMPACTED ¾- INCH CLEAN CRUSHED ROCK (LESS THAN 3 PERCENT FINES).
- ANCHORAGE
26. EPOXY-GROUTED ITEMS (THREADED RODS OR REINFORCING BARS) SPECIFIED ON THE DRAWINGS SHALL BE INSTALLED WITH SIMPSON EPOXY "SET-3G" OR EQUAL. SPECIAL INSPECTION IS REQUIRED. RODS SHALL BE ASTM A-36 UNLESS NOTED OTHERWISE.

27. DRIVEN PINS AND OTHER POWDER ACTUATED FASTENERS SHALL BE LOW VELOCITY TYPE. INSTALL IN STRICT ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS. MINIMUM EMBEDMENT IN CONCRETE SHALL BE 1" UNLESS OTHERWISE NOTED. MAINTAIN AT LEAST 3" TO NEAREST CONCRETE.

28. PERIODIC SPECIAL INSPECTION FOR EPOXIED ANCHORS AND BOLTS IS REQUIRED.

STEEL

29. STRUCTURAL STEEL FABRICATION, ERECTION AND WELDING INSPECTION SHALL COMPLY WITH THE SPECIAL INSPECTION SCHEDULE.

30. STRUCTURAL STEEL SHALL BE GRADE A-36 UNLESS NOTED OTHERWISE.

31. ARCHITECTURALLY EXPOSED STEEL SHALL CONFORM TO SECTION 10 OF THE AISC CODE OF STANDARD PRACTICE FOR STEEL BUILDINGS AND BRIDGES.

32. THE FOLLOWING ADHESIVE-TYPE ANCHORING SYSTEMS SHALL BE USED FOR CONCRETE AND MASONRY, AS APPLICABLE AND IN ACCORDANCE WITH CORRESPONDING CURRENT ICC ESR REPORT.

- SIMPSON "SET-3G" – ICC ESR 2508
FOR ANCHORING TO CONCRETE

33. ALL WELDING SHALL BE IN CONFORMANCE WITH AISC AND A.W.S STANDARDS AND SHALL BE PERFORMED BY W.A.B.O. CERTIFIED WELDERS USING E70 XX ELECTRODES. ONLY PREQUALIFIED WELDS(AS DEFINED BY A.W.S.) SHALL BE USED ALL COMPLETE JOINT PENETRATION GROOVE WELDS SHALL BE MADE WITH A FILLER MATERIAL THAT HAS A MINIMUM CVN TOUGHNESS OF 20 FT LBS AT -20 DEGREES F, AS DETERMINED BY AWS CLASSIFICATION OR MANUFACTURER CERTIFICATION

34. WELDING INSPECTION SHALL BE IN COMPLIANCE WITH AWS D1.1.
- WOOD
35. ALL SOLID LUMBER TO BE GRADED BY WCLIB OR WWSA. ALL LUMBER SHALL BE HEM-FIR #2 (HF #2) OR BETTER. ALL SOLID LUMBER 5" X 4" OR LARGER SHALL BE DOUGLAS FIR #2 (DF #2) U.N.O. ALL GLUE-LAMINATED LUMBER SHALL BE GLULAM 24F-1.8E WS.

DESIGN VALUES FOR GLULAM BEAMS

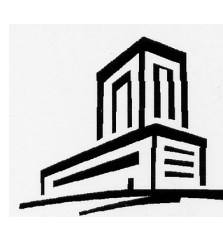
FLEXURAL STRESS TENSION ZONE	2,400 PSI
FLEXURAL STRESS COMPRESSION ZONE	1,850 PSI
COMPRESSION PERPENDICULAR TO GRAIN	650 PSI
SHEAR	266 PSI
APPARENT E	1.8x10 lb-in²
TRUE E	1.9x10 lb-in²

36. LUMBER IN CONTACT WITH CONCRETE AND ALL EXTERIOR WOOD SHALL BE PRESSURE TREATED, ALL CONNECTORS GALVANIZED.

37. INSTALL SOLID BLOCKING BTWN JOISTS AT ALL BEARING POINTS. THROUGH BOLTS AND LAG BOLTS SHALL BE ASTM A307. PROVIDE MALLEABLE IRON WASHER AT ALL BOLT AND LAG BOLT LOATIONS. PROVIDE CUT WASHER FOR ALL BOLTS PROTRUDING BEARING WOOD.

38. ALL METAL (CONNECTORS, NAILS, BOLTS, ETC.) IN CONTACT WITH P.T. WOOD SHALL BE HOT DIPPED GALVANIZED.

39. U.N.O. CONNECTORS AND FASTENERS SHALL COMPLY WITH IBC TABLE 2304.10.1
- OPEN WEB TRUSSES
40. THE INSTALLATION OF OPEN WEB TRUSSES SHALL COMPLY WITH THE REQUIREMENTS OF IBC 2021 TABLE 1705.2.3.

41. OPEN WEB TRUSS SHOP DRAWINGS SHALL BE PREPARED BY A LICENSED PROFESSIONAL ENGINEER IN THE STATE OF WASHINGTON.
- | COMPARISON OF COMMON, BOX AND SINKER NAIL DIMENSIONS (inches) OF THE SAME PENNYWEIGHT. | | | | | | |
|--|----------|-------------|-------|-------|-------|-------|
| TYPE | FEATURE | PENNYWEIGHT | | | | |
| | | 6d | 8d | 10d | 12d | 16d |
| COMMON | Length | 2 | 2-1/2 | 3 | 3-1/4 | 3-1/2 |
| | Diameter | 0.113 | 0.131 | 0.148 | 0.148 | 0.162 |
| | Head | 0.226 | 0.281 | 0.312 | 0.312 | 0.344 |
| BOX | Length | 2 | 2-1/2 | 3 | 3-1/4 | 3-1/2 |
| | Diameter | 0.099 | 0.113 | 0.128 | 0.128 | 0.135 |
| | Head | 0.266 | 0.297 | 0.312 | 0.312 | 0.344 |
| SINKER | Length | 1-7/8 | 2-3/8 | 2-7/8 | 3-1/8 | 3-1/4 |
| | Diameter | 0.092 | 0.113 | 0.120 | 0.135 | 0.148 |
| | Head | 0.231 | 0.266 | 0.281 | 0.312 | 0.344 |
-
- 

tec instruct LLC

4111 164th St. SW #51, Lynnwood, WA 98087
Telephone (206) 553 9076 - email: www.heimisch@yahoo.com

ENGINEERING
- | | | |
|--------------|-----------------------------------|----|
| CLIENT: | James & Brooke Aldrich | S1 |
| JOB SITE: | 7448 W Mercer Way, Mercer Island, | |
| PROPERTY # | WA 98040 | |
| DESCRIPTION: | Addition & Alteration | |
| DATE: | 04/25/2025 | |
| ENGINEER: | Roland Heimisch, P. E. | |