% REMODEL CALCULATION

(Used only to justify maintaining existing hardscape % above existing code - all other land use aspects are current code compliant)

	exist wall	new wall
A	20.70	
B	1.20	
C	1.70	
D	16.50	
E	1.7	
F	4.00	
G	1.60	
H	31.30	
I	43.00	
J	3.00	
K		13.06
L		9
M		3.81
N	7.80	
O	48.50	
P	1.31	
Q		6.63
R		10.81
S		2.00
T		12.63
U	12.63	
V		8.56
W		8.00
X		8.63
Y	2	
	197.14	83.13

TOTAL PERIM = 280.27
NEW WALLS = 29.66% <40%, ok

F.A.R. ALLOWABLE = 11167 x .4 = 4466.8 sf

for main floor, footprint = far = 3326.6 sf
new loft = 203.3 sf
rooms over 17' = 489.5 sf
pool house = 200 sf

existing basement 100% below grade

total = 4219.4 sf < 40% ok

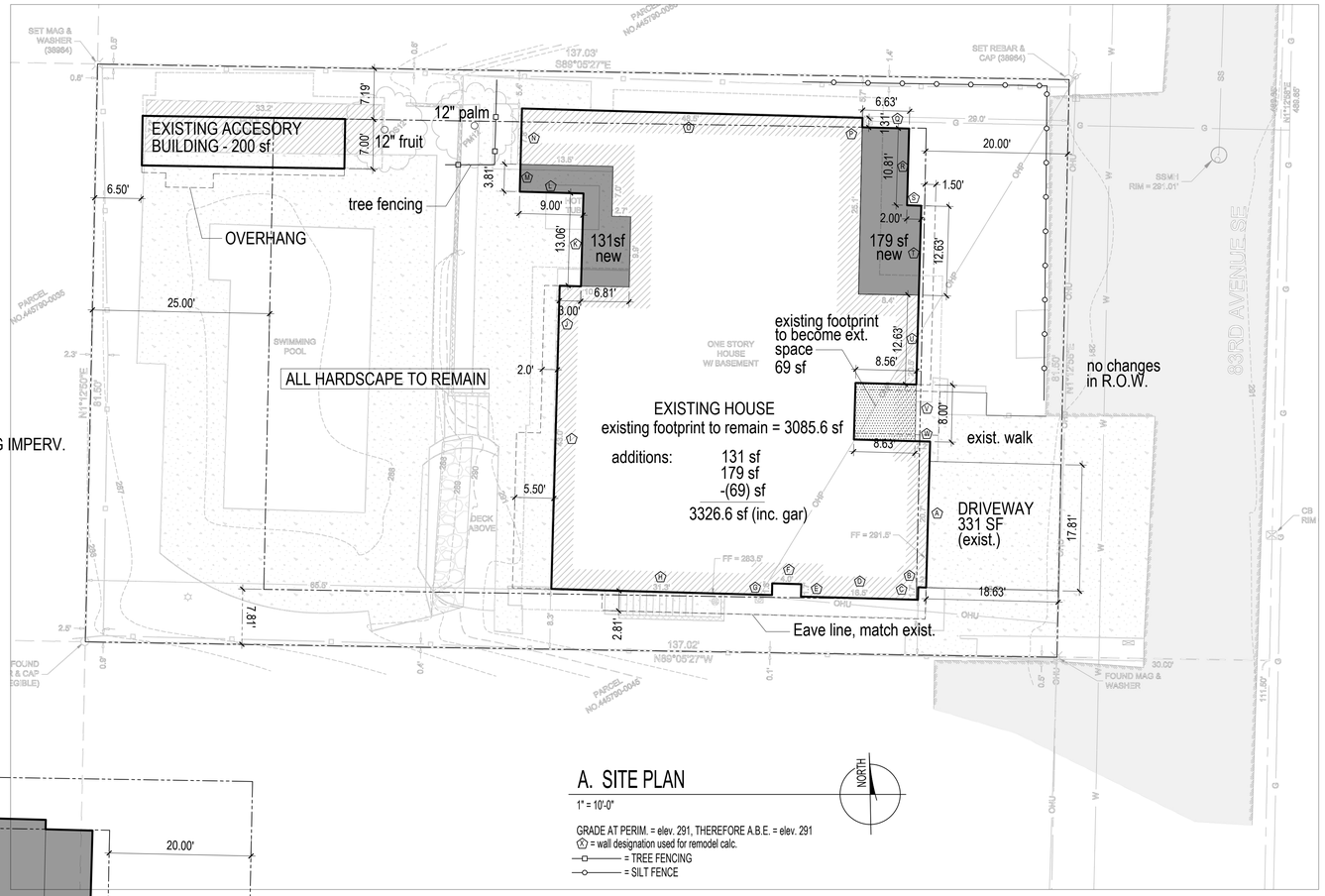
LOT COVERAGE ALLOWABLE = 11167 x .4 = 4466.8 sf

PROPOSED = HOUSE TO EAVES = 3833.5 sf
POOL HOUSE TO EAVES = 242 sf
DRIVEWAY = 331 sf
4406.5 sf < 40% ok

PROPOSED HOUSE ADDS ONLY ONLY 12 sf TO EXISTING IMPERV.
THEREFOR, DRAINAGE EXEMPT

LOT SLOPE

HIGH POINT = 291'
LOW POINT = 285.5'
LOT SLOPE = 5.5'/132.07' = 4.16%

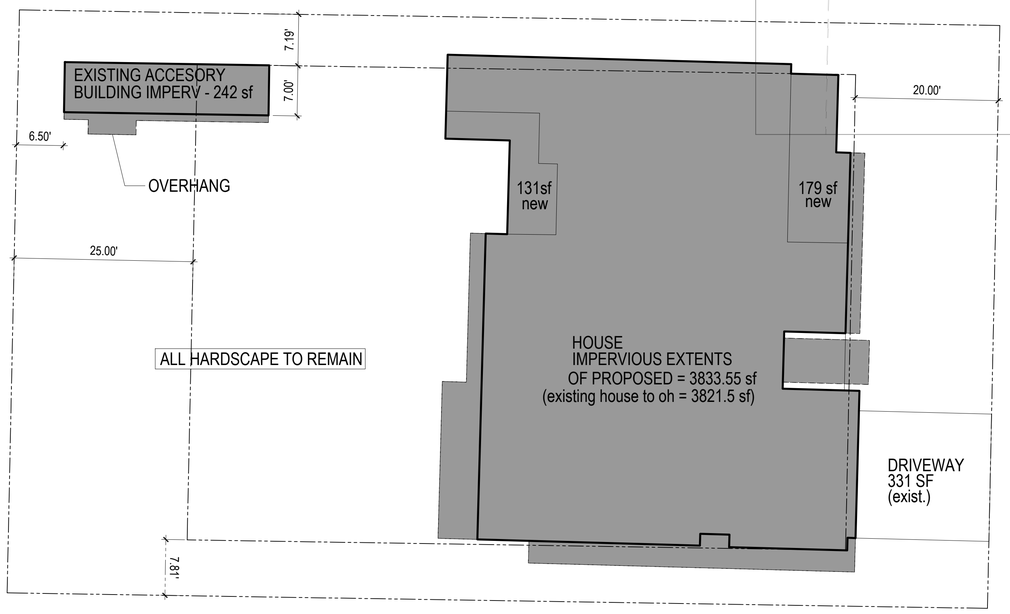


A. SITE PLAN

1" = 10'-0"

NORTH

GRADE AT PERIM. = elev. 291, THEREFORE A.B.E. = elev. 291
⬠ = wall designation used for remodel calc.
—□— = TREE FENCING
—○— = SILT FENCE



B. IMPERVIOUS SITE PLAN

1" = 10'-0"

NORTH

DRAINAGE EXEMPT

All Japanese knotweed (Polygonum cuspidatum) and Regulated Class A, Regulated Class B, and Regulated Class C weeds identified on the King County Noxious Weed list, as amended, shall be removed from the property.

development proposals for a new single-family home shall remove japanese knotweed (polygonum cuspidatum) and regulated class a, regulated class b, and regulated class c weeds identified on the king county noxious weed list, as amended, from required landscaping areas established pursuant to subsection 19.02.020(f)(3)(a). new landscaping associated with new single-family home shall not incorporate any weeds identified on the king county noxious weed list, as amended. provided, that removal shall not be required if the removal will result in increased slope instability or risk of landslide or erosion.

Parcel Number/Legal

Parcel # 4457900050

LUCAS HILL DIV # 2
PLat Block: 1
Plat Lot: 10

ZONING = R-9.6
LOT sf = 11167

Owner

Farshad and Laleh Mahramnia
3859 83rd Ave SE Mercer Island WA

Structural Engineer

Javid Abdi, PE, SE Atlas Consulting Structural Engineers
6810 NE 149th St Kenmore WA 98028
Phone: (206) 427-7233

Project Description

Remodel of existing single family residence. Net New living space on the main floor = 241sf. New Loft area = 204 sf.

9317 REGISTERED ARCHITECT CHRISTOPHER R. LITTLE STATE OF WASHINGTON

CENTERLINE DESIGN
4737 37th AVE SW
SEATTLE
206.935.4684
www.Centerline-Design.com

Mahramnia Remodel

3859 83rd Ave SE

CONTENTS

Site Plan

DRAWN BY
CRL

DATE
2.23.22

A.1

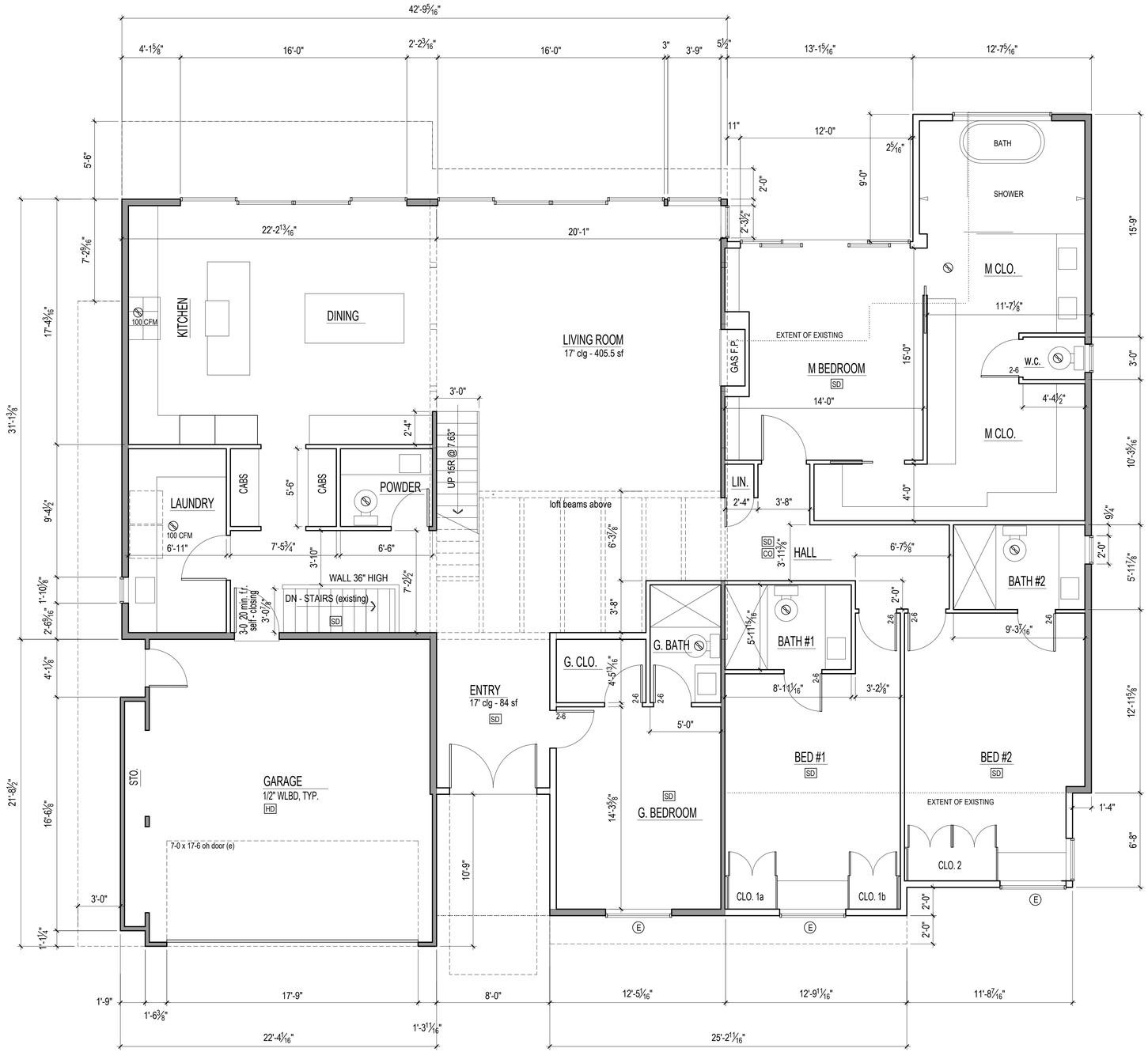
NOTES

SD = SMOKE DETECTOR, HARDWIRE, INTERCONNECTED w/ BATTERY BACK-UP
CO = CARBON MONOXIDE DETECTOR, HARDWIRE w/ BATTERY BACK-UP
HD = HEAT DETECTOR, HARDWIRE, INTERCONNECTED w/ BATTERY BACK-UP

DOORS ARE 3-0 x 6-8 (r.o. = 3'-2" x 6'-10") unless otherwise indicated
⊘ = FAN, 50 CFM UNLESS OTHERWISE INDICATED
FOR SHEAR WALL INFORMATION SEE STRUCTURAL PLANS
ALL INTERIOR WALLS TO BE 2x4, EXTERIOR WALLS 2x6, EXCEPT AS INDICATED, OR EXISTING
(E) =EGRESS WINDOWS

Contractor shall verify to Inspector all guards and railings shall be capable of resisting 200 lb load on top rail acting in any direction as required by IRC Table R301.5.

ALL WALLS FULL HIEGHT UNLESS OTHERWISE INDICATED
(T) =TEMPER/SAFETY GLAZE WINDOWS (TEMPER ALL DOORS/SIDELIGHTS, TYP.)
ALL GAS F.P. TO BE APPROVED DIRECT VENT U.L. APPROVED
(e) = EXISTING



A. MAIN FLOOR PLAN

1/4" = 1'-0"

NORTH

EXISTING = 3085.6 sf (gross)
NEW = 310 sf (gross) less 69 sf removed
TOTAL = 3326.6 sf (gross - outside of walls)
TOTAL = 3257 sf (net - inside of walls)
= WALLS THAT REMAIN IN EXISTING LOCATIONS
Living Area = 2972.7 sf
Garage Area = 423 sf

9317 REGISTERED ARCHITECT CHRIS LUTTE STATE OF WASHINGTON

CENTERLINE DESIGN
4737 37th AVE SW
SEATTLE
206.935.4684
www.Centerline-Design.com

Mahramnia Remodel

3859 83rd Ave SE

CONTENTS

Main Floor Plan

DRAWN BY
CRL

DATE
2.14.22

A.2

NOTES

SD = SMOKE DETECTOR, HARDWIRE, INTERCONNECTED w/ BATTERY BACK-UP
CO = CARBON MONOXIDE DETECTOR, HARDWIRE w/ BATTERY BACK-UP
HD = HEAT DETECTOR, HARDWIRE, INTERCONNECTED w/ BATTERY BACK-UP

DOORS ARE 3-0 x 6-8 (r.o. = 3'-2" x 6'-10") unless otherwise indicated

⊘ = FAN, 50 CFM UNLESS OTHERWISE INDICATED

FOR SHEAR WALL INFORMATION SEE STRUCTURAL PLANS

ALL INTERIOR WALLS TO BE 2x4, EXTERIOR WALLS 2x6, EXCEPT AS INDICATED, OR EXISTING

(E) =EGRESS WINDOWS

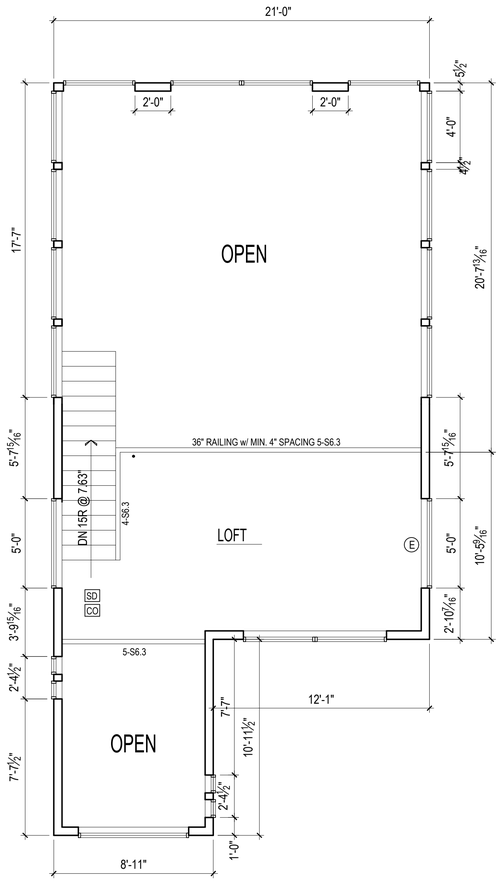
Contractor shall verify to Inspector all guards and railings shall be capable of resisting 200 lb load on top rail acting in any direction as required by IRC Table R301.5.

ALL WALLS FULL HIEGHT UNLESS OTHERWISE INDICATED

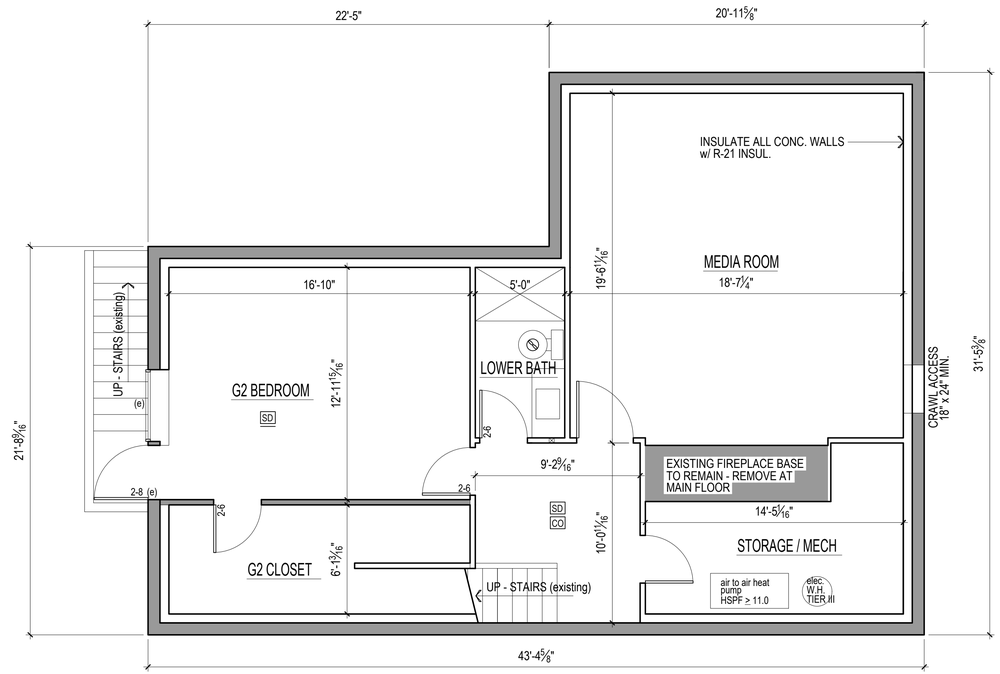
(T) =TEMPER/SAFETY GLAZE WINDOWS (TEMPER ALL DOORS/SIDELIGHTS, TYP.)

ALL GAS F.P. TO BE APPROVED DIRECT VENT U.L. APPROVED

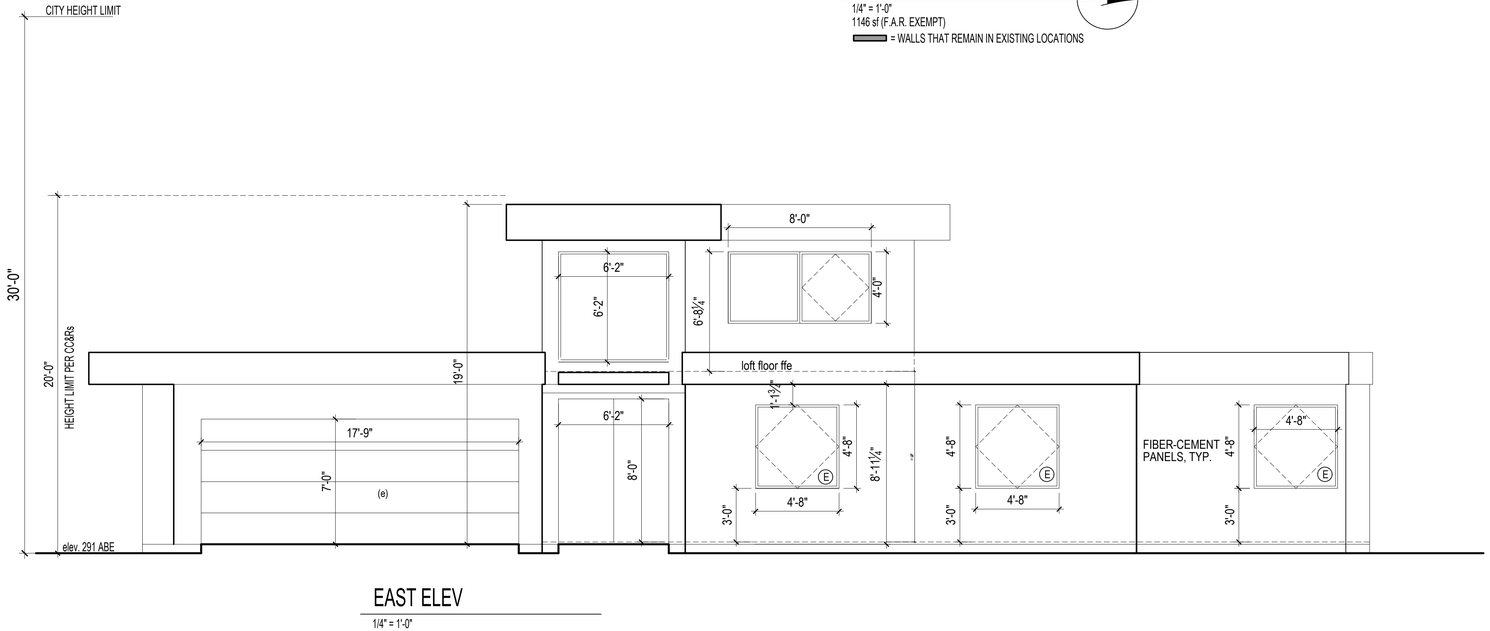
(e) = EXISTING



LOFT PLAN
1/4" = 1'-0"
203.3 sf
NORTH



LOWER FLOOR PLAN
1/4" = 1'-0"
1146 sf (F.A.R. EXEMPT)
= WALLS THAT REMAIN IN EXISTING LOCATIONS
NORTH



EAST ELEV
1/4" = 1'-0"

9317 REGISTERED ARCHITECT
CHRIS LUTTE
STATE OF WASHINGTON

CENTERLINE DESIGN
4737 37th AVE SW
SEATTLE
206.935.4684
www.Centerline-Design.com

Mahramnia Remodel

3859 83rd Ave SE

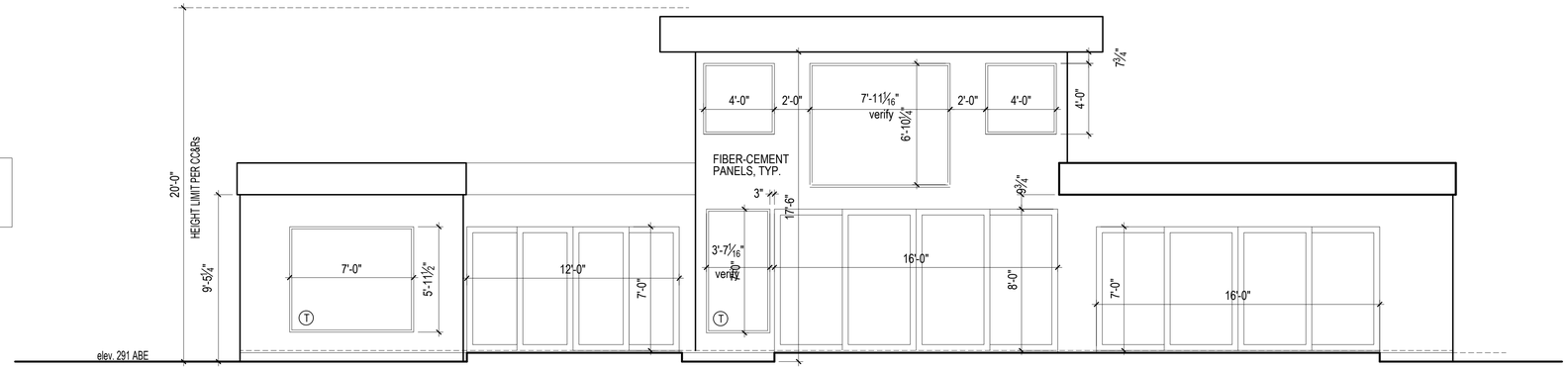
CONTENTS

Main Floor Plan

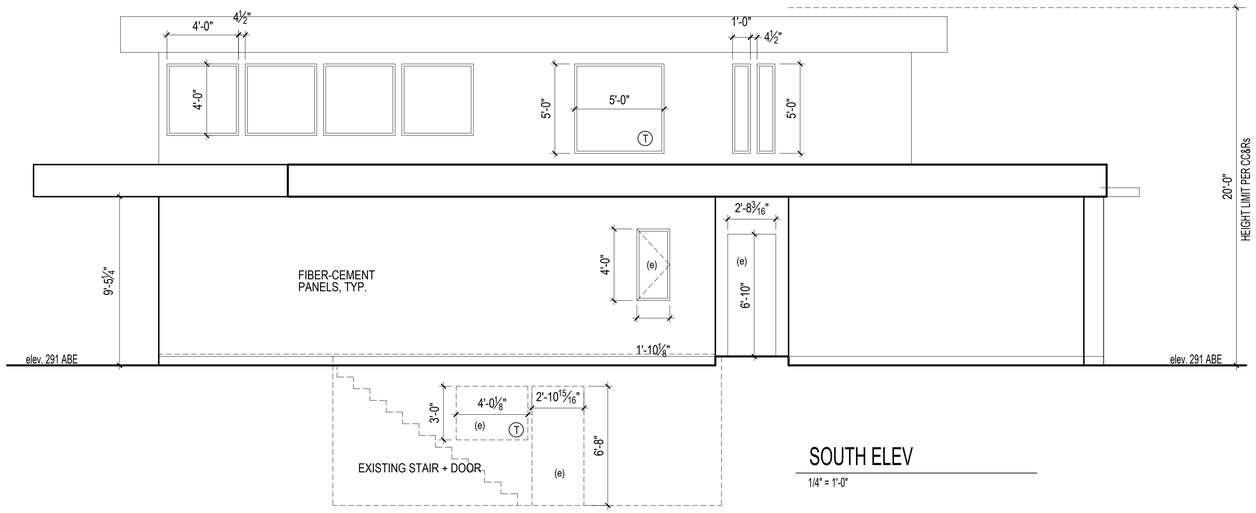
DRAWN BY
CRL
DATE
2.13.22

A.3

(E) = EGRESS WINDOWS
(T) =TEMPER/SAFETY GLAZE WINDOWS (TEMPER ALL DOORS/SIDELIGHTS, TYP.)
(e) = EXISTING



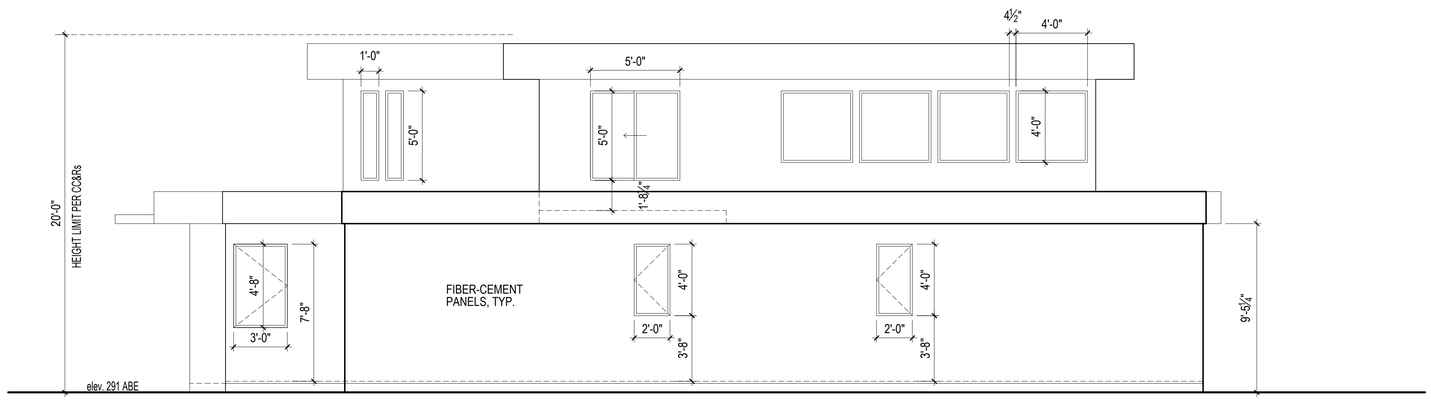
WEST ELEV
1/4" = 1'-0"



SOUTH ELEV
1/4" = 1'-0"

From CC&Rs:
"No structure shall be erected on any part of said property, the roofridge line of which extends to a hight [sic] greater than 20 feet above the average elevation of the present crown of the street or avenue abutting said lot."

AVERAGE CROWN OF STREET = ELEV. 191



NORTH ELEV
1/4" = 1'-0"

9317 REGISTERED ARCHITECT CHRIS LUTHI STATE OF WASHINGTON

CENTERLINE DESIGN
4737 37th AVE SW
SEATTLE
206.935.4684
www.Centerline-Design.com

Mahramnia Remodel

3859 83rd Ave SE

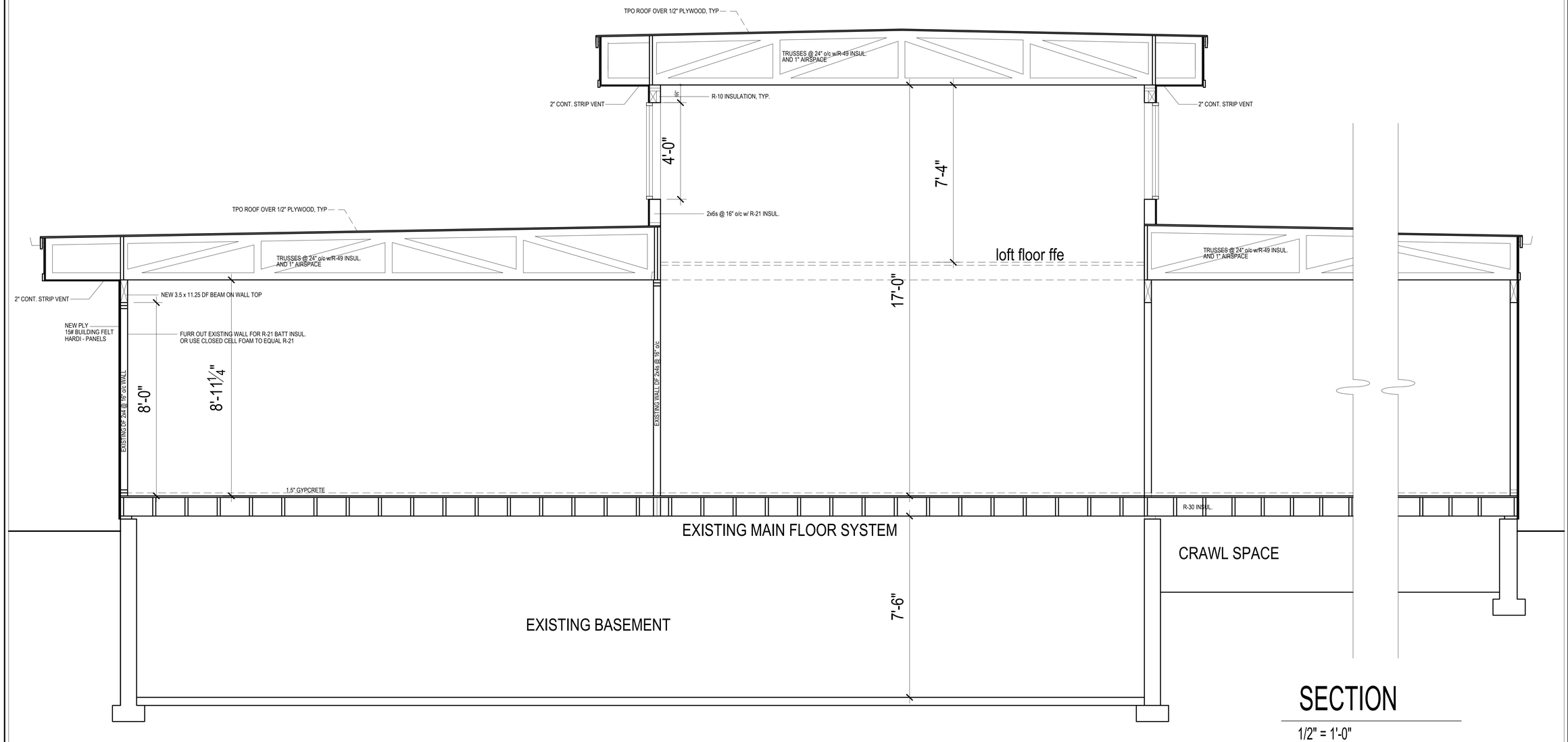
CONTENTS

Main Floor Plan

DRAWN BY
CRL

DATE
2.13.22

A.4



SECTION

1/2" = 1'-0"

FOAM INSULATION NOTES

Closed cell spray foam directly applied to
underside of sheathing (min R-10)
+ batts to = r-49

Spray foam product to be "Spraytite 178" as manufactured by BASF (ESR-2642), or equal.

Spray foam insulation shall be installed per IRC 806.5.1.3.

A copy of the ICC ESR report for the product used must be provided on the job site for field inspector verification

The applied spray foam must be installed by a certified installer.

9317 REGISTERED ARCHITECT CHRIS LUTHI STATE OF WASHINGTON

CENTERLINE DESIGN
4737 37th AVE SW
SEATTLE
206.935.4684
www.Centerline-Design.com

Mahramnia Remodel

3859 83rd Ave SE

CONTENTS

Main Floor Plan

DRAWN BY
CRL

DATE
2.13.22

A.5

Energy Code Info

ADDITIONS < 500 SF REQ 1.5 ENERGY CREDITS

PRIMARY RESIDENCE HVAC NOTES

Air-source, centrally ducted heat pump with minimum HSPF of 11.0.

HEAT RECOVERY VENTILATION
REQUIRED VENTING = CONTINUOUS 120CFM
SET TO OPERATE AT 240 CFM FOR 2 HOURS IN EA. 4 HR PERIOD (50%)
PROVIDED BY VARIABLE SPEED HIGH EFF. FAN (MAX .35 WATTS/CFM)
CONTOLLED TO OPERATE AT LOW SPEED IN VENTILATION
MODE ONLY.

design professional or builder shall complete and post an "Insulation Certificate for Residential Construction" within 3' of the electrical panel prior to final inspection.

Maximum flow rates for shower heads and kitchen sink - 1.75 GPM or less. All other lavatory faucets - 1.0 GPM or less.

2018 Washington State Energy Code – Residential
Prescriptive Energy Code Compliance for All Climate Zones in Washington
Single Family – New & Additions (effective February 1, 2021) Version 1.1

These requirements apply to all IRC building types, including detached one- and two-family dwellings and multiple single-family dwellings (townhouses).

Project Information	*Contact Information*
Mahramnia Remodel	

Instructions: This single-family project will use the requirements of the Prescriptive Path below and incorporate the minimum values listed. Based on the size of the structure, the appropriate number of additional credits are checked as chosen by the permit applicant.

Provide all information from the following tables as building permit drawings: Table R402.1 - Insulation and Fenestration Requirements by Component, Table R406.2 - Fuel Normalization Credits and 406.3 - Energy Credits.

Authorized Representative Chris Luthi *Date* 02/15/2022

All Climate Zones (Table R402.1.1)		
	R-Value [a]	U-Factor [a]
Fenestration U-Factor [b]	n/a	0.30
Skylight U-Factor [b]	n/a	0.50
Glazed Fenestration SHGC [b,e]	n/a	n/a
Ceiling [e]	49	0.026
Wood Frame Wall [g,h]	21 int	0.056
Floor	30	0.029
Below Grade Wall [c,h]	10/15/21 int + TB	0.042
Slab [d,f] R-Value & Depth	10, 2 ft	n/a

a	*R*-values are minimums. *U*-factors and SHGC are maximums. When insulation is installed in a cavity that is less than the label or design thickness of the insulation, the compressed *R*-value of the insulation from Appendix Table A101.4 shall not be less than the *R*-value specified in the table.
b	The fenestration *U*-factor column excludes skylights.
c	"10/15/21 +5TB" means R-10 continuous insulation on the exterior of the wall, or R-15 continuous insulation on the interior of the wall, or R-21 cavity insulation plus a thermal break between the slab and the basement wall at the interior of the basement wall. "10/15/21 +5TB" shall be permitted to be met with R-13 cavity insulation on the interior of the basement wall plus R-5 continuous insulation on the interior or exterior of the wall. "5TB" means R-5 thermal break between floor slab and basement wall.
d	R-10 continuous insulation is required under heated slab on grade floors. See Section R402.2.9.1.
e	For single rafter- or joist-vaulted ceilings, the insulation may be reduced to R-38 if the full insulation depth extends over the top plate of the exterior wall.
f	R-7.5 continuous insulation installed over an existing slab is deemed to be equivalent to the required perimeter slab insulation when applied to existing slabs complying with Section R503.1.1. If foam plastic is used, it shall meet the requirements for thermal barriers protecting foam plastics.
g	For log structures developed in compliance with Standard ICC 400, log walls shall meet the requirements for *climate zone* 5 of ICC 400.
h	Int. (intermediate framing) denotes framing and insulation as described in Section A103.2.2 including standard framing 16 inches on center, 78% of the wall cavity insulated and headers insulated with a minimum of R-10 insulation.

2018 Washington State Energy Code – Residential
Prescriptive Energy Code Compliance for All Climate Zones in Washington
Single Family – New & Additions (effective February 1, 2021)

Each dwelling unit ***in a residential building*** shall comply with sufficient options from Table R406.2 (fuel normalization credits) and Table 406.3 (energy credits) to achieve the following minimum number of credits. To claim this credit, the building permit drawings shall specify the option selected and the maximum tested building air leakage, and show the qualifying ventilation system and its control sequence of operation.

1. **Small Dwelling Unit:** 3 credits
   Dwelling units less than 1,500 sf in conditioned floor area with less than 300 sf of fenestration area. Additions to existing building that are greater than 500 sf of heated floor area but less than 1,500 sf.
2. **Medium Dwelling Unit:** 6 credits
   All dwelling units that are not included in #1 or #3
3. **Large Dwelling Unit:** 7 credits
   Dwelling units exceeding 5,000 sf of conditioned floor area
4. **Additions less than 500 square feet:** 1.5 credits
   All other additions shall meet 1-3 above

Before selecting your credits on this Summary table, review the details in Table 406.3 (Single Family), on page 4.

Summary of Table R406.2 and 406.3				
Heating Options	Fuel Normalization Descriptions	Credits - select ONE heating option		User Notes
1	Combustion heating minimum NAECA[b]	0.0	☐	
2	Heat pump[c]	1.0	☒	
3	Electric resistance heat only - furnace or zonal	-1.0	☐	
4	DHP with zonal electric resistance per option 3.4	0.5	☐	
5	All other heating systems	-1.0	☐	
Energy Options	Energy Credit Option Descriptions	Credits - select ONE energy option from each category [d]		
1.1	[illegible]	0.5	☐	
1.2	Efficient Building Envelope	1.0	☐	
1.3	Efficient Building Envelope	0.5	☐	
1.4	Efficient Building Envelope	1.0	☐	
1.5	Efficient Building Envelope	2.0	☐	
1.6	Efficient Building Envelope	3.0	☐	
1.7	Efficient Building Envelope	0.5	☐	
2.1	Air Leakage Control and Efficient Ventilation	0.5	☐	
2.2	Air Leakage Control and Efficient Ventilation	1.0	☐	
2.3	Air Leakage Control and Efficient Ventilation	1.5	☐	
2.4	Air Leakage Control and Efficient Ventilation	2.0	☐	
3.1[a]	High Efficiency HVAC	1.0	☐	
3.2	High Efficiency HVAC	1.0	☐	
3.3[a]	High Efficiency HVAC	1.5	☐	
3.4	High Efficiency HVAC	1.5	☐	
3.5	High Efficiency HVAC	1.5	☒	
3.6[a]	High Efficiency HVAC	2.0	☐	
4.1	High Efficiency HVAC Distribution System	0.5	☐	
4.2	High Efficiency HVAC Distribution System	1.0	☐	

2018 Washington State Energy Code – Residential
Prescriptive Energy Code Compliance for All Climate Zones in Washington
Single Family – New & Additions (effective February 1, 2021)

Summary of Table R406.2 (cont.)				
Energy Options	Energy Credit Option Descriptions (cont.)	Credits - select ONE energy option from each category [d]		User Notes
5.1[d]	Efficient Water Heating	0.5	☐	
5.2	Efficient Water Heating	0.5	☐	
5.3	Efficient Water Heating	1.0	☐	
5.4	Efficient Water Heating	1.5	☐	
5.5	Efficient Water Heating	2.0	☐	
5.6	Efficient Water Heating	2.5	☐	
6.1[e]	Renewable Electric Energy (3 credits max)	1.0		
7.1	Appliance Package	0.5	☐	
	Total Credits		2.5	Calculate Total / Clear Form

a. An alternative heating source sized at a maximum of 0.5 W/sf (equivalent) of heated floor area or 500 W, whichever is bigger, may be installed in the dwelling unit.
b. Equipment listed in Table C403.3.2(4) or C403.3.2(5)
c. Equipment listed in Table C403.3.2(1) or C403.3.2(2)
d. **You cannot select more than one option from any category EXCEPT in category 5. Option 5.1 may be combined with options 5.2 through 5.6. See Table 406.3.**
e. 1.0 credit for each 1,200 kWh of electrical generation provided annually, up to 3 credits max.
   See the complete Table R406.2 for all requirements and option descriptions.
f. Use the single radiobutton in the upper right of the second column to deselect radiobuttons in that group.

Per WSEC R402.4, The building thermal Envelope shall be constructed to limit air leakage to 2.0 air changes per hour maximum. The results of the test shall be signed by the party conducting the test and provided to the code official (R402.4.1.2). Per WSEC R403.1.1, at least one thermostat per dwelling unit shall be capable of controlling the heating and cooling system on a daily schedule. Per WSEC R403.2.2, Ducts, air handlers, and filter boxes shall be sealed. Per WSEC R404.1, A minimum of 75 percent of the lamps in permanently installed lighting fixtures shall be high-efficacy lamps.

All Climate Zones (Table R402.1.1)		
	R-Value [a]	U-Factor [a]
Fenestration U-Factor [b]	n/a	0.30
Skylight U-Factor [b]	n/a	0.50
Glazed Fenestration SHGC [b,e]	n/a	n/a
Ceiling [e]	49	0.026
Wood Frame Wall [g,h]	21 int	0.056
Floor	30	0.029
Below Grade Wall [c,h]	10/15/21 int + TB	0.042
Slab [d,f] R-Value & Depth	10, 2 ft	n/a

a	*R*-values are minimums. *U*-factors and SHGC are maximums. When insulation is installed in a cavity that is less than the label or design thickness of the insulation, the compressed *R*-value of the insulation from Appendix Table A101.4 shall not be less than the *R*-value specified in the table.
b	The fenestration *U*-factor column excludes skylights.
c	"10/15/21 +5TB" means R-10 continuous insulation on the exterior of the wall, or R-15 continuous insulation on the interior of the wall, or R-21 cavity insulation plus a thermal break between the slab and the basement wall at the interior of the basement wall. "10/15/21 +5TB" shall be permitted to be met with R-13 cavity insulation on the interior of the basement wall plus R-5 continuous insulation on the interior or exterior of the wall. "5TB" means R-5 thermal break between floor slab and basement wall.
d	R-10 continuous insulation is required under heated slab on grade floors. See Section R402.2.9.1.
e	For single rafter- or joist-vaulted ceilings, the insulation may be reduced to R-38 if the full insulation depth extends over the top plate of the exterior wall.
f	R-7.5 continuous insulation installed over an existing slab is deemed to be equivalent to the required perimeter slab insulation when applied to existing slabs complying with Section R503.1.1. If foam plastic is used, it shall meet the requirements for thermal barriers protecting foam plastics.
g	For log structures developed in compliance with Standard ICC 400, log walls shall meet the requirements for *climate zone* 5 of ICC 400.
h	Int. (intermediate framing) denotes framing and insulation as described in Section A103.2.2 including standard framing 16 inches on center, 78% of the wall cavity insulated and headers insulated with a minimum of R-10 insulation.

Window, Skylight and Door Schedule

Project Information	*Contact Information*
Mahramnia Remodel	

	Ref.	U-factor	Qt.	Width Feet	Inch	Height Feet	Inch	Area	UA
Exempt Swinging Door (24 sq. ft. max.)								0.0	0.00
Exempt Glazed Fenestration (15 sq. ft. max.)								0.0	0.00

Vertical Fenestration (Windows and doors)

Component Description	Ref.	U-factor	Qt.	Width Feet	Inch	Height Feet	Inch	Area	UA
Entry		0.30	1	6	2	8	0	49.3	14.80
G Bed		0.30	1	4	8	4	8	21.8	6.53
Bed 1		0.30	1	4	8	4	8	21.8	6.53
Bed 2		0.30	1	4	8	4	8	21.8	6.53
Bed 2		0.30	1	3	0	4	8	14.0	4.20
Bath 2		0.30	1	2	0	4	0	8.0	2.40
WC		0.30	1	2	0	4	0	8.0	2.40
M Bath		0.30	1	7	0	6	0	42.0	12.60
M Bed		0.30	1	12	0	7	0	84.0	25.20
L.R.		0.30	1	2	3.5	7	0	16.0	4.81
L.R.		0.30	1	3	7	7	0	25.1	7.53
L.R.		0.30	1	16	0	8	0	128.0	38.40
KitchenDining		0.30	1	16	0	7	0	112.0	33.60
Laundry		0.30	1	1	10	4	0	7.3	2.20
Back Door		0.30	1	3	2	6	10	21.6	6.49
Entry		0.30	1	6	2	6	2	38.0	11.41
Entry		0.30	4	1	0	5	0	20.0	6.00
Loft		0.30	1	8	0	4	0	32.0	9.60
Loft		0.30	2	5	0	5	0	50.0	15.00
L.R.		0.30	10	4	0	4	0	160.0	48.00
L.R.		0.30	1	8	0	6	10	54.7	16.40
								0.0	0.00
								0.0	0.00
								0.0	0.00
								0.0	0.00
								0.0	0.00
								0.0	0.00
								0.0	0.00
								0.0	0.00
								0.0	0.00
								0.0	0.00
								0.0	0.00
								0.0	0.00
								0.0	0.00
								0.0	0.00
								0.0	0.00
								0.0	0.00
								0.0	0.00
								0.0	0.00
								0.0	0.00
								0.0	0.00
								0.0	0.00

Sum of Vertical Fenestration Area and UA	935.5 / 280.64
Vertical Fenestration Area Weighted U = UA/Area	0.30

Overhead Glazing (Skylights)

Component Description	Ref.	U-factor	Qt.	Width Feet	Inch	Height Feet	Inch	Area	UA
								0.0	0.00
								0.0	0.00
								0.0	0.00
								0.0	0.00
								0.0	0.00
								0.0	0.00

Sum of Overhead Glazing Area and UA	0.0 / 0.00
Overhead Glazing Area Weighted U = UA/Area	0.00
Total Sum of Fenestration Area and UA *(for heating system sizing calculations)*	935.5 / 280.64

9317 REGISTERED ARCHITECT CHRIS LUTHI STATE OF WASHINGTON

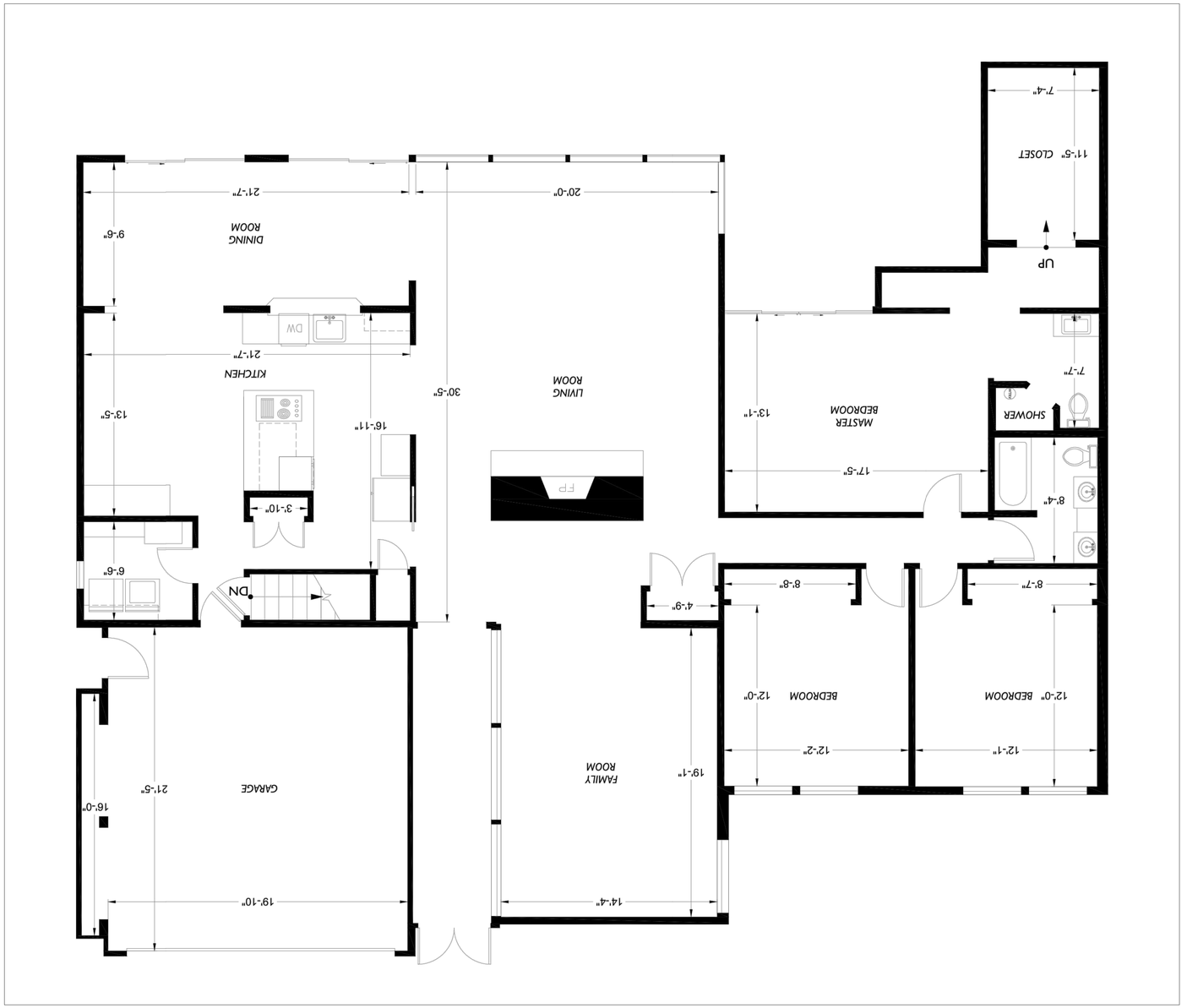
CENTERLINE DESIGN
4737 37th AVE SW
SEATTLE
206.935.4684
www.Centerline-Design.com

Mahramnia Remodel
3859 83rd Ave SE

CONTENTS
Energy Code Info

DRAWN BY
CRL
DATE
2.15.22

A.6



EXISTING MAIN FLOOR PLAN

1/4" = 1'-0"

NORTH

9317 REGISTERED ARCHITECT CHRIS LUTH STATE OF WASHINGTON

CENTERLINE DESIGN
4737 37th AVE SW
SEATTLE
206.935.4684
www.Centerline-Design.com

Mahramnia Remodel

3859 83rd Ave SE

CONTENTS

Energy Code Info

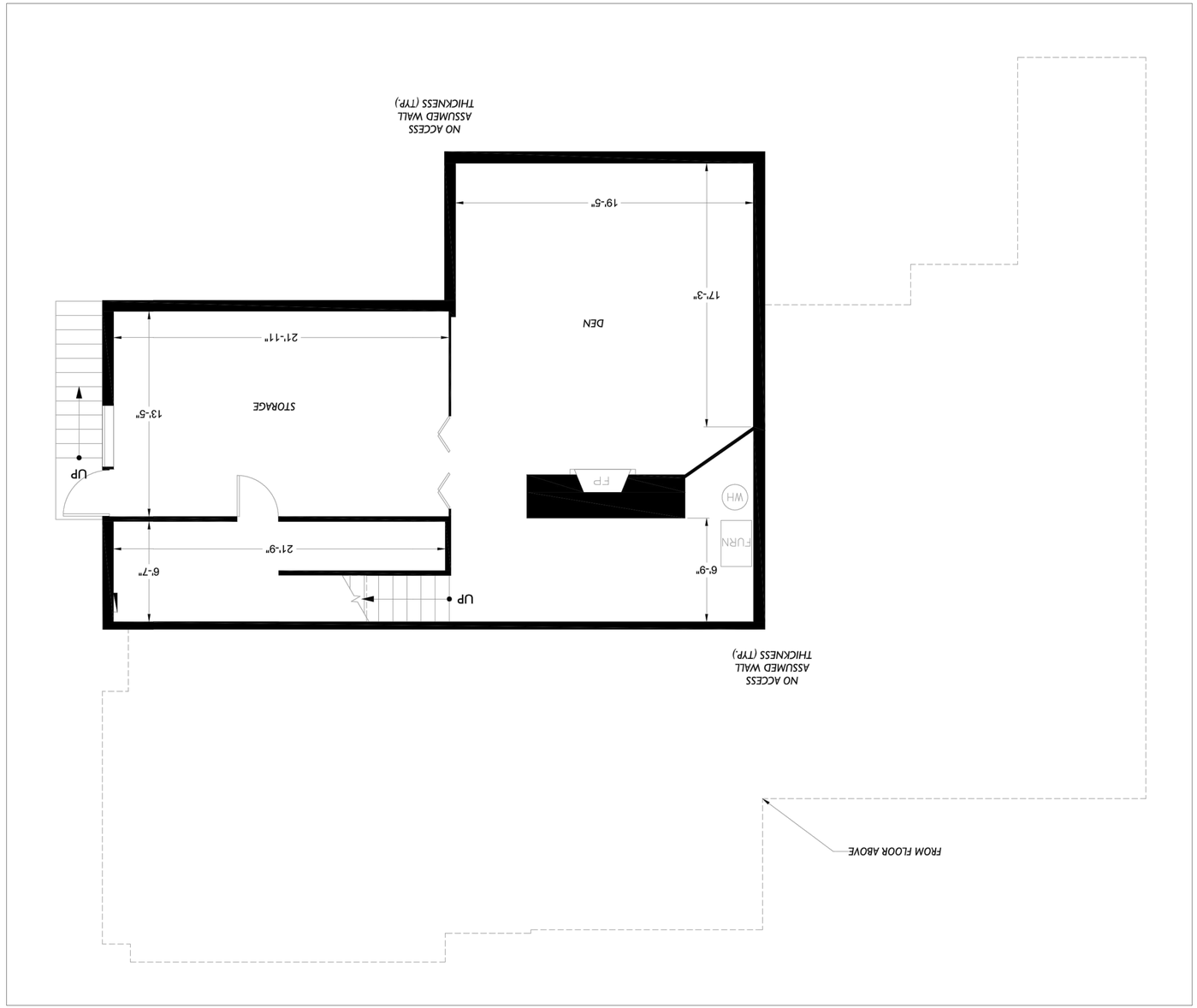
DRAWN BY

CRL

DATE

2.15.22

A.7



EXISTING LOWER FLOOR PLAN

1/4" = 1'-0"

NORTH

9317
REGISTERED ARCHITECT
CHRIS LUTHI
STATE OF WASHINGTON

CENTERLINE
DESIGN
4737 37th AVE SW
SEATTLE
206.935.4684
www.Centerline-Design.com

Mahramnia Remodel

3859 83rd Ave SE

CONTENTS

Energy Code Info

DRAWN BY

CRL

DATE

2.15.22

A.8

General Structural Notes (GSN's)

CRITERIA:

1. ALL MATERIALS, WORKMANSHIP, DESIGN, AND CONSTRUCTION SHALL CONFORM TO THE DRAWINGS, SPECIFICATIONS, AND THE INTERNATIONAL BUILDING CODE (IBC) WITH WASHINGTON STATE ADMINISTRATIVE CODE AMENDMENTS, 2018 EDITION.

2. DESIGN LOADING CRITERIA
   - RISK CATEGORY IBC TABLE 1604.5 II
   - ROOF SNOW LOAD . . . . 25 PSF (I_S = 1.0)
   - ROOF RAIN ON SNOW SURCHARGE . . . . 5 PSF 1
   - ROOF DEAD LOAD . . . . 15 PSF
   - LIVE LOAD . . . . 40 PSF
   - DECK LIVE LOAD . . . . 60 PSF
   - FLOOR DEAD LOAD . . . . 25 PSF

   EARTHQUAKE . . . . SEISMIC DESIGN CATEGORY D
   S_S = 1.413, S_1 = 0.491, S_{DS} = 1.131, S_{D1} = 0.592
   EQUIVALENT LATERAL FORCE PROCEDURE
   LIGHT FRAME (WOOD) WALLS AND ROOFS SHEATHED WITH WOOD STRUCTURAL PANELS RATED FOR SHEAR
   R = 6.5, Ω_0 = 2½, I_E = 1.0, C_d = 4, C_s = 0.174
   BASE SHEAR V = 18.2 K – LRFD

   WIND . . . . 110 MPH, EXPOSURE "B", Kzt = 1.3
   COMPONENTS & CLADDING . . . . –28.0/–16.8 PSF MAX. AT WALLS (LRFD/ASD)
   –47.5/–28.5 GROSS UPLIFT AT ROOF (LRFD/ASD)
   WIND PRESSURES BASED ON LESS THAN 10 SQUARE FOOT TRIBUTARY AREAS NEAR WALL CORNERS OR ROOF EDGES (EXCLUDING CORNER ZONES AT ROOF). REDUCED DESIGN PRESSURES MAY BE CALCULATED IN ACCORDANCE WITH ASCE 7–10 CHAPTER 30.

3. STRUCTURAL DRAWINGS SHALL BE USED IN CONJUNCTION WITH ALL OTHER CONTRACT DOCUMENTS FOR BIDDING AND CONSTRUCTION. CONTRACTOR SHALL VERIFY DIMENSIONS AND CONDITIONS FOR COMPATIBILITY AND SHALL NOTIFY ENGINEER OF ALL DISCREPANCIES PRIOR TO CONSTRUCTION. IT IS THE CONTRACTOR'S RESPONSIBILITY TO COORDINATE BUILDING LAYOUT DIMENSIONS (GRID LAYOUTS, SITE COORDINATES, ETC.) AMONGST ALL TRADES, INCLUDING SHOP FABRICATED ITEMS.

4. CONTRACTOR SHALL PROVIDE TEMPORARY BRACING, BOTH FOR VERTICAL LOADS AND LATERAL STABILITY, FOR THE STRUCTURE AND STRUCTURAL COMPONENTS UNTIL ALL FINAL CONNECTIONS HAVE BEEN COMPLETED IN ACCORDANCE WITH THE DRAWINGS.

5. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL SAFETY PRECAUTIONS AND THE METHODS, TECHNIQUES, SEQUENCES OR PROCEDURES REQUIRED TO PERFORM THE WORK.

6. 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.

7. ALL STRUCTURAL SYSTEMS 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.

8. SEISMIC BRACING AND/OR GRAVITY SUPPORT AND ANCHORAGE OF ALL MECHANICAL OR ELECTRICAL EQUIPMENT SHALL BE DESIGNED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF WASHINGTON, EXCEPT FOR ELEMENTS SPECIFICALLY SHOWN AND DETAILED ON THE STRUCTURAL DRAWINGS. THE MECHANICAL/ELECTRICAL CONTRACTOR MUST HIRE THE ENGINEER AND IS RESPONSIBLE FOR ALL COSTS RELATED TO THE PURCHASE AND INSTALLATION OF NECESSARY SUPPORTS, BRACING AND ANCHORAGE. SEISMIC BRACING AND ANCHORAGE DESIGN AND CONSTRUCTION SHALL COMPLY WITH CHAPTER 13 OF ASCE 7–10.

9. SHOP DRAWING REVIEW: SHOP DRAWINGS FOR TRUSSES SHALL BE SUBMITTED TO THE CONTRACTOR, ARCHITECT, AND ENGINEER OF RECORD FOR REVIEW PRIOR TO FABRICATION OF THESE ITEMS. DIMENSIONS AND QUANTITIES ARE NOT REVIEWED BY THE ENGINEER OF RECORD, AND THEREFORE MUST BE VERIFIED BY THE CONTRACTOR. THE CONTRACTOR SHALL REVIEW AND STAMP DRAWINGS PRIOR TO REVIEW BY ENGINEER OF RECORD. SUBMITTALS SHALL INCLUDE A REPRODUCIBLE AND ONE COPY. THE REPRODUCIBLE SHALL BE MARKED AND RETURNED. SHOP DRAWING SUBMITTALS PROCESSED BY THE ENGINEER ARE NOT CHANGE ORDERS. THE PURPOSE OF SHOP DRAWING SUBMITTALS BY THE CONTRACTOR IS TO DEMONSTRATE TO THE ENGINEER THAT THE CONTRACTOR UNDERSTANDS THE DESIGN CONCEPT BY INDICATING WHICH MATERIAL IS INTENDED TO BE FURNISHED AND INSTALLED AND BY DETAILING THE INTENDED FABRICATION AND INSTALLATION METHODS. IF DEVIATIONS, DISCREPANCIES, OR CONFLICTS BETWEEN SHOP DRAWING SUBMITTALS AND THE CONTRACT DOCUMENTS ARE DISCOVERED EITHER PRIOR TO OR AFTER SHOP DRAWING SUBMITTALS ARE PROCESSED BY THE ENGINEER, THE DESIGN DRAWINGS AND SPECIFICATIONS SHALL CONTROL AND SHALL BE FOLLOWED.

10. DEFERRED SUBMITTALS SHALL BE DESIGNED BY AN ENGINEER REGISTERED IN THE STATE OF WASHINGTON. THE COMPONENT DESIGNER SHALL BE A REGISTERED STRUCTURAL ENGINEER IF REQUIRED BY THE BUILDING OFFICIAL OF THE LOCAL JURISDICTION. BUILDING COMPONENT SUBMITTALS SHALL INCLUDE THE DESIGNING PROFESSIONAL ENGINEER'S STAMP AND SHALL BE APPROVED BY THE COMPONENT DESIGNER PRIOR TO CURSORY REVIEW BY THE ENGINEER OF RECORD FOR LOADS IMPOSED ON THE BASIC STRUCTURE. THE COMPONENT DESIGNER IS RESPONSIBLE FOR CODE CONFORMANCE INCLUDING ACCOMMODATION FOR STRUCTURAL DISPLACEMENT PER ASCE 7–10 SECTION 13.3.2. AND ALL NECESSARY CONNECTIONS NOT SPECIFICALLY CALLED OUT ON ARCHITECTURAL OR STRUCTURAL DRAWINGS. DEFERRED SUBMITTALS SHALL INDICATE MAGNITUDE AND DIRECTION OF ALL LOADS IMPOSED ON BASIC STRUCTURE. DESIGN CALCULATIONS SHALL BE INCLUDED IN THE SUBMITTAL. THE CONTRACTOR SHALL FORWARD DEFERRED SUBMITTALS TO THE BUILDING OFFICIAL AND HAVE THE DEFERRED SUBMITTALS ON SITE FOR THE GOVERNING JURISDICTIONS INSPECTORS USE AND REFERENCE. THE FOLLOWING BUILDING COMPONENTS SHALL BE DEFERRED SUBMITTALS FOR THIS PROJECT:
    PREFABRICATED CONNECTOR PLATE WOOD ROOF TRUSSES (SEE NOTE 23)

GEOTECHNICAL:

11. FOUNDATION NOTES: SUBGRADE PREPARATION INCLUDING DRAINAGE, EXCAVATION, COMPACTION, AND FILLING REQUIREMENTS, SHALL CONFORM STRICTLY WITH THE RECOMMENDATIONS GIVEN IN THE SPECIFICATIONS OR AS DIRECTED BY THE OWNER APPOINTED GEOTECHNICAL ENGINEER. FOOTINGS SHALL BEAR ON FIRM, UNDISTURBED EARTH OR CONTROLLED, COMPACTED STRUCTURAL FILL AT LEAST 18" BELOW LOWEST ADJACENT FINISHED GRADE. THE OWNER APPOINTED GEOTECHNICAL ENGINEER SHALL APPROVE FOOTING EXCAVATION/PREPARATION PRIOR TO PLACEMENT OF ALL FOOTINGS. BACKFILL BEHIND ALL RETAINING WALLS WITH FREE DRAINING, GRANULAR FILL AND PROVIDE FOR SUBSURFACE DRAINAGE AS NOTED IN THE SPECIFICATIONS OR AS DIRECTED BY THE OWNER APPOINTED GEOTECHNICAL ENGINEER
    ALLOWABLE SOIL PRESSURE . . . . 1,500 PSF

ANCHORAGE:

12. DRIVE PINS AND OTHER POWDER–ACTUATED FASTENERS SHALL BE ONE OF THE FOLLOWING INSTALLED IN STRICT ACCORDANCE WITH THE ICC–ES REPORTS INDICATED AND MANUFACTURER'S INSTRUCTIONS 1 INCLUDING MINIMUM EMBED REQUIREMENTS: "TE SERIES" (0.157" DIAMETER) AS MANUFACTURED BY ITW RAMSET (ICC–ES NO. 1799); OR "X–U" (0.157" DIAMETER) AS MANUFACTURED BY HILTI, INC. (ICC–ES NO. 2269); OR "STRONG–TIE PDPA" (0.157" DIAMETER) AS MANUFACTURED BY SIMPSON STRONG–TIE COMPANY, INC. (ICC–ES NO. 2138); OR "CSI PIN" (0.157" DIAMETER) AS MANUFACTURED BY DEWALT/POWERS (ICC–ES NO. 2024); OR AN APPROVED EQUIVALENT IN STRENGTH AND EMBEDMENT. MINIMUM EMBEDMENT IN CONCRETE SHALL BE 1" UNLESS OTHERWISE NOTED. MAINTAIN AT LEAST 3–1/2" TO NEAREST CONCRETE EDGE.

CONCRETE:

13. CONCRETE SHALL BE MIXED, PROPORTIONED, CONVEYED AND PLACED IN ACCORDANCE WITH ACI 318–14 CHAPTER 26 AND ACI 301. CONCRETE SHALL ATTAIN A 28–DAY STRENGTH OF f'c = 4,000 PSI (4,500 PSI AT ALL CONCRETE EXPOSED TO WEATHER). MAXIMUM WATER–CEMENTITIOUS MATERIAL RATIO FOR INTERIOR SLABS SHALL BE BETWEEN 0.40 AND 0.44. ALL CONCRETE SHALL BE EXPOSURE CLASSES F0, S0, W0, AND C0 PER ACI 318–14 TABLES 19.3.1.1 AND 19.3.2.1 EXCEPT AS NOTED BELOW.
    ALL CONCRETE EXPOSED TO EARTH (FOUNDATIONS, ETC.): (F0, S0, W0, C1)
    ALL CONCRETE EXPOSED TO WEATHER: (F1, S0, W0, C1)
    SEE SPECIFICATIONS FOR SHRINKAGE REDUCING CONCRETE MIX CRITERIA WHERE INDICATED ON DRAWINGS. CONCRETE MIXES SHALL MEET OR EXCEED THE REQUIREMENTS SPECIFIED ABOVE. MIXES SHALL BE SUBMITTED TO THE ENGINEER AND BUILDING OFFICIAL FOR APPROVAL TWO WEEKS PRIOR TO PLACING ANY CONCRETE AND SHALL INCLUDE THE AMOUNTS OF CEMENT, CEMENTITOUS MATERIAL, FINE AND COARSE AGGREGATE, WATER AND ADMIXTURES, AS WELL AS THE WATER–CEMENT RATIO, SLUMP, CONCRETE YIELD AND SUBSTANTIATING STRENGTH DATA IN ACCORDANCE WITH ACI 318–14, CHAPTER 26 AND 27. REVIEW OF MIX SUBMITTALS BY THE ENGINEER OF RECORD INDICATES ONLY THAT INFORMATION PRESENTED CONFORMS GENERALLY WITH CONTRACT DOCUMENTS. CONTRACTOR OR SUPPLIER MAINTAINS FULL RESPONSIBILITY FOR SPECIFIED PERFORMANCE.

14. REINFORCING STEEL SHALL CONFORM TO ASTM A615, GRADE 60, fy = 60,000 PSI. GRADE 60 REINFORCING BARS WHICH ARE TO BE WELDED SHALL CONFORM TO ASTM A706. REINFORCEMENT COMPLYING WITH ASTM A615(S1) MAY BE WELDED ONLY IF MATERIAL PROPERTY REPORTS INDICATING CONFORMANCE WITH WELDING PROCEDURES SPECIFIED IN A.W.S. D1.4 ARE SUBMITTED. WELDED WIRE FABRIC SHALL CONFORM TO ASTM A1064.

15. REINFORCING STEEL SHALL BE DETAILED (INCLUDING HOOKS AND BENDS) IN ACCORDANCE WITH ACI 315–99 AND 318–14. LAP ALL CONTINUOUS REINFORCEMENT IN ACCORDANCE WITH "REINFORCEMENT SPLICE AND DEVELOPMENT LENGTH SCHEDULE" OF 10/S3.1. PROVIDE CORNER BARS AT ALL WALL AND FOOTING INTERSECTIONS. LAP ADJACENT MATS OF WELDED WIRE FABRIC A MINIMUM OF 12" AT SIDES AND ENDS. NO BARS PARTIALLY EMBEDDED IN HARDENED CONCRETE SHALL BE FIELD BENT UNLESS OTHERWISE NOTED ON THE DRAWINGS OR APPROVED BY THE STRUCTURAL ENGINEER.

16. 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
    (i.e. WALLS BELOW GROUND)OR WEATHER (#5 BARS OR SMALLER). . . . . 1 ½"

17. BONDING AGENT SHALL BE "MASTEREMACO ADH 326" BY BASF CORPORATION. OR EQUIVALENT, AND SHALL BE USED WHERE NEW CONCRETE IS PLACED AGAINST HARDENED CONCRETE. PLACE IN STRICT ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS, INCLUDING PREPARATION OF EXISTING SURFACES. CONCRETE SHALL BE CONSIDERED HARDENED AFTER 56 DAYS.

18. NON–SHRINK GROUT SHALL BE FURNISHED BY AN APPROVED MANUFACTURER AND SHALL BE MIXED AND PLACED IN STRICT ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS. GROUT STRENGTH SHALL BE AT LEAST EQUAL TO THE MATERIAL ON WHICH IT IS PLACED (6,000 PSI MINIMUM).

WOOD:

19. FRAMING LUMBER SHALL BE KILN DRIED OR MC–19, AND GRADED AND MARKED IN CONFORMANCE WITH W.C.L.I.B. STANDARD GRADING RULES FOR WEST COAST LUMBER NO. 17 OR W.W.P.A. WESTERN LUMBER GRADING RULES. FURNISH TO THE FOLLOWING MINIMUM STANDARDS:
    PLATES, LEDGERS & MISC. — DOUGLAS FIR NO. 3 OR STUD GRADE
    LIGHT FRAMING: — MIN. BASIC DESIGN STRESS, F_b = 525 PSI, E = 1400 KSI; F_c = 775 PSI, F_t = 325 PSI
    JOISTS, BEAMS & POSTS: — DOUGLAS FIR NO. 1; MIN. BASIC DESIGN STRESS, F_b = 1000 PSI, E = 1700 KSI; F_c = 1500 PSI, F_t = 1000 PSI

20. MANUFACTURED LUMBER SHALL BE AS MANUFACTURED BY TRUS JOIST OR APPROVED EQUAL. REQUESTS FOR APPROVAL AS EQUAL WILL REQUIRE SUBMITTAL OF ICC REPORT EQUIVALENT TO ESR–1387 FOR LAMINATED VENNER LUMBER (LVL, LAMINATED STRAND LUMBER (LSL), OR PARALLEL STRAND LUMBER (PSL). THE MINIMUM ALLOWABLE DESIGN VALUES ARE AS FOLLOWS:
    LVL – F_b = 2,600 F_v = 290 PSI E = 2,000,000 PSI
    LSL – F_b = 1,900 F_v = 150 PSI E = 1,300,000 PSI

21. ENGINEERED WOOD I–JOISTS SHALL BE FURNISHED AND INSTALLED IN CONFORMANCE WITH THE MANUFACTURER'S INSTRUCTIONS. ALL NECESSARY BRIDGING, BLOCKING, BLOCKING PANELS, STIFFENERS, ETC., SHALL BE DETAILED AND FURNISHED BY THE MANUFACTURER. PERMANENT AND TEMPORARY BRIDGING SHALL BE INSTALLED IN CONFORMANCE WITH MANUFACTURER'S INSTRUCTIONS. ALL JOIST HANGERS AND OTHER HARDWARE SHALL BE COMPATIBLE IN SIZE WITH ENGINEERED WOOD I–JOISTS PROVIDED. DESIGN SHOWN ON THE DRAWINGS IS BASED ON RESIDENTIAL JOISTS MANUFACTURED BY WEYERHAUSER IN ACCORDANCE WITH ICC–ES REPORT NO. ESR–1153. ALTERNATE ENGINEERED WOOD I–JOISTS MAY BE USED SUBJECT TO REVIEW AND APPROVAL BY THE STRUCTURAL ENGINEER OF RECORD

22. GLUED LAMINATED MEMBERS SHALL BE FABRICATED IN CONFORMANCE WITH ASTM AND A.I.T.C. STANDARDS IN ACCORDANCE WITH IBC SECTION 2303.1.3. EACH MEMBER SHALL BEAR AN A.I.T.C. IDENTIFICATION MARK AND SHALL BE ACCOMPANIED BY AN A.I.T.C. CERTIFICATE OF CONFORMANCE. HORIZONTAL MEMBERS AND INCLINED MEMBERS OF LESS THAN 1:1 SLOPE SHALL HAVE A RADIUSED CAMBER OF 3,500 FT. UNLESS OTHERWISE NOTED.
    SIMPLE SPAN BEAMS — DOUGLAS FIR COMBINATION 24F–VR; F_b = 2400 PSI; F_v = 265 PSI; E = 1,800,000 PSI
    GLUED LAMINATED MEMBERS EXPOSED TO WEATHER OR MOISTURE SHALL BE TREATED WITH A NON–CORROSIVE, APPROVED PRESERVATIVE.

23. PREFABRICATED CONNECTOR PLATE WOOD ROOF TRUSSES SHALL BE DESIGNED BY THE MANUFACTURER IN ACCORDANCE WITH ANSI/TPI I–2007 AND IBC SECTION 2303.4 FOR THE SPANS AND CONDITIONS SHOWN ON THE DRAWINGS.
    DESIGN LOADS SHALL BE AS FOLLOWS:
    TOP CHORD LIVE LOAD — 25 PSF, SNOW + 5 PSF, RAIN ON SNOW SURCHARGE
    BOTTOM CHORD LIVE LOAD — 0 PSF
    TOP CHORD DEAD LOAD — 12 PSF
    BOTTOM CHORD DEAD LOAD — 3 PSF
    WIND UPLIFT (TOP CHORD) — SEE NOTE#2 COMPONENTS & CLADDING ROOF LOADS

    THE TRUSS MANUFACTURER SHALL COORDINATE LOCATIONS AND SUPPORT CONFIGURATIONS OF PLUMBING, MECHANICAL UNITS, DUCTS, AND/OR OTHER MISCELLANEOUS ITEMS WITH THE CONTRACTOR PRIOR TO TRUSS FABRICATION. THE TRUSS MANUFACTURER SHALL DESIGN TRUSSES TO SUPPORT ALL LOADS ASSOCIATED WITH SUCH ITEMS. THE TRUSS SHOP DRAWINGS SHALL INCLUDE ALL DESIGN LOADS AND APPROVED HANGER CONNECTION DETAILS TO TRUSS CHORDS FOR SUPPORT OF HUNG MECHANICAL SYSTEM COMPONENTS AS APPLICABLE.

    WOOD TRUSSES SHALL UTILIZE APPROVED CONNECTOR PLATES (GANGNAIL OR EQUAL). SHOP DRAWINGS AND CALCULATIONS SHALL BE PROVIDED AS A DEFERRED SUBMITTAL TO THE CONTRACTOR AND STRUCTURAL ENGINEER OF RECORD PER GENERAL STRUCTURAL NOTE 13. SHOP DRAWINGS SHALL INDICATE SHAPES, BEARING POINTS, INTERSECTIONS, HIPS, VALLEYS, ETC. EXACT COMPOSITION OF SPECIAL HIP, VALLEY, AND INTERSECTION AREAS (USE OF GIRDER TRUSSES, JACK TRUSSES, STEP–DOWN TRUSSES, ETC.) SHALL BE DETERMINED BY THE MANUFACTURER UNLESS OTHERWISE NOTED ON THE DRAWINGS. THE TRUSS MANUFACTURER SHALL PROVIDE ALL TRUSS–TO–TRUSS BEAM/JOIST CONNECTION DETAILS AND REQUIRED CONNECTION MATERIALS. THE TRUSS MANUFACTURER SHALL DESIGN AND PROVIDE DETAILS FOR ALL TEMPORARY AND PERMANENT TRUSS BRACING AND BRIDGING.

24. ROOF & WALL SHEATHING SHALL BE APA RATED, EXTERIOR OR EXPOSURE 1 PLYWOOD OR ORIENTED STRAND BOARD (OSB) IN CONFORMANCE WITH IBC SECTION 2303.1.5. SHEATHING SHALL BE MANUFACTURED UNDER THE PROVISIONS OF VOLUNTARY PRODUCT STANDARDS DOC PS 1–09, PS 2–10, OR APA PRP–108 PERFORMANCE STANDARDS AND POLICIES FOR STRUCTURAL USE PANELS. SEE DRAWINGS FOR THICKNESS, SPAN RATING, AND NAILING REQUIREMENTS.

25. AT NON–SHEAR WALL EXTERIOR WALLS, UNLESS OTHERWISE NOTED, WALL SHEATHING SHALL BE ½" (NOMINAL) WITH SPAN RATING OF 24/0; WITH 8d @ 6" oc PANEL NAILING (APPLIES TO ALL SHEATHING PANEL EDGES); AND 8d @ 12" oc TO INTERMEDIATE FRAMING.

26. ALL PRESSURE–TREATED (P.T.) WOOD MEMBERS SPECIFIED ON THE DRAWINGS THAT OCCUR ABOVE GROUND AND CONTINUOUSLY PROTECTED FROM MOISTURE (INTERIOR LOCATIONS) SHALL BE PRESSURE–TREATED WITH DOT SODIUM BORATE (SBX) WITHOUT $NaSiO_2$. AT LOCATIONS PERMANENTLY EXPOSED TO WEATHER OR IN CONTACT WITH THE GROUND, WOOD MEMBERS SHALL BE PRESSURE–TREATED WITH ALKALINE COPPER QUAT (ACQ–C FOR DOUGLAS–FIR) PRESERVATIVE UNLESS OTHERWISE NOTED. AMMONIACAL COPPER ZINC ARSENATE (ACZA) PRESERVATIVE OR OTHER PRESERVATIVES WITH AMMONIA CARRIERS, SHALL NOT BE USED.
    GLUED LAMINATED MEMBERS EXPOSED TO WEATHER OR MOISTURE SHALL BE TREATED WITH A NON–CORROSIVE, APPROVED PRESERVATIVE.
    SEE NOTE #27 FOR MATERIAL REQUIREMENTS OF CONNECTORS AND FASTENERS IN CONTACT WITH PRESSURE–TREATED MEMBERS.

27. TIMBER CONNECTORS CALLED OUT BY LETTERS AND NUMBERS SHALL BE "STRONG–TIE" BY SIMPSON COMPANY, AS SPECIFIED N THEIR WOOD CONSTRUCTION CONNECTORS CATALOG NO. C–C–2017–18. INSTALL NUMBER AND SIZE OF FASTENERS AS SPECIFIED BY MANUFACTURER. CONNECTORS SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS. WHERE CONNECTOR STRAPS CONNECT TWO MEMBERS, CENTER STRAP ON JOINT AND INSTALL NUMBER AND SIZE OF FASTENERS AS SPECIFIED BY MANUFACTURER, WITH EQUAL NUMBER AND SIZE OF FASTENERS IN EACH MEMBER. ALL BOLTS IN WOOD MEMBERS SHALL CONFORM TO ASTM A307. INSTALL WASHERS UNDER THE HEADS AND NUTS OF ALL BOLTS AND LAG SCREWS BEARING ON WOOD. ALL SHIMS SHALL BE SEASONED AND DRIED AND THE SAME GRADE (MINIMUM) AS MEMBERS CONNECTED.

    ALL TIMBER CONNECTORS IN CONTACT WITH PRESSURE–TREATED WOOD THAT USED PRESERVATIVE CHEMICALS OTHER THAN DOT SODIUM BORATE (SBX) WITHOUT $NaSiO_2$ SHALL BE MANUFACTURED FROM Z_{MAX} STEEL BY SIMPSON (G185 STEEL PER ASTM A653), OR TYPE 304 OR 316 STAINLESS STEEL. ALTERNATIVELY, CONNECTORS CAN BE POST HOT DIP GALVANIZED PER ASTM A123 OR MECHANICALLY GALVANIZED PER ASTM B695, CLASS 55 OR GREATER. STAINLESS STEEL FASTENERS SHALL BE USED WITH STAINLESS STEEL CONNECTORS, AND HOT DIP GALVANIZED FASTENERS PER ASTM A153 SHALL BE USED WITH GALVANIZED CONNECTORS.

28. WOOD FRAMING NOTES: THE FOLLOWING SHALL APPLY UNLESS OTHERWISE NOTED ON THE DRAWINGS:
    A. ALL WOOD FRAMING DETAILS SHALL BE CONSTRUCTED TO THE MINIMUM STANDARDS OF THE IBC. MINIMUM NAILING SHALL CONFORM TO IBC TABLE 2304.9.1 OR CURRENT ICC–ES REPORT NER–272. COORDINATE THE SIZE AND LOCATION OF ALL OPENINGS WITH MECHANICAL AND ARCHITECTURAL DRAWINGS. INSTALL WASHERS UNDER THE HEADS AND NUTS OF ALL BOLTS AND LAG SCREWS BEARING ON WOOD. INSTALLATION OF LAG SCREWS SHALL CONFORM TO 2012 NDS SECTION 11.1.4, AND INSTALLATION OF BOLTS SHALL CONFORM TO 2012 NDS SECTION 11.1.3.

    B. WALL FRAMING: TWO STUDS MINIMUM SHALL BE INSTALLED AT THE ENDS OF ALL WALLS, UNLESS NOTED OTHERWISE NOTED. INSTALL SOLID BLOCKING FOR WOOD COLUMN THROUGH FLOOR SPACES TO SUPPORTS BELOW.

    ALL STUD WALLS SHALL HAVE THEIR LOWER WOOD PLATES ATTACHED TO WOOD FRAMING BELOW WITH 16d NAILS @ 12" oc STAGGERED OR BOLTED TO CONCRETE WITH ⅝"ø ANCHOR BOLTS @ 4'–0" oc PER IBC SECTION 2308.6 (EMBED 7"), UNLESS OTHERWISE NOTED. 3" x 3" x 0.229" PLATE WASHERS SHALL BE USED WITH ALL SILL PLATE ANCHOR BOLTS AND INSTALLED PER AF&PA SDPWS–2008 SECTION 4.3.6.4.3. INDIVIDUAL MEMBERS OF BUILT–UP STUD POSTS SHALL BE NAILED TO EACH OTHER WITH 16d @ 12" oc STAGGERED.

    C. FLOOR AND ROOF FRAMING: INSTALL SOLID BLOCKING AT ALL BEARING POINTS. TOENAIL JOISTS TO SUPPORTS WITH (2)16d NAILS. ATTACH TIMBER JOISTS TO FLUSH HEADERS OR BEAMS WITH SIMPSON METAL JOIST HANGERS IN ACCORDANCE WITH NOTES ABOVE. NAIL ALL MULTI–JOIST BEAMS TOGETHER WITH 16d@12"oc STAGGERED.

    ROOF AND FLOOR SHEATHING SHALL BE LAID UP WITH GRAIN PERPENDICULAR TO SUPPORTS AND NAILED AS SHOWN ON THE DRAWINGS. INSTALL APPROVED PANEL EDGE CLIPS CENTERED BETWEEN JOISTS/TRUSSES AT UNBLOCKED ROOF SHEATHING EDGES. ALL FLOOR SHEATHING EDGES SHALL HAVE APPROVED TONGUE–AND–GROOVE JOINTS OR SHALL BE SUPPORTED WITH SOLID BLOCKING ALLOW ⅛" SPACING AT ALL PANEL EDGES AND ENDS OF LOOR AND ROOF SHEATHING. TOENAIL BLOCKING TO SUPPORTS WITH 16d@12"oc. IN ACCORDANCE WITH IBC SECTION 1604.8.3, DECKS SHALL BE POSITIVELY ANCHORED TO THE STRUCTURE BY MEANS OTHER THAN NAILS SUBJECT TO WITHDRAWAL. ANCHOR WITH MINIMUM (1) CS16 STRAP AT EACH END ATTACHED TO DECK JOISTS AND TO A SOLID BLOCKING MEMBER WITHIN THE BUILDING.

POST–INSTALLED ANCHORS AND EPOXY ADHESIVE

29. EPOXY–GROUTED RODS OR REBAR TO CONCRETE SPECIFIED ON THE DRAWINGS SHALL BE ONE OF THE FOLLOWING INSTALLED IN STRICT ACCORDANCE WITH THE ICC–ES REPORTS INDICATED AND MANUFACTURER'S INSTRUCTIONS INCLUDING MINIMUM EMBED REQUIREMENTS: "SET–XP" AS MANUFACTURED BY SIMPSON STRONG–TIE COMPANY, INC. (ICC–ES NO. 2508); OR "HIT–HY 200" AS MANUFACTURED BY HILTI, INC. (ICC–ES NO. 3187), "SAFE–SET" INSTALLATION WITH HOLLOW CARBIDE DRILL BIT IS PERMITTED; OR "PURE110+" AS MANUFACTURED BY DEWALT/POWERS (ICC–ES NO. 3298). SUBSTITUTES PROPOSED BY CONTRACTOR SHALL BE SUBMITTED FOR REVIEW WITH ICC–ES REPORTS INDICATING EQUIVALENT OR GREATER LOAD CAPACITIES. IN ADDITION, SUBSTITUTIONS SHALL MEET ICC–ES ACCEPTANCE CRITERIA AC308. SPECIAL INSPECTION OF EPOXY–GROUTED ANCHOR INSTALLATION IS REQUIRED. EPOXY GROUTED RODS OR REBAR SHALL NOT BE USED AS SUBSTITUTES FOR CAST–IN–PLACE ANCHOR BOLTS OR REINFORCING STEEL UNLESS SPECIFICALLY APPROVED BY THE STRUCTURAL ENGINEER. NOTIFY ENGINEER IF ANCHOR LOCATIONS CONFLICT WITH REINFORCING STEEL – DO NOT CUT REINFORCING OR REDUCE EMBEDMENT DEPTHS WITHOUT PRIOR APPROVAL. INSTALLATION OF ADHESIVE ANCHORS HORIZONTALLY OR UPWARDLY INCLINED TO SUPPORT SUSTAINED TENSION LOADS SHALL BE PERFORMED BY CERTIFIED PERSONNEL IN CONFORMANCE TO ACI 318–14 SECTION 17.8.2.2. HOLES SHALL BE HAMMER DRILLED AND DRY.

30. EXPANSION ANCHORS SHALL BE ONE OF THE APPROVED PRODUCTS BELOW:
    – KWIK BOLT TZ ANCHORS AS MANUFACTURED BY HILTI, INC. AND INSTALLED IN STRICT ACCORDANCE WITH ICC–ES REPORT NO. 1917, OR
    – STRONG–BOLT 2 AS MANUFACTURED BY SIMPSON STRONG–TIE COMPANY, INC. AND INSTALLED IN STRICT ACCORDANCE WITH ICC–ES REPORT NO. 3037
    AND INSTALLED IN STRICT ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.

IBC TABLE 1705.3 REQUIRED SPECIAL INSPECTIONS AND TESTS OF CONCRETE CONSTRUCTION

REQUIRED?	VERIFICATION & INSPECTION	CONTINUOUS	PERIODIC	REF STD.	IBC REF.
N*	1. INSPECT REINFORCEMENT, INCLUDING PRESTRESSING TENDONS AND VERIFY PLACEMENT.	---	X	ACI 318 CH. 20, 25.2, 25.3, 26.5.1–26.5.3	1908.4
N	2. REINFORCING BAR WELDING: A. VERIFY WELDABILITY OF REINFORCING BARS OTHER THAN ASTM A 706. B. INSPECT SINGLE–PASS FILLET WELDS, MAXIMUM 5/16"; AND C. INSPECT ALL OTHER WELDS	--- / X	X / X	AWSD1.4 ACI 318 26.5.4	---
YES	3. INSPECT ANCHORS CAST IN CONCRETE.	---	X	ACI 318: 17.8.2	---
YES	4. INSPECT ANCHORS POST–INSTALLED IN HARDENED CONCRETE MEMBERS. A. ADHESIVE ANCHORS INSTALLED IN HORIZONTALLY OR UPWARDLY INCLINED ORIENTATIONS TO RESIST SUSTAINED TENSION LOADS B. MECHANICAL ANCHORS AND ADHESIVE ANCHORS NOT DEFINED IN 4.A	X	X	ACI 318: 17.8.2.4 ACI 318:17.8.2	---
N*	5. VERIFY USE OF REQUIRED DESIGN MIX.	---	X	ACI 318: CH. 19, 26.4.3, 26.4.4	1904.1, 1904.2, 1908.2, 1908.3
N*	6. PRIOR TO CONCRETE PLACEMENT, FABRICATE SPECIMENS FOR STRENGTH TESTS, PERFORM SLUMP AND AIR CONTENT TESTS, AND DETERMINE THE TEMPERATURE OF THE CONCRETE.	X	---	ASTM C 172 ASTM C 31 ACI 318: 26.4.5, 26.12	1908.10
N*	7. INSPECT CONCRETE AND SHOTCRETE PLACEMENT FOR PROPER APPLICATION TECHNIQUES.	X	---	ACI 318: 26.4.5	1908.6, 1908.7, 1908.8
N*	8. VERIFY MAINTENANCE OF SPECIFIED CURING TEMPERATURE AND TECHNIQUES.	---	X	ACI 318: 26.4.7–26.4.9	1908.9
N	9. INSPECT PRESTRESSED CONCRETE FOR: A. APPLICATION OF PRESTRESSING FORCES; AND B. GROUTING OF BONDED PRESTRESSING TENDONS	X / X	--- / ---	ACI 318: 26.9.2.1 ACI 218: 26.9.2.3	---
N	10. INSPECT ERECTION OF PRECAST CONCRETE MEMBERS.	---	X	ACI 318: CH. 26.8	---
N*	11. VERIFY IN–SITU CONCRETE STRENGTH, PRIOR TO STRESSING OF TENDONS IN POST–TENSIONED CONCRETE AND PRIOR TO REMOVAL OF SHORES AND FORMS FROM BEAMS AND STRUCTURAL SLABS.	---	X	ACI 318: 26.10.2	---
N*	12. INSPECT FORMWORK FOR SHAPE, LOCATION AND DIMENSIONS OF THE CONCRETE MEMBER BEING FORMED.	---	X	ACI318: 26.10.1(b)	---

* EXCEPTIONS 2 PER IBC SECTION 1705.3 APPLIES TO CONCRETE WORK ON THIS PROJECT.

Minimum Connectors and Fasteners for Wood Members per IBC 2018

DESCRIPTION OF BUILDING ELEMENT	NUMBER AND TYPE OF FASTENERS	SPACING & LOCATION
ROOF		
1. BLOCKING BETWEEN CEILING JOISTS, RAFTERS, OR TRUSSES TO TOP PLATE OR OTHER FRAMING BELOW	3–8d COMMON (2½" x 0.131"); or 3–10d BOX (3" x 0.128"); or 3–3" x 0.131" NAILS; or 3–3" x 14 GAGE STAPLES, 7/16" CROWN	EACH END, TOENAIL
BLOCKING BETWEEN RAFTERS OR TRUSS NOT AT THE WALL TOP PLATE, TO RAFTER OR TRUSS	2–8d COMMON (2½" x 0.131") 2–3" x 0.131" NAILS 2–3" x 14 GAGE STAPLES	EACH END, TOENAIL
	2–16d COMMON (3½" x 0.162") 3–3" x 0.131" NAILS 3–3" x 14 GAGE STAPLES	END NAIL
FLAT BLOCKING TO TRUSS AND WEB FILLER	16d COMMON (3½" x 0.162") @ 6" oc 3" x 0.131" NAILS @ 6" oc 3" x 14 GAGE STAPLES @ 6" oc	FACE NAIL
2. CEILING JOISTS TO TOP PLATE	3–8d COMMON (2½" x 0.131"); or 3–10d BOX (3" x 0.128"); or 3–3" x 0.131" NAILS; or 3–3" x 14 GAGE STAPLES, 7/16" CROWN	EACH JOIST, TOENAIL
3. CEILING JOIST NOT ATTACHED TO PARALLEL RAFTER, LAPS OVER PARTITION (NO THRUST) (SEE 2308.7.3.1, TABLE 2308.7.3.1)	3–16d COMMON (3½" x 0.162"); or 4–10d BOX (3" x 0.128"); or 4–3" x 0.131" NAILS; or 4–3" x 14 GAGE STAPLES, 7/16" CROWN	FACE NAIL
4. CEILING JOIST ATTACHED TO PARALLEL RAFTER (HEEL JOINT)	PER TABLE 2308.7.3.1	FACE NAIL
5. COLLAR TIE TO RAFTER	3–10d COMMON (3" x 0.148"); or 4–10d BOX (3" x 0.128"); or 4–3" x 0.131" NAILS; or 4–3" x 14 GAGE STAPLES, 7/16" CROWN	FACE NAIL
6. RAFTER OR ROOF TRUSS TO TOP PLATE (SEE 2308.7.5, TABLE 2308.7.5)	3–10d COMMON (3" x 0.148"); or 3–16d BOX (3½" x 0.135"); or 4–10d BOX (3" x 0.128"); or 4–3" x 0.131" NAILS; or 4–3" x 14 GAGE STAPLES, 7/16" CROWN	TOENAIL
7. ROOF RAFTERS TO RIDGE VALLEY OR HIP RAFTERS; OR ROOF RAFTER TO 2" RIDGE BEAM	2–16d COMMON (3½" x 0.162"); or 3–10d BOX (3" x 0.128"); or 3–3" x 0.131 NAILS; or 3–3" x 14 GAGE STAPES, 7/16" CROWN	END NAIL
	3–10d COMMON (3½" x 0.148"); or 3–16d BOX (3½" x 0.135"); or 4–10d BOX (3" x 0.128"); or 4–3" x 0.131 NAILS; or 4–3" x 14 GAGE STAPES, 7/16" CROWN	TOENAIL
WALL		
8. STUD TO STUD (NOT AT SHEARWALL CHORDS)	16d COMMON (3½" x 0.162")"	24" oc FACE NAIL
	10d BOX (3" x 0.128"); or 3" x 0.131" NAILS; or 3–3" x 14 GAGE STAPLES, 7/16" CROWN	16" oc FACE NAIL
9. STUD TO STUD AND ABUTTING STUDS AT INTERSECTION WALL CORNERS	16d COMMON (3½" x 0.162")"; or	16" oc FACE NAIL
	16d BOX (3½" x 0.135")"; or	12" oc FACE NAIL
	3" x 0.131" NAILS; or 3–3" x 14 GAGE STAPLES, 7/16" CROWN	12" oc FACE NAIL
10. BUILT–UP HEADER (2" TO 2" HDR.)	16d COMMON (3½" x 0.162")"; or	16" oc EA. EDGE, FACE NAIL
	16d BOX (3½" x 0.135")	12" oc EA. EDGE, FACE NAIL
11. CONTINUOUS HEADER TO STUD	4–8d COMMON (2½" x 0.131"); or 4–10d BOX (3" x 0.128")	TOENAIL
12. TOP PLATE TO TOP PLATE	16d COMMON (3½" x 0.162"); or	16" oc FACE NAIL
	10d BOX (3" x 0.128"); or 3" x 0.131" NAILS; or 3" x 14 GAGE STAPLES, 7/16" CROWN	12" oc FACE NAIL
13. TOP PLATE TO TOP PLATE, AT END JOINTS	8–16d COMMON (3½" x 0.162"); or 12–10d BOX (3" x 0.128"); or 12–3" x 0.131" NAILS; or 12–3" x 14 GAGE STAPLES, 7/16" CROWN	EACH SIDE OF END JOINT, FACE NAIL (MINIMUM 24" LAP SPLICE LENGTH EA. SIDE OF END JOINT
14. BOTTOM PLATE TO JOIST, RIM JOIST, BAND JOIST, OR BLOCKING NOT AT SHEARWALL	16d COMMON (3½" x 0.162")"; or	16" oc FACE NAIL
	16d BOX (3½" x 0.135")"; or 3" x 0.131" NAILS; or 3" x 14 GAGE STAPLES, 7/16" CROWN	12" oc FACE NAIL
15. BOTTOM PLATE TO JOIST, RIM JOIST, BAND JOIST, OR BLOCKING AT SHEARWALL	2–16d COMMON (3½" x 0.162"); or 3–16d BOX (3½" x 0.135"); or 4–3" x 0.131" NAILS; or 4–3" x 14 GAGE STAPLES, 7/16" CROWN	16" oc FACE NAIL
16. STUD TO TOP OR BOTTOM PLATE	4–8d COMMON (2½" x 0.131"); or 4–10d BOX (3" x 0.128"); or 4–3" x 0.131" NAILS; or 4–3" x 14 GAGE STAPLES, 7/16" CROWN	TOENAIL
	2–16d COMMON (3½" x 0.162"); or 3–10d BOX (3" x 0.128"); or 3–3" x 0.131" NAILS; or 3–3" x 14 GAGE STAPLES, 7/16" CROWN	END NAIL
17. TOP OR BOTTOM PLATE TO STUD	2–16d COMMON (3½" x 0.162"); or 3–10d BOX (3" x 0.128"); or 3–3" x 0.131" NAILS; or 3–3" x 14 GAGE STAPLES, 7/16" CROWN	END NAIL
18. TOP PLATES, LAPS AT CORNERS AND INTERSECTIONS	2–16d COMMON (3½" x 0.162"); or 3–10d BOX (3" x 0.128"); or 3–3" x 0.131" NAILS; or 3–3" x 14 GAGE STAPLES, 7/16" CROWN	FACE NAIL
19. 1" BRACE TO EACH STUD AND PLATE	2–8d COMMON (2½" x 0.131"); or 2–10d BOX (3" x 0.128"); or 2–3" x 0.131" NAILS; or 2–3" x 14 GAGE STAPLES, 7/16" CROWN	FACE NAIL
20. 1" x 6" SHEATHING TO EACH BEARING	2–8d COMMON (2½" x 0.131"); or 2–10d BOX (3" x 0.128"); or	FACE NAIL
21. 1" x 8" AND WIDER SHEATHING TO EACH BEARING	3–8d COMMON (2½" x 0.131"); or 3–10d BOX (3" x 0.128"); or	FACE NAIL

DESCRIPTION OF BLDG. ELEMENT	NUMBER AND TYPE OF FASTENERS	SPACING & LOCATION
FLOOR		
22. JOIST TO SILL, TOP PLATE, OR GIRDER	3–8d COMMON (2½" x 0.131"); or 3–10d BOX (3" x 0.128"); or 3–3" x 0.131" NAILS; or 3–3" x 14 GAGE STAPLES, 7/16" CROWN	TOENAIL
23. RIM JOIST, BAND JOIST, OR BLOCKING TO TOP PLATE, SILL, OR OTHER FRAMING BELOW	8d COMMON (2½" x 0.131"); or 10d BOX (3" x 0.128"); or 3" x .131" NAILS; r 3" x 14 GAGE STAPLES, 7/16" CROWN	6" o.c., TOENAIL
24. 1" x 6" SUBFLOOR OR LESS TO EACH JOIST	2–8d COMMON (2½" x 0.131"); or 2–10d BOX (3" x 0.128")	FACE NAIL
25. 2" SUBFLOOR TO JOIST OR GIRDER	2–16d COMMON (3½" x 0.162")	FACE NAIL
26. 2" PLANKS (PLANK & BEAM – FLOOR & ROOF)	2–16d COMMON (3½" x 0.162")"	EA. BEARING, FACE NAIL
27. BUILT–UP GIRDERS AND BEAMS, 2" LUMBER LAYERS	20d COMMON (4" x 0.192")	32" o.c., FACE NAIL TOP & BOT. STAGGERED ON OPPOSITE SIDES
	10d BOX (3" x 0.128"); or 3" x 0.131" NAILS; or 3" x 14 GAGE STAPLES, 7/16" CROWN	24" o.c., FACE NAIL AT TOP & BOT. STAGGERED ON OPP. SIDES
	AND: 2–20d COMMON (4" x 0.192"); or 3–10d BOX (3" x 0.128"); or 3–3" x 0.131" NAILS; or 3–3" x 14 GAGE STAPLES, 7/16" CROWN	ENDS AND AT EACH SPLICE, FACE NAIL
28. LEDGER STRIP SUPPORTING JOISTS OR RAFTERS	3–16d COMMON (3½" x 0.162"); or 4–10d BOX (3" x 0.128"); or 4–3" x 0.131" NAILS; or 4–3" x 14 GAGE STAPLES, 7/16" CROWN	EACH JOIST OR RAFTER, FACE NAIL
29. JOIST TO BAND JOIST OR RIM JOIST	3–16d COMMON (3½" x 0.162"); or 4–10d BOX (3" x 0.128"); or 4–3" x 0.131" NAILS; or 4–3" x 14 GAGE STAPLES, 7/16" CROWN	END NAIL
30. BRIDGING OR BLOCKING TO JOIST, RAFTER, OR TRUSS	2–8d COMMON (2½" x 0.131"); or 2–10d BOX (3" x 0.128"); or 2–3" x 0.131" NAILS; or 2–3" x 14 GAGE STAPLES, 7/16" CROWN	EACH END, TOENAIL

9317 REGISTERED ARCHITECT
CHRIS LUTHI
STATE OF WASHINGTON

CENTERLINE DESIGN
4737 37th AVE SW
SEATTLE
206.932.8706
www.Centerline-Design.com

ATLAS CONSULTING STRUCTURAL ENGINEERS

Mahramni Residence
3859 83rd Avenue SE
Mercer Island, WA - 98040

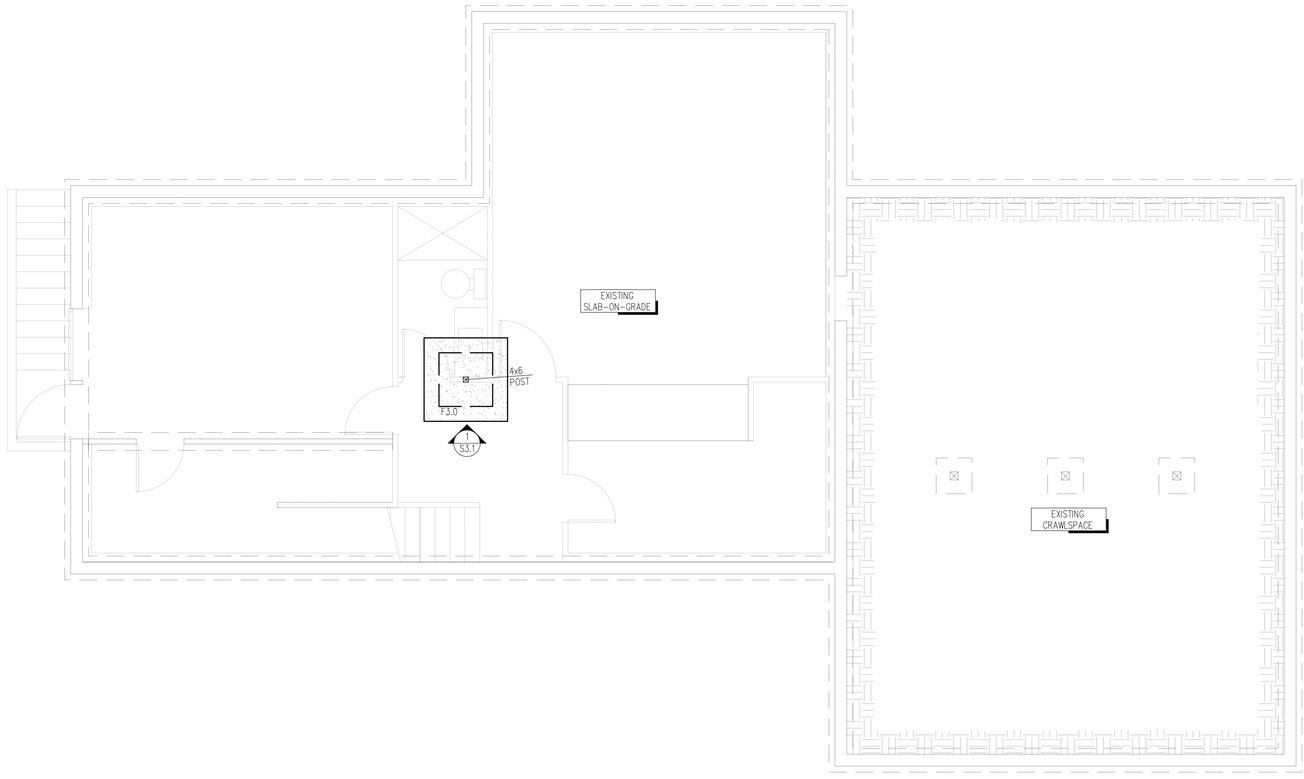
CONTENTS
General Structural Notes

DRAWN BY
JDA
DATE
02.14.22

S1.1

LEGEND

- EXISTING CONCRETE WALL
- EXISTING CONCRETE FOOTING
- EXISTING STRUCTURAL WOOD STUDWALL ABOVE
- POST ABOVE
- EXISTING POST ABOVE



LOWER FLOOR PLAN NOTES

1. SOLID WALLS AND SHEARWALLS SHOWN IN PLAN ARE ABOVE LOWER FLOOR LEVEL.
2. EXISTING CONCRETE FOUNDATION WALL CONDITION SHALL BE V.I.F. TO BE MIN. 8" WIDE AND IN SUITABLE CONDITION (i.e. FREE OF CRACKS, DETERIORATION, BOWING, ETC.). SEE ARCHITECTURAL FOR INTERIOR STUDWALLS. SEE 6/6.2, 5/S6.2, AND 2/S6.2 FOR ALLOWABLE HOLES & NOTCHES IN STUDWALL STUDS AND TOP & BOTTOM PLATES.
3. SEE STRUCTURAL GENERAL NOTES #13 – 18 FOR CONCRETE AND CONCRETE REINFORCING REQUIREMENTS.

1 / S2.1 LOWER FLOOR AND FOUNDATION PLAN

1/4" = 1'-0"

NORTH

9317 REGISTERED ARCHITECT
CHRIS LUTH
STATE OF WASHINGTON

CENTERLINE DESIGN
4737 37th AVE SW
SEATTLE
206.932.8706
www.Centerline-Design.com

ATLAS CONSULTING STRUCTURAL ENGINEERS

Mahramni Residence
3859 83rd Avenue SE
Mercer Island, WA - 98040

CONTENTS

Lower Floor and Foundation Plan

DRAWN BY

JDA

DATE

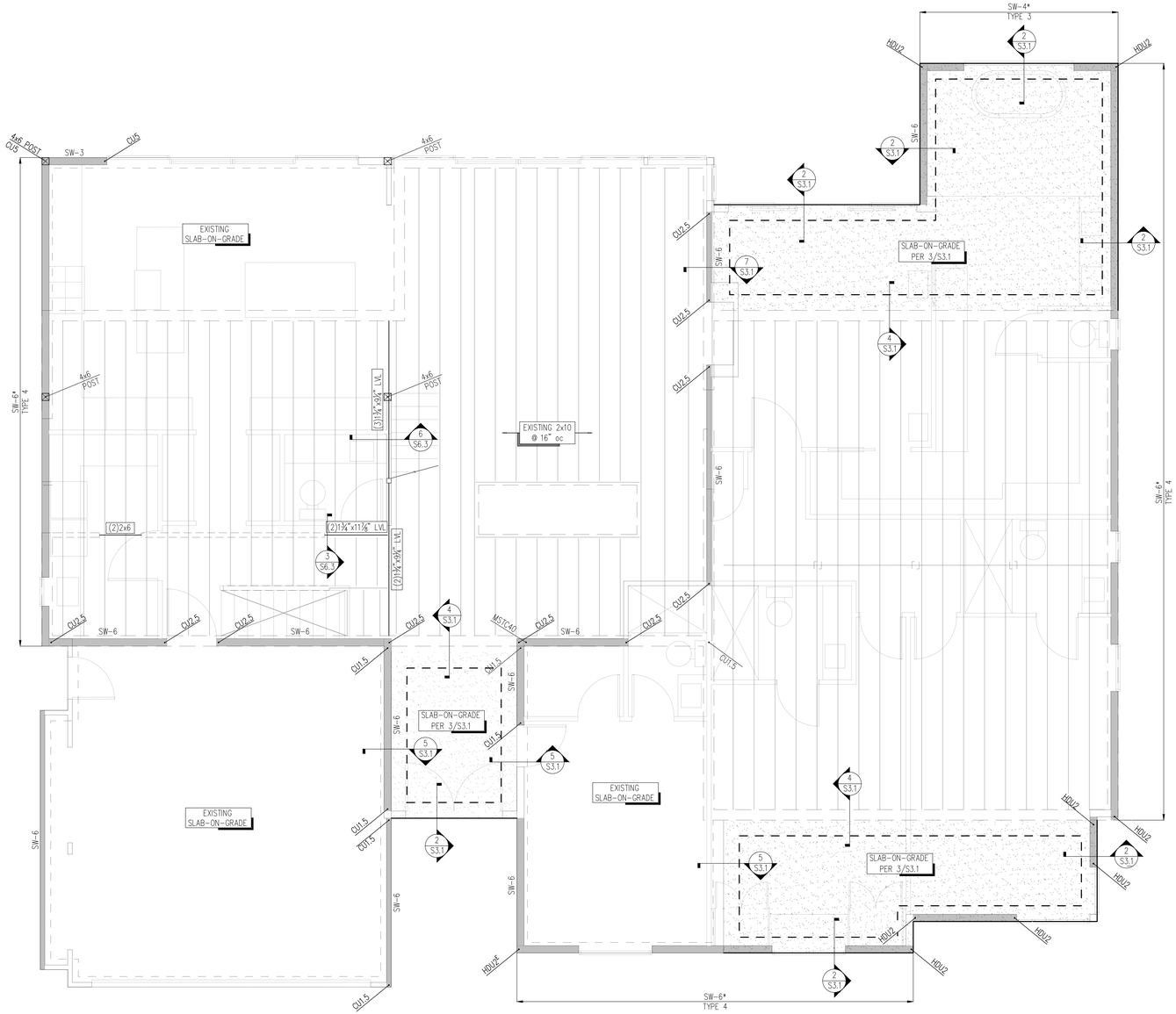
02.14.22

S2.1

LEGEND

- EXISTING CONCRETE WALL BELOW
- EXISTING CONCRETE SLAB
- NEW CONCRETE SLAB
- EXISTING STRUCTURAL WOOD STUDWALL ABOVE
- POST BELOW
- EXISTING POST BELOW
- POST ABOVE
- EXISTING POST ABOVE
- EXISTING WOOD FRAMING

- SW-_ — DENOTES EXTENT OF SHEARWALL TYPE SW-_ PER 1/S6.5
- SW-_* — DENOTES STRAPPED SHEARWALL PER 7/S6.5, WITH * DENOTING LOCATION OF STRAP ABOVE & BELOW OPENING
- HDU_ / MSTC_ — DENOTES SHEARWALL TENSION TIE PER 4/S6.5
  - * – DENOTES TRANSFER TIE FROM TIE ABOVE
  - ^ – DENOTES TIE ATOP FRAMING MEMBER
  - (E)– DENOTES TIE AT EXIST. CONC. w/ EPOXY
- CU_ — DENOTES CUSTOM TENSION TIE INTO EXIST. CONC. w/ EPOXY PER 7/S6.5
- WOOD BEAM or HEADER
- DENOTES STRAP TYPE BY LENGTH, CENTERED ON ABUTTING ELEMENTS — STRAP x LENGTH



MAIN FLOOR FRAMING PLAN NOTES

1. SOLID WALLS AND SHEARWALLS SHOWN IN PLAN ARE ABOVE MAIN FLOOR LEVEL. DASHED WALLS SHOWN IN PLAN ARE BELOW MAIN FLOOR FRAMING ELEVATION.
2. EXISTING EXTERIOR STUDWALLS SHALL BE V.I.F. TO BE 2x4 (MIN.) @ 24" oc (MAX). SEE ARCHITECTURAL FOR INTERIOR STUDWALLS. SEE 6/6.2, 5/S6.2, AND 2/S6.2 FOR ALLOWABLE HOLES & NOTCHES IN STUDWALL STUDS AND TOP & BOTTOM PLATES.
3. EXISTING FLOOR SHEATHING TO BE VERFIED IN FIELD TO BE IN SUITABLE CONDITION AND FREE OF DETERIORATION. IF AREAS REQUIRE REPLACEMENT, INFILL SHALL CONSIST OF ¾" T&G SHEATHING (PANEL SPAN RATING 48/24). NAIL SHEATHING AT ALL FRAMED PANEL EDGES, DIAPHRAGM BOUNDARIES, BLOCKING, AND SHEAR WALLS w/ 10d @ 6" oc; AND AT ALL INTERMEDIATE SUPPORTS w/ 10d @ 12" oc (SEE 3/S6.2). GLUE SHEATHING AT ALL SUPPORTS w/ ADHESIVE CONFORMING TO ASTM SPECIFICATION D3498.
4. ALL HEADERS ABOVE (SEE 1/S2.3) SHALL HAVE A MINIMUM NUMBER OF POSTS PER 4/S6.1 AT NON-LOAD BEARING EXTERIOR WALLS, AND PER 6/S6.1 AT LOAD BEARING EXTERIOR WALLS
5. HEADERS IN EXTERIOR WALLS NOT SUPPORTING RAFTERS, JOISTS, OR BEAMS SHALL BE PER DETAIL 4/S6.2 U.N.O. IN PLAN.

1 / S2.2 MAIN FLOOR FRAMING PLAN

1/4" = 1'-0"

NORTH

9317 REGISTERED ARCHITECT CHRIS LUTH STATE OF WASHINGTON

CENTERLINE DESIGN
4737 37th AVE SW
SEATTLE
206.932.8706
www.Centerline-Design.com

ATLAS CONSULTING STRUCTURAL ENGINEERS

Mahramni Residence
3859 83rd Avenue SE
Mercer Island, WA - 98040

CONTENTS
Main Floor Framing Plan

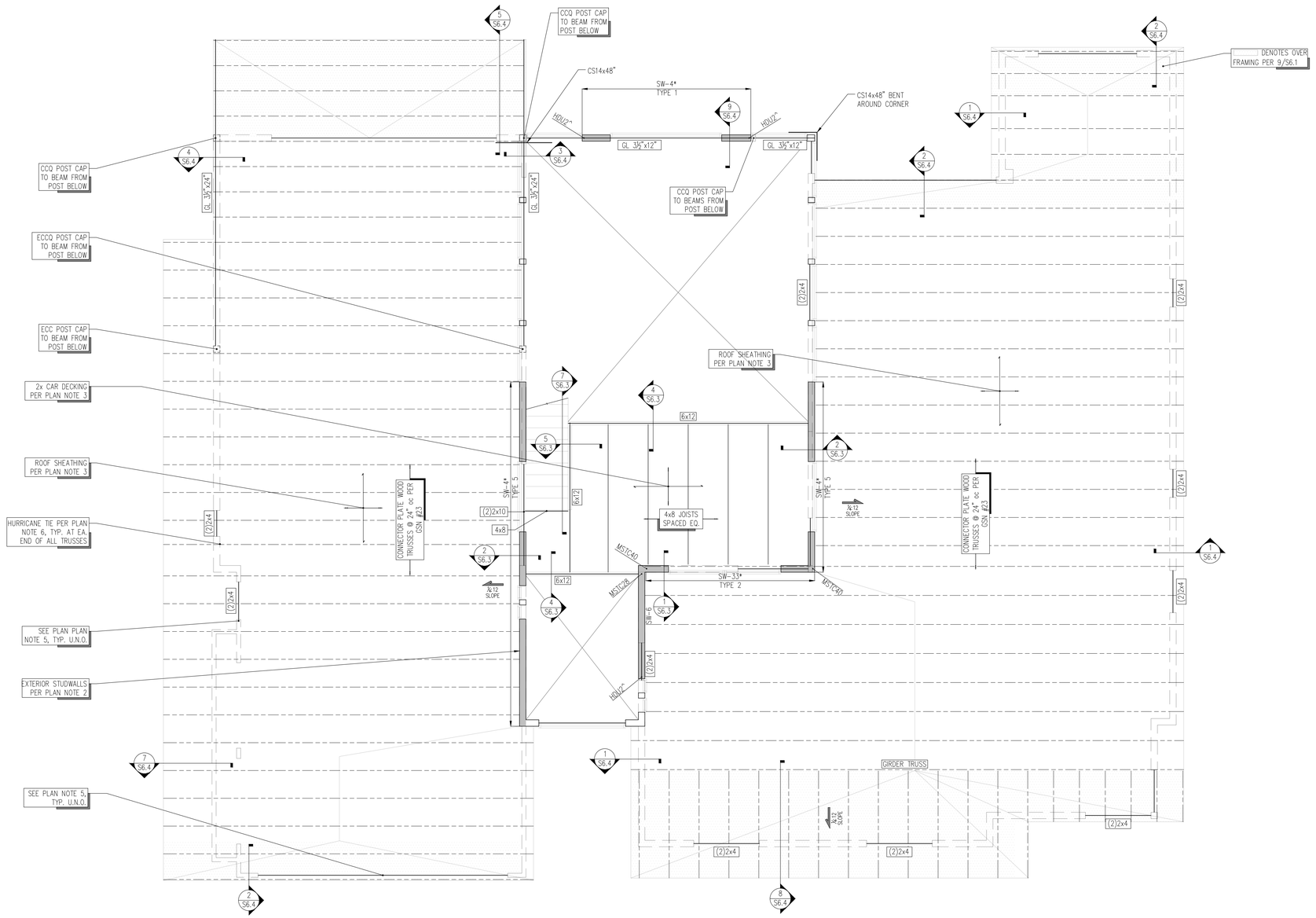
DRAWN BY
JDA

DATE
02.14.22

S2.2

LEGEND

- EXISTING STRUCTURAL WOOD STUDWALL BELOW
- STRUCTURAL WOOD STUDWALL ABOVE
- POST BELOW
- EXISTING POST BELOW
- POST ABOVE
- EXISTING POST ABOVE
- DENOTES STRAP TYPE BY LENGTH, CENTERED ON ABUTTING ELEMENTS — STRAP x LENGTH
- SW-_ — DENOTES EXTENT OF SHEARWALL TYPE SW-_ PER 1/S6.5
- SW-_ * — DENOTES STRAPPED SHEARWALL PER 7/S6.5, WITH * DENOTING LOCATION OF STRAP ABOVE & BELOW OPENING
- HDU_ / MSTC_ — DENOTES SHEARWALL TENSION TIE PER 4/S6.5; * – DENOTES TRANSFER TIE FROM TIE ABOVE; ^ – DENOTES TIE ATOP FRAMING MEMBER
- WOOD JOIST
- WOOD BEAM or HEADER
- WOOD TRUSS



LOFT AND LOW ROOF FRAMING PLAN NOTES

1. SOLID WALLS AND SHEARWALLS SHOWN IN PLAN ARE ABOVE LOFT FLOOR LEVEL. DASHED WALLS SHOWN IN PLAN ARE BELOW LOFT/LOW ROOF FRAMING ELEVATION.
2. NEW EXTERIOR STUDWALLS SHALL BE 2x6 STUDS @ 24" oc (MAX). EXISTING EXTERIOR STUDWALLS BELOW SHALL BE V.I.F. TO BE 2x4 (MIN.) @ 24" oc (MAX). SEE ARCHITECTURAL FOR INTERIOR STUDWALLS. SEE 6/6.2, 5/S6.2, AND 2/S6.2 FOR ALLOWABLE HOLES & NOTCHES IN STUDWALL STUDS AND TOP & BOTTOM PLATES.
3. FLOOR SHALL BE 2x CAR DECKING SET IN A CONTROLLED RANDOM LAYUP WITH #8x3" BLIND WOOD SCREWS @ 12" oc. A MINIMUM DISTANCE OF 2 FEET BETWEEN END JOINTS IN ADJACENT COURSES SHALL BE PROVIDED. THE FIRST AND SECOND COURSES MUST BEAR ON AT LEAST TWO SUPPORTS WITH END JOINTS IN THESE TWO COURES OCCURING ON ALTERNATE SUPPORTS. ROOF SHEATHING SHALL CONSIST OF ⅝" T&G SHEATHING (PANEL SPAN RATING 32/16). NAIL SHEATHING AT ALL FRAMED PANEL EDGES, DIAPHRAGM BOUNDARIES, BLOCKING, AND SHEAR WALLS w/ 10d @ 6" oc; AND AT ALL INTERMEDIATE SUPPORTS w/ 10d @ 12" oc (SEE 3/S6.2). GLUE SHEATHING AT ALL SUPPORTS w/ ADHESIVE CONFORMING TO ASTM SPECIFICATION D3498.
4. ALL HEADERS ABOVE (SEE 1/S2.4) SHALL HAVE A MINIMUM NUMBER OF POSTS PER 4/S6.1 AT NON-LOAD BEARING EXTERIOR WALLS, AND PER 6/S6.1 AT LOAD BEARING EXTERIOR WALLS
5. HEADERS IN EXTERIOR WALLS NOT SUPPORTING TRUSSES, JOISTS, OR BEAMS SHALL BE PER DETAIL 4/S6.2 U.N.O. IN PLAN.
6. PROVIDE H2.5A HURRICANE TIES AT END OF ALL TRUSSES AND RAFTERS.

1 / S2.3 LOFT AND LOW ROOF FRAMING PLAN

1/4" = 1'-0"

NORTH

9317 REGISTERED ARCHITECT CHRIS LUTH STATE OF WASHINGTON

CENTERLINE DESIGN
4737 37th AVE SW
SEATTLE
206.932.8706
www.Centerline-Design.com

ATLAS CONSULTING STRUCTURAL ENGINEERS

Mahrami Residence
3859 83rd Avenue SE
Mercer Island, WA - 98040

CONTENTS

Loft and Low Roof Framing Plan

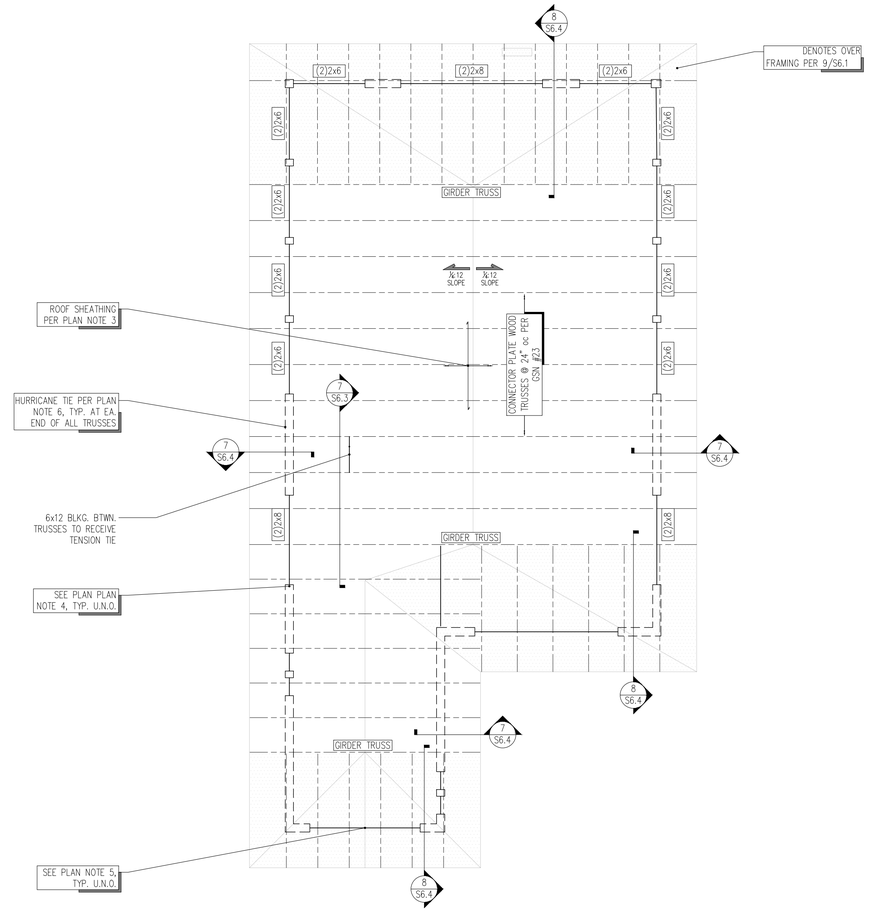
DRAWN BY
JDA

DATE
02.14.22

S2.3

LEGEND

- STRUCTURAL WOOD STUDWALL BELOW
- POST BELOW
- EXISTING POST BELOW
- WOOD TRUSS
- WOOD BEAM or HEADER
- DENOTES STRAP TYPE BY LENGTH, CENTERED ON ABUTTING ELEMENTS
  - STRAP x LENGTH



LOFT ROOF FRAMING PLAN NOTES

1. DASHED WALLS SHOWN IN PLAN ARE BELOW LOFT/LOW ROOF FRAMING ELEVATION.
2. NEW EXTERIOR STUDWALLS SHALL BE 2x6 STUDS @ 24" oc (MAX).
   SEE ARCHITECTURAL FOR INTERIOR STUDWALLS. SEE 6/6.2, 5/S6.2, AND 2/S6.2 FOR ALLOWABLE HOLES & NOTCHES IN STUDWALL STUDS AND TOP & BOTTOM PLATES.
3. ROOF SHEATHING SHALL CONSIST OF ⅝" T&G SHEATHING (PANEL SPAN RATING 32/16). NAIL SHEATHING AT ALL FRAMED PANEL EDGES, DIAPHRAGM BOUNDARIES, BLOCKING, AND SHEAR WALLS w/ 10d @ 6" oc; AND AT ALL INTERMEDIATE SUPPORTS w/ 10d @ 12" oc (SEE 3/S6.2). GLUE SHEATHING AT ALL SUPPORTS w/ ADHESIVE CONFORMING TO ASTM SPECIFICATION D3498.
4. ALL HEADERS SHALL HAVE A MINIMUM NUMBER OF POSTS PER 4/S6.1 AT NON-LOAD BEARING EXTERIOR WALLS, AND PER 6/S6.1 AT LOAD BEARING EXTERIOR WALLS
5. HEADERS IN EXTERIOR WALLS NOT SUPPORTING RAFTERS, JOISTS, OR BEAMS SHALL BE PER DETAIL 4/S6.2 U.N.O. IN PLAN.
6. PROVIDE H2.5A HURRICANE TIES AT END OF ALL RAFTERS.

1 S2.4 LOFT ROOF FRAMING PLAN

1/4" = 1'-0"

NORTH

9317 REGISTERED ARCHITECT CHRIS LUTH STATE OF WASHINGTON

CENTERLINE DESIGN
4737 37th AVE SW
SEATTLE
206.932.8706
www.Centerline-Design.com

ATLAS CONSULTING STRUCTURAL ENGINEERS

Mahramnni Residence
3859 83rd Avenue SE
Mercer Island, WA - 98040

CONTENTS

Loft Roof Framing Plan

DRAWN BY

JDA

DATE

02.02.22

S2.4

MIN. STRAIGHT DEVELOPMENT LENGTH		
BAR SIZE	TOP BARS	OTHER BARS
#4	25"	19"
#5	31"	24"

MIN. LAP SPLICE LENGTH (CLASS B)		
BAR SIZE	TOP BARS	OTHER BARS
#4	33"	25"
#5	41"	31"

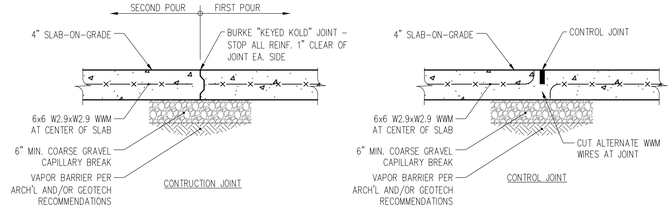
'TOP BARS' ARE HORIZONTAL BARS WITH MORE THAN 12" DEPTH OF CONCRETE CAST BELOW THEM

IF CLEAR CONCRETE COVER IS LESS THAN 1x THE DIAMETER OF THE BAR OR THE CENTER-TO-CENTER SPACING IS LESS THAN (3) BAR DIAMETERS, THEN VALUES SHALL BE INCREASED BY 50%

MIN. EMBEDMENT LENGTH FOR STANDARD END HOOKS	
BAR SIZE	LENGTH
#4	7"
#5	9"

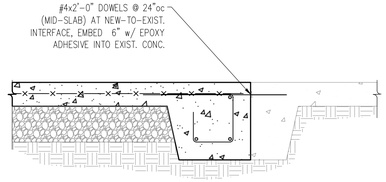
1. SIDE COVER MUST BE EQUAL TO OR GREATER THAN 2½"
2. END COVER FOR 90° HOOKS MUST BE EQUAL TO OR GREATER THAN 2"

9 / S3.2 CONCRETE REINFORCING DEVELOPMENT AND SPLICE LENGTH TABLES
N/A

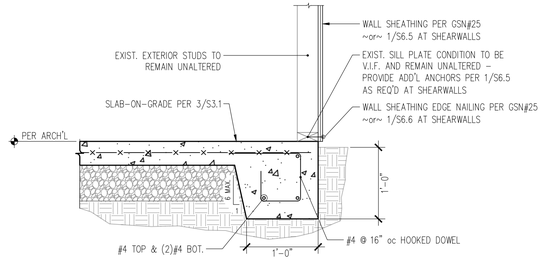


3 / S3.1 TYPICAL SLAB-ON-GRADE JOINTING
1" = 1'-0"

SEE DETAIL 2/S3.1 FOR CALL OUTS IN COMMON

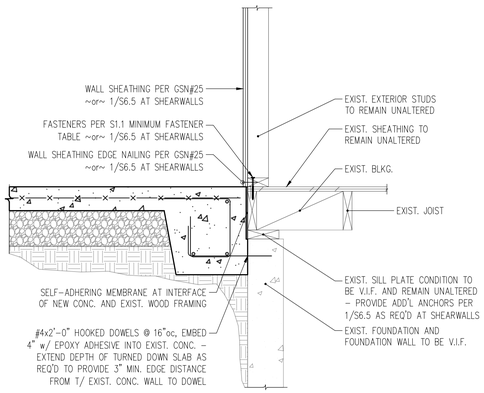


5 / S3.1 TYPICAL INTERFACE OF NEW-TO-EXISTING SLAB ON GRADE
1" = 1'-0"



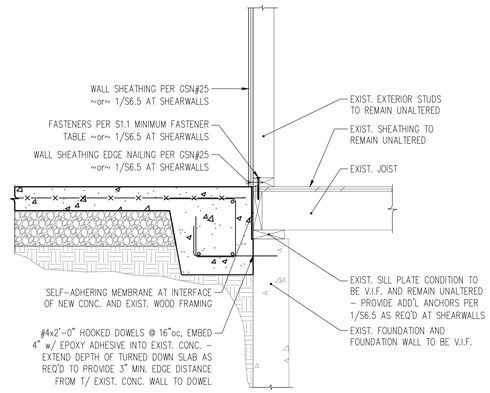
2 / S3.1 TYPICAL TURNED DOWN SLAB EDGE
1" = 1'-0"

SEE DETAIL 2/S3.1 FOR CALL OUTS IN COMMON



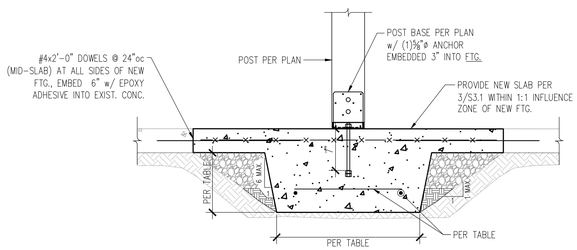
7 / S3.1 TYPICAL INTERFACE OF NEW SLAB ON GRADE TO EXISTING FOUNDATION WALL
1" = 1'-0"

SEE DETAIL 2/S3.1 FOR CALL OUTS IN COMMON



4 / S3.1 TYPICAL INTERFACE OF NEW SLAB ON GRADE TO EXISTING FOUNDATION WALL
1" = 1'-0"

FTG. MARK	DIMENSIONS			REINFORCING DIRECTION	
	LENGTH	WIDTH	DEPTH	SHORT	LONG
F3.0	3'-0"	3'-0"	10"	(4)#4	(4)#4



1 / S3.1 SPREAD FOOTING
1" = 1'-0"

9317 REGISTERED ARCHITECT
CHRIS LUTTH
STATE OF WASHINGTON

CENTERLINE DESIGN
4737 37th AVE SW
SEATTLE
206.932.8706
www.Centerline-Design.com

ATLAS CONSULTING STRUCTURAL ENGINEERS

Mahrami Residence
3859 83rd Avenue SE
Mercer Island, WA - 98040

CONTENTS
Concrete Details

DRAWN BY
JDA

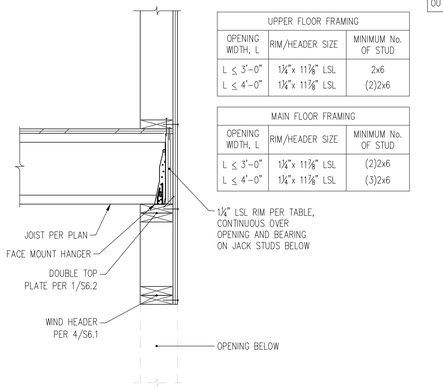
DATE
02.05.22

S3.1

SEE DETAIL 1/S6.2 FOR CALL OUTS IN COMMON

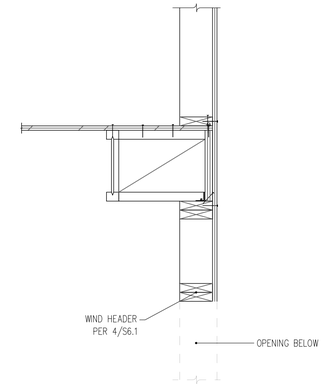
UPPER FLOOR FRAMING		
OPENING WIDTH, L	RIM/HEADER SIZE	MINIMUM No. OF STUD
L ≤ 3'-0"	1¾"x 11⅞" LSL	2x6
L ≤ 4'-0"	1¾"x 11⅞" LSL	(2)2x6

MAIN FLOOR FRAMING		
OPENING WIDTH, L	RIM/HEADER SIZE	MINIMUM No. OF STUD
L ≤ 3'-0"	1¾"x 11⅞" LSL	(2)2x6
L ≤ 4'-0"	1¾"x 11⅞" LSL	(3)2x6

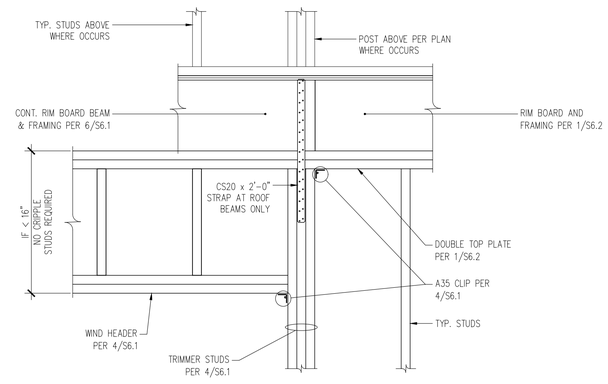


6 S6.1 TYPICAL RIMBOARD HEADER & WIND HEADER IN LOAD BEARING EXTERIOR WALL
NTS

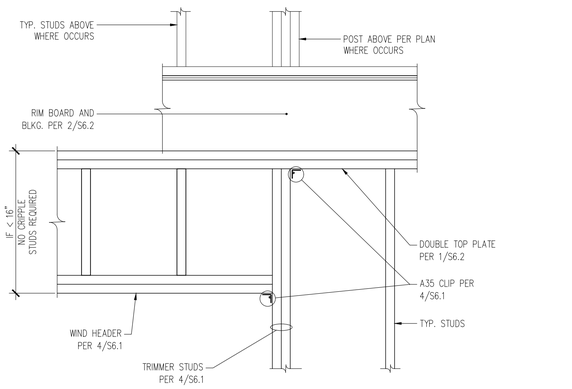
SEE DETAIL 2/S6.2 FOR CALL OUTS IN COMMON



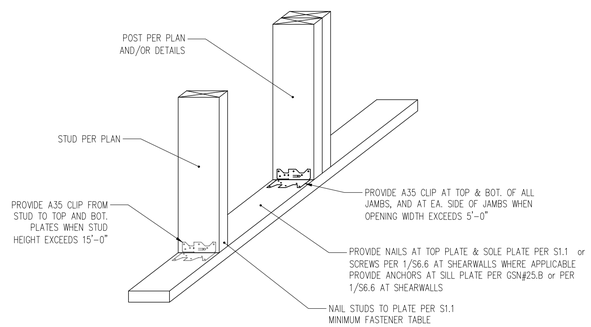
3 S6.1 TYPICAL WIND HEADER IN NON-LOAD BEARING EXTERIOR WALL
NTS



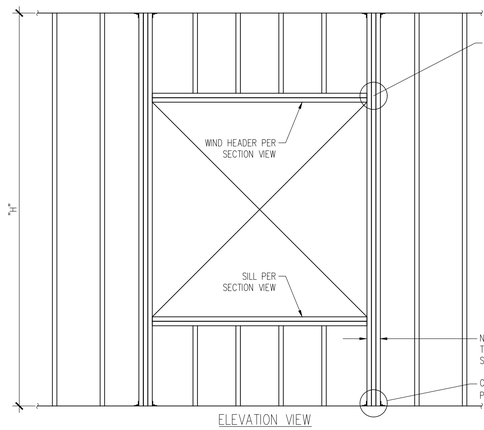
5 S6.1 TYPICAL FLUSH BEAM/HEADER IN EXTERIOR WALL
NTS



2 S6.1 TYPICAL WIND HEADER DETAIL
NTS



7 S6.1 CONNECTION OF EXTERIOR STUDS AT TOP & BOTTOM PLATES
NTS



ELEVATION VIEW

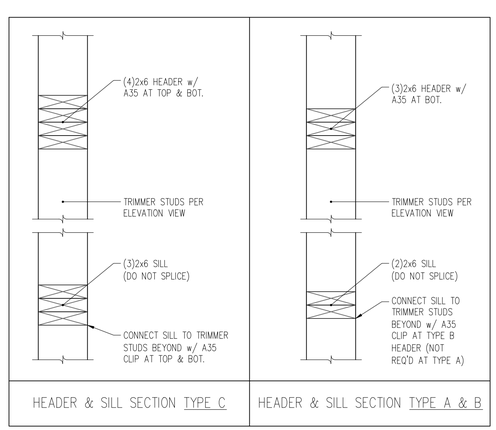
TYPICAL EXTERIOR WALL OPENING FRAMING SCHEDULE ②			
CLEAR HEIGHT "H" ③	OPENING WIDTH "L"	HDR./SILL TYPE PER SECTION AT RIGHT	No. OF FULL HEIGHT TRIMMER STUDS ①
H < 12'	L ≤ 6'-0"	A	2
	6' < L < 10'	B	2
	10' ≤ L ≤ 15'	C	3
12' < H < 16'	L ≤ 10'	B	3
	10' ≤ L ≤ 15'	C	6x8

① ALL TRIMMER STUDS, HEADERS, AND SILLS SHALL BE NAILED TOGETHER PER S1.1

② ALL STRUCTURAL TRIMMER STUDS, SILLS, AND HEADERS SHALL BE DOUGLAS FIR #2 OR BETTER

③ SEE PLANS FOR LVL STUD WALL LOCATIONS, WHERE APPLICABLE

4 S6.1 TYPICAL WIND HEADER
NTS



HEADER & SILL SECTION TYPE C

HEADER & SILL SECTION TYPE A & B

9317 REGISTERED ARCHITECT CHRIS LUTH STATE OF WASHINGTON

CENTERLINE DESIGN
4737 37th AVE SW
SEATTLE
206.932.8706
www.Centerline-Design.com

ATLAS CONSULTING STRUCTURAL ENGINEERS

Mahrami Residence
3859 83rd Avenue SE
Mercer Island, WA - 98040

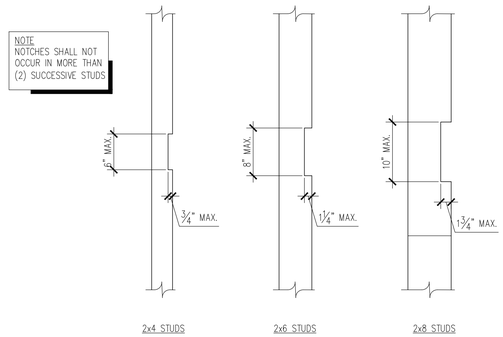
CONTENTS

Wood Typical Details

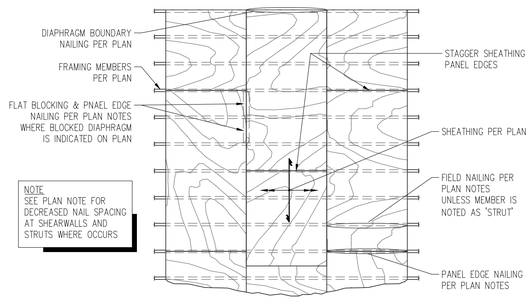
DRAWN BY
JDA

DATE
02.14.22

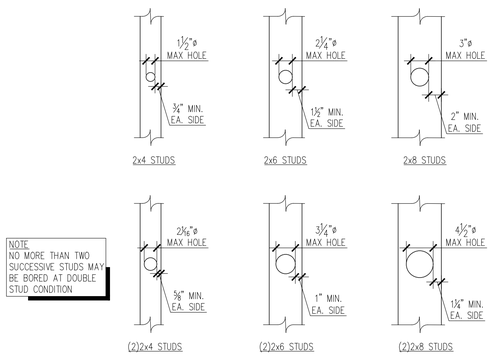
S6.1



6 S6.2 ALLOWABLE HOLES IN STUDWALL STUDS
NTS



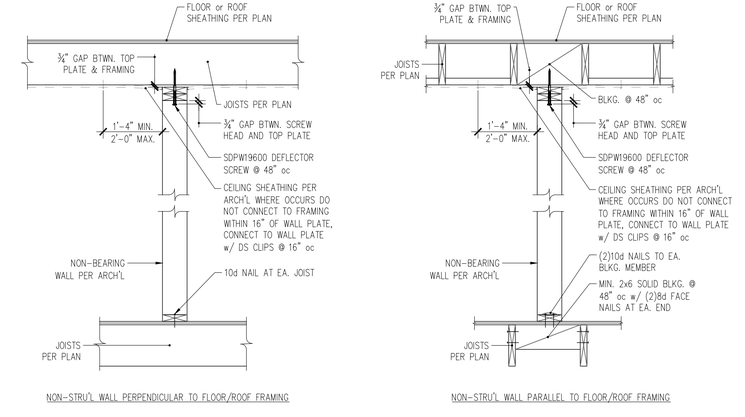
3 S6.2 TYPICAL DIAPHRAGM NAILING
NTS



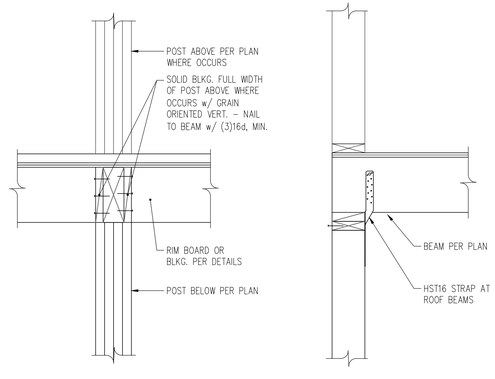
5 S6.2 ALLOWABLE HOLES IN STUDWALL STUDS
NTS

	NO REINF. REQUIRED	STRAP REINF. REQUIRED
2x4 PLATES	1½"ø MAX. HOLE, ¾" MIN. EA. SIDE	2⅝"ø MAX. HOLE, CMST16x3'-0" (CS16x2'-0" AT BOT. PLATES), ⅜" MIN. EA. SIDE
2x6 PLATES	2¼"ø MAX. HOLE, 1½" MIN. EA. SIDE	3¾"ø MAX. HOLE, CMST16x3'-0" (CS16x2'-0" AT BOT. PLATES), ¾" MIN. EA. SIDE
2x8 PLATES	3¼"ø MAX. HOLE, 2" MIN. EA. SIDE	5"ø MAX. HOLE, CMST16x3'-0" (CS16x2'-0" AT BOT. PLATES), 1¼" MIN. EA. SIDE

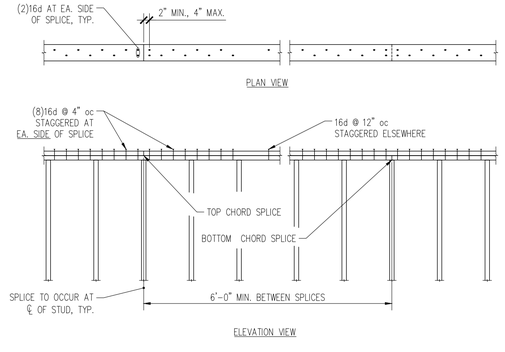
2 S6.2 ALLOWABLE HOLES THROUGH TOP PLATES
NTS



7 S6.2 CONNECTION OF NON-STRUC'L PARTITION WALL TO STRUCTURE
NTS



4 S6.2 TYPICAL BEAM PERPENDICULAR TO WALL
NTS



1 S6.2 TOP PLATE SPLICE
NTS

9317 REGISTERED ARCHITECT
CHRIS LUTH
STATE OF WASHINGTON

CENTERLINE DESIGN
4737 37th AVE SW
SEATTLE
206.932.8706
www.Centerline-Design.com

ATLAS CONSULTING STRUCTURAL ENGINEERS

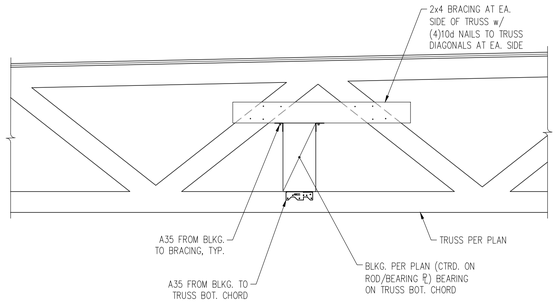
Mahramni Residence
3859 83rd Avenue SE
Mercer Island, WA - 98040

CONTENTS
Wood Floor Framing Details

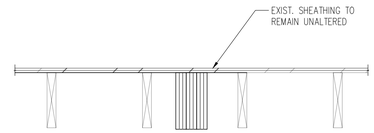
DRAWN BY
JDA

DATE
02.14.22

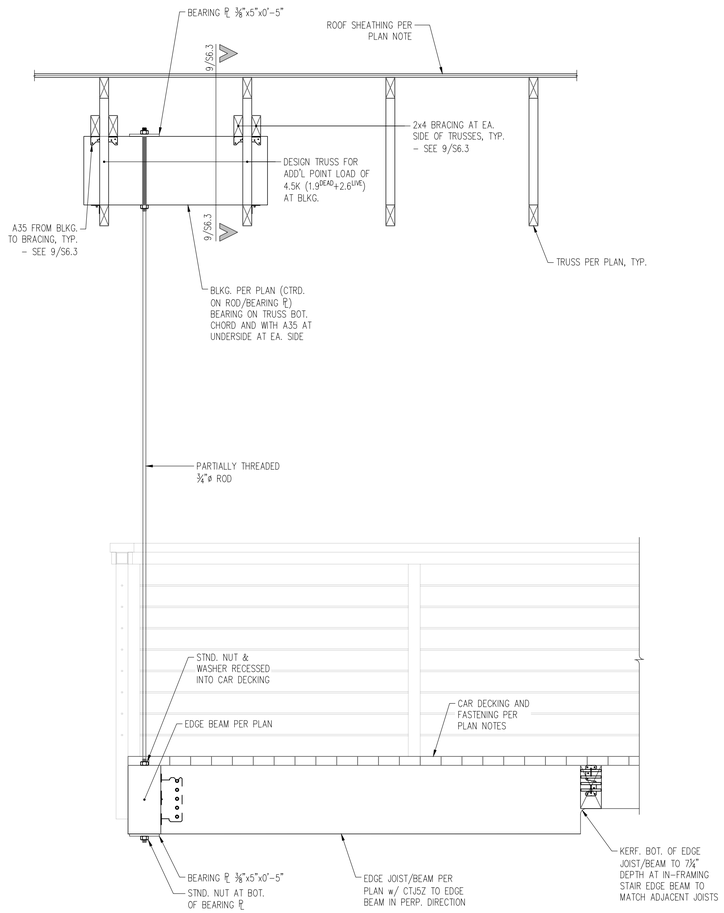
S6.2



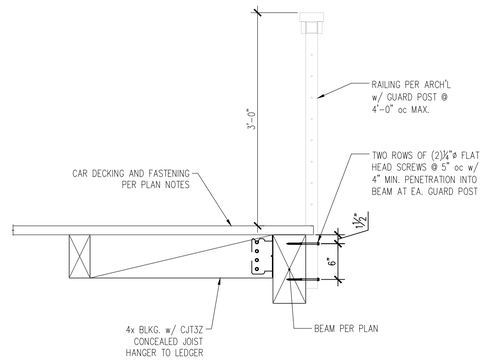
9 / S6.3 SECTION THROUGH TENSION TIE AT ROOF BLKG. MEMBER
1" = 1'-0"



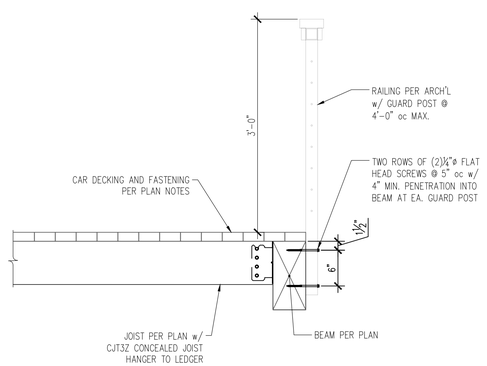
6 / S6.3 SECTION THROUGH EXTERIOR WALL AT PERPENDICULAR JOISTS AND PERPENDICULAR DECK JOISTS
1" = 1'-0"



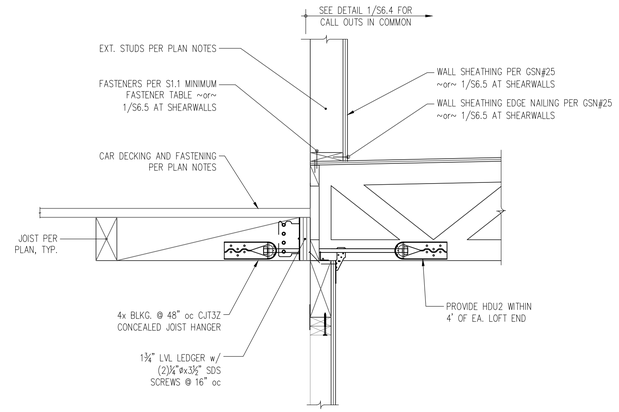
7 / S6.3 SECTION THROUGH TENSION TIE SUPPORTED LOFT CORNER
1" = 1'-0"



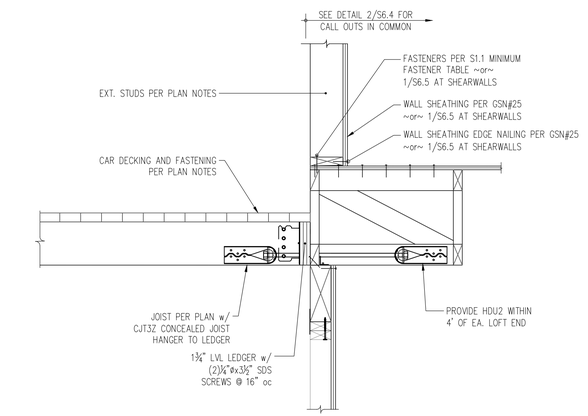
5 / S6.3 SECTION THROUGH OPEN LOFT EDGE AT PARALLEL JOISTS
1" = 1'-0"



4 / S6.3 SECTION THROUGH OPEN LOFT EDGE AT PERPENDICULAR JOISTS
1" = 1'-0"



2 / S6.3 SECTION THROUGH WALL AT PARALLEL JOISTS AND PERPENDICULAR LOW ROOF TRUSSES
1" = 1'-0"



1 / S6.3 SECTION THROUGH WALL AT PERPENDICULAR JOISTS AND PARALLEL LOW ROOF TRUSSES
1" = 1'-0"

9317 REGISTERED ARCHITECT
CHRIS LUTH
STATE OF WASHINGTON

CENTERLINE DESIGN
4737 37th AVE SW
SEATTLE
206.932.8706
www.Centerline-Design.com

ATLAS CONSULTING STRUCTURAL ENGINEERS

Mahramni Residence
3859 83rd Avenue SE
Mercer Island, WA - 98040

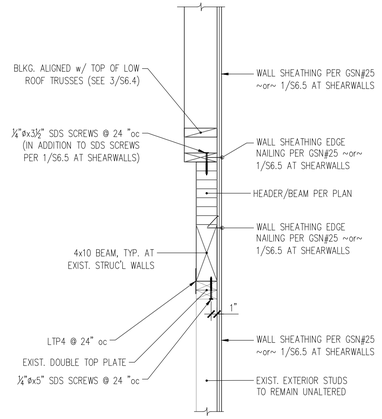
CONTENTS

Wood Floor Framing Details

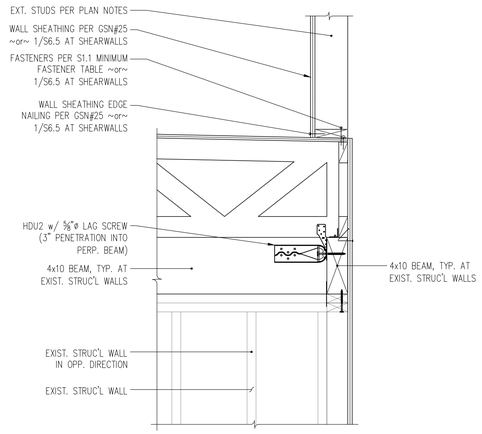
DRAWN BY
JDA

DATE
02.14.22

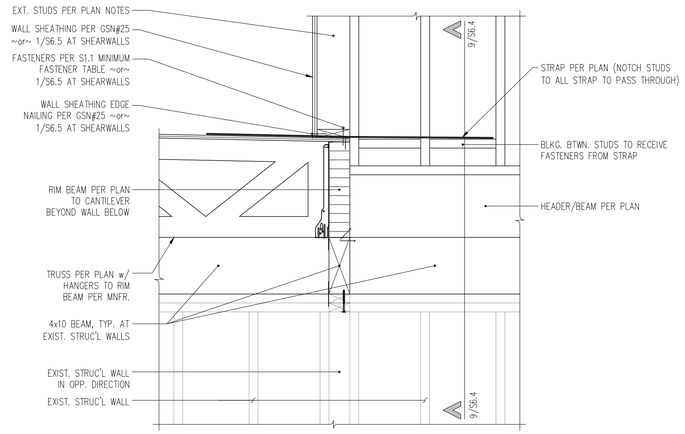
S6.3



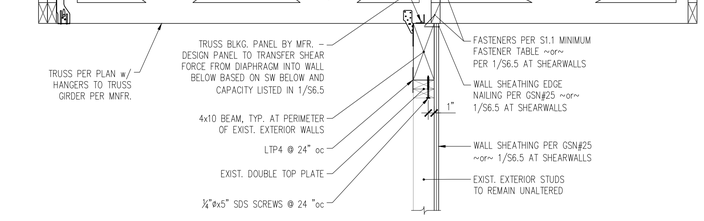
9 S6.4 SECTION THROUGH EXTERIOR WALL AT OPEN LOFT AREA
1" = 1'-0"



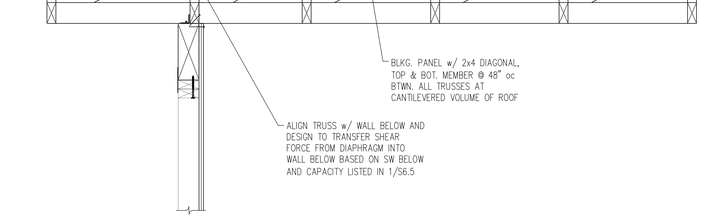
6 S6.4 ELEVATION VIEW OF EXTERIOR WALL
1" = 1'-0"



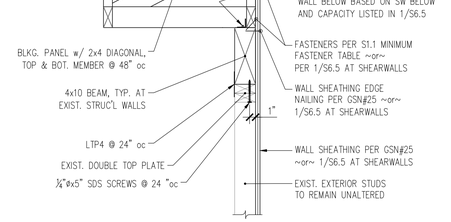
3 S6.4 ELEVATION VIEW OF EXTERIOR WALL
1" = 1'-0"



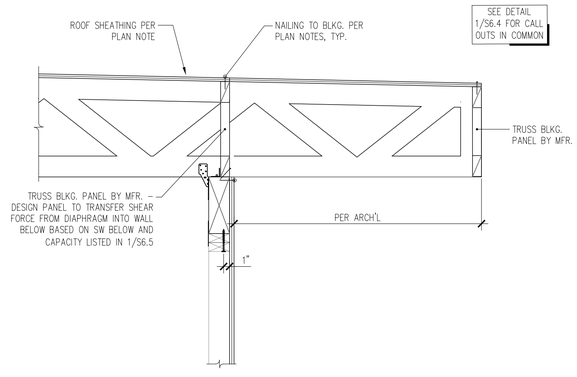
8 S6.4 CHORD TENSION TIE AT LOW-TO-HIGH ROOF BREAK
1" = 1'-0"



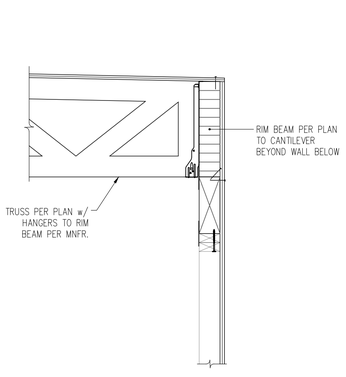
5 S6.4 SECTION THROUGH EXTERIOR WALL AT EXTENDED ROOF OVERHANG
1" = 1'-0"



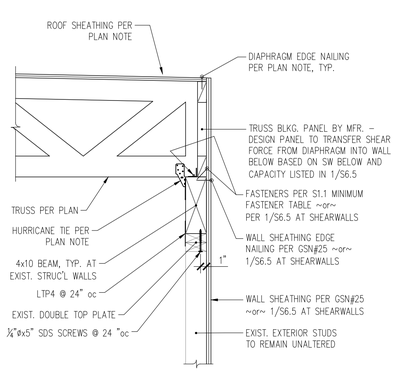
2 S6.4 SECTION THROUGH EXTERIOR WALL AT LOW ROOF PARALLEL TRUSSES
1" = 1'-0"



7 S6.4 SECTION THROUGH EXTERIOR WALL AT PERPENDICULAR TRUSSES w/ OVERHANG
1" = 1'-0"



4 S6.4 SECTION THROUGH EXTERIOR WALL AT PERPENDICULAR TRUSSES AND CANTILEVERED BEAM/RIM
1" = 1'-0"



1 S6.4 SECTION THROUGH EXTERIOR WALL AT PERPENDICULAR TRUSSES
1" = 1'-0"

9317
REGISTERED ARCHITECT
CHRIS LUTH
STATE OF WASHINGTON

CENTERLINE DESIGN
4737 37th AVE SW
SEATTLE
206.932.8706
www.Centerline-Design.com

ATLAS CONSULTING STRUCTURAL ENGINEERS

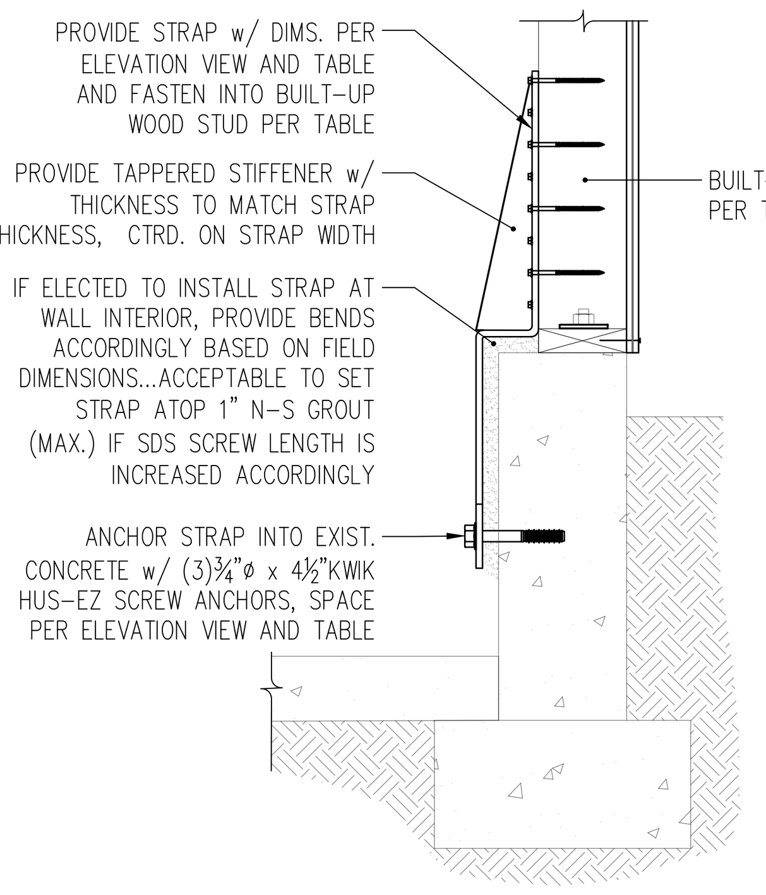
Mahramni Residence
3859 83rd Avenue SE
Mercer Island, WA - 98040

CONTENTS
Wood Roof Framing Details

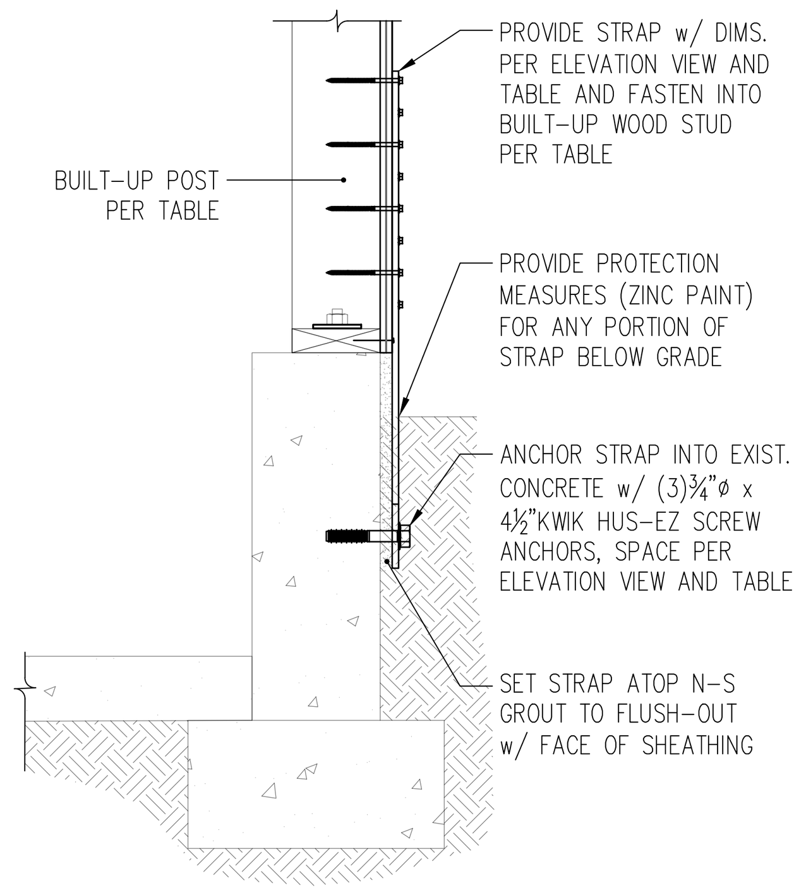
DRAWN BY
JDA

DATE
02.14.22

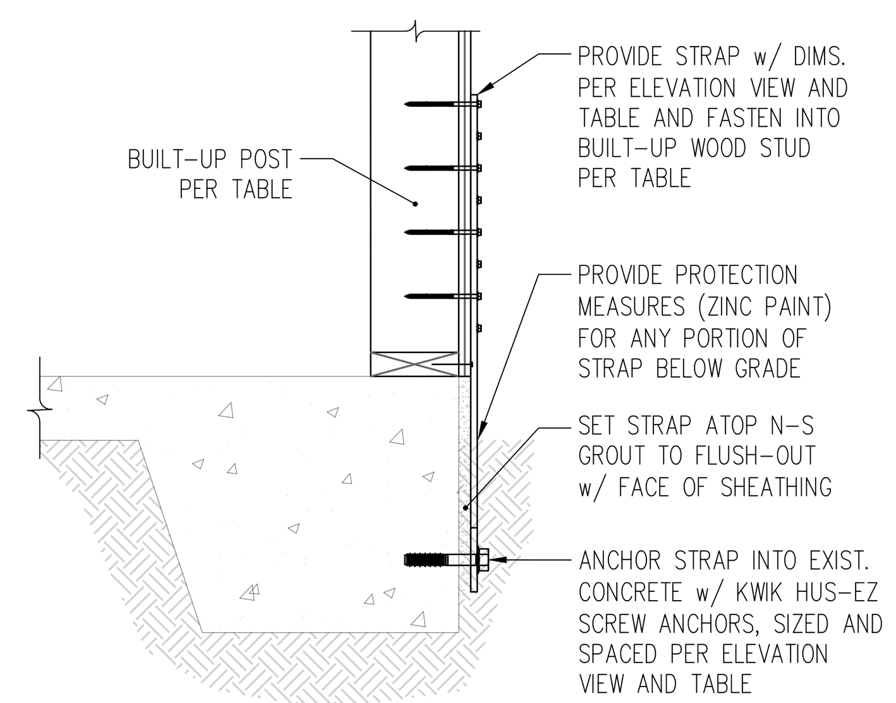
S6.4



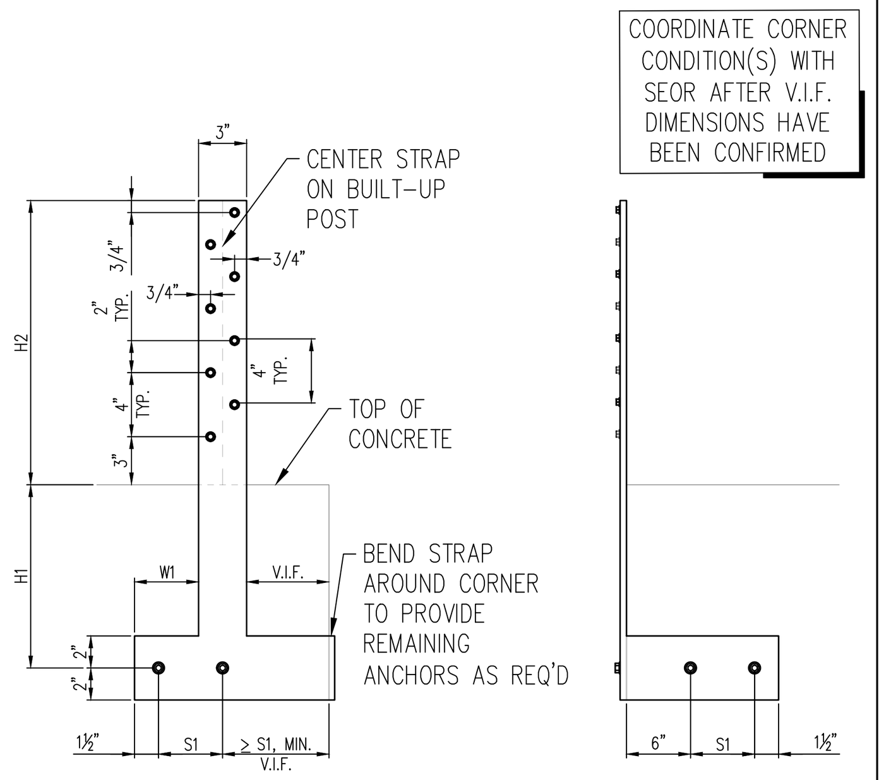
SECTION A – STRAP SET AT WALL INTERIOR



SECTION B – STRAP SET AT WALL EXTERIOR



SECTION C – STRAP AT EXISTING THICKENED SLAB EDGE

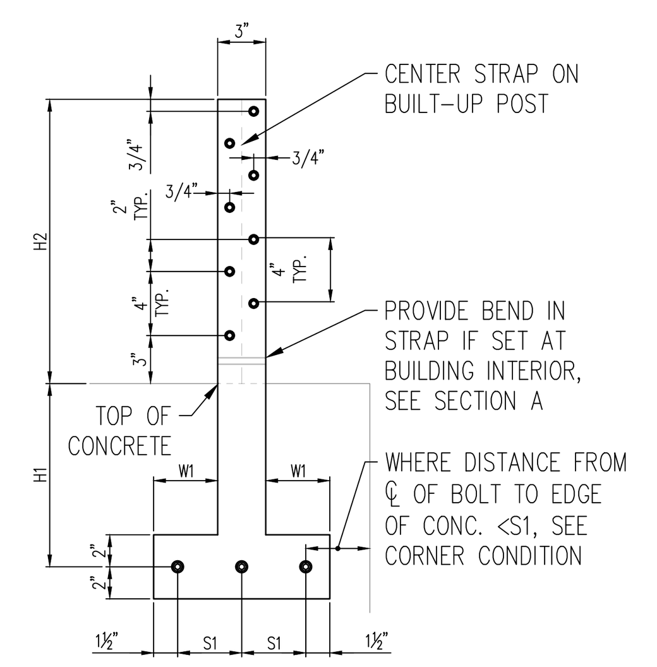


TENSION TIE ELEVATION VIEW – CORNER CONDITION

CUSTOM TENSION TIE SCHEDULE

TIE MARK	MIN. ① No. OF STUDS	STRAP DIMENSIONS ② t	H1	H2	W1	S1	No. OF ¼"ø x 3½" SDS SCREWS	No. OF KWIK HUS EZ ANCHORS	ASD CAPACITY
CU1.5	(2)2x	12 ga.	4"	11¾"	2½"	5"	(5)	(2)⅝"ø x 5½"	1,500#
CU2.5	(2)2x	12 ga.	5"	15¾"	4"	4"	(7)	(3)⅝"ø x 5½"	2,500#
CU3	(2)2x	10 ga.	6"	17¾"	4"	4"	(8)	(3)¾"ø x 4½"	3,000#
CU3.5	(2)2x	10 ga.	8"	19¾"	5"	5"	(9)	(3)¾"ø x 4½"	3,500#
CU5	(3)2x	10 ga.	8½"	29¾"	6¾"	4½"	(14)	(4)¾"ø x 4½"	5,000#
CU6	(4)2x	8 ga.	11¼"	33¾"	9"	6"	(16)	(5)¾"ø x 4½"	6,000#

① NAIL PLYWOOD SHEATHING TO STUDS RECEIVING HOLDOWN WITH SCHEDULED PANEL EDGE NAILING. STAGGER NAILS SO THAT EACH STUD IS NAILED.
② STRAPS SHALL BE ASTM A653 OR A1003, GRADE 33 WHERE STRAP THICKNESS IS LESS THAN 12 ga., AND GRADE 50 WHERE STRAP IS 10 ga. AND 8 ga.



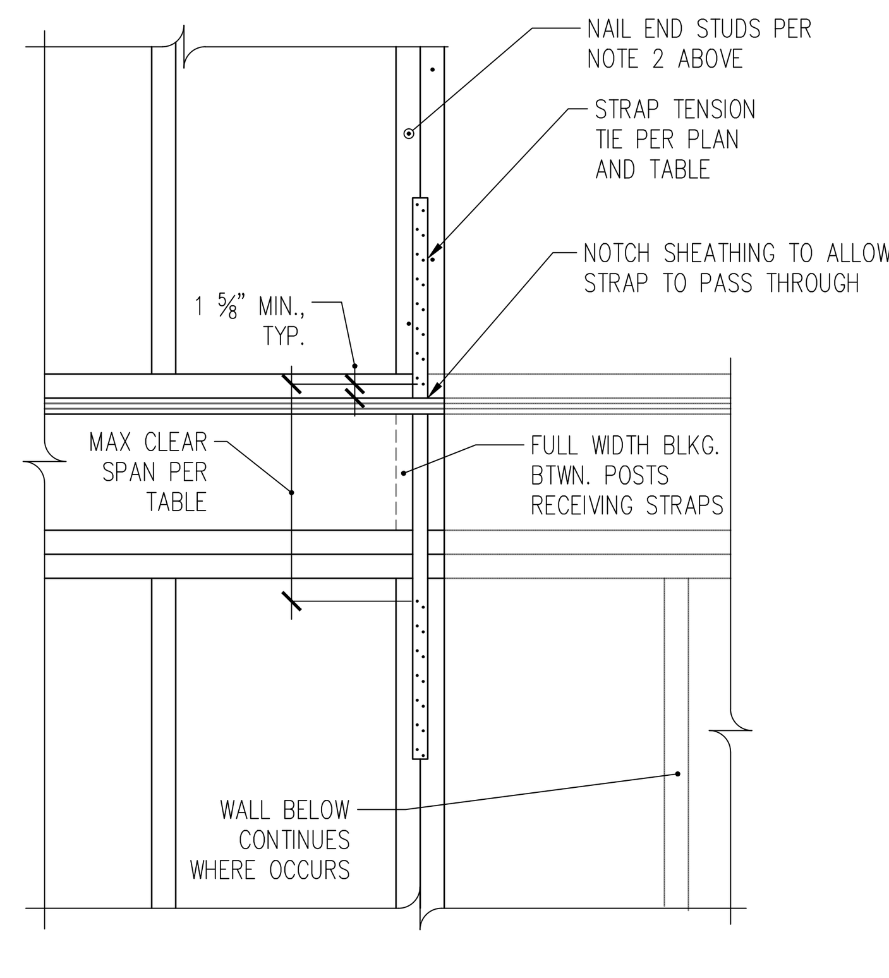
TENSION TIE ELEVATION VIEW – TYPICAL CONDITION

8 / S6.5 HOLD DOWN DETAIL
1" = 1'-0"

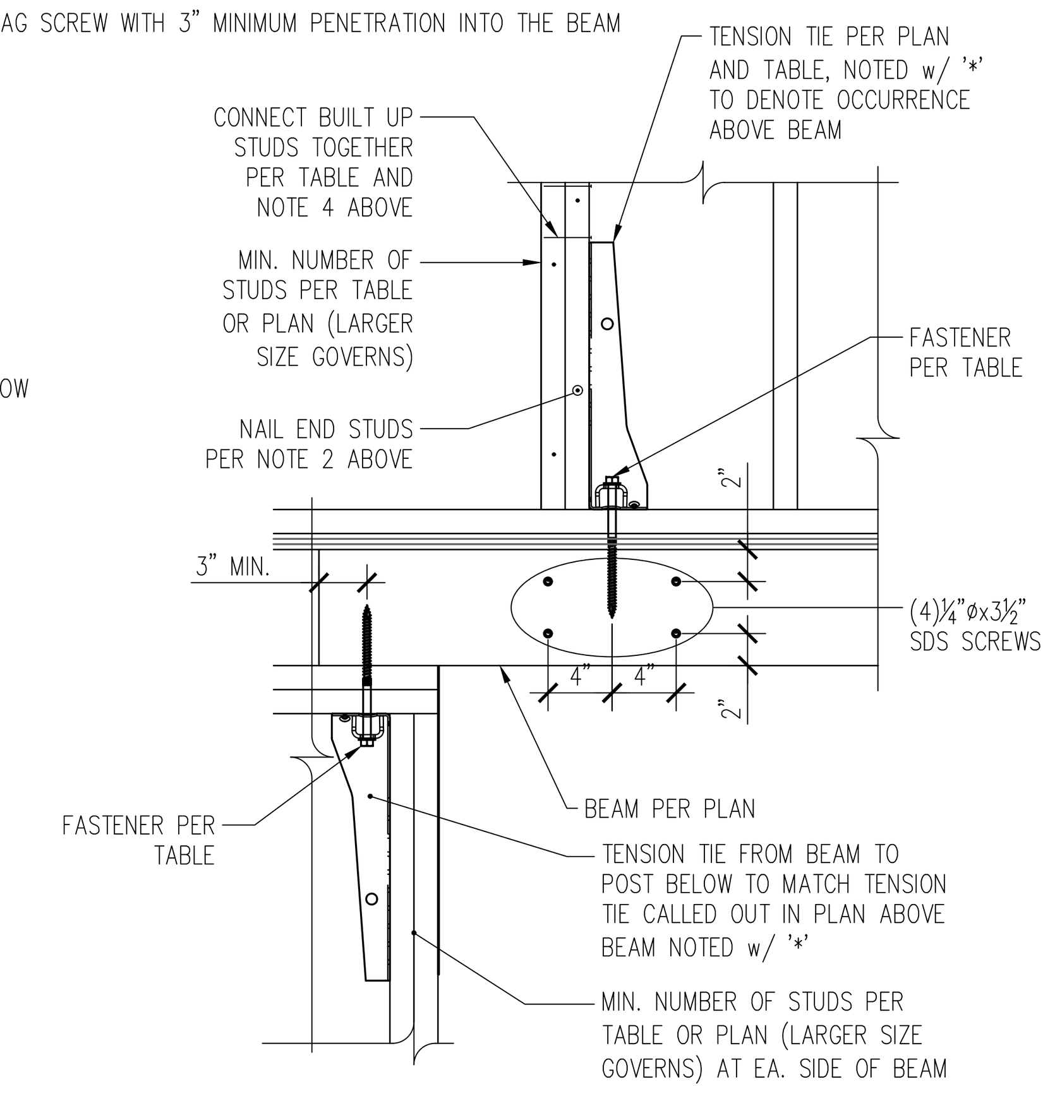
STRAP TENSION TIE SCHEDULE

TIE ① MARK	MIN. NUMBER ② OF STUDS	CLEAR SPAN – TOTAL FASTENERS ③	ASD CAPACITY	BUILT-UP STUD FACE NAILS or SCREWS ④
HDU2^	(2)2x	(6)¼"ø x 2½" SDS SCREWS	1,500#	10d @ 6" oc
MSTC28	(2)2x	16" – (16)0.148"ø x 3¼"	1,330#	10d @ 6" oc
MSTC40	(3)2x	16" – (32)0.148"ø x 3¼"	2,655#	(5)¼"øx4½" SDS
MSTC52	(3)2x	16" – (48)0.148"ø x 3¼"	3,985#	(8)¼"øx4½" SDS
MSTC66	(4)2x	16" – (68)0.148"ø x 3¼"	5,850#	(11)¼"øx6" SDS

① TENSION TIE TYPES REFER TO SIMPSON STRONG-TIE CATALOG CALLOUTS.
② NAIL PLYWOOD SHEATHING TO STUDS RECEIVING HOLDOWN WITH SCHEDULED PANEL EDGE NAILING. STAGGER NAILS SO THAT EACH STUD IS NAILED.
③ FASTENERS NOTED IN TABLE ABOVE REPRESENT THE TOTAL AMOUNT. FOR STRAPS, HALF OF THE FASTENERS SHALL BE PROVIDED INTO EACH STUD.
④ SCREWS SHALL BE SPACED EQUALLY ALONG FULL HEIGHT OF STUD ABOVE TENSION TIE. PROVIDE SCREWS AS NOTED IN TABLE AT ONE FACE OF BUILT-UP STUD, AND 10d @ 6" oc NAILS AT OPPOSITE FACE OF BUILT UP STUD.
^ DENOTES TENSION TIE THAT OCCURS ATOP OF A FRAMING MEMBER BELOW. FOR HDU2^, PROVIDE A ⅝"ø LAG SCREW WITH 3" MINIMUM PENETRATION INTO THE BEAM



ELEVATION VIEW – TYPICAL CONDITION



ELEVATION VIEW – TENSION TIE ABOVE BEAM

HOLDOWN TENSION TIE SCHEDULE

TIE ① MARK	MIN. NUMBER ② OF STUDS	ANCHOR (ø x EMBEDMENT) and No. OF HAIRPIN DOWELS ③	FASTENERS FROM TIE TO STUD	ASD CAPACITY	BUILT-UP STUD FACE NAILS or SCREWS ④
HDU2	(2)2x	⅝"ø x 10" – (2)#4 HAIRPIN	(6)¼"ø x 2½" SDS SCREWS	3,075#	10d @ 6" oc
HDU2^E	(2)2x	⅝"ø EMBED 7½" IN EPOXY GROUTED HOLE PER GSN#29	(6)¼"ø x 2½" SDS SCREWS	500#	10d @ 6" oc
HDU4	(3)2x	⅝"ø x 20" – (2)#4 HAIRPIN	(10)¼"ø x 2½" SDS SCREWS	4,565#	(9)¼"øx4½" SDS
HDU8	(4)2x	⅞"ø x 20" – (4)#4 HAIRPIN	(20)¼"ø x 2½" SDS SCREWS	7,870#	(15)¼"øx6" SDS
HDU11	(5)2x	1"ø x 20" – (4)#4 HAIRPIN	(30)¼"ø x 2½" SDS SCREWS	11,175#	(21)¼"øx8" SDS

① TENSION TIE TYPES REFER TO SIMPSON STRONG-TIE CATALOG CALLOUTS.
② NAIL PLYWOOD SHEATHING TO STUDS RECEIVING HOLDOWN WITH SCHEDULED PANEL EDGE NAILING. STAGGER NAILS SO THAT EACH STUD IS NAILED.
③ ANCHORS SHALL BE HEAVY HEX HEAD WITH DOUBLE NUT CAST INTO CONCRETE.
ASTM F 1554 Gr. 36 FOR ⅝"ø ANCHOR
ASTM F 1554 Gr. 105 FOR ⅞"ø ANCHOR
ASTM F 1554 Gr. 55 FOR 1"ø ANCHOR
④ SCREWS SHALL BE SPACED EQUALLY ALONG FULL HEIGHT OF STUD ABOVE TENSION TIE. PROVIDE SCREWS AS NOTED IN TABLE AT ONE FACE OF BUILT-UP STUD, AND 10d @ 6" oc NAILS AT OPPOSITE FACE OF BUILT UP STUD.

SHEARWALL PANEL TYPE	① SHEATHING THICKNESS	② 0.131" x 2¼" PANEL NAILING	③ STUD/BLKG. AT ABUTTING PANEL EDGES & SILL PLATE THICKNESS	⑦ CONN. OF BLKG. OR FRAMING to TOP PLATE; AND SOLE PLATE TO SILL PLATE: ④ ¼"ø x 3½" SDS SCREWS	⑤ A35 CLIPS	⑥ LTP4 PLATES	⑧ ⑨ ANCHOR BOLTS TO CONC.: ⅝"ø	¾"ø	ASD CAPACITY, PLF
SW-6	½"	6" oc	2x	11" oc	17" oc	17" oc	40" oc	48" oc	310
SW-4	½"	4" oc	3x	7" oc	12" oc	12" oc	27" oc	37" oc	460
SW-3	½"	3" oc	3x	5" oc	9" oc	9" oc	21" oc	29" oc	600
SW-2	½"	2" oc	3x	4" oc	7" oc	7" oc	16" oc	22" oc	770
SW-33	½"	3" oc EA. SIDE	3x	2" oc	4" oc	4" oc	10" oc	14" oc	1200

① SHEATHING SHALL CONSIST OF ½" PLYWOOD AND HAVE A MINIMUM SPAN RATING OF 24/0; PERMISSIBLE TO RE-USE EXISTING SHEATHING AT EXISTING STUDWALLS IF THICKNESS & SPAN RATING CAN BE VERIFIED AND STUDS & SHEATHING ARE IN SUITABLE CONDITION.

② PANEL NAILING APPLIES TO ALL SHEATHING PANEL EDGES. IF RE-USING EXISTING SHEATHING PER NOTE 1 ABOVE, PROVIDE ADDITIONAL FASTENERS AS REQUIRED TO MEET SPACING REQUIREMENTS. INSTALL BLOCKING AT ALL UNFRAMED PANEL EDGES. ENSURE SHEATHING IS NAILED TO EXISTING INTERMEDIATE FRAMING WITH PANEL NAILS AT 12"oc.

③ DOUBLE 2x MEMBERS MAY BE SUBSTITUTED FOR 3x MEMBERS AT WALLS WITH ONLY ONE LAYER OF SHEATHING. 2x MEMBERS SHALL BE NAILED TOGETHER WITH 8d FACE: @ 5" oc FOR SW-6, @ 3½" oc FOR SW-4, @ 2½" oc FOR SW-3, AND @ 2" oc FOR SW-2 (116#/NAIL)

④ ROWS OF NAILS AND SDS SCREWS SHALL BE OFFSET AT LEAST ½" AND STAGGERED. MINIMUM EDGE DISTANCE FOR NAILS AND SDS SCREWS INTO EDGE OF MEMBERS SHALL BE ⅝" (400#/SCREW)

⑤ A35 CLIPS SHALL BE INSTALLED w/ (12)0.131 x 1½ " NAILS (650#/CLIP)

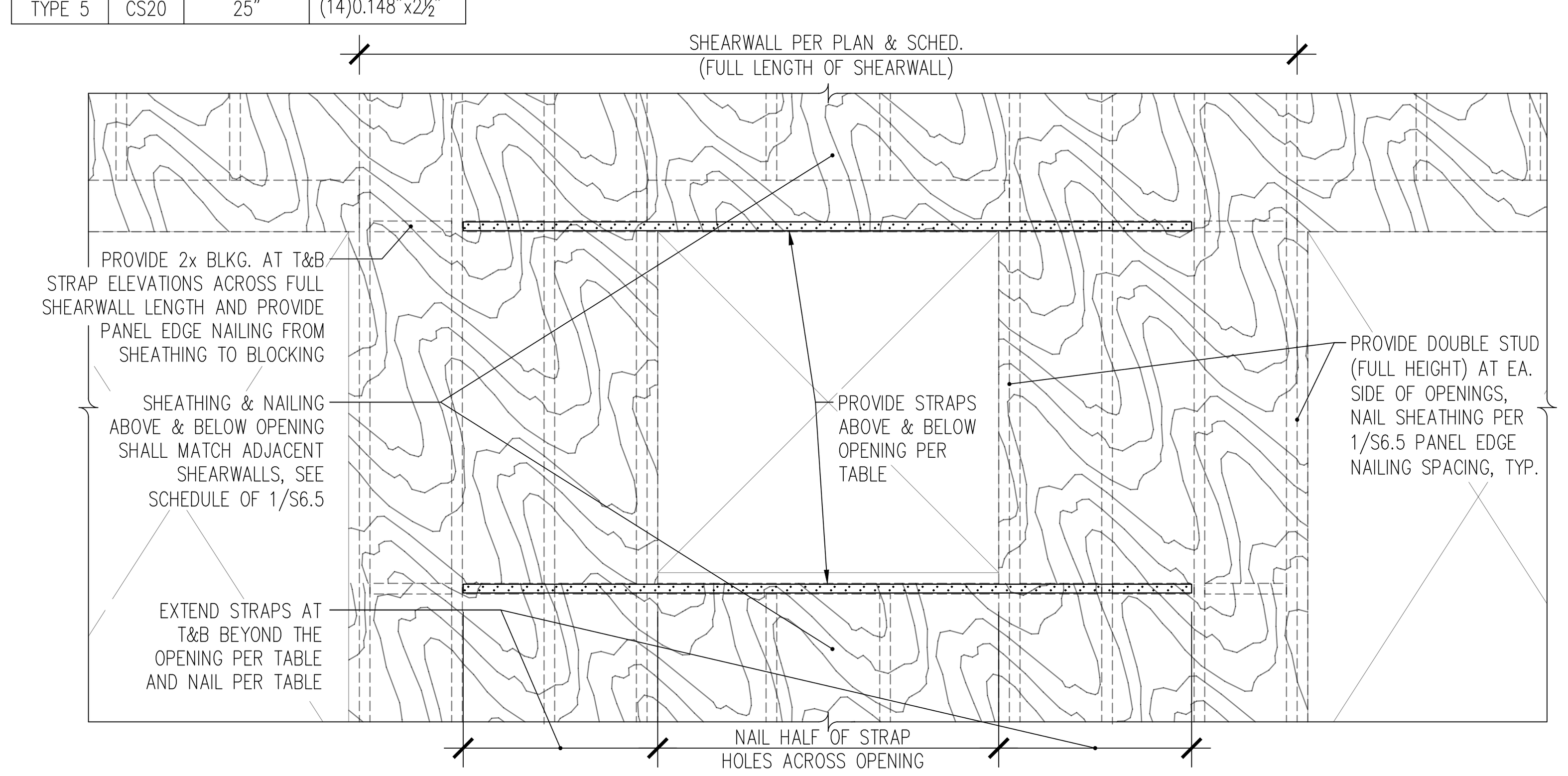
⑥ LTP4 LATERAL TIE PLATES MAY BE INSTALLED OVER SHEATHING w/ (12)0.131 x 2½" NAILS (625#/CLIP)

⑦ CONTRACTOR SHALL USE A35 or LT4P CLIPS TO CONNECT ROOF TO DOUBLE TOP PLATE AND SDS SCRWS or LTP4 CLIPS TO CONNECT SOLE PLATE TO RIM BOARD AT MAIN FLOOR. EXTEND SHEATHING TO BOTTOM OF SOLE PLATE AT MAIN FLOOR FOUNDATION WALL AND PROVIDE EDGE FASTENING AS NOTED IN TABLE.

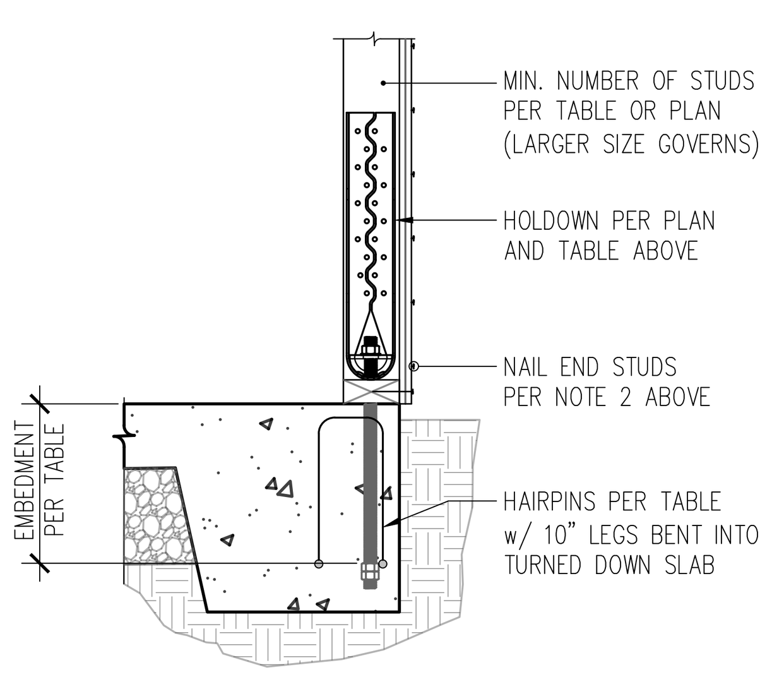
⑧ PLATE WASHERS IN 2x4 STUD WALLS AND ALL SINGLE SIDED SHEAR WALLS SHALL BE 3"x3"x0.229". DOUBLE SIDED 2x6 SHEAR WALLS SHALL HAVE 4½"x3"0.229" PLATE WASHERS. THE EDGE OF PLATE WASHERS SHALL BE LOCATED WITHIN ½" OF THE EDGE OF BOTTOM PLATE ON THE SIDE WITH SHEATHING.

⑨ CAST ANCHORS A MINIMUM OF 7" INTO CONCRETE. INSTALL ADDITIONAL ANCHOR BOLTS AT EACH SIDE OF PLATE BREAKS AND PENETRATIONS EXCEEDING THE "NO REINFORCING" HOLE SIZE PER 2/S6.1.
AT EXISTING STUD WALLS, A COMBINATION OF EXISTING AND NEW ANCHOR BOLTS CAN BE COUNTED TOWARDS THE SPACING REQUIREMENTS NOTE IN THE TABLE PROVIDED THEY ADHERE TO NOTE #8 ABOVE. NEW ANCHOR BOLTS SHALL BE ¾"ø HILTI KWIK HUS-EZ SCREW ANCHORS WITH 3" MINIMUM EMBEDMENT INTO CONCRETE. AS AN ALTERNATVIE TO NEW ANCHOR BOLTS, SIMPSON FRFP RETROFIT FOUNDATION PLATES WITH (5)¼"ø SDS SCREWS THAT PENETRATE THE SILL PLATE 2½" MAY BE USED (#1810/PLATE) IF SPACED ACCORDINGLY: @ 72" oc FOR SW-6, @ 56" oc FOR SW-4, @ 42" oc FOR SW-3,@ 32" oc FOR SW-2, AND @ 20" oc FOR SW-33

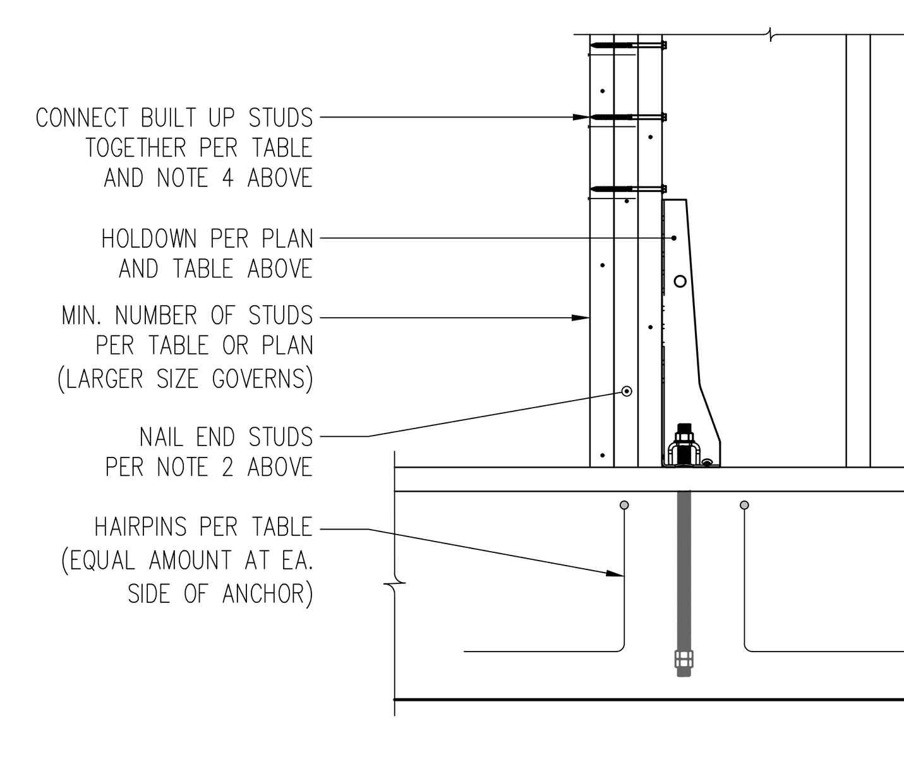
TYPE	STRAP	END LENGTH	NAILS
TYPE 1	CS14	59"	(30)0.148"x2½"
TYPE 2	CS16	17"	(22)0.148"x2½"
TYPE 3	CS16	34"	(22)0.148"x2½"
TYPE 4	CS20	7"	(14)0.148"x2½"
TYPE 5	CS20	25"	(14)0.148"x2½"



7 / S6.5 STRAPPED SHEARWALL DETAIL
N.T.S.

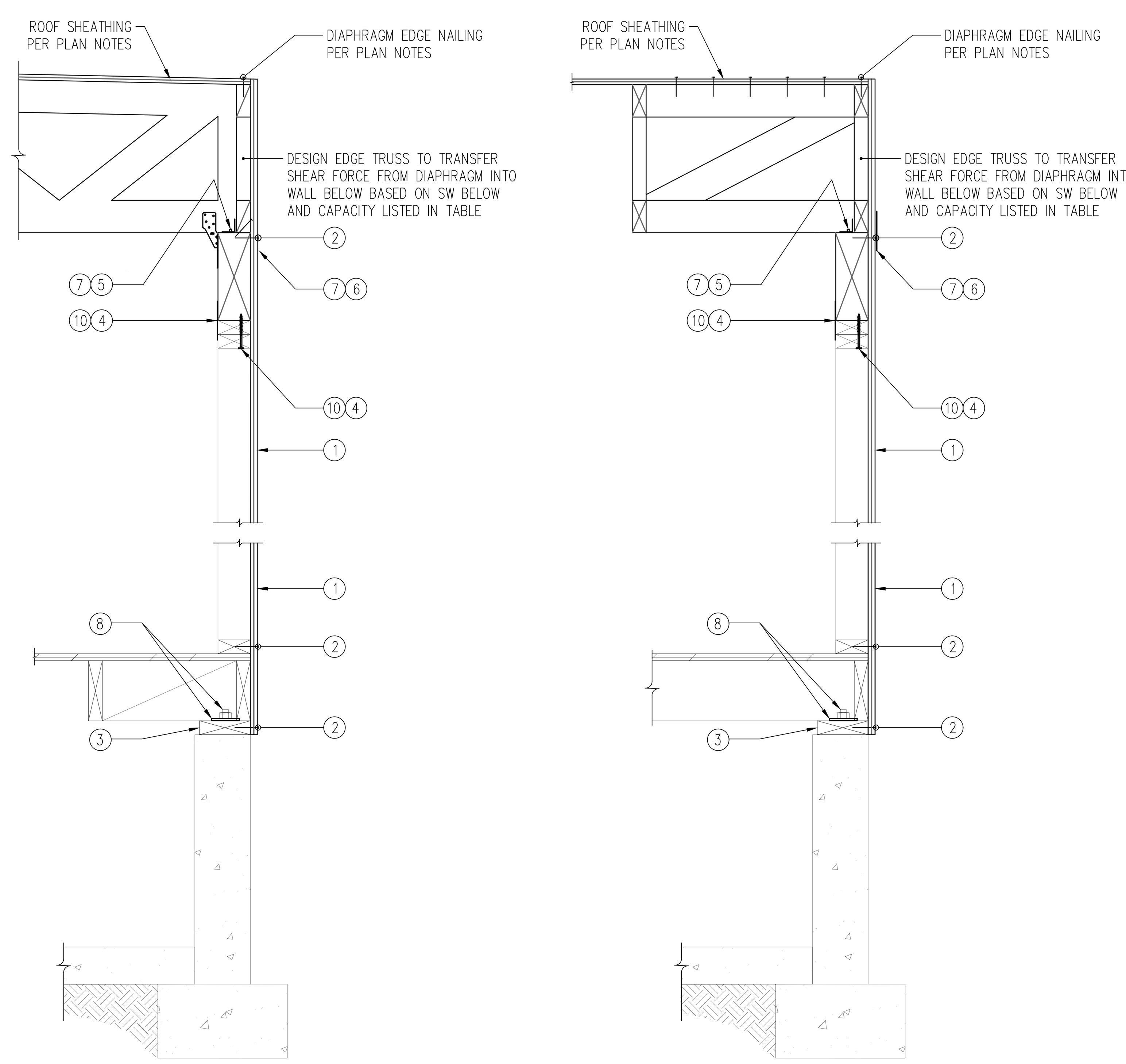


SECTION VIEW



ELEVATION VIEW

4 / S6.5 HOLDOWN DETAIL AND SCHEDULE
1" = 1'-0"



1 / S6.5 SHEARWALL SECTION AND SCHEDULE
1" = 1'-0"

REGISTERED ARCHITECT
CHRIS LUTHI
STATE OF WASHINGTON

CENTERLINE DESIGN
4737 37th AVE SW
SEATTLE
206.932.8706
www.Centerline-Design.com

ATLAS CONSULTING STRUCTURAL ENGINEERS

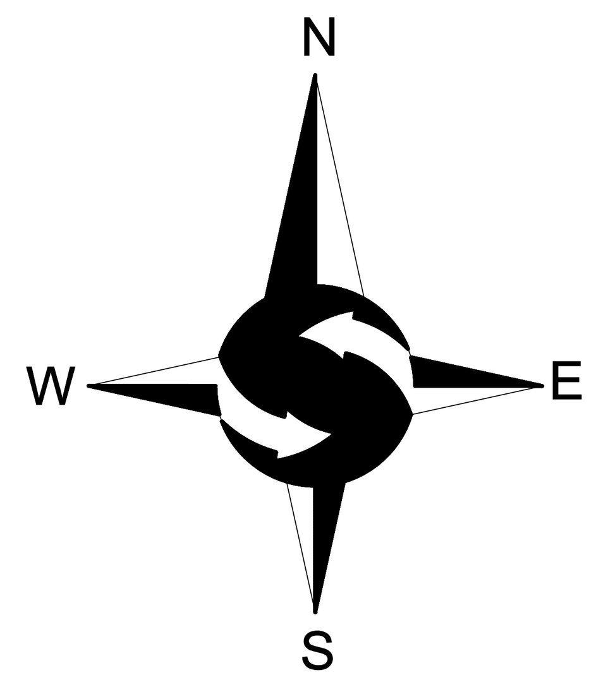
Mahramni Residence
3859 83rd Avenue SE
Mercer Island, WA - 98040

CONTENTS
Lateral Details

DRAWN BY
JDA

DATE
02.14.22

S6.5



GRAPHIC SCALE

1 INCH = 10 FT.

LEGEND

	FOUND MONUMENT AS DESCRIBED	—OHP—	OVERHEAD POWER
	FOUND REBAR AS DESCRIBED	—OHU—	OVERHEAD UTILITIES
	FOUND MAG NAIL AS DESCRIBED		CATCH BASIN
	SET MAG NAIL AS DESCRIBED		YARD DRAIN
	SET 5/8" X 24" IRON ROD W/1" YELLOW PLASTIC CAP		MAILBOX
	POWER METER		YARD LIGHT
	UTILITY POLE		WOOD FENCE
	GAS METER		CONCRETE WALL
	SANITARY SEWER MANHOLE		ROCKERY
	WATER VALVE		ASPHALT SURFACE
	FIRE HYDRANT		CONCRETE SURFACE
	WATER METER	PM	PALM
—SS—	APPROXIMATE LOCATION SANITARY SEWER LINE	DS	DECIDUOUS
— W —	APPROXIMATE LOCATION UNDERGROUND WATER LINE		

LEGAL DESCRIPTION

LOT 16, BLOCK 1, LUCAS HILL-DIVISION 2, ACCORDING TO THE PLAT THEREOF RECORDED IN VOLUME 56 OF PLATS, PAGE(S) 93, RECORDS OF KING COUNTY, WASHINGTON.

SITUATE IN THE CITY OF MERCER ISLAND, COUNTY OF KING, STATE OF WASHINGTON.

BASIS OF BEARINGS

THE PLAT OF LUCAS HILL-DIVISION 2, ACCORDING TO THE PLAT THEREOF RECORDED IN VOLUME 56 OF PLATS, PAGE(S) 93, RECORDS OF KING COUNTY, WASHINGTON.

PROJECT INFORMATION

SURVEYOR:	SITE SURVEYING, INC. 21923 NE 11TH ST SAMMAMISH, WA 98074 PHONE: 425.298.4412
PROPERTY OWNER:	MOHAMMAD MAHRAMNIA & LALEH MIRABBASZADEH 3859 83RD AVENUE SE MERCER ISLAND, WA 98040
TAX PARCEL NUMBER:	445790-0050
PROJECT ADDRESS:	3859 83RD AVENUE SE MERCER ISLAND, WA 98040
ZONING:	R-9.6
JURISDICTION:	CITY OF MERCER ISLAND
PARCEL ACREAGE:	11,167 SF (0.256 ACRES) AS SURVEYED

GENERAL NOTES

1. THIS SURVEY WAS BASED ON FIDELITY NATIONAL TITLE COMPANY ORDER NO. 611282658TS, DATED MAY 18, 2021 AT 08.00 AM.

2. INSTRUMENTATION FOR THIS SURVEY WAS A 3-SECOND SPECTRAPRECISION FOCUS 35 TOTAL STATION. PROCEDURES USED IN THIS SURVEY MEET OR EXCEED STANDARDS SET BY WAC 332-130-090.

3. THE INFORMATION ON THIS MAP REPRESENTS THE RESULTS OF A SURVEY MADE IN JULY 2021 AND CAN ONLY BE CONSIDERED AS INDICATING THE GENERAL CONDITIONS EXISTING AT THAT TIME.

4. UTILITIES SHOWN ON THIS SURVEY ARE BASED UPON ABOVE GROUND OBSERVATIONS AND AS-BUILT PLANS WHERE AVAILABLE. ACTUAL LOCATIONS OF UNDERGROUND UTILITIES MAY VARY AND UTILITIES NOT SHOWN ON THIS SURVEY MAY EXIST ON THIS SITE.

5. ALL MONUMENTS WERE LOCATED DURING THIS SURVEY UNLESS OTHERWISE NOTED.

VERTICAL DATUM & CONTOUR INTERVAL

DATUM

ELEVATIONS SHOWN ON THIS DRAWING WERE DERIVED FROM INFORMATION PROVIDED BY WCCS SURVEY CONTROL DATABASE.

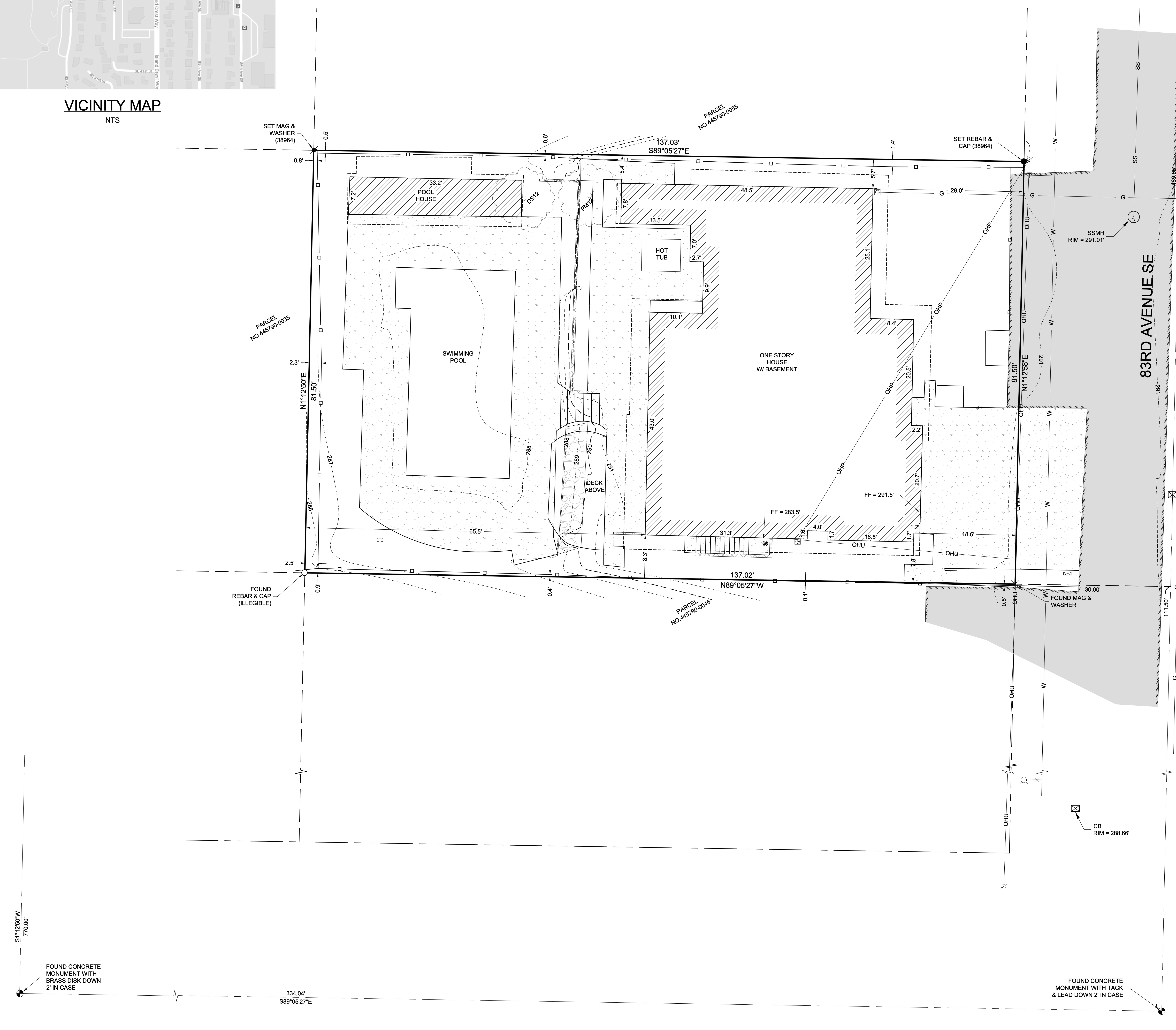
POINT ID NO. 217 (POINT NAME: 5513 -
CONCRETE MONUMENT WITH 3/8" COPPER PIN, DOWN 0.9' IN CASE, 32'± NORTH OF THE INTERSECTION OF 82ND AVE SE AND SE 38TH PL.

ELEVATION: 266.46 FEET (81.217 METERS) NAVD88

1.0' CONTOUR INTERVAL - THE EXPECTED VERTICAL ACCURACY IS EQUAL TO ½ THE CONTOUR INTERVAL OR PLUS / MINUS 0.5' FOR THIS PROJECT.

VICINITY MAP

NTS



SE 1/4, SE 1/4, SEC 12, TWP 24N, RNG 4E, W.M.

Site Surveying, Inc.
21923 NE 11th Street Sammamish, WA 98074
Phone: 425.298.4412
www.sitesurveymapping.com

DRN	REVISION	DATE

TOPOGRAPHIC SURVEY
FARID MOHAJERJASBI
3859 83RD AVENUE SE
MERCER ISLAND, WA 98040

PROJECT NO. 21-392

DRAWN BY:	EFJ
CHECKED BY:	TNW
DATE:	7/6/21
SHEET 1	OF 1