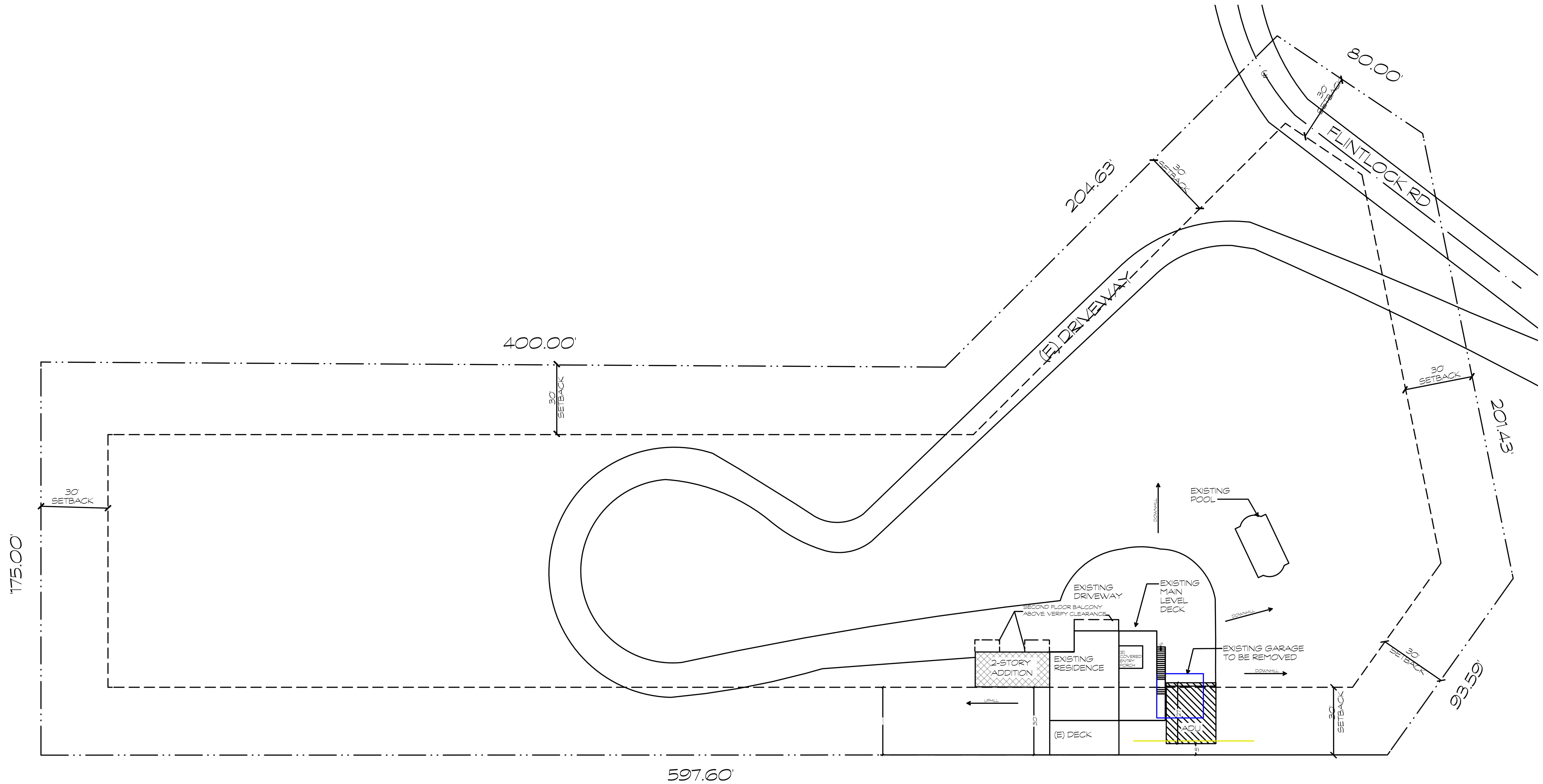

SITE PLAN

SCALE: 1" = 30'

PLUMBING FIXTURE NOTES:

ALL NEW PLUMBING FIXTURES SHALL COMPLY WITH THE FOLLOWING:
- -SHOWERS 1.8 GPM@80PSI COMBINED
- -LAVATORY 1.2 GPM@ 60PSI MAX. & 0.8@ 20PSI MIN.
- -KITCHEN FAUCET 1.8 @ 60 MAX
- -WATER CLOSET 1.28 MAX

VERIFICATION OF REPLACEMENT OF EXISTING NON-COMPLIANT PLUMBING FIXTURES WITH WATER-CONSERVING PLUMBING FIXTURES AS SPECIFIED IN CIVIL CODE SECTION 1101.1-1101.8, SHALL BE PROVIDED PRIOR TO FINAL INSPECTION. THIS REQUIREMENT APPLIES TO ALL EXISTING FIXTURES LOCATED WITHIN THE STRUCTURE UNDER THE SCOPE OF THIS PERMIT. FIXTURES MEETING THE FOLLOWING MAXIMUM USAGE MAY REMAIN.

I. 1.6 GALLONS PER FLUSH FOR TOILETS
II. 1.0 GALLONS PER FLUSH FOR URINALS
II. 2.5 GPM FOR SHOWERHEAD
IV. 2.2 GPM FOR ANY INTERIOR FAUCETS

GENERAL NOTES:

1. CONTRACTOR TO VERIFY ALL EXISTING CONDITIONS PRIOR TO CONSTRUCTION.
2. ALL DIMENSIONS ARE TO FACE OF STUD, UNLESS NOTED OTHERWISE
3. ALL WORK TO BE DONE IN COMPLIANCE W/ 2022 C.R.C., C.M.C., C.P.C., C.F.C., C.E.C., CAL GREEN AND ALL PERTINENT LOCAL, STATE AND FEDERAL CODES AND ORDINANCES.
4. THE ARCHITECT AND HER CONSULTANTS DO NOT ASSUME ANY RESPONSIBILITY FOR THE METHOD AND/OR MANNER OF CONSTRUCTION NOR FOR ANY JOB SITE SAFETY DURING CONSTRUCTION.
5. SLOPE FINISH GRADE AT 5% MIN FOR 10' AWAY FROM HOUSE.
6. PROVIDE NON REMOVABLE BACK FLOW PROTECTION AT ALL THREADED FAUCETS.
7. ALL PENETRATIONS INTO UNCONDITIONED SPACE (ATTICS, UNDERFLOORS, ETC.) SHALL BE CAULKED, GASKETED, WEATHER STRIPPED OR SEALED TO LIMIT INFILTRATION AND EXFILTRATION.
8. ALL PENETRATIONS IN TOP PLATES, FLOORS, ETC. SHALL BE CAULKED WITH A RESIDENTIAL FIRE RATED CAULK WITH AN ASTM E136 OR E814 RATING.
9. ALL FINISH MATERIALS, COLORS, TEXTURES, PATTERNS, ETC. TO BE SELECTED BY OWNER.
10. VERIFY STYLE AND FINISH OF PLUMBING FIXTURES WITH OWNER.
11. ALL FIXTURES AND CABINETS TO BE SELECTED BY OWNER. CONTRACTOR WILL PROVIDE INSTALLATION.

PROJECT DATA:

A.P.N.	351-32-011
LOT SIZE	3.16 ACRES
OCCUPANCY	R3
CONSTRUCTION TYPE	VB
EXISTING RESIDENCE AREA	2219 SF
EXISTING GARAGE AREA TO BE REMOVED	480 SF
ADDITION AREA	1075 SF
TOTAL RESIDENTIAL AREA	3294 SF
ADU AREA	594 SF

SCOPE OF WORK:

(N) 1075 S.F. RESIDENCE ADDITION AND 480 S.F. GARAGE DEMOLITION AS WELL AS NEW 594 SF ADU

SHEET INDEX:

REVISIONS

SESHAT DESIGN
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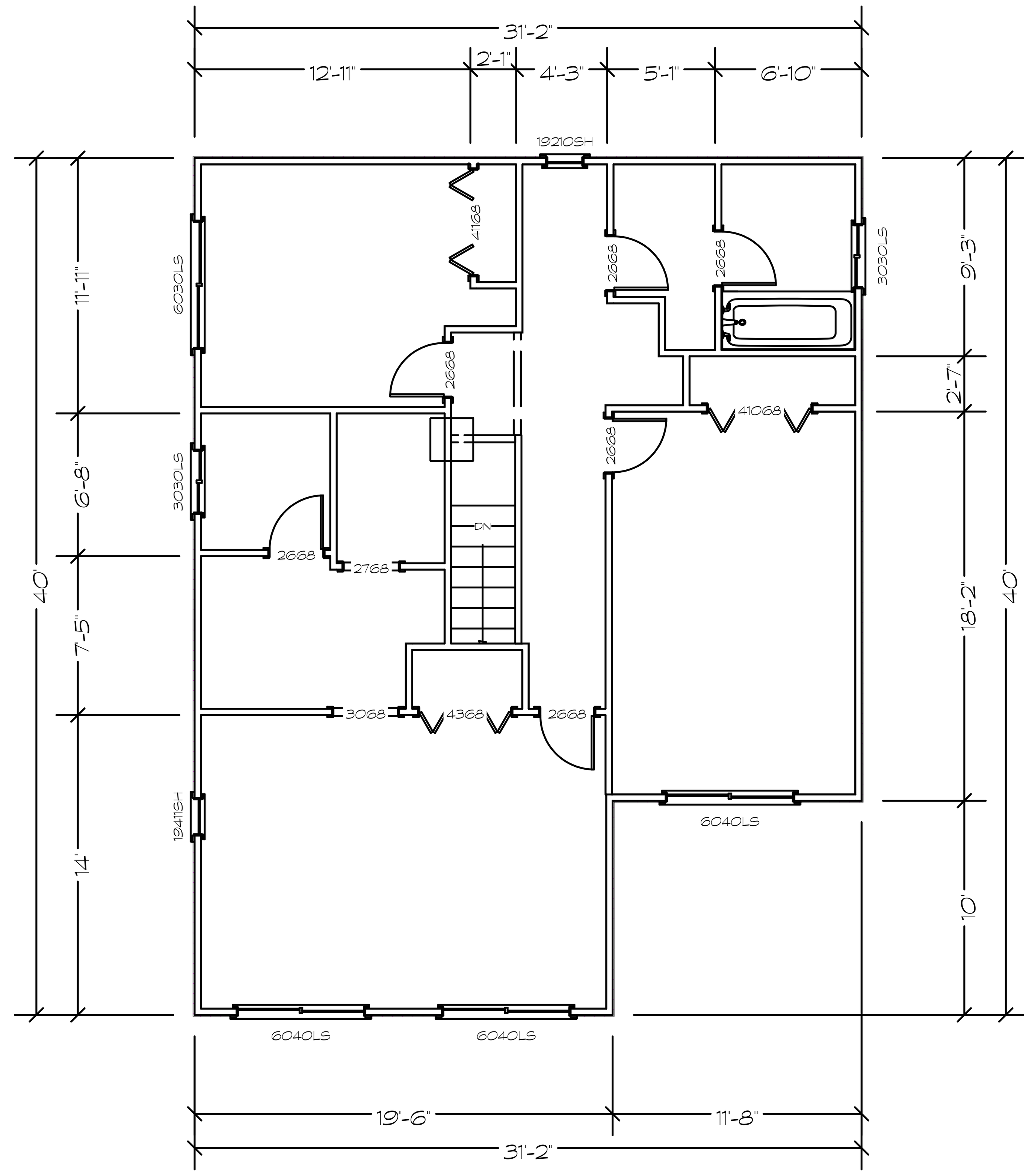
ADDITION AND REMODEL AND ADU
15990 FLINTLOCK ROAD
CUPERTINO CA 95014

DATE: 2/14/2023

SCALE:

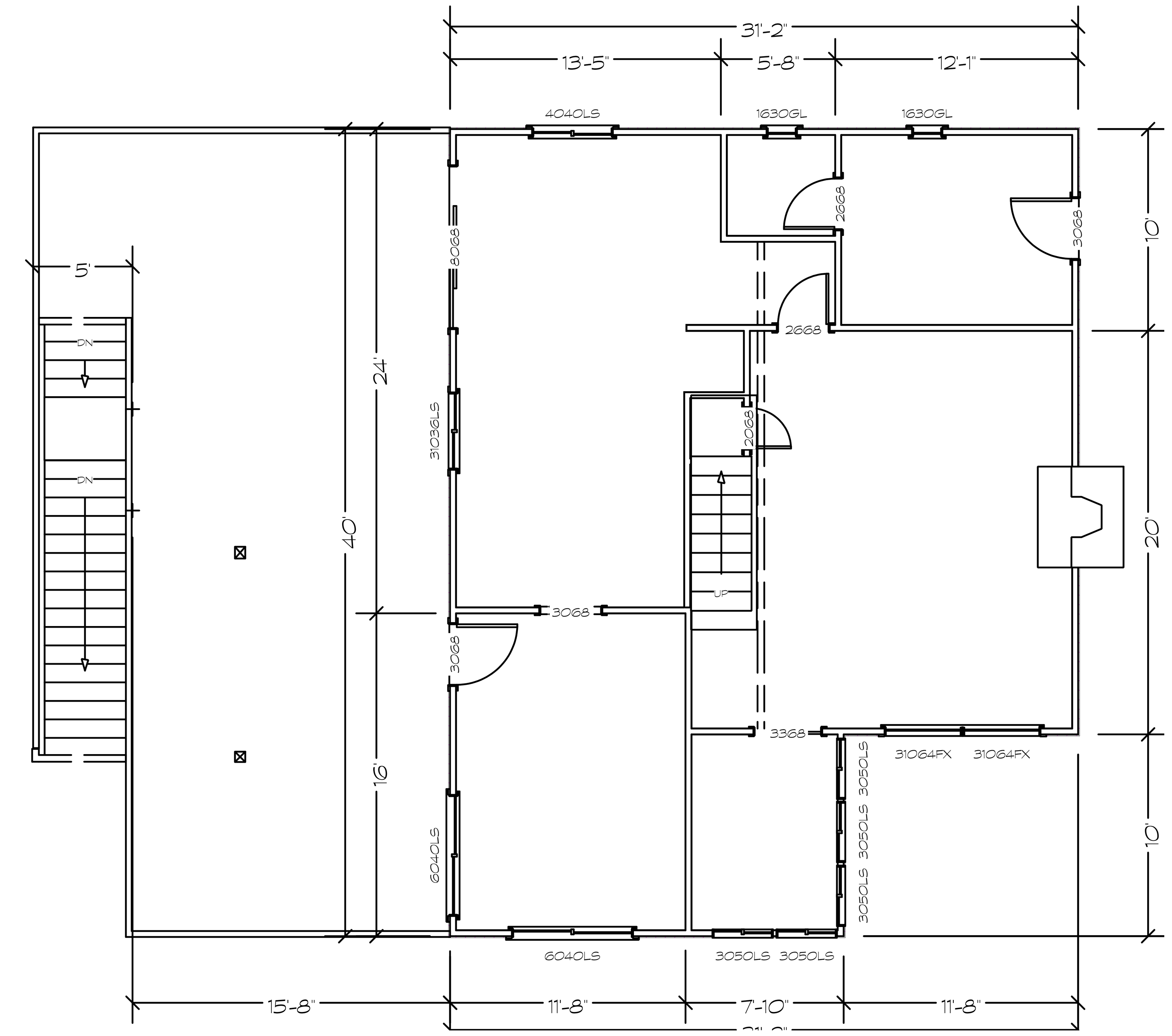
JOB NUMBER

SHEET: A-1



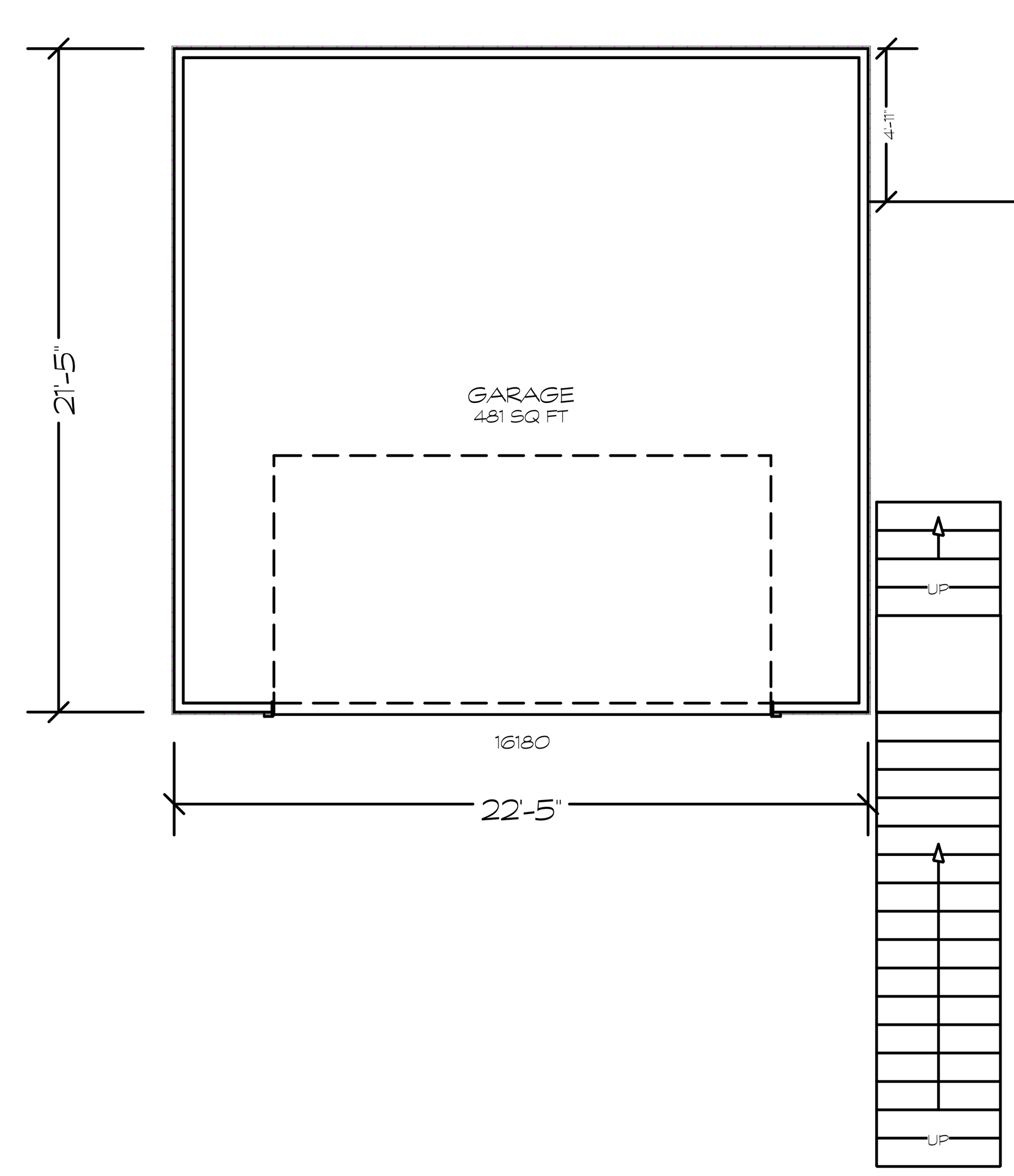
EXISTING UPPER LEVEL FLOOR PLAN

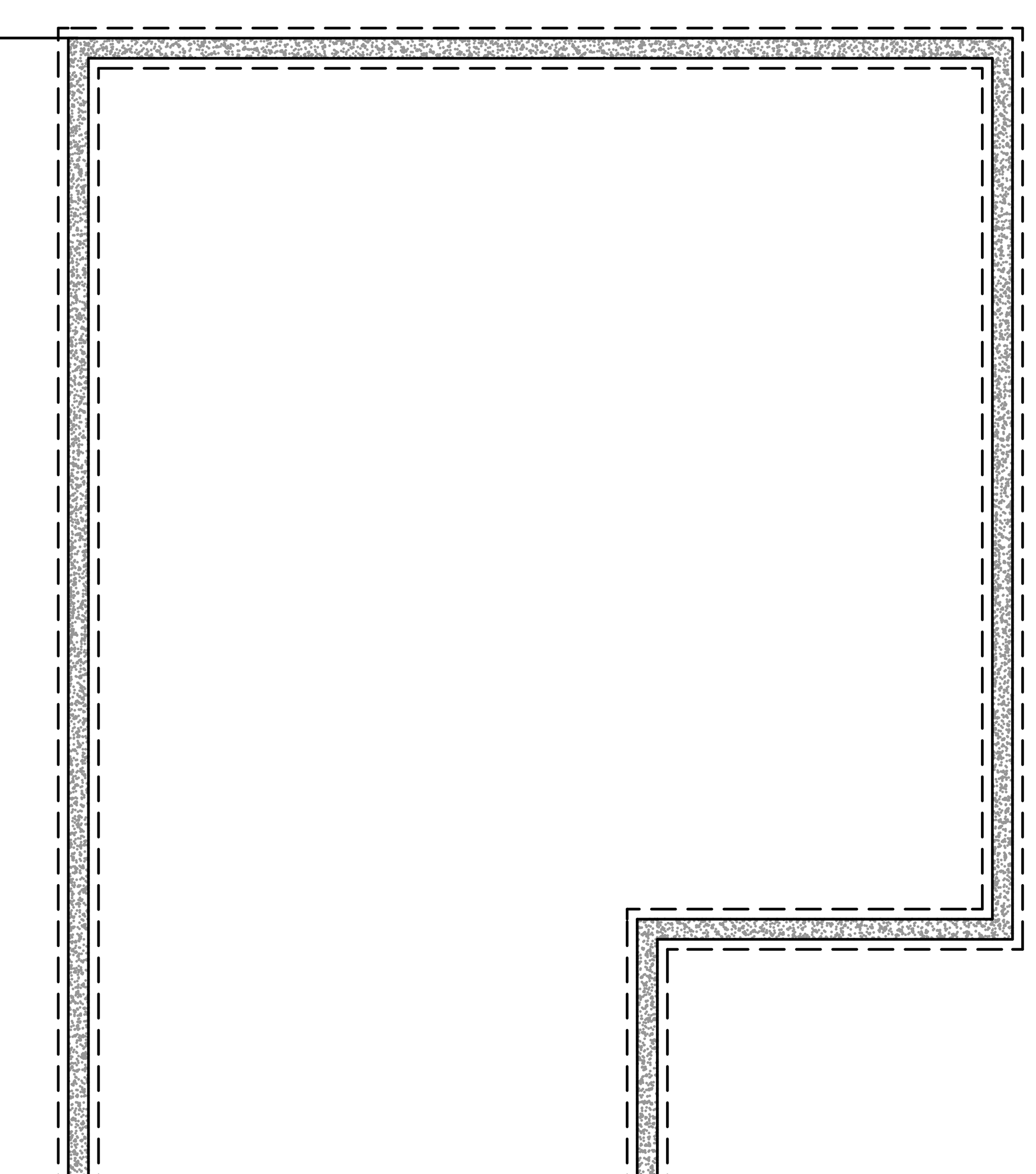
1/4" = 1'-0"



EXISTING MAIN LEVEL FLOOR PLAN

1/4" = 1'-0"





EXISTING LOWER LEVEL FLOOR PLAN

1/4" = 1'-0"

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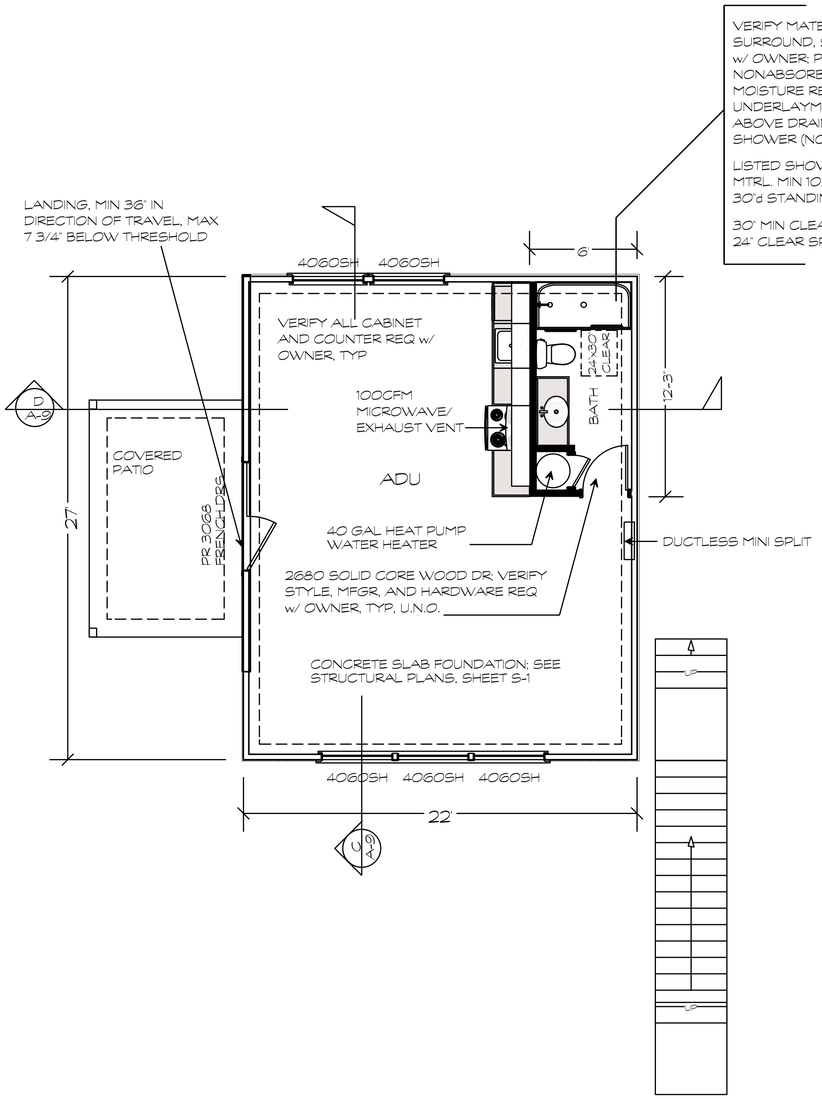

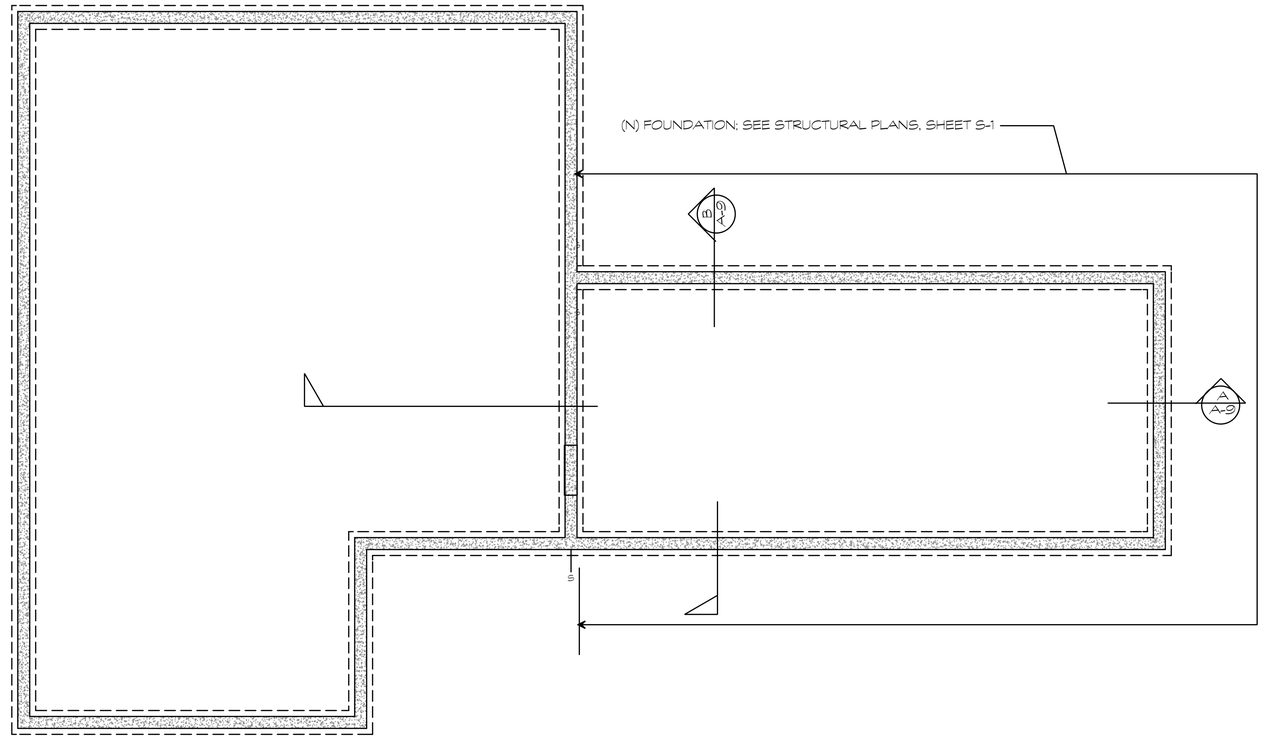

ADU AND LOWER LEVEL RESIDENCE FLOOR PLAN

1/4" = 1'-0"

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15990 FLINTLOCK ROAD
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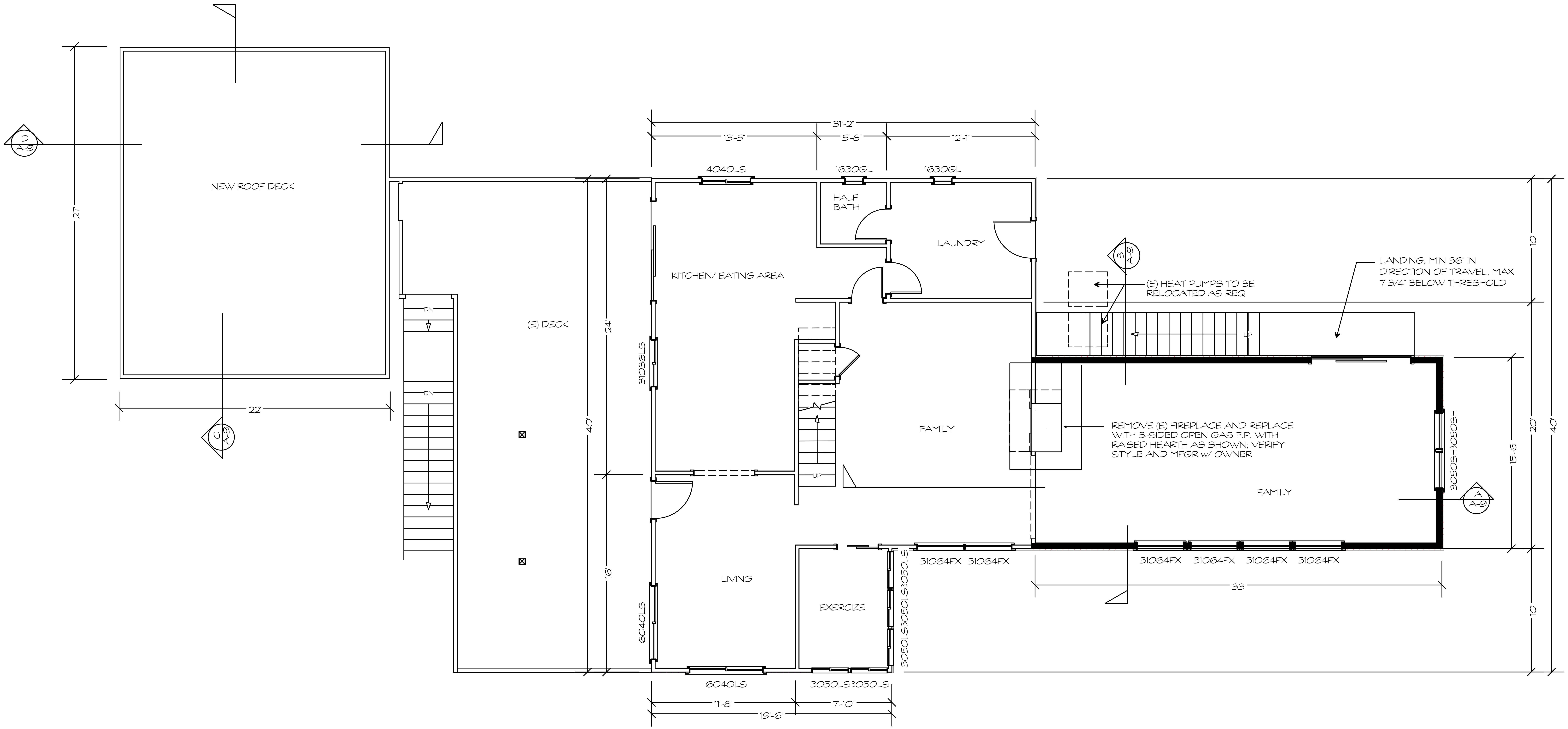
JOB NUMBER:

SHEET: A-3



MAIN LEVEL FLOOR PLAN AND ADU ROOF DECK

SCALE: 1/4" = 1'

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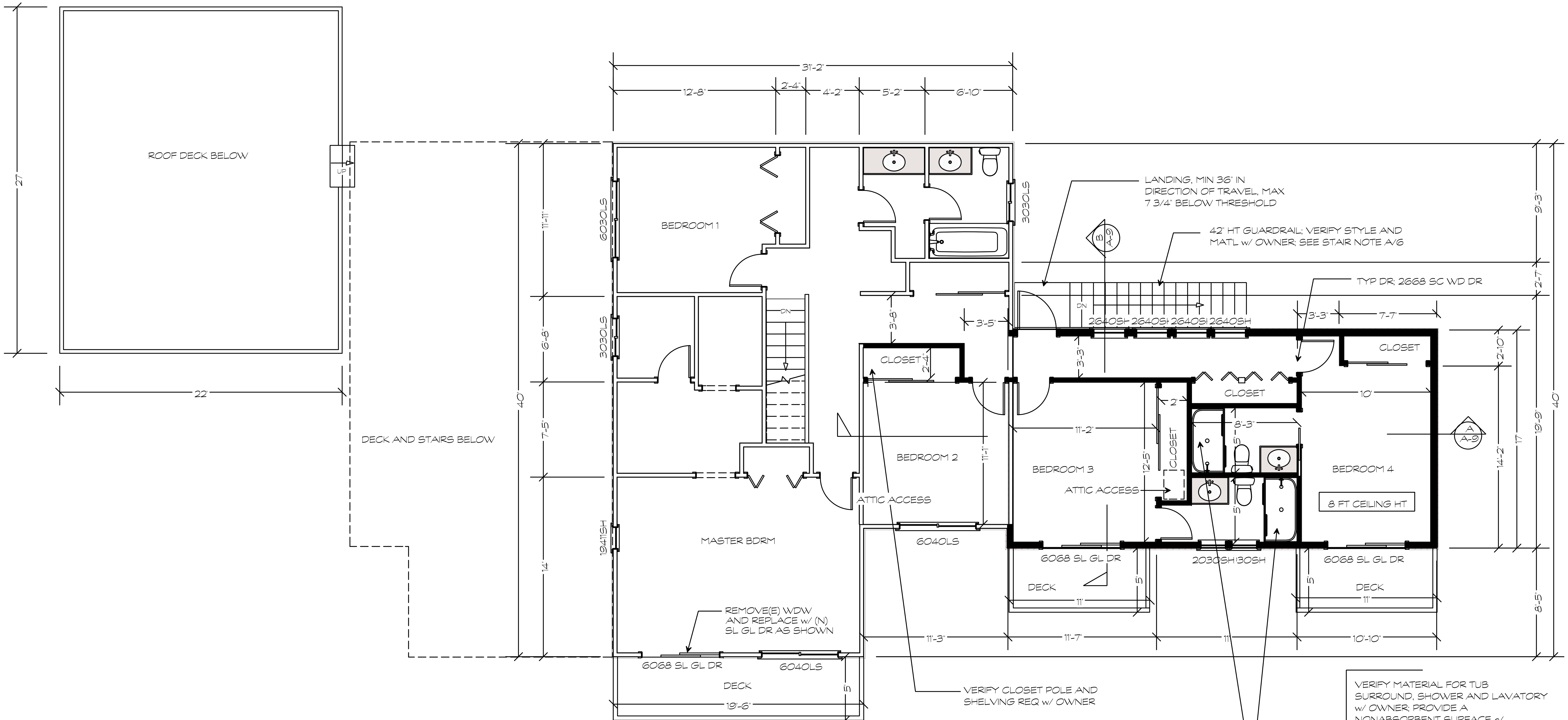

VERIFY MATERIAL FOR TUB SURROUND, SHOWER AND LAVATORY w/ OWNER; PROVIDE A NONABSORBENT SURFACE o/ MOISTURE RESISTANT UNDERLAYMENT TO A MIN OF 72" ABOVE DRAIN INLET AT TUB / SHOWER (NO GREEN BOARD)

LISTED SHOWER RECEPTOR/PAN MTRL. MIN 1024SQIN FLOOR AREA w/ 30"d STANDING AREA

TEMP GL SHWR DR MIN. 22" NET CLEAR OPENING

30" MIN CLEAR SPACE FOR TOILET w/ 24" CLEAR SPACE IN FRONT, TYP

UPPER LEVEL FLOOR PLAN

SCALE: 1/4" = 1'

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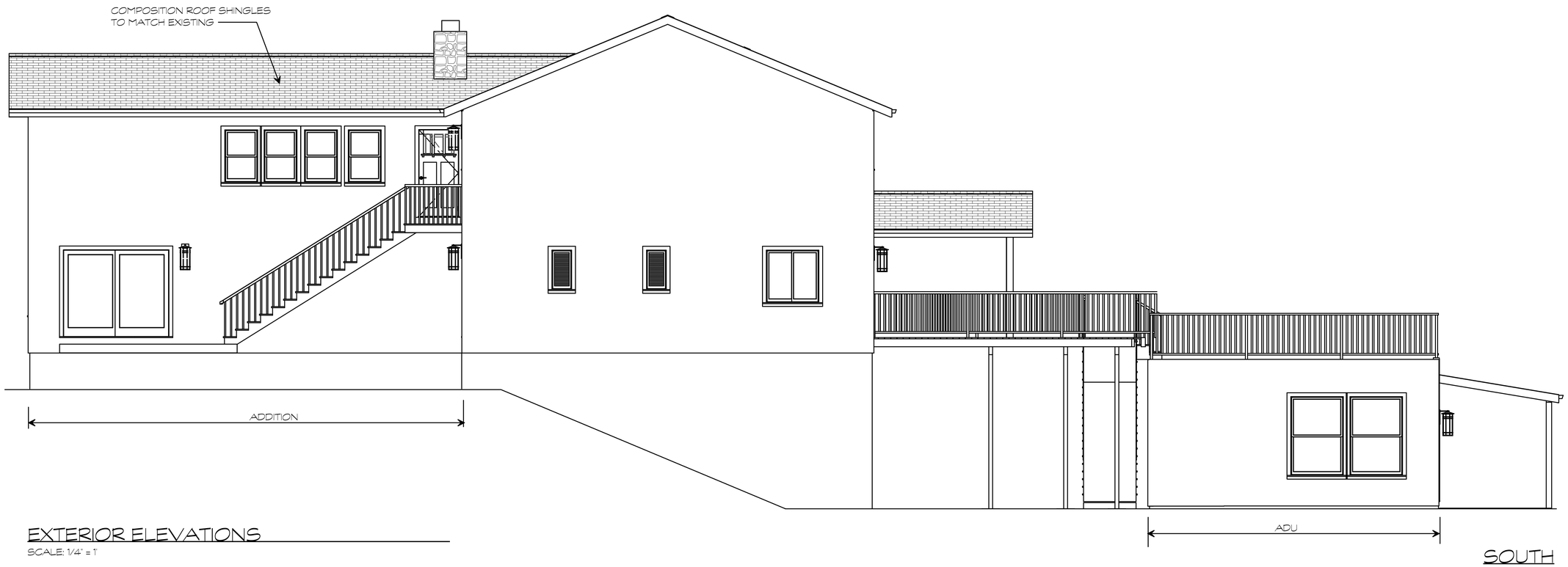
NOTE:
REMOVE (E) WOOD SIDING AND REPLACE WITH CEMENT PLASTER AT EXISTING HOUSE; ADDITION AND ADU TO MATCH



EXTERIOR ELEVATIONS

SCALE: 1/4" = 1

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1

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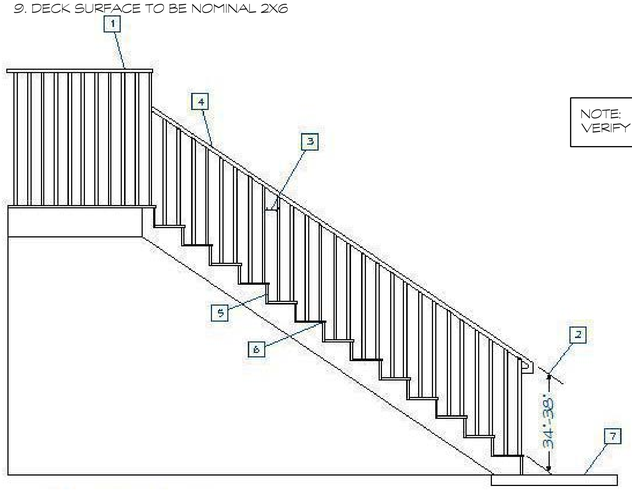
STAIR NOTES:

1. GUARD RAIL HEIGHT MIN 42"
2. HAND RAIL TO BE CONTINUOUS AND TERMINATE AT WALL, POST OR TURNOUT W/ HEIGHT OF 34" - 38" ABOVE LINE OF STAIRS
3. LESS THAN 4" SPACE BETWEEN RAILING COMPONENTS, 6" ALLOWED BETWEEN TREAD/RISER INTERSECTION AND BOTTOM OF GUARD RAIL
4. GRASPABLE RAILING PER CRC R311.7.8.3 (1 1/4" - 2" DIAMETER)
5. CLOSED RISER W/ 7 3/4" MAX. RISE
6. MIN. 10" TREAD DEPTH W/ MIN. 3/4" NOSING PROJECTION (NOSING PROJECTION NOT REQUIRED WHEN TREAD DEPTH IS 11" OR GREATER
7. ALL WEATHER LANDING, FULL WIDTH OF STAIR, EXTEND 36" IN DIRECTION OF TRAVEL
8. STAIR STRINGERS TO BE 2X12 PTDF, MAX 24" O.C.
9. DECK SURFACE TO BE NOMINAL 2X6



STAIR DETAILS

SCALE 1/4" = 1'

NOTE:
VERIFY RAILING MATL AND STYLE w/OWNER

EAST

WEST

EXTERIOR ELEVATIONS

SCALE: 1/4" = 1'

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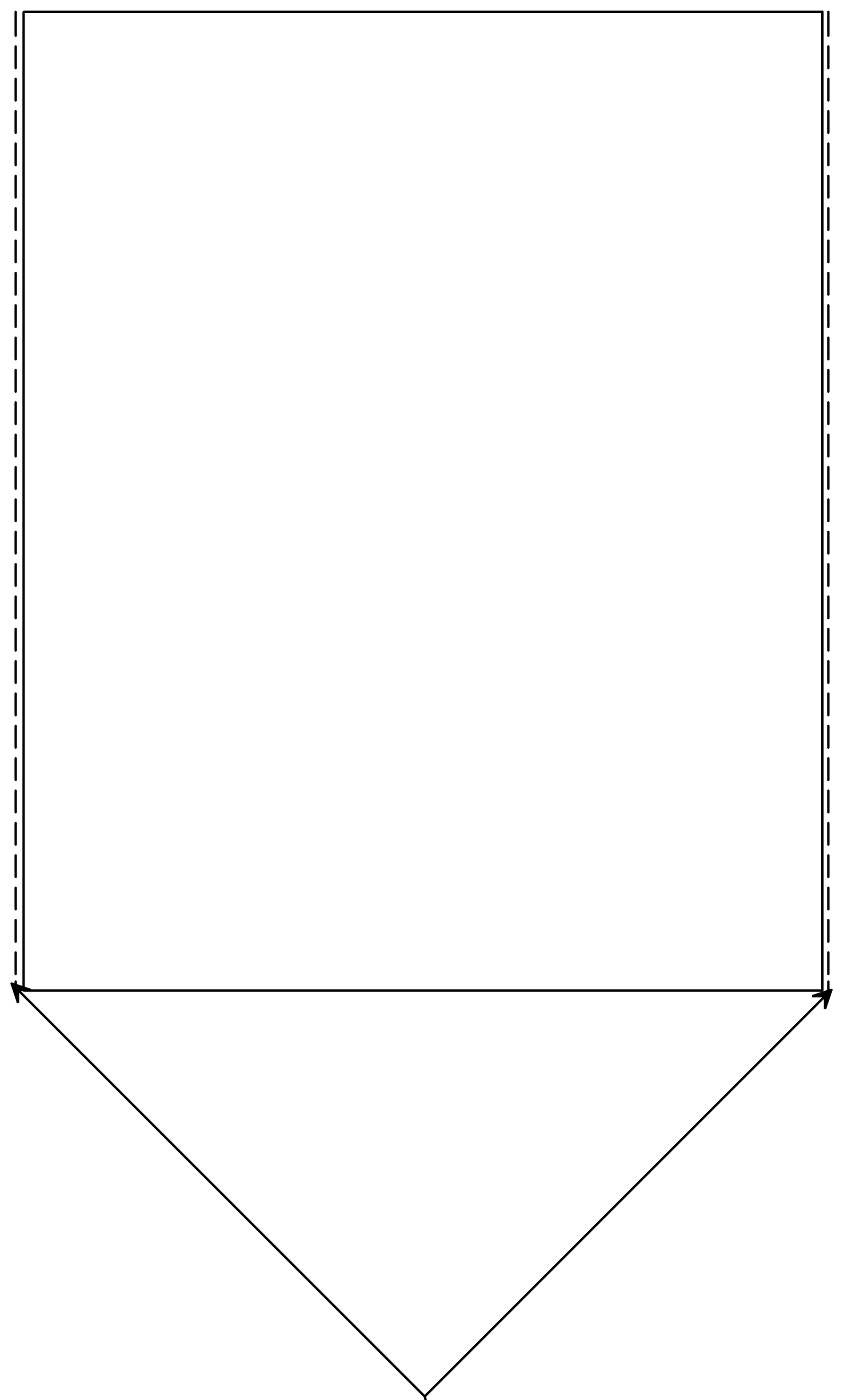

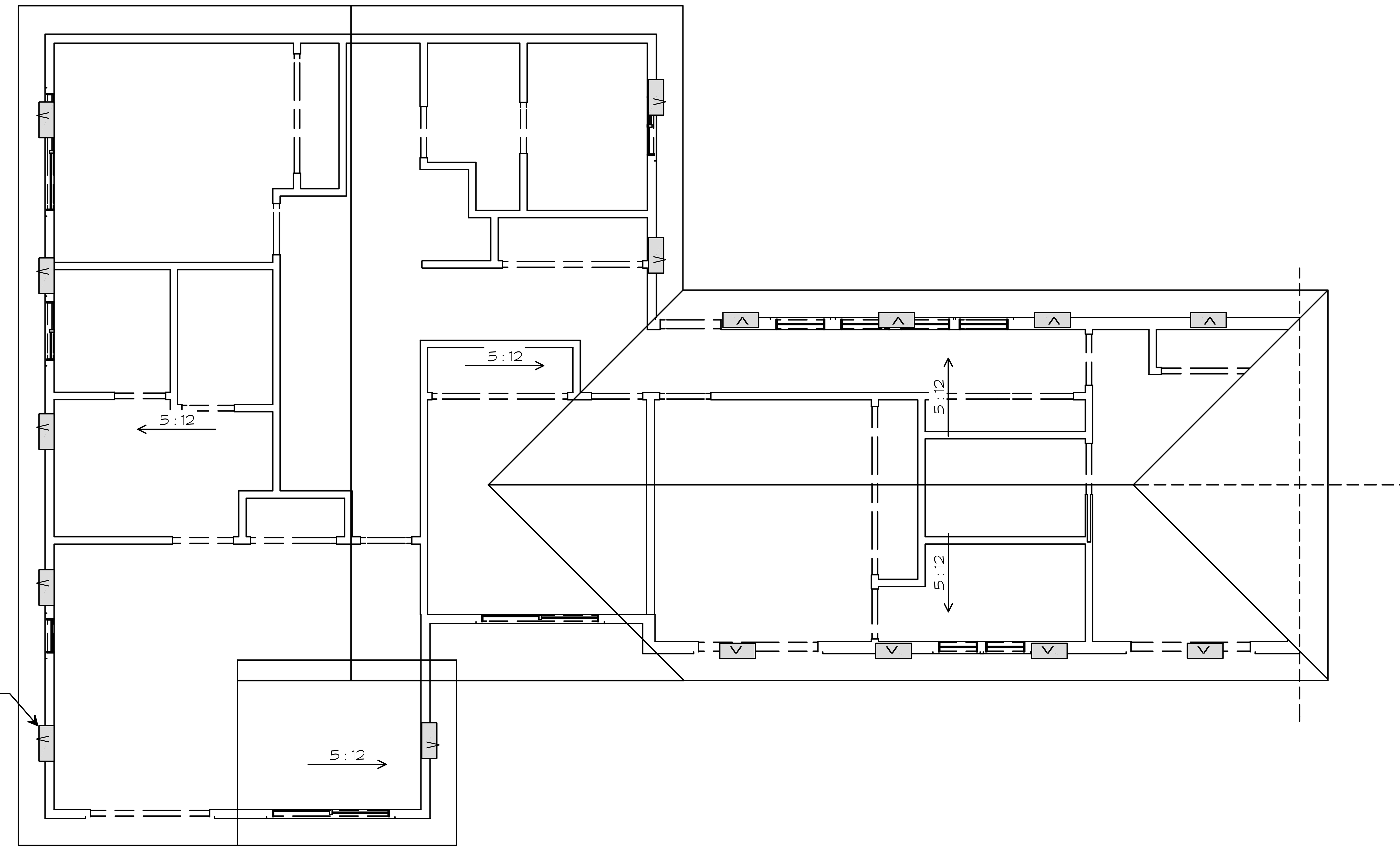

ATTIC VENTILATION

MAIN DWELLING:
ATTIC AREA 1,723 SF
TOTAL VENTILATION 1,723/150 = 5.74. SF
PROVIDE:
(16) 3.5"X22.5" EAVE VENTS 5.97SF

ADU:
ATTIC AREA 595 SF
TOTAL VENTILATION 595/150 = 3.97. SF
PROVIDE:
54 LNFT 2" CONTINUOUS VENT 4.5 SF
(50% FREE VENT AREA)

ALL VENTS TO BE COVERED
WITH 1/4" METALLIC SCREENING

ROOF PLAN

SCALE: 1/4" = 1'

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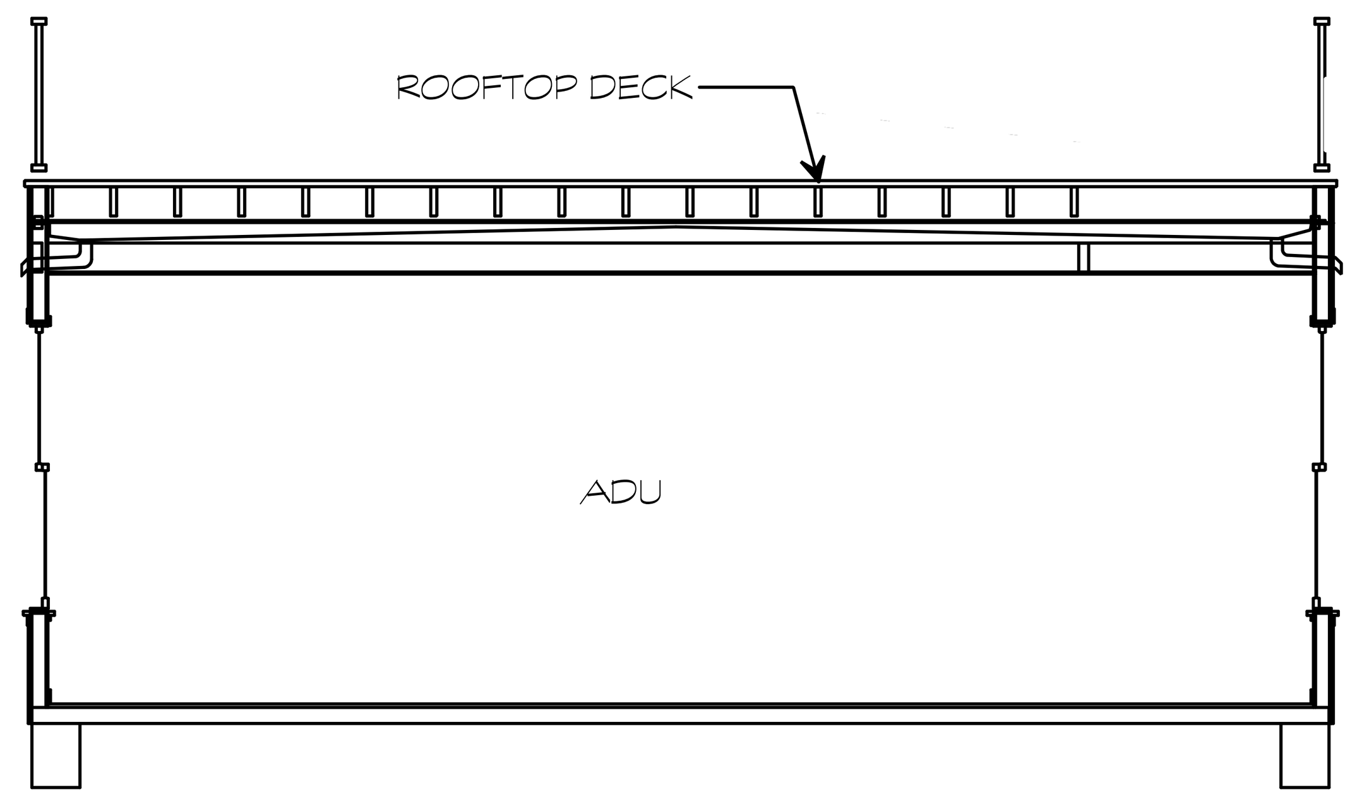
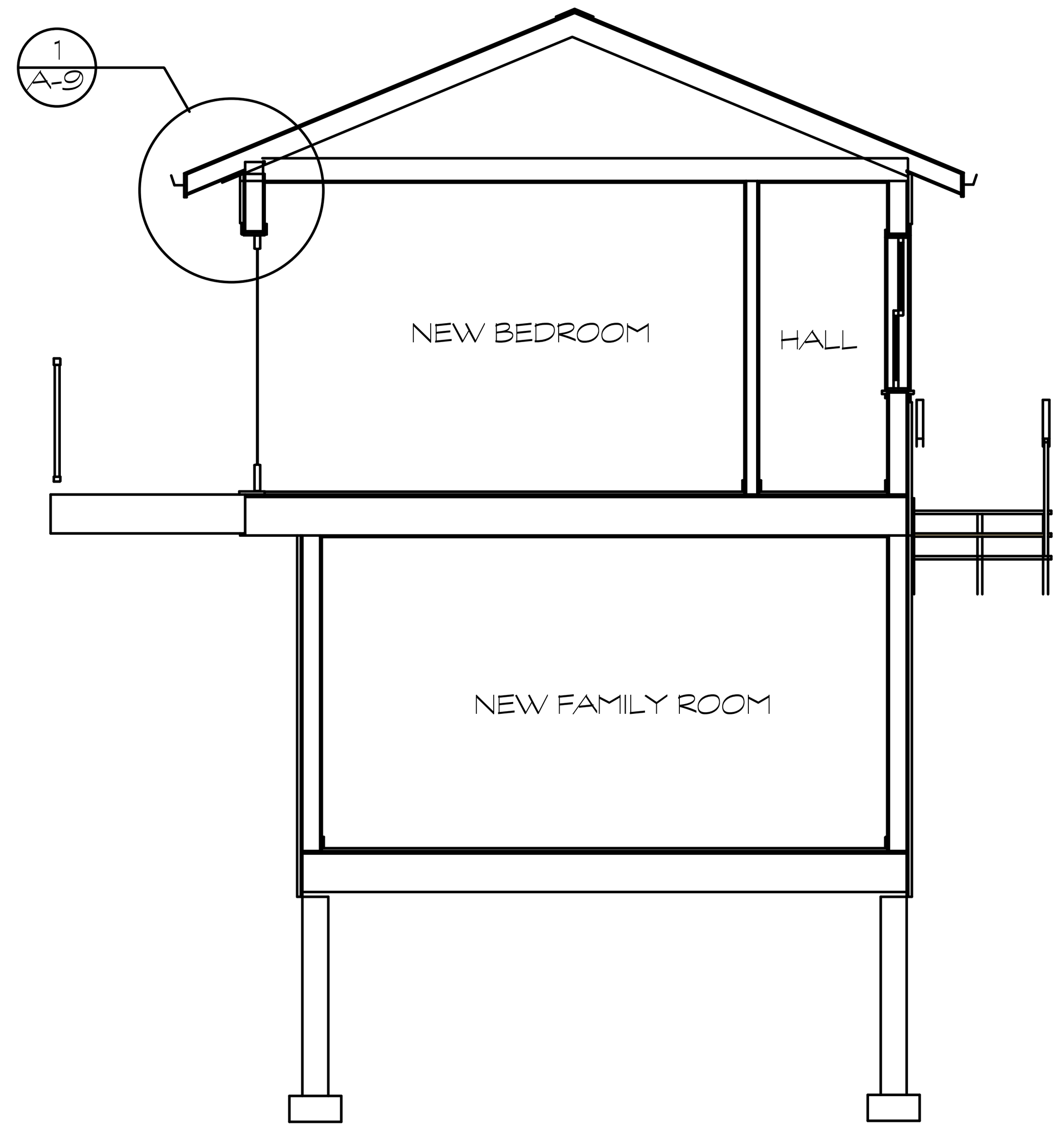
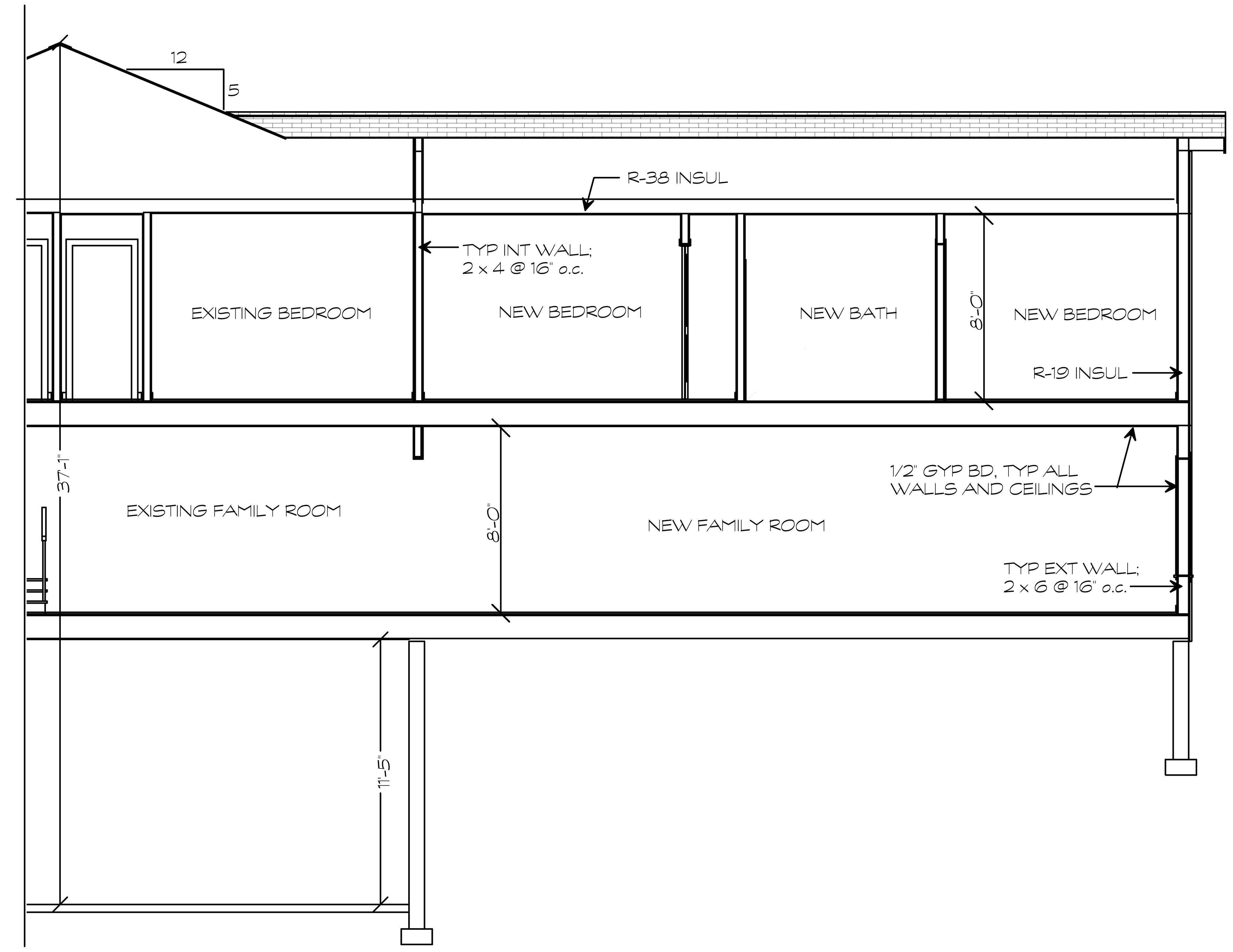


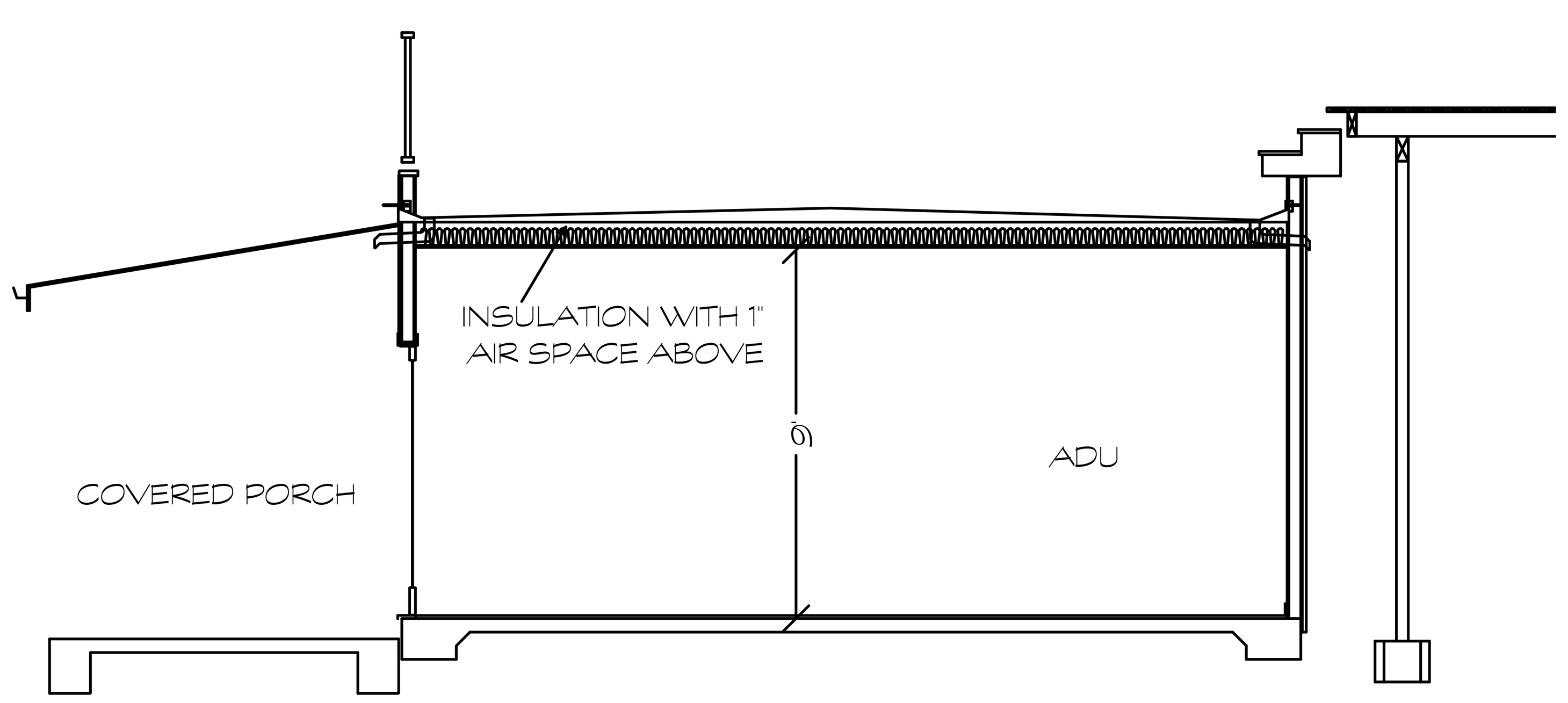
C SECTION AT ADU
1/4" - 1'-0"



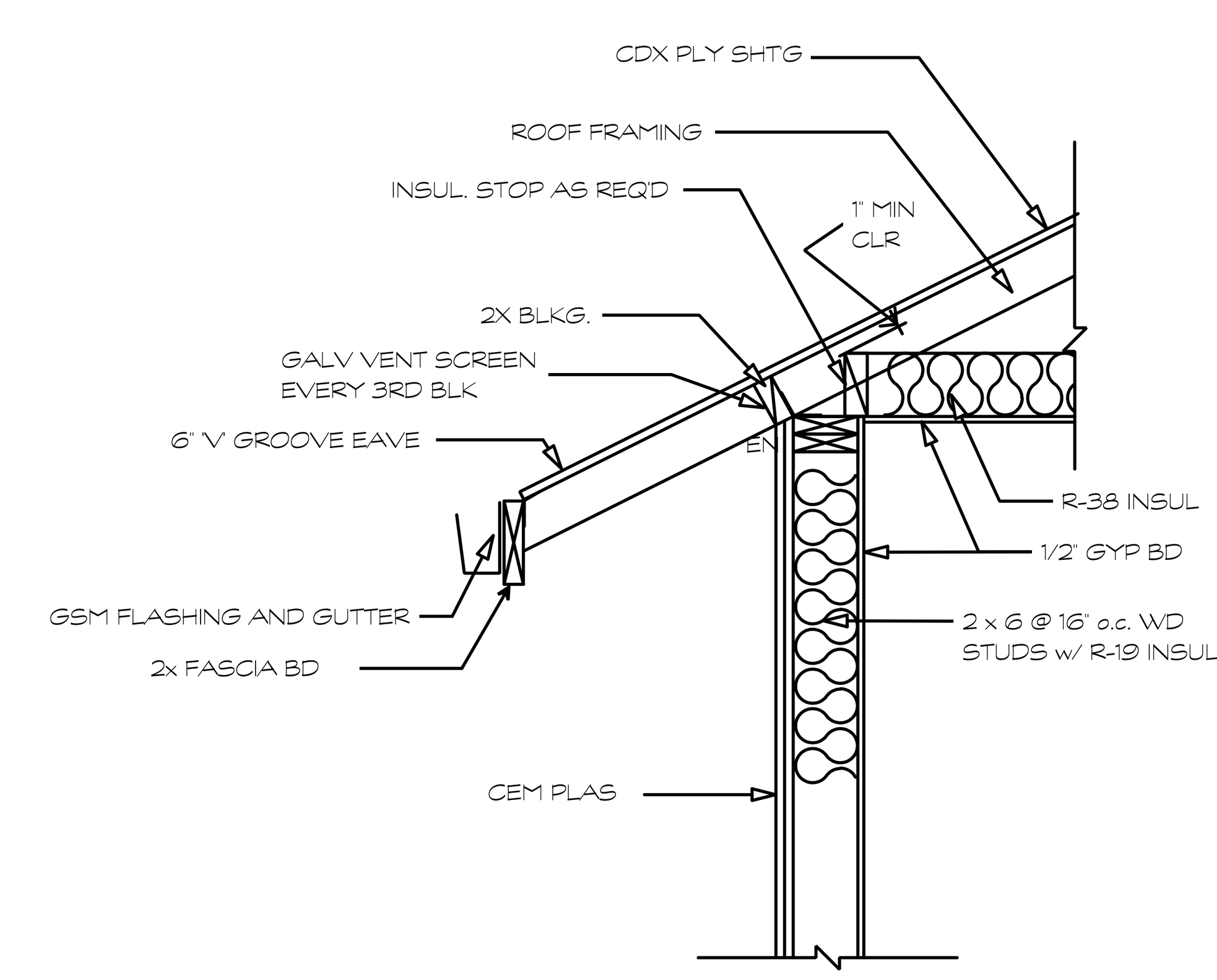
B SECTION AT ADDITION
1/4" - 1'-0"



A SECTION AT ADDITION
1/4" - 1'-0"



D SECTION AT ADU
1/4" - 1'-0"



1 TYP EAVE
3/4" = 1'-0"

CONSTRUCTION NOTES

1. ALL G.S.M. WORK TO BE DONE IN ACCORDANCE WITH S.M.A.C.N.A. DETAILS AND RECOMMENDATIONS; ALL G.S.M. TO BE 24 GAUGE MINIMUM.
2. ALL NAILING NOT SHOWN, TO BE PER C.R.C. NAILING SCHEDULE.
3. FIRE STOPS TO BE PROVIDED IN ACCORDANCE WITH 2016 C.R.C. R302.11 AND SHALL INCLUDE BUT NOT LIMITED TO THE FOLLOWING LOCATIONS:
   - A.. CONCEALED SPACES OF STUD WALLS & PARTITIONS, INCLUDING FURRED SPACES; AT THE CEILING AND FLOOR LEVELS AND AT 10'-0" INTERVALS.
   - B. AT ALL INTERCONNECTIONS BETWEEN VERTICAL AND HORIZONTAL SPACES, SUCH AS SOFFITS, DROP AND COVE CEILING, ETC
   - C. IN CONCEALED SPACES BETWEEN STAIR STRINGERS AT THE TOP AND BOTTOM OF THE RUN AND BETWEEN STUDS ALONG AND IN LINE WITH THE RUN OF STAIRS IF THE WALLS UNDER STAIRS ARE UNFINISHED.
   - D. IN OPENINGS AROUND VENTS, PIPES, DUCTS, CHIMNEYS, FIREPLACES AND SIMILAR OPENINGS WHICH AFFORD A PASSAGE FOR FIRE AT THE CEILING AND FLOOR LEVELS, WITH NON-COMBUSTIBLE MATERIAL.
4. ALL ROOF MATERIAL MANUFACTURER, STYLE, COLOR, ETC. TO BE APPROVED BY OWNER; INSTALL IN STRICT COMPLIANCE WITH MANUFACTURER RECOMMENDATIONS AND C.B.C. REQUIREMENTS; INSTALL 30# FELT UNDERLAYMENT.
5. ALL DOORS AROUND PERIMETER OF CONDITIONED SPACES TO BE WEATHER-STRIPPED.
6. ALL GYP. BD. TO BE AS SHOWN ON DRAWINGS. VERIFY FINISH WITH OWNER; ALL GYP. BD. BEHIND FRP PANELS OR SIMILAR MATERIAL TO BE WATER RESISTANT TYPE; PROVIDE METAL BEADS AT ALL CORNERS.
7. NO WATER SUPPLY PIPING TO BE INSTALLED UNDER CONCRETE SLABS. ALL COPPER WATER SUPPLY PIPING WITHIN THE BUILDING TO BE TYPE 'L'.
8. EXTERIOR CEM. PLASTER TO BE 3 COATS, 3/4" MIN. THICKNESS, OVER APPROVED WIRE LATH, FURRED OUT AS REQ., OVER MIN. OF TWO LAYERS OF GRADE D PAPER. PROVIDE MTL. WEEP SCREED AT BTM. OF ALL WALLS.
9. 30" MIN. CLEAR SPACE FOR WATER CLOSET. MAINTAIN 24" MINIMUM CLEARANCE IN FRONT. NET CLEAR OPENING FOR SHOWERS SHALL BE MIN. 22" WITH THE DOOR IN THE OPEN POSITION.

REVISIONS

△	

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15990 FLINTLOCK ROAD
CUPERTINO CA 95014

DATE:
2/14/2023

SCALE:

JOB NUMBER

SHEET:
A-9

GENERAL INFORMATION

01	Project Name	Vogel Residence			
02	Run Title	Title 24 Analysis			
03	Project Location	15990 Flintlock Rd			
04	City	Cupertino	05	Standards Version	2022
06	Zip code	95014	07	Software Version	EnergyPro 9.0
08	Climate Zone	4	09	Front Orientation (deg/ Cardinal)	90
10	Building Type	Single family	11	Number of Dwelling Units	1
12	Project Scope	Addition and/or Alteration	13	Number of Bedrooms	8
14	Addition Cond. Floor Area (ft²)	1075	15	Number of Stories	2
16	Existing Cond. Floor Area (ft²)	2219	17	Fenestration Average U-factor	0.32
18	Total Cond. Floor Area (ft²)	3294	19	Glazing Percentage (%)	22.10%
20	ADU Bedroom Count	n/a			

COMPLIANCE RESULTS

01	Building Complies with Computer Performance
02	This building incorporates features that require field testing and/or verification by a certified HERS rater under the supervision of a CEC-approved HERS provider.
03	This building incorporates one or more Special Features shown below

ENERGY USE SUMMARY

Energy Use	Standard Design Source Energy (EDR1) (kBtu/ft²- yr)	Standard Design TDV Energy (EDR2) (kTDV/ft²- yr)	Proposed Design Source Energy (EDR1) (kBtu/ft²- yr)	Proposed Design TDV Energy (EDR2) (kTDV/ft²- yr)	Compliance Margin (EDR1)	Compliance Margin (EDR2)
Space Heating	0	41.54	0	37.75	0	3.79
Space Cooling	0	53.22	0	54.95	0	-1.73
IAQ Ventilation	0	8.04	0	9.09	0	-1.05
Water Heating	0	15.5	0	15.5	0	0
Self Utilization/Flexibility Credit						
Efficiency Compliance Total	0	118.3	0	117.29	0	1.01
Photovoltaics	0		0			
Battery			0			
Flexibility						
Indoor Lighting	0	6.31	0	6.31		
Appl. & Cooking	0	14.26	0	14.27		
Plug Loads	0	31.84	0	31.84		
Outdoor Lighting	0	1.65	0	1.65		
TOTAL COMPLIANCE	0	172.36	0	171.36		

ENERGY USE INTENSITY

	Standard Design (kBtu/ft² - yr)	Proposed Design (kBtu/ft² - yr)	Compliance Margin (kBtu/ft² - yr)	Margin Percentage
Gross EUI[1]	19.84	19.68	0.16	0.81
Net EUI[2]	19.84	19.68	0.16	0.81

Notes
1. Gross EUI is Energy Use Total (not including PV) / Total Building Area.
2. Net EUI is Energy Use Total (including PV) / Total Building Area.

REQUIRED SPECIAL FEATURES

The following are features that must be installed as condition for meeting the modeled energy performance for this computer analysis.

- Indoor air quality, balanced fan
- IAQ Ventilation System Heat Recovery: minimum 50 SRE and 55 ASRE
- IAQ Ventilation System: supply outside air inlet, filter, and H/ERV cores accessible per RACM Reference Manual
- Ducts in crawl space
- Variable capacity heat pump compliance option (verification details from VCHP Staff report, Appendix B, and RA3)

HERS FEATURE SUMMARY

The following is a summary of the features that must be field-verified by a certified HERS Rater as a condition for meeting the modeled energy performance for this computer analysis. Additional detail is provided in the building tables below. Registered CF2Rs and CF3Rs are required to be completed in the HERS Registry

- Indoor air quality ventilation
- Verified Refrigerant Charge
- Airflow in habitable rooms (SCS.1.4.1.7)
- Verified heat pump rated heating capacity
- Wall-mounted thermostat in zones greater than 150 ft2 (SCS.1.4.5)
- Ductless indoor units located entirely in conditioned space (SCS.1.4.1.8)
- Duct Sealing required if a duct system component, plenum, or air handling unit is altered

BUILDING - FEATURES INFORMATION

01	02	03	04	05	06	07
Project Name	Conditioned Floor Area (ft²)	Number of Dwelling Units	Number of Bedrooms	Number of Zones	Number of Ventilation Cooling Systems	Number of Water Heating Systems
Vogel Residence	3294	1	8	4	0	1

ZONE INFORMATION

01	02	03	04	05	06	07
Zone Name	Zone Type	HVAC System Name	Zone Floor Area (ft²)	Avg. Ceiling Height	Water Heating System 1	Status
Existing 1st Floor	Conditioned	HVAC System1	1109	8	DHW Sys 1	Existing Unchanged
Existing 2nd Floor	Conditioned	HVAC System2	1110	8	DHW Sys 1	Existing Unchanged
Addition 1st Floor	Conditioned	HVAC System3	512	8	DHW Sys 1	New
Addition 2nd Floor	Conditioned	HVAC System3	563	8	DHW Sys 1	New

OPAQUE SURFACES

01	02	03	04	05	06	07	08	09	10	11
Name	Zone	Construction	Azimuth	Orientation	Gross Area (ft²)	Window and Door Area (ft2)	Tilt (deg)	Wall Exceptions	Status	Verified Existing Condition
Front Wall	Existing 1st Floor	R-0 Wall	90	Front	320	110.7	90	none	Existing	No
Left Wall	Existing 1st Floor	R-0 Wall	180	Left	248	25	90	none	Existing	No
Rear Wall	Existing 1st Floor	R-0 Wall	270	Back	196	65	90	none	Existing	No
Right Wall	Existing 1st Floor	R-0 Wall	0	Right	248	102.6	90	none	Existing	No
Front Wall 2	Existing 2nd Floor	R-0 Wall	90	Front	320	35.3	90	none	Existing	No
Left Wall 2	Existing 2nd Floor	R-0 Wall	180	Left	248	0	90	none	Existing	No
Rear Wall 2	Existing 2nd Floor	R-0 Wall	270	Back	196	9	90	none	Existing	No
Right Wall 2	Existing 2nd Floor	R-0 Wall	0	Right	248	88	90	none	Existing	No
Left Wall 3	Addition 1st Floor	R-19 Wall	180	Left	264	53.3	90	none	New	n/a

OPAQUE SURFACES

01	02	03	04	05	06	07	08	09	10	11
Name	Zone	Construction	Azimuth	Orientation	Gross Area (ft²)	Window and Door Area (ft2)	Tilt (deg)	Wall Exceptions	Status	Verified Existing Condition
Rear Wall 3	Addition 1st Floor	R-19 Wall	270	Back	124	30	90	none	New	n/a
Right Wall 3	Addition 1st Floor	R-19 Wall	0	Right	264	97.2	90	none	New	n/a
Front Wall 3	Addition 2nd Floor	R-19 Wall	90	Front	12	0	90	none	New	n/a
Left Wall 4	Addition 2nd Floor	R-19 Wall	180	Left	264	60	90	none	New	n/a
Rear Wall 4	Addition 2nd Floor	R-19 Wall	270	Back	136	0	90	none	New	n/a
Right Wall 4	Addition 2nd Floor	R-19 Wall	0	Right	264	52	90	none	New	n/a
Interior Surface	Addition 2nd Floor>>Addition 1st Floor	R-0 Wall	n/a	n/a	10	0	n/a		New	No
Roof	Existing 2nd Floor	R-19 Roof Attic	n/a	n/a	1110	n/a	n/a		Existing	No
Roof 2	Addition 2nd Floor	R-38 Roof Attic	n/a	n/a	563	n/a	n/a		New	n/a
Raised Floor (o,o)	Addition 2nd Floor	R-19 Floor No Crawlspace	n/a	n/a	51	n/a	n/a		New	n/a
Raised Floor	Existing 1st Floor	R-0 Floor Crawlspace	n/a	n/a	1109	n/a	n/a		Existing	No
Raised Floor 2	Addition 1st Floor	R-19 Floor Crawlspace	n/a	n/a	512	n/a	n/a		New	n/a
Interior Surface 2	Existing 1st Floor	R-0 Roof No Attic	n/a	n/a	1109	n/a	n/a		Existing	No
Interior Surface 3	Addition 1st Floor	R-0 Roof No Attic	n/a	n/a	256	n/a	n/a		New	n/a
Interior Surface 4	Addition 1st Floor	R-0 Roof No Attic	n/a	n/a	256	n/a	n/a		New	n/a

OPAQUE SURFACES

01	02	03	04	05	06	07	08	09	10	11
Name	Zone	Construction	Azimuth	Orientation	Gross Area (ft²)	Window and Door Area (ft2)	Tilt (deg)	Wall Exceptions	Status	Verified Existing Condition
Interior Surface 5	Existing 2nd Floor	R-0 Floor No Crawlspace	n/a	n/a	1110	n/a	n/a		Existing	No

ATTIC

01	02	03	04	05	06	07	08	09	10
Name	Construction	Type	Roof Rise (x in 12)	Roof Reflectance	Roof Emittance	Radiant Barrier	Cool Roof	Status	Verified Existing Condition
Attic Existing 2nd Floor	Attic RoofExisting 2nd Floor	Ventilated	5	0.1	0.85	No	No	Existing	No
Attic Addition 2nd Floor	Attic RoofAddition 2nd Floor	Ventilated	5	0.1	0.85	No	No	New	n/a

FENESTRATION / GLAZING

01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16
Name	Type	Surface	Orientation	Azimuth	Width (ft)	Height (ft)	Mult.	Area (ft²)	U-factor	U-factor Source	SHGC	SHGC Source	Exterior Shading	Status	Verified Existing Condition
Window	Window	Front Wall	Front	90			1	24	0.55	Table 110.6-A	0.67	Table 110.6-B	Bug Screen	Existing	No
Door	Window	Front Wall	Front	90			1	20	0.55	Table 110.6-A	0.67	Table 110.6-B	Bug Screen	Existing	No
Window 2	Window	Front Wall	Front	90			1	13.4	0.55	Table 110.6-A	0.67	Table 110.6-B	Bug Screen	Existing	No
Door 2	Window	Front Wall	Front	90			1	53.3	0.55	Table 110.6-A	0.67	Table 110.6-B	Bug Screen	Existing	No
Window 3	Window	Left Wall	Left	180			1	16	0.55	Table 110.6-A	0.67	Table 110.6-B	Bug Screen	Existing	No
Window 4	Window	Left Wall	Left	180			1	4.5	0.55	Table 110.6-A	0.67	Table 110.6-B	Bug Screen	Existing	No

FENESTRATION / GLAZING

01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16
Name	Type	Surface	Orientation	Azimuth	Width (ft)	Height (ft)	Mult.	Area (ft²)	U-factor	U-factor Source	SHGC	SHGC Source	Exterior Shading	Status	Verified Existing Condition
Window 5	Window	Left Wall	Left	180			1	4.5	0.55	Table 110.6-A	0.67	Table 110.6-B	Bug Screen	Existing	No
Door 3	Window	Rear Wall	Back	270			1	20	0.55	Table 110.6-A	0.67	Table 110.6-B	Bug Screen	Existing	No
Window 6	Window	Rear Wall	Back	270			1	15	0.55	Table 110.6-A	0.67	Table 110.6-B	Bug Screen	Existing	No
Window 7	Window	Rear Wall	Back	270			1	15	0.55	Table 110.6-A	0.67	Table 110.6-B	Bug Screen	Existing	No
Window 8	Window	Rear Wall	Back	270			1	15	0.55	Table 110.6-A	0.67	Table 110.6-B	Bug Screen	Existing	No
Window 9	Window	Right Wall	Right	0			1	48.6	0.55	Table 110.6-A	0.67	Table 110.6-B	Bug Screen	Existing	No
Window 10	Window	Right Wall	Right	0			1	15	0.55	Table 110.6-A	0.67	Table 110.6-B	Bug Screen	Existing	No
Window 11	Window	Right Wall	Right	0			1	15	0.55	Table 110.6-A	0.67	Table 110.6-B	Bug Screen	Existing	No
Window 12	Window	Right Wall	Right	0			1	24	0.55	Table 110.6-A	0.67	Table 110.6-B	Bug Screen	Existing	No
Window 13	Window	Front Wall 2	Front	90			1	8.3	0.55	Table 110.6-A	0.67	Table 110.6-B	Bug Screen	Existing	No
Window 14	Window	Front Wall 2	Front	90			1	9	0.55	Table 110.6-A	0.67	Table 110.6-B	Bug Screen	Existing	No
Window 15	Window	Front Wall 2	Front	90			1	18	0.55	Table 110.6-A	0.67	Table 110.6-B	Bug Screen	Existing	No

FENESTRATION / GLAZING

01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16
Name	Type	Surface	Orientation	Azimuth	Width (ft)	Height (ft)	Mult.	Area (ft²)	U-factor	U-factor Source	SHGC	SHGC Source	Exterior Shading	Status	Verified Existing Condition
Window 16	Window	Rear Wall 2	Back	270			1	9	0.55	Table 110.6-A	0.67	Table 110.6-B	Bug Screen	Existing	No
Window 17	Window	Right Wall 2	Right	0			1	24	0.55	Table 110.6-A	0.67	Table 110.6-B	Bug Screen	Existing	No
Window 18	Window	Right Wall 2	Right	0			1	24	0.55	Table 110.6-A	0.67	Table 110.6-B	Bug Screen	Existing	No
Door 4	Window	Right Wall 2	Right	0			1	40	0.55	Table 110.6-A	0.67	Table 110.6-B	Bug Screen	Existing	No
Door 5	Window	Left Wall 3	Left	180			1	53.3	0.32	NFRC	0.25	NFRC	Bug Screen	New	NA
Window 19	Window	Rear Wall 3	Back	270			1	15	0.32	NFRC	0.25	NFRC	Bug Screen	New	NA
Window 20	Window	Rear Wall 3	Back	270			1	10	0.32	NFRC	0.25	NFRC	Bug Screen	New	NA
Window 21	Window	Right Wall 3	Right	0			1	24.3	0.32	NFRC	0.25	NFRC	Bug Screen	New	NA
Window 22	Window	Right Wall 3	Right	0			1	24.3	0.32	NFRC	0.25	NFRC	Bug Screen	New	NA
Window 23	Window	Right Wall 3	Right	0			1	24.3	0.32	NFRC	0.25	NFRC	Bug Screen	New	NA
Window 24	Window	Right Wall 3	Right	0			1	24.3	0.32	NFRC	0.25	NFRC	Bug Screen	New	NA
Door 6	Window	Left Wall 4	Left	180			1	20	0.32	NFRC	0.25	NFRC	Bug Screen	New	NA
Window 25	Window	Left Wall 4	Left	180			1	10	0.32	NFRC	0.25	NFRC	Bug Screen	New	NA
Window 26	Window	Left Wall 4	Left	180			1	10	0.32	NFRC	0.25	NFRC	Bug Screen	New	NA
Window 27	Window	Left Wall 4	Left	180			1	10	0.32	NFRC	0.25	NFRC	Bug Screen	New	NA
Window 28	Window	Left Wall 4	Left	180			1	10	0.32	NFRC	0.25	NFRC	Bug Screen	New	NA

FENESTRATION / GLAZING

01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16
Name	Type	Surface	Orientation	Azimuth	Width (ft)	Height (ft)	Mult.	Area (ft²)	U-factor	U-factor Source	SHGC	SHGC Source	Exterior Shading	Status	Verified Existing Condition
Door 7	Window	Right Wall 4	Right	0			1	40	0.32	NFRC	0.25	NFRC	Bug Screen	New	NA
Window 29	Window	Right Wall 4	Right	0			1	6	0.32	NFRC	0.25	NFRC	Bug Screen	New	NA
Window 30	Window	Right Wall 4	Right	0			1	6	0.32	NFRC	0.25	NFRC	Bug Screen	New	NA

OPAQUE SURFACE CONSTRUCTIONS

01	02	03	04	05	06	07	08
Construction Name	Surface Type	Construction Type	Framing	Total Cavity R-value	Interior / Exterior Continuous R-value	U-factor	Assembly Layers
R-0 Wall	Exterior Walls	Wood Framed Wall	2x4 @ 16 in. O. C.	R-0	None / None	0.361	Inside Finish: Gypsum Board Cavity / Frame: no insul. / 2x4 Exterior Finish: 3 Coat Stucco
R-19 Wall	Exterior Walls	Wood Framed Wall	2x6 @ 16 in. O. C.	R-19	None / None	0.074	Inside Finish: Gypsum Board Cavity / Frame: R-19 in 5-1/2 in. (R-18) / 2x6 Exterior Finish: 3 Coat Stucco
R-0 Wall1	Interior Walls	Wood Framed Wall	2x4 @ 16 in. O. C.	R-0	None / None	0.277	Inside Finish: Gypsum Board Cavity / Frame: no insul. / 2x4 Other Side Finish: Gypsum Board
Attic RoofExisting 2nd Floor	Attic Roofs	Wood Framed Ceiling	2x4 @ 24 in. O. C.	R-0	None / 0	0.644	Roofing: Light Roof (Asphalt Shingle) Roof Deck: Wood Siding/sheathing/decking Cavity / Frame: no insul. / 2x4

OPAQUE SURFACE CONSTRUCTIONS

01	02	03	04	05	06	07	08
Construction Name	Surface Type	Construction Type	Framing	Total Cavity R-value	Interior / Exterior Continuous R-value	U-factor	Assembly Layers
Attic RoofAddition 2nd Floor	Attic Roofs	Wood Framed Ceiling	2x4 @ 24 in. O. C.	R-0	None / 0	0.644	Roofing: Light Roof (Asphalt Shingle) Roof Deck: Wood Siding/sheathing/decking Cavity / Frame: no insul. / 2x4
R-0 Floor Crawlspace	Floors Over Crawlspace	Wood Framed Floor	2x6 @ 16 in. O. C.	R-0	None / None	0.22	Floor Surface: Carpeted Floor Deck: Wood Siding/sheathing/decking Cavity / Frame: no insul. / 2x6
R-19 Floor Crawlspace	Floors Over Crawlspace	Wood Framed Floor	2x6 @ 16 in. O. C.	R-19	None / None	0.049	Floor Surface: Carpeted Floor Deck: Wood Siding/sheathing/decking Cavity / Frame: R-19 / 2x6
R-19 Roof Attic	Ceilings (below attic)	Wood Framed Ceiling	2x4 @ 24 in. O. C.	R-19	None / None	0.049	Over Ceiling Joists: R-9.9 insul. Cavity / Frame: R-9.1 / 2x4 Inside Finish: Gypsum Board
R-38 Roof Attic	Ceilings (below attic)	Wood Framed Ceiling	2x4 @ 24 in. O. C.	R-38	None / None	0.025	Over Ceiling Joists: R-28.9 insul. Cavity / Frame: R-9.1 / 2x4 Inside Finish: Gypsum Board
R-19 Floor No Crawlspace	Exterior Floors	Wood Framed Floor	2x6 @ 16 in. O. C.	R-19	None / None	0.052	Floor Surface: Carpeted Floor Deck: Wood Siding/sheathing/decking Cavity / Frame: R-19 in 5-1/2 in. (R-18) / 2x6
R-0 Floor No Crawlspace	Interior Floors	Wood Framed Floor	2x6 @ 16 in. O. C.	R-0	None / None	0.199	Floor Surface: Carpeted Floor Deck: Wood Siding/sheathing/decking Cavity / Frame: no insul. / 2x6 Ceiling Below Finish: Gypsum Board

OPAQUE SURFACE CONSTRUCTIONS

01	02	03	04	05	06	07	08
Construction Name	Surface Type	Construction Type	Framing	Total Cavity R-value	Interior / Exterior Continuous R-value	U-factor	Assembly Layers
R-0 Roof No Attic	Interior Ceiling	Wood Framed Ceiling	2x4 @ 16 in. O. C.	R-0	None / None	0.202	Floor Surface: Carpeted Floor Deck: Wood Siding/sheathing/decking Cavity / Frame: no insul. / 2x4 Ceiling Below Finish: Gypsum Board

BUILDING ENVELOPE - HERS VERIFICATION

01	02	03	04	05
Quality Insulation Installation (QII)	High R-value Spray Foam Insulation	Building Envelope Air Leakage	CFM50	CFM50
Not Required	Not Required	N/A	n/a	n/a

WATER HEATING SYSTEMS

01	02	03	04	05	06	07	08	09	10	11	12
Name	System Type	Distribution Type	Water Heater Name	Number of Units	Solar Heating System	Compact Distribution	HERS Verification	Water Heater Name (#)	Status	Verified Existing Condition	Existing Water Heating System
DHW Sys 1	Domestic Hot Water (DHW)	Standard	DHW Heater 1	1	n/a	None	n/a	DHW Heater 1 (1)	Existing	No	

WATER HEATERS

01	02	03	04	05	06	07	08	09	10	11	12	13	14	15
Name	Heating Element Type	Tank Type	# of Units	Tank Vol. (gal)	Heating Efficiency Type	Efficiency	Rated Input Type	Input Rating or Pilot	Tank Insulation R-value (ind/Ext)	Standby Loss or Recovery Eff	1st Hr. Rating or Flow Rate	Tank Location	Status	Verified Existing Condition
DHW Heater 1	Gas	Consumer Instantaneous	1	0	UEF	0.82	Btu/Hr	200000	0	n/a			Existing	No

WATER HEATING - HERS VERIFICATION

01	02	03	04	05	06	07
Name	Pipe Insulation	Parallel Piping	Compact Distribution	Compact Distribution Type	Recirculation Control	Shower Drain Water Heat Recovery
DHW Sys 1 - 1/1	Not Required	Not Required	Not Required	None	Not Required	Not Required

SPACE CONDITIONING SYSTEMS

01	02	03	04	05	06	07	08	09	10	11	12
Name	System Type	Heating Unit Name	Heating Equipment Count	Cooling Unit Name	Cooling Equipment Count	Fan Name	Distribution Name	Required Thermostat Type	Status	Verified Existing Condition	Existing HVAC System
HVAC System1	Heat pump heating cooling	Heat Pump System 1	1	Heat Pump System 1	1	HVAC Fan 1	Air Distribution System 1	n/a	Existing	No	
HVAC System2	Heat pump heating cooling	Heat Pump System 2	1	Heat Pump System 2	1	HVAC Fan 2	Air Distribution System 2	n/a	Existing	No	
HVAC System3	Heat pump heating cooling	Heat Pump System 3	1	Heat Pump System 3	1	n/a	n/a	Setback	New	No	

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VOGEL RESIDENCE
15990 FLINTLOCK RD
CUPERTINO, CA 95014

PROJECT

T24—1

CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD **CF1R-PRF-01-E**

Project Name: Vogel Residence **Calculation Date/Time:** 2023-02-06T10:37:50-08:00 **(Page 13 of 16)**

Calculation Description: Title 24 Analysis **Input File Name:** 0230053 Vogel Residence.ribd22x

HVAC - HEAT PUMPS

01	02	03	04	05	06	07	08	09	10	11	12	13
Name	System Type	Number of Units	Heating				Cooling			Zonally Controlled	Compressor Type	HERS Verification
			Efficiency Type	HSPF / HSPF2 / COP	Cap 47	Cap 17	Efficiency Type	SEER / SEER2	EER / EER / CEER			
Heat Pump System 1	Central split HP	1	HSPF	8	36000	28080	EERSEER	13	11.7	Not Zonal	Single Speed	Heat Pump System 1-hers-htpump
Heat Pump System 2	Central split HP	1	HSPF	8	36000	28080	EERSEER	13	11.7	Not Zonal	Single Speed	Heat Pump System 2-hers-htpump
Heat Pump System 3	VCHP-ductless	1	HSPF	8.2	24000	18720	EERSEER	14	11.7	Not Zonal	Single Speed	Heat Pump System 3-hers-htpump

HVAC HEAT PUMPS - HERS VERIFICATION

01	02	03	04	05	06	07	08	09
Name	Verified Airflow	Airflow Target	Verified EER/EER2	Verified SEER/SEER2	Verified Refrigerant Charge	Verified HSPF/HSPF2	Verified Heating Cap 47	Verified Heating Cap 17
Heat Pump System 3-hers-htpump	Not Required	0	Not Required	Not Required	Yes	No	Yes	Yes

VARIABLE CAPACITY HEAT PUMP COMPLIANCE OPTION - HERS VERIFICATION

01	02	03	04	05	06	07	08	09	10
Name	Certified Low-Static VCHP System	Airflow to Habitable Rooms	Ductless Units in Conditioned Space	Wall Mount Thermostat	Air Filter Sizing & Pressure Drop Rating	Low Leakage Ducts In Conditioned Space	Minimum Airflow per RA3.3 and SC3.3.A.1	Certified non-continuous Fan	Indoor Fan not Running Continuously
Heat Pump System 3	Not required	Required	Required	Required	Not required	Not required	Not required	Not required	Not required

CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD **CF1R-PRF-01-E**

Project Name: Vogel Residence **Calculation Date/Time:** 2023-02-06T10:37:50-08:00 **(Page 14 of 16)**

Calculation Description: Title 24 Analysis **Input File Name:** 0230053 Vogel Residence.ribd22x

HVAC - DISTRIBUTION SYSTEMS

01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16
Name	Type	Design Type	Duct Ins. R-value		Duct Location		Surface Area		Bypass Duct	Duct Leakage	HERS Verification	Status	Verified Existing Condition	Existing Distribution system	New Ducts 25 ft
			Supply	Return	Supply	Return	Supply	Return							
Air Distribution System 1	Unconditioned crawl space	Non-Verified	R-4.2	R-4.2	Crawl Space	Crawl Space	n/a	n/a	No Bypass Duct	Existing (not specified)	Air Distribution System 1-hers-dist	Existing	No		No
Air Distribution System 2	Unconditioned attic	Non-Verified	R-4.2	R-4.2	Attic	Attic	n/a	n/a	No Bypass Duct	Existing (not specified)	Air Distribution System 2-hers-dist	Existing	No		No

HVAC - FAN SYSTEMS

01	02	03	04
Name	Type	Fan Power (Watts/CFM)	Name
HVAC Fan 1	HVAC Fan	0.58	HVAC Fan 1-hers-fan
HVAC Fan 2	HVAC Fan	0.58	HVAC Fan 2-hers-fan

HVAC FAN SYSTEMS - HERS VERIFICATION

01	02	03
Name	Verified Fan Watt Draw	Required Fan Efficacy (Watts/CFM)
HVAC Fan 1-hers-fan	Not Required	0
HVAC Fan 2-hers-fan	Not Required	0

CalCERTS, Inc. HERS PROVIDER

CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD **CF1R-PRF-01-E**

Project Name: Vogel Residence **Calculation Date/Time:** 2023-02-06T10:37:50-08:00 **(Page 15 of 16)**

Calculation Description: Title 24 Analysis **Input File Name:** 0230053 Vogel Residence.ribd22x

INDOOR AIR QUALITY (IAQ) FANS

01	02	03	04	05	06	07	08	09
Dwelling Unit	Airflow (CFM)	Fan Efficacy (W/CFM)	IAQ Fan Type	Includes Heat/Energy Recovery?	IAQ Recovery Effectiveness - SRE	Includes Fault Indicator Display?	HERS Verification	Status
SFam IAQVentRpt 1-1	160	0.71875	Balanced	Yes	55	No	Yes	

CalCERTS, Inc. HERS PROVIDER

CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD **CF1R-PRF-01-E**

Project Name: Vogel Residence **Calculation Date/Time:** 2023-02-06T10:37:50-08:00 **(Page 16 of 16)**

Calculation Description: Title 24 Analysis **Input File Name:** 0230053 Vogel Residence.ribd22x

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT

I, I certify that this Certificate of Compliance documentation is accurate and complete.

Documentation Author Name: Adam Bailey	Documentation Author Signature: Adam Bailey
Company: FRI Energy Consultants, LLC.	Signature Date: 2023-02-06 10:44:12
Address: 21 N. Harrison Ave,	CEA / HERS Certification Identification (if applicable):
City/State/Zip: Campbell, CA 95008	Phone: 408-866-1620

RESPONSIBLE PERSON'S DECLARATION STATEMENT

I certify the following under penalty of perjury, under the laws of the State of California:

1. I am eligible under Division 3 of the Business and Professions Code to accept responsibility for the building design identified on this Certificate of Compliance.
2. I certify that the energy features and performance specifications identified on this Certificate of Compliance conform to the requirements of Title 24, Part 1 and Part 6 of the California Code of Regulations.
3. The building design features or system design features identified on this Certificate of Compliance are consistent with the information provided on other applicable compliance documents, worksheets, calculations, plans and specifications submitted to the enforcement agency for approval with this building permit application.

Responsible Designer Name: Linda Hinkle	Responsible Designer Signature: Linda Hinkle
Company: Seshat Design	Date Signed: 2023-02-06 10:45:10
Address: 17545 Chesebro Lake Dr	License: N/A
City/State/Zip: Morgan Hill, CA 95030	Phone: 408-778-5454

Digitally signed by CalCERTS. This digital signature is provided in order to secure the content of this registered document, and in no way implies Registration Provider responsibility for the accuracy of the information.

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2022 Single-Family Residential Mandatory Requirements Summary

NOTE: Single-family residential buildings subject to the Energy Codes must comply with all applicable mandatory measures, regardless of the compliance approach used. Review the respective section for more information. (04/2022)

Building Envelope:

§ 110.6(a)1:	**Air Leakage.** Manufactured fenestration, exterior doors, and exterior pet doors must limit air leakage to 0.3 CFM per square foot or less when tested per NFRC-400, ASTM E283, or AAMA/WDMA/CSA 101/I.S.2/A440-2011. *
§ 110.6(a)5:	**Labeling.** Fenestration products and exterior doors must have a label meeting the requirements of § 10-111(a).
§ 110.6(b):	**Field fabricated exterior doors and fenestration** products must use U-factors and solar heat gain coefficient (SHGC) values from Tables 110.6-A, 110.6-B, or JA4.5 for exterior doors. They must be caulked and/or weather-stripped. *
§ 110.7:	**Air Leakage.** All joints, penetrations, and other openings in the building envelope that are potential sources of air leakage must be caulked, gasketed, or weather stripped.
§ 110.8(a):	**Insulation Certification by Manufacturers.** Insulation must be certified by the Department of Consumer Affairs, Bureau of Household Goods and Services (BHGS).
§ 110.8(g):	**Insulation Requirements for Heated Slab Floors.** Heated slab floors must be insulated per the requirements of § 110.8(g).
§ 110.8(i):	**Roofing Products Solar Reflectance and Thermal Emittance.** The thermal emittance and aged solar reflectance values of the roofing material must meet the requirements of § 110.8(i) and be labeled per §10-113 when the installation of a cool roof is specified on the CF1R.
§ 110.8(j):	**Radiant Barrier.** When required, radiant barriers must have an emittance of 0.05 or less and be certified to the Department of Consumer Affairs.
§ 150.0(a):	**Roof Deck, Ceiling and Rafter Roof Insulation.** Roof decks in newly constructed attics in climate zones 4 and 8-16 area-weighted average U-factor not exceeding U-0.184. Ceiling and rafter roofs minimum R-22 insulation in wood-frame ceiling; or area-weighted average U-factor must not exceed 0.043. Rafter roof alterations minimum R-19 or area-weighted average U-factor of 0.054 or less. Attic access doors must have permanently attached insulation using adhesive or mechanical fasteners. The attic access must be gasketed to prevent air leakage. Insulation must be installed in direct contact with a roof or ceiling which is sealed to limit infiltration and exfiltration , as specified in § 110.7, including but not limited to placing insulation either above or below the roof deck or on top of a drywall ceiling.
§ 150.0(b):	**Loose-fill Insulation.** Loose fill insulation must meet the manufacturer's required density for the labeled R-value.
§ 150.0(c):	**Wall Insulation.** Minimum R-13 insulation in 2x4 inch wood framing wall or have a U-factor of 0.102 or less, or R-20 in 2x6 inch wood framing or have a U-factor of 0.071 or less. Opaque non-framed assemblies must have an overall assembly U-factor not exceeding 0.102. Masonry walls must meet Tables 150.1-A or B. *
§ 150.0(d):	**Raised-floor Insulation.** Minimum R-19 insulation in raised wood framed floor or 0.037 maximum U-factor. *
§ 150.0(f):	**Slab Edge Insulation.** Slab edge insulation must meet all of the following: have a water absorption rate, for the insulation material alone without facings, no greater than 0.3 percent; have a water vapor permeance no greater than 2.0 perm per inch; be protected from physical damage and UV light deterioration; and, when installed as part of a heated slab floor, meet the requirements of § 110.8(g).
§ 150.0(g)1:	**Vapor Retarder.** In climate zones 1 through 16, the earth floor of unvented crawl space must be covered with a Class I or Class II vapor retarder. This requirement also applies to controlled ventilation crawl space for buildings complying with the exception to §150.0(d).
§ 150.0(g)2:	**Vapor Retarder.** In climate zones 14 and 16, a Class I or Class II vapor retarder must be installed on the conditioned space side of all insulation in all exterior walls, vented attics, and unvented attics with air-permeable insulation.
§ 150.0(q):	**Fenestration Products.** Fenestration, including skylights, separating conditioned space from unconditioned space or outdoors must have a maximum U-factor of 0.45; or area-weighted average U-factor of all fenestration must not exceed 0.45. *

Fireplaces, Decorative Gas Appliances, and Gas Log:

§ 110.5(e)	**Pilot Light.** Continuously burning pilot lights are not allowed for indoor and outdoor fireplaces.
§ 150.0(e)1:	**Closable Doors.** Masonry or factory-built fireplaces must have a closable metal or glass door covering the entire opening of the firebox.
§ 150.0(e)2:	**Combustion Intake.** Masonry or factory-built fireplaces must have a combustion outside air intake, which is at least six square inches in area and is equipped with a readily accessible, operable, and tight-fitting damper or combustion-air control device.
§ 150.0(e)3:	**Flue Damper.** Masonry or factory-built fireplaces must have a flue damper with a readily accessible control. *

Space Conditioning, Water Heating, and Plumbing System:

§ 110.0-§ 110.3:	**Certification.** Heating, ventilation, and air conditioning (HVAC) equipment, water heaters, showerheads, faucets, and all other regulated appliances must be certified by the manufacturer to the California Energy Commission.
§ 110.2(a):	**HVAC Efficiency.** Equipment must meet the applicable efficiency requirements in Table 110.2-A through Table 110.2-N. *
§ 110.2(b):	**Controls for Heat Pumps with Supplementary Electric Resistance Heaters.** Heat pumps with supplementary electric resistance heaters must have controls that prevent supplementary heater operation when the heating load can be met by the heat pump alone; and in which the cut-on temperature for compression heating is higher than the cut-on temperature for supplementary heating, and the cut-off temperature for compression heating is higher than the cut-off temperature for supplementary heating.
§ 110.2(c):	**Thermostats.** All heating or cooling systems not controlled by a central energy management control system (EMCS) must have a setback thermostat. *
§ 110.3(c)3:	**Insulation.** Unfired service water heater storage tanks and solar water-heating backup tanks must have adequate insulation, or tank surface heat loss rating.
§ 110.3(c)6:	**Isolation Valves.** Instantaneous water heaters with an input rating greater than 6.8 kBtu per hour (2 kW) must have isolation valves with hose bibbs or other fittings on both cold and hot water lines to allow for flushing the water heater when the valves are closed.

2022 Single-Family Residential Mandatory Requirements Summary

§ 110.5:	**Pilot Lights.** Continuously burning pilot lights are prohibited for natural gas: fan-type central furnaces; household cooking appliances (except appliances without an electrical supply voltage connection with pilot lights that consume less than 150 Btu per hour); and pool and spa heaters.
§ 150.0(h)1:	**Building Cooling and Heating Loads.** Heating and/or cooling loads are calculated in accordance with the ASHRAE Handbook, Equipment Volume, Applications Volume, and Fundamentals Volume; the SMACNA Residential Comfort System Installation Standards Manual; or the ACCA Manual J using design conditions specified in § 150.0(h)2.
§ 150.0(h)3A:	**Clearances.** Air conditioner and heat pump outdoor condensing units must have a clearance of at least five feet from the outlet of any dryer.
§ 150.0(h)3B:	**Liquid Line Drier.** Air conditioners and heat pump systems must be equipped with liquid line filter driers if required, as specified by the manufacturer's instructions.
§ 150.0(j)1:	**Water Piping, Solar Water-heating System Piping, and Space Conditioning System Line Insulation.** All domestic hot water piping must be insulated as specified in § 609.11 of the California Plumbing Code. *
§ 150.0(j)2:	**Insulation Protection.** Piping insulation must be protected from damage, including that due to sunlight, moisture, equipment' maintenance, and wind as required by §120.3(b). Insulation exposed to weather must be water retardant and protected from UV light (no adhesive tapes). Insulation covering chilled water piping and refrigerant suction piping located outside the conditioned space must include, or be protected by, a Class I or Class II vapor retarder. Pipe insulation buried below grade must be installed in a waterproof and non-crushable casing or sleeve.
§ 150.0(n)1:	**Gas or Propane Water Heating Systems.** Systems using gas or propane water heaters to serve individual dwelling units must designate a space at least 2.5' x 2.5' x 7' suitable for the future installation of a heat pump water heater, and meet electrical and plumbing requirements, based on the distance between this designated space and the water heater location; and a condensate drain no more than 2' higher than the base of the water heater
§ 150.0(n)3:	**Solar Water-heating Systems.** Solar water-heating systems and collectors must be certified and rated by the Solar Rating and Certification Corporation (SRCC), the International Association of Plumbing and Mechanical Officials, Research and Testing (IAPMO R&T), or by a listing agency that is approved by the executive director.

Ducts and Fans:

§ 110.8(d)3:	**Ducts.** Insulation installed on an existing space-conditioning duct must comply with § 604.0 of the California Mechanical Code (CMC). If a contractor installs the insulation, the contractor must certify to the customer, in writing, that the insulation meets this requirement.
§ 150.0(m)1:	**CMC Compliance.** All air-distribution system ducts and plenums must meet CMC §§ 601.0-605.0 and ANSI/SMACNA-006-2006 HVAC Duct Construction Standards Metal and Flexible 3rd Edition. Portions of supply-air and return-air ducts and plenums must be insulated to R-6.0 or higher; ducts located entirely in conditioned space as confirmed through field verification and diagnostic testing (RA3.1.4.3.8) do not require insulation. Connections of metal ducts and inner core of flexible ducts must be mechanically fastened. Openings must be sealed with mastic, tape, or other duct-closure system that meets the applicable UL requirements, or aerosol sealant that meets UL 723. The combination of mastic and either mesh or tape must be used to seal openings greater than ¼", If mastic or tape is used. Building cavities, air handler support platforms, and plenums designed or constructed with materials other than sealed sheet metal, duct board or flexible duct must not be used to convey conditioned air. Building cavities and support platforms may contain ducts; ducts installed in these spaces must not be compressed. *
§ 150.0(m)2:	**Factory-Fabricated Duct Systems.** Factory-fabricated duct systems must comply with applicable requirements for duct construction, connections, and closures; joints and seams of duct systems and their components must not be sealed with cloth back rubber adhesive duct tapes unless such tape is used in combination with mastic and draw bands.
§ 150.0(m)3:	**Field-Fabricated Duct Systems.** Field-fabricated duct systems must comply with applicable requirements for: pressure-sensitive tapes, mastics, sealants, and other requirements specified for duct construction.
§ 150.0(m)7:	**Backdraft Damper.** Fan systems that exchange air between the conditioned space and outdoors must have backdraft or automatic dampers.
§ 150.0(m)8:	**Gravity Ventilation Dampers.** Gravity ventilating systems serving conditioned space must have either automatic or readily accessible, manually operated dampers in all openings to the outside, except combustion inlet and outlet air openings and elevator shaft vents.
§ 150.0(m)9:	**Protection of Insulation.** Insulation must be protected from damage due tosunlight, moisture, equipment maintenance, and wind. Insulation exposed to weather must be suitable for outdoor service (e.g., protected by aluminum, sheet metal, painted canvas, or plastic cover). Cellular foam insulation must be protected as above or painted with a water retardant and solar radiation-resistant coating.
§ 150.0(m)10:	**Porous Inner Core Flex Duct.** Porous inner cores of flex ducts must have a non-porous layer or air barrier between the inner core and outer vapor barrier.
§ 150.0(m)11:	**Duct System Sealing and Leakage Test.** When space conditioning systems use forced air duct systems to supply conditioned air to an occupiable space, the ducts must be sealed and duct leakage tested, as confirmed through field verification and diagnostic testing, in accordance with Reference Residential Appendix RA3.1.
§ 150.0(m)12:	**Air Filtration.** Space conditioning systems with ducts exceeding 10 feet and the supply side of ventilation systems must have MERV 13 or equivalent filters. Filters for space conditioning systems must have a two inch depth or can be one inch if sized per Equation 150.0-A. Clean-filter pressure drop and labeling must meet the requirements in §150.0(m)12. Filters must be accessible for regular service. Filter racks or grilles must use gaskets, sealing, or other means to close gaps around the inserted filters to and prevents air from bypassing the filter. *

2022 Single-Family Residential Mandatory Requirements Summary

§ 150.0(m)13:	**Space Conditioning System Airflow Rate and Fan Efficacy.** Space conditioning systems that use ducts to supply cooling must have a hole for the placement of a static pressure probe, or a permanently installed static pressure probe in the supply plenum. Airflow must be ≥ 350 CFM per ton of nominal cooling capacity, and an air-handling unit fan efficacy ≤ 0.45 watts per CFM for gas furnace air handlers and ≤ 0.58 watts per CFM for all others. Small duct high velocity systems must provide an airflow ≥ 250 CFM per ton of nominal cooling capacity, and an air-handling unit fan efficacy ≤ 0.62 watts per CFM. Field verification testing is required in accordance with Reference Residential Appendix RA3.3. *

Ventilation and Indoor Air Quality:

§ 150.0(o)1:	**Requirements for Ventilation and Indoor Air Quality**. All dwelling units must meet the requirements of ASHRAE Standard 62.2, Ventilation and Acceptable Indoor Air Quality in Residential Buildings subject to the amendments specified in § 150.0(o)1. *
§ 150.0(o)1B:	**Central Fan Integrated (CFI) Ventilation Systems.** Continuous operation of CFI air handlers is not allowed to provide the whole-dwelling unit ventilation airflow required per §150.0(o)1C. A motorized damper(s) must be installed on the ventilation duct(s) that prevents all airflow through the space conditioning duct system when the damper(s) is closed andcontrolled per §150.0(o)1Biii&iv. CFI ventilation systems must have controls that track outdoor air ventilation run time, and either open or close the motorized damper(s) for compliance with §150.0(o)1C.
§ 150.0(o)1C:	**Whole-Dwelling Unit Mechanical Ventilation for Single-Family Detached and townhouses** . Single-family detached dwelling units, and attached dwelling units not sharing ceilings or floors with other dwelling units, occupiable spaces, public garages, or commercial spaces must have mechanical ventilation airflow specified in § 150.0(o)1Ci-iii.
§ 150.0(o)1G:	**Local Mechanical Exhaust.** Kitchens and bathrooms must have local mechanical exhaust; nonenclosed kitchens must have demand-controlled exhaust system meeting requirements of §150.0(o)1Gii.enclosed kitchens and bathrooms can use demand-controlled or continuous exhaust meeting §150.0(o)1Giii-iv. Airflow must be measured by the installer per §150.0(o)1Gv, and rated for sound per §150.0(o)1Gvi. *
§ 150.0(o)1H&I:	**Airflow Measurement and Sound Ratings of Whole-Dwelling Unit Ventilation Systems.** The airflow required per § 150.0(o)1C must be measured by using a flow hood, flow grid, or other airflow measuring device at the fan's inlet or outlet terminals/grilles per Reference Residential Appendix RA3.7. Whole-Dwelling unit ventilation systems must be rated for sound per ASHRAE 62.2 §7.2 at no less than the minimum airflow rate required by §150.0(o)1C.
§ 150.0(o)2:	**Field Verification and Diagnostic Testing.** Whole-Dwelling Unit ventilation airflow, vented range hood airflow and sound rating, and HRV and ERV fan efficacy must be verified in accordance with Reference Residential Appendix RA3.7. Vented range hoods must be verified per Reference Residential Appendix RA3.7.4.3 to confirm if it is rated by HVI or AHAM to comply with the airflow rates and sound requirements per §150.0(o)1G

Pool and Spa Systems and Equipment:

§ 110.4(a):	**Certification by Manufacturers.** Any pool or spa heating system or equipment must be certified to have all of the following: compliance with the Appliance Efficiency Regulations and listing in MAEDbS; an on-off switch mounted outside of the heater that allows shutting off the heater without adjusting the thermostat setting; a permanent weatherproof plate or card with operating instructions; and must not use electric resistance heating. *
§ 110.4(b)1:	**Piping.** Any pool or spa heating system or equipment must be installed with at least 36 inches of pipe between the filter and the heater, or dedicated suction and return lines, or built-in or built-up connections to allow for future solar heating.
§ 110.4(b)2:	**Covers.** Outdoor pools or spas that have a heat pump or gas heater must have a cover.
§ 110.4(b)3:	**Directional Inlets and Time Switches for Pools.** Pools must have directional inlets that adequately mix the pool water, and a time switch that will allow all pumps to be set or programmed to run only during off-peak electric demand periods.
§ 110.5:	**Pilot Light.** Natural gas pool and spa heaters must not have a continuously burning pilot light.
§ 150.0(p):	**Pool Systems and Equipment Installation.** Residential pool systems or equipment must meet the specified requirements for pump sizing, flow rate, piping, filters, and valves. *

Lighting:

§ 110.9:	**Lighting Controls and Components.** All lighting control devices and systems, ballasts, and luminaires must meet the applicable requirements of § 110.9. *
§ 150.0(k)1A:	**Luminaire Efficacy.** All installed luminaires must meet the requirements in Table 150.0-A, except lighting integral to exhaust fans, kitchen range hoods, bath vanity mirrors, and garage door openers; navigation lighting less than 5 watts; and lighting internal to drawers, cabinets, and linen closets with an efficacy of at least 45 lumens per watt.
§ 150.0(k)1B:	**Screw based luminaires.** Screw based luminaires must contain lamps that comply with Reference Joint Appendix JA8. *
§ 150.0(k)1C:	**Light Sources in Enclosed or Recessed Luminaires.** Lamps and other separable light sources that are not compliant with the JA8 elevated temperature requirements, including marking requirements, must not be installed in enclosed or recessed luminaires.
§ 150.0(k)1D:	**Recessed Downlight Luminaires in Ceilings.** Luminaires recessed into ceilings must not contain screw based sockets, must be airtight, and must be sealed with a gasket or caulk. California Electrical Code § 410.116 must also be met.
§ 150.0(k)1E:	**Blank Electrical Boxes.** The number of electrical boxes that are more than five feet above the finished floor and do not contain a luminaire or other device shall be no more than the number of bedrooms. These boxes must be served by a dimmer, vacancy sensor control, low voltage wiring, or fan speed control.
§ 150.0(k)1F:	**Lighting Integral to Exhaust Fans.** Lighting integral to exhaust fans (except when installed by the manufacturer in kitchen exhaust hoods) must meet the applicable requirements of § 150.0(k). *

2022 Single-Family Residential Mandatory Requirements Summary

§ 150.0(k)1G:	**Screw based luminaires.** Screw based luminaires must contain lamps that comply with Reference Joint Appendix JA8. *
§ 150.0(k)1H:	**Light Sources in Enclosed or Recessed Luminaires.** Lamps and other separable light sources that are not compliant with the JA8 elevated temperature requirements, including marking requirements, must not be installed in enclosed or recessed luminaires.
§ 150.0(k)1I:	**Light Sources in Drawers, Cabinets, and Linen Closets**. Light sources internal to drawers, cabinetry or linen closets are not required to comply with Table 150.0-A or be controlled by vacancy sensors provided that they are rated to consume no more than 5 watts of power, emit no more than 150 lumens, and are equipped with controls that automatically turn the lighting off when the drawer, cabinet or linen closet is closed.
§ 150.0(k)2A:	**Interior Switches and Controls.** All forward phase cut dirmmers used with LED light sources must comply with NEMA SSL 7A.
§ 150.0(k)2B:	**Interior Switches and Controls.** Exhaust fans must be controlled separately from lighting systems. *
§ 150.0(k)2A:	**Accessible Controls.** Lighting must have readily accessibe wall-mounted controls that allow the lighting to be manually turned on and off. *
§ 150.0(k)2B:	**Multiple Controls.** Controls must not bypass a dimmer, occupant sensor, or vacancy sensor function if the dimmer or sensor is installed to comply with § 150.0(k).
§ 150.0(k)2C:	**Mandatory Requirements.** Lighting controls must comply with the applicable requirements of § 110.9.
§ 150.0(k)2D:	**Energy Management Control Systems.** An energy management control system (EMCS) may be used to comply with dimming, occupancy, and control requirements if it provides the functionality of the specified control per § 110.9 and the physical controls specified in § 150.0(k)2A.
§ 150.0(k)2E:	**Automatic Shutoff Controls.** In bathrooms, garages, laundry rooms, utility rooms and walk-in closets, at least one installed luminaire must be controlled by an occupancy or vacancy sensor providing automatic-off functionality. Lighting inside drawers and cabinets with opaque fronts or doors must have controls that turn the light off when the drawer or door is closed.
§ 150.0(k)2F:	**Dimmers.** Lighting in habitable spaces (e.g., living rooms, dining rooms, kitchens, and bedrooms) must have readily accessible wall-mounted dimming controls that allow the lighting to be manually adjusted up and down. Forward phase cut dimmers controlling LED light sources in these spaces must comply with NEMA SSL 7A.
§ 150.0(k)2K:	**Independent controls.** Integrated lighting of exhaust fans shall be controlled independently from the fans. Lighting under cabinets or shelves, lighting in display cabinets, and switched outlets must be controlled separately from ceiling-installed lighting.
§ 150.0(k)3A:	**Residential Outdoor Lighting.** For single-family residential buildings, outdoor lighting permanently mounted to a residential building, or to other buildings on the same lot, must have a manual on/off switch and either a photocell and motion sensor or automatic time switch control) or an astronomical time clock. An energy management control system that provides the specified control functionality and meets all applicable requirements may be used to meet these requirements.
§ 150.0(k)4:	**Internally illuminated address signs.** Internally illuminated address signs must either comply with § 140.8 or consume no more than 5 watts of power.
§ 150.0(k)5:	**Residential Garages for Eight or More Vehicles.** Lighting for residential parking garages for eight or more vehicles must comply with the applicable requirements for nonresidential garages in §§ 110.9, 130.0, 130.1, 130.4, 140.6, and 141.0.

Solar Readiness:

§ 110.10(a)1:	**Single-family Residences.** Single-family residences located in subdivisions with 10 or more single-family residences and where the application for a tentative subdivision map for the residences has been deemed complete and approved by the enforcement agency, which do not have a photovoltaic system installed, must comply with the requirements of § 110.10(b)-(e).
§110.10(b)1A:	**Minimum Solar Zone Area.** The solar zone must have a minimum total area as described below. The solar zone must comply with access, pathway, smoke ventilation, and spacing requirements as specified in Title 24, Part 9 or other parts of Title 24 or in any requirements adopted by a local jurisdiction. The solar zone total area must be comprised of areas that have no dimension less than 5 feet and are no less than 80 square feet each for buildings with roof areas less than or equal to 10,000 square feet or no less than 160 square feet each for buildings with roof areas greater than 10,000 square feet. For single-family residences, the solar zone must be located on the roof or overhang of the building and have a total area no less than 250 square feet. *
§ 110.10(b)2:	**Azimuth.** All sections of the solar zone located on steep-sloped roofs must have an azimuth between 90-300° of true north.
§ 110.10(b)3A:	**Shading.** The solar zone must not contain any obstructions, including but not limited to: vents, chimneys, architectural features, and roof mounted equipment.
§ 110.10(b)3B:	**Shading.** Any obstruction located on the roof or any other part of the building that projects above a solar zone must be located at least twice the horizontal distance of the height difference between the highes point of the obstruction and the horizontal projection of the nearest point of the solar zone, measured in the vertical plane. *
§ 110.10(b)4:	**Structural Design Loads on Construction Documents.** For areas of the roof designated as a solar zone, the structural design loads for roof dead load and roof live load must be clearly indicated on the construction documents.
§ 110.10(c):	**Interconnection Pathways.** The construction documents must indicate: a location reserved for inverters and metering equipment and a pathway reserved for routing of conduit from the solar zone to the point of interconnection with the electrical service; and for single-family residences and central water heating systems, a pathway reserved for routing plumbing from the solar zone to the water-heating system.
§ 110.10(d):	**Documentation.** A copy of the construction documents or a comparable document indicating the information from § 110.10(b)-(c) must be provided to the occupant.
§ 110.10(e)1:	**Main Electrical Service Panel.** The main electrical service panel must have a minimum busbar rating of 200 amps.
§ 110.10(e)2:	**Main Electrical Service Panel.** The main electrical service panel must have a reserved space to allow for the installation of a double pole circuit breaker for a future solar electric installation. The reserved space must be permanently marked as "For Future Solar Electric."

Electric and Energy Storage Ready:

FRI Energy Consultants, LLC
21 N. Harrison Avenue, Suite 210
Campbell, Ca. 95008
Phone: 408-866-1620 Fax: 408-866-6832

T24-2

GENERAL INFORMATION

01	Project Name	Vogel ADU			
02	Run Title	Title 24 Analysis			
03	Project Location	15990 Flintlock Rd			
04	City	Cupertino	05	Standards Version	2022
06	Zip code	95014	07	Software Version	EnergyPro 9.0
08	Climate Zone	4	09	Front Orientation (deg/ Cardinal)	90
10	Building Type	Single family	11	Number of Dwelling Units	1
12	Project Scope	Newly Constructed	13	Number of Bedrooms	1
14	Addition Cond. Floor Area (ft²)	0	15	Number of Stories	1
16	Existing Cond. Floor Area (ft²)	n/a	17	Fenestration Average U-factor	0.32
18	Total Cond. Floor Area (ft²)	594	19	Glazing Percentage (%)	26.90%
20	ADU Bedroom Count	n/a			

COMPLIANCE RESULTS

01	Building Complies with Computer Performance
02	This building incorporates features that require field testing and/or verification by a certified HERS rater under the supervision of a CEC-approved HERS provider.
03	This building incorporates one or more Special Features shown below

ENERGY DESIGN RATINGS

	Energy Design Ratings			Compliance Margins		
	Source Energy (EDR1)	Efficiency[1] EDR (EDR2efficiency)	Total[2] EDR (EDR2total)	Source Energy (EDR1)	Efficiency[1] EDR (EDR2efficiency)	Total[2] EDR (EDR2total)
Standard Design	41.5	40.5	55.6			
Proposed Design	41.1	39.7	55	0.4	0.8	0.6

RESULT[3]: PASS

[1]Efficiency EDR includes improvements like a better building envelope and more efficient equipment
[2]Total EDR includes efficiency and demand response measures such as photovoltaic (PV) system and batteries
[3]Building complies when source energy, efficiency and total compliance margins are greater than or equal to zero and unmet load hour limits are not exceeded

- Standard Design PV Capacity: 0.00 kWdc
- PV System(s) removed due to Reduced PV Requirement @ kWdc

ENERGY USE SUMMARY

Energy Use	Standard Design Source Energy (EDR1) (kBtu/ft²-yr)	Standard Design TDV Energy (EDR2) (kTDV/ft²-yr)	Proposed Design Source Energy (EDR1) (kBtu/ft²-yr)	Proposed Design TDV Energy (EDR2) (kTDV/ft²-yr)	Compliance Margin (EDR1)	Compliance Margin (EDR2)
Space Heating	1.9	8.36	3.29	25.95	-1.39	-17.59
Space Cooling	0.73	28.05	0.29	18.53	0.44	9.52
IAQ Ventilation	0.42	4.5	0.42	4.5	0	0
Water Heating	3.35	36	2.27	26.37	1.08	9.63
Self Utilization/Flexibility Credit				0		0
Efficiency Compliance Total	6.4	76.91	6.27	75.35	0.13	1.56
Photovoltaics	0	0	0	0		
Battery			0	0		
Flexibility						
Indoor Lighting	1.07	10.5	1.07	10.5		
Appl. & Cooking	7.99	52.68	7.93	52.04		
Plug Loads	6.05	62.97	6.05	62.97		
Outdoor Lighting	0.22	1.97	0.22	1.97		
TOTAL COMPLIANCE	21.73	205.03	21.54	202.83		

ENERGY USE INTENSITY

	Standard Design (kBtu/ft² - yr)	Proposed Design (kBtu/ft² - yr)	Compliance Margin (kBtu/ft² - yr)	Margin Percentage
Gross EUI[1]	27.44	26.41	1.03	3.75
Net EUI[2]	27.44	26.41	1.03	3.75

Notes
1. Gross EUI is Energy Use Total (not including PV) / Total Building Area.
2. Net EUI is Energy Use Total (including PV) / Total Building Area.

REQUIRED PV SYSTEMS

01	02	03	04	05	06	07	08	09	10	11	12
DC System Size (kWdc)	Exception	Module Type	Array Type	Power Electronics	CFI	Azimuth (deg)	Tilt Input	Array Angle (deg)	Tilt: (x in 12)	Inverter Eff. (%)	Annual Solar Access (%)
0		Standard (16-17%)	Fixed	none	true	n/a	n/a	n/a	n/a	n/a	

REQUIRED SPECIAL FEATURES

The following are features that must be installed as condition for meeting the modeled energy performance for this computer analysis.

- PV exception 2: No PV required when minimum PV size (Section 150.1(c)14) < 1.8 kWdc (0 kW)
- Variable capacity heat pump compliance option (verification details from VCHP Staff report, Appendix B, and RA3)
- Northwest Energy Efficiency Alliance (NEEA) rated heat pump water heater; specific brand/model, or equivalent, must be installed

HERS FEATURE SUMMARY

The following is a summary of the features that must be field-verified by a certified HERS Rater as a condition for meeting the modeled energy performance for this computer analysis. Additional detail is provided in the building tables below. Registered CF2Rs and CF3Rs are required to be completed in the HERS Registry

- Indoor air quality ventilation
- Kitchen range hood
- Verified Refrigerant Charge
- Airflow in habitable rooms (SC3.1.4.1.7)
- Verified heat pump rated heating capacity
- Wall-mounted thermostat in zones greater than 150 ft2 (SC3.4.5)
- Ductless indoor units located entirely in conditioned space (SC3.1.4.1.8)

BUILDING - FEATURES INFORMATION

01	02	03	04	05	06	07
Project Name	Conditioned Floor Area (ft²)	Number of Dwelling Units	Number of Bedrooms	Number of Zones	Number of Ventilation Cooling Systems	Number of Water Heating Systems
Vogel ADU	594	1	1	1	0	1

ZONE INFORMATION

01	02	03	04	05	06	07
Zone Name	Zone Type	HVAC System Name	Zone Floor Area (ft²)	Avg. Ceiling Height	Water Heating System 1	Status
ADU	Conditioned	HVAC System1	594	9	DHW Sys 1	New

OPAQUE SURFACES

01	02	03	04	05	06	07	08
Name	Zone	Construction	Azimuth	Orientation	Gross Area (ft²)	Window and Door Area (ft2)	Tilt (deg)
Right Wall	ADU	R-19 Wall	0	Right	243	40	90
Left Wall	ADU	R-19 Wall	180	Left	198	48	90
Rear Wall	ADU	R-19 Wall	270	Back	243	0	90
Right Wall 2	ADU	R-19 Wall	0	Right	198	72	90

OPAQUE SURFACES - CATHEDRAL CEILINGS

01	02	03	04	05	06	07	08	09	10	11
Name	Zone	Construction	Azimuth	Orientation	Area (ft²)	Skylight Area (ft²)	Roof Rise (x in 12)	Roof Reflectance	Roof Emittance	Cool Roof
New Flat Roof	ADU	R-30 Roof No Attic	0	Right	594	0	0.25	0.1	0.85	No

FENESTRATION / GLAZING

01	02	03	04	05	06	07	08	09	10	11	12	13	14
Name	Type	Surface	Orientation	Azimuth	Width (ft)	Height (ft)	Mult.	Area (ft²)	U-factor	U-factor Source	SHGC	SHGC Source	Exterior Shading
Door	Window	Right Wall	Right	0			1	40	0.32	NFRC	0.25	NFRC	Bug Screen
Window	Window	Left Wall	Left	180			1	24	0.32	NFRC	0.25	NFRC	Bug Screen
Window 2	Window	Left Wall	Left	180			1	24	0.32	NFRC	0.25	NFRC	Bug Screen
Window 3	Window	Right Wall 2	Right	0			1	24	0.32	NFRC	0.25	NFRC	Bug Screen
Window 4	Window	Right Wall 2	Right	0			1	24	0.32	NFRC	0.25	NFRC	Bug Screen
Window 5	Window	Right Wall 2	Right	0			1	24	0.32	NFRC	0.25	NFRC	Bug Screen

SLAB FLOORS

01	02	03	04	05	06	07	08
Name	Zone	Area (ft²)	Perimeter (ft)	Edge Insul. R-value and Depth	Edge Insul. R-value and Depth	Carpeted Fraction	Heated
Slab-on-Grade	ADU	594	98	none	0	80%	No

OPAQUE SURFACE CONSTRUCTIONS

01	02	03	04	05	06	07	08
Construction Name	Surface Type	Construction Type	Framing	Total Cavity R-value	Interior / Exterior Continuous R-value	U-factor	Assembly Layers
R-19 Wall	Exterior Walls	Wood Framed Wall	2x6 @ 16 in. O. C.	R-19	None / None	0.074	Inside Finish: Gypsum Board Cavity / Frame: R-19 in 5-1/2 in. (R-18) / 2x6 Exterior Finish: 3 Coat Stucco

OPAQUE SURFACE CONSTRUCTIONS

01	02	03	04	05	06	07	08
Construction Name	Surface Type	Construction Type	Framing	Total Cavity R-value	Interior / Exterior Continuous R-value	U-factor	Assembly Layers
R-30 Roof No Attic	Cathedral Ceilings	Wood Framed Ceiling	2x10 @ 16 in. O. C.	R-30	None / None	0.037	Roofing: Light Roof (Asphalt Shingle) Roof Deck: Wood Siding/sheathing/decking Cavity / Frame: R-30 / 2x10 Inside Finish: Gypsum Board

BUILDING ENVELOPE - HERS VERIFICATION

01	02	03	04	05
Quality Insulation Installation (QII)	High R-value Spray Foam Insulation	Building Envelope Air Leakage	CFM50	CFM50
Not Required	Not Required	N/A	n/a	n/a

WATER HEATING SYSTEMS

01	02	03	04	05	06	07	08	09
Name	System Type	Distribution Type	Water Heater Name	Number of Units	Solar Heating System	Compact Distribution	HERS Verification	Water Heater Name (#)
DHW Sys 1	Domestic Hot Water (DHW)	Standard	DHW Heater 1	1	n/a	None	n/a	DHW Heater 1 (1)

WATER HEATERS - NEEA HEAT PUMP

01	02	03	04	05	06	07	08
Name	# of Units	Tank Vol. (gal)	NEEA Heat Pump Brand	NEEA Heat Pump Model	Tank Location	Duct Inlet Air Source	Duct Outlet Air Source
DHW Heater 1	1	40	Rheem	RheemPROPH40T2R H3755O	Outside	ADU	ADU

WATER HEATING - HERS VERIFICATION

01	02	03	04	05	06	07	08
Name	Pipe Insulation	Parallel Piping	Compact Distribution	Compact Distribution Type	Recirculation Control	Shower Drain Water Heat Recovery	
DHW Sys 1 - 1/1	Not Required	Not Required	Not Required	None	Not Required	Not Required	

SPACE CONDITIONING SYSTEMS

01	02	03	04	05	06	07	08	09
Name	System Type	Heating Unit Name	Heating Equipment Count	Cooling Unit Name	Cooling Equipment Count	Fan Name	Distribution Name	Required Thermostat Type
HVAC System1	Heat pump heating cooling	Heat Pump System 1	1	Heat Pump System 1	1	n/a	n/a	Setback

HVAC - HEAT PUMPS

01	02	03	04	05	06	07	08	09	10	11	12	13
Name	System Type	Number of Units	Heating			Cooling			Zonally Controlled	Compressor Type	HERS Verification	
			Efficiency Type	HSPF / HSPF2 / COP	Cap 47	Cap 17	Efficiency Type	SEER / SEER2	EER / EER / CEER			
Heat Pump System 1	VCHP-ductless	1	HSPF	8.2	12000	9360	EERSEER	14	11.7	Not Zonal	Single Speed	Heat Pump System 1-hers-Hpump

HVAC HEAT PUMPS - HERS VERIFICATION

01	02	03	04	05	06	07	08	09
Name	Verified Airflow	Airflow Target	Verified EER/EER2	Verified SEER/SEER2	Verified Refrigerant Charge	Verified HSPF/HSPF2	Verified Heating Cap 47	Verified Heating Cap 17
Heat Pump System 1-hers-Hpump	Not Required	0	Not Required	Not Required	Yes	No	Yes	Yes

VARIABLE CAPACITY HEAT PUMP COMPLIANCE OPTION - HERS VERIFICATION

01	02	03	04	05	06	07	08	09	10
Name	Certified Low-Static VCHP System	Airflow to Habitable Rooms	Ductless Units in Conditioned Space	Wall Mount Thermostat	Air Filter Sizing & Pressure Drop Rating	Low Leakage Ducts in Conditioned Space	Minimum Airflow per RA3.3 and SC3.3.4.1	Certified non-continuous Fan	Indoor Fan not Running Continuously
Heat Pump System 1	Not required	Required	Required	Required	Not required	Not required	Not required	Not required	Not required

INDOOR AIR QUALITY (IAQ) FANS

01	02	03	04	05	06	07	08	09
Dwelling Unit	Airflow (CFM)	Fan Efficacy (W/CFM)	IAQ Fan Type	Includes Heat/Energy Recovery?	IAQ Recovery Effectiveness - SRE	Includes Fault Indicator Display?	HERS Verification	Status
SFam IAQVentRpt	32	0.35	Exhaust	No	n/a	No	Yes	

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT

I, I certify that this Certificate of Compliance documentation is accurate and complete.

Documentation Author Name: Adam Bailey	Documentation Author Signature: Adam Bailey
Company: FRI Energy Consultants, LLC.	Signature Date: 2023-02-06 10:56:00
Address: 21 N. Harrison Ave,	CEA/ HERS Certification Identification (If applicable):
City/State/Zip: Campbell, CA 95008	Phone: 408-866-1620

RESPONSIBLE PERSON'S DECLARATION STATEMENT

I certify the following under penalty of perjury, under the laws of the State of California:
1. I am eligible under Division 3 of the Business and Professions Code to accept responsibility for the building design identified on this Certificate of Compliance.
2. I certify that the energy features and performance specifications identified on this Certificate of Compliance conform to the requirements of Title 24, Part 1 and Part 6 of the California Code of Regulations.
3. The building design features or system design features identified on this Certificate of Compliance are consistent with the information provided on other applicable compliance documents, worksheets, calculations, plans and specifications submitted to the enforcement agency for approval with this building permit application.

Responsible Designer Name: Linda Hinkle	Responsible Designer Signature: Linda Hinkle
Company: Seshat Design	Date Signed: 2023-02-06 10:56:38
Address: 17545 Chsesbro Lake Dr	License: N/A
City/State/Zip: Morgan Hill, CA 95030	Phone: 408-778-5454

Digitally signed by CalCERTS. This digital signature is provided in order to secure the content of this registered document, and in no way implies Registration Provider responsibility for the accuracy of the information.

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VOGEL ADU
15990 FLINTLOCK RD
CUPERTINO, CA 95014

T24-4

2022 Single-Family Residential Mandatory Requirements Summary

NOTE: Single-family residential buildings subject to the Energy Codes must comply with all applicable mandatory measures, regardless of the compliance approach used. Review the respective section for more information.
(04/2022)

Building Envelope:

§ 110.6(a)1:	**Air Leakage.** Manufactured fenestration, exterior doors, and exterior pet doors must limit air leakage to 0.3 CFM per square foot or as when tested per NFRC 400, ASTM E283,or AAMA/WDMA/CSA 101/I.S.2/A440-2011. *
§ 110.6(a)5:	**Labeling.** Fenestration products and exterior doors must have a label meeting the requirements of § 10-111(a).
§ 110.6(b):	**Field fabricated exterior doors and fenestration** products must use U-factors and solar heat gain coefficient (SHGC) values from Tables 110.6-A, 110.6-B, or JA4.5 for exterior doors. They must be caulked and/or weather-stripped.
§ 110.7:	**Air Leakage.** All joints, penetrations, and other openings ir the building envelope that are potential sources of air leakage must be caulked, gasketed, or weather stripped.
§ 110.8(a):	**Insulation Certification by Manufacturers.** Insulation must be certified by the Department of Consumer Affairs, Bureau of Household Goods and Services (BHGS).
§ 110.8(g):	**Insulation Requirements for Heated Slab Floors.** Heated slab floors must be insulated per the requirements of § 110.8(g).
§ 110.8(i):	**Roofing Products Solar Reflectance and Thermal Emittance.** The thermal emittance and aged solar reflectance values of the roofing material must meet the requirements of § 110.8(i) and be labeled per §10-113 when the installation of a cool roof is specified on the CF1R.
§ 110.8(j):	**Radiant Barrier.** When required, radiant barriers must have an emittance of 0.05 or less and be certified to the Department of Consumer Affairs.
§ 150.0(a):	**Roof Deck, Ceiling and Rafter Roof Insulation.** Roof decks in newly constructed attics in climate zones 4 and 8-16 area-weighted average U-factor not exceeding U-0.184. Ceiling and rafter roofs minimum R-22 insulation in wood-frame ceiling; or area-weighted average U-factor must not exceed 0.043. Rafter roof alterations minimum R-19 or area-weighted average U-factor of 0.054 or less. Attic access doors must have permanently attached insulation using adhesive or mechanical fasteners. The attic access must be gasketed to prevent air leakage. Insulation must be installed in direct contact with a roof or ceiling which is sealed to limit infiltration and exfiltration, as specified in § 110.7, including but not limited to placing insulation either above or below the roof deck or on top of a drywall ceiling. *
§ 150.0(b):	**Loose-fill Insulation.** Loose fill insulation must meet the manufacturer's required density for the labeled R-value.
§ 150.0(c):	**Wall Insulation.** Minimum R-13 insulation in 2x4 inch wood framing wall or have a U-factor of 0.102 or less, or R-20 in 2x6 inch wood framing or have a U-factor of 0.071 or less. Opaque non-framed assemblies must have an overall assembly U-factor not exceeding 0.102. Masonry walls must meet Tables 150.1-A or B. *
§ 150.0(d):	**Raised-floor Insulation.** Minimum R-19 insulation in raised wood framed floor or 0.037 maximum U-factor. *
§ 150.0(f):	**Slab Edge Insulation.** Slab edge insulation must meet all of the following: have a water absorption rate, for the insulation material alone without facings, no greater than 0.3 percent; have a water vapor permeance no greater than 2.0 perm per inch; be protected from physical damage and UV light deterioration; and, when installed as part of a heated slab floor, meet the requirements of § 110.8(g).
§ 150.0(g)1:	**Vapor Retarder.** In climate zones 1 through 16, the earth floor of unvented crawl space must be covered with a Class I or Class II vapor retarder. This requirement also applies to controlled ventilation crawl space for buildings complying with the exception to §150.0(d).
§ 150.0(g)2:	**Vapor Retarder.** In climate zones 14 and 16, a Class I or Class II vapor retarder must be installed on the conditioned space side of all insulation in all exterior walls, vented attics, and unvented attics with air-permeable insulation.
§ 150.0(q):	**Fenestration Products.** Fenestration, including skylights, separating conditioned space from unconditioned space or outdoors must have a maximum U-factor of 0.45; or area-weighted average U-factor of all fenestration must not exceed 0.45.

Fireplaces, Decorative Gas Appliances, and Gas Log:

§ 110.5(e)	**Pilot Light.** Continuously burning pilot lights are not allowed for indoor and outdoor fireplaces.
§ 150.0(e)1:	**Closable Doors.** Masonry or factory-built fireplaces must have a closable metal or glass door covering the entire opening of the firebox.
§ 150.0(e)2:	**Combustion Intake.** Masonry or factory-built fireplaces must have a combustion outside air intake, which is at least six square inches in area and is equipped with a readily accessible, operable, and tight-fitting damper or combustion-air control device.
§ 150.0(e)3:	**Flue Damper.** Masonry or factory-built fireplaces must have a flue damper with a readily accessible control. *

Space Conditioning, Water Heating, and Plumbing System:

§ 110.0-§ 110.3:	**Certification.** Heating, ventilation, and air conditioning (HVAC) equipment, water heaters, showerheads, faucets, and all other regulated appliances must be certified by the manufacturer to the California Energy Commission.
§ 110.2(a):	**HVAC Efficiency.** Equipment must meet the applicable efficiency requirements in Table 110.2-A through Table 110.2-N. *
§ 110.2(b):	**Controls for Heat Pumps with Supplementary Electric Resistance Heaters.** Heat pumps with supplementary electric resistance heaters must have controls that prevent supplementary heater operation when the heating load can be met by the heat pump alone; and in which the cut-on temperature for compression heating is higher than the cut-on temperature for supplementary heating, and the cut-off temperature for compression heating is higher than the cut-off temperature for supplementary heating.
§ 110.2(c):	**Thermostats.** All heating or cooling systems not controlled by a central energy management control system (EMCS) must have a setback thermostat. *
§ 110.3(c)3:	**Insulation.** Unfired service water heater storage tanks and solar water-heating backup tanks must have adequate insulation, or tank surface heat loss rating.
§ 110.3(c)6:	**Isolation Valves.** Instantaneous water heaters with an input rating greater than 6.8 kBtu per hour (2 kW) must have isolation valves with hose bibbs or other fittings on both cold and hot water lines to allow for flushing the water heater when the valves are closed.

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§ 110.5:	**Pilot Lights.** Continuously burning pilot lights are prohibited for natural gas: fan-type central furnaces; household cooking appliances (except appliances without an electrical supply voltage connection with pilot lights that consume less than 150 Btu per hour); and pool and spa heaters. *
§ 150.0(h)1:	**Building Cooling and Heating Loads.** Heating and/or cooling loads are calculated in accordance with the ASHRAE Handbook, Equipment Volume, Applications Volume, and Fundamentals Volume; the SMACNA Residential Comfort System Installation Standards Manual; or the ACCA Manual J using design conditions specified in § 150.0(h)2.
§ 150.0(h)3A:	**Clearances.** Air conditioner and heat pump outdoor condensing units must have a clearance of at least five feet from the outlet of any dryer.
§ 150.0(h)3B:	**Liquid Line Drier.** Air conditioners and heat pump systems must be equipped with liquid line filter driers if required, as specified by the manufacturer's instructions.
§ 150.0(j)1:	**Water Piping, Solar Water-heating System Piping, and Space Conditioning System Line Insulation.** All domestic hot water piping must be insulated as specified in § 609.11 of the California Plumbing Code. *
§ 150.0(j)2:	**Insulation Protection.** Piping insulation must be protectec from damage, including that due to sunlight, moisture, equipment` maintenance, and wind as required by §120.3(b). Insulation exposed to weather must be water retardant and protected from UV light (no adhesive tapes). Insulation covering chilled water piping and refrigerant suction piping located outside the conditioned space must include, or be protected by, a Class I or Class II vapor retarder. Pipe insulation buried below grade must be installed in a waterproof and non-crushable casing or sleeve.
§ 150.0(n)1:	**Gas or Propane Water Heating Systems.** Systems using gas or propane water heaters to serve individual dwelling units must designate a space at least 2.5' x 2.5' x 7' suitable for the future installation of a heat pump water heater, and meet electrical and plumbing requirements, based on the distance between this designated space and the water heater location; and a condensate drain no more than 2' higher than the base of the water heater.
§ 150.0(n)3:	**Solar Water-heating Systems.** Solar water-heating systems and collectors must be certified and rated by the Solar Rating and Certification Corporation (SRCC), the International Association of Plumbing and Mechanical Officials, Research and Testing (IAPMO R&T), or by a listing agency that is approved by the executive director.

Ducts and Fans:

§ 110.8(d)3:	**Ducts.** Insulation installed on an existing space-conditioning duct must comply with § 604.0 of the California Mechanical Code (CMC). If a contractor installs the insulation, the contractor must certify to the customer, in writing, that the insulation meets this requirement.
§ 150.0(m)1:	**CMC Compliance.** All air-distribution system ducts and plenums must meet CMC §§ 601.0-605.0 and ANSI/SMACNA-006-2006 HVAC Duct Construction Standards Metal and Flexible 3rd Edition. Portions of supply-air and return-air ducts and plenums must be insulated to R-6.0 or higher; ducts located entirely in conditioned space as confirmed through field verification and diagnostic testing (RA3.1.4.3.8) do not require insulation. Connections of metal ducts and inner core of flexible ducts must be mechanically fastened. Openings must be sealed with mastic, tape, or other duct-closure system that meets the applicable UL requirements, or aerosol sealant that meets UL 723. The combination of mastic and either mesh or tape must be used to seal openings greater than ¼", If mastic or tape is used. Building cavities, air handler support platforms, and plenums designed or constructed with materials other than sealed sheet metal, duct board or flexible duct must not be used to convey conditioned air. Building cavities and support platforms may contain ducts; ducts installed in these spaces must not be compressed.
§ 150.0(m)2:	**Factory-Fabricated Duct Systems.** Factory-fabricated duct systems must comply with applicable requirements for duct construction, connections, and closures; joints and seams of duct systems and their components must not be sealed with cloth back rubber adhesive duct tapes unless such tape is used in combination with mastic and draw bands.
§ 150.0(m)3:	**Field-Fabricated Duct Systems.** Field-fabricated duct systems must comply with applicable requirements for: pressure-sensitive tapes, mastics, sealants, and other requirements specified for duct construction.
§ 150.0(m)7:	**Backdraft Damper.** Fan systems that exchange air between the conditioned space and outdoors must have backdraft or automatic dampers.
§ 150.0(m)8:	**Gravity Ventilation Dampers.** Gravity ventilating systems serving conditioned space must have either automatic or readily accessible, manually operated dampers in all openings to the outside, except combustion inlet and outlet air openings and elevator shaft vents.
§ 150.0(m)9:	**Protection of Insulation.** Insulation must be protected from damage due tosunlight, moisture, equipment maintenance, and wind. Insulation exposed to weather must be suitable for outdoor service (e.g., protected by aluminum, sheet metal, painted canvas, or plastic cover). Cellular foam insulation must be protected as above or painted with a water retardant and solar radiation-resistant coating.
§ 150.0(m)10:	**Porous Inner Core Flex Duct.** Porous inner cores of flex cucts must have a non-porous layer or air barrier between the inner core and outer vapor barrier.
§ 150.0(m)11:	**Duct System Sealing and Leakage Test.** When space conditioning systems use forced air duct systems to supply conditioned air to an occupiable space, the ducts must be sealed and duct leakage tested, as confirmed through field verification and diagnostic testing, in accordance with Reference Residential Appendix RA3.1.
§ 150.0(m)12:	**Air Filtration.** Space conditioning systems with ducts exceeding 10 feet and the supply side of ventilation systems must have MERV 13 or equivalent filters. Filters for space conditioning systems must have a two inch depth or can be one inch if sized per Equation 150.0-A. Clean-filter pressure drop and labeling must meet the requirements in §150.0(m)12. Filters must be accessible for regular service. Filter racks or grilles must use gaskets, sealing, or other means o close gaps around the inserted filters to and prevents air from bypassing the filter. *

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§ 150.0(m)13:	**Space Conditioning System Airflow Rate and Fan Efficacy.** Space conditioning systems that use ducts to supply cooling must have a hole for the placement of a static pressure probe, or a permanently installed static pressure probe in the supply plenum. Airflow must be ≥ 350 CFM per ton of nominal cooling capacity, and an air-handling unit fan efficacy ≤ 0.45 watts per CFM for gas furnace air handlers and ≤ 0.58 watts per CFM for all others. Small duct high velocity systems must provide an airflow ≥ 250 CFM per ton of nominal cooling capacity, and an air-handling unit fan efficacy ≤ 0.62 watts per CFM. Field verification testing is required in accordance with Reference Residential Appendix RA3.3. *

Ventilation and Indoor Air Quality:

§ 150.0(o)1:	**Requirements for Ventilation and Indoor Air Quality**. All dwelling units must meet the requirements of ASHRAE Standard 62.2, Ventilation and Acceptable Indoor Air Quality in Residentia Buildings subject to the amendments specified in § 150.0(o)1. *
§ 150.0(o)1B:	**Central Fan Integrated (CFI) Ventilation Systems.** Continuous operation of CFI air handlers is not allowed to provide the whole-dwelling unit ventilation airflow required per §150.0(o)1C. A motorized damper(s) must be installed on the ventilation duct(s) that prevents all airflow through the space conditioning duct system when the damper(s) is closed andcontrolled per §150.0(o)1BiiBiiiv. CFI ventilation systems must have controls that track outdoor air ventilation run time, and either open or close the motorized damper(s) for compliance with §150.0(o)1C.
§ 150.0(o)1C:	**Whole-Dwelling Unit Mechanical Ventilation for Single-Family Detached and townhouses** . Single-family detached dwelling units, and attached dwelling units not sharing ceilings or floors with other dwelling units, occupiable spaces, public garages, or commercial spaces must have mechanical ventilation airflow specified n § 150.0(o)1Ci-iii.
§ 150.0(o)1G:	**Local Mechanical Exhaust.** Kitchens and bathrooms must have local mechanical exhaust; nonconnected kitchens must have demand-controlled exhaust system meeting requirements of §150.0(o)1GiiiEnclosed kitchens and bathrooms can use demand-controlled or continuous exhaust meeting §150.0(o)1GiiI-iv. Airflow must be measured by the installer per §150.0(o)1Gv, and rated for sound per §150.0(o)1Gvi. *
§ 150.0(o)1H&I:	**Airflow Measurement and Sound Ratings of Whole-Dwelling Unit Ventilation Systems.** The airflow required per § 150.0(o)1C must be measured by using a flow hood, flow grid, or other airflow measuring device at the fan's inlet or outlet terminals/grilles per Reference Residential Appendix RA3.7. Whole-Dwelling unit ventilation systems must be rated for sound per ASHRAE 62.2 §7.2 at no less than the minimum airflow rate required by §150.0(o)1C.
§ 150.0(o)2:	**Field Verification and Diagnostic Testing.** Whole-Dwelling Unit ventilation airflow, vented range hood airflow and sound rating, and HRV and ERV fan efficacy must be verified in accordance with Reference Residential Appendix RA3.7. Vented range hoods must be verified per Reference Residential Appendix RA3.7.4.3 to confirm if it is rated by HVI or AHAM to comply with the airflow rates and sound requirements per §150.0(o)1G

Pool and Spa Systems and Equipment:

§ 110.4(a):	**Certification by Manufacturers.** Any pool or spa heating system or equipment must be certified to have all of the following: compliance with the Appliance Efficiency Regulations and listing in MAZDeS; an on-off switch mounted outside of the heater that allows shutting off the heater without adjusting the thermostat setting; a permanent weatherproof plate or card with operating instructions; and must not use electric resistance heating. *
§ 110.4(b)1:	**Piping.** Any pool or spa heating system or equipment must be installed with at least 36 inches of pipe between the filter and the heater, or dedicated suction and return lines, or built-in or built-up connections to allow for future solar heating.
§ 110.4(b)2:	**Covers.** Outdoor pools or spas that have a heat pump or gas heater must have a cover.
§ 110.4(b)3:	**Directional Inlets and Time Switches for Pools.** Pools must have directional inlets that adequately mix the pool water, and a time switch that will allow all pumps to be set or programmed to run only during off-peak electric demand periods.
§ 110.5:	**Pilot Light.** Natural gas pool and spa heaters must not have a continuously burning pilot light.
§ 150.0(p):	**Pool Systems and Equipment Installation.** Residential pool systems or equipment must meet the specified requirements for pump sizing, flow rate, piping, filters, and valves. *

Lighting:

§ 110.9:	**Lighting Controls and Components.** All lighting control devices and systems, ballasts, and luminaires must meet the applicable requirements of § 110.9. *
§ 150.0(k)1A:	**Luminaire Efficacy.** All installed luminaires must meet the requirements in Table 150.0-A, except lighting integral to exhaust fans, kitchen range hoods, bath vanity mirrors, and garage door openers; navigation lighting less than 5 watts; and lighting internal to drawers, cabinets, and linen closets with an efficacy of at least 45 lumens per watt.
§ 150.0(k)1B:	**Screw based luminaires.** Screw based luminaires must contain lamps that comply with Reference Joint Appendix JA8. *
§ 150.0(k)1C:	**Recessed Downlight Luminaires in Ceilings.** Luminaires recessed into ceilings must not contain screw based sockets, must be airtight, and must be sealed with a gasket or caulk. California Electrical Code § 410.116 must also be met.
§ 150.0(k)1D:	**Light Sources in Enclosed or Recessed Luminaires.** Lamps and other separable light sources that are not compliant with the JA8 elevated temperature requirements, including marking requirements, must not be installed in enclosed or recessed luminaires.
§ 150.0(k)1E:	**Blank Electrical Boxes.** The number of electrical boxes that are more than five feet above the finished floor and do not contain a luminaire or other device shall be no more than the number of bedrooms. These boxes must be served by a dimmer, vacancy sensor control, low voltage wiring, or fan speed control.
§ 150.0(k)1F:	**Lighting Integral to Exhaust Fans.** Lighting integral to exhaust fans (except when installed by the manufacturer in kitchen exhaust hoods) must meet the applicable requirements of § 150.0(k).

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§ 150.0(k)1G:	**Screw based luminaires.** Screw based luminaires must contain lamps that comply with Reference Joint Appendix JA8. *
§ 150.0(k)1H:	**Light Sources in Enclosed or Recessed Luminaires.** Lamps and other separable light sources that are not compliant with the JA8 elevated temperature requirements, including marking requirements, must not be installed in enclosed or recessed luminaires.
§ 150.0(k)1I:	**Light Sources in Drawers, Cabinets, and Linen Closets**. Light sources internal to drawers, cabinetry or linen closets are not required to comply with Table 150.0-A or be controlled by vacancy sensors provided that they are rated to consume no more than 5 watts of power, emit no more than 150 lumens, and are equipped with controls that automatically turn the lighting off when the drawer, cabinet or linen closet is closed.
§ 150.0(k)2A:	**Interior Switches and Controls.** All forward phase cut dirmmers used with LED light sources must comply with NEMA SSL 7A.
§ 150.0(k)2B:	**Interior Switches and Controls.** Exhaust fans must be controlled separately from lighting systems. *
§ 150.0(k)2A:	**Accessible Controls.** Lighting must have readily accessibe wall-mounted controls that allow the lighting to be manually turned on and off. *
§ 150.0(k)2B:	**Multiple Controls.** Controls must not bypass a dimmer, occupant sensor, or vacancy sensor function if the dimmer or sensor is installed to comply with § 150.0(k).
§ 150.0(k)2C:	**Mandatory Requirements.** Lighting controls must comply with the applicable requirements of § 110.9.
§ 150.0(k)2D:	**Energy Management Control Systems.** An energy management control system (EMCS) may be used to comply with dimming, occupancy, and control requirements if it provides the functionality of the specified control per § 110.9 and the physical controls specified in § 150.0(k)2A.
§ 150.0(k)2E:	**Automatic Shutoff Controls.** In bathrooms, garages, laundry rooms, utility rooms and walk-in closets, at least one installed luminaire must be controlled by an occupancy or vacancy sensor providing automatic-off functionality. Lighting inside drawers and cabinets with opaque fronts or doors must have controls that turn the light off when the drawer or door is closed.
§ 150.0(k)2F:	**Dimmers.** Lighting in habitable spaces (e.g., living rooms, dining rooms, kitchens, and bedrooms) must have readily accessible wall-mounted dimming controls that allow the lighting to be manually adjusted up and down. Forward phase cut dimmers controlling LED light sources in these spaces must comply with NEMA SSL 7A.
§ 150.0(k)2K:	**Independent controls.** Integrated lighting of exhaust fans shall be controlled independently from the fans. Lighting under cabinets or shelves, lighting in display cabinets, and switched outlets must be controlled separately from ceiling-installed lighting.
§ 150.0(k)3A:	**Residential Outdoor Lighting.** For single-family residential buildings, outdoor lighting permanently mounted to a residential building, or to other buildings on the same lot, must have a manual on/off switch and either a photocell and motion sensor or automatic time switch control) or an astronomical time clock. An energy management control system that provides the specified control functionality and meets all applicable requirements may be used to meet these requirements.
§ 150.0(k)4:	**Internally illuminated address signs.** Internally illuminated address signs must either comply with § 140.8 or consume no more than 5 watts of power.
§ 150.0(k)5:	**Residential Garages for Eight or More Vehicles.** Lighting for residential parking garages for eight or more vehicles must comply with the applicable requirements for nonresidential garages in §§ 110.9, 130.0, 130.1, 130.4, 140.6, and 141.0.

Solar Readiness:

§ 110.10(a)1:	**Single-family Residences.** Single-family residences located in subdivisions with 10 or more single-family residences and where the application for a tentative subdivision map for the residences has been deemed complete and approved by the enforcement agency, which do not have a photovoltaic system installed, must comply with the requirements of § 110.10(b)-(e).
§110.10(b)1A:	**Minimum Solar Zone Area.** The solar zone must have a minimum total area as described below. The solar zone must comply with access, pathway, smoke ventilation, and spacing requirements as specified in Title 24, Part 9 or other parts of Title 24 or in any requirements adopted by a local jurisdiction. The solar zone total area must be comprised of areas that have no dimension less than 5 feet and are no less than 80 square feet each for buildings with roof areas less than or equal to 10,000 square feet or no less than 160 square feet each for buildings with roof areas greater than 10,000 square feet. For single-family residences, the solar zone must be located on the roof or overhang of the building and have a total area no less than 250 square feet. *
§ 110.10(b)2:	**Azimuth.** All sections of the solar zone located on steep-sloped roofs must have an azimuth between 90-300° of true north.
§ 110.10(b)3A:	**Shading.** The solar zone must not contain any obstructions, including but not limited to: vents, chimneys, architectural features, and roof mounted equipment.
§ 110.10(b)3B:	**Shading.** Any obstruction located on the roof or any other part of the building that projects above a solar zone must be located at least twice the horizontal distance of the height difference between the highes point of the obstruction and the horizontal projection of the nearest point of the solar zone, measured in the vertical plane. *
§ 110.10(b)4:	**Structural Design Loads on Construction Documents**. For areas of the roof designated as a solar zone, the structural design loads for roof dead load and roof live load must be clearly indicated on the construction documents.
§ 110.10(c):	**Interconnection Pathways.** The construction documents must indicate: a location reserved for inverters and metering equipment and a pathway reserved for routing of conduit from the solar zone o the point of interconnection with the electrical service; and for single-family residences and central water-heating systems, a pathway reserved for routing plumbing from the solar zone to the water-heating system.
§ 110.10(d):	**Documentation.** A copy of the construction documents or a comparable document indicating the information from § 110.10(b)-(c) must be provided to the occupant.
§ 110.10(e)1:	**Main Electrical Service Panel.** The main electrical service panel must have a minimum busbar rating of 200 amps.
§ 110.10(e)2:	**Main Electrical Service Panel.** The main electrical service panel must have a reserved space to allow for the installation of a double pole circuit breaker for a future solar electric installation. The reserved space must be permanently marked as "For Future Solar Electric."

Electric and Energy Storage Ready:

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§ 150.0(s)	**Energy Storage System (ESS) Ready.** All single-family residences must meet all of the following: Either ESS-ready interconnection equipment with backed up capacity of 60 amps or more anc four or more ESS supplied branch circuits, or a dedicated raceway from the main service to a subpanel that supplies the branch circuits in § 150.0(s); at least four branch circuits must be identified and have their source collocated at a single panelboard suitable to be supplied by the ESS, with one circuit supplying the refrigerator, one lighting circuit near the primary exit, and one circuit supplying a sleeping room receptacle outlet; main panelboard must have a minimum busbar rating of 225 amps; sufficient space must be reserved to allow future installation of a system isolation equipment/transfer switch within 3' of the main panelboard, with raceways installed between the panelboard and the switch location to allow the connection of backup power source.
§ 150.0(t)	**Heat Pump Space Heater Ready.** Systems using gas or propane furnaces to serve individual dwelling units must include: A dedicated unobstructed 240V branch circuit wiring installed within 3' of the furnace with circuit conductors rated at least 30 amps with the blank cover identified as "240V ready," and a reserved main electrical service panel space to allow for the installation of a double pole circuit breaker permanently marked as "For Future 240V use."
§ 150.0(u)	**Electric Cooktop Ready.** Systems using gas or propane cooktop to serve individual dwelling units must include: A dedicated unobstructed 240V branch circuit wiring installed within 3' of the cooktop with circuit conductors rated at least 50 amps with the blank cover identified as "240V ready," and a reserved main electrical service panel space to allow for the installation of a double pole circuit breaker permanently marked as "For Future 240V use."
§ 150.0(v)	**Electric Clothes Dryer Ready.** Clothes dryer locations with gas or propane plumbing to serve individual dwelling units must include: A dedicated unobstructed 240V branch circuit wiring installed within 3' of the dryer location with circuit conductors rated at least 30 amps with the blank cover identified as "240V ready," and a reserved main electrical service panel space to allow for the installation of a double pole circuit breaker permanently marked as "For Future 240V use."

*Exceptions may apply.

5/6/22

HVAC SYSTEM HEATING AND COOLING LOADS SUMMARY

Project Name: Vogel ADU
Date: 2/6/2023
System Name: HVAC System
Floor Area: 594

ENGINEERING CHECKS	
Number of Systems	1
Heating System	
Output per System	12,000
Total Output (Btuh)	12,000
Output (Btuh/sqft)	20.2
Cooling System	
Output per System	12,000
Total Output (Btuh)	12,000
Total Output (Tons)	1.0
Total Output (Btuh/sqft)	20.2
Total Output (sqft/Ton)	594.0
Air System	
CFM per System	0
Airflow (cfm)	0
Airflow (cfm/sqft)	0.00
Airflow (cfm/Ton)	0.0
Outside Air (%)	0.0%
Outside Air (cfm/sqft)	0.00
Note: values above given at ARI conditions	

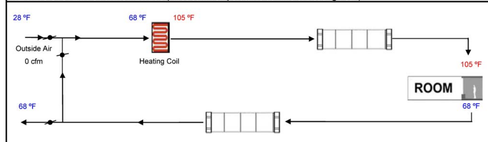
SYSTEM LOAD

	COIL COOLING PEAK CFM	COIL COOLING PEAK Sensible	COIL COOLING PEAK Latent	COIL HTG. PEAK CFM	COIL HTG. PEAK Sensible
Total Room Loads	300	6,454	285	223	8,878
Return Vented Lighting		0			
Return Air Ducts		0			0
Return Fan		0			0
Ventilation	0	0	0	0	0
Supply Fan		0			0
Supply Air Ducts		0			0
TOTAL SYSTEM LOAD		6,454	285		8,878

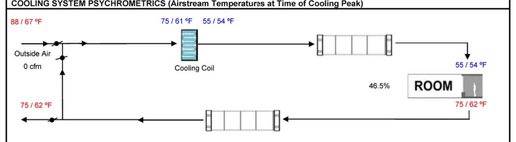
HVAC EQUIPMENT SELECTION

Standard Heat Pump		11,373	0	7,908
Total Adjusted System Output (Adjusted for Peak Design conditions)		11,373	0	7,908
TIME OF SYSTEM PEAK		Aug 3 PM		Jan 1 AM

HEATING SYSTEM PSYCHROMETRICS (Airstream Temperatures at Time of Heating Peak)



COOLING SYSTEM PSYCHROMETRICS (Airstream Temperatures at Time of Cooling Peak)



5/6/22

FRI Energy Consultants, LLC
21 N. Harrison Avenue, Suite 210
Campbell, Ca. 95008
Phone: 408—866—1620 Fax: 408—866—6832

VOGEL ADU
15990 FLINTLOCK RD
CUPERTINO, CA 95014

T24—5

COUNTY OF SANTA CLARA

2019 CALGREEN RESIDENTIAL CHECKLIST (MANDATORY)

County Amendments to CALGreen are in Italics.

- Designer to cross out items that are not applicable to the project.

- Installer or designer shall verify all applicable requirements have been satisfied and sign and date each row. County Inspectors will verify completion signatures and supporting documentation DURING CONSTRUCTION.

			APPLICANT TO COMPLETE Plan Check Review Data		Installer or Designer Verification	
ITEM #	CALGreen CODE SECTION	REQUIREMENT	REFERENCE SHEET	Note or Detail No.	Date	Installer or Designer Signature
PLANNING AND DESIGN: MANDATORY REQUIREMENTS						
1	4.106.2	A plan is developed and implemented to manage storm water drainage during construction.	CG-2	NOTE 1		
2	4.106.3	Construction plans indicates how site grading or a drainage system will manage all surface water flows to keep water from entering buildings.	CG-2	NOTE 2		
3	4.106.4.1	For new dwellings and the *rebuild of existing dwellings that include a panel upgrade or construction between panel and parking area*, a raceway to a dedicated 208/240-volt branch circuit meeting the requirements, is installed.	CG-2	NOTES 3 & 4		
ENERGY EFFICIENCY: MANDATORY REQUIREMENTS						
4	4.201.1	Building meets or exceeds the requirements of the California Building Energy Efficiency Standards.	T24 SHEETS			
WATER EFFICIENCY & CONSERVATION: MANDATORY REQUIREMENTS						
5	4.303.1	Plumbing Fixtures (water closets and urinals) and fittings (faucets and showerheads) installed in residential buildings comply with CALGreen Sections 4.303.1.1 through 4.303.1.4.4.	CG-2	NOTE 5		
6	4.303.2	Plumbing fixtures and fittings required in CALGreen Section 4.303.1 are installed in accordance with the CPC and meet the applicable referenced standards.	CG-2	Note 6		
7	4.304.1	Outdoor potable water use in landscape areas comply with a local water efficient landscape or the current California DWR MWELO, whichever is more stringent.	CG-2	Note 7		
8	4.305.1	For new dwellings where disinfected tertiary recycled water is available, installation of recycled water supply system is required per CPC chapter 15.	CG-2	Note 8		

			APPLICANT TO COMPLETE Plan Check Review Data		Installer or Designer Verification	
ITEM #	CALGreen CODE SECTION	REQUIREMENT	REFERENCE SHEET	Note or Detail No.	Date	Installer or Designer Signature
MATERIAL CONSERVATION & RESOURCE EFFICENCY: MANDATORY REQUIREMENTS						
9	4.406.1	Annular spaces around pipes, electric cables, conduits or other openings in plates at exterior walls are protected against the passage of rodents by closing such openings with cement mortar, concrete masonry or similar method acceptable to the County of Santa Clara.	CG-2	Note 9		
10	4.408.1	Recycle and/or salvage for reuse a minimum of 65 percent of the nonhazardous construction and demolition waste. Submit either a Construction Waste management plan (CALGreen 4.408.2) or Utilize a waste management company (CALGreen 4.408.3).	CG-2	Note 10		
11	4.408.5	Documentation is provided to County of Santa Clara which demonstrates compliance with CALGreen sections 4.408.2 or 4.408.3.	CG-1 CG-2	Construction Waste Management Forms Note 11		
12	4.410.1	An operation and maintenance manual is placed in the building at the time of final inspection.	CG-2	Note 12		
ENVIRONMENTAL QUALITY: MANDATORY REQUIREMENTS						
13	4.503.1	Any installed gas fireplace is a direct-vent sealed-combustion type. Any installed woodstove or pellet stove comply with US EPA Phase II emission limits where applicable.	CG-2	Note 13		
14	4.504.1	Duct openings and other related air distribution component openings are covered during construction until final startup of the HVAC equipment.	CG-2	Note 14		
15	4.504.2.1	Adhesives, sealants and caulks are compliant with VOC and other toxic compound limits.	CG-1 CG-2	Table 4.504.1 Table 4.504.2 Note 15		
16	4.504.2.2	Architectural paints and coatings are compliant with VOC limits.	CG-1 CG-2	Table 4.504.3 Note 16		
17	4.504.2.3	Aerosol paints and coatings are compliant with product weighted MIR limits for ROC and other toxic compounds.	CG-2	Note 17		
18	4.504.2.4	Documentation are provided to the County of Santa Clara to verify that compliant VOC limit finish materials have been used.	CG-2	Note 18		
19	4.504.3	Carpet and carpet systems meet the applicable testing and product requirements.	CG-1 CG-2	Table 4.504.1 Note 19		
20	4.504.4	80 percent of floor area receiving resilient flooring comply with applicable standards.	CG-2	Note 20		
21	4.504.5	Hardwood plywood, particleboard and medium density fiberboard composite wood meet formaldehyde limits.	CG-1 CG-2	Table 4.504.5 Note 21		

			APPLICANT TO COMPLETE Plan Check Review Data		Installer or Designer Verification	
ITEM #	CALGreen CODE SECTION	REQUIREMENT	REFERENCE SHEET	Note or Detail No.	Date	Installer or Designer Signature
ENVIRONMENTAL QUALITY: MANDATORY REQUIREMENTS (Continued)						
22	4.504.5.1	Documentation is provided to the County of Santa Clara to verify composite wood meets applicable formaldehyde limits.	CG-2	Note 22		
23	4.505.2	Vapor retarder and capillary break is installed at slab-on-grade foundations.	CG-2	Note 23		
24	4.505.3	Moisture content of building materials used in wall and floor framing do not exceed 19% prior to enclosure and is checked before enclosure. Insulation products are dry prior to enclosure.	CG-2	Note 24		
25	4.506.1	Each bathroom is mechanically ventilated and comply with applicable requirements.	CG-2	Note 25		
26	4.507.2	Heating and air-conditioning systems are sized, designed, and equipment is selected by using one of the methods listed.	CG-2	Note 26		
INSTALLER AND SPECIAL INSPECTOR QUALIFICATIONS: MANDATORY REQUIREMENTS						
27	702.1	HVAC system installers are trained and certified in the proper installation of HVAC systems.	CG-2	Note 27		
28	702.2	If required by County of Santa Clara, owner or owner's agent shall employ special inspector who are qualified and able to demonstrate competence in the discipline they are inspecting.	CG-2	Note 28		
29	703.1	Documentation used to show compliance with this code may include construction documents, plans, specifications, builder or installer certification, inspection reports, or other methods acceptable to County of Santa Clara which show substantial conformance.	CG-2	Note 29		

TABLE 4.504.5
FORMALDEHYDE LIMITS[1]
Maximum Formaldehyde Emissions in Parts per Million

PRODUCT	CURRENT LIMIT
Hardwood plywood veneer core	0.05
Hardwood plywood composite core	0.05
Particleboard	0.09
Medium density fiberboard	0.11
Thin medium density fiberboard[2]	0.13

1. Values in this table are derived from those specified by the California Air Resources Board, Air Toxics Control Measure for Composite Wood as tested in accordance with ASTM E1333. For additional information, see *California Code of Regulations*, Title 17, Sections 93120 through 93120.12.
2. Thin medium density fiberboard has a maximum thickness of 5/16 inch (8 mm).

TABLE 4.504.1
ADHESIVE VOC LIMIT[1, 2]
Less Water and Less Exempt Compounds in Grams per Liter

ARCHITECTURAL APPLICATIONS	VOC LIMIT
Indoor carpet adhesives	50
Carpet pad adhesives	50
Outdoor carpet adhesives	150
Wood flooring adhesive	100
Rubber floor adhesives	60
Subfloor adhesives	50
Ceramic tile adhesives	65
VCT and asphalt tile adhesives	50
Drywall and panel adhesives	50
Cove base adhesives	50
Multipurpose construction adhesives	70
Structural glazing adhesives	100
Single-ply roof membrane adhesives	250
Other adhesives not specifically listed	50
SPECIALTY APPLICATIONS	
PVC welding	510
CPVC welding	490
ABS welding	325
Plastic cement welding	250
Adhesive primer for plastic	550
Contact adhesive	80
Special purpose contact adhesive	250
Structural wood member adhesive	140
Top and trim adhesive	250
SUBSTRATE SPECIFIC APPLICATIONS	
Metal to metal	30
Plastic foams	50
Porous material (except wood)	50
Wood	30
Fiberglass	80

1. If an adhesive is used to bond dissimilar substrates together, the adhesive with the highest VOC content shall be allowed.
2. For additional information regarding methods to measure the VOC content specified in this table, see South Coast Air Quality Management District Rule 1168.

TABLE 4.504.2
SEALANT VOC LIMIT
Less Water and Less Exempt Compounds in Grams per Liter

SEALANTS	VOC LIMIT
Architectural	250
Marine deck	760
Nonmembrane roof	300
Roadway	250
Single-ply roof membrane	450
Other	420
SEALANT PRIMERS	
Architectural Nonporous Porous	 250 775
Modified bituminous	500
Marine deck	760
Other	750

TABLE 4.504.3
VOC CONTENT LIMITS FOR ARCHITECTURAL COATINGS[2,3]
Grams of VOC per Liter of Coating,
Less Water and Less Exempt Compounds

COATING CATEGORY	VOC LIMIT
Flat coatings	50
Nonflat coatings	100
Nonflat-high gloss coatings	150
SPECIALTY COATINGS	
Aluminum roof coatings	400
Basement specialty coatings	400
Bituminous roof coatings	50
Bituminous roof primers	350
Bond breakers	350
Concrete curing compounds	350
Concrete/masonry sealers	100
Driveway sealers	50
Dry fog coatings	150
Faux finishing coatings	350
Fire resistive coatings	350
Floor coatings	100
Form-release compounds	250
Graphic arts coatings (sign paints)	500
High temperature coatings	420
Industrial maintenance coatings	250
Low solids coatings[1]	120
Magnesite cement coatings	450
Mastic texture coatings	100
Metallic pigmented coatings	500
Multicolor coatings	250
Pretreatment wash primers	420
Primers, sealers, and undercoaters	100
Reactive penetrating sealers	350
Recycled coatings	250
Roof coatings	50
Rust preventative coatings	250
Shellacs Clear Opaque	 730 550
Specialty primers, sealers and undercoaters	100
Stains	250
Stone consolidants	450
Swimming pool coatings	340
Traffic marking coatings	100
Tub and tile refinish coatings	420
Waterproofing membranes	250
Wood coatings	275
Wood preservatives	350
Zinc-rich primers	340

1. Grams of VOC per liter of coating, including water and including exempt compounds.
2. The specified limits remain in effect unless revised limits are listed in subsequent columns in the table.
3. Values in this table are derived from those specified by the California Air Resources Board, Architectural Coatings Suggested Control Measure, February 1, 2008. More information is available from the Air Resources Board.

Construction Waste Management (CWM) Plan

Fill out the form including diversion rate and facility names and addresses

Project Name: ______________________________
Job #: ______________________________
Project Manager: ______________________________
Waste Handling Company: ______________________________
Contact Name: ______________________________

Legend:
Hauling Company
Sorting Facility Name and Location
Disposal Service Company

All Subcontractors shall comply with the project's Construction Waste Management Plan.
All Subcontractor foremen shall sign the CWM Plan Acknowledgment Sheet.

Subcontractors who fail to comply with the Waste Management Plan will be subject to backcharges or withholding of payment, as deemed appropriate. For instance, Subcontractors who contaminate debris boxes that have been designated for a single material type will be subject to backcharge or withheld payment, as deemed appropriate.

1. The project's overall rate of waste diversion will be ____%.
2. This project shall generate the least amount of waste possible by planning and ordering carefully, following all proper storage and handling procedures to reduce broken and damaged materials and reusing materials whenever possible. The majority of the waste that is generated on this jobsite will be diverted from the landfill and recycled for other use.
3. Spreadsheet 1, enclosed, identifies the waste materials that will be generated on this project, the diversion strategy for each waste type and the anticipated diversion rate.
4. Waste prevention and recycling activities will be discussed at the beginning of weekly subcontractor meetings. As each new subcontractor comes on site, the WMP Coordinator will present him/her with a copy of the CWM Plan and provide a tour of the jobsite to identify materials to be salvaged and the procedures for handling jobsite debris. All Subcontractor foremen will acknowledge in writing that they have read and will abide by the CWM Plan. Subcontractor Acknowledgment Sheet enclosed. The CWM Plan will be posted at the jobsite trailer.
5. Salvage: Excess materials that cannot be used in the project, nor returned to the vendor, will be offered to site workers, the owner, or donated to charity if feasible.
6. ____________ will provide a commingled drop box at the jobsite for most of the construction waste. These commingled drop boxes will be taken to ____________. The average diversion rate for commingled waste will be ____%. As site conditions permit, additional drop boxes will be used for particular phases of construction (e.g., concrete and wood waste) to ensure the highest waste diversion rate possible.
7. In the event that the waste diversion rate achievable via the strategy described in (6) above, is projected to be lower than what is required, then a strategy of source-separated waste diversion and/or waste stream reduction will be implemented. Source separated waste refers to jobsite waste that is not commingled but is instead allocated to a debris box designated for a single material type, such as clean wood or metal.

   Notes:
   1. Waste stream reduction refers to efforts taken by the builder to reduce the amount of waste generated by the project to below four (4) pounds per square foot of building area.
   2. When using waste stream reduction measures, the gross weight of the product is subtracted from a base weight of four (4) pounds per square foot of building area. This reduction is considered additional diversion and can be used in the waste reduction percentage calculations.
8. ____________ will track and calculate the quantity (in tons) of all waste leaving the project and calculate the waste diversion rate for the project. ____________ will provide Project Manager with an updated monthly report on gross weight hauled and the waste diversion rate being achieved on the project. ____________ monthly report will track separately the gross weights and diversion rates for commingled debris and for each source-separated waste stream leaving the project. In the event that ____________ does not service any or all of the debris boxes on the project, the ____________ will work with the responsible parties to track the material type and weight (in tons) in each debris boxes in order to determine waste diversion rates for these materials.
9. In the event that Subcontractors furnish their own debris boxes as part of their scope of work, such Subcontractors shall not be excluded from complying with the CWM Plan and will provide ____________ weight and waste diversion data for their debris boxes.
10. In the event that site use constraints (such as limited space) restrict the number of debris boxes that can be used for collection of designated waste the project Superintendent will, as deemed appropriate, allocate specific areas onsite where individual material types are to be consolidated. These collection points are not to be contaminated with non-designated waste types.
11. Debris from jobsite office and meeting rooms will be collected by ____________. ____________ will, at a minimum, recycle office paper, plastic, metal and cardboard.

Construction Waste Management (CWM) Worksheet

Project Name: ______________________________

Job Number: ______________________________

Project Manager: ______________________________

Waste Hauling Company: ______________________________

Construction Waste Management (CWM) Plan

WASTE MATERIAL TYPE	DIVERSION METHOD: COMMINGLED AND SORTED OFF SITE	SOURCE SEPARATED ON SITE	PROJECTED DIVERSION RATE
Asphalt			
Concrete			
Shotcrete			
Metals			
Wood			
Rigid insulation			
Fiberglass insulation			
Acoustic ceiling tile			
Gypsum drywall			
Carpet/carpet pad			
Plastic pipe			
Plastic buckets			
Plastic			
Hardiplank siding and boards			
Glass			
Cardboard			
Pallets			
Job office trash, paper, glass & plastic bottles, cans, plastic			
Alkaline and rechargeable batteries, toner cartridges, and electronic devices			
Other:			
Other:			
Other:			
Other:			

Construction Waste Management (CWM) Acknowledgment

Note: This sample form may be used to assist in documenting compliance with the waste management plan.

Project Name: ______________________________

Job Number: ______________________________

Project Manager: ______________________________

Waste Handling Company: ______________________________

CWM Plan Acknowledgment

The Foreman for each new Subcontractor that comes on site is to receive a copy of the Construction Waste Management Plan and complete this Acknowledgment Form.

I have read the Waste Management Plan for the project, I understand the goals of this plan and agree to follow the procedures described in this plan.

DATE	SUBCONTRACTOR COMPANY NAME	FOREMAN NAME	SIGNATURE

REVISIONS

1

SESHAT DESIGN
COMMERCIAL | RESIDENTIAL | GREEN DESIGN
408/778.5454 fax 408/778.1115
17545 Chesbro Lake Drive, Morgan Hill, CA 95037

LICENSED ARCHITECT
LINDA HINKLE
No. C-30336
RENEWAL DATE
STATE OF CALIFORNIA

ADDITION AND REMODEL AND ADU
15990 FLINTLOCK ROAD
CUPERTINO CA 95014

DATE:
3/3/2023

SCALE:

JOB NUMBER

SHEET:
CG1

CALGREEN 2019 NOTES – MANDATORY REQUIREMENTS:

1. PROJECTS WHICH DISTURB LESS THAN ONE ACRE OF SOIL AND ARE NOT PART OF A LARGER COMMON PLAN OF DEVELOPMENT WHICH IN TOTAL DISTURBS ONE ACRE OR MORE, SHALL MANAGE STORM WATER DRAINAGE DURING CONSTRUCTION. SEE CALGREEN 4.106.2 FOR FURTHER DETAILS.

2. CONSTRUCTION PLANS SHALL INDICATE HOW THE SITE GRADING OR DRAINAGE SYSTEM WILL MANAGE ALL SURFACE WATER FLOWS TO KEEP WATER FROM ENTERING BUILDINGS. SWALES, WATER COLLECTION AND DISPOSAL SYSTEMS, FRENCH DRAINS, WATER RETENTION GARDENS, AND OTHER MEASURES CAN BE USED. EXCEPTION: ADDITIONS AND ALTERATIONS NOT ALTERING THE DRAINAGE PATH.

3. NEW CONSTRUCTION SHALL COMPLY WITH CALGREEN SECTION 4.106.4.1 TO FACILITATE FUTURE INSTALLATION AND USE OF EV CHARGERS. ELECTRIC VEHICLE SUPPLY EQUIPMENT (EVSE) SHALL BE INSTALLED IN ACCORDANCE WITH THE CALIFORNIA ELECTRICAL CODE, ARTICLE 625.

EXCEPTIONS:

A. WHERE COUNTY OF SANTA CLARA HAS DETERMINED EV CHARGING AND INFRASTRUCTURE ARE NOT FEASIBLE.
B. ACCESSORY DWELLING UNITS (ADU) AND JUNIOR ACCESSORY DWELLING UNITS (JADU) WITHOUT ADDITIONAL PARKING FACILITIES.

4. FOR EACH DWELLING UNIT, INSTALL A LISTED RACEWAY TO ACCOMMODATE A DEDICATED 208/240-VOLT BRANCH CIRCUIT. THE RACEWAY SHALL NOT BE LESS THAN TRADE SIZE 1 (NOMINAL 1-INCH INSIDE DIAMETER). THE RACEWAY SHALL ORIGINATE AT THE MAIN SERVICE OR SUBPANEL AND SHALL TERMINATE INTO A LISTED CABINET, BOX OR OTHER ENCLOSURE IN CLOSE PROXIMITY TO THE PROPOSED LOCATION OF AN EV CHARGER. RACEWAYS ARE REQUIRED TO BE CONTINUOUS AT ENCLOSED, INACCESSIBLE OR CONCEALED AREAS AND SPACES. THE SERVICE PANEL AND/OR SUBPANEL SHALL PROVIDE CAPACITY TO INSTALL A 40-AMPERE MINIMUM DEDICATED BRANCH CIRCUIT AND SPACE(S) RESERVED TO PERMIT INSTALLATION OF A BRANCH CIRCUIT OVERCURRENT PROTECTIVE DEVICE. THE RACEWAY TERMINATION LOCATION SHALL BE PERMANENTLY AND VISIBLY MARKED AS "EV CAPABLE".

THE SERVICE PANEL OR SUB-PANEL CIRCUIT DIRECTORY SHALL IDENTIFY THE OVER CURRENT PROTECTIVE DEVICE SPACE(S) RESERVED FOR FUTURE EV CHARGING AS "EV CAPABLE". THE RACEWAY TERMINATION LOCATION SHALL BE PERMANENTLY AND VISIBLY MARKED AS "EV CAPABLE".

5. ALL NONCOMPLIANT PLUMBING FIXTURES SHALL BE REPLACED WITH WATER-CONSERVING PLUMBING FIXTURES. PLUMBING FIXTURE REPLACEMENT IS REQUIRED PRIOR TO ISSUANCE OF A CERTIFICATE OF FINAL COMPLETION, CERTIFICATE OF OCCUPANCY, OR FINAL PERMIT APPROVAL BY BUILDING AND INSPECTION DIVISION. SEE CIVIL CODE SECTION 1101.1, ET SEQ., FOR THE DEFINITION OF A NONCOMPLIANT PLUMBING FIXTURE, TYPES OF RESIDENTIAL BUILDINGS AFFECTED AND OTHER IMPORTANT ENACTMENT DATES.

A. THE EFFECTIVE FLUSH VOLUME OF ALL WATER CLOSETS SHALL NOT EXCEED 1.28 GALLONS PER FLUSH. TANK-TYPE WATER CLOSETS SHALL BE CERTIFIED TO THE PERFORMANCE CRITERIA OF THE U.S. EPA WATERSENSE SPECIFICATION FOR TANK-TYPE TOILETS.
B. SHOWERHEADS SHALL HAVE A MAXIMUM FLOW RATE OF NOT MORE THAN 1.8 GALLONS PER MINUTE AT 80 PSI. SHOWERHEADS SHALL BE CERTIFIED TO THE PERFORMANCE CRITERIA OF THE U.S. EPA WATERSENSE SPECIFICATION FOR SHOWERHEADS.
C. WHEN A SHOWER IS SERVED BY MORE THAN ONE SHOWERHEAD, THE COMBINED FLOW RATE OF ALL SHOWER-HEADS AND/OR OTHER SHOWER OUTLETS CONTROLLED BY A SINGLE VALVE SHALL NOT EXCEED 1.8 GALLONS PER MINUTE AT 80 PSI, OR THE SHOWER SHALL BE DESIGNED TO ALLOW ONLY ONE SHOWER OUTLET TO BE IN OPERATION AT A TIME. A HAND-HELD SHOWER SHALL BE CONSIDERED A SHOWERHEAD.
D. THE MAXIMUM FLOW RATE OF RESIDENTIAL LAVATORY FAUCETS SHALL NOT EXCEED 1.2 GALLONS PER MINUTE AT 60 PSI. THE MINIMUM FLOW RATE OF RESIDENTIAL LAVATORY FAUCETS SHALL NOT BE LESS THAN 0.8 GALLONS PER MINUTE AT 20 PSI.
E. THE MAXIMUM FLOW RATE OF KITCHEN FAUCETS SHALL NOT EXCEED 1.8 GALLONS PER MINUTE AT 60 PSI. KITCHEN FAUCETS MAY TEMPORARILY INCREASE THE FLOW ABOVE THE MAXIMUM RATE, BUT NOT TO EXCEED 2.2 GALLONS PER MINUTE AT 60 PSI, AND MUST DEFAULT TO A MAXIMUM FLOW RATE OF 1.8 GALLONS PER MINUTE AT 60 PSI.

6. PLUMBING FIXTURES AND FITTINGS SHALL BE INSTALLED IN ACCORDANCE WITH THE CALIFORNIA PLUMBING CODE, AND SHALL MEET THE APPLICABLE STANDARDS REFERENCED IN TABLE 1701.1 OF THE CALIFORNIA PLUMBING CODE.

7. RESIDENTIAL DEVELOPMENTS SHALL COMPLY WITH A LOCAL WATER EFFICIENT LANDSCAPE ORDINANCE OR THE CURRENT CALIFORNIA DEPARTMENT OF WATER RESOURCES' MODEL WATER EFFICIENT LANDSCAPE ORDINANCE (MWELO), WHICHEVER IS MORE STRINGENT.

8. NEWLY CONSTRUCTED RESIDENTIAL DEVELOPMENTS, WHERE DISINFECTED TERTIARY RECYCLED WATER IS AVAILABLE FROM A MUNICIPAL SOURCE TO A CONSTRUCTION SITE, MAY BE REQUIRED TO HAVE RECYCLED WATER SUPPLY SYSTEMS INSTALLED, ALLOWING THE USE OF RECYCLED WATER FOR RESIDENTIAL LANDSCAPE IRRIGATION SYSTEMS. SEE CHAPTER 15 OF THE CALIFORNIA PLUMBING CODE.

9. ANNULAR SPACES AROUND PIPES, ELECTRIC CABLES, CONDUITS OR OTHER OPENINGS IN SOLE/BOTTOM PLATES AT EXTERIOR WALLS SHALL BE PROTECTED AGAINST THE PASSAGE OF RODENTS BY CLOSING SUCH OPENINGS WITH CEMENT MORTAR, CONCRETE MASONRY OR A SIMILAR METHOD ACCEPTABLE TO THE COUNTY OF SANTA CLARA.

10. RECYCLE AND/OR SALVAGE FOR REUSE A MINIMUM OF 65 PERCENT OF THE NONHAZARDOUS CONSTRUCTION AND DEMOLITION WASTE IN ACCORDANCE WITH CALGREEN SECTION 4.408.2 OR 4.408.3.

A. A CONSTRUCTION WASTE MANAGEMENT PLAN IS PROVIDED. THE CONSTRUCTION WASTE MANAGEMENT PLAN SHALL BE UPDATED AS NECESSARY AND SHALL BE AVAILABLE DURING CONSTRUCTION FOR EXAMENATION BY THE COUNTY OF SANTA CLARA.
   1. IDENTIFY THE CONSTRUCTION AND DEMOLITION WASTE MATERIALS TO BE DIVERTED FROM DISPOSAL BY RECYCLING, REUSE ON THE PROJECT OR SALVAGE FOR FUTURE USE OR SALE.
   2. SPECIFY IF CONSTRUCTION AND DEMOLITION WASTE MATERIALS WILL BE SORTED ON-SITE (SOURCE-SEPARATED) OR BULK MIXED (SINGLE STREAM).
   3. IDENTIFY DIVERSION FACILITIES WHERE THE CONSTRUCTION AND DEMOLITION WASTE MATERIAL WILL BE TAKEN.
   4. IDENTIFY CONSTRUCTION METHODS EMPLOYED TO REDUCE THE AMOUNT OF CONSTRUCTION AND DEMOLITION WASTE GENERATED.
   5. Specify that the amount of construction and demolition waste materials diverted shall be calculated by weight or volume, but not by both.
B. A WASTE MANAGEMENT COMPANY CAN BE UTILIZED IF APPROVED BY THE COUNTY OF SANTA CLARA. SEE CALGREEN 4.408.3 FOR FURTHER .DETAILS

11. DOCUMENTATION SHALL BE PROVIDED TO THE COUNTY OF SANTA CLARA WHICH DEMONSTRATES COMPLIANCE WITH NOTE 10.

12. AT THE TIME OF FINAL INSPECTION, A MANUAL, COMPACT DISC, WEB-BASED REFERENCE OR OTHER MEDIA ACCEPTABLE TO THE COUNTY OF SANTA CLARA INCLUDES ALL OF THE REQUIRED INFORMATION, SHALL BE PLACED IN THE BUILDING. SEE CALGREEN 4.410.1 FOR DETAILS OF REQUIRED INFORMATION.

13. ANY INSTALLED GAS FIREPLACE SHALL BE A DIRECT-VENT SEALED-COMBUSTION TYPE. ANY INSTALLED WOODSTOVE OR PELLET STOVE SHALL COMPLY WITH U.S. EPA NEW SOURCE PERFORMANCE STANDARDS (NSPS) EMISSION LIMITS AS APPLICABLE, AND SHALL HAVE A PERMANENT LABEL INDICATING THEY ARE CERTIFIED TO MEET THE EMISSION LIMITS. WOODSTOVES, PELLET STOVES AND FIREPLACES SHALL ALSO COMPLY WITH APPLICABLE SANTA CLARA COUNTY ORDINANCES AND BAY AREA AIR QUALITY MANAGEMENT DISTRICT REGULATION 6, RULE 3.

14. AT THE TIME OF ROUGH INSTALLATION, DURING STORAGE ON THE CONSTRUCTION SITE AND UNTIL FINAL STARTUP OF THE HEATING, COOLING AND VENTILATING EQUIPMENT, ALL DUCT AND OTHER RELATED AIR DISTRIBUTION COMPONENT OPENINGS SHALL BE COVERED WITH TAPE, PLASTIC, SHEET METAL OR OTHER METHODS ACCEPTABLE TO THE COUNTY OF SANTA CLARA TO REDUCE THE AMOUNT OF WATER, DUST AND DEBRIS, WHICH MAY ENTER THE SYSTEM.

15. ADHESIVES, SEALANTS AND CAULKS USED ON THE PROJECT SHALL MEET THE REQUIREMENTS OF CALGREEN TABLES 4.504.1 OR 4.504.2 AS REPRODUCED ON SHEET CG-1. SUCH PRODUCTS ALSO SHALL COMPLY WITH THE RULE 1168 PROHIBITION ON THE USE OF CERTAIN TOXIC COMPOUNDS (CHLOROFORM, ETHYLENE DICHLORIDE, METHYLENE CHLORIDE, PERCHLOROETHYLENE AND TRICHLOROETHYLENE), EXCEPT FOR AEROSOL PRODUCTS, AS SPECIFIED BELOW.

AEROSOL ADHESIVES, AND SMALLER UNIT SIZES OF ADHESIVES, AND SEALANT OR CAULKING COMPOUNDS (IN UNITS OF PRODUCT, LESS PACKAGING, WHICH DO NOT WEIGH MORE THAN 1 POUND AND DO NOT CONSIST OF MORE THAN 16 FLUID OUNCES) SHALL COMPLY WITH STATEWIDE VOC STANDARDS AND OTHER REQUIREMENTS, INCLUDING PROHIBITIONS ON USE OF CERTAIN TOXIC COMPOUNDS, OF CALIFORNIA CODE OF REGULATIONS, TITLE 17, COMMENCING WITH SECTION 94507.

16. ARCHITECTURAL PAINTS AND COATINGS SHALL COMPLY WITH VOC LIMITS AS SHOWN IN TABLE 4.504.3 SHEET CG-1. THE VOC CONTENT LIMIT FOR COATINGS THAT DO NOT MEET THE DEFINITIONS FOR THE SPECIALTY COATINGS CATEGORIES LISTED IN TABLE 4.504.3 SHALL BE DETERMINED BY CLASSIFYING THE COATING AS A FLAT, NONFLAT OR NONFLAT-HIGH GLOSS COATING, BASED ON ITS GLOSS, AS DEFINED IN SUBSECTIONS 4.21, 4.36, AND 4.37 OF THE 2007 CALIFORNIA AIR RESOURCES BOARD, SUGGESTED CONTROL MEASURE, AND THE CORRESPONDING FLAT, NONFLAT OR NON-FLAT-HIGH GLOSS VOC LIMIT IN TABLE 4.504.3, SHEET CG-1 SHALL APPLY.

17. AEROSOL PAINTS AND COATINGS SHALL MEET THE PRODUCT-WEIGHTED MIR LIMITS FOR ROC IN SECTION 94522(A)(2) AND OTHER REQUIREMENTS, INCLUDING PROHIBITIONS ON USE OF CERTAIN TOXIC COMPOUNDS AND OZONE DEPLETING SUBSTANCES, IN SECTIONS 94522(E)(1) AND (F)(1) OF CALIFORNIA CODE OF REGULATIONS, TITLE 17, COMMENCING WITH SECTION 94520; AND IN AREAS UNDER THE JURISDICTION OF THE BAY AREA AIR QUALITY MANAGEMENT DISTRICT ADDITIONALLY COMPLY WITH THE PERCENT VOC BY WEIGHT OF PRODUCT LIMITS OF REGULATION 8, RULE 49.

18. VERIFICATION OF COMPLIANCE WITH NOTES 15, 16, AND 17 SHALL BE PROVIDED AT THE REQUEST OF THE COUNTY OF SANTA CLARA.

19. ALL CARPET INSTALLED IN THE BUILDING INTERIOR SHALL MEET THE TESTING AND PRODUCT REQUIREMENTS OF ONE OF THE FOLLOWING:

A. CARPET AND RUG INSTITUTE'S GREEN LABEL PLUS PROGRAM.
B. CALIFORNIA DEPARTMENT OF PUBLIC HEALTH, "STANDARD METHOD FOR THE TESTING AND EVALUATION OF VOLATILE ORGANIC CHEMICAL EMISSIONS FROM INDOOR SOURCES USING ENVIRONMENTAL CHAMBERS," VERSION 1.1, FEBRUARY 2010 (ALSO KNOWN AS SPECIFICATION 01350.)
C. NSF/ANSI 140 AT THE GOLD LEVEL.
D. SCIENTIFIC CERTIFICATIONS SYSTEMS INDOOR ADVANTAGE GOLD.

ALL CARPET CUSHION INSTALLED IN THE BUILDING INTERIOR SHALL MEET THE REQUIREMENTS OF THE CARPET AND RUG INSTITUTE'S GREEN LABEL PROGRAM. ALL CARPET ADHESIVE SHALL MEET THE REQUIREMENTS OF TABLE 4.504.1, SHEET CG-1.

20. WHERE RESILIENT FLOORING IS INSTALLED, AT LEAST 80 PERCENT OF FLOOR AREA RECEIVING RESILIENT FLOORING SHALL COMPLY WITH ONE OR MORE OF THE FOLLOWING:

A. PRODUCTS COMPLIANT WITH THE CALIFORNIA DEPARTMENT OF PUBLIC HEALTH, "STANDARD METHOD FOR THE TESTING AND EVALUATION OF VOLATILE ORGANIC CHEMICAL EMISSIONS FROM INDOOR SOURCES USING ENVIRONMENTAL CHAMBERS," VERSION 1.1, FEBRUARY 2010 (ALSO KNOWN AS SPECIFICATION 01350), CERTIFIED AS A CHPS LOW-EMITTING MATERIAL IN THE COLLABORATIVE FOR HIGH PERFORMANCE SCHOOLS (CHPS) HIGH PERFORMANCE PRODUCTS DATABASE.
B. PRODUCTS CERTIFIED UNDER UL GREENGUARD GOLD (FORMERLY THE GREENGUARD CHILDREN & SCHOOLS PROGRAM).
C. CERTIFICATION UNDER THE RESILIENT FLOOR COVERING INSTITUTE (RFCI) FLOORSCORE PROGRAM.
D. MEET THE CALIFORNIA DEPARTMENT OF PUBLIC HEALTH, "STANDARD METHOD FOR THE TESTING AND EVALUATION OF VOLATILE ORGANIC CHEMICAL EMISSIONS FROM INDOOR SOURCES USING ENVIRONMENTAL CHAMBERS," VERSION 1.1, FEBRUARY 2010 (ALSO KNOWN AS SPECIFICATION 01350).

21. HARDWOOD PLYWOOD, PARTICLEBOARD AND MEDIUM DENSITY FIBERBOARD COMPOSITE WOOD PRODUCTS USED ON THE INTERIOR OR EXTERIOR OF THE BUILDING SHALL MEET THE REQUIREMENTS FOR FORMALDEHYDE AS SPECIFIED IN TABLE 4.504.5 SHEET CG-1.

22. VERIFICATION OF COMPLIANCE WITH NOTE 21 SHALL BE PROVIDED AT THE REQUEST OF THE COUNTY OF SANTA CLARA.

23. CONCRETE SLAB FOUNDATIONS REQUIRED TO HAVE A VAPOR RETARDER BY CBC, CHAPTER 19 OR CONCRETE SLAB-ON-GROUND FLOORS REQUIRED TO HAVE A VAPOR RETARDER BY CRC CHAPTER 5, SHALL COMPLY WITH FOLLOWING REQUIREMENT:

A CAPILLARY BREAK SHALL BE INSTALLED IN COMPLIANCE WITH AT LEAST ONE OF THE FOLLOWING:

A. A 4-INCH-THICK BASE OF 1/2 INCH OR LARGER CLEAN AGGREGATE SHALL BE PROVIDED WITH A VAPOR RETARDER IN DIRECT CONTACT WITH CONCRETE AND A CONCRETE MIX DESIGN, WHICH WILL ADDRESS BLEEDING, SHRINKAGE, AND CURLING, SHALL BE USED.
B. A SLAB DESIGN SPECIFIED BY THE LICENSED DESIGN PROFESSIONAL.

24. BUILDING MATERIALS WITH VISIBLE SIGNS OF WATER DAMAGE SHALL NOT BE INSTALLED. WALL AND FLOOR FRAMING SHALL NOT BE ENCLOSED WHEN THE FRAMING MEMBERS EXCEED 19 PERCENT MOISTURE CONTENT. INSULATION PRODUCTS WHICH ARE VISIBLY WET OR HAVE A HIGH MOISTURE CONTENT SHALL BE REPLACED OR ALLOWED TO DRY PRIOR TO ENCLOSURE IN WALL OR FLOOR CAVITIES. WET-APPLIED INSULATION PRODUCTS SHALL FOLLOW THE MANUFACTURERS' DRYING RECOMMENDATIONS PRIOR TO ENCLOSURE.

25. EACH BATHROOM SHALL BE MECHANICALLY VENTILATED AND SHALL COMPLY WITH THE FOLLOWING:

A. FANS SHALL BE ENERGY STAR COMPLIANT AND BE DUCTED TO TERMINATE OUTSIDE THE BUILDING.
B. UNLESS FUNCTIONING AS A COMPONENT OF A WHOLE HOUSE VENTILATION SYSTEM, FANS MUST BE CONTROLLED BY A HUMIDITY CONTROL.
   1. HUMIDITY CONTROLS SHALL BE CAPABLE OF ADJUSTMENT BETWEEN A RELATIVE HUMIDITY RANGE OF ≤ 50 PERCENT TO A MAXIMUM OF 80 PERCENT. A HUMIDITY CONTROL MAY UTILIZE MANUAL OR AUTOMATIC MEANS OF ADJUSTMENT.
   2. A HUMIDITY CONTROL MAY BE A SEPARATE COMPONENT TO THE EXHAUST FAN AND IS NOT REQUIRED TO BE INTEGRAL.

26. HEATING AND AIR-CONDITIONING SYSTEMS SHALL BE SIZED, DESIGNED AND HAVE THEIR EQUIPMENT SELECTED USING THE FOLLOWING METHODS:

A. THE HEAT LOSS AND HEAT GAIN IS ESTABLISHED ACCORDING TO ANSI/ACCA 2 MANUAL J—2016 (RESIDENTIAL LOAD CALCULATION), ASHRAE HANDBOOKS OR OTHER EQUIVALENT DESIGN SOFTWARE OR METHODS.
B. DUCT SYSTEMS ARE SIZED ACCORDING TO ANSI/ACCA 1 MANUAL D—2016 (RESIDENTIAL DUCT SYSTEMS), ASHRAE HANDBOOKS OR OTHER EQUIVALENT DESIGN SOFTWARE OR METHODS.
C. SELECT HEATING AND COOLING EQUIPMENT ACCORDING TO ANSI/ACCA 3 MANUAL S—2014 (RESIDENTIAL EQUIPMENT SELECTION) OR OTHER EQUIVALENT DESIGN SOFTWARE OR METHODS.

27. HVAC SYSTEM INSTALLERS SHALL BE TRAINED AND CERTIFIED IN THE PROPER INSTALLATION OF HVAC SYSTEMS INCLUDING DUCTS AND EQUIPMENT BY A NATIONALLY OR REGIONALLY RECOGNIZED TRAINING OR CERTIFICATION PROGRAM. UNCERTIFIED PERSONS MAY PERFORM HVAC INSTALLATIONS WHEN UNDER THE DIRECT SUPERVISION AND RESPONSIBILITY OF A PERSON TRAINED AND CERTIFIED TO INSTALL HVAC SYSTEMS OR CONTRACTOR LICENSED TO INSTALL HVAC SYSTEMS.

28. IF REQUIRED BY THE COUNTY OF SANTA CLARA, THE OWNER OR THE RESPONSIBLE ENTITY ACTING AS THE OWNER'S AGENT SHALL EMPLOY ONE OR MORE SPECIAL INSPECTORS TO PROVIDE INSPECTION OR OTHER DUTIES NECESSARY TO SUBSTANTIATE COMPLIANCE WITH THIS CODE. SPECIAL INSPECTORS SHALL DEMONSTRATE COMPETENCE TO THE SATISFACTION OF THE COUNTY OF SANTA CLARA FOR THE PARTICULAR TYPE OF INSPECTION OR TASK TO BE PERFORMED. SPECIAL INSPECTORS SHALL BE INDEPENDENT ENTITIES WITH NO FINANCIAL INTEREST IN THE MATERIALS OR THE PROJECT THEY ARE INSPECTING FOR COMPLIANCE WITH THIS CODE.

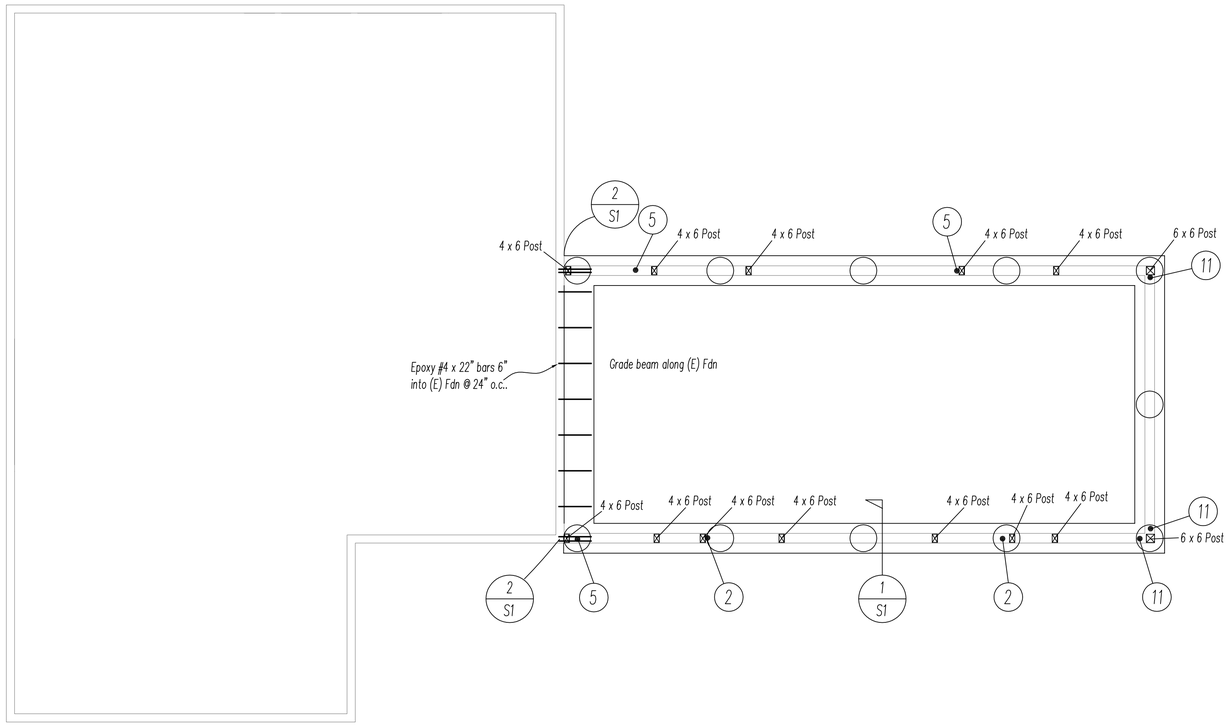
29. DOCUMENTATION USED TO SHOW COMPLIANCE WITH THIS CODE SHALL INCLUDE BUT IS NOT LIMITED TO, CONSTRUCTION DOCUMENTS, PLANS, SPECIFICATIONS, BUILDER OR INSTALLER CERTIFICATION, INSPECTION REPORTS, OR OTHER METHODS ACCEPTABLE TO THE COUNTY OF SANTA CLARA WHICH DEMONSTRATE SUBSTANTIAL CONFORMANCE. WHEN SPECIFIC DOCUMENTATION OR SPECIAL INSPECTION IS NECESSARY TO VERIFY COMPLIANCE, THAT METHOD OF COMPLIANCE WILL BE SPECIFIED IN THE APPROPRIATE SECTION OR IDENTIFIED IN THE APPLICATION CHECKLIST.

REVISIONS

SESHAT DESIGN
COMMERCIAL | RESIDENTIAL | GREEN DESIGN
408/778.5454 fax 408/778.1115
17546 Cheshro Lake Drive, Morgan Hill, CA 95037

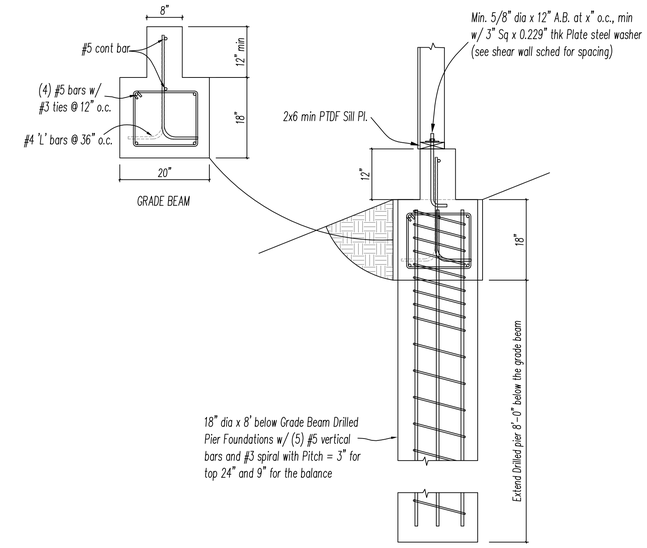
ADDITION AND REMODEL AND ADU
15990 FLINTLOCK ROAD
CUPERTINO CA 95014

DATE: 3/3/2023
SCALE:
JOB NUMBER:
SHEET: CG2



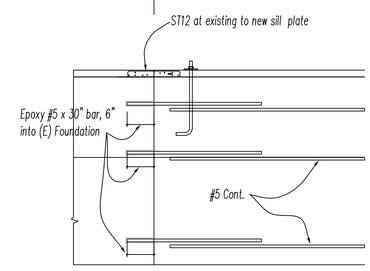
Foundation Plan

SCALE: ¼" = 1'-0"



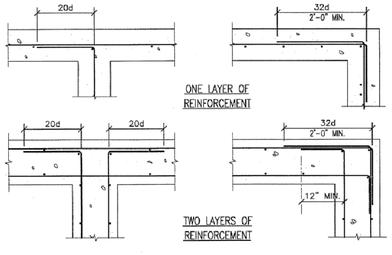
1 Pier & Grade Beam at Perimeter

Scale: ¾" = 1'-0"



2 Dowelling into (E) Fdn

Scale: ¾" = 1'-0"



TYPICAL LAP SPLICES – CONC. 3

N.T.S.

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REVISIONS:

REV:	DATE:	DESCRIPTION:

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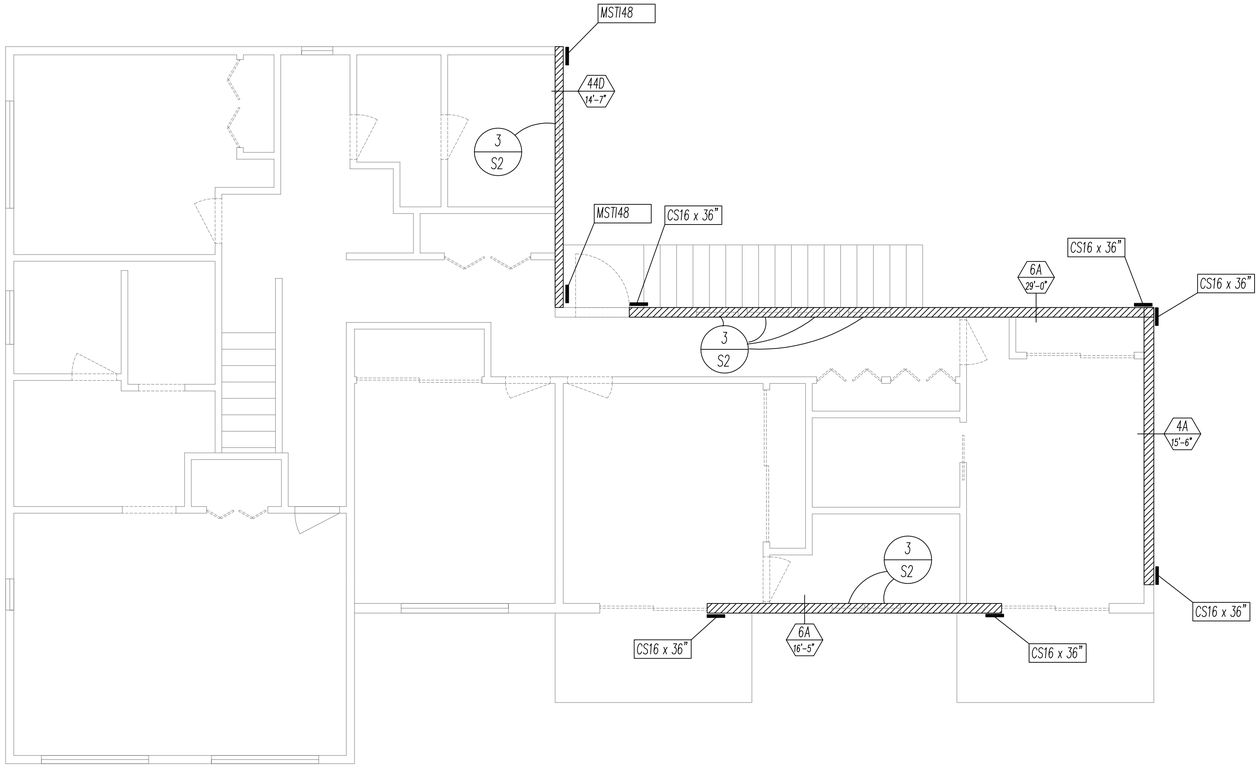
Cupertino, California 95014

Job # 231

1-21-2023

S1

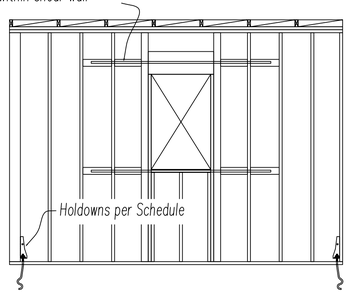
Arch D Scale: ¼" = 1'-0"



Shear Wall Plan – 2nd Floor

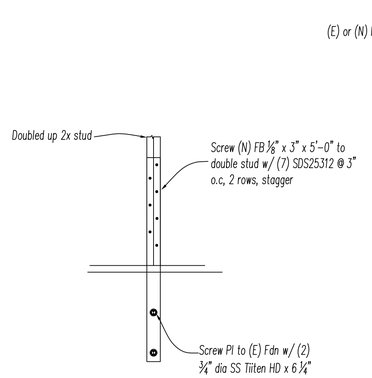
SCALE: ¼" = 1'-0"

Use CS14 Straps (or CMST14 where called for), above and below opening, extending 20" beyond opening, where windows are within shear wall



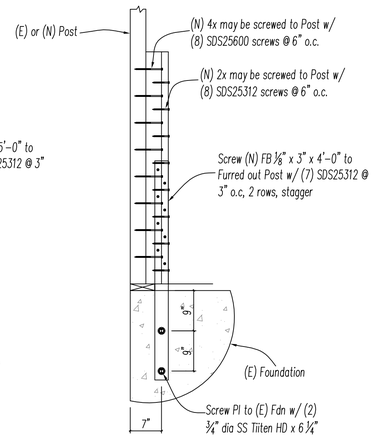
3 Straps @ Window within Shear Wall

Scale: ¾" = 1'-0"



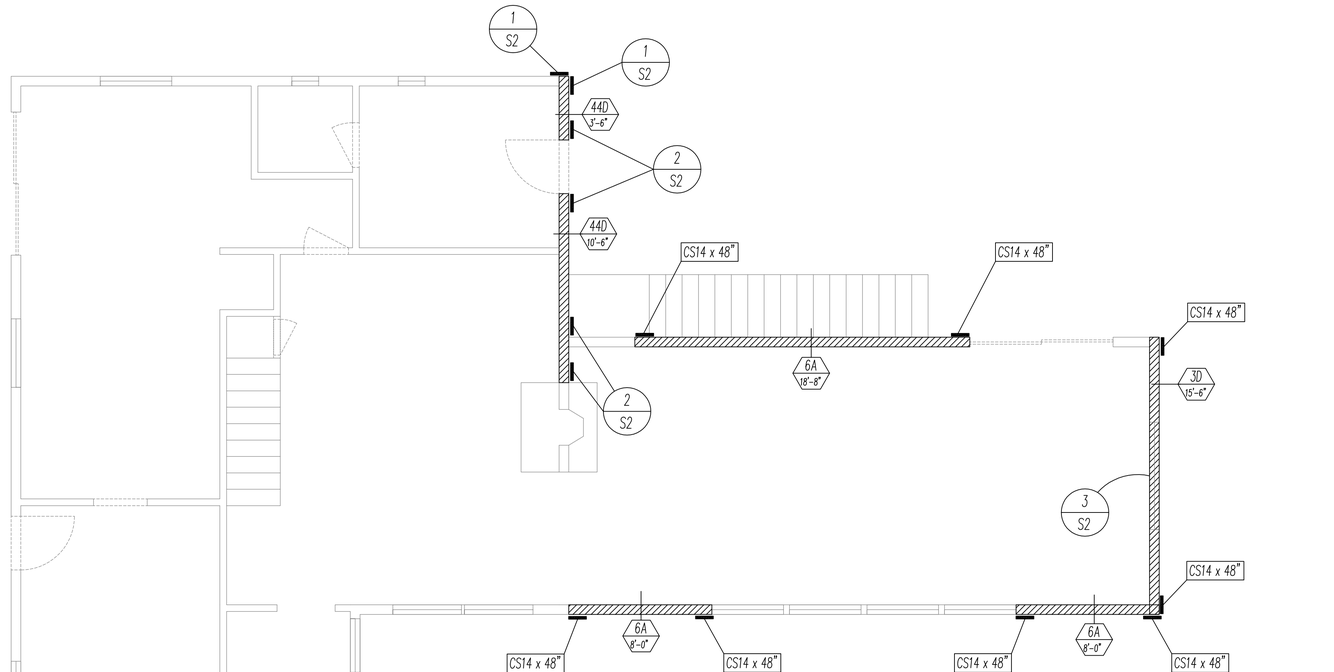
2 Hold Down Detail 2

Scale: ¾" = 1'-0"



1 Hold Down Detail 1

Scale: ¾" = 1'-0"



Shear Wall Plan – 1st Floor

SCALE: ¼" = 1'-0"

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1-21-2023

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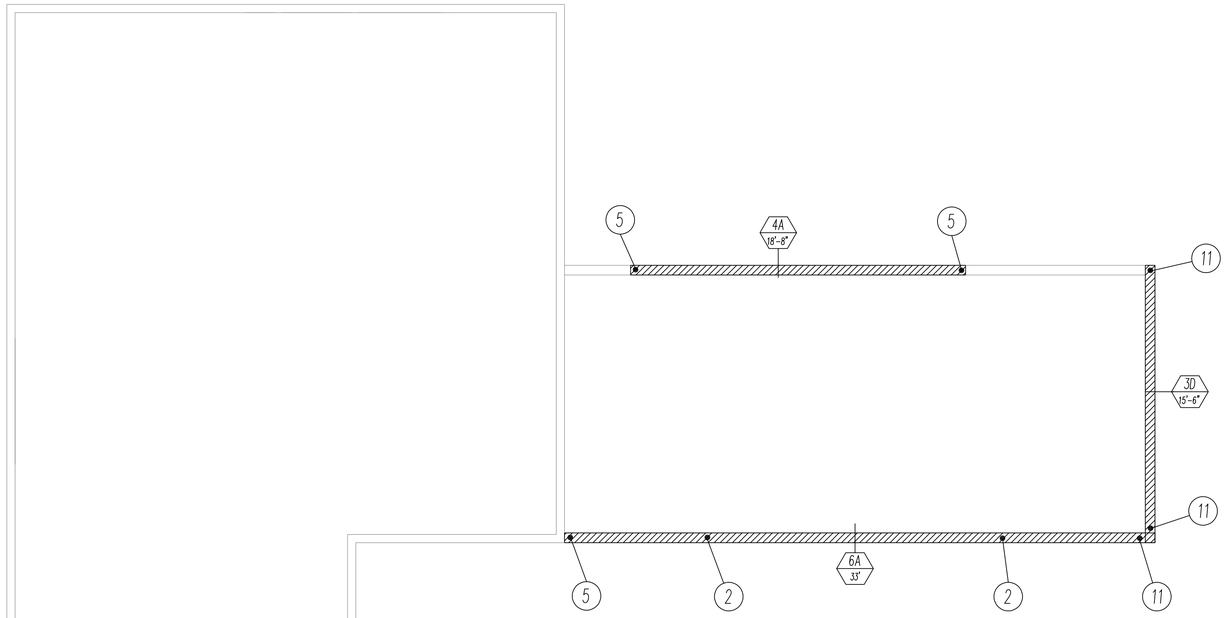
S2

Arch D Scale: ¼" = 1'-0"



Shear Wall Plan – Crawl Space

SCALE: ¼" = 1'-0"

Holdown Schedule

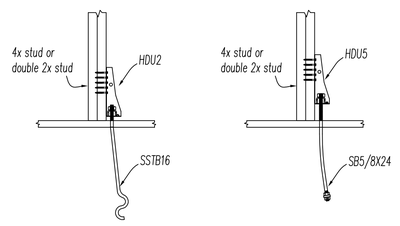
Symbol	Holdown	Rod Size	Minimum Post Size	Holdown Anchor Bolt
(2)	HDU2-SDS2.5	⅝"ϕ	(2) 2x Studs	SSTB24
(5)	HDU4-SDS2.5	⅝"ϕ	4 x Post	SB5/8X24
(11)	HDU11-SDS2.5	⅝"ϕ	6 x 6 Post	PAB4H embedded 12" into grade beam
CS16 x 36"	CS16 Coil Strap – Use (20) 0.148" dia x 2½" lg nails– end length =12"			
CS14 x 48"	CS14 Coil Strap – Use (26) 0.148" dia x 2½" lg nails– end length =16"			
MST148	MST148 Strap – Use (48) 0.148" dia x 1½" lg nails			

Shear Wall Sheathing Schedule

Symbol	Sheathing	Nailing		Sill Plate Bolting
		Edge	Field	
6A length	⅜" OSB, APA Rated Exp 1	8d @ 6" o.c.	8d @ 10" o.c.	⅝" dia x 12" A.B. @ 48" o.c.
4A length	⅜" OSB, APA Rated Exp 1	8d @ 4" o.c.	8d @ 10" o.c.	⅝" dia x 12" A.B. @ 48" o.c.
3D length	½" OSB, APA Rated Exp 1	10d @ 3" o.c.	10d @ 10" o.c.	⅝" dia x 12" A.B. @ 30" o.c.
44D length	½" OSB, APA Rated Exp 1 both sides of wall	10d @ 4" o.c.	10d @ 10" o.c.	⅝" dia x 12" A.B. @ 24" o.c.

SHEAR WALL NOTES:

1. Minimum 3x nominal framing at panel edges at staggered edge nailing where nails are spaced 2 inches on center or closer.
2. Minimum 3x nomial framing at panel edges and staggered edge nailing where 10d nails with more than 1 i penetration into framig are spaced 3 inches on center or closer
3. Where plywood panels are applied on both sides of wall and nail spacing is less than 6 inches on center, panel joints shall be offset to fall o different framing members, or framing shall be minimum 3x nominal at adjoining panel edges and edge nailing on each side shall be staggered.
4. For shear walls with maximum shear design value greater than 350 plf, provide minimum 3x nominal framing at adjoining panel edges, or (2) 2x nominal members fastened to transfer design shear value between framing members. Plywood panel edge nailing shall be staggered in both cases.
5. For shear walls with maximum shear design values greater than 350 plf, provide minimum 3x nominal sill plate with staggered panel edge nailing. Specify 3–20d box nails in lieu of 2–16d common box nails for stud end nails.
6. Record maximum shear design value for each shear wall type.
7. Nails shall be common or galvanized box (hot–dipped or tumbled)
8. Anchor bolts shall include steel plate washers, a minimum of 0.229" x 3" x 3" in size, between sill plate and nut.



1 Holdown @ (N) Foundation
Scale: ¾" = 1'-0"

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Job # 231

1-21-2023

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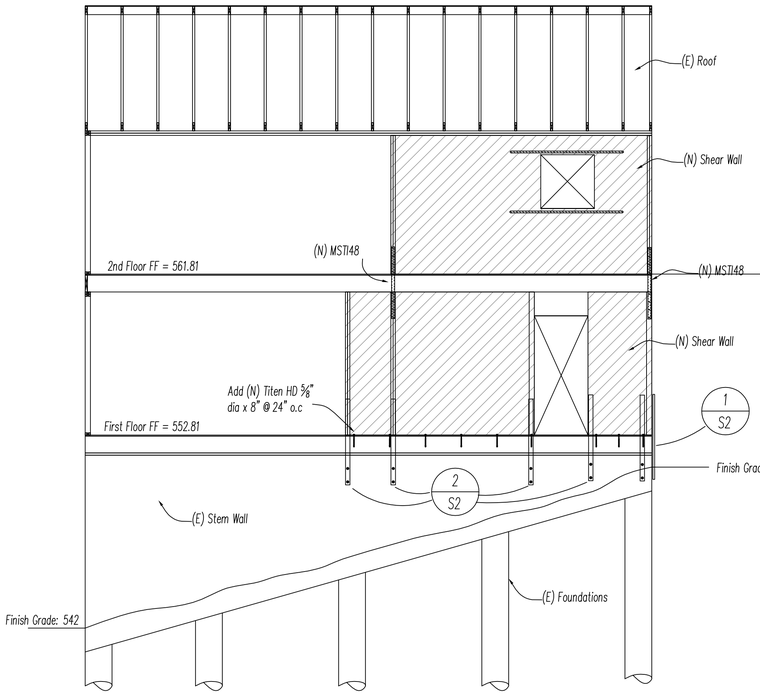
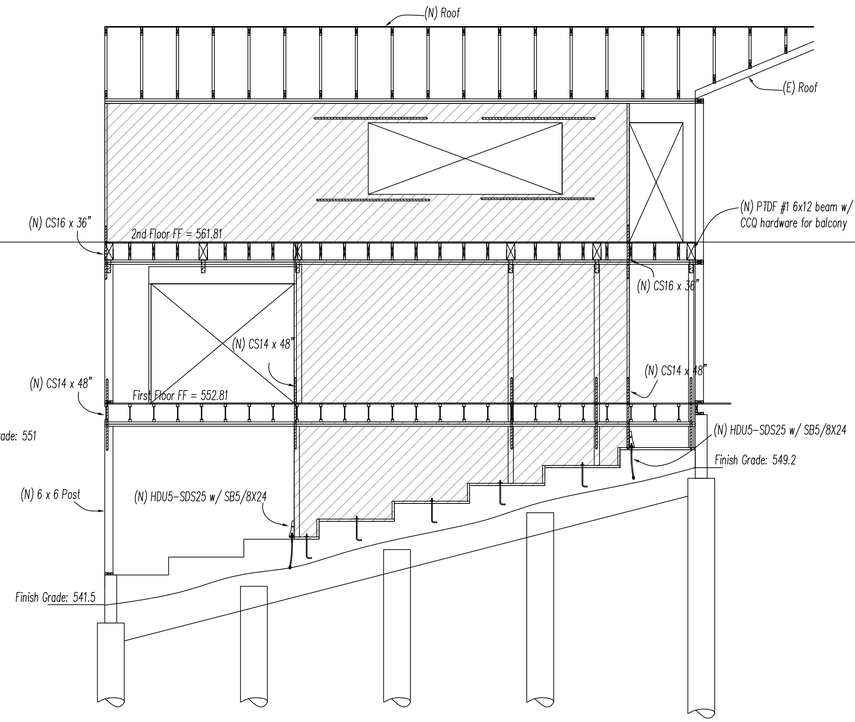
S3

Arch D Scale: ¼" = 1'-0"



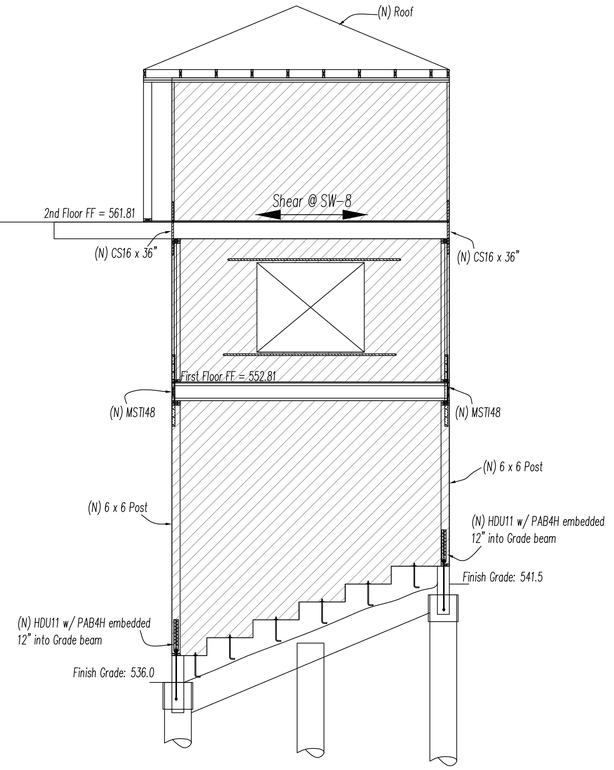
Hold Down Elevation (E) East Elevation

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



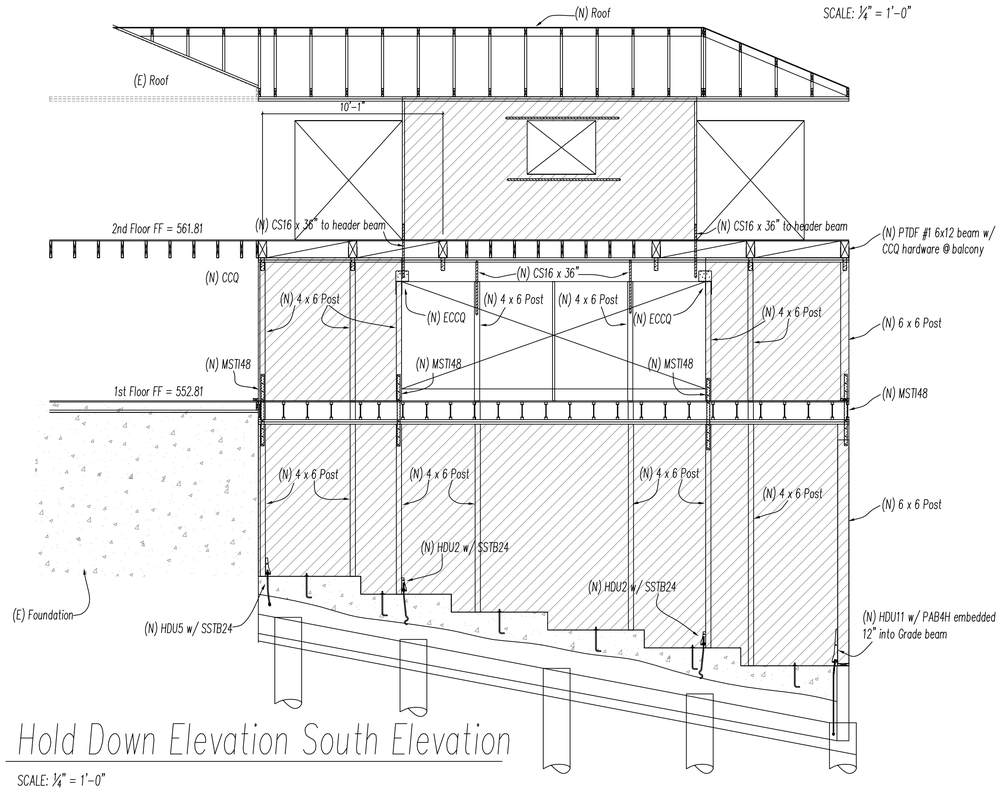
Hold Down Elevation South Elevation

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



Hold Down Elevation (N) East Elevation

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



Hold Down Elevation South Elevation

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

Arch D Scale: 1/4" = 1'-0"

15990 Flintlock Road
Cupertino, California 95014

Job # 231

1-21-2023

REVISIONS:

REV:	DATE:	DESCRIPTION:

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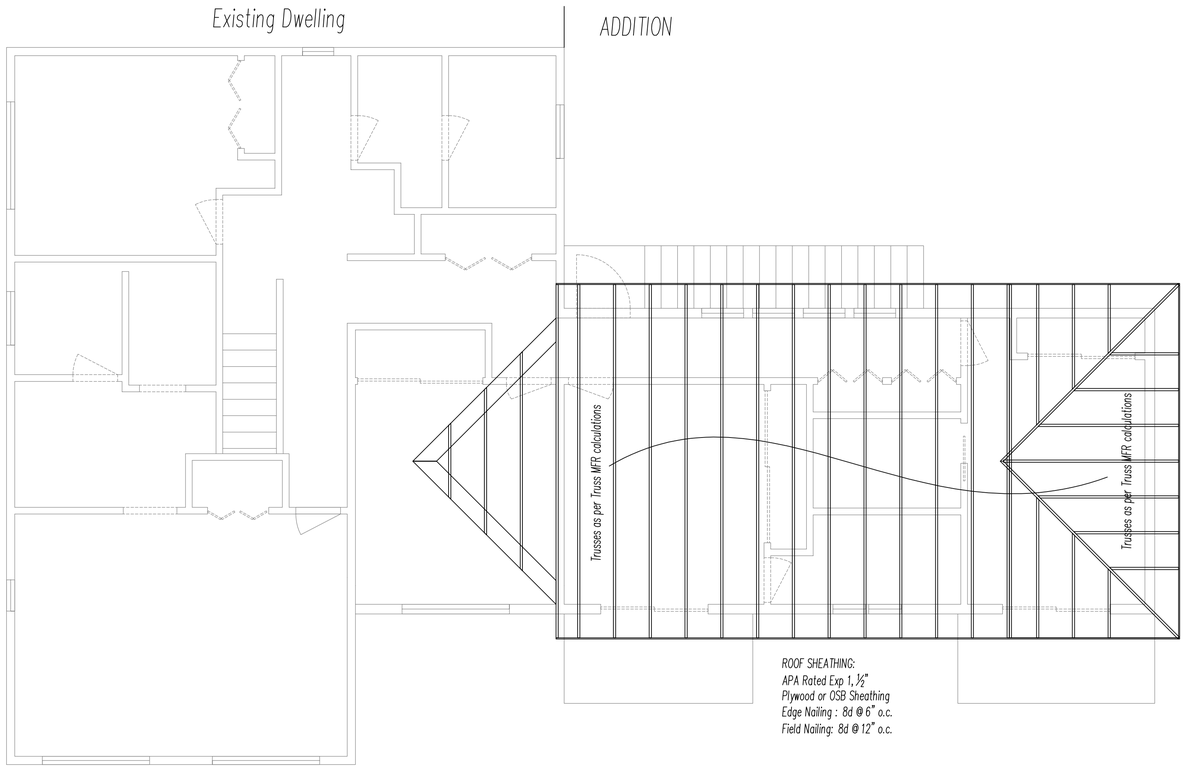
Exp. 3/31/24
STRUCTURAL
STATE OF CALIFORNIA

S4



Roof Framing Plan

SCALE: ¼" = 1'-0"

ALLOWABLE HOLES - TJI® Joists

Table A - End Support

Minimum distance from edge of hole to inside face of nearest end support

JOIST DEPTH	TJI®	ROUND HOLE SIZE									SQUARE OR RECTANGULAR HOLE SIZE								
		4"	6"	7"	8"	10"	12"	14 ¾"	16 ¾"	18 ¾"	20"	4"	6"	7"	8"	10"	12"	14 ¾"	16 ¾"	18 ¾"	20"
18"	560D	1'-0"	1'-6"	2'-0"	3'-0"	5'-6"	7'-5"	11'-0"				3'-0"	5'-6"	6'-6"	8'-0"	10'-6"	13'-6"	13'-6"			
20"		1'-0"	1'-0"	1'-6"	2'-6"	4'-6"	6'-0"	9'-0"	11'-6"			2'-6"	5'-0"	6'-0"	7'-0"	10'-0"	12'-6"	14'-0"	15'-0"		
22"		1'-0"	1'-0"	1'-0"	1'-6"	3'-6"	5'-0"	7'-0"	9'-6"	12'-6"		1'-0"	3'-6"	5'-0"	6'-6"	9'-6"	11'-6"	15'-0"	16'-6"	17'-0"	
24"		1'-0"	1'-0"	1'-0"	2'-0"	3'-6"	5'-0"	7'-0"	8'-6"	11'-0"	12'-6"	1'-6"	4'-0"	5'-0"	6'-6"	9'-6"	10'-6"	16'-0"	16'-6"	17'-0"	17'-0"

Table B - Intermediate or Cantilever Support

Minimum distance from edge of hole to inside face of nearest intermediate or cantilever support

JOIST DEPTH	TJI®	ROUND HOLE SIZE									SQUARE OR RECTANGULAR HOLE SIZE								
		4"	6"	7"	8"	10"	12"	14 ¾"	16 ¾"	18 ¾"	20"	4"	6"	7"	8"	10"	12"	14 ¾"	16 ¾"	18 ¾"	20"
18"	560D	1'-0"	1'-0"	2'-0"	4'-0"	7'-6"	11'-0"	16'-6"				3'-0"	7'-6"	9'-6"	11'-6"	16'-0"	17'-0"	19'-0"			
20"		1'-0"	1'-0"	1'-0"	2'-6"	5'-6"	8'-6"	13'-6"	17'-0"			1'-0"	5'-6"	8'-0"	10'-0"	15'-0"	18'-0"	19'-6"	20'-6"		
22"		1'-0"	2'-6"	3'-6"	4'-6"	6'-6"	8'-6"	11'-0"	14'-6"	17'-6"		3'-6"	6'-6"	8'-6"	10'-0"	19'-0"	20'-0"	21'-0"	21'-6"	22'-0"	
24"		2'-6"	4'-0"	5'-0"	5'-6"	7'-0"	8'-6"	11'-0"	13'-6"	16'-0"	17'-6"	5'-0"	7'-6"	9'-0"	10'-6"	14'-0"	20'-0"	21'-0"	21'-6"	22'-0"	22'-0"

Rectangular holes based on measurement of longest side.

How to Use These Tables

1. Using **Table A**, **Table B**, or both if required, determine the hole shape/size and select the TJI® joist and depth.
2. Scan horizontally until you intersect the correct hole size column.
3. Measurement shown is minimum distance from edge of hole to support.
4. Maintain the required minimum distance from the end **and** the Intermediate or cantilever support.

General Notes

- Holes may be located vertically anywhere within the web. Leave ½" of web (minimum) at top and bottom of hole.
- Knockouts are located in web at approximately 12" on-center; they do not affect hole placement and may be located in the hatched zone.
- For simple span (5' minimum) uniformly loaded joists meeting the requirements of this guide, one maximum size round hole may be located at the center of the joist span **provided that no other holes occur in the joist.**
- Distances are based on the maximum uniform loads allowed on the joists. For other load conditions or hole configurations, use Forte®WEB software or contact your Weyerhaeuser representative.

2nd Floor Framing Plan

SCALE: ¼" = 1'-0"

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REVISIONS:

REV.:	DATE:	DESCRIPTION:

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Cupertino, California 95014

Job # 231

1-21-2023

STUART A SCOTT
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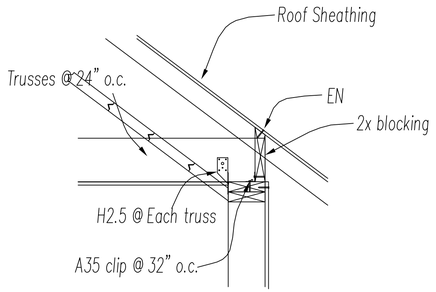
1905 RUCKER AVENUE, GILROY CA 95020
(408)500-5712 LIC # C 042921

S5

Arch D Scale: ¼" = 1'-0"

1st Floor Framing Plan

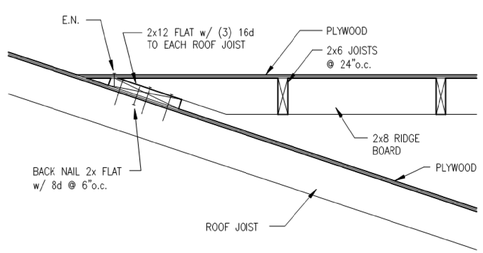
SCALE: ¼" = 1'-0"



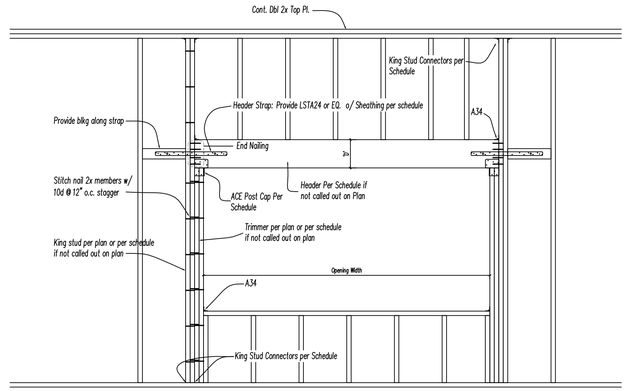
3 Rafters at Eave

SCALE: ¾" = 1'-0"

CA FRAME ROOF SHALL BE FRAMED WITH 2x6 JOISTS @ 24"o.c. PROVIDE 2x6 PURLIN @ 6'-0"o.c. AT JOISTS W/ 2x4 KICKER @ 4'-0"o.c. TO 2x FLAT BELOW.



2 TYP. CALIFORNIA FRAMING



Header / Framing Schedule

Opening Width	Min. Hdr. Size: 6x Nominal Depth	2 x 6 STUDS: Conditions of Windows: Trimmers	Conditions of Windows: King Stud(s)	Conditions of Doors: Trimmers	Conditions of Doors: King Stud(s)	King Stud(s) Connector to Dbl Top Plate	King Stud(s) Connector to Sole/Sill Plate	"ACE" Cap	HDR Strap	End Nailing
3'-0"	"D" = 4"	1 – 2x	1 – 2x	1 – 2x	1 – 2x	3 – 16d Toe Nail per Stud	3 – 16d Toe Nail per Stud	Not Reqd	Yes	4 – 16d
4'-0"	"D" = 4"	1 – 2x	1 – 2x	1 – 2x	1 – 2x	3 – 16d Toe Nail per Stud	3 – 16d Toe Nail per Stud	Not Reqd	Yes	4 – 16d
5'-0"	"D" = 6"	1 – 2x	1 – 2x	1 – 2x	1 – 2x	3 – 16d Toe Nail per Stud	3 – 16d Toe Nail per Stud	Not Reqd	Yes	6 – 16d
6'-0"	"D" = 6"	1 – 2x	2 – 2x	1 – 2x	1 – 2x	3 – 16d Toe Nail per Stud	3 – 16d Toe Nail per Stud	Yes	Yes	8 – 16d
7'-0"	"D" = 6"	1 – 2x	2 – 2x	1 – 2x	1 – 2x	3 – 16d Toe Nail per Stud	3 – 16d Toe Nail per Stud	Yes	Yes	8 – 16d
8'-0"	"D" = 10"	2 – 2x	2 – 2x	1 – 2x	1 – 2x	3 – 16d Toe Nail per Stud	3 – 16d Toe Nail per Stud	Yes	Yes	10 – 16d
9'-0"	"D" = 10"	2 – 2x	3 – 2x	2 – 2x	2 – 2x	"BC" or "A34" Ea side of stud	"BC" or "A34" Ea side of stud	Yes	Yes	10 – 16d
10'-0"	"D" = 12"	2 – 2x	3 – 2x	2 – 2x	2 – 2x	"BC" or "A34" Ea side of stud	"BC" or "A34" Ea side of stud	Yes	Yes	10 – 16d
Over 10'	Per Plan	Per Plan	Per Plan	Per Plan	Per Plan	Per Plan	Per Plan	Per Plan	Per Plan	Per Plan

1 Typical Wall Framing at Openings

SCALE: Not to Scale

1. Materials: The following minimums shall apply to lumber grades unless shown otherwise on the drawings:

A) Vertical members:
- 2x4 Less than 10'-0" long .... Stud Grade, any species
- 2x4 8'-0" to < 10'-0" .....Standard Douglas Fir
- 2x4 10'-0" and longer.....Douglas Fir #2
- 2x6 Any Length .....Douglas Fir #2
- 4" thick, 4" and wider .....Douglas Fir #2
- 6x6 and larger .....Douglas Fir #1

B) Horizontal Members:
- 2 to 4" thick 4" and wider .....Douglas Fir #2
- 6x6 and Larger.....Douglas Fir #1

Concrete: 28 day compressive strength f'c = 2500 psi
Reinforcing: #3, #4: ASTM A615 Gr 40
#5 and larger: ASTM A615, Gr 60

FRAMING NOTES:

1. Roof Diaphragm: Provide ½" APA (SR 24 / 0) rated structural sheathing with 8d common nails at 6" o.c. panel edges, and 12" o.c. at intermediate supports. Provide sheeting at exposure 1 sheeting at exposed locations.

2. Provide ⅛" gap at all panel edges. Sheathing less than 15/32" must have ends and edges supported by blocking or edge clips.

3. Provide solid diaphragm under all roof fill framing at trussed roofs and provide min 12" x 30" attic access opening with all edges blocked.

4. Structural beams, dimensional joists and rafters shall not be notched, cut or bored unless specifically designed and detailed by the engineer or architect of record..

5. All beam to column hardware to be of the CCQ variety

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Job #231

1-21-2023

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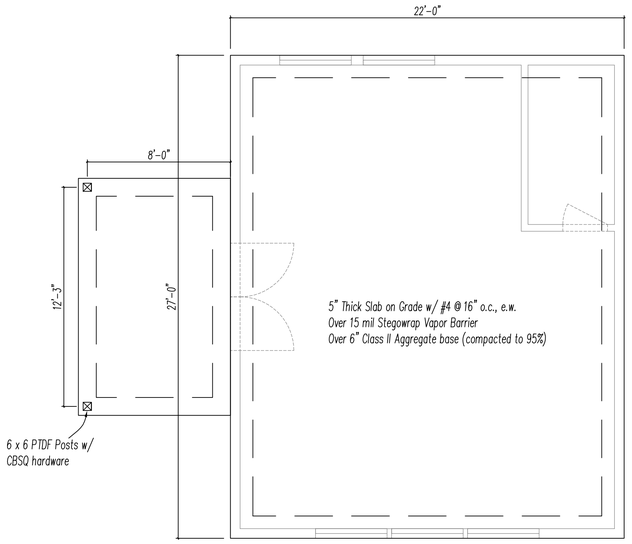
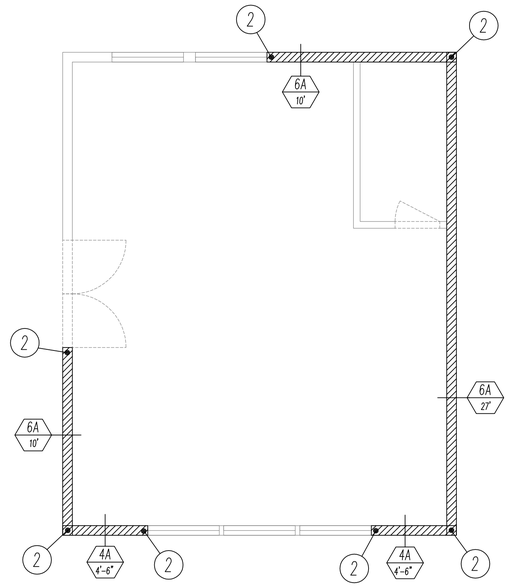
S6

Arch D Scale: ¼" = 1'-0"



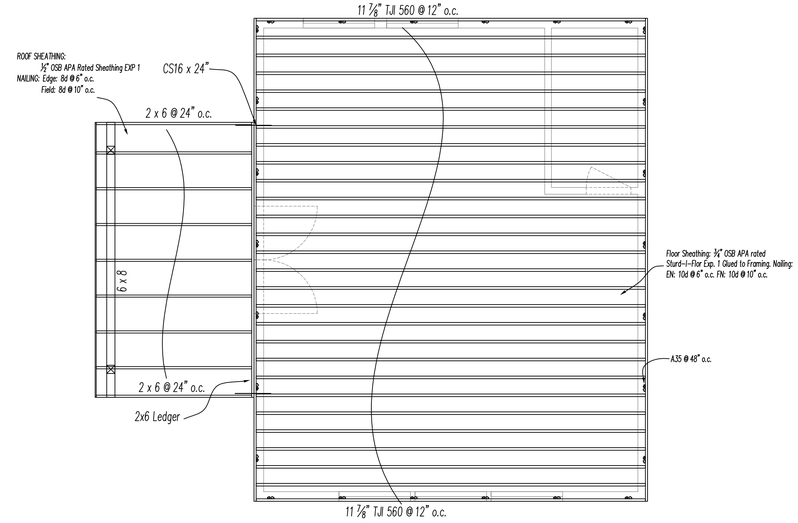
Foundation Plan – ADU

SCALE: ¼" = 1'-0"



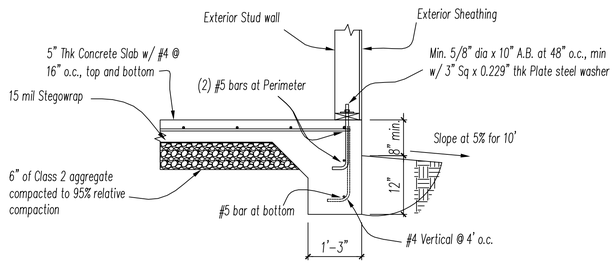
Shear Wall Plan

SCALE: ¼" = 1'-0"



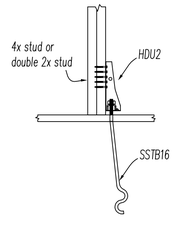
Roof Framing Plan

SCALE: ¼" = 1'-0"



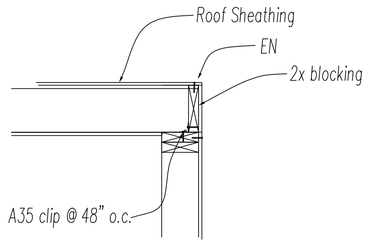
1 Foundation at Perimeter

SCALE: ¾" = 1'-0"



2 Holdown

Scale: ¾" = 1'-0"



3 Lateral Load Transfer

SCALE: 1 ½" = 1'-0"

Shear Wall Sheathing Schedule

Symbol	Sheathing	Nailing		Sill Plate Bolting
		Edge	Field	
6A length	⅜" OSB, APA Rated Exp 1	8d @ 6" o.c.	8d @ 10" o.c.	⅝" dia x 12" A.B. @ 48" o.c.
4A length	⅜" OSB, APA Rated Exp 1	8d @ 4" o.c.	8d @ 10" o.c.	⅝" dia x 12" A.B. @ 48" o.c.

Holdown Schedule

Symbol	Holdown	Rod Size	Minimum Post Size	Holdown Anchor Bolt
2	HDU2-SDS2.5	⅝"ϕ	(2) 2x Studs	SSTB16

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Arch D Scale: 1/4" = 1'-0"

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Job # 231

1-21-23

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S7

Nailing Schedule

TABLE 2304.10.1
FASTENING SCHEDULE

DESCRIPTION OF BUILDING ELEMENTS	NUMBER AND TYPE OF FASTENER	SPACING AND LOCATION
Roof		
1. Blocking between ceiling joists, rafters or trusses to top plate or other framing below	3-8d common ($2^1/_2$″ × 0.131″); or 3-10d box (3″ × 0.128″); or 3-3″ × 0.131″ nails; or 3-3″ 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 ($2^1/_2$″ × 0.131″) 2-3″ × 0.131″ nails 2-3″ 14 gage staples	Each end, toenail
	2-16 d common ($3^1/_2$″ × 0.162″) 3-3″ × 0.131″ nails 3-3″ 14 gage staples	End nail
Flat blocking to truss and web filler	16d common ($3^1/_2$″ × 0.162″) @ 6″ o.c. 3″ × 0.131″ nails @ 6″ o.c. 3″ × 14 gage staples @ 6″ o.c	Face nail
2. Ceiling joists to top plate	3-8d common ($2^1/_2$″ × 0.131″); or 3-10d box (3″ × 0.128″); or 3-3″ × 0.131″ nails; or 3-3″ 14 gage staples, $^7/_{16}$″ crown	Each joist, toenail
3. Ceiling joist not attached to parallel rafter, laps over partitions (no thrust) (see Section 2308.7.3.1, Table 2308.7.3.1)	3-16d common ($3^1/_2$″ × 0.162″); or 4-10d box (3″ × 0.128″); or 4-3″ × 0.131″ nails; or 4-3″ 14 gage staples, $^7/_{16}$″ crown	Face nail
4. Ceiling joist attached to parallel rafter (heel joint) (see Section 2308.7.3.1, Table 2308.7.3.1)	Per Table 2308.7.3.1	Face nail
5. Collar tie to rafter	3-10d common (3″ × 0.148″); or 4-10d box (3″ × 0.128″); or 4-3″ × 0.131″ nails; or 4-3″ 14 gage staples, $^7/_{16}$″ crown	Face nail
6. Rafter or roof truss to top plate (See Section 2308.7.5, Table 2308.7.5)	3-10 common (3″ × 0.148″); or 3-16d box ($3^1/_2$″ × 0.135″); or 4-10d box (3″ × 0.128″); or 4-3″ × 0.131 nails; or 4-3″ 14 gage staples, $^7/_{16}$″ crown	Toenail[c]
7. Roof rafters to ridge valley or hip rafters; or roof rafter to 2-inch ridge beam	2-16d common ($3^1/_2$″ × 0.162″); or 3-10d box (3″ × 0.128″); or 3-3″ × 0.131″ nails; or 3-3″ 14 gage staples, $^7/_{16}$″ crown; or	End nail
	3-10d common ($3^1/_2$″ × 0.148″); or 3-16d box ($3^1/_2$″ × 0.135″); or 4-10d box (3″ × 0.128″); or 4-3″ × 0.131″ nails; or 4-3″ 14 gage staples, $^7/_{16}$″ crown	Toenail

TABLE 2304.10.1—continued
FASTENING SCHEDULE

DESCRIPTION OF BUILDING ELEMENTS	NUMBER AND TYPE OF FASTENER	SPACING AND LOCATION	
Wood structural panels (WSP), subfloor, roof and interior wall sheathing to framing and particleboard wall sheathing to framing[a]			
		Edges (inches)	Intermediate supports (inches)
31. $^3/_8$″ – $^1/_2$″	6d common or deformed (2″ × 0.113″) (subfloor and wall)	6	12
	8d box or deformed ($2^1/_2$″ × 0.113″) (roof)	6	12
	$2^3/_8$″ × 0.113″ nail (subfloor and wall)	6	12
	$1^3/_4$″ 16 gage staple, $^7/_{16}$″ crown (subfloor and wall)	4	8
	$2^3/_8$″ × 0.113″ nail (roof)	4	8
	$1^3/_4$″ 16 gage staple, $^7/_{16}$″ crown (roof)	3	6
32. $^{19}/_{32}$″ – $^3/_4$″	8d common ($2^1/_2$″ × 0.131″); or 6d deformed (2″ × 0.113″)	6	12
	$2^3/_8$″ × 0.113″ nail; or 2″ 16 gage staple, $^7/_{16}$″ crown	4	8
33. $^7/_8$″ – $1^1/_4$″	10d common (3″ × 0.148″); or 8d deformed ($2^1/_2$″ × 0.131″)	6	12
Other exterior wall sheathing			
34. $^1/_2$″ fiberboard sheathing[b]	$1^1/_2$″ galvanized roofing nail ($^7/_{16}$″ head diameter); or $1^1/_4$″ 16 gage staple with $^7/_{16}$″ or 1″ crown	3	6
35. $^{25}/_{32}$″ fiberboard sheathing[b]	$1^3/_4$″ galvanized roofing nail ($^7/_{16}$″ diameter head); or $1^1/_2$″ 16 gage staple with $^7/_{16}$″ or 1″ crown	3	6
Wood structural panels, combination subfloor underlayment to framing			
36. $^3/_4$″ and less	8d common ($2^1/_2$″ × 0.131″); or 6d deformed (2″ × 0.113″)	6	12
37. $^7/_8$″ – 1″	8d common ($2^1/_2$″ × 0.131″); or 8d deformed ($2^1/_2$″ × 0.131″)	6	12
38. $1^1/_8$″ – $1^1/_4$″	10d common (3″ × 0.148″); or 8d deformed ($2^1/_2$″ × 0.131″)	6	12
Panel siding to framing			
39. $^1/_2$″ or less	6d corrosion-resistant siding ($1^7/_8$″ × 0.106″); or 6d corrosion-resistant casing (2″ × 0.099″)	6	12
40. $^3/_8$″	8d corrosion-resistant siding ($2^7/_8$″ × 0.128″); or 8d corrosion-resistant casing ($2^1/_2$″ × 0.113″)	6	12

TABLE 2304.10.1—continued
FASTENING SCHEDULE

DESCRIPTION OF BUILDING ELEMENTS	NUMBER AND TYPE OF FASTENER	SPACING AND LOCATION
Wall		
8. Stud to stud (not at braced wall panels)	16d common ($3^1/_2$″ × 0.162″);	24″ o.c. face nail
	10d box (3″ × 0.128″): or 3″ × 0.131″ nails; or 3-3″ 14 gage staples, $^7/_{16}$″ crown	16″ o.c. face nail
9. Stud to stud and abutting studs at intersecting wall corners (at braced wall panels)	16d common ($3^1/_2$″ × 0.162″); or	16″ o.c. face nail
	16d box ($3^1/_2$″ × 0.135″); or	12″ o.c. face nail
	3″ × 0.131″ nails; or 3-3″ 14 gage staples, $^7/_{16}$″ crown	12″ o.c. face nail
10. Built-up header (2″ to 2″ header)	16d common ($3^1/_2$″ × 0.162″); or	16″ o.c. each edge, face nail
	16d box ($3^1/_2$″ × 0.135″)	12″ o.c. each edge, face nail
11. Continuous header to stud	4-8d common ($2^1/_2$″ × 0.131″); or 4-10d box (3″ × 0.128″)	Toenail
12. Top plate to top plate	16d common ($3^1/_2$″ × 0.162″); or	16″ o.c. face nail
	10d box (3″ × 0.128″): or 3″ × 0.131″ nails; or 3″ 14 gage staples, $^7/_{16}$″ crown	12″ o.c. face nail
13. Top plate to top plate, at end joints	8-16d common ($3^1/_2$″ × 0.162″); or 12-10d box (3″ × 0.128″); or 12-3″ × 0.131″ nails; or 12-3″ 14 gage staples, $^7/_{16}$″ crown	Each side of end joint, face nail (minimum 24″ lap splice length each side of end joint)
14. Bottom plate to joist, rim joist, band joist or blocking (not at braced wall panels)	16d common ($3^1/_2$″ × 0.162″); or	16″ o.c. face nail
	16d box ($3^1/_2$″ × 0.135″); or 3″ × 0.131″ nails; or 3″ 14 gage staples, $^7/_{16}$″ crown	12″ o.c. face nail
15. Bottom plate to joist, rim joist, band joist or blocking at braced wall panels	2-16d common ($3^1/_2$″ × 0.162″); or 3-16d box ($3^1/_2$″ × 0.135″); or 4-3″ × 0.131″ nails; or 4-3″ 14 gage staples, $^7/_{16}$″ crown	16″ o.c. face nail
16. Stud to top or bottom plate	4-8d common ($2^1/_2$″ × 0.131″); or 4-10d box (3″ × 0.128″); or 4-3″ × 0.131″ nails; or 4-3″ 14 gage staples, $^7/_{16}$″ crown; or	Toenail
	2-16d common ($3^1/_2$″ × 0.162″); or 3-10d box (3″ × 0.128″); or 3-3″ × 0.131″ nails; or 3-3″ 14 gage staples, $^7/_{16}$″ crown	End nail
17. Top or bottom plate to stud	2-16d common ($3^1/_2$″ × 0.162″); or 3-10d box (3″ × 0.128″); or 3-3″ × 0.131″ nails; or 3-3″ 14 gage staples, $^7/_{16}$″ crown	End nail
18. Top plates, laps at corners and intersections	2-16d common ($3^1/_2$″ × 0.162″); or 3-10d box (3″ × 0.128″); or 3-3″ × 0.131″ nails; or 3-3″ 14 gage staples, $^7/_{16}$″ crown	Face nail

TABLE 2304.10.1—continued
FASTENING SCHEDULE

DESCRIPTION OF BUILDING ELEMENTS	NUMBER AND TYPE OF FASTENER	SPACING AND LOCATION	
Wood structural panels (WSP), subfloor, roof and interior wall sheathing to framing and particleboard wall sheathing to framing[a]			
		Edges (inches)	Intermediate supports (inches)
Interior paneling			
41. $^1/_4$″	4d casing ($1^1/_2$″ × 0.080″); or 4d finish ($1^1/_2$″ × 0.072″)	6	12
42. $^3/_8$″	6d casing (2″ × 0.099″); or 6d finish (Panel supports at 24 inches)	6	12

For SI: 1 inch = 25.4 mm.

a. Nails spaced at 6 inches at intermediate supports where spans are 48 inches or more. For nailing of wood structural panel and particleboard diaphragms and shear walls, refer to Section 2305. Nails for wall sheathing are permitted to be common, box or casing.

b. Spacing shall be 6 inches on center on the edges and 12 inches on center at intermediate supports for nonstructural applications. Panel supports at 16 inches (20 inches if strength axis in the long direction of the panel, unless otherwise marked).

c. Where a rafter is fastened to an adjacent parallel ceiling joist in accordance with this schedule and the ceiling joist is fastened to the top plate in accordance with this schedule, the number of toenails in the rafter shall be permitted to be reduced by one nail.

TABLE 2304.10.1—continued
FASTENING SCHEDULE

DESCRIPTION OF BUILDING ELEMENTS	NUMBER AND TYPE OF FASTENER	SPACING AND LOCATION
Wall		
19. 1″ brace to each stud and plate	2-8d common ($2^1/_2$″ × 0.131″); or 2-10d box (3″ × 0.128″); or 2-3″ × 0.131″ nails; or 2-3″ 14 gage staples, $^7/_{16}$″ crown	Face nail
20. 1″ × 6″ sheathing to each bearing	2-8d common ($2^1/_2$″ × 0.131″); or 2-10d box (3″ × 0.128″)	Face nail
21. 1″ × 8″ and wider sheathing to each bearing	3-8d common ($2^1/_2$″ × 0.131″); or 3-10d box (3″ × 0.128″)	Face nail
Floor		
22. Joist to sill, top plate, or girder	3-8d common ($2^1/_2$″ × 0.131″); or floor 3-10d box (3″ × 0.128″); or 3-3″ × 0.131″ nails; or 3-3″ 14 gage staples, $^7/_{16}$″ crown	Toenail
23. Rim joist, band joist, or blocking to top plate, sill or other framing below	8d common ($2^1/_2$″ × 0.131″); or 10d box (3″ × 0.128″); or 3″ × 0.131″ nails; or 3″ 14 gage staples, $^7/_{16}$″ crown	6″ o.c., toenail
24. 1″ × 6″ subfloor or less to each joist	2-8d common ($2^1/_2$″ × 0.131″); or 2-10d box (3″ × 0.128″)	Face nail
25. 2″ subfloor to joist or girder	2-16d common ($3^1/_2$″ × 0.162″)	Face nail
26. 2″ planks (plank & beam – floor & roof)	2-16d common ($3^1/_2$″ × 0.162″)	Each bearing, face nail
27. Built-up girders and beams, 2″ lumber layers	20d common (4″ × 0.192″)	32″ o.c., face nail at top and bottom staggered on opposite sides
	10d box (3″ × 0.128″); or 3″ × 0.131″ nails; or 3″ 14 gage staples, $^7/_{16}$″ crown	24″ o.c. face nail at top and bottom staggered on opposite sides
	And: 2 20d common (4″ × 0.192″); or 3-10d box (3″ × 0.128″); or 3-3″ × 0.131″ nails; or 3-3″ 14 gage staples, $^7/_{16}$″ crown	Ends and at each splice, face nail
28. Ledger strip supporting joists or rafters	3-16d common ($3^1/_2$″ × 0.162″); or 4-10d box (3″ × 0.128″); or 4-3″ × 0.131″ nails; or 4-3″ 14 gage staples, $^7/_{16}$″ crown	Each joist or rafter, face nail
29. Joist to band joist or rim joist	3-16d common ($3^1/_2$″ × 0.162″); or 4-10d box (3″ × 0.128″); or 4-3″ × 0.131″ nails; or 4-3″ 14 gage staples, $^7/_{16}$″ crown	End nail
30. Bridging or blocking to joist, rafter or truss	2-8d common ($2^1/_2$″ × 0.131″); or 2-10d box (3″ × 0.128″); or 2-3″ × 0.131″ nails; or 2-3″ 14 gage staples, $^7/_{16}$″ crown	Each end, toenail

General Notes:

1 – All construction, workmanship, and materials shall conform to the requirements of the 2022 California Building Code (CBC) and 2022 California Residential Code (CRC) for residential structures, and any local code requirements. All details, sections and notes shown on the drawings are intended to be typical and shall apply in similar situations elsewhere unless otherwise noted and/or conflict occurs.

2 – Check all dimensions in relation to site conditions before starting work. The contractor shall coordinate work of all trades. All discrepancies shall be called to the attention of the engineer and resolved before proceeding with work. During construction phase the contractor is responsible for the safety of the building and personnel. Provide adequate shoring and/or bracing in accordance with appropriate local, state and national safety codes.

3 – All dimensions and notes take precedence over scale shown on plans, sections and details

4 – Specific notes and details shall take precedence over structural otes and typical details.

5 – See architectural, mechanical, electrical, and all applicable drawings for all locations of penetrations not indicated on the structural drawings (door & window openings, pipes, floor drains, ducts, etc.)

6 – All Nails designated in this design are "Common" Nails

REGISTERED PROFESSIONAL ENGINEER
STUART A SCOTT
No. S 3890
Exp. 3/31/24
STRUCTURAL
STATE OF CALIFORNIA

15990 Flintlock Road
Cupertino, California 95014
Job # 231

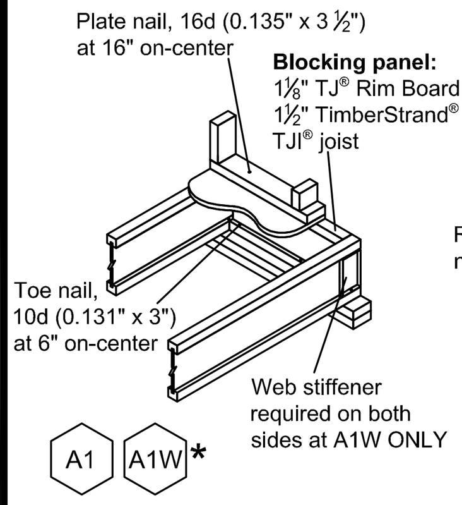
1-21-2023

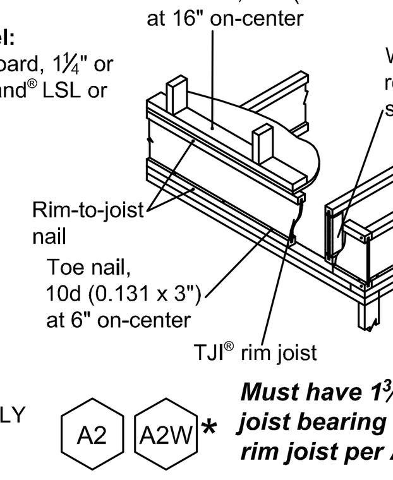
REVISIONS:
REV.: DATE: DESCRIPTION:

STUART A SCOTT
STRUCTURAL ENGINEER
1905 RUCKER AVENUE, GILROY CA 95020
(408)500-5712 LIC # C 042921

S8

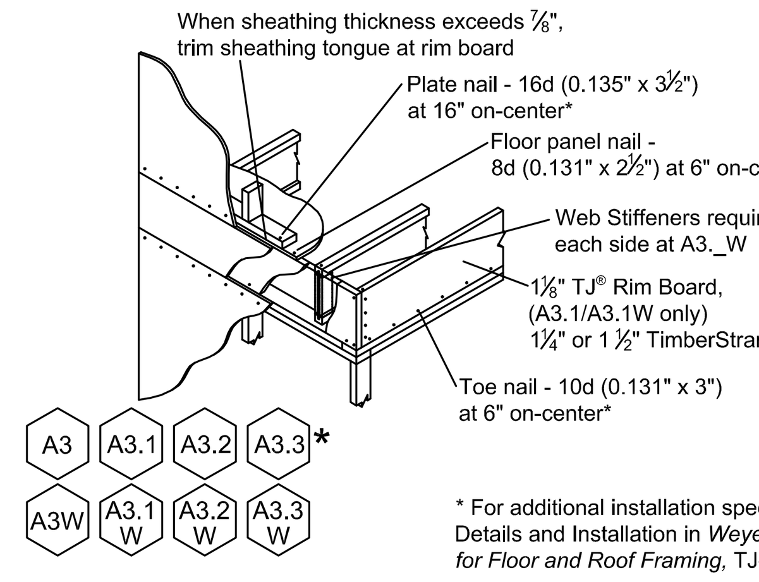
JOIST DETAILS

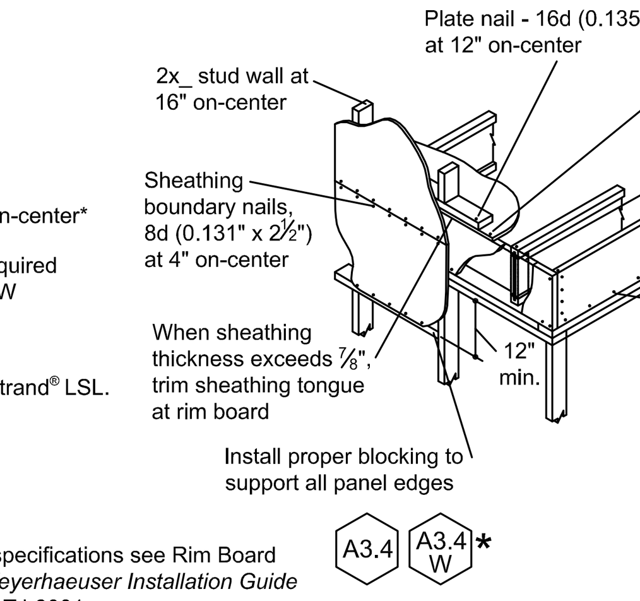




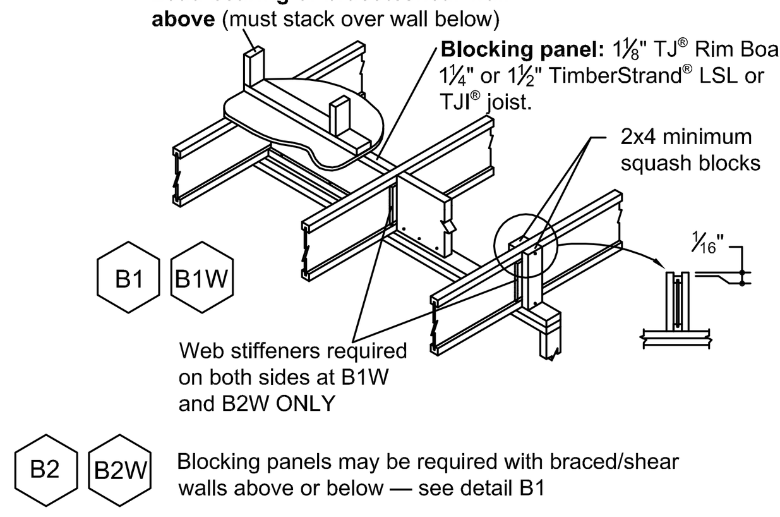
Must have 1¾" minimum joist bearing at ends. Attach rim joist per A3 detail.

* For additional installation specifications see Rim Board Details and Installation in *Weyerhaeuser Installation Guide for Floor and Roof Framing,* TJ-9001.

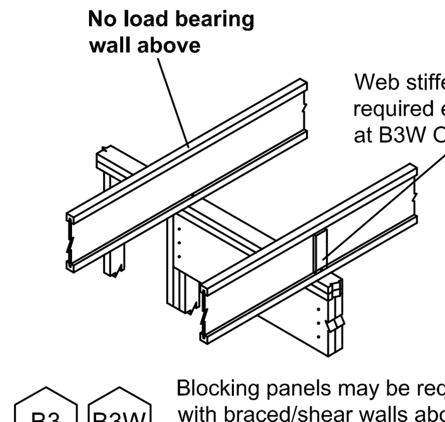




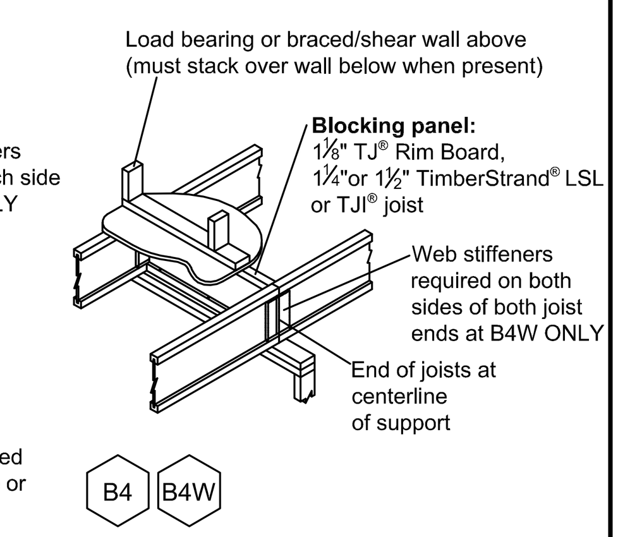
* For additional installation specifications see Rim Board Details and Installation in *Weyerhaeuser Installation Guide for Floor and Roof Framing,* TJ-9001.

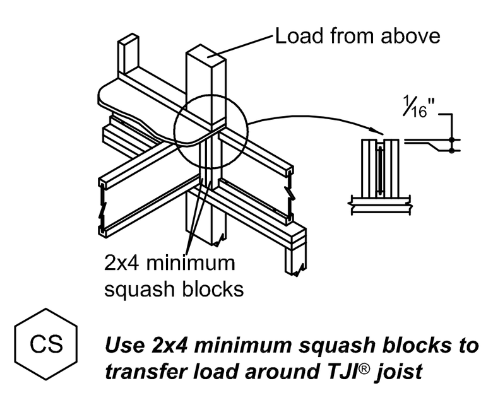


Blocking panels may be required with braced/shear walls above or below — see detail B1

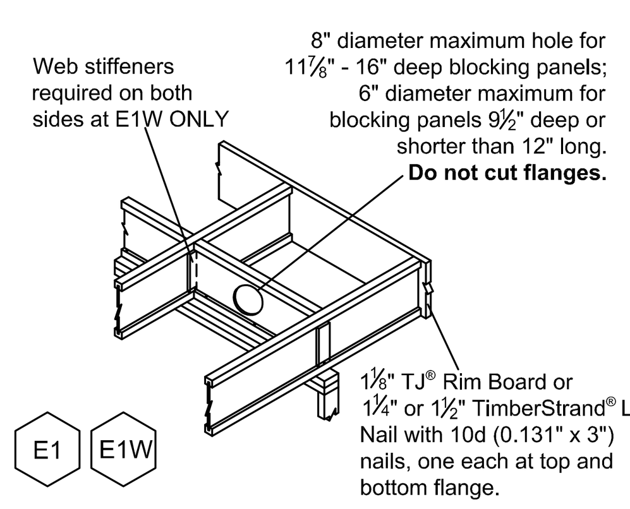


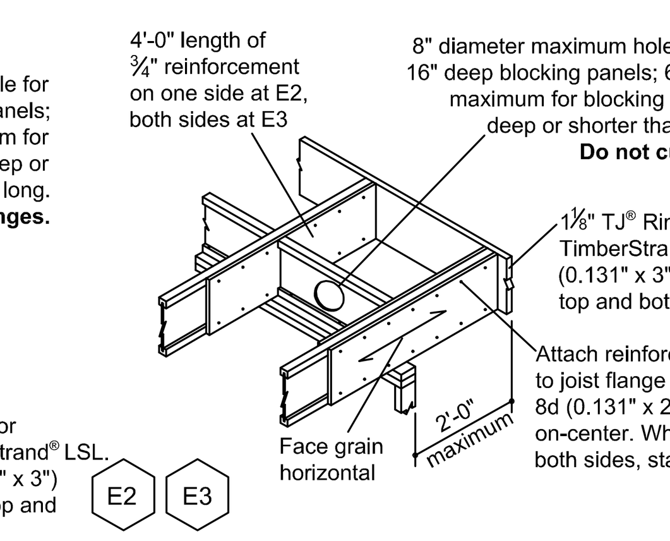
Blocking panels may be required with braced/shear walls above or below — see detail B1

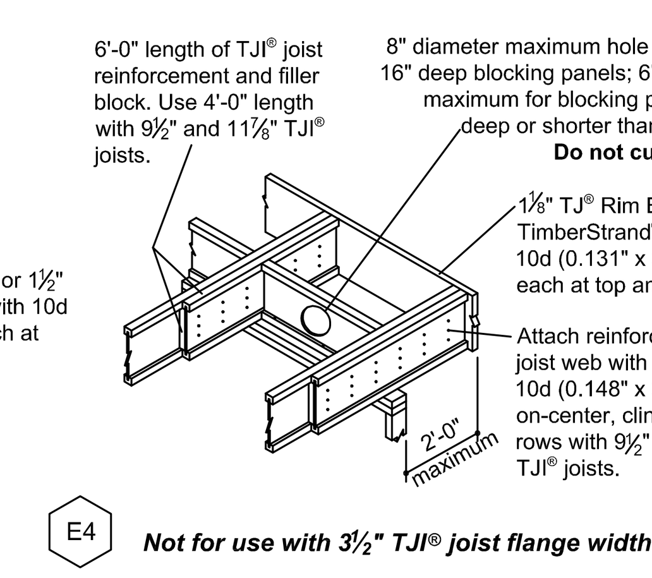




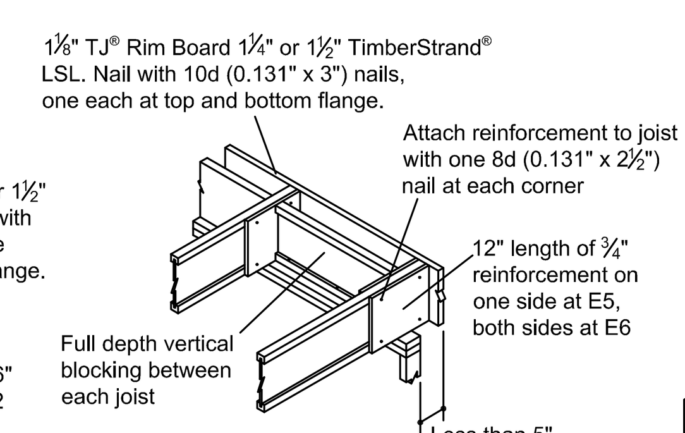
Use 2x4 minimum squash blocks to transfer load around TJI® joist

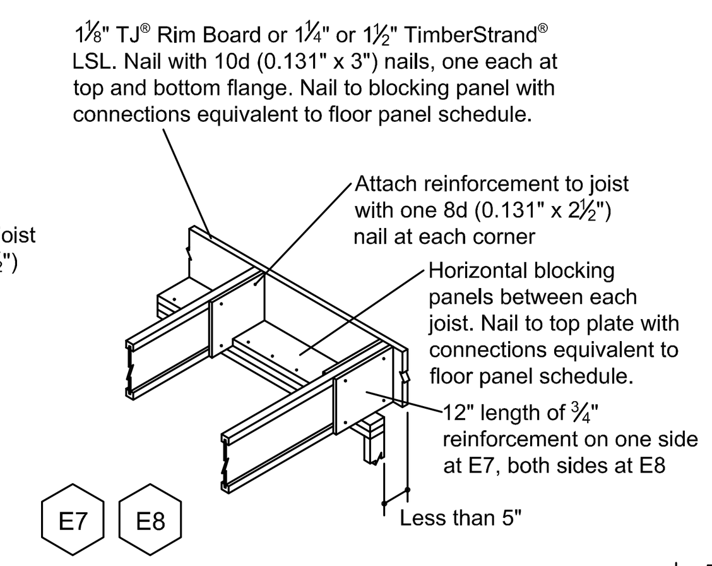


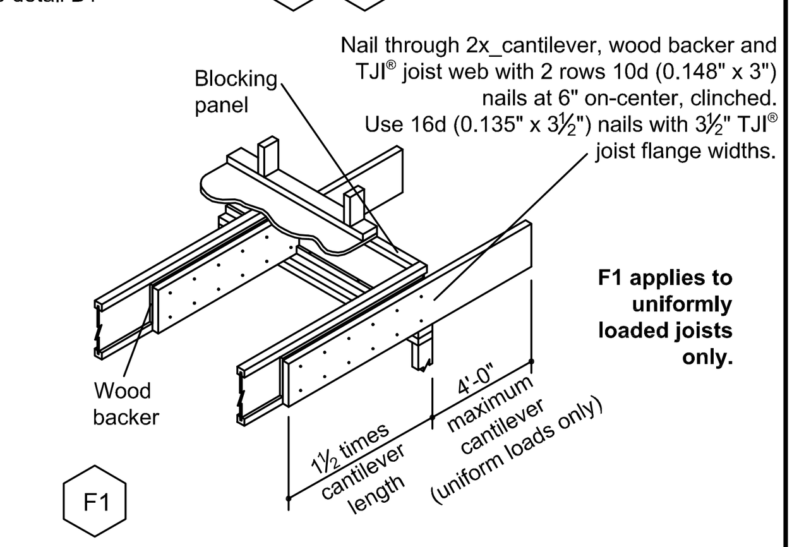




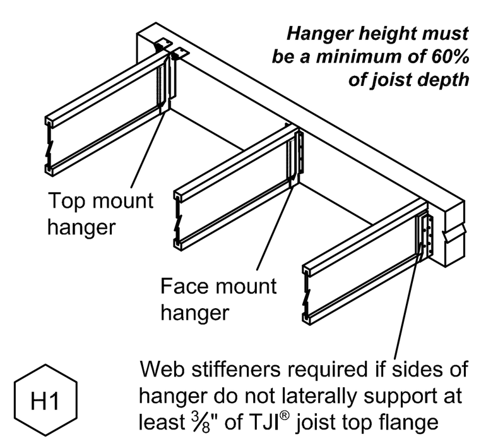
Not for use with 3½" TJI® joist flange widths

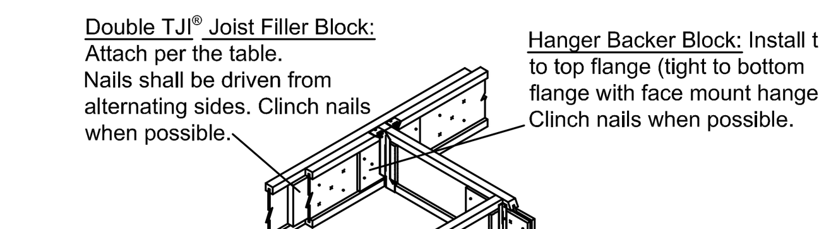




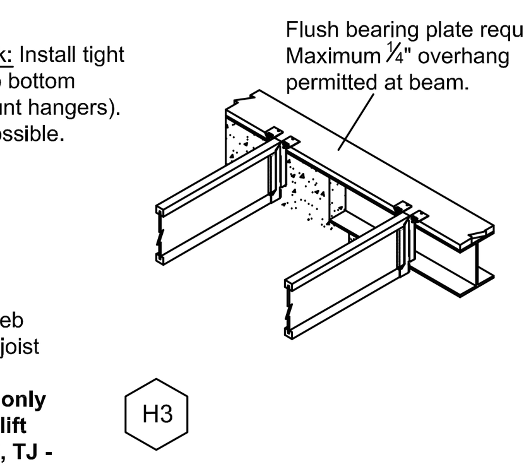


F1 applies to uniformly loaded joists only.

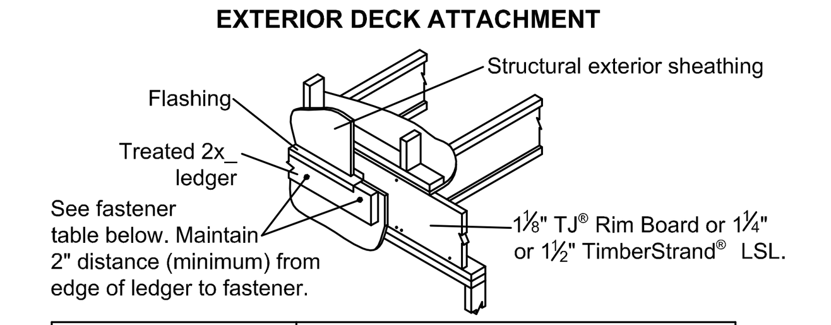




With top mount hangers, backer block required only for downward loads exceeding 250 lbs or for uplift conditions. For nailing requirements see page 5, TJ - 9001, *Weyerhaeuser installation Guide for Floor and Roof Framing, TJ-9001.*



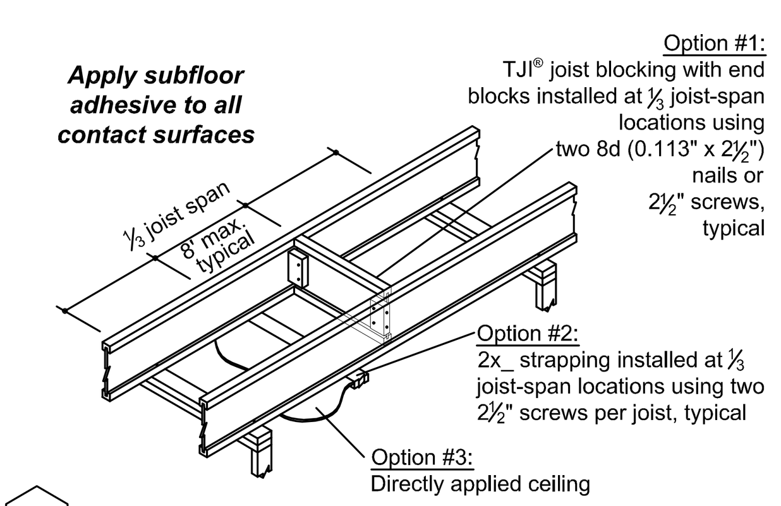
EXTERIOR DECK ATTACHMENT



Rim Board Material	Fastener Allowable Load(2) (lbs/bolt) ½" lag bolt	½" Through bolt	½" Through bolt with Air Space
1⅛" TJ® Rim Board(3)	480	695	615(4)
1¼" TimberStrand® LSL	610	725	
1½" TimberStrand® LSL	675	725	

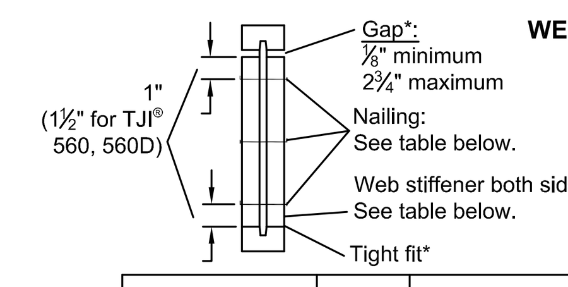
(1) Corrosion-resistant fasteners required for wet-service applications.
(2) Allowable load determined in accordance with ASTM D7672.
(3) 1⅛" TJ® Rim Board is allowed with joist depths ≤16" only.
(4) Maximum ½" shimmed air space.

Apply subfloor adhesive to all contact surfaces



When specified on the layout, one of the bracing options above is required

WEB STIFFENER ATTACHMENT

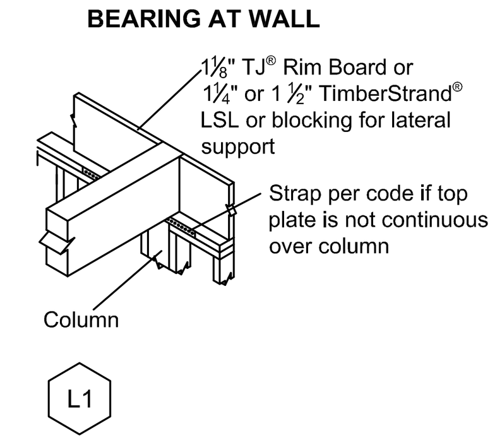


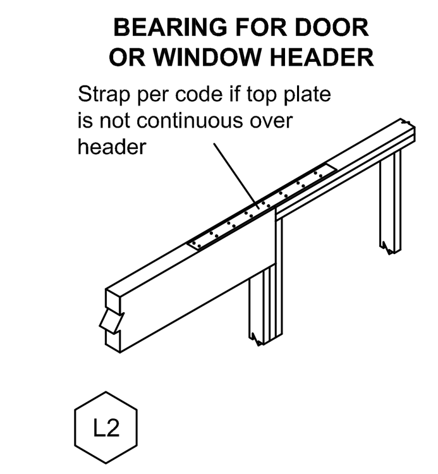
* With point load from above, and no support below, install web stiffener tight to top flange (gap at bottom flange)

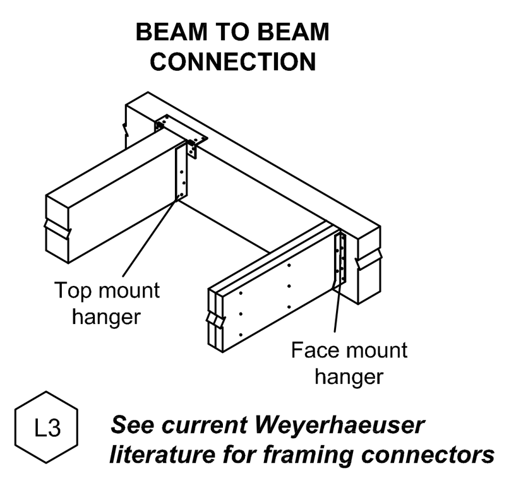
TJI® Joist Series	Depth (in.)	Minimum Web Stiffener Size	Nailing Requirements Type	Number Nails End	Number Nails Intermediate
110 210 230 & 360	All All All	⅝" x 2 5/16"(1) ¾" x 2 5/16"(1) ⅞" x 2 5/16"(1)	8d (0.113" x 2½")	3	3
560	All	2x4(2)	16d (0.135" x 3½")		
560D	18" 20" 22"(3) 24"(3)	2x4(2)	16d (0.135" x 3½")	4 5 6 6	4 5 11 13

(1) PS1 or PS2 sheathing, face grain vertical
(2) Construction grade or better
(3) Web stiffeners are always required for 22" and 24" TJI® 560D Joists

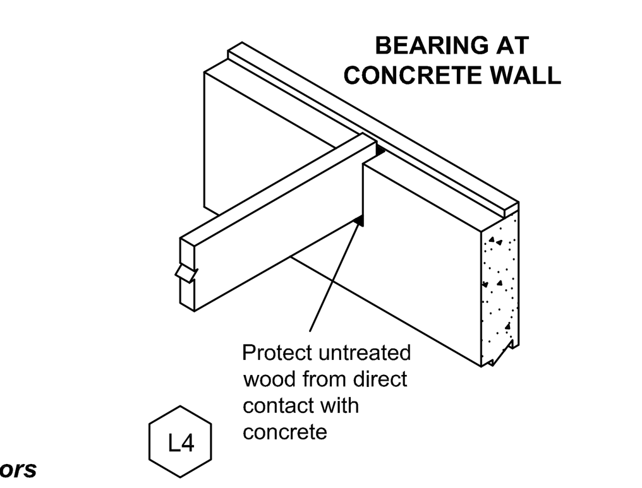
BEAM DETAILS

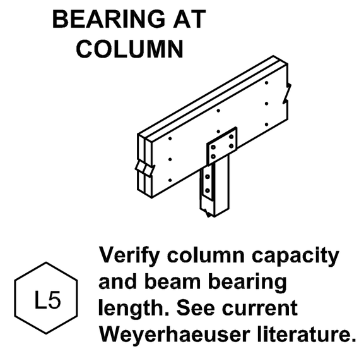






See current Weyerhaeuser literature for framing connectors





Verify column capacity and beam bearing length. See current Weyerhaeuser literature.

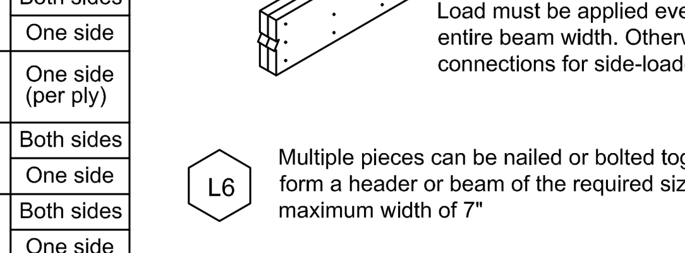
Multiple-Member Connections for Top-Loaded Beams

Fastener Installation Requirements

Piece Width	# of Plies	Type(1)	Min. Length	# Rows	O.C. Spacing	Location
1¾"	2	10d nails	3"	3(2)	12"	One side
		12d-16d nails	3¼"	2(2)		
		Screws	3⅜" or 3½"	2	24"	
	3	10d nails	3"	3(2)	12"	Both sides
		12d-16d nails	3¼"	2(2)		
		Screws	3⅜" or 3½"	2	24"	Both sides
			5"			One side
	4	10d nails(3)	3"	3(2)	12"	One side (per ply)
		12d-16d nails(3)	3¼"	2(2)		
		Screws	5" or 6"	2	24"	Both sides
			6¾"			One side
3½"	2	Screws	5" or 6"	2	24"	Both sides
			6¾"			One side
		½" bolts	8"	2	24"	-

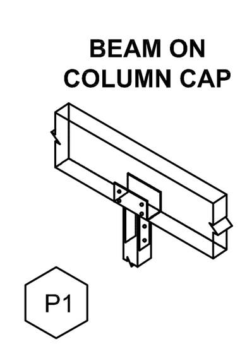
(1) 10d nails are 0.128" diameter; 12d-16d nails are 0.148" - 0.162" diameter; screws are SDS, SDW, USP WS, or TrussLOK®
(2) An additional row of nails is required with depths of 14" or greater.
(3) When connecting 4-ply members, nail each ply to the other and offset nail rows by 2" from the rows in the ply below.

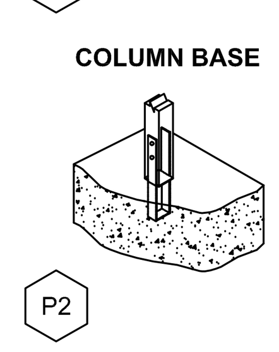
When fasteners are required on both sides, stagger fasteners on the second side so they fall halfway between fasteners on the first side.

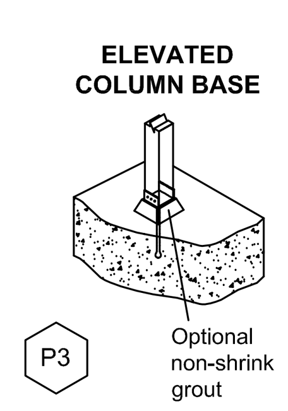


Multiple pieces can be nailed or bolted together to form a header or beam of the required size, up to a maximum width of 7"

COLUMN DETAILS

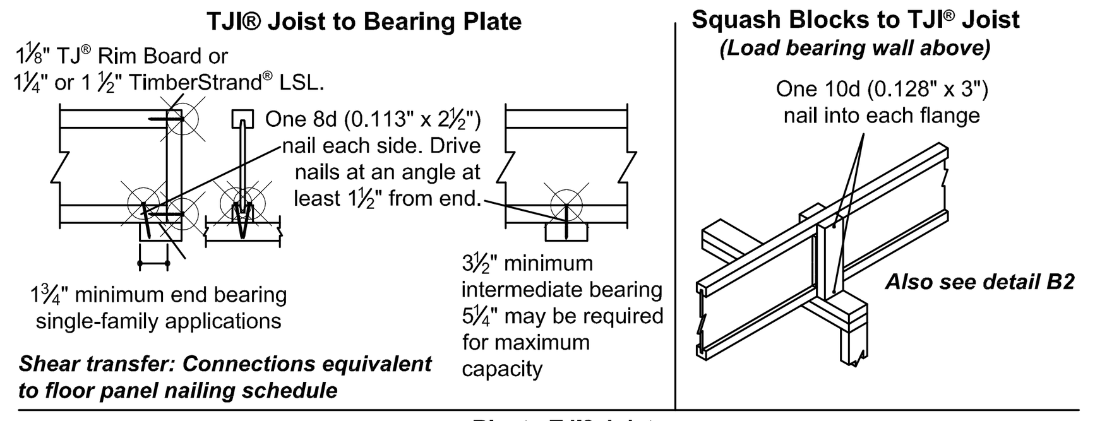






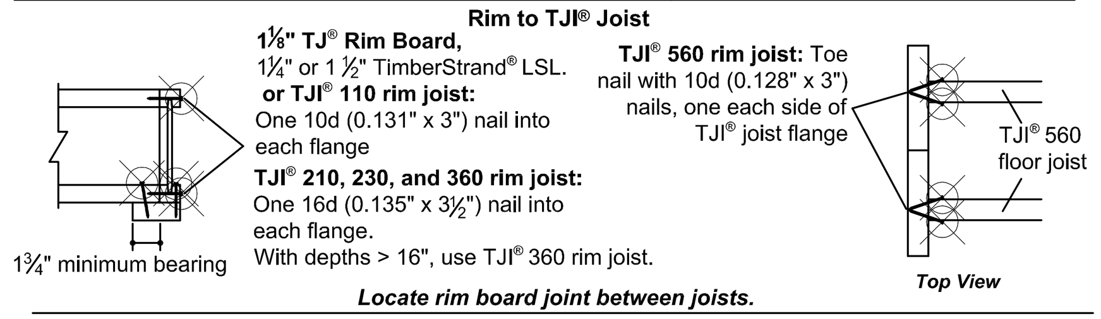
NAILING AT BEARING (FLOOR)

TJI® Joist to Bearing Plate



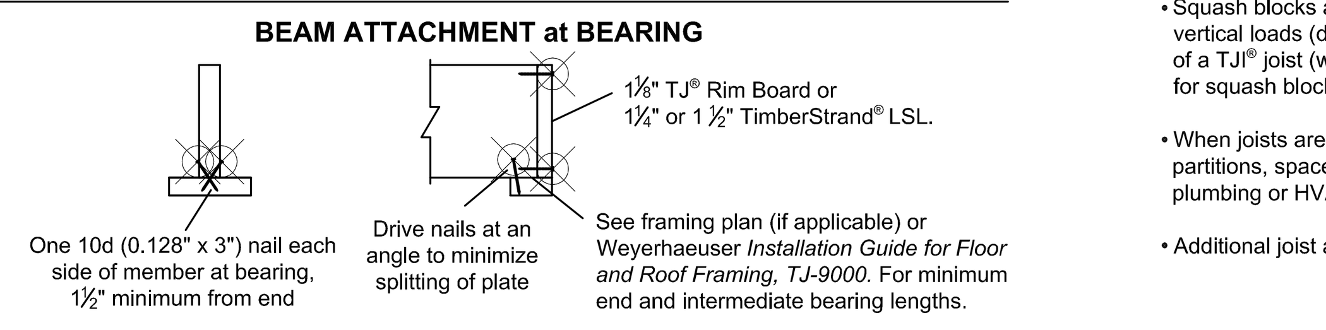
Shear transfer: Connections equivalent to floor panel nailing schedule

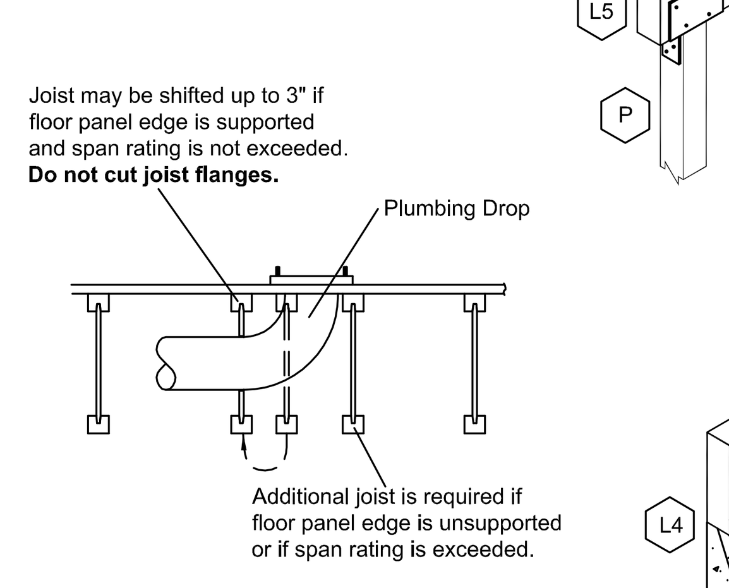
Rim to TJI® Joist



Locate rim board joint between joists.

BEAM ATTACHMENT at BEARING





INSTALLATION TIPS

- Subfloor adhesive will improve floor performance, but may not be required.
- Squash blocks and blocking panels carry stacked vertical loads (details B1 and B2). Packing out the web of a TJI® joist (with web stiffeners) is not a substitute for squash blocks or blocking panels.
- When joists are doubled at non-load bearing parallel partitions, space joists apart the width of the wall for plumbing or HVAC.
- Additional joist at plumbing drop (see detail).

FASTENING of FLOOR PANELS

Guidelines for Closest On-Center Spacing per Row

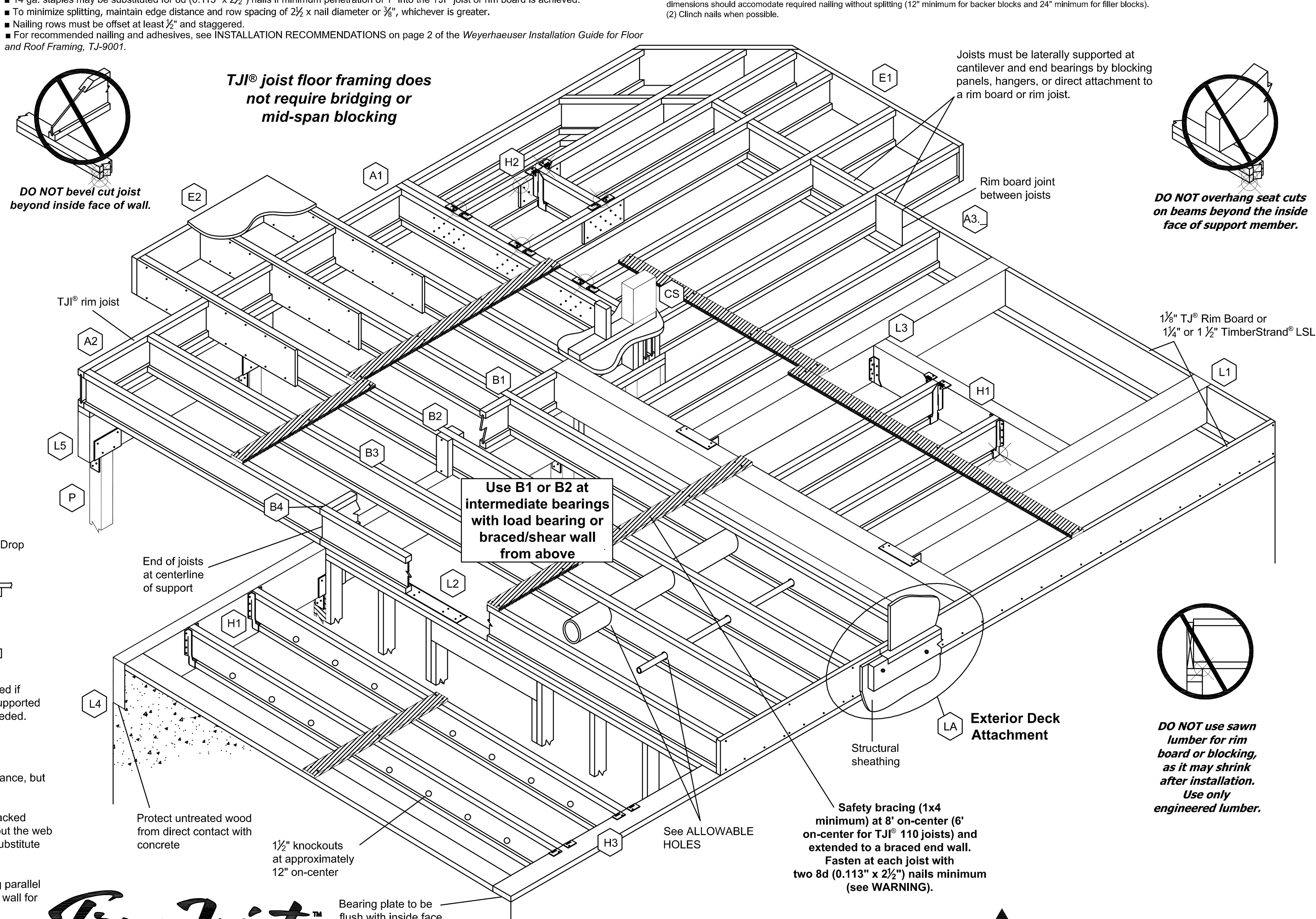
Nail Size	TJI®(1)(2) 110, 210, and 230	TJI® 360 and 560	Rim Board 1⅛" TJ® Rim Board	Rim Board TimberStrand® LSL 1¼"	Rim Board TimberStrand® LSL 1½"	1¾" TimberStrand® LSL or wider	Microllam® LVL	Parallam® PSL
8d (0.113" x 2½"), 8d (0.131" x 2½")	4"	3"	6"	4"	3"	3"	4"	4"
10d (0.148"x 3"), 12d (0.148"x 3¼")	4"(3)	4"(3)	6"	4"	3"	3"	5"	4"
16d (0.162"x 3½")	6"	6"	16"(4)	6"(5)	6"(5)	6"(6)	8"(4)	6"

(1) Stagger nails when using 4" on-center spacing and maintain ⅜" joist and panel edge distance. One row of fasteners is permitted (two at abutting panel edges) for diaphragms. Fastener spacing for TJI® joists in diaphragm applications cannot be less than shown in table. When fastener spacing for blocking is less than spacing shown above, rectangular blocking must be used in lieu of TJI® joists.
(2) For non-diaphragm applications, multiple rows of fasteners are permitted if the rows are offset at least ½" and staggered.
(3) With 10d (0.148" x 1½") nails, spacing can be reduced to 3" on-center for light gauge steel straps.
(4) Can be reduced to 5" on-center if nail penetration into the narrow edge is no more than 1¼" (to minimize splitting).
(5) Can be reduced to 4" on-center if nail penetration into the narrow edge is no more than 1¼" (to minimize splitting).
(6) Can be reduced to 3½" on-center if nail penetration into the narrow edge is no more than 1¼" (to minimize splitting).
- Recommended nailing is 12" on-center in field and 6" on-center along panel edge. Fastening requirements on engineered drawings supersede recommendations listed above.
- Maximum nail spacing for TJI® joists is 18" on-center.
- 14 ga. staples may be substituted for 8d (0.113" x 2½") nails if minimum penetration of 1" into the TJI® joist or rim board is achieved.
- To minimize splitting, maintain edge distance and row spacing of 2½ x nail diameter or ⅜", whichever is greater.
- Nailing rows must be offset at least ½" and staggered.
- For recommended nailing and adhesives, see INSTALLATION RECOMMENDATIONS on page 2 of the *Weyerhaeuser Installation Guide for Floor and Roof Framing, TJ-9001.*

FILLER and BACKER BLOCK SIZES

TJI® Joists	110	110	210	210	230 or 360	230 or 360	360	560	560	560	560D
Depth	9½"-11⅞"	14"-16"	9½"-11⅞"	14"-16"	9½"-11⅞"	14"-16"	18"-20"	11⅞"	14"-16"	18"-20"	22"-24"
Filler Block (1) (Detail H2)	2x6	2x8	2x6 + ⅜" sheathing	2x8 + ⅜" sheathing	2x6 + ½" sheathing	2x8 + ½" sheathing	2x12 + ½" sheathing	Two 2x6	Two 2x8	Two 2x12	Four ¾" x 15" sheathing
Cantilever Filler (Detail E4)	2x6 4'-0" long	2x10 6'-0" long	2x6 + ⅜" sheathing 4'-0" long	2x10 + ⅜" sheathing 6'-0" long	2x6 + ½" sheathing 4'-0" long	2x10 + ½" sheathing 6'-0" long	Not applicable	Not applicable			
Backer Block (1) (Detail F1 or H2)	⅝" or ¾"		¾" or ⅞"		⅞" or 1" Net			2x6	2x8	2x12	Two ¾" x 15" sheathing
Nail Size – Filler	(0.131" x 3")							(0.131" x 3½")			
Nail Size – Backer								(0.131" x 3")			
Nail Quantity(2) – Filler	15							32			50
Nail Quantity(2) – Backer								15			15

(1) If necessary, increase filler and backer block height for face mount hangers and maintain ⅛" gap at top of joist; see detail W. Filler and backer block dimensions should accomodate required nailing without splitting (12" minimum for backer blocks and 24" minimum for filler blocks).
(2) Clinch nails when possible.



Trus Joist™ Weyerhaeuser

Weyerhaeuser

ALLOWABLE HOLES - TJI® Joists

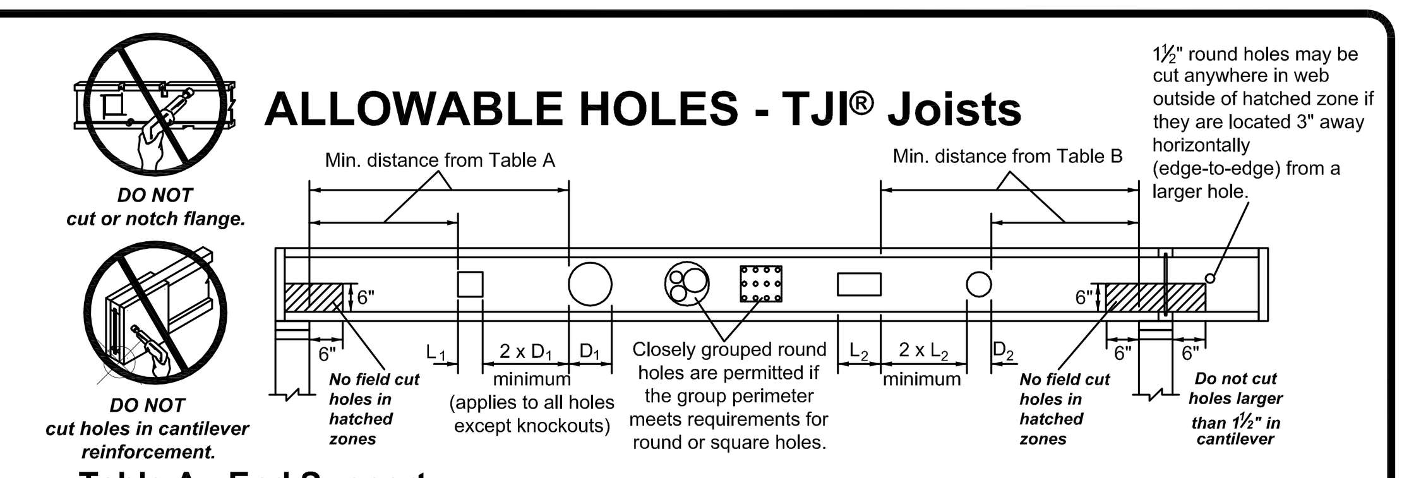


Table A - End Support

Minimum distance from edge of hole to inside face of nearest end support

JOIST DEPTH	TJI®	Round 2"	Round 3"	Round 4"	Round 5"	Round 6½"	Round 7"	Round 8⅞"	Round 11"	Round 13"	Square 2"	Square 3"	Square 4"	Square 5"	Square 6½"	Square 7"	Square 8⅞"	Square 11"	Square 13"
9½"	110	1'-0"	1'-6"	2'-0"	3'-0"	5'-0"					1'-0"	1'-6"	2'-6"	3'-6"	4'-6"				
	210	1'-0"	1'-6"	2'-6"	3'-0"	5'-6"					1'-0"	2'-0"	2'-6"	4'-0"	5'-0"				
	230	1'-6"	2'-0"	2'-6"	3'-6"	5'-6"					1'-0"	2'-0"	3'-0"	4'-6"	5'-0"				
	360	1'-6"	2'-0"	3'-0"	4'-0"	6'-0"					1'-6"	2'-6"	3'-6"	5'-0"	5'-6"				
	560	1'-6"	2'-6"	3'-6"	5'-0"	7'-0"					2'-0"	3'-0"	4'-0"	5'-6"	6'-0"				
11⅞"	110	1'-0"	1'-0"	1'-6"	2'-0"	2'-6"	3'-0"	5'-6"			1'-0"	1'-6"	2'-0"	2'-6"	4'-6"	5'-0"	6'-0"		
	210	1'-0"	1'-6"	2'-0"	2'-0"	3'-0"	3'-6"	6'-0"			1'-0"	1'-6"	2'-6"	3'-0"	5'-0"	5'-6"	6'-6"		
	230	1'-0"	1'-6"	2'-0"	2'-6"	3'-0"	3'-6"	6'-6"			1'-0"	2'-0"	2'-6"	3'-6"	5'-6"	5'-6"	7'-0"		
	360	1'-6"	2'-0"	3'-0"	3'-6"	4'-6"	5'-0"	7'-0"			1'-6"	2'-6"	3'-6"	4'-6"	6'-6"	6'-6"	7'-6"		
	560	1'-6"	2'-6"	3'-0"	4'-0"	5'-6"	6'-0"	8'-0"			2'-6"	3'-6"	4'-6"	5'-6"	7'-0"	7'-6"	8'-0"		
14"	110	1'-0"	1'-0"	1'-0"	1'-0"	1'-6"	2'-0"	3'-0"	5'-6"		1'-0"	1'-0"	1'-6"	2'-0"	3'-6"	4'-0"	6'-0"	8'-0"	
	210	1'-0"	1'-0"	1'-0"	1'-6"	2'-0"	2'-6"	3'-6"	6'-0"		1'-0"	1'-0"	2'-0"	2'-6"	4'-0"	4'-6"	6'-6"	8'-6"	
	230	1'-0"	1'-0"	1'-0"	1'-6"	2'-6"	2'-6"	4'-0"	7'-0"		1'-0"	1'-0"	2'-0"	3'-0"	4'-0"	5'-0"	7'-0"	9'-0"	
	360	1'-0"	1'-0"	1'-6"	2'-6"	3'-6"	4'-0"	5'-6"	8'-0"		1'-0"	1'-6"	2'-6"	4'-0"	6'-0"	6'-6"	8'-0"	9'-6"	
	560	1'-0"	1'-0"	2'-0"	3'-0"	4'-6"	5'-0"	6'-6"	9'-0"		1'-6"	3'-0"	4'-0"	5'-0"	7'-0"	7'-6"	9'-0"	10'-0"	
16"	110	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	2'-0"	3'-0"	5'-0"	1'-0"	1'-0"	1'-0"	1'-6"	3'-0"	3'-0"	5'-6"	7'-6"	10'-0"
	210	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	1'-6"	2'-6"	3'-6"	6'-0"	1'-0"	1'-0"	1'-0"	2'-0"	3'-0"	3'-6"	6'-6"	8'-0"	11'-0"
	230	1'-0"	1'-0"	1'-0"	1'-0"	1'-6"	1'-6"	3'-0"	4'-0"	7'-0"	1'-0"	1'-0"	1'-0"	2'-0"	3'-6"	4'-0"	7'-0"	9'-0"	11'-0"
	360	1'-0"	1'-0"	1'-0"	1'-0"	2'-6"	2'-6"	4'-6"	6'-6"	9'-0"	1'-0"	1'-0"	1'-6"	3'-0"	5'-0"	5'-6"	9'-0"	10'-0"	11'-6"
	560	1'-0"	1'-0"	1'-0"	1'-0"	2'-6"	3'-0"	5'-0"	7'-6"	10'-0"	1'-0"	2'-0"	3'-0"	4'-6"	6'-6"	7'-0"	10'-0"	11'-0"	12'-0"

JOIST DEPTH	TJI®	Round 4"	Round 6"	Round 7"	Round 8"	Round 10"	Round 12"	Round 14¾"	Round 16¾"	Square 4"	Square 6"	Square 7"	Square 8"	Square 10"	Square 12"	Square 14¾"	Square 16¾"
18"	360	1'-0"	1'-0"	1'-0"	2'-0"	4'-0"	5'-6"	9'-6"		1'-0"	3'-0"	4'-6"	6'-0"	10'-0"	11'-0"	13'-6"	
	560	1'-0"	1'-0"	1'-0"	2'-0"	4'-6"	7'-0"	10'-6"		2'-0"	5'-0"	6'-6"	8'-0"	11'-0"	12'-0"	14'-0"	
20"	360	1'-0"	1'-0"	1'-0"	1'-0"	2'-0"	4'-0"	7'-0"	10'-0"	1'-0"	1'-6"	3'-0"	4'-6"	8'-0"	11'-6"	13'-6"	15'-6"
	560	1'-0"	1'-0"	1'-0"	1'-0"	2'-0"	4'-6"	8'-6"	11'-0"	1'-0"	3'-6"	5'-0"	7'-0"	10'-6"	13'-0'	14'-6"	15'-6"

Table B - Intermediate or Cantilever Support

Minimum distance from edge of hole to inside face of nearest intermediate or cantilever support

JOIST DEPTH	TJI®	Round 2"	Round 3"	Round 4"	Round 5"	Round 6½"	Round 7"	Round 8⅞"	Round 11"	Round 13"	Square 2"	Square 3"	Square 4"	Square 5"	Square 6½"	Square 7"	Square 8⅞"	Square 11"	Square 13"
9½"	110	2'-0"	2'-6"	3'-6"	4'-6"	7'-6"					1'-6"	2'-6"	3'-6"	5'-6"	6'-6"				
	210	2'-0"	2'-6"	3'-6"	5'-0"	8'-0"					2'-0"	3'-0"	4'-0"	6'-6"	7'-6"				
	230	2'-6"	3'-0"	4'-0"	5'-6"	8'-6"					2'-0"	3'-6"	4'-6"	6'-6"	7'-6"				
	360	3'-0"	4'-0"	5'-6"	6'-6"	9'-0"					3'-0"	4'-6"	5'-6"	7'-6"	8'-0"				
	560	3'-6"	5'-0"	6'-0"	7'-6"	10'-0"					4'-0"	5'-6"	6'-6"	8'-0"	9'-0"				
11⅞"	110	1'-0"	1'-0"	1'-6"	2'-6"	4'-0"	4'-6"	8'-6"			1'-0"	1'-6"	2'-6"	4'-0"	7'-0"	7'-0"	9'-6"		
	210	1'-0"	1'-6"	2'-0"	3'-0"	4'-6"	5'-6"	9'-0"			1'-0"	2'-0"	3'-0"	4'-6"	8'-0"	8'-0"	10'-0"		
	230	1'-0"	2'-0"	2'-6"	3'-6"	5'-0"	5'-6"	10'-0"			1'-0"	2'-6"	3'-6"	5'-0"	8'-6"	9'-0"	10'-6"		
	360	2'-0"	3'-0"	4'-0"	5'-6"	7'-0"	7'-6"	11'-0"			2'-0"	3'-6"	5'-0"	7'-0"	9'-6"	9'-6"	11'-0"		
	560	1'-6"	3'-0"	4'-6"	5'-6"	8'-0"	8'-6"	12'-0"			3'-0"	4'-6"	6'-0"	8'-0"	10'-6"	11'-0"	12'-0"		
14"	110	1'-0"	1'-0"	1'-0"	1'-0"	2'-0"	2'-6"	4'-6"	8'-6"		1'-0"	1'-0"	1'-0"	2'-6"	5'-0"	6'-0"	9'-0"	12'-0"	
	210	1'-0"	1'-0"	1'-0"	1'-0"	2'-6"	3'-0"	5'-6"	9'-6"		1'-0"	1'-0"	2'-0"	3'-6"	6'-0"	7'-0"	10'-0"	13'-0"	
	230	1'-0"	1'-0"	1'-0"	2'-0"	3'-6"	4'-0"	6'-0"	10'-6"		1'-0"	1'-0"	2'-6"	4'-0"	6'-6"	7'-6"	11'-0"	13'-6"	
	360	1'-0"	1'-0"	2'-0"	3'-6"	5'-6"	6'-0"	8'-6"	12'-6"		1'-0"	2'-0"	4'-0"	5'-6"	9'-0"	10'-0"	12'-0"	14'-0"	
	560	1'-0"	1'-0"	1'-6"	3'-6"	5'-6"	6'-6"	9'-6"	13'-6"		1'-0"	3'-0"	5'-0"	7'-0"	10'-0"	11'-0"	13'-6"	15'-0"	
16"	110	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	2'-6"	5'-0"	8'-6"	1'-0"	1'-0"	1'-0"	1'-0"	3'-6"	4-6"	8'-6"	11'-6"	15'-0"
	210	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	3'-6"	6'-0"	10'-0"	1'-0"	1'-0"	1'-0"	1'-6"	4'-6"	5'-6"	10'-0"	12'-6"	16'-0"
	230	1'-0"	1'-0"	1'-0"	1'-0"	1'-6"	2'-0"	4'-0"	6'-6"	11'-0"	1'-0"	1'-0"	1'-0"	2'-6"	5'-0"	6'-0"	10'-6"	13'-6"	16'-6"
	360	1'-0"	1'-0"	1'-0"	1'-0"	3'-0"	4'-0"	6'-6"	10'-0"	13'-6"	1'-0"	1'-0"	2'-0"	4'-0"	7'-6"	8'-6"	13'-0"	14'-6"	17'-0"
	560	1'-0"	1'-0"	1'-0"	1'-0"	2'-6"	3'-6"	7'-0"	11'-0"	15'-0"	1'-0"	1'-0"	3'-6"	5'-6"	9'-0"	10'-0"	14'-6"	16'-0"	18'-0"

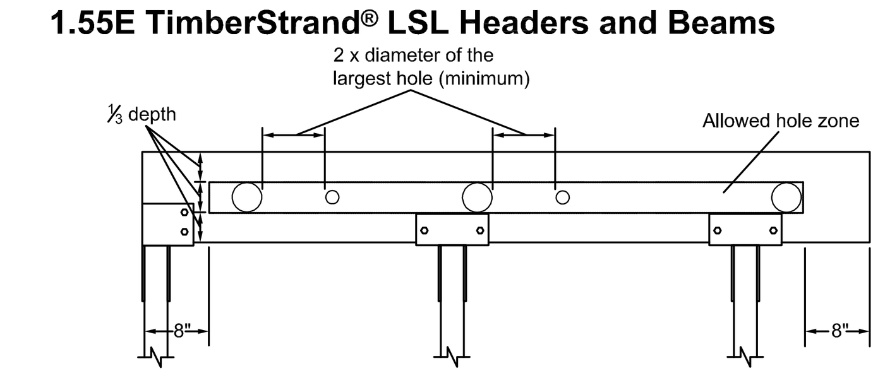
JOIST DEPTH	TJI®	Round 4"	Round 6"	Round 7"	Round 8"	Round 10"	Round 12"	Round 14¾"	Round 16¾"	Square 4"	Square 6"	Square 7"	Square 8"	Square 10"	Square 12"	Square 14¾"	Square 16¾"
18"	360	1'-0"	1'-0"	1'-6"	3'-0"	6'-0"	9'-0"	14'-6"		1'-0"	4'-0"	6'-6"	9'-0"	14'-6"	16'-6"	19'-0"	
	560	1'-0"	1'-0"	1'-0"	2'-0"	6'-0"	10'-0"	15'-6"		1'-0"	6'-0"	8'-6"	11'-6"	16'-6"	18'-0"	19'-6"	
20"	360	1'-0"	1'-0"	1'-0"	1'-0"	3'-0"	6'-0"	11'-0"	15'-0"	1'-0"	1'-6"	4'-0"	7'-0"	12'-6"	16'-6"	19'-0"	20'-6"
	560	1'-0"	1'-0"	1'-0"	1'-0"	1'-6"	5'-6"	11'-6"	15'-6"	1'-0"	3'-0"	6'-0"	8'-6"	14'-0"	17'-6'	19'-0"	20'-6"

Rectangular holes based on measurement of longest side.

- Leave ⅛" of web (minimum) at top and bottom of hole. **DO NOT cut joist flanges.**
- Tables are based on uniform load tables in current design literature.
- For simple span (5' minimum), uniformly loaded joists used in residential applications, one maximum size round hole may be located at the center of the joist span **provided that no other holes occur in the joist.**

ALLOWABLE HOLES - Headers and Beams

1.55E TimberStrand® LSL Headers and Beams



1.55 E TimberStrand® LSL

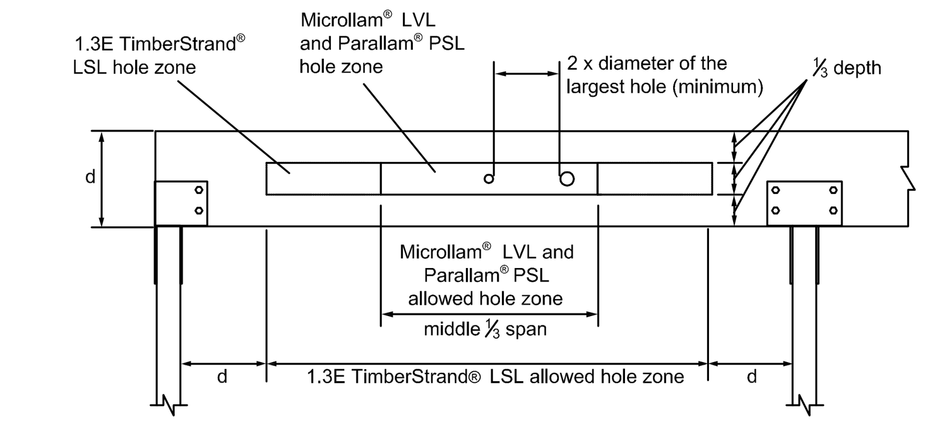
Header or Beam Depth	Maximum Round Hole Size
9¼"-9½"	3"
11¼"-11⅞"	3⅝"
14"-16"	4⅝"

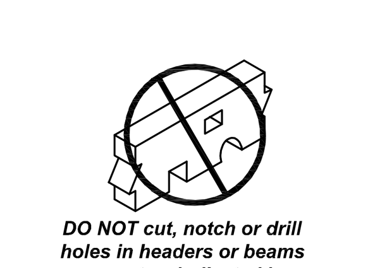
See illustration for allowed hole zone

General Notes

- Allowed hole zone suitable for headers and beams with **uniform and/or concentrated loads anywhere along the member**.
- Round holes only
- No holes in headers or beams in plank orientation.

Other Trus Joist® Headers and Beams





Other Trus Joist® Beams

Header or Beam Depth	Maximum Round Hole Size
4⅜"	1"
5½"	1¾"
7¼"- 20"	2"

See illustration for Allowed Hole Zone

General Notes

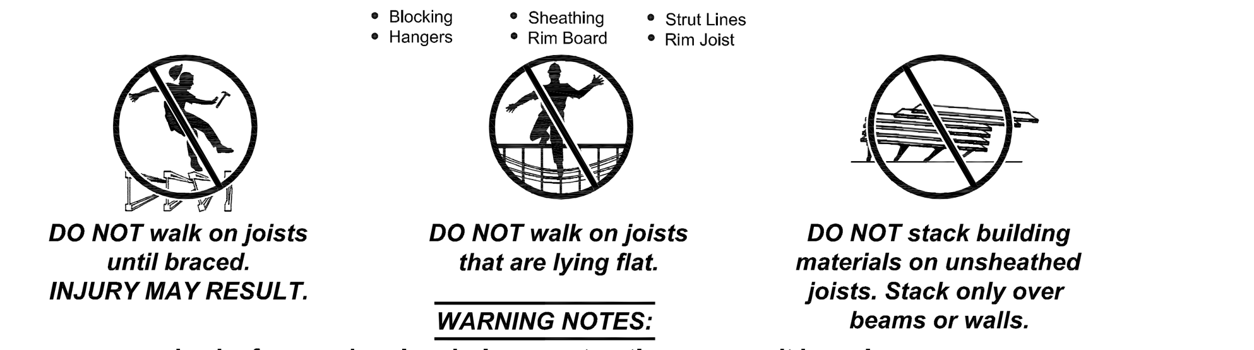
- Allowed hole zone suitable for headers and beams with **uniform loads only.**
- Round holes only
- No holes in cantilevers.
- No holes in headers or beams in plank orientation.

WARNING

Joists are unstable until braced laterally

Bracing Includes:

- Blocking
- Hangers
- Sheathing
- Rim Board
- Strut Lines
- Rim Joist



WARNING NOTES:

Lack of proper bracing during construction can result in serious accidents. Observe the following guidelines:

1. All blocking, hangers, rim boards and rim joists at the end supports of the TJI® joists must be completely installed and properly nailed.
2. Laterial strength, like braced end wall or an existing deck, must be established at the ends of the bay. This can also be accomplished by a temporary or permanent deck (sheathing) fastened to the first 4 feet of joists at the end of the bay.
3. Safety bracing of 1x4 (minimum) must be nailed to a braced end wall or sheathed area (as in note 2) and to each joist. Without this bracing, buckling sideways or rollover is highly probable under light construction loads - such as a worker or one layer of unnailed sheathing.
4. Sheathing must be completely attached to each TJI® joist before additional loads can be placed on the system.
5. Ends of cantilevers require safety bracing on both the top and bottom flanges.
6. The flanges must remain straight within 1/2" from true alignment.

Warning: Drilling, sawing, sanding or machining wood products generates wood dust. The paint and/or coating on this product may contain titanium dioxide. Wood dust and titanium dioxide are substances known to the state of California to cause cancer. For more information on Proposition 65, visit wy.com/inform.

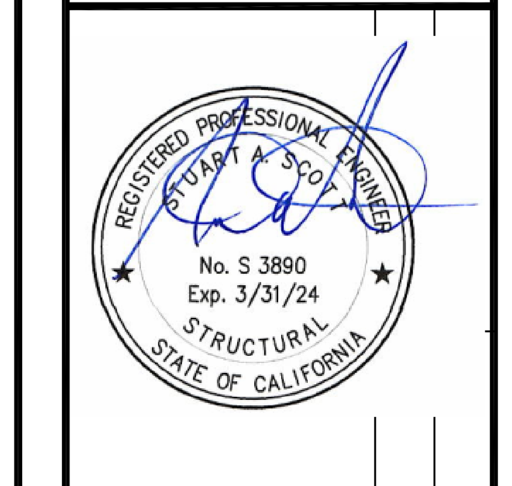
September 2020 Reorder TJ-4015

Weyerhaeuser
1.888.453.8358
weyerhaeuser.com

15990 Flintlock Road
Cupertino, California 95014

Job # 231

1-21-2023



REV	BY	DATE	COMMENT
△			
△			
△			
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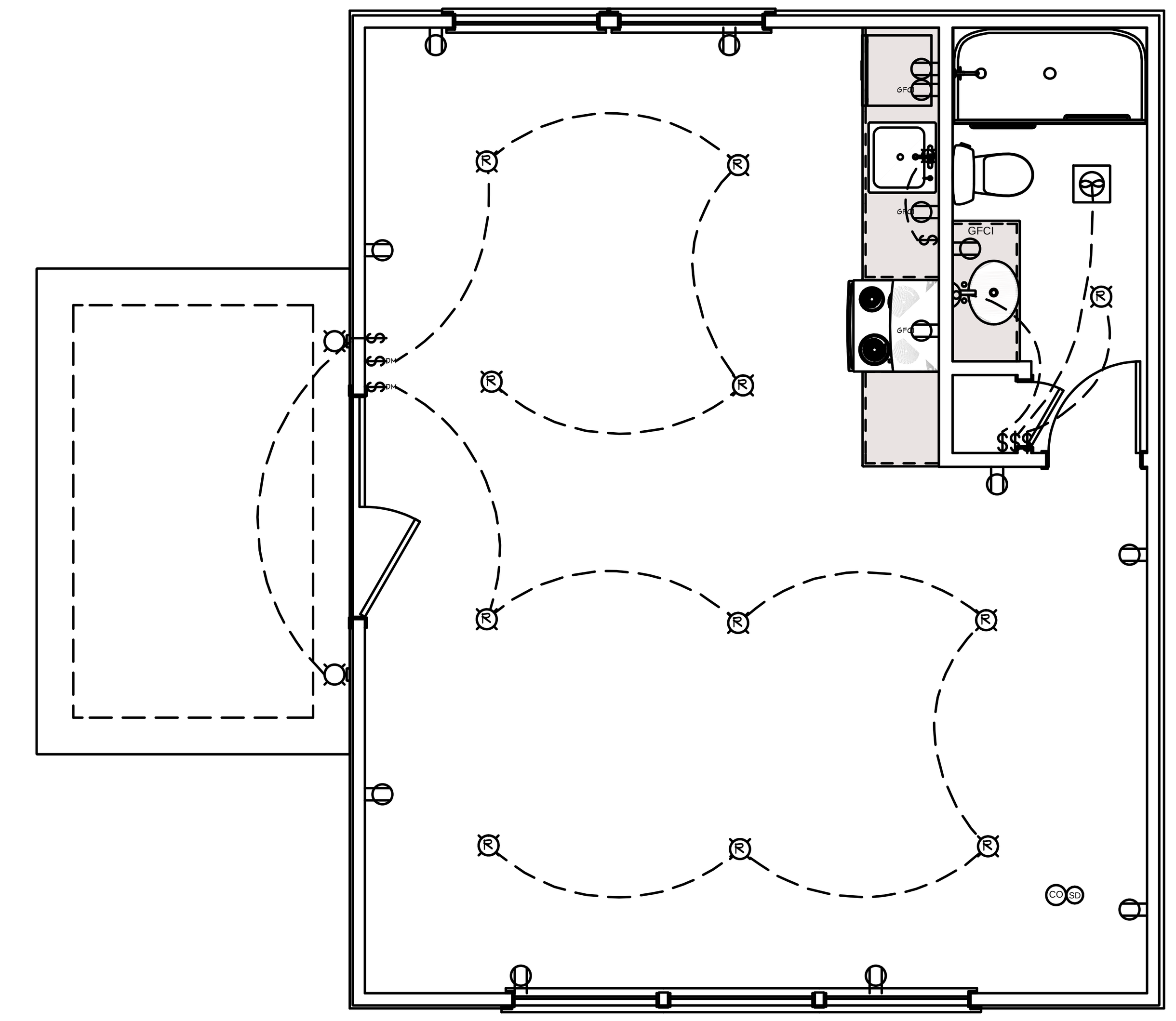
△			

S9

ELECTRICAL NOTES

a. A grounding electrode shall be provided per [CEC Article 250-50].
b. Provide two or more 20-amp small-appliance circuits to serve all countertop, wall and floor receptacles in the kitchen, pantry, breakfast room, dining room, or similar areas. Receptacle outlets shall be installed at each wall, island and peninsular counter space in kitchens and dining rooms per the requirements found in [CEC Article 210.52 (B) and (C)]. Such circuits shall have no other outlets.
c. At least one 20-ampere branch circuit shall be dedicated to supply bathroom receptacles. At least one receptacle is required within 3-ft of each basin. [CEC Articles 210.11(C)(3)] [CEC 210.52(D)]
d. Where the 20-ampere circuit supplies a single bathroom, outlets for other equipment within the same bathroom shall be permitted to be supplied in accordance with [CEC Article 210.23(A)(1) and (A)(2)].
e. At least one additional 20-ampere branch circuit shall be dedicated to supply laundry receptacle outlet(s) required by [CEC Articles 210-11(C)(2) & 210-52(F)]. This circuit shall have no other outlets.
f. Receptacle outlets shall be installed so that no point along the floor line in any wall space is more than 6-ft measured horizontally from an outlet in that space. Receptacle outlets are required in walls 2-ft or greater. Hallways of 10-ft or more in length shall have at least one receptacle outlet. [CEC Art. 210.52(A) and (H)]
g. Tamper-Resistant Receptacles in Dwelling Units. In all areas specified in 210.52, all 125 volt, 15 and 20 ampere receptacles shall be listed as tamper-resistant receptacles. [CEC 406.12]
h. Light fixtures that weight more than 6lbs or exceed 16-in in any dimension shall not be supported by the screw shell of a lamp holder. [CEC Art. 410.30(A)]
i. Outlet boxes or outlet box systems used as the sole support of a ceiling-suspended (paddle) fan shall be listed and marked by the manufacturer as suitable for this purpose. The required marking shall include the maximum weight to be supported for ceiling fans that weigh more than 35-lbs. [CEC Art. 314.27(D), 422.18]
j. An accessible 125-volt, single phase, 15 or 20 amp rated receptacle outlet shall be installed on the same level and within 25-ft of heating and air conditioning equipment. This service receptacle shall not be connected to the load side of the equipment disconnecting means. [CEC Art. 210.63]
k. Receptacles within bathtub or shower space are prohibited, even if enclosed. [CEC Art. 406.9(C)]
l. Cord-connected lighting fixtures, lighting tracks or ceiling-suspended (paddle) fans within 3-ft of horizontal edge and 8-ft vertical above top of tub/shower dam are prohibited. [CEC Art. 410.10(D)]
m. All lighting must be high efficacy per Table 150.0-A of the 2016 Energy Code
n. All lighting that qualifies as high efficacy per JA8 must be controlled by a dimmer or vacancy sensor.
o. All recessed lights must be air tight, IC rated and certified JA8-2016, or JA8-2016-E for elevated temperature and controlled by a dimmer or vacancy sensor
p. At least one light located in a bathroom, laundry room, utility room and garage must be controlled by a vacancy sensor.
q. Blank electrical boxes greater than 5' above the floor must be controlled by a dimmer, vacancy sensor or fan control switch. The quantity of blank electrical boxes is limited to no more that the number of bedrooms.
r. Exhaust fans shall be switched separately from lighting
s. All outdoor lighting permanently attached to the building must be high efficacy per Table 150.0-A of the 2016 energy code and controlled by a manual on-off switch, motion control and photo-control.
t. Illuminated address sign shall be 5 watts or less.

120V RECEPTACLE
LIGHT SWITCH
VS VACANCY SENSOR
DM DIMMER
R RECESSED LED ICAT FIXTURE
SURFACE MOUNTED LIGHT FIXTURE
WALL MOUNTED LIGHT FIXTURE
FAN W/ HUMIDISTAT CONTROL
FAN-LIGHT W/ HUMIDISTAT CONTROL
SD SMOKE ALARM 110v w/BATTERY BACKUP
CO CO ALARM 110v w/BATTERY BACKUP
SURFACE MOUNTED LED "SHOP" LIGHT
CEILING FAN



ADU ELECTRICAL PLAN
SCALE: 1/4" = 1'

REVISIONS

SESHAT DESIGN
COMMERCIAL | RESIDENTIAL | GREEN DESIGN
408/778.5454 fax 408/778.1115
17545 Chesbro Lake Drive, Morgan Hill, CA 95037

ADDITION AND REMODEL AND ADU
15990 FLINTLOCK ROAD
CUPERTINO CA 95014

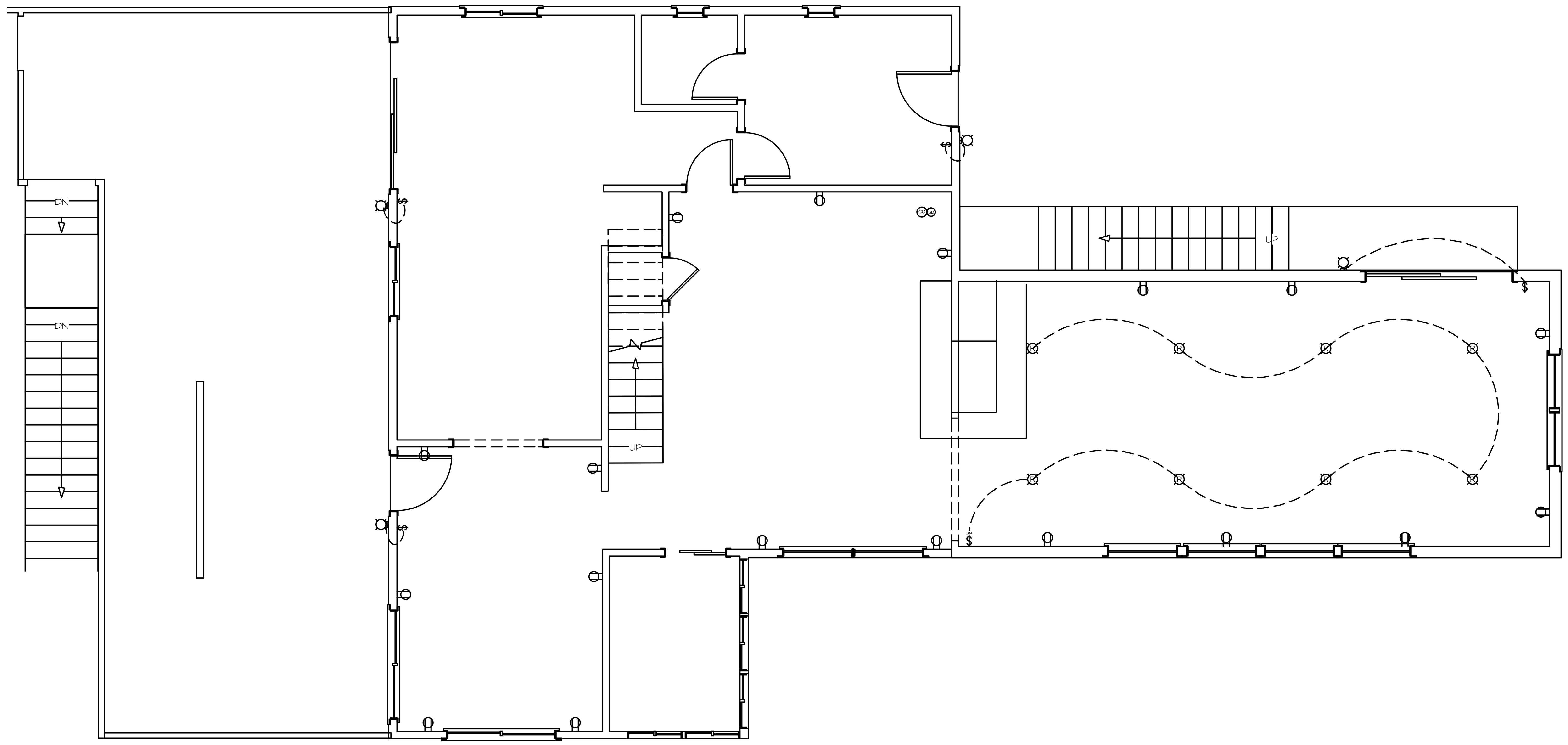
DATE:
2/14/2023

SCALE:

JOB NUMBER

SHEET:
E-1

- 120V RECEPTACLE
- LIGHT SWITCH
- VS VACANCY SENSOR
- DM DIMMER
- R RECESSED LED ICAT FIXTURE
- SURFACE MOUNTED LIGHT FIXTURE
- WALL MOUNTED LIGHT FIXTURE
- FAN W/ HUMIDISTAT CONTROL
- FAN-LIGHT W/ HUMIDISTAT CONTROL
- SD SMOKE ALARM 110v w/BATTERY BACKUP
- CO CO ALARM 110v w/BATTERY BACKUP
- SURFACE MOUNTED LED "SHOP" LIGHT
- CEILING FAN



MAIN LEVEL ELECTRICAL PLAN

SCALE: 1/4" = 1'

SESHAT DESIGN
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408/778.5454 fax 408/778.1115
17545 Chesbro Lake Drive, Morgan Hill, CA 95037

REVISIONS

ADDITION AND REMODEL AND ADU
15990 FLINTLOCK ROAD
CUPERTINO CA 95014

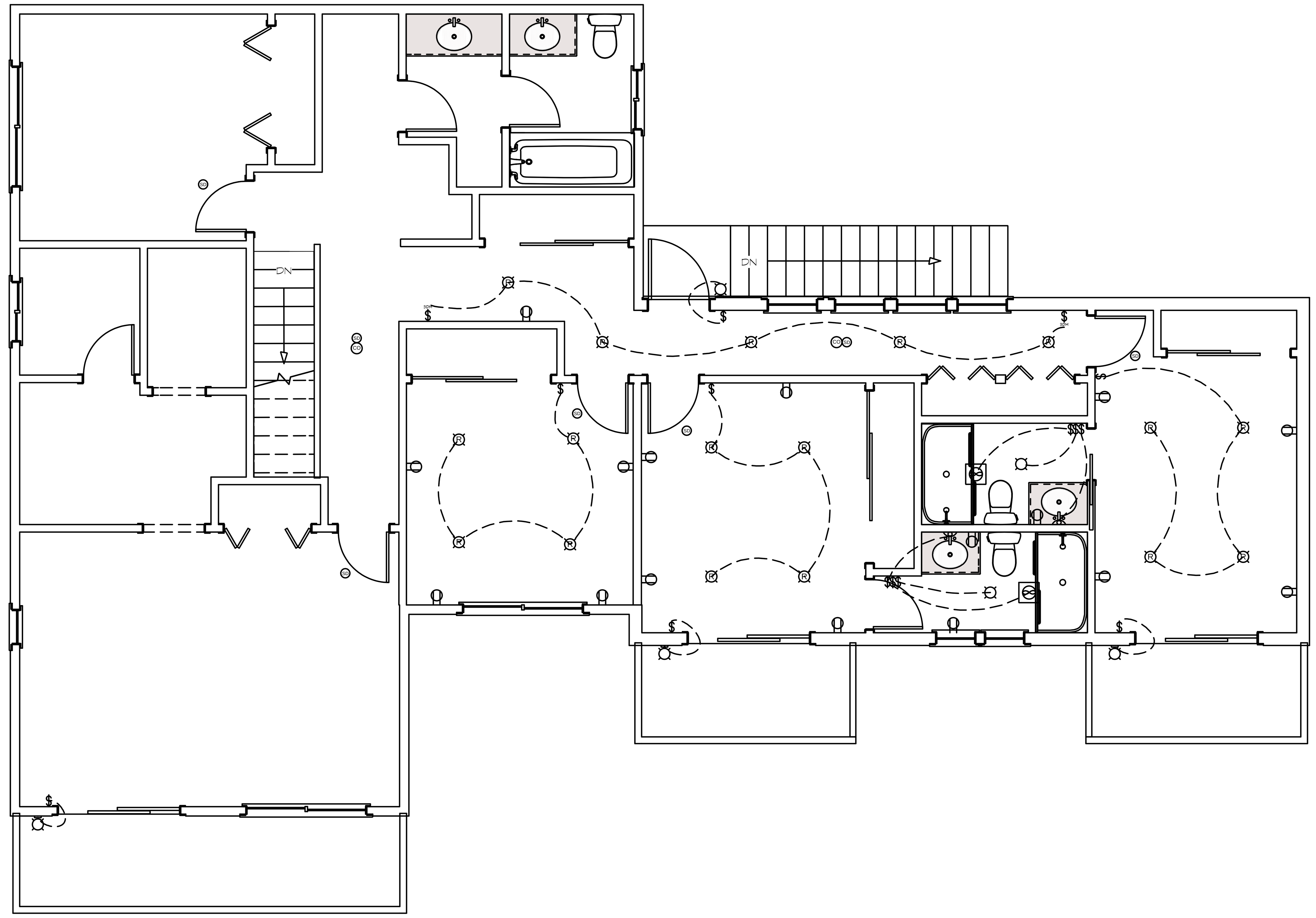
DATE: 2/14/2023

SCALE:

JOB NUMBER

SHEET: E-2

- 120V RECEPTACLE
- LIGHT SWITCH
- VACANCY SENSOR
- DIMMER
- RECESSED LED ICAT FIXTURE
- SURFACE MOUNTED LIGHT FIXTURE
- WALL MOUNTED LIGHT FIXTURE
- FAN W/ HUMIDISTAT CONTROL
- FAN-LIGHT W/ HUMIDISTAT CONTROL
- SMOKE ALARM 110v w/BATTERY BACKUP
- CO ALARM 110v w/BATTERY BACKUP
- SURFACE MOUNTED LED 'SHOP' LIGHT
- CEILING FAN



UPPER LEVEL ELECTRICAL PLAN

SCALE: 1/4" = 1'

REVISIONS

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ADDITION AND REMODEL AND ADU
15990 FLINTLOCK ROAD
CUPERTINO CA 95014

DATE:
2/14/2023

SCALE:

JOB NUMBER

SHEET:
E-3