

SITE PLAN NOTES:

- EXISTING FENCES ARE EXISTING STANDARD 6' HT. RESIDENTIAL FENCES TO REMAIN.
- ALL EXISTING TREES TO REMAIN. NO TREE WILL BE REMOVED.
- NO NEW PAVEMENT OR OTHER HARD SURFACE WILL BE INSTALLED, EXCEPT THE NEW CONCRETE LANDINGS IN FRONT OF EXTERIOR DOORS.
- LOT SHALL BE GRADED TO DRAIN SURFACE WATER AWAY FROM THE FOUNDATION WALLS. THE GRADE SHALL FALL A MINIMUM OF 6" WITHIN THE FIRST 10 FT (5% SLOPE), WHERE LOT LINES, WALLS, SLOPES OR OTHER PHYSICAL BARRIER PROHIBIT 6" OF FALL WITHIN 10 FT, DRAINS OR SWALES SHALL BE CONSTRUCTED TO ENSURE DRAINAGE AWAY FROM THE STRUCTURE. (CRC R401.3)
- IMPERVIOUS SURFACES WITHIN 10 FT OF THE BUILDING FOUNDATION SHALL BE SLOPED A MINIMUM OF 2% AWAY FROM THE BUILDING. (CRC R401.3 EXCEPTION).
- ALL NEW ROOF DRAINAGE WILL BE DIRECTED TO LANDSCAPED AREAS TO THE EXTENT FEASIBLE.
- MINIMUM 65% OF CONSTRUCTION WASTE TO BE RECYCLED OR SALVAGED PER CALGREEN 4.408.1.
- CONTRACTOR SHALL MANAGE STORM WATER DRAINAGE DURING CONSTRUCTION. REFER TO SITE PLAN FOR SITE GRADING/WATER FLOW DIRECTIONS TO KEEP WATER FROM ENTERING BUILDINGS (CGBC 4.106.3). ADDITION AND ALTERATION IN THIS PROJECT DOES NOT ALTER THE DRAINAGE PATH SINCE NO NEW PAVEMENT IS CONSTRUCTED (BESIDES TWO SMALL CONCRETE LANDINGS AT EXTERIOR DOORS) AND ALL LANDSCAPE/LAWN IS EXISTING TO REMAIN.(CGBC 4.106.3 EXCEPTION).
- AS ALL IMPROVEMENTS ARE INTERIOR TO THE EXISTING STRUCTURE AND NO LANDSCAPE AREA IS PROPOSED, NO LANDSCAPE PERMIT IS NECESSARY.

EROSION CONTROL PLAN:

- ALL EROSION CONTROL MEASURES SHALL BE ONSIDE AND READILY ACCESSIBLE PRIOR TO CONSTRUCTION.
- SWEEP OR SCRAPE UP SOILS TRACKED ONTO THE ROAD AT THE END OF EACH DAY. DO NOT HOSE INTO STREET, GUTTER, OR STORM DRAIN.
- RE-VEGETATE DISTURBED AREAS. EXPOSED BARE DIRT SHALL BE COVERED WITH MULCH, JUT NETTING OR OTHER EROSION CONTROL BLANKET.
- ALL TEMPORARY STOCKPILES SHALL BE COVERED WITH 6 MIL PLASTIC SHEETS, SUITABLY ANCHORED.
- THE SITE SHALL BE MONITORED BY THE CONTRACTOR /OWNER AFTER RAIN EVENT TO VERIFY EROSION CONTROL MEASURES ARE FUNCTIONING.

PROJECT CONTACT INFO:

PROPERTY OWNER	DESIGNER
LARRY LIU 408-838-2891 4005 HIGUERA ROAD, SAN JOSE, CA 95148	LINDA LIN 408-627-1299 6525 CROWN BLVD. #41068 SAN JOSE, CA 95160
CONTRACTOR	STRUCTURAL ENGINEER
T.B.D.	GUANGSHENG (KEVIN) WANG G.S. ENGINEERING 510-304-9812 2594 PEBBLE BEACH DRIVE, SANTA CLARA, CA 95051

VICINITY MAP:



PROJECT DATA:

LIU RESIDENCE
4005 HIGUERA ROAD,
SAN JOSE, CA 95148
TWO STORY, SINGLE FAMILY RESIDENCE
EXISTING: 3 BEDROOMS, 5 BATHROOMS
PROPOSED: 5 BEDROOMS, 5 BATHROOMS
CONSTRUCTION TYPE: V-B/(NOT SPRINKLERED)
OCCUPANCY GROUPS: R-3/U
ZONE: R1
APN: 654-14-019
LOT SIZE: 2.40 ACRES (104, 544 SQ.FT.)
TOTAL EXISTING LIVING AREA: 3,073 SQ.FT.
TOTAL PROPOSED LIVING AREA: 3,928 SQ.FT.
TOTAL LIVING AREA ADDED: 855 SQ.FT.
(E) 3-CAR ATTACHED GARAGE AREA: 1,128 SQ.FT. (NO CHANGE)
EXISTING FLOOR AREA: 4,201 SQ.FT.
PROPOSED FLOOR AREA: 5,056 SQ.FT.
TOTAL FLOOR AREA ADDED: 1,128 SQ.FT.
EXISTING FLOOR AREA RATIO: 4%
PROPOSED FLOOR AREA RATIO: 5%
HOUSE ADDITION PERCENTAGE TO EXISTING HOUSE: 20%

APPLICABLE CODES:

PROJECT SHALL COMPLY WITH THE
CBC CALIFORNIA BUILDING CODE 2019
CRC CALIFORNIA RESIDENTIAL CODE 2019
CEC CALIFORNIA ELECTRICAL CODE 2019
CPC CALIFORNIA PLUMBING CODE 2019
CMC CALIFORNIA MECHANICAL CODE 2019
CENC CALIFORNIA ENERGY CODE 2019
CALGREEN CALIFORNIA GREEN BUILDING STANDARDS
CODE 2019
ASCE 7 MINIMUM DESIGN LOADS AND ASSOCIATED
CRITERIA FOR BUILDINGS 2016
SDPWS SPECIAL DESIGN PROVISIONS FOR WIND &
SEISMIC 2015

DRAWING INDEX:

- A0 TITLE SHEET/SITE PLAN
- A1 EXISTING UPPER FLOOR PLAN
- A2 DEMOLITION LOWER FLOOR PLAN
- A3 PROPOSED LOWER FLOOR PLAN
- A4 PROPOSED MEP PLAN
- A5 EXISTING AND PROPOSED ELEVATIONS
- A6 EXISTING AND PROPOSED ELEVATIONS
- A7 EXISTING AND PROPOSED ELEVATIONS
- CG-1 CALGREEN MANDATORY REQUIREMENTS SHEET-1
- CG-2 CALGREEN MANDATORY REQUIREMENTS SHEET-2
- T-24 ENERGY REPORT AND CALCULATIONS - PART 1
- T-24 ENERGY REPORT AND CALCULATIONS - PART 2
- T-24 ENERGY REPORT AND CALCULATIONS - PART 3
- S1.0 GENERAL NOTES
- S1.1 TYPICAL DETAILS
- S2.0 FOUNDATION PLAN
- S2.1 ROOF FRAMING PLAN
- S2.2 ROOF FRAMING PLAN
- S3.0 DETAILS
- STRUCTURAL CALCULATIONS

SCOPE OF WORK:

LOWER FLOOR HAS BEEN CONVERTED TO A LIVING SPACE WITHOUT A BUILDING PERMIT. CURRENT SCOPE OF WORK INCLUDES DEMOLITION OF ILLEGALLY CONVERTED SPACE, ADDING 855 SQ.FT OF LOWER FLOOR TO LIVING SPACE AND COMPLETE INTERIOR REMODEL OF THE LOWER FLOOR.
AT LOWER FLOOR -
1) REMOVE EXISTING KITCHEN, BATHROOMS AND 3 BEDROOMS;
2) CONSTRUCT TWO NEW BATHROOMS: INSTALL NEW BATHROOM VANITIES, PLUMBING FIXTURES AND WALL/FLOOR TILES AT NEW MASTER BATHROOM.
3) CONSTRUCT TWO NEW BEDROOMS AND ONE STUDY ROOM;
4) CONVERT ONE EXISTING BATHROOM INTO A LAUNDRY ROOM;
5) INSTALL A WET BAR;
6) MECHANICAL, ELECTRICAL AND PLUMBING MODIFICATIONS WITHIN SCOPE OF WORK, INCLUDING NEW LIGHT FIXTURE LAYOUT.
NOTE: FOR ALL NEW EXTERIOR GLAZING: MAX. U-FACTOR REQUIRED IS 0.3; MAX. SHGC REQUIRED IS 0.23. REFER TO SHEET A2 FOR NEW EXTERIOR GLAZING SIZE AND TYPE.

COUNTY APPROVAL STAMP



Designer

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Project Name

**HOUSE ADDITION
LIU RESIDENCE**
4005 HIGUERA ROAD
SAN JOSE, CA 95148

Revisions	By
11/21/21	L.L.

Drawn	L.L.
Check	
Date	11/06/21
Scale	Noted

Drawing Name

**TITLE SHEET /
SITE PLAN**

Sheet

A0

Santa Clara County REBUILD Determination and Points Allocation ¹

A. Existing Residence

	Existing L.F. ²	New/modified or Removed L.F.	Ratio	Maximum Points	Resulting Points
1a Footings ³		0	0.00		
1b Slab - structural slabs and basement areas	Existing Area	Replaced/ Modified Area	Ratio		
	2510	715	0.28		
Subtotal				25	7.12
2 Walls - interior and exterior in linear feet ⁴	Existing L.F. ²	New/modified or Removed L.F.	Ratio	Maximum Points	Resulting Points
	920	107	0.12	50	5.82
3 Roof ⁵	Existing S.F.	new, replaced, altered or removed Roof S.F.	Ratio	Maximum Points	Resulting Points
	3047	0	0.00	25	0.00
Existing Residence Subtotal					12.94

B. Proposed Additions

	Area in S.F.	Ratio 1 pt/ 40 S.F. ⁸	Sub-Total Points
First floor and upper story additions ^{6,7}	855	22.00	22

C. Cumulative rebuild points from permits issued within last 2 years:

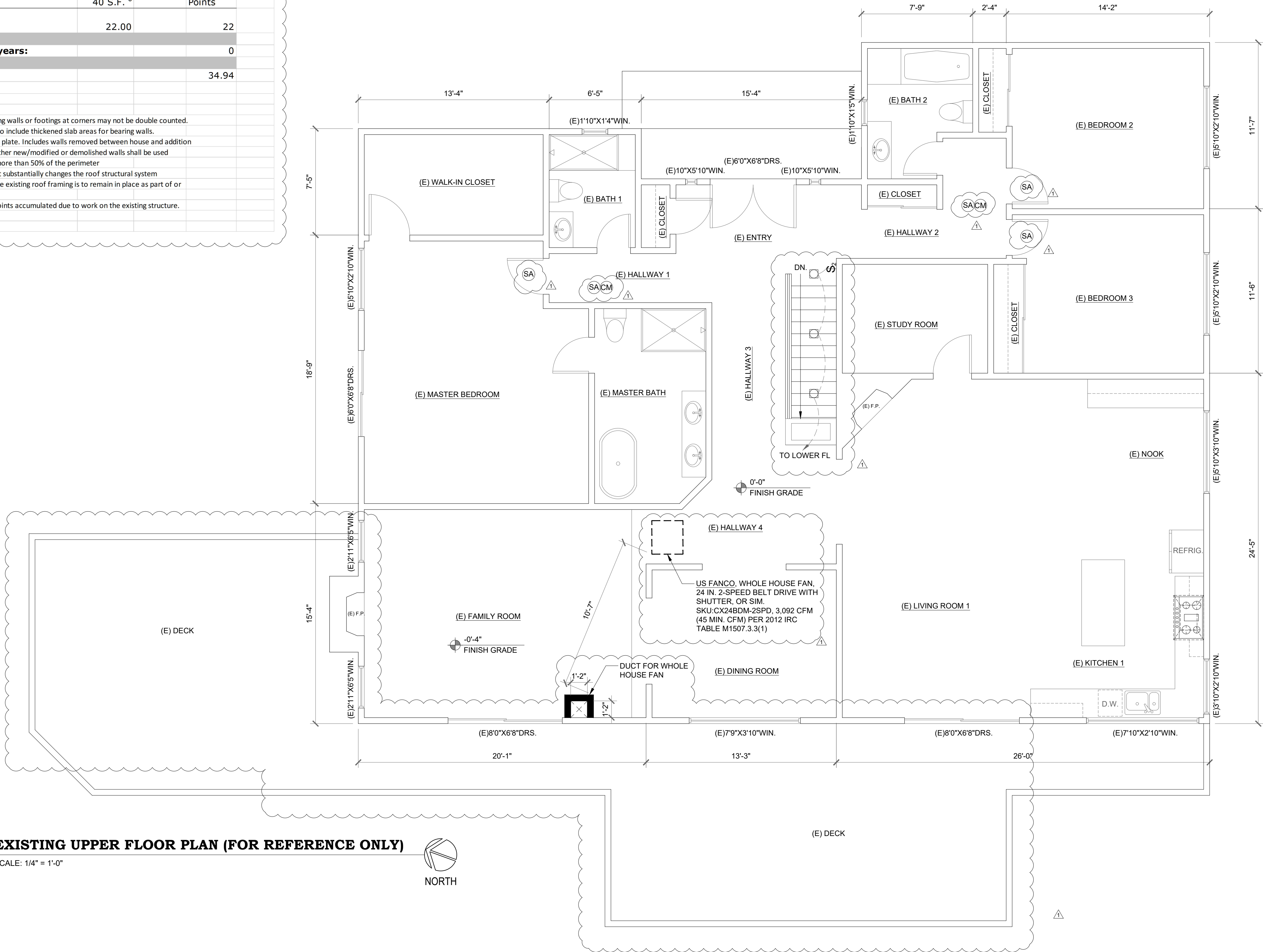
TOTAL POINT ALLOCATION ⁹					34.94
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Footnotes

- See County Ordinance # NS-1100.113
- L.F. = Lineal Feet measured to outside face or end of wall or footing. Lengths of intersecting walls or footings at corners may not be double counted.
- Lineal feet of rectangular footings shall be taken on the longest length. Lineal feet shall also include thickened slab areas for bearing walls.
- All non-bearing & bearing walls (including framed openings) measured along the double top plate. Includes walls removed between house and addition. Modified walls are walls where the double top plates are altered; the greatest length of either new/modified or demolished walls shall be used
- Includes all california framing, eaves, rakes, attached outdoor covered areas enclosed by more than 50% of the perimeter and substantial changes to roof framing (i.e. going from a flat ceiling to vaulted ceiling) that substantially changes the roof structural system
- Points for additions and points for removal of existing roof structures both count, unless the existing roof framing is to remain in place as part of or under the second story addition
- Additions great than 2000 sq. ft are automatically considered a rebuild, regardless of the points accumulated due to work on the existing structure.
- Any remaining fraction of points shall be considered one (1) whole point.
- The project will be classified as a "REBUILD" if the total points exceed 55.

GENERAL NOTES:

- THESE PLANS AND DESCRIPTION OF MATERIALS SHALL GOVERN THE EXTENT OF THE WORK TO BE DONE. ANY DISCREPANCY BETWEEN THESE DOCUMENTS AND FIELD CONDITIONS MUST BE CALLED TO THE ATTENTION OF THE DESIGNERS AND STRUCTURAL ENGINEER. ANY DISCREPANCY NOT REPORTED TO THE DESIGNER AND ENGINEERS WILL ABSOLVE THEM OF ANY RESPONSIBILITY.
- IT IS HOUSE OWNER'S FULL RESPONSIBILITY FOR ANY SITE DIMENSION DISCREPANCIES DUE TO OWNER'S DECISION TO OMIT OFFICIAL LAND SURVEY BY CERTIFIED SURVEYORS. HOUSE OWNER SHALL BE RESPONSIBLE FOR ANY LOSS/COST CAUSED BY THIS DECISION.
- THE GENERAL CONTRACTOR IS RESPONSIBLE FOR DESIGN AND INSTALLATION OF ALL TEMPORARY BRACING AND SHORING PRIOR TO THE REMOVAL OF ANY SUPPORTING STRUCTURE.
- THE GENERAL CONTRACTOR AND ALL SUBCONTRACTORS MUST FIELD VERIFY EXISTING CONDITIONS AND DIMENSIONS PRIOR TO THE SUBMITTAL OF BID PROPOSALS AND CONSTRUCTION.
- THE GENERAL CONTRACTOR IS FULLY RESPONSIBLE FOR THE SATISFACTORY COMPLETION OF ALL WORK IN ACCORDANCE WITH THE PROJECT PLANS AND SPECIFICATIONS.
- NOTED DIMENSIONS TAKE PRECEDENCE OVER SCALE DIMENSIONS. ANY DISCREPANCY SHALL BE BROUGHT TO THE DESIGNER'S ATTENTION IMMEDIATELY.
- DIMENSIONS SHOWN ARE TO FACE OF FRAMING OR FACE OF CONCRETE UNLESS OTHERWISE NOTED.
- TYPICAL DETAILS APPLY WHERE NO DETAILS OR SECTIONS ARE PROVIDED.
- ALL WORK IS TO BE DONE IN ACCORDANCE WITH THE MOST CURRENT ISSUES OF THE C.B.C., U.M.C., N.E.C., AND C.B.C., AND ALL GOVERNING LOCAL CODES AND ORDINANCES. ALL THOSE WORKING ON THE PROJECT MUST HAVE THE REQUIRED LICENSE AND EXPERIENCE.
- ALL ITEMS INDICATED ON PLANS ARE NEW AND INCLUDED IN THIS SCOPE OF WORK UNLESS OTHERWISE INDICATED AS (E) - EXISTING.



1
A1 EXISTING UPPER FLOOR PLAN (FOR REFERENCE ONLY)
SCALE: 1/4" = 1'-0"

COUNTY APPROVAL STAMP

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Project Name

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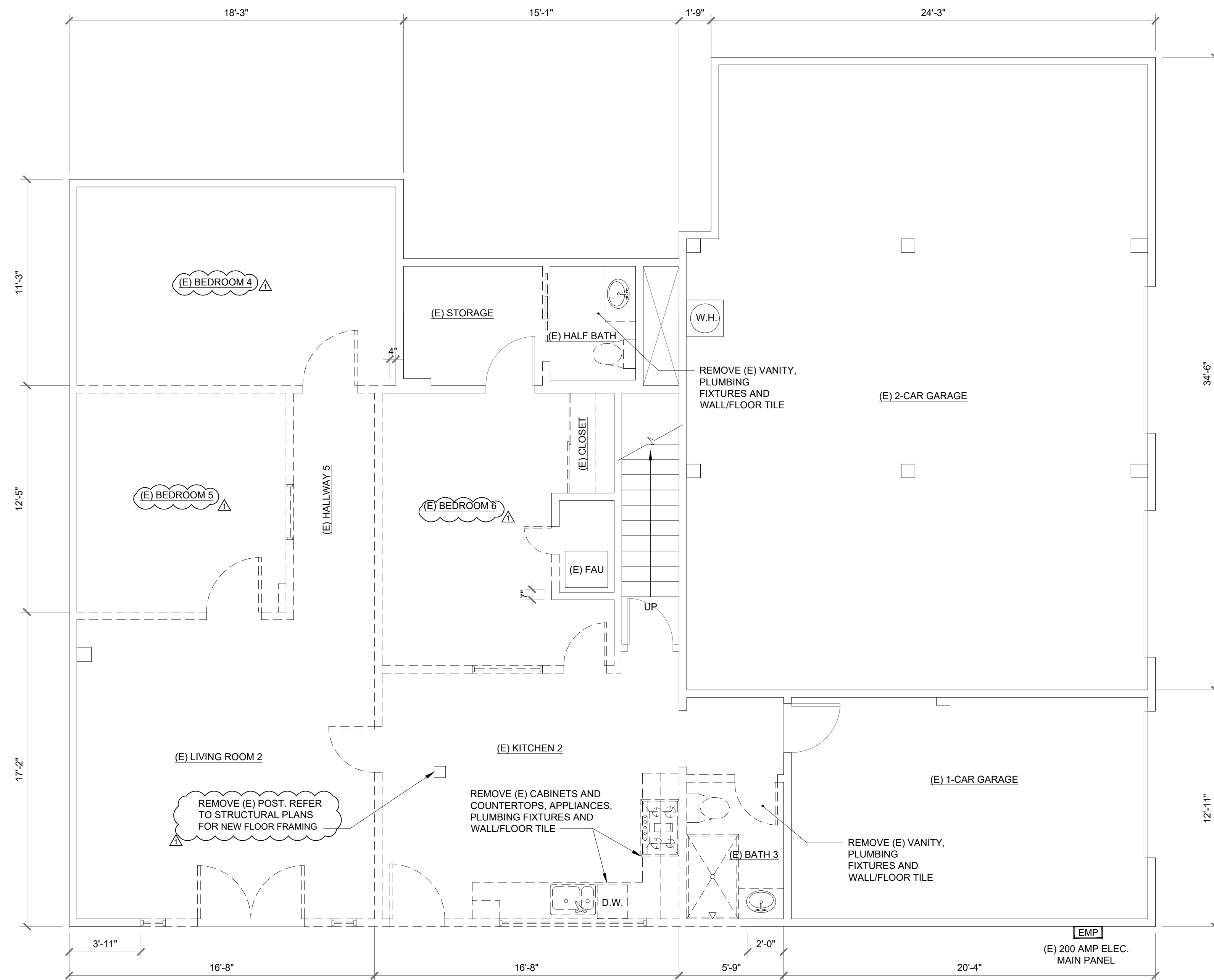
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Scale	Noted

Drawing Name

**EXISTING
UPPER FLOOR
PLAN**

Sheet

A1

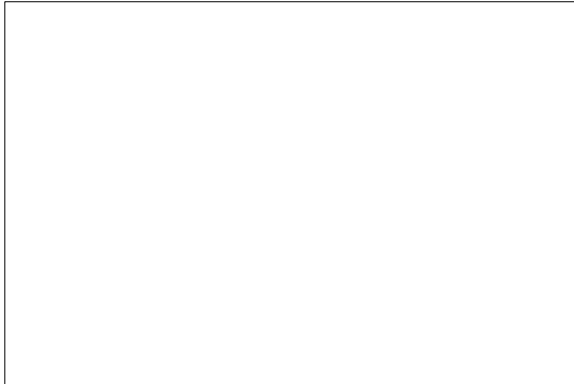


1
A2
1
A2
SCALE: 1/4" = 1'-0"
NORTH

SHEET NOTES:
LOWER FLOOR HAS BEEN CONVERTED TO LIVING SPACE WITHOUT A BUILDING PERMIT. ALL MODIFICATIONS AND ADDITIONS TO THE LOWER FLOOR SHALL BE REMOVED AND REPLACED AS SHOWN ON PROPOSED LOWER FLOOR PLAN SHEET A3

LEGEND	
—	(E) CONSTRUCTION
- - - -	(E) CONSTRUCTION TO BE DEMOLISHED

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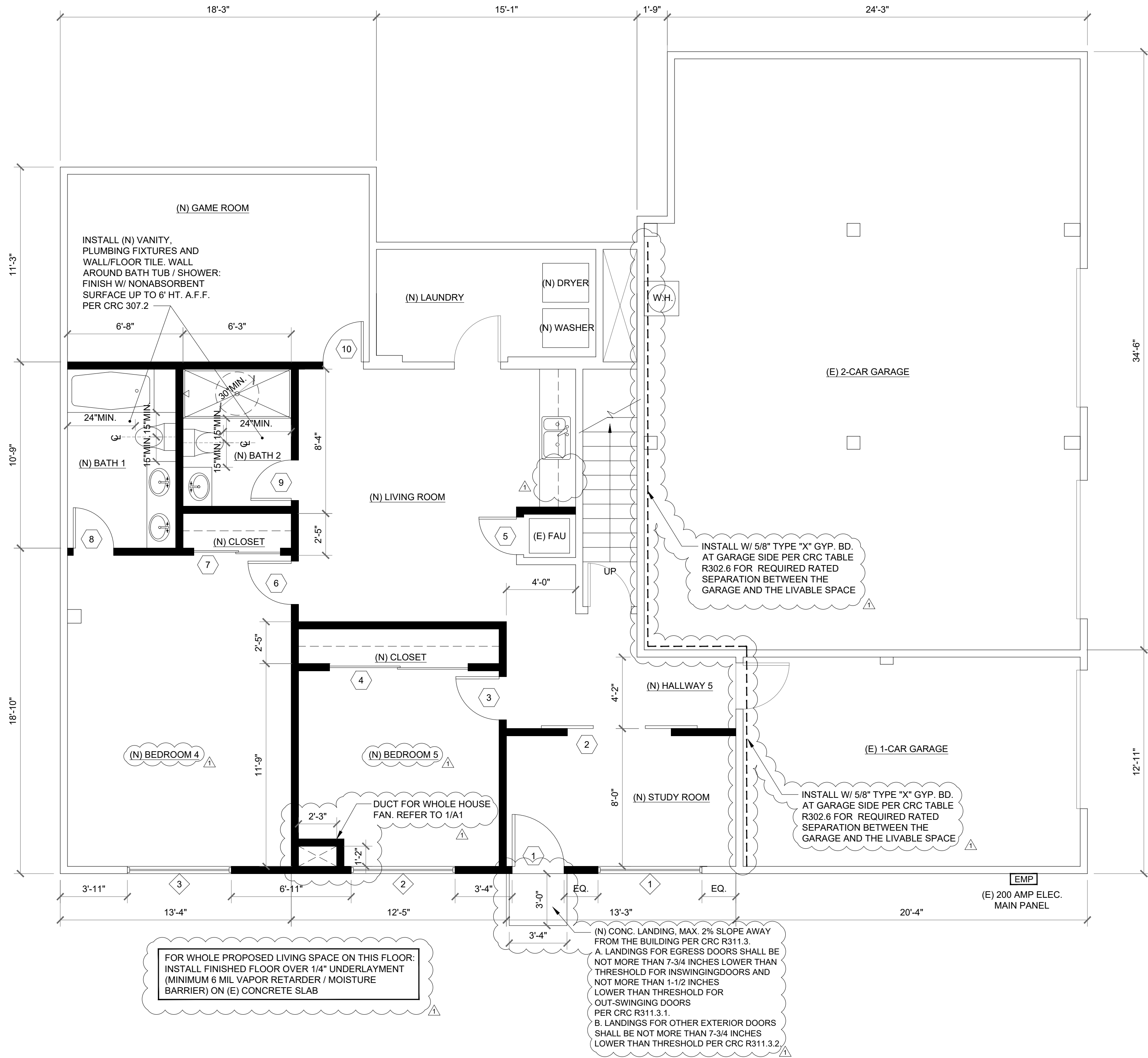
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Drawing Name
DEMOLITION
LOWER FLOOR
PLAN

Sheet
A2



1
A3 PROPOSED LOWER FLOOR PLAN
SCALE: 1/4" = 1'-0"
NORTH

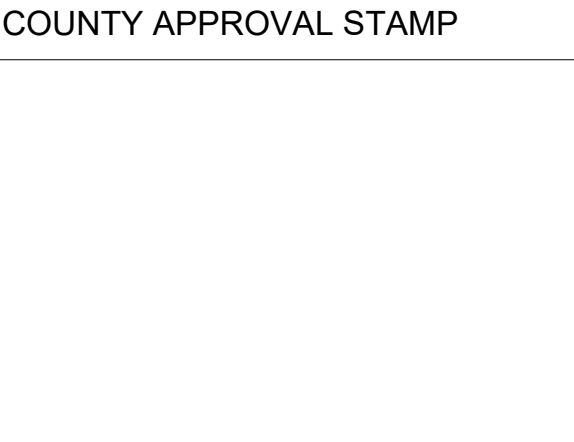
LEGEND	
	(E) CONSTRUCTION
	(N) CONSTRUCTION
	(N) OVERHEAD CONSTRUCTION
	(N) DOOR
	(N) WINDOW

REFER TO SHEET A4 FOR CALGREEN NOTES, AND MECHANICAL, ELECTRICAL AND PLUMBING NOTES

- BATHROOM NOTES:**
- BATHROOM EXHAUST DUCT SHALL TERMINATE OUTSIDE THE BUILDING AND SHALL BE EQUIPPED WITH BACKDRAFT DAMPER. (CMG 504.1)
 - SHOWER STALLS SHALL BE A MINIMUM FINISHED INTERIOR OF 1,024 SQUARE INCHES, BE CAPABLE OF ENCOMPASSING A 30 INCH DIAMETER CIRCLE. ANY DOORS SHALL SWING OUT OF THE ENCLOSURE HAVE A CLEAR OPENING OF 22 INCHES MINIMUM. (CPC 408.5, 408.6)
 - SHOWER STALLS AND BATHTUBS WITH SHOWER HEADS INSTALLED, SHALL HAVE WALLS FINISHED WITH A NON-ABSORBENT SURFACE FOR A MINIMUM OF 6 FEET ABOVE THE FLOOR.
 - THE MAXIMUM WATER TEMPERATURE TO A SHOWER OR TUB/SHOWER COMBINATION IS 120°F. THE WATER HEATER THERMOSTAT CANNOT BE USED AS THE CONTROL FOR THIS TEMPERATURE. VALVES SHALL PROVIDE SCALD AND THERMAL SHOCK PROTECTION, AND BE PRESSURE-BALANCED, THERMOSTATIC, OR COMBINATION PRESSURE-BALANCED/THERMOSTATIC MIXING IN ACCORDANCE WITH ASSE 1016 OR ASME A112.18.1/CSA B125.1. (CPC 408.3).
 - ALL NEW SHOWERS AND TUB/SHOWER COMBINATIONS SHALL BE PROVIDED WITH INDIVIDUAL CONTROL VALVES OF THE THERMOSTATIC MIXING, PRESSURE BALANCE OR COMBINATION VALVE TYPE PER CPC SEC. 408.3.
 - SAFETY GLASS (TEMPERED OR LAMINATED) IS REQUIRED FOR ALL GLASS SHOWER DOORS AND PARTITIONS AND FOR WINDOWS IN WALLS FACING THE TUB OR SHOWER AND LOCATED LESS THAN 60 INCHES ABOVE THE STANDING SURFACE OF THE TUB/SHOWER AND WITHIN 60 INCHES HORIZONTALLY (CRC R308.4.1&5).
 - CONCRETE BOARD REQUIRES A VAPOR BARRIER TO BE INSTALLED BETWEEN IT AND THE DRYWALL AND OR FRAMING. CORROSION RESISTANT FASTENERS MUST BE USED.
 - THE WATER CLOSET SHALL HAVE A CLEARANCE OF 30 INCHES WIDE (15 INCHES ON CENTER) AND 24 INCHES IN FRONT. (CPC 402.5) .
 - WHERE THE WATER CLOSET (OR OTHER PLUMBING FIXTURE) COMES INTO CONTACT WITH THE WALL OR FLOOR, THE JOINT SHALL BE CAULKED AND SEALED TO BE WATERTIGHT. (CPC 402.2).
 - AT LEAST ONE FIXTURE IN EACH BATHROOM CONTROLLED BY A VACANCY SENSOR. CEC L50.0(K) 2J.
 - SEE TABLE FOR PLUMBING FIXTURE REQUIREMENTS ON SHEET A3.

NEW WINDOW SCHEDULE							
MARK	W.	HT.	SILL. HT.	STYLE	TYPE	GLAZING	NOTE
1	6'-0"	4'-0"	3'-0"	SLIDING	-	TEMPERED	-
2	6'-0"	4'-0"	3'-0"	SLIDING	EGRESS	-	-
3	6'-0"	4'-0"	3'-0"	SLIDING	EGRESS	-	-

NEW DOOR SCHEDULE						
MARK	WIDTH	HT.	MATERIAL	INTERIOR/ EXTERIOR	TYPE	NOTE
1	3'-0"	6'-8"	S.C.	EXTERIOR	SWING	-
2	PR. 6'-0"	6'-8"	S.C.	INTERIOR	BARN	-
3	2'-6"	6'-8"	S.C.	INTERIOR	SWING	-
4	PR. 8'-0"	6'-8"	S.C.	INTERIOR	SLIDING	-
5	2'-2"	6'-8"	S.C.	INTERIOR	SWING	-
6	2'-6"	6'-8"	S.C.	INTERIOR	SWING	-
7	PR. 5'-0"	6'-8"	S.C.	INTERIOR	SLIDING	-
8	2'-4"	6'-8"	S.C.	INTERIOR	SWING	-
9	2'-4"	6'-8"	S.C.	INTERIOR	SWING	-
10	2'-6"	6'-8"	S.C.	INTERIOR	SWING	-



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Drawing Name
**PROPOSED
LOWER FLOOR
PLAN**

Sheet
A3

ELECTRICAL NOTES:

1. PROVIDE A MINIMUM OF (1) 20 AMP DEDICATED BRANCH CIRCUIT TO SUPPLY BATHROOM RECEPTACLE OUTLET(S) AND SUCH CIRCUITS SHALL HAVE NO OTHER OUTLETS PER CEC ARTICLE 210.11(C)(3)
2. PROVIDE (1) 20 AMP DEDICATED BRANCH CIRCUIT TO SUPPLY THE LAUNDRY RECEPTACLE OUTLET(S). THIS CIRCUIT SHALL HAVE NO OTHER OUTLETS CEC ART. 210.11(C)(2).
3. ALL RECEPTACLES SHALL BE GFCI PROTECTED AND TAMPER-RESISTANT (TR) AT KITCHEN AND BATHROOM. NEW/ADDITIONAL OUTLETS SHALL HAVE A DEDICATED 20-AMP CIRCUIT. (2016 CEC, ART. 406.12)
4. ARC-FAULT CIRCUIT-INTERRUPTER PROTECTION MUST BE PROVIDED IN ACCORDANCE WITH 210.12(A), (B) AND (C). AFCI DEVICES MUST BE INSTALLED IN READILY ACCESSIBLE LOCATIONS.
(A) WHERE REQUIRED, ALL 15A OR 20A, 120V BRANCH CIRCUITS IN DWELLING UNITS SUPPLYING OUTLETS OR DEVICES IN KITCHENS, FAMILY ROOMS, DINING ROOMS, LIVING ROOMS, PARLORS, LIBRARIES, DENs, BEDROOMS, SUNROOMS, RECREATION ROOMS, CLOSETS, HALLWAYS, LAUNDRY AREAS, OR SIMILAR ROOMS OR AREAS CEC210.12.
5. RECEPTACLES ARE TO BE LOCATED WITHIN 36" OF THE SINK EDGE.(210.52 (D))
6. BATHROOM EXHAUST FANS. EACH BATHROOM SHALL BE MECHANICALLY VENTILATED AND SHALL COMPLY WITH THE FOLLOWING: (CAL GREEN 4.506.1)
- 1). FANS SHALL BE ENERGY STAR COMPLIANT AND BE DUCTED TO TERMINATE OUTSIDE THE BUILDING.
- 2). UNLESS FUNCTIONING AS A COMPONENT OF A WHOLE HOUSE VENTILATION SYSTEM, FANS MUST BE CONTROLLED BY A HUMIDITY CONTROL.
- a) HUMIDITY CONTROLS SHALL BE CAPABLE OF MANUAL OR AUTOMATIC ADJUSTMENT BETWEEN A RELATIVE HUMIDITY RANGE OF LESS THAN 50% TO A MAXIMUM OF 80%.
- b) A HUMIDITY CONTROL MAY BE A SEPARATE COMPONENT TO THE EXHAUST FAN AND IS NOT REQUIRED TO BE INTEGRAL OR BUILT-IN.
- NOTE: FOR CAL GREEN A "BATHROOM" IS A ROOM WHICH CONTAINS A BATHTUB, SHOWER, OR TUB/SHOWER COMBINATION. FANS ARE REQUIRED IN EACH BATHROOM.
7. ALL RECESSED LIGHT FIXTURES WILL BE IC AND AT RATED.
8. LIGHTING FIXTURES LOCATED WITHIN 3 FEET HORIZONTALLY AND 8 FEET VERTICALLY OF THE BATHTUB RIM OR SHOWER STALL THRESHOLD SHALL BE LISTED FOR A DAMP LOCATION, OR LISTED FOR WET LOCATIONS WHERE SUBJECT TO SHOWER SPRAY. (CEC 410.10)
9. LIGHTING TO COMPLIANT WITH 2019 CA ENERGY CODE SECTION L50(K) FOR LIGHTING:
- A. ALL LIGHTING AS HIGH EFFICACY (I.E. PIN-BASED CFL; PULSE-START MH, HPS, GU-24 SOC KETS OTHER THAN LEDS, LED LUMINAIRES WITH INTEGRAL SOURCE, ETC.). CEC TABLE 1 50.0-A SCREW-BASED PERMANENTLY INSTALLED LIGHT FIXTURES MUST CONTAIN SCREWBASD JA8 (JOINT APPENDIX B) COMPLIANT LAMPS. JA8 COMPLIANT LIGHT SOURCES MUST BE MARKED AS "JA8-201 6" OR "JA8-2016-E" ("JA8-2016-E" LUMINAIRES ARE DEEMED APPROPRIATE FOR USE IN ENCLOSED LUMINAIRES). CEC 150.0(K) G
- C. ALL JA8 COMPLIANT LIGHT SOURCES IN THE FOLLOWING LOCATIONS ARE CONTROLLED BY VACANCY SENSORS OR DIMMERS (EXCEPTION CLOSETS LESS THAN 70 SF AND HALLWAYS). CEC 150.0(K)(2K):
- I. CEILING RECESSED DOWNLIGHT LUMINAIRES.
- II. LED LUMINAIRES WITH INTEGRAL SOURCES.
- III. PIN-BASED LED LAMPS (I.E. MR 16, AR-11 1, ETC.)
- IV. GU-24 BASED LED LIGHT SOURCES.
- D. LIMIT THE NUMBER OF BLANK ELECTRICAL BOXES MORE THAN 5 FEET ABOVE THE FINISHED FLOOR TO NOT GREATER THAN THE NUMBER OF BEDROOMS. SHOW THESE ELECTRICAL BOXES CONTROLLED BY A DIMMER, VACANCY SENSOR, OR FAN SPEED CONTROL. CEC 150.0(K) B
- E. AT LEAST ONE FIXTURE IN EACH BATHROOM CONTROLLED BY A VACANCY SENSOR. CEC L50.0(K) 2J
- F. AT LEAST ONE FIXTURE IN THE GARAGE CONTROLLED BY A VACANCY SENSOR. CEC L50.0(K) 2J
- G. AT LEAST ONE FIXTURE IN EACH LAUNDRY ROOM CONTROLLED BY A VACANCY SENSOR. CEC L50.0 (K) 2J
- H. AT LEAST ONE FIXTURE IN EACH UTILITY ROOM CONTROLLED BY A VACANCY SENSOR. CEC L50.0(K) 2J
- I. EXHAUST FANS (EXCLUDES KITCHEN EXHAUST HOOD) SWITCHED SEPARATE FROM LIGHTING (OR UTILIZE A DEVICE WHERE LIGHTING CAN BE TURNED OFF WHILE THE FAN IS RUNNING). SEPARATE SWITCHING FOR ANY UNDER CABINET LIGHTING (INCLUDING KITCHEN LIGHTING) FROM OTHER LIGHTING SYSTEMS. CEC L50.0(K) 2L
- K. ALL OUTDOOR LIGHTING AS HIGH EFFICACY WITH MANUAL ON/OFF SWITCH AND ONE OF THE FOLLOWING IN ACCORDANCE WITH CEC L50.0(K) 3:
- I. PHOTOCONTROL AND MOTION SENSOR
- II. PHOTOCONTROL AND AUTOMATIC TIME SWITCH CONTROL
- III. ASTRONOMICAL TIME SWITCH CONTROL
- IV. ENERGY MANAGEMENT CONTROL SYSTEMS.
10. COMPLETED CF2R-LTG-0 1-E FORM MUST BE PROVIDED TO THE CITY BUILDING INSPECTOR, PRIOR TO FINAL INSPECTION.

HIGH EFFICACY LIGHTING REQUIREMENTS	
LAMP POWER RATING	MINIMUM LAMP EFFICIENCY
15 WATTS OR LESS	40 LUMENS PER WATT
OVER 15 WATTS TO 40 WATTS	50 LUMENS PER WATT
OVER 40 WATTS	60 LUMENS PER WATT

MECHANICAL AND PLUMBING NOTES:

1. ALL WASTE VENTS SHALL TERMINATE A MINIMUM OF 6" OR MORE ABOVE THE ROOF SURFACE, 10' AWAY FROM OR 3' ABOVE ANY WINDOW, DOOR, OPEN-ABLE SKYLIGHT, AIR INTAKE, OR VENT SHAFT AND 1' AWAY FROM ANY VERTICAL WALL SURFACE.
2. HOT WATER PIPE FROM THE WATER HEATER TO THE KITCHEN WILL BE INSULATED.
4. A UFER GROUND WILL BE INSTALLED.
5. THE HEATING UNIT SHALL BE CAPABLE OF MAINTAINING A MINIMUM ROOM TEMPERATURE OF 68 DEGREES AT A POINT 3 FEET ABOVE THE FLOOR AND 2 FEET FROM EXTERIOR WALLS PER CRC SEC. R303.9.
6. PLUMBING FIXTURES AND FITTINGS SHALL BE INSTALLED IN ACCORDANCE WITH THE CALIFORNIA PLUMBING CODE, AND SHALL MEET APPLICABLE STANDARDS REFERENCED IN TABLE 1701.1 OF THE CALIFORNIA PLUMBING CODE.

WATER EFFICIENT PLUMBING FIXTURES (CALIFORNIA CIVIL CODE 1101.4(A))

THE CALIFORNIA CIVIL CODE REQUIRES THAT ALL EXISTING NON-COMPLIANT PLUMBING FIXTURES (BASED ON WATER EFFICIENCY) THROUGHOUT THE HOUSE BE UPGRADED WHENEVER A BUILDING PERMIT IS ISSUED FOR REMODELING IMPROVEMENTS. RESIDENTIAL BUILDING CONSTRUCTED AFTER JANUARY 1, 1994 ARE EXEMPT FROM THIS REQUIREMENT. THE FOLLOWING TABLE SHOWS THE FIXTURES THAT ARE CONSIDERED TO BE NONCOMPLAINT AND THE TYPE OF WATER-CONSERVING PLUMBING FIXTURE THAT SHOULD BE INSTALLED:

TYPE OF FIXTURE	NON-COMPLAINT PLUMBING FIXTURE	REQUIRED WATER-CONSERVING PLUMBING FIXTURE (MAXIMUM FLOW RATES)
WATER CLOSET (TOILET)	GREATER THAN 1.6 GALLONS/FLUSH	1.28 GALLONS/FLUSH
SHOWERHEAD	GREATER THAN 2.5 GALLONS/MINUTE	1.8 GALLONS/MINUTE AT 80psi
FAUCET - BATHROOM	GREATER THAN 2.2 GALLONS/MINUTE	1.2 GALLONS/MINUTE AT 60psi
FAUCET - KITCHEN	GREATER THAN 2.2 GALLONS/MINUTE	1.8 GALLONS/MINUTE AT 60psi

CALGREEN NOTES

1. 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 SIMILAR ACCEPTABLE METHODS PER CGBSC SECTION 4.406.1
2. ALL DUCT AND OTHER RELATED AIR DISTRIBUTION COMPONENT OPENINGS SHALL BE COVERED WITH TAPE, PLASTIC, SHEET METAL, OR OTHER ACCEPTABLE METHODS AT THE TIME OR ROUGH INSTALLATION OR DURING STORAGE ON THE CONSTRUCTION SITE AND UNTIL FINAL STARTUP OF THE HEATING AND COOLING EQUIPMENT. CGBSC SECTION 4.504.1
3. CGBSC SECTION 4.504.2, FINISH MATERIAL POLLUTANT CONTROL.
- 4.504.2.1 ADHESIVES, SEALANTS AND CAULKS. ADHESIVES, SEALANTS AND CAULKS SHALL BE COMPLIANT WITH VOC AND OTHER TOXIC COMPOUND LIMITS.
- 4.504.2.2 PAINTS AND COATINGS. PAINTS, STAINS AND OTHER COATINGS SHALL BE COMPLIANT WITH VOC LIMITS.
- 4.504.2.3 AEROSOL PAINTS AND COATINGS. AEROSOL PAINTS AND COATINGS SHALL BE COMPLIANT WITH PRODUCT WEIGHTED MIR LIMITS FOR ROC AND OTHER TOXIC COMPOUNDS.
- 4.504.2.4 VERIFICATION. DOCUMENTATION SHALL BE PROVIDED TO VERIFY THAT COMPLIANT VOC LIMIT FINISH MATERIALS HAVE BEEN USED.
4. NO CARPET SYSTEM WILL BE INSTALLED.
5. NO RESILIENT FLOORING SYSTEMS WILL BE INSTALLED.
6. COMPOSITE WOOD PRODUCTS. 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 ARB'S AIR TOXICS CONTROL MEASURE FOR COMPOSITE WOOD (17CCR 93.120 ET SEQ.), BY OR BEFORE THE DATES SPECIFIED IN THOSE SECTIONS, AS SHOWN IN CGBSC TABLE 4.504.5.
7. BATHROOM EXHAUST FANS MUST BE ENERGY STAR COMPLAINT, MUST BE DUCTED TO TERMINATE OUTSIDE THE BUILDING, AND MUST BE CONTROLLED BY A HUMIDISTAT WHICH SHALL BE READILY ACCESSIBLE. CGBSC SECTION 4.506.
8. FOR WHOLE PROPOSED LIVING SPACE ON THIS FLOOR: INSTALL FINISHED FLOOR OVER 1/4" UNDERLAYMENT (MINIMUM 6 MIL VAPOR RETARDER / MOISTURE BARRIER) ON (E) CONCRETE SLAB. RETARDER SHALL BE PLACED BETWEEN THE GARAGE CONCRETE FLOOR SLAB (DIRECT CONTACT WITH CONCRETE) AND THE BASE COURSE OR THE PREPARED SUBGRADE PER CRC R506.2.3 AND CALGREEN 4.505.2
9. MOISTURE CONTENT OF BUILDING MATERIALS (4.505.3): 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% MOISTURE CONTENT. MOISTURE CONTENT SHALL BE VERIFIED IN COMPLIANCE WITH THE FOLLOWING: 1.MOISTURE CONTENT SHALL BE DETERMINED WITH EITHER A PROBE-TYPE OR A CONTACT-TYPE MOISTURE METER. EQUIVALENT MOISTURE VERIFICATION METHODS MAY BE APPROVED TY THE ENFORCING AGENCY AND SHALL SATISFY REQUIREMENTS IN SECTION 101.8. 2.MOISTURE READINGS SHALL BE TAKEN AT A POINT 2 FEET TO 4 FEET FROM THE GRADE-STAMPED END OF EACH PIECE TO BE VERIFIED. 3.AT LEAST 3 RANDOM MOISTURE READINGS SHALL BE PERFORMED ON WALL AND FLOOR FRAMING WITH DOCUMENTATION ACCEPTABLE TO THE ENFORCING AGENCY PROVIDED AT THE TIME OF APPROVAL TO ENCLOSE THE WALL AND FLOOR FRAMING. 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. MANUFACTURERS' DRYING RECOMMENDATIONS SHALL BE FOLLOWED FOR WET-APPLIED INSULATION PRODUCTS PRIOR TO ENCLOSURE.
10. ALL PLUMBING FIXTURES AND FITTINGS SHALL MEET THE STANDARDS REFERENCED IN TABLE 1701.1 OF THE 2019 CALIFORNIA PLUMBING CODE. CGBSC SECTION 4.303.2.
11. HEATING AND AIR-CONDITIONING SYSTEMS SHALL BE DESIGNED IN ACCORDANCE WITH THE REQUIREMENTS OF CGBSC SECTION 4.507.2
12. DUCT SYSTEMS ARE SIZED, DESIGNED, AND EQUIPMENT IS SELECTED USING THE FOLLOWING METHODS:
- a) ESTABLISH HEAT LOSS AND HEAT GAIN VALUES ACCORDING TO ANSIACCA 2 MANUAL J-2011 OR EQUIVALENT;
- b) SIZE DUCT SYSTEMS ACCORDING TO ANSIACCA 1 MANUAL D-2014 OR EQUIVALENT;
- c) SELECT HEATING AND COOLING EQUIPMENT ACCORDING TO ANSI ACCA 3 MANUAL S-2014 OR EQUIVALENT.
13. HVAC INSTALLERS SHALL BE TRAINED AND CERTIFIED IN THE PROPER INSTALLATION OF HVAC SYSTEMS. SPECIAL INSPECTORS EMPLOYED BY THE ENFORCING AGENCY MUST BE QUALIFIED AND ABLE TO DEMONSTRATE COMPETENCE IN THE DISCIPLINE THEY ARE INSPECTING. VERIFICATION OF COMPLIANCE WITH THIS CODE MAY INCLUDE CONSTRUCTION DOCUMENTS, PLANS, SPECIFICATIONS BUILDER OR INSTALLER CERTIFICATION, INSPECTION REPORTS, OR OTHER METHODS ACCEPTABLE TO THE ENFORCING AGENCY WHICH SHOW SUBSTANTIAL CONFORMANCE.
14. DOCUMENTATION OF COMPLIANCE SHALL INCLUDE, BUT IS NOT LIMITED TO, CONSTRUCTION DOCUMENTS, PLANS, SPECIFICATIONS, BUILDER OR INSTALLER CERTIFICATION, INSPECTION REPORTS, OR OTHER METHODS ACCEPTABLE TO THE LOCAL ENFORCING AGENCY. OTHER SPECIFIC DOCUMENTATION OR SPECIAL INSPECTIONS NECESSARY TO VERIFY COMPLIANCE ARE SPECIFIED IN APPROPRIATE SECTIONS OF CALGREEN.

SMOKE AND CARBON MONOXIDE ALARMS

THE STATE OF CALIFORNIA REQUIRES SMOKE AND CARBON MONOXIDE ALARMS TO BE INSTALLED IN ALL RESIDENTIAL BUILDINGS. (CALIFORNIA RESIDENTIAL CODE) SECTIONS R314.3.2 AND R314.3.3 REQUIRE A 10-YEAR LIFESPAN FOR SMOKE ALARMS/DETECTORS:

1. UNITS THAT ARE OLDER THAN 10-YEARS NEED TO BE REPLACED.
2. ALL SMOKE DETECTORS AND CARBON MONOXIDE ALARMS SHALL BE HARD WIRED.

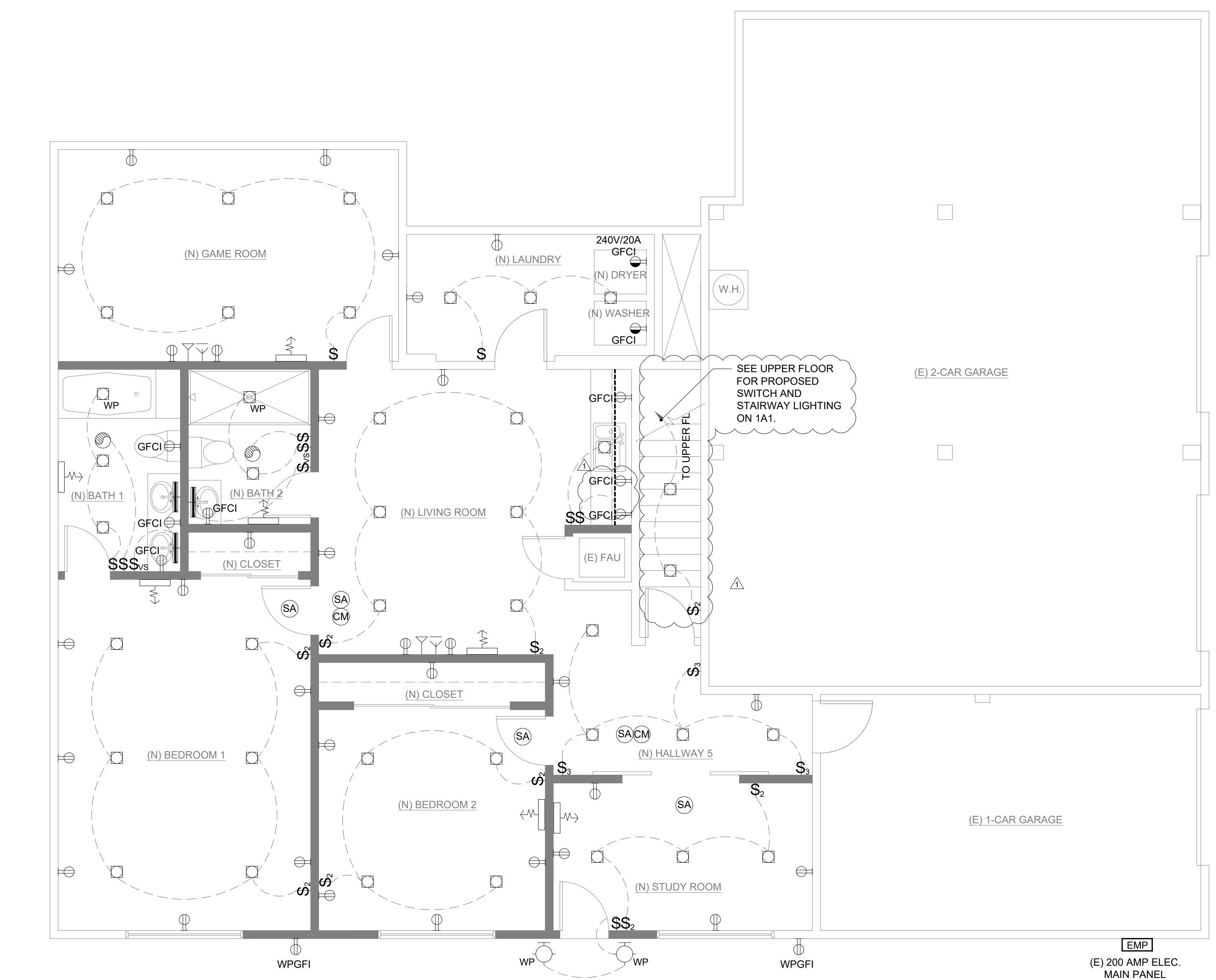
SMOKE, CARBON MONOXIDE OR MULTIPLE-PURPOSE ALARMS (CARBON MONOXIDE AND SMOKE ALARMS) MUST BE APPROVED AND LISTED BY THE STATE FIRE MARSHAL. THE DEVICES MUST BE INSTALLED PER THE MANUFACTURER'S INSTRUCTIONS.

ALARM LOCATION REQUIREMENTS

- SMOKE ALARMS MUST BE INSTALLED:
- A) IN EACH ROOM USED FOR SLEEPING PURPOSES;
- B) IN EACH HALLWAY OUTSIDE OF THE SLEEPING ROOM(S);
- C) ON EACH LEVEL OF THE DWELLING, INCLUDING BASEMENTS

CARBON MONOXIDE ALARMS MUST BE INSTALLED:

- A) OUTSIDE OF EACH SLEEPING ROOM IN THE IMMEDIATE VICINITY OF THE BEDROOM(S);
- B) ON EACH LEVEL OF THE DWELLING, INCLUDING BASEMENTS

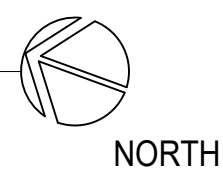


MEP SYMBOL LEGEND

- (N) LED FLUSH MOUNTED CAN LIGHT FIXTURE
- (N) WP (N) WATER PROOF LED FLUSH MOUNTED CAN LIGHT FIXTURE
- (N) WP (N) HIGH EFFICACY EXTERIOR WATER PROOF WALL MOUNTED LIGHT FIXTURE
- (N) HIGH EFFICACY WALL MOUNTED VANITY LIGHT FIXTURE
- (N) UNDER CABINET LED LIGHT FIXTURE
- (N) WALL SWITCH, MTD @ +48", U.O.N.
- (N) TWO-WAY WALL SWITCH, MTD @ +48", U.O.N.
- (N) THREE-WAY WALL SWITCH, MTD @ +48", U.O.N.
- (N) ARC FAULT CIRCUIT INTERRUPTER DUPLEX RECEPTACLE, MTD. @ +12", U.O.N.
- (N) GROUND FAULT CIRCUIT INTERRUPTER DUPLEX RECEPTACLE. HT.: ABOVE COUNTER WHEN INSTALLED AT CABINET AREA.
- (N) GROUND FAULT CIRCUIT INTERRUPTER DUPLEX RECEPTACLE. HT.: ABOVE COUNTER WHEN INSTALLED AT CABINET AREA.
- (N) EXTERIOR WATER PROOF GROUND FAULT CIRCUIT INTERRUPTER DUPLEX RECEPTACLE.
- (N) APPROVED EXHAUST FAN, (100 CFM MIN. AT KITCHEN, 80 CFM MIN. AT BATHROOM, 5 AIR CHANGES/HOUR, MIN. DUCT TO EXTERIOR PER U.M.C.
- (N) WALL MOUNTED AIR REGISTER
- (N) SMOKE ALARM - HARD WIRED, INTERCONNECTED W/ BATTERY BACK-UP
- (N) CARBON MONOXIDE DETECTOR
- (E) ELECTRICAL MAIN PANEL

1 PROPOSED MEP PLAN

A4 SCALE: 1/4" = 1'-0"



SHEET NOTE:

1. ALL NEWLY INSTALLED INTERIOR LIGHTING TO BE HIGH EFFICACY PER CENC 150.0(K)(1)(A).
2. ALL NEWLY INSTALLED EXTERIOR LIGHTING TO BE HIGH EFFICACY AND BE CONTROLLED BY A MANUAL ON AND OFF SWITCH THAT DOES NOT OVERRIDE THE AUTOMATIC ACTIONS OF ITEMS SHOWN ON CENC 150(K)(3)(II) OR CENC 150.0(K)(3)(III).
3. ALL RECESSED FIXTURES WILL BE IC AND AT RATED.
4. CONTRACTOR TO VERIFY WITH HOUSE OWNER BEFORE PURCHASING AND INSTALLATION OF ALL ELECTRICAL OUTLETS AND COMPONENTS.
5. ALL WALL PENETRATIONS BETWEEN LIVING SPACES AND GARAGE SHOULD NOT IMPACT WALL FIRE RATING.
6. UNIT SHALL BE EQUIPPED WITH SMOKE ALARMS LOCATED AS REQUIRED FOR NEW DWELLINGS, PER CRC R314.2.2. CONTRACTOR MUST INSTALL OR VERIFY THE EXISTENCE OF SMOKE ALARMS IN UPPER FLOOR. ALARMS IN EXISTING AREAS WHERE ACCESS TO THE AREA ABOVE THE CEILING IS NOT POSSIBLE MAY BE POWERED BY A DIC BATTERY SOURCE. FILL OUT THE AFFIDAVIT FORM LOCATED AT: [HTTPS://WWW.SCCGOV.ORG/SITES/DP/D/DOCS/FORMS/DOCUMENTS/AFFIDAVIT_SMOKE_CO_ALARM.PDF](https://www.sccgov.org/sites/dp/d/DOCS/FORMS/DOCUMENTS/AFFIDAVIT_SMOKE_CO_ALARM.PDF) BEFORE YOU REQUEST AN INSPECTOR TO SIGN OFF ON YOUR PROJECT. COMPLETE AND SIGN THIS AFFIDAVIT AND PLACE IT IN THE PERMIT JACKET OR WITH THE PERMIT RECORD CARD.

COUNTY APPROVAL STAMP

Blank area for County Approval Stamp.

Designer

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Project Name

**HOUSE ADDITION
LIU RESIDENCE**
4005 HIGUERA ROAD
SAN JOSE, CA 95148

Revisions	By
11/12/21	L.L.

Drawn	L.L.
Check	
Date	06/25/21
Scale	Noted

Drawing Name

**PROPOSED
LOWER FLOOR
MEP PLAN**

Sheet

A4

SHEET NOTES

1. EXTERIOR PLASTER/STUCCO NOTES:

A) WEATHER RESISTIVE BARRIERS SHALL BE INSTALLED AS REQUIRED IN SECTION R703.2 AND, WHERE APPLIED OVER WOOD-BASED SHEATING, SHALL INCLUDE A WATER-RESISTIVE VAPOR-PERMEABLE BARRIER WITH A PERFORMANCE AT LEAST EQUIVALENT TO TWO LAYERS OF GRADE D PAPER (R703.6.3)

B) PLASTERING WITH PORTLAND CEMENT PLASTER SHALL NOT BE LESS THAN THREE COATS WHEN APPLIED OVER METAL LATH OR WIRE LATH AND SHALL BE NOT LESS THAN TWO COATS WHEN APPLIED OVER MASONRY. CONCRETE, PRESSURE-PRESERVATIVE TREATED WOOD OR DECAY-RESISTANT WOOD AS SPECIFIED IN SECTION R317.1 OR GYPSUM BACKING (R703.6.2)

C) A MINIMUM 26 GA. GALVANIZED CORROSION-RESISTANT WEEP SCREED WITH: (R703.6.2.1)

1) A MINIMUM VERTICAL ATTACHMENT FLANGE OF 3-1/2 INCHES PROVIDED AT OR BELOW THE FOUNDATION PLATE LINE AT ALL EXTERIOR WALLS.

2) THE SCREED SHALL BE PLACED A MINIMUM OF 4 INCHES ABOVE EARTH OR 2 INCHES ABOVE PAVED AREA.

Designer

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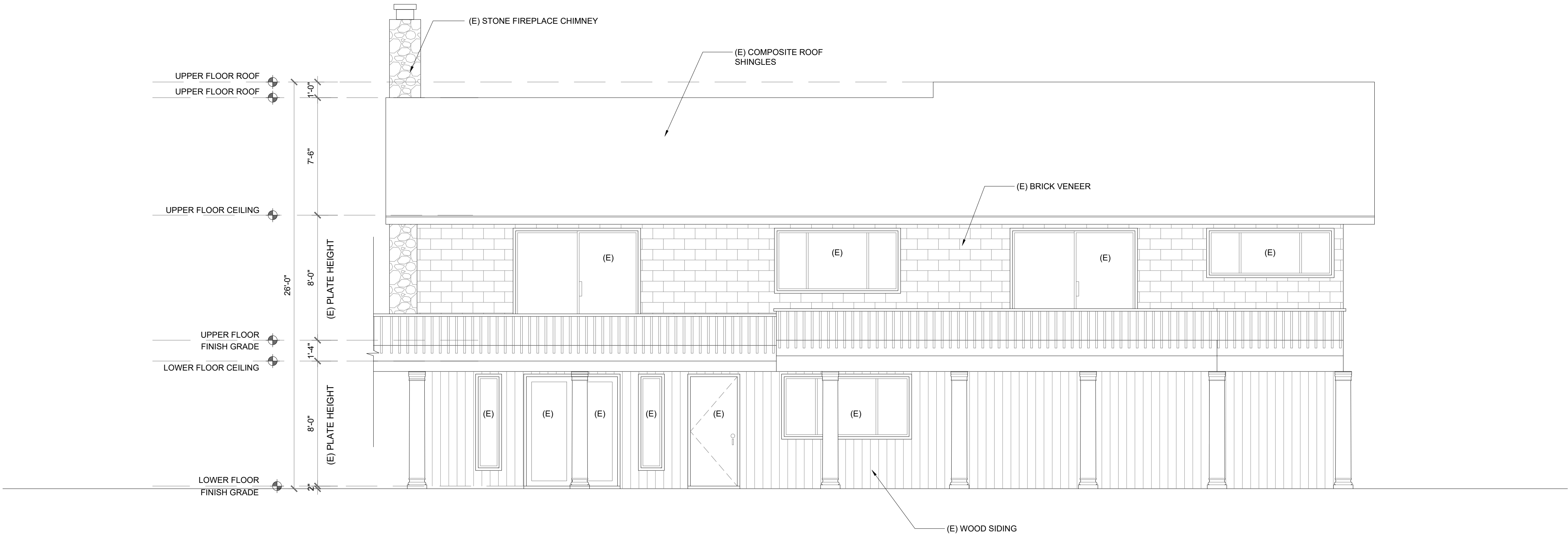
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△ 11/21/21	L.L.

Drawn	L.L.
Check	
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Scale	Noted

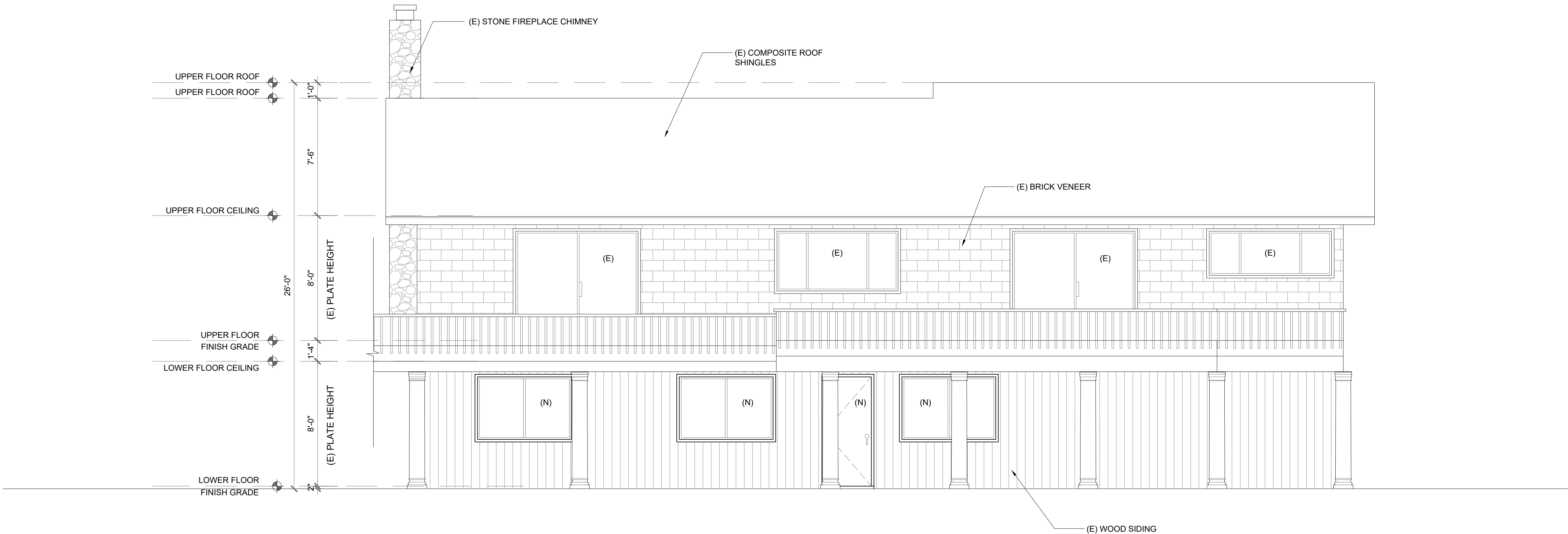
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**EXISTING AND
PROPOSED
ELEVATIONS**

Sheet

A5

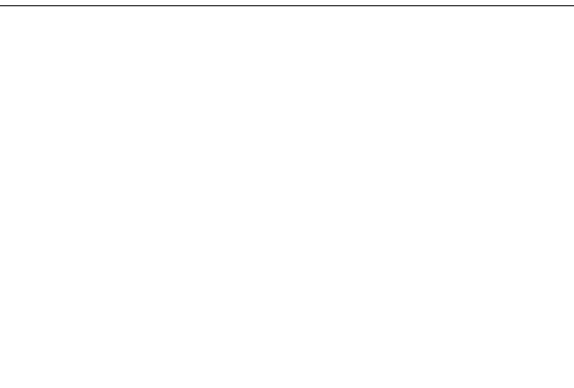


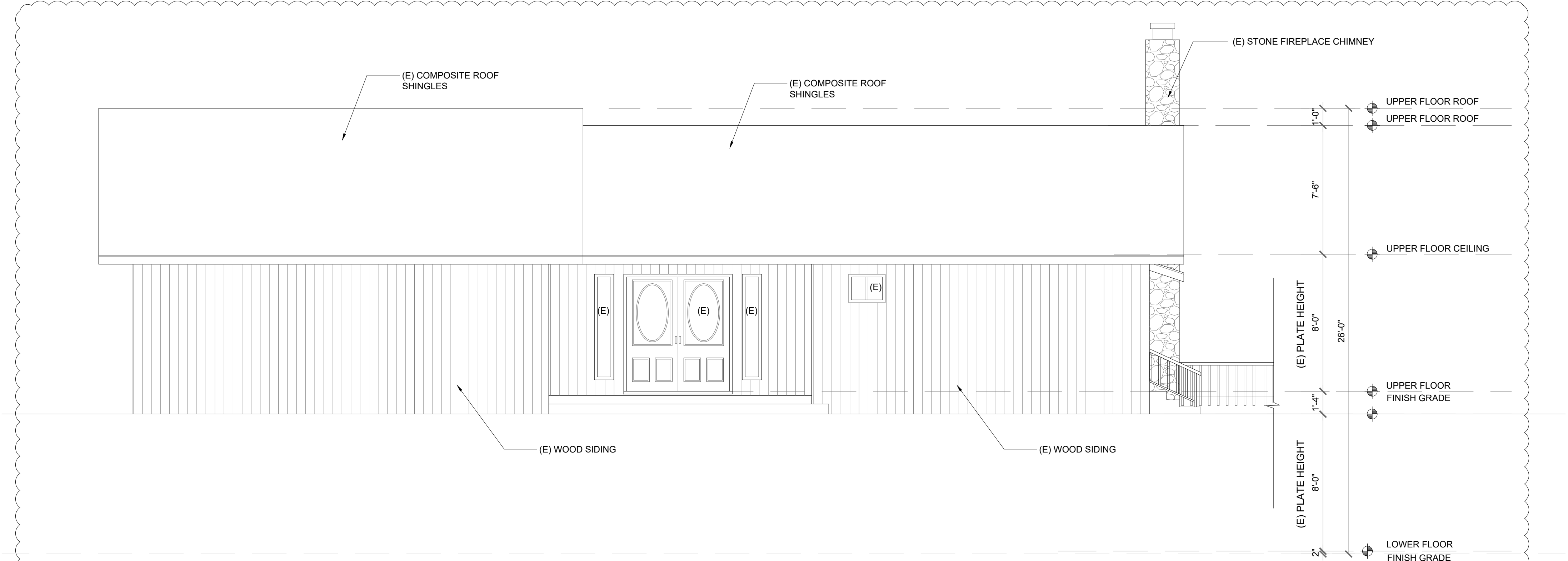
1 EXISTING REAR (WEST) ELEVATION
A5 SCALE: 1/4" = 1'-0"



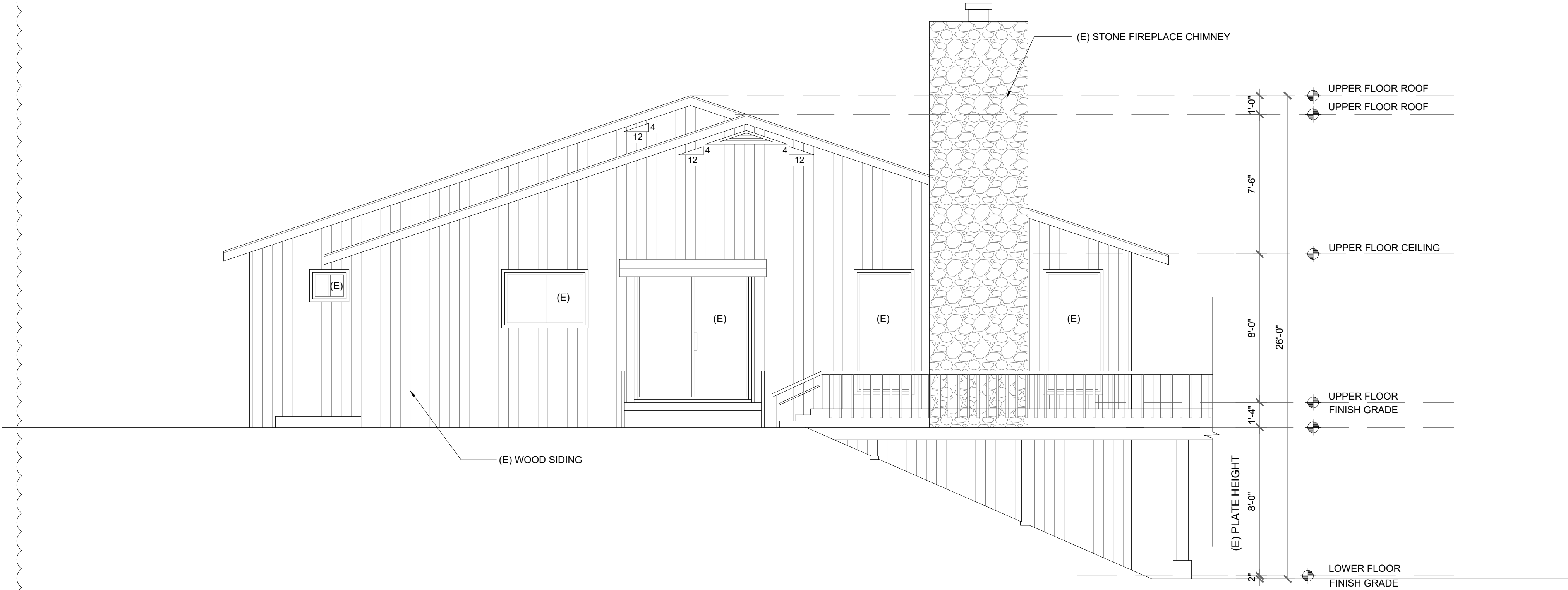
2 PROPOSED REAR (WEST) ELEVATION
A5 SCALE: 1/4" = 1'-0"

COUNTY APPROVAL STAMP



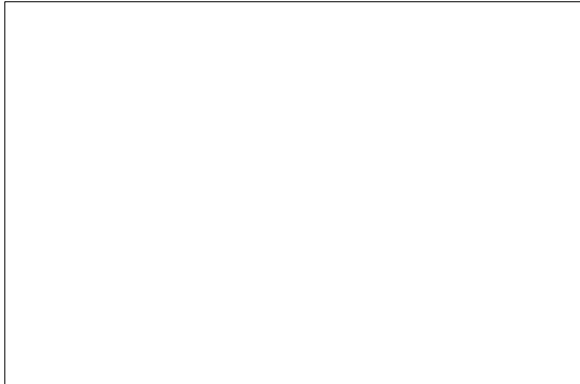


1 **EXISTING FRONT (EAST) ELEVATION (NO CHANGE)**
A6 SCALE: 1/4" = 1'-0"



2 **EXISTING RIGHT SIDE (NORTH) ELEVATION (NO CHANGE)**
A6 SCALE: 1/4" = 1'-0"

COUNTY APPROVAL STAMP



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△ 11/21/21	L.L.

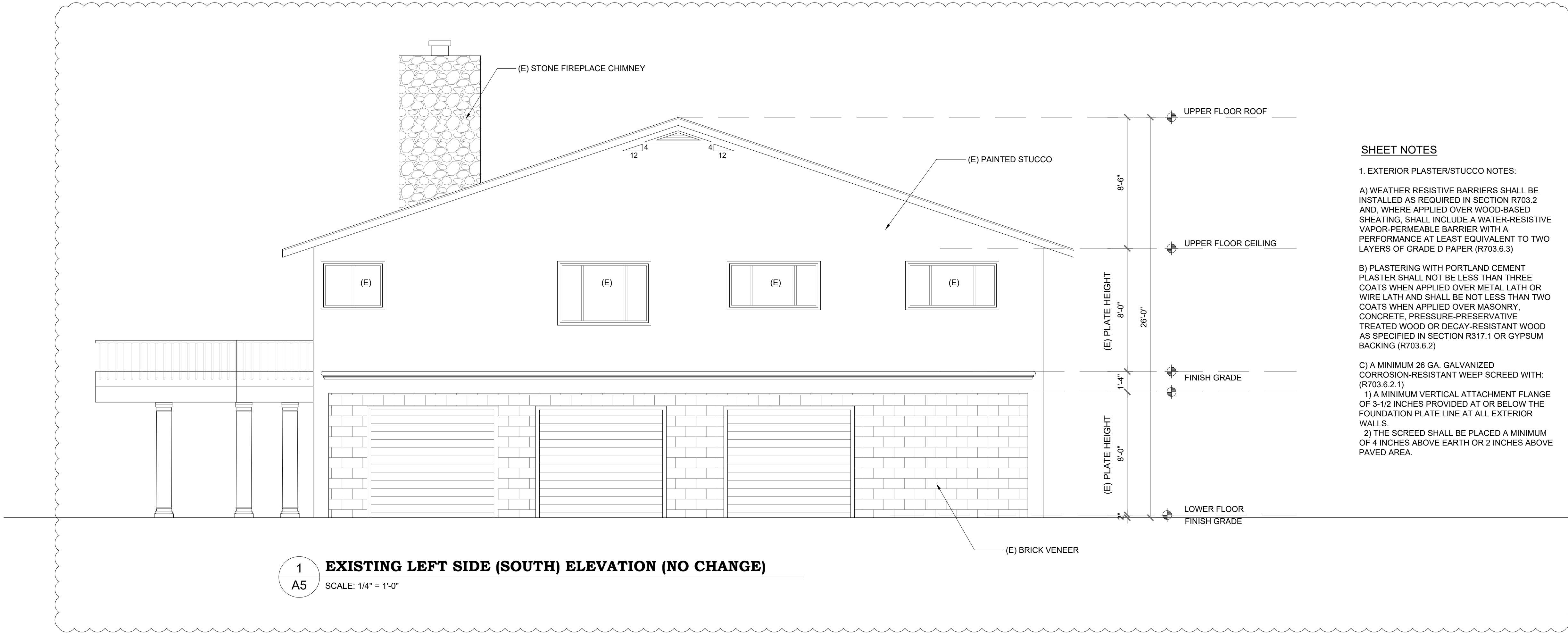
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Drawing Name

**EXISTING AND
PROPOSED
ELEVATIONS**

Sheet

A6



SHEET NOTES

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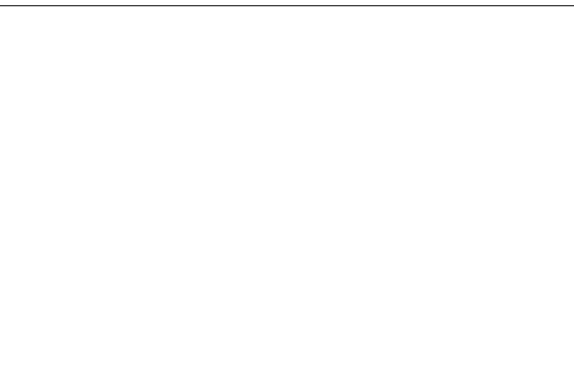
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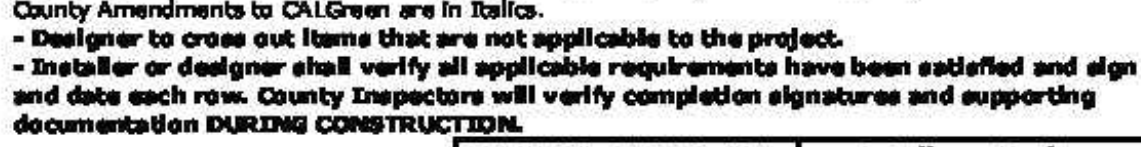
**EXISTING AND
PROPOSED
ELEVATIONS**

Sheet

A7

COUNTY APPROVAL STAMP





		APPLICANT TO COMPLETE Plan Check Review Data		Installer or Designer Verification	
ITEM #	CALGreen CODE SECTION	REFERENCE SHEET	Note or Detail No.	Date	Installer or Designer Signature
MATERIAL CONSERVATION & RESOURCE EFFICIENCY: MANDATORY REQUIREMENTS					
9	4.406.1	CG-2	Note 9		
10	4.408.1	CG-2	Note 10		
11	4.408.5	CG-1	Construction Waste Management Forms Note 11		
12	4.410.1	CG-2	Note 12		
ENVIRONMENTAL QUALITY: MANDATORY REQUIREMENTS					
13	4.503.1 N/A	CG-2	Note 13		N/A
14	4.504.1	CG-2	Note 14		
15	4.504.2.1	CG-1	Table 4.504.1 Table 4.504.2 Note 15		
16	4.504.2.2	CG-1	Table 4.504.3		
17	4.504.2.3	CG-2	Note 16		
18	4.504.2.4	CG-2	Note 17		
19	4.504.3 N/A	CG-1	Table 4.504.1		N/A
20	4.504.4 N/A	CG-2	Note 19		N/A
21	4.504.5	CG-1	Table 4.504.5		
		CG-2	Note 21		

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 ^b	0.13

COATING CATEGORY	VOC LIMIT
Floor coatings	50
Nonfloor coatings	100
Nonfloor-high gloss coatings	100
INSULATING COATINGS	150
Aluminum roof coatings	40
Basement spackling coatings	40
Blumkrout roof coatings	30
Blumkrout roof primers	350
Boat trailers	350
Concrete curing compounds	350
Construction sealers	100
Dewaxing sealers	50
Dry fog coatings	150
Faux finishing coatings	130
Faux finishing primers	350
Floor coatings	100
Form-release compounds	250
Gemlike area coatings (sign paints)	50
High temperature coatings	40
Industrial maintenance coatings	250
Low solids coatings ³	120
Masonry cement coatings	40
Mastic texture coatings	100
Metallic pigmented coatings	500
Multicolor coatings	250
Penetrating wax primers	450
Primer, sealer, and undercoats	100
Sealer/preserving sealers	350
Recycled coatings	250
Roof coatings	50
Roof precoatitive coatings	250
Shellacs	700
Clear	700
Opaque	700
Spackling primers, sealers and undercoats	250
Stains	250
Stone consolidants	450
Swimming pool coatings	30
Traffic marking coatings	100
Tub and tile finish coatings	40
Waterproof membranes	250
Wood coatings	275
Wood preservatives	350
Zinc-rich primers	350

SEALANTS	VOC LIMIT
Architectural	250
Marine dock	760
Nonmembrane roof	300
Roadway	250
8 ply ply roof membrane	430
Other	430

SEALANT PRIMERS	VOC LIMIT
Architectural	
Nonporous	250
Porous	773
Modified bituminous	500
Marine dock	760
Other	750

Project Name: _____ Legend: _____ Hauling Company
 Job #: _____ _____ Sorting Facility Name and Location
 Project Manager: _____ _____ Disposal Service Company
 Waste Hauling Company: _____
 Contact Name: _____

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 accumulate 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. Separately collected, identified 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 WHM 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 it is 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: Reuse 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 bins of construction (e.g., concrete and wood waste) to increase the overall waste diversion rate.
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 bin 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 _____ lbs per (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 waste the project and calculate the waste diversion rate for the project. _____ will provide Project Manager with an updated monthly report on gross weight haul rate and 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 such 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 uses consumables (such as limited supply) restrict the number of debris boxes that can be used for collection of designated waste the project Superintendent will, as deemed appropriate, allocate specific space on site where individual material types are to be consolidated. These will be collected by the waste hauler and taken to non-designated waste uses.
11. Debris from jobsite office and meeting rooms will be collected by _____, will, at a minimum, recycle office paper, plastic, metal and cardboard.

Project Name: _____

Job Number: _____

Project Manager: _____

Waste Hauling Company: _____

Construction Waste Management (CWM) Plan

WASTE MATERIAL TYPE	DIVERSION METHOD:		PROJECTED DIVERSION RATE
	COMINGLED AND BORTED OFF SITE	SOURCE SEPARATED ON SITE	
Asphalt			
Concrete			
Shuttercrete			
Metal			
Wood			
Rigid insulation			
Fiberglass insulation			
Acoustic ceiling tile			
Gypsum drywall			
Carpet/carpenter pad			
Plastic pipe			
Plastic buckets			
Plastic			
Hard plastic siding and boards			
Glass			
Cardboard			
Palettes			
Job office trash, paper, glass & plastic bottles, cans, plastic			
Alkaline and rechargeable batteries, laser cartridges, and electronic devices			
Other:			
Other:			
Other:			
Other:			

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

[illegible]

HOUSE ADDITION
LIU RESIDENCE
4005 HIGUERA ROAD,
SAN JOSE, CA 95148

Project Information



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 (MWEL0), 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 EXAMINATION 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(B)(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.

HOUSE ADDITION
LIU RESIDENCE
4005 HIGUERA ROAD,
SAN JOSE, CA 95148

Project Information

[Signature]



CERTIFICATE OF COMPLIANCE

Project Name: Higuera Road Addition
Calculation Description: Title 24 Analysis

Calculation Date/Time: 2021-11-30T10:51:21-08:00
Input File Name: Higuera Road Addition (4005).rbd19x

CF1R-PRF-01E

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GENERAL INFORMATION																
01	Project Name			Higuera Road Addition												
02	Run Title			Title 24 Analysis												
03	Project Location			4005 Higuera Road												
04	City			San Jose					05	Standards Version			2019			
06	Zip code			95148					07	Software Version			EnergyPro 8.2			
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/Alteration					13	Number of Bedrooms					5	
14	Addition Cond. Floor Area (ft²)			855					15	Number of Stories					2	
16	Existing Cond. Floor Area (ft²)			3073					17	Fenestration Average U-factor					0.3	
18	Total Cond. Floor Area (ft²)			3928					19	Glazing Percentage (%)					10.27%	
20	ADU Bedroom Count			n/a					21	ADU Conditioned Floor Area					n/a	
22	Is Natural Gas Available?			Yes												

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 (kTDOU/ft²-yr)	Standard Design	Proposed Design	Compliance Margin	Percent Improvement
Space Heating	58.22	55.11	3.11	5.3
Space Cooling	48.02	44.58	3.44	7.2
IAQ Ventilation	0	0	0	
Water Heating	10.44	10.44	0	0
Self Utilization/Flexibility Credit	n/a	0	0	n/a
Compliance Energy Total	116.68	110.13	6.55	5.6

Registration Number: 221-P010240402B-000-000-0000000-0000
CA Building Energy Efficiency Standards - 2019 Residential Compliance

Registration Date/Time: 2021-11-30 13:21:34
Report Version: 2019.1.300
Schema Version: rev 20200901

HERS Provider: CalCERTS, Inc.
Report Generated: 2021-11-30 10:51:54

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OPAQUE SURFACES - CATHEDRAL CEILINGS													
01	02	03	04	05	06	07	08	09	10	11	12	13	14
Name	Zone	Construction	Azimuth	Orientation	Area (ft²)	Skylight Area (ft²)	Roof Rise (x in 12)	Roof Reflectance	Roof Emittance	Cool Roof	Status	Verified Existing Condition	Existing Construction
Roof	__Garage__	R-0 Roof No Attic	0	Right	1128	0	4	0.1	0.85	No	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 Living Area	Attic Roof/Existing Living Area		Ventilated	4	0.1	0.85	No	No	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	Window	Front Wall	Front	90			1	2.4	1.19	Table 110.6-A	0.83	Table 110.6-B	Bug Screen	Existing	No
Window 4	Window	Front Wall	Front	90			1	4.9	1.19	Table 110.6-A	0.83	Table 110.6-B	Bug Screen	Existing	No
Window 5	Window	Front Wall	Front	90			1	4.9	1.19	Table 110.6-A	0.83	Table 110.6-B	Bug Screen	Existing	No
Window 6	Window	Left Wall	Left	180			1	16.5	1.19	Table 110.6-A	0.83	Table 110.6-B	Bug Screen	Existing	No
Window 7	Window	Left Wall	Left	180			1	16.5	1.19	Table 110.6-A	0.83	Table 110.6-B	Bug Screen	Existing	No
Window 8	Window	Left Wall	Left	180			1	22.4	1.19	Table 110.6-A	0.83	Table 110.6-B	Bug Screen	Existing	No
Window 9	Window	Left Wall	Left	180			1	10.8	1.19	Table 110.6-A	0.83	Table 110.6-B	Bug Screen	Existing	No

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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-11 Roof Attic	Ceilings (below attic)	Wood Framed Ceiling	2x4 @ 24 in. O. C.	R-11	None / None	0.081	Over Ceiling Joists: R-1.9 Insul. Cavity / Frame: R-9.1 / 2x4 Inside Finish: Gypsum Board
R-0 Floor No Crawlspace	Exterior Floors	Wood Framed Floor	2x12 @ 16 in. O. C.	R-0	None / None	0.24	Floor Surface: Carpeted Floor Deck: Wood Siding/sheathing/decking Cavity / Frame: no insul. / 2x12
R-19 Roof No Attic	Interior Ceiling	Wood Framed Ceiling	2x8 @ 16 in. O. C.	R-19	None / None	0.046	Floor Surface: Carpeted Floor Deck: Wood Siding/sheathing/decking Cavity / Frame: R-19 / 2x8 Ceiling Below Finish: Gypsum Board

BUILDING ENVELOPE - HERS VERIFICATION			
01	02	03	04
Quality Insulation Installation (QII)	High R-value Spray Foam Insulation	Building Envelope Air Leakage	CFM50
Not Required	Not Required	Not Required	n/a

WATER HEATING SYSTEMS									
01	02	03	04	05	06	07	08	09	10
Name	System Type	Distribution Type	Water Heater Name (H)	Solar Heating System	Compact Distribution	HERS Verification	Status	Verified Existing Condition	Existing Water Heating System
DHW Sys 1	Domestic Hot Water (DHW)	Standard Distribution System	DHW Heater 1 (1)	n/a	None	n/a	Existing	No	

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REQUIRED SPECIAL FEATURES													
The following are features that must be installed as condition for meeting the modeled energy performance for this computer analysis.													
<ul style="list-style-type: none"> New ductwork added is less than 40 ft. in length Non-standard duct location (any location other than attic) 													

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													
Building-level Verifications: <ul style="list-style-type: none"> None -- Cooling System Verifications: <ul style="list-style-type: none"> Minimum Airflow Fan Efficacy Watts/CFM Heating System Verifications: <ul style="list-style-type: none"> None -- HVAC Distribution System Verifications: <ul style="list-style-type: none"> Duct leakage testing Duct Sealing required if a duct system component, plenum, or air handling unit is altered Ducts located entirely in conditioned space confirmed by duct leakage testing Domestic Hot Water System Verifications: <ul style="list-style-type: none"> None -- 													

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
Higuera Road Addition	3928	1	5	2	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	Water Heating System 2
Existing Living Area	Conditioned	EX HVAC System1	3073	8	DHW Sys 1	N/A
New Living Area	Conditioned	New HVAC System2	855	8	DHW Sys 1	N/A

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CA Building Energy Efficiency Standards - 2019 Residential Compliance

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CERTIFICATE OF COMPLIANCE

Project Name: Higuera Road Addition
Calculation Description: Title 24 Analysis

Calculation Date/Time: 2021-11-30T10:51:21-08:00
Input File Name: Higuera Road Addition (4005).rbd19x

CF1R-PRF-01E

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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 10	Window	Rear Wall	Back	270			1	22.2	1.19	Table 110.6-A	0.83	Table 110.6-B	Bug Screen	Existing	No
Window - SGD	Window	Rear Wall	Back	270			1	53.3	1.19	Table 110.6-A	0.83	Table 110.6-B	Bug Screen	Existing	No
Window - SGD 2	Window	Rear Wall	Back	270			1	53.3	1.19	Table 110.6-A	0.83	Table 110.6-B	Bug Screen	Existing	No
Window 11	Window	Rear Wall	Back	270			1	29.7	1.19	Table 110.6-A	0.83	Table 110.6-B	Bug Screen	Existing	No
Window 12	Window	Right Wall	Right	0			1	19	1.19	Table 110.6-A	0.83	Table 110.6-B	Bug Screen	Existing	No
Window 13	Window	Right Wall	Right	0			1	39	1.19	Table 110.6-A	0.83	Table 110.6-B	Bug Screen	Existing	No
Window - SGD 3	Window	Right Wall	Right	0			1	40	1.19	Table 110.6-A	0.83	Table 110.6-B	Bug Screen	Existing	No
Window 14	Window	Right Wall	Right	0			1	16.5	1.19	Table 110.6-A	0.83	Table 110.6-B	Bug Screen	Existing	No
Window 1	Window	Rear Wall 2	Back	270			1	24	0.3	NFRC	0.23	NFRC	Bug Screen	New	n/a
Window 2	Window	Rear Wall 2	Back	270			1	24	0.3	NFRC	0.23	NFRC	Bug Screen	New	n/a
Window 3	Window	Rear Wall 2	Back	270			1	24	0.3	NFRC	0.23	NFRC	Bug Screen	New	n/a

OPAQUE DOORS					
01	02	03	04	05	06
Name	Side of Building	Area (ft ²)	U-factor	Status	Verified Existing Condition
Door	Front Wall	40	0.5	Existing	No
Door 1	Rear Wall 2	20	0.5	New	n/a
Door 2	Interior Surface	18	0.5	Existing	No

01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16
HVAC - DISTRIBUTION SYSTEMS															
			Duct Ins. R-value		Duct Location		Surface Area								
Name	Type	Design Type	Supply	Return	Supply	Return	Supply	Return	Bypass Duct	Duct Leakage	HERS Verification	Status	Verified Existing Condition	Existing Distribution system	New Ducts 40 ft
											1-her's-dist				
Air Distributi on System 2	Conditioned space-entirely	Non-Verified	R-8	R-8	Condit ioned Zone	Condit ioned Zone	n/a	n/a	No Bypass Duct	Sealed and Tested	Air Distributi on System 2-her's-dist	New	n/a	n/a	n/a

01	02	03	04	05	06	07	08	09
HVAC DISTRIBUTION - HERS VERIFICATION								
Name	Duct Leakage Verification	Duct Leakage Target (%)	Verified Duct Location	Verified Duct Design	Buried Ducts	Deeply/Buried Ducts	Low-leakage Air Handler	Low Leakage Ducts Entirely in Conditioned Space
Air Distribution System 2-her's-dist	Yes	5.0	Required	Not Required	Not Required	Credit not taken	Not Required	No

01	02	03	04
HVAC - FAN SYSTEMS			
Name	Type	Fan Power (Watts/CFM)	Name
HVAC Fan 2	HVAC Fan	0.45	HVAC Fan 2-her's-fan

01	02	03
HVAC FAN SYSTEMS - HERS VERIFICATION		
Name	Verified Fan Watt Draw	Required Fan Efficacy (Watts/CFM)
HVAC Fan 1-her's-fan	Not Required	0

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01	02	03
Name	Verified Fan Watt Draw	Required Fan Efficacy (Watts/CFM)
HVAC Fan 2-her's-fan	Required	0.45
HERS RATER VERIFICATION OF EXISTING CONDITIONS		

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DOCUMENTATION AUTHOR'S DECLARATION STATEMENT

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

Documentation Author Name:
Timothy Carstairs

Documentation Author Signature:
Timothy Carstairs

Company:
Carstairs Energy Inc.

Signature Date:
2021-11-30 11:13:31

Address:
2238 Bayview Heights Drive, Suite E
Los Osos, CA 93402

CEA/HERS Certification Identification (if applicable):
r160610042

City/State/Zip:
Los Osos, CA 93402

Phone:
805-904-9048

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:
Haylan Lin

Responsible Designer Signature:
Haylan Lin

Company:
Haylan Lin

Date/Time:
2021-11-30 13:21:34

Address:
6525 Crown Blvd, # 41068
San Jose, CA 95160

License:
na

City/State/Zip:
San Jose, CA 95160

Phone:
408-627-1299

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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RESIDENTIAL MEASURES SUMMARY										RMS-1
Project Name Higuera Road Addition		Building Type		<input checked="" type="checkbox"/> Single Family <input type="checkbox"/> Multi Family		<input checked="" type="checkbox"/> Addition Alone <input checked="" type="checkbox"/> Existing+ Addition/Alteration		Date 11/30/2021		
Project Address 4005 Higuera Road San Jose		California Energy Climate Zone CA Climate Zone 04		Total Cond. Floor Area 3,928		Addition 855		# of Units 1		
INSULATION		Area								
Construction	Type	Cavity	(ft²)	Special Features		Status				
Floor	Wood Framed w/o Crawl Space	- no insulation	3,028			Existing				
Wall	Wood Framed	- no insulation	420			Existing				
Door	Opaque Door	- no insulation	40			Existing				
Wall	Wood Framed	- no insulation	310			Existing				
Wall	Wood Framed	- no insulation	314			Existing				
Wall	Wood Framed	- no insulation	282			Existing				
Roof	Wood Framed Attic	R 11	3,073			Existing				
Wall	Wood Framed	R 15	272			New				
FENESTRATION		Total Area: 403		Glazing Percentage: 10.3 %		New/Altered Average U-Factor: 0.30				
Orientation	Area(ft²)	U-Fac	SHGC	Overhang	Sidelines	Exterior Shades	Status			
Front (E)	12.2	1.190	0.83	none	none	N/A	Existing			
Left (S)	66.2	1.190	0.83	none	none	N/A	Existing			
Rear (W)	158.5	1.190	0.83	none	none	N/A	Existing			
Right (N)	94.5	1.190	0.83	none	none	N/A	Existing			
Rear (W)	72.0	0.300	0.23	none	none	N/A	New			



2019 Low-Rise Residential Mandatory Measures Summary

NOTE: Low-rise residential buildings subject to the Energy Standards must comply with all applicable mandatory measures, regardless of the compliance approach used. Review the respective section for more information. Exceptions may apply.

Building Envelope Measures:	
§ 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 AIAA/VITDA/CSA 1011.1 § 2.4440-2011.
§ 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 10-6A, 10-6B, 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(h):	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(h) and be labeled per § 10-143 when the installation of a cool roof is specified on the CFI-18.
§ 110.8(i):	Radiant Barriers. When required, radiant barriers must have an emittance of 0.05 or less and be verified to the Department of Consumer Affairs.
§ 150.0(a):	Ceiling and Rafter Roof Insulation. Minimum R-22 insulation in wood-frame ceiling, or the weighted average U-factor must not exceed 0.043. Minimum R-19 or weighted average U-factor of 0.054 or less in a rafter roof alteration. 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 continuous 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. Oppose non-frame assemblies must have an overall assembly U-factor not exceeding 0.102. Masonry walls must meet Tables 150.1.4 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(h):	Fenestration Products. Fenestration, including skylights, separating conditioned space from unconditioned space or outdoors must have a maximum U-factor of 0.58, or the weighted average U-factor of all fenestration must not exceed 0.58.
Fireplaces, Decorative Gas Appliances, and Gas Log Measures:	
§ 110.5(e):	Pilot Light. Continuously burning pilot lights are not allowed for indoor and outdoor fireplaces.
§ 150.0(i):	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 light 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 Measures:	
§ 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 110.2-4 through Table 110.2-4C.
§ 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(a):	Water Heating Recirculation Loops Serving Multiple Dwelling Units. Water heating recirculation loops serving multiple dwelling units must meet the air release valve, backflow prevention, pump priming, pump isolation valve, and recirculation loop connection requirements of § 110.3(c)(4).
§ 110.3(c)(6):	Isolation Valves. Instantaneous water heaters with an input rating greater than 6.8 MBtu 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.
§ 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).



2019 Low-Rise Residential Mandatory Measures Summary

§ 150.0(h)(3A):	Cleanances. 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(i)(1):	Storage Tank Insulation. Unfired hot water tanks, such as storage tanks and backup storage tanks for solar water-heating systems, must have a minimum of R-12 external insulation or R-16 internal insulation where the internal insulation R-value is indicated on the exterior of the tank.
§ 150.0(j)(2A):	Water Piping, Solar Water-heating System Piping, and Space Conditioning System Line Insulation. All domestic hot water piping must be insulated as specified in Section 609.11 of the California Plumbing Code. In addition, the following piping conditions must have a minimum insulation wall thickness of one inch or a minimum insulation R-value of 7.7: the first two feet of cold water pipes from the storage tank; all hot water piping with a nominal diameter equal to or greater than 3/4 inch and less than one inch; all hot water piping with a nominal diameter less than 3/4 inch that is associated with a domestic hot water recirculation system, from the heating source to storage tank or between tanks, buried below grade, and from the heating source to kitchen fixtures.
§ 150.0(j)(3):	Insulation Protection. Piping insulation must be protected from damage, including that due to sunlight, moisture, equipment maintenance, and wind as required by Section 120.3(b). Insulation exposed to weather must be water resistant 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-erodable casing or sleeve.
§ 150.0(j)(1):	Gas or Propane Water Heating Systems. Systems using gas or propane water heaters to serve individual dwelling units must include all of the following: A dedicated 120 volt, 20 amp electrical receptacle connected to the electric panel with a 120/240 volt 3 conductor, 10 AWG copper branch circuit, within three feet of the water heater without obstruction. Both ends of the unused conductor must be labeled with the word "spare" and be electrically isolated. Have a reserved single pole circuit breaker space in the electrical panel adjacent to the circuit breaker for the branch circuit and labeled with the words "Future 240V Use," a Category I or IV vent, or a Type B vent with straight pipe between the outside termination and the space where the water heater is installed; a condensate drain that is no more than two inches higher than the base of the water heater, and allows natural draining without pump assistance; and a gas supply line with a capacity of at least 200,000 Btu per hour.
§ 150.0(j)(2):	Recirculating Loops. Recirculating loops serving multiple dwelling units must meet the requirements of § 110.3(c)(5).
§ 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 Measures:	
§ 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 the requirement.
§ 150.0(m)(1):	CMC Compliance. All air-distribution system ducts and plenums must meet the requirements of the CMC §§ 601.0, 602.0, 603.0, 604.0, 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 a minimum installed level of R-6.0 or a minimum installed level of R-4.2 when ducts are entirely in conditioned space as confirmed through field verification and diagnostic testing (RA3.1.4.3). Portions of the duct system completely exposed and surrounded by directly conditioned space are not required to be insulated. 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 requirements of UL 181, UL 101A, UL 181B or aerosol sealant that meets the requirements of UL 723. If mastic or tape is used to seal openings greater than 1/4 inch, the combination of mastic and either mesh or tape must be used. Building cavities, support platforms for air handlers, 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 cavities and support platforms must not be compressed to cause reductions in the cross-sectional area.
§ 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 based 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, sunlight, moisture, equipment maintenance, and wind. Insulation exposed to weather must be suitable for outdoor service. For example, protected by aluminum, sheet metal, painted canvas, or plastic cover. Cellular foam insulation must be protected as above or painted with a coating that is water resistant and provides shielding from solar radiation.
§ 150.0(m)(10):	Porous Inner Core Flex Duct. Porous inner core flex ducts must have a non-porous 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 § 150.0(m)(1) and Reference Residential Appendix RA3.
§ 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 rated per Equation 150.0-A. Pressure drops and labeling must meet the requirements in § 150.0(m)(12). Filters must be accessible for regular service.
§ 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 a 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 ≥ 0.38 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.*



2019 Low-Rise Residential Mandatory Measures Summary

Requirements for Ventilation and Indoor Air Quality:	
§ 150.0(i)(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(i)(1).
§ 150.0(i)(1)(C):	Single Family Detached Dwelling Units. 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 provided at rates determined by ASHRAE 62.2 Sections 4.1.1 and 4.1.2 and as specified in § 150.0(i)(1)(C).
§ 150.0(i)(1)(E):	Multifamily Attached Dwelling Units. Multifamily attached dwelling units must have mechanical ventilation airflow provided at rates in accordance with Equation 150.0-B and must be either a balanced system or continuous supply or continuous exhaust system. If a balanced system is not used, all units in the building must use the same system type and the dwelling-unit envelope leakage must be ≤ 0.3 CFM at 50 Pa (0.2 inch water) per square foot of dwelling unit envelope surface area and verified in accordance with Reference Residential Appendix RA3.6.
§ 150.0(i)(1)(F):	Multifamily Building Central Ventilation Systems. Central ventilation systems that serve multiple dwelling units must be balanced to provide ventilation airflow for each dwelling unit served at a rate equal to or greater than the rate specified by Equation 150.0-B. All unit airflows must be within 20 percent of the unit with the lowest airflow rate as it relates to the individual unit's minimum required airflow rate needed for compliance.
§ 150.0(j)(1)(G):	Kitchen Range Hoods. Kitchen range hoods must be rated for sound in accordance with Section 7.2 of ASHRAE 62.2.
§ 150.0(i)(2):	Field Verification and Diagnostic Testing. Dwelling unit ventilation airflow must be verified in accordance with Reference Residential Appendix RA3.7. A kitchen range hood must be verified in accordance with Reference Residential Appendix RA3.7.4.3 to confirm it is rated by AHJ to comply with the airflow rates and sound requirements as specified in Sections 5 and 7.2 of ASHRAE 62.2.
Pool and Spa Systems and Equipment Measures:	
§ 110.4(a):	Certification by Manufacturers. Any pool or spa heating system or equipment must be certified to have all of the following: a thermal efficiency that complies with the Appliance Efficiency Regulations, 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 Measures:	
§ 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.
§ 150.0(k)(1B):	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 must be no greater than the number of bedrooms. These electrical boxes must be served by a dimmer, vacancy sensor control, or fan speed control.
§ 150.0(k)(1C):	Recessed Downlight Luminaires in Ceilings. Luminaires recessed into ceilings must meet all of the requirements for: insulation contact (IC) labeling; or leakage; sealing; maintenance; and socket and light source as described in § 150.0(k)(1C).
§ 150.0(k)(1D):	Electronic Ballasts for Fluorescent Lamps. Ballasts for fluorescent lamps rated 13 watts or greater must be electronic and must have an output frequency no less than 20 kHz.
§ 150.0(k)(1E):	Night Lights, Step Lights, and Path Lights. Night lights, step lights and path lights are not required to comply with Table 150.0-A or be controlled by vacancy sensors provided they are rated to consume no more than 5 watts of power and emit no more than 150 lumens.
§ 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)*.
§ 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 out dimmers 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)(2C):	Interior Switches and Controls. Lighting must have readily accessible wall-mounted controls that allow the lighting to be manually turned ON and OFF.*
§ 150.0(k)(2D):	Interior Switches and Controls. Controls and equipment must be installed in accordance with manufacturer's instructions.
§ 150.0(k)(2E):	Interior Switches and Controls. Controls must not bypass a dimmer, occupant sensor, or vacancy sensor function if the control is installed to comply with § 150.0(k).
§ 150.0(k)(2F):	Interior Switches and Controls. Lighting controls must comply with the applicable requirements of § 110.9.

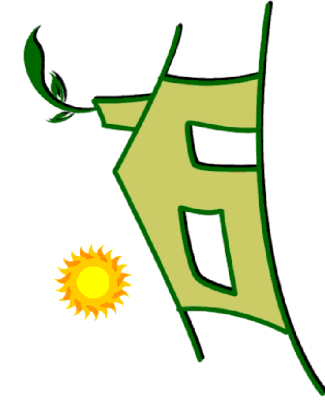


2019 Low-Rise Residential Mandatory Measures Summary

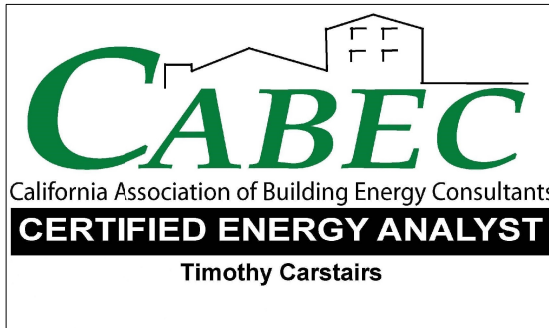
§ 150.0(k)(2G):	Interior Switches and Controls. An energy management control system (EMCS) may be used to comply with control requirements if it provides functionality of the specified control according to § 110.9, meets the Insulation Certificate requirements of § 150.4, meets the EMCS requirements of § 130.0(e), and meets all other requirements in § 150.0(k)(2).
§ 150.0(k)(2H):	Interior Switches and Controls. A multiscene programmable controller may be used to comply with dimmer requirements in § 150.0(k) if it provides the functionality of a dimmer according to § 110.9, and complies with all other applicable requirements in § 150.0(k)(2).
§ 150.0(k)(2I):	Interior Switches and Controls. In bathrooms, garages, laundry rooms, and utility rooms, at least one luminaire in each of these spaces must be controlled by an occupant sensor or a vacancy sensor providing automatic off functionality. If an occupant sensor is installed, it must be initially configured to manual on operation using the manual control required under Section 150.0(k)(2).
§ 150.0(k)(2J):	Interior Switches and Controls. Luminaires that are or contain light sources that meet Reference Joint Appendix JA8 requirements for dimming, and that are not controlled by occupancy or vacancy sensors, must have dimming controls.*
§ 150.0(k)(2K):	Interior Switches and Controls. Under cabinet lighting must be controlled separately from ceiling-installed lighting systems.
§ 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 meet the requirement in item § 150.0(k)(3A) (ON and OFF switch) and the requirements in other § 150.0(k)(3A) (photocell) and/or a motion sensor or automatic time switch control) or § 150.0(k)(3A) (astronomical time clock), or an EMCS.
§ 150.0(k)(3B):	Residential Outdoor Lighting. For low-rise residential buildings with four or more dwelling units outdoor lighting for private patios, entrances, balconies, and porches, and residential parking lots and carports with less than eight vehicles per site must comply with either § 150.0(k)(3A) or with the applicable requirements in Sections 110.9, 130.0, 130.2, 130.4, 140.7 and 141.0.
§ 150.0(k)(3C):	Residential Outdoor Lighting. For low-rise residential buildings with four or more dwelling units, any outdoor lighting for residential parking lots or carports with a total of eight or more vehicles per site and any outdoor lighting not regulated by § 150.0(k)(3B) or § 150.0(k)(3A) must comply with the applicable requirements in Sections 110.9, 130.0, 130.2, 130.4, 140.7 and 141.0.
§ 150.0(k)(4):	Internally Illuminated Address Signs. Internally illuminated address signs must comply with § 140.8; or must consume no more than 5 watts of power as determined according to § 130.0(c).
§ 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 Sections 110.9, 130.0, 130.1, 130.4, 140.8 and 141.0.
§ 150.0(k)(6A):	Interior Common Areas of Low-Rise Multifamily Residential Buildings. In a low-rise multifamily residential building where the total interior common area in a single building equals 20 percent or less of the floor area, permanently installed lighting for the interior common areas in that building must be compliant with Table 150.0-A and be controlled by an occupant sensor.
§ 150.0(k)(6B):	Interior Common Areas of Low-Rise Multifamily Residential Buildings. In a low-rise multifamily residential building where the total interior common area in a single building equals more than 20 percent of the floor area, permanently installed lighting for the interior common areas in that building must: i. Comply with the applicable requirements in Sections 110.9, 130.0, 130.1, 140.6 and 141.0, and ii. Lighting installed in corridors and stairwells must be controlled by occupant sensors that reduce the lighting power in each space by at least 50 percent. The occupant sensors must be capable of turning the light fully on and off from all designated paths of ingress and egress.
Solar Ready Buildings:	
§ 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) through § 110.10(c).
§ 110.10(a)(2):	Low-Rise Multifamily Buildings. Low-rise multi-family buildings that do not have a photovoltaic system installed must comply with the requirements of § 110.10(b) through § 110.10(d).
§ 110.10(b)(1):	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. For low-rise multi-family buildings the solar zone must be located on the roof or overhang of the building, or on the roof or overhang of another structure located within 250 feet of the building, or on covered parking installed with the building project, and have a total area no less than 15 percent of the total roof area of the building excluding any skylight area. The solar zone requirement is applicable to the entire building, including roof occupancy.*
§ 110.10(b)(2):	Azimuth. All sections of the solar zone located on steep-sloped roofs must be oriented between 90 degrees and 300 degrees 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 distance, measured in the horizontal plane, of the height difference between the highest 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) through § 110.10(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".

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www.carstairsenergy.com



Higuera Rd Addition
4005 Higuera Rd
San Jose CA



Call Us for

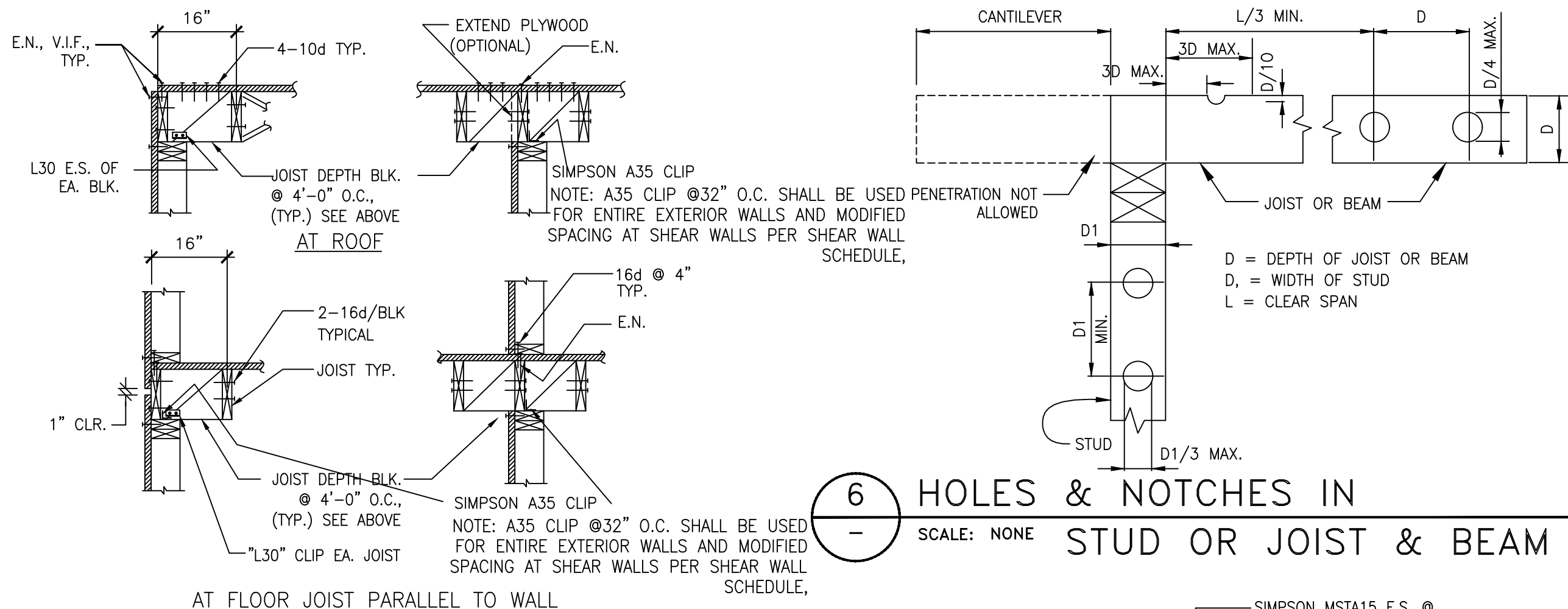
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Serving San Luis Obispo and Santa Barbara Counties

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21-111618

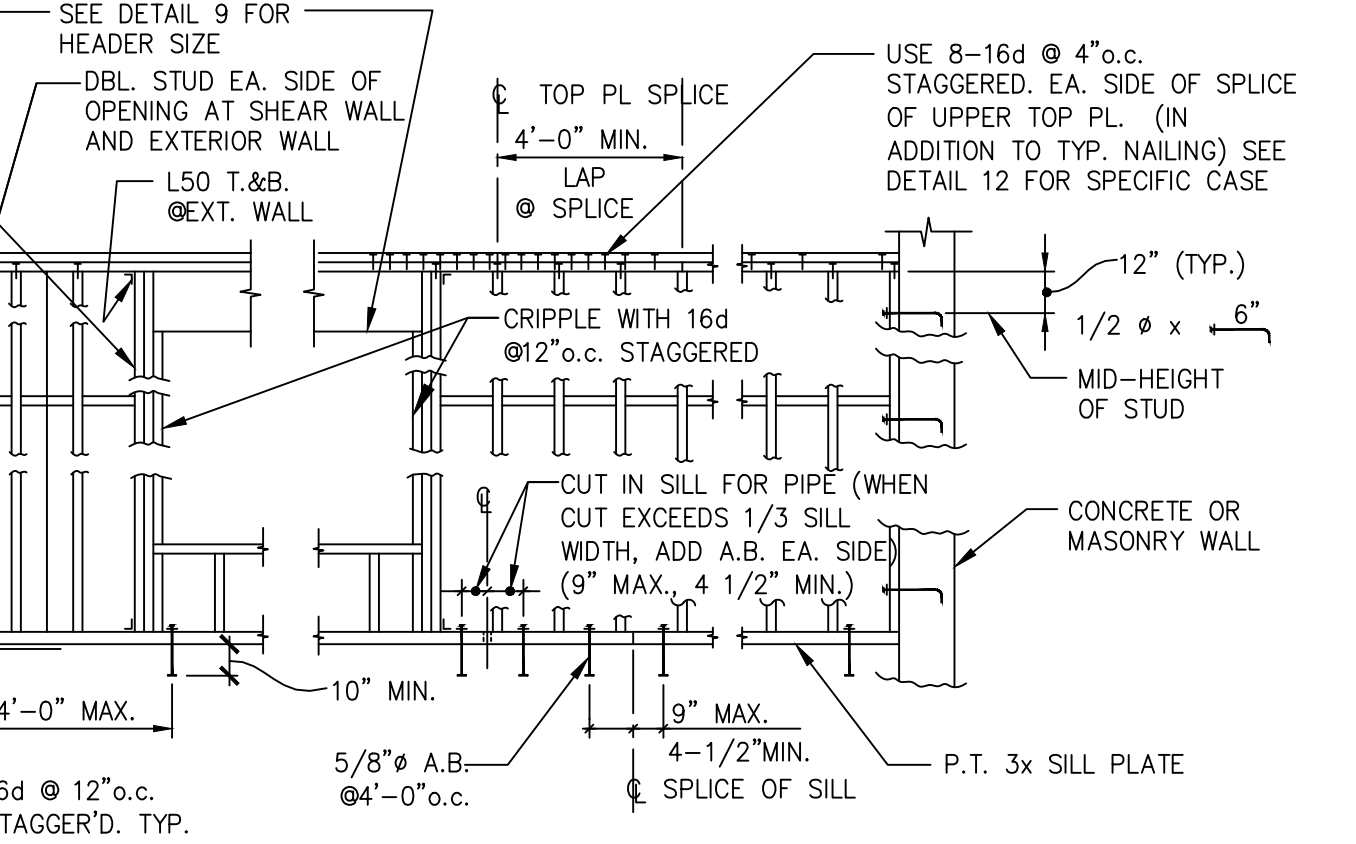
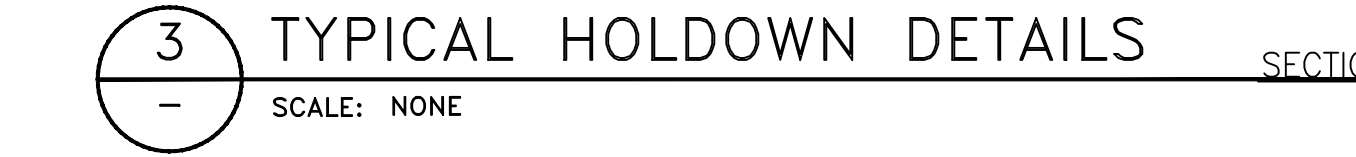
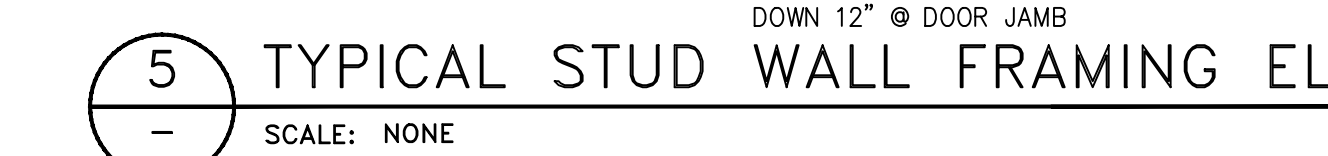
DRAWN BY: Timothy Carstairs
SCALE: N/A

SHEET:
T24.3



HOLD DOWN TYPE (2)	MIN. END POST SIZE	SCREWS /BOLTS TO POST	BOLTS THRU FLOOR (3) (4)	BOLT TO FDN. (3) (4)	SIMPSON ANCHOR BOLT	
				THREADED ROD W/PL WASHER	TYPE	EMBEDMENT LENGTH
HDU2	2-2x4	6-SDS¼x2½	5/8" Ø	5/8"Ø W/13" MIN. EMB. ¼"x3"x3" PLATE WASHER	SSTB16	13"
HDU4	2-2x4	10-SDS¼x2½	5/8" Ø	5/8"Ø W/17" MIN. EMB. ¼"x3"x3" PLATE WASHER	SSTB20	17"
HDU5	2-2x6	14-SDS¼x2½	5/8" Ø	5/8"Ø W/16" MIN. EMB. ¼"x3"x3" PLATE WASHER	SSTB24	21"
HDU8	3-2x6 OR 4x6	20-SDS¼x2½	7/8" Ø	7/8"Ø W/18" MIN. EMB. ¼"x3"x3½" PLATE WASHER	SSTB28	25"
SIMPSON STRONG-WALL				PER MANUFACTURE SPECIFICATION		

1. REFER TO THE PLANS FOR HOLD DOWN ASSEMBLY MARKS AND HOLD DOWN POST SIZES.
2. FOR HOLD DOWN ASSEMBLIES, USE SIMPSON CATALOG "HDU" SERIES HOLD DOWNS, OR APPROVED EQUAL.
3. BOLTS THROUGH FLOOR AND EMBEDDED IN FOUNDATION SHALL BE A36 STEEL ALL THREADED RODS.
4. AT HOLDOWN OVER FRAMED BEAM, USE SQ. PLATE WASHERS REQ'D. FOR FDN. H.D.
5. EPOXY THREADED RODS SHALL BE INSTALLED PER EPOXY MANUFACTURES SPECIFICATIONS.



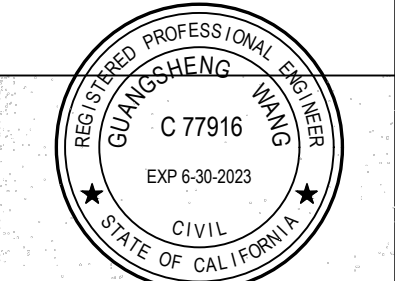
CIVIL ENGINEER

G.S. ENGINEERING
2594 PEBBLE BEACH DRIVE
SANTA CLARA, CA 95051
Tel: (510)304-9812
Email: gsengineering2000@gmail.com

PROJECT

LIU RESIDENCE HOUSE INTERIOR REMODEL
4005 HIGUERA ROAD
SAN JOSE, CA 95148

PROJECT NO
21-29



11/18/2021 REVISION-1

07/04/2021

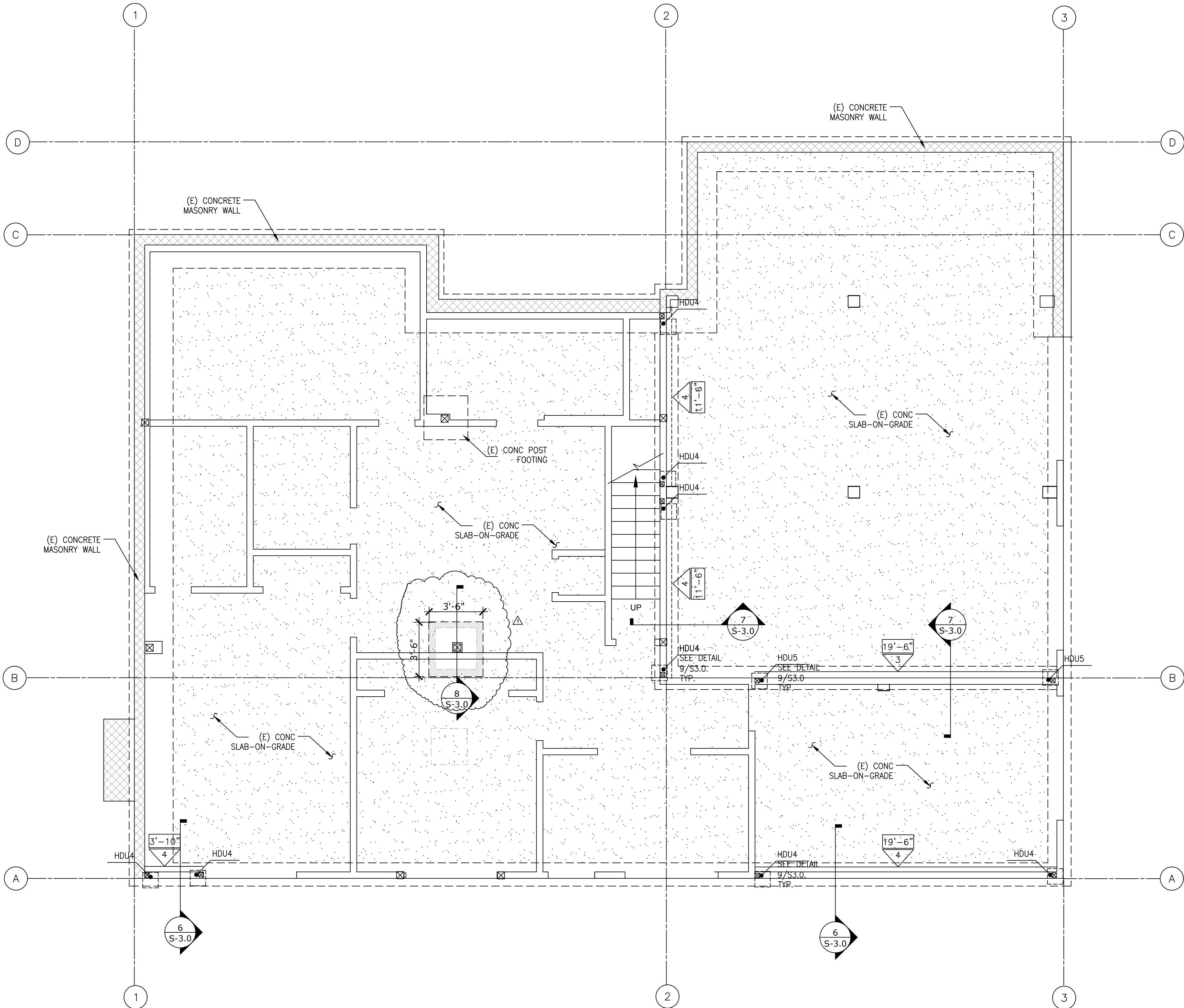
PLANS SUBMITTAL

SHEET CONTENTS

TYPICAL DETAILS

SHEET NUMBER

S1.1



KEY:

	WALLS ABOVE
	WALLS BELOW
	HEADER (HDR) AND BEAM BELOW
	SHEAR WALL (SEE SCHEDULE & TYP DETAIL)
	POST
	POST BELOW
	HANGERS: USE ITT AT I-JOIST, B AT DBL I-JOIST, AND USE FACE MOUNT HANGERS AT THE BEAMS. FOLLOW MANUFACTURER RECOMMENDATIONS FOR SPECIFIED HANGER U.O.N.
	HOLDOWN FASTENED TO EXISTING OR NEW 4x, 3x, OR 2-2x END POST (SEE TYP. DETAILS)

(N)12"x12"x10" CONCRETE
BLOCK FOR HOLDOWN ANCHOR
BOLT
SEE DETAIL 8/S3.0

1. THE CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS AND DIMENSIONS AT JOB SITE. THE CONTRACTOR SHALL COMPARE STRUCTURAL DRAWINGS WITH EXISTING CONDITIONS BEFORE COMMENCING WITH THE WORK, AND SHALL NOTIFY THE ENGINEER OF ANY DISCREPANCIES REQUIRING CLARIFICATION OR REVISION.

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



NOTES:

1. THE CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS AND DIMENSIONS AT JOB SITE. THE CONTRACTOR SHALL COMPARE STRUCTURAL DRAWINGS WITH EXISTING CONDITIONS BEFORE COMMENCING WITH THE WORK, AND SHALL NOTIFY THE ENGINEER OF ANY DISCREPANCIES REQUIRING CLARIFICATION OR REVISION.

NAILING SCHEDULE

ELEMENT/CONNECTION	FASTENER	LOCATION
ROOF		
1. BLOCKING BETWEEN CEILING JOISTS, RAFTERS TO TOP PLATE OR OTHER FRAMING BELOW	3-8d COMMON (2 1/2"x0.131)	TOENAIL EACH END
BLOCKING BETWEEN RAFTERS OR TRUSS NOT AT THE WALL TOP PLATE, TO RAFTER OR TRUSS	2-8d COMMON (2 1/2"x0.128)	TOENAIL EACH END
2. CEILING JOISTS TO TOP PLATE	3-8d COMMON OR 3-10d BOX	TOENAIL EACH JOIST
3. CEILING JOIST NOT ATTACHED TO PARALLEL RAFTER, LAPS OVER PARTITIONS	3-16d COMMON OR 4-10d BOX	FACE NAIL
4. CEILING JOISTS ATTACHED TO PARALLEL RAFTER(HEEL JOIST)	TABLE 2308.7.1	FACE NAIL
5. COLLAR TIE TO RAFTER	3-10d COMMON OR 4-10d BOX	FACE NAIL
6. RAFTER OR ROOF TRUSS TO TOP PLATE	3-10d COMMON; OR 3-16d BOX; OR 4-10d BOX	TOENAIL
7. ROOF RAFTERS TO RIDGE VALLEY; OR HIP RAFTER; OR ROOF RAFTER TO 2" RIDGE BEAM	2-16d COMMON	END NAIL
WALL		
8. STUD TO STUD(NOT AT BRACED WALL PANELS)	16d COMMON@24"o.c. OR10d BOX@16" o.c.	FACE NAIL
9. STUD TO STUD AND ABUTTING STUDS AT INTERSECTING WALL CORNERS(AT BRACED WALL PANELS)	16dCOMMON@16"o.c.; OR 16d BOX@12" o.c.	FACE NAIL
10. BUILT-UP HEADER	16d COMMON 16"o.c. EACH EDGE, FACE NAIL	FACE NAIL
11. CONTINUOUS HEADER TO STUD	4-8d COMMON or 4-10d BOX	TOENAIL
12. TOP PLATE TO TOP PLATE, AT END JOISTS	8-16d COMMON, 12-10d BOX	EACH SIDE OF END JOIST,FACE NAIL
13. TOP PLATE TO TOP PLATE,	16d COMMON 16"o.c./10d BOX@12" o.c.	FACE NAIL
14. BOTTOM PLATE TO JOIST, RIM JOIST, BAND JOIST OR BLOCKING	16d COMMON 16" o.c.	FACE NAIL
15. 1" BRACE TO EACH STUD AND PLATE, FACE NAIL	2-8d COMMOM,	FACE NAIL
FLOOR		
16. JOIST TO SILL OR GIRDER, TOE NAIL	3-8d COMMON	TOENAIL
17. 1"x6" SUBFLOOR OR LESS TO EACH JOIST, FACE NAIL	2-8d COMMON@6"o.c.	TOENAIL
18. RIM JOIST TO TOP PLATE, TOE NAIL	8d@6"o.c.	
19. LEDGER STRIP SUPPORTING JOISTS OR RAFTERS	3-16d AT EACH BEARING	
WOOD STRUCTURAL PANELS, SUBFLOOR, ROOF AND INTERIOR WALL SHEATHING TO FRAMING		
20. 3/4" AND LESS,8d COMMON NAIL, 6d DEFORMED	EDGE NAIL@6"o.c., INTERMEDIATE NAIL@12"o.c.	
21. 1/2"- 1" 8d COMMON NAIL(SUBFLOOR, WALL), 8d DEFORMED NAIL (ROOF)	EDGE NAIL@6"o.c., INTERMEDIATE NAIL@12"o.c.	
OTHER WALL SHEATHING		
22. 1/2" FIBERBOARD SHEATHING, 1/2"GALV. ROOF NAIL/ 1 1/4" 16 GAGE STAPLE WITH 1/8" OR 1" CROWN	EDGE NAIL@3"o.c., INTERMEDIATE NAIL@6"o.c.	
23. 5/8" FIBERBOARD SHEATHING, 1 3/4"GALV. ROOFING NAIL/ 1 1/2" 16 GAGE STAPLE WITH 7/16" OR 1" CROWN	EDGE NAIL@3"o.c., INTERMEDIATE NAIL@6"o.c.	
24. 1/2" GYPSUM SHEATHING, 1 1/2" GALV. ROOFING NAIL	EDGE NAIL@6"o.c., INTERMEDIATE NAIL@12"o.c.	
25. 5/8" GYPSUM SHEATHING, 1 3/4" GALV. ROOFING NAIL	EDGE NAIL@6"o.c., INTERMEDIATE NAIL@12"o.c.	
WOOD STRUCTURAL PANELS, COMBINATION SUBFLOOR UNDERLAYMENT TO FRAMING		
26. 3/4" AND LESS, 6d DEFORMED NAIL OR 8d COMMON NAIL	EDGE NAIL@6"o.c., INTERMEDIATE NAIL@12"o.c.	

FOOTNOTES:

1. COMMON OR BOX NAILS MAY BE USED UNLESS OTHERWISE NOTED.

NOTES:

1. NAILING PER SCHEDULE ABOVE IS TO BE USED WHERE NAILING IS NOT SPECIFIED ON PLANS OR DETAILS. NAILING PER PLANS AND DETAILS SUPERSEDE NAILING SCHEDULE UNLESS APPROVED BY ENGINEER

KEY:

	WALLS ABOVE
	WALLS BELOW
	HEADER (HDR) AND BEAM BELOW
	SHEAR WALL (SEE SCHEDULE & TYP DETAIL)
	POST
	POST BELOW
	HANGERS: USE ITT AT I-JOIST, B AT DBL I-JOIST, AND USE FACE MOUNT HANGERS AT THE BEAMS. FOLLOW MANUFACTURER RECOMMENDATIONS FOR SPECIFIED HANGER U.O.N.
	HOLDOWN FASTENED TO EXISTING OR NEW 4x, 3x, OR 2-2x END POST (SEE TYP. DETAILS)

1 UPPER FLOOR FLOOR FRAMING PLAN
SCALE: 1/4" = 1'-0"

CIVIL ENGINEER

G.S. ENGINEERING

2594 PEBBLE BEACH DRIVE
SANTA CLARA, CA 95051

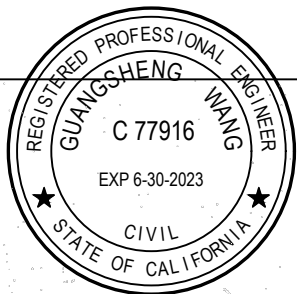
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PROJECT

LIU RESIDENCE
HOUSE INTERIOR REMODEL

4005 HIGUERA ROAD
SAN JOSE, CA 95148

PROJECT NO
21-29



11/18/2021 REVISION-1

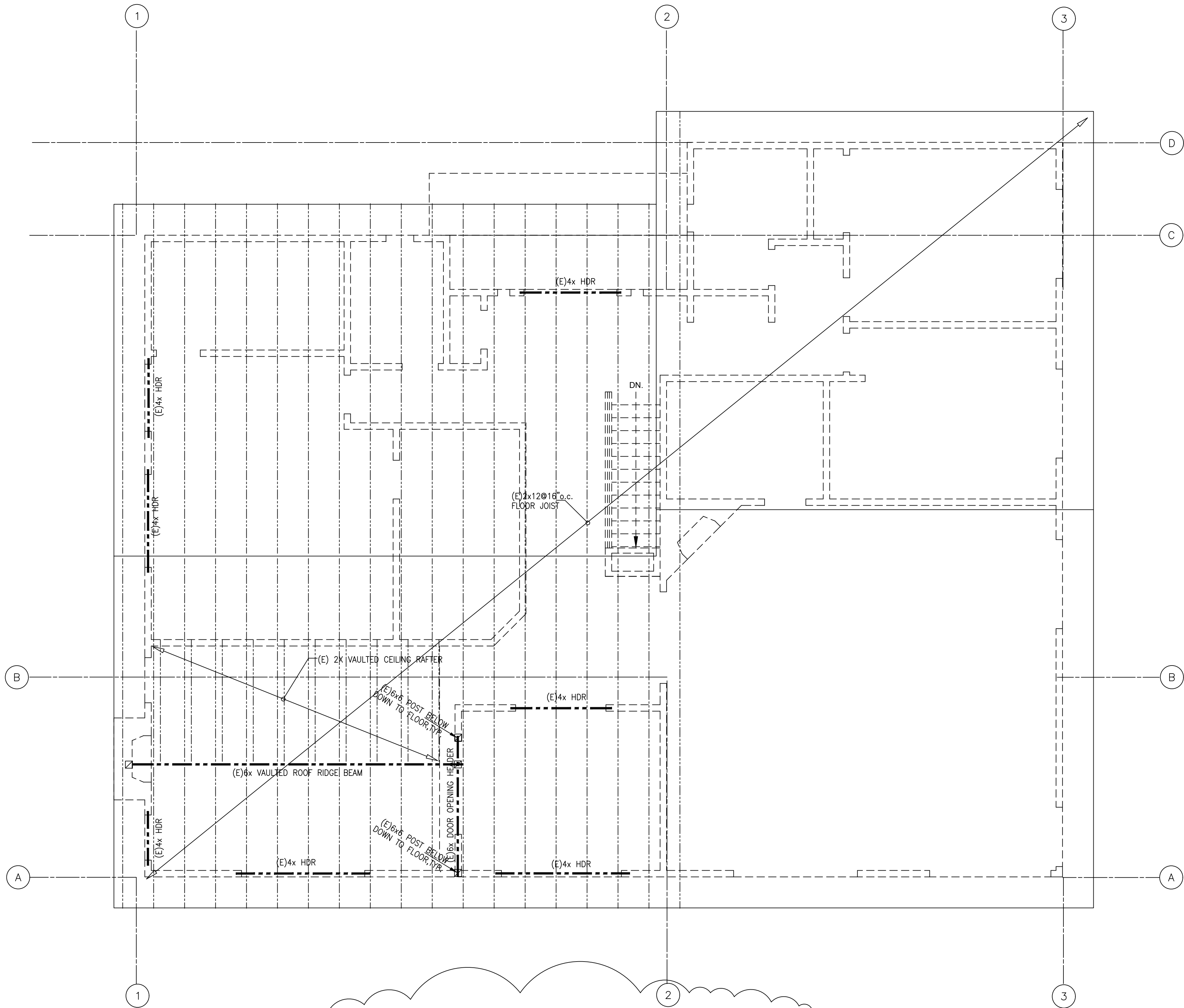
07/04/2021

PLANS SUBMITTAL
SHEET CONTENTS

ROOF FRAMING PLAN

SHEET NUMBER

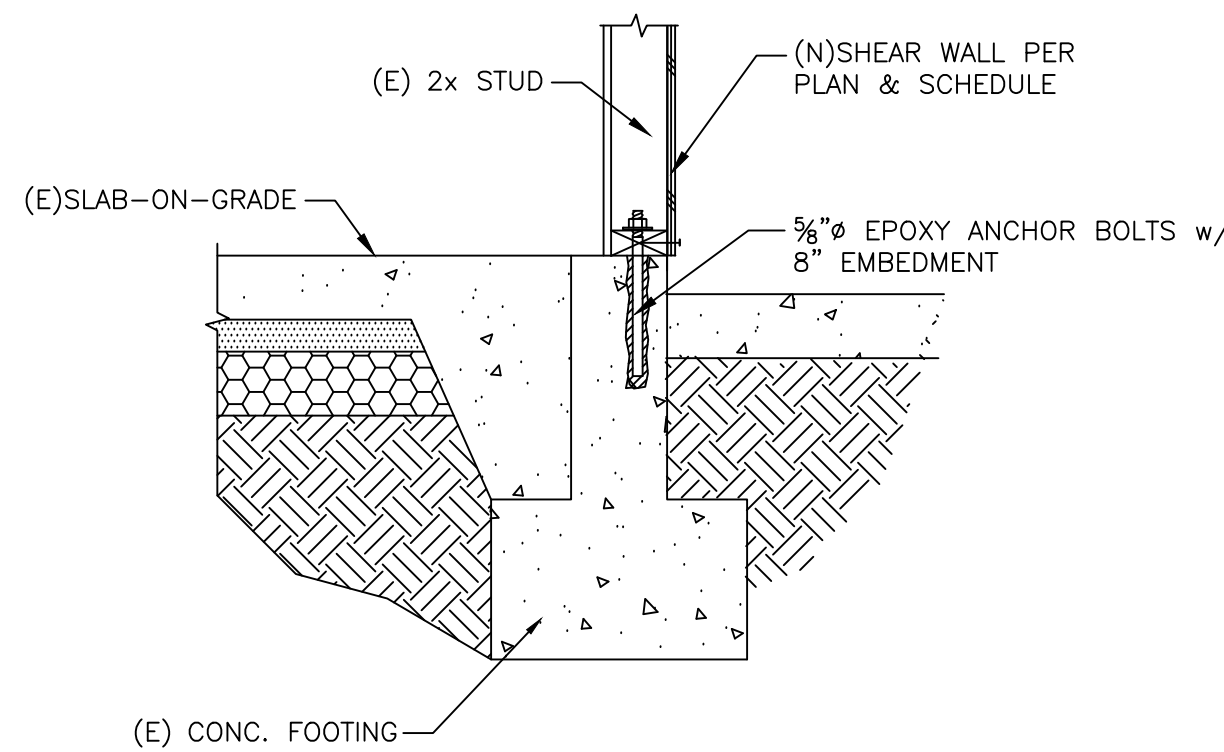
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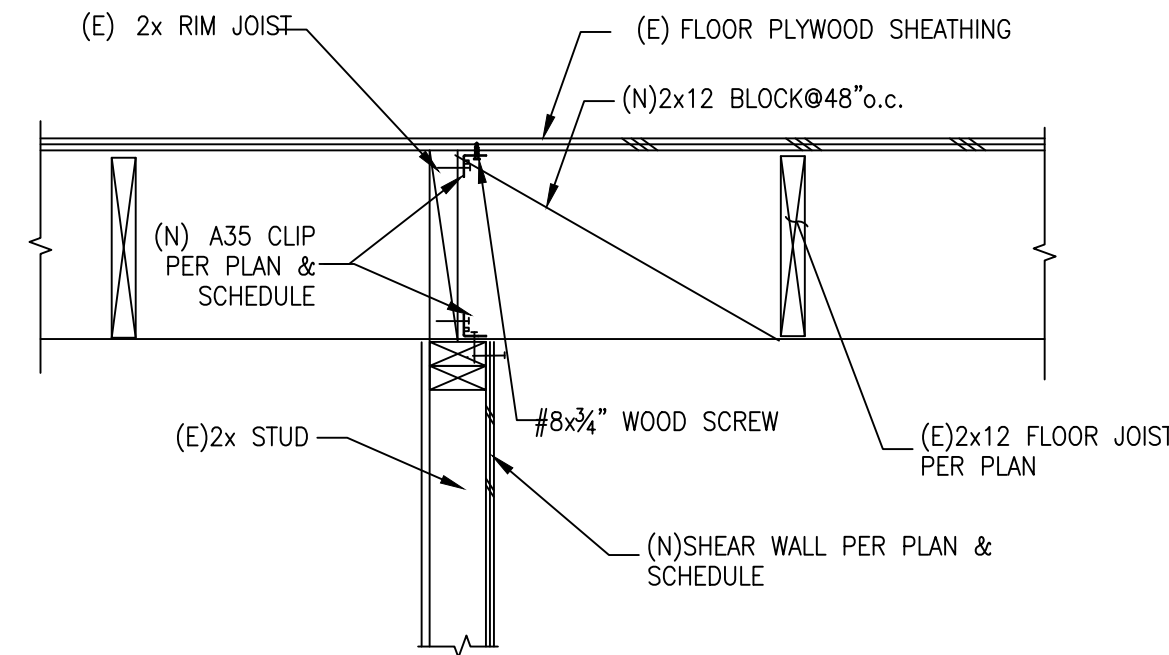
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	WALLS BELOW
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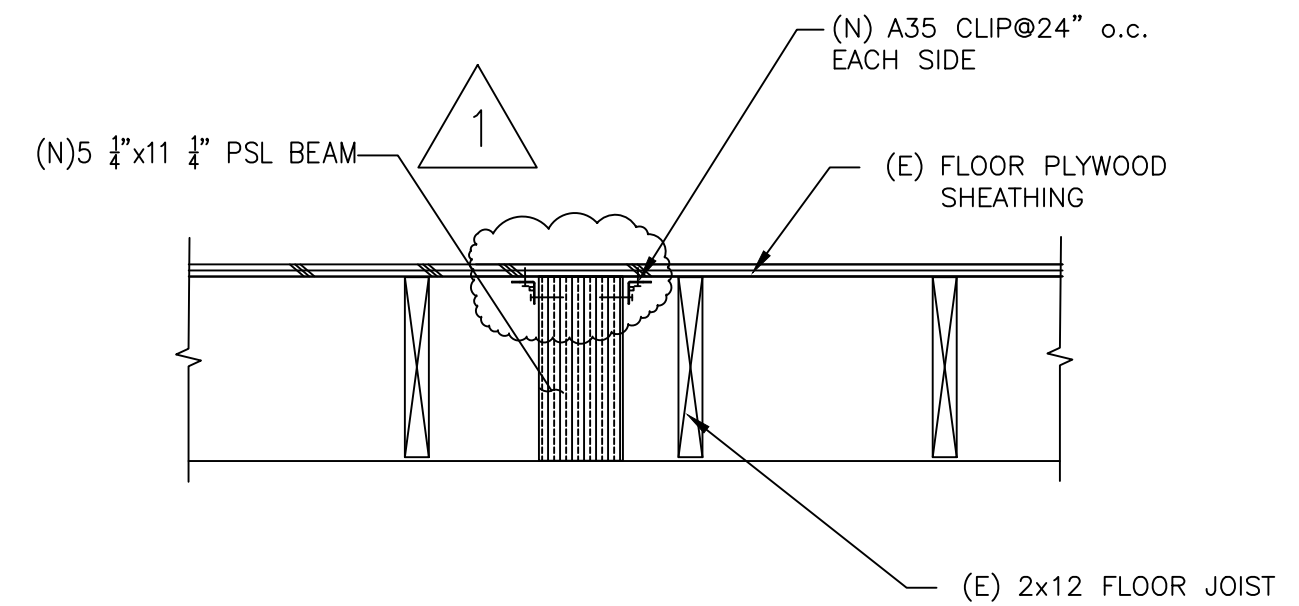
1 ROOF PARTIAL FRAMING PLAN
SCALE: 1/4" = 1'-0"



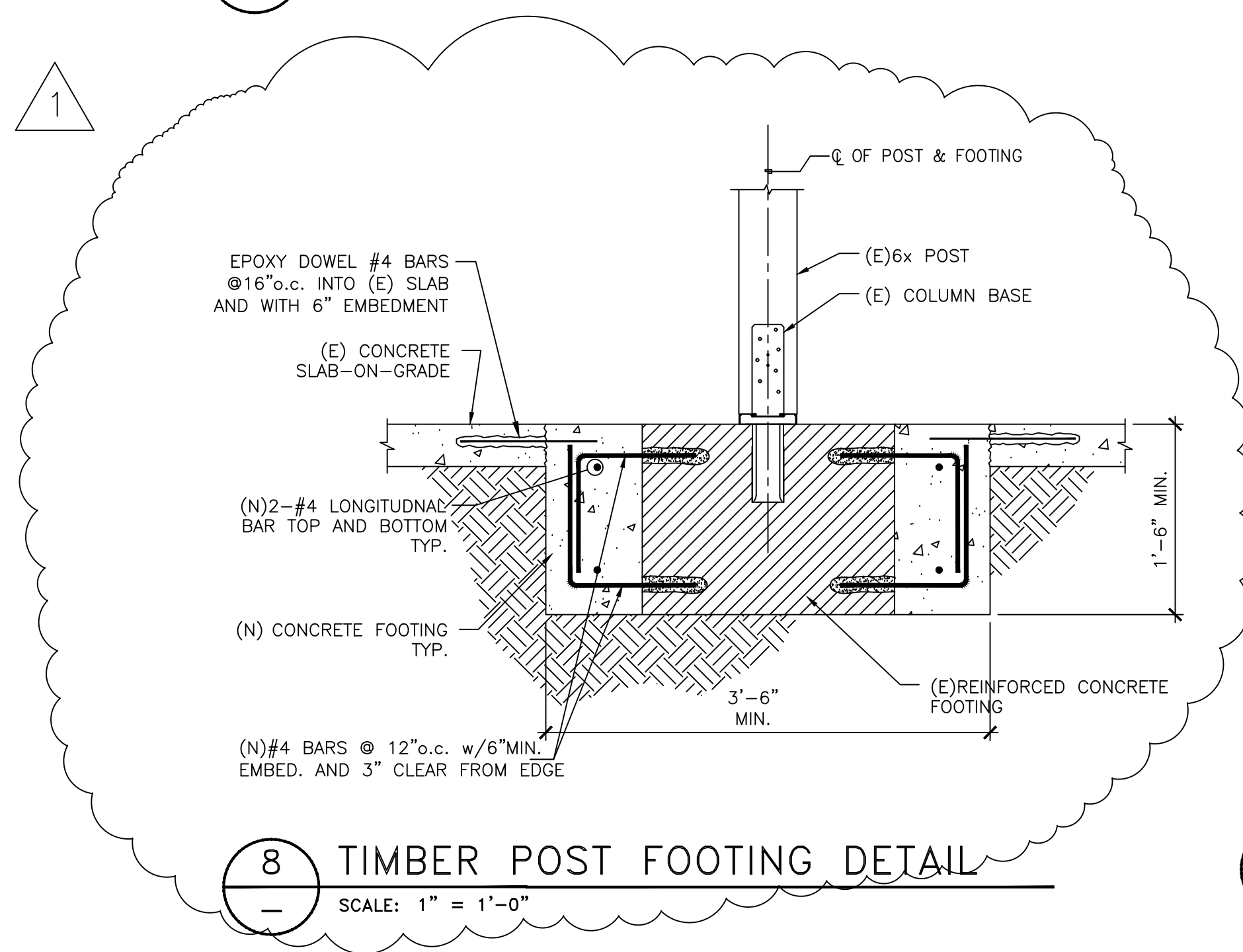
7 INTERIOR WALL FOOTING DETAIL
SCALE: 1"=1'-0"



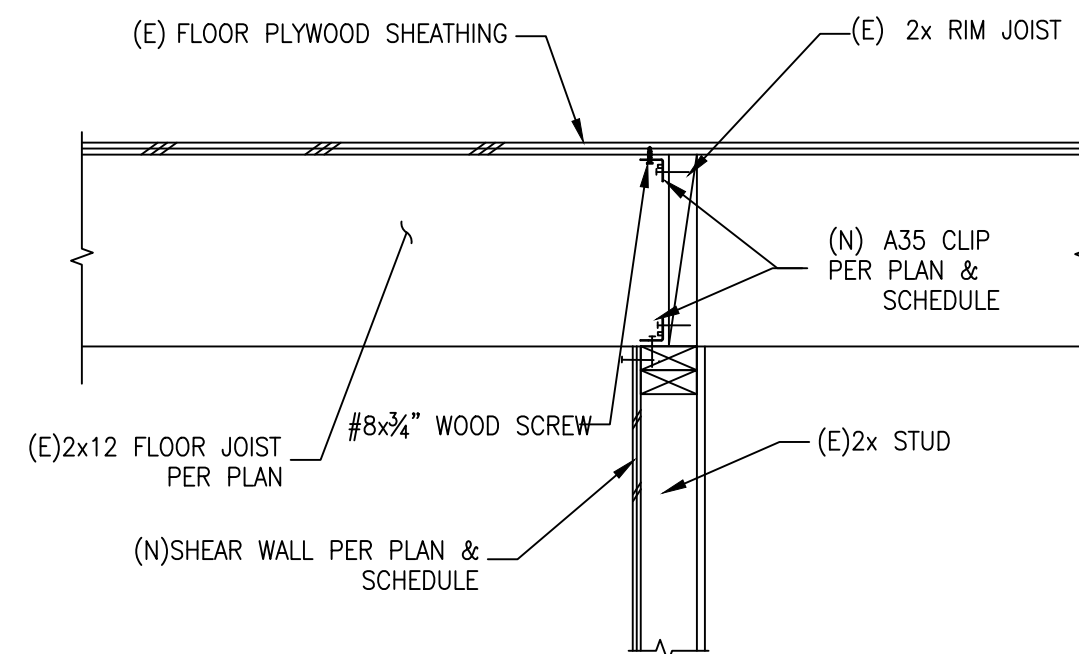
4 DETAIL
SCALE: 1"=1'-0"



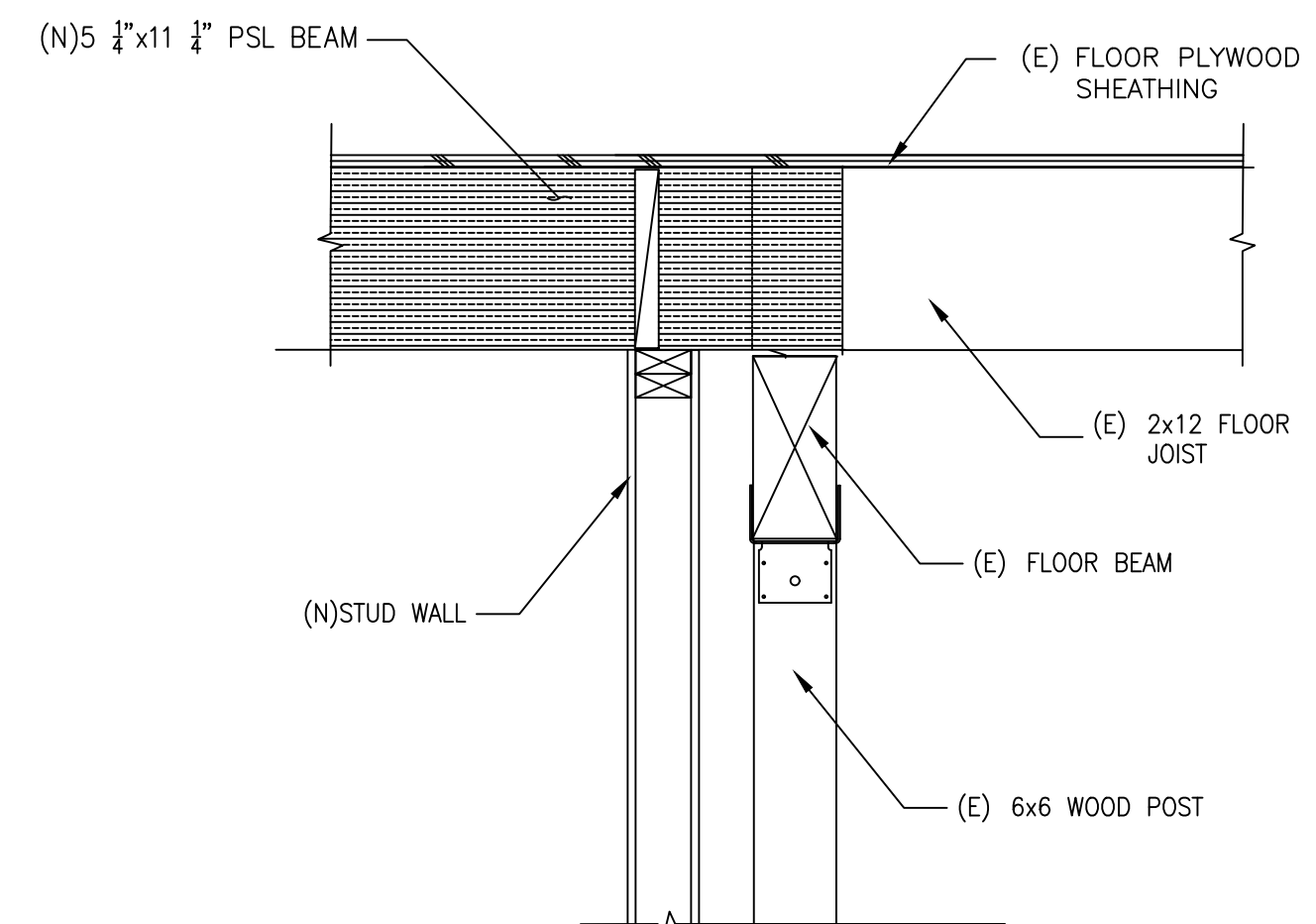
1 DETAIL
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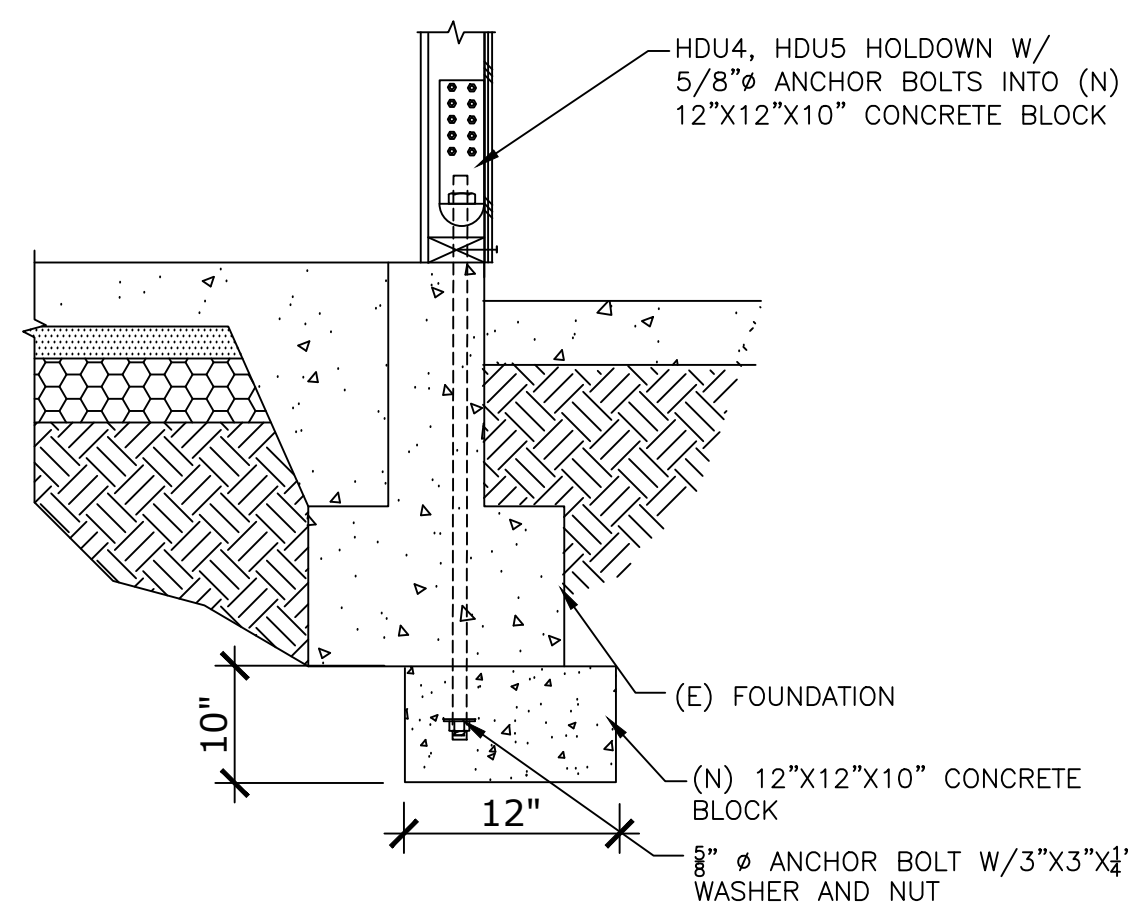
8 TIMBER POST FOOTING DETAIL
SCALE: 1" = 1'-0"



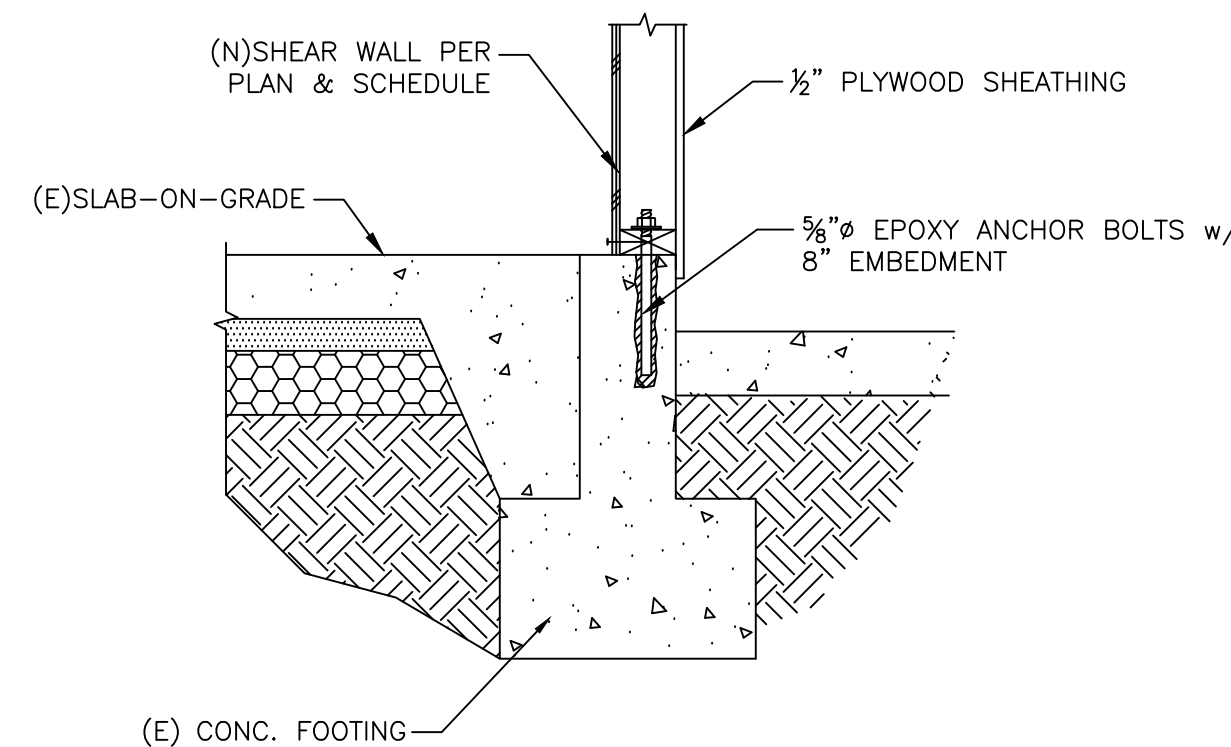
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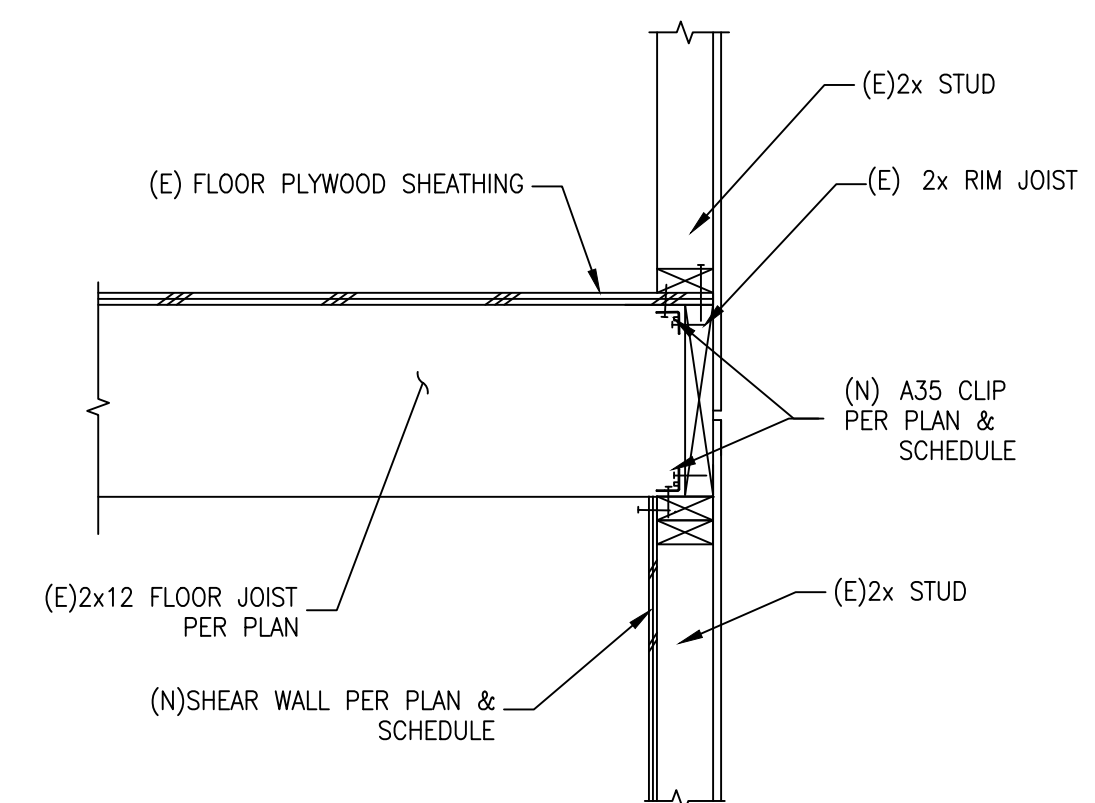
2 DETAIL
SCALE: 1"=1'-0"



3 TYPICAL SHEAR WALL EPOXY HOLDOWN
SCALE: NONE



6 EXTERIOR WALL FOOTING DETAIL
SCALE: 1"=1'-0"



3 WALL SECTION DETAIL
SCALE: 1" = 1'-0"

CIVIL ENGINEER

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11/18/2021 REVISION-1

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PLANS SUBMITTAL

SHEET CONTENTS

DETAILS

SHEET NUMBER

S3.0