HOME OWNERS GUIDE TO RESIDENTIAL PROJECTS

FOR OWNER OCCUPIED SINGLE FAMILY DWELLINGS

SAN RAFAEL
THE CITY WITH A MISSION

This booklet provides you with the information you need to get started in the process of obtaining permits and inspections for repair, remodeling or adding on to your single family home.

Obtaining a permit and inspections for construction on your home is required by law and provides important documentation in the event you sell or refinance the property.

The City of San Rafael Community Development and Public Works Departments will help you through the permit process and provide you with valuable information on codes and ordinances, construction practices, and property data.

IMPORTANT CONTACTS	
Building Division	(415) 485-3367
Planning Division	(415) 485-3085
Department of Public Works	(415) 485-3355
Fire Prevention	(415) 485-3308
San Rafael Sanitation District	(415) 485-3132
Las Gallinas Valley Sanitation	(415) 472-1734
Marin Municipal Water District	(415) 945-1455
Pacific Gas & Electric	(877) 660-6789
San Rafael School District	(415) 492-3233
Dixie Elementary School District	(415) 492-3700

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ZONING AND PROPERTY INFORMATION

Properties have different zoning requirements which are explained in the Zoning Chapter of the Municipal Code. These requirements vary depending on several elements. Due to the complexity of zoning laws the only accurate way to obtain the zoning requirements for your proposed building or addition is to visit the Planning counter at City Hall. You will need the *property address* or *Assessor's Parcel Number (APN)* and a *site plan* of the proposed work. The APN is usually included on your Property tax records or in the deed for that individual property. Take these items to the Planning counter and staff will check the City zoning maps and provide you with the correct information. This will safeguard you from unnecessary problems and expense. Basic zoning information can be obtained on the City website.

Some projects require Planning approval before you can get a Building permit. When you speak with staff at the Planning counter, they will let you know if what you are proposing is likely to need a separate planning approval. Once we have the final set of plans, we will be able to look at all the details to see if anything in the plan triggers the Planning process.

What is a Site Plan?

A site plan is a scaled drawing which shows the uses and structures proposed for a parcel of land.

It also includes information concerning the landscape features of a given parcel.

Below is a list of typical residential projects requiring a planning approval. Please check with Planning regarding your specific project as this is a partial list:

New Residence within 100 feet of a designated ridgeline	**New single-family residences and additions over 500 square feet on hillside lots**	**New two-story single-family residences**
Residential accessory structures or additions in ridgeline areas	**Roof modifications to Eichler and Alliance homes in the Terra Linda Area (-EA)**	**New decks over 100 square feet on hillside lots**
Retaining walls over 3 feet tall on hillside lots or within 100 feet of a ridgeline	**Detached accessory structures on hillside properties**	**Projects that do not conform to development standards**
Fences over a certain height		

***No Design Review permit is required for one-story single-family residences and decks in non-hillside areas, ordinary maintenance or repairs, installation of solar panels on existing structures or grounds.**

IF NEEDED, SUBMIT PLAN TO PLANNING DIVISION

When staff determines that a separate Planning Division review is needed before obtaining other permits they will also let you know what documents will be needed to review your specific application and how long the process normally takes. Time frames, fees and plans needed are determined by the level of review your project will need. Below are some general guidelines for a Planning Division Submittal.

Submitting to Planning Division:

General Planning Application must be signed by Property Owner.

****ALL PLAN SUBMITTALS SHOULD BE IN DIGITAL** FORM.**

Submittal's can be made Online or in Office

https://www.cityofsanrafael.org/apply-to-planning-online/

If additional paper copies are needed for hearings you will be notified by the Planning Department. Plan sheets of 24x36-inch maximum for full size are recommended for large projects along with one 11x17-inch or 8.5x11-inch reduction. Smaller sized plan sets may be accepted for minor projects.

Most Project Plans Should Include:

- Site Plans
- Floor Plan
- Elevations
- Roof Plan
- Landscape Plan
- Section/Profile Drawings

See following page for details.

City of San Rafael
Planning Division

1400 Fifth Avenue, Top Floor
San Rafael, CA 94901
(415) 485-3085

Planning Counter Hours:
Mon -Thurs:
8:30 am - 4:00 pm

Fri:
8:30 am - 12:30 pm

1 Site Plan(s) of entire property, showing:

- Site Conditions, showing existing and proposed building and site improvements, property lines, easements, adjacent street names, etc.
- Project Data Summary Table(s), showing existing and proposed site size, building floor areas, parking supply, landscape or natural state provided, required yard areas, etc.
- North Arrow, i.e., reference north and true north.
- Scale used and Graphic Scale provided
- Name of plan preparer, date prepared and revised, project name and address

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2 Floor Plan, containing the following minimum information:

- Floor Levels, Areas, Walls, Windows, Doors, Equipment, Rooms and Uses; existing and proposed
- Location, Dimensions and Square Footage of project area
- Project Area identified, with outline or shading
- Scale, Graphic Scale and North arrow
- Orient all other plan sheets (e.g., civil, landscape, floor plans) to match site plan orientation

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3 Building Elevations, for projects involving exterior building changes.

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4 Building Roof Plan, showing:

- Property lines, outline of building footprint, direction and slope of drainage, location of drainage collectors, rooftop structures, material, ridge elevations, various roof levels and slopes and their flow direction

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5 Landscape Plan.

- Show all existing and proposed landscape improvements, total landscape area in square feet, types of plant and landscape materials proposed. Show any drainage features, unless already included on the site plan.

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6 Cross-Section or Profile Drawings of site and/or building.

- Provide to-scale cross sections, as necessary, to illustrate building and floor area details, grading, etc. The section locations must be referenced on site, floor and elevation plans.
- Provide cross sections for new or modified driveways and retaining walls.

Depending on the scope of the project, additional information may be required or provided with initial submittal or in response to project completeness

SUBMIT PLANS TO BUILDING DIVISION

San Rafael Building Department will review plans for code compliance. Plans will be routed to the appropriate agencies such as Planning, Public Works, Sanitation etc. You will be notified if revision or additional information is needed. At time of submittal you will need the following:

****ALL PLAN SUBMITTALS SHOULD BE IN DIGITAL** FORM.**

Submittal's can be made Online or in Office

https://www.cityofsanrafael.org/building-permits

Once your permit is issued you will need to print a minimum of 1 full set of plans, printed back to original scale size (with a minimum paper size is 11" x 17") for the Inspector to use in the field during inspections.

City of San Rafael
Building Division

1400 Fifth Avenue, Top Floor
San Rafael, CA 94901
(415) 485-3367

Public Counter Hours:
Monday-Thursday:
8:30am - 4:00pm
Friday: 8:30am - 12:30pm

Field Inspection Hours:
Monday-Thursday:
8:00am - 4:00pm

ALL PLAN SETS SHALL INCLUDE THE FOLLOWING:

- Project Information
- Plot Plan/Site Plan
- Floor Plan
- Exterior Building Elevations
- Foundation Plan
- Framing Plan
- Structural Details and Sections
- Stair, Handrail, and Guard Details
- Structural Calculations (if applicable)
- Electrical Plan
- Mechanical Plan
- Plumbing Plan
- Energy Documentation
- Fire Sprinkler Plans (if applicable)
- Soils Reports (if applicable)

1 PROJECT INFORMATION:

This includes such information as owner's name, plan preparer's name, project address, type of construction, occupancy group, applicable code editions, sheet index, and any other relevant information.

2 PLOT PLAN/ SITE PLAN:

Fully dimensioned, showing property lines, streets, driveways, setbacks and locations of all structures and easements and any off-street parking. A survey may be required if proposed work is close to setbacks, or existing property lines are not apparent. For commercial projects show; parking for disabled persons, curb ramps, signage and path of travel to primary entrance. Unless a separate grading/drainage plan is provided, show drainage including downspouts, general surface flow direction and subsurface drainage features here.

3 FLOOR PLAN:

Show the size and intended use of all rooms, show type, sizes and locations of all; doors and windows, furnace, water heater, kitchen details, bathroom fixtures, electrical outlets, switches and lighting, and smoke detectors. For additions and alterations show an existing floor plan and all rooms adjoining the addition shall be fully dimensioned.

4

EXTERIOR BUILDING ELEVATIONS:

Indicating general appearance, windows, doors, finishes, roof covering, finish grade, etc. For new construction in the Wildland Urban Interface (WUI) visit cityofsanrafael.org/vegetation-management for more information.

5

FOUNDATION PLAN:

Indicating type of foundation such as slab or pier, etc. Providing a detailed construction layout showing size, spacing, anchoring and details of all structural members and materials used.

6

FRAMING PLAN:

Structural details of floors, walls, celling and rafters or trusses and providing a detailed construction layout showing size, spacing and connection details of all structural members and materials used.

7

STRUCTURAL DETAILS AND SECTIONS:

Clearly showing construction materials, sizes and attachments. If standard plan is used such as manufacturer's installation instructions (ICC, SPA, etc), include copies of plan, instructions or report. A standard plan may not be modified.

8

STAIR, HANDRAIL, AND GUARD DETAILS:

Providing a detailed construction layout showing size, spacing and connection details of all structural members and materials used.

9

STRUCTURAL CALCULATIONS:

(If applicable) To be provided and wet stamped by a licensed engineer.

10

ELECTRICAL PLAN:

Layout and location of all lights, switches and outlets. This plan may be incorporated into the Floor Plan layout.

11

MECHANICAL PLAN:

To include heating and/or air system locations, distribution and specs.

12

PLUMBING PLAN:

Layout and location of all plumbing fixtures and may also include a gas schematic for gas fueled appliances. This plan may be incorporated into the Floor Plan layout.

13

ENERGY DOCUMENTATION:

(If applicable) State Building Energy Efficiency Standards and Cal Green Building Standards including City of San Rafael amendments.

14

FIRE SPRINKLER PLANS:

(If applicable) To include hydraulic calculation and fire alarms when required. (provided by a licensed fire sprinkler contractor)

15

SOILS REPORT:

(If applicable) A letter or report that a Geotechnical Engineer will provide confirming the project's design compliance with soil conditions.

IF NEEDED, SUBMIT PLANS TO DEPARTMENT OF PUBLIC WORKS / SAN RAFAEL SANITATION DISTRICT (SRSD)

When a set of plans are routed to the Department of Public Works (DPW), they will be reviewed for site conditions and characteristics. This includes several items. They will check to see how the improvements fit on the property. Are there easements or utilities on the property? Are there improvements beyond the property line, into the Right-of-Way? Will the project require an encroachment permit; for items such as driveways, sidewalks and utility connections? Are there line-of-sight distance or access issues?

Is there grading and earthwork?

The Department of Public Works will need to know how much is being moved - both cut and fill. Are there retaining walls? An erosion and sediment control plan may be needed, even on small jobs. If it is 50 cubic yards or more, then a separate grading permit is required. Smaller projects on a steep sloped site, or near open waterways may also require a permit, especially during the wet season. This includes inspections for the site, specific to the earthwork and erosion control. Depending on the project Geotechnical reports may be necessary.

Drainage and Stormwater Runoff

DPW will also look for the major sources of drainage and runoff, like roofs and pavements. The City does not allow runoff to be increased. Single family homes with 2500 square feet of impervious surfaces require storm water treatment to promote filtration and infiltration.

Is the access being modified?

Driveways have specific requirements for the slopes, transitions and sight lines. Many older driveway aprons require revision to meet current ADA requirements.

Projects within the Flood Zone

For projects within the flood zone, we are required to ensure that your project meets the special requirements from FEMA. The requirements for buildings can be fairly complex. You can find out if you're in the flood zone using Marinmap.org or FEMA's map service center online.

Will there be a new sewer system or upgrade to the existing?

San Rafael Sanitation District (SRSD) will review plans for how the sewer lateral connections will be made, sewer easements, plumbing fixtures, and how the sewer flows generated may affect flows in the sewer mainline. Sewer Lateral Design should include Utility Plans showing the sewer lateral alignment, the type of pipe, diameter of pipe, the connection at the sewer mainline, the cleanouts, the backflow prevention device. In some cases, manholes will be necessary in the design.

Sewer connection fees will be required for the following:

- When a new sewer lateral connection is made at the sewer mainline.
- When an existing property adds an additional sewer lateral connection at the sewer mainline.

City of San Rafael Department of Public Works

111 Morphew Street
San Rafael, CA 94901
(415) 485-3355

Encroachment and Grading Permit Counter Hours:
Tuesday and Thursday
9:00am-12:00pm

San Rafael Sanitation District (SRSD)

111 Morphew Street
San Rafael, CA 94901
415-485-3132

CONSTRUCTION AND INSPECTION

BEGIN YOUR CONSTRUCTION:

With your approved plans and building permit in hand, you are ready to begin construction. If you have to vary from your plan specifications during construction, re-approval of the plan is required.

Call for inspections before covering any work.

Examples:

- Call for a footing/foundation inspection, when your forms are dug and the rebar is set **but** before the concrete is poured.
- Call for a Framing or "close in" inspection, when new walls are framed with plumbing and/or electrical is installed as per your plans **but** before insulation or drywall is installed.

Every permit is unique to its scope of work and while some projects may only need 1-2 inspections others may require many. If your project is larger in nature such as a new home or addition your inspector may advise you as to what stage in the progress you will need to call for your next inspection.

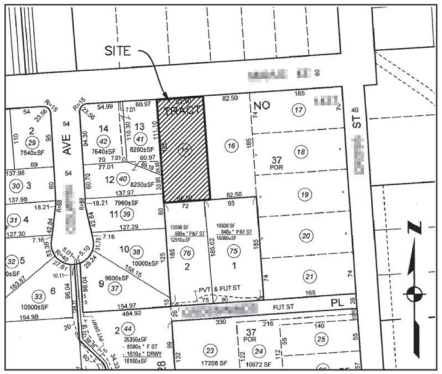
The 24-Hour Inspection Request Line is (415) 485-3365. You will be prompted to enter a code for the type of inspection needed, the code can be found on the back of your permit card. Inspections can be scheduled a minimum of on day before and up to 3 days out. There are no inspections on Fridays and weekends.

FINAL INSPECTION

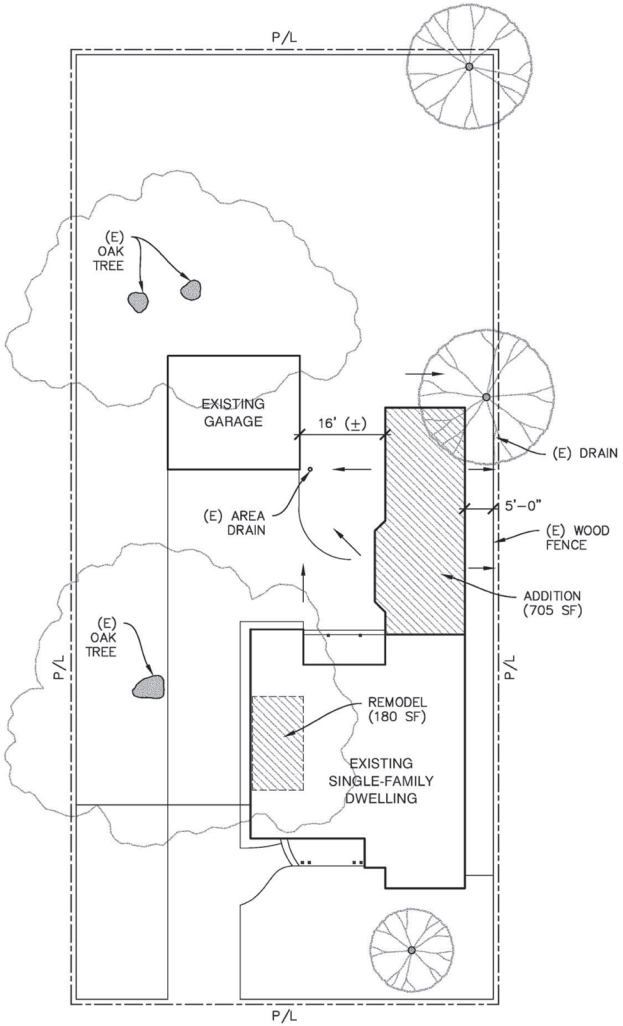
Call for final inspection when the construction has been completed. All external surfaces must be painted, or otherwise sealed, weather-stripping must be installed on all new windows and doors, and all electrical or plumbing fixtures have been installed. Interior painting, wallpapering, or carpeting need not be complete. Smoke detectors must be installed in all bedrooms and in the hallway leading to the bedrooms.

If your project is required to have other departments sign off on your permit (i.e. fire sprinklers or Planning Department) please have those additional (if applicable) agencies preform their final inspection prior to scheduling your Building Department final inspection

Addition and Remodel
for
Example Residence



VICINITY MAP
SCALE: (NTS)



22345 EXAMPLE LANE

SITE PLAN
SCALE: 1/16" = 1'-0"

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SITE GENERAL NOTES

ON-SITE VERIFICATION OF ALL FIELD CONDITIONS AND DIMENSIONS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. FIELD VERIFICATION SHALL BE DONE PRIOR TO COMMENCING WITH THE WORK. SHOULD ANY DISCREPANCY ARISE BETWEEN FIELD CONDITIONS AND THE CONSTRUCTION DOCUMENTS, THE ENGINEER SHALL BE NOTIFIED IMMEDIATELY BY THE CONTRACTOR.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING THE EXISTENCE AND PRECISE LOCATION OF UNDERGROUND FACILITIES OR STRUCTURES IN THE VICINITY OF THE PROJECT. UNDERGROUND FACILITIES OR STRUCTURES SHALL BE CLEARLY IDENTIFIED AT THE SITE AND PROTECTED IN PLACE. THE CONTRACTOR SHALL PROMPTLY NOTIFY EACH UTILITY COMPANY, MUNICIPALITY OR OTHER AGENCY WHO OWNS, OPERATES, OR REGULATES ANY SUCH FACILITIES OR STRUCTURES.

THESE DOCUMENTS DO NOT INDICATE THE METHOD OF CONSTRUCTION. CONTRACTOR SHALL SUPERVISE AND DIRECT METHODS OF CONSTRUCTION AND BE SOLELY RESPONSIBLE FOR ALL CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES AND PROCEDURES.

THE DESIGN, ERECTION, AND USE OF TEMPORARY BRACING, SHORING AND SUPPORTS ARE THE SOLE RESPONSIBILITY OF THE CONTRACTOR. THESE ITEMS SHALL COMPLY WITH ALL APPLICABLE SAFETY REGULATIONS.

SURFACE WATER SHALL BE CONVEYED AWAY FROM THE BUILDING TO AN APPROVED LOCATION. CONCENTRATED DRAINAGE SHALL BE CONVEYED VIA NON-EROSIVE DEVICES. DRAINAGE SYSTEMS SHALL BE DESIGNED BY OTHERS.

GAS PIPING SHALL NOT BE LOCATED IN OR ON THE GROUND UNDERNEATH A BUILDING OR STRUCTURE.

LOTS SHALL BE GRADED TO DRAIN AWAY FROM FOUNDATION WALLS. PROVIDE A 5% MINIMUM DRAINAGE SLOPE WITHIN 10 FT OF THE STRUCTURE. WHERE EXISTING CONDITIONS PROHIBIT A 5% DRAINAGE SLOPE, IMPERVIOUS SURFACES WITHIN 10 FT OF THE STRUCTURE SHALL BE SLOPED A MINIMUM OF 2% AWAY FROM THE BUILDING.

PROJECT DESCRIPTION

ADDITION TO EXISTING SINGLE-FAMILY DWELLING,
REMODEL EXISTING KITCHEN AND FAMILY ROOM.

EXISTING LIVING SPACE: 1,720 SQ. FT.
ADDED LIVING SPACE: 705 SQ. FT.
TOTAL LIVING SPACE: 2,425 SQ. FT.

TYPE OF CONSTRUCTION: V-B
OCCUPANCY: R-3

FIRE HAZARD ZONE: NO
FLOOD HAZARD ZONE: NO
SEWER: YES (EXISTING)

ADDRESS:

APN: 123-456-789

ORIGINAL CONSTRUCTION DATE: 1957

APPLICABLE CODES:

NOISE LIMITS

CONSTRUCTION WORK WITHIN 300 FT OF A RESIDENTIAL PROPERTY IS LIMITED TO THE HOURS OF SEVEN A.M. TO SEVEN P.M. MONDAY THROUGH FRIDAY, AND EIGHT A.M. TO SIX P.M. ON SATURDAY. NO WORK SHALL BE PERFORMED ON THE FOLLOWING PUBLIC HOLIDAYS: NEW YEAR'S DAY, INDEPENDENCE DAY, THANKSGIVING, CHRISTMAS, MEMORIAL DAY, AND LABOR DAY.

SHEET INDEX

REVISIONS:

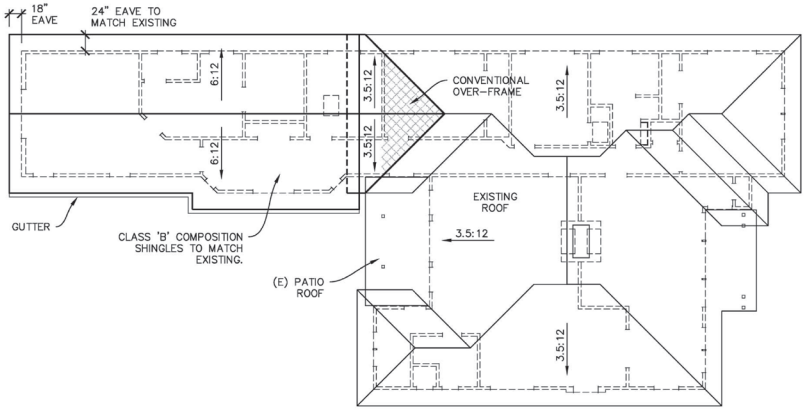
PROJECT:
ADDITION AND REMODEL FOR SINGLE-FAMILY DWELLING
22345 EXAMPLE LN.

OWNERS:
JOHN AND JANE DOE

ARCHITECT/
ENGINEER
SEAL AND
SIGNATURE

PERMIT #:
BLDXX-XXXXX

SHEET #
A1



ROOF PLAN

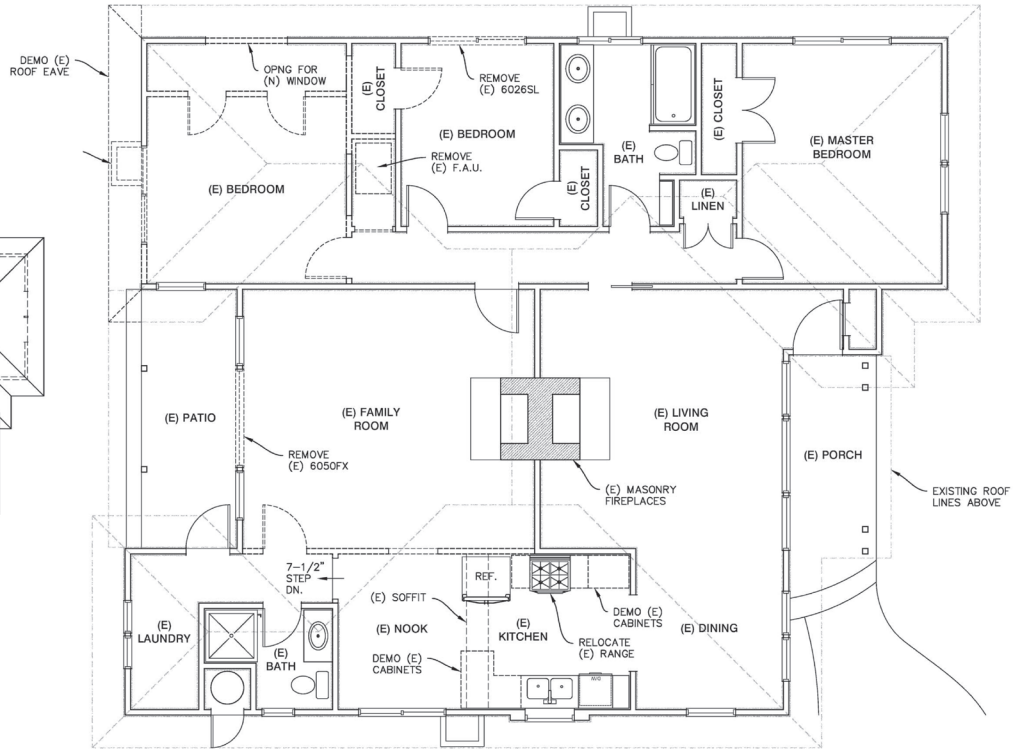
SCALE: 1/8" = 1'-0"

ROOF NOTES

ROOF ASSEMBLIES SHALL BE INSTALLED IN ACCORDANCE WITH THE CODE AND THE APPROVED MANUFACTURER'S INSTALLATION INSTRUCTIONS SUCH THAT THE ROOF ASSEMBLY SHALL SERVE TO PROTECT THE BUILDING OR STRUCTURE. FLASHINGS SHALL BE INSTALLED INA MANNER THAT PREVENTS MOISTURE FROM ENTERING THE WALL AND ROOF THROUGH JOINTS IN COPINGS, THROUGH MOISTURE PERMEABLE MATERIALS AND AT INTERSECTIONS WITH PARAPET WALLS AND OTHER PENETRATIONS THROUGH THE ROOF PLANE.

ENCLOSED ATTICS AND ENCLOSED RAFTER SPACES SHALL HAVE CROSS VENTILATION FOR EACH SEPARATE SPACE PROVIDED BY VENTILATING OPENINGS PROTECTED AGAINST THE ENTRANCE OF RAIN OR SNOW. VENTILATION OPENINGS SHALL BE SCREENED WITH A CORROSION-RESISTANT MESH HAVING 1/16" - 1/8" OPENINGS.

THE TOTAL NET FREE VENTILATING AREA SHALL NOT BE LESS THAN 1/150 OF THE AREA OF THE SPACE VENTILATED. REDUCTION TO 1/300 IS PERMITTED IF BETWEEN 50% AND 80% OF THE VENTILATING AREA IS PROVIDED BY VENTILATORS LOCATED IN THE UPPER PORTION OF THE SPACE, AT LEAST 3 FEET ABOVE EAVE OR CORNICE VENTS. AS AN ALTERNATIVE, THE NET FREE CROSS-VENTILATING AREA MAY BE REDUCED TO 1/300 WHEN A CLASS I OR II VAPOR BARRIER IS INSTALLED ON THE WARM-IN-WINTER SIDE OF THE CEILING. WHERE EAVE OR CORNICE VENTS ARE INSTALLED, INSULATION SHALL NOT BLOCK THE FREE FLOW OF AIR. A MINIMUM OF 1" SPACE SHALL BE PROVIDED BETWEEN THE INSULATION AND THE ROOF SHEATHING AND AT THE LOCATION OF THE VENT.



EXISTING / DEMOLITION PLAN

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

DEMOLITION NOTES

1. ALL DEMOLITION SHALL BE PERFORMED IN SUCH A WAY AS NOT TO DAMAGE EXISTING ELEMENTS WHICH ARE TO BE PART OF THE FINISHED BUILDING.
2. ALL ELEMENTS OF THE STRUCTURE WHICH ARE TO REMAIN AND WHICH ARE DAMAGED DURING DEMOLITION WORK SHALL BE REPLACED AT NO ADDED COST TO THE OWNER. EXISTING ELEMENTS SHALL BE PROTECTED TO THE FULLEST EXTENT POSSIBLE TO AVOID SUCH DAMAGE.

PLAN LEGEND

EXISTING WALLS TO REMAIN

EXISTING WALLS TO DEMOLISH

REVISIONS:

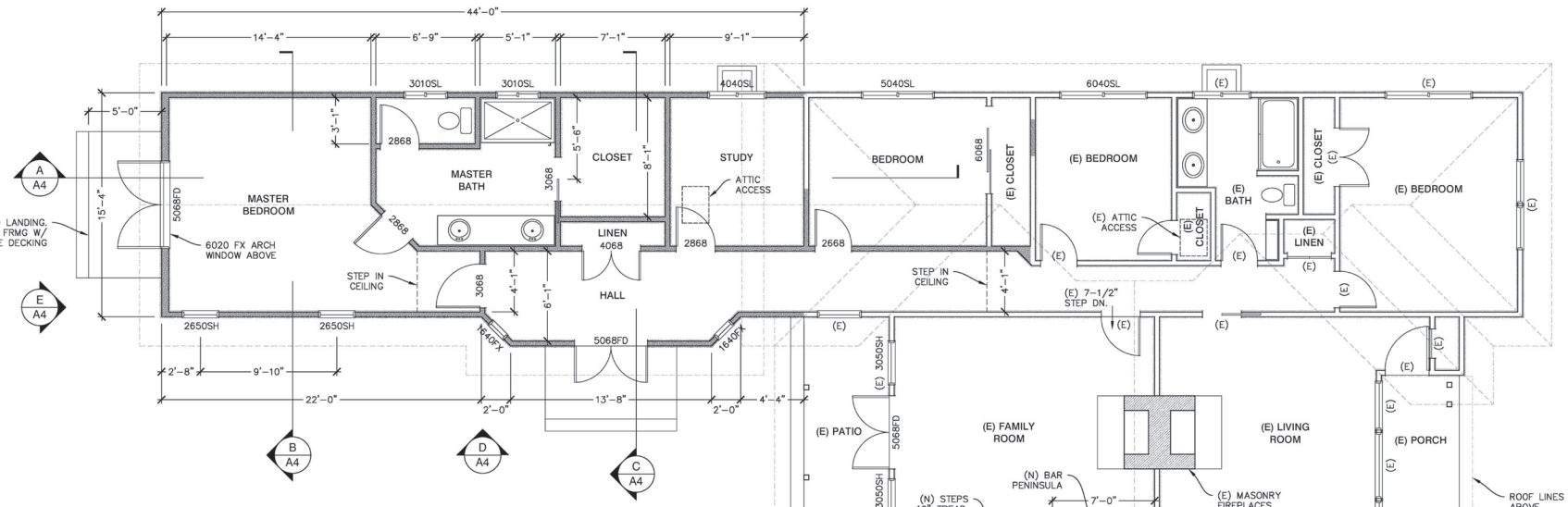
PROJECT:
ADDITION AND REMODEL FOR SINGLE-FAMILY DWELLING
22345 EXAMPLE LN.

OWNERS:
JOHN AND JANE DOE

ARCHITECT/ ENGINEER SEAL AND SIGNATURE

PERMIT #:
BLDXX-XXXXX

SHEET #
A2



FLOOR PLAN

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

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ARCHITECTURAL PLAN NOTES

ELEMENTS SHOWN ON THIS PLAN ARE NEW UNLESS LABELED AS EXISTING "(E)" OR SHOWN ON THE EXISTING FLOOR PLAN.

DOORS AND WINDOWS SHALL BE CENTERED ON WALLS AS SHOWN, UNLESS SPECIFICALLY DIMENSIONED.

BATHROOMS SHALL BE PROVIDED WITH MECHANICAL VENTILATION OF 50 CFM INTERMITTENT OR 20 CFM CONTINUOUS.

BATHTUB AND SHOWER FLOORS, WALLS ABOVE BATHTUBS WITH A SHOWERHEAD, AND SHOWER COMPARTMENTS SHALL BE FINISHED WITH A NONABSORBENT SURFACE EXTENDING TO A HEIGHT OF NOT LESS THAN 6 FEET ABOVE THE FLOOR.

ACCESS TO BATHROOM FIXTURES: WATER CLOSETS SHALL BE SET AT LEAST 15" FROM ITS CENTER TO ANY SIDE WALL OR OBSTRUCTION. THE CLEAR SPACE IN FRONT OF ANY WATER CLOSET SHALL BE NOT LESS THAN 24".

SHOWER COMPARTMENTS SHALL HAVE A MINIMUM FINISHED INTERIOR OF 1,024 SQ. IN. AND SHALL BE CAPABLE OF ENCOMPASSING A 30" CIRCLE.

THE MINIMUM WIDTH OF HALLWAYS SHALL BE AT LEAST 3 FT.

SAFETY GLAZING IS REQUIRED IN THE FOLLOWING LOCATIONS:

- GLAZING IN ALL FIXED AND OPERABLE PANELS OF SWINGING, SLIDING AND BIFOLD DOORS.
- GLAZING IN A FIXED OR OPERABLE PANEL ADJACENT TO A DOOR WHERE THE NEAREST VERTICAL EDGE IS WITHIN A 24" ARC OF THE DOOR IN A CLOSED POSITION, AND WHOSE BOTTOM EDGE IS LESS THAN 60" ABOVE THE WALKING SURFACE.
- GLAZING IN A FIXED OR OPERABLE PANEL MEETING ALL OF THE FOLLOWING CONDITIONS: THE EXPOSED AREA OF AN INDIVIDUAL PANE IS LARGER THAN 9 SQ. FT.; AND THE BOTTOM EDGE OF THE GLAZING IS LESS THAN 18" ABOVE THE FLOOR; AND THE TOP EDGE OF THE GLAZING IS MORE THAN 36" ABOVE THE FLOOR; AND A WALKING SURFACE IS WITHIN 36" OF THE GLAZING.
- ALL GLAZING IN RAILINGS.
- GLAZING IN ENCLOSURES FOR OR WALLS FACING HOT TUBS, WHIRLPOOLS, SAUNAS, STEAM ROOMS, BATHTUBS AND SHOWERS WHERE THE BOTTOM EXPOSED EDGE OF GLAZING IS LESS THAN 60" MEASURED VERTICALLY ABOVE ANY STANDING OR WALKING SURFACE.
- GLAZING IN WALLS AND FENCES ADJACENT TO INDOOR AND OUTDOOR SWIMMING POOLS, HOT TUBS AND SPAS WHERE THE BOTTOM EDGE OF THE GLAZING IS LESS THAN 60" ABOVE A WALKING SURFACE AND WITHIN 60" OF THE WATER'S EDGE.
- GLAZING ADJACENT TO STAIRWAYS, LANDINGS AND RAMPS WITHIN 36" HORIZONTALLY OF A WALKING SURFACE WHEN THE EXPOSED SURFACE OF THE GLAZING IS LESS THAN 60" ABOVE THE PLANE OF THE ADJACENT WALKING SURFACE.
- GLAZING ADJACENT TO STAIRWAYS WITHIN 60" HORIZONTALLY OF THE BOTTOM TREAD OF A STAIRWAY IN ANY DIRECTION WHEN THE EXPOSED SURFACE OF THE GLAZING IS LESS THAN 60" ABOVE THE NOSE OF THE TREAD.

SAFETY GLAZING SHALL BE PROVIDED WITH A MANUFACTURER'S DESIGNATION OR LABEL AS REQUIRED BY THE CODE.

EMERGENCY ESCAPE AND RESCUE OPENINGS: BASEMENTS, HABITABLE ATTICS, AND EVERY SLEEPING ROOM SHALL BE PROVIDED WITH AN OPERABLE EMERGENCY ESCAPE AND RESCUE OPENING. THE BOTTOM OF THE CLEAR OPENING SHALL NOT BE MORE THAN 44" ABOVE THE FLOOR. OPENINGS SHALL OPEN DIRECTLY INTO A PUBLIC WAY, OR TO A YARD OR COURT THAT OPENS TO A PUBLIC WAY. WHEN LOCATED AT THE GRADE FLOOR, THE NET CLEAR OPENING SHALL BE AT LEAST 5 SQ. FT. ELSEWHERE, THE NET CLEAR OPENING SHALL BE AT LEAST 5.7 SQ. FT. THE MINIMUM NET CLEAR OPENING HEIGHT SHALL BE 24". THE MINIMUM NET CLEAR OPENING WIDTH SHALL BE 20". OPENINGS SHALL BE OPERATIONAL FROM THE INSIDE OF THE ROOM WITHOUT THE USE OF KEYS, TOOLS, OR SPECIAL KNOWLEDGE. BARS, GRILLES, COVERS, SCREENS OR SIMILAR DEVICES ARE PERMITTED TO BE PLACED OVER EMERGENCY ESCAPE AND RESCUE OPENINGS, PROVIDED THE MINIMUM NET CLEAR OPENING SIZE COMPLIES AS DESCRIBED ABOVE. SUCH DEVICES SHALL BE RELEASABLE OR REMOVABLE FROM THE INSIDE WITHOUT THE USE OF A KEY, TOOL, SPECIAL KNOWLEDGE OR FORCE GREATER THAN THAT WHICH IS REQUIRED FOR NORMAL OPERATION OF THE ESCAPE AND RESCUE OPENING. SECURITY BARS (BURGLAR BARS) SHALL COMPLY WITH CALIFORNIA REFERENCED STANDARDS CODE (TITLE 24, PART 12) CHAPTER 12-3.

WINDOW SILLS, FALL PROTECTION: WHERE THE OPENING OF AN OPERABLE WINDOW IS LOCATED MORE THAN 72" ABOVE THE FINISHED GRADE OR SURFACE BELOW, THE LOWEST PART OF THE CLEAR OPENING OF THE WINDOW SHALL BE A MINIMUM OF 24" ABOVE THE FINISHED FLOOR OF THE ROOM IN WHICH THE WINDOW IS LOCATED. OTHERWISE, OPENINGS SHALL NOT ALLOW THE PASSAGE OF A 4" DIAMETER SPHERE, OR A CODE-COMPLIANT FALL PREVENTION OR OPENING LIMITING DEVICE SHALL BE PROVIDED.

ATTIC ACCESS: AN ATTIC ACCESS SHALL BE LOCATED IN A HALLWAY OR OTHER READILY ACCESSIBLE LOCATION. 30" MINIMUM HEADROOM IS REQUIRED ABOVE THE ACCESS OPENING. THE ROUGH-FRAMED OPENING SHALL BE AT LEAST 22" x 30". WHEN EQUIPMENT IS LOCATED IN THE ATTIC, THE ACCESS OPENING SHALL BE AT LEAST AS LARGE AS THE LARGEST COMPONENT OF THE EQUIPMENT.

PLAN LEGEND

EXISTING WALLS

NEW WALLS

WINDOW & DOOR CALLOUTS:

5430SL

- WIDTH IN FEET AND INCHES (E.G. 5'-4")
- HEIGHT IN FEET AND INCHES (E.G. 3'-0")
- TYPE:
  - SL = SLIDER
  - SH = SINGLE HUNG
  - CS = CASEMENT
  - FX = FIXED GLASS
  - FD = FRENCH DOOR

REVISIONS:

PROJECT:
ADDITION AND REMODEL FOR SINGLE-FAMILY DWELLING
22345 EXAMPLE LN.

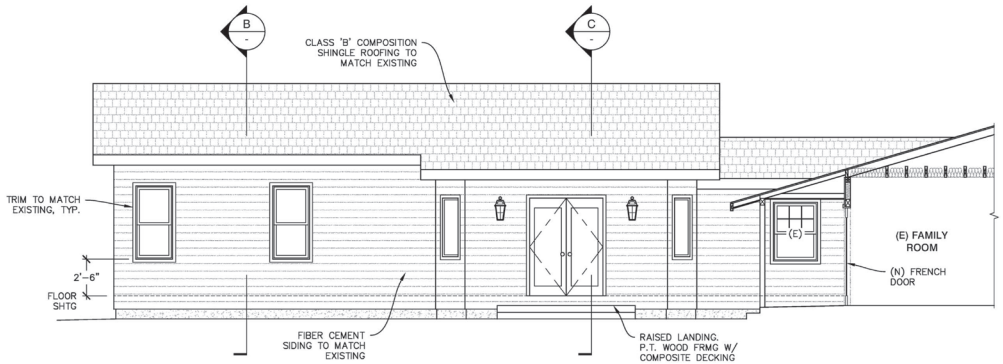
OWNERS:
JOHN AND JANE DOE

ARCHITECT/ ENGINEER SEAL AND SIGNATURE

PERMIT #:
BLDXX-XXXXX

SHEET #
A3

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



ELEVATION 'D'
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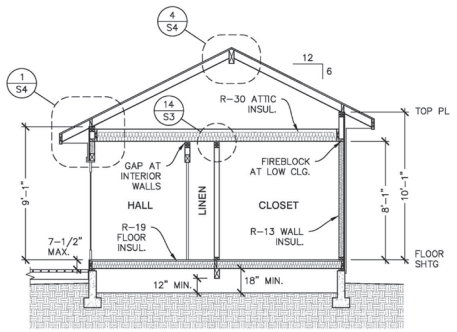

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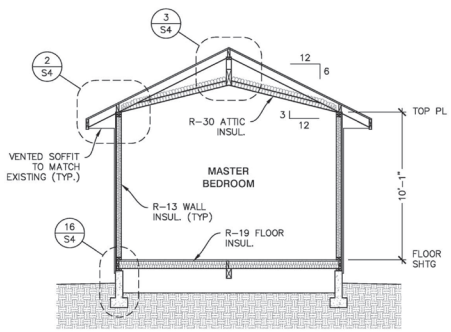

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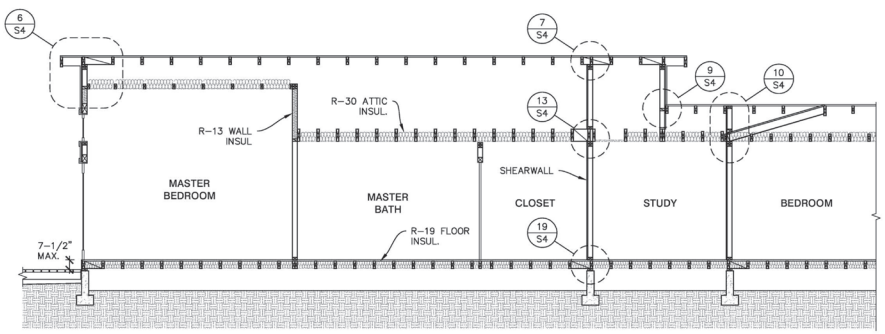

SECTION 'A'
SCALE: 1/4" = 1'-0"

REVISIONS:

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22345 EXAMPLE LN.

OWNERS:
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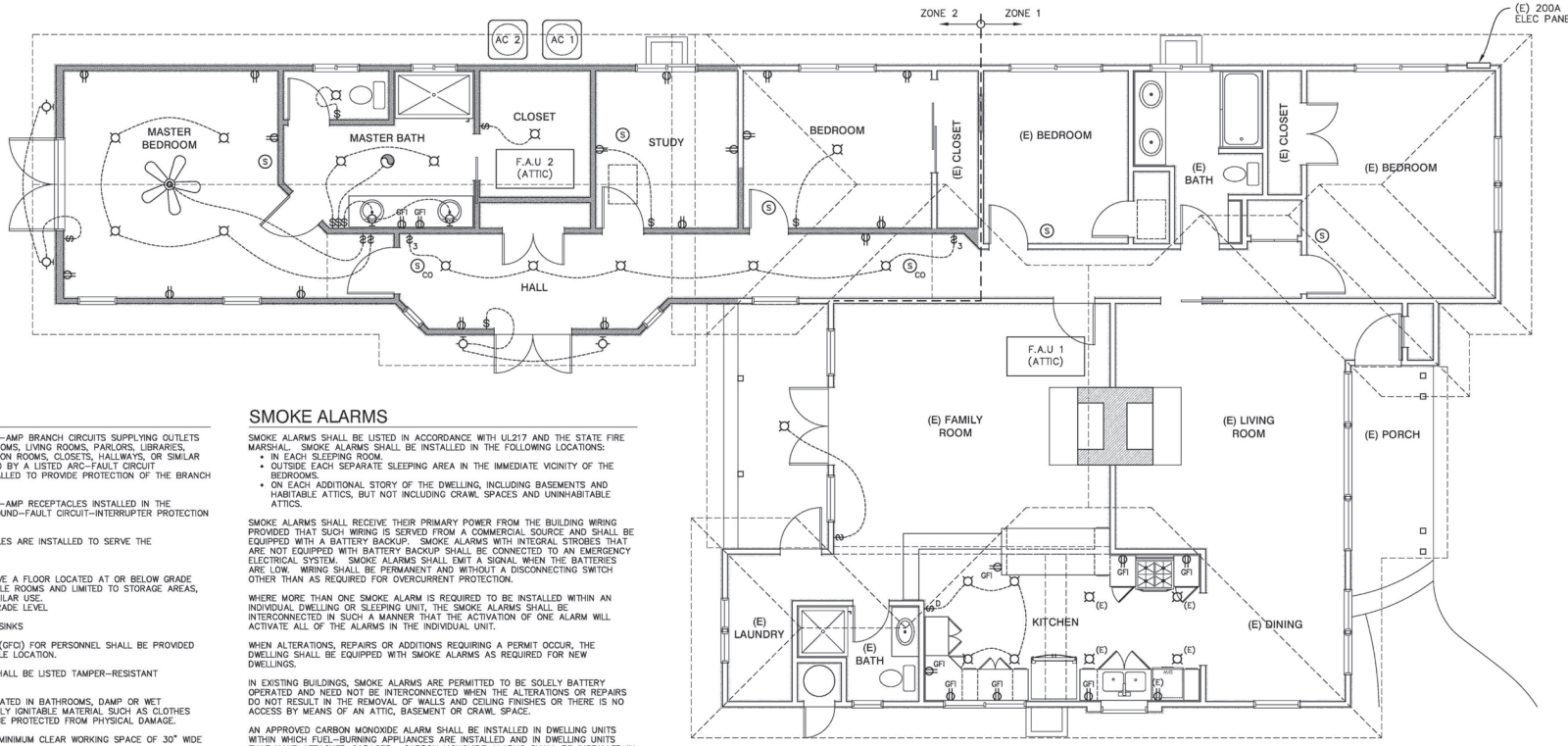
ARCHITECT/ ENGINEER SEAL AND SIGNATURE

PERMIT #:
BLDXX-XXXXX

SHEET #
A4



ELECTRICAL NOTES

AFCI REQUIREMENTS: ALL 15– AND 20–AMP BRANCH CIRCUITS SUPPLYING OUTLETS INSTALLED IN FAMILY ROOMS, DINING ROOMS, LIVING ROOMS, PARLORS, LIBRARIES, DENS, BEDROOMS, SUNROOMS, RECREATION ROOMS, CLOSETS, HALLWAYS, OR SIMILAR ROOMS OR AREAS SHALL BE PROTECTED BY A LISTED ARC–FAULT CIRCUIT INTERRUPTER, COMBINATION TYPE, INSTALLED TO PROVIDE PROTECTION OF THE BRANCH CIRCUIT.

GFCI REQUIREMENTS: ALL 15– AND 20–AMP RECEPTACLES INSTALLED IN THE FOLLOWING LOCATIONS SHALL HAVE GROUND–FAULT CIRCUIT–INTERRUPTER PROTECTION FOR PERSONNEL:

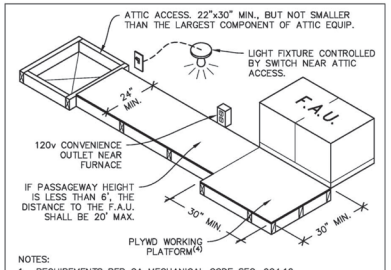
- BATHROOMS
- KITCHENS, WHERE THE RECEPTACLES ARE INSTALLED TO SERVE THE COUNTERTOP SURFACES
- OUTDOORS
- GARAGES
- ACCESSORY BUILDINGS WHICH HAVE A FLOOR LOCATED AT OR BELOW GRADE LEVEL NOT INTENDED AS HABITABLE ROOMS AND LIMITED TO STORAGE AREAS, WORK AREAS, AND AREAS OF SIMILAR USE.
- CRAWL SPACES, AT OR BELOW GRADE LEVEL
- UNFINISHED BASEMENTS
- LAUNDRY, UTILITY AND WET BAR SINKS

GROUND–FAULT CIRCUIT–INTERRUPTION (GFCI) FOR PERSONNEL SHALL BE PROVIDED AND INSTALLED IN A READILY ACCESSIBLE LOCATION.

ALL 15– AND 20–AMP RECEPTACLES SHALL BE LISTED TAMPER–RESISTANT RECEPTACLES.

ELECTRICAL PANELS SHALL NOT BE LOCATED IN BATHROOMS, DAMP OR WET LOCATIONS, OR IN THE VICINITY OF EASILY IGNITABLE MATERIAL SUCH AS CLOTHES CLOSETS. ELECTRICAL PANELS SHALL BE PROTECTED FROM PHYSICAL DAMAGE.

ELECTRICAL EQUIPMENT SHALL HAVE A MINIMUM CLEAR WORKING SPACE OF 30" WIDE x 36" DEEP.



NOTES:

1. REQUIREMENTS PER CA MECHANICAL CODE SEC. 904.10.
2. F.A.U. SHALL BE LISTED FOR THE USE SHOWN.
3. MAINTAIN ALL CLEARANCES AS SPECIFIED IN THE F.A.U. LISTING REPORT.
4. A WORKING PLATFORM NEED NOT BE PROVIDED WHERE THE FURNACE IS CAPABLE OF BEING SERVICED FROM THE REQUIRED ACCESS OPENING. THE FURNACE SERVICE SIDE SHALL NOT EXCEED 12" FROM THE ACCESS OPENING.

ATTIC FORCED AIR UNIT | 1

SMOKE ALARMS

SMOKE ALARMS SHALL BE LISTED IN ACCORDANCE WITH UL217 AND THE STATE FIRE MARSHAL. SMOKE ALARMS SHALL BE INSTALLED IN THE FOLLOWING LOCATIONS:

- IN EACH SLEEPING ROOM.
- OUTSIDE EACH SEPARATE SLEEPING AREA IN THE IMMEDIATE VICINITY OF THE BEDROOMS.
- ON EACH ADDITIONAL STORY OF THE DWELLING, INCLUDING BASEMENTS AND HABITABLE ATTICS, BUT NOT INCLUDING CRAWL SPACES AND UNINHABITABLE ATTICS.

SMOKE ALARMS SHALL RECEIVE THEIR PRIMARY POWER FROM THE BUILDING WIRING PROVIDED THAT SUCH WIRING IS SERVED FROM A COMMERCIAL SOURCE AND SHALL BE EQUIPPED WITH A BATTERY BACKUP. SMOKE ALARMS WITH INTEGRAL STROBES THAT ARE NOT EQUIPPED WITH BATTERY BACKUP SHALL BE CONNECTED TO AN EMERGENCY ELECTRICAL SYSTEM. SMOKE ALARMS SHALL EMIT A SIGNAL WHEN THE BATTERIES ARE LOW. WIRING SHALL BE PERMANENT AND WITHOUT A DISCONNECTING SWITCH OTHER THAN AS REQUIRED FOR OVERCURRENT PROTECTION.

WHERE MORE THAN ONE SMOKE ALARM IS REQUIRED TO BE INSTALLED WITHIN AN INDIVIDUAL DWELLING OR SLEEPING UNIT, THE SMOKE ALARMS SHALL BE INTERCONNECTED IN SUCH A MANNER THAT THE ACTIVATION OF ONE ALARM WILL ACTIVATE ALL OF THE ALARMS IN THE INDIVIDUAL UNIT.

WHEN ALTERATIONS, REPAIRS OR ADDITIONS REQUIRING A PERMIT OCCUR, THE DWELLING SHALL BE EQUIPPED WITH SMOKE ALARMS AS REQUIRED FOR NEW DWELLINGS.

IN EXISTING BUILDINGS, SMOKE ALARMS ARE PERMITTED TO BE SOLELY BATTERY OPERATED AND NEED NOT BE INTERCONNECTED WHEN THE ALTERATIONS OR REPAIRS DO NOT RESULT IN THE REMOVAL OF WALLS AND CEILING FINISHES OR THERE IS NO ACCESS BY MEANS OF AN ATTIC, BASEMENT OR CRAWL SPACE.

AN APPROVED CARBON MONOXIDE ALARM SHALL BE INSTALLED IN DWELLING UNITS WITHIN WHICH FUEL–BURNING APPLIANCES ARE INSTALLED AND IN DWELLING UNITS THAT HAVE ATTACHED GARAGES. CARBON MONOXIDE ALARMS SHALL BE INSTALLED IN THE FOLLOWING LOCATIONS:

- OUTSIDE OF EACH SEPARATE DWELLING UNIT SLEEPING AREA IN THE IMMEDIATE VICINITY OF THE BEDROOM(S).
- ON EVERY LEVEL OF A DWELLING UNIT INCLUDING BASEMENTS.

CARBON MONOXIDE ALARMS SHALL RECEIVE THEIR PRIMARY POWER FROM THE BUILDING WIRING PROVIDED THAT SUCH WIRING IS SERVED FROM A COMMERCIAL SOURCE AND SHALL BE EQUIPPED WITH A BATTERY BACKUP. WIRING SHALL BE PERMANENT AND WITHOUT A DISCONNECTING SWITCH OTHER THAN AS REQUIRED FOR OVERCURRENT PROTECTION.

WHEN ALTERATIONS, REPAIRS OR ADDITIONS REQUIRING A PERMIT OCCUR, THE DWELLING SHALL BE EQUIPPED WITH CARBON MONOXIDE ALARMS AS REQUIRED FOR NEW DWELLINGS.

IN EXISTING BUILDINGS, CARBON MONOXIDE ALARMS ARE PERMITTED TO BE SOLELY BATTERY OPERATED AND NEED NOT BE INTERCONNECTED WHEN THE ALTERATIONS OR REPAIRS DO NOT RESULT IN THE REMOVAL OF WALLS AND CEILING FINISHES OR THERE IS NO ACCESS BY MEANS OF AN ATTIC, BASEMENT OR CRAWL SPACE.

ELECTRICAL/UTILITY PLAN

SCALE: 1/4" = 1'–0"

N

PLAN LEGEND

S_{CO}	SMOKE DETECTOR CARBON MONOXIDE ALARM
	AFCI RECEPTACLE
$_{GFI}$	GFCI RECEPTACLE
$\$^{D}$	SWITCH (WITH DIMMER)
	HIGH EFFICACY LIGHT FIXTURE
	EXHAUST FAN

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SAMPLE GENERAL NOTES

ABBREVIATIONS

ABV	ABOVE
ADDL	ADDITIONAL
ALT	ALTERNATE
A.B.	ANCHOR BOLT
@	AT
BM	BEAM
BRG	BEARING
BTWN	BETWEEN
BLK	BLOCK
BLKG	BLOCKING
BD	BOARD
BOT	BOTTOM
B.N.	BOUNDARY NAILING
C.G	CEILING
C.J.	CEILING JOIST
C.L.	CENTER LINE
CLR	CLEAR
COL	COLUMN
C.P.	COMPLETE PENETRATION
CONC	CONCRETE
CMU	CONCRETE MASONRY UNIT
CONN	CONNECTION
CONTN	CONTINUOUS
CTSK	COUNTERSINK
DBL	DOUBLE
D/G	DF/GREF
DET	DETAIL
DIM	DIMENSION
DIST	DISTANCE
DBL	DOUBLE
DFL	DOUGLAS FIR LARCH
EA	EACH
E.F.	EACH FACE
E.W.	EACH WAY
E.N.	EDGE NAILING
EMBED	EMBEDMENT
EQ	EQUAL
(E)	EXISTING
F.J.	FLOOR JOIST
F.N.	FIELD NAILING
FRMG	FRAMING
FT	FEET
FTG	FOOTING
GAL.V	GALVANIZED
GLB	GLU-LAM BEAM
HDR	HEADER
HGR	HANGER
HT	HEIGHT
HORZ	HORIZONTAL
IN	INCHES
K.P.	KING POST
LB	POUND
M.B.	MACHINE BOLT
MANUF	MANUFACTURER
MAX	MAXIMUM
MIN	MINIMUM
(N)	NEW
N.T.S.	NOT TO SCALE
O.C.	ON CENTER
O.H.	OPPOSITE HAND
¢	PENNY
PLCS	PLACES
PL.	PLATE
P.L.	PROPERTY LINE
PLYWD	PLYWOOD
PSF	POUNDS PER SQ. FT.
P.T.	PRESERVATIVE TREATED
REINF	REINFORCING
REQD	REQUIRED
R.R.	ROOF RAFTER
SCHED	SCHEDULE
S.F.	SQUARE FOOT
S.W.	SHEARWALL
SHTG	SHEATHING
S.O.G.	SLAB ON GRADE
SPCS	SPACES
SPCG	SPACING
SQ	SQUARE
STD	STANDARD
STL	STEEL
T.N.	TOE NAILING
T&B	TOP AND BOTTOM
T.O.C.	TOP OF CONCRETE
T.O.S.	TOP OF STEEL
T.O.W.	TOP OF WALL
TPL	TRIPLE
TYP	TYPICAL
U.N.O.	UNLESS NOTED OTHERWISE
V.I.F.	VERIFY IN FIELD
VERT	VERTICAL
W.W.F.	WELDED WIRE FABRIC
W/	WITH
W.P.	WORKING POINT

GENERAL

1. ALL WORK SHALL COMPLY WITH THE 2013 EDITIONS OF THE FOLLOWING:
   - CALIFORNIA BUILDING CODE
   - CALIFORNIA RESIDENTIAL CODE
   - CALIFORNIA MECHANICAL CODE
   - CALIFORNIA ELECTRICAL CODE
   - CALIFORNIA PLUMBING CODE
   - CALIFORNIA ENERGY CODE
   - CODE AMENDMENTS ADOPTED BY THE LOCAL AUTHORITY.
   - ALL FEDERAL, STATE AND LOCAL LAWS, REGULATIONS AND ORDINANCES APPLICABLE TO THE SCOPE OF WORK.
2. CODES AND STANDARDS NOTED IN THE CONSTRUCTION DOCUMENTS SHALL BE THE LATEST ADOPTED ISSUE, INCLUDING SUPPLEMENTS, UNLESS NOTED OTHERWISE. MATERIAL SPECIFICATIONS SHALL COMPLY WITH THE LATEST ASTM REFERENCED STANDARDS.
3. THE CONTRACTOR SHALL REVIEW THE DRAWINGS TO IDENTIFY THE SCOPE OF WORK, VISIT THE SITE TO RELATE THE SCOPE OF WORK TO EXISTING CONDITIONS, AND DETERMINE THE EXTENT TO WHICH THOSE CONDITIONS AND PHYSICAL SURROUNDINGS WILL IMPACT THE WORK.
4. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS PRIOR TO CONSTRUCTION. THE ENGINEER OF RECORD SHALL BE NOTIFIED OF ANY INCONSISTENCIES OR DISCREPANCIES.
5. INFORMATION RELATED TO EXISTING CONDITIONS SHOWN ON THE DRAWINGS REPRESENTS THE PRESENT KNOWLEDGE, BUT WITHOUT GUARANTEE OF ACCURACY. CONDITIONS THAT CONFLICT WITH THE CONSTRUCTION DOCUMENTS SHALL BE REPORTED TO THE ENGINEER OF RECORD. DO NOT DEVIATE FROM THE CONSTRUCTION DOCUMENTS WITHOUT WRITTEN DIRECTION FROM THE ENGINEER OF RECORD.
6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING THE EXISTENCE AND PRECISE LOCATION OF UNDERGROUND FACILITIES OR STRUCTURES IN THE VICINITY OF THE PROJECT. UNDERGROUND FACILITIES OR STRUCTURES SHALL BE CLEARLY IDENTIFIED AT THE SITE AND PROTECTED IN PLACE. THE CONTRACTOR SHALL PROMPTLY NOTIFY EACH UTILITY COMPANY, MUNICIPALITY OR OTHER AGENCY WHO OWNS, OPERATES, OR REGULATES ANY SUCH FACILITIES OR STRUCTURES.
7. DIMENSIONS INDICATED ON THE DRAWINGS SHALL TAKE PRECEDENCE OVER SCALED DRAWINGS.
8. TYPICAL DETAILS AND GENERAL NOTES APPLY TO ALL PARTS OF THE WORK THAT ARE THE SAME OR SIMILAR TO THOSE SPECIFICALLY REFERENCED, UNLESS NOTED OTHERWISE OR SPECIFICALLY DETAILED.
9. DETAILS AND NOTES ON DRAWINGS SHALL TAKE PRECEDENCE OVER TYPICAL DETAILS AND GENERAL NOTES. WHERE DETAILS AND NOTES ON DRAWINGS AND THE TYPICAL DETAILS AND GENERAL NOTES ARE IN CONFLICT, THE MOST STRINGENT SHALL APPLY. CONDITIONS NOT SPECIFICALLY SHOWN SHALL BE CONSTRUCTED AS SHOWN FOR SIMILAR WORK.
10. OPENINGS, POCKETS, ETC. SHALL NOT BE PLACED IN STRUCTURAL ELEMENTS UNLESS SPECIFICALLY DETAILED ON THE STRUCTURAL DRAWINGS. THE ENGINEER OF RECORD SHALL BE NOTIFIED WHEN DRAWINGS BY OTHERS SHOW OPENINGS, POCKETS, ETC. WHICH ARE LOCATED IN STRUCTURAL MEMBERS, AND ARE NOT SHOWN ON THE STRUCTURAL DRAWINGS.
11. SUBSTITUTIONS OF PRODUCTS OR MATERIALS SPECIFIED ON THE CONSTRUCTION DOCUMENTS SHALL BE APPROVED BY THE ENGINEER OF RECORD.
12. THE CONSTRUCTION DOCUMENTS REPRESENT THE FINISHED STRUCTURE; THEY DO NOT INDICATE THE METHOD OF CONSTRUCTION. THE CONTRACTOR SHALL PROVIDE MEANS, METHOD, TECHNIQUES, PROCEDURE AND SEQUENCE OF CONSTRUCTION AS REQUIRED. SITE VISITS PERFORMED BY THE ENGINEER OF RECORD DO NOT INCLUDE INSPECTIONS OF MEANS AND METHODS OF CONSTRUCTION PERFORMED BY THE CONTRACTOR.
13. THE CONTRACTOR SHALL PROVIDE ALL NECESSARY SHORES, BRACES AND GUYS REQUIRED TO SUPPORT ALL LOADS TO WHICH THE BUILDING STRUCTURE AND COMPONENTS, SOILS, OTHER STRUCTURES AND UTILITIES MAY BE SUBJECTED DURING CONSTRUCTION. VISITS TO THE SITE BY THE ENGINEER OF RECORD WILL NOT INCLUDE OBSERVATION OF THE ABOVE NOTED ITEMS.
14. CONSTRUCTION MATERIALS SHALL BE SPREAD OUT WHEN PLACED ON FRAMED FLOORS OR ROOFS. LOADS SHALL NOT EXCEED THE DESIGN LIVE LOAD PER SQUARE FOOT. PROVIDE ADEQUATE SHORING AND/OR BRACING WHERE THE STRUCTURE HAS NOT ATTAINED DESIGN STRENGTH OR WHERE OVERLOAD IS ANTICIPATED.
15. STRUCTURAL OBSERVATIONS PERFORMED DURING CONSTRUCTION DO NOT WAIVE THE RESPONSIBILITY FOR THE INSPECTIONS REQUIRED OF THE BUILDING INSPECTOR OR THE DEPUTY INSPECTOR. STRUCTURAL OBSERVATIONS ARE NOT THE SPECIAL INSPECTION SERVICES. OBSERVATIONS SHALL NOT BE CONSIDERED AS SUPERVISION OF CONSTRUCTION AND DO NOT GUARANTEE THE CONTRACTOR'S PERFORMANCE.
16. THE CONTRACTOR SHALL RESOLVE ANY CONFLICTS ON THE CONSTRUCTION DOCUMENTS WITH THE ENGINEER OF RECORD BEFORE PROCEEDING WITH THE WORK.
17. THE ENGINEER OF RECORD SHALL HAVE NO LIABILITY FOR WATERPROOFING OR MOISTURE TRANSMISSION ISSUES, WHETHER RELATED TO FOUNDATIONS OR OTHERWISE. THE OWNER SHALL DEFEND AND INDEMNITY THE ENGINEER OF RECORD AGAINST ANY SUCH CLAIMS.
18. THE SCOPE OF THIS PROJECT INCLUDES THE NEW STRUCTURE(S) SHOWN ON THESE PLANS AND THOSE PORTIONS OF ANY EXISTING STRUCTURE(S) DIRECTLY AFFECTED BY THE NEW STRUCTURE(S). THE ENGINEER SHALL HAVE NO LIABILITY FOR THE SAFETY, PERFORMANCE, OR CODE COMPLIANCE OF ANY EXISTING ELEMENTS WHICH ARE NOT WITHIN THE PROJECT SCOPE.
19. ALL CONNECTORS WHICH WILL BE PERMANENTLY EXPOSED TO THE WEATHER SHALL BE CORROSION-RESISTANT (HOT-DIPPED GALVANIZED OR STAINLESS STEEL).

GLUED LAMINATED TIMBER

1. PROVIDE STRUCTURAL GLUED LAMINATED TIMBER OF DOUGLAS FIR LUMBER CONFORMING TO ANSI/AITC A 190.1.
2. MARK MEMBERS WITH THE ENGINEERED WOOD SYSTEM APA-EWS TRADEMARK OR AITC QUALITY INSPECTED MARK INDICATING CONFORMANCE WITH PROVISIONS OF ANSI STANDARD A190.1.
3. ADHESIVES SHALL BE EXTERIOR TYPE.
4. GLUED LAMINATED MEMBERS SHALL BE PRESERVATIVE-TREATED FOR EXTERIOR USE WHEN EXPOSED TO THE WEATHER.
5. BEAMS TO BE COMBINATION 24F-V4 FOR SINGLE SPAN MEMBERS AND 24F-V8 FOR CONTINUOUS OR CANTILEVERED MEMBERS UNLESS OTHERWISE NOTED.
6. NOTCH OR BORE GLUED LAMINATED MEMBERS ONLY WHERE SPECIFICALLY DETAILED ON THE STRUCTURAL DRAWINGS.

CONCRETE

1. ALL STRUCTURAL CONCRETE SHALL HAVE A MINIMUM 28-DAY COMPRESSIVE STRENGTH AS FOLLOWS:
   - SLAB ON GRADE: 2500 PSI NORMAL WEIGHT
   - GRADE BEAMS: 2500 PSI NORMAL WEIGHT
   - ALL OTHER CONCRETE: 2500 PSI NORMAL WEIGHT

   NO MORE THAN ONE GRADE OF CONCRETE SHALL BE ON THE JOB SITE AT ANY ONE TIME.
3. CONCRETE CONSTRUCTION SHALL CONFORM TO THE FOLLOWING STANDARDS:
   - ACI 318 – BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE
   - ACI 304 – MEASURING, MIXING, TRANSPORTING, AND PLACING CONCRETE
   - ASTM C94 – STANDARD SPECIFICATION FOR READY-MIXED CONCRETE
   - ASTM C150 – STANDARD SPECIFICATION FOR PORTLAND CEMENT. PORTLAND CEMENT SHALL CONFORM TO TYPE I OR TYPE II, LOW ALKALI.
   - ASTM C33 – STANDARD SPECIFICATION FOR CONCRETE AGGREGATES
4. CONCRETE IS REINFORCED AND CAST IN PLACE UNLESS OTHERWISE NOTED.
5. CONCRETE EXPOSED TO SULFATES SHALL COMPLY WITH ACI 318.
6. CONCRETE MIXES SHALL BE DESIGNED BY AN APPROVED LABORATORY. ADMIXTURES CONTAINING CALCIUM CHLORIDE ARE NOT ALLOWED.
7. CONCRETE CAST WITH AIR POCKETS AND/OR "HONEYCOMB" UNDER OR AROUND THE MEMBERS IS NOT ACCEPTABLE. PROVIDE POUR POCKETS IN FORMS AND UNDER EXISTING STRUCTURAL MEMBERS AS REQUIRED TO PREVENT AIR POCKETS AND/OR "HONEYCOMB" UNDER OR AROUND THE EXISTING MEMBERS.
8. CONCRETE SLAB THICKNESS SHALL BE UNIFORM UNLESS OTHERWISE SHOWN
9. NON-SHRINK CEMENT GROUT SHALL ATTAIN A MINIMUM COMPRESSIVE STRENGTH OF 7000 PSI AT 28 DAYS. USE "FIVE STAR GROUT" (COLA RR # 23816) OR "MASTERFLOW 928" (COLA RR # 23137).
10. THOROUGHLY CLEAN AND ROUGHEN ALL EXISTING CONCRETE. CONCRETE PREVIOUSLY POURED AND HARDENED AND MASONRY SURFACES TO RECEIVE NEW CONCRETE. INTERFACE SHALL BE ROUGHENED TO 1/4 IN. AMPLITUDE UNLESS NOTED OTHERWISE.
11. THE FOLLOWING MINIMUM CONCRETE COVER SHALL BE PROVIDED FOR REINFORCEMENT IN CAST-IN-PLACE CONCRETE:
    - CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH: 3 IN.
    - FORMED CONCRETE EXPOSED TO EARTH OR WEATHER:
      #6 BAR AND LARGER: 2 IN.
      #5 BAR, W31 OR D31 WIRE, AND SMALLER: 1-1/2 IN.
    - CONCRETE NOT EXPOSED TO WEATHER OR IN CONTACT WITH GROUND:
      SLABS, WALLS AND JOISTS (#11 BARS AND SMALLER): 3/4 IN.
      BEAMS AND COLUMNS PRIMARY REINFORCEMENT, TIES, STIRRUPS, AND SPIRALS: 1-1/2 IN.
12. BOLTS AND RODS CAST IN CONCRETE SHALL CONFORM TO ASTM F1554, GRADE 36 AND SHALL BE HOT-DIPPED GALVANIZED.
13. ALL REINFORCING BARS, ANCHOR BOLTS AND OTHER CONCRETE INSERTS SHALL BE WELL-SECURED IN POSITION PRIOR TO CONCRETE PLACEMENT.
14. PROVIDE SLEEVES FOR PLUMBING AND ELECTRICAL OPENINGS IN CONCRETE BEFORE PLACING. DO NOT CUT ANY REINFORCING WHICH MAY CONFLICT. CORING IN CONCRETE IS NOT PERMITTED EXCEPT AS SHOWN. NOTIFY THE ENGINEER IN ADVANCE OF CONDITIONS NOT SHOWN ON THE DRAWINGS.
15. PROJECTING CORNERS OF BEAMS, WALLS, COLUMNS, ETC., SHALL BE FORMED WITH A 3/4 IN. CHAMFER, UNLESS OTHERWISE NOTED ON ARCHITECTURAL DRAWINGS.

REINFORCING STEEL

1. ALL REINFORCING STEEL SHALL BE DETAILED AND PLACED IN CONFORMANCE WITH ACI 318 – BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE," AND "THE MANUAL OF STANDARD PRACTICE FOR REINFORCED CONCRETE CONSTRUCTION" BY THE C.R.S.I. AND THE W.C.R.S.I., OR AS MODIFIED BY THE CONSTRUCTION DOCUMENTS.
2. REINFORCING BARS SHALL CONFORM TO THE FOLLOWING, UNLESS NOTED OTHERWISE:
   - REINFORCING STEEL #7 AND SMALLER: ASTM A615, 60 KSI
   - REINFORCING STEEL #8 AND LARGER: ASTM A706, 60 KSI
   - REINFORCING STEEL TO BE WELDED: ASTM A706, 60 KSI
   - WELDED STEEL WIRE FABRIC: ASTM A185, 70 KSI
3. ALL BARS SHALL BE MARKED SO THEIR IDENTIFICATION CAN BE MADE WHEN THE FINAL IN-PLACE INSPECTION IS MADE.
4. ALL REINFORCING BAR BENDS SHALL BE MADE COLD.
5. MINIMUM LAP OF WELDED WIRE FABRIC SHALL BE 12 INCHES, OR ONE FULL MESH PLUS TWO INCHES, WHICHEVER IS GREATER.
6. REINFORCING SPLICES SHALL ONLY BE MADE AS INDICATED ON THE DRAWINGS.
7. WELDING OF REINFORCEMENT SHALL BE WITH LOW HYDROGEN E90XX ELECTRODES IN CONFORMANCE WITH "RECOMMENDED PRACTICES FOR WELDING REINFORCING STEEL, ETC.," AMERICAN WELDING SOCIETY, AWS-D1.4. WELDING OF REINFORCING STEEL SHALL BE PERFORMED BY WELDERS SPECIFICALLY CERTIFIED FOR REINFORCING STEEL.
8. MECHANICAL COUPLERS: LENTON THREADED OR INTERLOCK COUPLERS BY ERICO, ICC-ES #3967, CADWELD BY ERICO, ICC-ES #3967, OR XTENDER BY HEADED REINFORCEMENT CORPORATION, ICC-ES #3309. COUPLERS FOR BEAM AND SLAB BARS AT FORMED CONSTRUCTION JOINTS MAY BE LENTON FORM SAVERS BY ERICO, ICC-ES #3967.
9. DOWELS BETWEEN FOOTINGS AND WALLS OR COLUMNS SHALL BE THE SAME GRADE, SIZE AND SPACING AS THE VERTICAL REINFORCING, RESPECTIVELY, UNLESS NOTED OTHERWISE.
10. DOWELS BETWEEN SLABS AND WALLS OR COLUMNS SHALL BE THE SAME GRADE, SIZE AND SPACING AS THE SLAB REINFORCING, UNLESS NOTED OTHERWISE.

LUMBER

1. LUMBER SHALL BE DOUGLAS FIR, SEASONED AND GRADE MARKED, UNLESS NOTED OTHERWISE.
2. LUMBER GRADES SHALL BE AS FOLLOWS, UNLESS NOTED OTHERWISE:

   VERTICAL FRAMING MEMBERS:
   - 4x POSTS: NO. 1
   - 5x POSTS AND LARGER: NO. 1
   - BEARING STUDS: NO. 2 OR CONSTRUCTION
   - NON-BEARING STUDS: STUD
   - ALL OTHER VERTICAL MEMBERS: NO. 2

   HORIZONTAL FRAMING MEMBERS:
   - TOP PLATES AND SILL PLATES: NO. 2 OR CONSTRUCTION
   - 2x & 3x MEMBERS: NO. 2
   - 4x MEMBERS & LARGER: NO. 1
3. WOOD PANEL SHEATHING SHALL BE PLYWOOD OR OSB AND SHALL COMPLY WITH DEPARTMENT OF COMMERCE STANDARD PS 1 OR PS 2. GRADES SHALL BE MARKED BY APA AND BONDED WITH EXTERIOR GLUE (EXPOSURE 1) UNLESS NOTED OTHERWISE. REFER TO PLANS AND DETAILS FOR GRADE AND THICKNESS.
4. NAILS SHALL BE COMMON WIRE NAILS. AS A MINIMUM, NAILING SHALL COMPLY WITH NAILING SCHEDULES PRESCRIBED BY THE GOVERNING BUILDING CODE.
5. NAILS LARGER THAN 16d SHALL BE INSTALLED IN PRE-DRILLED HOLES OF 2/3 THE NAIL DIAMETER.
6. FASTENERS AND CONNECTORS IN CONTACT WITH PRESERVATIVE-TREATED WOOD OR FIRE-RETARDANT-TREATED WOOD SHALL BE HOT-DIPPED ZINC-COATED GALVANIZED STEEL IN ACCORDANCE WITH ASTM A153.
7. WOOD CONNECTOR DESIGNATIONS SPECIFIED ON THE DRAWINGS REFER TO CONNECTORS MANUFACTURED BY SIMPSON STRONG-TIE. INSTALL CONNECTORS PER APPLICABLE ICC-ES REPORTS AND MANUFACTURER'S RECOMMENDATIONS.
8. SILL PLATES AND OTHER WOOD MEMBERS BEARING DIRECTLY ON CONCRETE OR MASONRY SHALL BE PRESERVATIVE-TREATED LUMBER.
9. BOLTS AND LAG SCREWS SHALL COMPLY WITH ASTM A307 (F_y = 45 KSI). BOLTS AND LAG SCREWS SHALL BE FULL DIAMETER BODY. PROVIDE STANDARD CUT STEEL WASHERS AT ALL BOLT AND LAG SCREW CONNECTIONS. WASHERS SHALL CONFORM TO ANSI STANDARD B18.22.1.
10. BOLT HOLES SHALL NOT BE MORE THAN 1/16" LARGER THAN THE BOLT DIAMETER.
11. LAG SCREWS SHALL BE INSTALLED IN PRE-DRILLED HOLES. THE DIAMETER OF PRE-DRILL FOR THE THREADED PORTION SHALL BE 2/3 THE SHANK DIAMETER. THE DIAMETER OF PRE-DRILL FOR THE SHANK PORTION SHALL BE EQUAL TO THE SHANK DIAMETER. LAG SCREWS SHALL BE TURNED, NOT DRIVEN.
12. SILL PLATE ANCHOR BOLTS AT SHEARWALLS SHALL HAVE SQUARE PLATE WASHERS MEASURING 1/4 IN. x 3 IN. x 3 IN.
13. PROVIDE DOUBLE JOISTS BENEATH NON-BEARING WALLS PARALLEL TO JOISTS. PROVIDE SOLID BLOCKING BENEATH NON-BEARING WALLS PERPENDICULAR TO JOISTS.
14. PROVIDE FULL BEARING AT ENDS OF ALL BLOCKING, UNLESS NOTED OTHERWISE.
15. CARE SHALL BE TAKEN TO AVOID WOOD SPLITTING OR CHIPPING DUE TO NAILING. PRE-DRILL AS REQUIRED. SPLIT WOOD MEMBERS SHALL BE REPLACED.

NAILING SCHEDULE

CONNECTION	NAILING	LOCATION
JOIST TO SILL, TOP PLATE, OR GIRDER	3-8d COMMON, OR 3-10d BOX	TOENAIL
BOTTOM PLATE TO JOIST, RIM, OR BLOCKING (AT NON-SHEAR WALLS)	16d COMMON @ 16", OR 16d BOX @ 12"	FACE NAIL
TOP PLATE TO STUD	2-16d COMMON, OR 3-10d BOX	END NAIL
STUD TO BOTTOM PLATE	2-16d COMMON, OR 3-10d BOX, OR 4-8d COMMON, OR 4-10d BOX	END NAIL END NAIL TOENAIL TOENAIL
BLOCKING BETWEEN JOISTS OR RAFTERS TO TOP PLATE	3-8d COMMON, OR 3-10d BOX	TOENAIL AT EACH END
RIM BOARD TO TOP PLATE	8d COMMON @ 6", OR 10d BOX @ 6"	TOENAIL
TOP PLATES, LAPS AND INTERSECTIONS	2-16d COMMON, OR 3-10d BOX	FACE NAIL
CEILING JOISTS TO PLATE	3-8d COMMON, OR 3-10d BOX	TOENAIL PER JOIST
CONTINUOUS HEADER TO STUD	4-8d COMMON, OR 4-10d BOX	TOENAIL
CEILING JOISTS LAPS OVER PARTITIONS	3-16d COMMON, OR 4-10d BOX	FACE NAIL
CEILING JOISTS TO PARALLEL RAFTERS	3-16d COMMON, OR 4-10d BOX	FACE NAIL
RAFTER TO PLATE	3-10d COMMON, OR 3-16d BOX	TOENAIL
BUILT-UP CORNER STUDS	16d COMMON @ 16", OR 16d BOX @ 12"	FACE NAIL
COLLAR TIE TO RAFTER	3-10d COMMON, OR 4-10d BOX	FACE NAIL
JACK RAFTER TO HIP	3-10d COMMON, OR 2-16d COMMON	TOENAIL FACE NAIL
ROOF RAFTER TO 2x RIDGE BOARD	3-10d COMMON, OR 3-16d BOX, OR 4-10d BOX	TOENAIL
JOIST TO RIM JOIST	3-16d COMMON, OR 4-10d BOX	END NAIL

THE CONNECTIONS SPECIFIED IN THIS SCHEDULE SHALL BE PROVIDED, AS A MINIMUM, AT ALL OF THE FRAMING CONDITIONS INDICATED. CONNECTIONS SPECIFIED ON THE DETAILS SHALL TAKE PRECEDENCE OVER THOSE SPECIFIED IN THIS SCHEDULE.

ADHESIVE ANCHORS AND DOWELS

1. ANCHORS AND DOWELS INSTALLED INTO CONCRETE: SIMPSON SET-XP EPOXY (ICC-ES #ESR-2508) OR HILTI HIT-RE 500-SD (ICC-ES #ER-2322).
2. ANCHORS AND DOWELS INSTALLED INTO GROUT-FILLED MASONRY UNITS: HILTI HY-150 (ICC-ES #5193) OR SIMPSON SET ADHESIVE (ICC-ES #1772).
3. ANCHORS SHALL BE INSTALLED IN ACCORDANCE WITH ICC-ES REPORT AND MANUFACTURER'S RECOMMENDATIONS.
4. ANCHORS: ASTM A36 THREADED RODS WITH ASTM A 563 GRADE A NUTS AND ANSI B18.22.M TYPE A WASHERS UNLESS OTHERWISE NOTED. ANCHORS DESIGNATED AS ASTM A193 GRADE B7 THREADED RODS TO USE: ASTM A 563 GRADE DH HEAVY HEX NUTS AND ASTM F436 WASHERS.
5. DOWELS: ASTM A615 GRADE 60 REINFORCING STEEL, UNLESS NOTED OTHERWISE.
6. WEDGE BARS TIGHT AND CENTERED IN THE HOLE WITH WOODEN WEDGES TO HOLD IT IN PLACE UNTIL THE ADHESIVE SETS.
7. IF REINFORCEMENT IS ENCOUNTERED DURING DRILLING, ABANDON AND SHIFT THE LOCATION OF THE HOLE TO AVOID THE REINFORCEMENT. PROVIDE A MINIMUM OF 2 ANCHOR DIAMETERS OR 1 IN., WHICHEVER IS LARGER, OF SOUND CONCRETE BETWEEN THE DOWEL AND THE ABANDONED HOLE. FILL THE ABANDONED HOLE WITH NON-SHRINK GROUT. IF THE ANCHOR OR DOWEL MAY NOT BE SHIFTED AS NOTED ABOVE, THE ENGINEER WILL DETERMINE A NEW LOCATION.
8. LOCATE REINFORCEMENT AND CONFIRM FINAL ANCHOR LOCATIONS PRIOR TO FABRICATING PLATES, MEMBERS, OR OTHER STEEL ASSEMBLIES ATTACHED WITH ADHESIVE ANCHORS.
9. ANCHORS SHALL BE TESTED IN ACCORDANCE WITH ICC-ES REPORT AND MANUFACTURER'S RECOMMENDATIONS.

MASONRY

1. CONCRETE BLOCK SHALL BE HOLLOW LOAD-BEARING CONCRETE MASONRY UNITS CONFORMING TO ASTM C90 GRADE N, NORMAL WEIGHT, USE OPEN END UNITS FOR ALL EXTERIOR WALLS AND BOND BEAM UNITS AT HORIZONTAL REINFORCING. MINIMUM COMPRESSIVE STRENGTH OF BLOCKS AS REQUIRED TO MEET SPECIFIED COMPRESSIVE STRENGTH OF MASONRY ($f'm$) SPECIFIED ON THE CONSTRUCTION DOCUMENTS.
2. SPECIFIED COMPRESSIVE STRENGTH OF MASONRY, $f'm$ SHALL BE AS FOLLOWS:

   $f'm$ = 1500 PSI AT 28 DAYS, TYPICAL UNLESS NOTED OTHERWISE.
3. VERIFY SPECIFIED COMPRESSIVE STRENGTH OF MASONRY IN ACCORDANCE WITH ONE OF THE FOLLOWING METHODS AS DEFINED IN CBC CHAPTER 21: MASONRY PRISM TESTING, MASONRY PRISM TEST RECORD OR UNIT STRENGTH METHOD.
4. CEMENT SHALL BE AS SPECIFIED FOR CONCRETE.
5. MORTAR MIX SHALL CONFORM TO THE ASTM C270 REQUIREMENTS FOR TYPE S. MORTAR SHALL ATTAIN A MINIMUM COMPRESSIVE STRENGTH AS REQUIRED TO MEET THE SPECIFIED COMPRESSIVE STRENGTH OF MASONRY ($f'm$). THE COMPRESSIVE STRENGTH OF THE GROUT SHALL NOT BE LESS THAN OF 2000 PSI AT 28 DAYS.
6. PROVIDE GROUT COMPLYING WITH ASTM C476 ATTAINING A MINIMUM COMPRESSIVE STRENGTH AS REQUIRED TO MEET THE SPECIFIED COMPRESSIVE STRENGTH OF MASONRY ($f'm$). THE COMPRESSIVE STRENGTH OF THE GROUT SHALL NOT BE LESS THAN 2000 PSI AT 28 DAYS.
7. ADMIXTURES SHALL BE ADDED TO MORTAR OR GROUT RESPECTIVELY PER MANUFACTURER'S RECOMMENDATIONS.
8. PROVIDE 3/4 IN. CLEAR GROUT SPACE (ONE BAR DIAMETER MINIMUM) BETWEEN MAIN REINFORCING AND MASONRY UNITS.
9. PROVIDE 1 IN. CLEAR GROUT SPACE (ONE BAR DIAMETER MINIMUM) BETWEEN PARALLEL BARS.
10. LOW-LIFT CONSTRUCTION; MAXIMUM GROUT POUR HEIGHT IS 4 FEET.
11. HIGH-LIFT GROUTED CONSTRUCTION MAY BE USED IN CONFORMANCE WITH CHAPTER 21 OF THE CALIFORNIA BUILDING CODE.
12. ALL CELLS IN CONCRETE BLOCKS SHALL BE FILLED SOLID WITH GROUT, UNLESS NOTED OTHERWISE.
13. CELLS SHALL BE IN VERTICAL ALIGNMENT. DOWELS IN FOOTINGS AND FLOORS SHALL BE SET TO ALIGN WITH CORES CONTAINING REINFORCING STEEL AND SHALL MATCH THE SIZE OF THE WALL REINFORCING.
14. REFER TO ARCHITECTURAL DRAWING FOR SURFACE AND HEIGHT OF UNITS, LAYING PATTERN, AND JOINT TYPE.
15. IF WORK IS STOPPED FOR AN HOUR OR LONGER, PROVIDE HORIZONTAL CONSTRUCTION JOINT PER TYPICAL DETAILS AND BY STOPPING GROUT 1-1/2 IN. BELOW TOP OF MASONRY UNIT.

STRUCTURAL DESIGN CRITERIA

FLOOR LIVE LOAD: 40 PSF
ROOF LIVE LOAD: 20 PSF
ATTIC LIVE LOAD: 20 PSF

WIND DESIGN CRITERIA

BASIC WIND SPEED: 110 MPH
WIND EXPOSURE CATEGORY: B

SEISMIC DESIGN CRITERIA

RISK CATEGORY: II
IMPORTANCE FACTOR: 1.0
MAPPED ACCELERATIONS: SS = 3.03g, S1 = 0.95g
SITE CLASS: D
MAPPED COEFFICIENTS: SDS = 2.02g, SD1 = 0.95g
SEISMIC DESIGN CATEGORY: E
LATERAL SYSTEM: WOOD PANEL SHEARWALLS

RESPONSE MODIFICATION FACTOR: R = 6.5
SEISMIC RESPONSE COEFFICIENT: CS = 0.31W

ANALYSIS PROCEDURE USED: EQUIVALENT LATERAL FORCE

REVISIONS:

PROJECT:
ADDITION AND REMODEL FOR SINGLE-FAMILY DWELLING
22345 EXAMPLE LN.

OWNERS:
JOHN AND JANE DOE

ARCHITECT/ ENGINEER SEAL AND SIGNATURE

PERMIT #:
BLDXX-XXXXX

SHEET #
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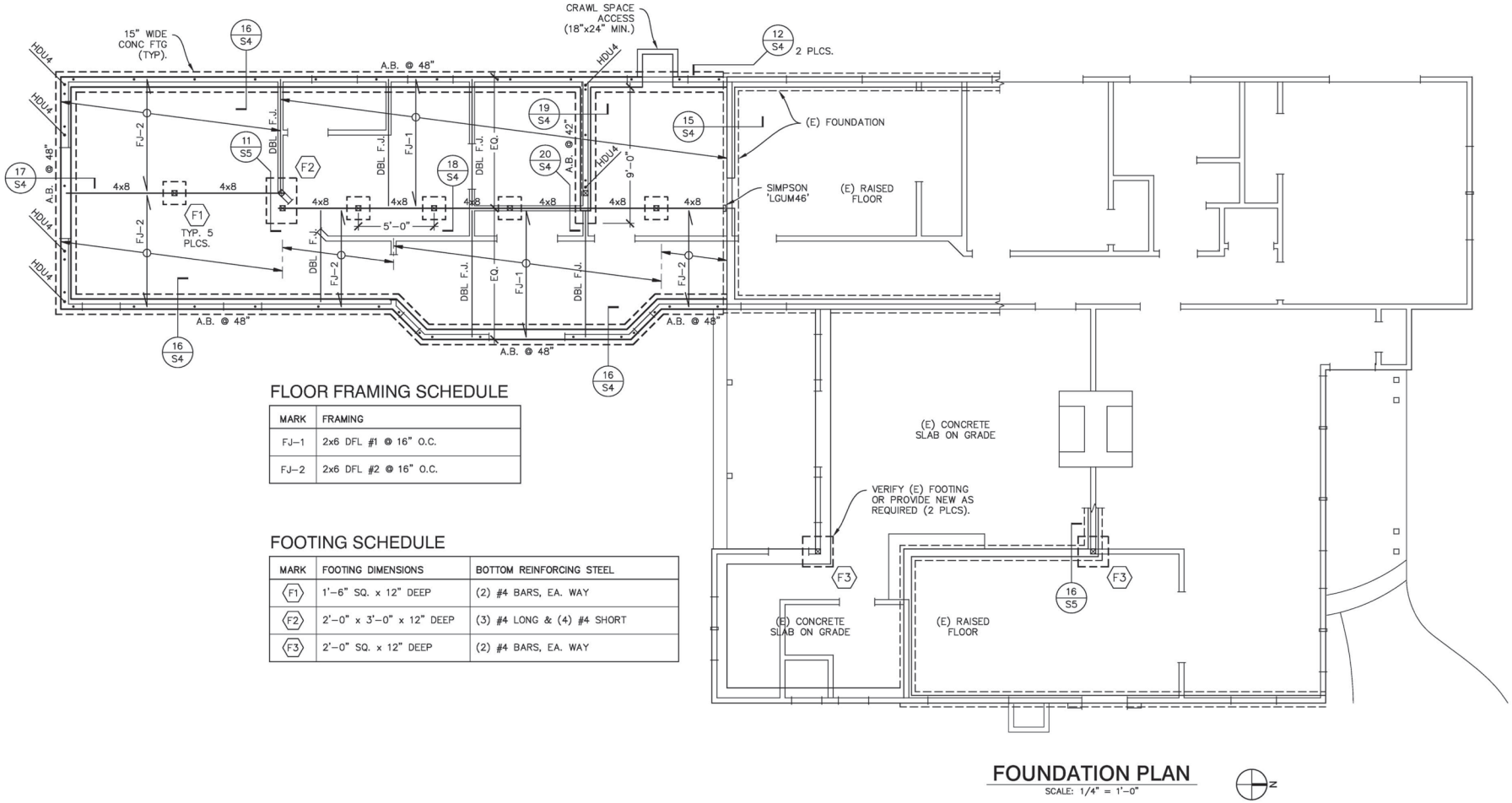

FLOOR FRAMING SCHEDULE

MARK	FRAMING
FJ-1	2x6 DFL #1 @ 16" O.C.
FJ-2	2x6 DFL #2 @ 16" O.C.

FOOTING SCHEDULE

MARK	FOOTING DIMENSIONS	BOTTOM REINFORCING STEEL
F1	1'-6" SQ. x 12" DEEP	(2) #4 BARS, EA. WAY
F2	2'-0" x 3'-0" x 12" DEEP	(3) #4 LONG & (4) #4 SHORT
F3	2'-0" SQ. x 12" DEEP	(2) #4 BARS, EA. WAY

FOUNDATION PLAN

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

N

FOUNDATIONS AND SITE WORK NOTES

1. THE DESIGN OF THE FOUNDATION SYSTEM IS BASED UPON MINIMUM SOIL VALUES PRESCRIBED IN CHAPTERS 16 & 18 OF THE BUILDING CODE.
2. FOOTING DESIGN IS BASED ON ALLOWABLE SOIL PRESSURE OF 1,500 PSF. BOTTOM OF FOOTINGS TO BE A MINIMUM OF 12" BELOW LOWEST ADJACENT FINISHED FLOOR OR GRADE, AND 24" INTO UNDISTURBED NATURAL SOIL.
3. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR EXCAVATION PROCEDURES INCLUDING SHORING, LAGGING, UNDERPINNING AND PROTECTION OF EXISTING CONSTRUCTION.
4. CONTRACTOR SHALL PROVIDE DE-WATERING OF EXCAVATIONS FROM SURFACE WATER, GROUND WATER OR SEEPAGE. REMOVE LOOSE SOIL AND STANDING WATER FROM FOUNDATION EXCAVATIONS PRIOR TO PLACING CONCRETE.
5. LOCATE AND PROTECT EXISTING UTILITIES TO REMAIN DURING AND/OR AFTER CONSTRUCTION.
6. ALL ABANDONED FOOTINGS, UTILITIES, ETC. THAT INTERFERE WITH NEW CONSTRUCTION SHALL BE REMOVED.

PLAN NOTES

1. ANCHOR BOLTS SHALL BE 5/8" DIA X 10" LONG. MAXIMUM SPACING OF ANCHOR BOLTS IS INDICATED ON THE FOUNDATION PLAN. SEE TYPICAL DETAILS FOR ANCHOR BOLT PLACEMENT.
2. HOLDOWN HARDWARE MUST BE SECURED IN PLACE PRIOR TO FOUNDATION INSPECTION.
3. HOLDOWNS SHALL BE TIGHTENED JUST PRIOR TO COVERING THE WALL FRAMING.
4. FLOOR SHEATHING SHALL BE 5/8" STRUCT 1 PLYWD OR OSB UNBLOCKED WITH 10d NAILS OR APPROVED SCREWS @ 6" BOUNDARY, 6" EDGE, 12" FIELD.
5. FLOOR SHEATHING SHALL BE GLUED TO FRAMING.

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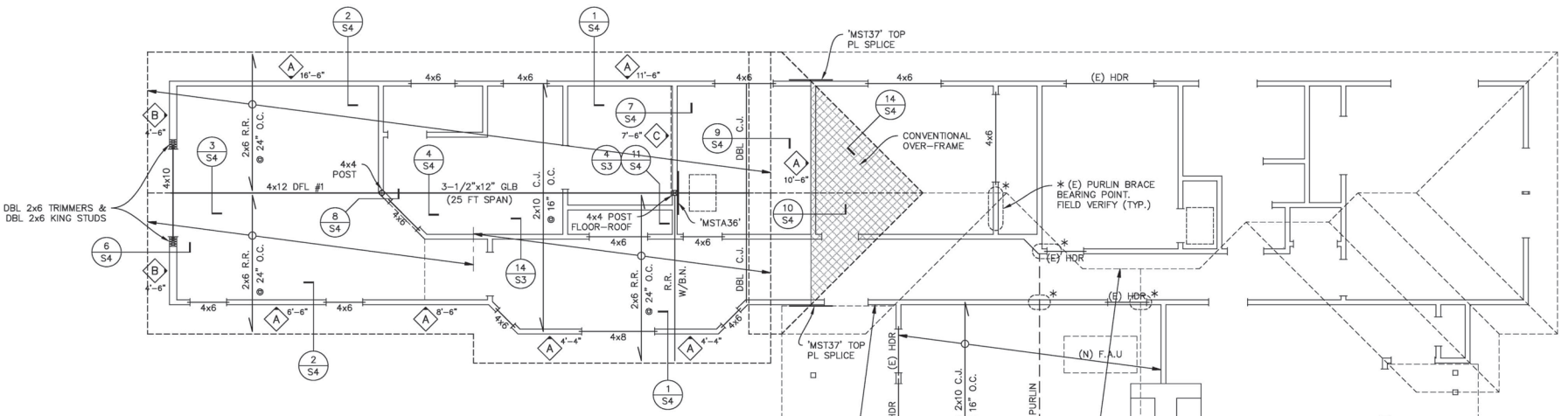

SHEARWALL SCHEDULE

MARK	SHEATHING (PLYWOOD OR OSB)	STUDS AT PANEL EDGES (1)	E.N. / F.N. (2)	FOUNDATION		UPPER FLOORS		ALLOW SHEAR (PLF)
				SILL PL	ANCHOR BOLTS (3)	SILL PL	SILL CONN (4)	
A	1/2" STRUCT. 1	2x	8d @ 6"/12"	2x	5/8" DIA. @ 48"	2x	16d @ 4"	280
B	1/2" STRUCT. 1	2x	10d @ 6"/12"	2x	5/8" DIA. @ 48"	2x	16d @ 4"	340
C	1/2" STRUCT. 1	3x	10d @ 4"/12"	2x	5/8" DIA. @ 42"	2x	16d @ 3"	510
D	1/2" STRUCT. 1	3x	10d @ 3"/12"	2x	5/8" DIA. @ 32"	2x	SDS @ 6"	665
E	1/2" STRUCT. 1	3x	10d @ 2"/12"	2x	5/8" DIA. @ 24"	2x	SDS @ 4"	870
F	1/2" STRUCT. 1 (BOTH SIDES)	3x	10d @ 4"/12"	2x	5/8" DIA. @ 20"	2x	SDS @ 4"	1020
G	1/2" STRUCT. 1 (BOTH SIDES)	3x	10d @ 3"/12"	2x	5/8" DIA. @ 16"	2x	SDS @ 3"	1330
H	1/2" STRUCT. 1 (BOTH SIDES)	3x	10d @ 2"/12"	2x	5/8" DIA. @ 12"	2x	SDS @ 2-1/2"	1740

NOTES:
1. THICKNESS OF STUDS AND BLOCKING RECEIVING EDGE NAILING FROM ADJOINING PANELS.
2. NAILS SHALL BE COMMON NAILS WITH FULL HEADS.
3. ANCHOR BOLTS SHALL BE INSTALLED WITH 3" SQ x 1/4" PLATE WASHERS.
4. 'SDS' INDICATES SIMPSON 'STRONG DRIVE' 1/4" x 4" S-SERIES WOOD SCREW (ICC-ES# 5268).

ROOF FRAMING PLAN

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

PLAN NOTES

1. ROOF SHEATHING SHALL BE 1/2" STRUCT 1 PLYWD OR OSB UNBLOCKED WITH 8d NAILS @ 6" BOUNDARY, 6" EDGE, 12" FIELD.
2. STUD WALLS UP TO 10 FT TALL SHALL BE MINIMUM 2x4 @ 16" O.C. STUD WALLS UP TO 14 FEET TALL MAY BE DOUBLE 2x4 @ 16" O.C.. WALLS TALLER THAN 14 FEET SHALL BE 2x6 @ 16" O.C.
3. EXISTING ROOF PURLINS, PURLIN BRACES, CEILING JOIST BRACES, AND OTHER ROOF ELEMENTS ABOVE THE CEILING SHALL BE PROTECTED IN PLACE. PROVIDE ADEQUATE SHORING DURING CONSTRUCTION.

PLAN LEGEND

- WALLS BELOW
- WALLS/ROOF LINES ABOVE
- FRAMING DIRECTION
- FRAMING EXTENT
- WOOD POST
- SHEARWALL TYPE
- X'-X" MINIMUM WALL LENGTH

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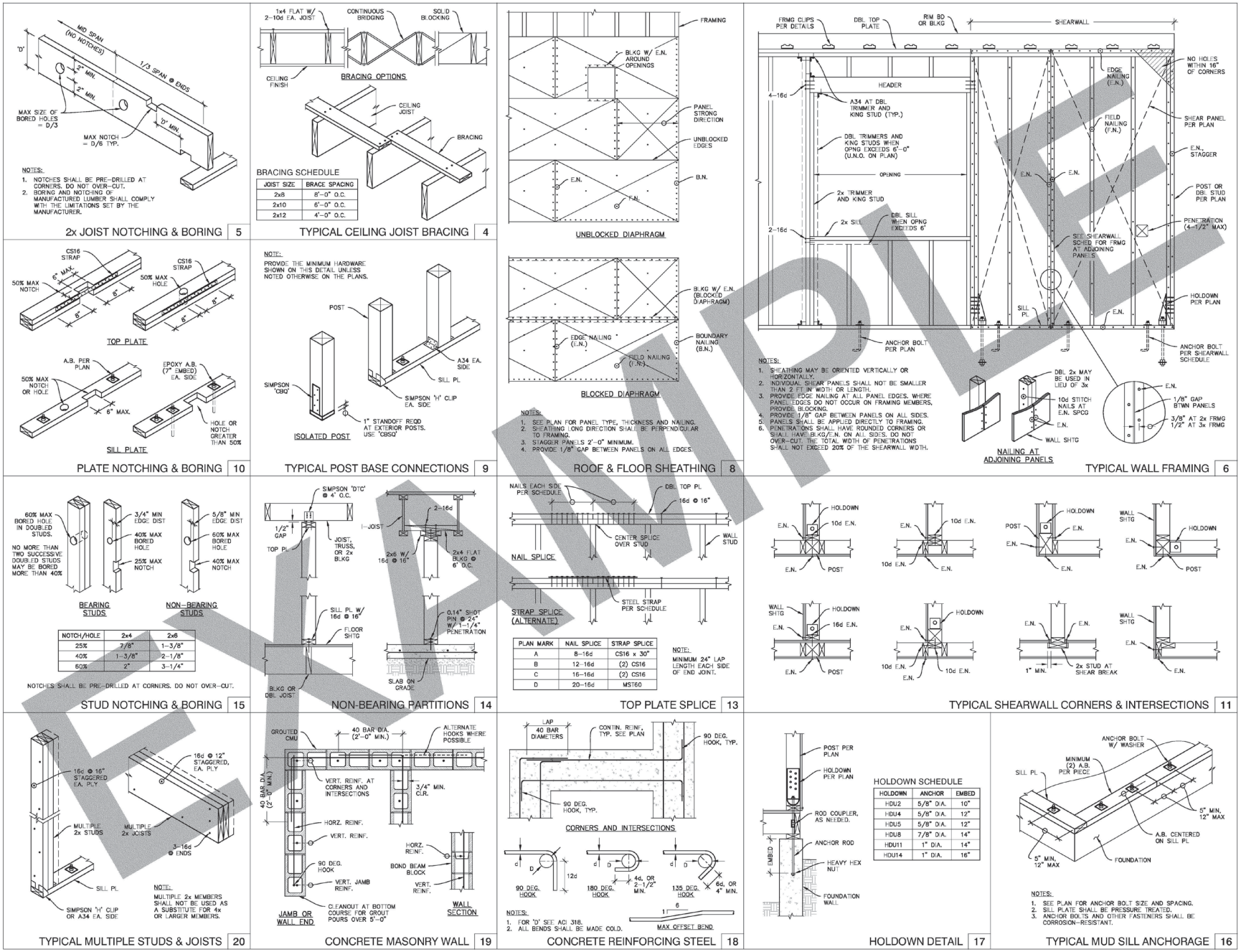
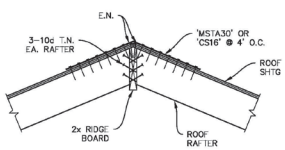
BLDXX-XXXXX

SHEET #
S2

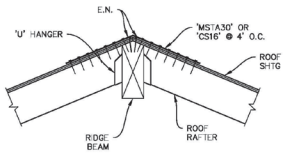
SAMPLE FRAMING DETAILS



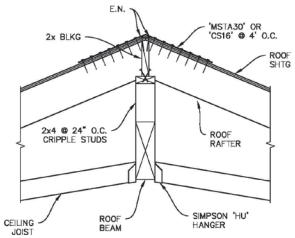
SAMPLE FRAMING DETAILS



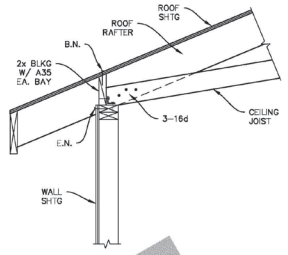
RIDGE BOARD 5



RIDGE BEAM 4



RIDGE BEAM 3



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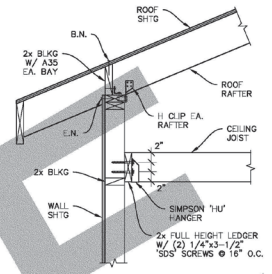

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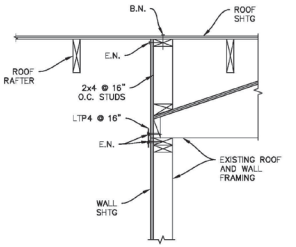
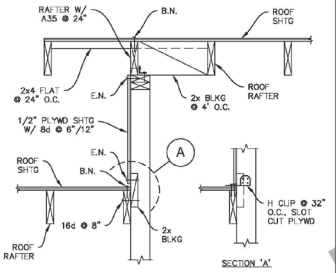
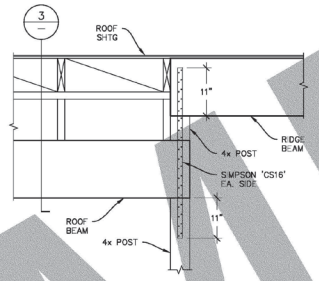


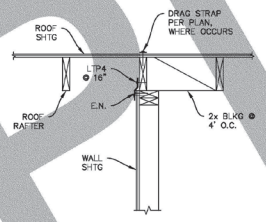
EXISTING WALL RETROFIT 10



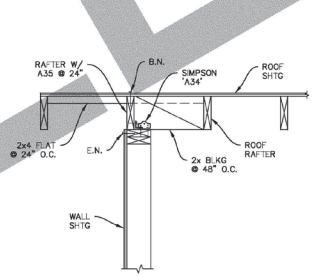
HIGH TO LOW ROOF 9



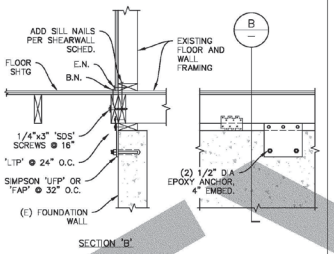
ROOF BEAMS 8



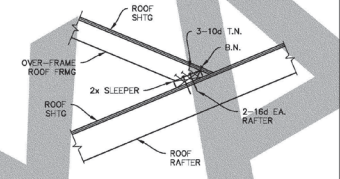
INTERIOR SHEARWALL 7



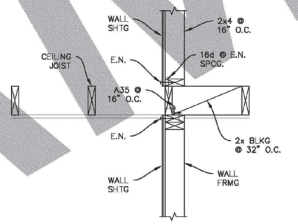
GABLE 6



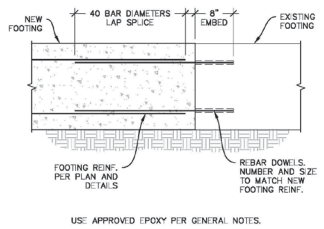
FOUNDATION AT EXISTING WALL 15



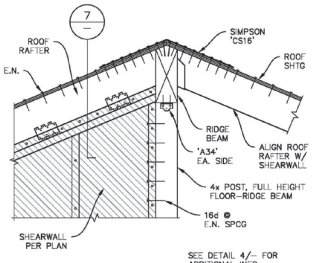
OVERFRAME ROOF 14



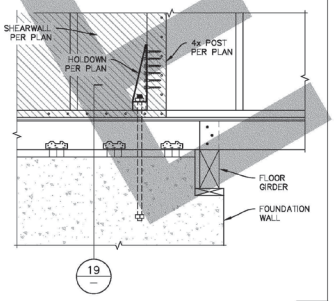
SHEARWALL THRU CEILING 13



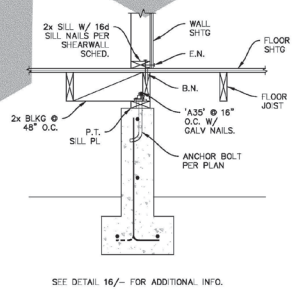
NEW TO EXISTING FOOTING 12



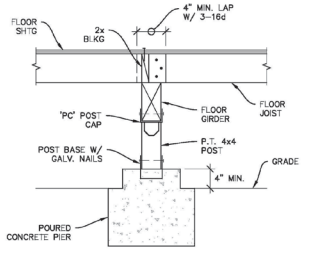
ROOF DETAIL 11



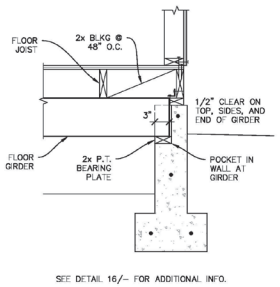
RAISED FLOOR FOUNDATION 20



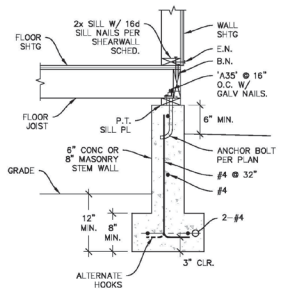
RAISED FLOOR FOUNDATION 19



RAISED FLOOR FOUNDATION 18



RAISED FLOOR FOUNDATION 17



RAISED FLOOR FOUNDATION 16

2013 CalGreen Code residential mandatory measures

For additions or alterations that increase the building's conditioned area, volume, or size

THE FOLLOWING REQUIREMENTS APPLY ONLY TO AND/OR WITHIN THE SPECIFIC AREA OF THE ADDITION OR ALTERATION

(incorporate these requirements and the signed compliance statement into the plans)

Planning & Design division 4.1

1. **Preservation** and use of available **natural resources** shall be accomplished through evaluation and careful planning to minimize negative effects on the site and adjacent areas.
2. **Storm water pollution-** This project shall comply with all NPDES and local storm water ordinance requirements to control storm water drainage and prevent sediment runoff during construction. BMPs per Section 4.106.2 shall be in place and strictly adhered to throughout construction
3. **Surface drainage** shall be designed to prevent water from entering the building. Construction plans shall clearly show how the site grading and drainage system will manage surface water flows to keep water from entering building(s).
   See sheet # __A1__ for compliance details.
   (N/A for projects that do not alter the existing drainage path)

Energy Efficiency division 4.2

1. All new/alter areas shall comply with all applicable energy efficiency requirements as set forth in the **2013 California Energy Code** (use 2010 edition prior to July 1, 2014). Title 24 Energy calcs shall be included as part of the plans and drawings.

Water Efficiency and Conservation division 4.3

1. Plumbing fixtures and fittings shall comply with the following:
   a. **Water closets-** 1.28 gallons per flush
   b. **Urinals-** 0.5 gallons per flush
   c. **Single showerheads-** flow rate shall not exceed 2.0 gallons per minute at 80 psi.
   d. **Multiple showerheads** serving one shower-combined flow rate of all showerheads controlled by a single valve shall not exceed 2.0 gallons per minute at 80 psi.
   e. **Lavatory faucets-** flow rate shall not exceed 1.5 gallons per minute at 60 psi.
   f. **Lavatory faucets** (common/public use areas)- flow rate shall not exceed 0.5 gallons per minute at 60 psi.
   g. **Metering faucets-** maximum 0.25 gallons per cycle.
   h. **Kitchen faucets-** 1.8 gallons per minute at 60 psi.
2. Plumbing fixtures and fittings shall be installed in accordance with the 2013 CPC and shall meet the applicable standards referenced in Table 1401.1 of the 2013 CPC.
3. For homes constructed prior to January 1, 1994, all plumbing fixtures throughout the entire residence must be upgraded to water-conserving fixtures (per SB 407 California State law). Compliance form to be signed and given to the City building inspector prior to final inspection.

Material Conservation & Resource Efficiency division 4.4

1. **Rodent proofing-** 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 city building inspector.
2. **Construction waste-** A minimum of 50% of nonhazardous construction and demolition waste shall be recycled and/or salvaged. Projects that qualify under the City's construction and demolition waste ordinance must also comply with City recycle requirements. City of Santa Clarita Environmental Services division approval and stamp required on plans prior to permit issuance.
3. A **construction waste management plan** shall be submitted to the City's Environmental Services Division per the requirement in Section 4.408.2 of the 2013 CGBSC prior to permit issuance.
4. **Documentation-** Utilize a waste management company that can provide verifiable documentation that the percentage of construction waste material diverted from the landfill meets the 50% minimum requirement.
5. Projects that generate a total combined weight of construction and demolition waste disposed of in landfills, which do not exceed four lbs./sq. ft. of the building area shall be deemed to meet the minimum 50% requirement.
6. **Proof of compliance** with one of the methods listed must be provided to and signed off by the Environmental Services Division at the time of final inspection and approval by the building inspector.

Environmental Quality division 4.5

1. Pre-fabricated fireplaces shall be gas direct-vent sealed combustion type. Wood burning masonry fireplaces are not allowed (per SCAQMD).
2. During the construction process and until final startup of the HVAC system, all duct openings and other related air distribution component openings shall be covered with tape, plastic, sheetmetal or other method to reduce the amount of water, dust or debris which may enter the system.
3. All **adhesives, sealants and caulks** used on this project shall comply with SCAQMD Rule 1168 for VOC limits and toxic compounds. Aerosol adhesives, sealants and caulks (in packaging units not more than one pound or 16 fluid ounces) shall comply with statewide VOC standards.
4. **Paints and coatings** shall comply with VOC limits in Table 4.504.3 of the CGBSC.
5. **Aerosol paints and coatings** shall comply with statewide requirements and other requirements noted in Section 4.504.2.3 of the CGBSC.
6. **Carpeting and carpet cushions** shall meet the requirements of the Carpet and Rug Institute Green Label program or equivalent. Adhesives shall comply with VOC limits in Table 4.504.1 of the CGBSC.
7. Where **resilient flooring** is installed, 50% of the floor area receiving resilient flooring shall comply with one or more of the requirements listed in Section 4.504.4.
8. **Composite wood products** used on the interior or exterior shall comply with the formaldehyde limits as noted in Table 4.504.5 of the CGBSC.
9. **Documentation of compliance** for items 3 through 8 shall be available for the building inspector upon request prior to final inspection.
10. **Interior moisture control-** A 10 mil vapor barrier shall be provided below new concrete slabs of conditioned spaces to minimize moisture intrusion (clearly show on details).
11. **Building materials** with visible signs of water damage shall not be installed. Framing lumber shall be protected from moisture prior to installation. Prior to enclosing the framing, the moisture content of the framing members shall be verified not to exceed 19%. Documentation of moisture content from at least three separate locations shall be provided to the building inspector prior to enclosing wall and floor framing.
12. **Bathroom fans** shall be ENERGY STAR compliant with humidistat controls capable of adjustment between 50% and 80% relative humidity. Fans shall be ducted to terminate outside the building and shall be equipped with a backdraft damper.
13. **Whole house fans** shall have insulated louvers or covers with a minimum insulation value of R-4.2
14. **New HVAC systems** shall be sized, designed and have equipment selected as outlined in Section 4.507.2 of the CGBSC. Documentation of compliance, including drawings and calculations of the system design, shall be provided to the City plancheckker upon request prior to permit issuance.

Installer and Special Inspector Qualifications Chapter 7

1. **HVAC equipment installers** shall be trained and certified by a nationally recognized training or certification program as outlined in section 702.1 of the 2013 CGBSC. Verification of qualifications shall be provided to the building inspector upon request.
2. **Special inspectors** must be registered with the City of Santa Clarita Building & Safety Division prior to performing special inspections of any 'green building' component or system required by this Code. Contact Building & Safety for registration requirements.

Compliance Statement

(to be completed by the project designer of record)

As the design professional or designer of record for this project, I certify that this project will comply with all applicable provisions of the 2013 California Green Building Standards Code (CalGreen Code).

_____
Signature

_____
Print Name

_____
Date

Eff. Date 1/1/2014

SAMPLE TITLE 24/ENERGY CALCULATIONS

CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD — CF1R-PRF-01 — Page 1 of 9

Project Name: Residence Addition — **Calculation Date/Time:** 20:16, Sat, Aug 13, 2016
Calculation Description: Title 24 Analysis — **Input File Name:** 06192016e R.xml

GENERAL INFORMATION

01	Project Name	Residence Addition			
02	Calculation Description	Title 24 Analysis			
03	Project Location	[redacted]			
04	City	Santa Clarita	05	Standards Version	Compliance 2015
06	Zip Code	[redacted]	07	Compliance Manager Version	BEMCmpMgr 2013-4 (744)
08	Climate Zone	C29	09	Software Version	EnergyPro 6.6
10	Building Type	Single Family	11	Front Orientation (deg/Cardinal)	355
12	Project Scope	Addition and/or Alteration	13	Number of Dwelling Units	1
14	Total Cond. Floor Area (ft²)	2425	15	Number of Zones	2
16	Slab Area (ft²)	415	17	Number of Stories	1
18	Addition Cond. Floor Area	705	19	Natural Gas Available	Yes
20	Addition Slab Area (ft²)	0	21	Glazing Percentage (%)	18.4%

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.

ENERGY USE SUMMARY

04	05	06	07	08
Energy Use (kTDV/ft²-yr)	Standard Design	Proposed Design	Compliance Margin	Percent Improvement
Space Heating	19.22	16.42	2.80	14.6%
Space Cooling	63.28	65.59	-2.31	-3.7%
IAQ Ventilation	0.00	0.00	0.00	0.0%
Water Heating	12.37	12.37	0.00	0.0%
Photovoltaic Offset	----	0.00	0.00	----
Compliance Energy Total	94.87	94.38	0.49	0.5%

CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD — CF1R-PRF-01 — Page 2 of 9

Project Name: Residence Addition — **Calculation Date/Time:** 20:16, Sat, Aug 13, 2016
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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.

NO SPECIAL FEATURES REQUIRED

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 components tables below.

Building-level Verifications:
- -- None --

Cooling System Verifications:
- Minimum Airflow
- Refrigerant Charge
- Fan Efficacy Watts/CFM

HVAC Distribution System Verifications:
- Duct Sealing

Domestic Hot Water System Verifications:
- -- None --

ENERGY DESIGN RATING

This is the sum of the annual TDV energy consumption for energy use components included in the performance compliance approach for the Standard Design Building (Energy Budget) and the annual TDV energy consumption for lighting and components not regulated by Title 24, Part 6 (such as domestic appliances and consumer electronics) and accounting for the annual TDV energy offset by an on-site renewable energy system.

	Reference Energy Use	Energy Design Rating	Margin	Percent Improvement
Total Energy (kTDV/f2-yr)*	139.36	138.87	0.49	0.4%

* Includes calculated Appliances and Miscellaneous Energy Use (AMEU)

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
Residence Addition	2425	1	4	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/Altered - Zone 1	Conditioned	Furnace/AC1	1475	8.1	DHW Sys 1	
Existing/Addition - Zone	Conditioned	Furnace/AC2	950	8.1	DHW Sys 1	

CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD — CF1R-PRF-01 — Page 3 of 9

Project Name: Residence Addition — **Calculation Date/Time:** 20:16, Sat, Aug 13, 2016
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OPAQUE SURFACES

01	02	03	04	05	06	07	08	09	10
Name	Zone	Construction	Azimuth	Orientation	Gross Area (ft²)	Window & Door Area (ft²)	Tilt (deg)	Status	Verified Existing Condition
North Frame Wall	Existing/Altered - Zone 1	Default Wall Prior to 197	355	Front	336	94	90	Existing	No
East Frame Wall	Existing/Altered - Zone 1	Default Wall Prior to 197	85	Left	451	60	90	Existing	No
South Frame Wall	Existing/Altered - Zone 1	Default Wall Prior to 197	175	Back	211	75.4	90	Existing	No
West Frame Wall	Existing/Altered - Zone 1	Default Wall Prior to 197	265	Right	328	68.8	90	Existing	No
Roof Attic (Existing)	Existing/Altered - Zone 1	Default Roof Attic Prior			1475			Existing	No
Raised Floor	Existing/Altered - Zone 1	Default Floor Crawlspace			1060			Existing	No
East Frame Wall 2	Existing/Addition - Zone	Default Wall Prior to 197	85	Left	47	12.5	90	Existing	No
West Frame Wall 2	Existing/Addition - Zone	Default Wall Prior to 197	265	Right	126	20	90	Existing	No
East Frame Wall 3	Existing/Addition - Zone	R-13 Wall	85	Left	324	58.4	90	New	N/A
South Frame Wall 2	Existing/Addition - Zone	R-13 Wall	175	Back	145	43.4	90	New	N/A
West Frame Wall 3	Existing/Addition - Zone	R-13 Wall	265	Right	356	22	90	New	N/A
Northeast Frame Wall	Existing/Addition - Zone	R-13 Wall	40	45	27	6	90	New	N/A
Southeast Frame Wall	Existing/Addition - Zone	R-13 Wall	130	135	27	6	90	New	N/A
Roof Attic (Existing) 2	Existing/Addition - Zone	Default Roof Attic Prior			49			Existing	No
Roof Attic (Addition)	Existing/Addition - Zone	R-30 Roof Attic			705			New	N/A
Raised Floor 2	Existing/Addition - Zone	Default Floor Crawlspace			245			Existing	No
Raised Floor 3	Existing/Addition - Zone	R-19 Floor Crawlspace			705			New	N/A

ATTIC

01	02	03	04	05	06	07	08	09	10
Name	Construction	Type	Roof Rise	Roof Reflectance	Roof Emittance	Radiant Barrier	Cool Roof	Status	Verified Existing Condition
Attic Existing/Altered - Zone 1	Attic Roof/Existing/Altered - Zone 1	Ventilated	0	0.1	0.85	No	No	Existing	No
Attic Existing/Addition - Zone	Attic Roof/Existing/Addition - Zone	Ventilated	0	0.1	0.85	No	No	Existing	No

CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD — CF1R-PRF-01 — Page 4 of 9

Project Name: Residence Addition — **Calculation Date/Time:** 20:16, Sat, Aug 13, 2016
Calculation Description: Title 24 Analysis — **Input File Name:** 06192016e R.xml

WINDOWS

01	02	03	04	05	06	07	08	09	10	11
Name	Surface (Orientation-Azimuth)	Width(ft)	Height (ft)	Multiplier	Area (ft²)	U-factor	SHGC	Exterior Shading	Status	Verified Existing Condition
Existing Bedroom Window	North Frame Wall (Front-355)	----	----	1	24.0	1.04	0.76	Insect Screen (default)	Existing	No
Existing Living Room Wind	North Frame Wall (Front-355)	----	----	1	15.0	1.04	0.76	Insect Screen (default)	Existing	No
Existing Living Room Wind 2	North Frame Wall (Front-355)	----	----	1	20.0	1.04	0.76	Insect Screen (default)	Existing	No
Existing Living Room Wind 3	North Frame Wall (Front-355)	----	----	1	15.0	1.04	0.76	Insect Screen (default)	Existing	No
Existing Dining Room Wind	North Frame Wall (Front-355)	----	----	1	20.0	1.04	0.76	Insect Screen (default)	Existing	No
Existing Bath Window	East Frame Wall (Left-85)	----	----	1	3.0	1.04	0.76	Insect Screen (default)	Existing	No
Existing Kitchen Window	East Frame Wall (Left-85)	----	----	1	16.0	1.04	0.76	Insect Screen (default)	Existing	No
Existing Kitchen Window 2	East Frame Wall (Left-85)	----	----	1	6.0	1.04	0.76	Insect Screen (default)	Existing	No
Existing Dining Room Wind 2	East Frame Wall (Left-85)	----	----	1	15.0	1.04	0.76	Insect Screen (default)	Existing	No
Existing Family Room Wind	South Frame Wall (Back-175)	----	----	1	15.0	1.04	0.76	Insect Screen (default)	Existing	No
Existing Family Room Door	South Frame Wall (Back-175)	----	----	1	33.4	0.99	0.76	Insect Screen (default)	Existing	No
Existing Family Room Wind 2	South Frame Wall (Back-175)	----	----	1	15.0	1.04	0.76	Insect Screen (default)	Existing	No
Existing Laundry Window	South Frame Wall (Back-175)	----	----	1	12.0	1.04	0.76	Insect Screen (default)	Existing	No
Existing Laundry Door	West Frame Wall (Right-265)	----	----	1	17.8	0.99	0.76	Insect Screen (default)	Existing	No
Existing Bedroom Window 2	West Frame Wall (Right-265)	----	----	1	24.0	1.04	0.76	Insect Screen (default)	Existing	No
Existing Bath Window 2	West Frame Wall (Right-265)	----	----	1	3.0	1.04	0.76	Insect Screen (default)	Existing	No
Existing Bedroom Window 3	West Frame Wall (Right-265)	----	----	1	24.0	1.04	0.76	Insect Screen (default)	Existing	No
Existing Hall Window	East Frame Wall 2 (Left-85)	----	----	1	12.5	1.04	0.76	Insect Screen (default)	Existing	No
Exiting Bedroom Window	West Frame Wall 2 (Right-265)	----	----	1	20.0	1.04	0.76	Insect Screen (default)	Existing	No
Master Bedroom Single-Hun	East Frame Wall 3 (Left-85)	----	----	1	12.5	0.35	0.28	Insect Screen (default)	New	N/A
Master Bedroom Single-Hun 2	East Frame Wall 3 (Left-85)	----	----	1	12.5	0.35	0.28	Insect Screen (default)	New	N/A
Hall French Doors	East Frame Wall 3 (Left-85)	----	----	1	33.4	0.35	0.28	Insect Screen (default)	New	N/A
Master Bedroom Transom Wi	South Frame Wall 2 (Back-175)	----	----	1	10.0	0.35	0.28	Insect Screen (default)	New	N/A
Master Bedroom French Doo	South Frame Wall 2 (Back-175)	----	----	1	33.4	0.35	0.28	Insect Screen (default)	New	N/A
Master Bath Slider Window	West Frame Wall 3 (Right-265)	----	----	1	3.0	0.35	0.28	Insect Screen (default)	New	N/A
Master Bath Slider Window 2	West Frame Wall 3 (Right-265)	----	----	1	3.0	0.35	0.28	Insect Screen (default)	New	N/A
Study Slider Window	West Frame Wall 3 (Right-265)	----	----	1	16.0	0.35	0.28	Insect Screen (default)	New	N/A
Hall Fixed Window	Northeast Frame Wall (- specify ~40)	----	----	1	6.0	0.35	0.28	Insect Screen (default)	New	N/A

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Hall Fixed Window 2	Southeast Frame Wall (- specify ~130)	----	----	1	6.0	0.35	0.28	Insect Screen (default)	New	N/A

DOORS

01	02	03	04	05	06
Name	Side of Building	Area (ft²)	U-factor	Status	Verified Existing Condition
Entry Door	East Frame Wall	20.0	0.50	Existing	No

OPAQUE SURFACE CONSTRUCTIONS

01	02	03	04	05	06	07
Construction Name	Surface Type	Construction Type	Framing	Total Cavity R-value	Winter Design U-value	Assembly Layers
Attic Roof/Existing/Altered - Zone 1	Attic Roofs	Wood Framed Ceiling	2x4 Top Chord of Roof Truss @ 24 in. O.C.	none	0.644	• Cavity / Frame: no insul. / 2x4 Top Chrd • Roof Deck: Wood Siding/sheathing/decking • Roofing: Light Roof (Asphalt Shingle)
Default Roof Attic Prior	Ceilings (below attic)	Wood Framed Ceiling	2x4 @ 16 in. O.C.	R 11	0.083	• Inside Finish: Gypsum Board • Cavity / Frame: R-9.1 / 2x4 • Over Floor Joists: R-1.9 insul.
Default Wall Prior to 197	Exterior Walls	Wood Framed Wall	2x4 @ 16 in. O.C.	none	0.302	• Inside Finish: Gypsum Board • Cavity / Frame: no insul. / 2x4 • Exterior Finish: Wood Siding/sheathing/decking
Default Floor Crawlspace	Floors Over Crawlspace	Wood Framed Floor	2x12 @ 16 in. O.C.	none	0.216	• Floor Surface: Carpeted • Floor Deck: Wood Siding/sheathing/decking • Cavity / Frame: no insul. / 2x12
Attic Roof/Existing/Addition - Zone	Attic Roofs	Wood Framed Ceiling	2x4 Top Chord of Roof Truss @ 24 in. O.C.	none	0.644	• Cavity / Frame: no insul. / 2x4 Top Chrd • Roof Deck: Wood Siding/sheathing/decking • Roofing: Light Roof (Asphalt Shingle)
R-30 Roof Attic	Ceilings (below attic)	Wood Framed Ceiling	2x4 @ 16 in. O.C.	R 30	0.032	• Inside Finish: Gypsum Board • Cavity / Frame: R-9.1 / 2x4 • Over Floor Joists: R-20.9 insul.
R-13 Wall	Exterior Walls	Wood Framed Wall	2x4 @ 16 in. O.C.	R 13	0.095	• Inside Finish: Gypsum Board • Cavity / Frame: R-13 / 2x4 • Exterior Finish: Wood Siding/sheathing/decking
R-19 Floor Crawlspace	Floors Over Crawlspace	Wood Framed Floor	2x6 @ 16 in. O.C.	R 19	0.049	• Floor Surface: Carpeted • Floor Deck: Wood Siding/sheathing/decking • Cavity / Frame: R-19 / 2x6

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Project Name: Residence Addition — **Calculation Date/Time:** 20:16, Sat, Aug 13, 2016
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SLAB FLOORS

01	02	03	04	05	06	07	08	09
Name	Zone	Area (ft²)	Perimeter (ft)	Edge Insul. R-value	Carpeted Fraction	Heated	Status	Verified Existing Condition
Slab-on-Grade	Existing/Altered - Zone 1	415	47	None	0.8	No	Existing	No

BUILDING ENVELOPE - HERS VERIFICATION

01	02	03	04
Quality Insulation Installation (QII)	Quality Installation of Spray Foam Insulation	Building Envelope Air Leakage	CFM50
Not Required	Not Required	Not Required	---

WATER HEATING SYSTEMS

01	02	03	04	05	06	07	08
Name	System Type	Distribution Type	Water Heater	Number of Heaters	Solar Fraction (%)	Status	Verified Existing Condition
DHW Sys 1	DHW	Standard	DHW Heater 1	1	Annual	Existing	No

WATER HEATERS

01	02	03	04	05	06	07	08
Name	Heater Element Type	Tank Type	Tank Volume (gal)	Energy Factor or Efficiency	Input Rating	Tank Exterior Insulation R-value	Standby Loss (Fraction)
DHW Heater 1	Natural Gas	Small Storage	50	0.58 EF	40000-Btu/hr	0	0.04

WATER HEATING - HERS VERIFICATION

01	02	03	04	05	06	07
Name	Pipe Insulation	Parallel Piping	Compact Distribution	Point-of Use	Recirculation with Manual Control	Recirculation with Sensor Control
DHW Sys 1	n/a	n/a	n/a	n/a	n/a	n/a

SPACE CONDITIONING SYSTEMS

01	02	03		04		05	06	07	08	09
		Heating System		Cooling System						
Name	System Type	Name	Ducted	Name	Ducted	Distribution System	Fan System	Floor Area Served	Status	Verified Existing Condition
Furnace/AC1	Other Heating and Cooling System	Heating Component 1	Yes	Cooling Component 1	Yes	Air Distribution System 1	HVAC Fan 1	1478	Altered	No
Furnace/AC2	Other Heating and Cooling System	Heating Component 2	Yes	Cooling Component 2	Yes	Air Distribution System 2	HVAC Fan 2	950	New	No

HVAC - HEATING SYSTEMS

01	02	03
Name	Type	Efficiency
Heating Component 1	Crit#Furnace - Fuel-fired central furnace	95 AFUE
Heating Component 2	Crit#Furnace - Fuel-fired central furnace	95 AFUE

HVAC - COOLING SYSTEMS

01	02	03		04	05	06	07
		Efficiency					
Name	System Type	EER	SEER		Zonally Controlled	Multi-speed Compressor	HERS Verification
Cooling Component 1	SplitAirCond - Split air conditioning system	11.7	14		No	No	Cooling Component 1-hers-cool
Cooling Component 2	SplitAirCond - Split air conditioning system	11.7	14		No	No	Cooling Component 2-hers-cool

HVAC COOLING - HERS VERIFICATION

01	02	03	04	05	06
Name	Verified Airflow	Airflow Target	Verified EER	Verified SEER	Verified Refrigerant Charge
Cooling Component 1-hers-cool	Required	350	Not Required	Not Required	Required
Cooling Component 2-hers-cool	Required	350	Not Required	Not Required	Required

HVAC - DISTRIBUTION SYSTEMS

01	02	03	04	05	06	07	08	09	10
Name	Type	Duct Leakage	Insulation R-value	Supply Duct Location	Return Duct Location	Bypass Duct	Status	Verified Existing Condition	HERS Verification
Air Distribution System 1	Ducts located in attic	Sealed and tested	6.0	Attic	Attic	None	Altered	No	Air Distribution System 1-hers-dist
Air Distribution System 2	Ducts located in attic	Sealed and tested	6.0	Attic	Attic	None	New	No	Air Distribution System 2-hers-dist

HVAC DISTRIBUTION - HERS VERIFICATION

01	02	03	04	05	06
	Duct Leakage	Duct Leakage		Verified Duct Design	
Name	Verification	Target (%)	Verified Duct Location	Return	Supply
Air Distribution System 1-hers-dist	Required	6.0	---	---	---
Air Distribution System 2-hers-dist	Required	6.0	---	---	---

HVAC - FAN SYSTEMS & HERS VERIFICATION

01	02	03	04
Name	Type	Fan Power (Watts/CFM)	HERS Verification
HVAC Fan 1	Single Speed PSC Furnace Fan	0.58	Required
HVAC Fan 2	Single Speed PSC Furnace Fan	0.58	Required

IAQ (Indoor Air Quality) FANS

01	02	03	04	05
Name	IAQ CFM	IAQ Fan Type	IAQ Recovery Effectiveness(%)	HERS Verification
5Fam IAQVentRpt	0	Default	0	Not Required

PROJECT NOTES

Attached Heating & Cooling load summary is submitted as part of the calculations required by the current regulations. DO NOT USE FOR ACTUAL HEATING & AC DESIGN

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT

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

Documentation Author Name: [redacted]	Documentation Author Signature: [redacted]
Company: [redacted]	Signature Date: 2016-08-14 15:51:51
Address: [redacted]	CEA/HERS Certification Identification (if applicable):
City/State/Zip: [redacted]	Phone: [redacted]

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: [redacted]	Responsible Designer Signature: [redacted]
Company: [redacted]	Date Signed: [redacted]
Address: [redacted]	License: [redacted]
City/State/Zip: [redacted]	Phone: [redacted]

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.

2013 Low-Rise Residential Mandatory Measures Summary

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

Building Envelope Measures:	
§110.6(a)1:	Doors and windows between conditioned and unconditioned spaces are manufactured to limit air leakage.
§110.6(a)5:	Fenestration products (except field-fabricated windows) have a label listing the certified U-Factor, certified Solar Heat Gain Coefficient (SHGC), and infiltration that meets the requirements of §10-111(a).
§110.7:	Exterior doors and windows are weatherstripped; all joints and penetrations are caulked and sealed.
§110.8(a):	Insulation specified or installed meets Standards for Insulating Material. Indicate type and include on the CF2R.
§110.8(i):	The thermal emittance and aged solar reflectance values of the cool roofing material meets the requirements of §110.8(i) when the installation of a cool roof is specified on the CF1R.
§110.8(j):	A radiant barrier shall have an emittance of 0.05 or less when the installation of a radiant barrier is specified on the CF1R.
§150.0(a):	Minimum R-30 insulation in wood-frame ceiling; or the weighted average U-factor shall not exceed 0.031. Minimum R-19 in a rafter roof alteration. Attic access doors shall have permanently attached insulation using adhesive or mechanical fasteners. The attic access shall be gasketed to prevent air leakage.
§150.0(b):	Loose fill insulation shall conform with manufacturer's installed design labeled R-value.
§150.0(c):	Minimum R-13 insulation in 2x4 inch wood framing wall or have a U-factor of 0.102 or less (R-19 in 2x6 or 0.074 maximum U-factor).
§150.0(d):	Minimum R-19 insulation in raised wood-frame floor or 0.037 maximum U-factor.
§150.0(g)1:	In Climate Zones 14 and 16 a Class II vapor retarder shall 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(g)2:	In Climate Zones 1-16 with unvented crawl spaces the earth floor of the crawl space shall be covered with a Class I or Class II vapor retarder.
§150.0(g)3:	In a building having a controlled ventilation crawl space, a Class I or Class II vapor retarder shall be placed over the earth floor of the crawl space to reduce moisture entry and protect insulation from condensation, as specified in the exception to Section 150.0(d).
§150.0(i):	Slab edge insulation shall: have a water absorption rate, for the insulation material alone without facings, no greater than 0.3%; have water vapor permeance rate is no greater than 2.0 perm/inch, be protected from physical damage and UV light deterioration; and where installed as part of a heated slab floor meets the requirements of §110.8(g).
§150.0(q):	Fenestration, including skylights, separating conditioned space from unconditioned space or outdoors shall have a maximum U-factor of 0.58, or the weighted average U-factor of all fenestration shall not exceed 0.58.
Fireplaces, Decorative Gas Appliances and Gas Log Measures:	
§150.0(e)1A:	Masonry or factory-built fireplaces have a closable metal or glass door covering the entire opening of the firebox.
§150.0(e)1B:	Masonry or factory-built fireplaces have a combustion outside air intake, which is at least six square inches in area and is equipped with a readily accessible, operable, and tight-fitting damper or a combustion-air control device.
§150.0(e)1C:	Masonry or factory-built fireplaces have a flue damper with a readily accessible control.
§150.0(e)2:	Continuous burning pilot lights and the use of indoor air for cooling a firebox jacket, when that indoor air is vented to the outside of the building, are prohibited.
Space Conditioning, Water Heating and Plumbing System Measures:	
§110.0-§110.3:	HVAC equipment, water heaters, showerheads, faucets and all other regulated appliances are certified to the Energy Commission.
§110.3(c)5:	Water heating recirculation loops serving multiple dwelling units meet the air release valve, backflow prevention, pump isolation valve, and recirculation loop connection requirements of §110.3(c)5.
§110.5:	Continuously burning pilot lights are prohibited for natural gas fan-type central furnaces, household cooking appliances (appliances without an electrical supply voltage connection with pilot lights that consume less than 150 Btu/hr are exempt), and pool and spa heaters.
§150.0(h)1:	Heating and/or cooling loads are calculated in accordance with ASHRAE, SMACNA or ACCA using design conditions specified in §150.0(h)2.
§150.0(h)3A:	Installed air conditioner and heat pump outdoor condensing units shall have a clearance of at least five feet from the outlet of any dryer vent.
§150.0(i):	Heating systems are equipped with thermostats that meet the setback requirements of §110.2(c).
§150.0(j)1A:	Storage gas water heaters with an energy factor equal to or less than the federal minimum standards shall be externally wrapped with insulation having an installed thermal resistance of R-12 or greater.
§150.0(j)1B:	Unfired hot water tanks, such as storage tanks and backup storage tanks for solar water-heating systems, have 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:	For domestic hot water system piping, whether buried or unburied, the first 5 feet of hot and cold water pipes from the storage tank, all piping with a nominal diameter of 3/4 inch or larger, all piping associated with a domestic hot water recirculation system regardless of the pipe diameter, piping from the heating source to storage tanks or between tanks, piping buried below grade, and all hot water pipes from the heating source to kitchen fixtures must be insulated according to the requirements of TABLE 120.3-A.
§150.0(j)2B:	All domestic hot water pipes that are buried below grade must be installed in a water proof and non-crushable casing or sleeve that allows for installation, removal, and replacement of the enclosed pipe and insulation.

2013 Low-Rise Residential Mandatory Measures Summary

§150.0(j)2C:	Pipe for cooling system lines shall be insulated as specified in §150.0(j)2A. Piping insulation for steam and hydronic heating systems or hot water systems with pressure > 15 psig shall meet the requirements in TABLE 120.3-A.
§150.0(m)3:	Insulation is protected from damage, including that due to sunlight, moisture, equipment maintenance, and wind.
§150.0(j)3A:	Insulation exposed to weather shall either be rated for outdoor use or installed with a cover suitable for outdoor service. For example, protected by aluminum, sheet metal, painted canvas, or plastic cover. Cellular foam insulation protected as specified or painted with coating that is water retardant and provides shielding from solar radiation that degrades the material.
§150.0(j)3B:	Insulation covering chilled water piping and refrigerant suction piping located outside the conditioned space shall have a Class I or Class II vapor retarding facing, or the insulation shall be installed at the thickness that qualifies as a Class I or Class II vapor retarder.
§150.0(n)1:	Systems using gas or propane water heaters to serve individual dwelling units shall include: a 120V electrical receptacle within 3 feet of the water heater; a Category III 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 2 inches higher than the base of the installed water heater, and allows natural draining without pump assistance; and a gas supply line with a capacity of at least 200,000 Btu/hr.
§150.0(n)2:	Recirculating loops serving multiple dwelling units shall meet the requirements of §110.3(c)5.
§150.0(n)3:	Solar water-heating systems and collectors shall be certified and rated by the Solar Rating and Certification Corporation (SRCC) or by a testing agency approved by the Executive Director.
Ducts and Pans Measures:	
§150.0(m)1:	All air distribution system ducts and plenums installed are sealed and insulated to meet the requirements of 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. Supply-air and return-air ducts and plenums are insulated to a minimum installed level of R-6.0 (or higher if required by CMC §605.0) or enclosed entirely in directly conditioned space as confirmed through field verification and diagnostic testing (RA3.1.4.3.8). Connections of metal ducts and inner core of flexible ducts are mechanically fastened. Openings shall be sealed with mastic, tape, or other duct-closure system that meets the applicable requirements of UL 181, UL 181A, or UL 181B or aerosol sealant that meets the requirements of UL 723. If mastic or tape is used to seal openings greater than ¼ inch, the combination of mastic and either mesh or tape shall be used. Building cavities, support platforms for air handlers, and plenums defined or constructed with materials other than sealed sheet metal, duct board or flexible duct shall not be used for conveying conditioned air. Building cavities and support platforms may contain ducts. Ducts installed in cavities and support platforms shall not be compressed to cause reductions in the cross-sectional area of the ducts.
§150.0(m)2:	Factory-Fabricated Duct Systems shall comply with specified requirements for duct construction, connections, and closures; joints and seams of duct systems and their components shall not be sealed with cloth back rubber adhesive duct tapes unless such tape is used in combination with mastic and draw bands.
§150.0(m)3-6:	Field-Fabricated Duct Systems shall comply with requirements for: pressure-sensitive tapes, mastics, sealants, and other requirements specified for duct construction; duct insulation R-value ratings; duct insulation thickness; and duct labeling.
§150.0(m)7:	All fan systems that exchange air between the conditioned space and the outside of the building must have backdraft or automatic dampers.
§150.0(m)8:	Gravity ventilating systems serving conditioned space have either automatic or readily accessible, manually operated dampers except combustion inlet and outlet air openings and elevator shaft vents.
§150.0(m)9:	Insulation shall be protected from damage, including that due to sunlight, moisture, equipment maintenance, and wind but not limited to the following: insulation exposed to weather shall be suitable for outdoor service. For example, protected by aluminum, sheet metal, painted canvas, or plastic cover. Cellular foam insulation shall be protected as above or painted with a coating that is water retardant and provides shielding from solar radiation.
§150.0(m)10:	Flexible ducts cannot have porous inner cores.
§150.0(m)11:	When space conditioning systems use forced air duct systems to supply conditioned air to an occupiable space, the ducts shall be sealed and duct leakage tested, as confirmed through field verification and diagnostic testing, in accordance with Reference Residential Appendix RA3.
§150.0(m)12:	Mechanical systems that supply air to an occupiable space through ductwork exceeding 10 feet in length and through a thermal conditioning component, except evaporative coolers, shall be provided with air filter devices that meet the requirements of §150.0(m)12.
§150.0(m)13:	Space conditioning systems that utilize forced air ducts to supply cooling to an occupiable space shall have a hole for the placement of a static pressure probe (ISPP), or a permanently installed static pressure probe (PSPP) in the supply plenum. The space conditioning system must also demonstrate airflow > 350 CFM per ton of nominal cooling capacity through the return grilles, and an air-handling unit fan efficacy ≤ 0.58 W/CFM as confirmed by field verification and diagnostic testing, in accordance with Reference Residential Appendix RA3.
§150.0(m)15:	Zonally controlled central forced air cooling systems shall be capable of simultaneously delivering, in every zonal control mode, an airflow from the dwelling, through the air handler fan and delivered to the dwelling, of ≥ 350 CFM per ton of nominal cooling capacity, and operating at an air-handling unit fan efficacy of < 0.58 W/CFM as confirmed by field verification and diagnostic testing, in accordance with Reference Residential Appendix RA3.
§150.0(o):	All dwelling units shall meet the requirements of ASHRAE Standard 62.2. Neither window operation nor continuous operation of central forced air system air handlers used in central fan integrated ventilation systems are permissible methods of providing the Whole Building Ventilation.
§150.0(o)1A:	Whole Building Ventilation airflow shall be confirmed through field verification and diagnostic testing, in accordance with Reference Residential Appendix RA3.
Pool and Spa Heating Systems and Equipment Measures:	
§110.4(a):	Any pool or spa heating system shall be certified to have: 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 shall not use electric resistance heating.

2013 Low-Rise Residential Mandatory Measures Summary

§110.4(b)1:	Any pool or spa heating equipment shall be installed with at least 36 inches of pipe between filter and heater or dedicated suction and return lines, or built-up connections for future solar heating.
§110.4(b)2:	Outdoor pools or spas that have a heat pump or gas heater shall have a cover.
§110.4(b)3:	Pools shall 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:	Natural gas pool and spa heaters shall not have a continuous burning pilot light.
§150.0(p):	Residential pool systems or equipment shall meet specified pump sizing, flow rate, piping, filters, and valve requirements.
Lighting Measures:	
§110.9:	All lighting control devices and systems, ballasts, and luminaires shall meet the applicable requirements of §110.9.
§150.0(k)1A:	Installed luminaires shall be classified as high-efficacy or low-efficacy for compliance with §150.0(k) in accordance with TABLE 150.0-A or TABLE 150.0-B, as applicable.
§150.0(k)1B:	When a high efficacy and low efficacy lighting system are combined in a single luminaire, each system shall separately comply with the applicable provisions of §150.0(k).
§150.0(k)1C:	The wattage and classification of permanently installed luminaires in residential kitchens shall be determined in accordance with §130.0(c). In residential kitchens, the wattage of electrical boxes finished with a blank cover or where no electrical equipment has been installed, and where the electrical box can be used for a luminaire or a surface mounted ceiling fan, shall be calculated as 180 watts of low efficacy lighting per electrical box.
§150.0(k)1D:	Ballasts for fluorescent lamps rated 13 watts or greater shall be electronic and shall have an output frequency no less than 20 kHz.
§150.0(k)1E:	Permanently installed night lights and night lights integral to installed luminaires or exhaust fans shall be rated to consume no more than 5 watts of power per luminaire or exhaust fan as determined in accordance with §130.0(c). Night lights do not need to be controlled by vacancy sensors.
§150.0(k)1F:	Lighting integral to exhaust fans (except when installed by the manufacturer in kitchen exhaust hoods) shall meet the applicable requirements of §150.0(k).
§150.0(k)2A:	High efficacy luminaires must be switched separately from low efficacy luminaires.
§150.0(k)2B:	Exhaust fans shall be switched separately from lighting systems.
§150.0(k)2C:	Luminaires shall be switched with readily accessible controls that permit the luminaires to be manually switched ON and OFF.
§150.0(k)2D:	Controls and equipment are installed in accordance with manufacturer's instructions.
§150.0(k)2E:	No control shall bypass a dimmer or vacancy sensor function if the control is installed to comply with §150.0(k).
§150.0(k)2F:	Lighting controls comply with applicable requirements of §110.9.
§150.0(k)2G:	An Energy Management Control System (EMCS) may be used to comply with dimmer requirements if: it functions as a dimmer according to §110.9; meets Installation Certificate requirements of §130.4; the EMCS requirements of §130.5; and all other requirements in §150.0(k)2.
§150.0(k)2H:	An Energy Management Control System (EMCS) may be used to comply with vacancy sensor requirements of §150.0(k) if: it functions as a vacancy sensor according to §110.9; meets Installation Certificate requirements of §130.4; the EMCS requirements of §130.5; and all other requirements in §150.0(k)2.
§150.0(k)2I:	A multisecne programmable controller may be used to comply with dimmer requirements of this section 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)3A:	A minimum of 50 percent of the total rated wattage of permanently installed lighting in kitchens shall be high efficacy.
§150.0(k)3B:	Kitchen lighting includes all permanently installed lighting in the kitchen except internal lighting in cabinets that illuminate only the inside of the cabinets. Lighting in areas adjacent to the kitchen, including but not limited to dining and nook areas, are considered kitchen lighting if they are not separately switched from kitchen lighting.
§150.0(k)4:	Permanently installed lighting that is internal to cabinets shall use no more than 20 watts of power per linear foot of illuminated cabinet.
§150.0(l)5:	A minimum of one high efficacy luminaire shall be installed in each bathroom; and all other lighting installed in each bathroom shall be high efficacy or controlled by vacancy sensors.
§150.0(k)6:	Lighting installed in attached and detached garages, laundry rooms, and utility rooms shall be high efficacy luminaires and controlled by vacancy sensors.
§150.0(k)7:	Lighting installed in rooms or areas other than in kitchens, bathrooms, garages, laundry rooms, and utility rooms shall be high efficacy, or shall be controlled by either dimmers or vacancy sensors.
§150.0(k)8:	Luminaires recessed into ceilings shall: be listed for zero clearance insulation contact (IC) by Underwriters Laboratories or other nationally recognized testing/rating laboratory; have a label that certifies that the luminaire is airtight with air leakage less than 2.0 CFM at 75 Pascals when tested in accordance with ASTM E283; be sealed with a gasket or caulk between the luminaire housing and ceiling, and shall have all air leak paths between conditioned and unconditioned spaces sealed with a gasket or caulk; and allow ballast maintenance and replacement without requiring cutting holes in the ceiling. For recessed compact fluorescent luminaires with ballasts to qualify as high efficacy for compliance with §150.0(k), the ballasts shall be certified to the Energy Commission to comply with the applicable requirements in §110.9.
§150.0(k)9A:	For single-family residential buildings, outdoor lighting permanently mounted to a residential building or other buildings on the same lot shall be high efficacy, or may be low efficacy if it meets all of the following requirements: i. Controlled by a manual ON and OFF switch that does not override to ON the automatic actions of Items ii or iii below; and ii. Controlled by a motion sensor not having an override or bypass switch that disables the motion sensor, or controlled by a motion sensor having a temporary override switch which temporarily bypasses the motion sensing function and automatically reactivates the motion sensor within 6 hours; and iii. Controlled by one of the following methods:

2013 Low-Rise Residential Mandatory Measures Summary

§150.0(k)9B:	a. Photocontrol not having an override or bypass switch that disables the photocontrol; or b. Astronomical time clock not having an override or bypass switch that disables the astronomical time clock, and which is programmed to automatically turn the outdoor lighting OFF during daylight hours; or c. Energy management control system which meets all of the following requirements: At a minimum provides the functionality of an astronomical time clock in accordance with §110.9; meets the Installation Certification requirements in §130.4; meets the requirements for an EMCS in §130.5; does not have an override or bypass switch that allows the luminaire to be always ON; and, is programmed to automatically turn the outdoor lighting OFF during daylight hours.
§150.0(k)9C:	For low-rise multifamily residential buildings, outdoor lighting for private patios, entrances, balconies, and porches; and outdoor lighting for residential parking lots and residential carports with less than eight vehicles per site shall comply with one of the following requirements: i. Shall comply with §150.0(k)9A; or ii. Shall comply with the applicable requirements in §110.9, §130.0, §130.2, §130.4, §140.7 and §141.0.
§150.0(k)9D:	For low-rise residential buildings with four or more dwelling units, outdoor lighting not regulated by §150.0(k)9B or 150.0(k)9D shall comply with the applicable requirements in §110.9, §130.0, §130.2, §130.4, §140.7 and §141.0.
§150.0(k)9E:	Outdoor lighting for residential parking lots and residential carports with a total of eight or more vehicles per site shall comply with the applicable requirements in §110.9, §130.0, §130.2, §130.4, §140.7 and §141.0.
§150.0(k)10:	Internally illuminated address signs shall comply with §140.8; or shall consume no more than 5 watts of power as determined according to §130.0(c).
§150.0(k)11:	Lighting for residential parking garages for eight or more vehicles shall comply with the applicable requirements for nonresidential garages in §110.9, §130.0, §130.1, §130.4, §140.6, and §141.0.
§150.0(k)12A:	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 shall be high efficacy luminaires or controlled by an occupant sensor.
§150.0(k)12B:	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 in that building shall: i. Comply with the applicable requirements in §110.9, §130.0, §130.1, §140.6 and §141.0, and ii. Lighting installed in corridors and stairwells shall be controlled by occupant sensors that reduce the lighting power in each space by at least 50 percent. The occupant sensors shall be capable of turning the light fully On and Off from all designed paths of ingress and egress.
Solar Ready Buildings:	
§110.10(a)1:	Single family residences located in subdivisions with ten or more single family residences and where the application for a tentative subdivision map for the residences has been deemed complete, by the enforcement agency, on or after January 1, 2014, shall comply with the requirements of §110.10(b) through §110.10(e).
§110.10(a)2:	Low-rise multi-family buildings shall comply with the requirements of §110.10(b) through §110.10(d).
§110.10(b)1:	The solar zone shall have a minimum total area as described below. The solar zone shall 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 shall 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 shall 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 shall 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.
§110.10(b)2:	All sections of the solar zone located on steep-sloped roofs shall be oriented between 110 degrees and 270 degrees of true north.
§110.10(b)3A:	No obstructions, including but not limited to, vents, chimneys, architectural features, and roof mounted equipment, shall be located in the solar zone.
§110.10(b)3B:	Any obstruction, located on the roof or any other part of the building that projects above a solar zone shall 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:	For areas of the roof designated as solar zone, the structural design loads for roof dead load and roof live load shall be clearly indicated on the construction documents.
§110.10(c):	The construction documents shall indicate: a location for inverters and metering equipment and a pathway for routing of conduit from the solar zone to the point of interconnection with the electrical service (for single family residences the point of interconnection will be the main service panel); a pathway for routing of plumbing from the solar zone to the water-heating system.
§110.10(d):	A copy of the construction documents or a comparable document indicating the information from §110.10(b) through §110.10(c) shall be provided to the occupant.
§110.10(e)1:	The main electrical service panel shall have a minimum busbar rating of 200 amps.
§110.10(e)2:	The main electrical service panel shall have a reserved space to allow for the installation of a double pole circuit breaker for a future solar electric installation. The reserved space shall be: positioned at the opposite (load) end from the input feeder location or main circuit location, and permanently marked as "For Future Solar Electric".