Huber Residence

129 Burnham Court Folsom, California 95630-4820

PROJECT DATA

OWNER: Jim & Melanie Huber 129 Burnham Court

Folsom, California 95630 916-849-9878

ARCHITECT: Jon N. Westphal 6960 Gild Creek Road

Shingle Springs, California 95682 (530) 677-9840

PROJECT ADDRESS: 129 Burnham Court

Folsom, California 95630-4820

2019 California Fire Code

071-0580-022-0000

ASSESSOR'S PARCEL NUMBER:

CODE REFERENCES:

2019 C.G.B.C., C.B.C, C.E.C., C.M.C, C.P.C., C.E.C., Title 24

OCCUPANCY GROUP: ZONING: MP

C-19845

CONSTRUCTION TYPE:

SNOW LOAD: SPECIAL INSP. No

PROJECT SCOPE: A kitchen remodel & expansion to the existing residence.

GENERAL NOTES

- 1. THE BUILDER SHALL VERIFY THAT SITE CONDITIONS ARE CONSISTENT WITH THESE PLANS BEFORE STARTING WORK WORK NOT SPECIFICALLY DETAILED SHALL BE CONSTRUCTED TO THE SAME QUALITY AS SIMILAR WORK THAT IS DETAILED. ALL WORK SHALL BE DONE IN ACCORDANCE WITH INTERNATIONAL BUILDING CODES AND LOCAL CODES.
- 2. WRITTEN DIMENSIONS AND SPECIFIC NOTES SHALL TAKE PRECEDENCE OVER SCALED DIMENSIONS AND GENERAL NOTES. THE ENGINEER/DESIGNER SHALL BE CONSULTED FOR CLARIFICATION IF SITE CONDITIONS ARE ENCOUNTERED THAT ARE DIFFERENT THAN SHOWN, IF DISCREPANCIES ARE FOUND IN THE PLANS OR NOTES, OR IF A QUESTION ARISES OVER THE INTENT OF THE PLANS OR NOTES. CONTRACTOR SHALL VERIFY AND IS RESPONSIBLE FOR ALL DIMENSIONS (INCLUDING ROUGH OPENINGS).
- 3. DIMENSIONS ARE TO FACE OF FRAMING, UNLESS NOTED OTHERWISE.
- 4. ALL MANUFACTURERED ARTICLES, MATERIALS AND EQUIPMENT SHALL BE APPLIED, INSTALLED, CONNECTED, ADJUSTED, USED, CLEANED AND CONDITIONS AS DIRECTED BY THE MANUFACTURER, UNLESS OTHERWISE DIRECTED.
- 5. ALL MATERIALS SHALL BE NEW AND UNUSED, UNLESS OTHERWISE NOTED
- 6. THE BUILDING, BUILDING SITE AND NEIGHBORING BUILDINGS AND PROPERTIES SHALL BE PROTECTED FROM ANY DAMAGE THAT MAY OCCUR DUE TO THE PERFORMANCE OF THIS WORK. ANY DAMAGES THAT OCCUR ARE THE SOLE RESPONSIBILITY OF THE GENERAL CONTRACTOR.
- 7. ALL WASTE AND REFUSE CAUSED BY THIS WORK SHALL BE REMOVED FROM THE PROPERTY AND DISPOSED OFPROPERLY BY THE GENERAL CONTRACTOR.
- 8. THE CONTRACTOR SHALL ASSUME FULL RESPONSIBILITY FOR ANY WORK KNOWINGLY PERFORMED CONTRARY TO SUCH LAWS, ORDINANCES, OR REGULATIONS. THE CONTRACTOR SHALL ALSO PERFORM COORDINATION WITH ALL UTILITIES AND STATE SERVICE AUTHORITIES.
- 9. THE GENERAL CONTRACTOR IS RESPONSIBLE FOR THE DESIGN AND PROPER FUNCTION OF PLUMBING, HYAC AND ELECTRICAL SYSTEMS. THE GENERAL CONTRACTOR SHALL NOTIFY THIS OFFICE WITH ANY PLAN CHANGES REQUIRED FOR DESIGN AND FUNCTION OF PLUMBING, HVAC AND ELECTRICAL SYSTEMS.
- 10. THIS OFFICE SHALL NOT BE RESPONSIBLE FOR CONSTRUCTION MEANS AND METHODS. ACTS OR OMISSIONS OF THE CONTRACTOR OR SUBCONTRACTOR, OR FAILURE OF ANY OF THEM TO CARRY OUT WORK IN ACCORDANCE WITH THE CONSTRUCTION DOCUMENTS. ANY DEFECT DISCOVERED IN THE CONSTRUCTION DOCUMENTS SHALL BE BROUGHT TO THE ATTENTION OF THIS OFFICE BY WRITTEN NOTICE BEFORE PROCEEDING WITH WORK. REASONABLE TIME NOT ALLOWED THIS OFFICE TO CORRECT THE DEFECT SHALL PLACE THE BURDEN OF COST AND LIABILITY FROM SUCH DEFECT UPON THE CONTRACTOR.
- 11. THIS STRUCTURE SHALL BE ADEQUATELY BRACED FOR WIND LOADS UNTIL THE ROOF, FLOOR AND WALLS HAVE BEEN PERMANENTLY FRAMED TOGETHER AND SHEATHED.
- 12. INSTALL POLYISOCYANURATE FOAM TYPE INSULATION AT FLOOR AND PLATE LINES, OPENINGS IN PLATES, CORNER STUD CAVITIES AND AROUND DOOR AND WINDOW ROUGH OPENING CAVITIES.
- 13. INSTALL WATERPROOF GYPSUM BOARD AT ALL WATER SPLASH AREAS TO MINIMUM 70" ABOVE SHOWER DRAINS.
- 14. INSULATE WASTE LINES FOR SOUND CONTROL.
- 15. EXHAUST ALL VENTS AND FANS DIRECTLY TO OUTSIDE VIA METAL DUCTS, PROVIDE 90 CFM (MIN) FANS TO PROVIDE 5 AIR CHANGES PER HOUR IN BATHS CONTAINING TUB AND I OR SHOWER AND IN LAUNDRY ROOMS.
- 16. ALL RECESSED LIGHTS IN INSULATED CEILINGS TO HAVE THE I.C. LABEL.
- 17. PROVIDE SOLID BLOCKING UNDER ALL BEARING WALLS PERPENDICULAR TO JOISTS AND OTHER BEARING POINTS NOT OTHERWISE PROVIDED WITH SUPPORT. PROVIDE SOILD BLOCKING AT ALL CABINET AND GRAB BAR LOCATIONS.

MISCELLANEOUS NOTES

- 1. EACH BEDROOM TO HAVE A MINIMUM WINDOW OPENING OF 5.7 SQ. FT. WITH A MINIMUM WIDTH OF 20 IN. AND A SILL LESS THAN 44" ABOYE FIN. FLR.
- 2. ALL GLAZING WITHIN 18 IN. OF THE FLOOR AND/OR WITHIN 24 IN. OF ANY DOOR (REGARDLESS OF WALL PLANE) ARE TO HAVE SAFETY GLAZING. ALL GLAZING MITHIN 60 IN. OF TUB OR SHOWER FLOOR, 60 IN. OF A STAIR LANDING OR A GLAZING AREA GREATER THAN 9 SQUARE FEET ARE TO HAVE SAFETY GLAZING.
- 3. SKYLIGHTS ARE TO BE GLAZED WITH TEMPERED GLASS ON OUTSIDE AND LAMINATED GLASS ON THE INSIDE (UNLESS PLEXIGLASS). GLASS TO HAVE MAXIMUM CLEAR SPAN OF 25 IN. AND FRAME IS TO BE ATTACHED TO A 2x CURB WITH A MINIMUM OF 4 IN. ABOVE ROOF PLANE.
- 4. ALL TUB AND SHOWER ENCLOSURES ARE TO BE GLAZED WITH SAFETY GLASS
- 5. ALL EXTERIOR WINDOWS ARE TO BE DOUBLE GLAZED AND ALL EXTERIOR DOORS ARE TO BE SOLID CORE WITH WEATHERSTRIPPING. PROVIDE 1/2 IN. DEADBOLT LOCKS ON ALL EXTERIOR DOORS, AND LOCKING DEVICES ON ALL DOORS AND WINDOWS WITHIN 10 FT. (VERTICAL) OF GRADE. PROVIDE PEEPHOLE 54-66 IN. ABOVE FIN. FLOOR ON EXTERIOR ENTRY
- 6. PROVIDE ONE SMOKE DETECTOR IN EACH ROOM AND ONE IN EACH CORRIDOR ACCESSING BEDROOMS. CONNECT SMOKE DETECTORS TO HOUSE POWER AND INTER-CONNECT SMOKE DETECTORS TO HOUSE POWER AND INTERCONNECT SO THAT, WHEN ANY ONE IS TRIPPED, THEY ALL WILL SOUND. PROVIDE BATTERY BACKUP FOR ALL UNITS.
- 7. PROVIDE COMBUSTION AIR VENTS (W/SCREEN AND BACK DAMPER) FOR GAS FIRE-PLACE AND ANY OTHER APPLIANCES WITH
- 8. BATHROOMS AND UTILITY ROOMS ARE TO BE VENTED TO THE OUTSIDE WITH A FAN CAPABLE OF PRODUCING A MINIMUM OF 5 AIR EXCHANGES PER HOUR.
- RANGE HOODS ARE ALSO TO BE VENTED TO THE OUTSIDE.
- 10. ELECTRICAL RECEPTACLES IN BATHROOMS, KITCHENS AND GARAGES SHALL BE G.F.I. OR G.F.I.C. PER NATIONAL ELECTRICAL CODE REQUIREMENTS.
- 11. INSULATE ALL ACCESS DOORS/ HATCHES TO CRAWL SPACES AND ATTICS TO THE EQUIVALENT RATING OF THE WALL, FLOOR OR CEILING THROUGH WHICH THEY PENETRATE. UNO ON PLANS. (ATTIC R-38, WALLS R-21, FLOORS R-30)
- 12. PROVIDE CRAWLSPACE VENTING TO MEET THE REQUIREMENTS OF THE 2016 EDITION OF THE CALIFORNIA BUILDING CODE.
- 13. PROVIDE SPECIAL INSPECTION, SPECIAL TESTING, REPORTING AND COMPLIANCE PROCEDURES ACCORDING TO THE 2016 CALIFORNIA BUILDING CODE.

SHEET INDEX

COVER SHEET EXISTING FLOOR PLANS INTERIOR ELEVATIONS

PROPOSED FLOOR PLANS GENERAL NOTES GENERAL NOTES (Continued)

GENERAL STRUCTURAL NOTES GENERAL STRUCTURAL NOTES 50.3 TYPICAL STRUCTURAL DETAILS

50.4 TYPICAL STRUCTURAL DETAILS FOUNDATION PLAN ROOF FRAMING PLAN

53.1 STRUCTURAL ELEVATIONS & SECTIONS STRUCTURAL DETAILS

AREA ANALYSIS

EXISTING BUILDING FLOOR AREA

 $= \pm 1.620 \text{ S.F.}$

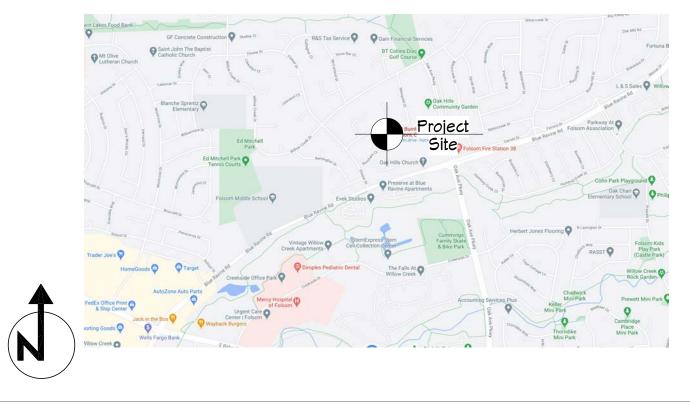
PROPOSED NEW FLOOR AREA

 $= \pm 140 \text{ S.F.}$

TOTAL PROPOSED BUILDING AREA

 $= \pm 1.760 \text{ S.F.}$

YICINITY MAP



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> DATE: 7/23/2022

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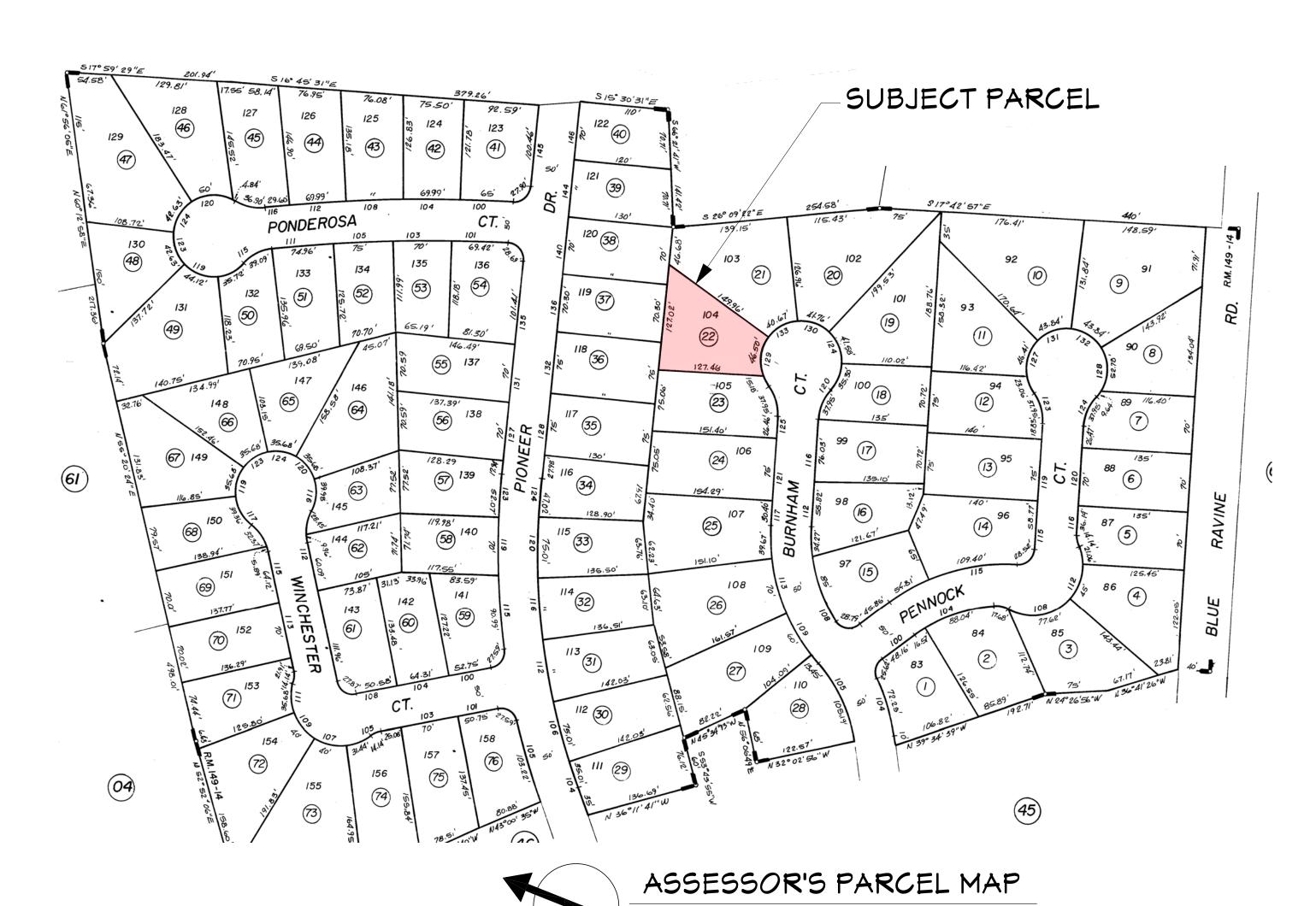
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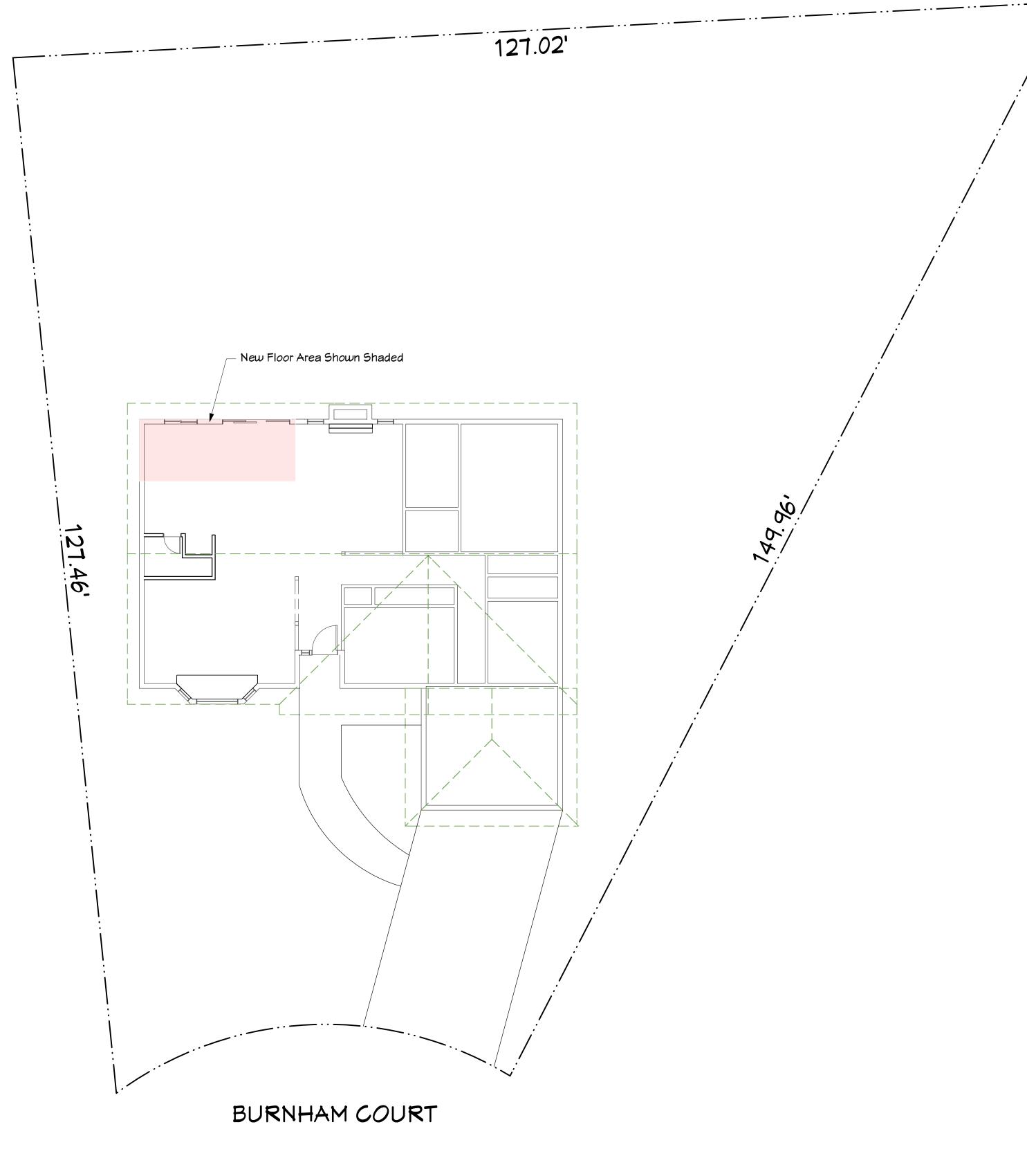
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3. THE CONTRACTOR SHALL PROVIDE EROSION, SEDIMENT AND POLLUTION CONTROL BEST MANAGEMENT PRACTICES (BMPs) WHEN AND WHERE APPLICABLE.

- 4. DIRECT ALL NEW DOWNSPOUTS ONTO NATURAL GROUND OR LANDSCAPED AREAS WHERE FEASIBLE.
- 5. ALL EXISTING NATURAL DRAINAGE AND SWALES SHALL BE MAINTAINED DURING THE COURSE OF, AND AFTER CONSTRUCTION.
- 6. NO PERMANENT STRUCTURE (INCLUDING WITHOUT LIMITATION GARAGES, PATIOS, CONCRETE SLABS, ROOF OVERHANGS AND SIMILAR STRUCTURES) SHALL BE CONSTRUCTED ON TOP OF WATER, SEWER OR DRAINAGE PIPELINES OR ANYWHERE WITHIN THE ASSOCIATED UTILITY EASEMENTS.
- 7. CONTRACTOR IS RESPONSIBLE FOR DETERMINING EXACT LOCATIONS AND PROTECTION OF ALL EXISTING MAINS AND LINES.
- 8. IT IS THE RESPONSIBILITY OF THE PROPERTY OWNER TO DETERMINE THE LOCATION OF ANY EASEMENTS OF RECORD ENCUMBERED WITHIN THE PROPERTY,



1" = 100.0'



SITE PLAN

1/8" = 1'-0"

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itchen Expansion & Remodel foHuber Residence124 Burnham CourtFolsom, California 95630-4820

FILE NO:

DATE: 1/23/202

SHEET NO:

DATE:

7/23/2022

SHEET NO: A-3

KITCHEN DINING EXISTING ENLARGED KITCHEN / DINING PLAN 3/8" = 1'-0"



YIEM 'A'



YIEM 'B'



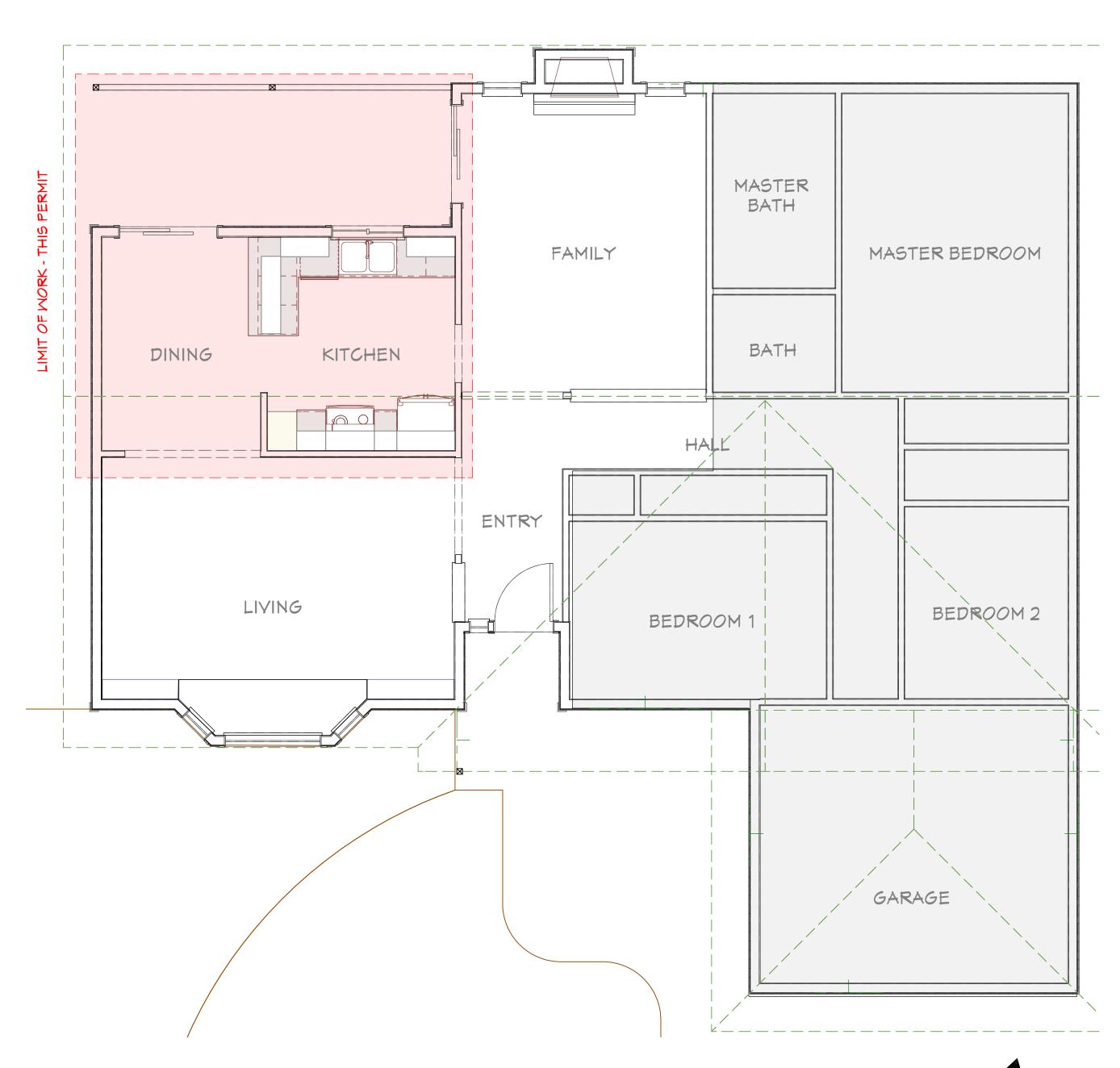


YIEM 'C'



YIEM 'D'

REAR OF EXISTING BUILDING - OVERVIEW 1/4" = 1'-0"



EXISTING FLOOR PLAN

1/4" = 1'-0"

[Based on field measurements made on February 1, 2021 - Grey Shaded area <u>not</u> surveyed, wall locations are estimated.]

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ELECTRICAL NOTES

Intercom

Electrical Breaker Panel

Door Chime, Door Bell Button

Smoke Detectors: Ceiling Mounted, Wall Mounted

HOME OWNER SHALL DO A WALK-THRU WITH RELEVANT INSTALLERS TO VERIFY THE EXACT LOCATION FOR OUTLETS, LIGHTS, SMITCHES, CABLE, DATA, PHONE, AUDIO, ETC.

ELECTRICAL NOTES:

- 1. ELECTRICAL RECEPTACLES IN BATHROOMS, KITCHENS AND GARAGES SHALL BE G.F.I. ORG.F.I.C. PER NATIONAL ELECTRICAL CODE REQUIREMENTS.
- 2. PROVIDE ONE SMOKE DETECTOR IN EACH ROOM AND ONE IN EACH CORRIDOR ACCESSING BEDROOMS. CONNECT SMOKE DETECTORS TO HOUSE POWER AND INTER-CONNECT SMOKE DETECTORS SO THAT, WHEN ANY ONE IS TRIPPED, THEY ALL WILL SOUND. PROVIDE BATTERY BACKUP FOR ALL UNITS.
- 3. PROVIDE VACANCY SENSORS IN EACH ROOM AS REQUIRED BY CRC 106.1.1 & CEnC 150.0(k)2J,2K
- 4. PROVIDE HUMIDITY CONTROLS IN EACH BATHROOM PER CGBSC 4.506.2
- 5. ALL LUMINAIRES TO BE HIGH EFFICACY FIXTURES
- 6. CIRCUITS SHALL BE VERIFIED WITH HOME OWNER PRIOR TO WIRE INSTALLATION.
- 7. FINAL SWITCHES FOR TIMERS AND DIMMERS SHALL BE VERIFIED WITH HOME OWNER.
- 8. FIXTURES TO BE SELECTED BY HOME OWNER.
- 9. PROVIDE UFER GROUND COMPLYING WITH CEC 250.52(3)
- 10. ALL EXISTING ELECTRICAL IN UNAFFECTED ROOMS TO REMAIN

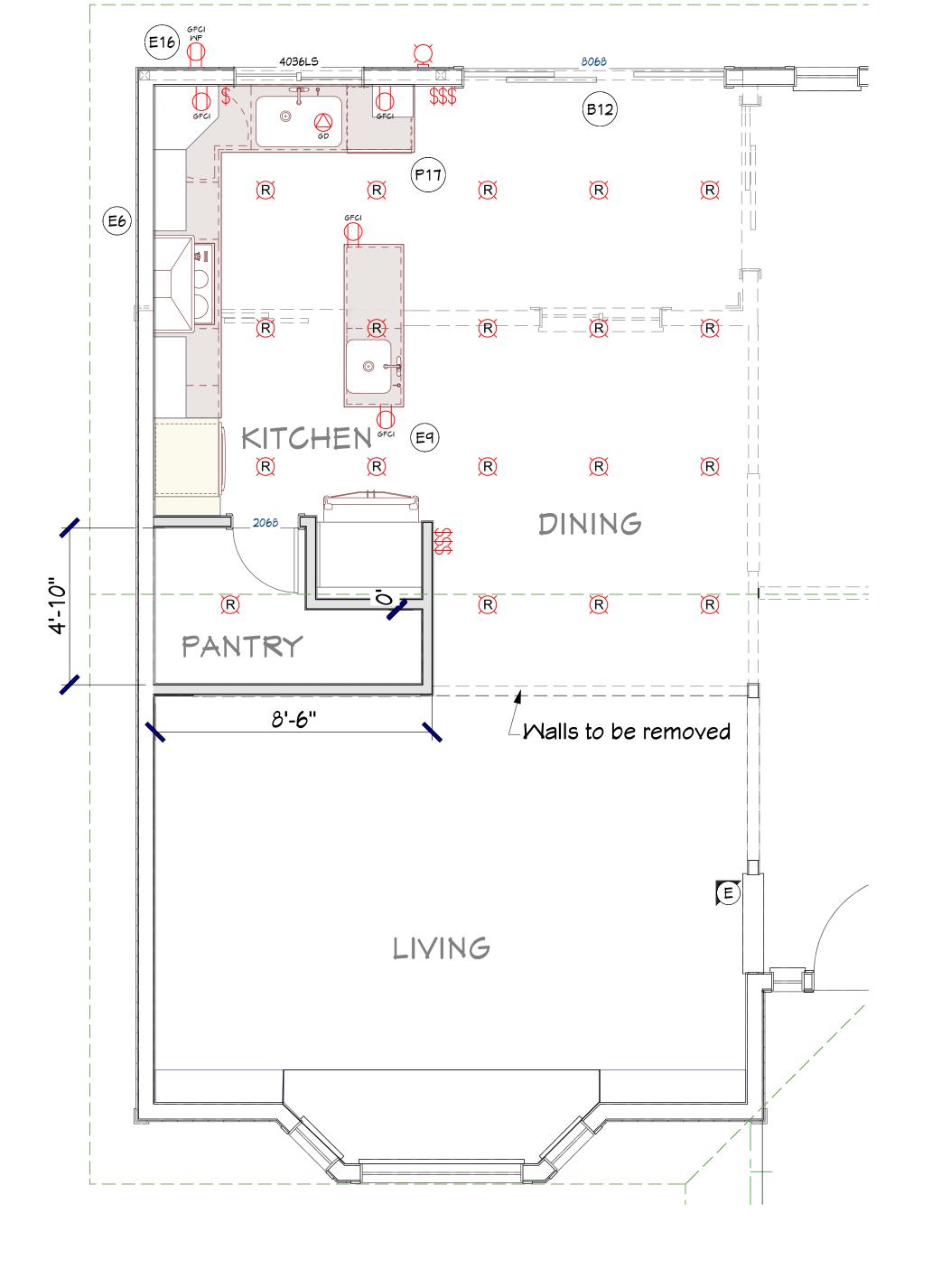
AUDIO:

- 1. LOCATE SPEAKERS AND AUDIO CONTROLS AS DIRECTED BY HOMEOWNER; RUN CIRCUIT OF SPEAKER WIRING TO AUDIO HOME PANEL. LOCATION BY HOMEOWNER;
- AUDIO SPEAKERS TO BE APPROVED BY HOME OWNER;
 LOCATE JACKS AS INDICATED BY HOMEOWNER; INSTALL DATA / CABLE PANEL. SYSTEM TO BE APPROVED BY HOME OWNER.

DATA / CABLE:

1. LOCATE SECURITY PANELS AS INDICATED BY HOMEOWNER; SYSTEM TO BE APPROVED BY HOME OWNER.

COYERED PATIO



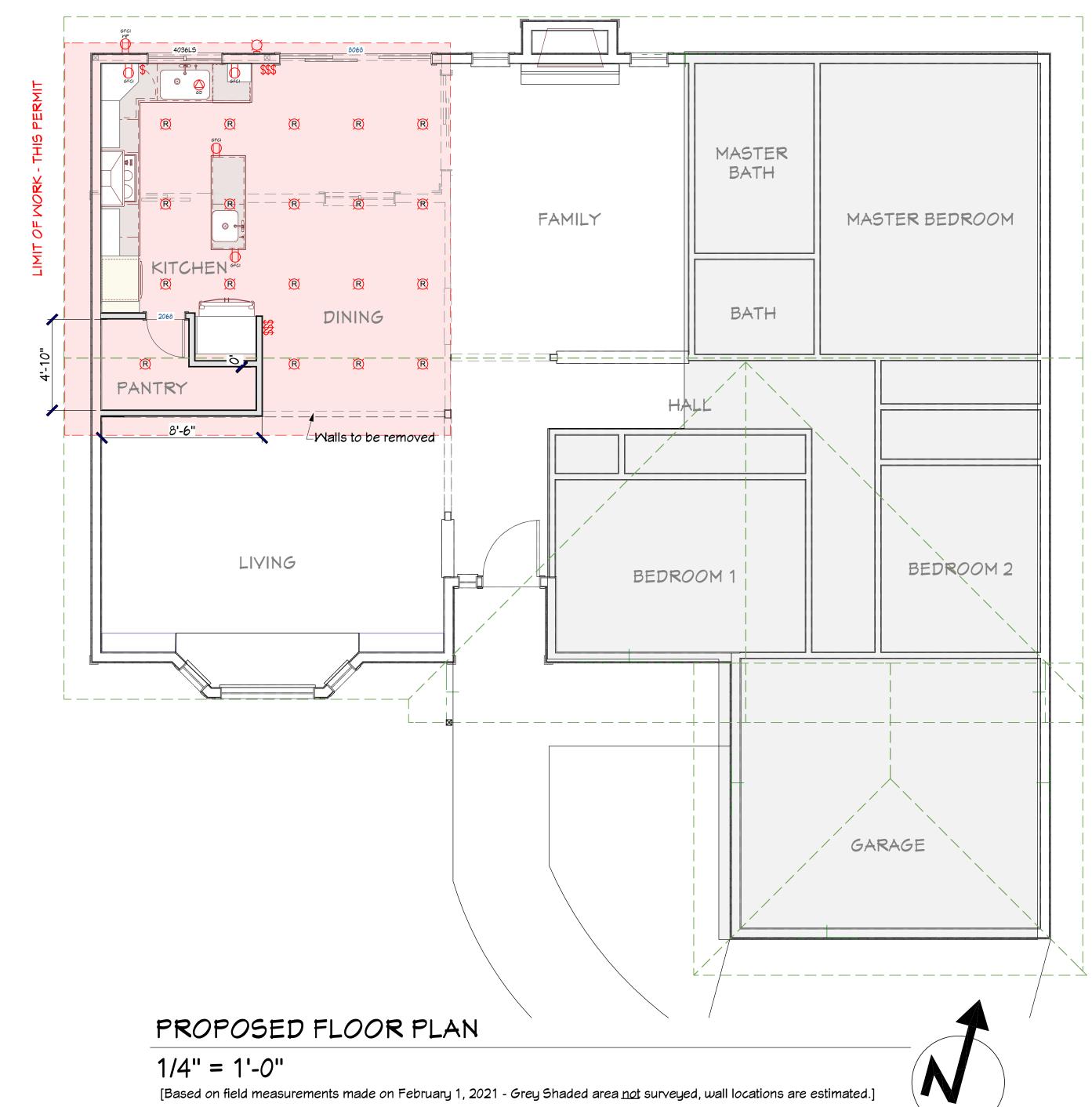
PROPOSED ENLARGED FLOOR PLAN

3/8" = 1'-0"



VIEW 'E'

COVERED PATIO



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FILE NO:

2108Base DATE: 7/23/2022

SHEET NO:

A-4

Section R302 Fire-Resistant Construction

R302.5.1 Opening protection. All private garages that open directly into a room used for sleeping purposes shall not be permitted. Other openings between the garage and the residence shall be equipped with solid wood doors not less than 1 3/8 inches in thickness, solid or honeycomb core steel doors not less than 1 3/8 inches thick, or 20-minute fire-rated doors, equipped with a self-closing and self-latching device. **Exception:** Where the residence and private garage are protected by an automatic residential fire sprinkler system in accordance with Sections R309.6 and R313, other door openings between the garage and residence need only be self-closing and latching. Under no circumstance shall a private garage have any opening into a room used for sleeping purposes. When habitable rooms are above a garage or carport, the separate ceiling shall have not less than 5/8 inch Type X gypsum board or equivalent.

R302.11 and R302.12 Fireblocking and Draftstopping. Fire blocking and Draft stopping shall be installed according to the 2016 CRC Section provisions.

R302.5.2 Duct Penetration. Ducts in the garage and ducts penetrating the walls or ceilings separating the dwelling from the garage shall be constructed of a minimum No. 26 gauge sheet steel or other approved material and shall not have openings into the garage.

R302.7 Under-stair protection. Enclosed accessible space under stairs shall have walls, under-stair surfaces, and any soffits protected on the enclosed side with ½ inch Gypsum board.

Section R303 Light, Ventilation and Heating

R303 Light, Ventilation and Heating. Provide adequate natural light and ventilation for habitable rooms within a dwelling unit. The minimum openable area to the outdoors for natural ventilation shall not be less than 4 percent of the floor area being ventilated. The minimum aggregate glazing area for natural light shall not be less than 8 percent of such room.

and a whole-house mechanical ventilation system is installed and capable of producing 0.35 air change per hour in the room is installed or a whole-house mechanical ventilation system is installed capable of supplying outdoor ventilation air of 15 cubic feet per minute per occupant computed on the basis of two occupants for the first bedroom and one for each additional bedroom. Exception 2: The glazed areas need not be installed in rooms where artificial light is provided capable of producing an average illumination of 6 footcandles over the area of the room at a height of 30" above the

Exception 1: The glazed areas need not be openable where the opening is not required by Section R310

R303.9 Required heating. Where the design temperature in Table R301.2(1) is below 60 degree F, every dwelling unit shall be provided with heating facilities capable of maintaining a room temperature of not less than 68 degree F at a point 3 feet above the floor and 2 feet from the exterior walls in habitable rooms at the design temperature. The installation of one or more portable space heaters shall not be used to achieve compliance with this section.

R304.1 and R304.2 Minimum area and dimensions. Habitable spaces within a dwelling unit, other than kitchens, shall not be less than 7-feet in any direction and have a minimum of 70 square feet of floor area

R305.1 Minimum height. Habitable space, hallways, bathrooms, toilet rooms, laundry rooms and portions of basements containing these spaces shall have a ceiling height of not less than 7-feet. Ceilings above fixtures in bathrooms or above shower heads may have a 6-foot 8 inch height.

R307.2 Bathtub and Shower spaces. Bathtub and shower floors and walls above bathtubs with installed shower heads and in shower compartments shall be finished with a nonabsorbent surface. Such wall surfaces shall extend to a height of not less than 6 feet above the floor.

R308.4 Hazardous locations. Provide safety glazing for all glazing located in hazardous locations as specified in Sections R308.4.1 through R308.4.7.

Section R310 **Emergency Escape and Rescue Openings**

R310.1 Emergency Escape and Rescue openings. Basements, habitable attics and every sleeping room shall have not less than one operable emergency escape and rescue opening. Where basements contain one or more sleeping rooms, an emergency escape and rescue shall be required in each sleeping room. Emergency escape and Rescue openings shall open directly into a public street, public way, or to a yard, or court that opens to a public way.

R310.2.1 Minimum opening area. Escape or rescue windows shall have a minimum net clear openable area of 5.7 square feet unless located at grade level where it may be reduced to 5 square feet. The minimum net clear openable height dimension shall be 24 inches. The minimum net clear openable width dimension shall be 20 inches.

R310.2.2 Window sill height. Where a window is provided as the emergency escape or rescue window opening it shall have the bottom of the clear opening not greater than 44 inches above the floor; where the sill height is below grade, it shall be provided with a window well in accordance with Section R310.2.3

B-16 R312.2 Window fall protection. Window fall protection shall be provided in accordance with Section

Section R311 Means of Egress

R311.7 Stairways. Private stairways and steps may be constructed with a 7 \(^3\)/-inch maximum rise, a 10inch minimum run, and a 36-inch minimum width. The largest tread run and the greatest riser height within any flight of stairs shall not exceed the smallest by more than 3/8-inch. A nosing of not less than 3/4-inch and not more than 1 1/4-inch shall be provided on stairways with solid risers. Stairways within dwelling units must have a handrail on at least one side unless there are less than 4 risers, where no handrail is required. The handgrip portion of handrails shall be not less than 1 1/4-inch or more than 2-inches in cross-sectional dimension and placed between 34-inches and 38-inches above the nosing of the treads. Non-circular handrails shall have dimensions not to exceed 2 1/4-inches in cross sectional area and a perimeter dimension of at least 4-inches but not to exceed 6 1/4-inches. Stairwells must maintain 80-inches of headroom clearance.

R311.7.6 Landings for stairways. There shall be a floor or landing at the top and bottom of each stairway. The width perpendicular to the direction of travel shall not be less than the width of the flight served. Landings of shape other than square or rectangular shall be permitted provided that the depth at the walk line and the total area is not less than that of a quarter circles, with a radius equal to the required landing width. Where the stairway has a straight run, the depth in the direction of travel shall be not less than 36

Exception: A floor or landing is not required at the top of an interior flight of stairs, including stairs in an enclosed garage, provided that a door does not swing over the stairs.

exterior door. The width of each landing shall not be less than the door served. Every landing shall have a dimension of not less than 36 inches measured in the direction of travel. The slope at exterior landings shall not exceed ¼ units vertical in 12 units horizontal (2 percent). **Exception:** Exterior balconies less than 60 square feet and only accessible from a door are permitted to have a landing less than 36 inches measured in the direction of travel.

B-19 R311.3 Floor and landings at exterior doors. There shall be a landing or floor on each side of each

R311.7.8 Handrails. Handrails shall be provided on not less than one side of each continuous run of treads or flight with four or more risers.

Section R312 **Guards and Window Fall Protection**

R312.1.1 Guards and Window Fall Protection. Guards shall be located along open-sided walking surfaces, including stairs, ramps and landings, that are located more than 30 inches measured vertically to the floor or grade below at any point within 36 inches horizontally to the edge of the open side.

R312.1.2 Height. Required guards at open-sided walking surfaces, including stairs, porches, balconies or landings, shall be not less than 42" inches in height as measured vertically above the adjacent walking surface or the line connecting the leading edges of the treads.

R312.1.3 Opening limitations. Required guards shall not have openings from the walking surface to the required guard height that allows passage of a sphere 4" inches in diameter. Exception: #2 Guards on the open side of stairs shall not have openings that allow passage of a

Section R314 Smoke Alarms

R314.1 General. Smoke alarms shall comply with NFPA 72 and Section R314.

sphere 4 3/8 inches in diameter

R314.1.1 Listings. Smoke alarms shall be listed in accordance with UL 217. Combination smoke and carbon monoxide alarms shall be listed in accordance with UL217 and UL 2034.

R314.1 General. Smoke alarms shall comply with NFPA 72 and Section R314.

R314.2.2 Alterations, repairs and additions. (Where alterations, repairs or additions requiring a permit occur, where one or more sleeping rooms are added or created in existing dwellings, the individual dwelling unit shall be equipped with smoke alarms located as required for new dwellings. Exceptions: See Section R314.6

R314.3 Location. Smoke alarms shall be installed in the following locations: 1. in each sleeping room.

building wiring without the removal of interior finishes.

2. outside each separate sleeping area in the immediate vicinity of the bedrooms. 3. on each additional story of the dwelling, including basements and habitable attic but not including crawl spaces and uninhabitable attics. In dwelling or dwelling units with split levels and without an intervening door between the adjacent levels, a smoke alarm installed on the upper level shall suffice for the adjacent lower level provided that the lower level is less than one full story below the upper

When more than one smoke alarm is required to be installed within an individual dwelling unit the alarm devices shall be interconnected in such a manner that the actuation of one alarm will activate all of the alarms in the individual unit.

R314.6 Power Source. 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.

Exceptions: 1. Smoke alarms permitted to be solely battery operated in existing buildings where no construction is

taking place. 2. Smoke alarms are permitted to be solely battery operated in buildings that are not served from a

commercial power source. 3. Smoke alarms are permitted to be solely battery operated in existing areas of building undergoing alterations or repairs that do not result in the removal of interior walls or ceiling finishes exposing the structure, unless there is an attic, crawl space or basement available which could provide access for

4. Smoke alarms are permitted to be solely battery operated where repairs or alterations are limited to the exterior surfaces of dwellings, such as the replacement of roofing or siding, or the addition or

replacement of windows or doors, or the addition of a porch or deck. 5. Smoke alarms are permitted to be solely battery operated when work is limited to the installation, alteration or repairs of plumbing or mechanical systems or the installation, alteration or repair of electrical systems which do not result in the removal of interior wall or ceiling finishes exposing the

B-30 R314.8.2 Existing Dwelling Units. Except as otherwise provided in this section a smoke detector, approved and listed by the State Fire Marshal pursuant to Section 13114, shall be installed, in accordance with the manufacturer's instructions in each dwelling intended for human occupancy upon the owner's application on or after January 1, 1985, for a permit for alteration or addition, exceeding one thousand dollars (\$1000).

Section R315 Carbon Monoxide Alarms

R315.1.1 Listings, Carbon monoxide alarms shall be listed in accordance with UL 2034. Combination carbon monoxide and smoke alarms shall be listed in accordance with UL 2034 and UL 217.

B-32 R315.2.1 Existing Buildings and New Construction. For existing buildings and new construction, an approved carbon monoxide alarm shall be installed in dwelling units where either or both conditions exist.

burning heater, appliance, or fireplace is added to an existing dwelling not previously required to be

provided with carbon monoxide alarms, new carbon monoxide alarms shall be installed in accordance with

 The dwelling unit contains fuel-burning appliances or fireplace. 2. The dwelling unit has an attached garage with an opening that communicates with the dwelling unit. R315.2.2 Alterations, repairs and additions. Where an addition is made to an existing dwelling or a fuel

R315.3 Location. Carbon monoxide alarms and carbon monoxide detectors shall be installed in accordance with this code, the current edition of NFPA 720 "Standard for the Installation of Carbon Monoxide (CO) Detection and Warning Equipment" and the manufacture's installation instructions. Other

carbon monoxide alarm and detection devices as recognized in NFPS 720 are also acceptable. Carbon monoxide alarms required by Section R315.1, R315.2 and R315.2.2 shall be installed in the following locations:

1. Outside of each separate dwelling unit sleeping area in the immediate vicinity of the bedroom(s). 2. On every occupiable level of a dwelling unit including basements.

R315.4 Combination alarms. Combination carbon monoxide alarms and smoke alarms shall be permitted to be used in lieu of carbon monoxide alarms.

Combination carbon monoxide/smoke alarms shall comply with Section R315 and all requirements for listing and approval by the Office of the State Fire Marshall, for smoke alarms. When the valuation of an addition, alteration or repair to a Group R Occupancy exceeds \$1000 and a permit is required, or when one or more sleeping rooms are added or created in existing Group R Occupancies, smoke alarms shall be installed in accordance with CRC Section R314.8.2.

B-36 R315.5 Power Source. For existing buildings and new construction, carbon monoxide alarms shall receive their primary power from the building writing where such wiring is served from a commercial source and, where primary power is interrupted, shall be equipped with a battery back-up. Alarm wiring shall be directly connected to the permanent building wiring without a disconnecting switch other than those required for overcurrent protection.

> 1. Carbon monoxide alarms shall be permitted to be battery operated where installed in buildings without commercial power

2. Carbon monoxide alarms installed in accordance with Section R315.2.2 shall be permitted to be

3. Carbon monoxide alarms in Group R occupancies shall be permitted to receive their primary power from other power sources recognized for use by NFPA 720.

R315.7 Interconnection. Where more than one carbon monoxide alarm is required to be installed within the dwelling unit or within a sleeping unit in Group R occupancies, the alarms shall be interconnected in a manner that activation of one alarm shall activate all of the alarms in the individual unit.

Interconnection is not required in existing buildings built prior to January 1, 2011, under any of the following conditions: 1. Physical interconnection is not required where listed wireless alarms are installed and all alarms sound

upon activation of one alarm. 2. No construction is taking place.

3. Repairs or alterations do not result in the removal of interior wall and ceiling finishes exposing the structure in area/spaces where carbon monoxide alarms are required.

Section R317 Protection Of Wood And Wood-Based Products Against Decay

B-38 R317.1 Location Required. Protection of wood and wood-based products from decay shall be provided in the following locations by the use of naturally durable wood or wood that is preservative-treated in accordance with AWPA UI for the species, product, preservative and end use. Preservatives shall be listed in Section 4 of AWPA UI.

Wood joists or the bottom of a wood structural floor when closer than 18" inches or wood girders when closer than 12" inches to the exposed ground in crawl spaces or unexcavated area located within the periphery of the building foundation. (Apply 2-7 if applicable), as well as all foundation sills, plates, sleepers, posts, and columns that rest on concrete or masonry must be naturally durable or preservative treated.

Section R408 **Under-Floor Space**

R408.1 Under-Floor Space Ventilation. The minimum net area of ventilation openings shall be not less than 1 square foot for each 150 square feet of under-floor space area, unless the ground surface is covered by a Class 1 vapor retarder material is used, the minimum net area of ventilation openings shall be not less

than 1 square foot for each 1,500 square feet of under-floor space area. One such ventilating opening shall be within 3 feet of each corner of the building.

R408.2 Openings for under-floor ventilation. The minimum net area of ventilation openings shall not be less than 1 square foot for each 150 square feet of under-floor area. One ventilation opening shall be within 3 feet of each corner of the building. Ventilation openings shall be covered for the height and width with any of the following materials provided that the least dimension of the covering shall not exceed 1/4 inch.

R408.4 Access. Access shall be provided to all under-floor spaces. Access openings through the floor shall be a minimum of 18" inches by 24" inches. Openings through a perimeter wall shall be not less than 16" inches by 24" inches. Where any portion of the through-wall access is below grade, an areaway not less than 16" inches by 24" inches shall be provided.

Chapter 5

R502.9 Fastening. Floor framing shall be nailed in accordance with Table R602.3 (1). Where posts and beams or girder construction is used to support floor framing, positive connection shall be provided to ensure against uplift and lateral displacement.

R506.2.3 Vapor retarder. A 6-mil polyethylene or approved vapor retarder with joints lapped not less than 6 inches shall be placed between the concrete floor slab and the base course or the prepared subgrade where no base course exists.

Section R602 Wood Wall Framing

Wood framed studs shall be dimensioned as per the CRC Table R602.3 (5) for size, height, and spacing.

R602.6 Drilling and Notching of studs. Drilling and Notching of studs shall be in accordance with the

depth not exceeding 25 percent of its width. Studs in nonbearing partitions shall be permitted to be notched to a depth not to exceed 40 percent of a single stud width. **Drilling**: Any stud shall be permitted to be bored or drilled, provided that the diameter of the resulting hole is not more than 60 percent of the stud width, the edge of the hole is not more than 5/8 inch to the edge of the stud, and the hole is not located in the same section as a cut or notch. Studs located in exterior walls or bearing partitions drilled over 40 percent and up to 60 percent shall be doubled with not more 2 successive doubled studs bored.

Notching: Any stud in an exterior wall or bearing partition shall be permitted to be cut or notched to a

Exception: Use of approved stud shoes is permitted where they are installed in accordance with the manufacturer's recommendations.

R602.9 Cripple Walls. Cripple Wall on a Conventional foundation shall be framed of studs not smaller than the studding above. When exceeding 4 feet in height, such walls shall be framed of studs having the size required for an additional story. Cripple walls with a stud height less than 14" inches shall be continuously sheathed on one side with wood structural panels fastened to both the top and bottom plates in accordance with Table R602.3(1), or the cripple walls shall be constructed of solid blocking. Cripple Walls shall be supported on continuous foundations.

R602.10 Wall Bracing. All Braced Wall lines shall consist of braced wall panels that meet the requirements for location, type, and amount of bracing specified in the CRC, section R602.10 and are in line or offset from each other by not more than 4 feet from the designated brace wall line. Braced wall panel end distance requirements shall be per Figure R602.10.1.1. All braced wall panels shall be clearly identified on the plans as to their type, length and location as per CRC Table R602.10.1.1Through R602.10.5).

Note: 1" x 4" let-in braces are allowed in Seismic Category C only (See Tables R602.10.4)

Alternate braced wall lengths shall be per Table R602.10.6.1

R602.11. 11.1 Wall anchorage for all buildings in Seismic Design Categories C, D0, D1 and D2. Foundation plates or sills shall be bolted or anchored to the foundation or foundation wall with a minimum of two ½" diameter bolts with a minimum embedment depth of 7" into concrete or grouted cells. Anchor bolts

shall have properly sized steel plate washers on each bolt. A properly sized nut and washer shall be tightened on each bolt to plate (3-inch x 3-inch x .0229). Anchor bolts shall not be placed more than 6-feet on center or not more than 12-inches (or no less than seven bolt diameters) from each end of the plate section per CRC Sections R403.1.6 and R602.11.1

All bearing walls shall be supported on masonry, concrete, foundations, piles, or other approved foundation systems that will be of sufficient size to support all loads. Where a design is not provided, the minimum foundation requirements for stud bearing walls shall be as set forth in CRC Table R403.1.

Wall Covering

2016 CRC Chapter 7. All gypsum board, stucco, plaster, and lath shall be installed as per this chapter.

2016 CRC Section R703. All exterior wall coverings shall be applied as per this section.

Section R802 Wood Roof Framing

R802.3 Framing details. Hip and valley rafters shall be supported at the ridge by a brace to a bearing partition or be designed to carry and distribute the specific load at that point. Where the roof pitch is less than 3 units vertical in 12 units horizontal (25 percent slope), structural members that support rafters and ceiling joists, such as ridge beams, hips and valleys, shall be designed as beams.

R802.3.1 Ceiling Joist and Rafter connections. Where ceiling joists are not parallel to rafters, rafter ties shall be installed. Rafter ties shall not be less than 2" inches by 4" inches, installed in accordance with the connection requirements in Table R802.5.1 (9), or connections of equivalent capacities shall be provided. Where ceiling joists or rafter ties are not provided the ridge formed by these rafters shall be supported by a wall or girder designed in accordance with accepted engineering practice. Collar ties or ridge straps to resist wind uplift shall be connected in the upper third of the attic space in accordance with Table R602.30 (1). Collar ties shall be not less than 1" inch by 4" inches, spaced not more than 4'feet on center.

R806 Roof Ventilation. Provide attic ventilation as per this CRC Section and the California Energy Standards Commission

Section R807 **Attic Access**

R807.1 Attic access. Buildings with combustible ceiling or roof construction shall have an attic access opening to attic areas that have a vertical height of 30 inches or greater over an area of not less than 30 square feet. The vertical height shall be measured from the top of the ceiling framing members to the underside of the roof framing members. Note: The rough-framed opening shall not be less than 22" inches by 30" inches and shall be located in a hallway or other readily accessible location. In addition attics with a maximum vertical

access openings.

Construction within Wildland Urban Interface areas shall comply with The Department of Forestry and Fire Protection. The Office of the State Fire Marshal in Sacramento can provide additional information. Please visit their web site at http://www.fire.ca.gov/wildland.php

height of less than 30 inches and an area of 30 square feet or less need not be provided with

Section R1001 Chimneys and Fireplaces

R1001.00 Fireplace clearance. Wood beams, joists, studs and other combustible material shall have clearance of not less than 2"inches from the front faces and sides of masonry fireplaces and not less than 4" inches from the back faces of masonry fireplaces. The air space shall not be filled, except to provide fire blocking in accordance with Section R1001.12.

R1001 and R1003 Masonry Fireplaces and Chimneys. Footing and foundations for masonry fireplaces and their chimneys shall be constructed of concrete or solid masonry not less than 12" inches thick and shall extend not less than 6" inches beyond the face of the fireplace or foundation wall on all sides. Unless a specified design is provided, all fireplaces and chimneys shall be constructed, reinforced and anchored with

this section and the applicable provisions of Chapter 3 and 4. R1003.18 Chimney clearances. Any portion of a masonry chimney located in the interior of the building or within the exterior wall of the building shall have a minimum airspace clearance to combustibles of 2" inches. Chimneys located entirely outside the exterior walls of the building, including chimneys that pass through the soffit or cornice, shall have a minimum airspace of 1" inch. The airspace shall not be filled, except to provide fire blocking in accordance with **Section R1003.19**.

R1004 and R1005 Factory-Built Fireplaces and Chimneys. Factory-built fireplaces and Chimneys shall be listed and labeled and shall be installed in accordance with the conditions of the listing. Factory-built fireplaces shall be tested in accordance with UL 127. Chimneys shall be listed and labeled and shall be installed and terminated in accordance with the manufacturer's instructions. Wood burning appliances within the Sacramento Metropolitan Air Quality Management District (SMAQMD) need approval from SMAQMD (916-874-4800).

2016 California Plumbing Code Requirements

Chapter 4 **Plumbing Fixtures and Fixture Fittings**

CPC Section 402.2 Joints. Where a fixture comes in contact with the wall or floor, the joint between the fixture and the wall or floor shall be made watertight.

CPC Section 402.5 Setting. Fixtures shall be set level and in proper alignment with reference to adjacent walls. No Water Closet or Bidet shall be set closer than 15" inches from its center to a side wall or obstruction, or closer than 30" inches center to center to a similar fixture. The clear space in front of the Water Closet, Lavatory, or Bidet shall be not less than 24" inches. **Exception**: The installation of a paper dispenser or accessibility grab bar shall not be considered an

CPC Section 408.3 Individual Shower and Tub-Shower Combination Control Valves. Showers and tub-shower combinations shall be provided with individual control valves of the pressure balance, thermostatic, or combination pressure balance/thermostatic mixing valve type that provide scald and thermal shock protection for the rated flow rate of the installed showerhead. Handle position stops shall be provided on such valves and shall be adjusted per the manufacturer's instructions to deliver a maximum mixed water setting of 120 degrees F.

Chapter 5 Water Heaters

CPC Chapter 5. All water heater installations shall be accessible for inspection, repair, or replacement as per the provisions of this Code and Sections thereafter.

CPC Table 501.1 (1). The minimum capacity for water heaters shall be in accordance with the first hour rating as listed in this Chapter and code Section.

CPC Section 504 and 504.1 Water Heater Requirements and Location. Water Heater installations in bedrooms and bathrooms shall be in accordance with one of the following [NFPA 54:10.28.1]: 1. Fuel-burning water heaters shall be permitted to be installed in a closet located in the bedroom or bathroom provided the closet is equipped with a listed, gasketed door assembly and a listed selfclosing device. The self-closing door assembly shall meet the requirements of **Section 504.1.1**. The

door assembly shall be installed with a threshold and bottom door seal and shall meet the requirements of Section 504.1.2. Combustion air for such installations shall be obtained from the outdoors in accordance with Section 506.4. The closet shall be for the exclusive use of the water

2. Water heater shall be of the direct vent type. [NFPA 54:10.28. [2]

CPC Section 504.6 Temperature, Pressure, and Vacuum relief Devices. Temperature, Pressure, and Vacuum relief Devices or combinations thereof, and automatic gas shutoff devices, shall be installed in accordance with the terms of their listings and the manufacture's installation instructions. A shutoff valve

shall not be placed between the relief valve and the water heater or on discharge pipes between such valves and the atmosphere. The Hourly British thermal units (Btu) (kW*h) discharge capacity or the rated steam relief capacity of the device shall not be less than the input rating of the water heater.

CPC Section 506.1 Air for Combustion and Ventilation. Air for combustion, ventilation, and dilution of flue gases for appliances installed in buildings shall be obtained by the application of one of the methods covered in Section 506.2 through Section 506.7.3. Where the requirements of Section 506.2 are not met, outdoor air shall be introduced in accordance with methods covered in Section 506.4 through Section **506.7.3**. [Water Heaters]

CPC Section 507.2 Seismic Provisions. Water heaters shall be anchored or strapped to resist horizontal displacement due to earthquake motion. Strapping shall be at points within the upper one-third (1/3) and lower one-third (1/3) of its vertical dimensions. At the lower point, a minimum distance of 4" inches (101.6) mm) shall be maintained above the controls with the strapping

P-10 CPC Section 507.13 Installation in Garages. Gas appliances in garages and in adjacent spaces that open to the garage and are not part of the living space of a dwelling unit shall be installed so that burner and burner- ignition devices are located not less than 18 inches above the floor unless listed as flammable vapor ignition resistant. [NFPA 54:9.1.10.1]

Chapter 6 Water Supply and Distribution

P-11 CPC Section 603.5.7 Outlets with Hose Attachments. Potable water outlets with hose attachments, other than water heater drains, boiler drains, and clothes washer connections, shall be protected by a nonremovable hose bib type backflow preventer, a non-removable hose bib type vacuum breaker, or by an atmospheric vacuum breaker installed not less than 6" inches above the highest point of usage located on the discharge side of the last valve.

P-12 CPC Section 608.5 Discharge Piping. The discharge piping servicing a temperature relief valve, pressure relief valve, or combination of both shall have no valves, obstructions, or means of isolation and be provided

with the following: 1: Equal to the size of the valve outlet and shall discharge full size to the flood level of the area receiving the discharge and pointing down

2: Materials shall be rated not less than the operating temperature of the system and approved as such 3: Discharge pipe shall discharge independently by gravity through an air gap into the drainage system of the building with the end of the pipe not exceeding 2 feet and not less than 6" inches above ground

and pointing downwards. 4: Discharge in such a manner that does not cause personal injury or structural damage.

5: No part of such drainpipe shall be trapped or subject to freezing. 6: The terminal end of the pipe shall be threaded. 7: Discharge from a relief valve into a water heater pan shall be prohibited.

Chapter 7 Sanitary Drainage

P-13 CPC Sections 701.2 (2) (a) [HCD 1 & HCD 2], Material Uses. ABS and PVC installations are limited to not nore than two stories of areas of residential accommodation

P-14 CPC Section 707.9 Clearances. No under- floor cleanout shall be located more than 5 feet from an access door, trap door, or crawl hole.

P-15 Shut off valves shall be installed in the fuel supply piping outside of each appliance as per ANZI Z21.24 and

Gas outlets located in a barbecue or fireplace shall be controlled by an approved operating valve located in the same room and outside the hearth but not more than 6-feet from such outlets as per NFPA 5.5.4.

Chapter 8 **Indirect Wastes**

CPC Section 807.3 Domestic Dishwashing Machines. No domestic dishwashing machine shall be directly connected to a drainage system or food waste disposer without the use of an approved dishwasher air gap fitting on the discharge side of the dishwashing machine. Listed air gaps shall be installed with the flood-level (FL) marking at or above the flood level of the sink or drainboard, whichever is higher.

P-18 CPC Table 1216.2 (1). Gas piping shall be sized as per this Table and Section.

2016 California Mechanical Code Requirements

Chapter 3 **General Regulations**

CMC Chapter 3. Such listed and unlisted equipment or appliance shall comply with the provisions of this

CMC 304.4 Appliances in Attics and Under-Floor Spaces. An attic or under-floor space in which an appliance is installed shall be accessible through an opening and passageway not less than the largest component of the appliance, and not less than 22" inches by 30" inches.

CMC 304.4.1 Length of Passageway. Where the height of the passageway is less than 6' feet, the distance from the passageway access to the appliance shall not exceed 20' feet measured along the centerline of the passageway. [NFPA 54:9.5.1.1]

CMC 304.4.2 Width of Passageway. The passageway shall be unobstructed and shall have solid flooring not less than 24" inches wide from the entrance opening to the appliance. [NFPA 54:9.5.1.2]

CMC 304.4.3 Work Platform. A level working platform not less than 30" inches by 30" inches shall be provided in front of the service side of the appliance. [NFPA 54:9.5.2] Exception: 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" inches from the access

CMC 304.4.4 Lighting and Convenience Outlet. A permanent 120-volt receptacle outlet shall be installed near the appliance. The switch controlling the lighting fixture shall be located at the entrance to the passageway. [NFPA 54:9.5.3]

CMC Section 308.1. Equipment covered by this code that is located in a garage and generates a glow, spark, or flame capable of igniting flammable vapors shall be installed on an enclosed platform with sources of ignition at least 18 inches above the floor level.

Chapter 5 **Exhaust Systems**

CMC Section 504.3. Ducts used for domestic kitchen range ventilation shall be of metal and shall have smooth interior surfaces. Exception: Ducts for domestic kitchen downdraft grill-range ventilation installed under a concrete slab floor shall be permitted to be of approved Schedule 40 PVC.

CMC Section 504.4 Clothes Dryers. A clothes dryer exhaust duct shall not be connected to a vent connector, gas vent, chimney, and shall not terminate into a crawl space, attic, or other concealed space. Exhaust ducts shall not be assembled with screws or other fastening means that extend into the duct and that are capable of catching lint, and that reduce the efficiency of the exhaust system. Exhaust ducts shall be constructed of rigid metallic material. Transition ducts used to connect the dryer to the exhaust duct shall be listed for that application or installed in accordance with the clothes dryer manufactures installation instructions. Clothes dryer exhaust ducts shall terminate to the outside of the building in accordance with Section 502.2.1 and shall be equipped with a backdraft damper.

M-10 CMC Section 504.4.1 Provisions for Make-Up Air. Makeup air shall be provided for Type 1 clothes dryers in accordance with the manufacturer's instructions. [NFPA 54:10.4.3.1]. Where a closet is designed for the installation of a clothes dryer, an opening of not less than 100 square inches for makeup air shall be provided in the door or by other approved means.

CMC Section 504.4.2 Domestic Clothes Dryers. Where a compartment or space for a Type 1 clothes dryer is provided, not less than a 4" inch diameter exhaust duct of approved material shall be installed in accordance with Section 504.0. Type 1 clothes dryer exhaust ducts shall be of ridged metal and shall have smooth interior surfaces. The diameter shall not be less than 4" inches nominal and the thickness shall be not less than 0.016 of an inch.

M-12 CMC Section 504.4.2.1 Length Limitations. Unless otherwise permitted or required by the dryer manufacturer's instructions and approved by the Authority Having Jurisdiction, domestic dryer moisture exhaust ducts shall not exceed a total combined horizontal and vertical length of 14' feet, including two 90 degree elbows. A length of 2' feet shall be deducted for each 90 degree elbow in excess of two.

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Chapter 7 Combustion Air

M-14 **CMC Ch. 7**. Fuel burning equipment shall be assured a sufficient supply of combustion air as per the provisions of this Section.

Chapter 8 Chimneys and Vents

M-15 **CMC Section 802.6.2 Termination Requirements.** Gas vents that are 12" inches or less in size and located not less than 8" feet from a vertical wall or similar obstruction shall terminate above the roof in accordance with Figure 802.6.2 and Table 802.6.2. Gas vents that are over 12" inches in size or are located less than 8' feet from a vertical wall or similar obstruction shall terminate not less than 2" feet above the highest point where they pass through the roof and not less than 2' feet above a portion of a building within 10' feet horizontally.

Note: Single wall metal vent connectors shall not originate in an unoccupied attic or concealed space and shall not pass through an attic, inside wall, or concealed space.

Chapter 9 Installation of Specific Appliances

- M-16 CMC Section 916.2.1 Prohibited Installations. Unless specifically permitted by the Authority Having Jurisdiction, unvented room heaters shall not be installed as primary heat sources. Unvented room heaters shall not be permitted in spaces that do not have the required volume of indoor air as defined in Section 701.4. [HCD 1 & HCD 2] Unvented fuel-burning room heaters shall not be installed, used, maintained, or permitted to exist in a Group R Occupancy.
- M-17 CMC Section 921.3.2 (1, 2, 3, and 4) Vertical Clearance above Cooking Top. House-hold cooking appliances shall have a vertical clearance above the cooking top of not less than 30" inches to combustible material or metal cabinets. A minimum clearance of 24" inches is permitted where a listed cooking appliance or microwave oven installed over a listed cooking appliance shall be in accordance with the terms of the upper appliance's listing and the manufacture's installation instructions. Microwave ovens shall comply with UL 923.
- M-18 **CMC Chapter 9**. Vented decorative appliances, floor furnaces, vented wall furnaces, unit heaters and room heaters shall comply with the provisions of this chapter.

2016 California Electrical Code Requirements

- E-1 CEC Article110.12 and 110.3 (B) and 110.10. Electrical equipment shall be installed in a neat and workmanlike manner. (B) Listed or labeled equipment shall be installed and used in accordance with any instructions included in the listing or labeling. 110.10 Components of an electrical circuit shall be selected and coordinated to permit the circuit protective devices used to clear a fault to do so without extensive damage to the components of the circuit.
- E-2 Contact SMUD's Customer Service Department for service location. Phone: (916) 732-7683 or 1-888-742-
- E-3 SCEC Chapter 16.28 Article 250.50 and CEC Article 250-52. Provide a concrete encased grounding electrode (Ufer) and conductor.
- E-4 Branch circuits for lighting and for appliances, including motor-operated appliances, shall be provided to supply the loads computed in accordance with the **CEC Article 220**. In addition, branch circuits shall be provided where required elsewhere in this Code and for dwelling unit loads as specified in **Article 210 11**(C)
- E-5 In each attached garage and in each detached garage with electrical power the branch circuit supplying this receptacle(s) shall not supply outlets outside of the garage. At least 1 receptacle outlet shall be installed for each car space as per CEC Article 210.52 (G) (1).
- E-6 Provide two or more 20-amp small appliance branch circuits to serve all countertop, wall and floor receptacles in the kitchen, pantry, breakfast room, dining room, or similar areas of a dwelling unit. Receptacle outlets shall be installed at each wall, island and peninsular counter space in kitchens and dining rooms per the requirements found in the CEC Article 210.52(A)(1) through (C)(5). Such circuits shall have no other outlets.
- E-7 At least one 20-ampere branch circuit shall be dedicated to supply bathroom receptacles. At least one receptacle is required within 3 ft. of each basin or installed on the countertop, on the side or face of the basin cabinet not more than 12 inches below the countertop as per the CEC Article 210.52 (D) and 406.5(E). Where the 20-ampere circuit supplies a single bathroom, outlets for other equipment within the same bathroom shall be permitted to be supplied in accordance with the CEC Article 210.23(A)(1) and (A)(2)
- E-8 At least one additional 20-ampere branch circuit shall be provided to supply the laundry receptacle outlet(s) required by the CEC Article 210.11(C) (2) and Article 210.52(F). This circuit shall have no other outlets.
- E-9 All 125-volt, single –phase, 15- and 20- ampere receptacles installed in the locations specified in CEC 210.8 (A) (1) through (10) shall have ground-fault circuit interrupter protection for personnel.
- E-10 Ground Fault circuit interrupter (GFCI) protection is required on all receptacles within 6' feet of the outside edge of a bathtub or shower stall. This applies even if the bathtub or shower stall is not located in bathroom as per Article 210.8(A) (9).
- E-11 GFCI protection shall be provided for all outlets that supply dishwashers installed in dwelling units. **NOTE**: This would include a receptacle outlet or a direct-wired outlet for a dishwasher as per **Article 210.8 (D)**.
- E-12 Hydro-massage bathtubs and their associated electrical components shall be on an individual branch circuits and protected by a readily accessible ground-fault circuit interrupter. All 125-volt single phase receptacles not exceeding 30 amperes and located within 6 feet of the inside walls of the tub, shall be protected by a ground-fault circuit interrupter as per the **CEC Article 680.71**.
- E-13 Receptacle outlets shall be installed so that no point along the floor line in any wall space is more than 6 feet measured horizontally, from an outlet in that space. Receptacle outlets are required in walls 2 feet or greater. Hallways of 10 feet or more in length shall have at least one receptacle outlet as per the CEC Article 210.52(A) and (H).
- E-14 All 120-volt, single phase, 15- and 20-ampere branch circuits supplying outlets or devices installed in dwelling unit kitchen, family rooms, dining rooms, living rooms, parlors, libraries, dens, bedrooms, sunrooms, recreation rooms, closets, hallways, laundry areas or similar rooms or areas shall be protected by any means described in 210.12(A)(1) through (6).
- E-15 Electrical Vehicle charging circuits are now required to be dedicated circuits with no other outlets on that circuit as per **CEC Article 210.17.**
- E-16 Dwellings with direct grade level access shall have at least one receptacle outlet within 6 ½ ft. of grade level at the front and back of the dwelling. All 125 volt, 15 and 20 amp, receptacles installed outdoors shall be G.F.C.I. protected. Receptacles installed outdoors in an exterior wet location shall have an enclosure that is weatherproof whether or not the attachment plug cap is inserted as per the CEC Articles 210.52(E)(1-3) and 406.9(B)(1-2).
- E-17 For a one-family dwelling at least one receptacle outlet shall be installed in the area specified in **CEC Article 210.52(G) (1-3)**, these receptacles shall be in addition to receptacles required for specific equipment.
- E-18 At least one wall switch-controlled lighting outlet shall be installed in every habitable room and bathroom. At least one wall switch-controlled lighting outlet shall be installed in hallways, stairways, attached garages, detached garages with electric power, and at outdoor entrances or exits per the CEC Article 210.70(A)(1-2).
- E-19 Location and installation requirements for Luminaries (Lighting Fixtures) shall comply with all applicable provisions of the **CEC Article 410**. Fixtures shall be securely supported. Fixtures installed in recessed cavities in walls or ceilings shall comply with the **CEC Article 410.115** through **410.122**.
- E-20 Luminaires and lampholders shall be securely supported. A luminaire that weighs more than 6 lbs. or exceeds 16" inches in any dimension shall not be supported by the screw shell of a lampholder as per the CEC Article 410.30(A).
- E-21 Outlet boxes or outlet box systems used as the sole support of a ceiling-suspended (paddle) fan shall be listed, shall be marked by their manufacturer as suitable for this purpose, and shall not support ceiling-suspended (paddle) fans that weigh more than 70 lbs.. For outlet boxes or outlet box systems designed to support ceiling-suspended (paddle) fans that weigh more than 35 lbs., the required marking shall include the maximum weight to be supported as per the CEC Articles 314.27(C) and 422.18.
- Electric water heaters, the branch-circuit switch or circuit breaker shall be permitted to serve as the disconnecting means where the switch or circuit breaker is within sight from the appliance or is lockable in accordance with 110.25 as per the CEC Article 422.31(B).
- E-23 Provide a disconnecting means at air conditioning units and heat pumps within sight from and readily accessible as per the **CEC Article 440.14**. Provide fuses or approved circuit breakers to protect a/c equipment and the branch circuit serving such equipment as per the **CEC Article 440.52** and the unit nameplate ratings.

- E-24 A 125-volt, single phase, 15 or 20 ampere-rated receptacle outlet shall be installed at an accessible location for the servicing of heating, air-conditioning, and refrigeration equipment. The receptacle shall be located on the same level and within 25' feet of the heating, air-conditioning, and refrigeration equipment. The receptacle outlet shall not be connected to the load side of the equipment disconnecting means as per the CEC Article 210.63. Also see the CEC Article 210.8 and 406.9 (B) for Ground-Fault Circuit Interrupter and enclosure requirements.
- E-25 The interior of enclosures or raceways installed underground shall be considered to be a wet location. Insulated conductors and cables installed in these enclosures or raceways in underground installations shall be listed for use in wet locations and shall comply with 310.10(C) as per the CEC Article 300.5(B).
- E-26 Types NM and NMS cables shall not be permitted in wet or damp locations as per the **CEC Article** 334.12(B) (4).
- E-27 Outlet boxes or fittings designed for the support of luminaires and lamp holders, and installed as required by CEC Article 314.23, shall be permitted to support a luminaire or lamp holder. At every outlet used
- exclusively for lighting, the box shall be designed or installed so that a luminaire or lamp holder may be attached. Boxes shall be required to support a luminaire weighing a minimum of 50 lb. A luminaire that weighs more than 50 lbs. shall be supported independently of the outlet box, unless the outlet box is listed and marked on the interior box to indicate the maximum weight the box shall be permitted to support. **CEC Article 314.27(A).**
- E-28 Flexible Metal Conduit (FMC) is not permitted in a wet location as per the CEC Article 348.12(1).
- E-29 A receptacle installed outdoors in a location protected from the weather or in other damp locations shall have an enclosure for the receptacle that is weatherproof when the receptacle is covered (attachment plug cap not inserted and receptacle covers closed).

 An installation suitable for wet locations shall also be considered suitable for damp locations.

A receptacle shall be considered to be in a location protected from the weather where located under roofed open porches, canopies, marquees, and the like, and will not be subjected to a beating rain or water runoff. All 15- and 20-ampere, 125- and 250-volt non-locking receptacles shall be a listed weather-resistant type as per the CEC Article 406.9(A).

- E-30 Receptacles of 15- and 20-amperes, 125- and 250-volt receptacles installed in a wet location shall have an enclosure that is weatherproof whether or not the attachment plug cap is inserted. An outlet box hood installed for this purpose shall be listed and shall be identified as "extra duty". All 15- and 20-ampere, 125- and 250-volt nonlocking-type receptacles shall be listed weather-resistant type as per the **CEC Article 406.9(B).**
- E-31 Tamper-Resistant Receptacles in Dwelling Units. In all areas specified in the CEC Article 210.52, all nonlocking-type 125-volt, 15- and 20-ampere receptacles shall be listed tamper-resistant receptacles as per the CEC Article 406.12 (A) through (C).
- E-32 PV systems circuit installed on or in a building shall include a rapid shut down function that controls specific conductors in accordance with **CEC Article 690.12 (1)** through **(5)**.

2016 California Energy Standards Commission

- CESC-1 CESC Section 150 (k) 1-6 in its entirety. All installed shall be high-efficacy in accordance with Table 150.0-
- CESC-2 Masonry and factory built fireplaces shall be installed with closeable metal or glass doors, outside combustion air intakes, and readily accessible flue dampers as per **CESC 150 (e) 1&2.**
- CESC-3 Bathrooms, toilet rooms and kitchens shall be provided with local ventilation fans.
- CESC-4 At least 1 fan in new buildings and additions over 1000sf shall provide 'whole building ventilation (constant on) per **CESC 150 (o)**. Window operation and a central forced air system air handler are not permissible methods of providing the ventilation requirements.

2016 California Fire Code Requirements

- CFC-1 **CFC 505.1**. Approved numbers or addresses shall be posted and plainly visible and legible from the street or road fronting the property.
- CFC-2 **CFC 503.2.1**.Driveway widths for private roads shall not be less than 20 feet unless approved by the local fire district.
- CFC-3 **CFC 6104**. Liquefied Petroleum Gas storage tanks shall not be located within 5 feet of a building or property line unless approved by the local fire district.
- CFC-4 **CFC 6104 Table 6104.3**. A minimum of 10 feet of clearance to combustibles shall be maintained for LP-gas containers.
- CFC-5 **CFC 6107.4**. LP-gas containers shall be suitably protected from vehicular damage.

2016 California Green codes requirements

Section 4.106 Site Development

- CGC-1 4.106.1 General. 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. Preservation of slopes, management of storm water drainage and erosion controls shall comply with this section.
- 4.106.2 Storm water drainage and retention during construction. Projects which disturb less than one acre of soil and are not part of a larger common plan of development which in total disturbs one acre or more, shall manage storm water drainage during construction. In order to manage storm water drainage during construction, one or more of the following measures shall be implemented to prevent flooding of adjacent property, prevent erosion and retain soil runoff on the site.
 - Retention basins of sufficient size shall be utilized to retain storm water on the site.
 Where storm water is conveyed to a public drainage system, collection point, gutter, or similar disposal
 - method, water shall be filtered by use of a barrier system, wattle or other method approved by the enforcing agency.
 - enforcing agency.3. Compliance with a lawfully enacted storm water management ordinance.
- CGC-3 4.106.3 Surface drainage. The site shall be planned and developed to keep surface water from entering buildings. Construction plans shall indicate how the site grading or drainage system will manage surface water flows. Examples of methods to manage surface water include, but are not limited to the following:
 - Water collection and disposal systems
 French drains
 - 3. French drains4. Water retention gardens
 - Other water measures which keep surface water away from building and aid in groundwater recharge.Exception: Additions and alterations not altering the drainage path.

Section 4.303 Indoor water use

- CGC-4 **4.303.1 Water conserving plumbing fixtures and fittings.** Plumbing fixtures (water closets and urinals) and fittings (faucets and showerheads) shall comply with the following:
- CGC-5 4.303.1.1 Water Closets. The effective flush volume of all water closets shall not exceed 1.28 gallons per flush. Tank type water closets shall be certified to the performance criteria of the U.S. EPA WaterSense Specifications for Tank-type toilets.
 - Note: The effective flush volume of dual flush toilets is defined as the composite, average flush volume of 2 reduced flushes and 1 full flush.
 - Water closets < or equal to 1.28 gal/flush, Urinals, < or equal to 0.5 gal/flush, Single shower heads < or equal to 2.0 gpm @ 80psi, Lavatory Faucets < or equal to 1.5 gpm @ 60psi and > or equal to 0.8 gpm @ 20 psi, Kitchen Faucets a < or equal to 1.8 gpm. @ 60 psi.

Section 4.304 Outdoor Water Use

- CGC-6
 4.304.1 Outdoor potable water use in landscape areas. After December 1, 2015, new residential developments with an aggregate landscape area equal to or greater than 500 square feet shall comply with 1 of the following options:

 1. A local water efficient landscape ordinance or the current California Department of Water
 - resources' Model Water Efficient Landscape Ordinance (MWELO), whichever is more stringent; or
 - Projects with aggregate landscape areas less than 2,500 square feet may comply with the MWELO's Appendix D Prescriptive Compliance Option.
 - Notes:
 - The MWELO and supporting documents are available at:
 http://www.water.ca.gov/wateruseefficiency/landscapeordinance/
 - http://www.water.ca.gov/wateruseefficiency/landscapeordinance/

 2. A water budget calculator is available at:
 http://www.water.ca.gov/wateruseefficiency/landscapeordinance/

Section 4.406 Enhanced Durability and Reduced Maintenance

CGC-7 4.406.1 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 enforcing agency.

Section 4.408 Construction Waste Reduction, Disposal and Recycling

- CGC-8 4.408.1 Construction waste reduction of at least 65 percent. Recycle and/or salvage for reuse a minimum of 65 percent of the non-hazardous construction and demolition waste in accordance with either Section 4.408.2, 4.408.3, or meet a more stringent local construction ordinance.
 - Exceptions:
 1. Excavated soil and land-clearing debris.
 - Alternate waste reduction methods developed by working with local agencies. If diversion or recycle facilities capable of compliance with this item, do not exist or are not located reasonably close to the inherite.
 - The enforcing agency may make exceptions to the requirements of this section when isolated jobsites are located in areas beyond the haul boundaries of the diversion facility.
- CGC-9 **4.408.2 Construction waste management plan.** Submit a construction waste management plan in conformance with Section 4808.2 1 through 5. The construction waste management plan shall be updated
- as necessary and shall be available during construction for examination by the enforcing agency.

 1. Identifies the materials to be diverted from disposal by recycling, reuse on the project or salvage for
- future use or sale.

 2. Specifies if materials will be sorted on-site or mixed for transportation to a diversion facility.

5. Specifies that the amount of materials diverted shall be calculated by weight or volume, but not by

- 3. Identifies the diversion facility where the material collected will be taken.4. Identifies construction methods employed to reduce the amount of waste generated.
- both.

 CGC-10 Any gas fireplace shall be direct vent sealed combustion type. Any installed wood stove or pellet stove
- shall be EPA Phase II certified.

 CGC-11 Duct openings and mechanical appliances shall be kept covered or sealed until final start-up.
- CGC-12 Adhesives, Paints, Aerosols and Carpets shall meet all current Lo-VOC requirements.
- CGC-13 Whole house fans shall have insulated louvers or remote fans with insulated ducts.
- CGC-14 Heating and Air Conditioning systems shall be designed using heat loss and gain calculations, duct sizing design and systems capacity design compliant with ANSI/ ACCA Manuals J, D, and S, ASHRAE handbooks or other equivalent software or methods.

Document # RS-15

EXP. 8-31-2021

hal - Architect urt Is, California 95762 13 · jon@jnwarchitect.com

Jon N. Westp
773 Bolsa Co
El Dorado Hill
(916) 804-018

GENERAL NOTE

in Expansion & Remodel for Huber Residence 124 Burnham Court

FILE NO:

DATE:

2108Base

SHEET NO:

5N-2

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- 1. ALL VENTING METHODS ARE BY OTHERS. OTHER ADDITIONAL VENTING METHODS MAY BE REQ'D SUCH AS RIDGE VENTS, EYEBROW VENTS, GABLE VENTS, MECHANICAL VENTING, ETC.
- 2. FOR RAFTERS PROVIDE HORIZONTAL SEAT CUT AT ALL BRG LOCATIONS UNO. SEAT CUT SHALL START AT THE INSIDE FACE OF SUPPORT UNO.
- 3. ENDS OF RAFTERS SHALL BE CUT PLUMB TO PROVIDE FULL CONTACT FOR END OF RAFTER WITH FLUSH RIDGES & BEAMS PROVIDE COMPOUND MITER CUTS AT ENDS OF ALL RAFTERS AT
- FLUSH HIPS & VALLEYS. 4. PROVIDE 2X_MIN SOLID BLKG BTWN ALL RAFTERS @ ALL BRG
- 5. TOPS OF RAFTERS SHALL BE BRACED FOR THE ENTIRE SPAN W/15/32" MIN THICKNESS PLY/OSB W/TYP FASTENER SPACING TO TOP OF RAFTER NOT TO EXCEED 12"CC. WHERE PLY/OSB IS NOT INSTALLED OV/TOP OF RAFTERS, INSTALL 2X_ FULL DEPTH BLKG @ ALL BAYS W/SPCG NOT TO EXCEED 48"CC.
- 6. BOT OF RAFTERS TO BE BRACED FOR ENTIRE SPAN BY ONE OF THE FOLLOWING METHODS UNO:
- A. 3/8" MIN THICKNESS PLY/OSB W/TYP FASTENER SPACING NOT TO EXCEED 12"CC
- B. 7/8" MIN THICKNESS PLASTER W/WIRE LATH, ATTACH LATH W/TYP FASTENER SPACING NOT TO EXCEED 6"CC.
- C. ½" MIN THICKNESS GWB W/TYP FASTENER SPACING NOT TO EXCEED 7"CC
- D. MIN 1X_ WOOD DECKING/SHIPLAP W/2-TYP FASTENERS @ EA NOTE: BRACING AT BOTTOM OF RAFTERS IS NOT REQ'D WHERE
- FULL DEPTH 2X BLKG IS INSTALLED @ 48"CC ALL BAYS 7. SEE 9/S0.4 FOR NOTCHING AND BORING OF RAFTERS

ROUGH CARPENTRY-WALL FRAMING:

- 1. ALL WALLS SHALL HAVE CONT 2-2X_ TOP PLATES W/MIN LAPS PER 1A/S0.4 UNO, NO BORING OR NOTCHES ARE ALLOWED WITHIN SPLICE LOCATIONS. TOP PLATES SHALL BE LAPPED AT ALL CORNERS & INTERSECTIONS.
- 2. ALL STUDS SHALL BE 2X4 MIN @ 16"CC UNO, USE 2X6 FRAMING @ PLUMBING WALLS (FINGER JOINTED STUDS ARE NOT
- 3. WALL FRAMING SHALL BE CONT BTWN BRACING LOCATIONS SUCH AS ROOF/FLOOR DIAPHRAGMS & FOUNDATION
- 4. STUDS/POSTS @ BRG WALLS, SHEARWALLS, AND EXTERIOR WALLS ARE TO BE BRACED FOR ENTIRE SPAN BY ONE OF THE FOLLOWING METHODS UNO:
- A. 3" MIN THICKNESS PLY/OSB W/TYP FASTENER SPACING NOT TO EXCEED 12"CC B. 7/8" MIN THICKNESS PLASTER W/WIRE LATH, ATTACH LATH
- W/TYP FASTENER SPACING NOT TO EXCEED 6"CC. C. ½" MIN THICKNESS GWB W/TYP FASTENER SPACING NOT TO EXCEED 7"CC
- D. ALTERNATE BRACING METHODS MUST BE SUBMITTED TO RW CONSULTING ENGINEERS FOR APPROVAL PRIOR TO USE
- 5. SEE 9/S0.4 FOR NOTCHING AND BORING OF STUDS 6. SILL PLATES
- A. WALLS LESS THAN 8'-0" LONG SHALL HAVE SINGLE PIECE SILL PLATE

BOLT DIAMETERS FROM ENDS OF SILL PLATE

B. ALL SILL PLATES SHALL HAVE A MINIMUM OF 2-ABS, HOLDOWN ABS DO NOT COUNT TOWARD THIS REQ'MT C. ABs SHALL BE NO FARTHER THAN 12" & NO CLOSER THAN 7

ROUGH CARPENTRY-HARDWARE

- 1. ALL STEEL CONNECTORS, STRAPS, HANGERS, HARDWARE, ETC SHALL BE BY SIMPSON STRONG-TIE OR APPROVED EQUAL UNO. ATTACH W/FASTENERS PER MFR TO ACHIEVE THE MAXIMUM TABULATED VALUE.
- 2. HARDWARE COMPONENTS AND FASTENERS INSTALLED AGAINST OR INTO TREATED LUMBER SHALL HAVE CORROSION PROTECTION APPROPRIATE FOR THE TYPE OF CHEMICALS USED IN THE TREATMENT PROCESS. AS A MINIMUM, ALL HARDWARE AND FASTENERS INTO/AGAINST TREATED LUMBER OR IN EXTERIOR APPLICATIONS SHALL BE HOT-DIPPED GALVANIZED (G185 MIN FOR HARDWARE) OR STAINLESS STEEL.
- 3. INSTALL ALL SPECIFIED FASTENERS BEFORE LOADING THE
- CONNECTION. 4. NAILS FOR HARDWARE SHALL NOT BE OVERDRIVEN OR DEFORM THE PART. THE CONTRACTOR SHALL VERIFY WITH THE HARDWARE MFR THAT THE PART PUBLISHED CAPACITIES ARE NOT REDUCED AS A RESULT OF THE INSTALLED
- CONDITION. 5. FASTENER SUBSTITUTIONS FOR HARDWARE ARE NOT ALLOWED UNLESS APPROVED FOR USE BY THE MFR AND THE HARDWARE CAPACITY IS NOT REDUCED.
- 6. WASHERS AT WOOD CONNECTIONS SHALL BE SQUARE PLATE STEEL OR MALLEABLE IRON W/THE FOLLOWING MIN DIMENSIONS:

	MIN WASHER DIMENSIONS	MIN THICKNESS	
1/2"	2" x 2"	³ / ₁₆ "	1
5/8"	2½" x 2½"	1/4"	
3/4"	2¾" x 2¾"	⁵ / ₁₆ "	
⁷ /8"	3" x 3"	⁵ / ₁₆ "	
1"	3½" x 3½"	3/8"	

ROUGH CARPENTRY-NAILS:

1. ALL SPECIFIED NAILS SHALL CONFORM TO ASTM F1667 OR ICC ESR-1539. ALTERNATE FASTENERS MUST HAVE AN ICC EVALUATION REPORT AND MAY NOT BE USED UNLESS APPROVED IN WRITING BY RW CONSULTING ENGINEERS. ALL NAILS SHALL BE FULL ROUND HEAD WITH MINIMUM PROPERTIES AS FOLLOWS:

SPECIFIED	DIANACTED	LENGTH	DENIETDATION	ADDUCATION
FASTENER	DIAMETER	LENGIH	PENETRATION	APPLICATION
8d	.131"Ø	2½"	13/8"	SHTG/FRMG
10d	.148"Ø	3"	1½"	SHTG/FRMG
16d BOX	.135"Ø	3½"	15/8"	FRMG
16d SINKER	.148"Ø	31/4"	1½"	FRMG
16d COMMON	.162"Ø	3½"	15/8"	FRMG
		 		

- ALL NAILS SHALL BE COMMON WIRE NAILS EXCEPT WHERE SPECIFICALLY
- 2. NAILS SHALL BE LOCATED AND SPACED TO PREVENT SPLITTING OF WOOD. PREDRILL ALL FASTENERS 75% MAX OF FASTENER DIAMETER WHERE WOOD TENDS TO SPLIT.
- 3. TOENAILS SHALL BE DRIVEN AT AN ANGLE OF APPROX 30° WITH THE MEMBER AND STARTED APPROX 1/3 THE LENGTH OF THE NAIL FROM THE MEMBER END.
- 4. NAILS USED IN HARDWARE SHALL BE AS SPECIFIED BY HARDWARE
- 5. MINIMUM NAILING SHALL BE PER CBC TABLE 2304.10.1 UNO:

	Description	Nailing
_	Roof	
1.	Blkg btwn clg joists, rafters or trusses to top plate or other framing blw	3-8d toe nail, ea e
	Blkg btwn rafters or truss not at the wall top plate, to rafter or truss	2-8d toe nail or 2-16d end nail, ea e
	Flat blkg to truss & web filler	16d face nail @ 6
2.	Clg joist to top plate	3-8d toe nail ea jo
3.	Clg joist not attached to parallel rafter, laps ov/partitions (no thrust)	3-16d face r
4.	Clg joist attached to parallel rafter, laps ov/partitions (w/thrust)	CBC Table 2308.7
5.	Collar tie to rafter	3-10d face r
ŝ.	Rafter or truss to top plate (see CBC section 2308.7.3.1, Table 2308.7.3.1)	3-10d toe r
7.	Rafters to ridge, valley or hip rafters; or rafter to 2" ridge	3-10d toenail or 2-16d end n
Т	Wall	
3.	Stud to stud (not @ braced wall panels)	16d @ 24"cc face r
7 .	Stud to stud and abutting studs at intersecting wall corners (braced wall panels)	16d @ 6"cc face r
10.	Built up header (2" to 2" header)	16d @ 16"cc face r
11.	Cont header to stud	4-8d toe r
2.	Top plate to top plate	16d @ 16"cc face r
13.	Top plate to top plate, at end joints	8-16d ea side of end joint face nail (24" min lap splice ea er
4.	Bot plate to joist, rim, band joist or blkg (not @ braced wall panels)	16d @ 16
15.	Bot plate to joist, rim, band joist or blkg (braced wall panels)	2-16d @ 16
16.	Stud to top or bot plate	4-8d toe r
17.	Top or bot plate to stud	2-16d end r
18.	Top plates, laps at corners & intersections	2-16d face r
19.	1" brace to ea stud & plate	2-8d face r
20.	1x6 sheathing to ea bearing	2-8d face r
21.	1x8 & wider sheathing to ea bearing	3-8d face r
Т	Floor	
	Joist to sill, top plate or girder	3-8d toe r
23.	Rim joist, band joist, or blkg to top plate, sill, or other framing blw	8d @ 6"cc toe r
24.	1x6 sub floor or less to ea joist	2-8d face r
25.	2" sub floor to joist or girder	2-16d face r
26.	2" planks ea bearing (plank & beam, floor & roof)	2-16d face r
27.	Built up girders & beams, 2" lumber layers	10d @ 24"cc face nail at top & bot, stagger on opposite sid
28.	Ledger strip supporting joists or rafters	3-16d ea joist or rafter face r
29.	Joist to band joist or rim joist	3-16d end r
3 0.	Bridging or blkg to joist, rafter or truss	2-8d toe nail ea e

- PROTECTION APPROPRIATE FOR THE TYPE OF CHEMICALS USED IN THE TREATMENT PROCESS. AS A MINIMUM, NAILS INTO TREATED LUMBER OR IN EXTERIOR APPLICATIONS SHALL BE HOT-DIPPED GALVANIZED PER ASTM A153 CLASS D OR TYPE 316 STAINLESS STEEL
- 7. SHEATHING NAILS SHALL BE DRIVEN SO THAT THEIR HEAD OR CROWN ARE FLUSH WITH THE SURFACE OF THE SHEATHING.

ROUGH CARPENTRY-WOOD SCREWS:

- 1. ALL SPECIFIED WOOD SCREWS SHALL CONFORM TO ANSI/ASME STANDARD B18.6.1. ALTERNATE WOOD SCREWS MUST HAVE AN ICC EVALUATION REPORT AND MAY NOT BE USED UNLESS APPROVED IN WRITING BY RW CONSULTING ENGINEERS. END DISTANCE, EDGE DISTANCE, & SPCG OF ALTERNATE WOOD SCREWS MUST CONFORM TO THE MFR ICC EVALUATION REPORT
- 2. WOOD SCREWS SHALL BE LOCATED AND SPACED TO PREVENT SPLITTING OF WOOD, PRE-DRILL LEAD HOLES AS REQ'D. LEAD HOLES SHALL NOT EXCEED THE SMALLEST OF % OF THE SHANK DIAMETER AND % OF THE ROOT DIAMETER AT THREADED PORTIONS. 3. WOOD SCREWS USED IN HARDWARE SHALL BE AS SPECIFIED
- BY HARDWARE MFR.
- 4. WOOD SCREWS SHALL BE INSTALLED BY TURNING OF THE SCREW & NOT BY DRIVING OF A HAMMER. 5. SOAP OR OTHER LUBRICANT MAY BE USED ON THE WOOD SCREW OR IN THE LEAD HOLE AS REQ'D TO PREVENT DAMAGE
- TO THE WOOD SCREW. 6. WOOD SCREWS INSTALLED IN TREATED LUMBER SHALL HAVE CORROSION PROTECTION APPROPRIATE FOR THE TYPE OF CHEMICALS USED IN THE TREATMENT PROCESS. AS A MINIMUM, WOOD SCREWS INTO TREATED LUMBER OR IN EXTERIOR APPLICATIONS SHALL BE HOT-DIPPED GALVANIZED PER ASTM A153 CLASS D OR TYPE 316 STAINLESS STEEL.

ROUGH CARPENTRY-LAG SCREWS:

- 1. ALL SPECIFIED LAG SCREWS SHALL CONFORM TO ANSI/ASME STANDARD B18.2.1.
- 2. LEAD HOLES FOR LAG SCREWS SHALL BE BORED TO AVOID SPLITTING OF WOOD MEMBERS. THE LEAD HOLE FOR THE SHANK SHALL HAVE THE SAME DIAMETER AND LENGTH AS THE UNTHREADED SHANK. THE LEAD HOLE FOR THE THREADED PORTION SHALL SHALL NOT EXCEED 70% OF THE SHANK DIAMETER AND HAVE MIN LENGTH EQUAL TO THREADED
- 3. LAG SCREWS SHALL BE INSTALLED BY TURNING OF THE LAG SCREW & NOT BY DRIVING OF A HAMMER.
- 4. SOAP OR OTHER LUBRICANT MAY BE USED ON THE LAG SCREW OR IN THE LEAD HOLE AS REQ'D TO PREVENT DAMAGE TO THE LAG SCREW.
- 5. LAG SCREWS INSTALLED IN TREATED LUMBER SHALL HAVE CORROSION PROTECTION APPROPRIATE FOR THE TYPE OF CHEMICALS USED IN THE TREATMENT PROCESS. AS A MINIMUM, LAG SCREWS INTO TREATED LUMBER OR IN EXTERIOR APPLICATIONS SHALL BE HOT-DIPPED GALVANIZED PER ASTM A153 CLASS C OR TYPE 316 STAINLESS STEEL.
- 6. LAG SCREWS SHALL BE INSTALLED WITH A STANDARD CUT WASHER OR PLATE WASHER W/CORROSION PROTECTION TO MATCH THE LAG SCREW.
- 7. ALL LAG SCREWS TO BE TIGHTENED DURING INSTALLATION & RE-TIGHTENED JUST PRIOR TO CLOSING IN.

WOOD FASTENERS-BOLTS:

- 1. ALL SPECIFIED BOLTS IN WOOD FRAMING SHALL CONFORM TO ANSI/ASME STANDARD B18.2.1. 2. HOLES SHALL BE A MIN OF $\frac{1}{32}$ " TO A MAX OF $\frac{1}{16}$ " GREATER THAN
- THE BOLT DIAMETER. HOLES SHALL BE ACCURATELY ALIGNED AND NOT FORCIBLY DRIVEN. 3. BOLTS INSTALLED IN TREATED LUMBER SHALL HAVE CORROSION PROTECTION APPROPRIATE FOR THE TYPE OF CHEMICALS USED IN THE TREATMENT PROCESS. AS A MINIMUM, BOLTS INTO TREATED LUMBER OR IN EXTERIOR APPLICATIONS SHALL BE HOT-DIPPED GALVANIZED PER ASTM A153 CLASS C OR
- TYPE 316 STAINLESS STEEL. 4. BOLTS SHALL BE INSTALLED WITH A STANDARD CUT WASHER OR PLATE WASHER AT HEAD AND NUT W/CORROSION PROTECTION TO MATCH THE BOLT.
- 5. ALL BOLTS & NUTS TO BE TIGHTENED DURING INSTALLATION & RE-TIGHTENED JUST PRIOR TO CLOSING IN.

CONCRETE NOTES:

- 1. ALL CONCRETE SHALL BE NORMAL WEIGHT PER ACI 301 AND HAVE PROPORTIONS OF CEMENT, COARSE AND FINE AGGREGATE, WATER AND ADMIXTURES TO PRODUCE THE PROPERTIES SPECIFIED FOR EACH CONCRETE MIX TYPE PER ACI 301 ON THE BASIS OF PREVIOUS FIELD EXPERIENCE AND SUPPORTED BY PREVIOUS TEST RECORDS.
- 2. CONCRETE SHALL HAVE THE FOLLOWING MINIMUM PROPERTIES. REFER TO PROJECT SPECIFICATIONS (WHERE APPLICABLE) FOR ADDITIONAL REQUIREMENTS.

ADDITIONAL REGUINEMENTS.						
CLASS	APPLICATION	STRENGTH	MAX W/C			
		f'c (psi)	Ratio			
CLASS A	EXTERIOR SLABS, FOOTINGS & WALLS	3000	0.48			
TEST CONCRETE STRENGTH PER 2019 CBC CH. 17						

- A. THE APPROVED PROPORTIONS SHALL BE CAREFULLY MAINTAINED. NO DEVIATION FROM THE APPROVED PROPORTIONS SHALL BE MADE WITHOUT WRITTEN
- APPROVAL BY ENGINEER. B. USE ADMIXTURES IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS. USE WATER-REDUCING ADMIXTURE THAT WILL NOT RESULT IN
- SEGREGATION, HONEYCOMBING, OR ROCK POCKETS C. ANY OF THE ABOVE MIXES CAN BE USED FLOWABLE (8" MAX SLUMP) IF THE PROPER ADDITION OF ADMIXTURES IS INCLUDED AND THE WATER TO CEMENT RATIO IS NOT
- D. CEMENT PER ASTM C-150 TYPE I OR II FLY ASH PER ASTM C-618 CLASS N OR CLASS F UP TO 20% OF PORTLAND CEMENT MAY BE SUBSTITUTED
- WITH FLY ASH E. COARSE AND FINE AGGREGATES PER ASTMC-33 F. ADMIXTURES AND DOSAGES WILL VAY WITH CLIMATE AND JOB SITE REQUIREMENTS. CONTRACTOR IS RESPONSIBLE FOR PROVIDING MIX DESIGN SUITABLE FOR JOB SITE CONDITIONS. ADMIXTURES CONTAINING CHLORIDES ARE
- NOT PERMITTED. 3. ALL DEBRIS SHALL BE REMOVED FROM FORMS AND FOOTING EXCAVATIONS PRIOR TO POURING CONCRETE. NO WOOD STAKES OR FORM SPREADERS SHALL BE PERMITTED IN
- CONCRETE. 4. BALL REINFORCEMENT, ANCHOR BOLTS, AND OTHER EMBEDDED ITEMS SHALL BE SECURED IN POSITION SHOWN
- ON DRAWINGS PRIOR TO PLACING CONCRETE. 5. CONCRETE SHALL BE CONSOLIDATED BY MECHANICAL VIBRATION PER ACI 309 BY MEANS SUITABLE FOR ON SITE CONDITIONS. USE HAND RODDING OR TAMPING AS
- 6. CONSTRUCTION JOINTS SHALL HAVE ALL LOOSE MATERIAL REMOVED AND SHALL BE INTENTIONALLY ROUGHENED TO 1/4" AMPLITUDE PRIOR TO POURING CONCRETE. CONTRACTOR SHALL SUBMIT CONSTRUCTION JOINT LOCATIONS TO
- ENGINEER FOR APPROVAL PRIOR TO CONSTRUCTION. 7. ALL FORMWORK TO REMAIN IN PLACE FOR DURATION AS REQUIRED BY LATEST EDITION OF ACI 318
- 8. REFER TO ACI RECOMENDATIONS FOR PLACING AND CURING CONCRETE IN COLD AND HOT WEATHER CONDITIONS. CONTRACTOR IS RESPONSIBLE FOR COORDINATING CONCRETE MIX DESIGN WITH BATCH PLANT TO PROVIDE CONCRETE MIX APPROPRIATE FOR SITE CONDITIONS.
- 9. CONTRACTOR IS RESPONSIBLE FOR DETERMING AND IMPLEMENTING APPROPRIATE CURING PROCEDURES FOR ACTUAL SITE/WEATHER CONDITIONS AND SHALL INCLUDE PROVISIONS FOR INCLEMENT WEATHER. REFER TO ACI 308R.
- 10. ALL SLABS SHALL BE FLAT AND LEVEL W/A TOLERANCE OF 3/6" IN 10' FOR FLATNESS AND MINIMUM LOCAL VALUE F = 32 PERASTM 1155. THE PROJECT OWNER MAY REJECT ANY CONSTRUCTION THAT DOES NOT MEET THE FLATNESS CRITERIA NOTED WITH REPLACEMENT AT CONTRACTOR'S
- EXPENSE. 11. CONDUITS AND PIPES EMBEDDED IN THE SLAB (OTHER THAN THOSE PASSING VERTICALLY THROUGH) SHALL NOT BE PERMITTED. CONTRACTOR TO SUBMIT FOOTING PENETRATIONS TO STRUCTURAL ENGINEER FOR REVIEW AND APPROVAL PRIOR TO CONSTRUCTION.

CONCRETE REINFORCEMENT NOTES:

- 1. DETAIL, FABRICATE, AND PLACE REINFORCING PER ACI 315 AND ACI 318. SUPPORT REINFORCEMENT W/APPROVED CHAIRS.
- SPACERS, OR TIES. 2. REINFORCEMENT SHALL BE DEFORMED BILLET STEEL PER ASTM A-615. GRADE 60. ALL REINFORCEMENT AT BOUNDARY ELEMENTS AND REINFORCEMENT TO BE WELDED SHALL BE ASTM A-706, GRADE 60.
- 3. ALL BENDING OF REINFORCEMENT PER ACI. FIELD BENDING OF REINFORCEMENT SHALL NOT BE PERMITTED. 4. REINFORCEMENT IN WALLS, SLABS, BEAMS AND FOOTINGS
- SHALL BE CONTINUOUS AROUND CORNERS OR CORNER BARS PROVIDED 5. LAP ALL REINFORCEMENT 48DB FOR #6 AND SMALLER BARS. 60DB FOR #7 AND LARGER BARS. INCREASE LAP LENGTH 30%
- WHERE MORE THAN 12" OF FRESH CONCRETE IS POURED UNDER REINFORCEMENT. 6. TRIM REINFORCING AROUND OPENINGS SHALL BE A MINIMUM
- EACH CORNER. PROVIDE 90° HOOK AT CORNERS WHERE STRAIGHT EMBEDMENT NOT POSSIBLE 7. REINFORCING SHALL BE TIED IN PLACE. TACK WELDING OF

2-#5 TOP AND BOTTOM EXTENDING 40" BEYOND OPENING AT

- REINFORCING IS NOT PERMITTED. 8. CONTRACTOR TO TAKE NECESSARY PRECAUTIONS TO INSURE CONCRETE IS PROPERLY CONSOLIDATED AROUND ALL BOLTS,
- ANCHORAGES, ETC. 9. WHERE REINFORCING IS NOT SPECIFIED, REFER TO ACI 318 FOR MINIMUM REINFORCEMENT.
- 10. WELDED WIRE FABRIC PER ASTM A-185 AND ASTM A-82. 11. DEFORMED BAR ANCHORS PER ASTM A-496. 12. PROVIDE MINIMUM COVER FOR ALL REINFORCING AS FOLLOWS:
- APPLICATION COVER CONCRETE CAST AGAINST EARTH CONCRETE EXPOSED TO EARTH OR WEATHER: #5 AND SMALLER #6 AND LARGER CONCRETE NOT EXPOSED TO EARTH OR WEATHER: SLABS AND WALLS

BEAMS AND COLUMNS

ER-263 UNO

- 13. STAGGER LAPS IN ADJACENT BARS 6'-0" MINIMUM 14. PROVIDE FOOTING DOWELS TO MATCH SIZE AND SPACING OF VERTICAL REINFORCEMENT UNO. 15. ALL REINFORCING TO BE WELDED SHALL BE ASTM A-706 AND
- CONTINUOUSLY INSPECTED AND PERFORMED PER AWS 16. REINFORCING WHICH IS TO BE DOWELED INTO EXISTING CONCRETE SHALL BE INSTALLED W/SIMPSON AT-XP PER IAPMO

TESTS & INSPECTIONS:

TESTS & INSPECTIONS SHALL BE PROVIDED BY A QUALIFIED TESTING AGENCY AS NOTED BLW AND SHALL CONFORM TO THE

REQUIREMENTS OF 2019 CBC, SECTION 1701 1. INSPECT ANCHORS CAST IN CONCRETE

2. INSPECT POST-INSTALLED ANCHORS A. ADESIVE ANCHORS INSTALLED IN HORIZINTALLY OR UPWARDLY INCLINED ORIENTATIONS TO RESIST SUSTAINED TENSION LOADS B. ALL OTHER MECHANICAL AND ADHESIVE ANCHORS 4. REINFORCING STEEL AND PLACEMENT VERIFYING MIX DESIGN_

1.	SHEAR WALLS WITH SPACING LESS THAN 6"oc	
	A. WALL SHEATHING NAILING	
	B. BOLTING TO CONCRETE	X
	C. HOLDOWN ANCHORAGE	
2.	TOP PLATE SPLICES	X
SC	DILS:	

FOUNDATION NOTES:

4. SUBGRADE PREPARATION

FOOTING EXVACTIONS AND BEARING

2. CLASSIFICATION AND TESTING OF FILL

3. FILL PLACEMENT AND COMPACTION

1. FOUNDATIONS ARE DESIGNED IN ACCORDANCE W/ THE CODE MINIMUM AS PRESENTED BY 2019 CBC TABLE 1806.2

SHALLOW FOUNDATIONS					
PROPERTY	VALUE				
SOIL BEARING	1500 PSF				
PASSIVE	250 PCF				
FRICTION	0.25				
COEFF.					

- 2. FOOTINGS SHALL BEAR ON FIRM, DRY, UNDISTURBED SOIL OR COMPACTED FILL PER SOILS REPORT. FOOTING DEPTHS INDICATED ON THE PLANS ARE MINIMUM. AREAS OVER-EXCAVATED SHALL BE BACKFILLED W/COMPACTED STRUCTURAL FILL PER SOILS REPORT OR LEAN CONCRETE (F'C=1000 PSI) AT CONTRACTOR'S EXPENSE.
- 3. CONTRACTOR TO NOTIFY ENGINEER OF RECORD IMMEDIATELY WHERE JOB SITE CONDITIONS ARE DIFFERENT THAN SHOWN ON CONTRACT DOCUMENTS.
- 4. ALL FOOTINGS NOT FORMED SHALL BE POURED INTO NEAT EXCAVATIONS. PRECAUTIONS SHALL BE TAKEN TO PREVENT SLOUGHING OF SOIL INTO THE FOOTING EXCAVATION PRIOR TO AND DURING THE PLACEMENT OF CONCRETE.

DESIGN CRITERIA:

129 BURNHAM COURT FOLSOM, CA 2. BUILDING CODE 2019 CALIFORNIA BUILDING CODE LIVE LOADS:

4. OTHER LOADS:

5. LATERAL LOADS:

20 PSF-ROOF

40 PSF-FLOOR

60 PSF-DECK

RISK CATEGORY II BASIC WIND SPEED 94 MPH (LRFD), 73 MPH (ASD) **EXPOSURE** SEISMIC LOADS

SITE CLASS SEISMIC DESIGN CATEGORY D IMPORTANCE FACTOR REDUNDANCY, RHO 1.3 R = 6.5 $S_{DS} = 0.403$ $S_c = 0.411$ $S_1 = 0.211$ $S_{D1} = NA$ V = 0.057 W (ASD)

STRUCTURAL SHEET INDEX: **GENERAL NOTES GENERAL NOTES** TYPICAL DETAILS TYPICAL DETAILS FOUNDATION PLAN ROOF FRAMING PLAN **ELEVATIONS/SECTIONS** DETAILS

ABBREVIATIONS

S0.2

S0.3

S0.4

S2.1

S2.2

S3.1

S4.1

@	AT	LS	LAG SCREW
AB	ANCHOR BOLT	LSL	LAMINATED STRAND
	APPROXIMATE		LUMBER
Arch	,	LVL	LAMINATED VENEER
BC	BOTTOM CHORD		LUMBER
BLK	BLOCK OR BLOCKING		
ВО	BOTTOM OF	MAX	MAXIMUM
CBC	CALIFORNIA BUILDING CODE		MINIMUM
ОС	ON CENTER	(N)	NEW
CIP	CAST IN PLACE	#	NUMBER
CJ	CONSTRUCTION JOINT	NTS	NOT TO SCALE
CL	CENTER LINE	OD	OUTSIDE DIAMETER
CMU	CONCRETE MASONRY UNIT	OH	OPPOSITE HAND
CONC	CONCRETE	OV	OVER
CONT	CONTINOUS	PL	PLATE
DF	DOUGLAS FIR	PT	PRESSURE TREATED
	DIAMETER	REIN	REINFORCEMENT
DL	DEAD LOAD	SIM	SIMILAR
DT	DRAG TRUSS	SP	STRUCTURAL PANEL
(E)	EXISTING	SW	SHEAR WALL
EN	EDGE NAIL	T&B	TOP AND BOTTOM
EOR	ENGINEER OF RECORD	T&G	TONGUE AND GROON
FDN	FOUNDATION	thru	THROUGH
FF	FINISH FLOOR	TN	TOE NAIL
FO	FACE OF	TOS	TOP OF STEEL
	FOOT/FEET	TYP	TYPICAL
FTG	FOOTING	UNO	UNLESS NOTED
FRMG	FRAMING		OTHERWISE
GLB	GLUE LAMINATED BEAM	W/O	WITHOUT
HD	HOLD DOWN	VIF	VERIFY IN FIELD
HDG	HOT-DIPPED GALVANIZED	W/O	WITHOUT
HDR	HEADER	WWF	WELDED WIRE FABRI

GENERAL NOTES:

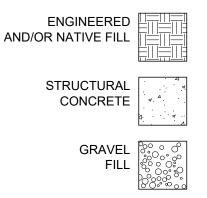
- 1. ALL CONSTRUCTION SHALL CONFORM TO 2019 CBC W/AMMENDMENTS AND ALL OTHER APPLICABLE CODES AND REGULATIONS.
- 2. NOTES ON THIS SHEET ARE TYPICAL AND SHALL APPLY UNLESS OTHERWISE NOTED OR SHOWN. TYPICAL DETAILS SHALL APPLY FOR ALL LIKE CONDITIONS UNLESS OTHERWISE NOTED OR DETAILED.
- 3. IT IS THE CONTRACTOR'S RESPONSIBILITY TO VERIFY ALL DIMENSIONS, ELEVATIONS, EXISTING CONDITIONS, AND OTHER RELATED ITEMS. THE CONTRACTOR SHALL REVIEW THE CONTRACT DOCUMENTS PRIOR TO CONSTRUCTION AND SHALL NOTIFY THE ENGINEER OF RECORD IF ANY CONFLICTS ARE SHOWN OR NOTED.
- 4. IT IS THE CONTRACTOR'S RESPONSIBILITY TO CONFORM TO RELEVANT SECTIONS OF THE CALIFORNIA "CONSTRUCTION SAFETY ORDERS" AND ALL OSHA REQUIREMENTS. THE ENGINEER OF RECORD ACCEPTS NO RESPONSIBILITY FOR THE CONTRACTOR'S FAILURE TO COMPLY W/ THESE REQUIREMENTS.
- 5. DESIGN AND CONSTRUCTION OF ALL TEMPORARY BRACING, SHORING, FORMING, ETC REQUIRED SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
- 6. OVERALL DIMENSIONS ARE SHOWN TO FACE OF STUD OR CONCRETE UNLESS NOTED OTHERWISE.

DRAWING STANDARDS:

SHEET NUMBERING - STRUCTURAL SHEETS - DRAWING TYPE 0 TYPICAL 2 PLANS 3 ELEVATIONS & SECTIONS 4 DETAILS - SHEET NUMBER WITHIN DRAWING TYPE S2.

SYMBOLS STANDARD WALL BUILDING DETAIL & ELEVATION SECTION & LOCATION & LOCATION LOCATION GRID LINE @ CENTER OF WALL STRUCTURAL ELEVATION

MATERIAL LEGEND



NOT FOR CONSTRUCTION

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PLAN REVIEW ONLY

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GENERAL

NOTES

SCALE: SEE SHEET JOB NUMBER: 22-037

DNH

06-23-22

DRAWN BY:

ISSUE DATE:

STRUCTURAL STEEL NOTES:

2.4 PIPE COLUMNS

- THE FABRICATION AND ERECTION OF ALL STEEL CONSTRUCTION SHALL CONFORM TO THE 2019 CBC AND THE AISC STEEL CONSTRUCTION MANUAL 16th EDITION.
- 2. STRUCTURAL STEEL SHAPES SHALL CONFORM TO THE FOLLOWING
- 2.1 CHANNELS ASTM A36, Fy = 36 KSI
 2.2 ANGLES ASTM A36, Fy = 36 KSI
 2.3 BARS AND PLATES ASTM A36, Fy = 36 KSI
- TYPE E OR S, Fy = 35 KSI
 2.5 RECTANGULAR HSS ASTM A500, GRADE B, Fy = 46 KSI
 2.6 ROUND HSS ASTM A500, GRADE B, Fy = 46 KSI
- 3. WELDING SHALL BE BY THE ELECTRIC ARC PROCESS (SHIELDED METAL ARC WELDING, FLUX CORE ARC WELDING, GAS METAL ARC WELDING) PER AWS STANDARDS AND BY CERTIFIED WELDERS. REFER TO "QUALIFICATION PROCEDURE" AWS D1.1.

ASTM A53, GRADE B

- 4. ALL WELDED JOINTS AND ELECTRODES ARE TO BE "PREQUALIFIED." ALL WELDING ELECTRODES ARE TO BE E70XX UNO. FCAW FILLER METAL WIRE SHALL BE $\frac{5}{64}$ " MAX DIAMETER AND SMAW FILLER METAL WIRE SHALL BE $\frac{5}{32}$ " MAX DIAMETER.
- 5. ALL STRUCTURAL STEEL SHALL BE ERECTED PLUM AND TRUE TO LINE. TEMPORARY BRACING SHALL BE INSTALLED AS REQUIRED TO MAINTAIN STABILITY OF THE STRUCTURE UNTIL THE STRUCTURAL SYSTEM IS SUBSTANTIALLY COMPLETE.
- 6. ALL STRUCTURAL STEEL ITEMS EMBEDDED IN CONCRETE AND LOCATED BELOW GRADE SHALL HAVE 3" MINIMUM COVER. ALL STRUCTURAL STEEL ITEMS EMBEDDED IN CONCRETE AND LOCATED ABOVE GRADE AT CONCRETE EXPOSED TO WEATHER SHALL HAVE 1½" MINIMUM COVER.
- 7. ALL STEEL BOLTS ARE TO HAVE STANDARD GAGE AND PITCH PER AISC. ALL STEEL-TO-STEEL BOLTED CONNECTIONS SHALL BE WITH A325-N BOLTS, UNO. ALL EMBEDDED ANCHOR BOLTS SHALL BE F1554 GRADE 36 UNO. HOLES AT STEEL-TO-STEEL CONNECTIONS ARE TO BE 16" OVERSIZE AND HOLES AT STEEL COLUMN BASE PLATES ARE TO BE 17" OVERSIZE, UNO.
- 8. STRUCTURAL STEEL IS TO BE SHOP PRIMED WITH ONE COAT, EXCEPT THE BELOW NOTED LOCATIONS, WHERE PRIMER SHALL BE HELD 2"
- 8.1 STEEL SURFACES EMBEDDED IN CONCRETE

CONNECTIONS

- 8.2 SURFACES TO BE FIELD WELDED8.3 CONTACT SURFACES WITH HIGH STRENGTH BOLTED
- 9. ALL STRUCTURAL COLUMNS ARE TO BE SET UPON ANCHOR RODS WITH LEVELING NUTS ALLOWING APPROXIMATELY 1½" ± CLEARANCE. CLEARANCE SPACE UNDER COLUMNS AND BLOCK-OUTS IN CURBS FOR COLUMN PLACEMENT ARE TO BE FILLED WITH A NON-SHRINK, HIGH-STRENGTH, POURABLE GROUT.

ROUGH CARPENTRY-MATERIALS:

- ALL SAWN LUMBER SHALL BE DOUG FIR UNO AND HAVE MOISTURE CONTENT NOT TO EXCEED 19% AT TIME OF INSTALLATION. EACH PIECE SHALL BEAR THE STAMP OF WCLIB OR WWPA SHOWING GRADE MARK.
- 2. ALL COMPOSITE WOOD PRODUCTS (IE LVL, LSL, GLULAM, ETC) SHALL BE PROTECTED FROM EXPOSURE AND EXCESSIVE MOISTURE IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS. MOISTURE CONTENT OF 16% PRIOR TO
- MEMBERS BEING WRAPPED OR ENCLOSED.

 3 ALL SAWN LIMBER TO BE SPECIES & GRADE AS NOTED BELOW:

3. ALL SAWN LUMBER TO BE SPECIES & GRADE						
MEMBER	SPECIES & GRADE					
2x_ & 3x_STUDS	#2 DF	1				
2x_ JOISTS, PLATES	#2 DF					
4x_ HEADERS	#2 DF					
4x_ COLUMNS	#1 DF					
6x_ & LARGER HEADERS	#1 DF					
6x_ & LARGER COLUMNS	#1 DF					

- A. MATERIAL EXPOSED TO WEATHER OR IN CONTACT W/CONCRETE SHALL BE PRESSURE TREATED
- B. OPTIONAL FOR EXPOSED 8X_ BEAMS & POSTS TO BE #1AC IN LIEU OF TREATED DF
- C. STUDS TALLER THAN 12'-0" SHALL BE #1DF
- 4. PRESERVATIVE TREATED & PRESSURE TREATED LUMBER
 A. SAWN LUMBER TO BE PROTECTED FROM EARTH,
 WEATHER, EARTH, & CONCRETE/CMU OR WOOD SHALL BE
 TREATED
- B. PRESERVATIVE TREATMENT & CLEARANCES TO SOIL OR CONCRETE SHALL BE PER CBC 2303.1.9 & 2304.12.1.2
 C. FIELD CUTS & HOLES IN TREATED LUMBER SHALL BE PROTECTED IN ACCORDANCE W/AWPA STANDARD M4
 D. CONTRACTOR TO COORDINATE WITH TREATED WOOD SUPPLIER TO DETERMINE THE APPROPRIATE LEVEL OF CORROSION PROTECTION FOR HARDWARE & FASTENERS IN CONTACT WITH WOOD TREATED WITH CORROSIVE CHEMICALS.
- 5. STRUCTURAL COMPOSITE LUMBER (SCL) SHALL BE MANUFACTURED BY BOISE CASCADE AND HAVE THE FOLLOWING MINIMUM PROPERTIES:

LVL MATERIAL	Fb	Fv	Fc	E
(ICC ESR ES-1040)	(psi)	(psi)	(psi)	(ksi)
VERSA-LAM BEAM				
1¾" & 2½"	2800	285	3000	2000
3½" & WIDER	3100	285	3000	2000
VERSA-LAM COLUMN	2650	285	3000	1700
VERSA-STUD	2400	285	3000	1700
VERSA-LAM RIMBOARD)			
1¾" MIN WIDTH	2800	285	3000	2000

- A. MEMBERS SHALL BE SINGLE SOLID PIECE W/DIMENSIONS SHOWN PER PLAN. FIELD LAMINATING MULTIPLE PLIES TOGETHER TO FORM LARGER MEMBERS IS NOT PERMITTED WITHOUT PRIOR WRITTEN APPROVAL.
- B. ALTERNATE MATERIALS MUST HAVE SAME SIZE AS SPECIFIED ON DRAWINGS AND HAVE EQUIVALENT OR BETTER DESIGN PROPERTIES. CONTRACTOR TO SUBMIT REQUEST FOR ALTERNATES TO ARCHITECT AND STRUCTURAL ENGINEER FOR REVIEW AND APPROVAL PRIOR TO CONSTRUCTION. ANY ADDITIONAL COSTS FOR REVIEW, REDESIGN, OR PLAN REVISIONS RESULTING FROM SUBSTITUTIONS ARE TO BE BOURNE BY CONTRACTOR.

 C. NO FIELD MODIFICATION, CUTTING, OR PLANING OF
- C. NO FIELD MODIFICATION, CUTTING, OR PLANING OF COMPOSITE STRUCTURAL MEMBERS IS ALLOWED UNLESS SPECIFICALLY NOTED OR DETAILED IN THE APPROVED PLANS.
- 6. STRUCTURAL GLUED-LAMINATED MEMBERS (GLB)
 A. MEET REQUIREMENTS OF AITC 117
- B. SHALL BE UNCAMBERED UNO ON PLANS.
- C. GRADE SHALL BE COMBINATION 24F-V4 FOR SIMPLE SPANSAND 24F-V8 FOR CONTINUOUS AND CANTILEVER SPANS UNO.
- D. ALL GLULAM FABRICATION SHALL BE PERFORMED IN AND APPROVED FABRICATOR'S SHOP PER CBC 1704.2.
- E. GLULAM INSPECTION CERTIFICATES SHALL BE SUBMITTED
 TO THE BUILDING INSPECTOR PRIOR TO COMPLETION OF
- FRAMING.

 F. NO FIELD MODIFICATION, CUTTING, OR PLANING OF COMPOSITE STRUCTURAL MEMBERS IS ALLOWED UNLESS SPECIFICALLY NOTED OR DETAILED IN THE APPROVED
- G. ALL GLB SHALL BE APPEARANCE GRADE UNO.
 CONTRACTOR TO COORDINATE APPEARANCE WITH ARCH
- 7. ALL WOOD PANEL STRUCTURAL SHEATHING SHALL BE STAMPED W/APA TRADEMARK AND CONFORM TO MOST CURRENT EDITION OF PS-1 OR PS-2. USE THICKNESS AND NAILING AS SHOWN ON DRAWINGS. SHEATHING SHALL HAVE EXPOSURE RATING AS APPROPRIATE FOR ON-SITE EXPOSURE CONDITIONS DURING CONSTRUCTION AND IN FINAL CONDITION. EQUIVALENT OSB SHALL BE USED IN LIEU OF PLYWOOD. PROVIDE PLYWOOD AT ALL EXPOSED EAVE CONDITIONS.

PRE-ENGINEERED WOOD TRUSSES:

1. TRUSSES SHALL BE DESIGNED FOR THE FOLLOWING GRAVITY LOADS:

		DL	LL
TYPE	MEMBER	(PSF)	(PSF)
ROOF	Top Chord	15	20
TRUSS	Bot Chord	5	NOTES A & E
FLOOR	Top Chord	N/A	N/A
TRUSS	Bot Chord	N/A	N/A

- A. PORTIONS OF TRUSSES WHERE TRUSS WEB CONFIGURATION IS SUCH THAT TWO ADJACENT TRUSSES ACCOMODATE AN ASSUMED RECTANGLE 24" WIDE X 42" TALL SHALL BE DESIGNED FOR BOT CHORD LIVE LOAD = 20 PSF CONCURRENT WITH ROOF LIVE LOAD. THE REMAINING PORTIONS OF TRUSSES SHALL BE DESIGNED FOR A BOT CHORD LIVE LOAD = 10 PSF CONCURRENT WITH ROOF LIVE LOAD.
- B. WHERE TRUSS WEB CONFIGURATION IS SUCH THAT TWO
 ADJACENT TRUSSES DO NOT ACCOMODATE AN ASSUMED
 RECTANGLE 24" WIDE X 42" DESIGN TRUSS FOR BOT CHORD LIVE
 LOAD = 10 PSF NOT CONCURRENT WITH ROOF LIVE LOAD.
- C. IN ADDITION TO LOADS NOTED ABOVE, ALL TRUSS BOTTOM CHORDS THAT SUPPORT SPRINKLERS SHALL BE DESIGNED FOR A 200# POINT LOAD ANYWHERE ALONG THE SPAN.
 D. IN ADDITION TO LOADS NOTED ABOVE, TRUSSES SHALL BE
- DESIGNED TO SUPPORT OTHER SUPERIMPOSED LOADS FROM JACK TRUSSES, CALIFORNIA FRAMING, FURRED CEILINGS, ETC.

 E. REFER TO MECHANICAL PLANS FOR ADDITIONAL LOADS DUE TO MECHANICAL EQUIPMENT. CONTRACTOR TO COORDINATE PLACEMENT OF ROOF/ATTIC MOUNTED EQUIPMENT W/TRUSS
- MANUFACTURER.

 2. IN ADDITION TO GRAVITY LOADS, TRUSS DESIGNER SHALL CONSIDER IN PLANE WIND AND SEISMIC LOADS (REFER TO DESIGN CRITERIA THIS SHEET) IN COMBINATION W/GRAVITY LOADS IN ACCORDANCE W/CBC CHAPTER 16
- CHAPTER 16.

 3. GABLE END TRUSSES SHALL HAVE VERTICAL WEBS @ 24"CC MAX SPACING. TRUSS DESIGNER TO INCLUDE OUT OF PLANE WIND AND SEISMIC FORCES IN DESIGN OF GABLE END TRUSSES.
- 4. VERTICAL DEFLECTION SHALL BE LIMITED TO L/240 FOR TOTAL LOAD AND L/360 FOR LIVE LOAD AT ROOF TRUSSES, L/240 FOR TOTAL LOAD AND L/480 FOR LIVE LOAD AT FLOOR TRUSSES. DEFLECTIONS SHALL CONSIDER CREEP EFFECTS.
- ALL TRUSS MEMBERS SHALL BE DOUG FIR. MINIMUM TRUSS MEMBER SIZE IS 2X4. WHERE ROOF TRUSS TOP CHORD DL EXCEEDS 10PSF, 2X6 MIN TOP CHORD IS RECOMMENDED.
- 6. ALL TRUSSES ARE TO BE PRE-ENGINEERED BY OTHERS IN ACCORDANCE W/CBC 2303.4. TRUSS LAYOUT DRAWINGS AND CALCULATIONS SHALL BE STAMPED AND SIGNED BY A CIVIL ENGINEER LICENSED IN THE STATE OF CALIFORNIA AND SUBMITTED TO THE BUILDING DEPARTMENT AND EOR FOR REVIEW PRIOR TO FABRICATION.
- 7. THE TRUSS FABRICATOR SHALL BE ICC APPROVED. IN PLANT INSPECTIONS ARE REQUIRED PER CBC 1704.2.5.
- 8. REFER TO MANUFACTURER FOR HANDLING AND ERECTION
 REQUIREMENTS. ERECTION AND TEMPORARY BRACING SHALL BE THE
 RESPONSIBILITY OF THE CONTRACTOR.
- 9. ALL PERMANENT BRACING REQUIRED FOR STABILITY OF TRUSS COMPRESSION ELEMENTS SHALL BE INSTALLED BY THE CONTRACTOR AT LOCATIONS REQUIRED BY THE TRUSS DESIGN. THE TRUSS MANUFACTURER SHALL COORDINATE REQUIRED BRACING LOCATIONS AND METHODS WITH THE CONTRACTOR AND PROVIDE NECESSARY BRACING DETAILS.
- 10. TRUSS DESIGN SHALL CONSIDER BEARING CONDITIONS SHOWN ON THE PLAN. IN NO CASE SHALL THE TRUSSES IMPOSE BEARING PRESSURES ON THE SUPPORTS THAT EXCEED 625 PSI. TRUSS DESIGNER TO INCLUDE NECESSARY BEARING ENHANCERS OR MULTIPLE PLIES AS REQUIRED TO MAINTAIN BEARING STRESS LIMIT NOTED.
- 11. ALL TRUSS TO TRUSS CONNECTIONS BY TRUSS MANUFACTURER. 12. SCISSOR TRUSSES SHALL BE DESIGNED TO LIMIT THE TOTAL LOAD
- HORIZONTAL DEFLECTION, INCLUDING CREEP EFFECTS, TO $\frac{1}{2}$ ". 13. G.T. INDICATES GIRDER TRUSS TO BE DESIGNED TO SUPPORT LOADS
- FROM OTHER TRUSSES OR BEAMS AS SHOWN ON THE PLAN.
 D.T. INDICATES DRAG TRUSS TO BE DESIGNED TO TRANSFER THE IN
 PLANE LATERAL LOAD NOTED ON THE PLAN FROM THE ROOF
 SHEATHING TO THE SHEARWALLS BELOW. D.T. DEIGN SHALL INCLUDE
 ACTUAL SUPPORT CONDITIONS AND TRANSFER LATERAL LOADS
 UNIFORMLY OVER THE LENGTH OF SHEARWALLS ONLY. ATTACH ROOF
 SHTG TO D.T. W/ROOF SHTG EN EA PLY. DRAG LOADS NOTED ON PLAN
 ARE WORST CASE LOADS DUE TO HORIZONTAL SEISMIC OR WIND
 LOADS FACTORED FOR ASD (SERVICE LEVEL) DESIGN.
- 14. THE TRUSS DESIGN SHALL INCLUDE BLOCKING PANELS TO TRANSFER LATERAL FORCES NOTED ON PLAN (260 PLF MIN UNO) FROM ROOF SHEATHING TO SUPPORT BELOW.



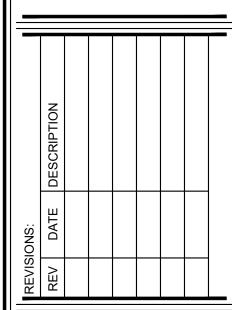
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> > HUBER RESIDENCE 129 BURNHAM COUR⁻ FOLSOM, CA 95630

PROJECT IN

GENERAL NOTES



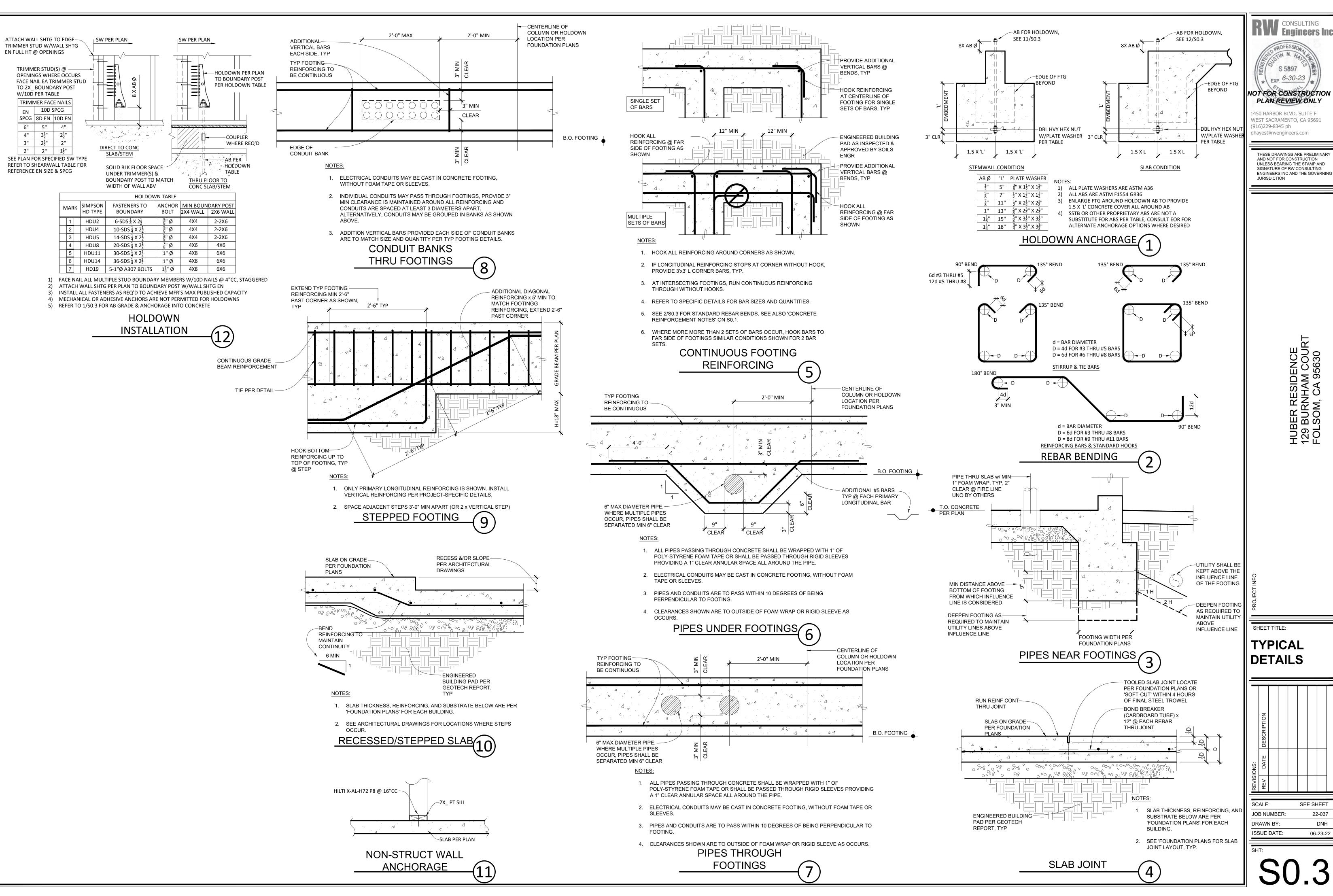
SCALE: SEE SHEET

JOB NUMBER: 22-037

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ISSUE DATE: 06-23-22

S0.2

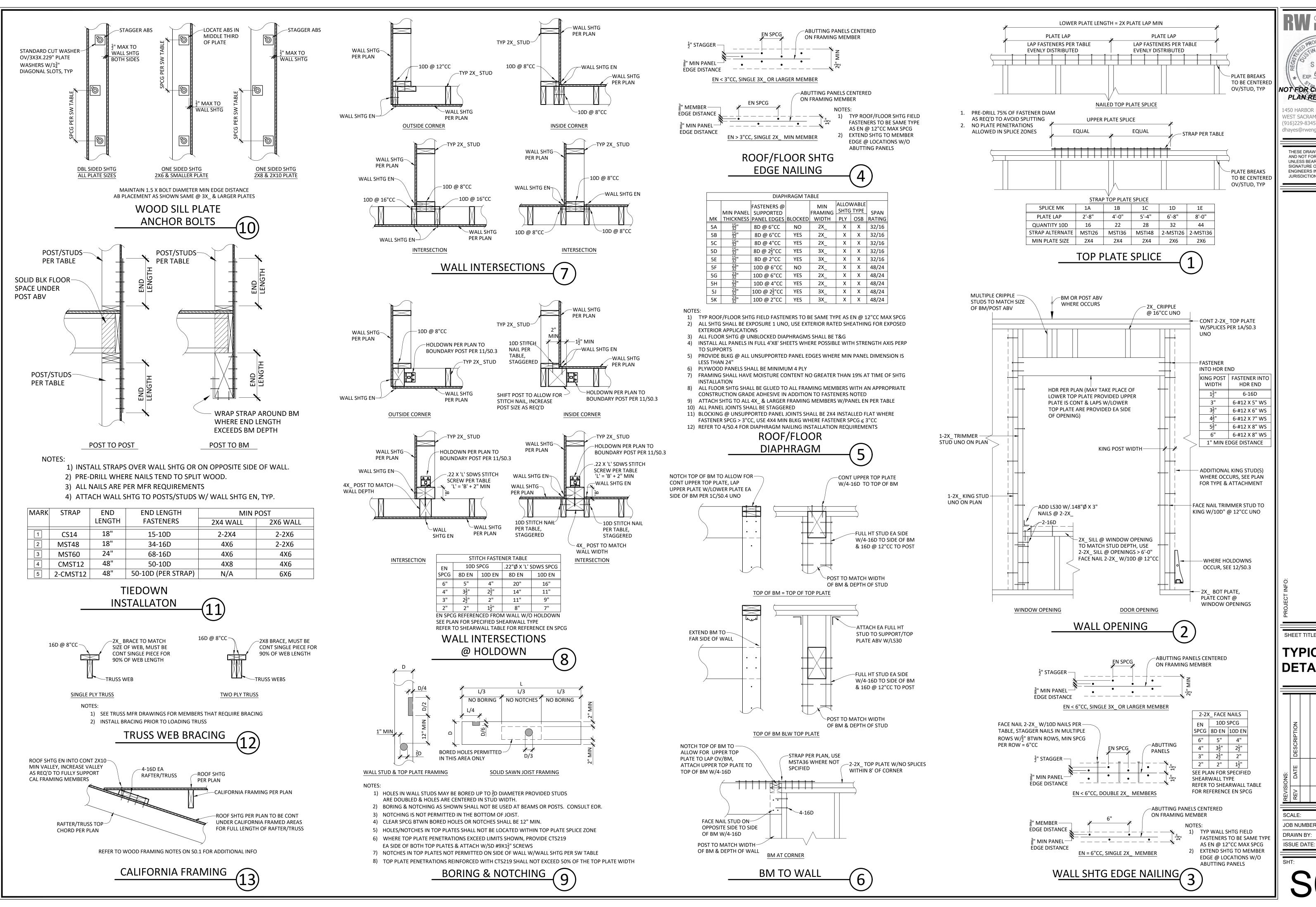


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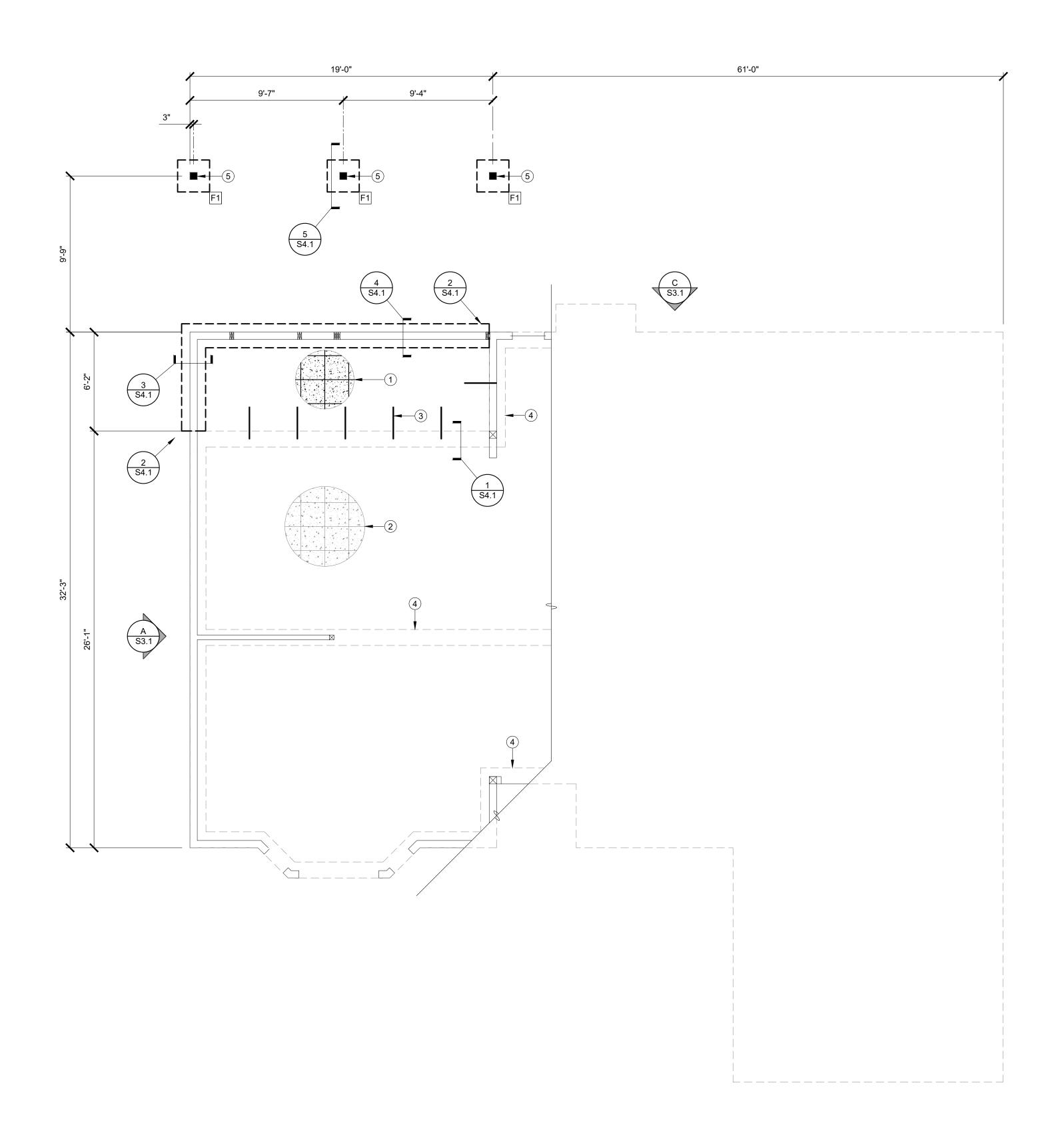
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TYPICAL DETAILS

SEE SHEET

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FOUNDATION PLAN LEGEND:

WALL LOCATION W _____ CONTINUOUS CONCRETE FOOTING _____ (E) CONTINUOUS CONCRETE FOOTING SLAB JOINT(SJ) PER <u>4/S0.3</u> — – — – — – —

FOUNDATION PLAN NOTES:

- 1. REFER TO SHEETS <u>S0.1</u>, <u>S0.2</u>, & <u>S0.3</u> FOR TYPICAL NOTES AND DETAILS.
- CONTRACTOR SHALL COORDINATE ALL WORK CONTAINED HEREIN WITH ALL PROJECT WORK BY OTHERS INCLUDING CIVIL, ARCHITECTURAL, MECHANICAL, ELECTRICAL & PLUMPING.
- 3. ALL EXPOSED EXTERIOR WOOD MEMBERS SHALL BE PT DF OR #1 ALASKAN YELLOW CEDAR.
- 4. ALL EXPOSED CONNECTORS SHALL BE HOT-DIPPED GALVANIZED
- 5. REFER TO 11/S0.3 NON-STRUCTURAL WALL SILL ANCHORAGE

FOUNDATION PLAN KEY NOTES:

- 5" NW CONCRETE SLAB W/ #4 REBAR @18"cc EACH WAY OVER 6" GRAVEL LAYER. VAPOR BARRIER (15 MIL) AS REQUIRED PER ARCH
- (E) CONCRETE SLAB
- (3) #4 EPOXY REBAR DOWEL. EMBED INTO (E) SLAB 6"
- (E) 1'-0" WIDE BY 1'-0" DEEP CONCRETE CONT FOOTING (ASSUMED). CONTRACTOR TO VIF
- (5) CBSQ66 POST BASE. CONTRACTOR MAY USE CPT66Z (CONCEALED POST BASE)

FOUNDATION SCHEDULE:

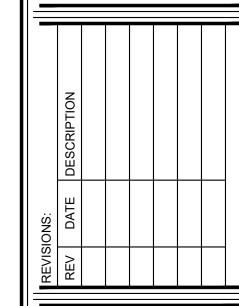
MARK	SIZE	REINFORCEMENT	NOTES	DETAIL
F1	2'-0" SQ x 1'-6"	3-#4 EA WAY	BEAM POST SUPPORT	<u>5/S4.1</u>

NOT FOR CONSTRUCTION PLAN REVIEW ONLY

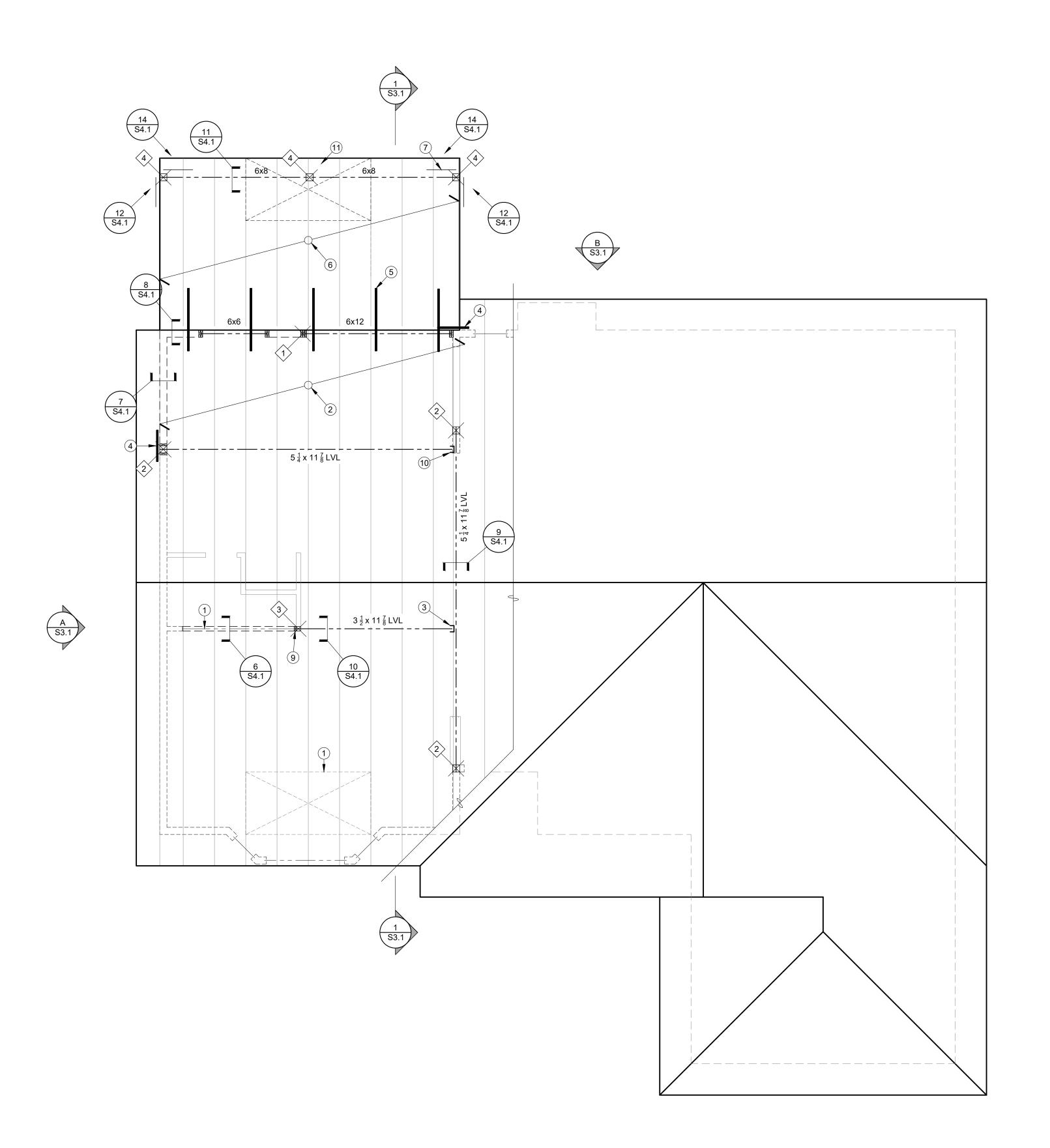
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FOUNDATION



SCALE: JOB NUMBER: DRAWN BY:





STRUCTURAL WALL BELOW ROOF

NON-STRUCTURAL/NON-BEARING WALL

(E) STRUCTURAL WALL BELOW ROOF

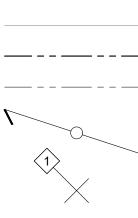
FRAMING MEMBER

FRAMING MEMBER
(E) FRAMING MEMBER

WALL HEADER/BEAM

(E) WALL HEADER/BEAM — - - - FRAMING EXTENTS

POST PER TABLE, BELOW



ROOF FRAMING PLAN NOTES:

- 1. REFER TO SHEETS <u>S0.1</u>, <u>S0.2</u>, <u>S0.3</u> & <u>S0.4</u> FOR TYPICAL NOTES AND DETAILS.
- CONTRACTOR SHALL COORDINATE ALL WORK CONTAINED HEREIN WITH ALL PROJECT WORK BY OTHERS INCLUDING CIVIL, ARCHITECTURAL, MECHANICAL, ELECTRICAL & PLUMPING.
- ALL STRUCTURAL WALLS AND PONY WALLS ARE 2x6 @ 16"cc UNO. ALL NON-STRUCTURAL WALLS ARE 2x4@ 16"cc UNO.
- 4. FRAME WALL OPENINGS PER <u>2/S0.4.</u>

ROOF FRAMING PLAN KEY NOTES:

- (E) ROOF SHEATHING TO REMAIN
- (E) ROOF TRUSSES TO REMAIN
- 3 HUCQ412-SDS FACE MOUNT HANGER
- 4 MST48 @ PL BREAK
- (5) CS16 x 4'-0" STRAP OVER (E) TRUSS & PATIO COVER FRAMING. SPACE @ 48"cc
- 6) 2x6 PATIO COVER RAFTERS @ 24"cc
- 7 2x6 KNEE BRACE. INSTALL PER 12/S4.1
- 8 RETAIN (E) WALL HEADER. PROVIDE INFILL FRAMING BELOW
- 9 PROVIDE 2x4 TRIMMER STUD @ (E) WALL HEADER FOR BEARING
- 10 HUCQ612-SDS FACE MOUNT HANGER
- 11 $\frac{15}{32}$ " ROOF SHEATHING. INSTALL PER <u>5A/S0.4</u>

POST SCHEDULE:

MARK	SIZE	TYPE	NOTES
1>	2-2x6	KING	STITCH NAIL TOGETHER
2	6x6	POST	SUPPORT FOR BEAM
3	4x4	POST	SUPPORT FOR BEAM
4	6x6 PT	POST	SUPPORT FOR PATIO BEAM

NOTES:

1. SINGLE TRIMMER AND KING STUDS ARE NOT CALLED OUT. 2. TYPICAL STITCH NAILING SHALL CONSISTS OF 16d @ 12"cc S 5897

EXP. 6-30-23

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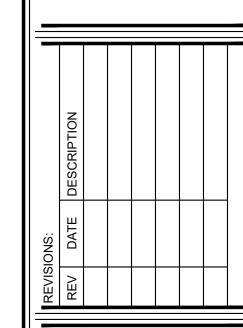
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PROJ

ROOF FRAMING



SCALE: SEE SHEET

JOB NUMBER: 22-037

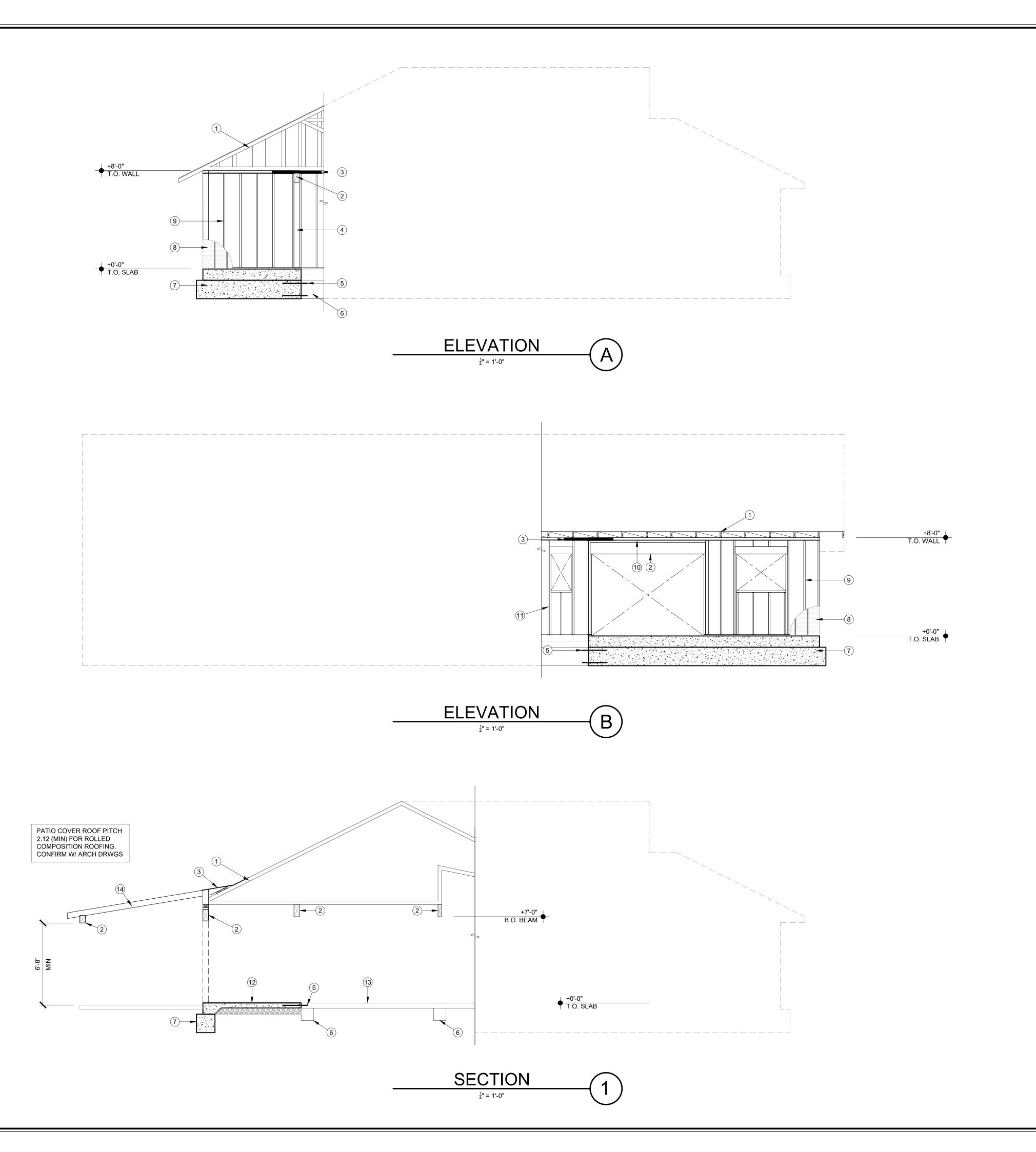
DRAWN BY: DNH

ISSUE DATE: 06-23-22

S2.2

ROOF FRAMING PLAN

1/4" = 1'-0"



ELEVATION/SECTION PLAN NOTES:

- REFER TO SHEETS <u>S0.1</u>, <u>S0.2</u>, <u>S0.3</u> & <u>S0.4</u> FOR TYPICAL NOTES AND DETAILS.
- 2. CONTRACTOR SHALL COORDINATE ALL WORK CONTAINED HEREIN WITH ALL PROJECT WORK BY OTHERS INCLUDING CIVIL, ARCHITECTURAL, MECHANICAL, ELECTRICAL & PLUMPING.
- 3. CONFIRM ELEVATIONS WITH ARCHITECTURAL DRAWINGS.

ELEVATION/SECTION KEY NOTES:

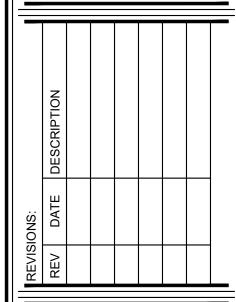
- (1) (E) ROOF FRAMING
- (2) BEAM PER PLAN
- (3) STRAP PER PLAN
- (4) POST PER PLAN
- (5) EPOXY DOWEL PER PLAN
- (6) (E) CONCRETE FOOTING (7) CONCRETE FOOTING PER PLAN
- 8 T1-11 RATED SIDING W/ 8D @ 6"cc EN, 8D @ 12"cc (FIELD NAILING)
- 9 WALL FRAMING PER PLAN 10) PAD ABOVE HEADER TO CREATE CONTINUOUS BEARING FOR TOP PL
- (11) (E) WALL FRAMING
- 12 SLAB PER PLAN (E) SLAB
- (14) ROOF FRAMING PER PLAN



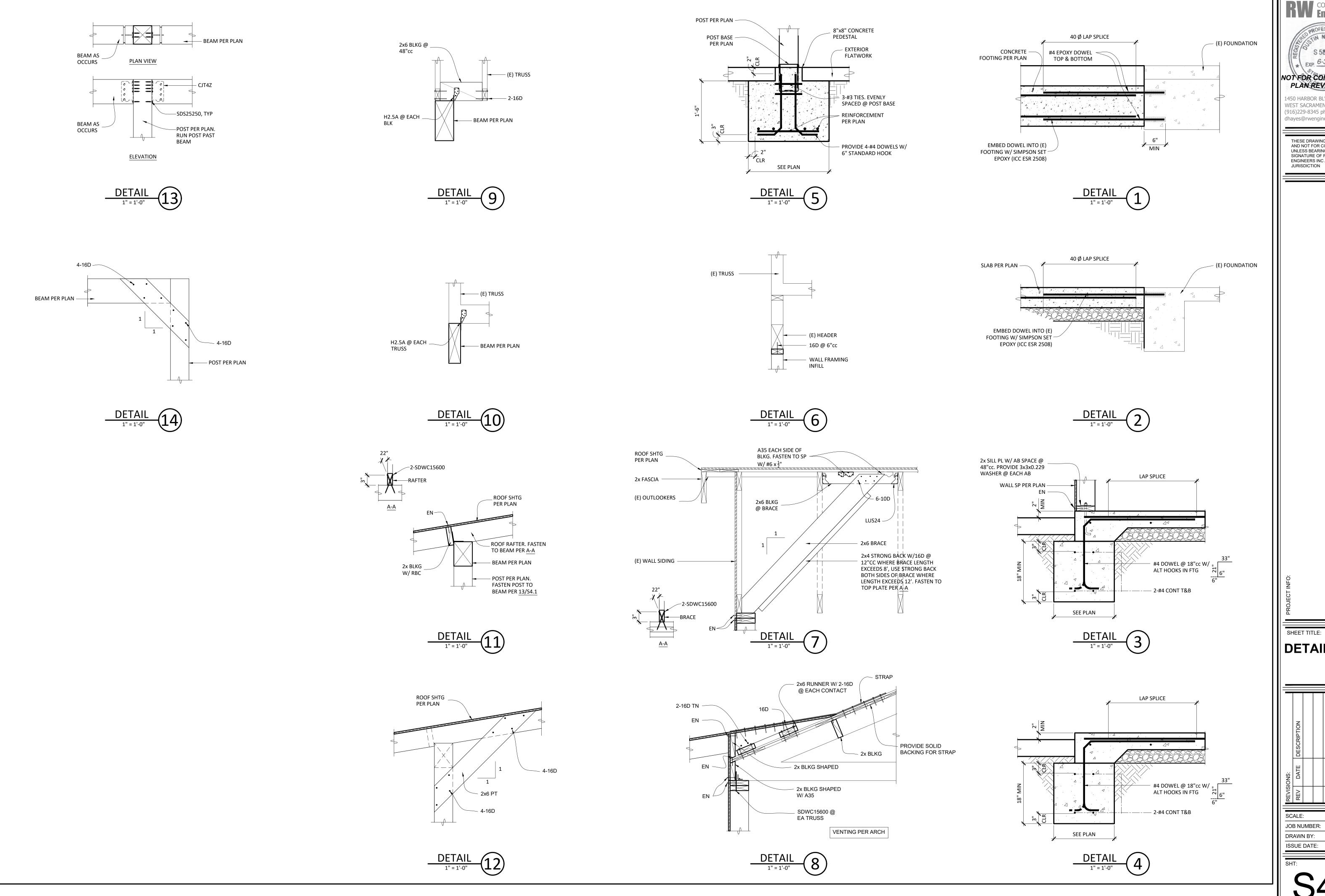
1450 HARBOR BLVD, SUITE F WEST SACRAMENTO, CA 95691 (916)229-8345 ph dhayes@rwengineers.com

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ELEVATIONS & SECTION



SCALE: SEE SHEET JOB NUMBER: 22-037 DRAWN BY:

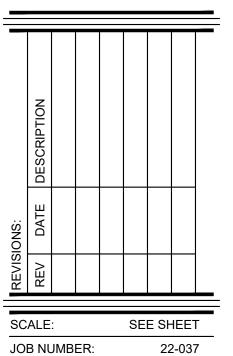


NOT FOR CONSTRUCTION PLAN REVIEW ONLY

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DETAILS



22-037 DNH 06-23-22