CBC Chapter 7A – Wildland-Urban Interface (WUI) Fire Conformance Checklist - APPLIES ONLY TO ADDITION AND REMODEL AREA
Per CBC 701A.3.2.2 "The local building official shall, prior to construction, provide the owner or applicant a certification that the building as proposed to be built complies with…all WUI materials and construction methods for wildfire exposure." Please complete and incorporate the following checklist into construction documents to demonstrate proposed materials comply with these requirements.
All materials shall bear identification showing the fire performance rating thereof. That identification shall be issued by ICC-ES or a testing facility recognized by the State Fire Marshall having a service for inspection of materials at the factory. Field inspector to verify identification prior to it being covered and/or concealed.
701A.3.2 VEGETATION CLEARANCE ***See vegetation clearance notes this sheet***
701a.3.2.4 Provide documentation (on plot plan, or landscape plan) of compliance with PRC 4291.
□ Plans shall specify and demonstrate requirement to maintain fire break
□ Remove and clear away all flammable vegetation or combustible growth for 30' from each side of building.
□ Remove any tree limbs within 10 feet of chimney outlet.
□ Eliminate any dead wood from trees overhanging building. Maintain the roof to be free of leaves, needles or dead vegetation.
□ Inspection and written approval by the Fire Marshall shall be obtained prior to final of the building permit.
704A.1 ROOFING
704A.1.2 Roof Coverings:
Is space proposed between the roof covering and roof decking? **X**Yes □No
If yes, the spaces shall be constructed to prevent the intrusion of flames and embers, and be firestopped with approved materials. Or have one layer of No. 72 ASTM cap sheet installed over the combustible decking. Provide detail for method of compliance, incorporate into plans and provide reference to detail location: ***see notes details 8' & 11 on D1 and 10 on sheet D2***
704A.1.3 Roof Valleys:
□ Assume shingle overlap proposed in valleys – please verify. □ Yes **X** No ***no valleys***
Or if metal flashing will be incorporated in valleys, it shall be not less than 0.019-inch (0.48 mm)(No. 26 galvanized sheet gage) corrosion-resistant metal installed over a minimum 36-inch wide underlayment consisting of one layer of No. 72 ASTM cap sheet running the full length of the valley. Provide detail and/or notation on section drawing(s) of plans and provide reference to detail/specification location: _____.
704A.1.5 Roof gutters:
□ Roof gutters shall be provided with the means to prevent the accumulation of leaves and debris in the gutter.
Indicate where specification has been incorporated into drawings: ***gutter guard see detail 8'&11 on D1 and 10 on D2***
704A.2 ATTIC VENTILATION
□ Define and detail how attic will be vented.
704A.2.2 Eave or Cornice Vents: Vents shall not be installed in eaves and cornices, unless they resist the intrusion of flame and burning embers into the attic area of the structure.
If eave vents are proposed: ***ridge vent and on roof O'hagins, see sheet 8 for venting top RHS***
□ Detail/indicate how proposed vents will resist the intrusion of flame & embers into attic area of the structure.
If a non-vented roof system is proposed:
□ Provide manufacturer's specifications and detailing for non-vented system, including air and water permeability testing data.
704A.2.3 Eave Protection
□ Eaves meet SFM 12-7A-3 **X** Yes □ No
If yes, specify product Company Name, Product Description, Test Protocol and Flame Spread:
_____ ***Hardie Soffit*** _____ Listed in SFM Handbook? **X** Yes □ No (provide test data)
OR, protect by ignition-resistant materials or noncombustible construction on the exposed underside. □ Yes □ No
If yes, provide detail/specifications for material and installation. Provide reference to detail/specification location on drawings: ***see detail 8'&11 on D1 and 10 on D2***
704A.3 EXTERIOR WALLS (Exterior walls shall be approved noncombustible or ignition-resistant material, heavy timber or log wall construction or shall provide protection in accordance with standard SFM 12-7A-1.) Check all that apply.
704A.3.1 Exterior walls:
□ Noncombustible (Verify and document compliance with definition per CBC 202 – ASTM 136)
□ Heavy Timber □ Log Wall Construction **X** Ignition –Resistant Material (per CBC 702A Definition)
□ Standard SFM 12-7A-1
If so, specify product Company Name, Product Description, Test Protocol and Flame Spread:
Hardie panel r LP Smart Siding _____ Listed in SFM Handbook? **X** Yes □ No (provide test data)
704A.3.1.1 Exterior wall coverings shall extend from the top of the foundation to the roof, and terminate at 2-inch nominal solid wood blocking between rafters at all roof overhangs, or in the case of enclosed eaves, terminate at the enclosure.
X Specify where notation has been detailed/noted on plans: ***elevation notes sheets 3,4&5***
704A.3.2.1 Exterior Wall Vent openings (such as gable end attic vents or underfloor vents) shall resist the intrusion of flame and embers into the structure or vents shall be screened with a corrosion-resistant, noncombustible wire mesh with 1/4 –inch openings or its equivalent.
Specify where notation has been detailed/noted on plans: ***see Foundation venting notes sheet 6 middle LHS. vulcan vents***
704A.3.2.2 Exterior glazing and window walls
Windows, window walls, glazed doors and glazed openings within exterior doors shall conform with one of the following (Check all that apply):
X Insulating-glass units with a minimum of one tempered pane OR □ Glass block units OR ***see elevation notes sheets 3&4***
□ Fire-resistance rating of not less than 20 minutes, when tested according to ASTM E 2010 OR
□ Performance requirements of SFM 12-7A-2
If so, specify product Company Name, Product Description, Test Protocol and Flame Spread:
_____, Listed in SFM Handbook? □ Yes □ No (Provide test data)

Exterior door assemblies (including garage doors) shall comply with one of the following (check all that apply):
□ Performance requirements of standard SFM 12-7A-1
If so, specify product Company Name, Product Description, Test Protocol and Flame Spread:
_____ Listed in SFM Handbook? □ Yes □ No (Provide report)
□ Approved noncombustible construction (document compliance with definition per CBC 202 – ASTM 136)
X Solid core wood having stiles and rails not less than 1 3/8 inches thick with interior field panel thickness no less than 1 ⅛-inches thick ***see elevation notes sheets 3&4***
□ Fire-resistance rating of not less than 20 minutes when tested according to ASTM E 2074
Garage doors exempt from requirement if: ***no garage doors***
□ Noncombustible □ Exterior fire-retardant treated wood doors
Indicate location on plans where garage door requirements have been specified: _____
704A.4 DECKING, FLOORS AND UNDERFLOOR PROTECTION (The use of paints, coatings, stains, or other surface treatments are not an approved method of protection as required in this chapter.)
704A.4.1 Decking Surfaces (Decking, surfaces, stair treads, risers, and landings of decks, porches and balconies where any portion of such surface is within 10 feet of the primary structure) Decking surfaces shall comply with one of the following methods:
□ Constructed of ignition-resistant materials and pass the performance requirements of SFM 12-7A-4, Parts A and B
If so, specify product Company Name, Product Description, Test Protocol and Flame Spread:
no decking _____ Listed in SFM Handbook? □ Yes □ No (provide report)
□ Constructed with heavy timber, exterior fire-retardant-treated wood or approved noncombustible materials
□ Document compliance with definition per CBC 202 – ASTM 136
□ Performance requirements of SFM 12-7A-4, Part A, 12-7A-4.7.5.1 only with a net peak heat release rate of 25kW/sq-ft for a 40 minute observation period and material shall pass accelerated weathering test & be identified as exterior type (ASTM E 84) and exterior wall covering where deck is attached and within 10 feet of the deck shall be constructed of approved noncombustible or ignition resistant material OR
□ Performance requirements of SFM 12-7A-4, Part A, 12-7A-4.7.5.1 only with a net peak heat release rate of 25 kW/sq-ft for a 40 minute observation period and material shall pass accelerated weathering test and be identified as exterior type (ASTM # 84) and decking surface conforms to ASTM E-84 Class B flame spread (Provide test data)

ADDITIONAL WUI NOTES
Open Roof Eaves. The exposed roof deck on the underside of unenclosed roof eaves shall be protected by ignition-resistant or noncombustible material, consist of 5/8" Type X gypsum sheathing applied behind an exterior covering on the underside of the roof deck, or the exterior portion of a 1-hour assembly on the exposed underside, Hardie soffit or similar.
The following materials do not require protection:
1. Solid wood rafter tails having a minimum nominal dimension of 2 inch.
2. Solid wood blocking between rafter tails having a minimum nominal dimension of 2 inch.
3. Gable end overhangs and roof assembly projections beyond an exterior wall other than at the lower end of the rafter tails.
4. Fascia and other architectural trim boards.
Enclosed roof eaves and roof eave soffits. The exposed underside of enclosed roof eaves having either a boxed-in roof eave soffit with a horizontal underside, or sloping rafter tails with an exterior covering applied to the underside of the rafter tails, shall be protected by ignition-resistant or noncombustible material, consist of 5/8" Type X gypsum sheathing applied behind an exterior covering on the underside of the rafter tails or soffit, the exterior portion of a 1-hour assembly applied to the underside of the rafter tails or soffit, or meet the performance requirements set forth in SFM Standard 12-7A-3. Hardie soffit or similar.
Exterior porch ceilings. The exposed underside of exterior porch ceilings shall be protected by ignition-resistant or noncombustible material, consist of 5/8" Type X gypsum sheathing applied on the underside of the ceiling, the exterior portion of a 1-hour assembly applied to the underside of the ceiling, Hardie soffit or similar., or meet the performance requirements set forth in SFM Standard 12-7A-3.
Exterior wall and opening protection. Exterior walls shall be approved noncombustible or ignitionresistant material, heavy timber, log wall construction, meet SFM Standard 12-7A-1. include one layer of 5/8" Type X gypsum sheathing applied behind the exterior covering on the exterior of the framing, or the exterior portion of a 1-hour assembly. Exterior wall coverings shall extend from the top of the foundation to the roof, and terminate at 2" nominal solid wood blocking between rafters at all roof overhangs or eave enclosures.
Exterior wall vent openings shall be protected by corrosion-resistant, noncombustible wire mesh with openings of 1/8" to 1/4".
Exterior glazing and glazed openings in exterior doors shall have a minimum of one tempered pane, or have a fire resistive rating of 20 minutes, or be of glass block.
Exterior doors shall be of approved noncombustible construction, or solid core wood having stiles and rails not less than 13/8" thick with interior field panel thickness not less than 1⅜" thick, or have a minimum 20 minute fire resistive rating.

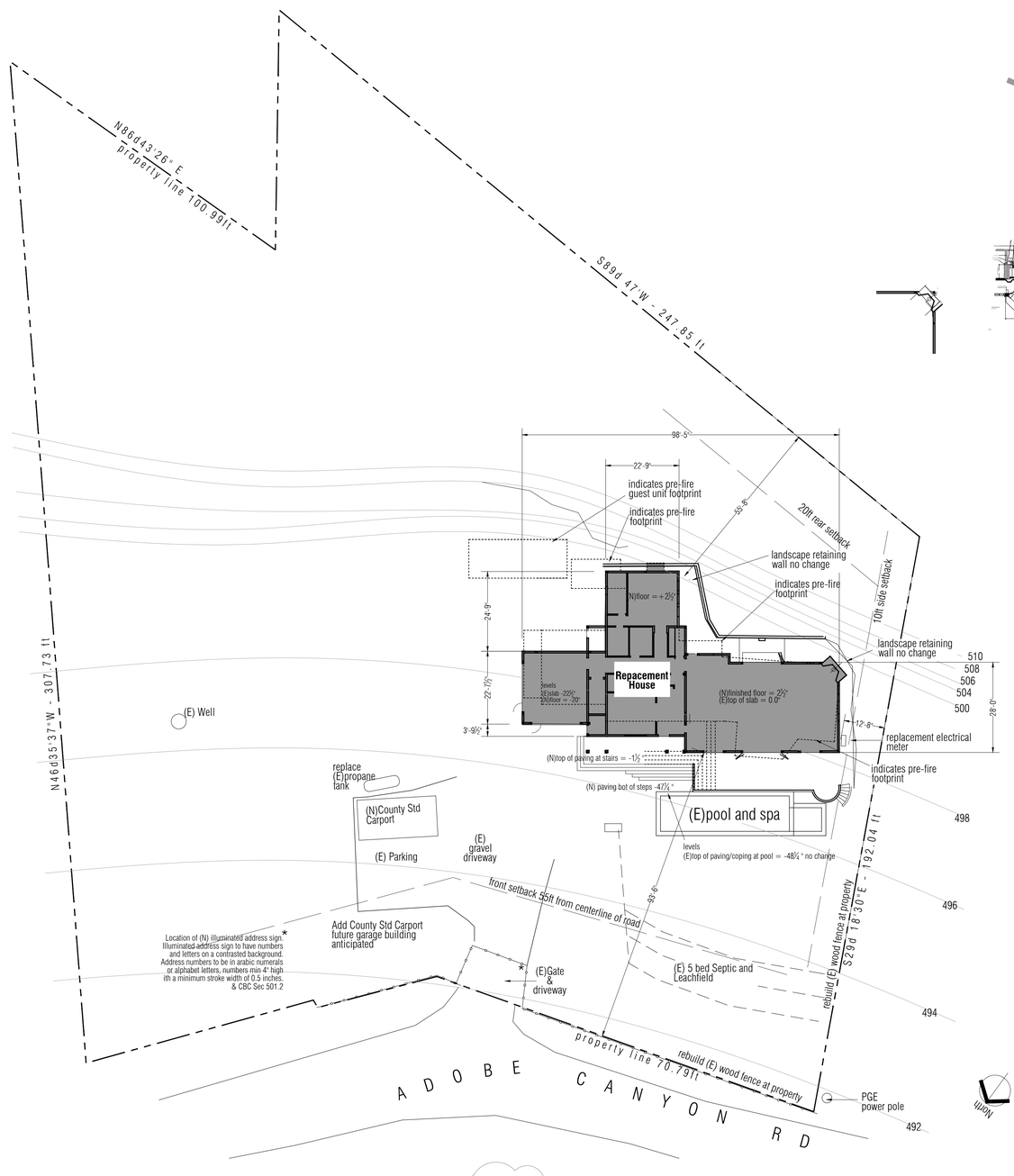
Vegetation Clearance
1. Remove and clear away all flammable vegetation or combustible growth for 30' from each side of building.
2. Remove any tree limbs within 10 feet of chimney outlet.
3. Eliminate any dead wood from trees overhanging buildings. Maintain the roof to be free of leaves, needles or dead vegetation.
4. Inspection and written approval by the Fire Marshall shall be obtained prior to final of the building permit.

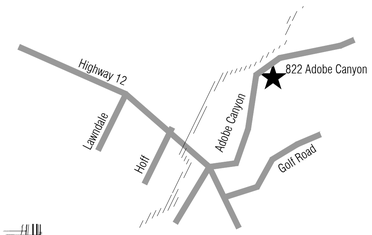
Soil Protection.
Soil disturbance and erosion are minimized by the following:
1. Natural drainage patterns have been evaluated and erosion control will be implemented during construction. Post construction existing drainage patterns are to be retained.
2. Cut and fill areas are to be limited to foundations only
3. Underground construction activities are coordinated to utilize the shortest practical amount of time the disturbed soil is exposed and the soil is protected by temporary compaction methods.
4. Displaced topsoil is stockpiled for reuse in designated area and covered for protection from erosion.

Cal Green Notes For Residenial New Construction 2016

4.106.2 A plan is developed and implemented to manage storm water during construction in accordance with requirements prescribed in Sonoma County Code Chapter 11A. See G&D notes sheet 0
4.106.3 Construction plans indicate how site grading and drainage will manage surface water to stop it entering building. See G&D notes sheet 0
4.106.4 EV charging outlet in garage. No garage, car port.
4.201.1 Building meets or exceeds the requirements of the California Building Energy Efficiency Standards. See T24 Documents
4.303.1-3 Water conserving plumbing fixtures and fittings. Plumbing Notes fixtures see flow notes sheet 1
4.406.1 Rodent proofing.Annular spaces around pipes, electric cables, conduits, or other openings in plates at exterior walls shall be protected against the passage of rodents by closing such openings with cement mortar, concrete masonry or similar method acceptable to the enforcing agency.
4.408.1 Nonhazardous construction and demolition waste generated at the site is diverted to recycle or salvage in compliance with at least a 65 percent reduction.
4.410.1 An operation and maintenance manual shall be provided to the building occupant or owner.
4.503.1 Any installed gas fireplace shall be a direct-vent or sealed-combustion type. Any wood stove or wood heating appliance shall comply with U.S. No gas Fireplaces
4.504.1Duct openings and other related air distribution component openings shall be covered during construction.
4.504.2.1 Adhesives, sealants and caulks shall be compliant with VOC and other toxic compound limits.
4.504.2.2 Paints, stains and other coatings shall be compliant with VOC limits
4.504.2.3 Aerosol paints and other coatings shall be compliant with product weighted MIR Limits for ROC and other toxic compounds
4.504.2.4 Documentation shall be provided to verify that compliant VOC limit finish materials have been used
4.504.3 Carpet and carpet systems shall be compliant with VOC limits.
4.504.4 Where resilient flooring is installed, at least 80 percent of floor area receiving resilient flooring shall comply with one or more of the requirements of this section.
4.504.5 Particle board, medium density fiberboard (MDF), and hardwood plywood used in interior finish systems shall comply with low formaldehyde emission standards.
4.505.2 Vapor retarder and capillary break is installed at slab on grade foundations. see details 1 and 2 sheet D1
4.505.3 Moisture content of building materials used in wall and floor framing is checked before enclosure.
4.506.1 Humidity controlled ENERGY STAR compliant exhaust fans which terminate outside the building are provided in every bathroom unless otherwise a component of a whole house ventilation system.
4.507.2. Duct systems are sized and designed…No ductwork , hydronic floor heating
702.1 HVAC system installers are trained and certified in the proper installation of HVAC systems.
702.2 The CALGreen Special Inspector for this project is listed by the County of Sonoma as an approved CALGreen Special Inspector and is qualified and able to demonstrate competence in the discipline they inspect and verify

Vegetation Management Notes
Vegetation adjacent to buildings (30ft) to be managed so that there is no continuity between ground fuels and tree crowns.
A. Tree crowns to be separated by at least 10 feet. Raise all tree crowns to at least 10 feet above ground, thin out crowns by 25% to reduce available fuels. Remove all dead branches, large areas of dead foilage, vines and loose bark. Remove all debris.
B. When thinning brush areas, first remove dead, sick or stressed shrubs, then highly flammable shrubs, ie shrubs that are twiggy, have small woody leaves, or contain volitile oils (aromatic). Shrub cover should not exceed 30% of defensible area. Maximum dead to live ratio is 20%-80%. Limbing of shrubs no greater than 1#3 of height. Remove all vines and papery bark, and other suspended debris, remove or mow undergrowth to 3'h, and remove all debris.
C. Chipped wood and mulch can provide an excellent thermal barrier which will prevent lost moisture in ground fuels. Shredded or 'hairy' bark is prohibited
D. Recovering existing landscaping. Signs that existing landscape and trees are recovering after fire. Wait till summer to see what is fully recovering before replacing existing landscaping. reinstate (E) irrigation where destroyed





Site Plan
scale 1" = 10 feet

Grading & Drainage Notes
Construction is to be on existing house that burned in the Fire. The new footprint is substantially the same as the previous house. The existing drainage patterns are to be maintained. Existing drive way is already graded to the existing parking location. The existing patios, pool and spa remain, some repair anticipated to the existing stonework.
No new cut and fill areas. Where existing vegetation is removed during construction and not being replaced with permanent landscaping ,area to be seeded with an industry standard erosion control seed mix at the rate of 50lbs per acre. erosion matting, straw or hydr-mulching shall be used to stabilize seed.

1. Surface drainage gradients: slope finished grading away from (N) Addition 5% for 10ft at grade/earth, and 2% for 10ft impervious surfaces. Follow (E) general site drainage which is away from building on all sides
2. Roof gutter down spouts/ collectors if used. to have gutter guard and to be piped to discharge into landscape areas min 5 feet from building. Concentrated flow's energy to be dissipated by rocks
3. Earth disturbed during construction to be collected and covered during construction for reuse afterwards as near as possible to where it was collected.
4. The Owner or Contractor shall ensure that any soil, sediment ,debris or other pollutants disturbed by the new construction shall not enter any existing storm water or drainage system Measures as required, to include broadcasting straw on disturbed areas, and placing weighted straw wattles along existing contours. All construction waste, excess soil, and water to be contained and discharged at an appropriate approved County Facility.

Revisions
7.15.19 delta 1
BLD18-2819
822 Adobe Canyon Road
Construction Revisions List delta 1 - 7.15.2019

First Floor plan sheet 1
1. Master Bedroom FF (top of sheet) remove masonry fireplace, replace with direct vent gas fireplace
2. Entry to Mater Bedroom revised to allow new Pantry with icemaker on right hand side (RHS) and revised Laundry room on LHS.
3. Area under 2nd floor overhang (previous porch) enclosed for new Pool Mechanical Room.
4. Previous Pool Mechanical Room, between Sunroom and Office/Bedroom, now split into Mechanical Room and deep closet accessible off hallway
5. Site change to levels, steps in front of deep closet, reduced from 3 to 2 risers
6. Sunroom doors reduced from 10 feet to 9ft, result of item 5 above
7. Dining Room revised to Bedroom, closet added and powder room changed to bathroom with shower
8. Entry by stairs, new door added thru to Kitchen. Previous Great Room door from outside omitted
9. Under stairs, closet door changed to make closet space available from hallway. Kitchen, Island size revised, second island removed
10. Great Room central doors changed from swing to sliders.
11. Window opposite central doors on back wall changed to doors match center doors opposite
12. Outside new center doors and a back wall, new feature wall fountain and 4" deep water catchment trough. 3ft x 6ft deck landing in catchment area for door landing
13. Kitchen rear wall window narrower and taller, and adjacent door changed to glazed door
14. Rear man door out of sunroom - omitted

Second Floor plans sheet 2
1. Rear Bedroom 3, closet and bed layout reconfigured
2. Rear Bedroom 4, closet and bed layout reconfigured. New en-suite bathroom added, with new bathroom window
3. Master bedroom door to roof deck changed to slider
4. Master bedroom front windows and doors changed to new layout
5. Master Bathroom enlarged and fixtures layout reconfigured
6. Master Bedroom closet 1 new size (accommodate Bed 4 en-suite), closets 2 and 3 added
7. New 12" pop-up in Master Bedroom truss ceiling
8. Master Bedroom front premanufactured metal balcony extended along length of facade

Revisions
1.21.2020 delta 2
Construction Revisions List delta 2 - 1.21.2020 - All revisions are non structural
First Floor plan sheet 1
1. New 400A electrical panel and meter location, external wall NW corner of Great Room.
2. (N)200Amp sub panel in Pantry.
3. Master bedroom FF, boxing/furr each side of bed removed, entry to w.i.c modified.
4. (N) pool sub panel in pool equipment room.
5. (N) 200Amp sub panel in Utility room between sunroom and Bedroom/office.

Second Floor plans sheet 2
1. Omit opening between stairs and great room at stair landing.
2. Move attic access to master bed small closet, sheet 2 and sheet 8
3. (N) ducted heat pump in attic at second floor over M.Bedroom large closet.
4. Linen closet in hall between bedrooms 3 and 4, removed
5. Change configuration of shower and vanity in M.bath, linen now in M.WC

General Notes
1. Governing Codes: All Construction shall comply with California Residential Code 2016 Edition. California Administrative Code 2016, Edition. California Mechanical Code 2016 Edition. California Plumbing Code 2016 Edition. California Fire Code 2016 Edition. California Energy Code 2016 Edition, California Green Building Standards Code 2016 Edition, and all County of Sonoma Ordinances that are current, and relate to the 2016 California Title 24.
2. The Contractor to verify all dimensions on site prior to starting that phase of work. All discrepancies to be discussed and resolved with the Designer prior to commencement of work. Verify all dimensions where work involves Framing for windows, doors or cabinets
3. All framing dimensions are to face of stud unless noted otherwise, DO NOT SCALE DRAWINGS!

Directory
Structural Engineering
Bob Kent PE
4214 Wayvern Drive
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Design Drafting / Irvin Klein
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Project Description / Application
Rebuild house destroyed in Fire. Similar configuration 2 story 5 bedroom house, straighten previous perimeter, and add 388sqft on first floor. Keep existing foundation and slabs in place and modify to new footprint. Cut in new perimeter footings at new wall lines as if the house had not burned, and it were an addition.

Project Information

Address	822 Adobe Road Kenwood Ca 95452
Owners	Blair Spangler
APN	051-060-019
Zoning	DA B6 20 VRC 100/50 SR
Lot size	1.56 ac
Setbacks	F-30ft (55ft CL road) S-10ft, R-20ft
Lot	Well and Septic
Lot Coverage	Prev 5%. Proposed 5%. Allowable 20%
Building height	28'-6"
Occupancy Type	R3/U
Building Type	VB
Pre Fire Areas	
House FF	2447 sqft
House 2F	1038 sqft
2F Deck	315 sqft
Garage	458 sqft
Guest	366 sqft
Guest Deck	138 sqft
New Areas	
House FF	3201 sqft (388sqft addition)
House 2F	1146 sqft (add 8sqft)
total conditioned area	4347 sqft
2f Deck	442 sqft
Entry porch (covered)	151 sqft
Rear covered Entry	45 sqft
Sprinklers	Yes per NFPA-13D
SRA/WUI	Yes.

Special Note.Fire Sprinklers, Trusses and truss calculations are under separate permit or deferred
Special Inspections : Special Inspections for this project
1. Periodic Special Inspections of nailing, bolting and anchoring for shear walls where the fastener spacing of the sheathing is 4" or less per 2016 CBC sct. 1705.12.2

Sheet Index

revised

Irvin klein Design
707 695 0711
irvin@sonic.net

Spangler Residence
822 Adobe Canyon Road Kenwood Ca. 95452

Cover sheet, site plan project information

1.21.2020

Pre Fire 2F plan

scale 1" = 8 feet

Pre Fire FF plan

scale 1" = 8 feet

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irvin@sonic.net

Spangler Residence
822 Adobe Canyon Road Kenwood Ca. 95452

pre fire plans

0.1

1.21.2020

ELECTRICAL NOTES
Electrical Contractor to note that final layout of electrical items to be approved with Client on walk thru at time of installation. Client may request additional outlets or lights.

1. All receptacles installed outdoors in garage, bathrooms, kitchens and wet bars shall be GCFI protected).
2. All outside and inside receptacles and outlets shall be provided w/arc-fault circuit interrupter protection.
3. All outside receptacles and outlets shall have weather resistant covers
4. All branch circuits that supply 125-volt single phase 15 and 20 ampere receptacles outlets installed in dwelling unit shall be protected by an arc-fault circuit interrupter, and have tamper resistant receptacles.
5. All outlets shall be tamper resistant type.
6. Bathroom Receptacle Outlets shall be supplied by at least on 20-ampere branch circuit. Such circuits shall have no other outlets. All bathroom receptacles shall be GCFI protected and adjacent to sinks mounted at 42" affl.
7. Bathrooms, garages, laundry and utility rooms shall have at least one luminaries controlled by a vacancy 'occupant' sensor, and dimmers and vacancy 'occupant' sensors shall control all luminaires required to have light sources compliant with Reference Joint Appendix JA8 [§150.0(k)(2)fXCEnC].
8. 't' or 'hr' by lighting fixture indicates fluorescent. Switches to High Efficiency lighting fixtures need not be dimmer controlled.
9. Recessed can type fixtures to be mounted into insulated ceilings are required to be rated for insulation contact (IC-rated), so that insulation can be placed over them. The housing of the fixture shall be air-tight to prevent ingress of unconditioned air, or escape of conditioned air into the attic or joist space.
10. Outdoor lighting: all outdoor light fixtures either mounted to the building or to other buildings on the same lot, shall be high efficacy type, or shall be controlled by a photocontrol/motion sensor control.
11. Owner to advise which receptacles to have integral USB sockets.
12. All Lighting to be high efficiency type per per table 150.0-A[§150.0(k)(1)(A)CEnC].
13. Luminaires located above a bathtub or shower shall be listed for wet locations

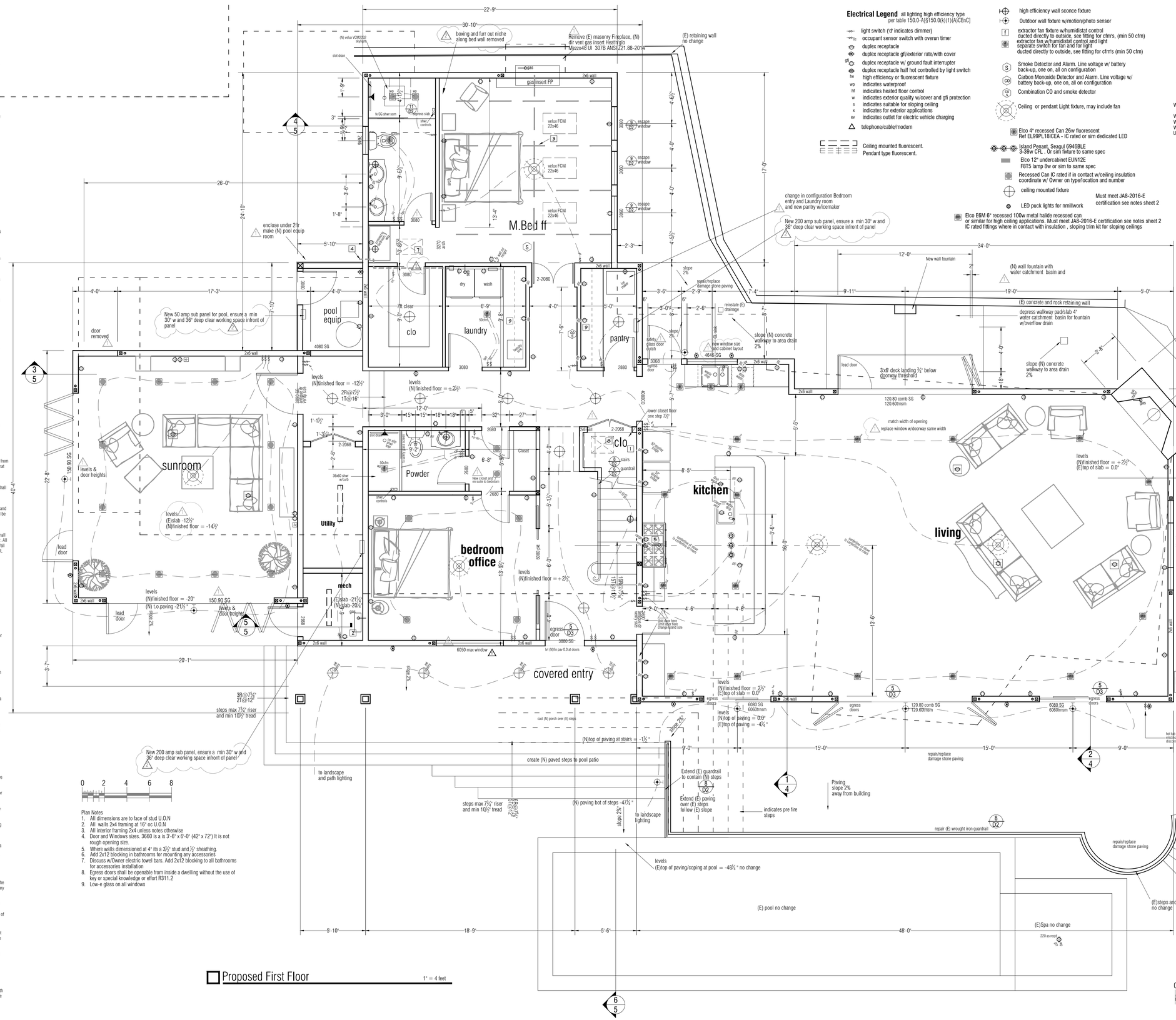
PLUMBING NOTES **Read in-conjunction with Cal Green notes on sheet 0**
1. Replacement or new Shower Flow. Shower heads shall be designed and manufactured so that the water supply flow shall not exceed gallons per minute 2.0 gpm @80psi CPC 2016 sec 408.2 Consider Neba type aeriation efficiency control.
2. Showers and shower tubs shall be provided with individual control valvsd the pressure balance, thermostatic, or combination pressure ballance/thermostatic mixing valve type that provides scald and thermal shock protection.
3. Replacement or new Water Closet Flush. WCs either flush tank, flush-o-meter tank, or flush-meter valve shall have av. consumption not more than 1.28 gal per flush CPC 2016 403.2.1 (1)&(2)
4. Replacement or new Lavatory faucets flow shall be designed and manufactured so that the flow does not exceed 1.2 gal per minute @<60psi and not less than 0.8gpm@20psi CPC 2016 403.7
5. Replacement or new Kitchen sink faucet shall have a maximum flow rate not greater than 1.5 gals per minute at 60 psi. CPC 2016 403.6 (Kitchen faucets may temporarily increase the flow above the maximum rate, but not to exceed 2.2 gallons per minute at 60 psi, and must default to a maximum flow rate of 1.5 gallons per minute at 60 psi. Note: Where faucets meeting the maximum flow rate of 1.8 gpm are unavailable, aerators or other means may be used to achieve reduction.
6. Hose Bibs. All Hose bibs shall be provided with non removable anti siphon backflow device or atmospheric vacuum breaker per CPC sec 603.4.7
7. Discuss w/client the options for constantly recycled hot water loop, to prevent cold dead leg and water wastage at faucets remote from water heater
8. Expansion Control: Any water system provided w/ a check valve back flow preventer or pressure regulating device which does not have a bypass feature at its source shall be provided with an approved, listed and adequately sized pressure relief valve or a means to control expansion CPC 608.3
9. Water Hammer: provide pressure absorbing device either air chamber or other mechanical device to prevent water hammering at quick acting valves such as but not limited to dishwasher and washing machine.CPC sec 609.10
10. ABS or PVC installations are limited to residential construction not more than 2 stories in ht.
11. Hot water pipes in general shall be insulated where they are not covered by wall/ceiling insulation in framing.

MECHANICAL NOTES
Heating system gas fired combined hot water boiler for hydronic floor heating. Possible future AC
2\ heat pump in attic.
ENERGY EFFICIENCY NOTES
Insulation in walls floors and ceilings to be low emitting type to certification section 01350. HVAC filters to be MERV 6+ type if used.
Bathroom fans are to be energy star type. All bathroom fans are to be on timer or humidistat.
All interior paint to be low VOC (<50 gp/voc for flat paint and,150 g.p.l VOC for non flat paint).
All caulking and construction adhesives to be <70 gpl voc.
BATHROOM VENTING & GLAZING
The glazed areas shall not be required where artificial light and a mechanical ventilation system are provided.
The minimum ventilation rates shall be 50 cubic feet per minute (24 Lis) for intermittent ventilation or 25 cubic feet per 8 minute (12 Lis) for continuous ventilation. Ventilation air from the space shall be exhausted directly to the outside, minimum 10 feet from any opening that could allow exhaust air to re-enter building
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 (1829 mm) above the floor. Moisture Resistant Sheetrock, (Greenboard) shall be used in all Bath and Powder rooms.
SMOKE AND CARBON MONOXIDE DETECTORS.
Smoke Detectors and CO detectors with audible alarms are required in all sleeping areas, and Smoke Detectors in halls and rooms that give access to all sleeping areas. Detectors shall be hard wired to the buildings permanent electrical supply, and shall have battery back up. Smoke Detectors shall be located within 6' vertically of highest point of ceiling, or per manufacturers recommendations.
CO (Carbon Monoxide) located in hallways adjacent to all sleeping areas, and detectors shall be mounted at a level of a sleeping persons head (19" affl), as CO is a gas heavier than air. All Smoke/Carbon Monoxide Detectors shall be hardwired and interconnected, in a one alert/all alert configuration. Joint CO and Smoke Alarm Detector combined units may be used if UL listed and mounted at manufacturers recommended height.

R314.1 General. Smoke alarms shall comply with NFPA 72 and Section R314.Smoke alarms shall be listed in accordance with UL 217. Combination smoke and carbon monoxide alarms shall be listedin accordance with UL 217 and UL 2034. Systems and components shall be California State Fire Marshal listed and approved in accordance with California Code of Regulations, Title 19, Division 1for the purpose for which they are installed.
R314.3 Location.Smoke alarms shall be installed in the following locations:
1. In each sleeping room.
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 attics and not including crawl spaces and uninhabitable attics. In dwellings 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 level.
4. Smoke alarms shall be installed not less than 3 feet horizontally from the door or opening of a bathroom that contains a bathtub or shower.
Smoke alarms or smoke detectors shall be installed a minimum of 20 feet horizontal distance from a permanently installed cooking appliance.
R314.4 Interconnection. Where more than one smoke alarm is required to be installed within an individual dwelling or sleeping unit, the smoke alarms shall be interconnected in such a manner that the activation of one alarm will activate all of the alarms in the individual unit. The alarm shall be clearly audible in all bedrooms over background noise levels with all intervening doors closed.
R314.5 Combination alarms. Combination smoke and carbon monoxide alarms shall be permitted to be used in lieu of smoke alarms. Systems and components shall be California State Fire Marshal listed and approved in accordance with California Code of Regulations, Title 19, Division 1 for the purpose for which they are installed.
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

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 accordancewith UL 2034 and UL 217. No person shall install, market, distribute, offer forsale, or sell any carbon monoxide device in the State of California unless the device and instructions have been approved and listed by the Office of the State Fire Marshal.
R315.2.1 Existing buildings and new construction. For existing buildings and new construction, carbon monoxide alarms shall be provided in dwelling units where either or both of the following conditions exist.
1. The dwelling unit contains a fuel-fired appliance or fireplace.
2. The dwelling unit has an attached garage with an opening that communicates with the dwelling unit.
R315.3 Location.Carbon monoxide alarms in dwelling units shall be installed and maintained in accordance with the manufacturer's published instructions in the following locations:
1.Outside of each separate sleeping area in the immediate vicinity of the bedrooms.
2. On every occupiable level of a dwelling unit, including basements.
3.Where a fuel-burningappliance is located within a bedroom or its attached bathroom, a carbon monoxide alarm shall be installed within the bedroom.
R315.4 Combination alarms. Combination carbon monoxide and smoke alarms shall be permitted to be used in lieu of carbon monoxide alarms.
Combination carbon monoxide/smoke alarms shallcomply with Section R315 and all requirements for listing and approval by the Office of the State Fire Marshal for smoke alarms.
R315.5 Power source. Carbon monoxide alarms shall receive their primary power from the building wiring where such wiring is served from a commercial source and, where primary power is interrupted, shall receive power from a battery. Wiring shall be permanent and without a disconnecting switch other than those required for overcurrent protection.
R315.7 Interconnection. Where more than one carbon monoxide alarm is required to be installed within a 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.

FIRE BLOCKING NOTES - for stud bays in excess of 10 feet
R302.11 Fireblocking. In combustible construction, fireblocking shall be provided to cut off all concealed draft openings (both vertical and horizontal) and to forn an effective fire barrier between and between a top story and the roof space.
Fireblocking shall be provided in wood-frame construction in the following locations:
1. In concealed spaces of stud walls and partitions, including furred spaces and parallel rows of studs or staggered studs, as follows:
1.1. Vertically at the ceiling and floor levels.
1.2. Horizontally at intervals not exceeding 10 feet
2. At all interconnections between concealed vertical and horizontal spaces such as occur at soffits, drop ceilings and cove ceilings.
3. In concealed spaces between stair stringers at the top and bottom of the run
4. At openings around vents, pipes, ducts, cables and wires at ceiling and floor level, with an approved material to resist the free passage of flame and products of combustion. The material filling this annular space shall not be required to meet the ASTM E 136 requirements.



Electrical Legend
all lighting high efficiency type per table 150.0-A[§150.0(k)(1)(A)CEnC]

- light switch ('d' indicates dimmer)
- occupant sensor switch with overun timer
- duplex receptacle
- duplex receptacle gfi/exterior rate/with cover
- duplex receptacle w/ ground fault interrupter
- duplex receptacle half hot controlled by light switch
- high efficiency or fluorescent fixture
- indicates waterproof
- indicates heated floor control
- indicates exterior quality w/cover and gfi protection
- indicates suitable for sloping ceiling
- indicates for exterior applications
- indicates outlet for electric vehicle charging
- telephone/cable/modern
- Ceiling mounted fluorescent. Pendant type fluorescent.
- high efficiency wall sconce fixture
- Outdoor wall fixture w/motion/photo sensor
- extractor fan fixture w/humidistat control ducted directly to outside, see fitting for cfm's, (min 50 cfm)
- extractor fan w/humidistat control and light separate switch for fan and for light ducted directly to outside, see fitting for cfm's (min 50 cfm)
- Smoke Detector and Alarm. Line voltage w/ battery back-up, one on, all on configuration
- Carbon Monoxide Detector and Alarm. Line voltage w/ battery back-up, one on, all on configuration
- Combination CO and smoke detector
- Ceiling or pendant Light fixture, may include fan
- Elco 4" recessed Can 26w fluorescent Ref EL99PL18ICEA - IC rated or sim dedicated LED
- Island Penant, Seagul 6946BLE 3-39w CFL . Or sim fixture to same spec
- Elco 12" undercabinet EUN12E F8T5 lamp 8w or sim to same spec
- Recessed Can IC rated if in contact w/ceiling insulation coordinate w/ Owner on type/location and number
- ceiling mounted fixture
- LED puck lights for nmwillwork

Must meet JA8-2016-E certification see notes sheet 2

Elco E6M 6" recessed 100w metal halide recessed can or similar for high ceiling applications. Must meet JA8-2016-E certification see notes sheet 2 IC rated fittings where in contact with insulation , sloping trim kit for sloping ceilings

- GDO
- min 1/2 hp hardwired overhead garage door opener w/light
- floor mounted recepticle w/cover
- gas connection
- hose bib
- wall mounted thermostatic mixer control with rail and telephone shower head
- shower curtain
- shower controls if not located under shower head

Whole House Fan Calculation from ASHRAE Std 62.2 Table 7.1

Whole House fan cfm = 0.01x House Conditioned Area+7.5x(#of bedrms +1)
Whole House fan cfm = 0.01x4347+7.5(5+1)
Whole House fan cfm = 88.47cfm
Use 150 cfm fan in one of the bathrooms (50 + 80.97) see sheet 2 bath

1. R302.7 Under-stair protection.Enclosed accessible space under stairs shall have walls,under-stair surface and any soffits protected on the enclosed side with ½" gypsum board
2. Combined hot water heater and boiler for hydronic heating
3. lake beams and ridge
4. Clothes dryer moisture exhaust vent to be 4" diameter smooth metal and terminate with a back draft damper. Must terminate more than 3ft from any opening that would allow air back into building
5. kitchen exhaust fan 100cfm ducted to outside. Ducting sized to ASHRAE std 62.2 table 7.1
6. Electrical panel 400Amperage w/overcurrent protection
7. attic access min 22 x 30
8. foundation access min 18 x 24
9. kitchen type cabinets counter/splash and upper cabinets

A electrical disconnect is required for the permanently installed outdoor hot tub, other than lighting for these water bodies . The electrical disconnect must be readily accessible and located within sight and at least 5 ft from the permanently installed outdoor hot tub, unless separated from the open water by a permanently installed barrier that provides a 5-ft reach path or greater. This horizontal distance is measured from the water's edge along the shortest path required to reach the disconnecting means. "Within sight" means it's visible and not more than 50 ft from one to the other.

List of Abbreviations

(E)	Existing
(N)	New
(R)	Replacement
(M)	Modify (E)
R&R	Remove & Replace
SG	Safety glass
N/C	No change
SC	Solid core
clsr	Self closer device
WS	Weatherstripped
o/a	Overall
FD	French Door
H/L	High Level
Sldr	Slider
affl	above fin floor level
u/s	underside
brn	barn door type
DW	Dishwasher
GD	Garbage disposer
CO	Cased Opening

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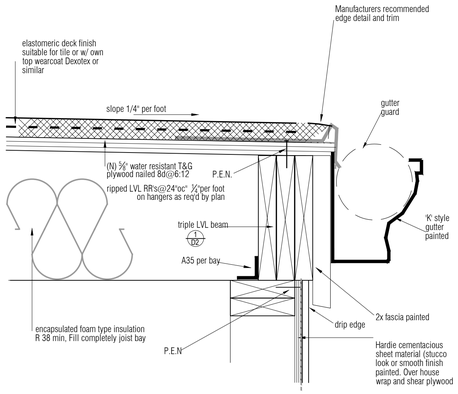
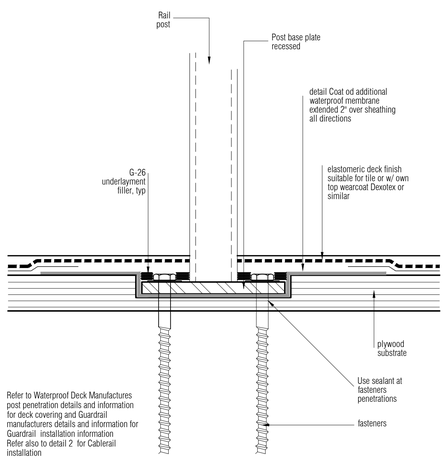
1 layout plan

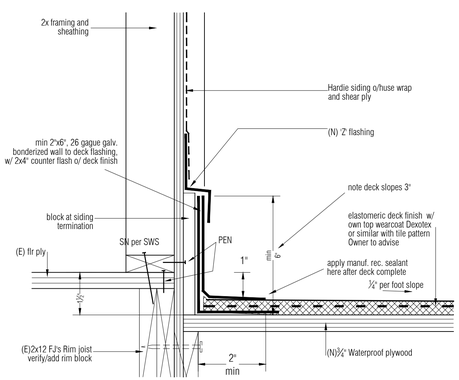
1.21.2020



1 Sunroom roof edge

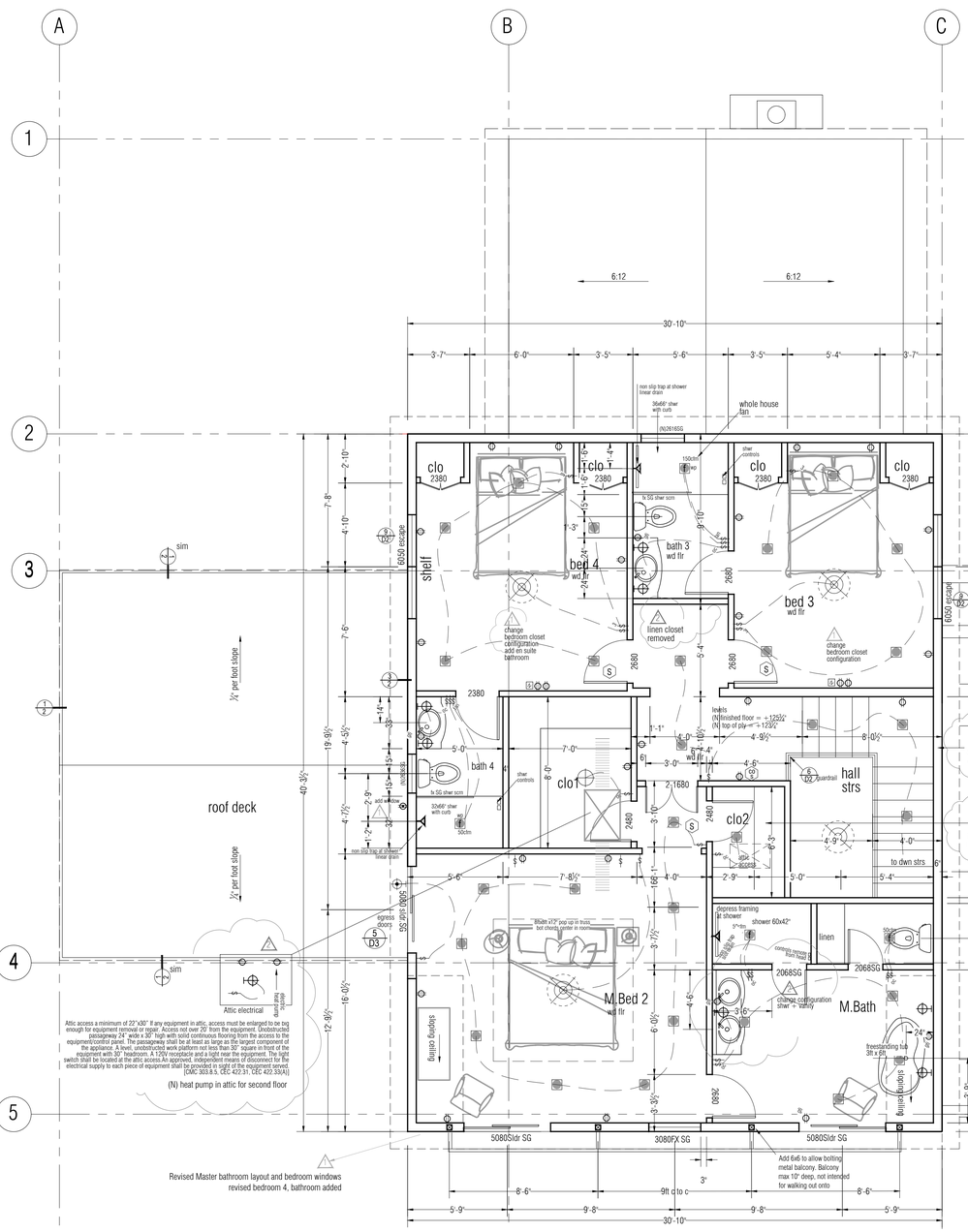


2 Sunroom roof patio guardrail fixing



3 Elastomeric roof to wall detail

Electrical Notes and Legend see sheet 1



Proposed Second Floor

1" = 4 feet

Plan Notes
1. All dimensions are to face of stud U.O.N
2. All walls 2x4 framing at 16" oc U.O.N
3. All interior framing 2x4 unless notes otherwise
4. Door and Windows sizes. 3660 is a is 3'-6" x 6'-0" (42" x 72") It is not rough opening size.
5. Where walls dimensioned at 4" its a 3½" stud and ½" sheathing.
6. Add 2x12 blocking in bathrooms for mounting any accessories
7. Discuss w/Owner electric towel bars. Add 2x12 blocking to all bathrooms for accessories installation
8. Egress doors shall be openable from inside a dwelling without the use of key or special knowledge or effort R311.2
9. Low-e glass on all windows

ADDITIONAL LIGHTING NOTES
• All luminaires.
All installed luminaires shall be high efficacy; either listed by source type or by being JA8-2016 certified and labeled. See Table 150.0-A below.
• JA8-2016-E certification required for enclosed luminaires and recessed ceiling downlights (cannot be screw base socket), Non-decorative LEDs (including GU-24 base luminaires containing LED), and any lamp designed for screw base socket.
1. All JA8 certified light sources must be controlled by a dimmer or vacancy sensor.
• Enclosed luminaires. Light sources that are not marked "JA8-2016-E", marked "E" for elevated temperature, shall not be installed in enclosed luminaires.
• Screw based luminaires. Screw based luminaires shall meet all of the following:
1. The luminaires shall not be recessed downlight luminaires in ceilings; and
2. The luminaires shall contain lamps that comply with Reference Joint Appendix JA8; and
3. The installed lamps shall be marked with JA8-2016 or JA8-2016-E.
• Recessed Downlight Luminaires in Ceilings. Luminaires recessed into ceilings must meet all of the
requirements for: insulation contact (IC) labeling; air leakage; sealing; maintenance; and socket and light source as described in § 150.0(k)1C. A JA8-2016-E light source rated for elevated temperature
must be installed by final inspection in all recessed ceiling downlight luminaires.
• Dimmers or vacancy sensors shall control all luminaires required to have light sources compliant with Reference Joint Appendix JA8, except hallways and closets less than 70 square feet.
• Vacancy sensors required for at least one luminaire in bathrooms, garages, laundry, and utility rooms.
• Exhaust fans and under cabinet lighting shall be switched separately from lighting system.
• Blank electrical boxes. All unused electrical boxes mounted above 5 feet from the finished floor shall be no more than the number of bedrooms and shall be served by dimmer or vacancy sensor control, or fan speed control.
• Outdoor Lighting. All lighting attached to the residence or to other buildings on the same lot must be high efficacy, and must be controlled by a manual ON and OFF switch and one of the following automatic control types:
1. Photocontrol and motion sensor.
2. Photocontrol and automatic time switch control.
3. Astronomical time clock control that automatically turns the outdoor lighting off during daylight hours.
4. Energy Management Control System (EMCS) that provides the functionality of an astronomical time clock, does not have an override or bypass switch that allows the luminaire to be always ON, and is programmed to automatically turn the outdoor lighting off during daylight hours.
Manual ON and OFF switches must not override the automatic control functions listed above, and any control that overrides the automatic controls to ON must automatically reactivate those controls within six hours.
• All Luminaires are either High efficacy by source types listed, or must be certified & labeled
per JA8 to be classified as high efficacy. See Table 150.0-A below:

List of Abbreviations

(E)	Existing
(N)	New
(R)	Replacement
(M)	Modify (E)
R&R	Remove & Replace
SG	Safety glass
N/C	No change
SC	Solid core
clsr	Self closer device
WS	Weatherstripped
o/a	Overall
FD	French Door
H/L	High Level
Sldr	Slider
affl	above fin floor level
u/s	underside
brn	barn door type
DW	Dishwasher
GD	Garbage disposer

FIRE BLOCKING NOTES - for stud bays in excess of 10 feet
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Fireblocking shall be provided in wood-frame construction in the following locations:
1. In concealed spaces of stud walls and partitions, including furred spaces and parallel rows of studs or staggered studs, as follows:
1.1. Vertically at the ceiling and floor levels.
1.2. Horizontally at intervals not exceeding 10 feet
2. At all interconnections between concealed vertical and
horizontal spaces such as occur at soffits, drop ceilings and cove ceilings.
3. In concealed spaces between stair stringers at the top and bottom of the run
4. At openings around vents, pipes, ducts, cables and wires at ceiling and floor level, with an approved material to resist the free passage of flame and products of combustion. The material filling this annular space shall not be required to meet the ASTM E 136 requirements.

0 2 4 6 8

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elevations 2

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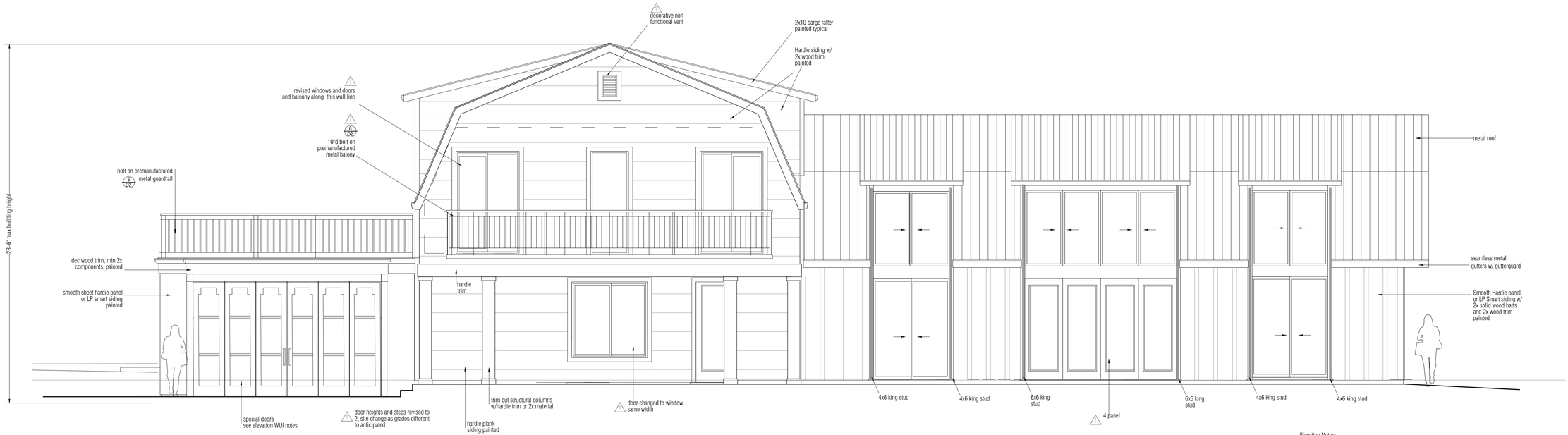
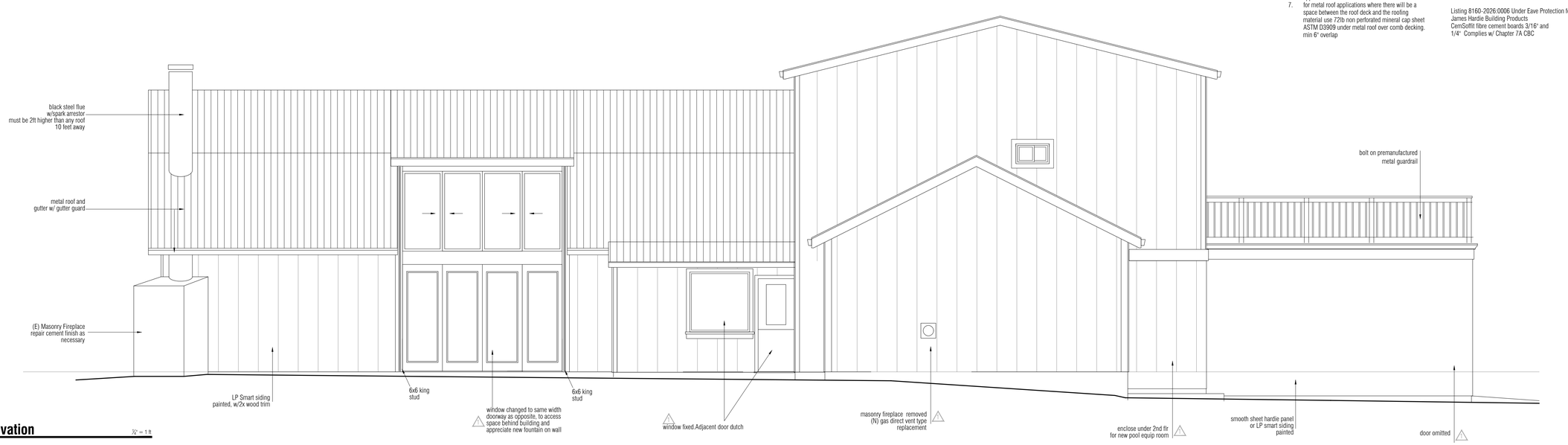


North Elevation

½" = 1 ft



South Elevation

½" = 1 ft

Elevation Notes:

1. Roof : Class 'A' type metal roof
2. Ext Walls: min 2x6 stds 16" o.c w/sheathing per SWS. Building wrap and cemetacious type or solid wood siding as mention in state fire Marshall handbook, stained or painted. Cemetacious and wood siding products to meet SFM 12-7A-1 for non combustible and ignition resistant materials.
3. WUI / SFM Fire Requirements - See Notes Sheet 0
4. All Exterior windows shall have min 1 pane tempered glass or be 20 min fire rated per Sec 704A.3.2.2
5. All Exterior Doors shall be approved non combustableconstruction or solid core or have a fire rating of 20 minutes. All Window and door trim to be non combustable too! Use Hardie Trim or sim non combustable ignition resistant material.
6. LP siding with 2x battens, Make mock up of siding for Owner to view and determine spacing of battens, approx 24" oc assumed.
7. for metal roof applications where there will be a space between the roof deck and the roofing material use 72lb non perforated mineral cap sheet ASTM D3909 under metal roof over comb decking. min 6" overlap

See requirements for WUI material manufacturers below
California Department of Forestry and Fire Protection
State Fire Marshal Building Materials Listing Program

Listing 8120-2120:0100 Exterior Windows for WUI
Riviera Manufacturing or similar to same listing spec
Windows w/min one tempered pane of glass per 7A CBC
Listing 8140-2026:0001 Exterior Siding/sheathing for WUI
James Hardie Building Products
fibre cement lap siding 5/8"t Complies w/ Chapter 7A CBC

Listing 8140-2027:0002 Exterior Siding/sheathing for WUI
Louisiana Pacific Construction Materials
LP Smart Siding Complies w/ Chapter 7A CBC

Listing 8150-2017:0005 Exterior Doors for WUI
Plastpro Doors or similar to same listing spec
20 minute rated doors Complies w/ Chapter 7A CBC

Listing 8160-2026:0006 Under Eave Protection for WUI
James Hardie Building Products
CemSoffit fibre cement boards 3/16" and 1/4" Complies w/ Chapter 7A CBC

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elevations

3

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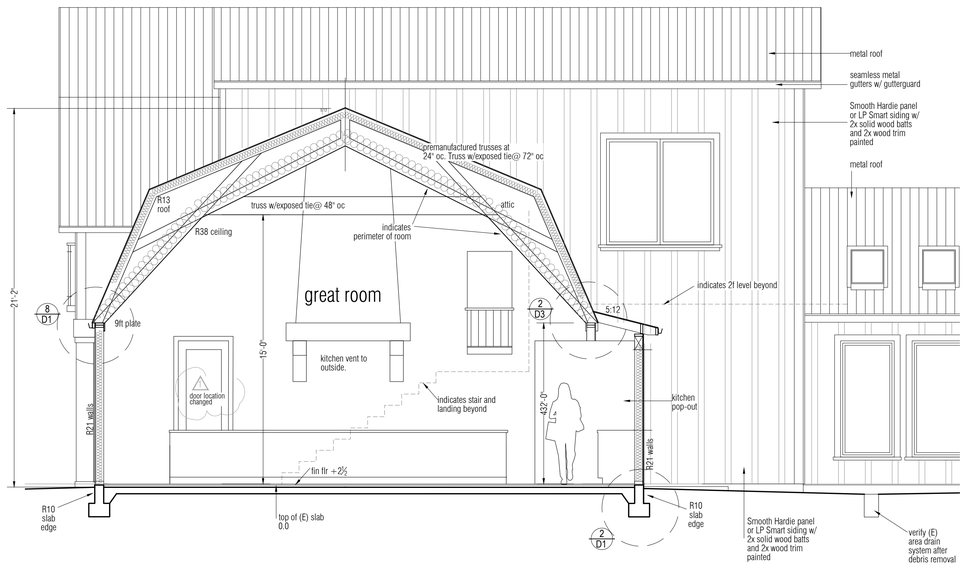
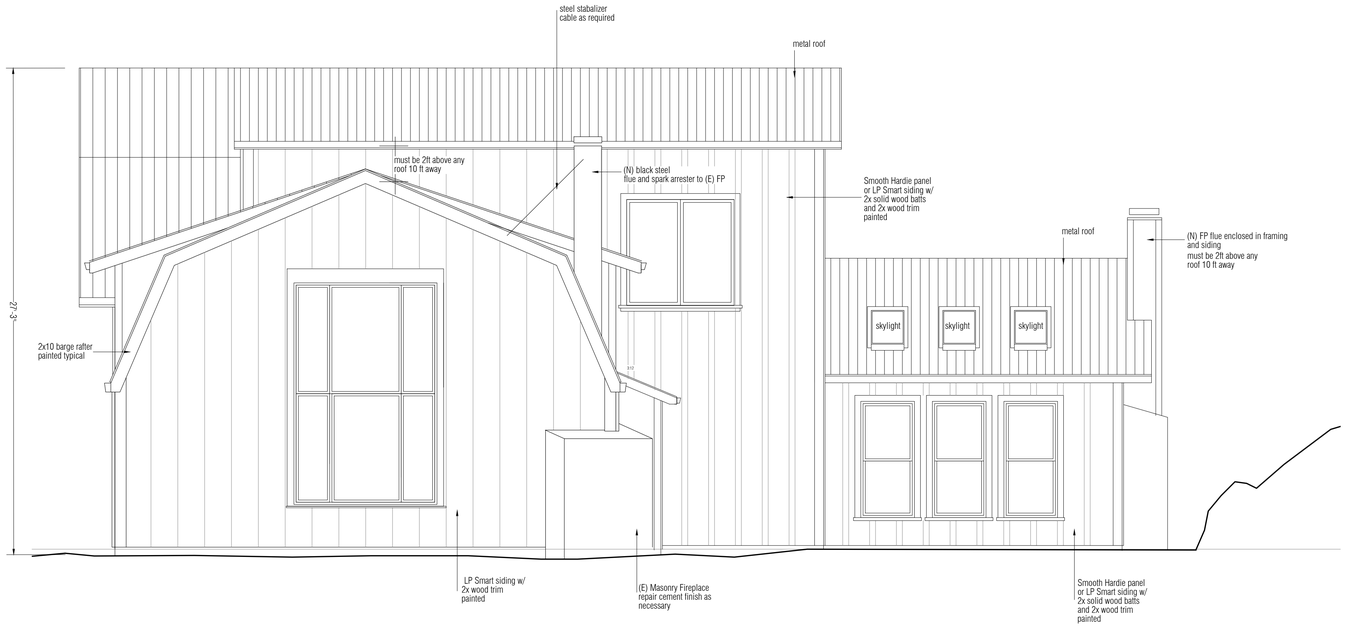


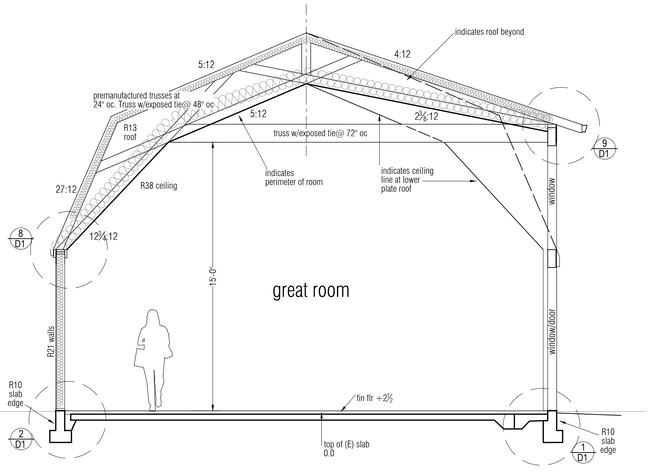
1 Section thru great room

½" = 1 ft



West Elevation

½" = 1 ft



2 Section thru Great Room

½" = 1 ft

Elevation Notes:

1. Roof : Class 'A' type metal roof
2. Ext Walls: min 2x6 stds 16" o.c w/sheathing per SWS. Building wrap and cemetacious type or solid wood siding as mention in state fire Marshall handbook, stained or painted. Cemetacious and wood siding products to meet SFM 12-7A-1 for non combustible and ignition resistant materials.
3. WUI / SFM Fire Requirements - See Notes Sheet 0
4. All Exterior windows shall have min 1 pane tempered glass or be 20 min fire rated per Sec 704A.3.2.2
5. All Exterior Doors shall be approved non combustableconstruction or solid core or have a fire rating of 20 minutes. All Window and door trim to be non combustable too! Use Hardie Trim or sim non combustable ignition resistant material.
6. LP siding with 2x battens, Make mock up of siding for Owner to view and determine spacing of battens, approx 24" oc assumed.
7. for metal roof applications where there will be a space between the roof deck and the roofing material use 72lb non perforated mineral cap sheet ASTM D3909 under metal roof over comb decking. min 6" overlap

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Windows w/min one tempered pane of glass per 7A CBC
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fibre cement lap siding 5/8"t Complies w/ Chapter 7A CBC

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20 minute rated doors Complies w/ Chapter 7A CBC

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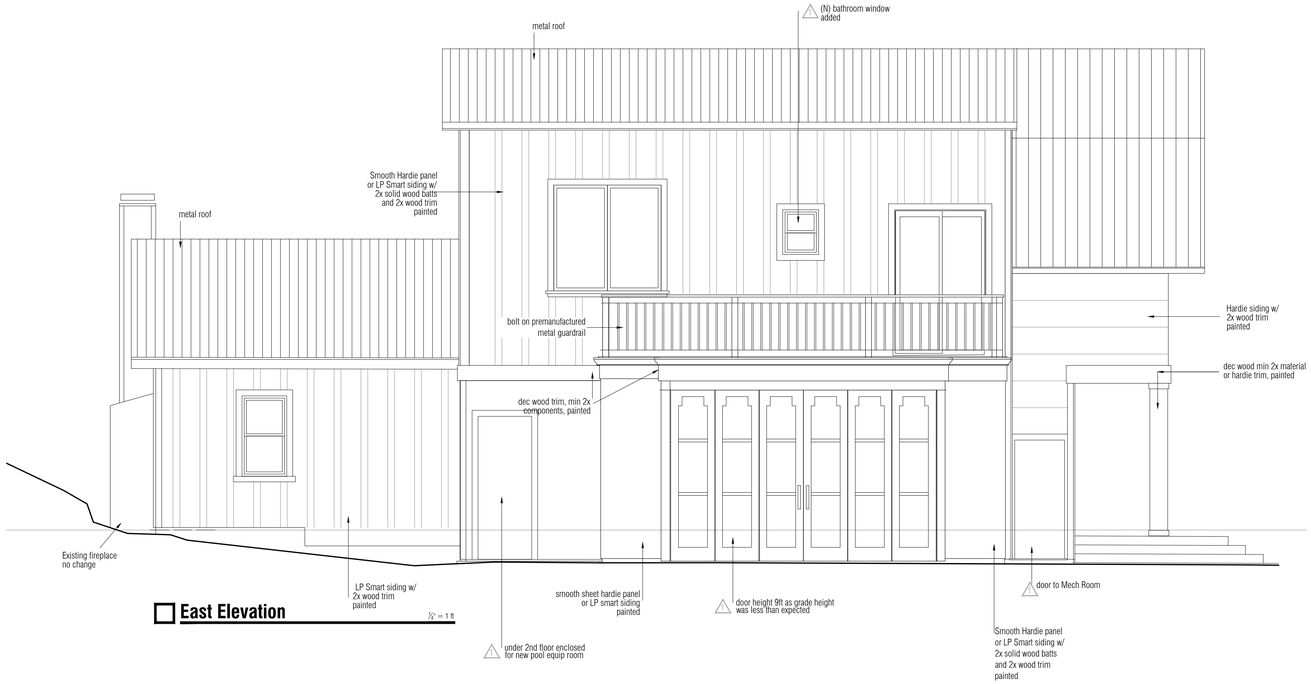

East Elevation

½" = 1 ft

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elevations and sections

4

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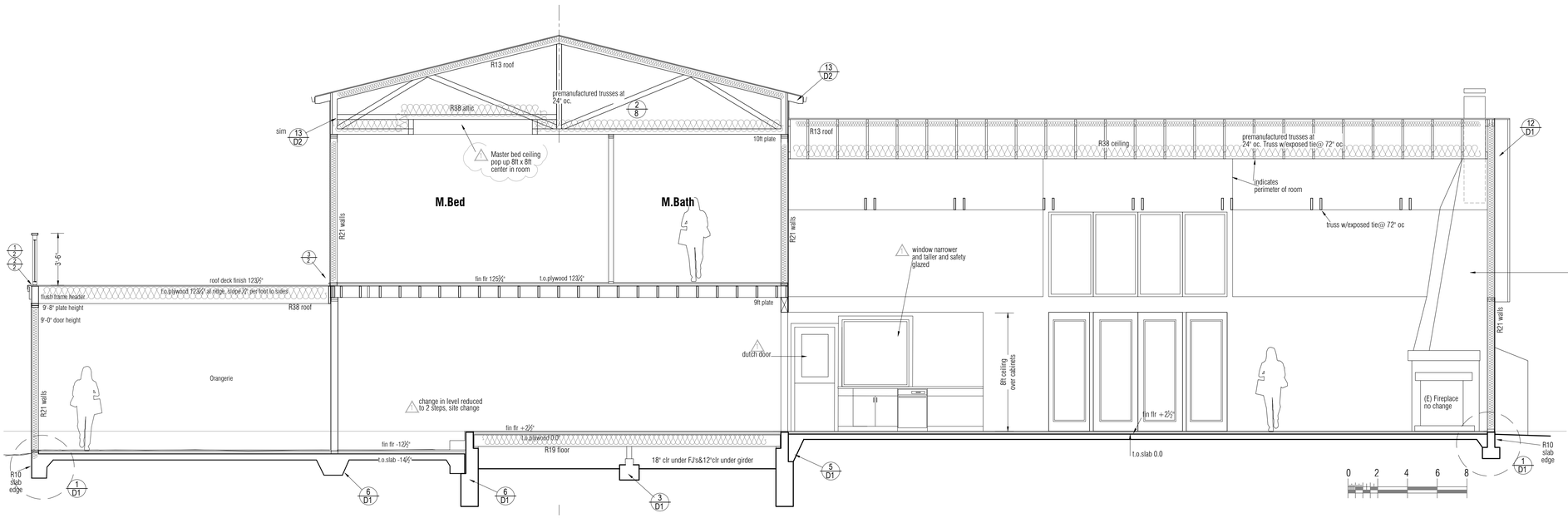
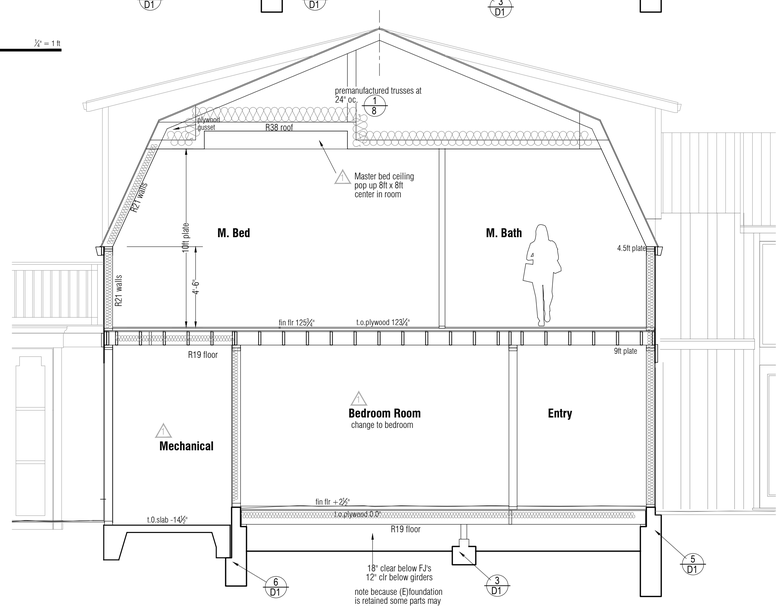


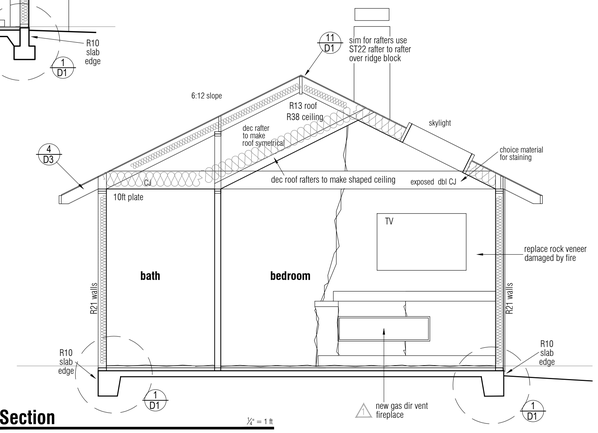
3 Section

½" = 1 ft



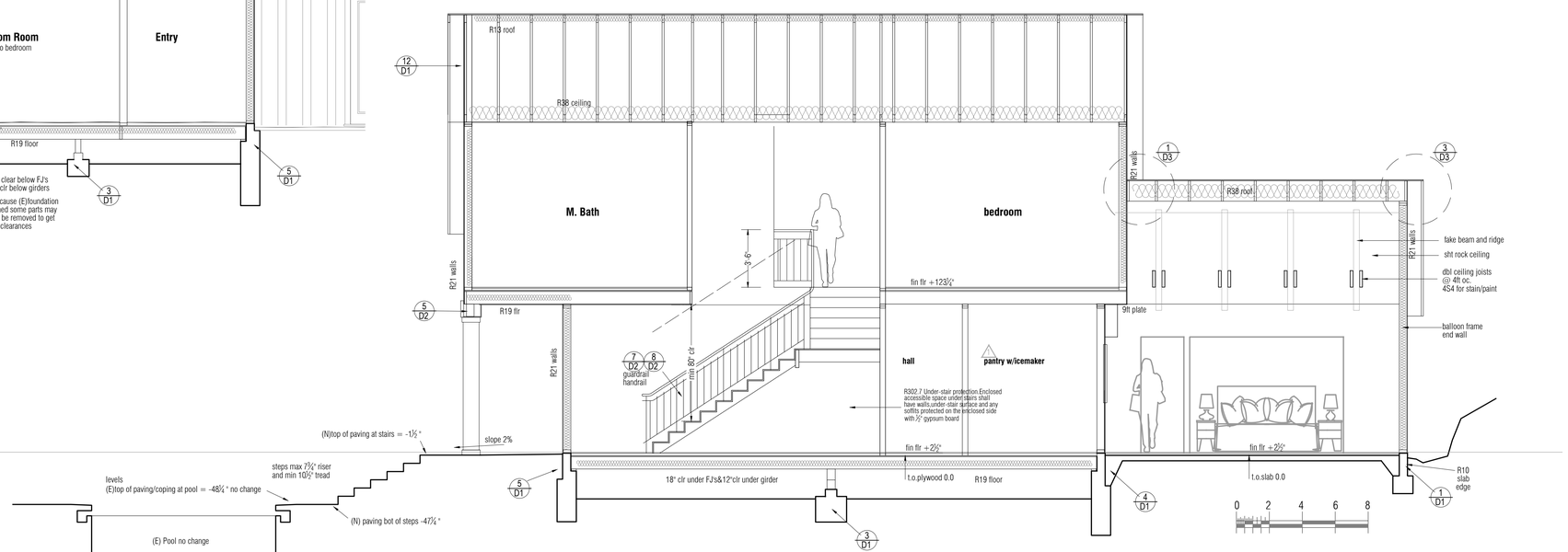
5 Section

½" = 1 ft



4 Section

½" = 1 ft



6 Section

½" = 1 ft

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5 elevations and sections

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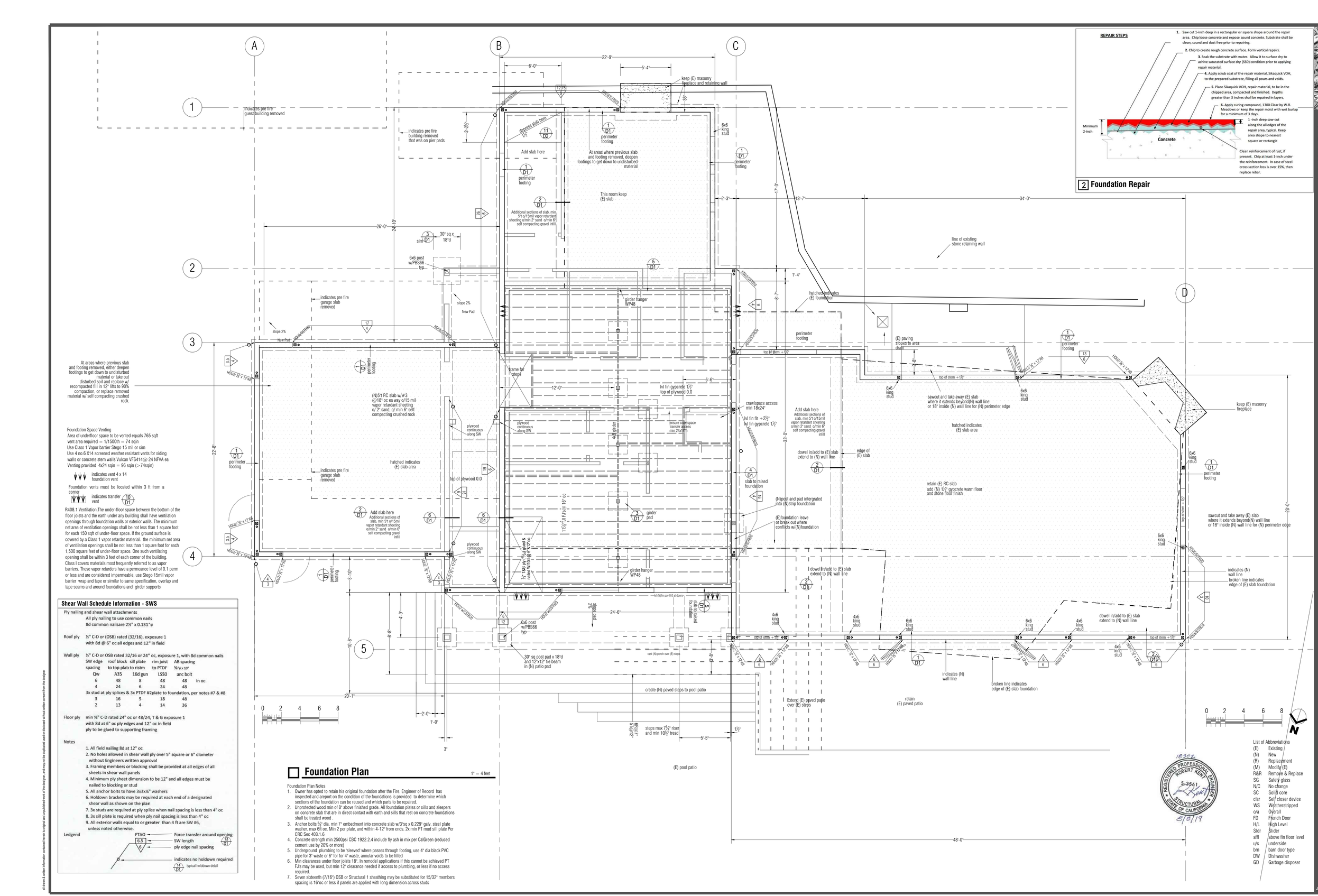

REPAIR STEPS

1. Saw cut 1-inch deep in a rectangular or square shape around the repair area. Chip loose concrete and expose sound concrete. Substrate shall be clean, sound and dust free prior to repairing.
2. Chip to create rough concrete surface. Form vertical repairs.
3. Soak the substrate with water. Allow it to surface dry to achive saturated surface dry (SSD) condition prior to applying repair material.
4. Apply scrub coat of the repair material, Sikaquick VOH, to the prepared substrate, filling all pours and voids.
5. Place Sikaquick VOH, repair material, to be in the chipped area, compacted and finished. Depths greater than 3 inches shall be repaired in layers.
6. Apply curing compound, 1300 Clear by W.R. Meadows or keep the repair moist with wet burlap for a minimum of 3 days.

2 Foundation Repair

Foundation Space Venting
Area of underfloor space to be vented equals 765 sqft
vent area required = 1/1500th = 74 sqin
Use Class 1 Vapor barrier Stego 15 mil or sim
Use 4 no.6 X14 screened weather resistant vents for siding walls or concrete stem walls Vulcan VFS414@ 24 NFVA ea
Venting provided 4x24 sqin = 96 sqin (>74sqin)

indicates vent 4 x 14 foundation vent

Foundation vents must be located within 3 ft from a corner

indicates transfer vent 10/D1

R408.1 Ventilation.The under-floor space between the bottom of the floor joists and the earth under any building shall have ventilation openings through foundation walls or exterior walls. The minimum net area of ventilation openings shall be not less than 1 square foot for each 150 sqft of under-floor space. If the ground surface is covered by a Class 1 vapor retarder material, 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. One such ventilating opening shall be within 3 feet of each corner of the building. Class I covers materials most frequently referred to as vapor barriers. These vapor retarders have a permeance level of 0.1 perm or less and are considered impermeable, use Stego 15mil vapor barrier wrap and tape or similar to same specification, overlap and tape seams and around foundations and girder supports

Shear Wall Schedule Information - SWS

Ply nailing and shear wall attachments
All ply nailing to use common nails
8d common nailsare 2½" x 0.131"ø

Roof ply ½" C-D or (OSB) rated (32/16), exposure 1 with 8d @ 6" oc all edges and 12" in field

Wall ply ½" C-D or OSB rated 32/16 or 24" oc, exposure 1, with 8d common nails

SW edge spacing	roof block to top plat	sill plate to ristm	rim joist to PTDF	AB spacing ⅝"ø x 10" anc bolt	
Qw	A35	16d gun	LSS0		
6	48	8	48	48	in oc
4	24	6	24	48	

3x stud at ply splices & 3x PTDF #2plate to foundation, per notes #7 & #8

3	16	5	18	48
2	13	4	14	36

Floor ply min ¾" C-D rated 24" oc or 48/24, T & G exposure 1 with 8d at 6" oc ply edges and 12" oc in field ply to be glued to supporting framing

Notes
1. All field nailing 8d at 12" oc
2. No holes allowed in shear wall ply over 5" square or 6" diameter without Engineers written approval
3. Framing members or blocking shall be provided at all edges of all sheets in shear wall panels
4. Minimum ply sheet dimension to be 12" and all edges must be nailed to blocking or stud
5. All anchor bolts to have 3x3x¼" washers
6. Holdown brackets may be required at each end of a designated shear wall as shown on the plan
7. 3x studs are required at ply splice when nail spacing is less than 4" oc
8. 3x sill plate is required when ply nail spacing is less than 4" oc
9. All exterior walls equal to or greater than 4 ft are SW #6, unless noted otherwise.

Ledgend
FTAO — Force transfer around opening
6.5 — SW length — 13/D1
6 — ply edge nail spacing
HD — indicates no holdown required
14/D1 typical holddown detail

Foundation Plan

1" = 4 feet

Foundation Plan Notes
1. Owner has opted to retain his original foundation after the Fire. Engineer of Record has inspected and areport on the condition of the foundations is provided to determine which sections of the foundation can be reused and which parts to be repaired.
2. Unprotected wood min of 8" above finished grade. All foundation plates or sills and sleepers on concrete slab that are in direct contact with earth and sills that rest on concrete foundations shall be treated wood .
3. Anchor bolts ⅝" dia. min 7" embedment into concrete slab w/3"sq x 0.229" galv. steel plate washer. max 6ft oc. Min 2 per plate, and within 4-12" from ends. 2x min PT mud sill plate Per CRC Sec 403.1.6
4. Concrete strength min 2500psi CBC 1922.2.4 include fly ash in mix per CalGreen (reduced cement use by 20% or more)
5. Underground plumbing to be 'sleeved' where passes through footing, use 4" dia black PVC pipe for 3" waste or 6" for for 4" waste, annular voids to be filled
6. Min clearances under floor joists 18". In remodel applications if this cannot be achieved PT FJ's may be used, but min 12" clearance needed if access to plumbing, or less if no access required.
7. Seven sixteenth (7/16") OSB or Structural 1 sheathing may be substituted for 15/32" members spacing is 16"oc or less if panels are applied with long dimension across studs

List of Abbreviations

(E)	Existing
(N)	New
(R)	Replacement
(M)	Modify (E)
R&R	Remove & Replace
SG	Safety glass
N/C	No change
SC	Solid core
clsr	Self closer device
WS	Weatherstripped
o/a	Overall
FD	French Door
H/L	High Level
Sldr	Slider
affl	above fin floor level
u/s	underside
brn	barn door type
DW	Dishwasher
GD	Garbage disposer

REGISTERED PROFESSIONAL ENGINEER
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6 foundation plan

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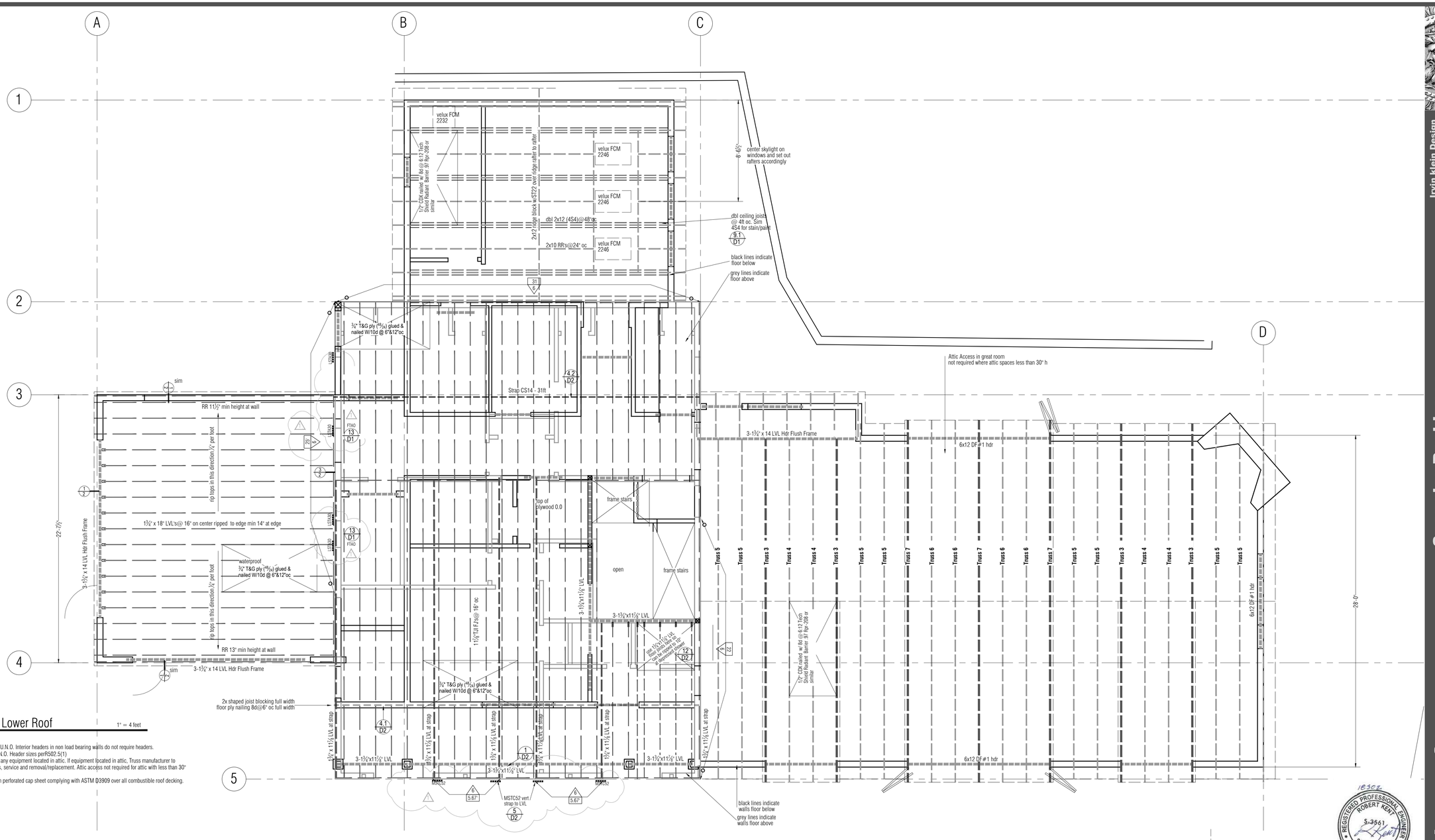
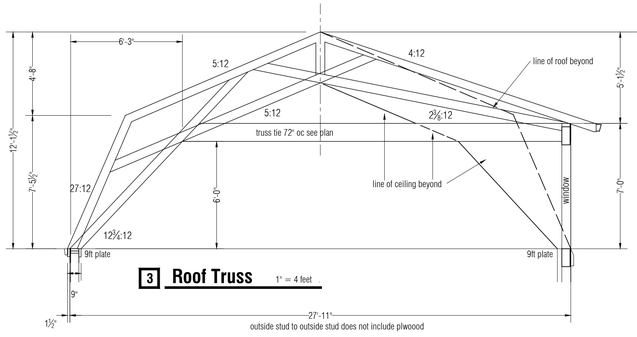


2f Floor Framing and Lower Roof

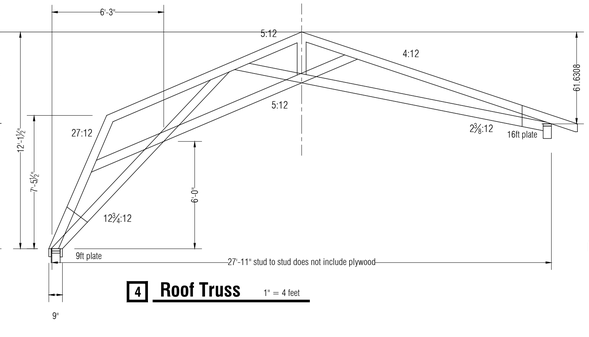
1" = 4 feet

Roof Framing Plan Notes

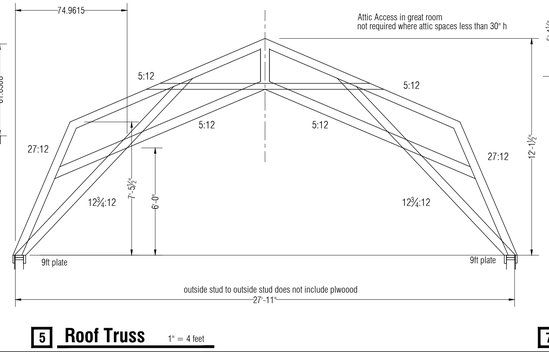
1. Use min 6x8 at all exterior and interior headers U.N.O. Interior headers in non load bearing walls do not require headers.
2. Install 2-2x or 4x post at ends of all headers U.N.O. Header sizes perR502.5(1)
3. Attic Access min 22x 30, but might be larger if any equipment located in attic. If equipment located in attic, Truss manufacturer to provide trusses that allow or equipment, access, service and removal/replacement. Attic access not required for attic with less than 30" headroom, unless equipment located there.
4. Install one layer min 72 lb mineral surfaced non perforated cap sheet complying with ASTM D3909 over all combustible roof decking.



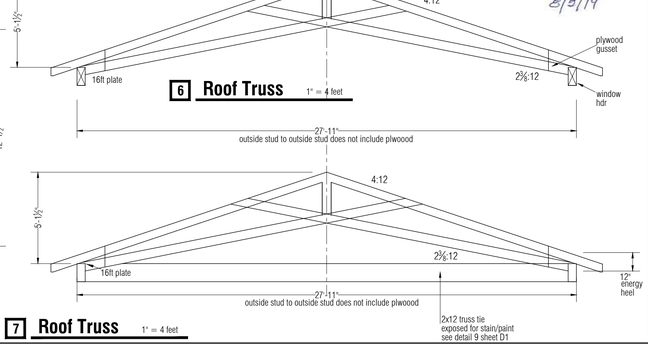
3 Roof Truss 1" = 4 feet



4 Roof Truss 1" = 4 feet



5 Roof Truss 1" = 4 feet



6 Roof Truss 1" = 4 feet

7 Roof Truss 1" = 4 feet

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2f flr frmg and lwr roof

7

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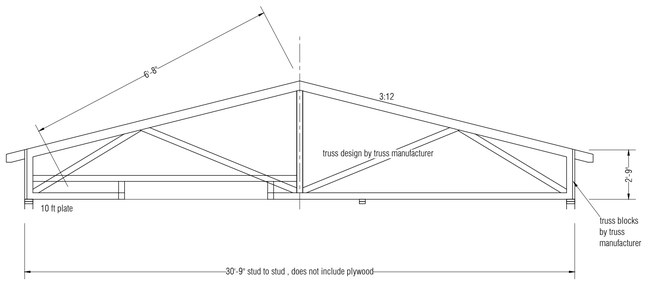
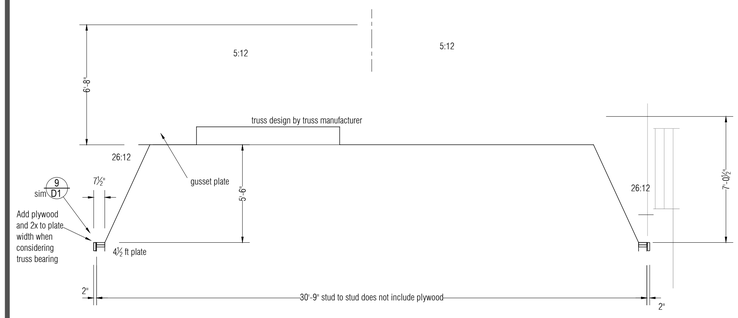


2 Roof Truss

1" = 4 feet



1 Roof Truss

1" = 4 feet

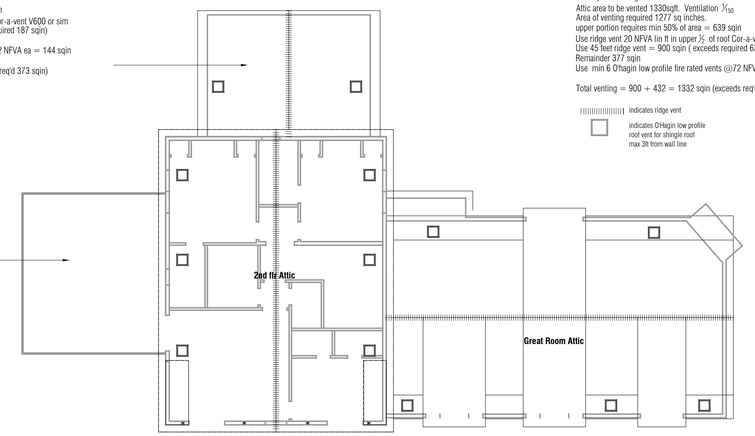
Attic Space Venting - FF Master Bedroom
Attic area to be vented 388sqft. Ventilation 1/150
Area of venting required 373 sq inches.
upper portion requires min 50% of area = 187 sqin
Use ridge vent 20 NFVA lin ft in upper ½ of roof Cor-a-vent V600 or sim
Use 17.5 feet ridge vent = 350 sqin (exceeds required 187 sqin)
Remainder 23 sqin
Use min 2 O'hagin low profile fire rated vents @72 NFVA ea = 144 sqin

Total venting = 350 + 144 = 494 sqin (exceeds req'd 373 sqin)

indicates ridge vent

indicates O'Hagin low profile
roof vent for shingle roof
max 3ft from wall line

Attic Sun Room
Use spray in closed cell insulation
venting not required



Attic Space Venting - Great Room Attic
Attic area to be vented 1330sqft. Ventilation 1/150
Area of venting required 1277 sq inches.
upper portion requires min 50% of area = 639 sqin
Use ridge vent 20 NFVA lin ft in upper ½ of roof Cor-a-vent V600 or sim
Use 45 feet ridge vent = 900 sqin (exceeds required 639 sqin)
Remainder 377 sqin
Use min 6 O'hagin low profile fire rated vents @72 NFVA ea = 432 sqin

Total venting = 900 + 432 = 1332 sqin (exceeds req'd 1277 sqin)

indicates ridge vent

indicates O'Hagin low profile
roof vent for shingle roof
max 3ft from wall line

Roof Plan - venting

1" = 10 ft

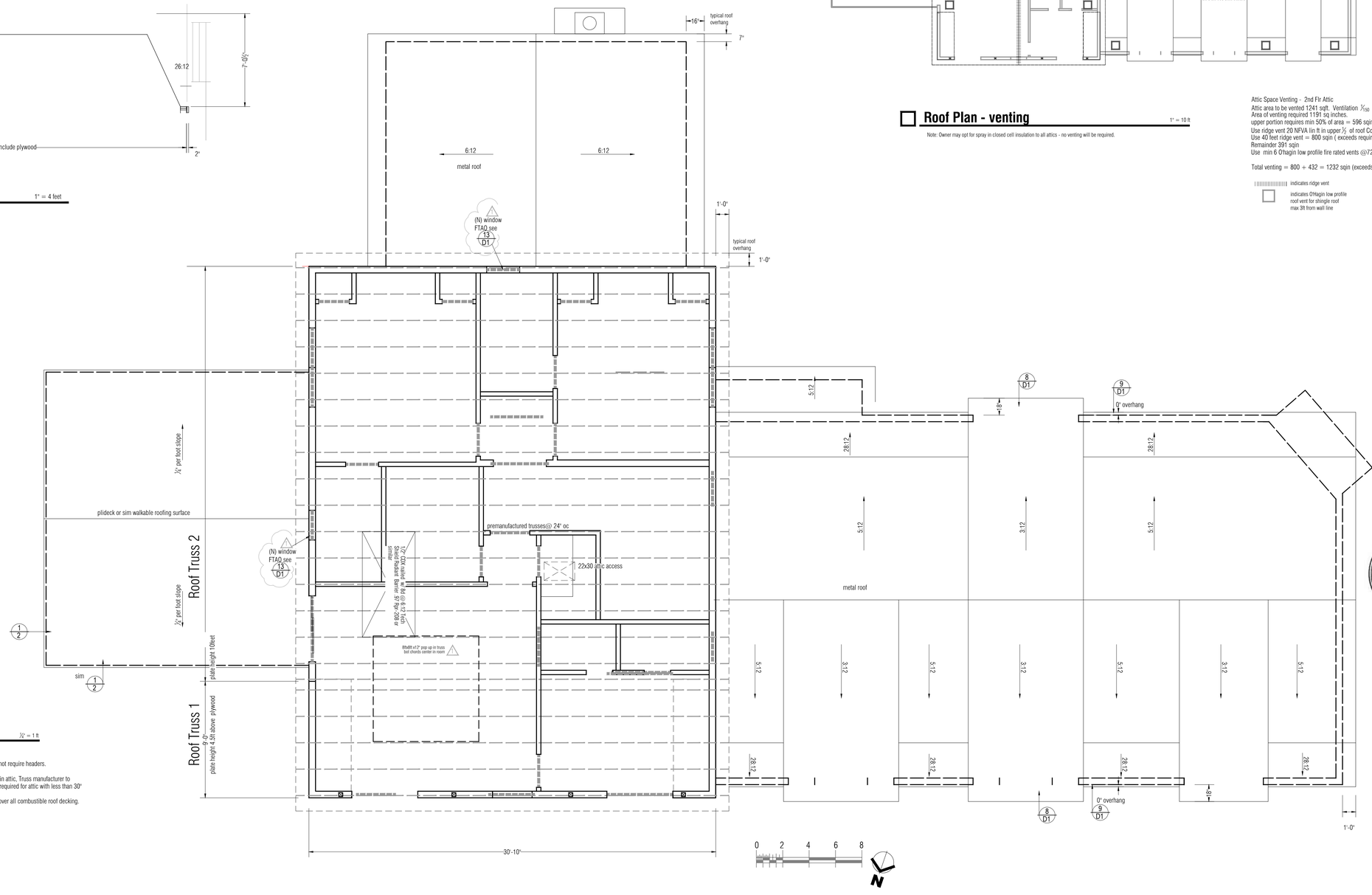
Note: Owner may opt for spray in closed cell insulation to all attics - no venting will be required.

Attic Space Venting - 2nd Flr Attic
Attic area to be vented 1241 sqft. Ventilation 1/150
Area of venting required 1191 sq inches.
upper portion requires min 50% of area = 596 sqin
Use ridge vent 20 NFVA lin ft in upper ½ of roof Cor-a-vent V600 or sim
Use 40 feet ridge vent = 800 sqin (exceeds required 596 sqin)
Remainder 391 sqin
Use min 6 O'hagin low profile fire rated vents @72 NFVA ea = 432 sqin

Total venting = 800 + 432 = 1232 sqin (exceeds req'd 1191 sqin)

indicates ridge vent

indicates O'Hagin low profile
roof vent for shingle roof
max 3ft from wall line



Upper Roof Framing Plan

1/4" = 1 ft

Roof Framing Plan Notes
1. Use min 6x8 at all exterior and interior headers U.N.O. Interior headers in non load bearing walls do not require headers.
2. Install 2-2x or 4x post at ends of all headers U.N.O. Header sizes perR502.5(1)
3. Attic Access min 22x 30, but might be larger if any equipment located in attic. If equipment located in attic, Truss manufacturer to provide trusses that allow or equipment, access, service and removal/replacement. Attic access not required for attic with less than 30" headroom, unless equipment located there.
4. Install one layer min 72 lb mineral surfaced non perforated cap sheet complying with ASTM D3909 over all combustible roof decking.

Attic Access min 22x30, but must be large enough for any equipment repair/removal. Truss manufacturer(as appropriate) to make a working/removal path. Path to hav plywood across truss bottom chords

List of Abbreviations

(E)	Existing
(N)	New
(R)	Replacement
(M)	Modify (E)
R&R	Remove & Replace
SG	Safety glass
N/C	No change
SC	Solid core
clsr	Self closer device
WS	Weatherstripped
o/a	Overall
FD	French Door
H/L	High Level
Sldr	Slider
affl	above fin floor level
u/s	underside
brn	barn door type
DW	Dishwasher
GD	Garbage disposer

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8 roof

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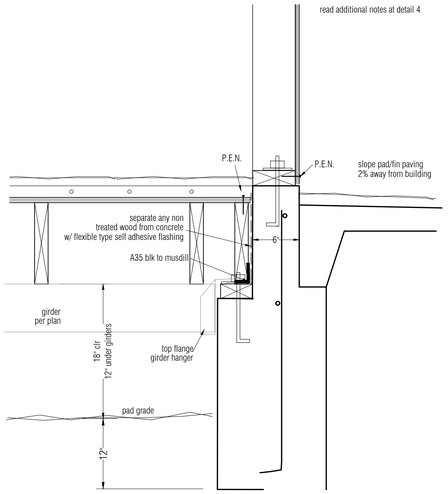
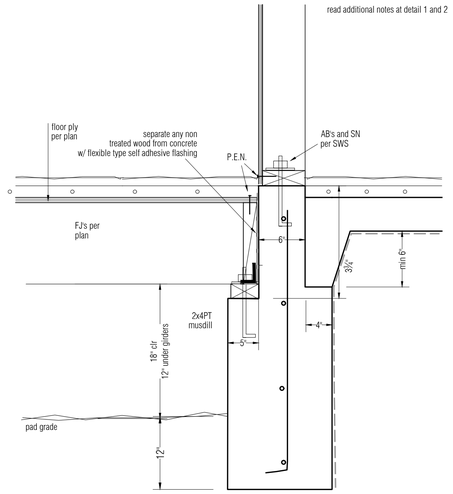
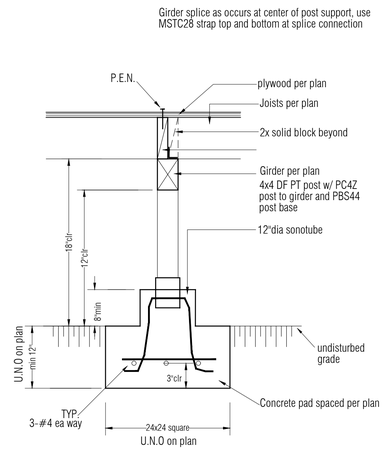


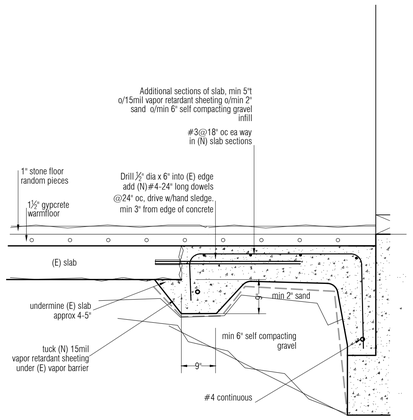
5 Exterior raised floor foundation



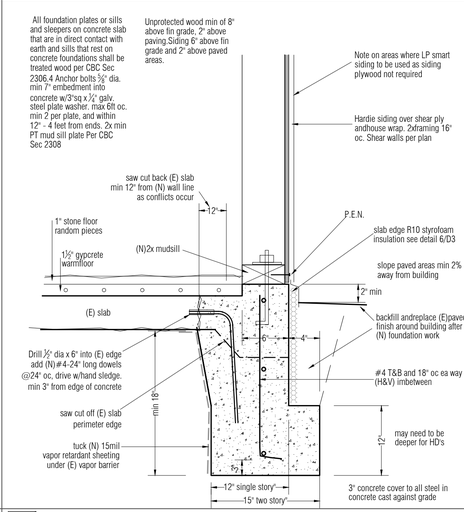
4 slab to interior raised floor foundation



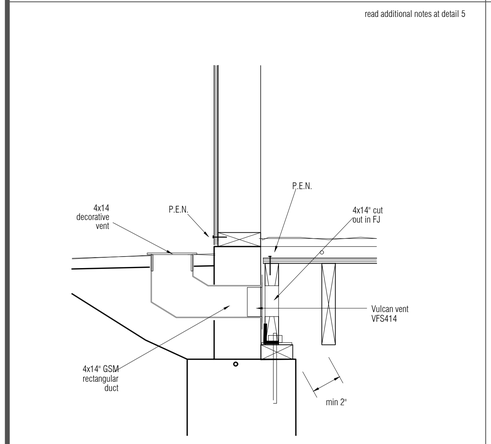
3 Girder pads



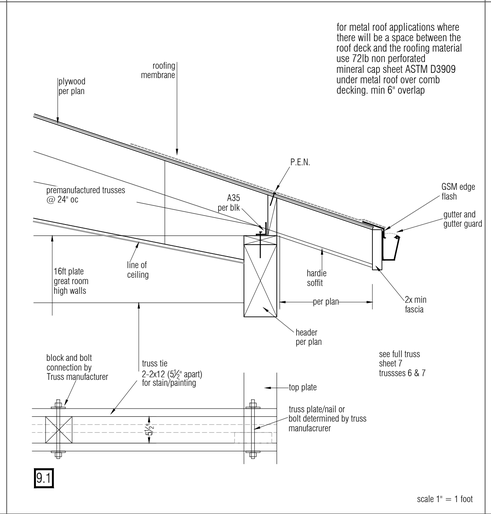
2 New to Existing Slab Perimeter



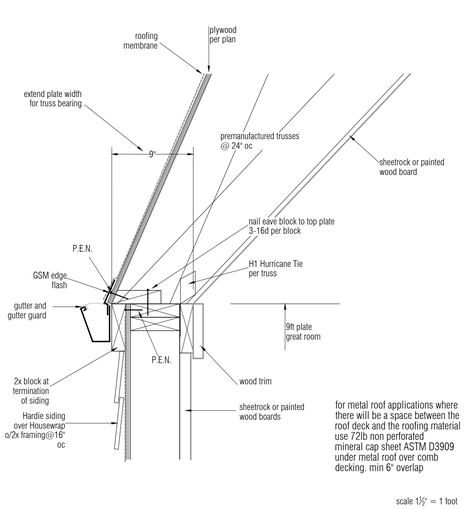
1 New to Existing Slab Perimeter



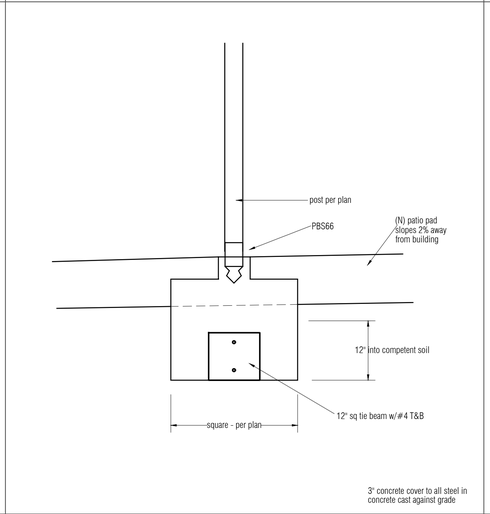
10 transfer foundation vent



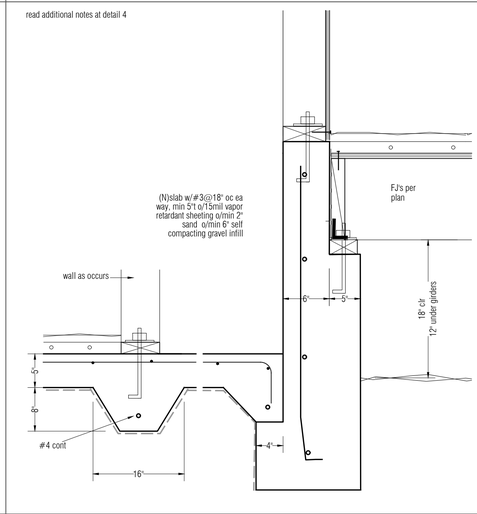
9 Great Room Truss at high walls



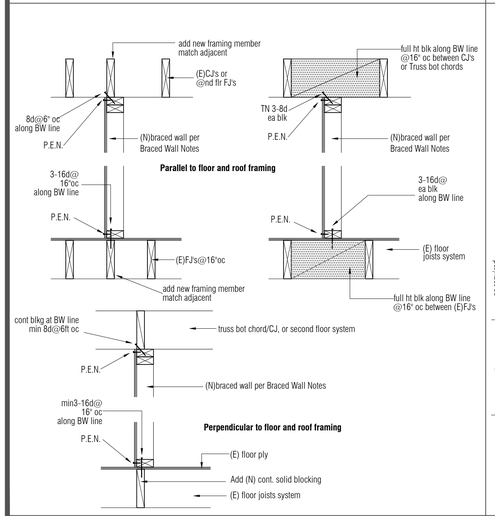
8 Great Room Truss



7 Entry deck modifications

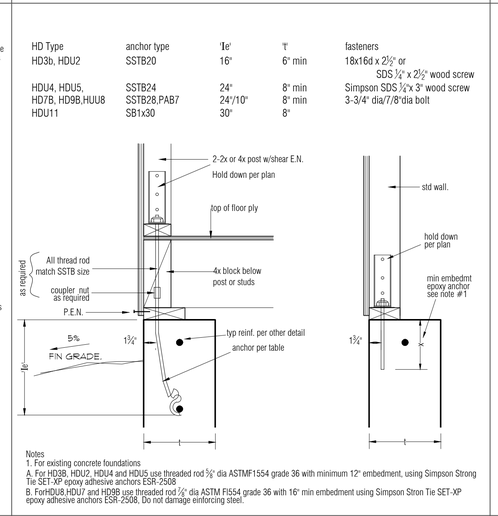


6 Raised floor to lower area slab

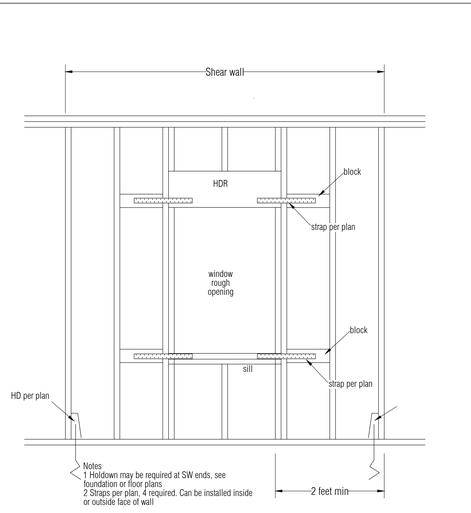


15 Truss to interior wall connection

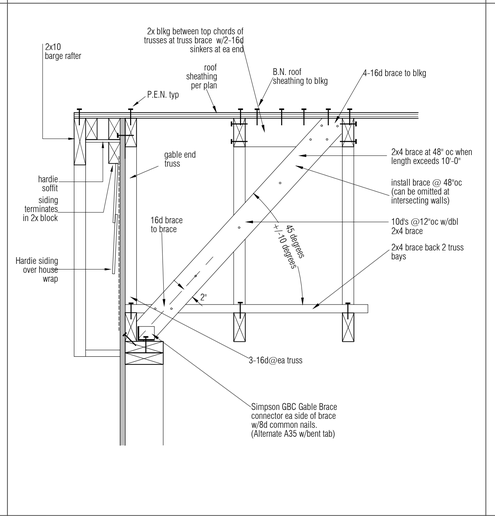
HD Type	anchor type	'le'	't'	fasteners
HD3b, HDU2	SSTB20	16"	6" min	18x16d x 2½" or SDS ¼" x 2½" wood screw
HDU4, HDU5, HD7B, HD9B,HUU8 HDU11	SSTB24 SSTB28,PAB7 SB1x30	24" 24"/10" 30"	8" min 8" min 8"	Simpson SDS ¼"x 3" wood screw 3-3/4" dia/7/8"dia bolt



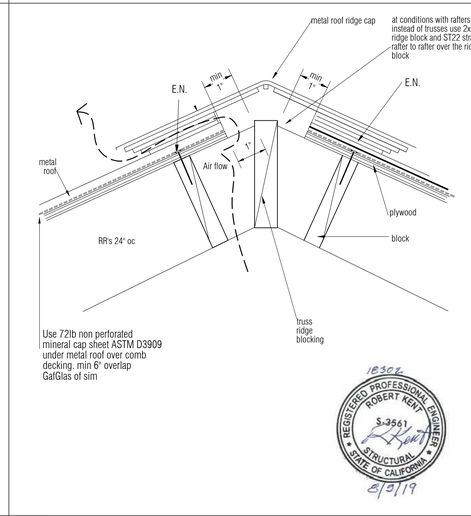
14 Typ Holddown connections



13 Force TransferAround Openings - FTAO



12 gable end truss framing



11 truss ridge venting

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D1 details

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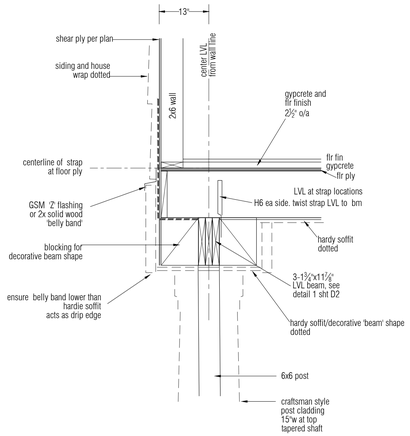
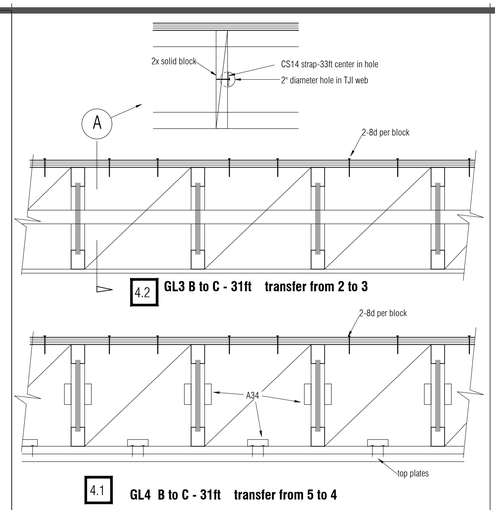
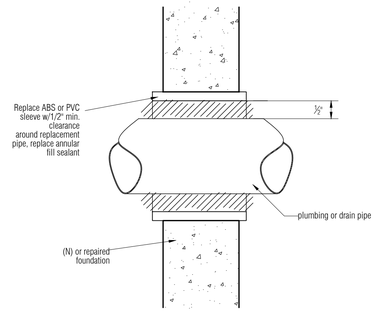


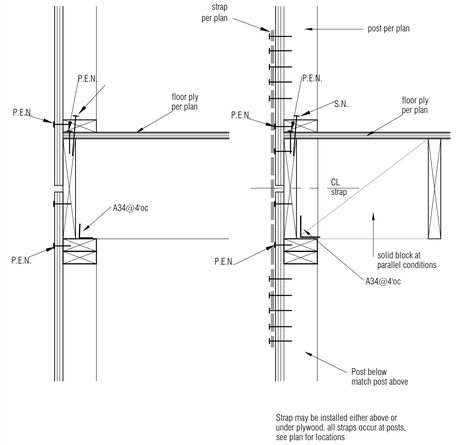
5 Strap to beam



4 Shear transfer

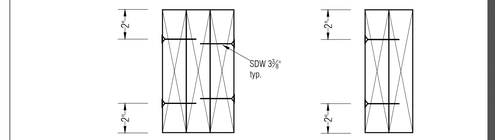


3 Penetrations in stem wall



Strap may be installed either above or under plywood. all straps occur at posts, see plan for locations

2 Shear Wall Floor to Floor



Screws @ 16" oc on LVL and 12" oc on stud posts
if from one side only for triple member use 5" screws
if quadrupule member use 6½" long screws
ask if lengths not avaialble

1 Combine LVL's to become Beam

for metal roof applications where there will be a space between the roof deck and the roofing material use 72lb non perforated mineral cap sheet ASTM D3909 under metal roof over comb decking. min 6" overlap

10 Truss Gable End

R310.1.4 Operational constraints. Emergency escape and rescue openings shall be maintained free of any obstructions other than those allowed by this section and shall be operational from the inside of the room without the use of keys, tools or special knowledge.

9 Escape window

Guardrail Construction - shall be constructed so that the handrail and supporting structure are capable of withstanding a single concentrated load of 200lbs in any direction along the top, and be capable of transferring this load through the supporting components into the structure of the Building. In addition, all the components, (except the handrail) balllusters,fillers and pickets and their connections are capable of withstanding a horizontal normal load of 50lbs per square foot applied horizontally at right angles over the entire tributary area, including openings and spaces between the rails. Pickets or mesh to be arranged so that a 4" sphere cannot pass through. Guardrail min ht above lin floor 42" when not at a staircase.

8 guardrail at stairs

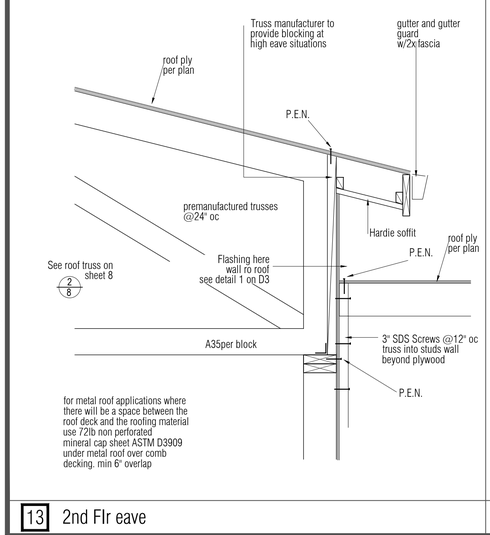
R311. 7.7.3
Grip-size. All required handrails shall be on one of the following types or provide equivalent grasp-ability.
1. Type I. Handrails with a circular cross section shall have an outside diameter of at least 1¼" inches and not greater than 2 inches. If the handrail is not circular, it shall have a perimeter dimension of at least 4 inches and not greater than 6¼" with a maximum cross section of dimension of 2¼" inches. Edges shall have a minimum radius of 0.01 inch
2. Type II. Handrails with a perimeter greater than 6¼"inches shall have a graspable finger recess area on both sides of the profile. The finger recess shall begin within a distance of ¾" measured vertically from the tallest portion of the profile and achieve a depth of at least ⅜" inch within 7/8 inch below the widest portion of the profile. This required depth shall continue for at least ⅜" to a level that is not less than 1¾" below the tallest portion of the profile. The minimum width of the handrail above the recess shall be 1¼" inches to a maximum 2¾". Edges shall have a minimum radius of 0.01 inch

handrail and supporting structure are capable of withstanding a single concentrated load of 200lbs in any direction

7 handrail at stairs

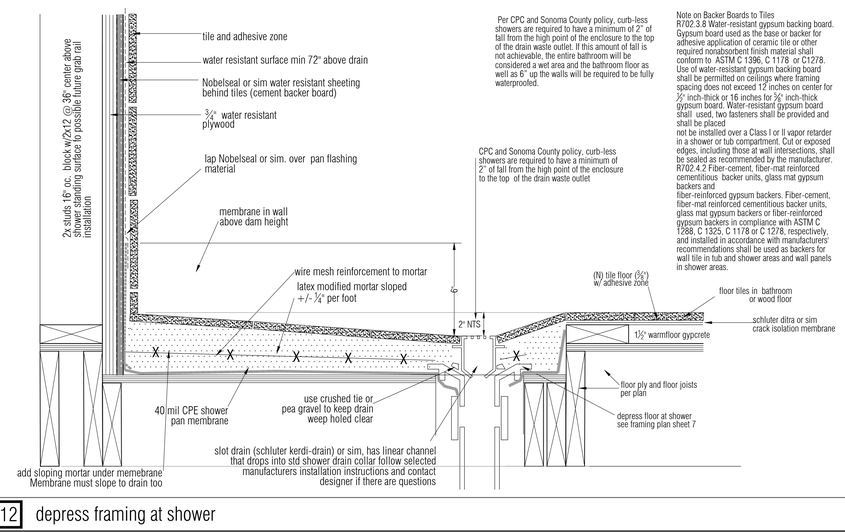
Note:
1. The term carriage is interchangeable w/ stringer in some regions.
2. Top or base of stair may terminate @ a floor level or @ landing. The stair framing can be the same in either case.

6 Stairs carriage



for metal roof applications where there will be a space between the roof deck and the roofing material use 72lb non perforated mineral cap sheet ASTM D3909 under metal roof over comb decking. min 6" overlap

13 2nd Flr eave

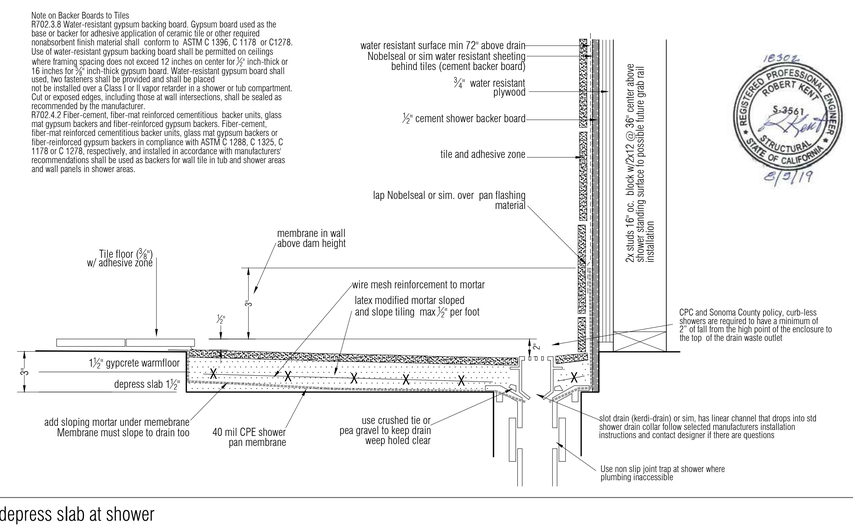


Per CPC and Sonoma County policy, curb-less showers are required to have a minimum of 2" of tall from the high point of the enclosure to the top of the drain waste outlet. If this amount of tall is not achievable, the entire bathroom will be considered a wet area and the bathroom floor as well as 6" up the walls will be required to be fully waterproofed.

CPC and Sonoma County policy, curb-less showers are required to have a minimum of 2" of tall from the high point of the enclosure to the top of the drain waste outlet

Note on Backer Boards to Tiles
R702.3.8 Water-resistant gypsum backing board. Gypsum board used as the base or backer for adhesive application of ceramic tile or other required nonabsorbent finish material shall conform to ASTM C 1396, C 1178 or C1278. Use of water-resistant gypsum backing board shall be permitted on ceilings where framing spacing does not exceed 12 inches on center for ½" inch-thick or 16 inches for ⅝" inch-thick gypsum board. Water-resistant gypsum board shall used, two fasteners shall be provided and shall be placed not be installed over a Class I or II vapor retarder in a shower or tub compartment. Cut or exposed edges, including those at wall intersections, shall be sealed as recommended by the manufacturer.
R702.4.2 Fiber-cement, fiber-mat reinforced cementitious backer units, glass mat gypsum backers and fiber-reinforced gypsum backers. Fiber-cement, fiber-mat reinforced cementitious backer units, glass mat gypsum backers or fiber-reinforced gypsum backers in compliance with ASTM C 1288, C 1325, C 1178 or C 1278, respectively, and installed in accordance with manufacturers' recommendations shall be used as backers for wall tile in tub and shower areas and wall panels in shower areas.

12 depress framing at shower



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R702.3.8 Water-resistant gypsum backing board. Gypsum board used as the base or backer for adhesive application of ceramic tile or other required nonabsorbent finish material shall conform to ASTM C 1396, C 1178 or C1278. Use of water-resistant gypsum backing board shall be permitted on ceilings where framing spacing does not exceed 12 inches on center for ½" inch-thick or 16 inches for ⅝" inch-thick gypsum board. Water-resistant gypsum board shall used, two fasteners shall be provided and shall be placed not be installed over a Class I or II vapor retarder in a shower or tub compartment. Cut or exposed edges, including those at wall intersections, shall be sealed as recommended by the manufacturer.
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11 depress slab at shower

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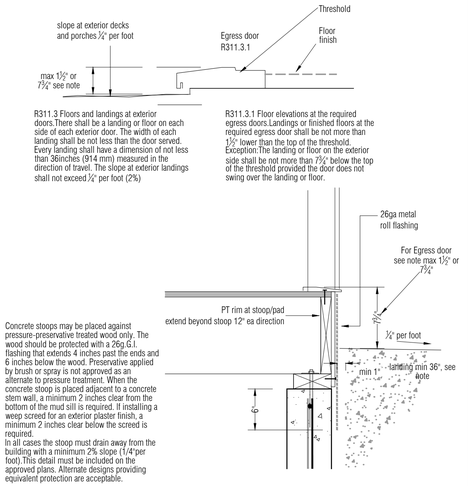
D2 details

2.21.2020

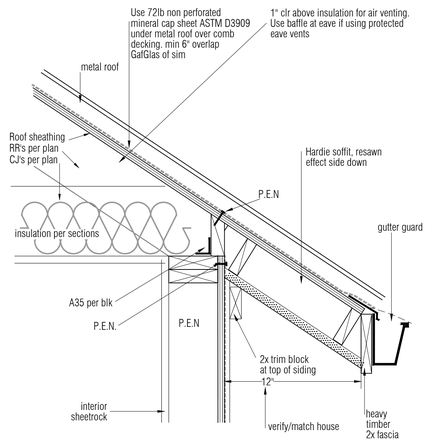


R311.3 Floors and landings at exterior doors.There shall be a landing or floor on each side of each exterior door. The width of each landing shall be not less than the door served. Every landing shall have a dimension of not less than 36inches (914 mm) measured in the direction of travel. The slope at exterior landings shall not exceed ¼" per foot (2%)

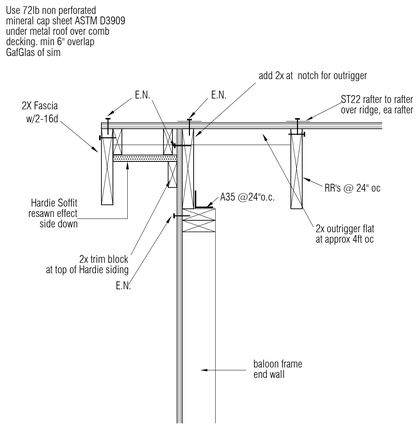
R311.3.1 Floor elevations at the required egress doors.Landings or finished floors at the required egress door shall be not more than 1½" lower than the top of the threshold. Exception:The landing or floor on the exterior side shall be not more than 7¾" below the top of the threshold provided the door does not swing over the landing or floor.

Concrete stoops may be placed against pressure-preservative treated wood only. The wood should be protected with a 26g.G.I. flashing that extends 4 inches past the ends and 6 inches below the wood. Preservative applied by brush or spray is not approved as an alternate to pressure treatment. When the concrete stoop is placed adjacent to a concrete stem wall, a minimum 2 inches clear from the bottom of the mud sill is required. If installing a weep screed for an exterior plaster finish, a minimum 2 inches clear below the screed is required.
In all cases the stoop must drain away from the building with a minimum 2% slope (1/4"per foot).This detail must be included on the approved plans. Alternate designs providing equivalent protection are acceptable.

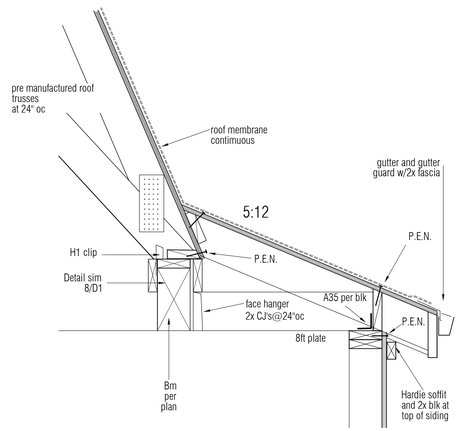
5 Egress doors and Concrete cast against wood framing and landings



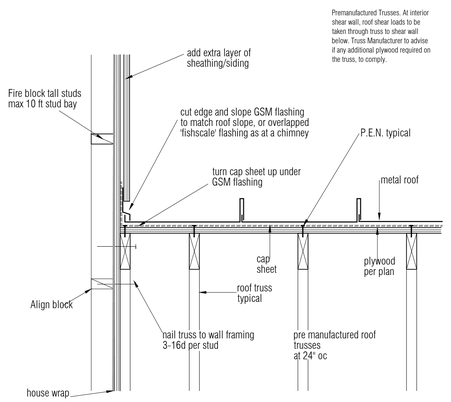
4 Rafter Eave



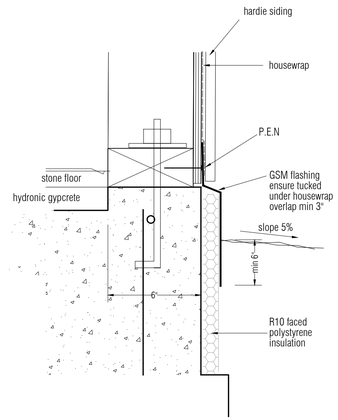
3 Rafter Gable End



2 'Lean to' roof



1 Flashing roof to wall



6 Slab edge insuulation

Irvin klein Design
707 695 0711
irvin@sonic.net

Spangler Residence
822 Adobe Canyon Road Kenwood Ca. 95452

D3 details

1.21.2020

ENERGY DESIGN RATING			
Energy Design Rating (EDR) is an alternate way to express the energy performance of a building using a scoring system where 100 represents the energy performance of the Residential Energy Services (RESNET) reference home characterization of the 2006 International Energy Conservation Code (IECC) with California modeling assumptions. A score of zero represents the energy performance of a building that combines high levels of energy efficiency with renewable generation to"zero out" its TDV energy. Because EDR includes consideration of components not regulated by Title 24, Part 6 (such as domestic appliances and consumer electronics), it is not used to show compliance with Part 6 but may instead be used by local jurisdictions pursuing local ordinances under Title 24, Part 11 (CALGreen). As a Standard Design building under the 2016 Building Energy Efficiency Standards is significantly more efficient than the baseline EDR building, the EDR of the Standard Design building is provided for Information. Similarly, the EDR score of the Proposed Design is provided separately from the EDR value of installed PV so that the effects of efficiency and renewable energy can both be seen			
EDR of Standard Efficiency	**EDR of Proposed Efficiency**	**EDR Value of Proposed PV + Battery**	**Final Proposed EDR**
46.8	**43.1**	**0.0**	**43.1**
☐	**Design meets Tier 1 requirement of 15% or greater code compliance margin (CALGreen A4.203.1.2.1) and QII verification prerequisite.**		
☐	**Design meets Tier 2 requirement of 30% or greater code compliance margin (CALGreen A4.203.1.2.2) and QII verification prerequisite.**		
☐	**Design meets Zero Net Energy (ZNE) Design Designation requirement for Single Family in climate zone CZ2 (CALGreen A4.203.1.2.3) including on-site photovoltaic (PV) renewable energy generation sufficient to achieve a Final Energy Design Rating (EDR) of zero or less. The PV System and QII must be verified.**		
Notes: • **Excess PV Generation EDR Credit: Bypassing PV size limit may violate Net Energy Metering (NEM) rules**			

REQUIRED SPECIAL FEATURES
The following are features that must be installed as condition for meeting the modeled energy performance for this computer analysis.
• **Slab Edge Insulation** • **Heated slab**

HERS FEATURE SUMMARY
The following is a summary of the features that must be field-verified by a certified HERS Rater as a condition for meeting the modeled energy performance for this computer analysis. Additional detail is provided in the building components tables below.
Building-level Verifications: • **IAQ mechanical ventilation** **Cooling System Verifications:** • **Minimum Airflow** • **Verified EER** • **Verified SEER** • **Fan Efficacy Watts/CFM** **HVAC Distribution System Verifications:** • **Duct Sealing** **Domestic Hot Water System Verifications:** • **-- None --**

GENERAL INFORMATION					
01	**Project Name**	Spangler Residence-Revised			
02	**Calculation Description**	Title 24 Analysis			
03	**Project Location**	822 Adobe Canyon Road			
04	**City**	Kenwood	05	**Standards Version**	Compliance 2017
06	**Zip Code**	95452	07	**Compliance Manager Version**	BEMCmpMgr 2016.3.1 (1149)
08	**Climate Zone**	CZ2	09	**Software Version**	EnergyPro 7.2
10	**Building Type**	Single Family	11	**Front Orientation (deg/Cardinal)**	350
12	**Project Scope**	Newly Constructed	13	**Number of Dwelling Units**	1
14	**Total Cond. Floor Area (ft²)**	4347	15	**Number of Zones**	2
16	**Slab Area (ft²)**	2433	17	**Number of Stories**	2
18	**Addition Cond. Floor Area(ft²)**	n/a	19	**Natural Gas Available**	No
20	**Addition Slab Area (ft²)**	n/a	21	**Glazing Percentage (%)**	29.3%

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

ENERGY USE SUMMARY				
04	05	06	07	08
Energy Use (kTDV/ft²-yr)	**Standard Design**	**Proposed Design**	**Compliance Margin**	**Percent Improvement**
Space Heating	41.77	36.90	4.87	11.7%
Space Cooling	1.30	1.70	-0.40	-30.8%
IAQ Ventilation	0.98	0.98	0.00	0.0%
Water Heating	11.12	9.28	1.84	16.5%
Photovoltaic Offset	----	0.00	0.00	----
Compliance Energy Total	**55.17**	**48.86**	**6.31**	**11.4%**

BUILDING - FEATURES INFORMATION						
01	02	03	04	05	06	07
Project Name	**Conditioned Floor Area (ft²)**	**Number of Dwelling Units**	**Number of Bedrooms**	**Number of Zones**	**Number of Ventilation Cooling Systems**	**Number of Water Heating Systems**
Spangler Residence-Revised	4347	1	5	2	0	1

ZONE INFORMATION						
01	02	03	04	05	06	07
Zone Name	**Zone Type**	**HVAC System Name**	**Zone Floor Area (ft²)**	**Avg. Ceiling Height**	**Water Heating System 1**	**Water Heating System 2**
First Floor	Conditioned	First Floor HVAC1	3201	11.3	DHW Sys 1	n/a
Second Floor	Conditioned	Second Floor HVAC2	1146	11.3	DHW Sys 1	n/a

OPAQUE SURFACES							
01	02	03	04	05	06	07	08
Name	**Zone**	**Construction**	**Azimuth**	**Orientation**	**Gross Area (ft²)**	**Window & Door Area (ft²)**	**Tilt (deg)**
North	First Floor	R-21 Wall	350	Front	1065	530	90
East	First Floor	R-21 Wall	80	Left	558	146.3	90
South	First Floor	R-21 Wall	170	Back	1065	208.3	90
West	First Floor	R-21 Wall	260	Right	558	150	90
Ceiling/Attic	First Floor	R-38+13 HP Attic	n/a	n/a	1845	n/a	n/a
Raised Floor 2	First Floor	R-19 Floor Crawlspace	n/a	n/a	768	n/a	n/a
North 2	Second Floor	R-21 Wall	350	Front	310	104	90
East 2	Second Floor	R-21 Wall	80	Left	420	78.8	90
South 2	Second Floor	R-21 Wall	170	Back	310	3.8	90
West 2	Second Floor	R-21 Wall	260	Right	420	30	90
Ceiling/Attic 2	Second Floor	R-38+13 HP Attic	n/a	n/a	1146	n/a	n/a
Raised Floor	Second Floor	R-19 Floor No Crawlspace	n/a	n/a	378	n/a	n/a

OPAQUE SURFACES – Cathedral Ceilings									
01	02	03	04	05	06	07	08	09	10
Name	**Zone**	**Type**	**Orientation**	**Area (ft²)**	**Skylight Area (ft2)**	**Roof Rise (x in 12)**	**Roof Reflectance**	**Roof Emittance**	**Cool Roof**
Ceiling/Cathedral/6/12	First Floor	R-38 Roof No Attic	- specify -	151	21	6	0.1	0.85	No
Ceiling/Cathedral/1/12	First Floor	R-38 Roof No Attic	Front	453	0	1	0.1	0.85	No

ATTIC							
01	02	03	04	05	06	07	08
Name	**Construction**	**Type**	**Roof Rise**	**Roof Reflectance**	**Roof Emittance**	**Radiant Barrier**	**Cool Roof**
Attic First Floor	Attic RoofFirst Floor	Ventilated	6	0.1	0.85	No	No
Attic Second Floor	Attic RoofSecond Floor	Ventilated	6	0.1	0.85	No	No

FENESTRATION / GLAZING										
01	02	03	04	05	06	07	08	09	10
Name	**Type**	**Surface (Orientation-Azimuth)**	**Width (ft)**	**Height (ft)**	**Multiplier**	**Area (ft²)**	**U-factor**	**SHGC**	**Exterior Shading**
Windows	Window	North (Front-350)	-----	-----	1	530.0	0.32	0.25	Insect Screen (default)
Windows 2	Window	East (Left-80)	-----	-----	1	146.3	0.32	0.25	Insect Screen (default)
Windows 3	Window	South (Back-170)	-----	-----	1	208.3	0.32	0.25	Insect Screen (default)
Windows 4	Window	West (Right-260)	-----	-----	1	150.0	0.32	0.25	Insect Screen (default)
Skylights	Skylight	Ceiling/Cathedral/6/12 (- specify --270)			1	21.0	0.37	0.29	
Windows 5	Window	North 2 (Front-350)	-----	-----	1	104.0	0.32	0.25	Insect Screen (default)
Windows 6	Window	East 2 (Left-80)	-----	-----	1	78.8	0.32	0.25	Insect Screen (default)
Window	Window	South 2 (Back-170)	-----	-----	1	3.8	0.32	0.25	Insect Screen (default)
Window 2	Window	West 2 (Right-260)	-----	-----	1	30.0	0.32	0.25	Insect Screen (default)

OPAQUE SURFACE CONSTRUCTIONS						
01	02	03	04	05	06	07
Construction Name	**Surface Type**	**Construction Type**	**Framing**	**Total Cavity R-value**	**Winter Design U-factor**	**Assembly Layers**
Attic Roof/First Floor	Attic Roofs	Wood Framed Ceiling	2x4 @ 24 in. O.C.	R 13	0.078	• *Around Roof Joists: R-0.0 insul.* • *Cavity / Frame: R-13.0 / 2x4* • *Roof Deck: Wood Siding/sheathing/decking* • *Roofing: Light Roof (Asphalt Shingle)*
R-38+13 HP Attic	Ceilings (below attic)	Wood Framed Ceiling	2x4 @ 24 in. O.C.	R 38	0.025	• *Inside Finish: Gypsum Board* • *Cavity / Frame: R-9.1 / 2x4* • *Over Ceiling Joists: R-28.9 insul.*
R-38 Roof No Attic	Cathedral Ceilings	Wood Framed Ceiling	2x12 @ 24 in. O.C.	R 38	0.029	• *Inside Finish: Gypsum Board* • *Cavity / Frame: R-38 / 2x12* • *Roof Deck: Wood Siding/sheathing/decking* • *Roofing: Light Roof (Asphalt Shingle)*
R-21 Wall	Exterior Walls	Wood Framed Wall	2x6 @ 16 in. O.C.	R 21	0.069	• *Inside Finish: Gypsum Board* • *Cavity / Frame: R-21 / 2x6* • *Exterior Finish: 3 Coat Stucco*
R-19 Floor Crawlspace	Floors Over Crawlspace	Wood Framed Floor	2x10 @ 16 in. O.C.	R 19	0.046	• *Floor Surface: Carpeted* • *Floor Deck: Wood Siding/sheathing/decking* • *Cavity / Frame: R-19 / 2x10*
Attic Roof/Second Floor	Attic Roofs	Wood Framed Ceiling	2x4 @ 24 in. O.C.	R 13	0.078	• *Around Roof Joists: R-0.0 insul.* • *Cavity / Frame: R-13.0 / 2x4* • *Roof Deck: Wood Siding/sheathing/decking* • *Roofing: Light Roof (Asphalt Shingle)*
R-19 Floor No Crawlspace	Exterior Floors	Wood Framed Floor	2x10 @ 16 in. O.C.	R 19	0.047	• *Floor Surface: Carpeted* • *Floor Deck: Wood Siding/sheathing/decking* • *Cavity / Frame: R-19 / 2x10*

SLAB FLOORS						
01	02	03	04	05	06	07
Name	**Zone**	**Area (ft²)**	**Perimeter (ft)**	**Edge Insul. R-value & Depth**	**Carpeted Fraction**	**Heated**
Slab Floor	First Floor	2433	302	R-10, 16 inches	0.8	Yes

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

WATER HEATING SYSTEMS						
01	02	03	04	05	06	
Name	**System Type**	**Distribution Type**	**Water Heater**	**Number of Heaters**	**Solar Fraction (%)**	
DHW Sys 1	Combined Hydronic	Standard	DHW Heater 1 (1)	1	.0%	

WATER HEATERS												
01	02	03	04	05	06	07	08	09	10	11	12	
Name	**Heater Element Type**	**Tank Type**	**Number of Units**	**Tank Volume (gal)**	**Uniform Energy Factor / Energy Factor / Efficiency**	**Input Rating / Pilot / Thermal Efficiency**	**Tank Insulation R-value (Int/Ext)**	**Standby Loss / Recovery Eff**	**First Hour Rating / Flow Rate**	**NEEA Heat Pump Brand / Model / Other**	**Tank Location or Ambient Condition**	
DHW Heater 1	Gas	Consumer Instantaneous (UEF)	1	0	0.95 UEF	<= 200 kBtu/hr	R-0/R-0	0	8 GPM	n/a	n/a	

SPACE CONDITIONING SYSTEMS					
01	02	03	04	05	06
SC Sys Name	**System Type**	**Heating Unit Name**	**Cooling Unit Name**	**Fan Name**	**Distribution Name**
First Floor HVAC1	Other Heating and Cooling System	Heating Component 1	Cooling Component 1	HVAC Fan 1	Air Distribution System 1
Second Floor HVAC2	Heat Pump Heating and Cooling System	Heat Pump System 2	Heat Pump System 2	HVAC Fan 2	Air Distribution System 2

HVAC - HEATING UNIT TYPES			
01	02	03	04
Name	**System Type**	**Number of Units**	**Efficiency**
Heating Component 1	CombHydro	1	95 AFUE

HVAC - HEAT PUMPS										
01	02	03	04	05	06	07	08	09	10	11
	System	**Number of**	**Heating**			**Cooling**		**Zonally**	**Compressor**	**HERS**
Name	**Type**	**Units**	**HSPF/COP**	**Cap 47**	**Cap 17**	**SEER**	**EER**	**Controlled**	**Type**	**Verification**
Heat Pump System 2	SplitHeatPump	1	9.5	22000	13700	15	11	Not Zonal	Single Speed	Heat Pump System 2-hers-cool

HVAC - COOLING UNIT TYPES							
01	02	03	04	05	06	07	08
			Efficiency				
Name	**System Type**	**Number of Units**	**EER**	**SEER**	**Zonally Controlled**	**Compressor Type**	**HERS Verification**
Cooling Component 1	SplitAirCond	1	12.2	15	Not Zonal	Single Speed	Cooling Component 1-hers-cool

HVAC COOLING - HERS VERIFICATION					
01	02	03	04	05	06
Name	**Verified Airflow**	**Airflow Target**	**Verified EER**	**Verified SEER**	**Verified Refrigerant Charge**
Cooling Component 1-hers-cool	Required	350	Required	Required	Not Required
Heat Pump System 2-hers-cool	Required	350	Not Required	Required	Not Required

HVAC - DISTRIBUTION SYSTEMS						
01	02	03	04	05	06	07
Name	**Type**	**Duct Leakage**	**Insulation R-value**	**Duct Location**	**Bypass Duct**	**HERS Verification**
Air Distribution System 1	DuctsAttic	Sealed and tested	6	Attic	None	Air Distribution System 1-hers-dist
Air Distribution System 2	DuctsAttic	Sealed and tested	6	Attic	None	Air Distribution System 2-hers-dist

HVAC DISTRIBUTION - HERS VERIFICATION							
01	02	03	04	05	06	07	08
Name	**Duct Leakage Verification**	**Duct Leakage Target (%)**	**Verified Duct Location**	**Verified Duct Design**	**Buried Ducts**	**Deeply Buried Ducts**	**Low-leakage Air Handler**
Air Distribution System 1-hers-dist	Required	5.0	Not Required	Not Required	Not Required	Not Required	n/a
Air Distribution System 2-hers-dist	Required	5.0	Not Required	Not Required	Not Required	Not Required	n/a

HVAC - FAN SYSTEMS			
01	02	03	04
Name	**Type**	**Fan Power (Watts/CFM)**	**HERS Verification**
HVAC Fan 1	Single Speed PSC Furnace Fan	0.58	HVAC Fan 1-hers-fan
HVAC Fan 2	Single Speed PSC Furnace Fan	0.58	HVAC Fan 2-hers-fan

HVAC FAN SYSTEMS - HERS VERIFICATION		
01	02	03
Name	**Verified Fan Watt Draw**	**Required Fan Efficiency (Watts/CFM)**
HVAC Fan 1-hers-fan	Required	0.58
HVAC Fan 2-hers-fan	Required	0.58

IAQ (Indoor Air Quality) FANS					
01	02	03	04	05	06
Dwelling Unit	**IAQ CFM**	**IAQ Watts/CFM**	**IAQ Fan Type**	**IAQ Recovery Effectiveness(%)**	**HERS Verification**
SFam IAQVentRpt	88	0.25	Default	0	Required

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT	
1. I certify that this Certificate of Compliance documentation is accurate and complete.	
Documentation Author Name: Patsy Griffin-Young	Documentation Author Signature: *Patsy Griffin-Young*
Company: Griffin Energy Compliance	Signature Date: 2020-01-28 15:00:49
Address: 23 Webster Street	CEA/HERS Certification Identification (If applicable):
City/State/Zip: Petaluma, CA 94952	Phone: 707-778-7818

RESPONSIBLE PERSON'S DECLARATION STATEMENT	
I certify the following under penalty of perjury, under the laws of the State of California: 1. I am eligible under Division 3 of the Business and Professions Code to accept responsibility for the building design identified on this Certificate of Compliance. 2. I certify that the energy features and performance specifications identified on this Certificate of Compliance conform to the requirements of Title 24, Part 1 and Part 6 of the California Code of Regulations. 3. The building design features or system design features identified on this Certificate of Compliance are consistent with the information provided on other applicable compliance documents, worksheets, calculations, plans and specifications submitted to the enforcement agency for approval with this building permit application.	
Responsible Designer Name: irvin klein	Responsible Designer Signature: *irvin klein*
Company: ikds	Date Signed: 2020-01-28 15:50:30
Address: 676Speers road	License: NA
City/State/Zip: santa rosa, CA 95409	Phone: 707-695-0711

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

Easy to Verify at CalCERTS.com

revised sheets

1.21.2020

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E1 T24 sheets