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ENVIRONMENTAL QUALITY NOTES:

FIREPLACES (4.503)
4.503.1-GAS FIREPLACES SHALL BE DIRECT-VENT SEALED COMBUSTION TYPE. ANY WOODSTOVE OR PELLET STOVE SHALL COMPLY WITH U.S. EPA NEW SOURCE PERFORMANCE

STANDARDS (NSPS) EMISSION LIMITS AS APPLICABLE, AND HAS A PERMANENT LABEL INDICATING
THEY ARE CERTIFIED TO MEET THE EMISSION LIMITS AS WELL AS SOUTH COAST AIR QUALITY
MANAGEMENT DISTRICT RULES & RICHMOND MUNICIPAL CODE.

4.504.1DUCT OPENING AND OTHER RELATED AIR DISTRIBUTION COMPONENT OPENING SHALL BE COVERED DURING CONSTRUCTION.

4.504.2.1 ADHESIVE, SEALANT AND CAULKS SHALL BE COMPLIANT WITH VOC AND OTHER TOXIC COMPOUND LIMITS

4.504.2.2 PAINTS, STAIN AND OTHER COATING SHALL BE COMPLIANT WITH VOC LIMITS
4.504.2.3 AEROSOL PAINT AND OTHER COATINGS SHALL BE COMPLIANT WITH PRODUCT WEIGHTED MIR

LIMITS FOR ROC AND OTHER TOXIC COMPONENTS
4.504.2.4 DOCUMENTATION SHALL BE PROVIDES TO VERIFY THAT COMPLIANT VOC LIMIT FINISH
MATERIALS HAVE BEEN USED.

4.504.3 CARPET AND CARPET SYSTEM SHALL BE COMPLIANT WITH VOC LIMITS.(SEE SHT CG1)
4.504.4.5 PARTICLEBOARD MEDIUM DENSITY FIBERBOARD (MDF), AND HARDWOOD PLYWOOD USED IN

4.504.4.5 PARTICLEBOARD, MEDIUM DENSITY FIBERBOARD (MDF), AND HARDWOOD PLYWOOD USED IN INTERIOR FINISH SYSTEMS SHALL COMPLY WITH LOW FORMALDEHYDE EMISSION STANDARDS...(SEE SHT CG1)

4.505.2 VAPOR RETARDER AND CAPILLARY BREAK IS INSTALLED AT SLAB ON GRADE FOUNDATIONS.
4.505.3 MOISTURE CONTENT OF BUILDING MATERIALS USED IN WALL AND FLOOR FRAMING IS CHECKED BEFORE ENCLOSURE.

4.506.1 HUMIDITY CONTROLLED 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 SYSTEM ARE SIZED AND DESIGNED AND EQUIPMENT IS SELECTED USING THE FOLLOWING METHODS:

1- ESTABLISH HEAT LOSS AND HEAT GAIN VALUES ACCORDING TO ANSI/ACCA MANUAL J-2004 OR

EQUIVALENT.

2- SIZE DUCT SYSTEMS ACCORDING TO ANSI/ACCA 1 MANUAL D-2009 OR EQUIVALENT.

3- SELECT HEATING AND COOLING EQUIPMENT ACCORDING TO ANSI/ACCA 3 MANUAL S-2004 OR EQUIVALENT 4.507.2 HEATING AND AIR-CONDITIONING SYSTEM DESIGN. DUCT SYSTEMS ARE SIZED, DESIGNED, AND EQUIPMENT IS SELECTED USING THE FOLLOWING

METHODS:

1. ESTABLISH HEAT LOSS AND HEAT GAIN VALUES ACCORDING TO ANSIIACCA

2 MANUAL J-2011 OR EQUIVALENT.
 2. SIZE DUCT SYSTEMS ACCORDING TO ANSI! ACCA 1 MANUAL D-2014 OR EQUIVALENT.

3. SELECT HEATING AND COOLING EQUIPMENT ACCORDING TO ANSI/ACCA 3
MANUAL S-2014 OR EQUIVALENT. 702.1 INSTALLER TRAINING. HVAC SYSTEM INSTALLERS ARE TRAINED
&CERTIFIED IN THE PROPER INSTALLATION OF HVAC SYSTEMS.

702.2 SPECIAL INSPECTION. SPECIAL INSPECTORS EMPLOYED BY THE ENFORCING AGENCY MUST BE QUALIFIED AND ABLE TO DEMONSTRATE COMPETENCE IN THE DISCIPLINE THEY ARE INSPECTING. 703.1 DOCUMENTATION. VERIFICATION OF COMPLIANCE WITH THIS CODE MAY INCLUDE CONSTRUCTION DOCUMENTS, PLANS, SPECIFICATIONS BUILDER OR INSTALLER CERTIFICATION, INSPECTION REPORTS, OR OTHER METHODS

ACCEPTABLE TO THE ENFORCING AGENCY WHICH SHOW SUBSTANTIAL CONFORMANCE.

MATERIAL CONSERVATION NOTES:

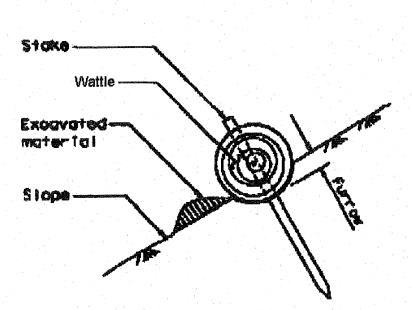
4.406.1 RODENT PROOFING. ANNULAR SPACES AROUND PIPES, ELECTRIC CABLES, CONDUIT, OR OTHER OPENINGS IN PLACE AT EXTERIOR WALLS SHALL BE PROTECTED AGAINST THE PASSAGE OR RODENTS BY CLOSING SUCH OPENINGS WITH CEMENT MORTAR, CONCRETE MASONRY OR SIMILAR METHOD ACCEPTABLE TO ENFORCING AGENCY

4.408.1 CONSTRUCTION WASTE GENERATED AT THE SITE IS DIVERTED TO RECYCLE OR SALVAGE IN COMPLIANCE WITH LEAST A 50 PERCENT REDUCTION

4.410.1 AN OPERATION AND MAINTENANCE MANUAL SHALL BE PROVIDED TO THE BUILDING OCCUPANT OR OWNER

CONSTRUCTION WASTE REDUCTION, DISPOSAL AND RECYCLING (4.408.1)

4.408.1 A MINIMUM OF 65% OF THE NONHAZARDOUS CONSTRUCTION AND DEMOLITION WASTE GENERATED AT THE SITE SHALL BE DIVERTED FROM LANDFILLS FOR RECYCLE OR SALVAGE. WASTE MANAGEMENT PLAN (S.C.M.C. CHAPTER 8.69) SHALL BE PRE-APPROVED BY CITY ENVIRONMENTAL SERVICES DIVISION.



SECTION INSTALLATION OF WATTLES

Additional Information — Silt Fence 2" X 4" WOOD POST, STANDARD OR BETTER OR EDUAL ALTERNATE: STEEL FENCE POST FILTER FABRIC MATERIAL 60" WIDE ROLLS. USE STAPLES OR WIRE RINGS TO ATTATCH FABRIC TO WINE BURY BOTTOM OF FILTER MATERIAL IN 8" X 12" TRENCH IN 8" X 12" TRENCH 2" X 2" 14 GA WIRE FABRIC ON EOUIV. FOLD & SET FILTER A" MAX. BACKFILL AND COMPACT THE EXCAVATED SOIL IN TRENCH AND ON BOTH SIDES OF FILTER FENCE FABRIC 2" X 4" WOOD POST ALT: STEEL FENCE POSTS

GENERAL NOTES:

A. PRIOR TO EXCAVATION AND WALL CONSTRUCTION, VERIFY SITE LAYOUT WITH ARCHITECTURAL DRAWINGS. IF DISCREPANCIES ARE FOUND CONTACT THE ENGINEER FOR A CLARIFICATION PRIOR TO STARTING ANY WORK

B. FILL IF REQUIRED SHALL BE PLACED USING A "SHEEPFOOT" ROLLER IN UNIFORM HORIZONTAL LIFTS NOT EXCEEDING 8" UNCOMPACTED THICKNESS. EACH LIFT MUST BE MOISTURE CONDITIONED AND MIXED THOROUGHLY. AREAS TO BE FILLED SHALL BE PREPARED BY REMOVING VEGETATION, TOPSOIL, NON-COMPLYING FILL OR ANY UNSUITABLE MATERIAL AS TERMINATED BY THE SOILS ENGINEER ON THE FIELD. ALL FILL AREAS SHALL BE COMPACTED TO 90%(ASTM METHOD D1557-84) FILL EXCEEDING 3' IN THICKNESS SHALL BE SUB-DRAINED. THE SOILS ENGINEER SHALL SUBMIT A GRADING REPORT TO THE COUNTY AND THE RESULTS OF THE COMPACTION TEST SHALL ALSO BE SUBMITTED. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO PROVIDE MEASURES TO PREVENT EROSION ON FRESHLY GRADED AREAS DURING CONSTRUCTION, AND UNTIL SUCH TIME AS PERMANENT DRAINAGE AND EROSION CONTROL MEASURES HAVE BEEN INSTALLED. C. NOT USED

D. PRIOR TO INSTALLING FINAL PAVEMENT OR GROUND CONCRETE, BASE AND COMPACTION SHALL BE APPROVED BY CITY INSPECTOR OR ENGINEER.

E. EXAMINATION OF SITE: THE CONTRACTOR SHALL THOROUGHLY EXAMINE THE SITE AND SATISFY HIMSELF AS TO THE CONDITIONS UNDER WHICH THE WORK IS TO BE PERFORMED. THE CONTRACTORS SHALL VERIFY AT THE SITE ALL GRADES, MEASUREMENTS AND CONDITIONS AFFECTING HIS WORK AND SHALL BE RESPONSIBLE FOR THE CORRECTNESS OF IT. THE CONTRACTOR ALONE IS RESPONSIBLE FOR JOB SITE SAFETY. SITE REVIEW OF THE CONSTRUCTION BY THE ENGINEER, IF ANY IS TO DETERMINE CONFORMANCE WITH THE PLANS AND SPECIFICATIONS.

IT DOES NOT ENCOMPASS SAFETY PROCEDURES, GENERAL CONSTRUCTION PROCEDURES, SCHEDULING OR OPERATIONS.

SPECIAL INSPECTIONS

1. ALL OTHER INSPECTIONS BY THE BUILDING AND ENGINEERING DEPARTMENT OF THE CITY ISSUING THE BUILDING PERMIT.

2. EXCAVATION AND FILL OPERATIONS BY CITY INSPECTOR OR SOIL ENGINEER.

3. A WRITTEN REPORT FROM THE AN SOILS ENGINEER SHALL BE FILED FOR FILL OPERATION AND PIER DRILLING OPERATIONS-(ONLY IF THIS PROCESS IS REQUIRED PER CITY INSPECTOR)

SITE NOTES

- 1. PRIOR TO ANY CUTTING OR FILLING THE SITE SHALL BE STRIPPED TO A SUFFICIENT DEPTH TO REMOVE ALL GRASS, WEEDS, ROOTS AND OTHER VEGETATION. THE STRIPPED MATERIAL SHALL EITHER BE REMOVED FROM THE SITE OR STOCKPILED FOR REUSE LATER AS TOPSOIL, BUT NONE OF THE STRIPPED MATERIAL MAY BE USED FOR ENGINEERING FILL. WHERE TREES ARE REMOVED, THE SOIL LOOSENED AND THE ROOTS SHALL BE OVER-EXCAVATED AT LEAST TO THE BOTTOM OF THE ROOT SYSTEM.
- 2. ALL ENGINEERING INSPECTIONS REQUIRE 24 HOURS NOTICE.
- 4. CONSTRUCTION WORKING HOURS SHALL NOT EXTEND BEYOND 7 A.M. TO 6 P.M. MONDAY THROUGH FRIDAY, WITHOUT SPECIFIC WRITTEN PERMISSION FROM THE CITY OF VACAVILLE OR SOLANO COUNTY.
- 5. ROADWAYS SHALL BE MAINTAINED CLEAR OF CONSTRUCTION MATERIALS AND DEBRIS AT ALL TIMES. DAILY CLEAN UP WILL BE ENFORCED.
- 6. DUST CONTROL MEASURES SHALL BE IMPLEMENTED AS NECESSARY.
- 7. ON SITE UTILITIES SHALL BE INSTALLED UNDERGROUND.
- 8. SURFACE AND RUNOFF DRAINAGE PIPING SHALL BE KEPT ENTIRELY SEPARATED FROM BACKDRAIN/SUBDRAIN SYSTEMS.
- 9. THE CONTRACTOR OR OWNER SHALL CONTACT THE BUILDING DIVISION 24 HOURS PRIOR TO COVERING ANY DRAINAGE SYSTEM COMPONENTS OR POURING ANY CONCRETE DRAINAGE STRUCTURE.
- 10. EXISTING CURB, SIDEWALK OR STREET ADJACENT TO PROPERTY THAT IS DAMAGED OR DISPLACED SHALL BE REPAIRED OR REPLACED EVEN IF THE DAMAGE OR DISPLACEMENT OCCURRED PRIOR TO ANY WORK PERFORMED FOR THIS PROJECT.
- 11. ANY DAMAGE TO IMPROVEMENTS WITHIN THE CITY RIGHT OF WAY OR TO ANY PRIVATE PROPERTY, WHETHER ADJACENT TO SUBJECT PROPERTY OR NOT, THAT IS DETERMINED BY TOWN ENGINEERS TO HAVE RESULTED FROM CONSTRUCTION ACTIVITIES RELATED TO THIS PROJECT, SHALL BE REPAIRED OR REPLACED AS DIRECTED BY THE TOWN ENGINEER.
- 12. ALL IMPROVEMENTS SHALL BE CONSTRUCTED ACCORDING TO THE CITY OF VACAVILLE OR SOLANO COUNTY SPECIFICATIONS AND WILL BE SUBJECT TO INSPECTION AND APPROVAL BY THE CITY.
- 13. THE CONTRACTOR OR OWNER SHALL CONTACT THE WASTEWATER DIVISION 24 HOURS PRIOR TO STARTING ANY OF THE FOLLOWING ACTIVITIES: BACKFILLING, TRENCHING, PAVEMENT RESTORATION, SEWER TAP, PIPE INSTALLATION OR ANY OTHER SEWAGE WORK.
- 14. ALL SEWER CONNECTIONS, STREET TRENCHING AND DRIVEWAY CONSTRUCTION SHALL BE MADE ACCORDING TO THE CITY OF VACAVILLE OR SOLANO COUNTY STANDARDS.
- 15. ALL SURFACE WATER SHALL BE DIVERTED AWAY FORM FOUNDATIONS SLOPE GRADING AT LEAST 2%
- 16. CLEAN OUTS (C.O.) TO BE INSTALLED AT ALL BENDS IN THE SUB-DRAIN PIPE LAYOUT.
- 17. ALL DOWNSPOUTS SHALL BE CONNECTED TO SOLID PIPES DRAINING AWAY FROM THE FOUNDATION. ALL DOWN SPOUT DRAINAGE AWAY FROM STRUCTURE DIRECTLY TO LANDSCAPE AREAS-IMPERVIOUS SURFACE WITHIN 10' OF THE HOUSE FOUNDATION SHALL BE SLOPED A 5% MIN. AWAY (See DET-A)

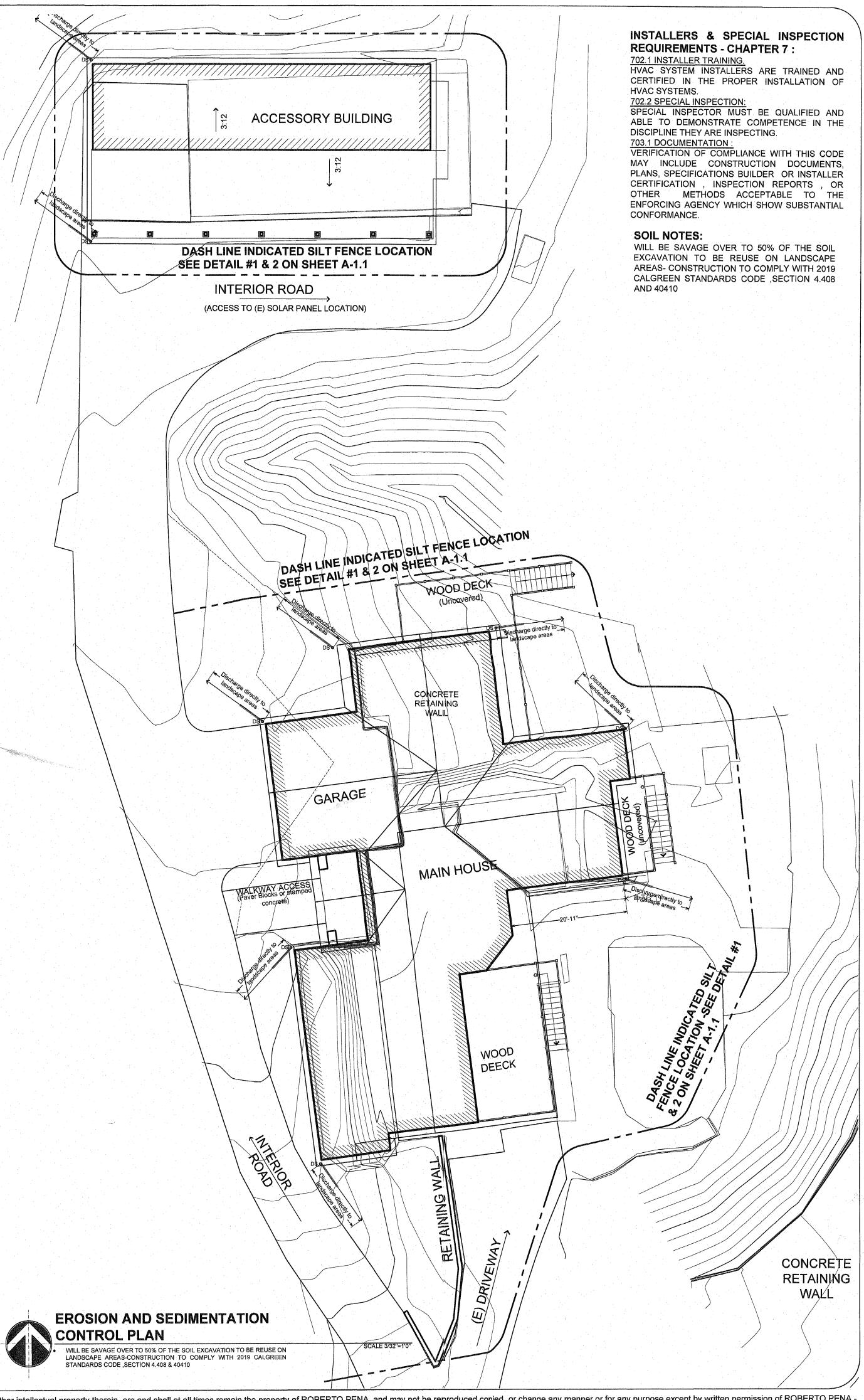
NOTES FOR STORM WATER POLLUTION PREVENTION

- 1. CONTROL AND PREVENT THE DISCHARGE OF ALL POTENTIAL POLLUTANTS, INCLUDING SOLID WASTE, PAINTS, CONCRETE, PETROLEUM PRODUCTS, CHEMICALS, WASH WATER OR SEDIMENT AND NON STORM WATER DISCHARGES TO STORM DRAINS AND WATERCOURSES.
- 2. AVOID CLEANING FUELING OR MAINTAINING VEHICLES ON SITE EXCEPT IN DESIGNATED AREAS IN WHICH RUNOFF IN CONTAINED AND TREATED.
- 3. STORE, HANDLE, AND DISPOSE OF CONSTRUCTION MATERIALS & WASTES PROPERLY, SO AS TO PREVENT THEIR CONTACT WITH STORM WATER.

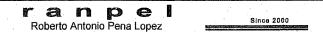
4. USE SEDIMENT CONTROL OR FILTRATION TO REMOVE SEDIMENT FROM DEWATERING EFFLUENT

- DELINEATE CLEARING LIMITS, EASEMENTS, SETBACKS, SENSITIVE OR CRITICAL AREAS, BUFFER ZONIES, TREES, AND DRAINAGE COURSES WITH FIELD MARKERS.

 5. PROTECT ADJACENT PROPERTIES AND UNDISTURBED AREAS FROM CONSTRUCTION IMPACTS USING VEGETATIVE BUFFER STRIPS, SEDIMENT BARRIERS, FILTERS, DIKES MULCHING OR OTHER APPROPRIATE
- 6. PERFORM EARTH AND CLEARING ACTIVITIES ONLY DURING DRY WEATHER.
- 7. LIMIT THE TIME AND APPLICATION OF PESTICIDES AND FERTILIZERS TO PREVENT POLLUTED RUNOFF.
 8. LIMIT CONSTRUCTION ACCESS ROUTS TO STABILIZED DESIGNATED ACCESS POINTS.
- 9. AVOID TRACKING DIRT OR OTHER MATERIALS OFF SITE, CLEAN OFF SITE-PAVED AREAS AND SIDEWALKS USING DRY SWEEPING METHODS.







SILT FENCE

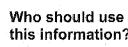
Blueprint for a Clean Bay

Best Management Practices for the Construction Industry

Remember: The property owner and the contractor share ultimate responsibility for the activities that occur on a construction site. You may be held responsible for any environmental damage caused by your subcontractors or employees.

Storm drain polluters may be liable for fines of up to \$10,000 per day!

General Construction and Site Supervision



- General Contractors
- Site Supervisors Inspectors Home Builders
- Developers Homeowners

Storm Drain Pollution from Construction Activities

Construction sites are common sources of storm water pollution. Materials and wastes that blow or wash into a storm drain, gutter, or street have a direct impact on local creeks and the Bay.

As a contractor, or site supervisor, owner or operator of a site, you may be responsible for any environmental damage caused by your subcontractors or employees.

Doing the Job Right General Principles

- Cover materials when they are not in use. Keep materials away from streets, storm drains and
- drainage channels. ☐ Ensure dust control water doesn't leave site or discharge

Advance Planning To Prevent Pollution

- Schedule excavation and grading activities for dry weather periods. To reduce soil erosion, plant temporary vegetation or place other erosion controls before rain begins. Use the Erosion and Sediment Control Field Manual, available form the Regional Water Quality Control Board San Francisco Bay Region, as a reference.
- Control the amount of runoff crossing your site (especially during excavation!) by using berms or temporary or permanent drainage ditches to divert water flow around the temporary check dams or berms where appropriate: ☐ Train your employees and subcontractors. Make sure
- this information. Inform subcontractors about the stormwater requirements and their own responsibilities. Use BAASMA, Blueprint for a Clean Bay, a construction best

management practices guide available from the Santa Clara Valley Urban Runoff Pollution Prevention Program, and California Storm Water Quality Association Stormwater Best Management Practice Handbook: Construction; (Jan 2003) as references.

Good Housekeeping Practices

- Designate one area of the site for auto parking, vehicle refueling, and routine equipment maintenance. The designated area should be well away from streams or storm drain inlets, bermed if necessary. Make major
- repairs off site. ☐ Keep materials out of the rain – prevent runoff contamination at the source. Cover exposed piles of soil or construction materials with plastic sheeting or temporary roofs. Before it rains, sweep and remove materials from surfaces that drain to storm drains, creeks, or channels.
- ☐ Keep pollutants off exposed surfaces. Place trash cans and recycling receptacles around the site to minimize litter. Clean up leaks, drips and other spills immediately so they do not contaminate soil or groundwater or leave residue on paved surfaces.
- Never hose down "dirty" pavement or surfaces where materials have spilled
- Use dry cleanup methods whenever possible, If you must use water, use just enough to keep the dust down. Cover and maintain dumpsters. Check frequently for leaks.
- Place dumpsters under roofs or cover with tarps or plastic sheeting secured around the outside of the dumpster. Never clean out a dumpster by hosing it down on the construction site

sediment control measures, and

Management Practice Handbook

Cover stockpiles and excavated soil

with secured tarps or plastic sheeting.

California Stormwater Quality

Association Stormwater Best

oily sheen on groundwater.

agency and ask whether the

groundwater must be tested.

water tested by a certified laboratory.

sediments present) or sanitary sewer.

haul pumped groundwater offsite for

OR, you may be required to collect and

be allowed to discharge pumped

treatment and disposal at an

appropriate treatment facility.

(construction, 2003)

☐ Place portable toilets away from storm drains. Make sure portable toilets are in good working order. Check frequently for leaks.

Materials/Waste Handling

- ☐ Practice Source Reduction -- minimize waste when you order materials. Order only the amount you need to finish the
- ☐ Use recyclable materials whenever possible. Arrange for pick-up of recyclable materials such as concrete, asphalt, scrap metal, solvents, degreasers, cleared vegetation, paper, rock, and vehicle maintenance materials such as used oil, antifreeze, batteries, and tires.
- ☐ Dispose of all wastes properly. Many construction materials and wastes, including solvents, water-based paints, vehicle fluids, broken asphalt and concrete, wood, and cleared vegetation can be recycled. (See Sunnyvale Recycling Program information listed above.) Materials that cannot be recycled must be taken to an appropriate landfill or disposed of as hazardous waste. Never bury waste materials or leave them in the street or near a creek or stream bed.

☐ If the water is clear, the pumping time is less

than 24 hours, and the flow rate is less than

20 gallons per minute, you may pump water

☐ In addition to local grading and building permits, you will need to obtain coverage under the State's General Construction Activity Stormwater Permit if your construction site's disturbed area totals 1 acre or more. Information on the General Permit can be obtained from the Regional Water Quality Control Board.

of Solvents and Adhesives Who should use this

Painting and Application

- information?
- Painters Paperhangers
- Plasterers Graphic Artists
- Dry Wall Crews Floor Covering

Developers

Homeowners

- General Contractors Home Builders
 - chemicals that are harmful to wildlife in local creeks, San Francisco Bay, and the Pacific Ocean. Toxic chemicals may come from liquid or solid products or from cleaning residues or rags. Paint material and wastes, adhesives and cleaning fluids should be recycled when possible, or disposed of properly to prevent these materials from flowing into storm drains and watercourses.

Storm Drain Pollution from

Paints, Solvents,

and Adhesives

All paints, solvents, and adhesives contain

Doing the Job Right Handling Paint Products

- Leep all liquid paint products and wastes away from the gutter, street, and storm drains. Liquid residues from paints, thinners, solvents, glues, and cleaning fluids are hazardous wastes and must be disposed of as hazardous. Contact the Santa Clara County Hazardous Waste Program at (408) 299-7300.
- Wash water from painted buildings constructed before 1978 can contain high amounts of lead, even if paint chips are not present. Before you begin stripping paint or cleaning pre-1978 building exteriors with water under high pressure, test paint for lead by taking paint scrapings to a local laboratory. See Yellow Pages for a state-certified laboratory.
- If there is loose paint on the building, or if the paint tests positive for lead, block storm drains. Check with the wastewater treatment plant to determine whether you may discharge water to the sanitary sewer, or if you must send it offsite for disposal as hazardous waste.

Paint Removal

- ☐ Buildings constructed before 1978 may have lead paint in them. Test paint for lead by taking samples to a local environmental testing laboratory to determine if removed paint must be disposed of as hazardous waste.
- Paint chips and dust from non-hazardous dry stripping and sand blasting may be swept up or collected in plastic drop cloths and disposed of as trash.
- ☐ Chemical paint stripping residue and chips and dust from marine paints or paints containing lead, mercury or tributyl tin must be disposed of as hazardous wastes. Lead based paint removal requires a state-certified contractor. When stripping or cleaning building exteriors with
- high-pressure water, block storm drains. Direct wash water onto a dirt area, or check Sunnyvale Water Pollution Control Plant (408) 730-7270 to find out if you can collect mop or vacuum) building cleaning water and dispose to the sanitary sewer. Sampling of the water may be required to assist the wastewater treatment authority in making its

Painting Cleanup

Never clean brushes or rinse paint containers into a street. gutter, storm drain, French drain, or stream.

further information.

For water-based paints, paint out brushes to the extent possible, and rinse into a drain that goes to the sanitary

Curbside pickup of yard waste is provided for

Sunnyvale residences. Place yard waste in approved

Sunnyvale Recycling Program (408) 730-7262 for

tree trimmings. Chip if necessary, and compost if

Do not blow or rake leaves, etc. into the street, or

place yard waste in gutters or on dirt shoulders.

Sweep up any leaves, litter or residue in gutters or on

excess liquids and residue as hazardous waste. ☐ For oil-based paints, paint out brushes to the extent possible and clean with thinner or solvent in a proper

sanitary landfill. Leave lids off paint cans so the refuse

sewer. Never pour paint down a storm drain. Dispose of

- container. Filter and reuse thinners and solvents. Dispose of excess liquids and residue as hazardous waste. ☐ When thoroughly dry, empty paint cans, used brushes, rags, and drop cloths may be disposed of as garbage in a
- collector cam see that they are empty. Empty, dry paint cans also may be recycled as metal. ☐ Dispose of empty aerosol paint cans as hazardous waste

or at household hazardous waste collection events.

Recycle/Reuse Leftover Paints

Whenever Possible Donate excess water-based (latex) paint for reuse. Call the Santa Clara County Hazardous Waste Program at

- (408) 299-7300 for details. Reuse leftover oil-based paint. Dispose of non-recyclable thinners, sludge and unwanted paint, as hazardous
- Unopened cans of paint may be able to be returned to the
- paint vendor. Check with the vendor regarding its "buy-back" policy.

Landscaping, Gardening **And Pool Maintenance**

Who should use this information?

- Landscapers Gardeners
- Swimming Pool/Spa Service and Repair Workers
- General Contractors

Home Builders Storm Drain Pollution

Fresh Concrete and Mortar

Who should use this information?

Application

Masons and Bricklayers

Construction Inspectors

General Contractors

Home Builders

Sidewalk Construction Crews

Patio Construction Workers

Swimming Pool Maintenance Many landscaping activities expose soils and increase the likelihood that earth and garden chemicals will run off into the storm drains during irrigation or when it rains. Swimming pool water

from Landscaping and

containing chlorine and copper-based algaecides should never be

discharged to storm drains. These chemicals are toxic to aquatic life

Doing the Job Right General Business Practices

- Protect stockpiles (e.g. asphalt, sand, or soil) and landscaping materials from wind and rain by storing them under tarps or secured plastic sheeting.
- Store pesticides, fertilizers, and other chemicals indoors or in a shed or storage cabinet.
- Schedule grading and excavation projects during dry
- Use temporary check dams or ditches to divert runoff away from storm drains. Protect storm drains with sandbags or other sediment
- Revegetation is an excellent form of erosion control for any site. Replant as soon as possible with temporary

Landscaping/Garden Maintenance

vegetation such as grass seed.

- Consider using Integrated Pest Management Techniques. Use pesticides sparingly, according to instructions on the label. Rinse empty containers, and use rinsewater as product. Dispose of rinsed, empty containers in the trash. Dispose of unused pesticides as hazardous waste.
- Pool/Fountain/Spa Maintenance Draining pools or spas
- When it's time to drain a pool, spa, or fountain, please be sure to call the Sunnyvale Water Pollution Control Plant (408) 730-7270 before you start for further guidance on flow rate restrictions, backflow prevention, and handling special cleaning waste (such as acid wash). Discharge flows should be kept to the low levels typically possible through a garden hose. Higher flow rates may be prohibited by local ordinance.

- Never discharge pool or spa water to a street or storm drain; discharge to a sanitary sewer
- containers at curbside for pickup on waste collection days. Commercial entities may take yard waste to the If possible, when emptying a pool or spa, let Sunnyvale SMaRT station for recycling. Contact the chlorine dissipate for a few days and then recycle/ reuse water by draining it gradually onto a
- landscaped area. OR Collect lawn and garden clippings, pruning waste, and Contact the Sunnyvale Water Pollution Control Plant (408) 730-7270. You may be able to discharge to the sanitary sewer by running the
 - hose to a utility sink or sewer pipe clean-out. Do not use copper-based algaecides. Control algae with chlorine or other alternatives, such as sodium bromide

Filter Cleaning

- Never clean a filter in the street or near a storm drain. Rinse cartridge and diatomaceous earth filters onto a dirt area, and spade filter residue into soil. Dispose of spent diatomaceous earth in the
- If there is no suitable dirt area, call the Sunnyvale Water Pollution Control Plant (408) 730-7270 for instructions on discharging filter backwash or rinsewater to the sanitary sewer.

Earth-Moving and **Dewatering Activities**

Who should use this information?



- Machine Operators

Bulldozer, Back Hoe, and Grading

- construction sites may be contaminated

- Site Supervisors
- Dump Truck Drivers

General Contractors

Home Builders Developers

Board's Erosion and Sedimenit Control

Who should use this information?

reatment is prohibited

 Road Crews Driveway/Sidewalk/Parking Lot Construction Crews Seal Coat Contractors

Earth-Moving Activities

Soil excavation and grading operations

or blow into storm drains when handled

storm drains, smother aquatic life, and

destroy habitats in creeks and the Bay.

mproperly. Sediments in runoff can clog

Effective erosion control practices reduce

the amount of runoff crossing a site and

ommon problem in the Santa Clara

history, groundwater pumped from

treatment plant operation. Discharging

site into any water of the state without

sediment-laden water from a dewatering

Valley. Depending on soil types and site

slow the flow with check dams or

Contaminated groundwater is a

oughened ground surfaces.

- easier. Avoid performing equipment repairs at construction sites. Construction Inspectors General Contractors
 - clean equipment.
 - Recycle used oil, concrete, broken asphalt, etc. whenever possible, or dispose of properly. Take broken up concrete to a local recycling facility. Call the Sunnyvale Recycling Program at

- ☐ Develop and implement erosion/sediment control
- ☐ Check for and repair leaking equipment. Perform major equipment repairs at designated
- ☐ When refueling or when vehicle/equipment maintenance must be done on site, designate a

areas in your maintenance yard, where cleanup is

- Do not use diesel oil to lubriicate equipment parts or
- (408) 730-7262 for information.

- bags, or other controls to divert or trap and filter Never wash excess material from exposed
- dispose to dirt area.
- material (cloth, rags, etc.) to catch drips when not ☐ Clean up all spills and leaks using "dry" methods
- Cover stockpiles (asphalt, sand, etc.) and other construction materials with plastic tarps. Protect from rainfall and prevent runoff with temporary roofs or plastic sheets and berms.
- (with absorbent materials and/or rags) Dig up, remove, and properly dispose of contaminated soil.

- from contacting stormwater runoff.
- Park paving machines over drip pans or absorbent
- **During Construction**
- Avoid paving and seal coating in wet weather, or when rain is forecast, to prevent fresh materials
- Cover and seal catch basins and manholes when applying seal coat, slurry seal, fog seal, or similar
- aggregate concrete or similar treatments into a

- to the street or storm drain. ☐ If the pumping time is more than 24 hours and the flow rate greater than 20 gpm, call your local wastewater treatment plant for ☐ If the water is not clear, solids must be filtered or settled out by pumping to a settling tank
- prior to discharge. Options for filtering Pumping through a perforate pipe sunk part way into a small pit filled with Pumping from a bucket placed below water level using a submersible pump;
- Pumping through a filtering device such as a swimming pool filter or filter fabric wrapped around end of suction pipe. groundwater to the storm drain (if no When discharging to a storm drain, protect the inlet using a barrier of burlap bags filled with drain rock, or cover inlet with filter fabric anchored under the grate. OR pump water

through a grassy swale prior to discharge.

Contaminated Soil or Groundwater ontaminated groundwater

Detecting

- a common problem in the Santa Clara Valley. It is essential that all contractors and subcontractors involved now what to look for in etecting contaminated soil or groundwater, and testing ponded groundwater before oumping. Watch for any of
- Unusual soil conditions discoloration or odor. Abandoned underground tanks. Abandoned wells.
- Buried barrels, debris or

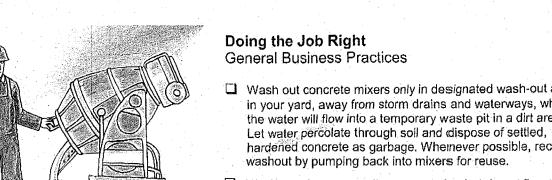
follow the procedures below.

If any of these are found

And Mortar Applications

Developers Concrete Delivery/Pumping Workers

Fresh concrete and cement-related mortars that wash into lakes, streams, or estuaries are



Storm Drain Pollution from Fresh Concrete

toxic to fish and the aquatic environment. Disposing of these materials to the storm drains or creeks can block storm drains, causes serious problems, and is prohibited by law.

Doing the Job Right **General Business Practices** Wash out concrete mixers only in designated wash-out areas in your yard, away from storm drains and waterways, where the water will flow into a temporary waste pit in a dirt area.

hardened concrete as garbage. Whemever possible, recycle washout by pumping back into mixers for reuse. Wash out chutes onto dirt areas at site that do not flow to

- Always store both dry and wet materials under cover. protected from rainfall and runoff and away from storm drains or waterways. Protect dry materials from wind.
- wind-blown cement powder away from streets, gutters, storm drains, rainfall, and runoff, Do not use diesel fuel as a lubricant on concrete forms, tools,

- During Construction Don't mix up more fresh concrete or cement than you will use in a two-hour period.
- ☐ Set up and operate small mixers on tarps or heavy plastic drop cloths.
- When cleaning up after driveway or sidewalk construction, wash fines onto dirt areas, not down the driveway or into the street or storm drain.
- Protect applications of fresh concrete and mortar from rainfall and runoff until the material has dried. Wash down exposed aggregate concrete only when the wash water can (1) flow onto a dirt area: (2) drain onto a bermed surface from which it can be pumped and disposed of properly; or (3) be vacuumed from a catchment created by blocking a storm drain inlet. If necessary, divert runoff with temporary berms. Make sure runoff
- does not reach gutters or storm drains. Secure bags of cement after they are open. Be sure to keep When breaking up pavement, be sure to pick up all the pieces and dispose of properly. Recycle large chunks of broken concrete at a local recycling facility. Call

the Sunnyvale Recycling Program at (408) 730-7262 for information.

Never bury waste material. Dispose of small amounts of excess dry concrete, grout, and mortar in the trash.

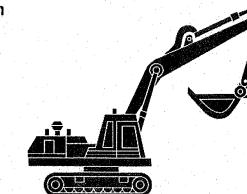
Never dispose of washout into the street, storm drains, drainage ditches, or streams.

Heavy Equipment Operation Who should use this

information?

Developers

 Site Supervisors General Contractors Home Builders



Poorly maintained vehicles and heavy equipment that leak fuel, oil, antifreeze or other fluids on the construction site are common sources of storm drain pollution. Prevent spills and leaks by isolating equipment from runoff channels, and by watching for leaks and other maintenance problems. Remove construction equipment from the site as soon as possible.

streets or drains.

or trailers.

Doing the Job Right

washing off site where cleanup is easier.

Use only water for any onsite cleaning.

doesn't leave silt or discharge to storim drains.

Site Planning and Preventive Vehilcle Maintenance

- Designate one area of the construction site, well away from streams or storm drain inlets, for auto and equipment parking, refueling, and routine vehicle and equipment maintenance. Contain the area with berms, sand bags, or other barriers.
- Maintain all vehicles and heavy equipment. Inspect frequently for and repair leaks.

Perform major maintenance, repair jobs, and vehicle and equipment

If you must drain and replace motor coil, radiator coolant, or other fluids on site, use drip pans or drop cloths tto catch drips and spills. Collect all spent fluids, store in separate conttainers. Recycle them wherever possible, otherwise, dispose of them as hazardous wastes.

Do not use diesel oil to lubricate equiipment parts, or clean equipment.

Cover exposed fifth wheel hitches and other oily or greasy equipment Use as little water as possible for dust control. Ensure water used

- Spill Cleanup
- Clean up spills immediately when they happen. ☐ Never hose down "dirty" pavement or impermeable surfaces where fluids have spilled. Use dry cleanup methods (absorbent materials, cat litter, and/

or rags) whenever possible and properly dispose of absorbent materials.

Sweep up spilled dry materials immediately. Never attempt to "wash them away" with water, or bury them.

Clean up spills on dirt areas by digging up and properly disposing of

Report significant spills to the appropriate local spill response agencies immediately. In Sunnyvale, dial 9-1-1 if hazardous materials might enter the

contaminated soil.

If the spill poses a significant hazard to human health and safety, property or

the environment, you must also report it to the State Office of Emergency



with toxics (such as oil or solvents) or laden with sediments. Any of these pollutants can harm wildlife in creeks or the Bay, or interfere with wastewater

Roadwork and Paving

 Operators of Grading Equipment, Paving Machines, Dump Trucks, Concrete Mixers

Developers

Home Builders

pollution of storm drains, creeks, and the Bay.

Storm Drain Pollution from Roadwork Road paving, surfacing, and pavement removal happen right in the street

ranpel

where there are numerous opportunities for asphalt, saw-cut slurry, or

excavated material to illegally enter storm drains. Extra planning is

required to store and dispose of materials properly and guard against

- to storm drains.
- - site. Reduce stormwater runoff velocities by constructing everyone who works at the construction site is familiar with
- Field Manual for proper erosion and Check for Sediment Levels Storm Drain Pollution from Doing the Job Right
- during dry weather. loosen large amounts of soil that can flow | 🚨 Perform major equipment repairs away from the lob site. ■ When refueling or vehicle/equilipment

Schedule excavation and gradling work

maintenance must be done on site.

General Business Practices

designate a location away from storm Dewatering Operations Check for Toxic Pollutants Do not use diesel oil to lubricatie Check for odors, discoloration, or an equipment parts, or clean equipment. Practices During Construction Call your local wastewater treatment

Remove existing vegetation only when

absolutely necessary. Plant temporary ☐ If contamination is suspected, have the vegetation for erosion control on slopes or where construction its not immediately planned. Depending on the test results, you may Protect downslope drainage courses, streams, and storm drains with wattles, or temporary drainage swales... Use

check dams or ditches to divert runoff

around excavations. Refer to the

Regional Water Quality Control

- Doing the Job Right General Business Practices
- plans for roadway embankments. ☐ Schedule excavation and grading work during dry
- location away from storm drains and creeks.

- Protect drainage ways by using earth dikes, sand
- street or storm drain. Collect and recycle, or

Collect and recycle or appropriately dispose of excess abrasive gravel or sand. Avoid over-application by water trucks for dust

asphalt or concrete.

rainfall or runoff.

Asphalt/Concrete Removal Avoid creating excess dust when breaking

After breaking up old pavement, be sure to

remove all chunks and pieces. Make sure

☐ When making saw cuts, use as little water as possible. Shovel or vacuum saw-cut slurry and remove from the site. Cover or protect storm drain inlets during saw-cutting. Sweep up, and properly dispose of, all residues.

Sweep, never hose down streets to clean up

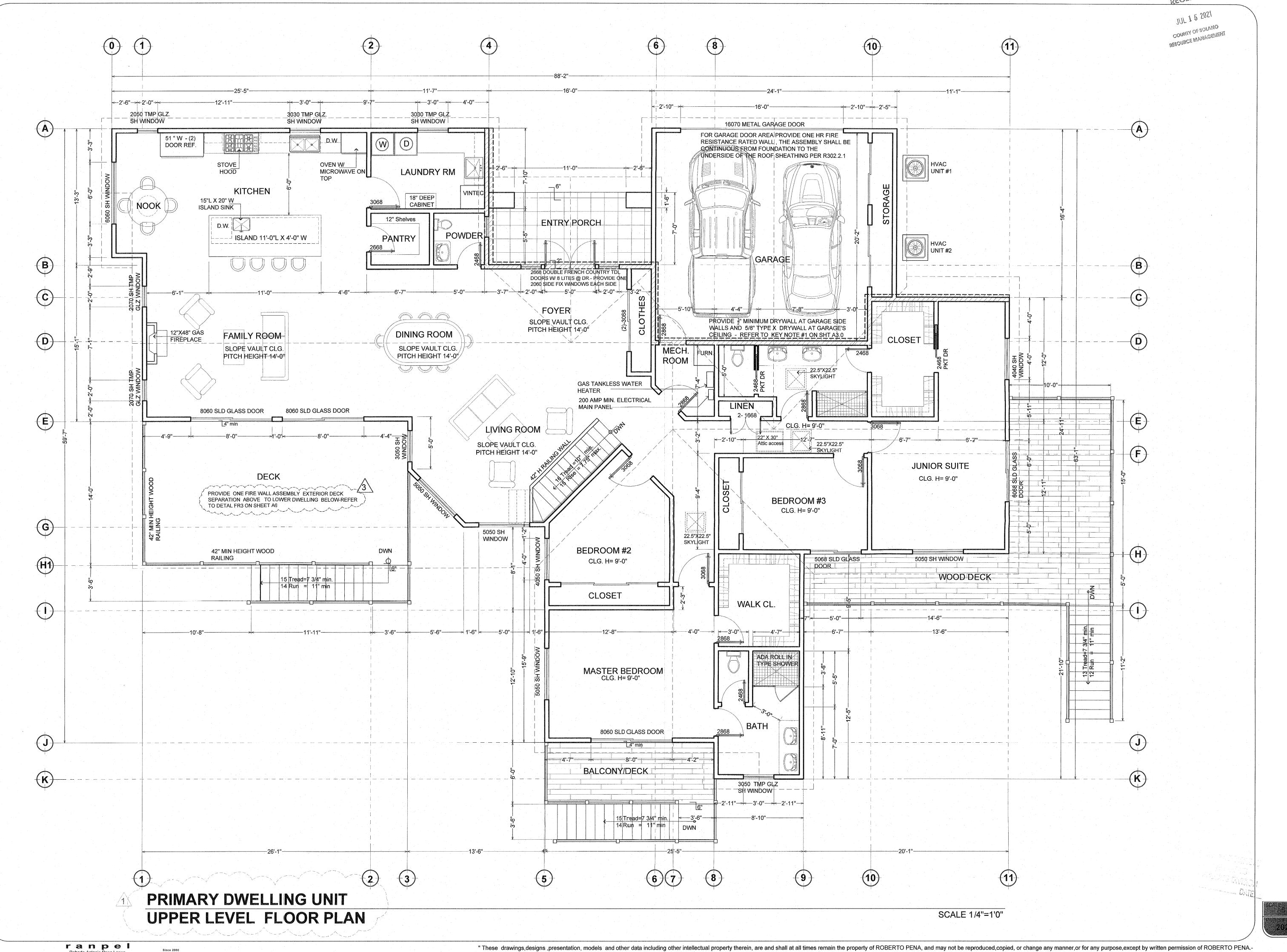
tracked dirt. Use a street sweeper or vacuum

truck. Do not dump vacuumed liquor in storm

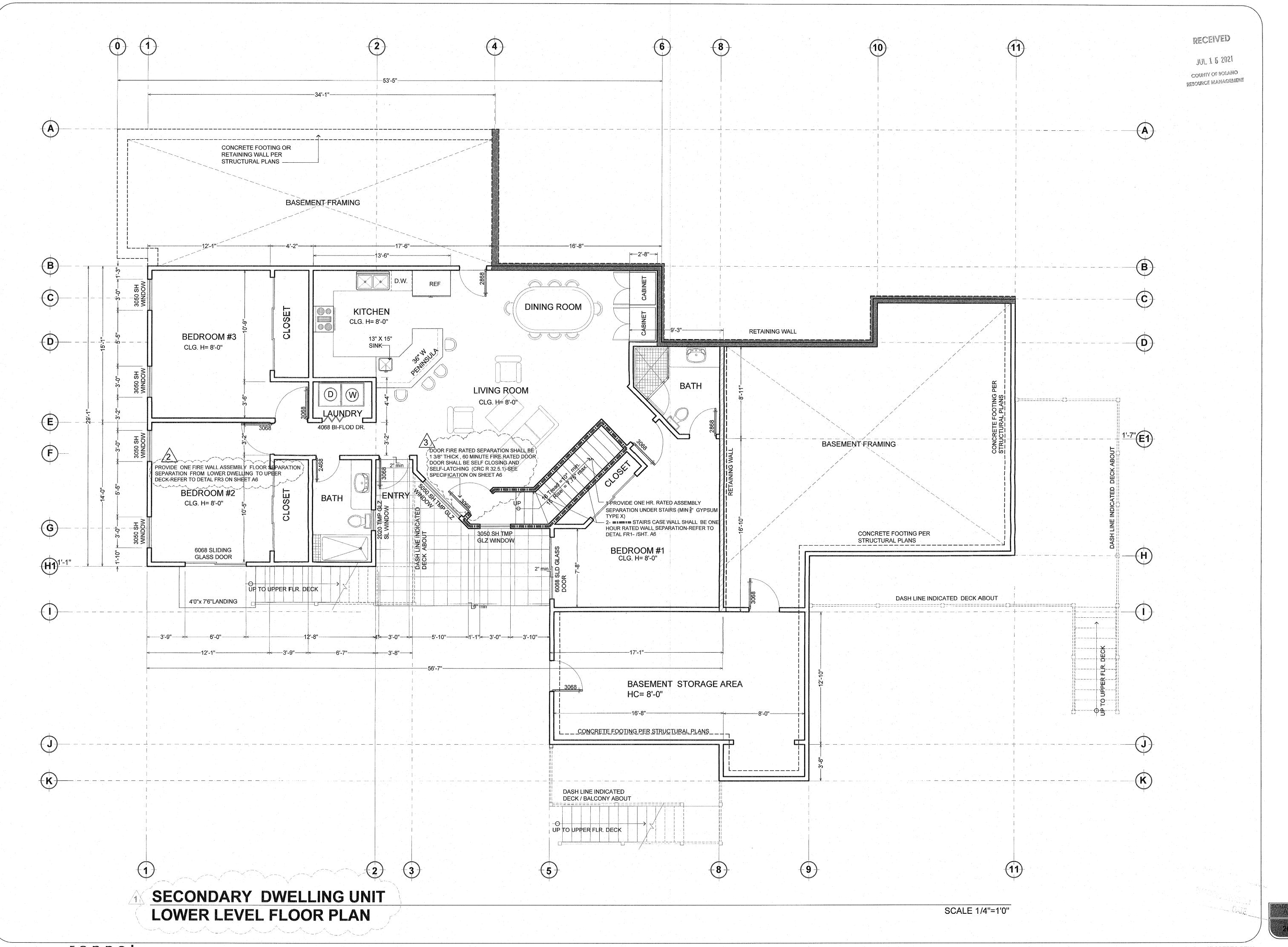
broken pavement does not come in contact with

Vehicle and Equipment Operators

Stormwater Pollution from Heavy Equipment on Construction Sites



In no event shall the client copy or use any of these plans, drawings, concepts, specifications, designs, models and other data produced than those note above without the prior written consent of ROBERTO PENA". *These drawings can be used only for the address of the project shown on the plans*







SCALE 1/4"=1'0"

DECK MATERIALS NOTE

- 1. DECK FLOOR & FRAMING: WOOD DECK BOARD SHALL BE MINIMUM 2X6 REDWOOD PER STATE FIRE MARSHAL LISTING 8110-2104:001 (CATEGORY 8110- DECKING FOR W.U.I.), SOLID WOOD DECKING INSTALLED OVER MINIMUM 2"x6" SOLID " DOUGLAS FIR OR BETTER JOIST, SPACED 24" OR LESS O.C. (REFER TO STRUCTURAL PLAN FOR SPACING & SIZES) ALL DECKING AND JOIST COMPLYING WITH AMERICAN SOFTWOOD LUMBER STANDARD PS20, CLASS B FLAME SPREAD RATING WHEN TESTED IN ACCORDANCE WITH ASTM E84.
- 2. ALL HARDWARE AND FASTENER SHALL BE HOT DIPPED GALVANIZED OR EQUIVALENT.
- 3. ALL FRAMING SHALL BE DECAY RESISTANT i.e., REDWOOD OR PRESSURE TREAD (SEE DECK NOTE 1)

FIRE ZONE DECKING:

THE WALKING SURFACE MATERIAL OF DECKS, PORCHES, BALCONIES AND STAIRS SHALL BE OF ONE OF THE FOLLOWING: [CRC §R337.9.3]

- A. •IGNITION-RESISTANT MATERIAL THAT COMPLIES WITH THE PERFORMANCE REQUIREMENTS OF BOTH SFM STANDARD 12-7A-4 AND 12-7A-5 (MATERIALS SHALL BEAR IDENTIFICATION ISSUED BY ICC-ES OR A TESTING AGENCY RECOGNIZED BY THE STATE FIRE MARSHAL); OR
- B. NON-COMBUSTIBLE MATERIALS; OR
 C. MATERIALS PASSING PERFORMANCE REQUIREMENTS OF SFM STANDARD 12-7A-4A WHEN THE EXTERIOR WALL COVERING ISALSO EITHER A NONCOMBUSTIBLE OR IGNITION-RESISTANT MATERIAL. EXCEPTION: WALL MATERIALS MAY BE OF ANY MATERIAL THAT OTHERWISE COMPLIES WITH CRC §R337 WHEN THE DECKING SURFACE MATERIAL COMPLIES WITH THE PERFORMANCE REQUIREMENTS ASTM E 84 WITH A CLASS B FLAME SPREAD RATING.

ELEVATIONS NOTES.

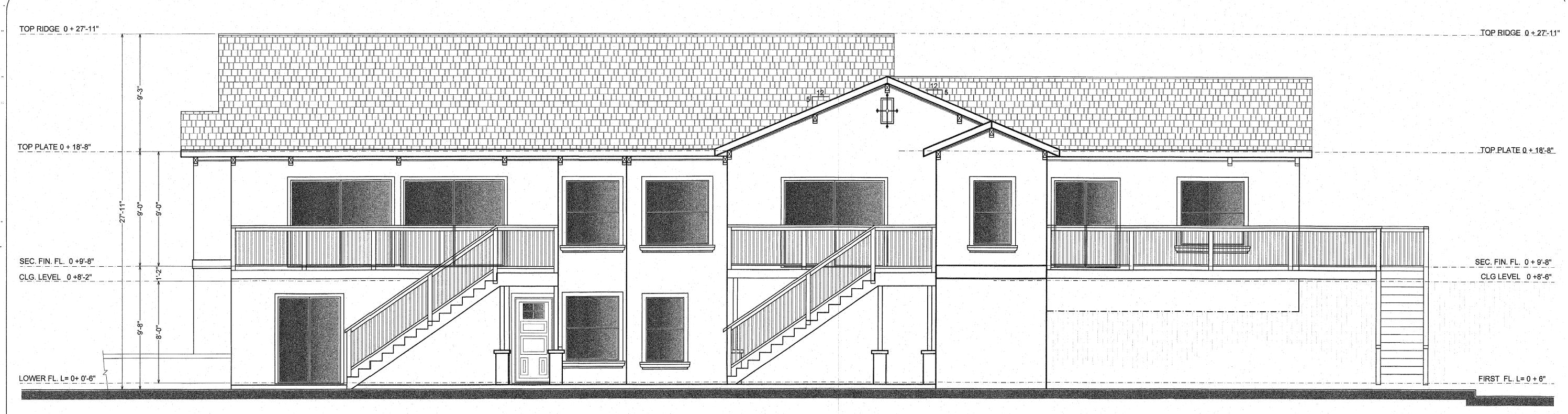
- 1. <u>ALL EXTERIOR WALL FINISH</u>: 7/8" THREE COAT STUCCO PLASTER -STUCCO-INSTALLATION-REQUIREMENTS:
- 1.a) WEATHER RESISTIVE BARRIERS SHALL BE INSTALLED AS REQUIRED IN SECTION R703.2 AND, WHERE APPLIED OVER WOOD-BASED SHEATHING, SHALL INCLUDE A WATER- RESISTIVE VAPOR PERMEABLE BARRIER WITH A PERFORMANCE AT LEAST EQUIVALENT TO TWO LAYERS OF-GRADE-"D"-PAPER-(R703.6.3).

 1.b) PLASTERING WITH PORTLAND CEMENT PLASTER SHALL NOT BE LESS THAN THREE COATS WHEN APPLIED OVER METAL LATH OR WIRE LATH AND SHALL BE NOT LESS THAN TWO COATS WHEN APPLIED OVER MASONRY, CONCRETE. PRESSURE-PRESERVATIVE TREATED WOOD OR DECAY- RESISTANT WOOD AS SPECIFIED IN SECTION R317.1 OR GYPSUM-BACKING-(R703.6.2).
- 1.c) A MINIMUM 26 GALVANIZED CORROSION-RESISTANT WEEP SCREED WITH A MINIMUM VERTICAL ATTACHMENT FLANGE OF 3-1/2 INCHES PROVIDED AT OR BELOW THE FOUNDATION PLATE LINE AT ALL EXTERIOR WALLS, AND, THE SCREED SHALL BE PLACED A MINIMUM OF INCHES ABOVE EARTH OR 2 INCHES ABOVE PAVED AREA.
- 2. CULTURAL STONE: PROVIDE CULTURAL STONE OVER RESISTIVE BARRIERS SHALL BE INSTALLED AS REQUIRED IN SECTION R703.2 AND, WHERE APPLIED OVER WOOD-BASED SHEATHING, SHALL INCLUDE A WATER- RESISTIVE VAPOR PERMEABLE BARRIER WITH A PERFORMANCE AT LEAST EQUIVALENT TO TWO LAYERS OF-GRADE-"D"-PAPER-(R703.6.3).
 INSTALLED PER MANUFACTURED REQUIREMENTS
- 3. MOLDING OVER TO VENEER BAND: PROVIDE THK 4" SLOPING FOAM MOLDED O/WALL 36" HEIGHT TO GROUND W/STUCCO AND ACCENT COLOR(TYPICAL)U.N.O.
- 4. ROOF COVERINGS AND ASSEMBLIES: ROOF COVERING FIRE RATINGS ARE CLASS A, B, C, OR UNRATED; WITH CLASS A PROVIDING THE BEST PERFORMANCE. COMMON CLASS A ROOF COVERINGS INCLUDE ASPHALT FIBERGLASS COMPOSITION SHINGLES, CONCRETE, AND FLAT/BARREL-SHAPED TILES. SOME MATERIALS HAVE A "BY ASSEMBLY" CLASS A FIRE RATING WHICH MEANS, ADDITIONAL MATERIALS MUST BE USED BETWEEN THE ROOF COVERING AND SHEATHING TO ATTAIN THAT RATING. EXAMPLES OF ROOF COVERINGS WITH A "BY ASSEMBLY" FIRE RATING INCLUDE ALUMINUM, RECYCLED PLASTIC AND RUBBER, AND SOME FIRE-RETARDANT WOOD SHAKE PRODUCTS. IF A WOOD SHAKE ROOF DOES NOT HAVE THE MANUFACTURER'S DOCUMENTATION SPECIFYING THE FIRE RETARDANT, ASSUME IT'S UNTREATED. NEW ROOF TO BE LIGHT CHARCOAL COLOR - ROOFING TO I.C.B.O. CERTIFICATED AND INSTALLED PER MFG'S REQUIREMENTS - INSTALLATION OF TWO LAYER OF TYPE 20 LB FELT UNDERLAY IS REQUIRED, FLASHING , VALLEY , ACCESSORIES ETC. SHALL COMPLY WITH C.B.C Chapter15
- . FASCIA BOARD: 2" X 6" WOOD FASCIA BOARD W/ 4 1/2"X 5" GAL. METAL GUTTER & DOWNSPOUTS , ALL DOWNSPOUT TO BE DISCHARGE DIRECTLY TO LANDSCAPE AREAS OR TERMINATING IN PIPED DRAINAGE SYSTEM PAINT FASCIA & GUTTER TRIM WITH ACCENT COLOR.
- 6. DOOR & WINDOWS TRIMS: PROVIDE 4" SLOPING FOAM & MOLDING @ STUCCO AND WOOD TRIM & SILL @ WOOD SIDING WALLS ALL FINISH TRIM & MOLDING WITH ACCENT COLOR
- 7. ALL WINDOWS & GLASS DOOR: WINDOWS DOUBLE GLASS PANEL VINYL & TEMPERATE GLAZING FOR BATHROOM WINDOWS & SLIDING GLASS DOORS AND WINDOWS LESS TO 18" TO FINISH FLOOR LEVEL AND LESS OF 24" OF ANY CORNER WALL SHALL BE TEMPERATE GLAZING.
- 8. GSM FLASHING o/2"X6" BARGE RAFTER W/ACCENT COLOR.
- 9. WATERPROOF EXTERIOR DOWN LIGHT / STYLE BY OWNER PROVIDE HIGH EFFICACY OR CONTROLLED BY MOTION SENSOR PLUS PHOTO-CONTROL

FOR NEW WINDOWS & GLASS DOORS

NOTE:EXTERIOR GLAZING WMC 150.01E(b)(IV)
PROVIDE EXTERIOR WINDOWS, WINDOW WALLS, SKYLIGHTS,
GLAZED DOORS, AND GLAZED OPENINGS WITHIN EXTERIOR
DOORS WITH A MINIMUM OF ONE TEMPERED PANE, OR GLASS
BLOCK UNITS, OR HAVING A FIRE RESISTANCE RATING OF NOT
LESS THAN 20-MINUTES, AND CONFORM TO SFM 12-7A-2 AND CBC
CHAPTER 24.





SCALE 1/4"=1'0"

SCALE 1/4"=1'0"

(N) REAR ELEVATION

(N) LEFT ELEVATION

ABOVE EARTH OR 2 INCHES ABOVE PAVED AREA. 0 + 27'-11" 0 + 27'-11" TOP PLATE TOP PLATE 0 + 18'-8" 0 + 18'-8" SEC. FIN. FL. 0 +9'-8" SEC. FIN. FL. 0 + 9'-8" CLG LEVEL 0 +8'-6"

ELEVATIONS NOTES.

- AS REQUIRED IN SECTION R703.2 AND, WHERE APPLIED OVER WOOD-BASED SHEATHING , SHALL INCLUDE A 2. WATER- RESISTIVE VAPOR - PERMEABLE BARRIER WITH A PERFORMANCE AT LEAST EQUIVALENT TO TWO LAYERS OF-GRADE-"D"-PAPER-(R703.6.3).
- 1.b) PLASTERING WITH PORTLAND CEMENT PLASTER SHALL NOT BE LESS THAN THREE COATS WHEN APPLIED OVER METAL LATH OR WIRE LATH AND SHALL BE NOT LESS CONCRETE. PRESSURE- PRESERVATIVE TREATED WOOD OR DECAY- RESISTANT WOOD AS SPECIFIED IN SECTION R317.1 OR GYPSUM-BACKING-(R703.6.2). 1.c) A MINIMUM 26 GALVANIZED CORROSION-RESISTANT WEEP SCREED WITH A MINIMUM VERTICAL ATTACHMENT FLANGE OF 3-1/2 INCHES PROVIDED AT OR BELOW THE
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- INSTALLED PER MANUFACTURED REQUIREMENTS
- 3. MOLDING OVER TO VIENEER BAND: PROVIDE THK. 4" SLOPING FOAM MOLDED O/WALL 36" HEIGHT TO GROUND W/STUCCO AND ACCENT COLOR(TYPICAL)U.N.O.
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- 5. FASCIA BOARD: 2" X 6" WOOD FASCIA BOARD W/ 4 1/2"X 5" GAL. METAL GUTTER & DOWNSPOUTS, ALL DOWNSPOUT TO BE DISCHARGE DIRECTLY TO LANDSCAPE AREAS OR TERMINATING IN PIPED DRAINAGE SYSTEM - PAINT FASCIA & GUTTER TRIM WITH ACCENT COLOR.
- 6. DOOR & WINDOWS TRIMS: PROVIDE 4" SLOPING FOAM & MOLDING @ STUCCO AND WOOD TRIM & SILL @ WOOD SIDING WALLS - ALL FINISH TRIM & MOLDING WITH ACCENT
- 7. ALL WINDOWS & GLASS DOOR: WINDOWS DOUBLE GLASS PANEL - VINYL & TEMPERATE GLAZING FOR BATHROOM WINDOWS & SLIDING GILASS DOORS - AND WINDOWS LESS TO 18" TO FINISH FLOOR LEVEL AND LESS OF 24" OF ANY CORNER WALL SHALL BIE TEMPERATE GLAZING.
- 8. GSM FLASHING o/2"X6" BARGE RAFTER W/ACCENT COLOR.
- 9. WATERPROOF EXTERIOR DOWN LIGHT / STYLE BY OWNER - PROVIDE HIGH EFFICACY OR CONTROLLED BY MOTION SENSOR PLUS PHOTO-CO)NTROL

FOR NEW WINDOWS & GLASS DOORS

NOTE: EXTERIOR GLAZING WMC 150.01E(b)(IV) PROVIDE EXTERIOR WINDOWS, WINDOW WALLS, SKYLIGHTS, GLAZED DOORS, AND GLAZED OPENINGS WITHIN EXTERIOR DOORS WITH A MINIMUM OF ONE TEMPERED PANE, OR GLASS BLOCK UNITS, OR HAVING A FIRE RESISTANCE RATING OF NOT LESS THAN 20-MINUTES, AND CONFORM TO SFM 12-7A-2 AND CBC CHAPTER 24.

KEY NOTES:

- 1. ALL EXTERIOR WALL FINISH: 7/8" THREE COAT STUCCO
 PLASTER -STUCCO-INSTALLATION-REQUIREMENTS:
 1.a) WEATHER RESISTIVE BARRIERS SHALL BE INSTALLED

 1. STAIR NOTES: TREAD NOSINGS FOR STAIRWAYS WITH SOLID RISERS(WHEN TREADS ARE LESS THAN 11")SHALL BEBETWEEN 0.75" AND 1.25", MIN. STAIR WIDTH SHALL BE 36" U.N.O.
 - STAIRWAY: RISE SHALL BE 4" MIN AND 7.75" MAX. RUN SHALL BE 10" MIN. HEADROOM SHALL BE 80" MIN. WIDTH SHALL BE 36" MINIMUM. HANDRAILS SHALL PROVIDE GRASPABILITY AND BE 34"-38" ABOVE TREAD NOSING WITH OPENINGS LESS THAN 4 3/8" CLEAR, EXCEPT OPENINGS FORMED BY THE RISER, TREAD, AND BOTTOM RAIL OF THE GUARD MAY BE 6" MAXIMUM DIAMETER, (R 311.7 & R312.3 EX.
 - THAN TWO COATS WHEN APPLIED OVER MASONRY, 3. THERE SHALL BE A FLOOR OR LANDING AT THE TOP AND BOTTOM OF EACH STAIRWAY, WIDTH AND LENGTH OF LANDINGS SHALL BE NOT LESS THAN THE WIDTH OF THE STAIRWAY SERVED. A FLOOR OR LANDING IS NOT REQUIRED AT THE TOP OF AN INTERIOR FLIGHT OF STAIRS, INCLUDING STAIRS IN AN ENCLOSED GARAGE, PROVIDED A DOOR DOES NOT SWING OVER THE STAIRS.(R311.7.6)
- FOUNDATION PLATE LINE AT ALL EXTERIOR WALLS, AND , 4. GUARDS/RAILING (DECK AREA) : SHALL BE LOCATED ALONG THE SCREED SHALL BE PLACED A MINIMUM OF INCHES OPEN SIDED WALKING SURFACES, INCLUDING STAIRS, RAMPS, LANDINGS, AND DECKS, THAT ARE MORE THAN 30" ABOVE THE FLOOR OR GRADE, MEASURED AT ANY POINT WITHIN 36" HORIZONTALLY, REQUIRED GUARDS SHALL BE NOT LESS THAN 42" ABOVE THE ADJACENT WALKING SURFACE, EXCEPT THAT HANDRAILS MAY BE CONSIDERED AS GUARDS AT STAIRWAYS, OPENINGS, GUARDRAILS SHALL HAVE INTERMEDIATE RAILS OR AN ORNAMENTAL PATTERN SUCH THAT A SPHERE 4 3/8 INCHES IN DIAMETER CANNOT PASS THROUGH (CRC Sec. R312)
 - DOORS, STAIRWAYS AND LANDINGS (INCLUDING DECKS) REQUIRED EGRESS DOOR SHALL BE SIDE HINGED AND HAVE A MINIMUM NET CLEAR WIDTH OF 32" AND A MINIMUM HEIGHT OF 78". (R311.2) THERE SHALL BE A LANDING AT EACH SIDE OF ALL DOORS NOT MORE THAN 1 1/2" LOWER THAN THE THRESHOLD AT THE REQUIRED EGRESS DOOR, AND NOT MORE THAN 7 3/4" FOR OTHER EXTERIOR DOORS. THE LANDING SHALL BE AT LEAST AS WIDE AS THE DOOR SERVED AND 36" MINIMUM LENGTH MEASURED IN THE DIRECTION OF TRAVEL. A LANDING IS NOT REQUIRED AT DOORS OTHER THAN THE REQUIRED EGRESS DOOR WHERE A STAIRWAY OF TWO OR FEWER RISERS IS LOCATED ON THE EXTERIOR OF THE DOOR.
 - ALL DECK /BALCONIES FRAMING, SUPPORT POSTS AND OTHER LUMBER EXPOSED TO THE WEATHER SHALL BE OF PRESERVATIVE- TREATED OR DECAY-RESISTANT LUMBER (CRC R317.1).- HARDWARE AND FASTENERS SHALL BE HOT-DIPPED GALVANIZED, STAINLESS STEEL, SILICON BRONZE, OR COPPER (CRC R317.3.1). SPANS FOR DECKING, DECK FRAMING AND DECK BEAMS SHALL NOT EXCEED THE ALLOWABLE VALUES IN TABLES R507.4, R507.5, R507.6 AND R507.8.

DECK MATERIALS NOTE:

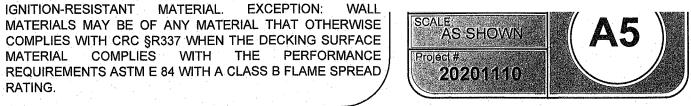
- DECK FLOOR & FRAMING: WOOD DECK BOARD SHALL BE MINIMUM 2X6 REDWOOD PER STATE FIRE MARSHAL LISTING 8110-2104:001 (CATEGORY 8110- DECKING FOR W.U.I.), SOLID WOOD DECKING INSTALLED OVER MINIMUM 2"x6" SOLID " DOUGLAS FIR OR BETTER JOIST , SPACED 24" OR LESS O.C. (REFER TO STRUCTURAL PLAN FOR SPACING & SIZES) ALL DECKING AND JOIST COMPLYING WITH AMERICAN SOFTWOOD LUMBER STANDARD PS20 ,CLASS B FLAME SPREAD RATING WHEN TESTED IN ACCORDANCE WITH ASTM E84.
- ALL HARDWARE AND FASTENER SHALL BE HOT DIPPED GALVANIZED OR EQUIVALENT.
- ALL FRAMING SHALL BE DECAY RESISTANT i.e., REDWOOD OR PRESSURE TREAD (SEE DECK NOTE 1)

FIRE ZONE DECKING:

RATING.

THE WALKING SURFACE MATERIAL OF DECKS, PORCHES, BALCONIES AND STAIRS SHALL BE OF ONE OF THE FOLLOWING: [CRC §R337.9.3]

- A. •IGNITION-RESISTANT MATERIAL THAT COMPLIES WITH THE PERFORMANCE REQUIREMENTS OF BOTH SFM STANDARD 12-7A-4 AND 12-7A-5 (MATERIALS SHALL BEAR IDENTIFICATION ISSUED BY ICC-ES OR A TESTING AGENCY RECOGNIZED BY THE STATE FIRE MARSHAL); OR
- NON-COMBUSTIBLE MATERIALS; OR MATERIALS PASSING PERFORMANCE REQUIREMENTS OF SFM STANDARD 12-7A-4A WHEN THE EXTERIOR WALL COVERING ISALSO EITHER A NONCOMBUSTIBLE OR IGNITION-RESISTANT MATERIAL. EXCEPTION: WALL MATERIALS MAY BE OF ANY MATERIAL THAT OTHERWISE COMPLIES WITH CRC §R337 WHEN THE DECKING SURFACE



LOWER FL. L= 0+ 0'-6"



ROOF VENT. PER CBC NET AREA OPENING MIN. ALLOWED IS 1 /150 OF NET AREA. CALC= 3268 /150= 21.78 SQ.FT. REQUIRED = 22 SQ. FT.

PROPOSED: 2" Ø HOLES IN SOLID BLK BETWEEN AROUND ROOF @ TRUSS FOR ATTIC VENT. * 2" Ø EACH = 0.0218 SF2 * (3 HOLES PER BLK MAXIMUM) HOLES @ 2 TRUSSES TOTAL ATTIC VENT AREA REQUIRED:

ROOF =22.0	O Sq. Ft.		:	
ROOF LOCATION	VENT TYP	QUANT.	AREA EACH VENT (Sq.Ft)	SUB TOTAL AREA (Sq.Ft)
1'0"x 2' Gable Vent	Metal Louver gable vent	7	2.0	14.0
Add. Roof	2 Ø HOLES	264	0.0218	5.75
Extra Vent Roof vent	24" STEALTH VENT	9	0.28 Net Vent	2.52

TOTAL ATTIC VENT AREA PROPOSED:

NOTE: -ALL OPENING IN ROOF FRAMING MEMBERS(NOTCHING AND CUTTING) SHALL BE CONFORM WITH CRC SECTION R802.7 - VENTILATION OPENINGS SHALL BE PROVIDED WITH CORROSION -RESISTANT WIRE CLOTHING SCREENING HARDWARE CLOTH, OR SIMILAR

MATERIAL WITH OPENING HAVING LEAST DIMENSION OF MINIMUM 1/ 16" AND MAXIMUM 1 /4" PER CRC R806.1

ACCESSORY BLDG ATTIC VENTILATION CALC.

1- ROOF AREA = 900 Sq.Ft. ROOF VENT. PER CBC NET AREA OPENING MIN. ALLOWED IS 1/150 OF NET AREA. CALC= 900 /150= 6.0 SQ.FT. REQUIRED = 22 SQ. FT.

2" Ø HOLES IN SOLID BLK BETWEEN AROUND ROOF @ TRUSS FOR ATTIC VENT. * 2" Ø EACH = 0.0218 SF2 * (3 HOLES PER BLK MAXIMUM) HOLES @ 2 TRUSSES TOTAL ATTIC VENT AREA REQUIRED:

ROOF LOCATION	VENT TYP	QUANT.	AREA EACH VENT (Sq.Ft)	SUB TOTAL AREA (Sq.Ft)
1'0"x 2' Gable Vent	Metal Louver gable vent	2	2.0	4.0
Add. Roof	2 Ø HOLES	180	0.0218	3.90

TOTAL ATTIC VENT AREA PROPOSED:

MAXIMUM 1 /4" PER CRC R806.1

ABS - Manufacturing

888-454-2888 Phone

888-454-2889 Fax

2X INTERIOR

WALL PER

PLAN

7.90 Sq. Ft.

Specifications: 3, 5 Ply construction. Meets or exceeds industry standards of WDMA I.S.1-A,

| Length - Depends on faces (See faces below for available length)

Edge banding veneer or plastic when matching edges required

tails: Laminated Composite to wood (Georgia Pacific), Specific to rating*

Faces: RN Birch 2 Ply, MDF Back, 1/64" Face Veneer, 8/0 Max length.

mbossed Primed MDF Single Ply, 8/0 Max length

Architectural Select Species Raw & Prefinished 2 Ply, 1/42" Face, 10/0 Max length

Embossed Prefinished MDF (Legacy) Single Ply, 8/0 Max length

Plastic Laminate 2 Ply, 1/50" Face, 10/0 Max length. All laminates meet or

Light Commercial PS Red Oak 2 Ply, MDF Back, 1/64" Face Veneer, 8/0 Max length.

Raw MDF Single Ply, 10/0 Max length

Primed MDF Single Ply, 10/0 Max length

Faces: Primed MDO 2 Ply HDF Back, 10/0 Max length

oustical Rating: 30 STC Operable See www.doormerica.com for seal information

MC-45A = Mineral Core 45 Minute, Category A

MC-60B = Mineral Core 60 Minute, Category B

MC-60A = Mineral Core 60 Minute, Category A

MC-90A = Mineral Core 90 Minute, Category A

*See fire door specifications section in catalogue for details on sizes, hardware

Door Specification

SLOPE DECK FLOOR TRUSSES @

16" O.C.- PER STRUCTURAL PLANS

23/32" SHEATHING T&G SUBFLOOR

Page 10

MC-60NP = Mineral Core 60 Minute, Neutral Pressure

MC-90NP = Mineral Core 90 Minute, Neutral Pressure MC-90B = Mineral Core 90 Minute, Category B

Description MC-45NP = Mineral Core 45 Minute, Neutral Pressure

Adhesive: Type-1 PVA. Interior installation only.

Temp Rise: 30 Minutes 250 Degrees maximum

mmended Architectural, Light Commercial

DOORMERICA

and construction limitations.

FLOOR TRUSSES @ 16" O.C.

PER STRUCTURAL PLANS

---- 1 ⅔" LVL RIM JOIST

Warranty: Lifetime. See limited warranty for details.

Abbreviations: MC-45B = Mineral Core 45 Minute, Category B

Machining: To Specification

Louvers: To Specification

Lites: To Specification

CAN4-S104, NFPA-252, UBC-7-2-97, UL10C

WI Section 12, AWI Section 1300. Testing Standards ASTM-E-152, CSFM 43.7

22.27 Sq. Ft.

TOP RIDGE 0 + 27'-11"

NOTE: -ALL OPENING IN ROOF FRAMING MEMBERS(NOTCHING AND CUTTING) SHALL BE CONFORM WITH CRC SECTION R802.7 - VENTILATION OPENINGS SHALL BE PROVIDED WITH CORROSION -RESISTANT WIRE CLOTHING SCREENING, HARDWARE CLOTH, OR SIMILAR MATERIAL WITH OPENING HAVING LEAST DIMENSION OF MINIMUM 1/-16" AND

FLUSH MINERAL CORE 45-60-90 MINUTE RATED

Width = 1" Minimum

Core: Gypsum Mineral

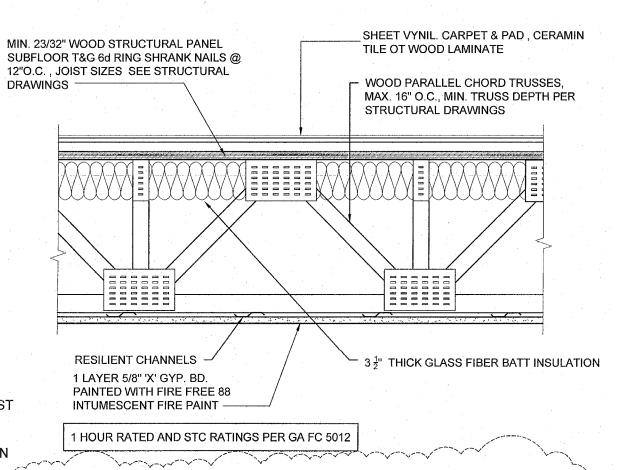
re Rating: 45-60-90 Minute Rate

IOP RIDGE 0 + 27'-11" 2 X PREFAB. SCISSORS TRUSSES P'ER ROOF FMG, PLAN RECEIVED 2 X PREFAB. TRUSSES ATTIC SPACE PER ROOF FMG. PLAN R30-INSULATION ______ JUL 1 5 2021 **COUNTY OF SOLANO** RESOURCE MANAGEMENT **=====** TOP PLATE 0 + 18'-8" TOP PLATE 0 + 18'-8" 2X4 STUDS WALL @ 16" O.C. R15 - INSULATION FLOOR TRUISS FRAMING PER : = = = = = = = FAMILY ROOM STRUCTURAL PLANS -FOOTING P'ER STRUCTURAL FIRE RATED FLOOR FIRE RATED DECK/ PLANS <u>┴╘⋛⋿⋿⋿⋶⋶⋶</u> SEPARATION PER FLOOR SEPARATION DET. FR2 -PER DET. FR3 _ SEC. FIN. IFL. 0 +9'-8" COVERED DECK SEC. FIN. FL. 0 + 9'-8" CLG. LEVEL 0 +8'-2" ____ CLG LEVEL 0 +8'-6" <u>-----</u> **----**2X4 STUDS: WALL @ 16" O.C. R15 - INSULATION - - - - - - - - - - - | <u>|-----</u> BEDROOM BEDROOM L==== SLAB FOOTING PER STRUCTURAL PLANS DOOR SPECIFICATIONS SLAB FOUNDATION PER

SECTION A-A

WALLS AND INTERIOR PARTITIONS. WOOD FRAMED GA FILE NO. WP 3241 PROPRIETARY† 1 HOUR 50 to 54 STC GYPSUM WALLBOARD, RESILIENT CHANNELS, MINERAL FIBER INSULATION, WOOD STUDS Resilient channels 24" o.c. attached at right angles to ONE SIDE of 2 x 4 wood studs 16" or 24" o.c. with 1 1/4" Type S drywall screws. One layer 5/8" proprietary type X gypsum wallboard or gypsum veneer base applied parallel to channels with 1" Type S drywall screws 12" o.c. End joints backblocked with resilient channels. 3" mineral fiber insulation, 2.0 or 2.3 pcf, in stud space. OPPOSITE SIDE: one layer 5/8" proprietary type X gypsum wallboard or gypsum veneer base applied at right angles to stude with 1 1/4" Type W drywall screws 12" o.c. Vertical joints staggered 48" on opposite sides. Sound tested with stude 16" o.c. and open Approx. Weight: 7 psf face of mineral fiber insulation blankets toward resilient channel-side of stud space. Based on UL R3660-7, 11-12-87; UL R2717-61, 8-18-87; UL R7094, PROPRIETARY GYPSUM BOARD 10-24-90 American Gypsum Company 5/8" FIREBLOC TYPE C UL Design U311 CertainTeed Gypsum, Inc. 5/8" ProRocтм Type C Gypsum Panels Sound Test: G-P Gypsum 5/8" ToughRock® Fireguard® C Lafarge North America Inc 5/8" Firecheck® Type C National Gypsum Company 5/8" Gold Bond® Brand FIRE-SHIELD C™ PABCO Gypsum 1/2" FLAME CURB® Super 'C' Temple-Inland Forest Products Corporatio †Contact the manufacturer for more detailed information on proprietary products

ONE HOUR FIRE RATED INTERIOR WALL PARTITION FOR GARAGE SEPARATION AND STAIRS CASE WALLS



STC 55 to 58 RATED WITH 3 ½" GLASS FIBER INSULATION AGAINST FLOOR SIDE IN JOIST SPACES AND WITH SHEET VINYL, CARPET AND PAD, CERAMIC TILE, OR ENGINEERED WOOD LAMINATE. SECOND LAYER OF 5" OR 5" TYPE X GYPSUM WALLBOARD REQUIRED TO ARCHIEVE 1 HOIR RESISTANT RATING GLASS FIBER INSULATION

CONTINUOUS STUCCO 2 X STUDS @ 16" O.C. DRIP/WEEP SCREED STUCCO o/WATER RESISTANT BARRIER MEMBRANE o/LATH o/ SHEATHING PER PLAN /PT MUDSILL PER PLAN – 26 GA. CORROSION-RESISTANT WEEP SCREED FIN. GRADE 2% SLOPE MIN

TYP. BASE OF STUCCO WALL

GENERAL HOTES FOR ALL DETAILS A. All details exploded for clarity - not in scale B. All delais represent typical installations - see manufacturer's latation menual for additional details Installation by designated licensed trade contractor(s) in accordance with plans, specifications, this report and all applicable building codes and regulators Three Coat 7" stucco plaster 2. 1" x 20 gauge wire mesh (Lath) 5. Cause Taxon screed (Min. 4" above grade or 2" above paved)

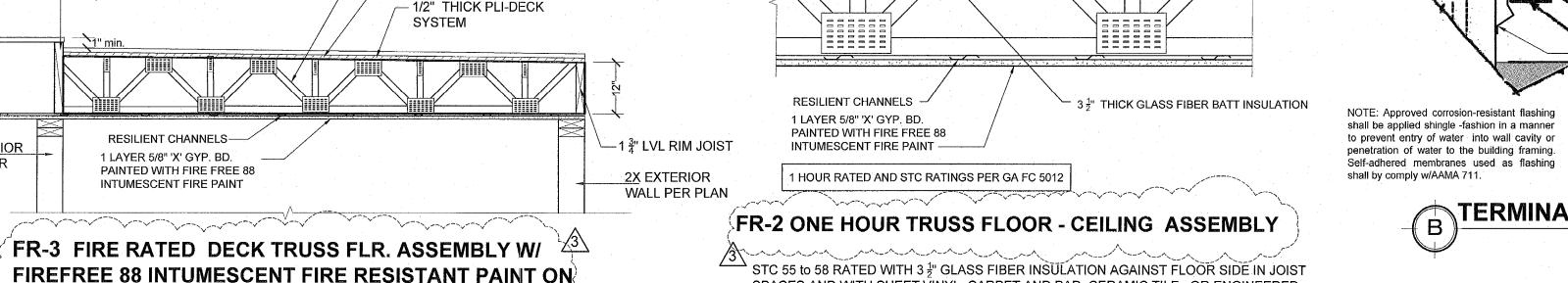
ERMINATION WEEP SCREED

Sheathing per plan

SCALE 1/4"=1'0"

STRUCTURAL PLAN

- **FLOOR PLAN KEY NOTES:** PROVIDE A 1 HOUR FIRE RATED IS REQUIRED TO COMPLETELY SEPARATE THE RESIDENCE AND THE ATTACHED GARAGE - NOT LESS 5/8" TYPE "X" GYPSUM BOARD OR EQUIVALENT IN SEPARATION FROM ALL HABITABLE ROOM ABOVE THE GARAGE OR CARPOT - AND- NOT LESS THAN 1 /2 INCH GYPSUM BOARD OR EQUIVALENT APPLIED TO THE GARAGE SIDE IN SEPARATION FROM THE RESIDENCE. - (CRC Table R302.6)-PROVIDE 🗦 MINIMUM DRYWALL AT GARAGE SIDE WALLS AND 5/8" TYPE X DRYWALL AT GARAGE'S CEILING
- 2. TWO-FAMILY DWELLINGS SHALL BE SEPARATED BY WALL AND FLOOR ASSEMBLIES HAVING NOT LESS THAN A 1-HOUR FIRE-RESISTANCE RATING PER THE REQUIREMENTS OF CRC 302.3 AND A SOUND TRANSMISSION CLASS OF NOT LESS THAN 50 PEIR CBC 1206.2. -REFER TO FIRE RATED DETAIL ON SHEET A6
- 3. ALL WINDOWS TO BE DUAL GLAZED ,PROVIDE SCREENS ON OPERABLE WINDOWS. VERIFY ALL WINDOW ROUGH OPENINGS WITH WINDOW MANUFACTURED
- PROVIDE SAFETY GLAZING IN FIXED OR OPERABLE PANELS ADJACENT TO A DOOR WHERE DE NEAREST EXPOSED EDGE OF THE GLAZING WITHIN A 24" ARC OF EITHER VERTICAL EDGE OF THE DOOR IN A WALKING SURFACE & EXPOSED BOTTOM EDGE IS LESS THEN 18" ABOVE THE FLOOR FOR WINDOWS AND DOOR (PROVIDE TEMPERATE
- PROVIDE EMERGENCY EGRESS & RESCUE WINDOWS SHALL HAVE A MINIMUM NET CLEAR OPERABLE ARE OF 5.7 SQUARE FEET .THE MINIMUM NET CLEAR OPERABLE HEIGHT DIMENSION SHALL BE 24 INCH. CBC-Section 1026.2 -PROVIDE AS MEANS OF ESCAPE OR RESCUE OPENING SHALL HAVE THE BOTTOM OF THE CLEAR OPENING NOT GREATER THAN 44 INCHES MEASURED FROM THE FLOOR IN THE BEDROOM AS REQ'D. ((CRC-R 310.1)
- 6. ALL EXTERIOR DOOR IS TO BE SOLID CORE 1 3/4" DOORS AND OF THE TYPE AND DESIGN SHOWN ON THE ELEVATIONS AND FLOORS PLANS WITH WEATHERPROOF TIGHT FIT.
- 7. ALL STRUCTURAL ELEMENTS SUPPORTING THE FLOOR / CEILING ASSEMBLIES USED AS A FIRE RATED SEPARATION SHALL HAVE 5" GYPSUM BOARD PROTECTION. (CRC Table R302.6).
- EXTERIOR DOORS ONTO GARAGE & PORCHES SHALL BE PROVIDE 36" OUTSIDE LANDING THE WIDTH OF THE LANDING SHALL BE NOT LESS THAN THE DOOR WIDTH AND 36" MINIMUM DEPTH LANDING AT REQUIRED EGRESS DOORS SHALL NOT BE MORE THAN 1 - 3" LOWER THAN THE TOP OF THRESHOLD, Exception: A DOOR MAY OPEN AT A LANDING THAT IS NOT MORE THAN 7 $\frac{3}{4}$ " LOWER THAN THE FLOOR LEVEL IF THE DOOR DOES NOT SWING OVER THE LANDING. (CRC R311.3.1 & R311.3.2)
- 9. AT GARAGES PROVIDE VENTILATION AREA OF 60 SQ/INCH PER VEHICLE FOR OUTSIDE AIR 10. PROVIDE FIRE-BLOCKING TO CUT OFF ALL CONCEALED DRAFT OPENING (VERTICAL AND HORIZONTAL)TO FROM AN EFFECTIVE FIRE BARRIER BETWEEN STORIES, AND BETWEEN A TOP STORY AND THE ROOF SPACE. (CRC R302.11).
- 11. PROVIDE BUILDING NUMBERS IDENTIFICATION PLACED IN A POSITION THAN IS PLAINLY LEGIBLE AND VISIBLE FROM THE STREET FRONTING THE PROPERTY. THESE NUMBERS SHALL BE ARABIC NUMERALS OR ALPHABETICAL LETTERS. NUMBERS SHALL BE A MINIMUM OF 4 INCHES HIGH WITH MINIMUM WIDTH OF 0.5 INCHES . CBC Section 501.2.
- 12. PROVIDE BETWEEN THE DWELLING AND GARAGE SOLID WOOD DOOR NOT LESS THAN 1 3/8" THICK, OR 20 MINUTE FIRE RATED DOOR. DOOR SHALL BE SELF CLOSING AND SELF-LATCHING (CRC R 32.5.1)
- -13. PROVIDE FOR STAIRS (CASE DOOR SEPARATION TO UPPER UNIT AND LOWER UNIT AT MIN. 1 %" THICK , OR 60 MINUTE $\overleftarrow{+}$ FIRE RATED DOOR . DOOR SHALL BE SELF CLOSING AND SELF-LATCHING (CRC R 32.5.1)
- 14. DOORS, STAIRWAYS AND LANDINGS (INCLUDING DECKS) REQUIRED EGRESS DOOR SHALL BE SIDE HINGED AND HAVE A MINIMUM NET CLEAR WIDTH OF 32" AND A MINIMUM HEIGHT OF 78". (R311.2)THERE SHALL BE A LANDING AT EACH SIDE OF ALL DOORS NOT MORE THAN 1 1/2" LOWER THAN THE THRESHOLD AT THE REQUIRED EGRESS DOOR, AND NOT MORE THAN 7 3/4" FOR OTHER EXTERIOR DOORS. THE LANDING SHALL BE AT LEAST AS WIDE AS THE DOOR SERVED AND 36" MINIMUM LENGTH MEASURED IN THE DIRECTION OF TRAVEL. A LANDING IS NOT REQUIRED AT DOORS OTHER THAN THE REQUIRED EGRESS DOOR WHERE A STAIRWAY OF TWO OR FEWER RISERS IS LOCATED ON THE EXTERIOR OF THE DOOR.
- 15. STAIRWAY: RISE SHALL BE 4" MIN AND 7.75" MAX. RUN SHALL BE 10" MIN. HEADROOM SHALL BE 80" MINIMUM. WIDTH SHALL BE 36" MINIMUM. HANDRAILS SHALL PROVIDE GRASPABILITY AND BE 34"-38" ABOVE TREAD NOSING WITH OPENINGS LESS THAN 4 3/8" CLEAR, EXCEPT OPENINGS FORMED BY THE RISER, TREAD, AND BOTTOM RAIL OF THE GUARD MAY BE 6" MAXIMUM DIAMETER. (R 311.7 & R312.3 EX.
- 16. ENCLOSED USEABLE SPACE UNDER INTERIOR STAIRS SHALL BE FINISHED WITH 1/2" GYPSUM BOARD (R302.7) FIRE BLOCKING IS REQUIRED IN CONCEALED SPACES BETWEEN STAIR STRINGERS AT THE TOP AND BOTTOM OF THE RUN.
- 17. THERE SHALL BE A FLOOR OR LANDING AT THE TOP AND BOTTOM OF EACH STAIRWAY. WIDTH AND LENGTH OF LANDINGS SHALL BE NOT LESS THAN THE WIDTH OF THE STAIRWAY SERVED. A FLOOR OR LANDING IS NOT REQUIRED AT THE TOP OF AN INTERIOR FLIGHT OF STAIRS, INCLUDING STAIRS IN AN ENCLOSED GARAGE, PROVIDED A DOOR DOES NOT SWING OVER THE STAIRS.(R311.7.6)
- 18. GUARDS: SHALL BE LOICATED ALONG OPEN SIDED WALKING SURFACES, INCLUDING STAIRS, RAMPS, LANDINGS, AND DECKS, THAT ARE MORE THAN 30" ABOVE THE FLOOR OR GRADE, MEASURED AT ANY POINT WITHIN 36" HORIZONTALLY. REQUIRED GUARDS SHALL BE NOT LESS THAN 42" ABOVE THE ADJACENT WALKING SURFACE. EXCEPT THAT HANDRAILS MAY BE CONSIDERED AS GUARDS AT STAIRWAYS. OPENINGS IN GUARDS SHALL NOT EXCEED 4". (R312)

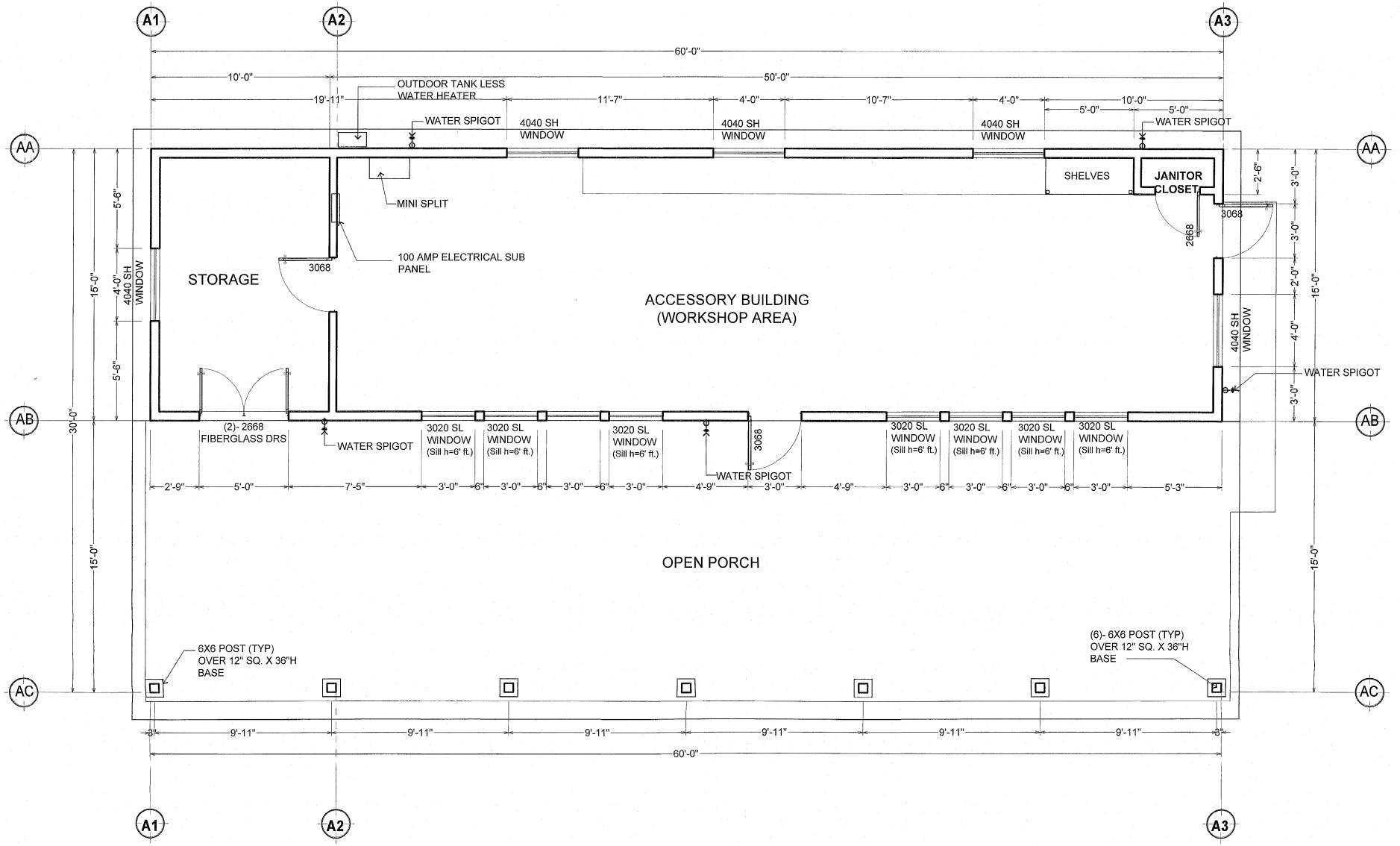




THE CEILING BELOW THE DECK FRAMING

NTS

NTS



ACCESSORY BUILDING PLAN

NOTE:

1- ALL PERIMETER 2X6 @ 16" O.C.

2-PROPOSED STRUCTURE USES: WORKSHOP AREA FOR PRIVATE USES LIKE SMALL FURNITURE REPAIR, SMALL MANUFACTURING RUNS, SOME PAINT WORK, ETC, AND STORAGE HAND TOOLS, POWER TOOLS OTHER HARDWARE

SCALE 1/4"=1'0"

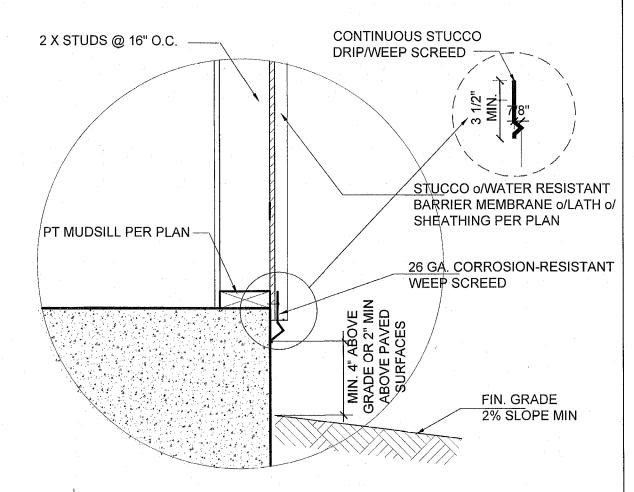
1. WINDOWS & GLASS DOORS, EXTERIOR GLAZING WMC 150.01E(b)(IV)--PROVIDEFOR ALL EXTERIOR WINDOWS, GLASS BLOCK WALLS,
SKYLIGHTS, GLAZED DOORS, AND GLAZED OPENINGS WITHIN EXTERIOR
DOORS WITH A MINIMUM OF ONE TEMPERED PANEL, OR GLASS BLOCK
UNITS, OR HAVING A FIRE RESISTANCE RATING OF NOT LESS THAN
20-MINUTES, AND CONFORM TO SFM 12-7A-2 AND CBC CHAPTER 24.

- 2. PROVIDE SAFETY GLAZING IN FIXED OR OPERABLE PANELS ADJACENT TO A DOOR WHERE DE NEAREST EXPOSED EDGE OF THE GLAZING WITHIN A 24" ARC OF EITHER VERTICAL EDGE OF THE DOOR IN A WALKING SURFACE & EXPOSED BOTTOM EDGE IS LESS THEN 18" ABOVE THE FLOOR FOR WINDOWS AND DOOR (PROVIDE TEMPERATE GLAZING)SEE NOTE #1
- 3. ALL EXTERIOR DOOR IS TO BE SOLID CORE 1 3/4" DOORS AND OF THE TYPE AND DESIGN SHOWN ON THE ELEVATIONS AND FLOORS PLANS WITH WEATHERPROOF TIGHT FIT.
- 4. ALL EXTERIOR DOORS TO PATIOS, PORCHES SHALL BE PROVIDE 36" OUTSIDE LANDING THE WIDTH OF THE LANDING SHALL BE NOT LESS THAN THE DOOR WIDTH AND 36" MINIMUM DEPTH.LANDING AT REQUIRED EGRESS DOORS SHALL NOT BE MORE THAN $1 \frac{1}{2}$ " LOWER THAN THE TOP OF THRESHOLD. Exception: A DOOR MAY OPEN AT A LANDING THAT IS NOT MORE THAN $7\frac{3}{4}$ " LOWER THAN THE FLOOR LEVEL IF THE DOOR DOES NOT SWING OVER THE LANDING. (CRC R311.3.1 & R311.3.2)
- 5. PROVIDE FIRE-BLOCKING TO CUT OFF ALL CONCEALED DRAFT OPENING (VERTICAL AND HORIZONTAL) TO FROM AN EFFECTIVE FIRE BARRIER BETWEEN STORIES, AND BETWEEN A TOP STORY AND THE ROOF SPACE. (CRC R302.11).
- 6. THERE SHALL BE A FLOOR OR LANDING AT THE TOP AND BOTTOM OF EACH STAIRWAY. WIDTH AND LENGTH OF LANDINGS SHALL BE NOT LESS THAN THE WIDTH OF THE STAIRWAY SERVED. A FLOOR OR LANDING IS NOT REQUIRED AT THE TOP OF AN INTERIOR FLIGHT OF STAIRS, INCLUDING STAIRS IN AN ENCLOSED GARAGE, PROVIDED A DOOR DOES NOT SWING OVER THE STAIRS.(R311.7.6)

ELEVATIONS NOTES.

- 1. ALL EXTERIOR WALL FINISH: 17/8" THREE COAT STUCCO PLASTER -STUCCO-INSTALLATION-REQUIREMENTS:
- -STUCCO-INSTALLATION-REQUIREMENTS: 1.a) WEATHER RESISTIVE BARRIERS SHALL BE INSTALLED AS REQUIRED IN SECTION R703.2 AND, WHERE APPLIED OVER WOOD-BASED SHEATHING, SHALL INCLUDE A WATER- RESISTIVE VAPOR - PERMEABLE BARRIER WITH A PERFORMANCE AT LEAST EQUIVALENT TO TWO LAYERS OF-GRADE-"D"-PAPER-(R703.6.3). 1.b) PLASTERING WITH PORTLAND CEMENT PLASTER SHALL NOT BE LESS THAN THREE COATS WHEN APPLIED OVER METAL LATH OR WIRE LATH AND SHALL BE NOT LESS THAN TWO COATS WHEN APPLIED OVER MASONRY, CONCRETE. PRESSURE- PRESERVATIVE TREATED WOOD OR DECAY- RESISTANT WOOD AS SPECIFIED IN SECTION R317.1 OR GYPSUM-BACKING-(R703.6.2). 1.c) A MINIMUM 26 GALVANIZED CORROSION-RESISTANT WEEP SCREED WITH A MINIMUM VERTICAL ATTACHMENT FLANGE OF 3-1/2 INCHES PROVIDED AT OR BELOW THE FOUNDATION PLATE LINE AT ALL EXTERIOR WALLS, AND , THE SCREED SHALL BE PLACED A MINIMUM OF INCHES ABOVE EARTH OR 2 INCHES ABOVE PAVED
- 2. ROOF COVERINGS AND ASSEMBLIES: ROOF COVERING FIRE RATINGS ARE CLASS A, B, C, OR UNRATED; WITH CLASS A PROVIDING THE BEST PERFORMANCE, COMMON CLASS A ROOF COVERINGS INCLUDE ASPHALT FIBERGLASS COMPOSITION SHINGLES, CONCRETE, AND FLAT/BARREL-SHAPED TILES. SOME MATERIALS HAVE A "BY ASSEMBLY" CLASS A FIRE RATING WHICH MEANS, ADDITIONAL MATERIALS MUST BE USED BETWEEN THE ROOF COVERING AND SHEATHING TO ATTAIN THAT RATING. EXAMPLES OF ROOF COVERINGS WITH A "BY ASSEMBLY" FIRE RATING INCLUDE ALUMINUM, RECYCLED PLASTIC AND RUBBER, AND SOME FIRE-RETARDANT WOOD SHAKE PRODUCTS. IF A WOOD SHAKE ROOF DOES NOT HAVE THE MANUFACTURER'S DOCUMENTATION SPECIFYING THE FIRE RETARDANT, ASSUME IT'S UNTREATED. NEW ROOF TO BE LIGHT CHARCOAL COLOR - ROOFING TO I.C.B.O. CERTIFICATED AND INSTALLED PER MFG'S REQUIREMENTS - INSTALLATION OF TWO LAYER OF TYPE 20 LB FELT UNDERLAY IS REQUIRED, FLASHING, VALLEY, ACCESSORIES ETC. SHALL COMPLY WITH C.B.C Chapter15
- 3. FASCIA BOARD: 2" X 6" WOOD FASCIA BOARD W/ 4 1/2"X 5" GAL.
 METAL GUTTER & DOWNSPOUTS , ALL DOWNSPOUT TO BE
 DISCHARGE DIRECTLY TO LANDSCAPE AREAS OR TERMINATING IN
 PIPED DRAINAGE SYSTEM PAINT FASCIA & GUTTER TRIM WITH
 ACCENT COLOR.
- 4. DOOR & WINDOWS TRIMS: PROVIDE 4" SLOPING FOAM & MOLDING @ STUCCO AND WOOD TRIM & SILL @ WOOD SIDING WALLS ALL FINISH TRIM & MOLDING WITH ACCENT COLOR
- 5. GSM FLASHING o/2"X6" BARGE RAFTER W/ACCENT COLOR.
- 6. WATERPROOF EXTERIOR DOWN LIGHT / STYLE BY OWNER PROVIDE HIGH EFFICACY OR CONTROLLED BY MOTION SENSOR PLUS PHOTO-CONTROL

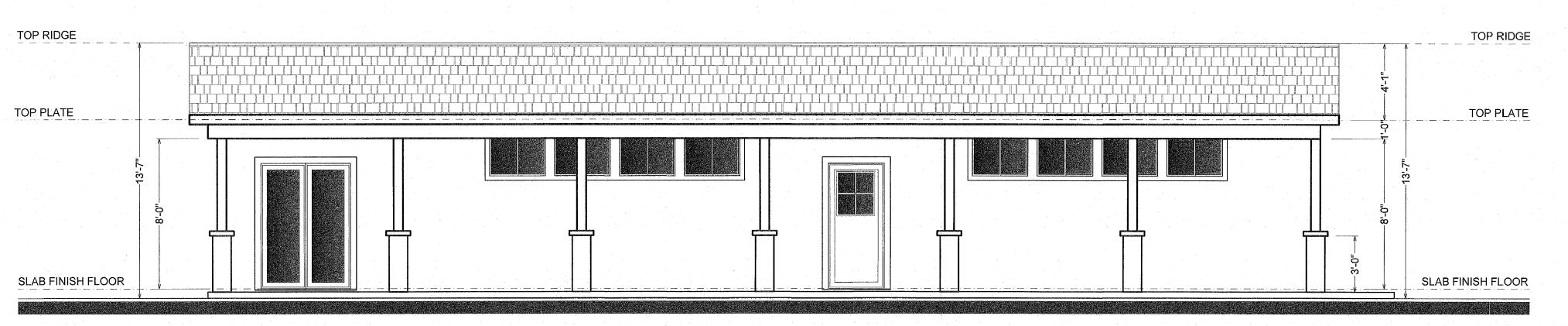




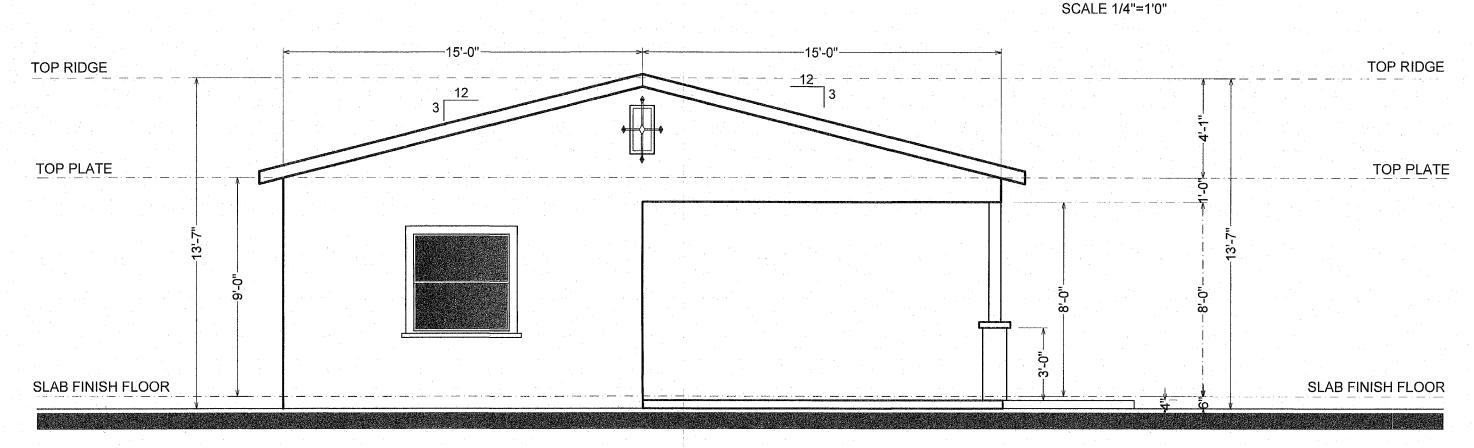
TYP. BASE OF STUCCO WALL
@ FOOTING

NTS



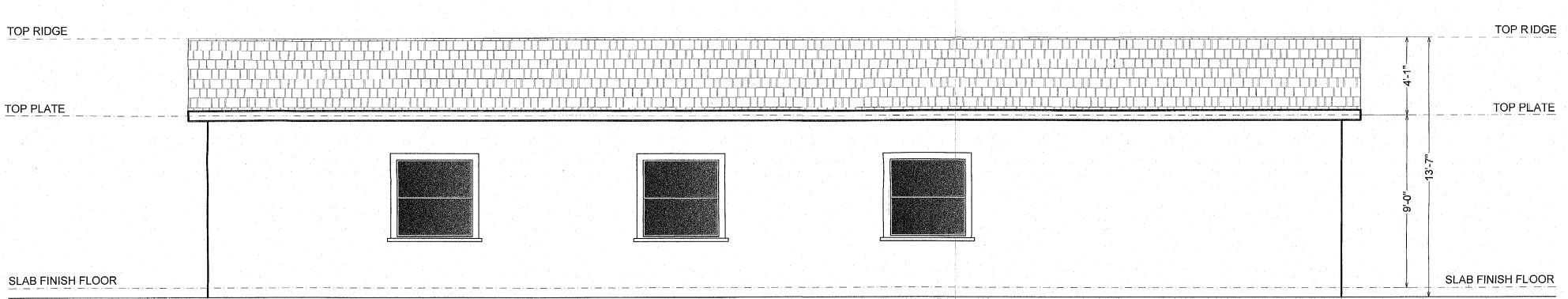


ACCESSORY BLDG FRONT ELEVATION



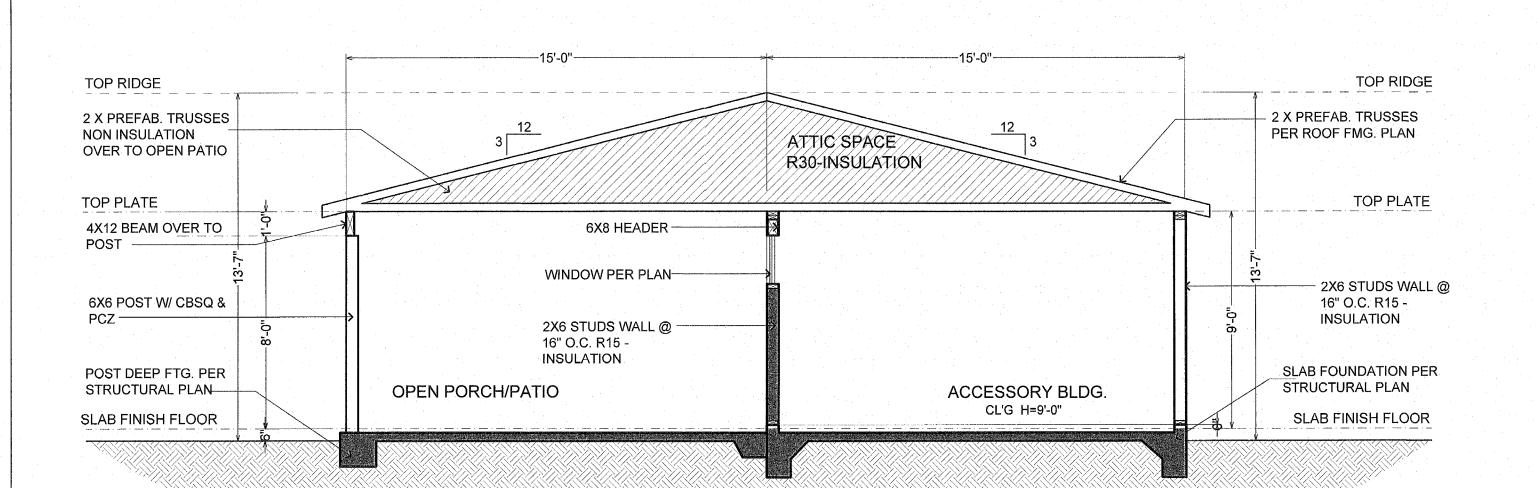
ACCESSORY BLDG. LEFT ELEVATION

SCALE 1/4"=1'0"



ACCESSORY BLDG. REAR ELEVATION

SCALE 1/4"=1'0"



ACCESSORY BLDG. SECTION A-A

SCALE 1/4"=10"

School Control Pays of Research Numberson
Presenting Services Dicision Approved

Application Notice

Top RIDGE

Considering Approved

Top PLATE

TOP PLATE

SLAB FINISH FLOOR

SLAB FINISH FLOOR

ACCESSORY BLDG. RIGHT ELEVATION

SCALE 1/4"=1'0"

ELEVATIONS NOTES.

OF-GRADE-"D"-PAPER-(R703.6.3).

OF-GRADE-"D"-PAPER-(R703.6.3).

Chapter15

1. <u>ALL EXTERIOR WALL FINISH</u>: 7/8" THREE COAT STUCCO -STUCCO-INSTALLATION-REQUIREMENTS:

1.a) WEATHER RESISTIVE BARRIERS SHALL BE INSTALLED AS REQUIRED IN SECTION R703.2 AND, WHERE APPLIED OVER WOOD-BASED SHEATHING, SHALL INCLUDE A WATER- RESISTIVE VAPOR - PERMEABLE BARRIER WITH A PERFORMANCE AT LEAST EQUIVALENT TO TWO LAYERS

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

1.c) A MINIMUM 26 GALVANIZED CORROSION-RESISTANT WEEP SCREED WITH A MINIMUM VERTICAL ATTACHMENT FLANGE OF 3-1/2 INCHES PROVIDED AT OR BELOW THE FOUNDATION PLATE LINE AT ALL EXTERIOR WALLS, AND THE SCREED SHALL BE PLACED A MINIMUM OF INCHES

ABOVE EARTH OR 2 INCHES ABOVE PAVED AREA.

2. <u>CULTURAL STONE:</u> PROVIDE CULTURAL STONE OVER RESISTIVE BARRIERS SHALL BE INSTALLED AS REQUIRED IN SECTION R703.2 AND, WHERE APPLIED OVER WOOD-BASED SHEATHING, SHALL INCLUDE A WATER-RESISTIVE VAPOR - PERMEABLE BARRIER WITH A

PERFORMANCE AT LEAST EQUIVALENT TO TWO LAYERS

- INSTALLED PER MANUFACTURED REQUIREMENTS

W/STUCCO AND ACCENT COLOR(TYPICAL)U.N.O.

3. MOLDING OVER TO VENEER BAND: PROVIDE THK. 4"
SLOPING FOAM MOLDED O/WALL 36" HEIGHT TO GROUND

4. ROOF COVERINGS AND ASSEMBLIES: ROOF COVERING FIRE RATINGS ARE CLASS A, B, C, OR UNRATED; WITH CLASS A PROVIDING THE BEST PERFORMANCE. COMMON CLASS A ROOF COVERINGS INCLUDE ASPHALT FIBERGLASS COMPOSITION SHINGLES, CONCRETE, AND

FLAT/BARREL-SHAPED TILES. SOME MATERIALS HAVE A "BY ASSEMBLY" CLASS A FIRE RATING WHICH MEANS, ADDITIONAL MATERIALS MUST BE USED BETWEEN THE ROOF COVERING AND SHEATHING TO ATTAIN THAT RATING. EXAMPLES OF ROOF COVERINGS WITH A "BY ASSEMBLY" FIRE RATING INCLUDE ALUMINUM, RECYCLED PLASTIC AND RUBBER, AND SOME FIRE-RETARDANT WOOD SHAKE PRODUCTS. IF A WOOD SHAKE ROOF DOES NOT HAVE THE MANUFACTURER'S DOCUMENTATION SPECIFYING THE FIRE RETARDANT, ASSUME IT'S UNTREATED. NEW ROOF TO BE LIGHT CHARCOAL COLOR ROOFING TO I.C.B.O. CERTIFICATED AND INSTALLED PER MFG'S REQUIREMENTS - INSTALLATION OF TWO LAYER OF TYPE 20 LB FELT UNDERLAY IS REQUIRED, FLASHING

VALLEY, ACCESSORIES ETC. SHALL COMPLY WITH C.B.C

TO BE DISCHARGE DIRECTLY TO LANDSCAPE AREAS OR TERMINATING IN PIPED DRAINAGE SYSTEM - PAINT FASCIA

5. FASCIA BOARD: 2" X 6" WOOD FASCIA BOARD W/ 4 1/2"X 5" GAL. METAL GUTTER & DOWNSPOUTS , ALL DOWNSPOUT

6. DOOR & WINDOWS TRIMS: PROVIDE 4" SLOPING FOAM & MOLDING @ STUCCO AND WOOD TRIM & SILL @ WOOD SIDING WALLS - ALL FINISH TRIM & MOLDING WITH ACCENT

7. ALL WINDOWS & GLASS DOOR: WINDOWS DOUBLE GLASS PANEL - VINYL & TEMPERATE GLAZING FOR BATHROOM WINDOWS & SLIDING GLASS DOORS - AND WINDOWS LESS TO 18" TO FINISH FLOOR LEVEL AND LESS OF 24" OF ANY

8. GSM FLASHING o/2"X6" BARGE RAFTER W/ACCENT COLOR.

9. WATERPROOF EXTERIOR DOWN LIGHT / STYLE BY OWNER
- PROVIDE HIGH EFFICACY OR CONTROLLED BY MOTION

NOTE:EXTERIOR GLAZING WMC 150.01E(b)(IV)
PROVIDE EXTERIOR WINDOWS, WINDOW WALLS,
SKYLIGHTS, GLAZED DOORS, AND GLAZED OPENINGS
WITHIN EXTERIOR DOORS WITH A MINIMUM OF ONE
TEMPERED PANE, OR GLASS BLOCK UNITS, OR HAVING A
FIRE RESISTANCE RATING OF NOT LESS THAN 20-MINUTES,
AND CONFORM TO SFM 12-7A-2 AND CBC CHAPTER 24.

CORNER WALL SHALL BE TEMPERATE GLAZING.

FOR NEW WINDOWS & GLASS DOORS

SENSOR PLUS PHOTO-CONTROL.

& GUTTER TRIM WITH ACCENT COLOR.

GYPSUM-BACKING-(R703.6.2).

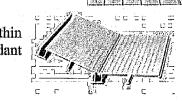
SCA

AS SHOWN.

Wildland Urban Interface (WUI) Compliance Homeowner Checklist 2019 CBC CHAPTER 7A and CRC SECTION R337

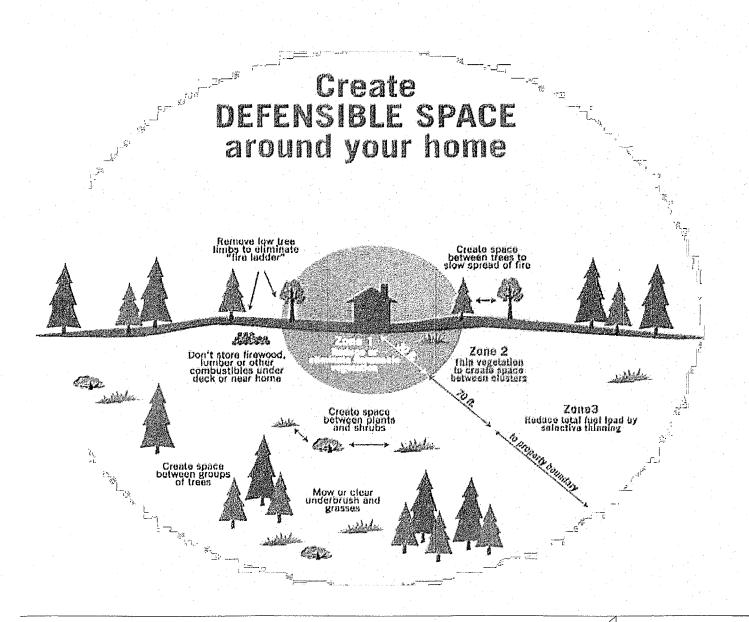
The purpose of this code is to assist in protection of life and property by increasing the ability of the building to resist fire intrusions. New construction shall comply with the Wildland Urban Interface requirements.

- ☐ Remove all flammable vegetation within 30ft of building (see vegetation management handout)
- ☐ Reduce fuel vegetation for the next 70ft (see vegetation management handout)
- ☐ Remove tree limbs from within 10ft of chimney outlet
- ☐ Eliminate dead wood from trees overhanging structure
- □ Roof is free of leaves, needles, and/or dead vegetation. All roof gutters have debris guards installed. (CRC R337.5.4)
 - ☐ Exterior wall coverings are noncombustible, ignition resistant, heavy timber, log
 - wall or fire resistive construction. (CRC R337.7)
 - ☐ Exterior wall coverings extend from the foundation to the roof and terminate at 2 inch nominal solid blocking between rafters and overhangs. (CRC R337.7.2)
 - Open/enclosed roof eaves and soffits, exterior porch ceilings, floor projections, under-floor areas and undersides of appendages comply with ignition resistant or noncombustible construction requirements. (CRC R337.7.4-9)
 - Roof is a class A fire rated/listed roofing assembly. (Nevada County Ord. L-V 3.6)
- ☐ Spaces created between roof coverings and roof decking are fire stopped by approved materials or have one layer of minimum 72lb mineral surfaced non-perforated cap sheet complying with ASTM D 3909. (CRC R337.5.2)
- □ Where valley flashing is installed, the flashing is not less than 26gage and installed over not less than one layer of minimum 72lb mineral surfaced nonperforated cap sheet and at least 36 inches wide running the full length. (CRC
- ☐ Attic gable and eaves above 12ft and under-floor ventilation are fully covered metal wire mesh, vents, or other materials that have a minimum 1/16 inch and maximum 1/8 inch openings, non-combustible and corrosion resistant. All wurdooplant other eave vents shall be listed/approved to resist the intrusion of flame and burning embers. (CRC R337.6)
- ☐ Exterior glazing (windows, skylights, and door glazing) have a minimum of one-tempered pane, glass block, has a fire resistive rating of 20 minutes or is tested to meet performance requirements of SFM Standard 12-7A-2. Operable skylights shall have 1/8" maximum noncombustible screens installed over the openings. (CRC R337.8.2)
- Exterior doors including garage doors are noncombustible, ignition resistant material, minimum 1 3/8 inch solid core, minimum 20 minute fire resistive rating or tested to meet the performance requirements of SFM Standard 12-7A-1. Garage doors are weather stripped with no gaps over 1/8". (CRC R337.8.3)
- ☐ The walking surface material of decks, porches, balconies and stairs within 10ft of the building shall be ignition resistant material, exterior fire retardant treated wood or noncombustible material. (CRC R337.9)



All materials used shall comply with CRC Section R337 requirements for exposure to wildfire. Refer to the Office of the State Fire Marshal approved Building Material Listing website for more information:

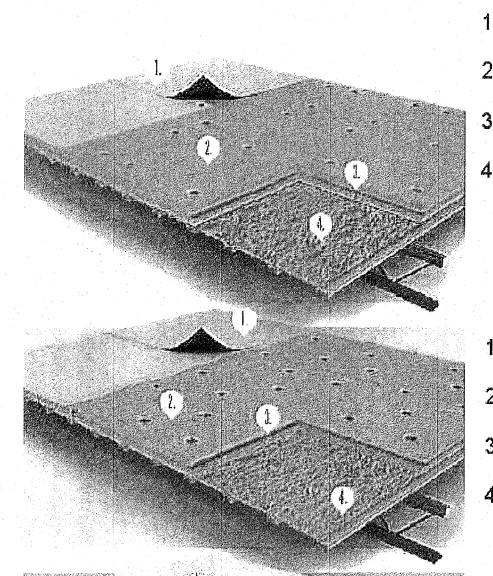
http://osfm.fire.ca.gov/licensinglistings/licenselisting_bml_searchcotest



JM CGF Polyiso UL Class A Approvals

ProtectoR® HD, SeparatoR® CGF and ENGRY 3® CGF achieve UL Class A approvals over combustible wood decks up to 1/2:12" slope. These versatile Class A approvals allow for installation of a single layer of these products or in combination with additional layers of ENRGY 3 insulation. These Class A approvals eliminate the need to utilize FR faced products up to 1/2:12" slope.

Common UL Class A assemblies include the following examples:



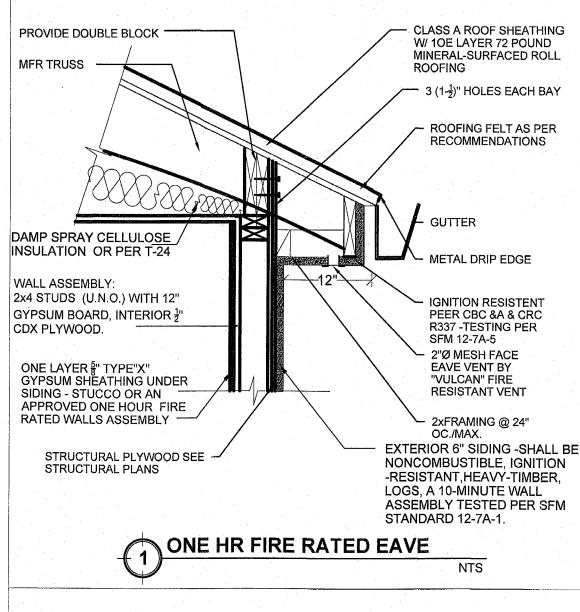
- JM Membrane (adhered, fastened or induction welded) ProtectoR HD or SeparatoR CGF (joints
- offset min. 12" from wood deck joints) Optional layer(s) of ENRGY 3 insulation, any
 - Combustible wood deck

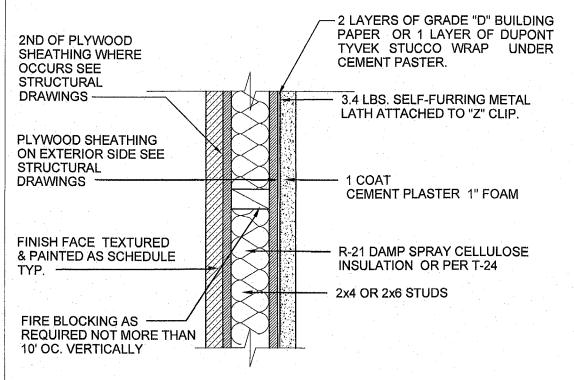
thickness

- JM Membrane (adhered, fastened or induction welded)
- ENRGY 3 CGF min., 1" thickness (joints offset min. 12" from wood deck joints)
- Optional layer(s) of ENRGY 3 insulation. any thickness
- Combustible wood deck

Combustible wood deck

- JM Membrane (adhered, fastened or induction
- SeparatoR CGF, ProtectoR HD or ENRGY 3 CGF min. 1" thickness (joints offset min. 12" from wood deck joints)





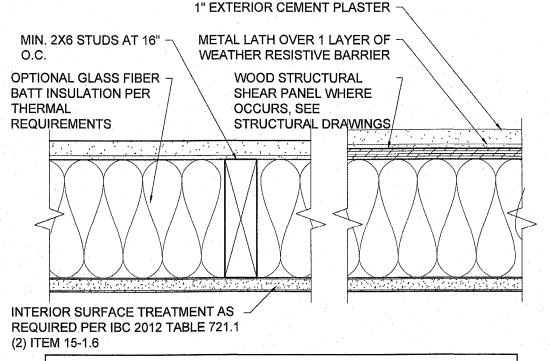
EXTERIOR WALL ASSEMBLY

—2 LAYERS OF GRADE "D" BUILDING

EXTERIOR 6" SIDING -SHALL BE NONCOMBUSTIBLE. IGNITION -RESISTANT HEAVY-TIMBER, LOGS, A 10-MINUTE WALL ASSEMBLY TESTED PER SFM STANDARD 12-7A-1. -EXTERIOR WALL (COVERINGS SHALL EXTEND CAVITY INSULATION FROM THE TOP OF THE FOUNDATION TO THE 2X6 STUD @ 16"O.C. ROOF, AND TERMINATE AT 2-INCH (50.8 MM) NOMINAL SOLID WOOD BLOCKING BETWEEN RAFTERS AT ALL RIOOF OVERHANGS, OR IN THE CASE OF ENCLOSED EAVES, TERMINATE AT AIR/WATER BARRIER THE ENCLOSURE FLEXIBLE FLASHING BUILDING PAPER CONTINUOUS INSULATION AIR/WATER BARRIER W/DRAINAGE CHANNELS PORTLAND CEMENT PLASTER - FLEXIBLE FLASHING 2-7/8" WEEP SCREED GYPSUM SHEATHING - WEEP SCREED FLASHING -- STUD PER PLAN SEALANT - FLASHING TRACK FOUNDATION -SEALANT FOUNDATION WALL | FND. DETAIL

TYVEK STUCCO WRAP UNDER CEMENT PASTER. 5/8-INCH GYPSUM BOARD UNDER SIDING OR - 3.4 LBS. SELF-FURRING METAL LATH ATTACHED TO "Z" CLIP. INTERIOR SIDE OF WALLS OR AN APPROVED ONE-HOUR FIRE RATED WALL ASSEMBLY. -CEMENT PLASTER 1" FOAM - 2X BELLY BAND 2x4 OR 2x6 STUDS FLOOR FRAMING PER STRUCTURAL PER PLAN SHEAR WALL PER - R-21 DAMP SPRAY CELLULOSE STRUCTURAL PLANS INSULATION OR PER T-24 WALL FRAMING -5/8-INCH BOARD UNDER SIDING OR INTERIOR SIDE OF SHEATHING PER PLAN WALLS OR ANY OTHER 7 APPROVED ONE-HOUR FIRE RATED WALL ASSEMBLY.

WALLS BETWEEN FMG. DETAIL



1 HOUR RATED PER IBC 2018 TABLE 721.1. (2), ITEM 15-1.6 See footnote m for reduction of allowable F'c.

ONE HOUR FIRE RATED EXT. STUCCO WALL WHEN APPLY

WUI KEY NOTES -BUILDING ELEMENTS SPECIFICATIONS BY CODE

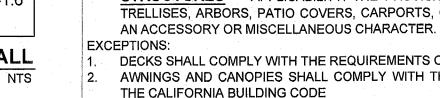
(CBC CHAPTER 7A & CRC SECTION R337) IGNITION-RESISTANT MATERIALS - SHALL BE DETERMINED IN ACCORDANCE WITH THE TEST PROCEDURES SET FORTH IN SEM STANDARD 12-7A-5 "IGNITION-RESISTANT MATERIAL" OR IN ACCORDANCE WITH THIS SECTION.

CBC 706A & CRC 337.6 VENTS -

- MINIMUM 1/16TH INCH (1.6MM) MAXIMUM 1/8TH INCH (3.2MM) OPENINGS. MATERIALS TO BE NONCOMBUSTIBLE AND CORROSION RESISTANT.
- SHALL NOT BE INSTALLED ON THE UNDERSIDE OF EAVES AND CORNICES UNLESS THE ENCLOSED AREA IS PROTECTED BY A SPRINKLER SYSTEM, OR THE VENTS ARE LOCATED MORE THAN 12 FEET ABOVE THE GROUND OR WALKING SURFACE BELOW, AND ALL EXTERIOR SURFACES OF THE STRUCTURE ARE IGNITION-RESISTANT.
- (CRC 337.1.5) VEGETATION MANAGEMENT: PRIOR TO BUILDING PERMIT FINAL APPROVAL, THE PROPERTY SHALL BE IN COMPLIANCE WITH THE VEGETATION MANAGEMENT REQUIREMENTS PRESCRIBED IN CALIFORNIA FIRE CODE SECTION 4906. INCLUDING CALIFORNIA PUBLIC RESOURCES CODE 4291 OR CALIFORNIA GOVERNMENT CODE SECTION 51182. RECOMENDATION :ALL GRASS WITHIN 30'-0" OF STRUCTURES TO BE ELIMINATED, OR IGNITION RESISTANT WITH ALL TREES WITHIN 100'-0" TRIMMED UP TO 10'-0"
- CBC 705A.2 & CRC 337.5.2 ROOF COVERINGS WHERE THE ROOF PROFILE ALLOWS A SPACE BETWEEN THE ROOF COVERING AND ROOF DECKING. THE SPACES SHALL BE CONSTRUCTED TO PREVENT THE INTRUSION OF FLAMES AND EMBERS, BE FIRESTOPPED WITH APPROVED MATERIALS OR HAVE ONE LAYER OF MINIMUM 72 POUND (32.4 KG) MINERAL-SURFACED NONPERFORATED CAP SHEET COMPLYING WITH ASTM D3909
- ROOF COVERINGS AND ASSEMBLIES ROOF COVERING FIRE RATINGS ARE CLASS A, B, C, OR UNRATED; WITH CLASS A PROVIDING THE BEST PERFORMANCE. COMMON CLASS A ROOF COVERINGS INCLUDE ASPHALT FIBERGLASS COMPOSITION SHINGLES, CONCRETE, AND RATING WHICH MEANS, ADDITIONAL MATERIALS MUST BE USED BETWEEN THE ROOF COVERING AND SHEATHING TO ATTAIN THAT RATING. EXAMPLES OF ROOF COVERINGS WITH A "BY ASSEMBLY" FIRE RATING INCLUDE ALUMINUM, RECYCLED PLASTIC AND RUBBER, AND SOME FIRE-RETARDANT WOOD SHAKE PRODUCTS. IF A WOOD SHAKE ROOF DOES NOT HAVE THE MANUFACTURER'S DOCUMENTATION SPECIFYING THE FIRE RETARDANT, ASSUME IT'S
- CBC 707A.3 & CRC R377.7.3 EXTERIOR COVERINGS: THE EXTERIOR WALL COVERING OR WALL ASSEMBLY SHALL COMPLY WITH ONE OF THE FOLLOWING: REQUIREMENTS
- NONCOMBUSTIBLE MATERIAL **IGNITION-RESISTANT MATERIAL**
- HEAVY-TIMBER EXTERIOR WALL ASSEMBLY LOGS WALL CONSTRUCTION ASSEMBLY
- WALL ASSEMBLIES THAT MEET THE PERFORMANCE CRITERIA IN ACCORDANCE WITH THE TEST PROCEDURES FOR A 10-MINUTE DIRECT FLAME CONTACT EXPOSURE TEST SET FORTH

EXCEPTION: ANY OF THE FOLLOWING SHALL BE DEEMED TO MEET THE ASSEMBLY PERFORMANCE CRITERIA AND INTENT OF THIS SECTION: ONE LAYER OF 5/8-INCH TYPE X GYPSUM SHEATHING APPLIED BEHIND THE EXTERIOR

- COVERING OR CLADDING ON THE EXTERIOR SIDE OF THE FRAMING THE EXTERIOR PORTION OF A 1-HOUR FIRE RESISTIVE EXTERIOR WALL ASSEMBLY DESIGNED FOR EXTERIOR FIRE EXPOSURE INCLUDING ASSEMBLIES USING THE GYPSUM PANEL AND SHEATHING PRODUCTS LISTED IN THE GYPSUM ASSOCIATION FIRE RESISTANCE DESIGN MANUAL
- CBC 707A3.1 EXTENT OF EXTERIOR WALL COVERING. 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.
- CBC 707A.4 & CRC R337.7.4 OPEN ROOF EAVES : SHALL BE PROVIDE SOLID WOOD BLOCKING INSTALLED BETWEEN RAFTER TAILS ON THE EXPOSED UNDERSIDE OF OPEN ROOF EAVES HAVING A MINIMUM NOMINAL DIMENSION OF 2 INCH. EXPOSED ROOF DECK ON THE UNDERSIDE OF UNENCLOSED ROOF EAVES SHALL CONSIST OF ONE OF THE FOLLOWING:
- NONCOMBUSTIBLE MATERIAL **IGNITION-RESISTANT MATERIAL**
- ONE LAYER OF 5" INCH TYPE X GYPSUM SHEATHING APPLIED BEHIND AN EXTERIOR COVERING ON THE UNDERSIDE EXTERIOR OF THE ROOF DECK
- THE EXTERIOR PORTION OF A 1-HOUR FIRE RESISTIVE EXTERIOR WALL ASSEMBLY APPLIED TO THE UNDERSIDE OF THE ROOF DECK DESIGNED FOR EXTERIOR FIRE EXPOSURE INCLUDING ASSEMBLIES USING THE GYPSUM PANEL AND SHEATHING PRODUCTS LISTED IN THE GYPSUM ASSOCIATION FIRE RESISTANCE DESIGN MANUAL
- CBC 707A.5 CRC 337.7.5) ENCLOSED ROOF EAVES & ROOF EAVE SOFFITS 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 ONE OF THE FOLLOWING:
- NONCOMBUSTIBLE MATERIAL 2. IGNITION-RESISTANT MATERIAL
- ONE LAYER OF 5/8-INCH 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 FIRE RESISTIVE EXTERIOR WALL ASSEMBLY APPLIED TO THE UNDERSIDE OF THE RAFTER TAILS OR SOFFIT INCLUDING ASSEMBLIES USING THE GYPSUM PANEL AND SHEATHING PRODUCTS LISTED IN THE GYPSUM ASSOCIATION FIRE RESISTANCE DESIGN MANUAL
- BOXED-IN ROOF EAVE SOFFIT ASSEMBLIES WITH A HORIZONTAL UNDERSIDE THAT MEET THE PERFORMANCE CRITERIA IN ACCORDANCE WITH THE TEST PROCEDURES SET FORTH IN EITHER OF THE FOLLOWING: 5.1. SFM STANDARD 12-7A-3; OR
- 5.2. ASTM E2957
- EXCEPTIONS: THE FOLLOWING MATERIALS DO NOT REQUIRE PROTECTION:
- 1-GABLE END OVERHANGS AND ROOF ASSEMBLY PROJECTIONS BEYOND AN EXTERIOR WALL OTHER THAN AT THE LOWER END OF THE RAFTER TAILS 2-FASCIA AND OTHER ARCHITECTURAL TRIM BOARDS.
- CBC 707A.6-CRC 337.7.6) EXTERIOR CEILINGS: SHALL BE PROTECTED BY NONCOMBUSTIBLE MATERIAL, IGNITION RESISTANT MATERIAL, 1COAT STUCCO OR ONE LAYER OF 5/8-INCH TYPE X GYPSUM SHEATHING APPLIED BEHIND THE EXTERIOR COVERING ON THE UNDERSIDE OF THE CEILING UNDER THE SIDING, A 1-HOUR FIRE RESISTIVE EXTERIOR WALL ASSEMBLY APPLIED TO THE UNDERSIDE OF THE CEILING ASSEMBLY INCLUDING ASSEMBLIES USING THE GYPSUM PANEL AND SHEATHING PRODUCTS LISTED IN THE GYPSUM ASSOCIATION FIRE RESISTANCE DESIGN MANUAL OR OTHER MATERIALS COMPLYING WITH SFM STANDARD 12-7A-3, ASTM E2957 . (CRC 337.7.7-9) UNDERFLOOR
- PROTECTION OF OVERHANGS AND APPENDAGES AND CANTILEVERS SHALL BE ENCLOSED TO GRADE WITH MATERIALS THAT ARE NONCOMBUSTIBLE IGNITION-RESISTANT, ONE LAYER OF 5/8-INCH TYPE X GYPSUM SHEATHING UNDER THE SIDING, AN APPROVED ONE-HOUR ASSEMBLY, OR OTHER MATERIALS COMPLYING WITH SFM STANDARD 12-7A-3.
- CBC 708A.2 CRC 337.8.2.1 EXTERIOR WINDOWS: (ALL WINDOWS AND DOOR GLAZING MATERIAL) SHALL BE CONSTRUCTED OF MULTIPANE GLAZING WITH A MINIMUM OF ONE TEMPERED PANE GLASS BLOCK MEETING THE REQUIREMENTS OF SECTION 2406-SAFETY GLAZING OR BE CONSTRUCTED OF GLASS BLOCK UNITS, HAVE A FIRE -RESISTANCE OF NOT LESS THAN 20-MINUTE RATED FIRE TESTED ACCORDING NFPA 275), OR A TESTED MATERIAL OR ASSEMBLY THAT MEETS THE SFM STANDARD 12-7A-2. INSTALLED PYRAN® PLATINUM F 20-180 MIN. FIRE RATED FILMED CERAMIC GLASS
- CBC 708A.3 & CRC 337.8.3 EXTERIOR DOORS EXTERIOR SURFACE SHALL BE NONCOMBUSTIBLE IGNITION-RESISTANT, OR THE DOOR 1 3/8-INCH THICK SOLID CORE, MINIMUM 20 MINUTE FIRE RESISTIVE RATING OR TESTED TO MEET THE PERFORMANCE REQUIREMENTS OF SFM STANDARD 12-7A-1. RAISED PANELS SHALL NOT BE LESS THAN 1 1/4-INCH THICK AND MAY BE TAPERED TO 3/8-INCH THICK AT EDGES.
- CBC 709A & CRC 337.9)DECKING, PORCHES, BALCONIES AND STAIRS WITHIN 10 FEET OF GROUND LEVEL SHALL BE IGNITION-RESISTANT MATERIALS (SFM STANDARD 12-7A-4 & SFM STANDARD 12-7A-5), EXTERIOR FIRE RETARDANT TREATED WOOD, NONCOMBUSTIBLE, MATERIALS THAT COMPLY WITH ASTM E 84 WITH A CLASS B FLAME SPREAD RATING, OR OTHER MATERIALS THAT CONFORM TO SFM STANDARD 12-7A-4 (CRC
- 11. CBC 710A & CRC 337.10.2 ACCESSORY AND MISCELLANEOUS STRUCTURES - APPLICABILITY THE PROVISIONS OF THIS SECTION SHALL APPLY TO TRELLISES, ARBORS, PATIO COVERS, CARPORTS, GAZEBOS, AND SIMILAR STRUCTURES OF
- DECKS SHALL COMPLY WITH THE REQUIREMENTS OF SECTIONR337.9. AWNINGS AND CANOPIES SHALL COMPLY WITH THE REQUIREMENTS OF SECTION 3105 OF





ASSEMBLY WINDOWS DETAIL

1 COAT STUCCO

NONCOMBUSTIBLE, IGNITION -RESISTANT, HEAVY-TIMBER, STYROFOAM SCOREDBOARD LOGS, A 10-MINUTE WALL ASSEMBLY TESTED PER SFM EXTRUDED POLYSTYRENE STANDARD 12-7A-1. INSULATION ON LIVING AREAS SHEATHING PER PLAN - FLASHING 4" GYPSUM BOARD -CONCRETE RETAINING ON LIVING AREAS ONLY WALL PER PLAN FURRING

를" GYPSUM BOARD -

NWALL TO RET. CONCRETE WALL

R21 BATT WHEN OCCURS

EXTERIOR 6" SIDING -SHALL BE

2X BELLY BAND

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INDOOR AIR QUALITY AND EXHAUST (4.506)

4.506.1 BATHROOM AND EXHAUST FANS. EACH BATHROOM (A ROOM CONTAINING A 1. GENERAL CODE REQUIREMENTS: (CPC 507.24) - INSTALLER SHALL LEAVE THE TUB, SHOWER OR TUB/SHOWER COMBO) SHALL BE MECHANICAL VENTILATED CFM50 MIN EXHAUST FAN .THE SWITCH IS LABELED TO SATE"FAN SHOULD BE ON WHENEVER! THE HOME IS OCCUPIED:

BATHROOM FANS: (CGBSC 4.506) FANS SHALL BE ENERGY STAR COMPLIANT. FANS SHALL BE ENERGY STAR COMPLIANT AND BE DUCTED TO TERMINATE

2. UNLESS FUNCTIONING AS A COMPONENT OF A WHOLE HOUSE VENTILATION SYSTEM, FANS MUST BE CONTROLLED BY A HUMIDITY CONTROL A. CONTROLLED BY AN ACCESSIBLE HUMIDISTAT CAPABLE OF ADJUSTMENT BETWEEN A RELATIVE HUMIDITY RANGE BETWEEN 50 AND 80% B. A HUMIDITY CONTROL MAY BE A SEPARATE COMPONENT TO THE EXHAUST FAN.

SMOKE ALARM NOTE:

OUTSIDE THE BUILDING.

- SMOKE ALARMS MUST BE LISTED IN ACCORDANCE WITH UL 217 AND CALIFORNIA STATE FIRE MARSHAL APPROVED FOR SMOKE ALARMS PER CRC §R314.1.1.
- IN EACH SLEEPING ROOM. OUTSIDE EACH SEPARATE SLEEPING AREA IN THE INMEDIATE VICINITY OF
- BEDROOMS. ON EACH STORY.BASEMENT, AND HABITABLE ATTICS.
- ON CEILING OF UPPER LEVEL IN CLOSE PROXIMITY TO THE STAIRWAY WHEN SLEEPING AREAS ARE AN UPPER LEVEL.
- IN THE ADJACENT ROOM (OR AREA)WHERE THE CEILING HEIGHT EXCEEDS THAT OF THE HALLWAY BY 24" OR MORE.

CARBON MONOXIDE ALARM NOTE:

- CARBON MONOXIDE ALARMS MUST BE LISTED IN ACCORDANCE WITH UL2034 PER
- CARBON MONOXIDE ALARMS SHALL BE INTERCONNECTED PURSUANT TO CRC § R317.5.
- SMOKE AND CARBON MONOXIDE ALARMS SHALL RECEIVE THEIR PRIMARY POWER FROM THE BUILDING'S ELECTRICAL SYSTEM AND SHALL HAVE A BATTERY BACKUP

POWER SUPPLY, CRC §R314.6 AND §R315.5. SMOKE ALARM & CARBON MONOXIDE ALARM MAINTENANCE

THE OWNER SHALL BE RESPONSIBLE FOR TESTING AND MAINTAINING DETECTORS IN HOTELS. MOTELS. LODGING HOUSES. AND COMMON STAIRWELLS OF APARTMENT COMPLEXES AND OTHER MULTIPLE DWELLING COMPLEXES. THE SMOKE DETECTOR SHALL BE OPERABLE AT THE TIME THAT THE TENANT TAKES POSSESSION. THE APARTMENT COMPLEX TENANT SHALL BE RESPONSIBLE FOR NOTIFYING THE MANAGER OR OWNER IF THE TENANT BECOMES AWARE OF AN INOPERABLE SMOKE DETECTOR WITHIN HIS OR HER UNIT. THE OWNER OR AUTHORIZED AGENT SHALL CORRECT ANY REPORTED DEFICIENCIES IN THE SMOKE DETECTOR AND SHALL NOT BE IN VIOLATION OF THIS SECTION FOR A DEFICIENT SMOKE DETECTOR WHEN HE OR SHE HAS NOT RECEIVED NOTICE OF THE DEFICIENCY. (CFC 907.9 AND CALIFORNIA HEALTH AND SAFETY CODE 13113.7)

EMERGENCY ESCAPE AND RESCUE OPENING (CBC Section R310)

R 310.1 EMERGENCY ESCAPE AND RESCUE REQUIRED.

BASEMENTS, HABITABLE ATTIC AND EVERY SLEEPING ROOM SHALL BE AT LEAST ONE OPERABLE WINDOW OR EXTERIOR DOOR APPROVED FOR EMERGENCY ESCAPE OR RESCUE OPENING WHERE BASEMENT CONTAIN ONE OR MORE SLEEPING ROOM, EMERGENCY EGRESS AND RESCUE OPENING SHALL BE REQUIRED IN EACH

WHERE EMERGENCY ESCAPE AND RESCUE OPENING ARE PROVIDED THEY SHALL HAVE A SILL HEIGHT OF NOT MORE THAN 44 INCHES (118 mm) ABOVE THE FLOOR WHERE A DOOR OPENING HAVING A THRESHOLD BELOW THE ADJACENT GROUND ELEVATION SERVES AS AN EMERGENCY ESCAPE AND IS PROVIDED WITH A BULKHEAD ENCLOSURE THE BULKHEAD ENCLOSURE SHALL BE COMPLY WITH SECTION R310.3.THE NET CLEAR OPENING DIMENSIONS REQUIRED BY THIS SECTION SHALL BE OBTAINS BY THE NORMAL OPERATION OF THE EMERGENCY ESCAPE AND RESCUE OPENING FROM THE INSIDE.EMERGENCY ESCAPE AND RESCUE OPENING WITH A FINISHED SILL HEIGHT BELOW THE ADJACENT GROUND ELEVATION SHALL BE PROVIDED WITH SECTION R310.2.EMERGENCY ESCAPE AND RESCUE OPENING SHALL OPEN DIRECTLY INTO A PUBLIC WAY, OR TO A YARD OR COURT THAT OPEN TO A CONCRETE -PUBLIC WAY.

R310.1.1 MINIMUM OPENING AREA

ALL ESCAPE OR RESCUE WINDOWS FROM SLEEPING ROOMS SHALL HAVE A LEAST ONE NET CLEAR OPENABLE AREA OF 5.7 SQUARE FEET (0.53 M2). R310.1.2 MINIMUM OPENING HEIGHT

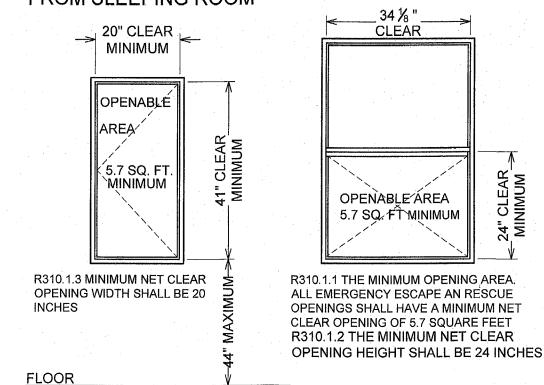
THE MINIMUM NET CLEAR OPENABLE HEIGHT DIMENSION SHALL BE 24 INCHES (610 MM). R310.1.3 MINIMUM OPENING WIDHT.

THE MINIMUM NET CLEAR OPENABLE WIDTH DIMENSION SHALL BE 20 INCHES (508 MM) R310.1.4 OPERATIONAL CONSTRAINTS.

EMERGENCY ESCAPE AND RESCUE OPENING SHALL BE MAINTAINED FREE OF ANY OBSTRCTIONS OTHER THAN THOSE ALLOWED BY THIS SECTION AND SHALL BE OPERATIONAL FROM THE INSIDE OF THE ROOM WITHOUT THE USE OF KEY, TOOLS OR SPECIAL KNOWLEDGE.

R310.2 WINDOW WELLS. THE MINIMUM HORIZONTAL AREA OF THE WINDOW WELL SHALL BE 9 SQUARE FEET, WITH A MINIMUM HORIZONTAL PROJECTION AND WIDTH OF 36 INCHES. THE AREA OF THE WINDOW WELL SHALL ALLOW THE EMERGENCY ESCAPE AND RESCUE OPENING TO BE FULLY OPENED.

R310 MINIMUM SIZED RESCUE OR ESCAPE WINDOW FROM SLEEPING ROOM



R310.2.1 LADDER AND STEPS

WINDOW WELLS WITH A VERTICAL DEPTH OF MORE THAN 44 INCHES (1118 MM) SHALL BE EQUIPPED WITH AN APPROVED, PERMANENTLY AFFIXED LADDER OR STAIRS THAT ARE ACCESSIBLE WITH THE WINDOW IN THE FULLY OPEN POSITION. THE LADDER OR STAIRS SHALL NOT ENCROACH INTO THE REQUIRED DIMENSIONS OF THE WINDOW WELL BY MORE THAN 6 INCHES (152 MM).

R310.4 LADDER AND STEPS

BARS, GRILLES,COVERS ,SCREENS OR SIMILAR DEVICES ARE PERMITTED TO BE PLACED OVER EMERGENCY ESCAPE AND RESCUE OPENINGS.BULKHEAD ENCLOSURE OR WINDOW WELLS THAT SERVE SUCH OPENINGS PROVIDED THE MINIMUM NET CLEAR OPENING SIZE COMPLIES WITH SECTION R310.1.1 FROM INSIDE WITHOUT THE USE OF A KEY, TOOL, SPECIAL KNOWLEDGE OR FORCE GREATER THAT WICH IS REQUIRED FOR NORMAL OPERATION OF THE ESCAPEAND RESCUE OPENING THE RELEASE MECHANISM SHALL BE MAINTAINED OPERABLE AT ALL TIMES.

THE BUILDING IS EQUIPPED WITH SMOKE DETECTORS INSTALLED IN ACCORDANCE WITH SECTION R314 (CRC 2019)

WATER HEATER DETAILS & NOTES:

MANUFACTURER'S INSTALLATION, OPERATING, AND MAINTENANCE INSTRUCTIONS IN A LOCATION ON THE PREMISES, READILY AVAILABLE FOR REFERENCE AND GUIDANCE TO THE INSPECTOR, SERVICE PERSONNEL, AND THE OWNER OR OPERATOR. ALL PIPE, PIPE FITTINGS, TRAPS, FIXTURES, MATERIAL, AND DEVICES USED IN A PLUMBING SYSTEM SHALL BE LISTED OR LABELED BY AN APPROVED LISTING AGENCY. LISTED WATER HEATERS SHALL BE INSTALLED IN ACCORDANCE WITH THEIR LISTINGS AND THE MANUFACTURER'S INSTRUCTIONS PROVIDE THE MINIMUM CAPACITY FOR WATER HEATERS SHALL BE ACCORDANCE WITH THE FIRST HOUR RATING LISTED IN CPC 2019 SECTION 503 TABLE 501.1

GARAGE: WATER HEATERS IN A GARAGE SHALL BE ELEVATED SO THE PILOT LIGHT AND CONTROLS ARE AT LEAST 18"ABOVE THE GARAGE FLOOR SURFACE (UNLESS THE UNIT IS LISTED AS FLAMMABLE VAPOR IGNITION RESISTANT) NOTE: (CPC 507.13) WHEN INSTALLED IN RESIDENTIAL GARAGES. APPLIANCES SHALL BE LOCATED OR PROTECTED SO THEY ARE NOT SUBJECT TO PHYSICAL DAMAGE BY A MOVING VEHICLE.

WATER HEATERS SHALL STRAPPING MINIMUM TWO 3/4-INCH BY24-GAUGE STRAPS REQUIRED AROUND WATER HEATER WITH 1/4-INCH BY 3-INCH LAG BOLTS ATTACHED DIRECTLY TO FRAMING. STRAP SHALL BE AT POINTS WITHIN UPPER THIRD AND LOWER THIRD OF WATER HEATER VERTICAL DIMENSION(CPC 508.2)

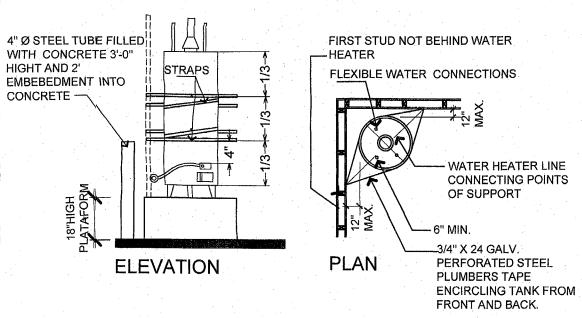
4. WHEN WATER HEATER IS LOCATED IN THE FLOOR-SUBFLOOR ASSEMBLY WHERE DAMAGE MAY RESULT FROM A LEAKING WATER HEATER A WATER LIGHT PAN OF CORROSION-RESISTANT MATERIALS SHALL BE INSTALLED BENEATH THE WATER HEATER WITH A MINIMUM THREE-QUATER (%)INCH DIAMETER DRAIN TO AN APPROVED LOCATION (CPC 508.4)

PROVIDE PRESSURE RELIEF VALVE WITH DRAIN TO OUTSIDE AT WATER HEATER WATER HEATER SHALL HAVE APPROVED EXPANSION TANK OR OTHER DEVICE DESIGNED FOR INTERMIT OPERATION FOR THE THERMAL EXPANSION CONTROL.

PROVIDE A MINIMUM 30" X30" CLEAR SPACE IN FRONT OF THE WATER HEATER FIRE BOX AND FURNACE FOR ACCESS TO SERVICE, REPAIR OR REPLACEMENT.(CMC 904.11.5).

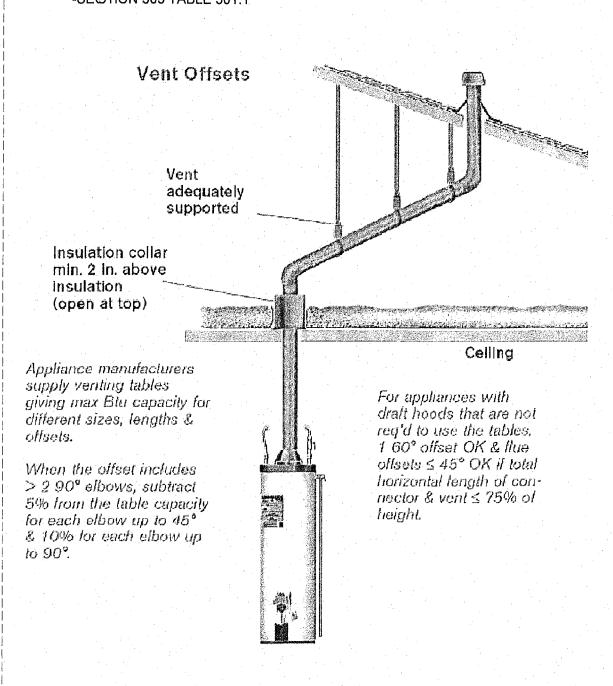
PROVIDE Ø6" MIN. COMBUSTION EXHAUST PIPE. COMBUSTION AIR: (CPC 506) COMBUSTION AIR MUST BE MAINTAINED PER THE CPC. WHEN THE APPLIANCE IS LOCATED IN AN UNCONFINED SPACE (E.G. GARAGE) THE COMBUSTION AIR CAN BE USED FROM THAT AREA. WHEN LOCATED IN A CLOSET COMBUSTION AIR MUST BE PROVIDED AT A MINIMUM OF TWO OPENINGS (ONE WITHIN 12" OF THE TOP OF THE WATER HEATER AND ONE WITHIN 12" OF THE BOTTOM) SIZED AT 100 SQUARE INCHES EACH.

VENTING: (CPC 509, 510)ALL VENT PIPING THAT RUNS THROUGH CEILINGS, FLOORS, OR WALLS SHALL BE DOUBLE-WALL METAL PIPE. THE VENT AND THE WATER HEATER MUST MAINTAIN CLEARANCE FROM COMBUSTIBLE MATERIALS (SUCH AS WALL FRAMING OR ROOFING) AS REQUIRED BY THE MANUFACTURER, WHICH IS TYPICALLY 1" MINIMUM. THE VENT SHALL TERMINATE A MINIMUM 1' (12") ABOVE THE ROOF, BE INSTALLED WITH FLASHING THROUGH THE ROOF, AND TERMINATE IN A LISTED AND APPROVED VENT CAP. VENTS SHALL ALSO TERMINATE A MINIMUM OF 3' ABOVE ANY BUILDING OPENING (DOOR, OPERABLE WINDOW, ETC.) WITHIN 3' OF THE TERMINATION, VENTING SHALL EXTEND IN A GENERALLY VERTICAL DIRECTION WITH OFFSETS NOT EXCEEDING 45 DEGREES, EXCEPT ONE 60 DEGREE OFFSET IS PERMITTED. VENTS MAY REQUIRE ADDITIONAL SUPPORTS DEPENDING ON THE MATERIAL AND DESIGN.



WATER HEATER SEISMIC BRACING

PROVIDE WATER HEATER WITH ENERGY FACTOR (EF>=0.67) AND FIRST HOUR RATING OF 80 GALLONS MINIMUM PER CPC -SECTION 503 TABLE 501.1



EXHAUST VENT TYPICAL DETAIL

MECHANICAL NOTES

- PROVIDE 22'X30" MIN. ATTIC ACCESS, LOCATED WHERE AT LAST 30 INCHES OF UNOBSTRUCTED HEADROOM OCCURS AND ATTIC SPACE EXCEEDS 30 SQ.FT.
- ATTIC AREAS SHALL BE PROVIDED WITH 1 SQ. FT. OF VENTILATION FOR EACH 150 S.F. OF AREA CRAWL SPACES SHALL BE PROVIDED W/ 1 SQ. FT. OF VENTILATION FOR EACH 150 S.F. OF AREA.
- THE MINIMUM CAPACITY FOR WATER HEATERS SHALL BE ACCORDANCE WITH THE FIRST HOUR RATING LISTED IN CPC 2019 SECTION 503 TABLE 501.1
- A GLOW, SPARK, ORFLAME SHALL BE LOCATED A MINIMUM OF 18 INCHES ABOVE GARAGE FLOOR(CMC 307.1) THE WATER HEATER SHALL HAVE ISOLATION VALVES ON BOTH THE COLD | 4 WATER SUPPLY AND THE HOT WATER PIPE LEAVING THE WATER HEATER, AND
- HOSE BIBS OR OTHER FITTINGS ON EACH VALVE FOR FLUSHING THE WATER HEATER WHEN THE VALVES ARE CLOSED. CBEES 110.3(C)7 HANDLE POSITION STOP SHALL BE PROVIDED ON SUCH VALVES AND SHALL BE
- WATER SETTING OF 120 DEGREE F (TYPE.). PROVIDE A MINIMUM 30" X30" CLEAR SPACE IN FRONT OF THE WATER HEATER
- FIRE BOX AND FURNACE FOR ACCESS TO SERVICE, REPAIR OR REPLACEMENT (CMC 904.11.5). PROVIDE CLOTHES DRYER MOISTURE EXHAUST DUCT(MIN. 4 INCHES DIA.) TO

THE OUTSIDE AND EQUIP WITH A BACK-DRAFT DAMPER EXHAUST DUCT LENGTH

- IS LIMITED TO 14 FT. WITH 2 ELBOWS.(CMC 504.3.2.2) BATHROOM AND LAUNDRY ROOM PROVIDE MECHANICAL VENTILATION SYSTEM MUST BE CAPABLE OF PRODUCING 5 AIR CHANGE PER HOUR FOR IN-ROOM VENTILATION SYSTEM(CRC R303.1) -- FOR MECHANICAL VENTILATION PROVIDE FAN WITH 50 CFM MINIMUM.
- 10. ALL HOSE BIBS MUST HAVE AN APPROVED ANTI-SIPHON DEVICE(CPC 603,4.7) FOR GARAGE PROVIDE 5/8" SHEET ROCK AT WALLS AND CEILING (CRC TABLE
- 12. DUCTS IN A PRIVATE GARAGE AND DUCT PENETRATING THE WALLS OR CEILING SEPARATING THE DWELLING UNIT FROM THE GARAGE SHALL BE CONSTRUCTED OF A MIN. No.26 GAGE STEEL OR OTHER APPROVED MATERIAL & SHALL HAVE NO OPENING INTO GARAGE(CRC R 302.5.2)
- 13. PROVIDE R-15 INSULATION AT WALLS BETWEEN GARAGE AND LIVING SPACE.
- 14. PROVIDE R-19 INSULATION AT GARAGE CEILING BETWEEN GARAGE AND LIVING AREAS, UNO. 15. SINGLE WALL METAL PIPE SHALL NOT BE USED AS A VENT IN THE DWELLING

AND RESIDENTIAL OCCUPANCIES PER CMC 802.7.3.

- 16. GAS APPLIANCES SHALL BE PROVIDED WITH COMBUSTION VENTILATION AND DILUTION AIR IN ACCORDANCE WITH APPLIANCES MANUFACTURES
- ASHARE 62.2 MECHANICAL VENTILATION /INDOOR AIR QUALITY FRANSFER AIR: VENTILATION AIR SHIALL BE PROVIDED DIRECTLY FROM THE OUTDOORS AND NOT AS TRANSFER AIR ADJACENT DWELLING UNITS OR OTHERS SPACES, SUCH AS GARAGES, UNCONDITIONED CRAWL SPACE, OR UNCONDITIONED ATTICS.
- INSTRUCTIONS AND LABELING: VENTILATION SYSTEM CONTROLS SHALL BE LABELED AND THE HOME OWNER SHALL BE PROVIDED WITH INSTRUCTIONS ON HOW TO OPERATE THE SYSTEM.
- COMBUSTION AND SOLID-FUEL BURNING APPLIANCES: COMBUSTION APPLIANCES SHALL BE PROPERLY VENTED AND AIR SYSTEMS SHALL BE DESIGNED TO PREVENT BACK DRAFTING.
- GARAGE SHALL BE SEALED. "HVAC" SYSTEM THAT INCLUDED AIR HANDLERS OR RETURN DUCTS LOCATED IN GARAGE'S SHALL HAVE TOTAL AIR LEAKAGE OF NO MORE THAN 6% OF TOTAL FAN FLOW
- MINIMUM FILTRATION: MECHANICAL SYSTEM SUPPLYING AIR TO OCCUPIABLE SPACE TROUGH DUCTWORK SHALL BE PROVIDED WITH A FILTER HAVING A MINIMUM EFFICENCY OF MERV6 OR BETTER. AIR INLETS: AIR INLETS(NOT EXHAUST)SHALL BE LOCATED AWAY FROM KNOW
- CONTAMINANTS. SOUND ALL CONTINUOUSLY OPERATING FANS SHALL BE RATED AT A MAXIMUM | PRESCRIPTIVE REQUIREMENTS OF SECTIONS 4303.1.1 THROUGH 4303.1.4.4. OF 1.0 SONE & INTERMITTENTLY OPERATED WHOLE-BUILDING VENTILATION
- LOCAL EXHAUST VENTILATION: BATHROOMS: PROVIDE AN EXHAUST FAN DUCTED TO THE OUTSIDE (MINIMUM 4" DIAMETER FLEX DUCT WITH A MAXIMUM LENGTH 70') WITH A MINIMUM

LOCAL EXHAUST FANS SHALL BE RATED A MAXIMUM OF 3.0 SONE.

FANS SHALL BE RATED A MAXIMUM OF 1.0 SONE INTERMITTENTLY OPERATED

- VENTILATION RATE OF 50 CFM. KITCHENS: PROVIDE AN EXHAUST FAN DUCTED TO THE OUTSIDE(MINIMUM 5" DIAMETER FLEX DUCT WITH A MAXIMUM LENGTH OF 35') VENTILATION RATE PF EXHAUST RATE IS 400 CFM OR GREATER. THE RATING MUST BE BASED ON A WATER COLUMN OF .25 OR GREATER, SEE ENERGY COMPLIANCE MANUAL
- SECTION 4.6.5, 4.6.7, CALIFORNIA ENERGY CODE 150(0), ASHRAE 62.2 18. THE FAN MUST BE LISTED AT 1 SONE OR LESS FOR NOISE. THE SIZE DEPENDS ON THE NUMBER OF BEDROOMS AND SQUARE FOOTAGE. SPECIFY THE FAN ON THE PLANS, DUCT SIZE AND INCLUDE THE CUT. THE RATING MUST BE BASED ON A WATER COLUMN OF .25 OR GREATER.

LAUNDRY ROOM NOTES:

- PROVIDE FLUORESCENT OR LED LIGHT & MANUAL-ON OCCUPANCY SENSOR-TURNOFF AUTOMATIC.
- ECHANICAL: 504.1.1 BACKDRAFT PROTECTION: EXHAUST DUCTS SHALL TERMINATE OUTSIDE THE BUILDING AND SHALL BE EQUIPPED WITH BACKDRAFT DAMPERS OR WITH MOTORIZED DAMPERS THAT AUTOMATICALLY SHUT WHERE THE SYSTEMS OR SPACES SERVED ARE NOT IN USE
- PROVIDE CLOTHES DRYER MOISTURE EXHAUST DUCT (MIN. 4 INCHES DIA.)TO THE OUTSIDE AND EQUIP WITH A BACK-DRAFT DAMPER AND NOT MORE THAN 14 FEET IN LENGTH, WITH AN ALLOWANCE OF 2 90° BENDS IN THAT 14 FT. DEDUCT 2 FT. FOR EACH ADDITIONAL 90 ° BEND IN EXCESS OF 2 [CMC 504.4.2.1]. CLOTHES DRYERS IN CLOSETS REQUIRE A MINIMUM OF 100 SQ. IN. OF MAKEUP
- AIR, WHICH CAN BE SUPPLIED BY LOUVERS OR UNDERCUTTING THE DOOR [CMC 504.4 EXHAUST INSTALLATION. DRYER EXHAUST DUCTS FOR CLOTHES DRYERS
- SHALL TERMINATE ON THE OUTSIDE OF THE BUILDING & SHALL BE EQUIPPED WITH A BACKDRAFT DAMPER. SCREENS SHALL NOT BE INSTALLED AT THE DUCT. TERMINATION. DUCTS SHALL NOT BE CONNECTED OR INSTALLED WITH SHEET METAL SCREWS OR OTHER FASTENERS THAT WILL BE OBSTRUCT THE EXHAUST FLOW . CLOTHES DRYER EXHAUST DUCTS SHALL NOT BE CONNECTED TO A VENT CONNECTOR, VENT OR CHIMNEY. CLOTHES DRYER EXHAUST DUCTS SHALL NOT EXTEND INTO OR THROUGH DUCTS OR PLENUMS.
- FLEXIBLE TRANSITION DUCTS (CONNECTORS) BETWEEN THE DRYER AND THE METAL DUCT ARE ALLOWED IN LENGTHS UP TO 6 FEET AND CANNOT BE CONCEALED WITHIN CONSTRUCTION [CMC 504.4.2.2 EXCEPTION]. THEY MUST BE UL LISTED AND LABELED (L&L) AS DRYER TRANSITION DUCTS, AND CANNOT BE

BE AFCI PROTECTED [CEC210.12A]

- ALL NEW OR ALTERED LIGHTING SHALL BE HIGH EFFICACY. [CNC 150.0(K)1A] AT LEAST ONE LIGHT SHALL BE CONTROLLED BY A VACANCY SENSOR (A MANUAL-ON, AUTOMATIC-OFF OCCUPANCY SENSOR). [CNC 150.0(K)2A].
- ALL 125-VOLT RECEPTACLES IN LAUNDRY AREAS GFCI PROTECTION, INCLUDING THE CLOTHES WASHER RECEPTACLE. [CEC 210.8A10]. RECEPTACLE OUTLETS SHALL BE TAMPER-RESISTANT EXCEPT THOSE WITHIN DEDICATED SPACE FOR AN APPLIANCE NOT EASILY MOVED FROM ONE PLACE TO ANOTHER (BEHIND CLOTHES WASHER), [CEC 406.12A]
- LIGHTS AND OTHER RECEPTACLES IN THE ROOM CANNOT BE ON THAT CIRCUIT [CEC 210C2]. ALL CIRCUITS SUPPLYING OUTLETS OR DEVICES IN THE LAUNDRY ROOM MUST

PLUMBING NOTES

- TERMINATION OF ALL ENVIRONMENTAL AIR DUCTS SHALL BE A MINIMUM OF 3 FEET FROM PROPERTY LINES OR ANY OPENING INTO THE BUILDING (DRYERS. BATH AND UTILITY FANS ETC.) MUST BE 3 FEET AWAY FROM DOORS, WINDOWS SKYLIGHTS OR ATTIC VENTS.
- ALL AIR DUCTS PENETRATING A SEPARATION WALL OR CEILING BETWEEN GARAGE AND LIVING AREAS SHALL BE 26 GA. MINIMUM.
- (WATER HEATER/DRYER/FURNACE) ELEMENTS OF APPLIANCES WHICH CREATE | 3. ALL NEW HOT WATER PIPING SHALL BE INSULATED PER CBEES 150.0(J) AND CPC
 - DOORS & PANELS OF BATHTUB ENCLOSURES SHALL BE FULLY TEMPERED LAMINATED SAFETY GLASS OR APPROVED PLASTIC. ALL GLAZING LESS THAN 60" ABOVE A SHOWER OR TUB FLOOR SHALL BE SAFETY GLAZING (SHALL BE TEMPERED) (CRC R308.4 ITEM 5).
- ADJUSTED PER MANUFACTURE'S INSTRUCTIONS TO DELIVER A MAXIMUM | 5. BATHTUB AND SHOWERS FLOORS, WALLS ABOVE BATHTUBS WITH A SHOWERHEADS COMPARTMENTS SHALL BE FINISHED WITH A NONABSORBENT SURFACE (e.g., CERAMIC ,TITLE OR FIBERGLASS) OVER MOISTURE RESISTANT UNDERLAYMENT (e.g. CEMENT, FIBER CEMENT, OR GLASS MAT GYPSUM BACKER) EXTENDING TO A HEIGHT OF NOT LESS THAN 6 FEET ABOVE THE DRAIN INLET. WATER RESISTANT GYPSUM BACKING BOARD SHALL NOT USED OVER VAPOR RETARDER IN SHOWER OR BATHTUB COMPARTMENTS. (CRC R702.3.8, R307.2).
 - ALL WATER CLOSET SHALL BE SET NO CLOSER THAN 15" FROM ITS CENTER TO ANY SIDE WALL OR OBSTRUCTION OR NO CLOSER THAN 30" CENTER TO CENTER TO ANY SIMILAR FIXTURE AND THE CLEAR SPACE IN FRONT OF IT SHALL BE LEAST 24" (CPC 407.5).
 - PROVIDE A MINIMUM SQUARE 32" BY 32" SHOWER STALL, 36" BY 36" MINIMUM DIMENSION FOR TRIANGULAR SHOWER STALL. NET AREA SHOWER COMPARTMENTS SHALL BE LESS THAN 1024 SQUARE INCHES AND SHALL ALSO BE CAPABLE OF ENCOMPASSING A 30 INCHES DIAMETER CIRCLE.(CPC 408.6)
 - MATERIALS FOR DRAIN, WASTE, VENT PIPE AND FITTINGS PIPE SHALL BE IN ACCORDANCE WITH ONE OF THE REFERENCE STANDARD IN TABLE 701.1 CPC 2019- EXCEPT THAT: ***NO GALVANIZED WROUGHT-IRON OR GALVANIZED STEEL PIPE SHALL BE USED UNDERGROUND AND SHALL BE KEPT NOT LESS THAT 6 INCHES ABOVE GROUND***ABS AND PVC DWV PIPING INSTALLATIONS SHALL BE INSTALLED IN ACCORDANCE WITH APPLICABLE STANDARDS REFERENCED IN 16. GROUND-FAULT CIRCUIT-INTERRUPTER PROTECTION FOR OUTLET RECEPTACLES TABLE 14-1 CPC 2019
 - 9. WATER HAMMER ARRESTOR SHALL BE INSTALLED AT ALL APPLIANCES FITTED WITH QUICK ACTING VALVES (DISHWASHERS, CLOTHES, WASHER).
 - 10. THE MAXIMUM HOT WATER TEMPERATURE DISCHARGING ROM THE BATHTUB AND WHIRLPOOL BATHTUB FILLER SHALL BE LIMITED TO 120 DEGREES FAHRENHEIT BY A DEVICE THAT IS IN ACCORDANCE WITH ASSE 1070 OR CSBA B125.3. WATER HEATER THERMOSTAT SHALL NOT BE CONSIDERED A CONTROL FOR MEETING THIS PROVISION. (CPC 409.4).
 - SHOWERS AND TUB-SHOWER COMBINATIONS SHALL BE PROVIDED WITH INDIVIDUAL CONTROL VALVES OF THE PRESSURE BALANCE, THERMOSTATIC OR COMBINATION PRESSURE BALANCE/ THERMOSTATIC MIXING VALVE TYPE THAT SCALD AND THERMAL SHOCK PROTECTION FOR THE RATED FLOW RATE OF THE INSTALLED SHOWERHEAD. (CPC 408.3).
- GARAGES: THE WALL AND OPENINGS BETWEEN OCCUPIABLE SPACES AND THE 12. PROVIDE NON-REMOVABLE BACK FLOW PREVENTION DEVICES ON ALL NEW EXTERIOR HOSE BIBS (IF ANY).
 - 13. ABS AND PVC DWV PIPE IS ALLOWED FOR DOMESTIC WATER SUPPLY AND/OR SANITARY WASTE SYSTEM PREVIOUS CITY INSPECTOR APPROVED.

CAL-GREEN PLUMBING NOTES:

AIR MOVING EQUIPMENT: AIR MOVING EQUIPMENT USED TO MEET EITHER THE | 4.303.1 WATER CONSERVING PLUMBING FIXTURES AND FITTINGS. PLUMBING WHOLE-BUILDING VENTILATION REQUIREMENTS OR THE LOCAL VENTILATION FIXTURES (WATER CLOSETS AND URINALS) AND FITTINGS (FAUCETS AND EXHAUST REQUIREMENTS SHALL BE RATED IN TERMS OF AIRFLOW AND SHOWERHEADS) INSTALLED IN RESIDENTIAL BUILDINGS SHALL COMPLY WITH THE

> 4.303.1.1 WATER CLOSETS. THE EFFECTIVE FLUSH VOLUME OF ALL WATER CLOSETS SHALL NOT EXCEED 1.28 GALLONS PER FLUSH. TANK-TYPE WATER CLOSETS SHALL BE CERTIFIED TO THE PERFORMANCE CRITERIA OF THE U.S. EPA WATER SENSE SPECIFICATION FOR TANK-TYPE TOILETS.

> **NOTE:** THE EFFECTIVE FLUSH VOLUME OF DUAL FLUSH TOILETS IS DEFINED AS THE COMPOSITE, AVERAGE TIUSH VOLUME OF TWO REDUCED FLUSHES AND ONE

100 CFM.THE FAN MUST BE LISTED AT 3 SONE OR LESS FOR NOISE UNLESS THE 4.303.1.2 URINALS. THE EFFECTIVE FLUSH VOLUME OF WALL MOUNTED URINALS SHALL NOT EXCEED 0.125 GALLONS PER FLUSH. THE EFFECTIVE FLUSH VOLUME OF ALL OTHER URINALS SHALL NOT EXCEED 0.5 GALLONS PER FLUSH.

4.303.1.3 SHOWERHEADS. 4.303.1.3.1 SINGLE SHOWERHEAD. SHOWERHEADS SHALL HAVE A MAXIMUM FLOW RATE OF NOT MORE THAN 1.8 GALLONS PER MINUTE AT 80 PSI. SHOWERHEADS SHALL BE CERTIFIED TO THE PERFORMANCE CRITERIA OF THE U.S. EPA WATERSENSE SPECIFICATION FOR SHOWERHEADS.

4.303.1.3.2 MULTIPLE SHOWERHEADS SERVING ONE SHOWER. WHEN A SHOWER IS $_{\perp}$ SERVED BY MORE THAN ONE SHOWERHEAD, THE COMBINED FLOW RATE OF ALL SHOWERHEADS AND/OR OTHER SHOWER OUTLETS CONTROLLED BY A SINGLE VALVE SHALL NOT EXCEED 1.8 GALLONS PER MINUTE AT 80 PSI, OR THE SHOWER SHALL BE DESIGNED TO ALLOW ONLY

ONE SHOWER OUTLET TO BE IN OPERATION AT A TIME A HAND-HELD SHOWER SHALL BE CONSIDERED A SHOWERHEAD. NOTE:

4.303.1.4 FAUCETS.

REFERENCED STANDARDS.

4.303.1.4.1 RESIDENTIAL LAVATORY FAUCETS. THE MAXIMUM FLOW RATE OF RESIDENTIAL LAVATORY FAUCETS SHALL NOT EXCEED 1.2 GALLONS PER MINUTE AT 60 PSI. THE MINIMUM FLOW RATE OF RESIDENTIAL LAVATORY FAUCETS SHALL NOT BE LESS THAN 0.8 GALLONS PER MINUTE AT 20 PSI.

4.303.1.4.2 LAVATORY FAUCETS IN COMMON AND PUBLIC USE AREAS. THE MAXIMUM FLOW RATE OF LAVATORY FAUCETS INSTALLED IN COMMON AND PUBLIC USE AREAS (OUTSIDE OF DWELLINGS OR SLEEPING UNITS) IN RESIDENTIAL BUILDINGS SHALL NOT EXCEED 0.5 GALLONS PER MINUTE AT 60 PSI.

4.303.1.4.3 METERING FAUCETS. METERING FAUCETS WHEN INSTALLED IN RESIDENTIAL BUILDINGS SHALL NOT DELIVER MORE THAN 0.2 GALLONS PER

4.303.1.4.4 KITCHEN FAUCETS. THE MAXIMUM FLOW RATE OF KITCHEN FAUCETS SHALL NOT EXCEED 1,8 GALLONS PER MINUTE AT 60 PSI. KITCHEN FAUCE:TS MAY TEMPORARILY INCREASE THE FLOW ABOVE THE MAXIMUM RATE, BUT INOT TO EXCEED 2.2 GALLONS PER MINUTE AT 60 PSI, AND MUST DEFAULT TO A MAXIMUM FLOW RATE OF 1.8 GALLONS PER MINUTE AT 60PSI. NOTE: WHERE COMPLYING FAUCETS ARE UNAVAILABLE, AERATORS OR OTHER

MEANS MAY BE USED TO ACHIEVE REDUCTION 4.303.2 STANDARDS FOR PLUMBING **FIXTURES AND FITTINGS**. PLUMBING FIXTURES AND FITTINGS REQUIRED IN SECTION 4.303.1 SHALL BE INSTALLED IN ACCORDANCE WITH THE CALIFORNIA PLUMBING CODE, AND SHALL MEET THE APPLICABLE

GREEN BUILDING MANDATORY MEASURES:

(CGBSC 702.1) HVAC SYSTEM INSTALLERS SHALL BE TRAINED & CERTIFIED IN THE PROPER INSTALLATION OF HVAC SYSTEMS INCLUDING DUCTS AND EQUIPMENT. A SEPARATE 20-AMP CIRCUIT IS REQUIRED FOR THE LAUNDRY EQUIPMENT. THE UNCERTIFIED PERSONS MAY PERFORM HVAC INSTALLATIONS ONLY WHEN UINDER THE DIRECT SUPERVISION AND RESPONSIBILITY OF CERTIFIED INSTALLER OR LICENISED HVAC CONTRACTOR, VERIFICATION OF CERTIFICATION IS REQUIRED.

ELECTRIC GENERAL NOTES

- ALL ELECTRICAL DEVICES AND WORK SHALL COMPLY WITH THE STANDARDS OF THE CRC, CBC AND CEC 2019 EDITION AND LOCAL REGULATIONS PERFORMANCE STANDARDS SHALL CONFORM TO ALL APPLICABLE CBC CODES AND
- REGULATIONS AS ESTABLISHED BY GOVERNING AND APPROVAL AGENCIES. ALL DEVICES SHALL BE "UL" APPROVED AND BEAR "UL" LISTING LABELS. UNLESS NOTED OTHERWISE ALL SWITCHES AND OUTLETS HEIGHTS SHALL BE AS
- NOTED ON THESE DRAWINGS. RECESSED CEILING FIXTURES SHALL BE "IC" (INSULATED COVER) APPROVED IF APPLICABLE.
- WALLS 2 FEET WIDE OR GREATER SHALL HAVE AN OUTLET. OUTLETS SHALL BE SPACED NO MORE THAN 12 FEET APART, AND A MAXIMUM OF 6 FEET FROM END OF
- WALLS OR POINT MEASURED HORIZONTAL ALONG THE FLOOR LINE IN ANY WALL SPACE WITH OPENING (CEC 210.52(A)). SWITCH & DUPLEX OUTLETS OF MULTIPLE SWITCHES UP TO FOUR WHEN SHOWN
- ADJACENT TO EACH OTHER ON PLAN SHALL BE GROUPED UNDER ONE PLATE. ALL ELECTRICAL OUTLETS WITHIN 6 FEET OF WATER USE AREAS SHALL BE GFCI OUTLETS.

ALL KITCHEN SHALL BE HIGH EFFICIENCY FLUORESCENT LIGHT

- AFCI (ARC-FAULT CIRCUIT-INTERRUPTER) PROTECTION IS REQUIRED FOR ALL 120V 15-& 20-AMP KITCHEN CIRCUITS [CEC210.12A] - AND - ALL RECEPTACLES SERVING KITCHEN COUNTERTOP SURFACES SHALL HAVE GFCI PROTECTION [210.8A6] 11. A MINIMUM OF TWO 20 AMP SMALL APPLIANCE BRANCH CIRCUITS SHALL BE
- PROVIDED FOR ALL RECEPTACLE OUTLETS IN THE KITCHEN ,DINING ROOM , PANTRY OR SIMILAR AREAS. (CEC 210.11.11 (C) (1). 12. IN THE KITCHEN PANTRIES BREAKFAST ROOMS, AND DINING ROOMS, A RECEPTACLE
- SHALL BE PROVIDED FOR EACH WALL COUNTERTOP SPACE WIDER THAN 12 INCHES SO THAT NO POINT IS MORE THAN 24" FROM OUTLET.(CEC 210.52(C)).
- 13. BATHROOM OUTLET(S) SHALL BE GFCI PROTECTED. AT LEAST ONE 20 AMP BRANCH CIRCUIT SHALL BE PROVIDED TO SUPPLY BATHROOM RECEPTACLE OUTLETS, SUCH CIRCUITS SHALL HAVE NO OTHERS OUTLETS. CEC 210.11 (C)(3)
- 14. IN BATHROOMS, GARAGES, LAUNDRY AND UTILITY ROOMS PROVIDE **LIGHTING
- HIGH EFFICACY OR MANUAL -ON OCCUPANCY SENSOR TURN OFF AUTOMATIC**. 15. AT LEAST ONE 20 AMP BRANCH CIRCUIT SHALL BE PROVIDED TO SUPPLY LAUNDRY RECEPTACLE OUTLETS, SUCH CIRCUITS SHALL HAVE NO OTHERS OUTLETS. CEC 210.11 (C)(2)
- INSTALLED IN RESIDENTIAL BATHROOMS, AT ALL KITCHEN COUNTERTOPS, LAUNDRY ROOMS, GARAGES, ACCESSORY STRUCTURES, OUTDOORS, CRAWLSPACES OR UNFINISHED BASEMENTS, AND WHERE THE RECEPTACLES ARE INSTALLED WITHIN 6 FEET OF THE OUTSIDE EDGE OF THE SINK. [CEC §210.8(A)]
- 17. ALL NEW 125-VOLT, RECEPTACLES, 15 AND 20 AMP BRANCH CIRCUITS INSTALLED IN DWELLING UNIT FAMILY ROOMS, KITCHENS, DINING ROOMS, LIVING ROOMS PARLORS, LIBRARIES, DENS, BEDROOMS, SUNROOMS, RECREATION ROOMS CLOSETS, HALLWAYS, LAUNDRY ROOMS OR SIMILAR ROOMS OR AREAS SHALL BE PROTECTED BY A LISTED ARC-FAULT CIRCUIT INTERRUPTER, COMBINATION TYPE INSTALLED TO PROVIDE PROTECTION OF THE BRANCH CIRCUITS. CEC 210.12(A)
- ALL INTERIOR ROOMS(e.g. LIVING ROOM, DINING HALLWAYS, STAIRS) PROVIDE HIGH EFFICIENCY LIGHT OR PROVIDE MANUAL ON MOTION SENSOR OR DIMMER SWITCHES. 19. INTERIOR STAIRWAYS SHALL HAVE A MINIMUM ILLUMINATION LEVEL 1 FOOT-CANDLE
- MEASURE AT THE CENTER OF TREADS AND LANDINGS.EXTERIOR STAIRWAYS SHALL BE PROVIDED WITH ARTIFICIAL LIGHT SOURCE LOCATED IN THE IMMEDIATE VICINITY OF THE BOTTOM LANDING OF THE STAIRWAY(CRC R303.6) 20. ALL EXTERIOR LIGHTS SHALL BE WEATHERPROOF FIXTURES (OUTDOOR LIGHTING
- ATTACHED TO BLDG. HIGH EFFICACY OR MOTION SENSOR PLUS PHOTO-CONTROL 21. PROVIDE AT LEAST ONE OUTSIDE WEATHERPROOF,GCFI 120 VOLT RECEPTACLE FRONT AND BACK OF DWELLING UNIT(CEC 201.52(E)(1) AND 210.8(A)(3))ADDITIONAL EXTERIOR RECEPTACLE REQUIREMENTS(CEC 210.8 AND 406.8) NEW EXTERIOR
- ELECTRICAL RECEPTACLES INSTALLED MUST BE GFCI PROTECTED, WATER RESISTANT, AND IN A WATERPROOF ENCLOSURE 22. PROVIDE AT LEAST ONE RECEPTACLE IN GARAGE OR BASEMENT IN ADDITION TO ANY RECEPTACLE PROVIDED FOR SPECIFIC EQUIPMENT(CEC 201.52(G)). 23. PROVIDE HARD WIRED W/BATTERY BACKUP SMOKE DETECTORS INSIDE THE EACH
- SLEEPING ROOMS OUTSIDE EACH SEPARATE SLEEPING AREA IN THE IMMEDIATE VICINITY OF THE BEDROOMS (LOCATED AT THE CORRIDOR GIVING ACCESS TO THE
- 24. NEW HEATING REGISTERS SHALL BE CONNECTED TO THE CENTRAL GAS HEATING SYSTEM (TYP). 25. NFRG TEMPORARY LABELING ON THE NEW WINDOW SHALL NOT BE REMOVE UNTIL
- INSPECTED BY THE ENFORCEMENT AGENCY. 26. PROVIDE ILLUMINATED NUMBER AT FRONT OF BUILDING.
- PROVIDE ELECTRIC MAIN PANEL WITH 200 AMPERE MIN. , PROVIDE MINIMUM 20' LENGHT OF #4 BARE COOPER FOR A CONCRETE ENCASED 28. REQUIRED INTERSYSTEM BONDING ELECTRODE. AN INTERSYSTEM BONDING ELECTRODE INCLUDES PROVISIONS FOR CONNECTING LEAST THREE GROUNDING OR BONDING CONDUCTORS REQUIRED FOR COMMUNICATIONS SYSTEMS SHALL BE INSTALLED EXTERNALLY AT THE SERVICE ENTRANCE PANEL AS SPECIFIED IN CEC
- 29. ADDITIONAL ELECTRICAL NOTES: (CHANGES TO THE 2013 CEC , PER 2019 CEC ART.210.8(A) DWELLING UNITS. GFCI PROTECTION IS REQUIRED FOR ALL 15A AND 20A, 125V RECEPTACLES INSTALLED IN THE FOLLOWING LOCATIONS):
- SINK: GCFI PROTECTION FOR RECEPTACLES IS REQUIRED WITHIN AN ARC MEASUREMENT OF 6 FT. FROM THE OUTSIDE EDGE OF A SINK.
- BATHTUBS OR SHOWER: GCFI PROTECTION FOR RECEPTACLES IS REQUIRED WITHIN AN ARC MEASUREMENT OF 6 FT. FROM THE OUTSIDE EDGE OF A BATHTUB

LAUNDRY AREAS: RECEPTACLES INSTALLED IN THE LAUNDRY AREAS OF A

DWELLING UNIT SHALL BE GFCI PROTECTED. DWELLING UNIT DISHWASHER - OUTLETS (NOT FOR A HARDWARE APPLIANCE) SUPPLYING DISHWASHER IN A DWELLING UNIT MUST BE GFCI PROTECTED PER 2019

CEC Art CEC 210.8 9D) LIGHTING REQUIREMENTS NOTES

800.100(B) AND CEC 250.94.

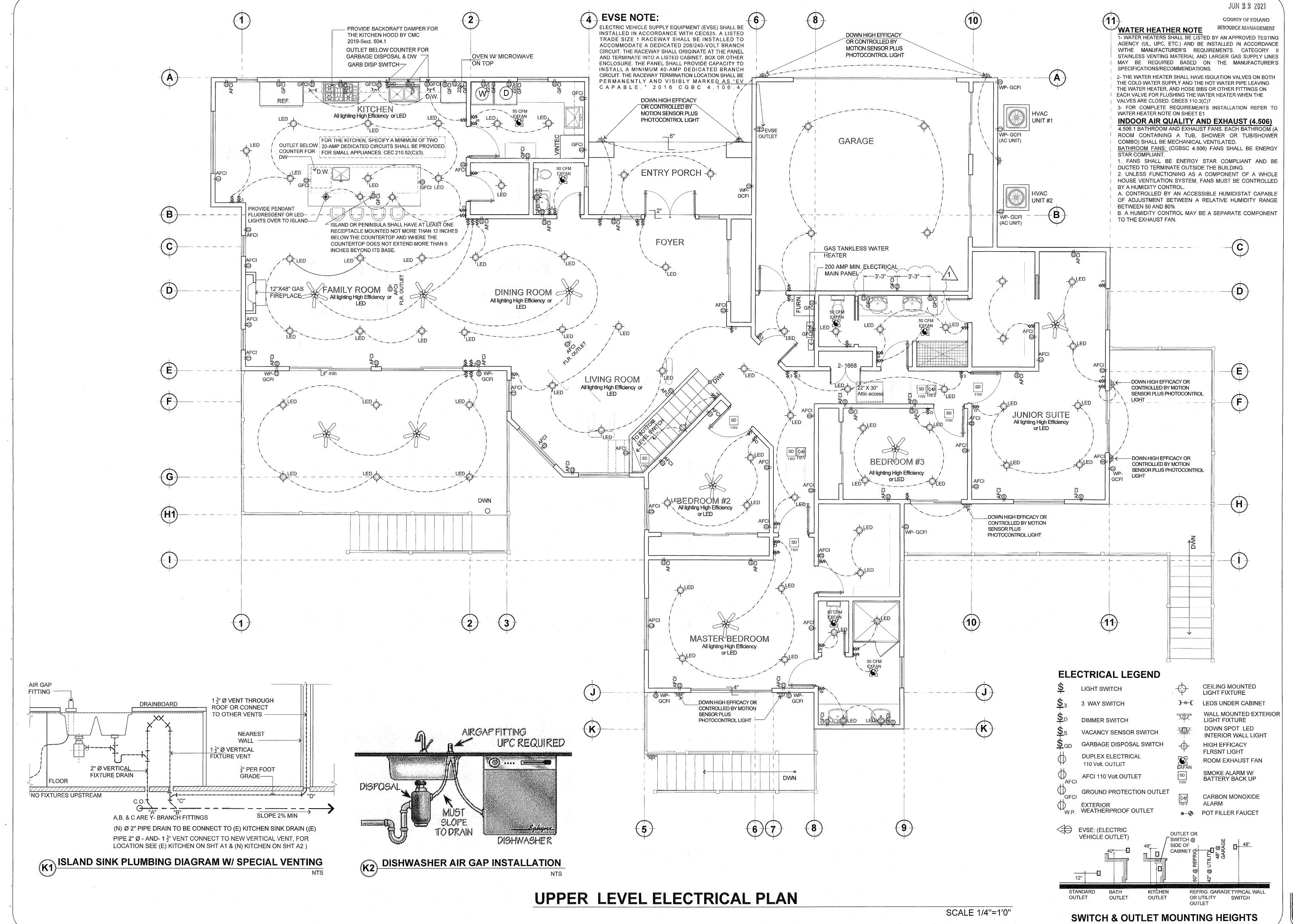
- ALL INSTALLED LUMINAIRES SHALL BE HIGH-EFFICACY IN ACCORDANCE WITH TABLE 150.0(k) 1A
- SHALL BE HEIGHT EFFICACY, AT LEAST ONE LUMINAIRE IN THE BATHROOMS, GARAGES, LAUNDRY ROOMS & UTILITY ROOMS SHALL BE CONTROLLED BY A
- VACANCY SENSOR 150 (K) 2J ALL LUMINAIRES RECESSED INTO CEILING SHALL MEET ALL OF THE FOLLOWING PER 150.0 (K) 1C
- 1) LISTED FOR ZERO CLEARANCE INSULATION 2) LABELED THAT CERTIFIES THE LUMINAIRE IS AIRTIGHT WITH A LEAKAGE LESS THAN
- 2.0CFM AT 75 PASCALS, SEALED WITH A GASKET OR CAULK, ALLOW CERTIFIED AIRTIGHT LUMINAIRES WITH AIR LEAKAGE LESS 2.0 CFM AT 75 PASCAL's 3) SEALED WITH A GASKET OR CAULK, WILL ALLOW REPLACEMENT & MAINTENANCE TO
- BE READILY ACCESSIBLE FROM BELOW THE CEILING WITHOUT CUTTING HOLES IN THE 4)NO CONTROLS SHALL BYPASS A DIMMER OR VACANCY SENSOR FUNCTION WHERE THAT DIMMER OR VACANCY SENSOR HAS BEEN INSTALLED TO COMPLY WITH
- 150.0(K).SHALL NOT CONTAIN SCREW BASE SOCKETS , AND SHALL CONTAIN LIGHT SOURCES THAT COMPLY WITH JA8. AL OUTDOOR (HIGH EFFICACY) LIGHTHING SHALL BE CONTROLLED BY A MANUAL

ON & OFF SWITCH OR CONTROLLED BY PHOTOCELL & MOTION SENSOR.

EXTERIOR LUMINAIRES TO BE HIGH EFFICACY AND SHALL MEET THE FOLLOWING REQUIREMENTS, AS APPLICABLE PER CEC 150.0(K)(3):

1-CONTROLLED BY A MANUAL ON AND OFF SWITCH THAT DOES NOT OVERRIDE TO ON THE AUTOMATIC ACTIONS OF ITEMS B) OR C) BELOW; AND

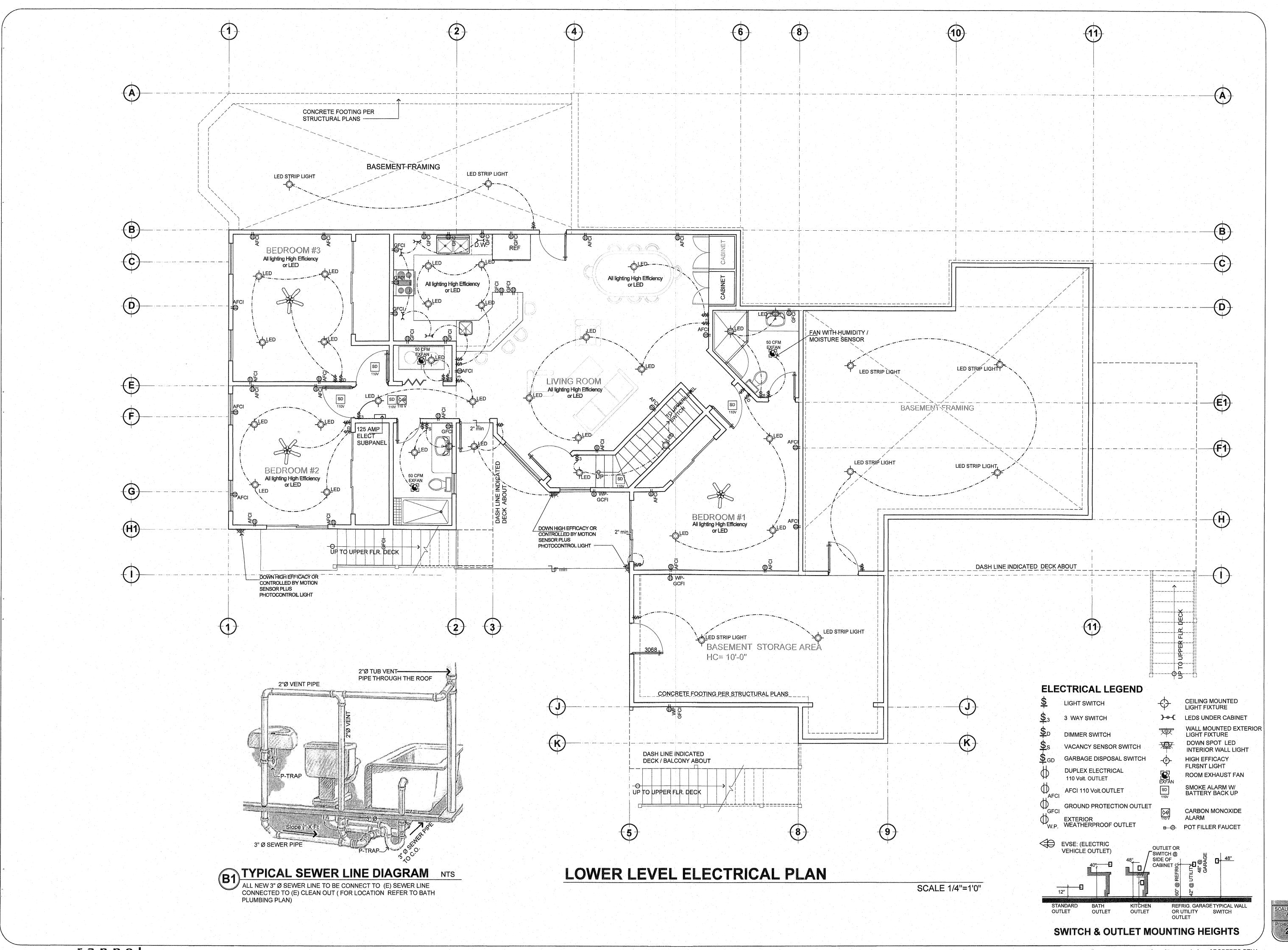
- 2-CONTROLLED BY PHOTOCELL AND MOTION SENSOR. CONTROLS THAT OVERRIDE TO ON SHALL NOT BE ALLOWED UNLESS THE OVERRIDE AUTOMATICALLY REACTIVATES THE MOTION SENSOR WITHIN 6 HOURS; OR 3-CONTROLLED BY ONE OF THE FOLLOWING METHODS:
- 3.1- PHOTOCONTROL AND AUTOMATIC TIME SWITCH CONTROL. 3.2- ASTRONOMICAL TIME CLOCK. 3.3- ENERGY MANAGEMENT CONTROL SYSTEM

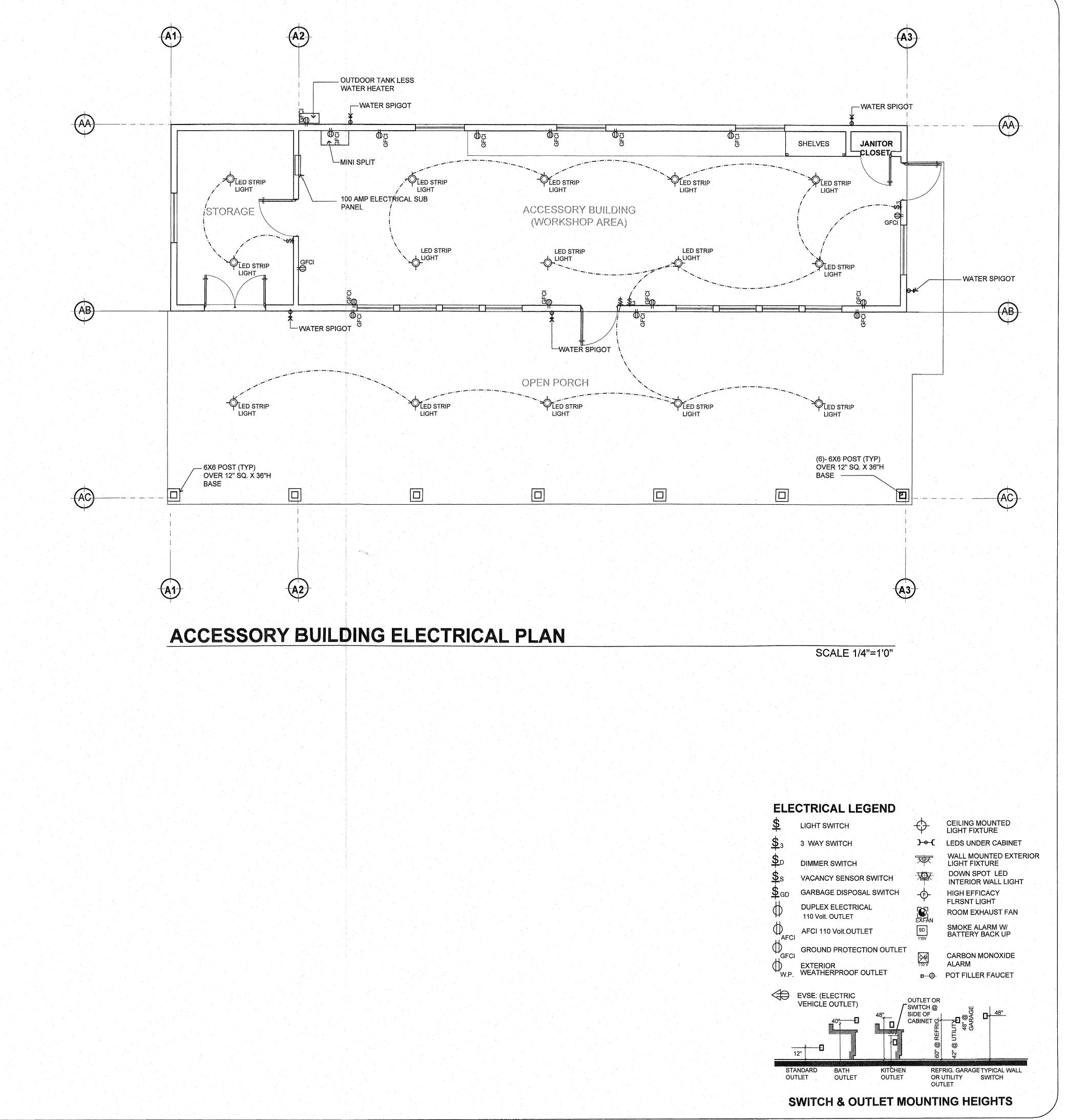


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Part	culation Description	STRUCTIONS		T	-			ribd19x	T		T		2 story ranpel
Column C									Interior / Exteri	or		80	vors.
Description Control	Construction Name	Surfac	е Туре	Construc	tion Type	Framin	ะ			U-factor			
	floor 19	- 1		Wood Fra	med Floor	2x6 @ 24 in.	. o. c.	R-13	None / None	0.061	Si Ca	Floor Deck: W ding/sheathing/ wity / Frame: R-	/ood /decking 13 / 2x6
Part	Roof Attic			1		2x4 @ 16 in.	, O. C.	R-38	None / None	0.025	Ca Insi	vity / Frame: R-! de Finish: Gypsi	9.1 / 2x4 um Board
Property		Exterio	r Floors	Wood Fra	med Floor	2x12 @ 16 in	}				Sie	Floor Deck: W ding/sheathing/ rame: R-19 in 5	ood/decking
The content of the		Interio	r Floors	1224		2x12 @ 16 in	n. O. c. R		None / None	0.196	Si Cavit	Floor Deck: W ding/sheathing/ y / Frame: no in	/ood /decking nsul. / 2x12
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Column C	roject Name: Rebuil alculation Descripti	t Two Story h		•			Input F	ile Name: 132				e main house	(Page 8 of 12)
Description Septem Type									06	07			
### PROFESSION 16 16 16 16 16 16 16 1	Name	System Type	Syst	ems in				Water Hea	iter Name (#)	Solar Heatin	g System	•	I I
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Name Honester Francisco	/ATER HEATERS			A CONTRACTOR OF THE CONTRACTOR								- symmetria de la companya de la com	
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No. 10 OF 10	DHW Heater 1	Gas	Consu Instanta	neous	2/ 0 =	V.JO-OEF	Btu/Hr	0			n/a		n/a
Name Pipe Insulation Pentilel Piping Compact Distribution Type 39.14 dot DOW 5ys 1 Not Required Not Re		I	est. L		THE RESERVE OF THE PARTY OF THE			0 V 1	D En		0.3		08
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Component 2:Heating Component 2:Air other other Component 2:Air ot	ERTIFICATE OF COM roject Name: Rebuil alculation Description PACE CONDITIONING	t Two Story ho	nalysis 02	/pe	Heating U	nit Cooling Unit	Input F duplex.	ile Name: 132 ribd19x 06	07 Required Thermosta	nt Valley Ro	09 Verified Existing	10 Heating Equipment	2 story ranpel 11 Cooling Equipment
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up 4 b	oed		Condit	tioned			2774				9				1	
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Name	CFA (ft2)	Numb	er of Nur	mber in	n Hadi	Space Cond		tems Assi	lened		DI	-IW System		IAO V	ent Fan N	Jame
		Bedro	oms Bu	ilding	A American	<u> </u>	r rs	\	V· I	<u>D 1</u>	R	Name	<u></u>		2110.	
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Name		Zone		Construction	on	Azimut	h	Orientati	on	Gross	Area (f	t ²)	Vindow and Area (ft2		7	Γilt (deg)
F		On 2 bed		r15		270		Front			380	Market and a factor of the second of the sec	20			90
L B		On 2 bed On 2 bed		r15 r15		90		Left Back			240 380	Tanadasa	8 60	No. A. A. Indiana	1000	90 90
R		On 2 bed		r15		180		Right			240		100	Janana nuo a		90
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01		02		03		04		05		***************************************	06		07 Vindow and	Door		08
Name		Zone		Constructio	on	Azimut	h ()rientation	on	Gross	Area (fi	²) V	vindow and Area (ft2		Т	ilt (deg)
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Raised Floor		up 4 bed	R-19 F	loor No Cra		n/a		n/a			359		n/a	,		n/a
Raised Floor 2 Raised Floor 3		On 2 bed up 4 bed		floor 19 floor 19		n/a n/a		n/a			1200 1400		n/a n/a			n/a n/a
Interior Surface	-	ip 4 bed	Default	t Floor No	Crwlspce	n/a		n/a n/a			1737		n/a	<u></u>		n/a
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CERTIFICATE OF COMPLIANCE

	OF COMPLIANCE				CF1R-PRF-01
	e: Rebuilt Two Story house			ation Date/Time: 2021-07-01T12:08:21-	
alculation	Description: Title 24 Analysis		Input	File Name: 13220 6829 Pleasant Valley R	oad ,Vacaville main house 2 story rangel
ENERAL INF	ORMATION		dupie	x.ribd19x	Man And And And And And And And And And An
01	Project Name				
02	Run Title			APPLACEMENT OF THE PROPERTY OF	
03	Project Location			NUMBER OF THE CONTROL	
04	City			Standards Version	2019
06	Zip code			Software Version	EnergyPro 8.2
80	Climate Zone	12	09	Front Orientation (deg/ Cardinal)	270
10	Building Type	Multifamily	11	Number of Dwelling Units	2
12	Project Scope	NewConstruction	13	Number of Bedrooms	6
14	Addition Cond. Floor Area (ft ²)	0	15	Number of Stories	2
16	Existing Cond. Floor Area (ft ²)	n/a	17	Fenestration Average U-factor	0.26
18	Total Cond. Floor Area (ft ²)	4348	19	Glazing Percentage (%)	15.94%
20	ADU Bedroom Count	n/a	**2 1 **		n/a
22	Is Natural Gas Available?	01-05 00K 25R 10Z 10M 60K 30Q 1	446		
OMPLIANCE		Carl Carl II Torri Barri I			
01	Building Complies with Computer	Performance	<u> 17</u>	<u>ovides </u>	
02		s that require field testing and/or verification	. L	All different distances	
03		more Special Features shown below	i nà a ce	a uneu richa later under the supervision of a	сес-арргоуец неко provider.
	This bunding medipolates one of	inote phecial Learnies Strown nerom			· · · · · · · · · · · · · · · · · · ·

Project Name: Rebuilt Two Story house		Calculation Dat	e/Time: 2021-07-01T1:	2:08:21-07:00	(Page 2 of 12)	
CERTIFICATE OF COMPLIANCE					CF1R-PRF-01E	

Registration Date/Time: 2021-07-02 00:53:40

Report Version: 2019.1.300

Schema Version: rev 20200901

CalCERTS inc.

Report Generated: 2021-07-01 12:09:15

Registration Number: 221-P010135710A-000-000-0000000-0000

CA Building Energy Efficiency Standards - 2019 Residential Compliance

ENERGY DESIGN RATI	NG				
		Energy Desig	n Ratings	Complianc	e Margins
		Efficiency¹ (EDR)	Total ^z (EDR)	Efficiency¹ (EDR)	Total² (EDR)
	Standard Design	50.9	28.7		
:	Proposed Design	49.5	27,4	1.4	1.3
	*** Control of the Co	RESULT: 3: C	OMPLIES		THE RESERVE OF THE PROPERTY OF
2: Total EDR includes	ides improvements to the building envelop efficiency and demand response measures when efficiency and total compliance marg	such as photovoltaic (PV) systems a	and batteries		

			ENERGY USE SUMN	ARY (
	 Energy Use (kTDV/ft ² -yr)	Standard Design	in and the second	Proposed Design	Compliance Margin	Percent Improvement
	 Space Heating	15.69	D PM	16.34 1 1	-0.65	-4.1
	Space Cooling	26.86		25	1.86	6.9
	IAQ Ventilation	2.66		2.66	0	0 7 1
	Water Heating	12.59		10.87	1.72	13.7
	Self Utilization/Flexibility Credit	n/a		0	o	n/a
	Compliance Energy Total	57.8		54.87	2.93	5.1

REQUIRED PV SYS	TEMS - SIMPLIFIED	·				<u> </u>					
01	02	03	04	05	06	07	08	09	10	11	12
DC System Size (kWdc)	Exception	Module Type	Array Type	Power Electronics	CFI	Azimuth (deg)	Tilt Input	Array Angle (deg)	Tilt: (x in 12)	Inverter Eff. (%)	Annual Solar Access (%)
5.45	NA	Standard	Fixed	none	true	150-270	n/a	n/a	<=7:12	96	100

		<u> </u>		
Registration Number:	Registration Date/Time:		HERS Provider:	O JOSEPHO II
221-P010135710A-000-000-0000000-0000	2021-07-02 00:55:40			CalCERTS inc.
CA Building Energy Efficiency Standards - 2019 Residential Compliance	Report Version: 2019.1.300		Report Generated: 2021-07-01	1 12:09:15
	Schema Version: rev 20200901			

CERTIFICATE OF COMPLIANCE	CF1R-PRF-01E
Project Name: Rebuilt Two Story house	Calculation Date/Time: 2021-07-01T12:08:21-07:00 (Page 3 of 12)
Calculation Description: Title 24 Analysis	Input File Name: 13220 6829 Pleasant Valley Road ,Vacaville main house 2 story ranpel duplex.ribd19x
REQUIRED SPECIAL FEATURES	

REC	UIRED SPECIAL FEATURES	
The	following are features that must be installed as condition for meeting the modeled energy performance for this computer analysis.	
	Cool roof Insulation below roof deck Non-standard duct location (any location other than attic)	

The following is a summary of the features that mu					eled energy performance for this	computer analysis. Addition
detail is provided in the buildng tables below. Regil	stered CF2Rs a	nd CF3Rs are requir	ed to be completed in the	HERS Registry	Miller (Meldelle le coper e replante e contribé en quaire l'antenire commè re representation accesses années e	
Building-level Verifications:						
 Quality insulation installation (QII) 						
Indoor air quality ventilation						
Kitchen range hood						
Cooling System Verifications:	\$ - C					

noung placem semications.	10 miles (10 miles)	7.5								
Minimum Airflow										
Verified EER										
Verified SEER			4000			guin giri	in talangaris	2000	24	
Fan Efficacy Watts/CFM				ALCOHOL: NA		A A)		1000	A APPEARS
eating System Verifications:		4				7				
None			The same	Carl H	H Wasse	Const I	# #	most f	器 選	C now !
VAC Distribution System Verifications:			11	Garage Contrar	() C		7 6	1/1	The Land	17
Duct leakage testing	• *	41	8 8	Barret	* *	1 1	The think	3/ I	Lus E.	* *
Ducts located entirely in condition	ned space	confirmed by	duct lea	kage te	sting					

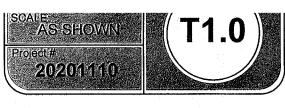
ſ	BUILDING - FEATURES INFORMA	ATION						
• •	01	02	03	04	05	06	07	
	Project Name	Conditioned Floor Area (ft ²)	Number of Dwelling Units	Number of Bedrooms	Number of Zones	Number of Ventilation Cooling Systems	Number of Water Heating Systems	
ľ	Rebuilt Two Story house	4348	2	6	2	0	2	

Registration Number: 221-P010135710A-000-000-0000000-0000 CA Building Energy Efficiency Standards - 2019 Residential Compliance

Domestic Hot Water System Verifications:

-- None --

Registration Date/Time: 2021-07-02 00:53:40 HERS Provider: CalCERTS inc. Report Version: 2019.1.300 Report Generated: 2021-07-01 12:09:15 Schema Version: rev 20200901



Schema Version: rev 20200901

CF1R-PRF-01E

2019 Low-Rise Residential Mandatory Measures Summary

Mariji da	
§ 150.0(k)2G:	Interior Switches and Controls. An energy management control system (EMCS) may be used to comply with control requirements if it: provides functionality of the specified control according to § 110.9; meets the Installation Certificate requirements of § 130.4; meets the
	EMCS requirements of § 130.0(e); and meets all other requirements in § 150.0(k)2.
	Interior Switches and Controls. A multiscene programmable controller may be used to comply with dimmer requirements in § 150.0(k) if it
§ 150.0(k)2H:	provides the functionality of a dimmer according to § 110.9, and complies with all other applicable requirements in § 150.0(k)2.
	Interior Switches and Controls. In bathrooms, garages, laundry rooms, and utility rooms, at least one luminaire in each of these spaces must
§ 150.0(k)2I:	be controlled by an occupant sensor or a vacancy sensor providing automatic-off functionality. If an occupant sensor is installed, it must be
g 150.0(n)21.	initially configured to manual-on operation using the manual control required under Section 150.0(k)2C.

Interior Switches and Controls. Luminaires that are or contain light sources that meet Reference Joint Appendix JA8 requirements for dimming, and that are not controlled by occupancy or vacancy sensors, must have dimming controls." Interior Switches and Controls. Under cabinet lighting must be controlled separately from ceiling-installed lighting systems. § 150.0(k)2K:

Residential Outdoor Lighting. For single-family residential buildings, outdoor lighting permanently mounted to a residential building, or to othe buildings on the same lot, must meet the requirement in item § 150.0(k)3Ai (ON and OFF switch) and the requirements in either 150.0(k)3Ali (photocell and either a motion sensor or automatic time switch control) or § 150.0(k)3Alii (astronomical time clock), or an EMCS. sidential Outdoor Lighting. For low-rise residential buildings with four or more dwelling units, outdoor lighting for private patios, entrances, balconies, and porches; and residential parking lots and carports with less than eight vehicles per site must comply with either § 150.0(k)3A or § 150.0(k)3B: with the applicable requirements in Sections 110.9, 130.0, 130.2, 130.4, 140.7 and 141.0.

tesidential Outdoor Lighting. For low-rise residential buildings with four or more dwelling units, any outdoor lighting for residential parking lots or carports with a total of eight or more vehicles per site and any outdoor lighting not regulated by § 150.0(k)3B or § 150.0(k)3D must comply with the applicable requirements in Sections 110.9, 130.0, 130.2, 130.4, 140.7 and 141.0.

Internally illuminated address signs. Internally illuminated address signs must comply with § 140.8; or must consume no more than 5 watts of power as determined according to § 130.0(c). Residential Garages for Eight or More Vehicles. Lighting for residential parking garages for eight or more vehicles must comply with the § 150.0(k)5:

applicable requirements for nonresidential garages in Sections 110.9, 130.0, 130.1, 130.4, 140.6, and 141.0.

Interior Common Areas of Low-rise Multifamily Residential Buildings. in a low-rise multifamily residential building where the total interior common area in a single building equals 20 percent or less of the floor area, permanently installed lighting for the interior common areas in that building must be comply with Table 150.0-A and be controlled by an occupant sensor. Interior Common Areas of Low-rise Multifamily Residential Buildings. In a low-rise multifamily residential building where the total interior common area in a single building equals more than 20 percent of the floor area, permanently installed lighting for the interior common areas in

II. Lighting Installed in corridors and stairwells must be controlled by occupant sensors that reduce the lighting power in each space by at least 50 percent. The occupant sensors must be capable of turning the light fully on and off from all designed paths of ingress and egress. Single Family Residences. Single family residences located in subdivisions with 10 or more single family residences and where the

i. Comply with the applicable requirements in Sections 110.9, 130.0, 130.1, 140.6 and 141.0; and

§ 110.10(a)1: application for a tentative subdivision map for the residences has been deemed complete and approved by the enforcement agency, which do not have a photovoltaic system installed, must comply with the requirements of § 110.10(b) through § 110.10(e). Low-rise Multifamily Buildings. Low-rise multi-family buildings that do not have a photovoltaic system installed must comply with the requirements of § 110.10(b) through § 110.10(d).

Minimum Solar Zone Area. The solar zone must have a minimum total area as described below. The solar zone must comply with access, pathway, smoke ventilation, and spacing requirements as specified in Title 24, Part 9 or other parts of Title 24 or in any requirements adopted by a local jurisdiction. The solar zone total area must be comprised of areas that have no dimension less than 5 feet and are no less than 80 square feet each for buildings with roof areas less than or equal to 10,000 square feet or no less than 160 square feet each for buildings with roof areas greater than 10,000 square feet. For single family residences, the solar zone must be located on the roof or overhand of the building and have a total area no less than 250 square feet. For low-rise multi-family buildings the solar zone must be located on the roof or overhang of the building, or on the roof or overhang of another structure located within 250 feet of the building, or on covered parking installed with the building project, and have a total area no less than 15 percent of the total roof area of the building excluding any skylight area. The solar zone equirement is applicable to the entire building, including mixed occupancy.*

Azimuth. All sections of the solar zone located on steep-sloped roofs must be oriented between 90 degrees and 300 degrees of true north. Shading. The solar zone must not contain any obstructions, including but not limited to: vents, chimneys, architectural features, and roof § 110.10(b)3A: mounted equipment.* Shading. Any obstruction located on the roof or any other part of the building that projects above a solar zone must be located at least twice the

§ 110.10(b)3B: distance, measured in the horizontal plane, of the height difference between the highest point of the obstruction and the horizontal projection of the nearest point of the solar zone, measured in the vertical plane.* tructural Design Loads on Construction Documents. For areas of the roof designated as a solar zone, the structural design loads for roof dead load and roof live load must be clearly indicated on the construction documents. nterconnection Pathways. The construction documents must indicate: a location reserved for inverters and metering equipment and a pathway reserved for routing of conduit from the solar zone to the point of interconnection with the electrical service; and for single family residences and central water-heating systems, a pathway reserved for routing plumbing from the solar zone to the water-heating system.

ocumentation. A copy of the construction documents or a comparable document indicating the information from § 110.10(b) through § 110.10(c) must be provided to the occupant. § 110.10(e)1: Main Electrical Service Panel. The main electrical service panel must have a minimum busbar rating of 200 amps. Main Electrical Service Panel, The main electrical service panel must have a reserved space to allow for the installation of a double pole circu

breaker for a future solar electric installation. The reserved space must be permanently marked as "For Future Solar Electric".

	Oleman Alexandra de la companya del companya del companya de la companya del la companya de la c
§ 150.0(h)3A:	Clearances. Air conditioner and heat pump outdoor condensing units must have a clearance of at least five feet from the outlet of any dryer
§ 150.0(h)3B:	Liquid Line Drier. Air conditioners and heat pump systems must be equipped with liquid line filter driers if required, as specified by the manufacturer's instructions.
§ 150.0(j)1:	Storage Tank Insulation. Unfired hot water tanks, such as storage tanks and backup storage tanks for solar water-heating systems, must have a minimum of R-12 external insulation or R-16 internal insulation where the internal insulation R-value is indicated on the exterior of the tank.
§ 150.0(j)2A;	Water Piping, Solar Water-heating System Piping, and Space Conditioning System Line Insulation. All domestic hot water piping must be insulated as specified in Section 609.11 of the California Plumbing Code. In addition, the following piping conditions must have a minimum insulation wall thickness of one inch or a minimum insulation R-value of 7.7: the first five feet of cold water pipes from the storage tank; all hot water piping with a nominal diameter equal to or greater than 3/4 inch and less than one inch; all hot water piping with a nominal diameter less than 3/4 inch that is: associated with a domestic hot water recirculation system, from the heating source to storage tank or between tanks, buried below grade, and from the heating source to kitchen fixtures.*
§ 150.0(j)3:	Insulation Protection. Piping insulation must be protected from damage, including that due to sunlight, moisture, equipment maintenance, and wind as required by Section 120.3(b). Insulation exposed to weather must be water retardant and protected from UV light (no adhesive tapes). Insulation covering chilled water piping and refrigerant suction piping located outside the conditioned space must include, or be protected by, a Class I or Class II vapor retarder. Pipe insulation buried below grade must be installed in a waterproof and non-crushable casing or sleeve.
§ 150.0(n)1:	Gas or Propane Water Heating Systems. Systems using gas or propane water heaters to serve individual dwelling units must include all of the following: A dedicated 125 volt, 20 amp electrical receptacle connected to the electric panel with a 120/240 volt 3 conductor, 10 AWG copper branch circuit, within three feet of the water heater without obstruction. Both ends of the unused conductor must be labeled with the word "spare" and be electrically isolated. Have a reserved single pole circuit breaker space in the electrical panel adjacent to the circuit breaker for the branch circuit and labeled with the words "Future 240V Use"; a Category III or IV vent, or a Type B vent with straight pipe between the outside termination and the space where the water heater is installed; a condensate drain that is no more than two inches higher than the base of the water heater, and allows natural draining without pump assistance; and a gas supply line with a capacity of at least 200,000 Btu per hour.
§ 150.0(n)2:	Recirculating Loops. Recirculating loops serving multiple dwelling units must meet the requirements of § 110.3(c)5.
§ 150.0(n)3:	Solar Water-heating Systems. Solar water-heating systems and collectors must be certified and rated by the Solar Rating and Certification Corporation (SRCC), the International Association of Plumbing and Mechanical Officials, Research and Testing (IAPMO R&T), or by a listing agency that is approved by the Executive Director.
Ducts and Fans	Measures:
§ 110.8(d)3:	Ducts. Insulation installed on an existing space-conditioning duct must comply with § 604.0 of the California Mechanical Code (CMC). If a contractor installs the insulation, the contractor must certify to the customer, in writing, that the insulation meets this requirement.
§ 150.0(m)1:	CMC Compliance. All air-distribution system ducts and plenums must meet the requirements of the CMC §§ 601.0, 602.0, 603.0, 604.0, 605.0 and ANSI/SMACNA-006-2006 HVAC Duct Construction Standards Metal and Flexible 3rd Edition. Portions of supply-air and return-air ducts and plenums must be insulated to a minimum installed level of R-6.0 or a minimum installed level of R-4.2 when ducts are entirely in conditioned space as confirmed through field verification and diagnostic testing (RA3.1.4.3.8). Portions of the duct system completely exposed and surrounded by directly conditioned space are not required to be insulated. Connections of metal ducts and inner core of flexible ducts must be mechanically fasteried. Openings must be sealed with mastic, tape, or other duct-closure system that meets the applicable requirements of UL 181A, or UL 181B or aerosol sealant that meets the requirements of UL 723. If mastic or tape is used to seal openings greater than ½ inch, the combination of mastic and either mesh or tape must be used. Building cavities, support platforms for air handlers, and plenums designed or constructed with materials other than sealed sheet metal, duct board or flexible duct must not be used to convey conditioned air. Building cavities and support platforms may contain ducts. Ducts installed in cavities and support platforms must not be compressed to cause reductions in the cross-sectional area.*
§ 150.0(m)2:	Factory-Fabricated Duct Systems. Factory-fabricated duct systems must comply with applicable requirements for duct construction, connections, and closures; joints and seams of duct systems and their components must not be sealed with cloth back rubber adhesive duct tapes unless such tape is used in combination with mastic and draw bands.
§ 150.0(m)3:	Field-Fabricated Duct Systems. Field-fabricated duct systems must comply with applicable requirements for: pressure-sensitive tapes, mastics, sealants, and other requirements specified for duct construction.
§ 150.0(m)7:	Backdraft Damper. Fan systems that exchange air between the conditioned space and outdoors must have backdraft or automatic dampers.
§ 150.0(m)8:	Gravity Ventilation Dampers. Gravity ventilating systems serving conditioned space must have either automatic or readily accessible, manually operated dampers in all openings to the outside, except combustion inlet and outlet air openings and elevator shaft vents.
§ 150.0(m)9:	Protection of Insulation. Insulation must be protected from damage, sunlight, moisture, equipment maintenance, and wind. Insulation exposed to weather must be suitable for outdoor service. For example, protected by aluminum, sheet metal, painted canvas, or plastic cover. Cellular foam insulation must be protected as above or painted with a coating that is water retardant and provides shielding from solar radiation.
§ 150.0(m)10:	Porous inner Core Flex Duct. Porous inner core flex ducts must have a non-porous layer between the inner core and outer vapor barrier.
§ 150.0(m)11:	Duct System Sealing and Leakage Test. When space conditioning systems use forced air duct systems to supply conditioned air to an occupiable space, the ducts must be sealed and duct leakage tested, as confirmed through field verification and diagnostic testing, in accordance with § 150.0(m)11 and Reference Residential Appendix RA3.
§ 150.0(m)12:	Air Filtration. Space conditioning systems with ducts exceeding 10 feet and the supply side of ventilation systems must have MERV 13 or equivalent filters. Filters for space conditioning systems must have a two inch depth or can be one inch if sized per Equation 150.0-A. Pressure drops and labeling must meet the requirements in §150.0(m)12. Filters must be accessible for regular service.*
§ 150.0(m)13:	Space Conditioning System Airflow Rate and Fan Efficacy. Space conditioning systems that use ducts to supply cooling must have a hole for the placement of a static pressure probe, or a permanently installed static pressure probe in the supply plenum. Airflow must be ≥ 350 CFM per ton of nominal cooling capacity, and an air-handling unit fan efficacy ≤ 0.45 watts per CFM for gas furnace air handlers and ≤ 0.58 watts per CFM for all others. Small duct high velocity systems must provide an airflow ≥ 250 CFM per ton of nominal cooling capacity, and an air-handling unit fan efficacy ≤ 0.62 watts per CFM. Field verification testing is required in accordance with Reference Residential Appendix RA3.3.*

2019 Low-Rise Residential Mandatory Measures Summary

and Acceptable Indoor Air Quality in Residential Buildings subject to the amendments specified in § 150.0(o)1.

Kitchen Range Hoods. Kitchen range hoods must be rated for sound in accordance with Section 7.2 of ASHRAE 62.2.

rated by HVI to comply with the airflow rates and sound requirements as specified in Section 5 and 7.2 of ASHRAE 62.2.

dedicated suction and return lines, or built-in or built-up connections to allow for future solar heating.

will allow all pumps to be set or programmed to run only during off-peak electric demand periods.

Pilot Light. Natural gas pool and spa heaters must not have a continuously burning pilot light

Luminaire Efficacy. All installed luminaires must meet the requirements in Table 150.0-A.

labeling; air leakage; sealing; maintenance; and socket and light source as described in § 150.0(k)1C.

Interior Switches and Controls. Exhaust fans must be controlled separately from lighting systems.*

Interior Switches and Controls. Lighting controls must comply with the applicable requirements of § 110.9.

Screw based luminaires. Screw based luminaires must contain lamps that comply with Reference Joint Appendix JA8.*

temperature requirements, including marking requirements, must not be installed in enclosed or recessed luminaires.

Interior Switches and Controls. All forward phase cut dimmers used with LED light sources must comply with NEMA SSL 7A.

Interior Switches and Controls. Controls and equipment must be installed in accordance with manufacturer's instructions.

Interior Switches and Controls. Lighting must have readily accessible wall-mounted controls that allow the lighting to be manually

Covers. Outdoor pools or spas that have a heat pump or gas heater must have a cover.

determined by ASHRAE 62.2 Sections 4.1.1 and 4.1.2 and as specified in § 150.0(o)1C.

Requirements for Ventilation and Indoor Air Quality. All dwelling units must meet the requirements of ASHRAE Standard 62.2, Ventilation

Single Family Detached Dwelling Units. Single family detached dwelling units, and attached dwelling units not sharing ceilings or floors with

other dwelling units, occupiable spaces, public garages, or commercial spaces must have mechanical ventilation airflow provided at rates

Multifamily Attached Dwelling Units. Multifamily attached dwelling units must have mechanical ventilation airflow provided at rates in

accordance with Equation 150.0-B and must be either a balanced system or continuous supply or continuous exhaust system. If a balanced

system is not used, all units in the building must use the same system type and the dwelling-unit envelope leakage must be ≤ 0.3 CFM at 50 Pa

(0.2 inch water) per square foot of dwelling unit envelope surface area and verified in accordance with Reference Residential Appendix RA3.8.

Multifamily Building Central Ventilation Systems. Central ventilation systems that serve multiple dwelling units must be balanced to provide

ventilation airflow for each dwelling unit served at a rate equal to or greater than the rate specified by Equation 150.0-B. All unit airflows must be

within 20 percent of the unit with the lowest airflow rate as it relates to the individual unit's minimum required airflow rate needed for compliance.

Certification by Manufacturers. Any pool or spa heating system or equipment must be certified to have all of the following: a thermal efficiency

that complies with the Appliance Efficiency Regulations; an on-off switch mounted outside of the heater that allows shutting off the heater

Piping. Any pool or spa heating system or equipment must be installed with at least 36 inches of pipe between the filter and the heater, or

Directional Inlets and Time Switches for Pools. Pools must have directional inlets that adequately mix the pool water, and a time switch that

Pool Systems and Equipment Installation. Residential pool systems or equipment must meet the specified requirements for pump sizing, flow

Lighting Controls and Components. All lighting control devices and systems, ballasts, and luminaires must meet the applicable requirements of § 110.9.*

Blank Electrical Boxes. The number of electrical boxes that are more than five feet above the finished floor and do not contain a luminaire or

tecessed Downlight Luminaires in Cellings. Luminaires recessed into ceilings must meet all of the requirements for: insulation contact (IC)

Electronic Ballasts for Fluorescent Lamps. Ballasts for fluorescent lamps rated 13 watts or greater must be electronic and must have an

Night Lights, Step Lights, and Path Lights. Night lights, step lights and path lights are not required to comply with Table 150.0-A or be

Ighting Integral to Exhaust Fans. Lighting integral to exhaust fans (except when installed by the manufacturer in kitchen exhaust hoods)

Light Sources in Enclosed or Recessed Luminaires. Lamps and other separable light sources that are not compliant with the JA8 elevated

Light Sources in Drawers, Cabinets, and Linen Closets. Light sources internal to drawers, cabinetry or linen closets are not required to comply with Table 150.0-A or be controlled by vacancy sensors provided that they are rated to consume no more than 5 watts of power, emit no

more than 150 lumens, and are equipped with controls that automatically turn the lighting off when the drawer, cabinet or linen closet is closed,

Interior Switches and Controls. Controls must not bypass a dimmer, occupant sensor, or vacancy sensor function if the control is installed to

controlled by vacancy sensors provided they are rated to consume no more than 5 watts of power and emit no more than 150 lumens.

other device must be no greater than the number of bedrooms. These electrical boxes must be served by a dimmer, vacancy sensor control, or

without adjusting the thermostat setting; a permanent weatherproof plate or card with operating instructions; and must not use electric

Field Verification and Diagnostic Testing. Dwelling unit ventilation airflow must be verified in accordance with Reference Residential

Appendix RA3.7. A kitchen range hood must be verified in accordance with Reference Residential Appendix RA3.7.4.3 to confirm it is

Requirements for Ventilation and Indoor Air Quality:

Pool and Spa Systems and Equipment Measures:

rate, piping, filters, and valves.*

output frequency no less than 20 kHz.

must meet the applicable requirements of § 150.0(k).*

fan speed control.

turned ON and OFF.*

§ 150.0(o)1:

§ 150.0(o)1C:

§ 150.0(o)1G:

§ 150.0(o)2:

§ 110.4(b)1:

§ 110.4(b)2:

§ 110.5:

§ 150.0(p):

§ 150.0(k)1A:

§ 150.0(k)1B:

150.0(k)1D:

§ 150.0(k)1E:

§ 150.0(k)1G:

150.0(k)1H:

§ 150.0(k)2A:

§ 150.0(k)2B:

§ 150.0(k)2C:

§ 150.0(k)2D:

§ 150.0(k)2E:

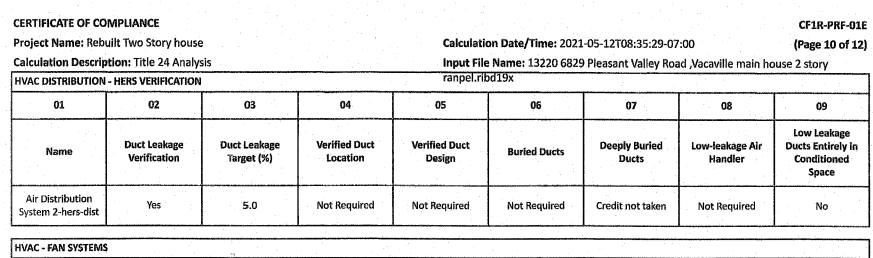
§ 150.0(k)2F:

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Floor		amed w/Crawl Si	2000	R 13		2,600				New
Demising		amed w/o Crawl			sulation	1,737	<u> </u>	······		New
Roof		amed Attic	Оричо	R 38	iaiaion	2,774	Add=R-1	9.0 Cool Roof		New
Floor		amed w/o Crawl	Snace	R 19	· · · · · · ·	359		210 000, 1100,		New
. 100,	***************************************									
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		312.0	0.280	0.23	none		none	N/A		New
Rear (E) Right (S)		215.0	0.280	0.23	none		none	N/A		New
Front (W)	· · · · · · · · · · · · · · · · · · ·	87.0	0.280	0.23	none	<u></u>	none	NIA		New
1.51.7.5.00	A. 10 ST					-				
	SYSTE Heating		Min. Eff	Co	oling		Min.	Eff	Thermostat	Status
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hvac		Ducted		Duct	ed	Condit	oned		8.0	New
hvac		Ducted		Duci	ed	Attic			8.0	New
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2019 Low-Rise Residential Mandatory Measures Summary

Aff Leakepe, Manufactured finesteution, extent or core, and extent per bottoms must limit air relatings to 1.3 CFM per square foot or less when tested per IFRC-00/ASTH 2502 or AAMAYDMANGA 01/18 2/AMA-02011; \$10.06(a)5. Labelling, Penestration products and extentor doors must have a label meeting the requirements of § 10-11(a)6. \$10.06(a)5. Labelling, Penestration products and extentor drooms must have a label meeting the requirements of § 10-11(a)6. \$10.06(a)5. Household 10-16 or extentor factors. They must be coulded endor weather adopted to the products of the state	Building Envelop	oe Measures:
\$10.0(a)5. Labelling. Ferrestration products and extender doors must have a label meeting the requirements of § 10-111(a). Field Bailcraded extentior open and ferrestration products must use U-factors and soid heat gain coefficient (SNGC) values from Tables (10-6). Title-64. 110-64. or JAM-5 for addated once meetings in the calified ention weekline-entipsed. Ar Leadings, 71 pinist, personations, and other openings in the building envirolpe that are potential sources of air leakage must be caulited, and the second of the sealage of the requirements of \$110.8(g). Road and the sealage of the sealage of the sealage of the sealage of the requirements of \$110.8(g). Road and the sealage of the sealage of the sealage of the sealage of the requirements of \$110.8(g). Road and the sealage of the sealage of the sealage of the sealage of the requirements of \$110.8(g). Road and the sealage of the sealage of the sealage of the sealage of the requirements of \$110.8(g). Road and the sealage of the requirements of \$10.9(g) of the sealage of the sealag	THE PERSON NAMED IN COLUMN 2 IS NOT THE OWNER.	Air Leakage. Manufactured fenestration, exterior doors, and exterior pet doors must limit air leakage to 0.3 CFM per square foot or less
Field dathocated exterior doors and fenestration products must use Unicose and solar heat gain coefficient (SHGC) values from Tables 10.06): 10.7. gasteled, or wealth of something control, They must be caudited and/or wealther-articiped.' Air Leakage, All joints, penetrations, and other openings in the building envolope that are potential sources of air leakage must be caudited, gasteled, or wealther stripped. Insulation Contributation by Manufacturers, Insulation must be cardited by the Department of Consumer Affairs, Bureau of Household Goods and Sendres (BRGS). Roofing Products Solar Refrectations and Themat Emittance. The tilesmal environment of \$110.8(g). Roofing Products Solar Refrectations and Themat Emittance. The tilesmal environment aged solar refrectance on the configuration of th		
Air Lealeage, Air Josius, pentiretions, and other openings in the bidding envelope that are potential sources of air leakage must be caulited, gesteled, or wealther stripped. Insulation Certification by Meanthecturers, Insulation must be certified by the Department of Consumer Affairs, Bureau of Household Goods and Sonrices (Bids). Insulation Requirements for Heated Slab Floors, Heated slab floors must be insulated per the requirements of § 110.8(g). Roofing Products Solar Reflectance and Thermal Emittance. The liveral emittance and aged solar reflectance used the cooling and the products of 110.8(g). Roofing Products Solar Reflectance and Thermal Emittance. The liveral emittance and aged solar reflectance used the cooling and the products of 110.8(g) and the biddle in explainments of § 110.8(g). Rodflam Barrier. When required, radiant barriers must have an emittance of 0.05 or less and be certified to the Department of Consumer of Minimum R-19 or weighted deverage U-factor of 0.05 or less in a rather roof alteration, Aid access doors must have permanently statebook in the CPI and the certification used and the certification used and emitted on which addition used and emitted of the certification used and emitted with a continuous roof or celling which is seeded to limit intification as specified in § 110.7, including but not limited of increat contact with a continuous roof or celling which is seeded to limit intification as operated by 110.7, including but not limited or plants plantation. Loose iffill insulation. Loose iffill insulation to Loose flat insulation to Loose and the product of evolve in roof developed celling. Yell insulation to Loose and ill insulation must meet the manufacturer's required density of the lebeled R-value. Yell insulation to Loose and the product of the celling which is seen to the product of the	§ 110.6(b):	Field fabricated exterior doors and fenestration products must use U-factors and solar heat gain coefficient (SHGC) values from Tables
\$10.8(g): Including Requirements for Headed Slab Floors. Heated slab floors must be insulated per the requirements of § 110.8(g). Roofing Products Solar Reflectance and Thermal Emittance. The thermal emittance and agol solar reflectance values of the coding material must meet the requirements of § 110.8(g) and be labeled per §10-113 when the installation of a cool roof is specified on the CFR. § 110.8(g). Roofing Products Solar Reflectance and Thermal Emittance. The thermal emittance and agol solar reflectance values of the coding material must meet the requirements of § 110.8(g) and be labeled per §10-113 when the installation of a cool roof is specified on the CFR. § 110.8(g). Roofing Products Solar Reflectance of 1.03 or less and be certified to the Department of Consumer Affair Celling and Rafter Roof Insulation. Minimum R-12 installation in Roofing and Rafter Roof Insulation must be reflected insulation using administer of mechanical flasteners. The attic access must be gasteted to prevent air leakage, insulation that the manufacturer's required density for the labeled R-value. § 150.0(e): direct confact with a continuous roof or colling which is seaded to limit Infliction and exhitication as specified in § 140.7, including but not timited to placing insulation either above or below the roof deck or on top of a dywall celling. § 150.0(e): Wall Insulation. Loseji film relation must meet the manufacturer's required density for the labeled R-value. § 150.0(e): Wall Insulation. Minimum R-19 insulation in raised wood framing wall or have a U-factor of 0.072 or less, Osepan con-framed assemblies must have an overall assembly U-factor not exceeding 0.102. Missonny walls must meet Tables 150.1-1, or 0.71. \$ 150.0(e): Ralaced-floor Insulation. Minimum R-19 insulation in raised wood framed floor or 0.037 maximum U-factor of 0.072 in access to 10.072 in a second production of 1.072. In the production of 1.	§ 110.7:	Air Leakage. All joints, penetrations, and other openings in the building envelope that are potential sources of air leakage must be caulked,
\$ 10.8(g): Insulation Requirements for Healed Slab Floors. Healed slab floors must be insulated per the requirements of § 110.8(g), at 10.8(g): Roofing Products Solar Reflectance and Thermal Emittance. The turned emittance and aged solar reflectance values of the roofing material must meet the requirements of § 110.8(g) and be labeled per § 10-119 when the insulation of a cod roof is specified on the CPT R. \$10.8(g): Rolling and Rafter Roof Insulation. Minimum R-22 insulation is wood frame celling or the weighted average U-lactor of 0.054 or less in a rafter roof alteration. Altic access solar so must have permanently altached insulation using adeable or prevent in leskage, Insulation must be installed in direct contact with a continuous roof or celling which is sealed to limit infiltration and extilization as specified in § 110.7, including but not limited inclinations of the contact with a continuous roof or celling which is sealed to limit infiltration and extilization as specified in § 110.7, including but not limited inclination. Loose III insulation. Loose III insulation. Loose III insulation. Loose III insulation must meet the manufacturer's required density for the labeled R-value. **Will Insulation Minimum R-13 insulation in 24 inch word famility will be reveral to 1.02 or less, or R-20 in 26 inch wood framings will be reveral to 1.02 or less, or R-20 in 26 inch wood framings will be reveral to 1.02 or less, or R-20 in 26 inch wood framings will be reveral to 1.02 or less, or R-20 in 26 inch wood framings will be reveral to 1.02 percent frame from 1.03 percent flavor or 1.03 or 1.03 percent flavor from 1.03 percent flavor in 0.03 percent fl	§ 110.8(a):	
meterial must reset the requirement of \$110.80): material must reset the requirement of \$110.80 not be labeled per §10.11 when the intellation of a cool roof is specified on the CFTR. ### Radiant Barrier. When required, radiant barriers must have an emittance of 0.05 or less and be certified to the Department of Consumer Affair Calling and Rather Roof insulation. Minimum R-22 insulation must not minimum R-22 insulation must not make a minimum R-22 insulation must not make selected to the minimum R-22 insulation must not be insulation as expected and passage. Insulation must not be insulation must meet a manufacturer sequent density for the labeled R-value. #### Wall Insulation. Minimum R-13 insulation must meet the manufacturer sequent density for the labeled R-value. ##### Wall Insulation. Minimum R-13 insulation must meet all of the following: have a water absorption rate, for the insulation must meet all of the following: have a water absorption rate, for the insulation must meet all of the following: have a water absorption rate, for the insulation must meet all of the following: have a water absorption rate, for the insulation must meet all of the following: have a water absorption rate, for the insulation must make a manufacturer and assorption and must be covered with a Class I or Class I to year related: This requirement also applies to controlled ventilation crawl space must be covered with a Class I or Class I to year related: This requirement also applies to controlled ventilation crawl space for buildings complying with the exception to § 150.0(d). #### Sto.0(g):	§ 110.8(g):	
Radiant Barrier. When required, radiant barriers must have an emittance of 0.05 or less and be cartified to the Department of Consumer Affair Carling and Rather Roof Insulation. Minimum R-22 insulation in wood-frame celling; or the weighted average U-factor must not accessed 0.043, insulation using adhesive or innechanical fasteners. The attitue accesses must be gaskeded to prevent air leakage. Insulation must not accessed 0.043, insulation using adhesive or innechanical fasteners. The attitue accesses must be gaskeded to prevent air leakage. Insulation must be installed in insulation using adhesive or innechanical fasteners. The attitue accesses must be gaskeded to prevent air leakage. Insulation must be installed in the control of the control o		
Ceiling and Rafter Roof Insulation. Minimum R-22 insulation in wood-frame ceiling; or the weighted vareage U-factor or 0.050 or less in a rafter roof alteration. A title access dows must have permanently attached insulation using adhealve or mechanical fasteners. The attic access must be gasketed to prevent air leakage, Insulation must be installed in insulation using adhealve or mechanical fasteners. The attic access must be gasketed to prevent air leakage, Insulation must be installed in the placing insulation either above or below the roof deck or on top of a dywall ceiling. § 150.0(b): Loose-fill Insulation. Loose fill insulation must meet the manufacturer's required density for the labeled R-value. Wall Insulation. Minimum R-19 insulation in 2x4 inch wood framing wall or have a U-factor of 0.102 or less, or R-20 in 2x6 inch wood framing wall or have a U-factor of 0.070 or less. Or R-20 in 2x6 inch wood framing wall or have a U-factor of 0.070 or less. Or R-20 in 2x6 inch wood framing wall or have a U-factor of 0.070 or less. Or R-20 in 2x6 inch wood framing wall or have a U-factor of 0.070 or less. Or R-20 in 2x6 inch wood framing wall or have a U-factor of 0.070 or less. Or R-20 in 2x6 inch wood framing wall or have a U-factor of 0.070 or less. Or R-20 in 2x6 inch wood framing wall or have a U-factor of 0.070 or less. Or R-20 in 2x6 inch wood framing wall or have a U-factor of 0.070 or less. Or R-20 in 2x6 inch wood framing wall or have a U-factor of 0.070 or less. Or R-20 in 2x6 inch wood framing wall or have a U-factor of 0.070 or less. Or R-20 in 2x6 inch wood framing wall or have a overall wall have a U-factor of 0.070 or less. Or R-20 in 2x6 inch wood framing wall or have a overall wall have a unavailable or the condition of the place was unavailable or the condition of space side of all insulation in all studerior walls, wenter the condition of the place was una	\$ 110.8(i):	Radiant Barrier. When required, radiant barriers must have an emittance of 0.05 or less and be certified to the Department of Consumer Affair
Wall Insulation. Minimum R-13 insulation in 2x4 inch wood framing wall or have a U-factor of 0.07 or less, or R-20 in 2x6 inch wood framing have au U-factor of 0.07 or less. Opaque non-framed assembles must have an overall assembly U-factor not exceeding 0.102. Masomy walls must meet Tables 150.1-A or B: \$150.0(g): Raised-floor Insulation. Minimum R-19 insulation in raised wood framed floor or 0.037 maximum U-factor.' Slab Edge Insulation. Slab edge insulation must meet all of the following: have a water absorption rate, for the insulation material alone without facings, no greater than 0.3 percent; have a water vapor premaence no greater than 2.0 perm per inchic place produced from physical darnage and VI light deterioration; and, when installed as part of a heated slab floor, meet the requirements of § 110.8(g). Vaporr Retarder: In climate zones 14 and 16, a class 1 or Class II wapor retarder must be covered with a class 1 or Class II wapor retarder. In climate zones 14 and 16, a class 1 or Class II wapor retarder must be installed on the exception to § 150.0(g). Vaporr Retarder: In climate zones 14 and 16, a class 1 or Class II wapor retarder must be installed on the exception to § 150.0(g). Vaporr Retarder: In climate zones 14 and 16, a class 1 or Class II wapor retarder must be installed on the conditioned space side of all insulation in all exterior walls, vende attics, and unwented attics, with air permeable insulation. Fenestration Products. Fenestration, including skylights, separating conditioned space from unconditioned space or outdoors must have a maximum U-factor of 0.85; or the weighted average U-factor of all fenestration must not exceed 0.58.* Fireplaces, Decorative Gas Appliances, and Gas Log Measures: § 10.5(e) Pilot Light. Continuously burning pilot lights are not allowed for indoor and outdoor fireplaces. § 150.0(e): Consultion in thake. Masorry or factory-bulk fireplaces must have a combustion outside air intake, which is at least six square inches in area and is equiloped with a	§ 150.0(a):	insulation using adhesive or mechanical fasteners. The attic access must be gasketed to prevent air leakage, insulation must be installed in direct contact with a continuous roof or ceiling which is sealed to limit infiltration and exfiltration as specified in § 110.7, including but not limited
have a U-factor of 0.071 or Jess. Opaque non-framed assemblies must have an overall assembly U-factor not exceeding 0.102. Masonry walls must meet Tables 150.1-A or 8. 3 (50.0(g): Ralsed-floor Insulation. Minimum R-19 insulation in raised wood framed floor or 0.037 maximum U-factor. Slab (Edge Insulation. Slab) edge insulation must meet all of the following: have a water absorption rate, for the insulation material alone without facings, no greater than 0.3 percent, have a water vapor permeance no greater than 2.0 perm per linch; be protected from physical damage and UV light deterioration; and, when installed as part of a heated slab floor, meet the requirements of \$10.0(g). Vapor Retarder. In climate zones 1 through 16, the earth floor of unvented crawl space must be covered with a Class 1 or Class II vapor retardier. This requirement also applies to controlled ventilation crawl space for buildings complying with the exception to § 150.0(g). Vapor Retarder. In climate zones 14 and 16, a Class I or Class II vapor retarder must be installed on the conditioned space side of all insulation in all exterior walls, vented attics, and unvented attics with air-permeable insulation. Fenestation Products. Fenestation, including skylights, separating conditioned space from unconditioned space or outdoors must have a maximum U-factor of 0.8%; of the weighted average U-factor of all fenestration must not exceed 0.5s.* Fitroplaces, Decorative Gas Appliances, and Gas Log Measures: \$105.0(e) Filiot Light. Continuously burning pilot lights are not allowed for indoor and outdoor fireplaces. \$105.0(e) Closable Doors. Mesonry or factory-built fireplaces must have a combustion outside air intake, which is at least six square inches in area and is equipped with a readily accessible, operable, and tight-fitting damper or combustion-air control device. \$105.0(e)2: Filio Damper. Mesonry or factory-built fireplaces must have a flue damper with a readily accessible control.* \$100.0(s)3: Filio Damper. Mesonry or factory-bu	§ 150.0(b):	Loose-fill Insulation. Loose fill insulation must meet the manufacturer's required density for the labeled R-value.
Slab Edge insulation. Slab edge insulation must meet all of the following: have a water absorption rate, for the insulation malerial alone without facings, no greater than 0.3 percent, have a water vapor permeance no greater than 2.0 perm per inch; be protected from physical damage and UV light deterioration; and, when installed as part of a heated slab floor, meet the requirement protected from physical damage and UV light deterioration; and, when installed as part of a heated slab floor, meet the requirement protected from physical damage and UV light deterioration; and, when installed as part of a heated slab floor, meet the requirement the requirement of \$110.0(g). Vapor Retarder. In climate zones 14 and 16, a Class I or Class II wapor retained. This requirement also applies to controlled ventilation crawl space must be covered with a Class I or Class II vapor retained. The value of the control of the c	§ 150.0(c):	have a U-factor of 0.071 or less. Opaque non-framed assemblies must have an overall assembly U-factor not exceeding 0.102. Masonry walls
facings, no greater than 0.3 percent, have a water vapor permeance no greater than 2.0 perm per inct; be protected from physical darnage and UV light deterioration; and, when installed as part of a heated slab floor, meet the requirements of § 110.8(g). Vapor Retarder. In climate zones 1 through 16, the earth floor of unvented crawl space must be covered with a Class I or Class II vapor retarder. This requirement also applies to controlled ventilation crawl space for buildings complying with the exception to § 150.0(d). Vapor Retarder. In climate zones 14 and 16, a Class I or Class II vapor retarder must be installed on the conditioned space side of all insulation in all exterior walls, vented attics, and unvented attics with air-permeable insulation. Fereiestration Products. Fenestration, including skylights, separating conditioned space from unconditioned space or outdoors must have a maximum U-factor of 0.58; or the weighted average U-factor of all fenestration must not exceed 0.58.* Fireplaces, Decorative Gas Appilances, and Gas Log Measures: § 110.5(e) Pilot Light. Continuously burning pilot lights are not allowed for indoor and outdoor fireplaces. § 150.0(e)1: Closable Doors. Masonry or factory-built fireplaces must have a closable metal or glass door covering the entire opening of the firebox. Combustion Intake. Masonry or factory-built fireplaces must have a combustion outside air intake, which is at least six square inches in area and is equipped with a readily accessible, operable, and sight-fitting damper or combustion-air control device. § 150.0(e)2: Space Conditioning, Water Heating, and Plumbing System Measures: § 110.2 Certification. Heating, ventilation and air conditioning (HVAC) equipment, water heaters, showerheads, faucets, and all other regulated applicable must have controls that prevent supplementary Electric Resistance Heaters. Heat pumps with supplementary electric resistance heaters must have controls that prevent supplementary Electric Resistance Heaters. Heat pumps with s	§ 150.0(d):	Raiserd-floor Insulation. Minimum R-19 insulation in raised wood framed floor or 0.037 maximum U-factor.*
s 150.0(g) : retardier. This requirement also applies to controlled ventitation crawl space for buildings complying with the exception to § 150.0(g). § 150.0(g) 2: Insulation in all exterior walls, vented attles, and unvented attics with air-permeable insulation. Fenestration Products. Fenestration, including skylights, separating conditioned space from unconditioned space or outdoors must have a maximum U-factor of 0.58; or the weighted average U-factor of all fenestration must not exceed 0.58.* Fireplaces, Decorative Gas Appliances, and Gas Log Measures: § 110.5(e) Pilot Light. Continuously burning pilot lights are not allowed for indoor and outdoor fireplaces. Closable Doors. Masonry or factory-built fireplaces must have a closable metal or glass door covering the entire opening of the firebox. Combustion Intake. Masonry or factory-built fireplaces must have a combustion outside air intake, which is at least six square inches in area and is equipped with a readily accessible, operable, and tight-fitting damper or combustion-air control device. § 150.0(e)3: Flue Damper. Masonry or factory-built fireplaces must have a flue damper with a readily accessible control. Space Conditioning, Water Heating, and Plumbing System Measures: Certification. Heating, ventilation and air conditioning (HVAC) equipment, water heaters, showerheads, faucets, and all other regulated appliances must be certified by the manufacturer to the California Energy Commission. § 110.2(a): HVAC Efficiency, Equipment must meet the applicable efficiency requirements in Table 110.2-A. through Table 110.2-K. Controls for Heat Pumps with Supplementary Electric Resistance Heaters, Heat pumps with supplementary electric resistance heaters must have controls that prevent supplementary heater operation when the heating load can be met by the heat pump alone; and in which the cut-on temperature for compression heating is higher than the cut-off temperature for supplementary heating, and the cut-off temperature for supplementary heating, in	§ 150.0(f):	
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\$ 110.5: appliances without an electrical supply voltage connection with pilot lights that consume less than 150 Btu per hour); and pool and spa heaters Building Cooling and Heating Loads. Heating and/or cooling loads are calculated in accordance with the ASHRAE Handbook, Equipment Volume, Applications Volume, and Fundamentals Volume; the SMACNA Residential Comfort System Installation Standards	§ 110.3(c)6:	bibbs or other fittings on both cold and hot water lines to allow for flushing the water heater when the valves are closed.
5 150.0(h)1: Equipment Volume, Applications Volume, and Fundamentals Volume; the SMACNA Residential Comfort System Installation Standards	§ 110.5:	Pilot Lights. Continuously burning pilot lights are prohibited for natural gas: fan-type central furnaces; household cooking appliances (except appliances without an electrical supply voltage connection with pilot lights that consume less than 150 Btu per hour); and pool and spa heaters
	§ 150.0(h)1:	Equipment Volume, Applications Volume, and Fundamentals Volume; the SMACNA Residential Comfort System Installation Standards



HVAC - FAN SYSTEMS	-				
	01	1	02	03	04
	Name / 1	1	Туре	Fan Power (Watts/CFM)	Name
	HVAC Fan 1)	HVAC Fan	0.45	HVAC Fan 1-hers-fan
	HVAC Fan 2	المانية المنظمين الم	HVAC Fah	0.45	HVAC Fan 2-hers-fan

HVAC FAN SYSTEMS - HERS VERIFICATION	telt i ka hi ti di Sy Hi	
01		
Name	Verified Fan Watt Draw	Required Fan Efficacy (Watts/CFM)
HVAC Fan 1-hers-fan	Required	0.45
HVAC Fan 2-hers-fan	Required	0.45

IAQ (INDOOR AIR QUALITY) FANS					
01	02	03	04	05	06
Dwelling Unit	IAQ CFM	IAQ Watts/CFM	IAQ Fan Type	IAQ Recovery Effectiveness (%)	IAQ Recovery Effectiveness - SREIAQ Recovery Effectiveness - SRE
SFam IAQVentRpt	173	0.25	Default	0	n/a

Registration Date/Time: Registration Number 221-P010091964A-000-000-0000000-0000 2021-05-12 08:39:37 CalCERTS inc. CA Building Energy Efficiency Standards - 2019 Residential Compliance Report Version: 2019.1.300 Report Generated: 2021-05-12 08:36:21 Schema Version: rev 20200901

CF1R-PRF-01E CERTIFICATE OF COMPLIANCE Project Name: Rebuilt Two Story house Calculation Date/Time: 2021-05-12T08:35:29-07:00 (Page 11 of 12) Calculation Description: Title 24 Analysis Input File Name: 13220 6829 Pleasant Valley Road , Vacaville main house 2 story

COOLING VENTILATION	N								
01	02	03	04	05	06	07	08	09	
Name	Airflow Rate (CFM/ft2)	Cooling Vent CFM	Cooling Vent Watts/CFM	Total Watts	Number of Fans	CFVCS Type	Exhausts to	HERS Verification	
WH Fan 1	1.44	4000	0.0875	350	1	Not a CFVCS	Attic	Yes	



Registration Number: 221-P010091964A-000-000-0000000-0000 CA Building Energy Efficiency Standards - 2019 Residential Compliance Registration Date/Time: 2021-05-12 08:39:37 Report Version: 2019.1.300 Schema Version: rev 20200901

HERS Provider: CalCERTS inc. Report Generated: 2021-05-12 08:36:21

CERTIFICATE OF COMPLIANCE Project Name: Rebuilt Two Story house Calculation Description: Title 24 Analysis

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT

Calculation Date/Time: 2021-05-12T08:35:29-07:00 Input File Name: 13220 6829 Pleasant Valley Road ,Vacaville main house 2 story

CF1R-PRF-01E (Page 12 of 12)

SPONSIBLE PERSON'S DECLARATION STATEMENT

221-P010091964A-000-000-00000000-0000

CA Building Energy Efficiency Standards - 2019 Residential Compliance

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

ertify the following under penalty of perjury, under the laws of the State of California: 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.

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. 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 Signature:

at CalCERTS.com



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.

> HERS Provider: Registration Date/Time: 2021-05-12 08:39:37 Report Generated: 2021-05-12 08:36:21 Report Version: 2019.1.300 Schema Version: rev 20200901



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	2019 Low-Rise Residential Mandatory Measures Summary
§ 150.0(k)2G:	Interior Switches and Controls. An energy management control system (EMCS) may be used to comply with control requirements if it: provides functionality of the specified control according to § 110.9; meets the Installation Certificate requirements of § 130.4; meets the EMCS requirements of § 130.0(e); and meets all other requirements in § 150.0(k)2.
§ 150.0(k)2H:	Interior Switches and Controls. A multiscene programmable controller may be used to comply with dimmer requirements in § 150.0(k) if it provides the functionality of a dimmer according to § 110.9, and complies with all other applicable requirements in § 150.0(k)2.
§ 150.0(k)2l:	Interior Switches and Controls. In bathrooms, garages, laundry rooms, and utility rooms, at least one luminaire in each of these spaces must be controlled by an occupant sensor or a vacancy sensor providing automatic-off functionality. If an occupant sensor is installed, it must be initially configured to manual-on operation using the manual control required under Section 150.0(k)2C.
§ 150,0(k)2J:	Interior Switches and Controls. Luminaires that are or contain light sources that meet Reference Joint Appendix JA8 requirements for dimming, and that are not controlled by occupancy or vacancy sensors, must have dimming controls.
§ 150.0(k)2K:	Interior Switches and Controls. Under cabinet lighting must be controlled separately from ceiling-installed lighting systems.
§ 150.0(k)3A:	Residential Outdoor Lighting. For single-family residential buildings, outdoor lighting permanently mounted to a residential building, or to other buildings on the same lot, must meet the requirement in item § 150.0(k)3Ai (ON and OFF switch) and the requirements in either § 150.0(k)3Aii (photocell and either a motion sensor or automatic time switch control) or § 150.0(k)3Aii (astronomical time clock), or an EMCS.
§ 150.0(k)3B:	Residential Outdoor Lighting. For low-rise residential buildings with four or more dwelling units, outdoor lighting for private patios, entrances, balconies, and porches; and residential parking lots and carports with less than eight vehicles per site must comply with either § 150.0(k)3A or with the applicable requirements in Sections 110.9, 130.0, 130.2, 130.4, 140.7 and 141.0.
§ 150.0(k)3C:	Residential Outdoor Lighting. For low-rise residential buildings with four or more dwelling units, any outdoor lighting for residential parking lots or carports with a total of eight or more vehicles per site and any outdoor lighting not regulated by § 150.0(k)3B or § 150.0(k)3D must comply with applicable requirements in Sections 110.9, 130.0, 130.2, 130.4, 140.7 and 141.0.
§ 150.0(k)4:	Internally illuminated address signs. Internally illuminated address signs must comply with § 140.8; or must consume no more than 5 watts of power as determined according to § 130.0(c).
§ 150.0(k)5:	Residential Garages for Eight or More Vehicles. Lighting for residential parking garages for eight or more vehicles must comply with the applicable requirements for nonresidential garages in Sections 110.9, 130.0, 130.1, 130.4, 140.6, and 141.0.
§ 150.0(k)6A:	Interior Common Areas of Low-rise Multifamily Residential Buildings. In a low-rise multifamily residential building where the total interior common area in a single building equals 20 percent or less of the floor area, permanently installed lighting for the interior common areas in that building must be comply with Table 150.0-A and be controlled by an occupant sensor.
§ 150.0(k)6B:	Interior Common Areas of Low-rise Multifamily Residential Buildings. In a low-rise multifamily residential building where the total interior common area in a single building equals more than 20 percent of the floor area, permanently installed lighting for the interior common areas in that building must: i. Comply with the applicable requirements in Sections 110.9, 130.0, 130.1, 140.6 and 141.0; and ii. Lighting installed in corridors and stairwells must be controlled by occupant sensors that reduce the lighting power in each space by at least 50 percent. The occupant sensors must be capable of turning the light fully on and off from all designed paths of ingress and egress.
Solar Ready Bui	
§ 110.10(a)1;	Single Family Residences. Single family residences located in subdivisions with 10 or more single family residences and where the application for a tentative subdivision map for the residences has been deemed complete and approved by the enforcement agency, which do not have a photovoltaic system installed, must comply with the requirements of § 110.10(b) through § 110.10(e).
§ 110.10(a)2:	Low-rise Multifamily Buildings. Low-rise multi-family buildings that do not have a photovoltaic system installed must comply with the requirements of § 110.10(b) through § 110.10(d).
§ 110.10(b)1:	Minimum Solar Zone Area. The solar zone must have a minimum total area as described below. The solar zone must comply with access, pathway, smoke ventilation, and spacing requirements as specified in Title 24, Part 9 or other parts of Title 24 or in any requirements adopted by a local jurisdiction. The solar zone total area must be comprised of areas that have no dimension less than 5 feet and are no less than 80 square feet each for buildings with roof areas less than or equal to 10,000 square feet or no less than 160 square feet each for buildings with roof areas greater than 10,000 square feet. For single family residences, the solar zone must be located on the roof or overhang of the building and have a total area no less than 250 square feet. For low-rise multi-family buildings the solar zone must be located on the roof or overhang of the building, or on the roof or overhang of another structure located within 250 feet of the building, or on covered parking installed with the building project, and have a total area no less than 15 percent of the total roof area of the building excluding any skylight area. The solar zone requirement is applicable to the entire building, including mixed occupancy.*
§ 110.10(b)2:	Azimuth. All sections of the solar zone located on steep-sloped roofs must be oriented between 90 degrees and 300 degrees of true north.
§ 110.10(b)3A:	Shading. The solar zone must not contain any obstructions, including but not limited to: vents, chimneys, architectural features, and roof mounted equipment.
§ 110.10(b)3B:	Shading. Any obstruction located on the roof or any other part of the building that projects above a solar zone must be located at least twice the distance, measured in the horizontal plane, of the height difference between the highest point of the obstruction and the horizontal projection of the nearest point of the solar zone, measured in the vertical plane.
§ 110.10(b)4:	Structural Design Loads on Construction Documents. For areas of the roof designated as a solar zone, the structural design loads for roof dead load and roof live load must be clearly indicated on the construction documents.
§ 110.10(c):	Interconnection Pathways. The construction documents must indicate: a location reserved for inverters and metering equipment and a pathway reserved for routing of conduit from the solar zone to the point of interconnection with the electrical service; and for single family residences and central water-heating systems, a pathway reserved for routing plumbing from the solar zone to the water-heating system.
.8 110 10/d\·	Documentation. A copy of the construction documents or a comparable document indicating the information from § 110.10(b) through

Main Electrical Service Panel. The main electrical service panel must have a minimum busbar rating of 200 amps.

breaker for a future solar electric installation. The reserved space must be permanently marked as "For Future Solar Electric".

Main Electrical Service Panel. The main electrical service panel must have a reserved space to allow for the installation of a double pole circuit

§ 110.10(c) must be provided to the occupant.

§ 110.10(e)1:

	2019 Low-Rise Residential Mandatory Measures Summary
Requirements f	or Ventilation and Indoor Air Quality:
§ 150.0(o)1:	Requirements for Ventilation and Indoor Air Quality. All dwelling units must meet the requirements of ASHRAE Standard 62.2, Ventilation and Acceptable Indoor Air Quality in Residential Buildings subject to the amendments specified in § 150.0(o)1.
§ 150.0(o)1C:	Single Family Detached Dwelling Units. Single family detached dwelling units, and attached dwelling units not sharing ceilings or floors will other dwelling units, occupiable spaces, public garages, or commercial spaces must have mechanical ventilation airflow provided at rates determined by ASHRAE 62.2 Sections 4.1.1 and 4.1.2 and as specified in § 150.0(o)1C.
§ 150.0(o)1E:	Multifamily Attached Dwelling Units. Multifamily attached dwelling units must have mechanical ventilation airflow provided at rates in accordance with Equation 150.0-B and must be either a balanced system or continuous supply or continuous exhaust system. If a balanced system is not used, all units in the building must use the same system type and the dwelling-unit envelope leakage must be ≤ 0.3 CFM at 50 I (0.2 inch water) per square foot of dwelling unit envelope surface area and verified in accordance with Reference Residential Appendix RA3.8
§ 150.0(o)1F:	Multifamily Building Central Ventilation Systems. Central ventilation systems that serve multiple dwelling units must be balanced to provid ventilation airflow for each dwelling unit served at a rate equal to or greater than the rate specified by Equation 150.0-B. All unit airflows must within 20 percent of the unit with the lowest airflow rate as it relates to the individual unit's minimum required airflow rate needed for compliance.
§ 150.0(o)1G:	Kitchen Range Hoods. Kitchen range hoods must be rated for sound in accordance with Section 7.2 of ASHRAE 62.2.
§ 150.0(o)2:	Field Verification and Diagnostic Testing. Dwelling unit ventilation airflow must be verified in accordance with Reference Residential Appendix RA3.7. A kitchen range hood must be verified in accordance with Reference Residential Appendix RA3.7.4.3 to confirm it is rated by HVI to comply with the airflow rates and sound requirements as specified in Section 5 and 7.2 of ASHRAE 62.2.
Pool and Spa S	ystems and Equipment Measures:
§ 110.4(a):	Certification by Manufacturers. Any pool or spa heating system or equipment must be certified to have all of the following: a thermal efficienc that complies with the Appliance Efficiency Regulations; an on-off switch mounted outside of the heater that allows shutting off the heater without adjusting the thermostat setting; a permanent weatherproof plate or card with operating instructions; and must not use electric resistance heating.
§ 110.4(b)1:	Piping. Any pool or spa heating system or equipment must be installed with at least 36 inches of pipe between the filter and the heater, or dedicated suction and return lines, or built-in or built-up connections to allow for future solar heating.
§ 110.4(b)2:	Covers. Outdoor pools or spas that have a heat pump or gas heater must have a cover.
§ 110.4(b)3:	Directional Inlets and Time Switches for Pools. Pools must have directional inlets that adequately mix the pool water, and a time switch the will allow all pumps to be set or programmed to run only during off-peak electric demand periods.
§ 110.5: § 150.0(p):	Pilot Light. Natural gas pool and spa heaters must not have a continuously burning pilot light. Pool Systems and Equipment Installation. Residential pool systems or equipment must meet the specified requirements for pump sizing, flo
	rate, piping, filters, and valves.*
Lighting Measu	Lighting Controls and Components. All lighting control devices and systems, ballasts, and luminaires must meet the applicable requirement
§ 110.9:	of § 110.9.
§ 150.0(k)1A:	Luminaire Efficacy. All installed luminaires must meet the requirements in Table 150.0-A.
§ 150.0(k)1B:	Blank Electrical Boxes. The number of electrical boxes that are more than five feet above the finished floor and do not contain a luminaire or other device must be no greater than the number of bedrooms. These electrical boxes must be served by a dimmer, vacancy sensor control, of fan speed control.
§ 150.0(k)1C:	Recessed Downlight Luminaires in Ceilings. Luminaires recessed into ceilings must meet all of the requirements for: insulation contact (IC labeling; air leakage; sealing; maintenance; and socket and light source as described in § 150.0(k)1C.
§ 150.0(k)1D:	Electronic Ballasts for Fluorescent Lamps. Ballasts for fluorescent lamps rated 13 watts or greater must be electronic and must have an output frequency no less than 20 kHz.
§ 150.0(k)1E:	Night Lights, Step Lights, and Path Lights. Night lights, step lights and path lights are not required to comply with Table 150.0-A or be controlled by vacancy sensors provided they are rated to consume no more than 5 watts of power and emit no more than 150 lumens.
§ 150.0(k)1F:	Lighting Integral to Exhaust Fans. Lighting integral to exhaust fans (except when installed by the manufacturer in kitchen exhaust hoods) must meet the applicable requirements of § 150.0(k).
§ 150.0(k)1G:	Screw based luminaires. Screw based luminaires must contain lamps that comply with Reference Joint Appendix JA8.
§ 150.0(k)1H:	Light Sources in Enclosed or Recessed Luminaires. Lamps and other separable light sources that are not compliant with the JA8 elevated temperature requirements, including marking requirements, must not be installed in enclosed or recessed luminaires.
§ 150.0(k)11:	Light Sources in Drawers, Cabinets, and Linen Closets. Light sources internal to drawers, cabinetry or linen closets are not required to comply with Table 150.0-A or be controlled by vacancy sensors provided that they are rated to consume no more than 5 watts of power, emit more than 150 lumens, and are equipped with controls that automatically turn the lighting off when the drawer, cabinet or linen closet is closed.
§ 150.0(k)2A:	Interior Switches and Controls. All forward phase cut dimmers used with LED light sources must comply with NEMA SSL 7A.
§ 150.0(k)2B:	Interior Switches and Controls. Exhaust fans must be controlled separately from lighting systems."
§ 150.0(k)2C:	Interior Switches and Controls. Lighting must have readily accessible wall-mounted controls that allow the lighting to be manually turned ON and OFF.*
§ 150.0(k)2D:	Interior Switches and Controls. Controls and equipment must be installed in accordance with manufacturer's instructions.
§ 150.0(k)2E:	Interior Switches and Controls. Controls must not bypass a dimmer, occupant sensor, or vacancy sensor function if the control is installed to comply with § 150.0(k).

§ 150.0(k)2F: Interior Switches and Controls. Lighting controls must comply with the applicable requirements of § 110.9.

	2019 Low-Rise Residential Mandatory Measures Summary
§ 150.0(h)3A:	Clearances. Air conditioner and heat pump outdoor condensing units must have a clearance of at least five feet from the outlet of any dryer
150.0(h)3B:	Liquid Line Drier. Air conditioners and heat pump systems must be equipped with liquid line filter driers if required, as specified by the manufacturer's instructions.
150.0(j)1:	Storage Tank Insulation. Unfired hot water tanks, such as storage tanks and backup storage tanks for solar water-healing systems, must have a minimum of R-12 external insulation or R-16 internal insulation where the internal insulation R-value is indicated on the exterior of the tank.
§ 150.0(j)2A:	Water Piping, Solar Water-heating System Piping, and Space Conditioning System Line Insulation. All domestic hot water piping must be insulated as specified in Section 609.11 of the California Plumbing Code. In addition, the following piping conditions must have a minimum insulation wall thickness of one inch or a minimum insulation R-value of 7.7: the first five feet of cold water pipes from the storage tank; all hot water piping with a nominal diameter equal to or greater than 3/4 inch and less than one inch; all hot water piping with a nominal diameter less than 3/4 inch that is: associated with a domestic hot water recirculation system, from the heating source to storage tank or between tanks, buried below grade, and from the heating source to kitchen fixtures.*
§ 150.0(j)3;	Insulation Protection. Piping insulation must be protected from damage, including that due to sunlight, moisture, equipment maintenance, and wind as required by Section 120.3(b). Insulation exposed to weather must be water retardant and protected from UV light (no adhesive tapes). Insulation covering chilled water piping and refrigerant suction piping located outside the conditioned space must include, or be protected by, a Class I or Class II vapor retarder. Pipe insulation buried below grade must be installed in a waterproof and non-crushable casing or sleeve.
§ 150.0(n)1.	Gas or Propane Water Heating Systems. Systems using gas or propane water heaters to serve individual dwelling units must include all of the following: A dedicated 125 volt, 20 amp electrical receptacle connected to the electric panel with a 120/240 volt 3 conductor, 10 AWG copper branch circuit, within three feet of the water heater without obstruction. Both ends of the unused conductor must be labeled with the word "spare" and be electrically isolated. Have a reserved single pole circuit breaker space in the electrical panel adjacent to the circuit breaker for the branch circuit and labeled with the words "Future 240V Use"; a Category III or IV vent, or a Type B vent with straight pipe between the outside termination and the space where the water heater is installed; a condensate drain that is no more than two inches higher than the base of the water heater, and allows natural draining without pump assistance; and a gas supply line with a capacity of at least 200,000 Btu per hour.
§ 150.0(n)2:	Recirculating Loops. Recirculating loops serving multiple dwelling units must meet the requirements of § 110.3(c)5.
3 150.0(n)3:	Solar Water-heating Systems. Solar water-heating systems and collectors must be certified and rated by the Solar Rating and Certification Corporation (SRCC), the International Association of Plumbing and Mechanical Officials, Research and Testing (IAPMO R&T), or by a listing agency that is approved by the Executive Director.
Ducts and Fans	Measures:
110.8(d)3;	Ducts. Insulation installed on an existing space-conditioning duct must comply with § 604.0 of the California Mechanical Code (CMC). If a contractor installs the insulation, the contractor must certify to the customer, in writing, that the insulation meets this requirement.
§ 150.0(m)1:	CMC Compliance. All air-distribution system ducts and plenums must meet the requirements of the CMC §§ 601.0, 602.0, 603.0, 604.0, 605.0 and ANSI/SMACNA-006-2006 HVAC Duct Construction Standards Metal and Flexible 3rd Edition. Portions of supply-air and return-air ducts and plenums must be insulated to a minimum installed level of R-6.0 or a minimum installed level of R-4.2 when ducts are entirely in conditioned space as confirmed through field verification and diagnostic testing (RA3.1.4.3.8). Portions of the duct system completely exposed and surrounded by directly conditioned space are not required to be insulated. Connections of metal ducts and inner core of flexible ducts must be mechanically fastened. Openings must be sealed with mastic, tape, or other duct-closure system that meets the applicable requirements of UL 181, UL 181A, or UL 181B or aerosol sealant that meets the requirements of UL 723. If mastic or tape is used to seal openings greater than ¼ inch, the combination of mastic and either mesh or tape must be used. Building cavities, support platforms for air handlers, and plenums designed or constructed with materials other than sealed sheet metal, duct board or flexible duct must not be used to convey conditioned air. Building cavities and support platforms may contain ducts. Ducts installed in cavities and support platforms must not be compressed to cause reductions in the cross-sectional area.*
§ 150.0(m)2:	Factory-Fabricated Duct Systems. Factory-fabricated duct systems must comply with applicable requirements for duct construction, connections, and closures; joints and seams of duct systems and their components must not be sealed with cloth back rubber adhesive duct tapes unless such tape is used in combination with mastic and draw bands.
150.0(m)3;	Field-Fabricated Duct Systems. Field-fabricated duct systems must comply with applicable requirements for: pressure-sensitive tapes, mastics, sealants, and other requirements specified for duct construction.
150.0(m)7:	Backdraft Damper. Fan systems that exchange air between the conditioned space and outdoors must have backdraft or automatic dampers.
150.0(m)8:	Gravity Ventilation Dampers, Gravity ventilating systems serving conditioned space must have either automatic or readily accessible, manually operated dampers in all openings to the outside, except combustion inlet and outlet air openings and elevator shaft vents.
150.0(m)9:	Protection of Insulation. Insulation must be protected from damage, sunlight, moisture, equipment maintenance, and wind. Insulation exposed to weather must be suitable for outdoor service. For example, protected by aluminum, sheet metal, painted canvas, or plastic cover. Cellular foam insulation must be protected as above or painted with a coating that is water retardant and provides shielding from solar radiation.
150.0(m)10;	Porous Inner Core Flex Duct. Porous inner core flex ducts must have a non-porous layer between the inner core and outer vapor barrier.
150.0(m)11:	Duct System Sealing and Leakage Test. When space conditioning systems use forced air duct systems to supply conditioned air to an occupiable space, the ducts must be sealed and duct leakage tested, as confirmed through field verification and diagnostic testing, in accordance with § 150.0(m)11 and Reference Residential Appendix RA3.
i 150.0(m)12:	Air Filtration. Space conditioning systems with ducts exceeding 10 feet and the supply side of ventilation systems must have MERV 13 or equivalent filters. Filters for space conditioning systems must have a two inch depth or can be one inch if sized per Equation 150.0-A. Pressure drops and labeling must meet the requirements in §150.0(m)12. Filters must be accessible for regular service.*
150.0(m)13:	Space Conditioning System Airflow Rate and Fan Efficacy. Space conditioning systems that use ducts to supply cooling must have a hole for the placement of a static pressure probe, or a permanently installed static pressure probe in the supply plenum. Airflow must be ≥ 350 CFM per ton of nominal cooling capacity, and an air-handling unit fan efficacy ≤ 0.45 watts per CFM for gas furnace air handlers and ≤ 0.58 watts per CFM for all others. Small duct high velocity systems must provide an airflow ≥ 250 CFM per ton of nominal cooling capacity, and an air-handling unit fan efficacy ≤ 0.62 watts per CFM. Field verification testing is required in accordance with Reference Residential Appendix RA3.3.*

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2019 Low-Rise Residential Mandatory Measures Summary

Building Envelop	
§ 110.6(a)1:	Air Leakage. Manufactured fenestration, exterior doors, and exterior pet doors must limit air leakage to 0.3 CFM per square foot or less whein tested per NFRC-400, ASTM E283 or AAMA/WDMA/CSA 101/LS.2/A440-2011.
§ 110.6(a)5:	Labieling. Fenestration products and exterior doors must have a label meeting the requirements of § 10-111(a).
§ 110.6(b):	Field fabricated exterior doors and fenestration products must use U-factors and solar heat gain coefficient (SHGC) values from Tables 110.6-A, 110.6-B, or JA4.5 for exterior doors. They must be caulked and/or weather-stripped.
§ 110.7:	Air Leakage. All joints, penetrations, and other openings in the building envelope that are potential sources of air leakage must be caulked, gasketed, or weather stripped.
§ 110.8(a):	Insulation Certification by Manufacturers. Insulation must be certified by the Department of Consumer Affairs, Bureau of Household Goods and Services (BHGS).
§ 110.8(g):	Insulation Requirements for Heated Slab Floors. Heated slab floors must be insulated per the requirements of § 110.8(g).
§ 110.8(i):	Roofing Products Solar Reflectance and Thermal Emittance. The thermal emittance and aged solar reflectance values of the roofing material must meet the requirements of § 110.8(i) and be labeled per §10-113 when the installation of a cool roof is specified on the CF1R.
§ 110.8(j):	Radiant Barrier. When required, radiant barriers must have an emittance of 0.05 or less and be certified to the Department of Consumer Affal
§ 150.0(a):	Ceiling and Rafter Roof Insulation. Minimum R-22 insulation in wood-frame ceiling; or the weighted average U-factor must not exceed 0.047 Minimum R-19 or weighted average U-factor of 0.054 or less in a rafter roof alteration. Attic access doors must have permanently attached insulation using adhesive or mechanical fasteners. The attic access must be gasketed to prevent air leakage. Insulation must be installed in direct contact with a continuous roof or ceiling which is sealed to limit infiltration and exfiltration as specified in § 110.7, including but not limited to placing insulation either above or below the roof deck or on top of a drywall ceiling.*
§ 150.0(b):	Looise-fill Insulation. Looise fill insulation must meet the manufacturer's required density for the labeled R-value.
§ 150.0(c):	Wallt Insulation. Minimum R-13 insulation in 2x4 inch wood framing wall or have a U-factor of 0.102 or less, or R-20 in 2x6 inch wood framing have a U-factor of 0.071 or less. Opaque non-framed assemblies must have an overall assembly U-factor not exceeding 0.102. Masonry walls must meet Tables 150.1-A or B.
§ 150.0(d):	Raissed-floor Insulation. Minimum R-19 insulation in raised wood framed floor or 0.037 maximum U-factor.
§ 150.0(f):	Slab Edge Insulation. Slab edge insulation must meet all of the following: have a water absorption rate, for the insulation material alone with facings, no greater than 0.3 percent; have a water vapor permeance no greater than 2.0 perm per inch; be protected from physical damage ar UV light deterioration; and, when installed as part of a heated slab floor, meet the requirements of § 110.8(g).
§ 150.0(g)1:	Vapor Retarder. In climate zones 1 through 16, the earth floor of unvented crawl space must be covered with a Class I or Class II vapor retainder. This requirement also applies to controlled ventilation crawl space for buildings complying with the exception to § 150.0(d).
§ 150.0(g)2:	Vapior Retarder. In climate zones 14 and 16, a Class I or Class II vapor retarder must be installed on the conditioned space side of all insullation in all exterior walls, vented attics, and unvented attics with air-permeable insulation. Feniestration Products. Fenestration, including skylights, separating conditioned space from unconditioned space or outdoors must have a
§ 150.0(q):	maximum U-factor of 0.58, or the weighted average U-factor of all fenestration must not exceed 0.58.
Fireplaces, Decor	rative Gas Appliances, and Gas Log Measures:
§ 110.5(e)	Pilort Light. Continuously burning pilot lights are not allowed for indoor and outdoor fireplaces.
§ 150.0(e)1:	Closable Doors, Masonry or factory-built fireplaces must have a closable metal or glass door covering the entire opening of the firebox.
§ 150.0(e)2:	Combustion Intake. Masonry or factory-built fireplaces must have a combustion outside air intake, which is at least six square inches in area and is equipped with a readily accessible, operable, and tight-fitting damper or combustion-air control device.
§ 150.0(e)3:	Flue Damper. Masonry or factory-built fireplaces must have a flue damper with a readily accessible control.
	ng, Water Heating, and Plumbing System Measures:
§ 110.0-§ 110.3:	Certification. Healing, ventilation and air conditioning (HVAC) equipment, water heaters, showerheads, faucets, and all other regulated appliances must be certified by the manufacturer to the California Energy Commission.
§ 110.2(a):	HVAC Efficiency. Equipment must meet the applicable efficiency requirements in Table 110.2-A through Table 110.2-K.
§ 110.2(b):	Controls for Heat Pumps with Supplementary Electric Resistance Heaters. Heat pumps with supplementary electric resistance heaters must have controls that prevent supplementary heater operation when the heating load can be met by the heat pump alone; and in which the cut-on temperature for compression heating is higher than the cut-on temperature for supplementary heating, and the cut-off temperature for compression heating is higher than the cut-off temperature for supplementary heating.
§ 110,2(c):	Thermostats. All heating or cooling systems not controlled by a central energy management control system (EMCS) must have a setback thermostat.
§ 110.3(c)4:	Water Heating Recirculation Loops Serving Multiple Dwelling Units. Water heating recirculation loops serving multiple dwelling units mus meet the air release valve, backflow prevention, pump priming, pump isolation valve, and recirculation loop connection requirements of § 110.3(c)4.
§ 110.3(c)6:	Isolation Valves. Instantaneous water heaters with an input rating greater than 6.8 kBtu per hour (2 kW) must have isolation valves with hose bibbs or other fittings on both cold and hot water lines to allow for flushing the water heater when the valves are closed.
§ 110.5:	Pilot Lights. Continuously burning pilot lights are prohibited for natural gas: fan-type central furnaces; household cooking appliances (except appliances without an electrical supply voltage connection with pilot lights that consume less than 150 Btu per hour); and pool and spa heater
§ 150.0(h)1:	Building Cooling and Heating Loads. Heating and/or cooling loads are calculated in accordance with the ASHRAE Handbook, Equipment Volume, Applications Volume, and Fundamentals Volume; the SMACNA Residential Comfort System Installation Standards Manual; or the ACCA Manual J using design conditions specified in § 150.0(h)2.

CERTIFICATE OF COMPLIANCE CF1R-PRF-01E (Page 10 of 12) Project Name: Rebuilt Two Story house Calculation Date/Time: 2021-07-01T12:08:21-07:00 Input File Name: 13220 6829 Pleasant Valley Road ,Vacaville main house 2 story ranpel Calculation Description: Title 24 Analysis HVAC COOLING - HERS VERIFICATION 06 Verified Airflow **Airflow Target** Verified EER Verified SEER **Verified Refrigerant Charge** Cooling Component 350 Required Required Cooling Component 350 Required Not Required 2-hers-cool HVAC - DISTRIBUTION SYSTEMS 03 04 05 06 07 08 09 10 11 12 Bypass Duct Leakage Design Type Supply Return Return Verification Air Distribution Conditioned Sealed and Distribution Bypass System 1 space-entirely 1-hers-dist Air Distribution Sealed and Distribution Unconditioned attic Non-Verified R-8 R-8 Attic n/a n/a Bypass System 2 Tested System 2-hers-dist HVAC DISTRIBUTION - HERS VERIFICATION 09

Name	Duct Leakage Verification	Duct Leakage Target (%)	Verified Duct Location	Verified Duct Design	Buried Ducts	Deeply Buried Ducts	Low-leakage Air Handler	Ducts Entirely in Conditioned Space
ir Distribution stem 1-hers-dist	Yes	total leakage <= 12.0 or leakage to outdoors <= 6.0	Required	Not Required	Not Required	Credit not taken	Not Required	No
gistration Number	": 221-P010135710A-000	-000-0000000-0000		Registration Date/1	ime: 2021-07-02 00:53:40	НЕГ	tS Provider:	CalCERTS inc.

Report Version: 2019.1.300

Schema Version: rev 20200901

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CA Building Energy Efficiency Standards - 2019 Residential Compliance

CA Building Energy Efficiency Standards - 2019 Residential Compliance

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

CERTIFICATE OF CO	MPLIANCE							CF1R-PRF-01E
Project Name: Reb	uilt Two Story house	0		Calculati	on Date/Time: 2021	L-07-01T12:08:21-07	7:00	(Page 11 of 12)
Calculation Descrip	otion: Title 24 Analy	sis		Input File	Name: 13220 6829	Pleasant Valley Roa	nd ,Vacaville main ho	use 2 story ranpel
HVAC DISTRIBUTION	- HERS VERIFICATION		Marina and photo before to add an over construction of a cross a construction employed and a	duplex.ri	od19x	ж об из хам сколона положения основняе жер сменя о то поступульную продуступульного учество.	TOTAL TOTAL PORT OF THE TOTAL PROPERTY OF TH	
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Name	Duct Leakage Verification	Duct Leakage Target (%)	Verified Duct Location	Verified Duct Design	Buried Ducts	Deeply Buried Ducts	Low-leakage Air Handler	Low Leakage Ducts Entirely in Conditioned Space
Air Distribution System 2-hers-dist	Yes	total leakage <= 12.0 or leakage to outdoors <= 6.0	Not Required	Not Required	Not Required	Credit not taken	Not Required	No

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	Name			Туре	Fan Po	wer (Watts/CFM)	Name
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de la companya de la	HVAC Fan 2	4		HVAC Fan		0.45	HVAC Fan 2-hers-fan
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Dwelling Unit	IAQ CFM	IAQ Watts/CFM	IAQ Fan Type	IAQ Recovery Effectiveness (%)	IAQ Recovery Effectiveness - SREIAQ Recovery Effectiveness
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IAQ (INDOOR AIR QUALITY) FAN	IS .				
HVAC Fan	2-hers-fan	Req	uired	0	.45
rivac ran	T-HGLZ-1911	neq.	uirea	Ų	.45

Dwelling Unit	IAQ CFM	IAQ Watts/CFM	IAQ Fan Type	IAQ Recovery Effectiveness (%)	SREIAQ Recovery Effectiveness - SRE
DDU-1 dn 1/1	70	0.25	Default	0	n/a
DDU-2 Up 1/1	121	0.25	Default	0	n/a
Registration Number: 221-P0101	135710A-000-000-0000000-0000	Registra	ition Date/Time: 2021-07-02 00:53:40	HERS Provider:	CalCERTS inc.
CA Building Energy Efficiency St	tandards - 2019 Residential Comp	liance Report	Version: 2019.1.300	Report General	ted: 2021-07-01 12:09:15

CERTIFICATE OF COMPLIANCE			CF1R-PRF-01E
Project Name: Rebuilt Two Story house		Calculation Date/Time: 2021-07-01T12:08:21-07:00	(Page 12 of 12)
Calculation Description: Title 24 Analysis		Input File Name: 13220 6829 Pleasant Valley Road ,Vacaville m:	ain house 2 story ranpel
DOCUMENTATION AUTHOR'S DECLARATION STA	ATEMENT	CAN DISTRIBUTE CONTRACTOR	

Report Version: 2019.1.300 Schema Version: rev 20200901

Documentation Author Name:	Documentation Author Signature:
Kevin Laughton	Kevin Laughton
Company:	Signature Date:
Tailored Energy Services	2021-07-02 00:53:40
Address: 548 Market St #30051	CEA/ HERS Certification Identification (If applicable):
City/State/Zip:	Phone:
San Francisco, CA 94120	888-310-0808
RESPONSIBLE PERSON'S DECLARATION STATEMENT	
	Compliance conform to the requirements of Title 24, Part 1 and Part 6 of the California Code of Regulations. The compliance documents, worksheets,
Responsible Designer Name: Kevin Laughton	Kevin Lauchton
Company: HERS Tailored Energy Services	Date Signed:) 2021-07-02 00:53:40
Address: 548 Market St #30051	License: tba

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.

221-P010135710A-000-000-0000000-0000 CA Building Energy Efficiency Standards - 2019 Residential Compliance

City/State/Zip: San Francisco, CA 94120

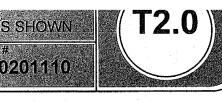
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	2019 Low-Rise Residential Mandatory Measures Summary
§ 150.0(k)2G:	Interior Switches and Controls. An energy management control system (EMCS) may be used to comply with control requirements if it: provides functionality of the specified control according to § 110.9; meets the Installation Certificate requirements of § 130.4; meets the EMCS requirements of § 130.0(e); and meets all other requirements in § 150.0(k)2.
§ 150.0(k)2H:	Interior Switches and Controls. A multiscene programmable controller may be used to comply with dimmer requirements in § 150.0(k) if it provides the functionality of a dimmer according to § 110.9, and complies with all other applicable requirements in § 150.0(k)2.
§ 150.0(k)2l:	Interior Switches and Controls. In bathrooms, garages, laundry rooms, and utility rooms, at least one luminaire in each of these spaces must be controlled by an occupant sensor or a vacancy sensor providing automatic-off functionality. If an occupant sensor is installed, it must be initially configured to manual-on operation using the manual control required under Section 150.0(k)2C.
§ 150.0(k)2J:	Interior Switches and Controls. Luminaires that are or contain light sources that meet Reference Joint Appendix JA8 requirements for dimming, and that are not controlled by occupancy or vacancy sensors, must have dimming controls.
§ 150.0(k)2K:	Interior Switches and Controls. Under cabinet lighting must be controlled separately from ceiling-installed lighting systems.
§ 150.0(k)3A:	Residential Outdoor Lighting. For single-family residential buildings, outdoor lighting permanently mounted to a residential building, or to other buildings on the same lot, must meet the requirement in item § 150.0(k)3Ai (ON and OFF switch) and the requirements in either § 150.0(k)3Aii (photocell and either a motion sensor or automatic time switch control) or § 150.0(k)3Aii (astronomical time clock), or an EMCS.
§ 150.0(k)3B:	Residential Outdoor Lighting. For low-rise residential buildings with four or more dwelling units, outdoor lighting for private patios, entrances, balconies, and porches; and residential parking lots and carports with less than eight vehicles per site must comply with either § 150.0(k)3A or with the applicable requirements in Sections 110.9, 130.0, 130.2, 130.4, 140.7 and 141.0.
§ 150.0(k)3C;	Residential Outdoor Lighting. For low-rise residential buildings with four or more dwelling units, any outdoor lighting for residential parking lots or carports with a total of eight or more vehicles per site and any outdoor lighting not regulated by § 150.0(k)3B or § 150.0(k)3D must comply with the applicable requirements in Sections 110.9, 130.0, 130.2, 130.4, 140.7 and 141.0.
§ 150.0(k)4:	Internally illuminated address signs. Internally illuminated address signs must comply with § 140.8; or must consume no more than 5 watts of power as determined according to § 130.0(c).
§ 150.0(k)5:	Residential Garages for Eight or More Vehicles. Lighting for residential parking garages for eight or more vehicles must comply with the applicable requirements for nonresidential garages in Sections 110.9, 130.0, 130.1, 130.4, 140.6, and 141.0.
§ 150.0(k)6A:	Interior Common Areas of Low-rise Multifamily Residential Buildings. In a low-rise multifamily residential building where the total interior common area in a single building equals 20 percent or less of the floor area, permanently installed lighting for the interior common areas in that building must be comply with Table 150.0-A and be controlled by an occupant sensor.
§ 150.0(k)6B:	Interior Common Areas of Low-rise Multifamily Residential Buildings. In a low-rise multifamily residential building where the total interior common area in a single building equals more than 20 percent of the floor area, permanently installed lighting for the interior common areas in that building must: i. Comply with the applicable requirements in Sections 110.9, 130.0, 130.1, 140.6 and 141.0; and ii. Lighting installed in corridors and stairwells must be controlled by occupant sensors that reduce the lighting power in each space by at least 50 percent. The occupant sensors must be capable of turning the light fully on and off from all designed paths of ingress and egress.
Solar Ready Buil	
§ 110.10(a)1:	Single Family Residences. Single family residences located in subdivisions with 10 or more single family residences and where the application for a tentative subdivision map for the residences has been deemed complete and approved by the enforcement agency, which do not have a photovoltaic system installed, must comply with the requirements of § 110.10(b) through § 110.10(e).
§ 110.10(a)2:	Low-rise Multifamily Buildings. Low-rise multi-family buildings that do not have a photovoltaic system installed must comply with the requirements of § 110.10(b) through § 110.10(d).
§ 110.10(b)1:	Minimum Solar Zone Area. The solar zone must have a minimum total area as described below. The solar zone must comply with access, pathway, smoke ventilation, and spacing requirements as specified in Title 24, Part 9 or other parts of Title 24 or in any requirements adopted by a local jurisdiction. The solar zone total area must be comprised of areas that have no dimension less than 5 feet and are no less than 80 square feet each for buildings with roof areas less than or equal to 10,000 square feet or no less than 160 square feet each for buildings with roof areas greater than 10,000 square feet. For single family residences, the solar zone must be located on the roof or overhang of the building and have a total area no less than 250 square feet, For low-rise multi-family buildings the solar zone must be located on the roof or overhang of
	the building, or on the roof or overhang of another structure located within 250 feet of the building, or on covered parking installed with the building project, and have a total area no less than 15 percent of the total roof area of the building excluding any skylight area. The solar zone requirement is applicable to the entire building, including mixed occupancy.*
§ 110.10(b)2:	Azimuth. All sections of the solar zone located on steep-sloped roofs must be oriented between 90 degrees and 300 degrees of true north.
§ 110.10(b)3A:	Shading. The solar zone must not contain any obstructions, including but not limited to: vents, chimneys, architectural features, and roof mounted equipment.*
§ 110.10(b)3B:	Shading. Any obstruction located on the roof or any other part of the building that projects above a solar zone must be located at least twice the distance, measured in the horizontal plane, of the height difference between the highest point of the obstruction and the horizontal projection of the mearest point of the solar zone, measured in the vertical plane.
§ 110.10(b)4:	Structural Design Loads on Construction Documents. For areas of the roof designated as a solar zone, the structural design loads for roof dead load and roof live load must be clearly indicated on the construction documents.
§ 110.10(c):	Interconnection Pathways. The construction documents must indicate: a location reserved for inverters and metering equipment and a pathway reserved for routing of conduit from the solar zone to the point of interconnection with the electrical service; and for single family residences and central water-heating systems, a pathway reserved for routing plumbing from the solar zone to the water-heating system.
§ 110.10(d):	Documentation. A copy of the construction documents or a comparable document indicating the information from § 110.10(b) through § 110.10(c) must be provided to the occupant.

Maim Electrical Service Panel. The main electrical service panel must have a minimum busbar rating of 200 amps.

breaker for a future solar electric installation. The reserved space must be permanently marked as "For Future Solar Electric".

Maim Electrical Service Panel. The main electrical service panel must have a reserved space to allow for the installation of a double pole circuit

	2019 Low-Rise Residential Mandatory Measures Summary
§ 150.0(h)3A:	Clearances. Air conditioner and heat pump outdoor condensing units must have a clearance of at least five feet from the outlet of any dryer
§ 150.0(h)3B:	Liquid Line Drier. Air conditioners and heat pump systems must be equipped with liquid line filter driers if required, as specified by the manufacturer's instructions.
§ 150.0(j)1:	Storage Tank Insulation. Unfired hot water tanks, such as storage tanks and backup storage tanks for solar water-heating systems, must ha a minimum of R-12 external insulation or R-16 internal insulation where the internal insulation R-value is indicated on the exterior of the tank.
§ 150.0(j)2A:	Water Piping, Solar Water-heating System Piping, and Space Conditioning System Line Insulation. All domestic hot water piping must be insulated as specified in Section 609.11 of the California Plumbing Code. In addition, the following piping conditions must have a minimum insulation wall thickness of one inch or a minimum insulation R-value of 7.7: the first five feet of cold water pipes from the storage tank; all hot water piping with a nominal diameter equal to or greater than 3/4 inch and less than one inch; all hot water piping with a nominal diameter les than 3/4 inch that is: associated with a domestic hot water recirculation system, from the heating source to storage tank or between tanks, buried below grade, and from the heating source to kitchen fixtures.*
§ 150.0(j)3:	Insulation Protection. Piping insulation must be protected from damage, including that due to sunlight, moisture, equipment maintenance, a wind as required by Section 120.3(b). Insulation exposed to weather must be water retardant and protected from UV light (no adhesive tapes insulation covering chilled water piping and refrigerant suction piping located outside the conditioned space must include, or be protected by, Class I or Class II vapor retarder. Pipe insulation buried below grade must be installed in a waterproof and non-crushable casing or sleeve.
§ 150.0(n)1:	Gas or Propane Water Heating Systems. Systems using gas or propane water heaters to serve individual dwelling units must include all of the following: A dedicated 125 volt, 20 amp electrical receptacle connected to the electric panel with a 120/240 volt 3 conductor, 10 AWG copper branch circuit, within three feet of the water heater without obstruction. Both ends of the unused conductor must be labeled with the word "spare" and be electrically isolated. Have a reserved single pole circuit breaker space in the electrical panel adjacent to the circuit break for the branch circuit and labeled with the words "Future 240V Use"; a Category III or IV vent, or a Type B vent with straight pipe between the outside termination and the space where the water heater is installed; a condensate drain that is no more than two inches higher than the bas of the water heater, and allows natural draining without pump assistance; and a gas supply line with a capacity of at least 200,000 Btu per ho
§ 150.0(n)2:	Recirculating Loops. Recirculating loops serving multiple dwelling units must meet the requirements of § 110.3(c)5.
§ 150.0(n)3:	Solar Water-heating Systems. Solar water-heating systems and collectors must be certified and rated by the Solar Rating and Certification Corporation (SRCC), the International Association of Plumbing and Mechanical Officials, Research and Testing (IAPMO R&T), or by a listing agency that is approved by the Executive Director.
Ducts and Fans	Measures:
§ 110.8(d)3:	Ducts. Insulation installed on an existing space-conditioning duct must comply with § 604.0 of the California Mechanical Code (CMC). If a contractor installs the insulation, the contractor must certify to the customer, in writing, that the insulation meets this requirement.
§ 150.0(m)1:	CMC Compliance. All air-distribution system ducts and plenums must meet the requirements of the CMC §§ 601.0, 602.0, 603.0, 604.0, 605. and ANSI/SMACNA-006-2006 HVAC Duct Construction Standards Metal and Flexible 3rd Edition. Portions of supply-air and return-air ducts a plenums must be insulated to a minimum installed level of R-6.0 or a minimum installed level of R-4.2 when ducts are entirely in conditioned space as confirmed through field verification and diagnostic testing (RA3.1.4.3.8). Portions of the duct system completely exposed and surrounded by directly conditioned space are not required to be insulated. Connections of metal ducts and inner core of flexible ducts must be mechanically fastened. Openings must be sealed with mastic, tape, or other duct-closure system that meets the applicable requirements of UI 181, UL 181A, or UL 181B or aerosol sealant that meets the requirements of UL 723. If mastic or tape is used to seal openings greater than ½ inch, the combination of mastic and either mesh or tape must be used. Building cavities, support platforms for air handlers, and plenums designed or constructed with materials other than sealed sheet metal, duct board or flexible duct must not be used to convey conditioned air. Building cavities and support platforms may contain ducts. Ducts installed in cavities and support platforms must not be compressed to cause

reductions in the cross-sectional area.*

tapes unless such tape is used in combination with mastic and draw bands.

mastics, sealants, and other requirements specified for duct construction.

accordance with § 150.0(m)11 and Reference Residential Appendix RA3.

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§ 150.0(m)2:

§ 150.0(m)7:

§ 150.0(m)11:

§ 150.0(m)12:

§ 150.0(m)13:

2010 Low-Rica Posidential Mandatory Measures Summary

Factory-Fabricated Duct Systems. Factory-fabricated duct systems must comply with applicable requirements for duct construction,

connections, and closures; joints and seams of duct systems and their components must not be sealed with cloth back rubber adhesive duct

Backdraft Damper. Fan systems that exchange air between the conditioned space and outdoors must have backdraft or automatic dampers.

Protection of Insulation. Insulation must be protected from damage, sunlight, moisture, equipment maintenance, and wind. Insulation exposed to weather must be suitable for outdoor service. For example, protected by aluminum, sheet metal, painted canvas, or plastic cover. Cellular foam insulation must be protected as above or painted with a coating that is water retardant and provides shielding from solar radiation.

Field-Fabricated Duct Systems. Field-fabricated duct systems must comply with applicable requirements for: pressure-sensitive tapes,

Gravity Ventilation Dampers. Gravity ventilating systems serving conditioned space must have either automatic or readily accessible, manually operated dampers in all openings to the outside, except combustion inlet and outlet air openings and elevator shaft vents.

Duct System Sealing and Leakage Test. When space conditioning systems use forced air duct systems to supply conditioned air to an occupiable space, the ducts must be sealed and duct leakage tested, as confirmed through field verification and diagnostic testing, in

Air Filtration. Space conditioning systems with ducts exceeding 10 feet and the supply side of ventilation systems must have MERV 13 or

equivalent filters. Filters for space conditioning systems must have a two inch depth or can be one inch if sized per Equation 150.0-A. Pressure

Space Conditioning System Airflow Rate and Fan Efficacy. Space conditioning systems that use ducts to supply cooling must have a hole

for the placement of a static pressure probe, or a permanently installed static pressure probe in the supply plenum. Airflow must be ≥ 350 CFM

per ton of nominal cooling capacity, and an air-handling unit fan efficacy ≤ 0.45 watts per CFM for gas furnace air handlers and ≤ 0.58 watts per

CFM for all others. Small duct high velocity systems must provide an airflow ≥ 250 CFM per ton of nominal cooling capacity, and an air-handling unit fan efficacy ≤ 0.62 watts per CFM. Field verification testing is required in accordance with Reference Residential Appendix RA3.3.*

§ 150.0(m)10: Porous Inner Core Flex Duct. Porous inner core flex ducts must have a non-porous layer between the inner core and outer vapor barrier.

drops and labeling must meet the requirements in §150.0(m)12. Filters must be accessible for regular service.*

Requirements for	Venitilation and Indoor Air Quality:
§ 150.0(o)1:	Requirements for Ventilation and Indoor Air Quality. All dwelling units must meet the requirements of ASHRAE Standard 62.2, Ventilation and Acceptable Indoor Air Quality in Residential Buildings subject to the amendments specified in § 150.0(o)1.
§ 150.0(o)1C:	Single Family Detached Dwelling Units. Single family detached dwelling units, and attached dwelling units not sharing ceilings or floors with other dwelling units, occupiable spaces, public garages, or commercial spaces must have mechanical ventilation airflow provided at rates determined by ASHRAE 62.2 Sections 4.1.1 and 4.1.2 and as specified in § 150.0(o)1C.
§ 150.0(o)1E:	Multifamily Attached Dwelling Units. Multifamily attached dwelling units must have mechanical ventilation airflow provided at rates in accordance with Equation 150.0-B and must be either a balanced system or continuous supply or continuous exhaust system. If a balanced system is not used, all units in the building must use the same system type and the dwelling-unit envelope leakage must be ≤ 0.3 CFM at 50 Pa (0.2 inch water) per square foot of dwelling unit envelope surface area and verified in accordance with Reference Residential Appendix RA3.8.
§ 150.0(o)1F:	Multifamily Building Central Ventilation Systems. Central ventilation systems that serve multiple dwelling units must be balanced to provide ventilation airflow for each dwelling unit served at a rate equal to or greater than the rate specified by Equation 150.0-B. All unit airflows must be within 20 percent of the unit with the lowest airflow rate as it relates to the individual unit's minimum required airflow rate needed for compliance
§ 150.0(o)1G:	Kitrchen Range Hoods. Kitchen range hoods must be rated for sound in accordance with Section 7.2 of ASHRAE 62.2.
§ 150.0(o)2:	Field Verification and Diagnostic Testing. Dwelling unit ventilation airflow must be verified in accordance with Reference Residential Appendix RA3.7. A kitchen range hood must be verified in accordance with Reference Residential Appendix RA3.7.4.3 to confirm it is rated by HVI to comply with the airflow rates and sound requirements as specified in Section 5 and 7.2 of ASHRAE 62.2.
Pool and Spa Sys	tems and Equipment Measures:
§ 110.4(a):	Certification by Manufacturers. Any pool or spa heating system or equipment must be certified to have all of the following: a thermal efficiency that complies with the Appliance Efficiency Regulations; an on-off switch mounted outside of the heater that allows shutting off the heater without adjusting the thermostat setting; a permanent weatherproof plate or card with operating instructions; and must not use electric resistance heating.*
§ 110.4(b)1:	Piping. Any pool or spa heating system or equipment must be installed with at least 36 inches of pipe between the filter and the heater, or dedicated suction and return lines, or built-in or built-ip connections to allow for future solar heating.
§ 110.4(b)2:	Covers. Outdoor pools or spas that have a heat pump or gas heater must have a cover.
§ 110.4(b)3:	Directional Inlets and Time Switches for Pools. Pools must have directional inlets that adequately mix the pool water, and a time switch that will allow all pumps to be set or programmed to run only during off-peak electric demand periods.
§ 110.5:	Pilot Light. Natural gas pool and spa heaters must not have a continuously burning pilot light.
§ 150.0(p):	Pool Systems and Equipment Installation. Residential pool systems or equipment must meet the specified requirements for pump sizing, flow rate, piping, filters, and valves.
Lighting Measure	s:
§ 110.9:	Lighting Controls and Components. All lighting control devices and systems, ballasts, and luminaires must meet the applicable requirements of § 110.9.*
§ 150.0(k)1A:	Luminaire Efficacy. All installed luminaires must meet the requirements in Table 150.0-A.
§ 150.0(k)1B:	Blank Electrical Boxes. The number of electrical boxes that are more than five feet above the finished floor and do not contain a luminaire or other device must be no greater than the number of bedrooms. These electrical boxes must be served by a dimmer, vacancy sensor control, or fan speed control.
§ 150.0(k)1C:	Recessed Downlight Luminaires in Cellings. Luminaires recessed into cellings 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.
§ 150.0(k)1D:	Electronic Ballasts for Fluorescent Lamps. Ballasts for fluorescent lamps rated 13 watts or greater must be electronic and must have an output frequency no less than 20 kHz.
§ 150.0(k)1E:	Night Lights, Step Lights, and Path Lights. Night lights, step lights and path lights are not required to comply with Table 150.0-A or be controlled by vacancy sensors provided they are rated to consume no more than 5 watts of power and emit no more than 150 lumens.
§ 150.0(k)1F:	Lighting Integral to Exhaust Fans. Lighting integral to exhaust fans (except when installed by the manufacturer in kitchen exhaust hoods) must meet the applicable requirements of § 150.0(k).*
§ 150.0(k)1G:	Screw based luminaires. Screw based luminaires must contain lamps that comply with Reference Joint Appendix JA8.*
§ 150.0(k)1H:	Light Sources in Enclosed or Recessed Luminaires. Lamps and other separable light sources that are not compliant with the JA8 elevated temperature requirements, including marking requirements, must not be installed in enclosed or recessed luminaires.
§ 150.0(k)11:	Light Sources in Drawers, Cabinets, and Linen Closets. Light sources internal to drawers, cabinetry or linen closets are not required to comply with Table 150.0-A or be controlled by vacancy sensors provided that they are rated to consume no more than 5 watts of power, emit no more than 150 lumens, and are equipped with controls that automatically turn the lighting off when the drawer, cabinet or linen closet is closed.
§ 150.0(k)2A:	Interior Switches and Controls. All forward phase cut dimmers used with LED light sources must comply with NEMA SSL 7A.
§ 150.0(k)2B:	Interior Switches and Controls. Exhaust fans must be controlled separately from lighting systems.*
§ 150.0(k)2C:	Interior Switches and Controls. Lighting must have readily accessible wall-mounted controls that allow the lighting to be manually turned ON and OFF.*
§ 150.0(k)2D:	Interior Switches and Controls. Controls and equipment must be installed in accordance with manufacturer's instructions.
§ 150.0(k)2E:	Interior Switches and Controls. Controls must not bypass a dimmer, occupant sensor, or vacancy sensor function if the control is installed to comply with § 150.0(k).
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RESID			SAUES C	S MIAIIAI	MI				Charles and the Control of the Contr		RM
Project Nan Accesso	ory Buildi	ing			ding Type	□ Mul	iti Family		ng+ Addition	n/Alteration	Date 5/12
Project Add 6829 Ple		/alley Ro ad	Vacaville		ifornia Ene CA Clima			Total Cond. 1,2		Addition <i>n/a</i>	# 0
INSUL/ Constru		Туре		Car	vity	Area (ft²)	q2	ecial Fe	eatures		Statu
Wall	Wood Fra	med		R 15		1,161					New
Roof	Wood Fra	med Attic		R 38		1,250	Add=R-1	19.0 Cool Ro	oof		New
Slab	Unheated	Slab-on-Grade		- no in	sulation	1,250	Perim =	150'			New
FENES	TRATIO) N	Total Avan	179	0 01	D	1_	.3% New/			
Orienta		Area(<i>ft</i> ²)	Total Area:	SHGC	Glazing Overh	Percenta nand	ge: 14 Sidefir		Altered Avera erior Sha		0. Statu
Front (W)		95.0	0.280	0.23	none		none	N/A	J. IVI VIIC	u u v u	New
Rear (E)		48.0	0.280	0.23	none		none	NA	**************************************		New
Right (S)		36.0	0.280	0.23	none		none	NIA			New
								74			
HVAC S			Min. El	if Co	polina		Min.	Eff	Ther	mostat	Statu
Qty. F	SYSTEI leating		Min. E1		ooling om PTAC		Min. 11.0 E			mostat	Statu
Qty. I	leating				ooling		Min. 11.0 E		Ther Setback	mostat	(////////////////////////////////////
Qty. H	leating Room PTHE	BUTION	3.75 COP	Ro	om PTAC		11.0 E	ER	Setback D	uct	New
Qty. H	leating Room PTHE	BUTION Hea	3.75 COP ating	Co	om PTAC	Duc	HANDER CONTRACTOR OF THE PERSON NAMED IN	ER	Setback D		New Statu
Qty. H	leating Room PTHE	BUTION Hea	3.75 COP	Co	om PTAC	Duc	11.0 E	ER	Setback D	uct -Value	New
Qty. H	leating Room PTHE	BUTION Hea	3.75 COP ating	Co	om PTAC		11.0 E	ER	Setback D R	uct -Value	New Statu
Qty. H 1 R HVAC I Location	Heating Room PTHE DISTRII DIN R HEAT	BUTION Hea	3.75 COP ating as I with Fan	Co Duc	oom PTAC ooling tless	nla	11.0 E	ER Lion	Setback D R	uct -Value	Statu New
Qty. H 1 R HVAC I Location hvac WATER Qty. T	Heating Room PTHF DISTRII DISTRII ON R HEAT Type	BUTION Hea Ductles	3.75 COP ating ss / with Fan Ga	Co	oom PTAC ooling tless Min. 1	nla	t Locat	ER Lion	Setback D R	uct -Value	Statu New Statu
HVAC I Location hvac WATER Qty. T	Heating Room PTHE DISTRII DIN R HEAT Type Small Instal	BUTION Hea Ducties ING	3.75 COP ating ss / with Fan Ga 0	Co Duc	oom PTAC poling tless Min. I 0.96	nla	t Locat Distrib	ER Lion	Setback D R	uct -Value	Statu New Statu New
HVAC I Location hvac WATER Qty. T	Heating Room PTHE DISTRII DIN R HEAT Type Small Instal	BUTION Hea Ductles	3.75 COP ating ss / with Fan Ga	Co Duc	oom PTAC ooling tless Min. 1	nla	t Locat	ER Lion	Setback D R	uct -Value	Statu New Statu



2019 Low-Rise Residential Mandatory Measures Summary

(01/2020)	
Building Envelop	
§ 110.6(a)1:	Air Leakage. Manufactured fenestration, exterior doors, and exterior pet doors must limit air leakage to 0.3 CFM per square foot or less when tested per NFRC-400, ASTM E283 or AAMA/WDMA/CSA 101/I.S.2/A440-2011.*
§ 110.6(a)5:	Laibeling. Fenestration products and exterior doors must have a label meeting the requirements of § 10-111(a).
§ 110.6(b):	Field fabricated exterior doors and fenestration products must use U-factors and solar heat gain coefficient (SHGC) values from Tables 110.6-A, 110.6-B, or JA4.5 for exterior doors. They must be caulked and/or weather-stripped.*
§ 110.7:	Air Leakage. All joints, penetrations, and other openings in the building envelope that are potential sources of air leakage must be caulked, gasketed, or weather stripped.
§ 110.8(a):	Insulation Certification by Manufacturers. insulation must be certified by the Department of Consumer Affairs, Bureau of Household Goods and Services (BHGS).
8 110 9(a)·	Insulation Requirements for Heated Slab Floors. Heated slab floors must be insulated per the requirements of § 110.8(g).
§ 110.8(g):	Roofing Products Solar Reflectance and Thermal Emittance. The thermal emittance and aged solar reflectance values of the roofing
§ 110.8(i):	material must meet the requirements of § 110.8(i) and be labeled per §10-113 when the installation of a cool roof is specified on the CF1R.
§ 110.8(j):	Radiant Barrier. When required, radiant barriers must have an emittance of 0.05 or less and be certified to the Department of Consumer Affair
§ 150.0(a):	Ceiling and Rafter Roof Insulation. Minimum R-22 insulation in wood-frame ceiling; or the weighted average U-factor must not exceed 0.043 Minimum R-19 or weighted average U-factor of 0.054 or less in a rafter roof alteration. Attic access doors must have permanently attached insulation using adhesive or mechanical fasteners. The attic access must be gasketed to prevent air leakage. Insulation must be installed in direct contact with a continuous roof or ceiling which is sealed to limit infiltration and exfiltration as specified in § 110.7, including but not limited to placing insulation either above or below the roof deck or on top of a drywall ceiling.*
§ 150.0(b):	Loose-fill Insulation. Loose fill insulation must meet the manufacturer's required density for the labeled R-value.
§ 150.0(c):	Wall Insulation. Minimum R-13 insulation in 2x4 inch wood framing wall or have a U-factor of 0.102 or less, or R-20 in 2x6 inch wood framing have a U-factor of 0.071 or less. Opaque non-framed assemblies must have an overall assembly U-factor not exceeding 0.102. Masonry walls must meet Tables 150.1-A or B.*
§ 150.0(d):	Raised-floor Insulation. Minimum R-19 insulation in raised wood framed floor or 0.037 maximum U-factor.*
§ 150.0(f):	Slab Edge Insulation. Slab edge insulation must meet all of the following: have a water absorption rate, for the insulation material alone withor facings, no greater than 0.3 percent; have a water vapor permeance no greater than 2.0 perm per inch; be protected from physical damage an UV light deterioration; and, when installed as part of a heated slab floor, meet the requirements of § 110.8(g).
§ 150.0(g)1:	Vapor Retarder. In climate zones 1 through 16, the earth floor of unvented crawl space must be covered with a Class I or Class II vapor retarder. This requirement also applies to controlled ventilation crawl space for buildings complying with the exception to § 150.0(d). Vapor Retarder. In climate zones 14 and 16, a Class I or Class II vapor retarder must be installed on the conditioned space side of all
§ 150.0(g)2:	insulation in all exterior walls, vented attics, and unvented attics with air-permeable insulation.
§ 150.0(q):	Femestration Products. Fenestration, including skylights, separating conditioned space from unconditioned space or outdoors must have a maximum U-factor of 0.58; or the weighted average U-factor of all fenestration must not exceed 0.58.
Fireplaces, Decor	rative Gas Appliances, and Gas Log Measures:
§ 110.5(e)	Pillot Light. Continuously burning pilot lights are not allowed for indoor and outdoor fireplaces.
§ 150.0(e)1:	Closable Doors. Masonry or factory-built fireplaces must have a closable metal or glass door covering the entire opening of the firebox.
§ 150.0(e)1:	Combustion Intake. Masonry or factory-built fireplaces must have a combustion outside air intake, which is at least six square inches in area and is equipped with a readily accessible, operable, and tight-fitting damper or combustion-air control device.*
§ 150.0(e)3:	Flue Damper. Masonry or factory-built fireplaces must have a flue damper with a readily accessible control.*
	ng, Water Heating, and Plumbing System Measures:
Opace Containin	Certification. Heating, ventilation and air conditioning (HVAC) equipment, water heaters, showerheads, faucets, and all other regulated
§ 110.0-§ 110.3:	appliances must be certified by the manufacturer to the California Energy Commission.*
§ 110.2(a):	HWAC Efficiency. Equipment must meet the applicable efficiency requirements in Table 110.2-A through Table 110.2-K.*
§ 110.2(b):	Controls for Heat Pumps with Supplementary Electric Resistance Heaters. Heat pumps with supplementary electric resistance heaters must have controls that prevent supplementary heater operation when the heating load can be met by the heat pump alone; and in which the cut-on temperature for compression heating is higher than the cut-on temperature for supplementary heating, and the cut-off temperature for
	compression heating is higher than the cut-off temperature for supplementary heating.* Thiermostats. All heating or cooling systems not controlled by a central energy management control system (EMCS) must have a
§ 110.2(c):	settback thermostat."
§ 110.3(c)4:	Water Heating Recirculation Loops Serving Multiple Dwelling Units. Water heating recirculation loops serving multiple dwelling units mus meet the air release valve, backflow prevention, pump priming, pump isolation valve, and recirculation loop connection requirements of § 110.3(c)4.
§ 110.3(c)6:	Isolation Valves. Instantaneous water heaters with an input rating greater than 6.8 kBtu per hour (2 kW) must have isolation valves with hose bibbs or other fittings on both cold and hot water lines to allow for flushing the water heater when the valves are closed.
§ 110.5:	Pillot Lights. Continuously burning pilot lights are prohibited for natural gas: fan-type central furnaces; household cooking appliances (except appliances without an electrical supply voltage connection with pilot lights that consume less than 150 Btu per hour); and pool and spa heater
§ 150.0(h)1:	Building Cooling and Heating Loads. Heating and/or cooling loads are calculated in accordance with the ASHRAE Handbook, Equipment Volume, Applications Volume, and Fundamentals Volume; the SMACNA Residential Comfort System Installation Standards Manual; or the ACCA Manual J using design conditions specified in § 150.0(h)2.

2019 CALGREEN RESIDENTIAL OCCUPANCIES APPLICATION CHECKLIST **SECTION A4.602** Effective January 1, 2020

	APPLICA	EVELS NT TO SE E MEASU		VERIFICATIONS ENFORCING AGENCY TO SPECIFY VERIFICATION METHOD			
FEATURE OR MEASURE		Prerequisites and Electives ¹		Enforcing Agency	Installer or Designer	Third- Party	
	Mandatory	Tier 1	Tier 2		D All		
Performance Approach for Newly Constructed Buildings				The second se			
A4.203.1.1.1 Tier 1 and Tier 2. Total Energy Design Rating (Total EDR) and Energy Efficiency Design Rating (Efficiency EDR) for the Proposed Design Building is included in the Certificate of Compliance documentation.		⊠ ²	⊠ ²	П		П	
A4.203.1.1.2 Tier 1 and Tier 2. Quality Insulation Installation procedures specified in the Building Energy Efficiency Standards Reference Appendices RA3.5 are completed.		⊠ ²	⊠ ²				
A4.203.1.2 Tier 1 and Tier 2 prerequisite options. One of the following options is required: Roof deck insulation or ducts in conditioned space. High performance walls.		⊠ ²	⊠²		П		
 HERS-verified compact hot water distribution system. HERS-verified drain water heat recovery. 							
A4.203.1.3.1 Tier 1. Buildings complying with the first level of advanced energy efficiency shall have additional integrated efficiency and onsite renewable energy generation to achieve a Total EDR for Tier 1 as specified in Table A4.203.1.1.1 or lower as calculated by Title 24, Part 6 Compliance Software approved by the Energy Commission. This Total EDR is in addition to meeting the Efficiency EDR.		⊠²				П	
A4.203.1.3.2 Tier 2. Buildings complying with the second level of advanced energy efficiency shall have additional integrated efficiency and onsite renewable energy generation to achieve a Total EDR for Tier 2 as specified in Table A4.203.1.1.1 or lower as calculated by Title 24, Part 6 Compliance Software approved by the Energy Commission. This Total EDR is in addition to meeting the Efficiency EDR.			⊠²				
A4.203.1.4 Local jurisdictions adopting Tier 1 or Tier 2, or considering community shared solar or storage options as specified, shall consult with the local electric service for acceptance.		⊠²	⊠ ²		П		
WATER EFFICIENCY AND CONSERVATION							
4.303.1 Plumbing fixtures (watter closets and urinals) and fittings (faucets and showerheads) installed in residential buildings shall comply with the prescriptive requirements of	×						

2019 CALGREEN RESIDENTIAL OCCUPANCIES APPLICATION CHECKLIST

SECTION A4.602

Effective January 1, 2020 HCD SHL 615C (New 01/20)

FEATURE OR MEASURE

4.303.2 Plumbing fixtures and fittings required in Section 4.303.1 shall be installed in accordance with the California

Plumbing Code, and shall meet the applicable referenced

A4.303.1 The maximum flow rate of kitchen faucets shall not exceed 1.5 gallons per minute at 60 psi. Kitchen faucets may temporarily increase the flow above the maximum rate, but not to exceed 2.2 gallons per minute at 60 psi, and must default to a maximum flow rate of 1.5 gallons per minute at

Note: Where complying faucets are unavailable, aerators or other means may be used to achieve reduction.

4.303.1.4.3 Metering faucets in residential buildings shall not deliver more than 0.2 gallons per cycle.

applications. Alternate nonpotable water sources are used

for indoor potable water reduction. Alternate nonpotable water sources shall be installed in accordance with the

A4.303.3 Install at least one qualified ENERGY STAR

A4.303.4 Nonwater urinals or waterless tollets are installed. A4.303.5 One- and two-family dwellings shall be equipped

4.304.1 Residential developments shall comply with a local water efficient landscape ordinance or the current California

A4.304.1 A rainwater capture, storage and re-use system is

A4.304.2 A landscape design is installed, which does not

A4.304.3 For new water service connections, landscaped irrigated areas less than 5,000 square feet shall be provided

with separate submeters or metering devices for outdoor

A4.305.1 Piping is installed to permit future use of a graywater irrigation system served by the clothes washer or other fixtures.

A4.305.2 Recycled water piping is installed.

Department of Water Resources' Model Water Efficient Landscape Ordinance (MWELO), whichever is more

A4.303.2 Alternate water source for nonpotable

with a demand hot water recirculation system.

California Plumbing Code.

Outdoor Water Use

designed and installed.

utilize potable water.

potable water use.

Water Reuse Systems

dishwasher or clothes washer.

LEVELS APPLICANT TO SELECT ELECTIVE MEASURES

and Electives¹

Tier 1 Tier 2

VERIFICATIONS ENFORCING AGENCY TO SPECIFY VERIFICATION METHOD

Designer

All

Enforcing Agency

	615C (New 01/20) LEVELS APPLICANT TO SELECT ELECTIVE MEASURES			VERIFICATIONS ENFORCING AGENCY TO SPECIFY VERIFICATION MET			
FEATURE OR MEASURE		Prerec	uisites ectives ¹	Enforcing Agency	Installer or Designer	TI P	
	Mandatory	Tier 1	Tier 2				
A4.106.4 Permeable paving is utilized for the parking, walking or patio surfaces in compliance with the following:							
Tier 1. Not less than 20% of the total parking, walking or patio surfaces shall be permeable.		\boxtimes^2					
Tier 2. Not less than 30% of the total parking, walking or patio surfaces shall be permeable.			\boxtimes^2				
A4.106.5 Roofing materials shall have a minimum 3-year aged solar reflectance and thermal emittance or a minimum Solar Reflectance Index (SRI) equal to or greater than the values specified in the applicable tables.							
Low-Rise Residential							
Tier 1. Roof covering shall meet or exceed the values contained in Table A4.106.5.1(1).		\boxtimes^2					
Tier 2. Roof covering shall meet or exceed the values contained in Table A4.106.5.1(2).			\boxtimes^2				
High-Rise Residential, Hotels and Motels							
Tier 1. Roof covering shall meet or exceed the values contained in Table A4.106.5.1(3).		\boxtimes^2					
Tier 2. Roof covering shall meet or exceed the values contained in Table A4.106.5.1(4).			⊠ ²				
A4.106.6 Install a vegetated roof for at least 50% of the roof area. Vegetated roofs shall comply with requirements for roof gardens and landscaped roofs in the California Building Code, Chapters 15 and 16.			П		П		
A4.106.7 Reduce nonroof heat Islands for 50% of sidewalks, patios, driveways or other paved areas by using one or more of the methods listed.		П	П		П		
A4.106.8.1 Tier 1 and Tier 2. For one- and two-family dwellings and townhouses with attached private garages. Install a dedicated 208/240-volt branch circuit, including an overcurrent protective device rated at 40 amperes minimum per dwelling unit.		⊠ ²	⊠ ²	П			
			 			-	

2019 CALGREEN RESIDENTIAL OCCUPANCIES APPLICATION CHECKLIST **SECTION A4.602** Effective January 1, 2020 HCD SHL 615C (New 01/20)

 \boxtimes^2

A4.106.8.2 Provide capability for future electric vehicle charging in new multifamily dwellings, as specified.

Tier 1. In 15% of total parking spaces.

Tier 2. In 20% of total parking spaces.

	APPLICA	EVELS NT TO SE E MEASU		ENFOR	RIFICATIONS CING AGENCY RIFICATION M	
FEATURE OR MEASURE		Prereq	uisites ectives ¹	Enforcing Agency	Installer or Designer	Third- Party
	Mandatory	Tier 1	Tier 2	□ Ali	□ All	
A4.106.8.3 Provide electric vehicle charging spaces for new hotels and motels.						
Tier 1. Install EV spaces per Table A4.106.8.3.1.		⊠ ²				
Tier 2. Install EV spaces per Table A4.106.8.3.2.			⊠ ²			
 A4.106.9 Provide bicycle parking facilities as noted below or meet a local ordinance, whichever is more stringent. Number of bicycle parking spaces may be reduced, as approved by the enforcing agency, due to building site characteristics, including but not limited to, isolation from other development. 1. Provide short-term bicycle parking, per Section A4.106.9.1. 2. Provide long-term bicycle parking for multifamily buildings, per Section A4.106.9.2. 3. Provide long-term bicycle parking for hotel and motel buildings, per Section A4.106.9.3. 						
 A4.106.10 [HR] Outdoor lighting systems shall be designed and installed to comply with: 1. The minimum requirements in the California Energy Code for Lighting Zones 1-4; and 2. Backlight, Uplight and Glare (BUG) ratings as defined in IES TM-15-11; and 3. Allowable BUG ratings not exceeding those shown in Table A4.106.10; or Comply with a lawfully enacted local ordinance, whichever is more stringent. 						
Innovative Concepts and Local Environmental Conditions						
A4.108.1 Items in this section are necessary to address innovative concepts or local environmental conditions.						
Item 1						
Item 2						
Item 3				П		
ENERGY/EFFICIENCY (KOWARISERESIDENHAL)						
General						
4.201.1 Building meets or exceeds the requirements of the California Building Energy Efficiency Standards ³ .		⊠ ²	⊠ ²			П

³ These measures are currently required elsewhere in statute or in regulation.

2019 CALGREEN RESIDENTIAL OCCUPANCIES APPLICATION CHECKLIST SECTION A4.602

Effective January 1, 2020

	APPLICA	EVELS NT TO SE 'E MEASU		ENFOR	VERIFICATIONS ENFORCING AGENCY TO SPECIFY VERIFICATION METHOD		
FEATURE OR MEASURE	and the second s		ulsites ectives ¹	Enforcing Agency	Installer or Designer	Third Part	
	Mandatory	Tier 1	Tier 2	□ Ali	All	All	
PLANNING AND DESIGN Site Selection	À.						
A4.103.1 A site which complies with at least one of the following characteristics is selected: 1. An infill site is selected. 2. A greyfield site is selected. 3. An EPA-recognized Brownfield site is selected.					B		
 A4.103.2 Facilitate community connectivity by one of the following methods: 1. Locate project within a 1/4-mile true walking distance of at least 4 basic services; 2. Locate project within 1/2-mile true walking distance of at least 7 basic services; or 3. Other methods increasing access to additional 							
resources. Site Preservation							
A4.104.1 An individual with oversight responsibility for the project has participated in an educational program promoting environmentally friendly design or development and has provided training or instruction to appropriate entities.			П				
Deconstruction and Reuse of Existing Materials							
A4.105.2 Existing buildings are disassembled for reuse or recycling of building materials. The proposed structure utilizes at least one of the following materials which can be easily reused: 1. Light fixtures 2. Plumbing fixtures 3. Doors and trim 4. Masonry 5. Electrical devices 6. Appliances 7. Foundations or portions of foundations Site Development							
4.106.2 A plan is developed and implemented to manage storm water drainage during construction.	Ø			П			
4.106.3 Construction plans shall indicate how site grading or a drainage system will manage all surface water flows to keep water from entering buildings.	×			П		口	
4.106.4 Provide capability for electric vehicle charging for one- and two-family dwellings; townhouses with attached private garages; multifamily dwellings; and hotels/motels in accordance with Section 4.106.4.1, 4.106.4.2, or 4.106.4.3, as applicable.	⊠	П	П				

¹ Green building measures listed in this table may be mandatory if adopted by a city, county, or city and county as specified in Section 101.7.

2019 CALGREEN RESIDENTIAL OCCUPANCIES APPLICATION CHECKLIST SECTION A4.602

Effective J HCD SHL 6							
	APPLICA	EVELS NT TO SE E MEASU		VERIFICATIONS ENFORCING AGENCY TO SPECIFY VERIFICATION METHOD			
FEATURE OR MEASURE			uisites ectives ¹	Enforcing Agency	Installer or Designer	Third- Party	
	Mandatory	Tier 1	Tier 2	□ Ali	All	□ Ali	
A4.106.1 Reserved.							
A4.106.2.1 Soil amalysis is performed by a licensed design professional and tihe findings are utilized in the structural design of the building.		П			П	П	
A4.106.2.2 Soll disturbance and erosion are minimized by at least one of the following: 1. Natural drainage patterns are evaluated and erosion controls are implemented to minimize erosion during				П	П		
construction and after occupancy. 2. Site access is accomplished by minimizing the amount of cut and fill needed to install access roads			П				
and driveways. 3. Underground construction activities are coordinated to utilize the same trench, minimize the amount of time the disturbed soil is exposed and the soil is replaced using accepted compaction methods.							
A4.106.2.3 Topsoil shall be protected or saved for reuse as specified in this section.			\ \		П	П	
Tier 1. Displaced topsoil shall be stockpiled for reuse in a designated area and covered or protected from erosion.		\boxtimes^2	⊠ ²				
Tier 2. The construction area shall be identified and delineated by fencing or flagging to limit construction activity to the construction area.			⊠ ²′				
A4.106.3 Postconstruction landscape designs accomplish one or more of the following:							
Areas disrupted during construction are restored to be consistent with native vegetation species and							
patterns. 2. Utilize at least 75% native California or drought tolerant plant and tree species appropriate for the climate zone region.	•						

² Required prerequisite for this Tier.



2019 CALGREEN RESIDENTIAL OCCUPANCIES APPLICATION CHECKLIST SECTION A4.602

Effective .	I ON A4.60 I anuary 1 , 315C (New 0	2020				
	APPLICA	EVELS NT TO SE E MEASU		ENFOR	RIFICATIONS CING AGENCY RIFICATION M	
FEATURE OR MEASURE		Prerequisites and Electives		Enforcing Agency	Installer or Designer	Third- Party
	Mandatory	Tier 1	Tier 2	CI All	□ All	□ Ali
A4.504.3 Thermal insulation installed in the building shall meet the following requirements:		E-Sto		П	П	П
Tier 1. Install thermal insulation in compliance with VOC limits.		⊠²				
Tier 2. Install insulation which contains no-added formaldehyde (NAF) and is in compliance with Tier 1.			⊠²			
Interior Moisture Control						
4.505.2 Vapor retarder and capillary break is installed at slab-on-grade foundations.	⊠					
4.505.3 Moisture content of building materials used in wall and floor framing is checked before enclosure.	Ø					
Indoor Air Quality and Exhaust	William	.,				
 4.506.1 Each bathroom shall be provided with the following: ENERGY STAR fans ducted to terminate outside the building. Fans must be controlled by a humidity control (separate or built-in); OR functioning as a component of a whole house ventilation system. Humidity controls with manual or automatic means of adjustment, capable of adjustment between a relative humidity range of ≤ 50% to a maximum of 80%. 	⊠					
A4.506.1 Reserved.		П	П	П		
A4.506.2 [HR] Provide filters on return air openings rated MERV 8 or higher during construction when it is necessary to use HVAC equipment.						П
A4.506.3 Direct-vent appliances shall be used when equipment is located in conditioned space or the equipment must be installed in an isolated mechanical room.						П
Environmental Comfort						
 4.507.2 Duct systems are sized, designed, and equipment is selected using the following methods: 1. Establish heat loss and heat gain values according to ANSI/ACCA 2 Manual J - 2016 or equivalent. 2. Size duct systems according to ANSI/ACCA 1 Manual D - 2016 or equivalent. 3. Select heating and cooling equipment according to ANSI/ACCA 3 Manual S - 2014 or equivalent. 	×					

2019 CALGREEN RESIDENTIAL OCCUPANCIES APPLICATION CHECKLIST SECTION A4.602 Effective January 1, 2020 HCD SHL 615C (New 01/20)

	APPLICA	EVELS NT TO SE E MEASU		VERIFICATIONS ENFORCING AGENCY TO SPECIFY VERIFICATION METHOD			
FEATURE OR MEASURE			uisites ectives¹	Enforcing Agency	Installer or Designer	Third- Party	
	Mandatory	Tier 1	Tier 2	All	All	All	
A4.408.1 Construction waste generated at the site is diverted to recycle or salvage in compliance with one of the following: Tier 1. At least a 65% reduction with a third-party verification. Tier 2. At least a 75% reduction with a third-party verification.		⊠ ²	⊠ ²				
Exception: Equivalent waste reduction methods are developed by working with local agencies.							
Building Maintenance and Operation							
4.410.1 An operation and maintenance manual shall be provided to the building occupant or owner.	Ø				П		
4.410.2 Where 5 or more multifamily dwelling units are constructed on a building site, provide readily accessible areas that serve the entire building and are identified for the depositing, storage and collection of nonhazardous materials for recycling, including (at a minimum) paper, corrugated cardboard, glass, plastics, organic waste, and metals or meet a lawfully enacted local recycling ordinance, if more restrictive.	×						
Exception: Rural jurisdictions that meet and apply for the exemption in Public Resources Code Section 42649.82(a)(2)(A) et seq. will also be exempt from the organic waste portion of this section.							
Innovative Concepts and Local Environmental Conditions							
A4.411.1 Items in this section are necessary to address innovative concepts or local environmental conditions.							
Item 1							
Item 2							
Item 3							
ENVIRONMENTAL QUALITY			1				
Fireplaces							
4.503.1 Any installed gas fireplace shall be a direct-vent sealed-combustion type. Any installed woodstove or pellet stove shall comply with U.S. EPA New Source Performance Standards (NSPS) emission limits as applicable, and shall have a permanent label indicating they are certified to meet the emission limits. Woodstoves, pellet stoves and fireplaces shall also comply with applicable local ordinances.	×					П	
Pollutant Control	7.500 E						
4.504.1 Duct openings and other related air distribution component openings shall be covered during construction.	Ø				П		

2019 CALGREEN RESIDENTIAL OCCUPANCIES APPLICATION CHECKLIST SECTION A4.602

Effective January 1, 2020

	APPLICA	EVELS NT TO SE E MEASU		VERIFICATIONS ENFORCING AGENCY TO SPECIFY VERIFICATION METHOI			
FEATURE OR MEASURE			uisites ectives ¹	Enforcing Agency	Installer or Designer	Third- Party	
	Mandatory	Tier 1	Tier 2	□ Ali	All		
A4:305.3 Recycled water is used for landscape irrigation. Innovative Concepts and Local Environmental Conditions		П	П				
A4.306.1 Items in this section are necessary to address innovative concepts or local environmental conditions.							
Item 1 Item 2 Item 3							
MATERIAL CONSERVATION AND RESOURCE EFFICIENCY Foundation Systems				Round	1		
A4.403.1 A Frost-Protected Shallow Foundation (FPSF) is designed and constructed.		П		П			
A4.403.2 Cement use in foundation mix design is reduced. Tier 1. Not less than a 20% reduction in cement use. Tier 2. Not less than a 25% reduction in cement use. Efficient Framing Techniques		⊠ ²	⊠ ²	Ľ		П	
A4.404.1 Beams, headers and trimmers are the minimum size to adequately support the load.		П	П		П	П	
A4.404.2 Building dimensions and layouts are designed to minimize waste.		П	П	П	П		
A4.404.3 Use premanufactured building systems to eliminate solid sawn lumber whenever possible.							
A4.404.4 Material lists are included in the plans which specify material quantity and provide direction for on-site cuts.		П			П	П	
Material Sources A4.405.1 One or more of the following building materials that do not require additional resources for finishing are used: 1. Exterior trim not requiring paint or stain. 2. Windows not requiring paint or stain. 3. Siding or exterior wall coverings which do not require paint or stain.							
A4.405.2 Floors that do not require additional coverings are used including but not limited to stained, natural or stamped concrete floors.		П	П	П	П	П	
A4.405.3 Postconsumer or preconsumer recycled content value (RCV) materials are used on the project. Tier 1. Not less than a 10% RCV. Tier 2. Not less than a 15% RCV.		⊠ ²	⊠²			П	
A4.405.4 Renewable source building products are used.							

2019 CALGREEN RESIDENTIAL OCCUPANCIES APPLICATION CHECKLIST SECTION A4.602

11

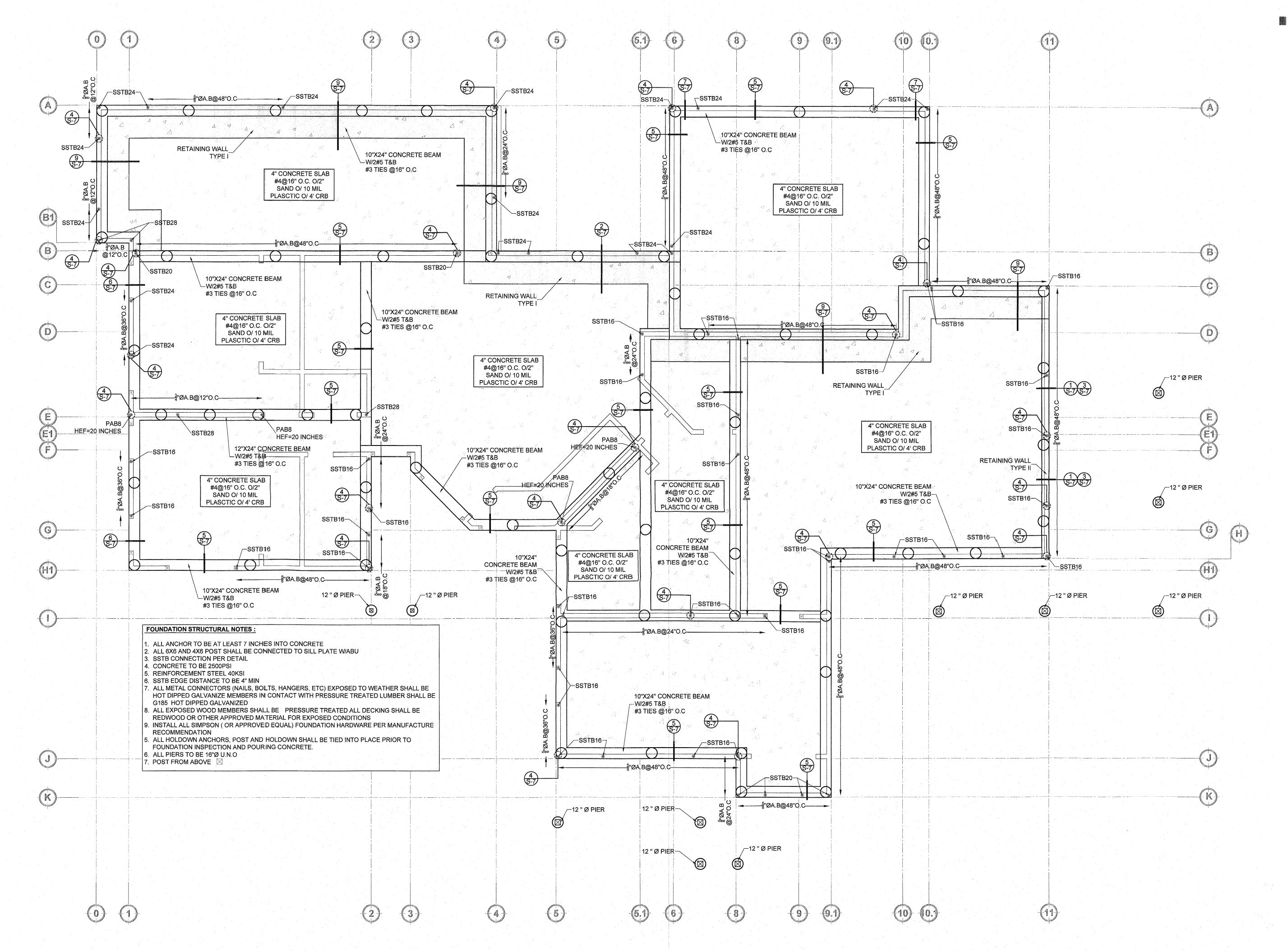
	APPLICA	EVELS NT TO SE E MEASU		VERIFICATIONS ENFORCING AGENCY TO SPECIFY VERIFICATION METH			
FEATURE OR MEASURE			ulsites ectives ¹	Enforcing Agency	Installer or Designer	Third- Party	
and the second section of the second of the	Mandatory	Tier 1	Tier 2	□ All	All		
Outdoor Air Quality Reserved							
Innovative Concepts and Local Environmental Conditions							
A4.509.1 Items in this section are necessary to address novative concepts or local environmental conditions.							
tem 1							
tem 2							
tem 3							
INSTALLER AND SPECIAL INSPECTOR QUALIFICATIONS							
Qualifications					***************************************		
702.1 HVAC system installers are trained and certified in the proper installation of HVAC systems.	×						
702.2 Special inspectors employed by the enforcing agency must be qualified and able to demonstrate competence in the discipline they are inspecting.	M					П	
Verifications							
703.1 Verification of compliance with this code may include construction documents, plans, specifications, builder or installer certification, inspection reports, or other methods	×				; -1	П	

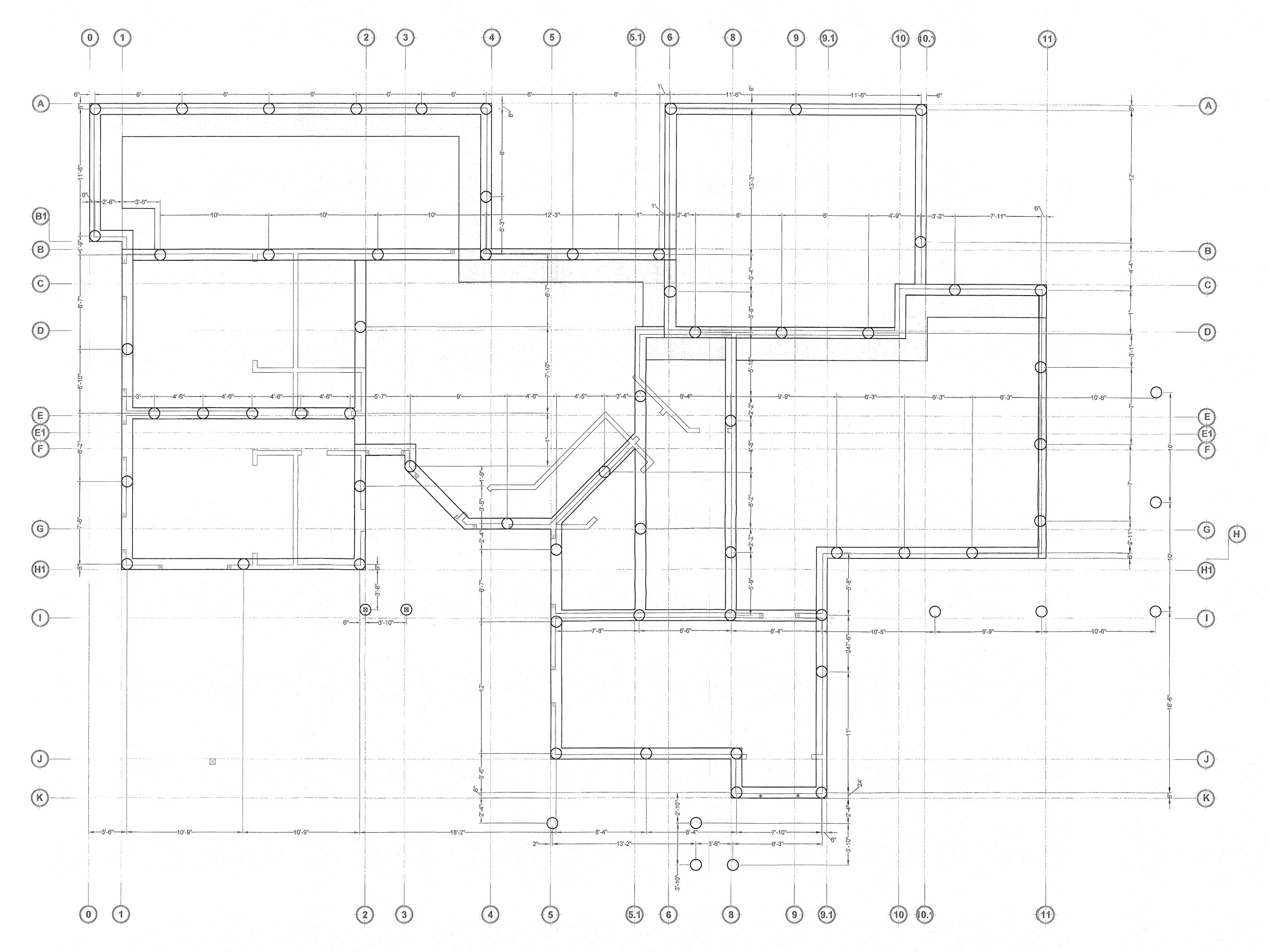
2019 CALGREEN RESIDENTIAL OCCUPANCIES APPLICATION CHECKLIST SECTION A4.602

Effective .	ION A4.60 January 1, 315C (New 0	2020					
	APPLICA	EVELS NT TO SEI E MEASU		VERIFICATIONS ENFORCING AGENCY TO SPECIFY VERIFICATION METHO			
FEATURE OR MEASURE		Prereq and Ele		Enforcing Agency	Installer or Designer	Third- Party	
	Mandatory	Tier 1	Tier 2	□ Ali	□ Ali	□ All	
4.504.2.1 Adhesives, sealants and caulks shall be compliant with VOC and other toxic compound limits.	×				П		
4.504.2.2 Paints, stains and other coatings shall be compliant with VOC limits.	×			П			
4.504.2.3 Aerosol paints and coatings shall be compliant with product-weighted MIR Limits for ROC and other toxic compounds.	⊠					П	
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.	×			П	D		
4.504.4 80% of floor area receiving resilient flooring shall comply with specified VOC criteria.	⊠				П		
4.504.5 Particleboard, medium density fiberboard (MDF) and hardwood plywood used in interior finish systems shall comply with low formaldehyde emission standards.	☒					П	
A4.504.1 Use composite wood products made with either California Air Resources Board approved no-added formaldehyde (NAF) resins or ultra-low emitting formaldehyde (ULEF) resins.		П					
A4.504.2 Install VOC compliant resilient flooring systems. Tier 1. At least 90% of the resilient flooring installed shall comply. Tier 2. At least 100% of the resilient flooring installed shall comply.		⊠²	⊠²	D			

2019 CALGREEN RESIDENTIAL OCCUPANCIES APPLICATION CHECKLIST SECTION A4.602 Effective January 1, 2020

	Effective . HCD SHL	315C (New 0			V.	DIFICATIONS	M.W	
		APPLICA			VERIFICATIONS ENFORCING AGENCY TO SPECIFY VERIFICATION METHOI			
	FEATURE OR MEASURE			ulsites ectives¹	Enforcing Agency	Installer or Designer	Third- Party	
		Mandatory	Tier 1	Tier 2	□ Ali	All	All	
	Enhanced Durability and Reduced Maintenance							
	4.406.1 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 a similar method acceptable to the enforcing agency.	×			П	С		
	Water Resistance and Moisture Management							
	A4.407.1 Install foundation and landscape drains.							
	A4.407.2 Install gutter and downspout systems to route water at least 5 feet away from the foundation or connect to landscape drains which discharge to a dry well, sump, bioswale, rainwater capture system or other approved onsite location.		口					
	A4.407.3 Provide flashing details on the building plans and comply with accepted industry standards or manufacturer's instructions.				П		П	
	A4.407.4 Protect building materials delivered to the construction site from rain and other sources of moisture.				П			
	A4.407.5 In Climate Zone 16, an ice/water barrier is installed at roof valleys, eaves and wall to roof intersections.					П		
	A4.407.6 Exterior doors to the dwelling are protected to prevent water intrusion.				П	П		
	A4.407.7 A permanent overhang or awning at least 2 feet in depth is provided at all exterior walls.	₩\$	П					
9	Construction Waste Reduction, Disposal and Recycling							
	 4.408.1 Recycle and/or salvage for reuse a minimum of 65% of the nonhazardous construction and demolition waste in accordance with one of the following: Comply with a more stringent local construction and demolition waste management ordinance; or A construction waste management plan, per Section 4.408.2; or A waste management company, per Section 4.408.3; or The waste stream reduction alternative, per Section 4.408.4. 	×						

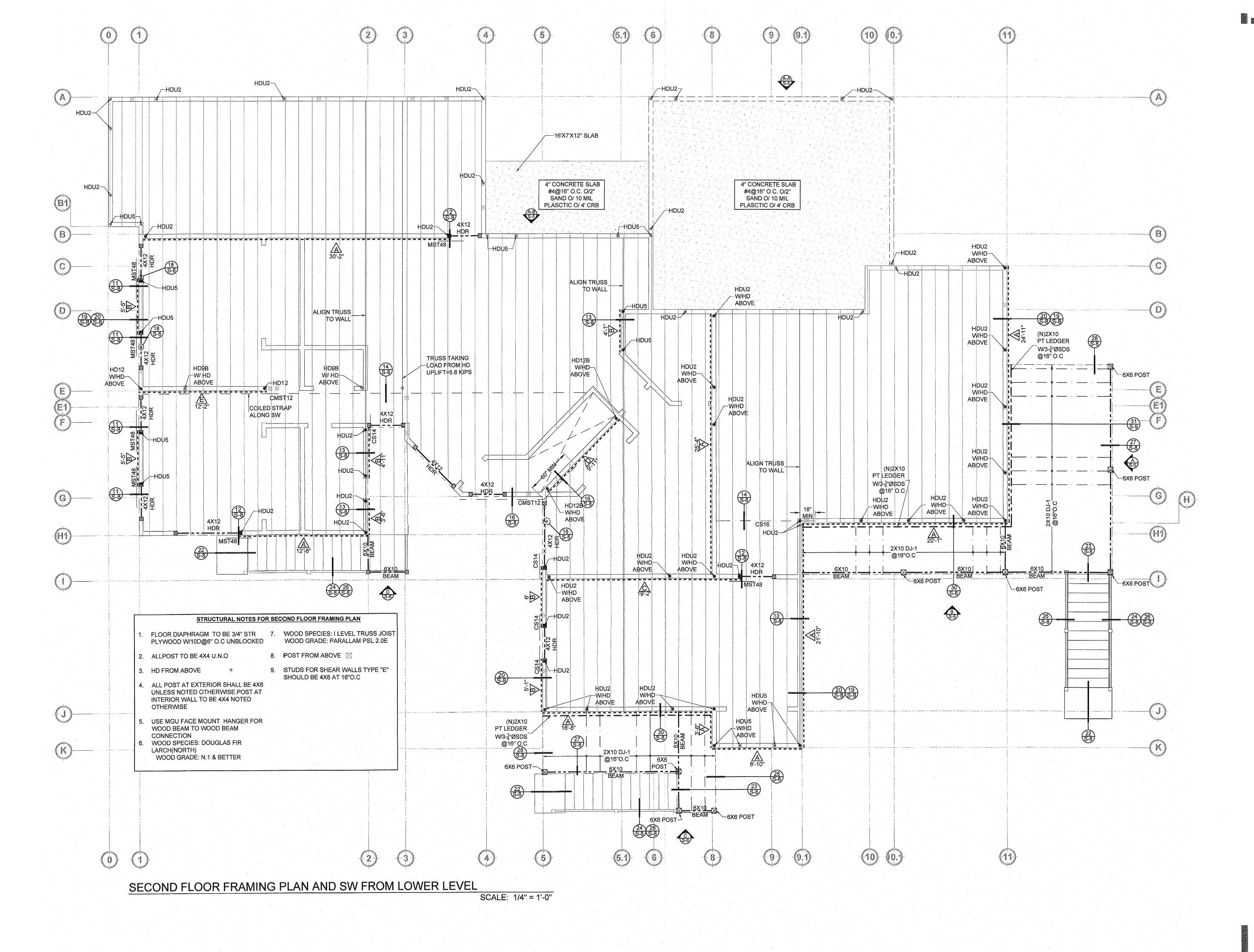


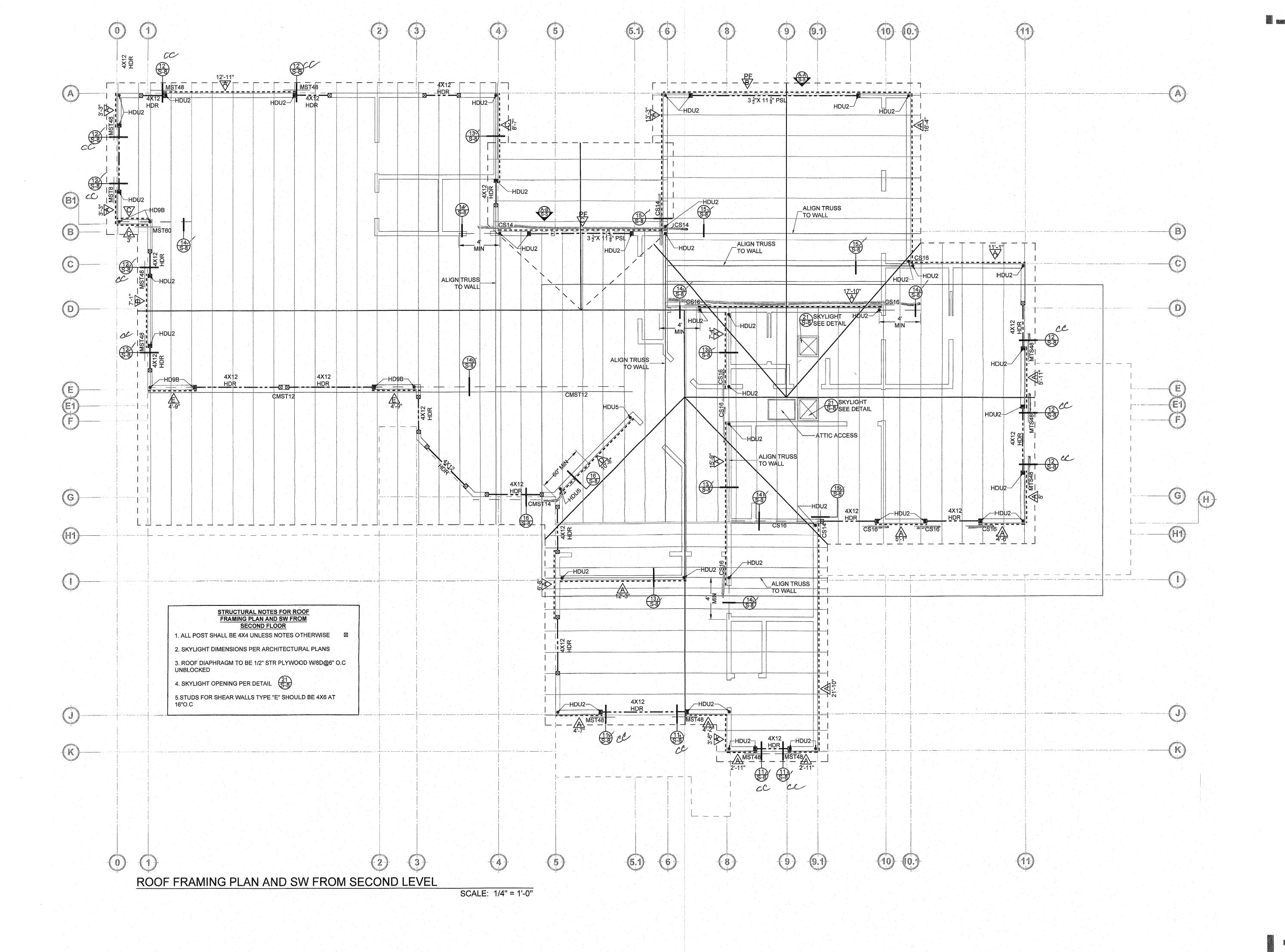


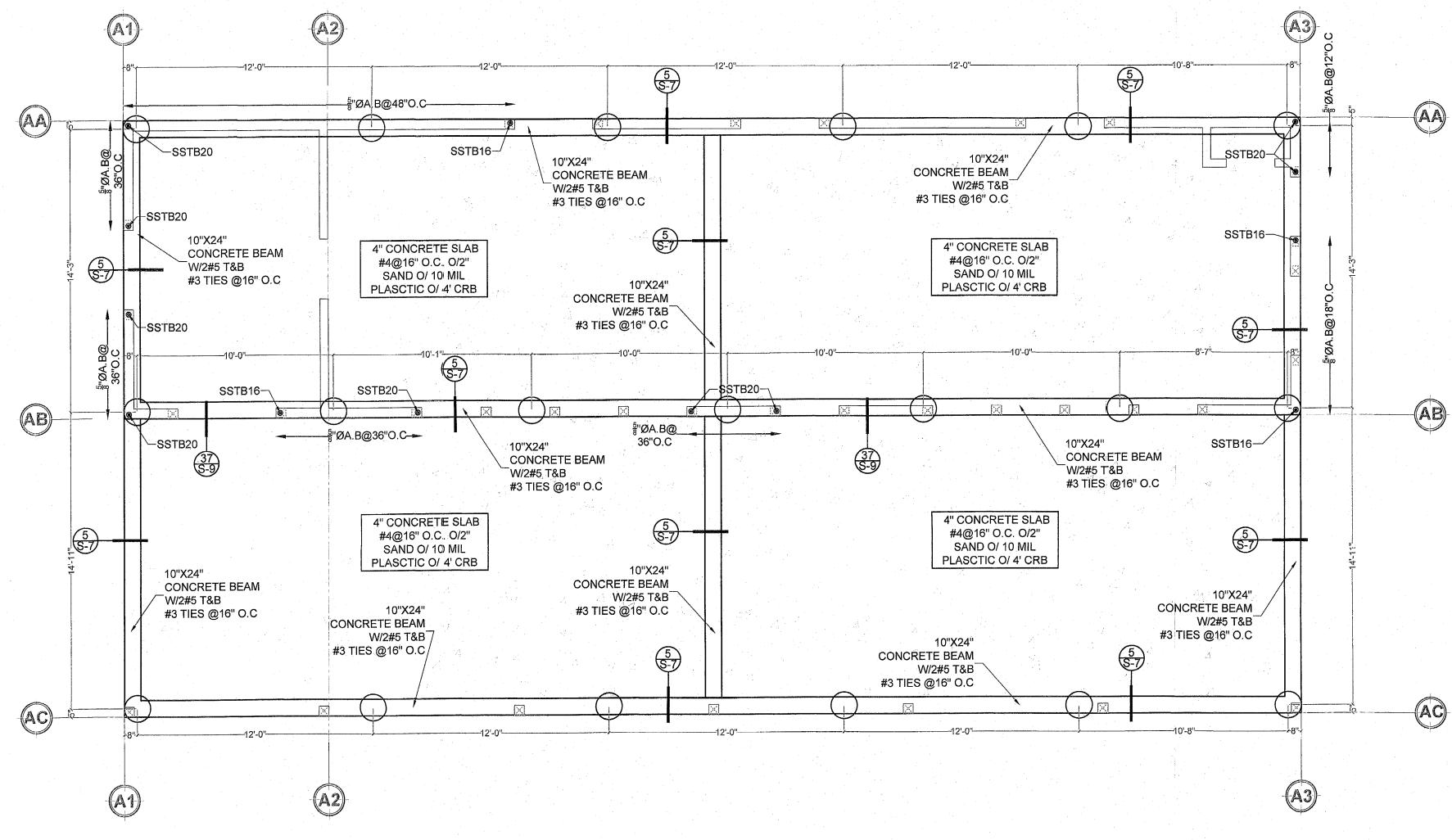
FOUNDATION PLAN W/PIER REFERENCE

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

project no sheet no S-1.

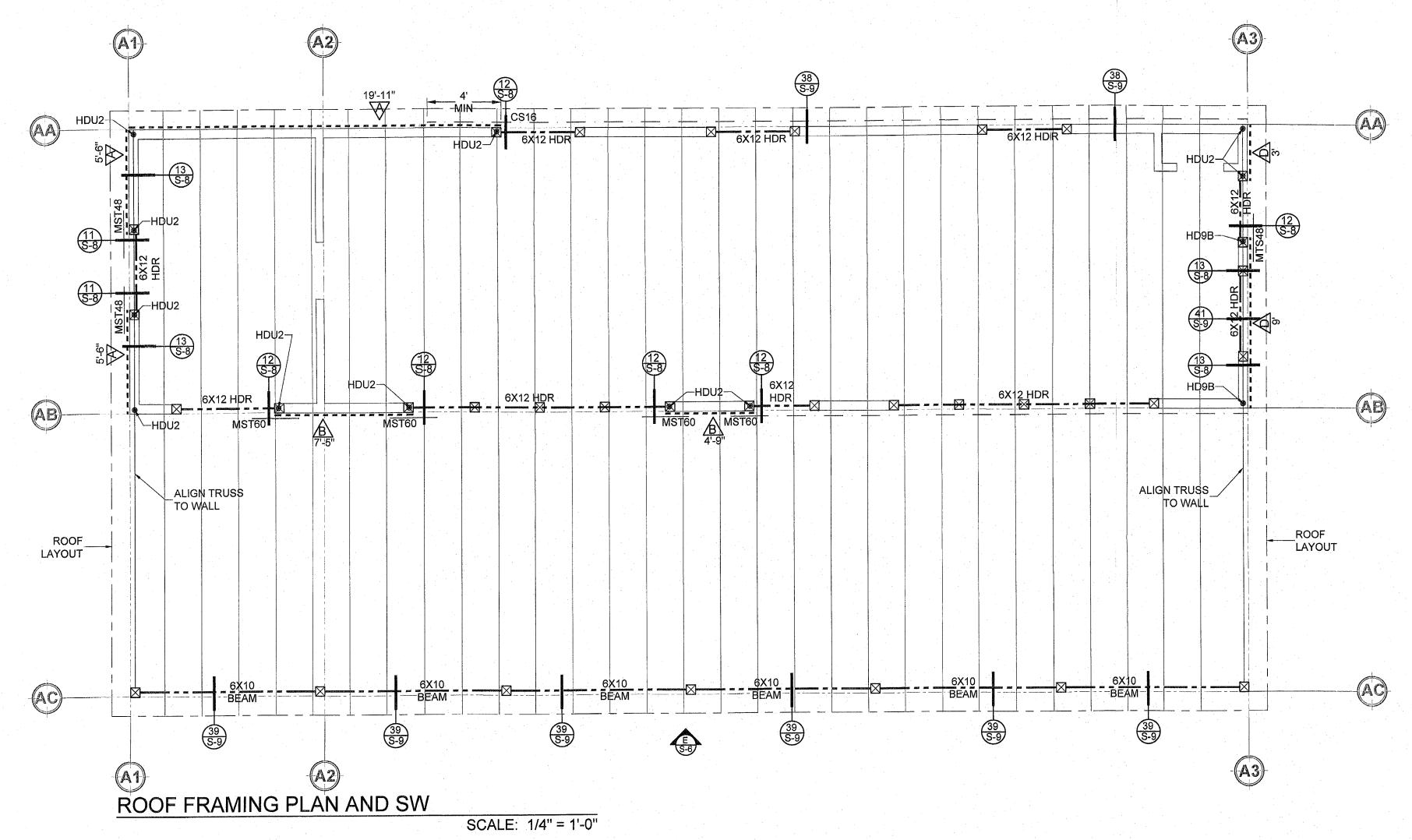






FOUNDATION PLAN AT ACC. BUILDING

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



FOUNDATION STRUCTURAL NOTES:

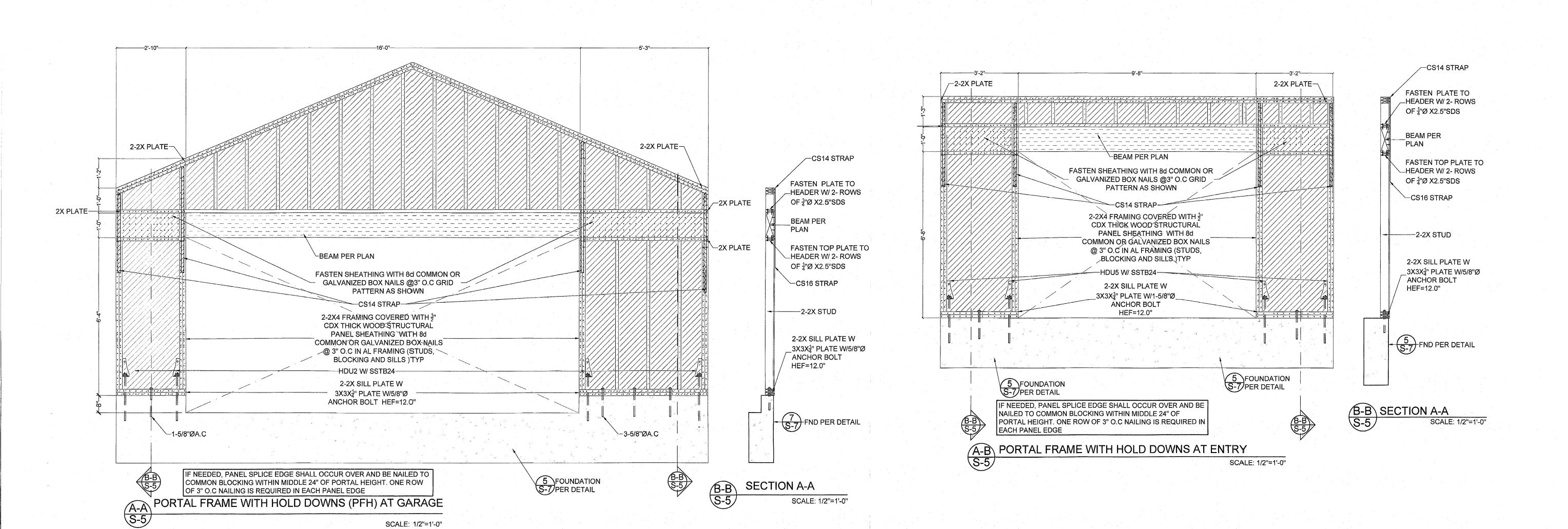
- 1. ALL ANCHOR TO BE AT LEAST 7 INCHES INTO CONCRETE
- 2. ALL 6X6 AND 4X6 POST SHALL BE CONNECTED TO SILL PLATE W/ABU
- 3. SSTB CONNECTION PER DETAIL4. CONCRETE TO BE 2500PSI
- 5. REINFORCEMENT STEEL 40KSI
- 6. SSTB EDGE DISTANCE TO BE 4" MIN
- 7. ALL METAL CONNECTORS (NAILS, BOLTS, HANGERS, ETC) EXPOSED TO WEATHER SHALL BE HOT DIPPED GALVANIZED GALVANIZE MEMBERS IN CONTACT WITH PRESSURE TREATED LUMBER SHALL BE G185 HOT DIPPED GALVANIZED B. ALL EXPOSED WOOD MEMBERS SHALL BE PRESSURE TREATED ALL DECKING SHALL BE REDWOOD OR OTHER
- APPROVED MATERIAL FOR EXPOSED CONDITIONS

 INSTALL ALL SIMPSON (OR APPROVED EQUAL) FOUNDATION HARDWARE PER MANUFACTURE RECOMMENDATION

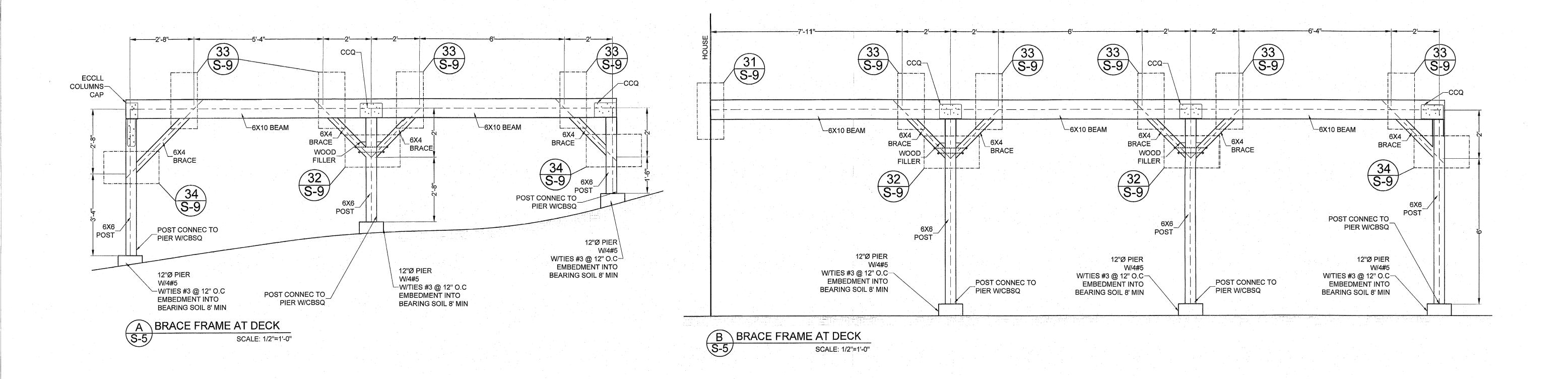
 INSTALL ALL SIMPSON (OR APPROVED EQUAL) FOUNDATION HARDWARE PER MANUFACTURE RECOMMENDATION
- 5. ALL HOLDOWN ANCHORS, POST AND HOLDOWN SHALL BE TIED INTO PLACE PRIOR TO FOUNDATION INSPECTION AND POURING CONCRETE.
- 6. ALL PIERS TO BE 16"Ø 16"Ø PIER W/4#5 W/TIES #3 @ 12" O.C EMBEDMENT INTO BEARING SOIL=8FT U.N.O 7. POST FROM ABOVE ☑

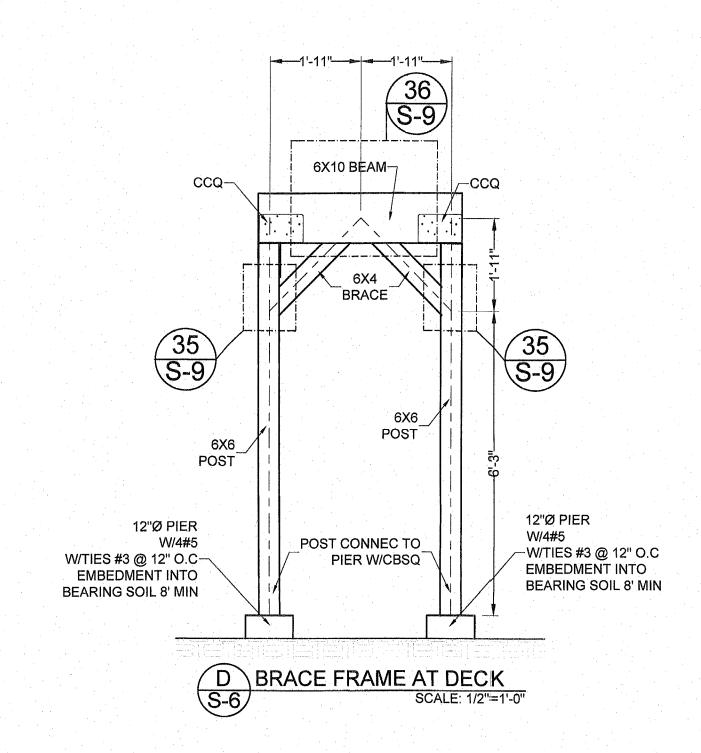
STRUCTURAL NOTES FOR ROOF ACC BUILDING

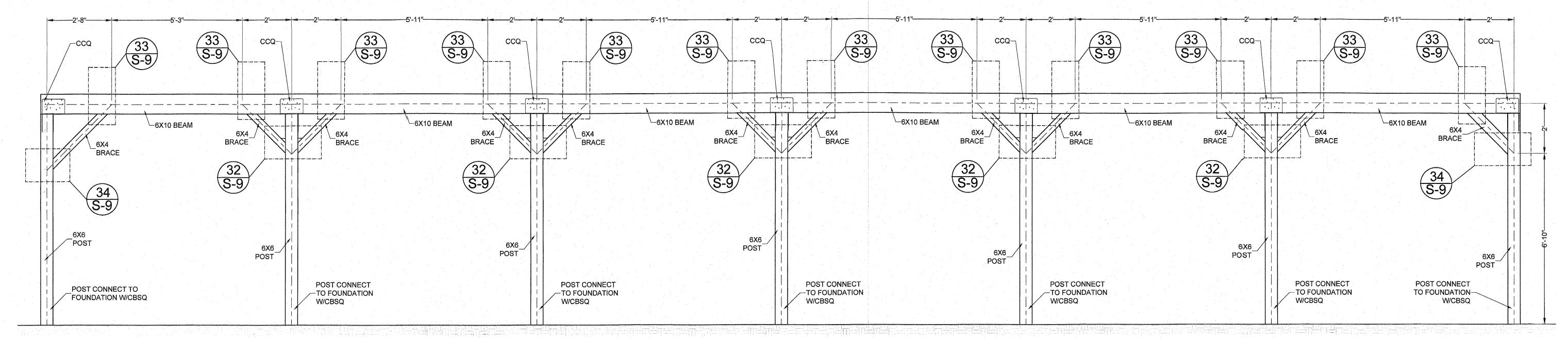
- 1. ALL POST SHALL BE 6X6 UNLESS NOTES OTHERWISE
- 2. SKYLIGHT DIMENSIONS PER ARCHITECTURAL PLANS
- 3. ROOF DIAPHRAGM TO BE 1/2" STR PLYWOOD W/8D@6" O.C UNBLOCKED



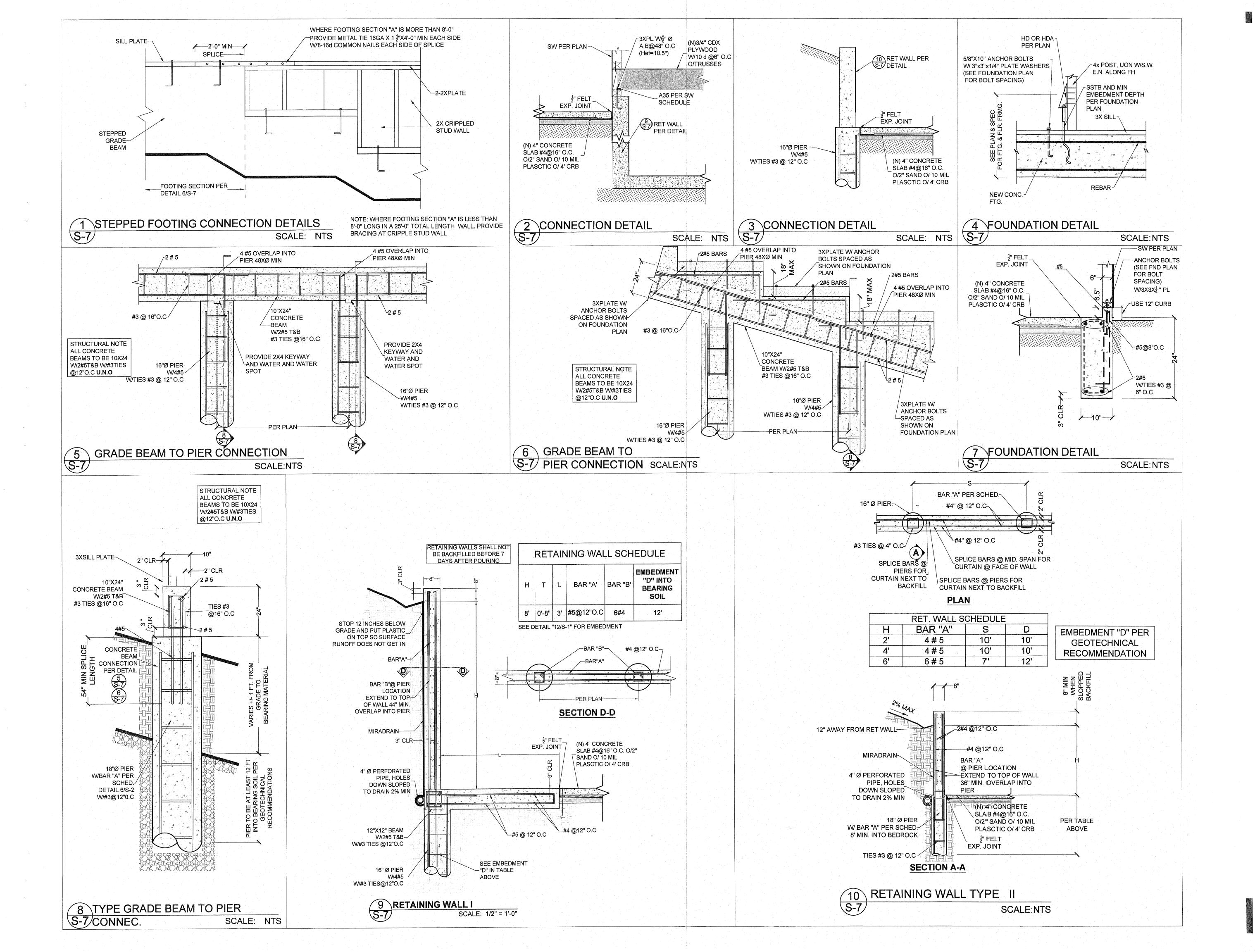
SCALE: 1/2"=1'-0"

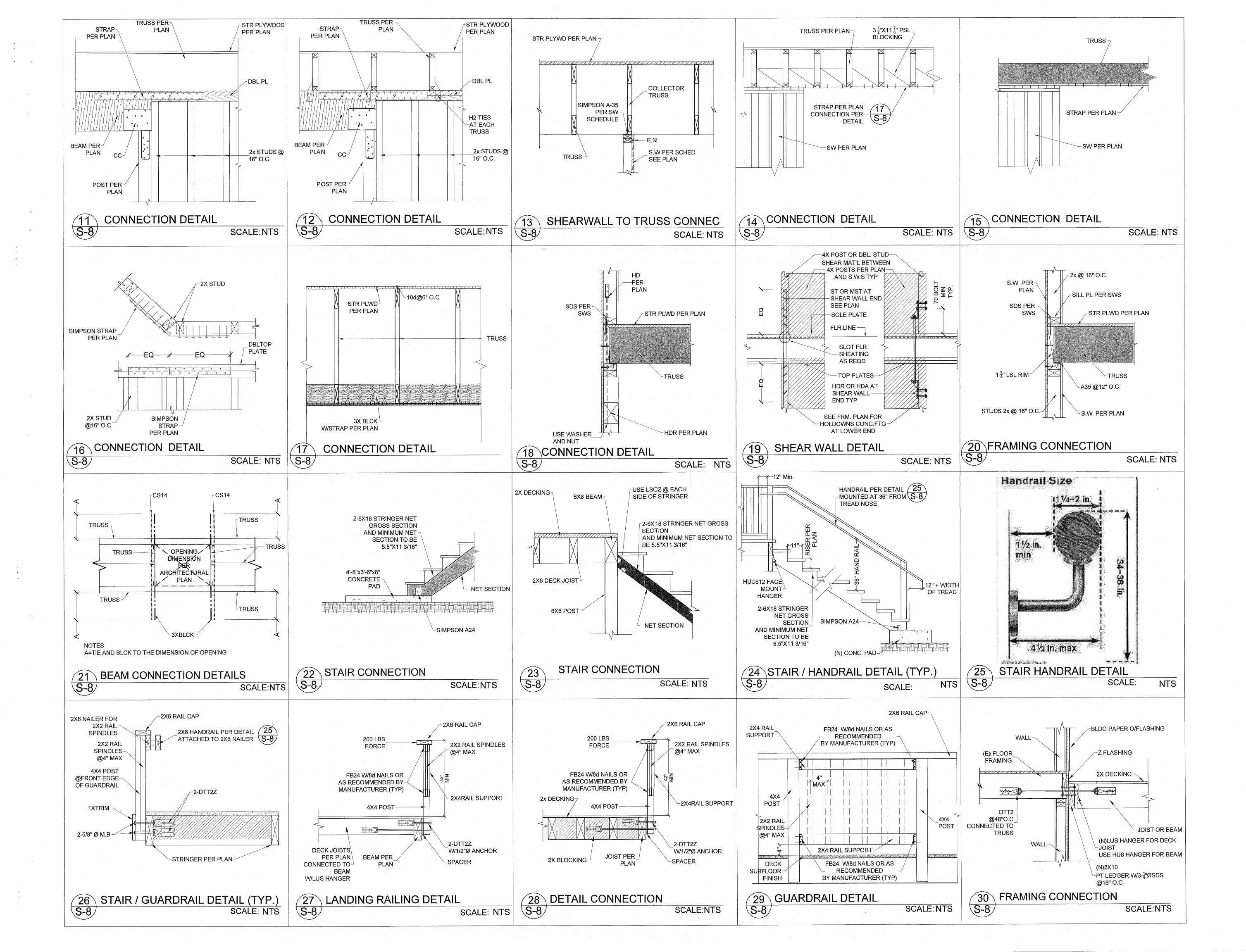




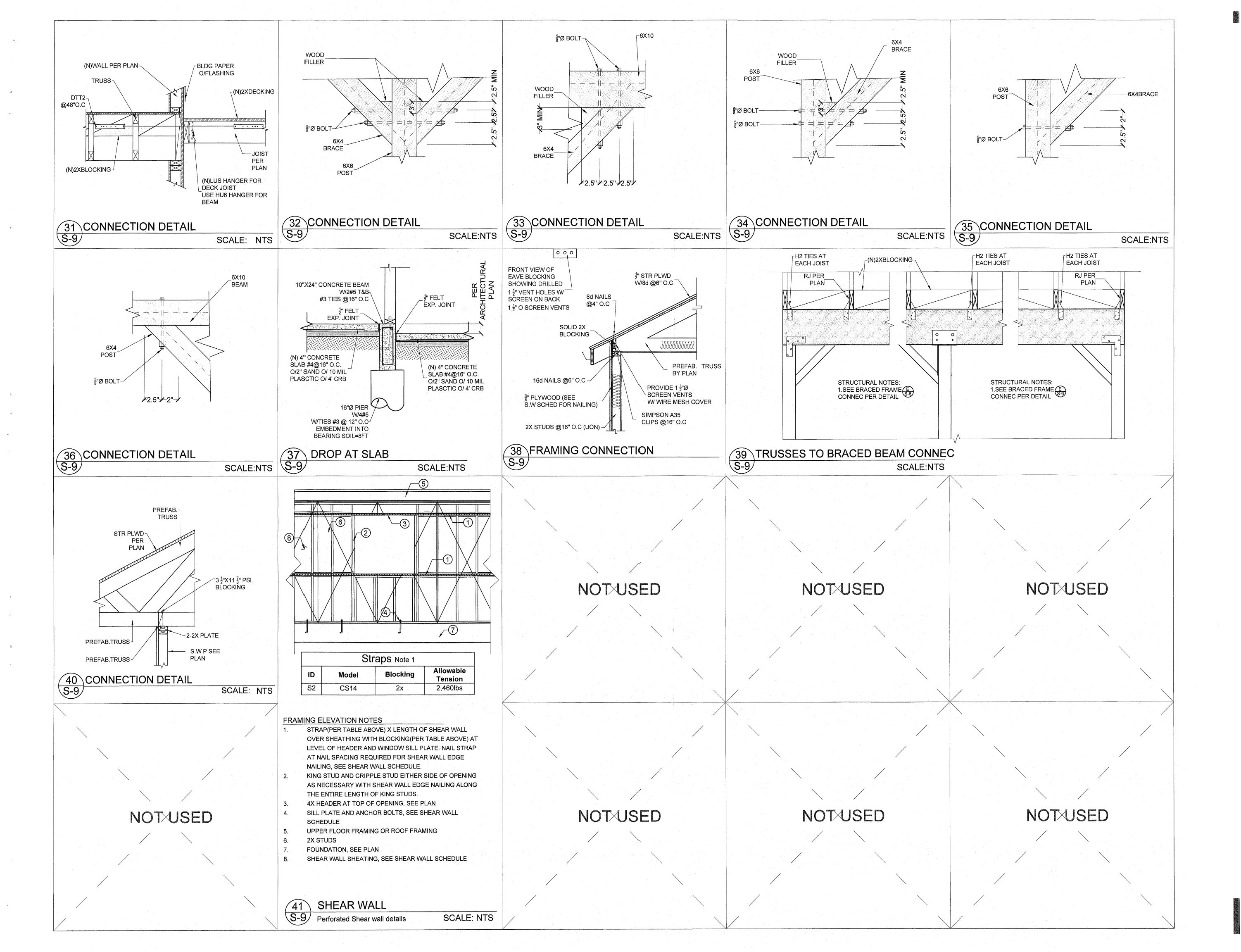


E BRACE FRAME AT ACC. BUILDING
S-6
SCALE: 1/2"=1'-0"





S-8



GENERAL NOTES:

N1 ERRORS AND OMISSIONS:

IMPORTANT NOTES

IN THE EVENT THAT ANY ERRORS, DISCREPANCIES, OR OMISSIONS MAY OCCUR IN THE CONSTRUCTION DOCUMENTS, THE PROPERTY OWNER SHALL NOTIFY THE JCENGINEERING IMMEDIATELY PRIOR TO PROCEEDING WITH THE WORK IN QUESTION. THE OWNER OR CONTRACTOR SHALL BRING THEM TO THE ATTENTION OF THE DESIGNER FOR PROPER CLARIFICATION BEFORE CONTINUING THE PROJECT.

N 2. INTERPRETATION OF DRAWINGS:

FOR VERIFICATION OF FLOOR PLAN LAYOUT, DIMENSIONING, AND GENERAL FINISH, REFERENCE MUST BE MADE TO THE CONSTRUCTION DOCUMENTS. IF ANY DISCREPANCIES APPEAR BETWEEN THE SCALE MEASUREMENTS AND/OR ANY PLAN NOTES AND SPECIFICATIONS. THE OWNER OR CONTRACTOR SHALL BRING THEM TO THE ATTENTION OF THE JCENGINEERING FOR PROPER CLARIFICATION BEFORE CONTINUING THE PROJECT.

N3. PRODUCT SUBSTITUTIONS:

ALL PRODUCTS AND/OR MATERIALS SHALL BE PROVIDED AS SPECIFIED IN THE CONSTRUCTION DOCUMENTS, WITH THE SINGULAR EXCEPTION OF PRODUCTS AND/OR MATERIALS LABELED AS "OR APPROVED EQUAL" OR "O.A.E." REQUESTS FOR PRODUCT AND/OR MATERIAL SUBSTITUTIONS WILL NOT BE ALLOWED OTHERWISE. THE OWNER AND/OR CONTRACTOR SHALL ASSUME FULL RESPONSIBILITY FOR ALL NON-PROJECT SPECIFIED PRODUCTS PROVIDED AND/OR INSTALLED WITHOUT THE DESIGNERS CONSENT. THE OWNER OR CONTRACTOR MUST SUPPLY THE DESIGNER WITH PRODUCT LITERATURE AND/OR SAMPLES FOR REQUESTED SUBSTITUTIONS. IF APPLICABLE. OWNER/CONTRACTOR WILL BE NOTIFIED UPON ACCEPTANCE OF ANY PRODUCT SUBSTITUTION.

NOTE: IN NO EVENT SHALL THE CONTRACTOR OR OWNER SCALE THE CONSTRUCTION DRAWINGS!

N4. SUBMITTALS AND SHOP DRAWINGS:

GENERAL CONTRACTOR SHALL PROVIDE THE DESIGNER (FOR DESIGNER'S REVIEW) WITH COPIES OF ALL SHOP DRAWINGS. SPECIFICATIONS. AND/OR CALCULATIONS WHICH MAY BE REQUESTED FOR APPROVAL BY THE LOCAL GOVERNING AGENCY DUE TO PRODUCTS SCOPE OF WORK.

N5. GENERAL CONTRACTOR:

PANEL SIDING (TO FRAMING) - 5/8'

FIBERBOARD SHEATHING- 25/32"h

B. COMMON OR DEFORMED SHANK.

SUPPORTS FOR ROOF SHEATHING.

F. CORROSION-RESISTANT ROOFING NAILS WITH 7/16" DIAMETER HEAD.

AT INTERMEDIATE SUPPORTS FOR NONSTRUCTURAL APPLICATIONS

C CORROSION-RESISTANT STAPLES WITH 7/16" CROWN, PANEL SUPPORTS AT 16".

33. FIBERBOARD SHEATHING- 1/2" h

34. INTERIOR PANELING -1/4"

AND 12" OC

INTERIOR PANELING -3/8"

CONTRACTOR SHALL PERFORM ALL LABOR AND INSTALL ALL MATERIALS IN A TIMELY AND PROFESSIONAL WORKMAN-LIKE MANNER THROUGH COMPLETION OF THE PROJECT.

N6. JOB SITE CLEANING:

CONTRACTOR SHALL AT ALL TIMES MAINTAIN THE AREA OF WORK. SO AS TO BE CLEAN AND FREE OF ALL TRASH, DEBRIS AND OTHER HAZARDS, AND SHALL PROTECT ALL ADJACENT PROPERTY DAMAGE, SOILING, PAINT OVERSPRAY, ETC. WORK AREA SHALL BE LEFT BROOM CLEAN EVERYDAY UPON INSPECTION.

ALL WORK SHALL COMPLY WITH THE MOST CURRENT CALIFORNIA BUILDING CODE AND THE LATEST ADOPTED LOCAL ORDINANCES.

SPECIAL INSPECTIONS

STRUCTURAL **OBSERVATIONS**

- SPECIAL INSPECTION FOR: FOUNDATION REINFORCEMENT
- DRILLED PIERS CONCRETE PLACEMENT TIE DOWNS. 3. SHEAR WALLS.
 - 4. DIAPHRAGMS.
- SUBSURFACE DRAINS AREAS TO BE COMPACTED

GRADING OPERATIONS SURFACE AND

DESIGN LOADS

ROOF LIVE=20 PSF DEAD=15 PSF 2ND FLOOR LIVE=40 PSF

3000 PSI CONCRETE

- DEAD=15 PSF DECK LIVE=60 PSF
- DEAD=13.5 PSF WALL STUCCO WEIGHT=19 PSF
- WALL INTERIOR WEIGHT=8 PSF
- EARTH DESIGN DATA LONGITUDE=38.389263 LATITUDE=-122.038766 RISK CATEGORY=II
- SS=1.479 S1=0.523 SDS=1.183

SITE CLASS= D "DEFAULT"(IN ACCORDANCE TO SOIL REPORT) SEISMIC DESIGN CATEGORY= "D"

BASIC SEISMIC-FORCE-RESISTING SYSTEM= 1. LIGHT FRAME WALL SHEATHED W/WOOD STRUC. PANELS R=6.5 SYSTEM OVER STRENGTH FACTOR=3

CS=0.1820 **REDUNDACY FACTOR=1.3** SOIL DATA

FRICTION VALUE FOR PIER DESIGN

8D CORROSION-RESISTANT SIDING OR CASING NAIL

1 1/2" 11 GAGE ROOFING NAIL f.6D COMMON NAIL, 1 1/8" 16 GAGE STAPLE 9

1 3/4" 11 GAGE ROOFING NAIL 1,8D COMMON NAIL,1 1/2" 16 GAGE STAPLE 9

4D CASING OR FINISH NAILS SPACED 6" ON PANEL EDGES, 12" AT INTERMEDIATE SUPPORTS

6D PANEL SUPPORTS AT 24" CASING OR FINISH NAILS SPACED 6" AT EDGES, 12" AT INTERMEDIATE

(RET WALLS) =450 PSF (WALLS)=400 PSF

PASSIVE PRESSURE =300 PSF **ACTIVE PRESSURE=45 PSF** AT REST PRESSURE=60PSF

FASTENING SCHEDULE ICRC TABLE 2304 10 11-COMMON OR BOX NAILS PERMITTED UNLESS NOTED STAPLES SHALL HAVE MIN. 4" CROWN WIDTH

. JOIST TO SILL OR GIRDER, TOENAIL	3-8D COMMON, 3-3"X0.131" NAILS, 3-3" 14 GAGES STAPLES
BRIDGING TO JOIST, TOENAIL EACH END	2-8D COMMON, 2-3"X0.131" NAILS, 2-3" 14 GAGES STAPLES
1"X6" SUBFLOOR OR LESS TO EACH JOIST, FACE NAIL	2-8D COMMON
WIDER THAN 1"X6" SUBFLOOR TO EACH JOIST, FACE NAIL	3-8D COMMON
2" SUBFLOOR TO JOIST OR GIRDER, BLIND AND FACE NAIL	2-16D COMMON
SOLE PLATE TO JOIST OR BLOCKING, TYPICAL FACE NAIL	16D AT 16" OC, 3"X0.131" NAILS AT 8" OC, 3" 14 GAGE STAPLES AT 12" OC.
SOLE PLATE TO JOIST OR BLOCKING AT BRACED WALL PANELS	3-16D AT 16", 4-3"X0.131"NAILS AT 16",4-3" 14 GAGE STAPLES PER 16"
TOP PLATE TO STUD, END NAIL	2-16D COMMON, 3-3"X0.131"NAILS, 3-3" 14 GAGE STAPLES
STUD TO SOLE PLATE, TOENAIL	4-8D COMMON, 4-3"X0.131"NAILS, 3-3" 14 GAGE STAPLES
STUD TO SOLE PLATE, END NAIL	2-16D COMMON, 3-3"X0.131"NAILS, 3-3" 14 GAGE STAPLES
DOUBLE STUDS, FACE NAIL	16D AT 24" OC 3"X0.131"NAIL AT 8" OC, 3" 14 GAGE STAPLE AT 8" OC.
DOUBLE TOP PLATES, TYPICAL FACE NAIL	16D AT 16" OC 3"X0.131"NAIL AT 12" OC, 3" 14 GAGE STAPLE AT 12" OC.
DOUBLE TOP PLATES, LAP SPLICE	8-16D COMMON 12-3"X0.131" NAILS 12-3" 14 GAGE STAPLES
BLOCKING BETWEEN JOISTS OT RAFTERS TO TOP PLATE, TOENAIL	3-8D COMMON, 3-3"X0.131" NAILS 3-3" 14 GAGE STAPLES
. RIM JOIST TO TOP PLATE, TOENAIL	8D AT 6" OC 3"X0.131" NAIL AT 6" OC 3" 14 GAGE STAPLE AT 6" OC
TOP PLATES, LAPS AND INTERSECTIONS, FACE NAIL	2-16D COMMON, 3-3"X0.131"NAILS AT 6" OC 3" 14 GAGE STAPLES
CONTINUOUS HEADER, TWO PIECES	16D COMMON 16" OC ALONG EDGE
CONTINUOUS HEADER, TWO FIECES	3-8D COMMON, 5-3"X0,131"NAILS, 5-3" 14 GAGE STAPLES
CONTINUOUS HEADER TO STUD. TOENAIL	4-8D COMMON
, CONTINUOUS FIEADER TO STOD, TOLINAIL , CEILING JOIST, LAPS OVER PARTITIONS, FACE NAIL.	3-16D COMMON MIN, TABLE 2308.10.4.1.4- 3"X0.131"NAILS, 4-3" 14 GAGE STAPLES
. CEILING JOIST TO PARALLEL RAFTERS, FACE NAIL.	3-16D COMMON MIN. TABLE 2308.10.4.1.4- 3"X0.131"NAILS, 4-3" 14 GAGE STAPLES
RAFTER TO PLATE, TOENAIL.	3-8D AT COMMON, 3-3"X0.131"NAILS, 3-3" 14 GAGE STAPLES
), 1" DIAGONAL BRACE TO EACH STUD AND PLATE, FACE NAIL.	2-8D COMMON, 2-3"X0.131", 3-3" 14 GAGE STAPLES
. 1"x8" SHEATHING TO EACH BEARING, FACE NAIL.	3-8D COMMON
WIDER THAN 1"x8" SHEATHING TO EACH BEARING, FACE NAIL.	3-8D COMMON
BUILT-UP CORNER STUDS.	16D COMMON AT 24" OC, 3"X0.131" NAILS AT 16" OC, 3" 14 GAGES STAPLES AT 16" OC
BUILT-UP GIRDER AND BEAMS, FACE NAIL AT TOP AND BOTTOM STAGGERED ON OPPOSITE SIDES	20D COMMON AT 32" OC, 3"X0.131" NAIL AT 24" OC, 3" 14 GAGE STAPLE AT 24" OC.
BUILT-UP GIRDER AND BEAMS, FACE NAIL AT ENDS AND AT EACH SPLICE.	2-20D COMMON, 3-3"X0.131" NAILS, 3-3" 14 GAGE STAPLE
	16D COMMON
. 2" PLANKS, AT EACH BEARING. . COLLAR TIE TO RAFTER, FACE NAIL.	3-10D COMMON, 4-3"X0.131" NAILS, 4-3" 14 GAGE STAPLES
	3-10D COMMON, 4-3"X0.131" NAILS, 4-3" 14 GAGE STAPLES
7. JACK RAFTER TO HIP, TOENAIL JACK RAFTER TO HIP, FACE NAIL	2-16D COMMON, 3-3"X0.131" NAILS, 3-3" 14 GAGE STAPLES
ROOF RAFTER TO AIP, FACE NAIL ROOF RAFTER TO 2-BY RIDGE BEAM, TOENAIL OR FACE NAIL	2-16D COMMON, 3-3"X0.131" NAILS, 3-3" 14 GAGE STAPLES
	3-16D COMMON, 3-3 X0.131 NAILS, 3-3 14 GAGE STAPLES
D. JOIST TO BAND JOIST, FACE NAIL	3-16D COMMON, 4-3 X0.131 NAILS, 4-3" 14 GAGE STAPLES
). LEDGER STRIP, FACE NAIL I. WOOD STRUCTURAL PANELS AND PARTICLEBOARDa, SUBFLOOR ROOF AND WALL SHEATHING (TO FRAM	
	6D ^b , ^c 2 3/8"X0.113" NAIL,1 3/4" 16 GAGE ^e
1/2" AND LESS	8D COM. OR 6D DEF., 2 3/8"X0.113" NAIL 4" OC AT EDGE 8" OC FIELD, 2" 16 GAGE 4", 8" OC
19/32" TO 3/4"	8D COMMON OR DEFORMED SHANK
7/8" TO 1"	10D OR 8D COMMON
1 1/8" TO 1 1/4"	
WOOD STRUCTURAL PANELS AND PARTICLE BOARD, SINGLE FLOOR (COMBINATION SUBFLOOR-UNDERL	6D DEFORMED SHANK
3/4" AND LESS	8D DEFORMED SHANK
7/8" TO 1"	
1 1/8" TO 1 1/4"	10D COMMON OR 8D DEFORMED 6D CORROSION-RESISTANT SIDING OR CASING NAIL
2. PANEL SIDING (TO FRAMING) - 1/2" OR LESS	OD CORROSION-RESISTANT SIDING OR CASING NAIL

A. NAILS SPACED 6" OC AT EDGES, 12" AT INTERMEDIATE SUPPORTS EXCEPT 6" AT SUPPORTS WHERE SPANS ARE 48" OR MORE. FOR NAILING OF WOOD STRUCTURAL PANEL

H. FASTENERS SPACED 3" OC AT EXTERIOR EDGES, 6" OC AT INTERMEDIATE SUPPORTS, WHEN USED AS STRUCTURAL SHEATHING. SPACING SHALL BE 6" OC ON THE EDGES

E. FASTENERS SPACED 4" OC AT EDGES, 8D OC AT INTERMEDIATE SUPPORTS FOR SUBFLOOR AND WALL SHEATHING AND 3" OC AT EDGES, 6" AT INTERMEDIATE

AND PARTICLEBOARD DIAPHRAGMS AND SHEAR WALLS. REFER TO SECTION 2305, NAILS PERMITTED TO BE COMMON BOX OR CASING.

C. FOR ROOF SHEATING APPLICATIONS, 8D NAILS ARE THE MINIMUM REQUIRED FOR WOOD STRUCTURAL PANELS.

D. FOR ROOF SHEATING APPLICATIONS, FASTENERS SPACED 4" OC AT EDGES, 8D OC AT INTERMEDIATE SUPPORTS

STRUCTURAL NOTES:

OBSERVATIONS

- A. -THESE PLANS PREPARED BY JC ENGINEERING ARE INTENDED FOR USE ONLY ON THE LOT FOR WHICH THEY WERE DESIGNED AND SHALL REMAIN THE PROPERTY OF JC ENGINEERING. THESE DRAWINGS ARE NOT INTENDED TO BE COMPREHENSIVE AND IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTORS TO NOTIFY THE OWNER OF ANY NECESSARY CLARIFICATIONS OR MODIFICATIONS. ALL INFORMATION PERTAINING TO THE SITE SHALL REMAIN THE OWNER'S RESPONSIBILITY.
- B. -ALL WORK CONNECTED WITH THIS PROJECT SHALL BE DONE IN A PROFESSIONAL MANNER IN ACCORDANCE WITH THE TRADITIONALLY AND LEGALLY DEFINED "BEST ACCEPTED PRACTICE" OF THE TRADE INVOLVED. ADDITIONALLY, ALL WORK SHALL COMPLY WITH APPLICABLE CODES AND TRADE STANDARDS WHICH GOVERN EACH PHASE OF WORK INCLUDING BUT NOT LIMITED TO CALIFORNIA BUILDING CODE 2019 EDITION AND APPLICABLE LOCAL CODES.
- C. -THE OWNER OR CONTRACTOR SHALL BE RESPONSIBLE FOR NOTIFYING JC ENGINEERING OF ANY UNUSUAL OR UNFORESEEN STRUCTURAL CONDITIONS. DISCREPANCIES OR CHANGES FORM THE PLANS BEFORE PROCEEDING WITH THE WORK INVOLVED, OTHERWISE THEY WILL BE CONSIDERED ADEQUATE FOR PROPER COMPLETION OF THE PROJECT.
- D. -THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING FIELD MEASUREMENTS BEFORE ORDERING MATERIALS AND PREFABRICATED ITEMS. ADEQUATE SUPERVISION AND PERIODIC INSPECTION DURING THE CONSTRUCTION PHASE ARE RECOMMENDED. IT IS THE RESPONSIBILITY OR THE CONTRACTOR AND ALL SUBCONTRACTORS TO CHECK AND VERIFY ALL DIMENSIONS AND DISCREPANCIES PRIOR TO COMMENCING THEIR WORK
- -NO GUARANTEE FOR QUALITY OF CONSTRUCTION IS IMPLIED OR INTENDED BY THESE DOCUMENTS, AND THE CONTRACTOR SHALL ASSUME FULL RESPONSIBILITY FOR ANY OR ALL CONSTRUCTION DEFICIENCIES. THE GENERAL CONTRACTOR SHALL HOLD HARMLESS, INDEMNIFY AND DEFEND JC ENGINEERING FROM ANY ACTION INITIATED BY THE INITIAL OWNER OR ANY SUBSEQUENT OWNERS FOR CONSTRUCTION DEFICIENCIES. MODIFICATIONS OR SUCH CONDITIONS WHICH MAY BE BEYOND THE CONTROL OF JC ENGINEERING.

GENERAL

- THESE NOTES ARE GENERAL AND APPLY TO THE ENTIRE PROJECT EXCEPT
- WHERE THERE ARE SPECIFIC INDICATIONS TO THE CONTRARY. CONSTRUCTION SHALL MEET THE REQUIREMENTS OF THE LATEST EDITION OF
- THECALIFORNIA BUILDING CODE. THE ABOVE SHALL GOVERN EXCEPT WHERE OTHER APPLICABLE CODES OR THE FOLLOWING NOTES ARE MORE RESTRICTIVE. STRUCTURAL DIMENSIONS CONTROLLED BY OR RELATED TO MECHANICAL AND/OR ELECTRICAL EQUIPMENT SHALL BE CERTIFIED BY THE CONTRACTOR
- PRIOR TO CONSTRUCTION. STRUCTURES HAVE BEEN DESIGNED FOR OPERATIONAL LOADS ON COMPLETED STRUCTURES. DURING CONSTRUCTION, STRUCTURES AND PARTS OF THE STRUCTURE SHALL BE PROTECTED AND/OR SUPPORTED BY BRACING AND SHORING WHEREVER EXCESSIVE LOADING MAY OCCUR.
- 5. THE CONTRACTOR ALONE IS RESPONSIBLE FOR JOB SITE SAFETY. SITE REVIEW OF THE CONSTRUCTION BY THE ENGINEER, IF ANY IS TO DETERMINE CONFORMANCE WITH THE PLANS AND SPECIFICATIONS. IT DOES NOT ENCOMPASS SAFETY PROCEDURES, GENERAL CARPENTRY PROCEDURES. CONTRACTING SCHEDULING OR OPERATIONS.
- 6. IT IS THE RESPONSIBILITY OF THE CONTRACTOR AND SUBCONTRACTOR TO NOTIFY THE OWNER AND THE ENGINEER OF ANY CONDITIONS TO BE FOUND IN THE FIELD TO BE DIFFERENT FROM THOSE SHOWN ON THE PLANS, BEFORE COMPLETION OF THE PROJECT.
- VERIFY TYPE AND SIZE OF METAL WORK AGAINST APPROPRIATE MEMBER SIZE BEFORE ORDERING HARDWARE
- 8. HARDWARE NOTED IS SIMPSON "STRONG-TIE" HARDWARE OF SIMILAR CONSTRUCTION OR EQUAL CBC VALUE IS ACCEPTABLE
- FOR HARDWARE USE THE MAXIMUM SIZE BOLTS AND NAILS SPECIFIED IN MANUFACTURE'S CATALOG. NAIL ALL HOLES USE SPECIAL SHORT-LENGTH NAILS SUPPLIED BY MANUFACTURE WHERE COMMON NAILS WILL EXCEED THE WIDTH OF THE FRAMING MEMBER
- 10. IN CASE OF CONFLICT BETWEEN STRUCTURAL AND ARCHITECTURAL PLANS. DETAILS AND/OR SPECIFICATIONS. NOTIFY THE ENGINEER. IN ANY CASE, THE MORE RESTRICTIVE CONDITIONS SHALL APPLY.

WOODS

STUDS: STUD GRADE

UNLESS OTHERWISE NOTED FRAMING LUMBER SHALL BE GRADED AS FOLLOWS: FRAMING LUMBER (RAFTERS, JOINTS, PURLINS, ETC.) DF NO. 2 BEAMS AND HEADERS: DF 1

FOUNDATION SILLS: PRESSURE-TREATED (DF OR REDWOOD) EXPOSED DECKING: CALIFORNIA REDWOOD NO. 1.

- ALL PLYWOOD SHALL BE CDX U.N.O. MINIMUM THICKNESS SHALL BE 1/2" ON ROOF 5/8" T & G ON FLOORS AND 3/8" ON WALLS (WHERE NOTED). USE PANEL CLIPS AT UNSUPPORTED EDGES OF ROOFS.
- GLUELAM BEAMS SHALL BE GRADE 24F-1/4, STANDARD CAMBER U.O.N. (AITC -103). 7 PROVIDE COMPLIANCE CERTIFICATE TO BUILDING DEPARTMENT. GLUE LAM BEAMS SHALL HAVE METAL HARDWARE CONNECTIONS TO POSTS (CC POST CAP AND CB COLUMN BASE MINIMUM).
- SPECIAL BEAMS LVL AND PSL SHALL HAVE A BENDING STRESS OF 2900 PSI, SHEAR CAPACITY OF 285 PSI AND MODULES OF ELASTICITY OF 1.8 E 6 PSI.

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STRUCTURAL STEEL

- DETAILING, FABRICATION, AND ERECTION OF STRUCTURAL STEEL SHALL CONFORM TOT HE SPECIFICATIONS AND STANDARDS OF THE LATEST EDITION OF THE AISC MANUAL OF STEEL CONSTRUCTION
- 2. ALL STEEL SHALL BE FREE OF MILL SCALE, RUST, OR OTHER CONTAMINANTS THAT WOULD IMPAIR THE BONDING OF THE CONCRETE TO THE STEEL
- **ELECTRODES** 4. ALL STRUCTURAL STEEL SHALL BE A-572 GRADE. 5. BOLTS FOR STRUCTURAL CONNECTIONS SHALL BE ASTM A-325 HIGH STRENGTH.
- ALL STEEL MEMBERS TO BE FABRICATED IN APPROVED FABRICATOR'S SHOP FABRICATOR TO SUBMIT CERTIFICATE OF COMPLIANCE TO BUILDING INSPECTOR PRIOR TO ERECTION.

FRAMING

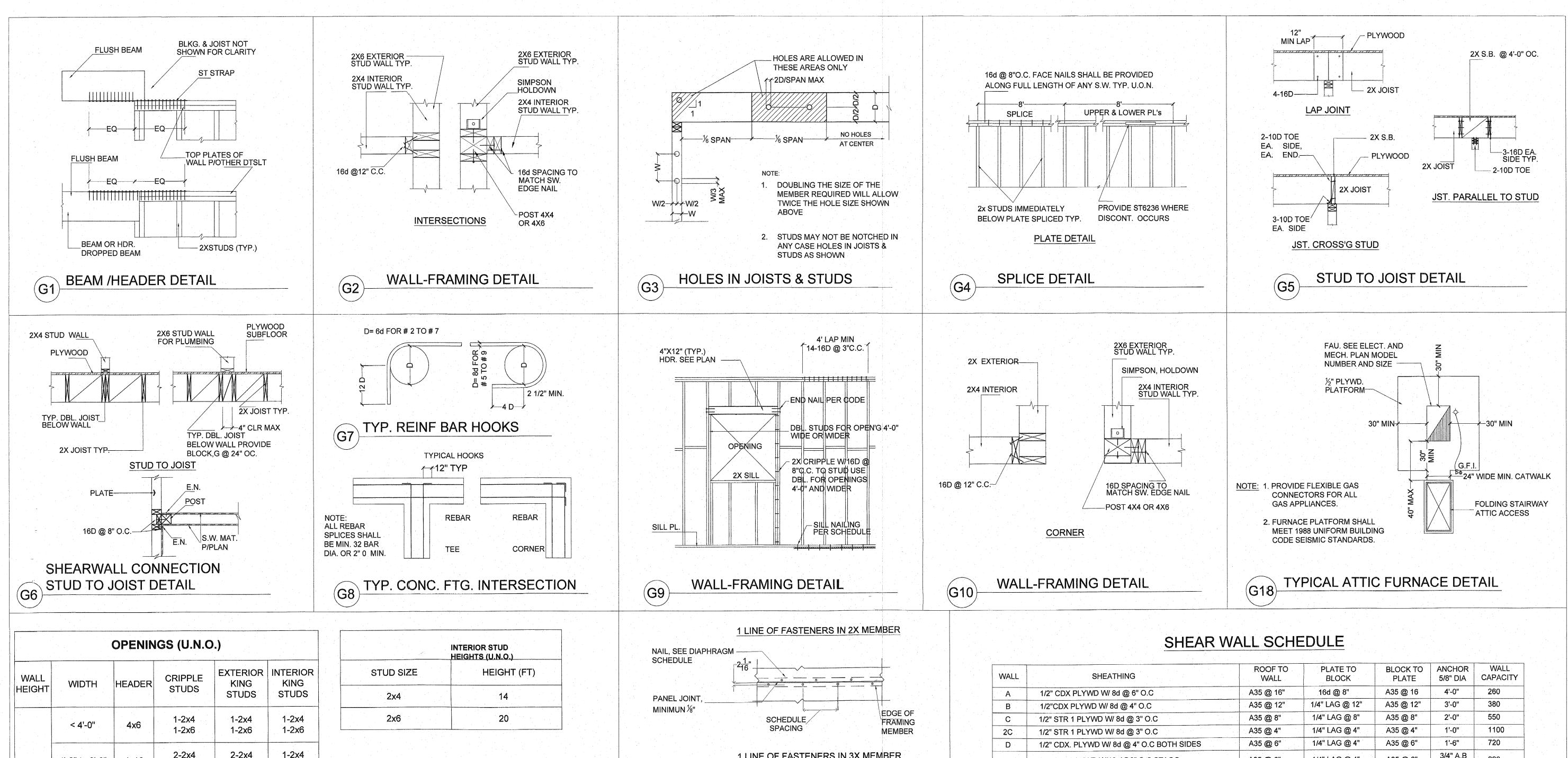
- ALL FRAMING SHALL CONFORM TO THE REQUIREMENTS OF THE 2019 CBC. NAILING SHALL BE PER CBC 2019 TABLE 2304.10.1.ALL NAILS AND HARDWARE EXPOSED TO WEATHER SHALL BE GALVANIZED. NAILS SHALL BE COMMON WIRE
- NAILS U.O.N. ALL BOLTS FOR WOOD CONNECTIONS SHALL CONFORM TO ASTM A307 WITH HEAVY HEX HEADS. MAIL ABLE IRON WASHERS SHALL BE USED AT ALL PLACES WHERE THE BOLT HEAD OR NUT WOULD OTHERWISE BEING CONTACT WITH THE WOOD SURFACE. BOLT HOLES IN WOOD MEMBERS SHALL NOT BE DRILLED MORE THAN 1/8" INCH LARGER THAN THE BOLT DIAMETER.
- 4. BALLOON FRAME ALL WALLS WITH SLOPING CEILING OR WITH RAISED CEILINGS MAXIMUM STUD HEIGHT FOR 2 X 4 STUDS IS 14' - 0" AND FOR 2 X 6 STUDS 20' 0". PROVIDE FIRE BLOCKING SUCH THAT MAXIMUM CONCEALED SPACE IS 10'-0".
- 5. BLOCK UNDER ALL PERPENDICULAR PARTITIONS. DOUBLE JOISTS (MIN.) UNDER ALL PARALLEL PARTITIONS.
- 6. BOLT MULTIPLE JOIST TOGETHER WITH 1/2" MACHINE BOLTS AT 24" OR TWICE THE JOIST DEPTH. NAIL DOUBLE JOIST WITH 16D AT 24" O.C. (SIMILAR PATTERN)
- 7. PROVIDE LATERAL SUPPORT AT ENDS OF JOIST AND RAFTERS BY BLOCKING, RIM JOISTS OR HANGERS. BLOCK BETWEEN JOIST OVER ALL SUPPORTS. AND AT SPACES NO GREATER THAN 8' FOR FLOORS.
- ALL WOOD MEMBERS IN CONTACT WITH CONCRETE OR MASONRY FOUNDATION SURFACE'S SHALL BE PRESSURE TREATED WITH A PRESERVATIVE, ALL WOOD PERMANENTLY EXPOSED TO WEATHER SHALL BE PRESSURE TREATED OR REDWOOD.
- SOLID SWAN MEMBERS IN FLOORS SHALL BE PLACED WITH CROWNS AND ANY MAJOR KNOTS UPWARD.
- 10. POSTS SHALL BE CONTINUOS FROM BEAM OR HEADER TO FLOOR OR SILL BELOW.
- 11. PROVIDE AT LEAST A DOUBLE STUD AT ALL BEARING POINTS UNDER BEAMS
- 12. ALL HEADERS 4 X 12 U.O.N. WITH DOUBLE TRIMMERS AND ONE KING STUD. 13. LAP TOP PLATES 48". NAILS WITH 32-16D NAILS UNLESS OTHERWISE NOTED
- 14. MAXIMUM ALLOWABLE NOTCH IS 7/8" IN 2 X 3 STUDS, 1-3/8" ON 2 X 4 STUDS AND 2-1/8" ON 2 X6 STUDS AND AT LEAST 5/8" CLEAR TO THE EDGE OF THE STUD
- 15. PROVIDE A 35 ANCHOR FROM RAFTER TO TOP PLATE @ 16" O.C. UNLESS OTHERWISE SHOWN ON SHEAR WALL SCHEDULE.
- 16. UNLESS OTHERWISE NOTED STAGGER ALL PLYWOOD JOINTS IN FLOOR AND ROOF SHEATHING. NAILING SHALL BE 10D AT 6" SUPPORTED EDGES AND 10' FIELD. NAIL FLOOR DIAPHRAGM PERIMETER WITH 10D AT 6" O.C. AND 10" O.C. FIELD. NAILING SHOWN IN SHEAR WALL SCHEDULE REFERS TO EDGE AND BOUNDARY NAILING. EDGE NAILING ALSO REFERS TO PANEL BOUNDARY FOR CONTINUOS PANEL JOINTS.
- 17. VERTICAL PLYWOOD SHEATHING SHALL BE BLOCKED AT ALL EDGES AND SHALL BE EXTENDED FROM TOP PLATE TO SILL OF WALL. WHERE POSSIBLE, BUTT VERTICAL SHEATHING ON FLOOR JOISTS OR BLOCKING LEAVING 3/8" GAP FOR SHRINKAGE IF REQUIRED ON FIRST FLOOR WALLS. MINIMUM NAILING IS @ 6" EDGES AND 10" FIELD.
- 18. MINIMUM GYPSUM BOARD NAILING IS 5D PARKERHEAD NAILS (6D FOR 5/8" BOARD) AT 7" O.C EDGES AND FIELD.
- 19. HOLDOWNS ARE ATTACHED TO 4 X STUDS AT THE ENDS OF SHEAR WALLS AND EXTEND TO EITHER 4 X STUDS OR DOUBLE STUD FRAMING BELOW. NAIL ALL DOUBLE STUDS AT HOLDOWNS WITH 16D NAILS AT 8" O.C.
- 20. WHERE SOLID SWAN WOOD MEMBERS ARE FRAMED INTO GLUE-LAM MEMBERS IN FLOORS, THE TOPS OF THESE MEMBERS SHALL BE HELD 3/8" INCH ABOVE GLUE-LAMS.
- 21. ALL BEAMS SHALL BE CONNECTED TO THE SUPPORTING POST WITH SIMPSON CC CONNECTOR OR EQUAL
- 22. WOOD POSTS BEARING ON CONCRETE SHALL BE SECURED DIRECTLY TO THE CONCRETE WITH POST ANCHORS FULLY NAILED (I.E. SIMPSON CB FOR MAIN MEMBERS AND SIMPSON PB FOR SECONDARY MEMBERS. ALL POSTS WITH A WALL THAT ARE CARRYING BEAMS ABOVE. SHALL BE SECURED TO THE FOUNDATION WITH SIMPSON COLUMN BASE CB.
- 23. ALL PLYWOOD SHALL BE D.F.P.A. GRADE MARKED. PLYWOOD SUBJECT TO MOISTURE DURING CONSTRUCTION SHALL HAVE EXTERIOR GRADE GLUE. PLYWOOD SUBJECT TO MOISTURE AFTER CONTRACTION SHALL BE EXTERIOR GRADE PLYWOOD

CONCRETE

- ALL CONCIRETE WORK SHALL CONFORM TO THE REQUIREMENTS OF THE LATEST EDITION OF THE ACI BUILDING CODE (ACI-318) AND THE CALIFORNIA BUILDING CODE (CBC). DETAILING, FABRICATION, AND ERECTION OF REINFORCING BARS SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE MANUAL OF STANDARD PRACTICE (ACI-315)
- 2. AGGREGATE FOR THE CONCRETE MIX SHALL CONFORM TO (ASTM-C33). THE MAXIMUM SIZE AGGREGATE SHALL BE 3/8" INCH. CEMENT SHALL CONFORM TO ASTM-C. TYPE I OR II.
- CONCRETE SHALL HAVE AN ULTIMATE COMPRESSIVE STRENGTH OF 3000 PSI (28) DAY STRENGTH) WITH 4" SLUMP (TOLERANCE 1").
- REINFORCING STEEL SHALL BE DEFORMED BARS (ASTM-A615) GRADE 40, EXCEPT THAT NO.6 OR LARGER BARS SHALL BE GRADE 60. WELDED WIRE FABRIC SHALL BE PER (ASTM 185)
- 5. REINFORCING STEEL IN CONTINUOUS FOOTINGS AND GRADE BEAMS SHALL BE SECURELY FASTENED IN PLACE HORIZONTALLY AND VERTICALLY PRIOR TO POURING.
- 6. LAP BARS 48 DIAMETERS AT SPLICES. HOOK BAR 24 DIAMETERS AT CORNERS BEND DOWN TOP BARD AT ENDS OF FOOTINGS 8. PROVIDE A MINIMUM OF TWO ANCHOR BOLTS PER SILL PIECE, WITH ONE WITHIN
- 12" OF EACH END. 9. CONCRETE FOOTINGS SHALL BE POURED AGAINST UNDISTURBED EARTH OR
- EARTH THAT HAS BEEN COMPACTED AND RE-EXCAVATED FOR FOOTINGS 10. REINFORCING SHALL BE PROTECTED BY THE THICKNESS OF CONCRETE SHOWN ON THE PLANS. WHERE NOT OTHERWISE SHOWN, THE THICKNESS OF CONCRETE
- OVER THE REINFORCEMENT SHALL BE AS FOLLOWS: A) WHERE CONCRETE IS DEPOSITED AGAINST GROUND WITHOUT THE USE OF
- FORMS, NOT LESS THAN 3" B) WHERE CONCRETE MAY BE EXPOSED TO GROUND BUT IS PLACED INFORMS.
- NOT LESS THAN 2" C) IN BEAMS, GIRDERS AND COLUMNS NOT EXPOSED TO THE GROUND OR EARTH THAT HAS BEEN COMPACTED AND RE-EXCAVATED FOR FOOTINGS.
- 11. BOTTOM OF FOOTING EXCAVATION SHALL BE KEPT CLEAR OF SLOUGH AND CUSTOM FABRICATED CONNECTOR SHALL USE A-572 STEEL AND E70XX WELDING DEBRIS. FOOTING EXCAVATION SHALL ALSO BE KEPT MOIST AND FREE OF STANDING WATER BEFORE PLACEMENT OF CONCRETE. SEE SOILS REPORT FOR RECOMMENDATIONS FOR POURING WHEN WATER IS PRESENT
 - 12. CONSTRUCTION JOINTS NOT INDICATED ON THE PLANS SHALL BE SO MADE AND LOCATED AS TO AL LEAST IMPAIR THE STRENGTH OF THE STRUCTURE. WHERE A JOINT IS TO BE MADE. THE SURFACE OF THE CONCRETE SHALL BE THOROUGHLY CLEANED AND ALL LATINATE REMOVED

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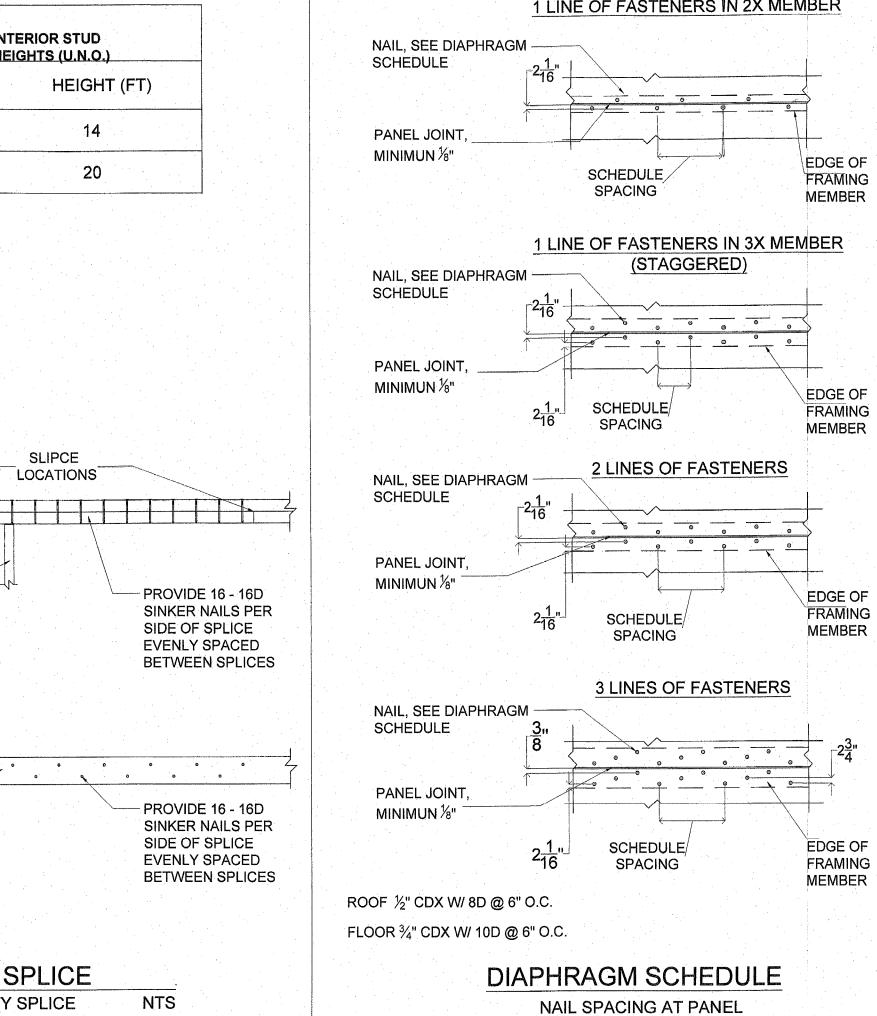
S-10



EDGES, USE 10" AT FIELD

		OPENIN	IGS (U.N.O.	.)				NTERIOR STUD IEIGHTS (U.N.O.)	
WALL HEIGHT	WIDTH	HEADER	CRIPPLE STUDS	EXTERIOR KING STUDS	INTERIOR KING STUDS		STUD SIZE	HEIGHT (FT)
	< 4'-0"	4x6	1-2x4 1-2x6	1-2x4 1-2x6	1-2x4 1-2x6		2x6	20	
.0-	4'-0" to 6'-0"	4x10	2-2x4 1-2x6	2-2x4 1-2x6	1-2x4 1-2x6				
, _" 0- ₈ >	6'-0" to 8'-0"	4x10	2-2x4 2-2x6	2-2x4 1-2x6	1-2x4 1-2x6				
	8'-0" to 16'-6"	SEE PLAN	1-4x8 3-2x6	2-2x6	2-2x4 1-2x6				
- 3	< 4'-0"	4x6	2-2x4 1-2x6	2-2x4 1-2x6	1-2x4 1-2x6	DOUL	BLE 2X TOP PLATES	SLIPCE LOCATIONS	
TO 10'-0"	4'-0" to 6'-0"	4x8	3-2x4 1-2x6	3-2x4 1-2x6	1-2x4 1-2x6				
8'-0" TO	6'-0" to 8'-0"	4x10	3-2x4 2-2x6	4-2x4 2-2x6	1-2x4 1-2x6		2X STUDS		PROVIDE 16 - 16D SINKER NAILS PER
	8'-0" to 16'-6"	SEE PLAN	3-2x6	3-2x6	2-2x4 1-2x6		ELEVATION VIEW		SIDE OF SPLICE EVENLY SPACED BETWEEN SPLICES
	< 4'-0"	4x6	1-2x6	2-2x6	1-2x4 1-2x6	DO	UBLE 2X TOP PLATES		
.0-	4'-0" to 6'-0"	4x8	1-2x6	2-2x6	1-2x4 1-2x6		2X STUDS		PROVIDE 16 - 16D SINKER NAILS PER
10'-0" TO 12'-0"	6'-0" to 8'-0"	4x10	2-2x6	2-2x6	2-2x4 1-2x6		<u>PLAN VIEW</u>		SIDE OF SPLICE EVENLY SPACED BETWEEN SPLICES
10(8'-0" to 12'-0"	SEE PLAN	2-2x6	3-2x6	1-4x4 1-2x6				
	12'-0" to 16'-6"	SEE PLAN	3-2x6	1-6x8	1-4x6 2-2x6		TOP PLATE 2,500 LB CAPACIT		NTS

NOTE: ONLY USE TABLE IF THE PLANS DO NOT HAVE THE MEMBERS SPECIFIED.



WALL	SHEATHING	ROOF TO WALL	PLATE TO BLOCK	BLOCK TO PLATE	ANCHOR 5/8" DIA	WALL CAPACITY
Α	1/2" CDX PLYWD W/ 8d @ 6" O.C	A35 @ 16"	16d @ 8"	A35 @ 16	4'-0"	260
В	1/2"CDX PLYWD W/ 8d @ 4" O.C	A35 @ 12"	1/4" LAG @ 12"	A35 @ 12"	3'-0"	380
С	1/2" STR 1 PLYWD W/ 8d @ 3" O.C	A35 @ 8"	1/4" LAG @ 8"	A35 @ 8"	2'-0"	550
2C	1/2" STR 1 PLYWD W/ 8d @ 3" O.C	A35 @ 4"	1/4" LAG @ 4"	A35 @ 4"	1'-0"	1100
D	1/2" CDX. PLYWD W/ 8d @ 4" O.C BOTH SIDES	A35 @ 6"	1/4" LAG @ 4"	A35 @ 6"	1'-6"	720
E	1/2" STR PLYWD W/10 d@2" O.C STAGG	A35 @ 6"	1/4" LAG @ 4"	A35 @ 6"	3/4" A.B @12" O.C	820

ALL EXTERIOR WALLS TO BE SHEATHED WITH WALL. "A" U.O.N USE 3 X BOUNDARY FRAMING INCLUDING SILL PLATE FOR WALLS B,C,AND D AND 4X BOUNDARY MEMBERS AND SILL PLATE FOR WALLS WITH SHEAR AT BOTH SIDES

ALL ANCHOR BOLTS TO BE SPACED AT 4' O.C. U.O.N USE 3"X3"X1/4 PL AT ANCHOR BOLTS

ALL HEADERS TO BE 4X12 U.O.N

ALL BEAMS SHOWN ON PLAN SHALL BE SUPPORTED BY A SOLID POST OR A DOUBLE STUD WITH A METAL SIMPSON CONNECTOR. USE CC FOR MAIN FRAMING ELEMENTS

ALL POST SHALL HAVE A POST BELOW DOWN TO FOUNDATION LEVEL OR BE SUPPORTED ON A BEAM IF A WALL DOES NOT LINE UP AT THE LEVEL IMMEDIATELY BELOW

SEE GENERAL NOTES FOR OTHER IMPORTANT FRAMING NOTES

SEVERAL TYPICAL DETAILS ARE INCLUDED ON DETAIL SHEET THAT ARE NOT NOT KEYED ON PLAN REFER TO IT FOR WALL FRAMING, STUD TO WALL CONNECTION, HOLES ON JOIST ETC.

HOLDOWNS SHOWN ON ROOF FRAMING PLAN ANCHOR SECOND FLOOR WALLS TO FIRST FLOOR WALL