NORTH ARROW

# Map data ©2020 Google 200 ft ■

VICINITY MAP

**TABULATIONS** OWNER: MONTECITO FIRE DEPARTMENT DISTRICT 595 SAN YSIDRO RD MONTECITO, CA 93108 SITE ADDRESS: 1257 \$ 1257 EAST VALLEY RD MONTECITO, CA 93109 009-030-011 ZONE: 2-E-1 OVERLAY: NONE SETBACKS: 20 FRONT: 10 INTERIOR / SIDE: 25' REAR: OCCUPANCY GROUP: R-3 CONSTRUCTION TYPE: TYPE VB SPRINKLERED:

YES

APPROX.LOT SIZE: ±.70 ACRE / ±30,861 SF ±7% GRADING: O CUBIC YARDS

O CUBIC YARDS FILL: NO. OF STORIES: (E) RESIDENCE

(E) RESIDENCE 2 (N) RESIDENCE 3 BUILDING HEIGHT: EXISTING:

PROP. MAX. HEIGHT: ±26'-0' MAX. HT. ALLOWED:

BUILDING AREA CALCULATIONS:

HIGH FIRE SEVERITY:

±947 NET (±1,015 GROSS) (E) RESIDENCE 1 [1257 EAST VALLEY RD] = (E) RESIDENCE 2 [1256 EAST VALLEY RD] = ±713 NET (±762 GROSS) (N) RESIDENCE 3 [1255 EAST VALLEY RD]

LOWER FLOOR = 1,485 S.F. NET (1,573 S.F. GROSS) 551 S.F. NET (608 S.F. GROSS) 2036 S.F. NET ( 2181 S.F. GROSS)

TOTAL ALL BUILDINGS = ±3,696 S.F. NET (±3,958 S.F. GROSS) DECKS:

(N) DECK (RESIDENCE 2) = 211 S.F. PARKING: 7 UNCOVERED NEW PROPOSED: OUNCOVERED TOTAL: 7 UNCOVERED

CONSTRUCTION WASTE MGMT: MARBORG INDUSTRIES 728 E. YANONALI SANTA BARBARA, CA 93103 805.963.1852 or 800.798.1852

VERTICAL DATUM REF .: NAVD 1988

# CODE COMPLIANCE SCOPE OF WORK

) CONSTRUCTION TO COMPLY WITH: 2019 CBC EDITION 2019 CRC EDITION CALIFORNIA BUILDING CODE CALIFORNIA RESIDENTIAL CODE CALIFORNIA ELECTRICAL CODE 2019 CEC EDITION 2019 CPC EDITION CALIFORNIA PLUMBING CODE 2019 CMC EDITION CALIFORNIA MECHANICAL CODE

GREEN BLDG & BEST MGMT PRACTICES FOR CONST

- CALIFORNIA GREEN BUILDING STANDARDS CODE 2019 CGBSC EDITION 2019 CFC EDITION CALIFORNIA FIRE CODE 2019 EDITION CALIFORNIA ENERGY CODE 2) ADDITIONS, ALTERATIONS AND REPAIRS OF EXISTING BUILDINGS ARE TO
- COMPLY MITH APPLICABLE PROVISIONS OF THE CALIFORNIA EXISTING BUILDING CODE (CEBC). [CRC 1.8.10.1]
- 3) THE CALIFORNIA ENERGY CODE, 2016 EDITION (BASED ON 2019 CALIFORNIA BUILDING ENERGY EFFICIENCY STANDARDS) 4) THE CALIFORNIA GREEN BUILDING STANDARDS CODE, 2019 EDITION
- 5) SANTA BARBARA COUNTY ORDINANCE [SBCO] #4986. SANTA BARBARA COUNTY GRADING ORDINANCE [SBCO] #4766 AND ALL STATE AND LOCAL CODES AND ORDINANCES INCLUDING ALL AMENDMENTS AS ADOPTED [SBCO] ) THE CALIFORNIA FIRE CODE, 2019 EDITION AND ALL COUNTY OF SANTA BARBARA HIGH FIRE AREA REQUIREMENTS AND THE MILDFIRE-URBAN INTERFACE AREA PROVISIONS OF THE CRC R327

. REBUILD EXISTING DEBRIS FLOW DAMAGE TO 'RESIDENCE 1' REAR DECK AND REAR BUILDING WALL.

PROJECT SUBJECT TO HIGH FIRE HAZARD AREA PROVISIONS OF CRC SECTION

- P. REPLACE DOORS AND WINDOWS ON THIS REAR WALL TO MATCH EXISTING.
- RAISE PLATE HEIGHT AT REAR WALL AND ADJUST ROOF RAFTERS AT REAR WALL TO ACCOMODATE NEW PLATE HT.
- . ROOF REPLACEMENT ON FLAT ROOF AT REAR.
- 5. CONSTRUCT NEW DECK/ GUARDRAIL TO REPLACE EXISTING.

PACIFIC ARCHITECTS

1117 COAST VILLAGE RD. MONTECITO, CA 93108 8 0 5 . 5 6 5 . 3 6 4 0



ALL IDEAS, DESIGNS AND PLANS INDICATED OR

REPRESENTED BY THESE

DRAWINGS ARE OWNED BY

PACIFIC ARCHITECTS AND

WERE CREATED AND

AND ARE THE PROPERTY OF

DEVELOPED FOR USE IN CONNECTION WITH THE SPECIFIED PROJECT. NON OF SUCH IDEAS, DESIGNS, OR PLANS SHALL BE USED FOR ANY PURPOSE WHATSOEVER WITHOUT THE WRITTEN PERMISSION OF PACIFIC ARCHITECTS. PLN CHK 01/25/21

Revision Description Date Job Number:

Date: **12.15.20** 

	RETROTES	M11-G · GUARD CONCEN TOP RA
	C1-5/8" GYPSUM BOARD. SPRAYED TEXTURE FINISH COATING (LIGHT KNOCK DOWN TEXTURED FINISH), PRIMED AND PAINTED. WATERPROOF GYPSUM BOARD AND PLASTER AT ALL WET LOCATIONS. PROVIDE 2'-0" SQ. SAMPLE FOR OWNERS APPROVAL OF COLOR AND	PRODUC 1607.8 • HEIGHT VERTIC
	TEXTURE.  CF: CABINET / COUNTER FINISHES	1.) FROM 2.) ON SPER CB
	ADHESIVE 0/3/4" EXTERIOR GRADE PLYWOOD BASE. QUARTZ SLABS & EDGE PROFILE TO BE SELECTED AND APPROVED BY OWNER. SEE INTERIOR ELEVATIONS.	OCCUPA NOT LES EDGES FOR OC GROUP
	(APPROVED BY OWNER). FULLY CONCEALED HINGES AND FULL EXTENSION DRAWER GUIDES. FLUSH OVERLAY DOORS AND DRAWER FRONTS. HARDWOOD VENEER FACED PLYWOOD FRONTS W/ SOLID HARDWOOD EDGE BANDING. WHITE MELAMINE OR KORTRON INTERIORS ALL OTHER INTERIORS AND SHELVING. NOTE: CASEWORK PULL HARDWARE AS SELECTED BY OWNER. CF 1 - COUNTERTOP AND SPLASH AS SELECTED BY OWNER.	SIDES O MORE 1 EDGES • OPENII PASSAG REQUIR
	DM: DOORS AND MINDOMS  DM 1 - WOOD FRAME DOORS: TO BE PRIMED AND PAINTED OR STAINED, COLOR TO BE SELECTED & APPROVED BY OWNER. (SEE DOOR SCHED.)	EXCEPT OPENING 1015.4 THE TRI
	DM2- WOOD FRAME CLAD DOORS: EXTERIOR SIDE PREFINISHED ALUMINUM CLADDING, COLOR AS SELECTED BY OWNER. INTERIOR SIDE EXPOSED WOOD TO BE PRIMED AND PAINTED OR STAINED, COLOR TO BE SELECTED & APPROVED BY OWNER. (SEE DOOR SCHED.)	AND BO CBC SE MITHIN II OCCUPA ALLOW
	DW3 WOOD FRAME CLAD WINDOWS: EXTERIOR SIDE PREFINISHED ALUMINUM CLADDING, COLOR AS SELECTED BY OWNER. INTERIOR SIDE EXPOSED WOOD TO BE PRIMED AND PAINTED OR STAINED, COLOR TO BE SELECTED & APPROVED BY OWNER. (SEE WINDOW SCHED.)  EX: EXTERIOR FINISHES	(6)
	EX1- TYP SLOPED ROOF: (PITCH SEE PLAN) ASPHALT SHINGLES BEARING UNDERWRITERS LABORATORIES INCORPORATED CLASS 'A' LABEL O/ 15# ASPHALT SATURATED FELT UNDERLAYMENT. (NOTE: FOR ROOF SLOPES FROM 2:12 AND UP TO 4:12, UNDERLAYMENT SHALL BE TWO LAYERS APPLIED PER CBC SECT. 1507.2.8 & CRC SECT. R905.2.2) SHINGLES MUST BE APPLIED IN STRICT ACCORDANCE W/ MANUFACTURE'S DIRECTIONS AND AS PER CBC SECT. 1507.2 & CRC SECT. R905.2 O/ CDX APA-RATED PLYWOOD SHEATHING O/PREFABRICATED WOOD TRUSSES OR 2x ROOF RAFTERS (SEE FRAMING AND DETAILS)	
	EX2- EXTERIOR VERTICAL SIDING: TYP. EXT. BOARD AND BATT REDWOOD WOOD SIDING. PRIMED AND PAINTED. BACK PRIME BEFORE INSTALLATION. O/ WATERPROOF BUILDING PAPER (DBL. LAYERS OF W.P. BLD'G. PAPER AT CORNERS TYPICAL) O/ APA RATED CDX PLYWD. SHEATHING (WHERE OCCURS REFER TO STRUCT DRWG'S.) O/ 2x STUD WALL FRM'G. USE CORROSION RESISTANT FASTENERS PER MFR RECOMMENDATIONS. FINISH TO MATCH EXISTING	
	EX3-REDWOOD TRIM BOARDS (3/4"x 2 1/2") BATTEN BOARD . BACK PRIME BEFORE INSTALLATION. REFER TO EXTERIOR ELEVATIONS & DETAILS.  EX4-EXPOSED WOOD RATER TAILS REFER TO DETAILS.	
	EX5- WOOD BARGE RAFTER AT RAKE TYPICAL. SEE DETAILS.  F: FLOORING	
	F1- SHOWER FLOOR TILE: TILE O/ BOND COAT O/ MORTAR SETTING BED O/ SHOWER PAN / WATERPROOF MEMBRANE O/ SLOPED FILL TO DRAIN. USE STAIN RESISTANT MORTARS AND GROUTS BY CUSTOM BUILDING PRODUCTS. FINAL TILE AND GROUT DIMENSION, COLOR AND TYPE TO BE APPROVED BY OWNER. SEE TILE SPECIFICATIONS.  F2- VINYL FAUX WOOD FLOORING.	
	F3- 4" CONCRETE SLAB SEE DETAILS. F4- 2X6X5/4" IPE DECKING.	
	G: GLAZING G1- TEMPERED FRAMLESS GLASS SHOWER ENCLOSURE PER CBC SECT 2406.4.5	
	WF: WALL FINISH  WF1-5/8" TYPE 'X' GYPSUM BOARD, BULL-NOSE CORNER BEAD ALL OUTSIDE CORNERS.  SPRAYED TEXTURE FINISH COATING (LIGHT KNOCK DOWN TEXTURED FINISH). PRIMED AND PAINTED. WATERPROOF GYP BOARD AND PLASTER AT ALL WET LOCATIONS. PROVIDE 2-0" SQ. SAMPLE FOR OWNERS APPROVAL OF COLOR AND TEXTURE.	
	WF2- TILE: TILE O/POLYMER MODIFIED THINSET MORTAR BOND COAT O/CEMENTITIOUS BACKER UNIT "CBU" O/ WATERPROOF MEMBRANE (6 MIL. POLYETHYLENE FILM) USE STAIN RESISTANT MORTARS AND CAULKS. FINAL TILE AND GROUT DIMENSIONS COLOR AND TYPE TO BE SELECTED AND APPROVED BY OWNER.  M: MISCELLANEOUS	
	M1 - INSULATION: • ROOF AREAS: ICYNENE INSUL. (HIGH DENSITY, CLOSED CELL POLYURETHANE FOAM PLASTIC INSULATION) AT UNDERSIDE OF THE ROOF SHEATHING IN VOIDS BETWEEN RAFTERS (R-VALUE = R-7/INCH, THEREFORE 4.5" = 3 1.5 TOTAL R-VALUE) INSTALL PER MANUF. INSTALLATION	
	INSTRUCTIONS.  • EXTERIOR FRAMED WALLS: R-19 PAPER BACKED BATT INSULATION (6 1/4" THICK). PAPER VAPOR BARRIER FACES INSIDE/ WARM SIDE OF WALL.  M2- ALL PLUMBING FIXTURES BY KOHLER OR APPROVED EQUAL. SUBMIT LIST FOR OWNERS APPROVAL AS DIRECTED BY OWNER.	
	M3-GUTTERS: FACTORY FINISHED ALUMINUM HALF ROUND GUTTER AND DOMNSPOUT TO SPLASH BLOCK OR HARD PIPED TO UNDERGROUND DRAINAGE SYSTEM REFER TO ROOF PLAN, ROOF GUTTER/ DOWNSPOUT PLAN, ELEVATIONS, DETAILS AND CIVIL DRAWINGS.	
	M4- INDIVIDUAL SHOMER AND TUB-SHOMER COMBINATION CONTROL VALVES: SHOMER AND TUB-SHOMER COMBINATIONS SHALL BE PROVIDED WITH INDIVIDUAL CONTROL VALVES OF THE PRESSURE BALANCE, THERMOSTATIC, OR COMBINATION PRESSURE BALANCE/THERMOSTATIC MIXING VALVE TYPE THAT PROVIDE SCALD AND THERMAL SHOCK PROTECTION FOR THE RATED FLOW RATE OF THE INSTALLED SHOWERHEAD. PER CPC SECT. 408.3	
	M5- SHOWER COMPARTMENTS: SHOWER COMPARTMENTS, REGARDLESS OF SHAPE, SHALL HAVE A MINIMUM FINISHED INTERIOR OF 1024 SQUARE INCHES AND SHALL ALSO BE CAPABLE OF ENCOMPASSING A 30 INCH CIRCLE. THE MINIMUM REQUIRED AREA AND DIMENSIONS SHALL BE MEASURED AT A HEIGHT EQUAL TO THE TOP OF THE THRESHOLD AND AT A POINT TANGENT TO ITS CENTERLINE. THE AREA AND DIMENSIONS SHALL BE MAINTAINED TO A POINT OF NOT	
	LESS THAN 70 INCHES ABOVE THE SHOWER DRAIN OUTLET WITH NO PROTRUSIONS OTHER THAN THE FIXTURE VALVE OR VALVES, SHOWER HEAD, SOAP DISHES, SHELVES, AND SAFETY GRAB BARS, OR RAILS. FOLD-DOWN SEATS IN ACCESSIBLE SHOWER STALLS SHALL BE PERMITTED TO PROTRUDE INTO THE 30 INCH CIRCLE. PER CPC SECT. 408.6	
	M6- APPLIANCES TO BE SELECTED AND APPROVED BY OWNER. CONTRACTOR TO REVIEW MANUFACTURE'S OPTIONS FOR APPLIANCES. SEE FLOOR PLAN FOR MODEL OPTIONS.  M7- PLUMBING FIXTURES SHALL BE WATER- CONSERVING IN COMPLIANCE WITH THE CALIFORNIA PLUMBING CODE AND GREEN BUILDING STANDARDS. WATER CLOSETS SHALL NOT EXCEED 1.28 GALLONS PER FLUSH. SHOWERHEADS SHALL NOT EXCEED 1.8 GPM AND NEW	
	LAVATORY FAUCETS SHALL NOT EXCEED 1.2 GPM AT 60 PSI. [CPC 407.2.1.1, 408.2 & 411.2].  M8- NEWLY INSTALLED KITCHEN FAUCETS SHALL NOT EXCEED 1.8 GALLONS PER MINUTE [CPC 420.2.2], [GRN 4.303.1.4.4].	
	M9-TOMEL BAR AS SELECTED BY OWNER. FRAMING CONTRACTOR TO PROVIDE SOLID IN-WALL BLOCKING. (NOTE: VERIFY CONNECTION TO GLASS AT SHOWER)  M10-HANDRAILS:  HANDRAIL CONCENTRATED LOAD: HANDRAILS SHALL BE ABLE TO RESIST A SINGLE	
	CONCENTRATED LOAD OF 200 POUNDS, APPLIED IN ANY DIRECTION AT ANY POINT ON THE HANDRAIL OR TOP RAIL AND TO TRANSFER THIS LOAD THROUGH THE SUPPORTS TO THE STRUCTURE TO PRODUCE THE MAXIMUM LOAD EFFECT ON THE ELEMENT BEING CONSIDERED. PER CBC SECT. 1607.8.1.1 AND SECT. 4.5.1 OF ASCE 7 • HEIGHT: HANDRAIL HEIGHT, MEASURED ABOVE STAIR TREAD NOSINGS, SHALL BE UNIFORM,	
	NOT LESS THAN 34 INCHES AND NOT MORE THAN 38 INCHES. PER CBC SECT. 1014.2 NOTE: WHERE HANDRAIL FITTINGS OR BENDINGS ARE USED TO PROVIDE CONTINUOUS TRANSITION BETWEEN FLIGHTS, TRANSITION AT WINDER TREADS, TRANSITION FROM HANDRAIL TO GUARD, OR WHEN USED AT THE START OF A FLIGHT, THE HANDRAIL HEIGHT AT THE FITTINGS OR BENDINGS SHALL BE PERMITTED TO EXCEED THE MAXIMUM HEIGHT PER CBC SECT. 1014.2 EXCEP. (2)	
	• HANDRAL GRASPABILITY: TYPE I; HANDRAILS WITH A CIRCULAR CROSS SECTION SHALL HAVE AN OUTSIDE DIAMETER OF AT LEAST 1 1/4 INCHES AND NOT GREATER THAN 2 INCHES. WHERE THE HANDRAIL IS NOT CIRCULAR, IT SHALL HAVE A PERIMETER DIMENSION OF NOT LESS THAN 4 INCHES AND NOT GREATER THAN 6 1/4 INCHES WITH A MAXIMUM CROSS-SECTIONAL DIMENSION OF 2 1/4 INCHES AND MINIMUM CROSS-SECTIONAL DIMENSION OF 1 INCH. EDGES	
	SHALL HAVE A MINIMUM RADIUS OF 0.01 INCH PER CBC SECT. 1014.3.1  TYPE II. HANDRAILS WITH A PERIMETER GREATER THAN 6 1/4 INCHES SHALL PROVIDE A  GRASPABLE FINGER RECESS AREA ON BOTH SIDES OF THE PROFILE. THE FINGER RECESS  SHALL BEGIN WITHIN A DISTANCE OF 3/4 INCH MEASURED VERTICALLY FROM THE TALLEST	
	PORTION OF THE PROFILE AND ACHIEVE A DEPTH OF AT LEAST 5/16 INCH WITHIN 7/8 INCH BELOW THE WIDEST PORTION OF THE PROFILE. THIS REQUIRED DEPTH SHALL CONTINUE FOR NOT LESS THAN 3/8 INCH TO A LEVEL THAT IS NOT LESS THAN 1 3/4 INCHES BELOW THE TALLEST PORTION OF THE PROFILE. THE WIDTH OF THE HANDRAIL ABOVE THE RECESS SHALL BE NOT LESS THAN 1 1/4 INCHES TO NOR GREATER THAN 2 3/4 INCHES. EDGES SHALL HAVE	
	A MINIMUM RADIUS OF 0.01 INCH PER CBC SECT. 1014.3.2  • CONTINUITY: HANDRAIL GRIPPING SURFACES SHALL BE CONTINUOUS. PER CBC SECT 1014.4  EXCEPTIONS: HANDRAILS MITHIN DWELLING UNITS ARE PERMITTED TO BE INTERRUPTED BY A  NEWEL POST AT A TURN OR LANDING. PER CBC SECT. 1014.4 EXCEP. (1)  MITHIN A DWELLING UNIT, THE USE OF A VOLUTE, TURNOUT, STARTING EASING OR STARTING	
	NEWEL IS ALLOWED OVER THE LOWEST TREAD. PER CBC SECT. 1014.4 EXCEPT. (2) HANDRAIL BRACKETS OR BALUSTERS ATTACHED TO THE BOTTOM SURFACE OF THE HANDRAIL THAT DO NOT PROJECT HORIZONTALLY BEYOND THE SIDES OF THE HANDRAIL MITHIN 1 1/2 INCHES OF THE BOTTOM OF THE HANDRAIL SHALL NOT BE CONSIDERED OBSTRUCTIONS. FOR EACH 1/2 INCH OF ADDITIONAL HANDRAIL PERIMETER DIMENSION	
	ABOVE 4 INCHES, THE VERTICAL CLEARANCE DIMENSION OF 1 1/2 INCHS SHALL BE PERMITTED TO BE REDUCED BY 1/8 INCH. PER CBC SECT. 1014.4 EXCEP. (3) • FITTINGS: HANDRAILS SHALL NOT ROTATE WITHIN THEIR FITTINGS. PER CBC SECT. 1014.5 • HANDRAIL EXTENSIONS: HANDRAILS WITHIN DWELLING UNIT NEED EXTEND ONLY FROM THE TOP RISER TO THE BOTTOM RISER PER CBC SECT. 1014.6 EXCEP. (1)	
	• CLEARANCE: CLEAR SPACE BETWEEN A HANDRAIL AND WALL OR OTHER SURFACE SHALL BE NOT LESS THAN 1 1/2 INCHES. A HANDRAIL AND A WALL OR OTHER SURFACE ADJACENT TO THE HANDRAIL SHALL BE FREE OF ANY SHARP OR ABRASIVE ELEMENTS. PER CBC SECT. 1014.7	

- GUARDS:

«RD CONCENTRATED LOAD: GUARDS SHALL BE ABLE TO RESIST A SINGLE

CENTRATED LOAD OF 200 POUNDS, APPLIED IN ANY DIRECTION AT ANY POINT ON THE

RAIL AND TO TRANSFER THIS LOAD THROUGH THE SUPPORTS TO THE STRUCTURE TO

DUCE THE MAXIMUM LOAD EFFECT ON THE ELEMENT BEING CONSIDERED. PER CBC SECT.

27.8.1.1 AND SECT. 4.5.1 OF ASCE 7

IGHT: REQUIRED GUARDS SHALL BE NOT LESS THAN 42 INCHES HIGH, MEASURED

GHT: REQUIRED GUARDS SHALL BE NOT LESS THAN 42 INCHES HIGH, MEASURED STICALLY AS FOLLOWS:

ROM THE ADJACENT WALKING SURFACES;

ON STAIRWAYS, FROM THE LINE CONNECTING THE LEADING EDGES OF THE TREAD NOSING.

CBC SECT. 10 15.3

EPTIONS: FOR OCCUPANCIES IN GROUP R-3, AND WITHIN INDIVIDUAL DWELLING UNITS IN

CUPANCIES IN GROUP R-2, GUARDS ON THE OPEN SIDES OF STAIRS SHALL HAVE A HEIGHT

LESS THAN 34 INCHES MEASURED VERTICALLY FROM A LINE CONNECTING THE LEADING

SES OF THE TREADS. PER CBC SECT. 10 15.3 EXCEPT. (1)

COCUPANCIES IN GROUP R-3, AND WITHIN INDIVIDUAL DWELLING UNITS IN OCCUPANCIES IN

CUP R-2, WHERE THE TOP OF THE GUARD ALSO SERVES AS A HANDRAIL ON THE OPEN

SES OF STAIRS, THE TOP OF THE GUARD SHALL BE NOT LESS THAN 34 INCHES AND NOT

RE THAN 38 INCHES MEASURED VERTICALLY FROM A LINE CONNECTING THE LEADING

SES OF STAIRS, THE TOP OF SECT. 10 15.3 EXCEPT (2)

ENING LIMITATIONS: REQUIRED GUARDS SHALL NOT HAVE OPENINGS WHICH ALLOW

SAGE OF A SPHERE 4 INCHES IN DIAMETER FROM THE WALKING SURFACES TO THE

CUIRED GUARD HEIGHT. PER CBC SECT. 10 15.4

EPTIONS: FROM A HEIGHT OF 36 INCHES TO 42 INCHES GUARDS SHALL NOT HAVE

ENINGS WHICH ALLOW PASSAGE OF A SPHERE 4 3/8 INCHES IN DIAMETER PER CBC SECT.

5.4 EXCEP. (1)

TRIANGULAR OPENINGS AT THE OPEN SIDES OF A STAIR, FORMED BY THE RISER, TREAD

5.4 EXCEP. (1)
FRIANGULAR OPENINGS AT THE OPEN SIDES OF A STAIR, FORMED BY THE RISER, TREAD
BOTTOM RAIL SHALL NOT ALLOW PASSAGE OF A SPHERE 6 INCHES IN DIAMETER. PER
SECT. 1015.4 EXCEP. (2)
N INDIVIDUAL DWELLING UNITS AND SLEEPING UNITS IN GROUP R-2 AND R-3
JPANCIES, GUARDS ON THE OPEN SIDES OF STAIRS SHALL NOT HAVE OPENINGS WHICH
DW PASSAGE OF A SPHERE 4 3/8 INCHS IN DIAMETER. PER CBC SECT. 1015.4 EXCEPT.

PACIFIC ARCHITECTS

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ALL IDEAS, DESIGNS AND PLANS INDICATED OR REPRESENTED BY THESE DRAWINGS ARE OWNED BY AND ARE THE PROPERTY OF PACIFIC ARCHITECTS AND WERE CREATED AND DEVELOPED FOR USE IN CONNECTION WITH THE SPECIFIED PROJECT. NONE OF SUCH IDEAS, DESIGNS, OR PLANS SHALL BE USED FOR ANY PURPOSE WHATSOEVER WITHOUT THE WRITTEN PERMISSION OF PACIFIC ARCHITECTS.

Revision	Description	Date	
1	PLN CHK	01/25	/21
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			-
Job Num	-		

Date: **12.15.20** 



P A C I F I C ARCHITECTS

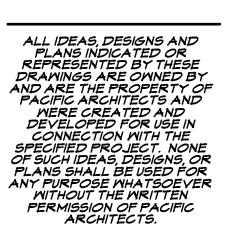
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MONTECITO, CA 93108

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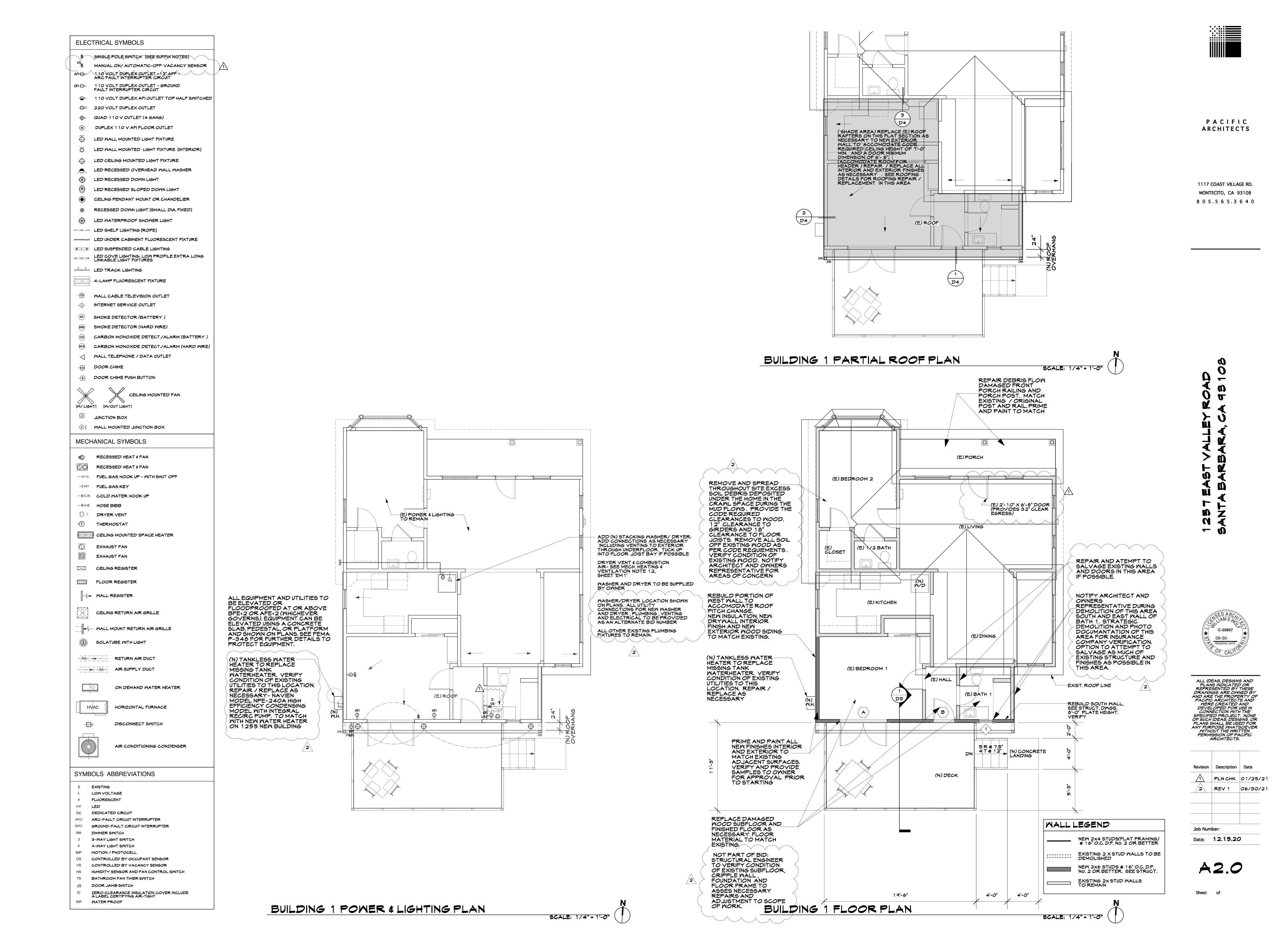
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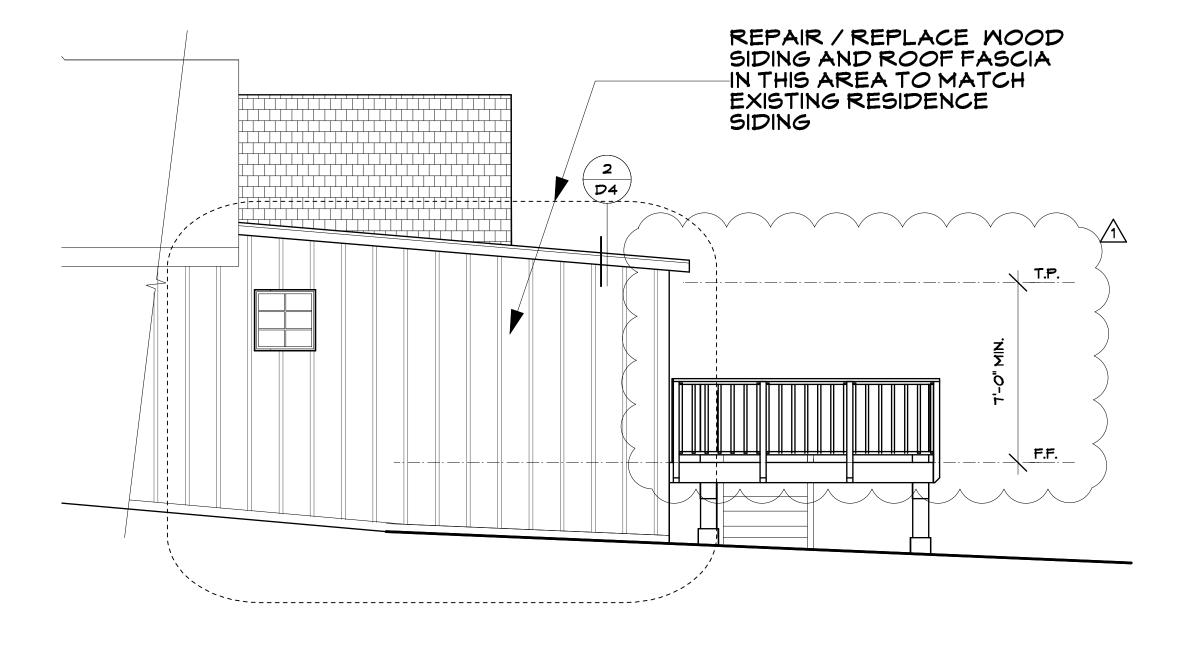


Revision	Description	Date
1	PLN CHK	01/25/
2	REV 1	06/30/
Job Nun	nber:	
Date:	12.15.20	)

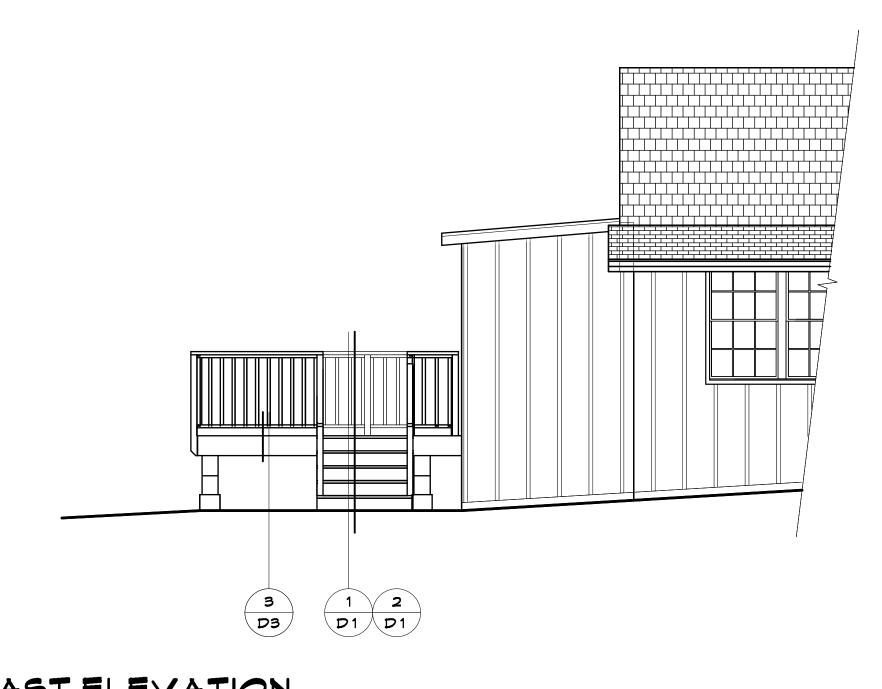
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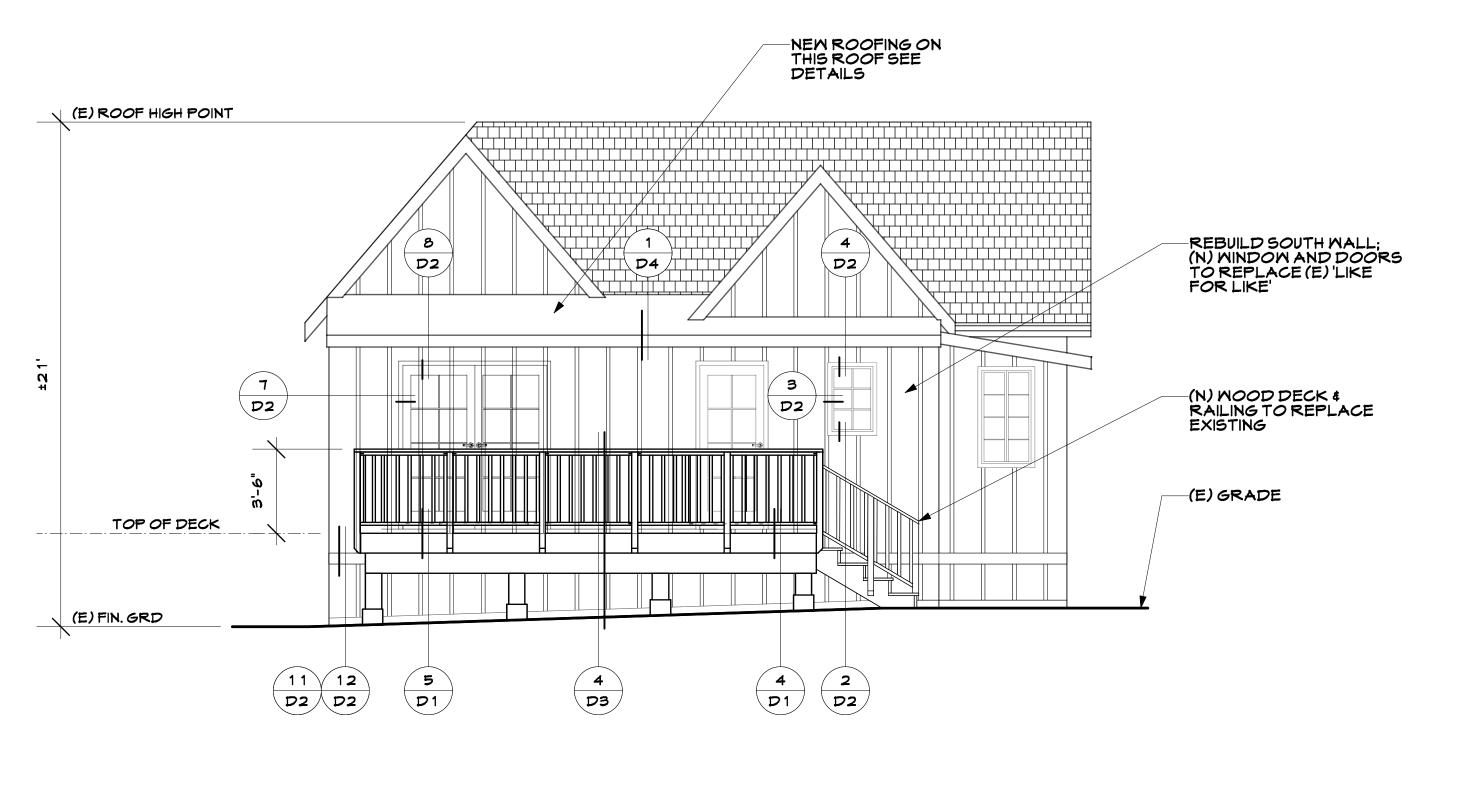
<i>-</i>		ALL EXTERIOR MATERIALS IN ACCORDANCE WITH HIGH FIRE LOCATION REQUIREMENTS PER CITY OF SANTA BARBARA ORDINANCE SECTION 10-12								
是产 #	MATERIAL LOCATIONS	MANUFACTURER	TYPE	COLOR						
1)	DOOR & MINDOM, TYP.	SIERRA PACIFIC MANUF. FINISH	ALUMINUM CLAD	MHITE 001 (TO MATCH EXISTING HOUSE)						
2	REDWOOD BOARD AND BATTEN SIDING	DUNN EDWARDS	PAINT	ALMOND LATTE DE 6143 (TO MATCH EXISTING HOUSE)						
3	EXTERIOR WOOD TRIM EAVE TAILS, EXPOSED BEAMS, COLUMNS, STAIR FRAME, DECK GUARD RAIL)	DUNN EDMARDS	PAINT	LIGHTHOUSE DEM385 (TO MATCH EXISTING HOUSE)						
4	ROOF GUTTERS AND DOWNSPOUTS		FACTORY PAINTED ALUMINUM	LIGHTHOUSE DEM385 (TO MATCH EXISTING HOUSE GUTTERS)						
5	MOOD FRONT ENTRY DOOR	SHERMIN MILLIAMS	MOOD SEMI- TRANSPARENT STAIN	COVERED BRIDGE SM3508						
6	SHINGLE ROOFING	CERTAINTEED LANDMARK SERIES	ASPHALT COMP. SHINGLE	RESAMN SHAKE- (TO MATCH EXISTING HOUSE)						
7	DECKING	IPE MOOD	IPE WOOD	NATURAL IPE COLOR						



# WEST ELEVATION SCALE: 1/4" = 1'-0"



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



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



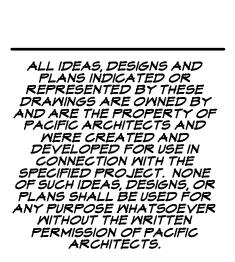
P A C I F I C ARCHITECTS

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MONTECITO, CA 93108
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A3.0

MINIMUM SIZE. EMERGENCY ESCAPE AND RESCUE OPENINGS (MINDOMS) SHALL HAVE MINIMUM NET CLEAR OPENING OF 5.7 SQ. FT. EXCEPTION: THE MINIMUM NET CLEAR OPENING FOR GRADE-FLOOREMERGENCY ESCAPE AND RESCUE OPENINGS SHALL BE 5 SQUARE FEET. MINIMUM DIMENSIONS: THE MINIMUM NET CLEAR OPENING HEIGHT DIMENSION SHALL BE 24 INCHES. THE MINIMUM NET CLEAR OPENING WIDTH DIMENSION SHALL BE 20 INCHES. THE NET CLEAR OPENING DIMENSIONS SHALL BE THE RESULT OF NORMAL OPERATION OF THE OPENING. MAXIMUM HEIGHT FROM FLOOR: EMERGENCY ESCAPE AND RESCUE OPENINGS (WINDOWS) SHALL HAVE THE BOTTOM OF THE CLEAR OPENING NOT GREATER THAN 44 INCHES MEASURED FROM THE FLOOR. PER CBC SECT. 1030.2, 1030.2.1, 1030.3 & CRC SECT. R3 10.2,

R310.2.1, R310.2.2 2. OPERATIONAL CONSTRAINTS. EMERGENCY ESCAPE AND RESCUE OPENINGS AND ANY EXIT DOORS SHALL BE MAINTAINED FREE OF ANY OBSTRUCTIONS OTHER THAN THOSE ALLOWED BY THIS SECTION AND SHALL BE OPERATIONAL FROM THE INSIDE OF THE ROOM. BARS, GRILLES, GRATES OR SIMILAR DEVICES ARE PERMITTED TO BE PLACED OVER EMERGENCY ESCAPE AND RESCUE OPENINGS PROVIDED THE MINIMUM NET CLEAR OPENING SIZE COMPLIES WITH SECTION 1030.2 (SEE NOTE 7 ABOVE) AND SUCH DEVICES SHALL BE RELEASABLE OR REMOVABLE FROM THE INSIDE WITHOUT THE USE OF A KEY, TOOL, SPECIAL KNOWLEDGE OR EFFORT OR FORCE GREATER THAN THAT WHICH IS REQUIRED FOR NORMAL OPERATION OF EMERGENCY ESCAPE AND RESCUE OPENING. WHERE SUCH BARS, GRILLES, GRATES OR SIMILAR DEVICES ARE INSTALLED IN EXISTING BUILDINGS, SMOKE ALARMS SHALL BE INSTALLED IN ACCORDANCE WITH SECTION 907.2.1 1 REGARDLESS OF VALUATION OF ALTERATION. THE RELEASE MECHANISM SHALL BE MAINTAINED OPERABLE AT ALL TIMES. SUCH BARS, GRILLES, GRATES OR ANY SIMILAR DEVICES SHALL BE EQUIPPE WITH AN APPROVED EXTERIOR RELEASE DEVICE FOR USE BY THE FIRE DEPARTMENT ONLYWHEN REQUIRED BY THE AUTHORITY HAVING JURISDICTION. PER CBC SECT. 1030.4 & CRC SECT. R310.1.1,

3. THIS UNIT MEETS NATIONAL EGRESS CODES FOR FIRE EVACUATION. 4. ALL NEW EXTERIOR WINDOW AND WINDOWS IN EXTERIOR DOORS SHALL COMPLY WITH HIGH FIRE SEVERITY SECTION CRC. R.337.8.2.1 - EXTERIOR WINDOWS AND GLAZING IN EXTERIOR DOORS SHALL BE MULTI-PANE GLAZING WITH A MINIMUM
[1] TEMPERED PANE OR 20 MINUTE FIRE RATED GLASS. 1607.8 WHERE THE PLANE OF THE GLASS IS GREATER THAN 18 INCHES FROM THE GUARD.

# ACCESS CLEARANCE/ FIRE NOTES

1. DOORS BETWEEN GARAGE AND RESIDENCE SHALL BE EQUIPED WITH SOLID MOOD DOORS NOT LESS THAN 1 3/8" THICKNESS, SOLID OR HONEYCOMB CORE STEEL NOT LESS THAN 1 3/8" THICK, OR 20-MINUTE FIRE RATED DOORS. DOORS SHALL BE SELF-CLOSING AND SELF-LATCHING AS PER CBC SECT. 406.3.4.1 & CRC R302.5.1 EXCEPTION: WHERE THE RESIDENCE AND PRIVATE GARAGE ARE PROTECTED BY AN AUTOMATIC FIRE SPRINKLER SYSTEM IN ACCORDANCE WITH CRC SECTIONS R309.6 AND R313.

2. ALL NEW EXTERIOR WINDOW AND WINDOWS IN EXTERIOR DOORS SHALL COMPLY WITH HIGH FIRE SEVERITY SECTION CRC. R.337.8.2.1 - EXTERIOR WINDOWS AND GLAZING IN EXTERIOR DOORS SHALL BE MULTI-PANE GLAZING WITH A MINIMUM [1] TEMPERED PANE OR 20 MINUTE FIRE RATED GLASS ...

# SAFETY GLAZING

1. GLAZING IN DOORS: GLAZING IN ALL FIXED AND OPERABLE PANELS OF SWINGING, SLIDING, AND BIFOLD DOORS SHALL BE CONSIDERED A HAZARDOUS LOCATION. REQUIRING SAFETY GLAZING. PER CBC SECT. 2406.4.1 & CRC SECT.

2. GLAZING ADJACENT TO DOORS: GLAZING IN AN INDIVIDUAL FIXED OR OPERABLE PANEL ADJACENT TO A DOOR WHERE THE NEAREST VERTICAL EDGE OF THE GLAZING IS WITHIN A 24-INCH ARC OF EITHER VERTICAL EDGE OF THE DOOR IN A CLOSED POSITION AND WHERE THE BOTTOM EXPOSED EDGE OF THE GLAZING IS LESS THAN 60 INCHES ABOVE THE WALKING SURFACE SHALL BE CONSIDERED A HAZARDOUS LOCATION. REQUIRING SAFETY GLAZING. PER CBC SECT. 2406.4.2 & CRC SECT. R308.4.2

3. GLAZING IN WINDOWS: GLAZING IN AN INDIVIDUAL FIXED OR OPERABLE PANEL THAT MEETS ALL OF THE FOLLOWING CONDITIONS SHALL BE CONSIDERED A HAZARDOUS LOCATION. REQUIRING SAFETY GLAZING PER CBC SECT. 2406.4.3 \$ • THE EXPOSED AREA OF AN INDIVIDUAL PANE IS GREATER THAN 9 SQ. FT. • THE BOTTOM EDGE OF THE GLAZING IS LESS THAN 18 INCHES ABOVE THE FLOOR.
• THE TOP EDGE OF THE GLAZING IS GREATER THAN 36 INCHES ABOVE THE • ONE OR MORE WALKING SURFACE(S) ARE WITHIN 36 INCHES, HORIZONTALLY AND IN A STRAIGHT LINE, OF THE PLANE OF THE GLAZING.

GLAZING AND MET SURFACES: GLAZING IN WALLS, ENCLOSURES OR FENCES CONTAINING OR FACING HOT TUBS SPAS, WHIRLPOOLS, SAUNAS, STEAM ROOMS. BATHTUBS, SHOWERS AND INDOOR OR OUTDOOR SWIMMING POOLS WHERE THE BOTTOM EXPOSED EDGE OF THE GLAZING IS LESS THAN 60 INCHES MEASURED VERTICALLY ABOVE ANY STANDING OR MALKING SURFACE SHALL BE CONSIDERED A HAZARDOUS LOCATION, REQUIRING SAFETY GLAZING, THIS SHALL APPLY TO SINGLE GLAZING AND ALL PANES IN MULTIPLE GLAZING. EXCEPTION: GLAZING THAT IS MORE THAN 60 INCHES, MEASURED HORIZONTALLY AND IN A STRAIGHT LINE, FROM THE WATER'S EDGE OF A BATHTUB, HOT TUB, SPA, WHIRLPOOL, OR SWIMMING POOL. PER CBC SECT. 2406.4.5 & CRC SECT. R308.4.5

5. GLAZING ADJACENT TO STAIRWAYS AND RAMPS: GLAZING WHERE THE BOTTOM EXPOSED EDGE OF THE GLAZING IS LESS THAN 60 INCHES ABOVE THE PLANE OF THE ADJACENT WALKING SURFACE OF STAIRWAYS, LANDINGS BETWEEN FLIGHTS OF STAIRS, AND RAMPS SHALL BE CONSIDERED A HAZARDOUS LOCATION. REQUIRING SAFETY GLAZING. PER. CBC SECT. 2406.4.6 & CRC SECT. R308.4.6 EXCEPTIONS:

• THE SIDE OF A STAIRWAY, LANDING OR RAMP THAT HAS A GUARD COMPLYING WITH THE PROVISIONS OF CBC SECTIONS 1015 AND 1607.8, AND THE PLANE OF THE GLASS IS GREATER THAN 18 INCHES FROM THE • WHEN A RAIL IS INSTALLED ON THE ACCESSIBLE SIDE(S) OF THE GLAZING 34 TO 38 INCHES ABOVE THE WALKING SURFACE. THE RAIL SHALL BE CAPABLE OF WITHSTANDING A HORIZONTAL LOAD OF 50 POUNDS PER LINEAR FOOT WITHOUT CONTRACTING THE GLASS AND BE A MINIMUM OF 1 1/2 INCHES IN CROSS SECTIONAL HEIGHT. . GLAZING 36 INCHES OR MORE MEASURED HORIZONTALLY FROM THE MALKING SURFACE.

6. GLAZING ADJACENT TO THE BOTTOM STAIRWAY LANDING: GLAZING ADJACENT TO THE LANDING AT THE BOTTOM OF A STAIRWAY WHERE THE GLAZING IS LESS THAN 60 INCHES ABOVE THE LANDING AND WITHIN 60 INCHES HORIZONTALLY ARC THAT IS LESS THAN 180 DEGREES FROM THE BOTTOM TREAD NOSING SHALL BE CONSIDERED A HAZARDOUS LOCATION. REQUIRING SAFETY GLAZING. PER. CBC SECT. 2406.4.7 & CRC SECT. R308.4.7 EXCEPTION:

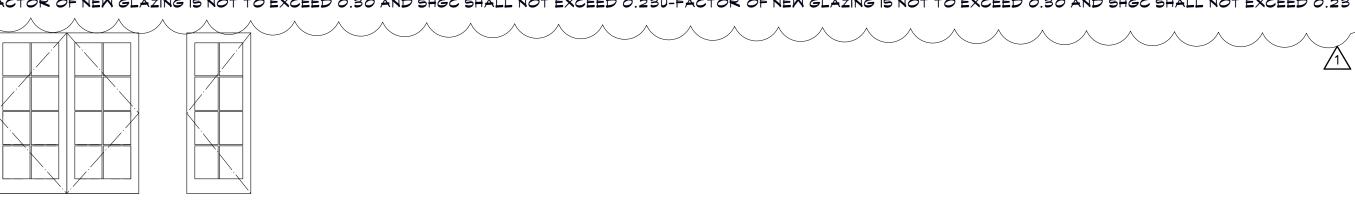
• GLAZING THAT IS PROTECTED BY A GUARD COMPLYING WITH SECTIONS 1015 AND 1607.8 WHERE THE PLANE OF THE GLASS IS GREATER THAN 181 NCHES FROM THE GUARD.

### MINDOM AND DOOR NOTES

- 1. SEE EXTERIOR ELEVATIONS TO VERIFY WINDOW STYLE AND POSITION. THE MANUFACTURED WINDOWS AND EXT. GLASS DOORS SHALL HAVE A LABEL ATTACHED CERTIFIED BY THE NATIONAL FENESTRATION RATING COUNCIL (NFRC) AND SHOWING COMPLIANCE WITH THE ENERGY CALULATIONS.
- 3. CONTRACTOR TO REVIEW MANUFACTURE'S OPTIONS FOR DOORS & WINDOWS
- 4. ALL NEW EXTERIOR WINDOW AND WINDOWS IN EXTERIOR DOORS SHALL COMPLY WITH HIGH FIRE SEVERITY SECTION CRC. R.337.8.2.1 - EXTERIOR WINDOWS AND GLAZING IN EXTERIORDOORS SHALL BE MULTI-PANE GLAZING WITH A MINIMUM [1] TEMPERED PANE OR 20 MINUTE FIRE RATED GLASS.

### DOOR SCHEDULE <u> ALL GLAZING IN EXTERIOR DOORS TO MEET HIGH FIRE SEVERITY REQUIREMENTS - SEE WINDOW & DOOR NOTE 4</u> MARK | SIZE (W x H x THKNS) | TYPE | MATERIAL | OPERATION | STYLE/FACE | \_\_JAMB\_\_ THRESHOLD U-VALUE NOTES GLAZING HARDWARE LOWER FLOOR A 6'-0" x 6'-8" x 1 3/4" (PAIR); 1 | WD/ GLS | BI-PART SWING | FRENCH | TEMP; HIGH FIRE/ NOTE 4; | WOOD | WOOD (OPT. ACTIVE LEAF: DEADBOLT LOCKSET, ASTRAGAL | SEE ENERGY CALCS | SEE ENERGY CALCS | SEE DOOR/ WINDOW NOTES; MEET HIGH FIRE REQUIREMENTS: ALUM) INACTIVE LEAF: HEAD & FLOOR BOLTS, DUMBY VERIFY (E) SIZE AND MATCH <u>MATCH (E) FRENCH DOOR STYLE AND MATERIAL</u> B 2'-8" X 6'-8" X 1 3/4" WD/ GLS TEMP; HIGH FIRE/ NOTE 4; SEE ENERGY CALCS SEE ENERGY CALCS SEE DOOR/ WINDOW NOTES; MEET HIGH FIRE REQUIREMENTS;

U-FACTOR OF NEW GLAZING IS NOT TO EXCEED 0.30 AND SHGC SHALL NOT EXCEED 0.23U-FACTOR OF NEW GLAZING IS NOT TO EXCEED 0.30 AND SHGC SHALL NOT EXCEED 0.23



# DOOR TYPES

VERIFY (E) SIZE AND MATCH

NOTE: ALL DOORS TO COMPLY WITH HIGH FIRE SEVERITY REQUIREMENTS, SEE WINDOW AND DOOR NOTE (4)

### WINDOW SCHEDULE ALL GLAZING TO MEET HIGH FIRE SEVERITY REQUIREMENTS - SEE WINDOW & DOOR SEE NOTE 4 SIZE (W x H) MATERIAL | FINISH (INT./ EXT.) | U-VALUE NOTES OPERATION **GLAZING** LOWER FLOOR MATCH EXIST. | SEE ENERGY CALCS | SEE ENERGY CALCS | SEE WINDOW / DOOR NOTES; MATCH (E) WINDOW STYLE & MATERIALS; LOW-E; TEMPERED/ SEE HIGH FIRE SEVERITY NOTE 4 1'-8" X 2'-8" (VERIFY EXIST. CASEMENT SIZE AND MATCH) MATCH (E) WINDOW STYLE AND MATERIALS

U-FACTOR OF NEW GLAZING IS NOT TO EXCEED 0.30 AND SHGC SHALL NOT EXCEED 0.23U-FACTOR OF NEW GLAZING IS NOT TO EXCEED 0.30 AND SHGC SHALL NOT EXCEED 0.23



# MINDOM TYPES

NOTE: ALL MINDOMS TO COMPLY MITH HIGH FIRE SEVERITY REQUIREMENTS, SEE MINDOM AND DOOR NOTE (4)



MATCH (E) FRENCH DOOR STYLE AND MATERIAL

PACIFIC ARCHITECTS

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Revision	Description	Date
$\triangle$	PLN CHK	01/25



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(VERTICAL SIDING)



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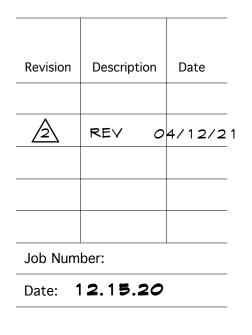
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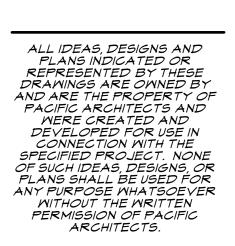
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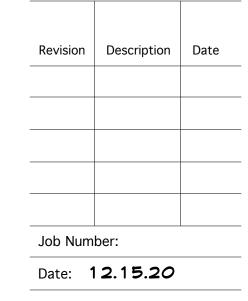
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D3.0

neet of

FLAT ROOF OVERHANG RAKE EDGE DETAIL (ROOF JOIST PARALLEL TO WALL)



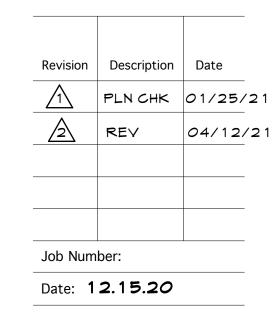
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3"=1'-*0*"

ENERGY STAR COMPLIANT

ALL BATHROOM RELATED ROOMS CONTAINING A BATHTUB, SHOWER, SPA OR SIMILAR SOURCE OF MOISTURE ARE TO PROVIDED WITH AN EXHAUST FAN WITH AN EXHAUST RATE THAT DELIVER VENTILATION AIRFLOW AT 50 CFM MINIMUM INTEREST OR 20 CFM CONTINUES, DUCTED TO THE EXTERIOR OF THE ALL CEILING MOUNTED INTERMITTENT LOCAL VENTILATION FANS TO HAVE A SOUND RATING OF THREE SONES OR LESS AT THE REQUIRED AIRFLOW RATE T MUST BE CONTROLLED BY A READILY ACCESSIBLE HUMIDISTAT & SHALL BE

3. ALL ENCLOSED WATER CLOSET COMPLARTMENTS ARE TO PROVIDED WITH AN EXHAUST FAN WITH AN EXHAUST RATE THAT DELIVER VENTILATION AIRFLOW AT 50 CFM MINIMUM INTERMITTENT OR 20 CFM CONTINUOUS, DUCTED TO THE EXTERIOR OF THE BUILDING FOR EACH UNIT. ALL CEILING MOUNTED INTERMIT LOCAL VENTILATION FANS TO HAVE A SOUND RATING OF THREE SONES OR LESS AT THE REQUIRED AIRFLOW RATE. IT MUST BE CONTROLLED BY A READILY ACCESS. HUMIDISTAT & SHALL BE ENERGY STAR COMPLIANT PER CMC AND CRC R303.3

ALL BATH EXHAUST FANS ARE REQ. TO BE CONTROLLED BY A 'HUMIDISTAT' \* PER THE GREEN BUILDING STANDARDS CODE SECTION 4.506. [R303.3.1 CRC]

VENT FANS MUST BE SMITCHED SEPARATELY FROM LIGHTING. \* PER CALIFORNIA ENERGY CODE 150(k)2B.

5. THE KITCHEN HOOD SHALL BE PROVIDED WITH AN EXHAUST FAN THAT SHALL BE ENERGY STAR COMPLIANT, THAT SHALL DELIVER VENTILATION AIRFLOW AT 100 CFM MIMIMUM FOR INTERMITTENT EXHAUST OR 5 AIR CHANGES PER HOUR IF

KITCHCEN HOOD SYSTEMS THAT VENT AIR TO THE OUTSIDE MAYBE USED FOR THIS PURPOSE. \*[CALIFORNIA ENERGY CODE SECTION 150(0)]. LOCAL VENTILATION FANS HAVE A SOUND RATING OF THREE SONES OR LESS AT THE REQUIRED AIRFLOW RATE.

THE DISCHARGE POINT FOR EXHAUST AIR SUCH AS HOODS, DRYER & BATH VENTS SHALL TERMINATE A MIN. OF 3 FEET FROM PROPERTY LINES & 3 FEET FROM OPENINGS INTO BUILDINGS (MINDOMS/DOORS INCLUDING UNDERFLOOR AIRVENTS) AND 10 FEET FROM FORCED AIR INTAKES. \*PER [CMC 504.528]. THE RETURN AIR PLENUM SERVING THE MECHANICAL EQUIPMENT MUST BE FULLY DUCTED FROM THE EQUIPMENT TO THE CONDITIONED SPACE. DROP CEILINGS, WALL CAVITIES AND EQUIPMENT PLATFORMS MAY NOT BE USED AS PLENUMS.

JOINTS & OTHER OPENINGS IN THE BUILDING ENVELOPE THAT ARE POTENTIAL SOURCES OF LEAKAGE SHALL BE CAULKED, GASKETED, WEATHER STRIPPED OR OTHERWISE SEALED TO LIMIT INFILTRATION & EXFILTRATION

8. DUCT TAPE, AS A MINIMUM, MEETING THE REQUIREMENTS OF UL 181,181A, OR 81B, SHALL BE USED OR ADDITIONAL DUCT ATTACHMENT DEVICES SUCH AS TIE MRAPS OR MASTIC MILL BE REQUIRED FOR INSTALLING MECH DUCTING.

9. ALL GAS FIREPLACES SHALL BE DIRECT-VENTED, SEALED COMBUSTION TYPE \* PER [CGBC - 5.503.1]

10. FIREPLACE GAS OUTLET "LOG LIGHTER" CONTROL VALVES SHALL BE LOCATED IN THE SAME ROOM AS THE OUTLET AND OUTSIDE THE REQUIRED HEARTH AREA AND A 4 FEET MAXIMUM FROM THE OUTLET.

1 1. PROVIDE COMBUSTION AIR FOR FUEL BURNING EQUIPMENT IN CONFORMANCE W/ CHAPTER 7 OF THE CMC AND CHAPTER 5 CPC; \* PER [CPC 506.2 - 506.7 AND CMC 701.4 - CMC 701.9.3] 12. PROVIDE COMBUSTION AIR FOR CLOTHES DRYER PER DRYER MANUFACTURER INSTRUCTIONS AND IN ACCORDANCE WITH \*[CMC 701.1.[CMC 701]

\*ALSO SEE NOTES SHEET 'EMO. 1' DRYER VENT AS PER C.M.C. SECT.S' 504.3, 504.5, \$ 905.4 DRYER MANUFACTURERS INSTALLATION INSTRUCTRIONS ARE TO BE AVAILABLE ON JOB SITE AT THE TIME OF INSPECTION. DRYER VENT TO OUTSIDE AIR TO BACKDRAFT DAMPERED WALL VENT CAP. NOTE: DISCHARGE POINT FOR EXHAUST AIR MUST BE AT LEAST 3 FEET

FROM ANY OPENING WHICH ALLOWS AIR ENTRY INTO OCCUPIED PORTIONS OF THE BUILDING, AS PER C.M.C. SECT. 504.5. DUCT LENGTH SHALL NOT EXCEED A TOTAL COMBINED HORIZONTAL & VERTICAL LENGTH OF 14 FT., INCLUDING (2) 90 DEGREE ELBOWS. TWO FT. SHALL BEDEDUCTED FOR EACH 90 ELBOW IN EXCESS OF (2), AS \* PER [CMC SECT. 504.3.2.2]

PROVIDE FOR 2 SQ. INCHES PER 1000 BTU BUT NOT LESS THAN 100 SQ. THE CALCULATION IS AS FOLLOWS:

CALCULATION: 35,000 BTU DIVIDED BY 2 = 17.5 SQ IN. FREE AREA [BASED ON A 50% FREE AREA LOUVER]

> 17.5 MOULD BE DOUBLED 17.5 [X] 2 = 36 SQ IN. THE MINIMUM REQUIRED IS 100 SQ IN.

PROVIDED A LOUVER THAT IS 24X8 = 192 SQ IN.

13. PAD SUPPORTING COMPRESSOR OR CONDENSER SHALL BE INSTALLED WITH A MINIMUM OF 3" ABOVE GRADE. \*PER [CMC 1105.2]

14. MEANS FOR INTERRUPTING THE ELECTRICAL SUPPLY TO THE AIR CONDITIONING EQUIPMENT AND TO ASSOCIATED COOLING TOWER SHALL BE PROVIDED WITHIN SIGHT OF AND NOT OVER 50 FT. FROM THE AIR-CONDITIONER AND TOWER.

MECHANICAL - ACCESS (RESIDENTIAL)

AN ATTIC SPACE IN MHICH AN APPLIANCE IS INSTALLED SHALL BE ACCESSIBLE THROUGH AN OPENING AND PASSAGEMAY AT LEAST AS LARGE AS THE LARGEST COMPONENT OF THE APPLIANCE AND NOT LESS THAN 22-IN. X 30-IN. PER [CMC

2. 30-IN. MIN. VERTICAL CLEARANCE FROM TOP OF CEILING FRAMING MEMBERS TO UNDERSIDE OF ROOF FRAMING MEMBERS PER [CBC 1209.2], [CRC R807].

LIGHTING AND CONVENIENCE OUTLET: A PERMANENT 120-VOLT RECEPTACLE OUTLET AND LIGHTING FIXTURE SHALL BE INSTALLED NEAR THE APPLAINCE. THE SWITCH CONTROLLING THE FIXTURE SHALL BE LOCATED AT THE ENTRANCE TO THE PASSAGEWAY PER [CMC 904.10.4].

SHALL BE UNOBSTRUCTED AND SHALL HAVE SOLID FLOORING NOT LESS THAN 24-IN. WIDE FROM THE ENTRANCE OPENING TO THE APPLIANCE PER [CMC

MORKING PLATFORM: NOT LESS THAN 30-IN. X 30-IN. SHALL BE PROVIDED IN FRONT OF THE SERVICE SIDE OF APPLIANCE PER [CMC 904.10.3].

6. THE RETURN AIR PLENUM SERVING THE MECHANICAL EQUIPMENT MUST BE FULLY DUCTED FROM THE EQUIPMENT TO THE CONDITIONED SPACE. DROP CEILINGS, WALL CAVITIES AND EQUIPMENT PLATFORMS MAY NOT BE USED AS PLENUMS.

MECHANICAL - WHOLE HOUSE EXHAUST FAN (RESIDENTIAL) WHOLE HOUSE EXHAUST SYSTEMS SHALL MEET THE REQUIREMENTS OF ANSI/ASHRAE STANDARD 62.2

PANASONIC INLINE VENTILATION FAN FY-10NLF1 120 CFM: 36.3 WATTS DUCT DIAMETER (INCHES): 5"

WHOLE HOUSE EXHAUST ONLY VENTILATION SYSTEM. THE FAN USED FOR CONTINUOUS VENT. SHALL BE ENERGY STAR COMPLIANT AND MUST HAVE A LOW SOUND RATING MAX. OF 1 SONE. LOCAL INTERMIT. EXHAUST FANS ARE REQ. IN ALL KITCHENS AND BATHS TO REDUCE THE LEVEL OF CONTAMINANTS AND MOISTURE IN THESE SPACES WHEN THEY OCCUR. THESE FANS CAN BE SMITCHED ON AND OFF WHEN NEEDED. WHOLE HOUSE FAN SHALL HAVE INSULATED LOUVERS OR COVERS WHICH CLOSE WHEN THE FAN IS OFF. COVERS OR LOUVERS MUST HAVE A MIN. INULATION VALUE OF R4.2

SMITCH LABELING FOR WHOLE HOUSE VENTIL SYS: LABEL TEXT SHOULD BE IN BOLD TYPE, PLACED ON A WHITE BACKGROUND, AND NO SMALLER THAN THE EQUIVALENT OF ARIAL 12 POINT TYPE.

3. TO MAINTAIN MINIMUM LEVELS OF OUTSIDE AIR VENTILATION REQUIRED FOR GOOD HEALTH, THE FAN CONTROL SHOULD BE ON AT ALL TIMES WHEN THE BUILDING IS OCCUPIED, UNLESS THERE IS SEVERE OUTDOOR AIR CONTAMINATION

4. ATTIC VENTILATION TO BE NOT LESS THAN 1/150 OF ATTIC AREA. OPENINGS SHALL BE COVERED M/ CORROSION-RESISTANT METAL MESH M/ DORMER STYLE ROOF VENTS PER CRC 806.1-806.3.27.

MECHANICAL - PLUMBING (RESIDENTIAL) 2019

MATER-CONSERVING PLUMBING FIXTURES AND FITTINGS:
NEW AND RETROFIT PLUMBING FIXTURES SHALL COMPLY WITH CURRENT CPC
REQUIRMENTS AND ALL FIXTURES WILL MEET THE FOLLOWING RESTRICTED FLOW REQUIRMENT'S:

 A. WATER CLOSET(S):
 EITHER; FLUSH TANK, FLUSHOMETER TANK OR FLUSHOMETER VALVE.
 SHALL HAVE AN AVERAGE CONSUMPTION OF NOT MORE THAN 1.28 GPF. B. URINAL(S):

• SHALL HAVE AN EFFECTIVE FLUSH VOLUME NOT TO EXCEED 0.5 GPF.

C. SINGLE SHOWERHEAD(S): PROVIDE MIXING VALVE(S) AT SHOWER(S)

• MAX. FLOW RATE OF NOT MORE THAN 1.8 GPM AT 80 PSI. NOTE: A HAND-HELD SHOMER SHALL BE CONSIDERED A SHOMERHEAD. \* PER [CPC 408.2.2] & [CALGREEN 4.303.1.3.2]. D. MULTIPLE SHOWERHEAD(S): PROVIDE MIXING VALVE(S) AT SHOWER(S) • SHALL HAVE A COMBINED FLOW RATED NOT TO EXCEED 1.8 GPM AT 80 PSI.

NOTE: SHOWERS AND TUBS SHALL BE PROVIDED WITH INDIVIDUAL CONTROL VALVES OF THEPRESSURE BALANCE, THERMOSTATIC, OR COMBINATION MIXING VALVE THAT PROVIDE PROTECTION FROM SCALDING AND THERMAL

E. LAVATORY FAUCET(S):
SHALL HAVE A MAX. FLOW RATE OF 1.2 GPM AT 60 PSI
AND SHALL HAVE A MIN. FLOW RATE OF 0.8 GPM AT 20 PSI.

F. FAUCETS IN COMMON AND PUBLIC AREAS OUTSIDE DWELLING(5):
• MUST HAVE MAX. FLOW RATES OF 0.5 GPM AT 60 PSI.

G. METERING FAUCETS WHEN INSTALLED IN RESIDENT. BLDG.:MUST NOT DELIVER MORE THAN 0.25 GALLONS PER CYCLE.

• SHALL HAVE A MAX. FLOW RATE OF 1.8 GPM AT 60 PSI NOTE: KITCHEN FAUCETS TEMP. INCREASE THE FLOW RATE TO A MAX. OF 2.2 GPM AT 60 PSI, BUT MUST DEFAULT BACK TO THE 1.8 GPM (SECT. 4.303).

2. SHOWERS ARE TO HAVE MIN. INTERIOR AREA OF 1024 SQ. IN. AND SHALL BE CAPABLE OF ENCOMPASSING A 30" CIRCLE \* PER [CPC 408.6].

3. THE FOLLOWING DOMESTIC HOT WATER SYSTEM PIPING CONDITION, WHETHER UNBURIED OR BURIED, LISTED BELOW SHALL BE INSULATED

A. ALL PIPING ASSOCIATED WITH RECIRCULATION SYSTEM.

B. THE FIRST 5FT. OF HOT AND COLD WATER PIPES FROM THE STORAGE TANK.

C. ALL PIPING WITH A NOMINAL DIAMETER OF 3/4" OR LARGER.

D. PIPING BURIED BELOW GRADE. E. PIPING FROM THE HEATING SOURCE TO THE STORAGE TANK.

F. ALL HOT MATER PIPING FROM THE HEATING SOURCE TO KITCHEN FIXTURES. 4. GAS PIPING SHALL NOT BE INSTALLED IN OR ON THE GROUND UNDER ANY BLDG. OR STRUCTURE. VERIFY WITH CLIENT NEED FOR FUTURE GAS LINES TO EXTERIOR BARBEQUE. FUTURE GAS LINES NOT A PART OF THIS PERMIT.

5. HOSE BIBS AND LAWN SPRINKLER SYSTEMS SHALL BE FITTED WITH APPROVED, NON-REMOVABLE BACK-FLOW PREVENTION DEVICE(S).

6. WATER PRESSURE REGULATOR OF 60 PSI SHALL BE PROVIDED.

8. WATER HEATER TO BE PROVIDED W/ TEMPERATURE & PRESSURE RELIEF VALVES. A DRAIN THAT EXTENDS FROM THE VALVES TO THE OUTSIDE TO BE PROVIDED. PROVIDE SEISMIC STRAPPING OR ANCHORAGE RESISTANT OVERTURNING OF \* PER [CPC 507.2].

7. PROVIDE SHUT OFF VALVE ON GAS AND ALL COLD MATER LINES TO BUILDING.

MECHANICAL - PLUMBING (RESIDENTIAL)

MATER-CONSERVING PLUMBING FIXTURES AND FITTINGS:
NEW AND RETROFIT PLUMBING FIXTURES SHALL COMPLY WITH CURRENT CPC
REQUIRENT'S AND ALL FIXTURES WILL MEET THE FOLLOWING RESTRICTED FLOW REQUIRMENT'S:

EITHER; FLUSH TANK, FLUSHOMETER TANK OR FLUSHOMETER VALVE.

• SHALL HAVE AN AVERAGE CONSUMPTION OF NOT MORE THAN 1.28 GPF.

• SHALL HAVE AN EFFECTIVE FLUSH VOLUME NOT TO EXCEED 0.5 GPF.

C. SINGLE SHOWERHEAD(S): PROVIDE MIXING VALVE(S) AT SHOWER(S)

• MAX. FLOW RATE OF NOT MORE THAN 1.8 GPM AT 80 PSI. NOTE: A HAND-HELD SHOWER SHALL BE CONSIDERED A SHOWERHEAD. \* PER [CPC 408.2.2] & [CALGREEN 4.303.1.3.2]

D. MULTIPLE SHOWERHEAD(S): PROVIDE MIXING VALVE(S) AT SHOWER(S)
• SHALL HAVE A COMBINED FLOW RATED NOT TO EXCEED 1.8 GPM AT 80 PSI.

NOTE: SHOWERS AND TUBS SHALL BE PROVIDED WITH INDIVIDUAL CONTROL VALVES OF THEPRESSURE BALANCE, THERMOSTATIC, OR COMBINATION MIXING VALVE THAT PROVIDE PROTECTION FROM SCALDING AND THERMAL

E. LAVATORY FAUCET(S):
SHALL HAVE A MAX. FLOW RATE OF 1.2 GPM AT 60 PSI
AND SHALL HAVE A MIN. FLOW RATE OF 0.8 GPM AT 20 PSI.

F. FAUCETS IN COMMON AND PUBLIC AREAS OUTSIDE DWELLING(S):
• MUST HAVE MAX. FLOW RATES OF 0.5 GPM AT 60 PSI.

TO THE 1.8 GPM (SECT. 4.303).

G. METERING FAUCETS WHEN INSTALLED IN RESIDENT. BLDG.:
• MUST NOT DELIVER MORE THAN 0.25 GALLONS PER CYCLE.

• SHALL HAVE A MAX. FLOW RATE OF 1.8 GPM AT 60 PSI NOTE: KITCHEN FAUCETS TEMP. INCREASE THE FLOW RATE TO A MAX. OF 2.2 GPM AT 60 PSI, BUT MUST DEFAULT BACK

2. SHOWERS ARE TO HAVE MIN. INTERIOR AREA OF 1024 SQ. IN. AND SHALL BE CAPABLE OF ENCOMPASSING A 30" CIRCLE

3. THE FOLLOWING DOMESTIC HOT WATER SYSTEM PIPING CONDITION, WHETHER UNBURIED OR BURIED, LISTED BELOW SHALL BE INSULATED

A. ALL PIPING ASSOCIATED WITH RECIRCULATION SYSTEM.

B. THE FIRST 5FT. OF HOT AND COLD WATER PIPES FROM THE STORAGE TANK.

C. ALL PIPING WITH A NOMINAL DIAMETER OF 3/4" OR LARGER D. PIPING BURIED BELOW GRADE.

E. PIPING FROM THE HEATING SOURCE TO THE STORAGE TANK.

F. ALL HOT WATER PIPING FROM THE HEATING SOURCE TO KITCHEN FIXTURES 4. GAS PIPING SHALL NOT BE INSTALLED IN OR ON THE GROUND UNDER ANY BLDG. OR STRUCTURE. VERIFY WITH CLIENT NEED FOR FUTURE GAS LINES TO EXTERIOR BARBEQUE. FUTURE GAS LINES NOT A PART OF THIS PERMIT.

HOSE BIBS AND LAWN SPRINKLER SYSTEMS SHALL BE FITTED WITH APPROVED, NON-REMOVABLE BACK-FLOW PREVENTION DEVICE(S).

6. MATER PRESSURE REGULATOR OF 60 PSI SHALL BE PROVIDED. 7. PROVIDE SHUT OFF VALVE ON GAS AND ALL COLD WATER LINES TO BUILDING.

5. WATER HEATER TO BE PROVIDED M/ TEMPERATURE & PRESSURE RELIEF VALVES. A DRAIN THAT EXTENDS FROM THE VALVES TO THE OUTSIDE TO BE PROVIDED . PROVIDE SEISMIC STRAPPING OR ANCHORAGE RESISTANT OVERTURNING OF MATERHEATER \* PER [CPC 507.2].

ELECTRICAL GENERAL (RESIDENTIAL) 2019 INTERIOR RESIDENTIAL LIGHTING IS TO BE HIGH EFFICACY PER TABLE 150.0-A. 2016 CALIFORNIA ENERGY CODE TABLE 150.0 AND THE FOLLOWING NOTES:

A. THE FOLLOWING LIGHTING IS HIGH EFFICACY:
• PIN-BASED LINEAR FLUORECENT, . PIN-BASED COMPACT FLUORECENT

· LED LUMINAIRES W/INTEGRAL SOURCES

 PULSE-START METAL HALIDE, · HIGH PRESSURE SODIUM . GU-24 (OTHER THAN LED'S

. INSEPARABLE SOLID STATE LUMINAIRES (SSL) INSTALLED OUTDOORS, • INSEPARABLE (SSL) LUMINAIRES W/ COLORED LIGHT SOURCES FOR DECORATIVE LIGHTING PURPOSES.

B. THE FOLLOWING LAMPS AND LIGHT SOURCES ARE HIGH EFFICACY OF THEY ARE JOINT APPENDIX JAS CERTIFIED. JA-8 CERTIFIED LAMPS AND LIGHT SOURCES ARE MARKED AS JAS-2016 OR JAS-2016-E.. THESE FIXTURES

(CERTIFIED TO THE ENERGY COMM.). SCREW BASED LED LAMPS (A-LAMPS, PAR LAMPS, ETC...), PIN BASED LED LAMPS (MR-16, AR-111, ETC..), • GU-24 BASED LED LIGHT SOURCES,

 AND OTHER LUMINAIRES. C. ADDITIONAL REQUIRMENTS FOR ANY RECESSED DOWNLIGHTS IN CEILINGS

ARE AS FOLLOWS: THEY SHALL NOT HAVE SCREW BASED SOCKETS,
THEY SHALL CONTAIN JAS CERTIFIED LIGHT SOURCES AND,
THEY SHALL MEET PERFORMANCE REQ. OF [CEC SECTION 50.0(k) 1C].

AT LEAST ONE LUMINAIRE IN EACH BATHROOM, GARAGE, LAUNDRY ROOM, AND UTILITY ROOM SHALL BE CONTROLLED BY A MANUAL ON/AUTOMATIC OFF VACANCY SENSOR. [CEC 150(k) 2. j].

3. EXCEPT FOR CLOSETS LESS THAN 70 SQ. FT. AND HALLWAYS, ALL LUMINAIRES THAT ARE INSTALLED WITH JAS-CERTIFIED LIGHT SOURCES ARE REQ. TO BE CONTROLLED BY EITHER A DIMMER OR VACANCY SENSOR. CEC 150(k) 7

4. LUMINAIRES IN CLOTHES CLOSETS. TYPES PERMITTED.

A. LISTED LUMINAIRES OF THE FOLLOWING TYPES SHALL BE PERMITTED TO BE NSTALLED IN A CLOSET; SURFACE-MOUNTED OR RECESSED INCANDESCENT OR LED LUMINAIRE MITH COMPLETELY ENCLOSED LIGHT SOURCES.

• SURFACE-MOUNTED OR RECESSED FLUORESCENT LUMINAIRE.

• SURFACE-MOUNTED FLUORESCENT OR LED LUMINAIRES IDENTIFIED AS SUITABLE FOR INSTALLATION WITHIN THE CLOSET STORAGE SPACE. PER SUITABLE FOR INSTALLATION MITHIN THE CLOSET STORAGE SPACE. PER CEC 4 10.16(A) LOCATION. THE MINIMUM CLEARANCE BETWEEN LUMINAIRES INSTALLED IN CLOTHES CLOSETS AND NEAREST POINT OF A CLOSET STORAGE SPACE SHALL BE AS FOLLOWS:

1 2 IN. FOR SURFACE-MOUNTED INCANDESCENT OR LED LUMINAIRES WITH A COMPLETELY ENCLOSED LIGHT SOURCE INSTALLED ON THE WALL ABOVE THE DOOR OR ON THE CEILING.

6 IN. FOR SURFACE-MOUNTED FLUORESCENT LUMINAIRES INSTALLED ON THE WALL ABOVE THE DOOR OR ON THE CEILING. THE WALL ABOVE THE DOOR OR ON THE CEILING.

6"FOR RECESSED INCAND. OR LED LUMINAIRES WITH A COMPLETELY ENCLOSED LIGHT SOURCE INSTALLED IN THE WALL OR THE CEILING.

 6" FOR RECESS. FLUOR. LUMINAIRES INSTALL. IN THE WALL OR THE CEILING.
 SURFACE-MOUNTED FLUORESCENT OR LED LUMINAIRES SHALL BE PERMITTED TO BE INSTALLED WITHIN THE CLOSET STORAGE SPACE WHERE IDENTIFIED FOR THIS USE. PER CEC 4 10.16(C) 5. USE IC RATED RECESSED LIGHT FIXTURES WHERE FIXTURES ARE IN CONTACT WITH INSULATION. AS PER CEC 6. RECEPTACLE OUTLETS

A. RECEPTACLE OUTLETS SHALL BE SPACED NOT MORE THAN 12 FEET APART AND A MAXIMUM OF 6 FEET FROM THE ENDS OF WALLS OR OPENINGS. B. RECEPTACLE OUTLETS ARE ALSO REQUIRED IN WALLS 2 FEET OR GREATER PER CEC, ARTICLE 210.52(a) HALLWAYS OF 10 FEET OR MORE IN LENGTH SHALL HAVE AT LEAST ONE RECEPTACLE OUTLET

A MINIMUM OF TWO 20-AMPERE SMALL APPLIANCE BRANCH CIRCUIT SHALL BE PROVIDED FOR ALL RECEPTACLE OUTLETS IN THE KITCHEN, DINING ROOM, PANTRY OR OTHER SIMILAR AREAS PER CEC 210.11(C) (2)

IN ADDITION TO THE NUMBER OF BRANCH CIRCUITS REQUIRED BY OTHER PARTS OF THIS SECTION, AT LEAST ONE ADDITIONAL 20-AMPERE BRANCH CIRCUIT SHALL BE PROVIDED TO SUPPLY THE LAUNDRY RECEPTACLE OUTLET(S) REQUIRED BY [CEC 210.52(F)]. THIS CIRCUIT SHALL HAVE NO OTHER OUTLETS. PER [CEC 210.11(C) (2)].

9. BATHROOM CIRCUITING SHALL BE EITHER:

A. 120 VOLT 20 AMPERE CIRCUIT DEDICATED TO EACH BATHROOM OR B. AT LEAST ONE 120 VOLT 20 AMPERE CIRCUIT SUPPLYING ONLY BATHROOM RECEPTACLE OUTLETS. PER CEC 210.11(C)(3)

10. LIGHTING FIXTURES WITHIN 3 FEET OF BATHTUB AND LESS THAN 8 FEET ABOVE RIM OF TUB SHALL BE RECESSED, WATERPROOF, G.F.I.C. PROTECTED AND HAVE NON-METALLIC TRIM.

ALL 120 V, SINGLE PHASE, 15- AND 20- AMPERE BRANCH CIRCUITS SUPPLYING OUTLETS INSTALLED IN DWELLING UNITS FAMILY ROOMS, DINING ROOMS, LIVING ROOMS, PARLORS, LIBRARIES, DENS, BEDROOMS, SUNROOMS, RECREATION ROOMS, CLOSETS, HALLWAYS, OR SIMILAR ROOMS OR AREAS SHALL BE PROTECTED BY A "LISTED ARC-FAULT CIRCUIT INTERRUPTER, COMBINATION TYPE, INSTALLED TO PROVIDE PROTECTION OF THE BRANCH CIRCUIT. AS PER [CEC 210.12(a)].

12. WHERE BRANCH-CIRCUIT MIRING IS MODIFIED, REPLACED OR EXTENDED IN AREA SPECIFIED IN CEC 2 10.12(A), THE BRANCH CIRCUITS SHALL BE PROTECTED BY EITHER A LISTED COMBINATION-TYPE AFCI LOCATED AT THE ORIGIN OF THE BRANCH CIRCUIT OR A LISTED OUTLET BRANCH-CIRCUIT TYPE AFCI LOCATED AT THE FIRST RECEPTACLE OF THE EXISTING BRANCH CIRCUIT.

13. ALL 125-VOLT, 15 AND 20 AMPERE RECEPTACLES IN A DWELLING UNIT SHALL BE LISTED TAMPER-RESISTANT RECEPTACLES. [EXCEPTIONS: (1) RECEPT. MORE THAN 5'-6" ABOVE THE FLOOR, (2) RECEPT. PART OF A LUMINAIRM OR APPLIANCE, (3) A SINGLE RECEPT. OR A DUPLEX RECEPT. FOR TWO APPL. THAT ARE NOT EASILY MOVED AND LOCATED WITHIN DEDICATED SPACE AND ARE CHORD AND PLUG CONNECTED AS PER CEC 400.7 AND (4) NON-GROUND DECEPT. ICED EOR DEDICATED AS PER CEC 400.7 AND (4) NON-GROUND RECEPT. USED FOR REPLACEMENTS AS PERMITTED IN [CEC 406.4 (D)(2)(a)]

14. THE NUMBER OF ELECTRICAL BOXES LOCATED MORE THAN 5 FEET ABOVE FINISHED FLOOR THAT DO NOT CONTAIN A LUMINAIRE OR OTHER DEVICE SHALL NOT EXCEED THE NUMBER OF BEDROOMS. THESE BOXES MUST BE SERVED BY A DIMMER, VACANCY SENSOR OR FAN SPEED CONTROL [CALIFORNIA ENERGY CODE SECTION 150(k) 1(b)]

15. CONTRACTOR TO PROVIDE SLOPED CEILING CANS IN AREAS WITH YAULTED CEILINGS AS SHOWN ON THIS PLAN. A WALK THRU W/ OWNER TO BE PROVIDED TO VERIFY THIS PLAN PRIOR TO START OF WORK OR ORDER OF MATERIALS. 16. CONTRACTOR TO PROVIDE A WALK THRU TO VERIFY THIS PLAN WITH OWNER PRIOR TO START OF WORK OR ORDER OF MATERIALS. CONTRACTOR TO PROVIDE A WALK THRU TO VERIFY WITH OWNER LOCATION OF DIMMER

SWITCHING, FIXTURE TYPE AND LOCATIONS AND OUTLET LOCATIONS 17. CONTRACTOR TO VERIFY WITH OWNER LOCATIONS FOR CABLE TV/RADIO / INSIDE LINE WIRING, SECURITY SYSTEMS, COMPUTER NETWORKING, SOUND SYSTEMS ETC... FOR INSIDE AND OUTSIDE RESIDENCE.

18. PER 2016 CALIFORNIA GREEN BUILDING STANDARDS, CHAPTER 4, PROVIDE FOR AN ELECTRIC VEHICLE [EV] CHARGING SPACE. [EV] STATION SIZE AND ELECTRICAL SERVICE REQUIRMENTS PER SHEET 6B-1 [2016 CGBS].

ELECTRIC VEHICLE READINESS: (RESIDENTIAL) 1. ELECTRIC YEHICLE (EY) CHARGING FOR NEW CONSTRUCTION

A. NEW CONSTRUCTION SHALL COMPLY WITH SECTIONS 4.106.4.1 AND 4.106.4.2 TO FACILITATE FUTURE INSTALLATION AND USE OF EY CHARGERS. ELECTRIC VEHICLES SUPPLY EQUIPMENT (EVS) SHALL BE INSTALLED IN ACCORDANCE WITH THE CALIFORNIA ELECTRICAL CODE, ARTICLE 625 ON A CASE-BY-CASE BASIS, WHERE THE LOCAL ENFORCING AGENCY HAS

DETERMINED EV CHARGING AND INFRASTRUCTURE ARE NOT FEASIBLE BASED UPON ONE OR MORE OF THE FOLLOWING CONDITIONS. A. WHERE THERE IS NO COMMERCIAL POWER SUPPLY

B. WHERE THERE IS EVIDENCE SUBSTANTIATING THAT MEETING THE REQUIREMENTS WILL ALTER TYHE LOCAL UTILITY INFRASTRUCTURE DESIGN REQUIREMENTS ON THE UTILITY SIDE OF THE METER SO AS TO INCREASE THE UTILITY SIDE COST TO THE HOMEOWNER OR DEVELOPER BY MORE THAN \$400.00 PER UNIT.

2. NEW ONE AND TWO-FAMILY DWELLINGS AND TOWNHOUSES WITH ATTACHED PRIVATE GARAGES FOR EACH DWELLING UNIT,

A. INSTALL A LISTED RACEWAY TO ACCOMODATE A DEDICATED 208/240-VOLT BRANCH CIRCUIT.

B. THE RACEMAY SHALL NOT BE LESS THAN THE TRADE SIZE 1 (NOMINAL 1-INCH INSIDE DIAMETER).

C. THE RACEMAY SHALL ORIGINATE AT THE MAIN SERVICE OR SUBPANEL & SHALL TERMINATE INTO A LISTED CABINET, BOX OR OTHER ENCLOSURE IN CLOSE PROXIMITY TO THE PROPOSED LOCATION OF AN EV CHARGER.

D. RACEWAYS ARE REQUIRED TO BE CONTINUOUS AT ENCLOSED, NACCESSIBLE OR CONCEALED AREAS AND SPACES. E. THE SERVICE PANEL AND/OR SUBPANEL SHALL PROVIDE CAPACITY TO

INSTALL A 40-AMPERE MINIMUM DEDICATED BRANCH CIRCUIT AND SPACE(S) RESERVED TO PERMIT INSTALLATION OF A BRANCH CIRCUIT OVERCURRENT PROTECTIVE DEVICE 4.106.4.1.1 IDENTIFICATION

THE SERVICE PANEL OR SUBPANEL CIRCUIT DIRECTORY SHALL IDENTIFY THE OVERCURRENT PROTECTIVE DEVICE SPACE(S) RESERVED FOR FUTURE EV CHARGING AS "EV CAPABLE". THE RACEMAY TERMINATION LOCATION SHALL BE PERMANENTLY AND VISIBLY MARKED AS "EV CAPABLE".

EXTERIOR ELECTRICAL: (RESIDENTIAL) 1. ENTRY GATE LIGHT FIXTURES

A. LIGHT FIXTURES TO BE LOW MATTAGE LOW INTENSITY & SHEILDED FIXTURES. B. FIXTURE ACTIVATED WITH MOTION DETECTOR AND TIMER.

2. GENERALLY.

OUTDOOR LIGHTING IN RESIDENTIAL ZONES AND OUTDOOR LIGHTING ON REAL PROPERTIES ADJACENT TO RESIDENTIAL ZONES SHALL BE DESIGNED, INSTALLED, AND OPERATED SO THAT IT IS COMPATIBLE WITH THE AMBIENT LIGHTING OF THE NEIGHBORHOOD IN WHICH IT IS LOCATED. SUCH LIGHTING SHALL BE DESIGNED, INSTALLED, AND OPERATED TO CONTROL GLARE, PREVENT LIGHT TRESPASS ONTO ADJACENT AREAS, MINIMIZE DIRECT UPWARD LIGHT EMISSION, PROMOTE EFFECTIVE SECURITY, AVOID INTERFERENCE MITH SAFE OPERATION OF MOTOR VEHICLES. THE MINIMUM INTENSITY NEEDED FOR THE INTENDED PURPOSE SHALL BE USED.

3. CERTAIN LIGHTING EXEMPTED.

A. THE USE OF THE FOLLOWING LIGHTING FIXTURES AND LIGHT SOURCES ARE EXEMPTED FROM REGULATION PURSUANT TO THIS CHAPTER: • LOW VOLTAGE FIXTURES. LOW VOLTAGE LIGHTING EXCEPT FOR THOSE FIXTURES REGULATED PURSUANT TO SUBSECTION 22.75.030A(6) ABOVE.

• CONTROLLED FIXTURES.
A LIGHTING FIXTURE CONTROLLED BY A MOTION DETECTOR IN A RESIDENTIAL ZONE PROVIDED THE MOTION DETECTOR IS PREDOMINANTLY IN THE OFF MODE AND IT IS INSTALLED TO MINIMIZE NUISANCE LIGHTING.

4. OUTDOOR LIGHTING PERMANENTLY MOUNTED TO A SINGLE FAMILY DWELLING OR OTHER BUILDINGS IN THE SAME LOT SHALL BE HIGH EFFICACY OR MUST BE CONTROLLED BY AN ON/OFF SWITCH THAT DOES NOT OVERRIDE TO 'ON'. ALSO, LIGHTING MUST BE ONE OF THE FOLLOWING METHODS LISTED BELOW: A. CONTROLLED BY PHOTOCELL AND MOTION SENSOR.

• CONTROLS THAT OVERRIDE TO 'ON' SHALL NOT BE ALLOWED UNLESS THE OVERLIDE AUTOMATICALLY REACTIVATES THE MOTION SENSOR WITHIN (6) SIX HOURS, OR;

B. CONTROLLED BY ANY OF THE FOLLOWING:

• PHOTOCELLAND AUTOMATIC TIME SWITCH CONTROL. CONTROLS THAT OVERRIDE TO 'ON' SHALL NOT BE ALLOWED UNLESS THE OVERRIDE AUTOMATICALLY RETURN THE PHOTOCONTROL AND AUTOMATIC TIME SMITCH CONTROL TO ITS NORMAL OPERATION MITHIN 6 HOURS, OR;

• ASTRONOMICAL TIME CLOCK. CONTROLS THAT OVERRIDE TO 'ON' SHALL NOT BE ALLOWED UNLESS THE OVERRIDE AUTOMATICALLY RETURNS THE ASTRONOMICAL CLOCK TO ITS NORMAL OPERATION WITHIN 6 HOURS AND WHICH IS PROGRAMMED TO AUTOMATICALLY TURN THE OUTDOOR LIGHTING OFF DURING THE DAYLIGHT HOURS, OR; ENERGY MANAGEMENT CONTROL SYSTEM WHICH MEETS ALL OF THE FOLLOWING REQUIREMENTS. AT A MINIMUM;

a. PROVIDES THE FUNCTIONALITY OF AN ASTRONOMICAL TIME CLOCK IN ACCORDANCE M/[SECTION 130.4] OF THE STANDARDS.

b. MEET THE REQUIREMENTS FOR AN EMOS IN [SECTION 130.5] OF THE STANDARDS. C. DOES NOT HAVE AN OVERRIDE OR BYPASS SMITCH THAT ALLOWS THE LUMINAIRE TO BE ALWAYS ON.

d. AND, IS PROGRAMMED TO AUTOMATICALLY TURN THE OUTDOOR LIGHTING OFF DURING THE DAYLIGHT HOURS.

5. GENERAL PROHIBITIONS. THE USE OF THE FOLLOWING LIGHTING FIXTURES SHALL BE PROHIBITED IN ALL

A. MERCURY VAPOR AND LOW-PRESSURE SODIUM FIXTURES AND LAMPS EXCEPT WHEN USED FOR LANDSCAPE LIGHTING ACCENT PURPOSES. B. SEARCHLIGHTS, LASER LIGHTS, OR SIMILAR HIGH INTENSITY OUTDOOR LIGHTS EXCEPT PURSUANT TO A SPECIAL LIGHTING EVENT PERMIT GRANTED PURSUANT TO SUBSECTION C HEREOF.

C. LIGHTING FIXTURES MOUNTED IN SUCH A WAY AS TO ILLUMINATE A ROOF

D. LIGHTING FIXURES MOUNTED TO AIM LIGHT ONLY TOWARDS A PROPERTY

E. LIGHTING FIXTURES MOUNTED IN A WAY THAT IS DISTRACTING TO MOTORISTS OR IN A WAY THAT INTERFERES WITH THE SAFE OPERATION OF A MOTOR VEHICLE, AS MAY BE DETERMINED BY THE CITY ENGINEER. F. LIGHTING THAT IS BLINKING, MOVING, OR WHICH CHANGES IN INTENSITY EXCEPT SMALL TEMPORARY LIGHTING FIXTURES INSTALLED AND USED ONLY DURING THE PERIOD BETWEEN THE LAST WEEK OF NOVEMBER AND FIRST WEEK OF JANUARY OF THE FOLLOWING YEAR.

6. TO ELIMINATE THE NUISANCE LIGHTING, SUCH STEPS MAY INCLUDE, BUT AND NOT LIMITED TO, EACH OF THE FOLLOWING (OR ANY COMBINATION THEREOF)

A. THE USE AND APPLICATION OF APPROPRIATE LIGHTING EQUIPMENT

B. FIXTURE LOCATIONS. C. SHIELDING, LIGHT SOURCES AND ILLUMINATION INTENSITIES,

D. THROUGH THE ELIMINATION OF UNNECESSARY LIGHTING. AUTOMATIC GARAGE DOOR OPENERS SHALL BE LISTED IN ACCORDANCE WITH UL 325 MEET MEET REQUIREMENTS OF HEALTH & SAFETY CODE [SECTIONS 19890 AND 19891].

8. PROVIDE CONDUIT[S] FOR FUTURE SOLAR READY PER [110.10 CEnC 2016]

9. ELECTRICIAN TO STUB OUT FOR LANDSCAPE LIGHTING. 10.PROVIDE POWER & PLUMBING FOR FUTURE SITE FOUNTAINS / WATER FEATURES

EXTERIOR LIGHTING NOTES: (RESIDENTIAL)

(MHERE APPLICABLE).

1. ENTRY GATE LIGHT FIXTURES:

LIGHT FIXTURES TO BE LOW MATTAGE LOW INTENSITY AND SHEILDED FIXTURES. FIXTURE ACTIVATED WITH MOTION DETECTOR AND TIMER. GENERALLY OUTDOOR LIGHTING IN RESIDENTIAL ZONES AND OUTDOOR LIGHTING ON REAL PROPERTIES ADJACENT TO RESIDENTIAL ZONES SHALL BE DESIGNED, INSTALLED, AND OPERATED SO THAT IT IS COMPATIBLE WITH HE AMBIENT LIGHTING OF THE NEIGHBORHOOD IN MHICH IT IS LOCATED. SUCH LIGHTING OF THE NEIGHBORHOOD IN WHICH IT IS LOCATED.
SUCH LIGHTING SHALL BE DESIGNED, INSTALLED, AND OPERATED TO
CONTROL GLARE, PREVENT LIGHT TRESPASS ONTO ADJACENT AREAS,
MINIMIZE DIRECT UPWARD LIGHT EMISSION, PROMOTE EFFECTIVE SECURITY,
AVOID INTERFERENCE WITH SAFE OPERATION OF MOTOR VEHICLES. THE
MINIMUM INTENSITY NEEDED FOR THE INTENDED PURPOSE SHALL BE USED.

CERTAIN LIGHTING EXEMPTED. THE USE OF THE FOLLOWING LIGHTING FIXTURES AND LIGHT SOURCES ARE EXEMPTED FROM REGULATION PURSUANT TO THIS CHAPTER:

A. LOW VOLTAGE FIXTURES. LOW VOLTAGE LIGHTING EXCEPT FOR THOSE FIXTURES REGULATED PURSUANT TO SUBSECTION 22.75.030A(6) ABOVE. B. CONTROLLED FIXTURES. A LIGHTING FIXTURE CONTROLLED BY A MOTION DETECTOR IN A

RESIDENTIAL ZONE PROVIDED THE MOTION DETECTOR IS PREDOMINANTLY IN THE OFF MODE AND IT IS INSTALLED TO MINIMIZE

GENERAL PROHIBITIONS. THE USE OF THE FOLLOWING LIGHTING FIXTURES SHALL BE PROHIBITED IN ALL ZONES OF THE CITY: A. MERCURY VAPOR AND LOW-PRESSURE SODIUM FIXTURES AND LAMPS EXCEPT WHEN USED FOR LANDSCAPE LIGHTING ACCENT PURPOSES.

B. SEARCHLIGHTS, LASER LIGHTS, OR SIMILAR HIGH INTENSITY OUTDOOR LIGHTS EXCEPT PURSUANT TO A SPECIAL LIGHTING EVENT PERMIT GRANTED PURSUANT TO SUBSECTION C HEREOF. C. LIGHTING FIXTURES MOUNTED IN SUCH A WAY AS TO ILLUMINATE A ROOF OR AN AMNING

PROPERTY LINE. E. LIGHTING FIXTURES MOUNTED IN A MAY THAT IS DISTRACTING TO MOTORISTS OR IN A MAY THAT INTERFERES MITH THE SAFE OPERATION OF A MOTOR VEHICLE, AS MAY BE DETERMINED BY THE CITY ENGINEER.

D. LIGHTING FIXTURES MOUNTED TO AIM LIGHT ONLY TOWARDS A

F. LIGHTING THAT IS BLINKING, MOVING, OR WHICH CHANGES IN INTENSITY EXCEPT SMALL TEMPORARY LIGHTING FIXTURES INSTALLED AND USED ONLY DURING THE PERIOD BETWEEN THE LAST WEEK OF NOVEMBER AND FIRST WEEK OF JANUARY OF THE FOLLOWING YEAR. TO ELIMINATE THE NUISANCE LIGHTING, SUCH STEPS MAY INCLUDE, BUT ARE NOT LIMITED TO, EACH OF THE FOLLOWING (OR ANY COMBINATION THEREOF) IN THE

THE USE AND APPLICATION OF APPROPRIATE LIGHTING EQUIPMENT FIXTURE LOCATIONS, SHIELDING, LIGHT SOURCES AND ILLUMINATION INTENSITIES, AND THROUGH THE ELIMINATION OF UNNECESSARY LIGHTING. SOLAR READY REQUIREMENTS (RESIDENTIAL) 2019

SOLAR READY PER [CENC SECTION 110.10(b)1A]. [SANTA BARBARA COUNTY CODE 10-6.2] A DESIGNATED SOLAR ZONE SHALL BE PROVIDED.
THE SOLAR ZONE SHALL COMPLY WITH ACESS, PATHWAY, SMOKE VENTILATION
AND SPACING AS REQUIRED BY THE CALIFORNIA FIRE CODE AND/OR LOCAL

THE SOLAR ZONE SHALL BE LOCATED ON THE ROOF OR OVERHANG OF THE BUILDING AND HAVE A TOTAL AREA NOT LESS THAN 250 SQ. FT. SHOW PROPOSED SOLAR ZONES ON THE ROOF PLAN. IF THE SOLAR ZONE IS MADE UP OF MULTIPLE AREAS, EACH SOLAR ZONE AREA SHALL NOT BE LESS THAN 80 SQ. FT. OR LESS THAN 160 SQ. FT. FOR BUILDINGS WITH A ROOF AREA EXCEEDING 10,000 SQ. FT.

NO DIMENSION OF ANY SOLAR AREA SHALL BE LESS THAN 5 FEET. 4. ALL SECTIONS OF THE SOLAR ZONE LOCATED ON STEEP-SLOPED ROOFS SHALL BE ORIENTED BETWEEN 110° AND 270° OF TRUE NORTH.

NO OBSTRUCTIONS SUCH AS CHIMNEYS, ARCHITECTURAL FEATURES OR EQUIPMENT SHALL BE LOCATED IN THE SOLAR ZONE(S). OBSTRUCTIONS SHALL BE LOCATED IN ACCORDANCE WITH [CENC SECTION 1 10.10(b)3B].

PLANS SHALL INDICATE A PATHWAY FOR ROUTING OF PLUMBING FROM THE SOLAR ZONE TO THE WATER HEATING SYSTEM. THE MAIN ELECTRICAL SERVICE PANEL SHALL HAVE A RESERVED SPACE FOR THE INSTALLATION OF DOUBLE POLE CIRCUIT BREAKER.

THE RESERVED SPACE SHALL BE MARKED AS; "FOR FUTURE SOLAR ELECTRIC". PLANS SHALL INDICATE A LOCATION FOR INVERTERS AND METERING EQUIPMENT, AND A PATHAWAY FOR ROUTING OF CONDUIT FROM THE SOLAR ZONE TO THE MAIN ELECTRICAL SERVICE PANEL. ELECTRICAL CONDUIT SHALL BE INSTALLED IN ACCORDANCE WITH THE

JUNCTION BOX LOCATED MITHIN 72" HORIZONTALLY AND 12" VERTICALLY OF A MAIN ELECTRICAL PANEL. A SECOND CONDUIT RUN SHALL ORIGINATE AT THE ELECTRICAL JUNCTION BOX AND TERMINATE AT THE MAIN ELECTRICAL PANEL. II. THE CONDUIT SHALL BE A MINIMUM 1" DIAMETER, LISTED ELECTRIC METALLIC III. THE ELECTRICAL JUNCTION BOX AND THE SEGMENT OF THE CONDUIT RUN IN THE ATTIC SHALL BE PERMANENTLY AND VISIBLY MARKED AS; "FOR FUTURE SOLAR PHOTOVOLTAIC."

ONE CONDUIT RUN SHALL ORIGINATE AT A READILY ACCESSIBLE ATTIC LOCATION AND TERMINATE AT A MINIMUM 4" SQUARE APPROVED ELEC.

SMOKE DETECTORS: (RESIDENTIAL)

REMODEL CONSTRUCTION HAVING A VALUE IN EXCESS OF \$ 1,000 REQUIRE SMOKE DETECTORS IN EACH EXISTING SLEEPING ROOM AND IN THE HALLWAY AREA SERVING EACH SLEEPING AREA.

\*BATTERY-OPERATED DETECTORS ARE ACCEPTABLE FOR EXISTING CONSTRUCTION PER [CRC SECT. R3 14.6.2].

2. SMOKE DETECTORS FOR NEW CONSTRUCTION REQUIRED AT THE FOLLOWING LOCATIONS PER [CBC 907.2.1 1.2 & CRC R3 14.3].;

A. ON THE CEILING OR WALL OF THE AREA IMMEDIATELY OUTSIDE EACH SEPARATE SLEEPING AREA;

B. IN EACH ROOM USED FOR SLEEPING PURPOSES;

C. AT EACH STORY WITHIN THE DWELLING UNIT. 3. IN NEW CONSTRUCTION, REQUIRED SMOKE DETECTORS SHALL RECEIVE THEIR PRIMARY POWER FROM THE BUILDING WIRING (1 10 V.) WHERE SUCH WIRING IS SERVED FROM A COMMERCIAL SOURCE AND SHALL BE EQUIPPED WITH A SMOKE ALARMS SHALL EMIT A SIGNAL WHEN THE BATTERIES ARE LOW.
WIRING SHALL BE PERMANENT AND WITHOUT A DISCONNECTING SWITCH OTHER
THAN AS REQUIRED FOR OVERCURRENT PROTECTION. SEE ELECTRIC PLAN FOR LOCATIONS. \*PER [CBC SECT. 907.2.1 1.4 & CRC SECT. R3 14.4]

4. WHERE MORE THAN ONE SMOKE ALARM IS REQUIRED TO BE INSTALLED WITHIN AN INDIVIDUAL DWELLING UNIT OR SLEEPING UNIT IN GROUP R OCCUPANCIES, THE SMOKE ALARMS SHALL BE INTERCONNECTED IN SUCH A MANNER THAT THE ACTIVATION OF ONE ALARM WILL ACTIVATE ALL OF THE ALARMS IN THE INDIVIDUAL UNIT. THE ALARM SHALL BE CLEARLY AUDIBLE IN ALL BEDROOMS OVER BACKGROUND NOISE LEVELS WITH ALL INTERVENING DOORS CLOSED \*PER [CBC SECT. 907.2.11.3 & CRC SECT. R314.5].

SMOKE ALARMS SHALL HAVE A MIN. 3' CLEARANCE FROM ANY AIR SUPPLY AND \*PER MANUFACTURE INSTRUCTIONS.

CARBON MONOXIDE ALARMS: (RESIDENTIAL)

1. WHERE A PERMIT IS REQUIRED FOR ALTERATIONS, REPAIRS OR ADDITIONS EXCEEDING ONE THOUSAND DOLLARS (\$ 1,000), EXISTING DWELLING OR SLEEPING UNITS THAT HAVE ATTACHED GARAGES OR FUEL-BURNING APPLIANCES SHALL BE PROVIDED WITH;

A. A CARBON MONOXIDE ALARM IN ACCORDANCE WITH; [CBC SECT. 420.6.2 & CRC SECT. R3 15.2]. CARBON MONOXIDE ALARMS SHALL ONLY BE REQUIRED IN THE SPECIFIC DWELLING UNIT OR SLEEPING UNIT FOR WHICH THE PERMIT WAS OBTAINED
 \* PER [CBC SECT. 420.6.2.2 & CRC SECT. R3 15.2.2].

2. CARBON MONOXIDE ALARMS: A. FOR NEW CONSTRUCTION, AN APPROVED CARBON MONOXIDE ALARM SHALL BE INSTALLED IN DWELLING UNITS AND IN SLEEPING UNITS WITHIN WHICH FUEL - BURNING APPLIANCES ARE INSTALLED;

B. AND IN DWELLING UNITS THAT HAVE ATTACHED GARAGES \*PER [CBC SECT. 420.6.1 & CRC SECT. R3 15.1]. 3. IN NEW CONSTRUCTION REQUIRED CARBON MONOXIDE ALARMS SHALL RECEIVE THEIR PRIMARY POWER FROM THE BUILDING WIRING WHERE SUCH WIRING IS SERVED FROM A LOOMMERCIAL SOURCE AND SHALL BE EQUIPPED WITH A HATTERY BACK-UP ALARM WIRING SHALL BE DIRECTLY CONNECTED TO THE PERMANENT BUILDING WIRING WITHOUT A DISCONNECTING SWITCH OTHER THAN AS REQUIRED FOR OVERCURRENT PROTECTION.

EXCEPTIONS ARE AS SUCH: A. IN DWELLING UNITS WHERE THERE IS NO COMMERCIAL POWER SUPPLY, THE CARBON MONOXIDE ALARM MAY BE SOLELY BATTERY OPERATED. \*PER [CBC SECT. 420.6.1.2 & CRC SECT. R3 15.1.2].

B. IN EXISTING DWELLING UNITS, A CARBON MONOXIDE ALARM IS PERMITTED TO BE SOLELY BATTERY OPERATED WHERE REPAIRS OR ALTERATIONS DO NOT RESULT IN THE REMOVAL OF WALL AND CEILING FINISHES OR THERE IS NO ACCESS BY MEANS OF ATTIC, BASEMENT OR CRAWL SPACE. \* PER [CBC SECT. 420.6.2.4(2)] & [CRC SECT. R3 15.2.4(2)].

WHERE MORE THAN ONE CARBON MONOXIDE ALARM IS REQUIRED TO BE

INSTALLED WITHIN THE DWELLING UNIT OR WITHIN SLEEPING UNIT, THE ALARM SHALL BE INTERCONNECTED IN A MANNER THAT ACTIVATION OF ONE ALARM SHALL ACTIVATE ALL OF THE ALARMS IN THE INDIVIDUAL UNIT. \*PER [CBC SECT. 420.6.1.3 & 420.6.2.5] & [CRC SECT. R315.1.3 & 315.2.5]. EXCEPTION ARE AS SUCH: A. INTERCONNECTION IS NOT REQUIRED IN EXISTING DWELLING UNITS OR WITHIN SLEEPING UNITS WHERE REPAIRS DO NOT RESULT IN THE REMOVAL OF WALL AND CEILING FINISHES, THERE IS NO ACCESS BY MEANS OF ATTIC, BASEMENT OR CRAWLSPACE, AND NO PREY. METHOD FOR INTERCONNECT EXISTED.

PER [CBC SECT. 420.6.2.5(1)] & [CRC SECT. R3 15.2.5(1)]. 5. CARBON MONOXIDE ALARMS SHALL BE INSTALL IN THE FOLLOWING LOCATIONS AS REQUIRED BY:

A. OUTSIDE OF EACH SEPARATE DWELLING UNIT SLEEPING AREA IN THE IMMEDIATE VICINITY OF THE BEDROOM(S). B. ON EVERY LEVEL OF A DWELLING UNIT INCLUDING BASEMENTS. \*PER [CBC SECT. 420.6.1.4 & 420.6.2.6] & [CRC SECT. R3 15.1.4 & R3 15.2.6].

\*[CBC SECT. 420.6.1, 420.6.2], [CRC SECT. R3 15.1] & [R3 15.2.2]

6. MULTIPLE-PURPOSE ALARMS: CARBON MONOXIDE ALARMS COMBINED WITH SMOKE ALARMS SHALL COMPLY WITH [CBC SECT. 420.6] & [CRC SECT. R3 15], ALL APPLICABLE STANDARDS, AND REQUIREMENTS FOR LISTING AND APPROVAL BY THE OFFICE OF THE STATE FIRE MARSHAL, FOR SMOKE ALARMS.

TABLE 150.0-A CLASSIFICATION OF HIGH-EFFICACY LIGHT SOURCES

Luminaires installed with only the lighting technologies in this table shall be classified as high efficacy Light sources in this column, other than those in ceiling recessed downlight luminaires, are classified high efficacy and are not required to comply with Reference Joint Appendix JA8

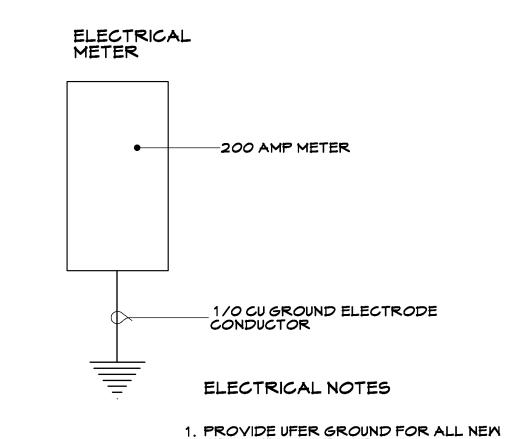
\* PER [CBC SECT. 420.6.1.5] & [CRC SECT. 3 15.1.5].

Pin-based linear or compact fluorescent light sources using electronic ballast. Pulse-start metal halide. High pressure sodium. 5. Fight pressure sociation.
4. GU-24 sockets containing light sources other than LEDs.
5. Luminaires with hardwired high frequency generator and induction lamp.
6. Inseparable SSL luminaires that are installed outdoors.
7. Inseparable SSL luminaires containing colored light sources that are installed to provide decorative lighting.

Light sources in this column shall be certified to the Commission as High Efficacy Light Sources in accordance with Reference Joint Appendix JA8 and be marked as meeting JA8 8. All light sources in ceiling recessed downlight luminaires. Note that ceiling recessed downlight luminaires shall not have screw bases regardless of lamp type as described in Section 150(k)1C.
9. GU-24 sockets containing LED light sources.
10. Any light source not otherwise listed in this table and certified

a. GU-24 sockets containing light sources such as compact fluorecent lamps and induction lamps. b. California Title 20 Section 1605(k)3 does not allow incandescent sources to have a GU-24 base.

to the Commission as complying with Joint Appendix 8



SERVICES AS PER CEC 2. A 30" WIDE BY 36" DEEP UNOBSTRUCTED CLEARANCE MUST BE PROVIDED IN FRONT OF EELCTRICAL PANELS AND/ OR SUB PANELS AS PER CEC 1 10.26



PACIFIC ARCHITECTS

1117 COAST VILLAGE RD. MONTECITO, CA 93108

8 0 5.5 6 5.3 6 4 0

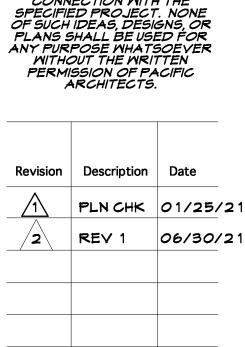


ALL IDEAS, DESIGNS AND PLANS INDICATED OR REPRESENTED BY THESE

PRAMINGS ARE OMNED BY

AND ARE THE PROPERTY OF PACIFIC ARCHITECTS AND

MERE CREATED AND DEVELOPED FOR USE IN CONNECTION WITH THE



Date: 12.15.20

ELECTRIC PANEL GROUNDING

Sheet of

Job Number:



# 2019 CALIFORNIA GREEN BUILDING STANDARDS CODE



RESIDENTIAL MANDATORY MEASURES, SHEET 1 (January 2020, Includes August 2019 Supplement)

**CHAPTER 3 GREEN BUILDING SECTION 301 GENERAL** DIVISION 4.4 MATERIAL CONSERVATION AND RESOURCE DIVISION 4.3 WATER EFFICIENCY AND CONSERVATION **4.106.4.2.1.1 Electric Vehicle Charging Stations (EVCS)** When EV chargers are installed, EV spaces **301.1 SCOPE.** Buildings shall be designed to include the green building measures specified as mandatory in **EFFICIENCY** required by Section 4.106.2.2, Item 3, shall comply with at least one of the following options: the application checklists contained in this code. Voluntary green building measures are also included in the 4.303 INDOOR WATER USE application checklists and may be included in the design and construction of structures covered by this code, 1. The EV space shall be located adjacent to an accessible parking space meeting the 4.406 ENHANCED DURABILITY AND REDUCED MAINTENANCE 4.303.1 WATER CONSERVING PLUMBING FIXTURES AND FITTINGS. Plumbing fixtures (water closets and but are not required unless adopted by a city, county, or city and county as specified in Section 101.7. requirements of the California Building Code, Chapter 11A, to allow use of the EV charger urinals) and fittings (faucets and showerheads) shall comply with the sections 4.303.1.1, 4.303.1.2, 4.303.1.3, **4.406.1 RODENT PROOFING.** Annular spaces around pipes, electric cables, conduits or other openings in from the accessible parking space. sole/bottom plates at exterior walls shall be protected against the passage of rodents by closing such **301.1.1 Additions and alterations. [HCD]** The mandatory provisions of Chapter 4 shall be applied to 2. The EV space shall be located on an accessible route, as defined in the California Building openings with cement mortar, concrete masonry or a similar method acceptable to the enforcing additions or alterations of existing residential buildings where the addition or alteration increases the Code, Chapter 2, to the building. **Note:** All noncompliant plumbing fixtures in any residential real property shall be replaced with water-conserving building's conditioned area, volume, or size. The requirements shall apply only to and/or within the plumbing fixtures. Plumbing fixture replacement is required prior to issuance of a certificate of final specific area of the addition or alteration. **Exception:** Electric vehicle charging stations designed and constructed in compliance with the completion, certificate of occupancy, or final permit approval by the local building department. See Civil 4.408 CONSTRUCTION WASTE REDUCTION, DISPOSAL AND RECYCLING California Building Code, Chapter 11B, are not required to comply with Section 4.106.4.2.1.1 and Code Section 1101.1, et seq., for the definition of a noncompliant plumbing fixture, types of residential **4.408.1 CONSTRUCTION WASTE MANAGEMENT.** Recycle and/or salvage for reuse a minimum of 65 Note: On and after January 1, 2014, residential buildings undergoing permitted alterations, additions, or buildings affected and other important enactment dates. percent of the non-hazardous construction and demolition waste in accordance with either Section improvements shall replace noncompliant plumbing fixtures with water-conserving plumbing fixtures. 4.408.2, 4.408.3 or 4.408.4, or meet a more stringent local construction and demolition waste Plumbing fixture replacement is required prior to issuance of a certificate of final completion, certificate Note: Electric Vehicle charging stations serving public housing are required to comply with the California **4.303.1.1 Water Closets.** The effective flush volume of all water closets shall not exceed 1.28 gallons per management ordinance. of occupancy or final permit approval by the local building department. See Civil Code Section 1101.1, Building Code, Chapter 11B. flush. Tank-type water closets shall be certified to the performance criteria of the U.S. EPA WaterSense et seq., for the definition of a noncompliant plumbing fixture, types of residential buildings affected and Specification for Tank-type Toilets. 4.106.4.2.2 Electric vehicle charging space (EV space) dimensions. The EV space shall be other important enactment dates. designed to comply with the following: Note: The effective flush volume of dual flush toilets is defined as the composite, average flush volume Excavated soil and land-clearing debris. of two reduced flushes and one full flush. . Alternate waste reduction methods developed by working with local agencies if diversion or 301.2 LOW-RISE AND HIGH-RISE RESIDENTIAL BUILDINGS. [HCD] The provisions of 1. The minimum length of each EV space shall be 18 feet (5486 mm). recycle facilities capable of compliance with this item do not exist or are not located reasonably individual sections of CALGreen may apply to either low-rise residential buildings high-rise residential 2. The minimum width of each EV space shall be 9 feet (2743 mm). **4.303.1.2 Urinals.** The effective flush volume of wall mounted urinals shall not exceed 0.125 gallons per flush. buildings, or both. Individual sections will be designated by banners to indicate where the section applies 3. One in every 25 EV spaces, but not less than one EV space, shall have an 8-foot (2438 mm) The effective flush volume of all other urinals shall not exceed 0.5 gallons per flush. 3. The enforcing agency may make exceptions to the requirements of this section when isolated specifically to low-rise only (LR) or high-rise only (HR). When the section applies to both low-rise and wide minimum aisle. A 5-foot (1524 mm) wide minimum aisle shall be permitted provided the jobsites are located in areas beyond the haul boundaries of the diversion facility. minimum width of the EV space is 12 feet (3658 mm). high-rise buildings, no banner will be used. 4.303.1.3 Showerheads. 4.408.2 CONSTRUCTION WASTE MANAGEMENT PLAN. Submit a construction waste management plan a. Surface slope for this EV space and the aisle shall not exceed 1 unit vertical in 48 units **4.303.1.3.1 Single Showerhead.** Showerheads shall have a maximum flow rate of not more than 1.8 in conformance with Items 1 through 5. The construction waste management plan shall be updated as **SECTION 302 MIXED OCCUPANCY BUILDINGS** horizontal (2.083 percent slope) in any direction. gallons per minute at 80 psi. Showerheads shall be certified to the performance criteria of the U.S. EPA necessary and shall be available during construction for examination by the enforcing agency. WaterSense Specification for Showerheads. **302.1 MIXED OCCUPANCY BUILDINGS.** In mixed occupancy buildings, each portion of a building 1. Identify the construction and demolition waste materials to be diverted from disposal by recycling, shall comply with the specific green building measures applicable to each specific occupancy. 4.106.4.2.3 Single EV space required. Install a listed raceway capable of accommodating a 208/240-**4.303.1.3.2 Multiple showerheads serving one shower**. When a shower is served by more than one reuse on the project or salvage for future use or sale. volt dedicated branch circuit. The raceway shall not be less than trade size 1 (nominal 1-inch inside showerhead, the combined flow rate of all the showerheads and/or other shower outlets controlled by 2. Specify if construction and demolition waste materials will be sorted on-site (source separated) or diameter). The raceway shall originate at the main service or subpanel and shall terminate into a listed a single valve shall not exceed 1.8 gallons per minute at 80 psi, or the shower shall be designed to only **ABBREVIATION DEFINITIONS:** cabinet, box or enclosure in close proximity to the proposed location of the EV space. Construction allow one shower outlet to be in operation at a time. 3. Identify diversion facilities where the construction and demolition waste material collected will be Department of Housing and Community Development documents shall identify the raceway termination point. The service panel and/or subpanel shall provide California Building Standards Commission capacity to install a 40-ampere minimum dedicated branch circuit and space(s) reserved to permit **Note**: A hand-held shower shall be considered a showerhead. 4. Identify construction methods employed to reduce the amount of construction and demolition waste Division of the State Architect, Structural Safety installation of a branch circuit overcurrent protective device. OSHPD Office of Statewide Health Planning and Development 4.303.1.4 Faucets. 5. Specify that the amount of construction and demolition waste materials diverted shall be calculated Low Rise **4.106.4.2.4 Multiple EV spaces required.** Construction documents shall indicate the raceway by weight or volume, but not by both. Hiah Rise termination point and proposed location of future EV spaces and EV chargers. Construction documents **4.303.1.4.1 Residential Lavatory Faucets.** The maximum flow rate of residential lavatory faucets shall Additions and Alterations shall also provide information on amperage of future EVSE, raceway method(s), wiring schematics and not exceed 1.2 gallons per minute at 60 psi. The minimum flow rate of residential lavatory faucets shall **4.408.3 WASTE MANAGEMENT COMPANY.** Utilize a waste management company, approved by the electrical load calculations to verify that the electrical panel service capacity and electrical system, not be less than 0.8 gallons per minute at 20 psi. enforcing agency, which can provide verifiable documentation that the percentage of construction and including any on-site distribution transformer(s), have sufficient capacity to simultaneously charge all EVs demolition waste material diverted from the landfill complies with Section 4.408.1. at all required EV spaces at the full rated amperage of the EVSE. Plan design shall be based upon a 4.303.1.4.2 Lavatory Faucets in Common and Public Use Areas. The maximum flow rate of lavatory **CHAPTER 4** 40-ampere minimum branch circuit. Required raceways and related components that are planned to be faucets installed in common and public use areas (outside of dwellings or sleeping units) in residential **Note:** The owner or contractor may make the determination if the construction and demolition waste installed underground, enclosed, inaccessible or in concealed areas and spaces shall be installed at the RESIDENTIAL MANDATORY MEASURES buildings shall not exceed 0.5 gallons per minute at 60 psi. materials will be diverted by a waste management company. time of original construction. 4.303.1.4.3 Metering Faucets. Metering faucets when installed in residential buildings shall not deliver 4.408.4 WASTE STREAM REDUCTION ALTERNATIVE [LR]. Projects that generate a total combined DIVISION 4.1 PLANNING AND DESIGN 4.106.4.2.5 Identification. The service panel or subpanel circuit directory shall identify the overcurrent weight of construction and demolition waste disposed of in landfills, which do not exceed 3.4 more than 0.2 gallons per cycle. protective device space(s) reserved for future EV charging purposes as "EV CAPABLÉ" in accordance lbs./sg.ft. of the building area shall meet the minimum 65% construction waste reduction requirement in **SECTION 4.102 DEFINITIONS** with the California Electrical Code. **4.303.1.4.4 Kitchen Faucets.** The maximum flow rate of kitchen faucets shall not exceed 1.8 gallons 4.102.1 DEFINITIONS per minute at 60 psi. Kitchen faucets may temporarily increase the flow above the maximum rate, but not The following terms are defined in Chapter 2 (and are included here for reference) 4.408.4.1 WASTE STREAM REDUCTION ALTERNATIVE. Projects that generate a total combined to exceed 2.2 gallons per minute at 60 psi, and must default to a maximum flow rate of 1.8 gallons per **4.106.4.3 New hotels and motels.** All newly constructed hotels and motels shall provide EV spaces weight of construction and demolition waste disposed of in landfills, which do not exceed 2 pounds capable of supporting future installation of EVSE. The construction documents shall identify the location FRENCH DRAIN. A trench, hole or other depressed area loosely filled with rock, gravel, fragments of brick or similar per square foot of the building area, shall meet the minimum 65% construction waste reduction pervious material used to collect or channel drainage or runoff water. **Note**: Where complying faucets are unavailable, aerators or other means may be used to achieve WATTLES. Wattles are used to reduce sediment in runoff. Wattles are often constructed of natural plant materials **4.408.5 DOCUMENTATION**. Documentation shall be provided to the enforcing agency which demonstrates 4.303.2 STANDARDS FOR PLUMBING FIXTURES AND FITTINGS. Plumbing fixtures and fittings shall be installed such as hay, straw or similar material shaped in the form of tubes and placed on a downflow slope. Wattles are also compliance with Section 4.408.2, items 1 through 5, Section 4.408.3 or Section 4.408.4... 1. Construction documents are intended to demonstrate the project's capability and capacity in accordance with the California Plumbing Code, and shall meet the applicable standards referenced in Table or facilitating future EV charging. 1701.1 of the California Plumbing Code. **4.106 SITE DEVELOPMENT** 2. There is no requirement for EV spaces to be constructed or available until EV chargers are installed for use. **4.106.1 GENERAL.** Preservation and use of available natural resources shall be accomplished through evaluation 1. Sample forms found in "A Guide to the California Green Building Standards Code and careful planning to minimize negative effects on the site and adjacent areas. Preservation of slopes, (Residential)" located at www.hcd.ca.gov/CALGreen.html may be used to assist in **4.106.4.3.1 Number of required EV spaces.** The number of required EV spaces shall be based THIS TABLE COMPILES THE DATA IN SECTION 4.303.1, AND management of storm water drainage and erosion controls shall comply with this section. documenting compliance with this section. on the total number of parking spaces provided for all types of parking facilities in accordance with IS INCLUDED AS A CONVENIENCE FOR THE USER. 2. Mixed construction and demolition debris (C & D) processors can be located at the California Table 4.106.4.3.1. Calculations for the required number of EV spaces shall be rounded up to the 4.106.2 STORM WATER DRAINAGE AND RETENTION DURING CONSTRUCTION. Projects which disturb less Department of Resources Recycling and Recovery (CalRecycle). nearest whole number. than one acre of soil and are not part of a larger common plan of development which in total disturbs one acre TABLE - MAXIMUM FIXTURE WATER USE 4.410 BUILDING MAINTENANCE AND OPERATION or more, shall manage storm water drainage during construction. In order to manage storm water drainage **4.410.1 OPERATION AND MAINTENANCE MANUAL.** At the time of final inspection, a manual, compact during construction, one or more of the following measures shall be implemented to prevent flooding of adjacent TABLE 4.106.4.3.1 **FIXTURE TYPE** disc, web-based reference or other media acceptable to the enforcing agency which includes all of the property, prevent erosion and retain soil runoff on the site. following shall be placed in the building: TOTAL NUMBER OF PARKING NUMBER OF REQUIRED EV SHOWER HEADS 1. Retention basins of sufficient size shall be utilized to retain storm water on the site. 1.8 GMP @ 80 PSI SPACES SPACES (RESIDENTIAL) 2. Where storm water is conveyed to a public drainage system, collection point, gutter or similar 1. Directions to the owner or occupant that the manual shall remain with the building throughout the disposal method, water shall be filtered by use of a barrier system, wattle or other method approved life cycle of the structure. LAVATORY FAUCETS MAX. 1.2 GPM @ 60 PSI 2. Operation and maintenance instructions for the following: MIN. 0.8 GPM @ 20 PSI (RESIDENTIAL) 3. Compliance with a lawfully enacted storm water management ordinance. a. Equipment and appliances, including water-saving devices and systems, HVAC systems, photovoltaic systems, electric vehicle chargers, water-heating systems and other major LAVATORY FAUCETS IN 0.5 GPM @ 60 PSI Note: Refer to the State Water Resources Control Board for projects which disturb one acre or more of soil, or appliances and equipment. COMMON & PUBLIC USE AREAS are part of a larger common plan of development which in total disturbs one acre or more of soil. b. Roof and yard drainage, including gutters and downspouts. 1.8 GPM @ 60 PSI KITCHEN FAUCETS c. Space conditioning systems, including condensers and air filters. (Website: https://www.waterboards.ca.gov/water\_issues/programs/stormwater/construction.html) d. Landscape irrigation systems. METERING FAUCETS 0.2 GAL/CYCLE e. Water reuse systems. **4.106.3 GRADING AND PAVING.** Construction plans shall indicate how the site grading or drainage system will 3. Information from local utility, water and waste recovery providers on methods to further reduce WATER CLOSET 1.28 GAL/FLUSH manage all surface water flows to keep water from entering buildings. Examples of methods to manage surface resource consumption, including recycle programs and locations. water include, but are not limited to, the following: URINALS 0.125 GAL/FLUSH 4. Public transportation and/or carpool options available in the area. 101-150 5. Educational material on the positive impacts of an interior relative humidity between 30-60 percent 1. Swales and what methods an occupant may use to maintain the relative humidity level in that range. 151-200 10 2. Water collection and disposal systems 6. Information about water-conserving landscape and irrigation design and controllers which conserve 6 percent of total 201 and over 4.304 OUTDOOR WATER USE 7. Instructions for maintaining gutters and downspouts and the importance of diverting water at least 5 4.304.1 OUTDOOR POTABLE WATER USE IN LANDSCAPE AREAS. Residential developments shall comply with 5. Other water measures which keep surface water away from buildings and aid in groundwater feet away from the foundation. a local water efficient landscape ordinance or the current California Department of Water Resources' Model Water 4.106.4.3.2 Electric vehicle charging space (EV space) dimensions. The EV spaces shall be designed to 8. Information on required routine maintenance measures, including, but not limited to, caulking, Efficient Landscape Ordinance (MWELO), whichever is more stringent. painting, grading around the building, etc. **Exception**: Additions and alterations not altering the drainage path. 9. Information about state solar energy and incentive programs available. 1. The minimum length of each EV space shall be 18 feet (5486mm). 10. A copy of all special inspections verifications required by the enforcing agency or this code. 2. The minimum width of each EV space shall be 9 feet (2743mm) 4.106.4 Electric vehicle (EV) charging for new construction. New construction shall comply with Sections 1. The Model Water Efficient Landscape Ordinance (MWELO) is located in the California Code Regulations, 4.106.4.1, 4.106.4.2, or 4.106.4.3 to facilitate future installation and use of EV chargers. Electric vehicle supply **4.410.2 RECYCLING BY OCCUPANTS.** Where 5 or more multifamily dwelling units are constructed on a Title 23, Chapter 2.7, Division 2. MWELO and supporting documents, including water budget calculator, are **4.106.4.3.3 Single EV space required.** When a single EV space is required, the EV space shall be designed equipment (EVSE) shall be installed in accordance with the California Electrical Code, Article 625. building site, provide readily accessible area(s) that serves all buildings on the site and are identified for the available at: https://www.water.ca.gov/ depositing, storage and collection of non-hazardous materials for recycling, including (at a minimum) paper, corrugated cardboard, glass, plastics, organic waster, and metals, or meet a lawfully enacted local recycling 4.106.4.3.4 Multiple EV spaces required. When multiple EV spaces are required, the EV spaces shall be 1. On a case-by-case basis, where the local enforcing agency has determined EV charging and ordinance, if more restrictive. designed in accordance with Section 4.106.4.2.4 infrastructure are not feasible based upon one or more of the following conditions: 1.1 Where there is no commercial power supply. **Exception:** Rural jurisdictions that meet and apply for the exemption in Public Resources Code Section 4.106.4.3.5 Identification. The service panels or sub-panels shall be identified in accordance with Section 1.2 Where there is evidence substantiating that meeting the requirements will alter the local 42649.82 (a)(2)(A) et seq. are note required to comply with the organic waste portion of 4.106.4.2.5. utility infrastructure design requirements on the utility side of the meter so as to increase the utility side cost to the homeowner or the developer by more than \$400.00 per **4.106.4.3.6 Accessible EV spaces.** In addition to the requirements in Section 4.106.4.3, EV spaces for 2. Accessory Dwelling Units (ADU) and Junior Accessory Dwelling Units (JADU) without additional hotels/motels and all EVSE, when installed, shall comply with the accessibility provisions for the EV charging stations in the California Building Code, Chapter 11B. parking facilities. **DIVISION 4.5 ENVIRONMENTAL QUALITY** 4.106.4.1 New one- and two-family dwellings and townhouses with attached private garages. For each dwelling unit, install a listed raceway to accommodate a dedicated 208/240-volt branch circuit. The raceway **DIVISION 4.2 ENERGY EFFICIENCY SECTION 4.501 GENERAL** shall not be less than trade size 1 (nominal 1-inch inside diameter). The raceway shall originate at the main service or subpanel and shall terminate into a listed cabinet, box or other enclosure in close proximity to the The provisions of this chapter shall outline means of reducing the quality of air contaminants that are odorous, proposed location of an EV charger. Raceways are required to be continuous at enclosed, inaccessible or irritating and/or harmful to the comfort and well being of a building's installers, occupants and neighbors. **4.201.1 SCOPE.** For the purposes of mandatory energy efficiency standards in this code, the California Energy concealed areas and spaces. The service panel and/or subpanel shall provide capacity to install a 40-ampere Commission will continue to adopt mandatory standards. minimum dedicated branch circuit and space(s) reserved to permit installation of a branch circuit overcurrent **SECTION 4.502 DEFINITIONS** protective device. 5.102.1 DEFINITIONS The following terms are defined in Chapter 2 (and are included here for reference) **4.106.4.1.1 Identification.** The service panel or subpanel circuit directory shall identify the overcurrent protective device space(s) reserved for future EV charging as "EV CAPABLE". The raceway termination **AGRIFIBER PRODUCTS.** Agrifiber products include wheatboard, strawboard, panel substrates and door location shall be permanently and visibly marked as "EV CAPABLE". cores, not including furniture, fixtures and equipment (FF&E) not considered base building elements. **4.106.4.2 New multifamily dwellings.** If residential parking is available, ten (10) percent of the total number of **COMPOSITE WOOD PRODUCTS.** Composite wood products include hardwood plywood, particleboard and parking spaces on a building site, provided for all types of parking facilities, shall be electric vehicle charging medium density fiberboard. "Composite wood products" does not include hardboard, structural plywood. spaces (EV spaces) capable of supporting future EVSE. Calculations for the required number of EV spaces shall structural panels, structural composite lumber, oriented strand board, glued laminated timber, prefabricated be rounded up to the nearest whole number. wood I-joists or finger-jointed lumber, all as specified in California Code of regulations (CCR), title 17, Section 1. Construction documents are intended to demonstrate the project's capability and capacity for **DIRECT-VENT APPLIANCE.** A fuel-burning appliance with a sealed combustion system that draws all air for combustion from the outside atmosphere and discharges all flue gases to the outside atmosphere. 2. There is no requirement for EV spaces to be constructed or available until EV chargers are installed **4.106.4.2.1 Electric vehicle charging space (EV space) locations.** Construction documents shall indicate the location of proposed EV spaces. Where common use parking is provided at least one EV space shall be located in the common use parking area and shall be available for use by all residents.

DISCLAIMER: THIS DOCUMENT IS PROVIDED AND INTENDED TO BE USED ON AN INDIVIDUAL PROJECT BASIS AND MAY BE MODIFIED BY THE END USER TO MEET THOSE INDIVIDUAL PROJECT BASIS AND MAY BE MODIFIED BY THE END USER TO MEET THOSE INDIVIDUAL PROJECT BASIS AND MAY BE MODIFIED BY THE END USER ASSUMES ALL RESPONSIBILITY ASSOCIATED WITH THE END USER TO MEET THOSE INDIVIDUAL PROJECT BASIS AND MAY BE MODIFIED BY THE END USER TO MEET THOSE INDIVIDUAL PROJECT BASIS AND MAY BE MODIFIED BY THE END USER ASSUMES ALL RESPONSIBILITY ASSOCIATED WITH THE END USER TO MEET THOSE INDIVIDUAL PROJECT BASIS AND MAY BE MODIFIED BY THE END USER TO MEET THOSE INDIVIDUAL PROJECT BASIS AND MAY BE MODIFIED BY THE END USER ASSUMES ALL RESPONSIBILITY ASSOCIATED WITH THE END USER ASSUMES ALL RESPONSIBILITY ASSOCIATED WITH THE END USER TO MEET THOSE INDIVIDUAL PROJECT BASIS AND MAY BE MODIFIED BY THE END USER ASSUMES ALL RESPONSIBILITY ASSOCIATED WITH THE END USER ASSUMES AND MAY BE MODIFIED BY THE END USER ASSUMES AND MAY BE MODIFIED BY THE END USER ASSUMES AND MAY BE MODIFIED BY THE END USER ASSUMES AND MAY BE MODIFIED BY THE END USER ASSUMES AND MAY BE MODIFIED BY THE END USER ASSUMES AND MAY BE MODIFIED BY THE END USER ASSUMES AND MAY BE MODIFIED BY THE END USER ASSUMES AND MAY BE MODIFIED BY THE END USER ASSUMES AND MAY BE MODIFIED BY THE END USER ASSUMES AND MAY BE MODIFIED BY THE END USER ASSUMES AND MAY BE MODIFIED BY THE END USER ASSUMES AND MAY BE MODIFIED BY THE END USER ASSUMES AND MAY BE MODIFIED BY THE END USER ASSUMES AND MAY BE MODIFIED BY THE END USER ASSUMES AND MAY BE MODIFIED BY THE END USER ASSUMES AND MAY BE MODIFIED BY THE END USER ASSUMES AND MAY BE MODIFIED BY THE END USER ASSUMES AND MAY BE MODIFIED BY THE END USER ASSUMES AND MAY BE MODIFIED BY THE END USER ASSUMES AND MAY BE MODIFIED BY THE END USER ASSUMES AND MAY BE MODIFIED BY THE END USER ASSUMES AND MAY BE MODIFIED BY THE END USER ASSUMES AND MAY BE MODIFIED BY THE END USER ASSUMES AND MAY BY THE END USER ASSUMES AND MAY BY THE END USER ASSUMES AND MAY BY THE END USER ASSU

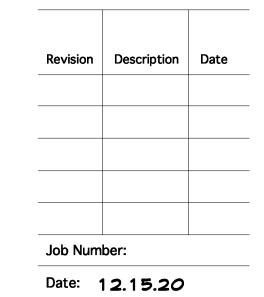
PACIFIC ARCHITECTS

1117 COAST VILLAGE RD. MONTECITO, CA 93108

8 0 5 . 5 6 5 . 3 6 4 0

257 EAST VALLEY ROAD ANTA BARBARA, CA 48108





GB 1

FIBERGLASS

1. IF AN ADHESIVE IS USED TO BOND DISSIMILAR SUBSTRATES TOGETHER.

THE ADHESIVE WITH THE HIGHEST VOC CONTENT SHALL BE ALLOWED.

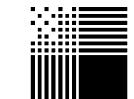
2. FOR ADDITIONAL INFORMATION REGARDING METHODS TO MEASURE

THE VOC CONTENT SPECIFIED IN THIS TABLE, SEE SOUTH COAST AIR

QUALITY MANAGEMENT DISTRICT RULE 1168.

# 2019 CALIFORNIA GREEN BUILDING STANDARDS CODE

RESIDENTIAL MANDATORY MEASURES, SHEET 2 (January 2020, Includes August 2019 Supplement)



Y = YES

N/A = NOT APPLICABLE

RESPON. PARTY = RESPONSIBLE PARTY (ie: ARCHITECT, ENGINEER,
OWNER CONTRACTOR INSPECTOR ETC.)

**CHAPTER 7** TABLE 4.504.2 - SEALANT VOC LIMIT TABLE 4.504.5 - FORMALDEHYDE LIMITS<sub>1</sub> **INSTALLER & SPECIAL INSPECTOR QUALIFICATIONS MAXIMUM INCREMENTAL REACTIVITY (MIR).** The maximum change in weight of ozone formed by adding a compound to the "Base Reactive Organic Gas (ROG) Mixture" per weight of compound added, expressed to (Less Water and Less Exempt Compounds in Grams per Liter) MAXIMUM FORMALDEHYDE EMISSIONS IN PARTS PER MILLION hundredths of a gram (g O³/g ROC) **702 QUALIFICATIONS SEALANTS VOC LIMIT CURRENT LIMIT** Note: MIR values for individual compounds and hydrocarbon solvents are specified in CCR, Title 17, Sections 94700 PRODUCT 702.1 INSTALLER TRAINING. HVAC system installers shall be trained and certified in the proper **ARCHITECTURAL** 250 HARDWOOD PLYWOOD VENEER CORE 0.05 installation of HVAC systems including ducts and equipment by a nationally or regionally recognized training or certification program. Uncertified persons may perform HVAC installations when under the direct supervision and MOISTURE CONTENT. The weight of the water in wood expressed in percentage of the weight of the oven-dry wood. 760 MARINE DECK HARDWOOD PLYWOOD COMPOSITE CORE 0.05 responsibility of a person trained and certified to install HVAC systems or contractor licensed to install HVAC systems. Examples of acceptable HVAC training and certification programs include but are not limited to the following: **PRODUCT-WEIGHTED MIR (PWMIR).** The sum of all weighted-MIR for all ingredients in a product subject to this NONMEMBRANE ROOF 300 PARTICLE BOARD 0.09 article. The PWMIR is the total product reactivity expressed to hundredths of a gram of ozone formed per gram of 250 ROADWAY MEDIUM DENSITY FIBERBOARD 0.11 1. State certified apprenticeship programs. product (excluding container and packaging). Note: PWMIR is calculated according to equations found in CCR, Title 17, Section 94521 (a). 2. Public utility training programs. 450 SINGLE-PLY ROOF MEMBRANE THIN MEDIUM DENSITY FIBERBOARD2 3. Training programs sponsored by trade, labor or statewide energy consulting or verification organizations. **REACTIVE ORGANIC COMPOUND (ROC).** Any compound that has the potential, once emitted, to contribute to 4. Programs sponsored by manufacturing organizations. 420 1. VALUES IN THIS TABLE ARE DERIVED FROM THOSE SPECIFIED 5. Other programs acceptable to the enforcing agency. ozone formation in the troposphere. BY THE CALIF. AIR RESOURCES BOARD, AIR TOXICS CONTROL **SEALANT PRIMERS** MEASURE FOR COMPOSITE WOOD AS TESTED IN ACCORDANCE 702.2 SPECIAL INSPECTION [HCD]. When required by the enforcing agency, the owner or the **VOC.** A volatile organic compound (VOC) broadly defined as a chemical compound based on carbon chains or rings WITH ASTM E 1333. FOR ADDITIONAL INFORMATION, SEE CALIF. ARCHITECTURAL responsible entity acting as the owner's agent shall employ one or more special inspectors to provide inspection or with vapor pressures greater than 0.1 millimeters of mercury at room temperature. These compounds typically contain CODE OF REGULATIONS, TITLE 17, SECTIONS 93120 THROUGH hydrogen and may contain oxygen, nitrogen and other elements. See CCR Title 17, Section 94508(a). other duties necessary to substantiate compliance with this code. Special inspectors shall demonstrate competence NON-POROUS 250 to the satisfaction of the enforcing agency for the particular type of inspection or task to be performed. In addition to 4.503 FIREPLACES other certifications or qualifications acceptable to the enforcing agency, the following certifications or education may be 775 2. THIN MEDIUM DENSITY FIBERBOARD HAS A MAXIMUM POROUS considered by the enforcing agency when evaluating the qualifications of a special inspector: **4.503.1 GENERAL**. Any installed gas fireplace shall be a direct-vent sealed-combustion type. Any installed THICKNESS OF 5/16" (8 MM). 500 woodstove or pellet stove shall comply with U.S. EPA New Source Performance Standards (NSPS) emission limits as MODIFIED BITUMINOUS 1. Certification by a national or regional green building program or standard publisher. applicable, and shall have a permanent label indicating they are certified to meet the emission limits. Woodstoves, 760 MARINE DECK pellet stoves and fireplaces shall also comply with applicable local ordinances. 2. Certification by a statewide energy consulting or verification organization, such as HERS raters, building performance contractors, and home energy auditors. 750 OTHER 4.504 POLLUTANT CONTROL 3. Successful completion of a third party apprentice training program in the appropriate trade. 4.504.1 COVERING OF DUCT OPENINGS & PROTECTION OF MECHANICAL EQUIPMENT DURING 4. Other programs acceptable to the enforcing agency. **DIVISION 4.5 ENVIRONMENTAL QUALITY (continued) CONSTRUCTION.** At the time of rough installation, during storage on the construction site and until final startup of the heating, cooling and ventilating equipment, all duct and other related air distribution component 4.504.3 CARPET SYSTEMS. All carpet installed in the building interior shall meet the testing and product 1. Special inspectors shall be independent entities with no financial interest in the materials or the openings shall be covered with tape, plastic, sheet metal or other methods acceptable to the enforcing agency to requirements of at least one of the following: project they are inspecting for compliance with this code. reduce the amount of water, dust or debris which may enter the system. 2. HERS raters are special inspectors certified by the California Energy Commission (CEC) to rate 1. Carpet and Rug Institute's Green Label Plus Program. 4.504.2 FINISH MATERIAL POLLUTANT CONTROL. Finish materials shall comply with this section. homes in California according to the Home Energy Rating System (HERS). 2. California Department of Public Health, "Standard Method for the Testing and Evaluation of Volatile TABLE 4.504.3 - VOC CONTENT LIMITS FOR Organic Chemical Emissions from Indoor Sources Using Environmental Chambers" Version 1.1, **4.504.2.1 Adhesives, Sealants and Caulks.** Adhesives, sealant and caulks used on the project shall meet the [BSC] When required by the enforcing agency, the owner or the responsible entity acting as the owner's agent shall February 2010 (also known as Specification 01350). ARCHITECTURAL COATINGS<sub>2,3</sub> employ one or more special inspectors to provide inspection or other duties necessary to substantiate compliance with requirements of the following standards unless more stringent local or regional air pollution or air quality B. NSF/ANSI 140 at the Gold level. this code. Special inspectors shall demonstrate competence to the satisfaction of the enforcing agency for the management district rules apply: GRAMS OF VOC PER LITER OF COATING, LESS WATER & LESS EXEMPT 4. Scientific Certifications Systems Indoor Advantageтм Gold. particular type of inspection or task to be performed. In addition, the special inspector shall have a certification from a COMPOUNDS recognized state, national or international association, as determined by the local agency. The area of certification 1. Adhesives, adhesive bonding primers, adhesive primers, sealants, sealant primers and caulks **4.504.3.1 Carpet cushion.** All carpet cushion installed in the building interior shall meet the shall comply with local or regional air pollution control or air quality management district rules where **COATING CATEGORY VOC LIMIT** shall be closely related to the primary job function, as determined by the local agency. requirements of the Carpet and Rug Institute's Green Label program. applicable or SCAQMD Rule 1168 VOC limits, as shown in Table 4.504.1 or 4.504.2, as applicable. **FLAT COATINGS** Note: Special inspectors shall be independent entities with no financial interest in the materials or the Such products also shall comply with the Rule 1168 prohibition on the use of certain toxic 4.504.3.2 Carpet adhesive. All carpet adhesive shall meet the requirements of Table 4.504.1 compounds (chloroform, ethylene dichloride, methylene chloride, perchloroethylene and project they are inspecting for compliance with this code. **NON-FLAT COATINGS** 100 tricloroethylene), except for aerosol products, as specified in Subsection 2 below. **4.504.4 RESILIENT FLOORING SYSTEMS.** Where resilient flooring is installed, at least 80% of floor area receiving NONFLAT-HIGH GLOSS COATINGS resilient flooring shall comply with one or more of the following: 703 VERIFICATIONS 2. Aerosol adhesives, and smaller unit sizes of adhesives, and sealant or caulking compounds (in **SPECIALTY COATINGS** units of product, less packaging, which do not weigh more than 1 pound and do not consist of more 1. Products compliant with the California Department of Public Health, "Standard Method for the Testing and **703.1 DOCUMENTATION.** Documentation used to show compliance with this code shall include but is not than 16 fluid ounces) shall comply with statewide VOC standards and other requirements, including Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers," **ALUMINUM ROOF COATINGS** 400 limited to, construction documents, plans, specifications, builder or installer certification, inspection reports, or other prohibitions on use of certain toxic compounds, of California Code of Regulations, Title 17, Version 1.1, February 2010 (also known as Specification 01350), certified as a CHPS Low-Emitting Material methods acceptable to the enforcing agency which demonstrate substantial conformance. When specific commencing with section 94507. in the Collaborative for High Performance Schools (CHPS) High Performance Products Database. **BASEMENT SPECIALTY COATINGS** ocumentation or special inspection is necessary to verify compliance, that method of compliance will be specified ir Products certified under UL GREENGUARD Gold (formerly the Greenguard Children & Schools program). the appropriate section or identified applicable checklist. **4.504.2.2 Paints and Coatings.** Architectural paints and coatings shall comply with VOC limits in Table 1 of **BITUMINOUS ROOF COATINGS** B. Certification under the Resilient Floor Covering Institute (RFCI) FloorScore program. the ARB Architectural Suggested Control Measure, as shown in Table 4.504.3, unless more stringent local limits 4. Meet the California Department of Public Health, "Standard Method for the Testing and Evaluation of **BITUMINOUS ROOF PRIMERS** 350 apply. The VOC content limit for coatings that do not meet the definitions for the specialty coatings categories Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers", Version 1.1, listed in Table 4.504.3 shall be determined by classifying the coating as a Flat, Nonflat or Nonflat-High Gloss February 2010 (also known as Specification 01350). **BOND BREAKERS** 350 coating, based on its gloss, as defined in subsections 4.21, 4.36, and 4.37 of the 2007 California Air Resources Board, Suggested Control Measure, and the corresponding Flat, Nonflat or Nonflat-High Gloss VOC limit in CONCRETE CURING COMPOUNDS **4.504.5 COMPOSITE WOOD PRODUCTS.** Hardwood plywood, particleboard and medium density fiberboard 350 composite wood products used on the interior or exterior of the buildings shall meet the requirements for CONCRETE/MASONRY SEALERS 100 formaldehyde as specified in ARB's Air Toxics Control Measure for Composite Wood (17 CCR 93120 et seq.). 4.504.2.3 Aerosol Paints and Coatings. Aerosol paints and coatings shall meet the Product-weighted MIR by or before the dates specified in those sections, as shown in Table 4.504.5 DRIVEWAY SEALERS 50 Limits for ROC in Section 94522(a)(2) and other requirements, including prohibitions on use of certain toxic compounds and ozone depleting substances, in Sections 94522(e)(1) and (f)(1) of California Code of **4.504.5.1 Documentation.** Verification of compliance with this section shall be provided as requested DRY FOG COATINGS 150 Regulations, Title 17, commencing with Section 94520; and in areas under the jurisdiction of the Bay Area Air by the enforcing agency. Documentation shall include at least one of the following: Quality Management District additionally comply with the percent VOC by weight of product limits of Regulation 350 FAUX FINISHING COATINGS Product certifications and specifications. FIRE RESISTIVE COATINGS 350 Chain of custody certifications. **4.504.2.4 Verification.** Verification of compliance with this section shall be provided at the request of the 3. Product labeled and invoiced as meeting the Composite Wood Products regulation (see FLOOR COATINGS 100 enforcing agency. Documentation may include, but is not limited to, the following: CCR, Title 17, Section 93120, et seq.). 4. Exterior grade products marked as meeting the PS-1 or PS-2 standards of the Engineered FORM-RELEASE COMPOUNDS 250 1. Manufacturer's product specification. Wood Association, the Australian AS/NZS 2269, European 636 3S standards, and Canadian CSA 2. Field verification of on-site product containers. GRAPHIC ARTS COATINGS (SIGN PAINTS) 500 0121, CSA 0151, CSA 0153 and CSA 0325 standards. 5. Other methods acceptable to the enforcing agency. HIGH TEMPERATURE COATINGS 4.505 INTERIOR MOISTURE CONTROL INDUSTRIAL MAINTENANCE COATINGS 250 TABLE 4.504.1 - ADHESIVE VOC LIMIT<sub>1,2</sub> **4.505.1 General.** Buildings shall meet or exceed the provisions of the California Building Standards Code. LOW SOLIDS COATINGS<sub>1</sub> 120 (Less Water and Less Exempt Compounds in Grams per Liter) **4.505.2 CONCRETE SLAB FOUNDATIONS.** Concrete slab foundations required to have a vapor retarder by MAGNESITE CEMENT COATINGS 450 California Building Code, Chapter 19, or concrete slab-on-ground floors required to have a vapor retarder by the ARCHITECTURAL APPLICATIONS **VOC LIMIT** California Residential Code, Chapter 5, shall also comply with this section. MASTIC TEXTURE COATINGS 100 INDOOR CARPET ADHESIVES METALLIC PIGMENTED COATINGS 500 **4.505.2.1 Capillary break.** A capillary break shall be installed in compliance with at least one of the CARPET PAD ADHESIVES MULTICOLOR COATINGS 250 150 **OUTDOOR CARPET ADHESIVES** 1. A 4-inch (101.6 mm) thick base of 1/2 inch (12.7mm) or larger clean aggregate shall be provided with PRETREATMENT WASH PRIMERS a vapor barrier in direct contact with concrete and a concrete mix design, which will address bleeding, 100 WOOD FLOORING ADHESIVES shrinkage, and curling, shall be used. For additional information, see American Concrete Institute, PRIMERS, SEALERS, & UNDERCOATERS 100 60 RUBBER FLOOR ADHESIVES REACTIVE PENETRATING SEALERS 350 2. Other equivalent methods approved by the enforcing agency. SUBFLOOR ADHESIVES 3. A slab design specified by a licensed design professional. 250 RECYCLED COATINGS **CERAMIC TILE ADHESIVES** 4.505.3 MOISTURE CONTENT OF BUILDING MATERIALS. Building materials with visible signs of water damage **ROOF COATINGS** shall not be installed. Wall and floor framing shall not be enclosed when the framing members exceed 19 percent VCT & ASPHALT TILE ADHESIVES moisture content. Moisture content shall be verified in compliance with the following: **RUST PREVENTATIVE COATINGS** 250 DRYWALL & PANEL ADHESIVES SHELLACS 1. Moisture content shall be determined with either a probe-type or contact-type moisture meter. Equivalent 50 COVE BASE ADHESIVES moisture verification methods may be approved by the enforcing agency and shall satisfy requirements CLEAR 730 found in Section 101.8 of this code. 70 MULTIPURPOSE CONSTRUCTION ADHESIVE 2. Moisture readings shall be taken at a point 2 feet (610 mm) to 4 feet (1219 mm) from the grade stamped end OPAQUE 550 of each piece verified. 100 STRUCTURAL GLAZING ADHESIVES 3. At least three random moisture readings shall be performed on wall and floor framing with documentation SPECIALTY PRIMERS, SEALERS & 100 250 acceptable to the enforcing agency provided at the time of approval to enclose the wall and floor framing. SINGLE-PLY ROOF MEMBRANE ADHESIVES UNDERCOATERS OTHER ADHESIVES NOT LISTED 250 Insulation products which are visibly wet or have a high moisture content shall be replaced or allowed to dry prior to enclosure in wall or floor cavities. Wet-applied insulation products shall follow the manufacturers' drying STONE CONSOLIDANTS 450 SPECIALTY APPLICATIONS recommendations prior to enclosure. SWIMMING POOL COATINGS PVC WELDING 510 4.506 INDOOR AIR QUALITY AND EXHAUST 100 490 TRAFFIC MARKING COATINGS **4.506.1 Bathroom exhaust fans.** Each bathroom shall be mechanically ventilated and shall comply with the CPVC WELDING TUB & TILE REFINISH COATINGS ABS WELDING 325 420 1. Fans shall be ENERGY STAR compliant and be ducted to terminate outside the building. 250 250 WATERPROOFING MEMBRANES PLASTIC CEMENT WELDING 2. Unless functioning as a component of a whole house ventilation system, fans must be controlled by a 550 ADHESIVE PRIMER FOR PLASTIC WOOD COATINGS 275 **WOOD PRESERVATIVES** 350 CONTACT ADHESIVE a. Humidity controls shall be capable of adjustment between a relative humidity range less than or equal to 50% to a maximum of 80%. A humidity control may utilize manual or automatic means of SPECIAL PURPOSE CONTACT ADHESIVE 250 ZINC-RICH PRIMERS b. A humidity control may be a separate component to the exhaust fan and is not required to be 1. GRAMS OF VOC PER LITER OF COATING, INCLUDING WATER & 140 STRUCTURAL WOOD MEMBER ADHESIVE integral (i.e., built-in) EXEMPT COMPOUNDS 250 **TOP & TRIM ADHESIVE** 2. THE SPECIFIED LIMITS REMAIN IN EFFECT UNLESS REVISED LIMITS ARE LISTED IN SUBSEQUENT COLUMNS IN THE TABLE. SUBSTRATE SPECIFIC APPLICATIONS 1. For the purposes of this section, a bathroom is a room which contains a bathtub, shower or 3. VALUES IN THIS TABLE ARE DERIVED FROM THOSE SPECIFIED BY METAL TO METAL THE CALIFORNIA AIR RESOURCES BOARD, ARCHITECTURAL COATINGS 2. Lighting integral to bathroom exhaust fans shall comply with the California Energy Code. PLASTIC FOAMS SUGGESTED CONTROL MEASURE, FEB. 1, 2008. MORE INFORMATION IS AVAILABLE FROM THE AIR RESOURCES BOARD. 4.507 ENVIRONMENTAL COMFORT POROUS MATERIAL (EXCEPT WOOD) 50 4.507.2 HEATING AND AIR-CONDITIONING SYSTEM DESIGN. Heating and air conditioning systems shall be

P A C I F I C ARCHITECTS

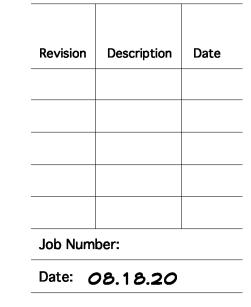
1117 COAST VILLAGE RD. MONTECITO, CA 93108

MONTECITO, CA 93108 8 0 5.5 6 5.3 6 4 0

LEY ROAD 34, CA 49 108







**CB**2

sized, designed and have their equipment selected using the following methods:

ASHRAE handbooks or other equivalent design software or methods.

Equipment Selection), or other equivalent design software or methods.

The heat loss and heat gain is established according to ANSI/ACCA 2 Manual J - 2011 (Residential Load Calculation), ASHRAE handbooks or other equivalent design software or methods.
 Duct systems are sized according to ANSI/ACCA 1 Manual D - 2014 (Residential Duct Systems).

3. Select heating and cooling equipment according to ANSI/ACCA 3 Manual S - 2014 (Residential

**Exception:** Use of alternate design temperatures necessary to ensure the system functions are

PROJECT:

1257 E. Valley Rd. (Residence 1)

1257 E. Valley Rd.

Santa Barbara, CA 93108

Project Designer:

Pacific Architects
1117 Coast Village Road
Montecito, CA 93108

Report Prepared by:

(805) 565-3640

David Hensel, PE
Hensel Consulting Engineers, Inc.
5857 Owens Ave., 3rd Floor
Carlsbad, CA 92008
(619) 665-3259

HENSEL CONSULTING ENGINEERS, INC.

Job Number:

20252

7/26/2020

The EnergyPro computer program has been used to perform the calculations summarized in this compliance report. This program has approval and is authorized by the California Energy Commission for use with both the Residential and Nonresidential 2019 Building Energy Efficiency Standards.

This program developed by EnergySoft Software – www.energysoft.com.

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STATE OF CALIFORNIA  Prescriptive Residential Alterations That Do Not Require HERS Field Verification  CEC-CF1R-ALT-05-E (Revised 01/19)  CERTIFICATE OF COMPLIANCE  Prescriptive Residential Alterations That Do Not Require HERS Field Verification	STATE OF CALIFORNIA  Prescriptive Residential Alterations That Do Not Require HERS Field Verification  CETR-ALT-05-E  (Page 1 of 8)  STATE OF CALIFORNIA  Prescriptive Residential Alterations That Do Not Require HERS Field Verification  CALIFORNIA ENERGY COMMISSION  CALIFORNIA ENERGY COMMISSION  CALIFORNIA ENERGY COMMISSION  CETTIFICATE OF COMPLIANCE  Prescriptive Residential Alterations That Do Not Require HERS Field Verification  (Page 4 of 8)
Project Name: 1257 E. Valley Rd. (Residence 1)  Date Prepared: 7/26/2020	Project Name: 1257 E. Valley Rd. (Residence 1)  Date Prepared: 7/26/2020
This compliance document is only applicable to simple alterations that do not require HERS verification for compliance. When HERS verification is required, a CF1R-ALT-01 shall with a HERS Provider Data Registry.	E. Fenestration Proposed Areas and Efficiencies – Add (Section 150.2(b)1A)  Note: Doors with greater than or equal to 25 percent glazed area are considered glazed doors and are treated as fenestration products.
Alterations to Space Conditioning Systems that are exempt from HERS verification requirements may use the CF1R-ALT-05 and CF2R- ALT-05 Compliance Documents. Possible of leakage testing include: less than 40 ft of ducts were added or replaced; or the existing duct system was insulated with asbestos; or the existing duct system was previously test	ested and passed by a Proposed Proposed West Proposed Fixerior Combined
HERS Rater. If space conditioning systems are altered and are not exempt from HERS verification, then a CF1R-ALT-02 must be completed and registered with a HERS Provider Alterations that utilize close Cell Spray Polyurethane Foam (ccSPF) with a density of 1.5 to less than 2.5 pounds per cubic foot having an R-value other than 5.8 per inch, or Open	Type Type Glazing N, S, W, E Panes Fenestration Area ft <sup>2</sup> Fenestration Area ft <sup>2</sup> Surce SHGC Shading SHGC from CF1R-ENV-03
Polyurethane Foam (ocSPF) with a density of 0.4 to less than 1.5 pounds per cubic foot having an R-value of 3.6 per inch, shall complete and register a CF1R-ALT-01 with a HERS Registry.	1 New Non-Metal n/a (S) 2 4.5 n/a 0.300 NFRC 0.23 NFRC n/a 0.23  2 New Non-Metal n/a (S) 2 57.8 n/a 0.300 NFRC 0.23 NFRC n/a 0.23
If more than one person has responsibility for installation of the items on this certificate, each person shall prepare and sign a certificate applicable to the portion of construction responsible. Alternatively, the person with chief responsibility for construction shall prepare and sign this certificate for the entire construction. All applicable Mandatory Measuremporary labels shall not be removed before verification by the building inspector.	
A. General Information	15 Total Proposed Fenestration Area 62.300
	26/2020 16 Maximum Allowed Fenestration Area
03     Project Location:     1255 E. Valley Rd.     04     Building Front Orientation (deg or cardinal):     (N)       05     CA City:     Santa Barbara     06     Number of Altered Dwelling Units:     1	18 Total Proposed West-Facing Fenestration Area 0.000
07         Zip Code:         93108         08         Fuel Type:         Nat	19 Maximum Allowed West-Facing Fenestration Area  20 Compliance Statement Existing + Proposed West-Facing Fenestration Area ≤ Maximum Allowed West-Facing Fenestration Area  □ Yes □ No
	015.0 21 Proposed Fenestration U-factor (Windows) 22 Required Fenestration U-factor (Windows) 0.300
11     Building Type:     Single Family     12     Slab Area (ft²):     0       13     Project Scope:     Alteration	23 Compliance Statement Proposed Fenestration U-factor ≤ Required Fenestration U-factor ☐ Yes ☐ No
13 Project Scope: Alteration	24 Proposed Fenestration SHGC (Windows) 0.230 25 Required Fenestration SHGC (Windows) 0.230
	26     Compliance Statement     Proposed Fenestration SHGC ≤ Required Fenestration SHGC       27     Proposed Fenestration U-factor (Skylights)
	28 Required Fenestration U-factor (Skylights)  29 Compliance Statement Proposed Fenestration U-factor ≤ Required Fenestration U-factor  ☑ Yes □ No
	30 Proposed Fenestration SHGC (Skylights) 0.000
	Required Fenestration SHGC (Skylights)
CA Building Energy Efficiency Standards - 2019 Residential Compliance	January 2019 CA Building Energy Efficiency Standards - 2019 Residential Compliance January 2019
STATE OF CALIFORNIA	STATE OF CALIFORNIA
Prescriptive Residential Alterations That Do Not Require HERS Field Verification  CEC-CF1R-ALT-05-E (Revised 01/19)  CERTIFICATE OF COMPLIANCE  CALIFORNIA ENERGY  CALIFORNIA ENERGY	Prescriptive Residential Alterations That Do Not Require HERS Field Verification  CF1R-ALT-05-E  CEC-CF1R-ALT-05-E (Revised 01/19)  CERTIFICATE OF COMPLIANCE  CETTIFICATE OF COMPLIANCE  CETTIFICATE OF COMPLIANCE
Prescriptive Residential Alterations That Do Not Require HERS Field Verification  Project Name: 1257 E. Valley Rd. (Residence 1)  Date Prepared: 7/26/2020	(Page 2 of 8) Prescriptive Residential Alterations That Do Not Require HERS Field Verification (Page 5 of 8)
B. Building Insulation Details (Section 150.2(b)1)	32 Compliance Statement Proposed Fenestration SHGC ≤ Required Fenestration SHGC ✓ Required Fenestration SHGC
	11
Frame Frame Continuous Reference from Table	F. Fenestration/Glazing Proposed Areas and Efficiencies – Replace (Section 150.2(b)1B)  Note: Doors with greater than or equal to 25 percent glazed area are considered glazed doors and are treated as fenestration products.
	01   02   03   04   05   06   07   08   9   10   11   12   13   14
1 Wall Wood 2x4 16" O.C. 15 0.0 0.095 4.3.1 A4 0.102 Altered	d R-15 Wall  Tag/ Fenestration Frame Dynamic Orientation Removed Added Added Added ID Type Type Glazing N, S, W, E (ft²) (ft²) Area (ft²) U-factor Source SHGC Source Device CF1R-ENV-03
	15 Net Added West-facing Fenestration Area  16 Is Net Added Fenestration Area ≤ for west-facing fenestration? □ Yes
	17 Net Added Fenestration Area (all orientations)
	18 Is Net Added Fenestration Area ≤ 0 for all orientations? ☐ Yes ☐ No  19 Proposed Fenestration U-factor (Windows)
	20 Required Fenestration U-factor (Windows)
	21 Is the proposed Fenestration U-factor ≤ the Required Fenestration U-factor? ☐ No  22 Proposed Fenestration SHGC (Windows)
	Required Fenestration SHGC (Windows)
	24 Is the Proposed Fenestration SHGC ≤ the Required Fenestration SHGC?
	26 Required Fenestration U-factor (Skylights)  27 Is the proposed Fenestration U-factor ≤ the Required Fenestration U-factor? □ Yes
	28 Proposed Fenestration SHGC
	29 Required Fenestration SHGC  30 Is the Proposed Fenestration SHGC ≤ the Required Fenestration SHGC? ☐ Yes
CA Building Energy Efficiency Standards - 2019 Residential Compliance	January 2019  CA Building Energy Efficiency Standards - 2019 Residential Compliance  Tanuary 2019  CA Building Energy Efficiency Standards - 2019 Residential Compliance
STATE OF CALIFORNIA  Prescriptive Residential Alterations That Do Not Require HERS Field Verification  CEC-CF1R-ALT-05-E (Revised 01/19)  CALIFORNIA ENERG	STATE OF CALIFORNIA  Prescriptive Residential Alterations That Do Not Require HERS Field Verification  CEC-CF1R-ALT-05-E (Revised 01/19)  CALIFORNIA ENERGY COMMISSION  CALIFORNIA ENERGY COMMISSION
CERTIFICATE OF COMPLIANCE  Prescriptive Residential Alterations That Do Not Require HERS Field Verification	CF1R-ALT-05-E (Page 3 of 8) CERTIFICATE OF COMPLIANCE CF1R-ALT-05-E Prescriptive Residential Alterations That Do Not Require HERS Field Verification (Page 6 of 8)
Project Name: 1257 E. Valley Rd. (Residence 1)  Date Prepared: 7/	7/26/2020 Project Name: 1257 E. Valley Rd. (Residence 1) Date Prepared: 7/26/2020
C. Roof Replacement (Prescriptive Alteration, Section 150.2(b)1H)         01       02       03       04       05       06       07       08       09       10       11	G. Space Conditioning (SC) Systems – Heating/Cooling (Prescriptive Section 150.2(b))
N Voluce	Alterations to Space Conditioning Systems shall be exempt from HERS verification requirements as prerequisite for use of the CF1R-ALT-05 and CF2R- ALT-05 Compliance Documents. If new space conditioning systems are installed or existing systems are altered and are not exempt from HERS verification, then a CF1R-ALT-01 shall be completed and registered with a HERS Provider Data Registry. In each row below for each dwelling unit in the building, check the box that indicates the exemption from HERS verification compliance:
	Emittance (Optional)  ☑ a: space conditioning system was not altered; ☑ b: less than 40 ft of ducts were added or replaced;
	□ c: (exempt from duct leakage testing) if: the existing duct system was insulated with asbestos; □ d: (exempt from duct leakage testing) if: the existing duct system was previously tested and passed by a HERS Rater.  01 02 03 04
	Dwelling Unit Name SC System Identification or Name SC System Location or Area Served Exemption from HERS Verification
NOTES:	1255 E. Valley Rd. (Res 1) Existing Furnace 1,015 🖸 a 🗖 b 🖂 c 🖂 d
<ul> <li>Roof area covered by building integrated photovoltaic panels and solar thermal panels are exempt from the above Cool Roof requirements.</li> <li>Liquid field applied coatings must comply with installation criteria from section 110.8(i)4.</li> </ul>	
D. Fenestration/Glazing Allowed Areas and Efficiencies (Section 150.2(b)1)	
01 02 03 04 05 06 07	07
Maximum     Maximum       Allowed     Allowed West-       Existing     Existing West-       Fenestration     Facing       Maximum     Maximum       Maximum     Maximum	
Area For All Fenestration Area for All Fenestration Allowed Allowed Allowed Allowed Allowed Allowed Allowed SHGC SHGC	
Type         (ft²)         (ft²)         (ft²)         (Windows)         (Skylights)         (Windows)         (Skylights)         Comm           Add         n/a         n/a         62.3         0.0         0.30         0.55         0.23         0.30         <= 75 sqft of windows	windows added a b c d
CA Building Enorgy Efficiency Standards 2010 Residential Compliance	January 2019 CA Building Energy Efficiency Standards - 2019 Residential Compliance January 2019
CA Building Energy Efficiency Standards - 2019 Residential Compliance	January 2019 CA Building Energy Efficiency Standards - 2019 Residential Compliance January 2019

	E (Revised 01/19) F COMPLIANCE										2211 0	RNIA ENERO		-ALT-C
	escriptive Residential Alterations That Do Not Require HERS Field Verification											ige 7 d		
	E. Valley Rd. (F		'							Da	te Prepared: 7/26	6/2020		
H. Water Hea	ting Systems (S	ection 150.2(b)	1G)											
01	02	03	04	05	06	07	08	09	10	11	12	13	14	1
Dwelling Unit Name	Water Heating System Identification or Name	Water Heating System Location or Area Served	Water Heating System Type	Water Heater Type	# of Water Heaters in System	Water Heater Storage Volume (gal)	Fuel Type	Rated Input Type	Rated Input Value	Heating Efficiency Type	Heating Efficiency Value	Standby Loss (%)	Exterior Insulation R-Value	Back Sol Savi Fract
Residence 1	WH-1	New	DHW	Tankless	1	0	Gas	0.95	EF	n/a	n/a	n/a	n/a	n/

STATE OF CALIFORNIA Prescriptive Residential Alterations That Do Not Require HERS Field Verification
CEC-CF1R-ALT-05-E (Revised 01/19) CERTIFICATE OF COMPLIANCE CF1R-ALT-05-E Prescriptive Residential Alterations That Do Not Require HERS Field Verification (Page 8 of 8) Date Prepared: 7/26/2020 Project Name: 1257 E. Valley Rd. (Residence 1) DOCUMENTATION AUTHOR'S DECLARATION STATEMENT I certify that this Certificate of Compliance documentation is accurate and complete. David Hensel, PE Signature Date: 7/26/2020 Hensel Consulting Engineers, Inc. CEA/ HERS Certification Identification (if applicable): M329015857 Owens Ave., 3rd Floor (619) 665-3259 Carlsbad, CA 92008 RESPONSIBLE PERSON'S DECLARATION STATEMENT I certify the following under penalty of perjury, under the laws of the State of California: The information provided on this Certificate of Compliance is true and correct.

I am eligible under Division 3 of the Business and Professions Code to accept responsibility for the building design or system design identified on this Certificate of Compliance (responsible That the energy features and performance specifications, materials, components, and manufactured devices for the building design or system design 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 I will ensure that a registered copy of this Certificate of Compliance shall be made available with the building permit(s) issued for the building, and made available to the enforcement agency for all applicable inspections. I understand that a registered copy of this Certificate of Compliance is required to be included with the documentation the builder provides to the building owner at occupancy.
Responsible Designer Name:

CA Building Energy Efficiency Standards - 2019 Residential Compliance

Pacific Architects

1117 Coast Village Road

Montecito, CA 93108

For assistance or questions regarding the Energy Standards, contact the Energy Hotline at: 1-800-772-3300.

(805) 565-3640

CA Building Energy Efficiency Standards - 2019 Residential Compliance

January 2019



P A C I F I C ARCHITECTS

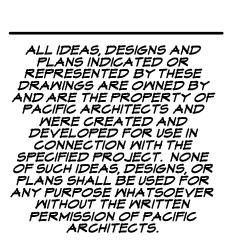
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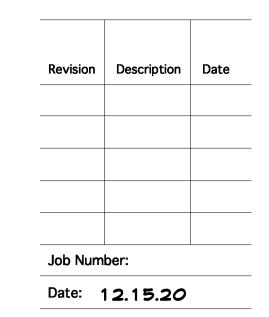
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NOTE: Low-rise residential buildings subject to the Energy Standards must comply with all applicable mandatory measures, regardless of the compliance approach used. Review the respective section for more information. \*Exceptions may apply. Building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

Insulation Certification by Manufacturers. Insulation must be certified by the Department of Consumer Affairs, Bureau of Household Goods

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. Labeling. Fenestration products and exterior doors must have a label meeting the requirements of § 10-111(a). 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.\* 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.

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 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. Radiant Barrier. When required, radiant barriers must have an emittance of 0.05 or less and be certified to the Department of Consumer Affairs Ceiling and Rafter Roof Insulation. Minimum R-22 insulation in wood-frame ceiling; or the weighted average U-factor must not exceed 0.04 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.\* Loose-fill Insulation. Loose fill insulation must meet the manufacturer's required density for the labeled R-value. Wall Insulation. Minimum R-13 insulation in 2x4 inch wood framing wall or have a U-factor of 0.102 or less, or R-20 in 2x6 inch wood framing or

have a U-factor of 0.071 or less. Opaque non-framed assemblies must have an overall assembly U-factor not exceeding 0.102. Masonry wall

Slab Edge Insulation. Slab edge insulation must meet all of the following: have a water absorption rate, for the insulation material alone without facings, no greater than 0.3 percent; have a water vapor permeance no greater than 2.0 perm per inch; be protected from physical damage and UV light deterioration; and, when installed as part of a heated slab floor, meet the requirements of § 110.8(g). 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

Raised-floor Insulation. Minimum R-19 insulation in raised wood framed floor or 0.037 maximum U-factor.

insulation in all exterior walls, vented attics, and unvented attics with air-permeable insulation. Fenestration 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, Decorative Gas Appliances, and Gas Log Measures:

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 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 § 110.0-§ 110.3: Certification. Fleating, ventiliation and all considering Commission.\* appliances must be certified by the manufacturer to the California Energy Commission.\* 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-on temperature for supplementary heating, and the cut-off temperature for compression heating is higher than the cut-off temperature for supplementary heating.\* Thermostats. All heating or cooling systems not controlled by a central energy management control system (EMCS) must have a

Water Heating Recirculation Loops Serving Multiple Dwelling Units. Water heating recirculation loops serving multiple dwelling units must meet the air release valve, backflow prevention, pump priming, pump isolation valve, and recirculation loop connection requirements of 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. 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. Building Cooling and Heating Loads. Heating and/or cooling loads are calculated in accordance with the ASHRAE Handbook, Equipment Volume, Applications Volume, and Fundamentals Volume; the SMACNA Residential Comfort System Installation Standards Manual; or the ACCA Manual J using design conditions specified in § 150.0(h)2.

# 2019 Low-Rise Residential Mandatory Measures Summary

Clearances. Air conditioner and heat pump outdoor condensing units must have a clearance of at least five feet from the outlet of any dryer Liquid Line Drier. Air conditioners and heat pump systems must be equipped with liquid line filter driers if required, as specified by the 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. 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 nines 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.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. 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 Recirculating Loops. Recirculating loops serving multiple dwelling units must meet the requirements of § 110.3(c)5.

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: 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. 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 1/4 inch, the combination of mastic and either mesh or tape must be used. Building cavities, support platforms for air handlers, and plenums designed or constructed with materials other than sealed sheet metal, duct board or flexible duct must not be used to convey conditioned air. Building cavities and support platforms may contain ducts. Ducts installed in cavities and support platforms must not be compressed to cause reductions in the cross-sectional area.\*

Factory-Fabricated Duct Systems. Factory-fabricated duct systems must comply with applicable requirements for duct construction, § 150.0(m)2: 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. 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,

§ 150.0(m)3: mastics, sealants, and other requirements specified for duct construction. Backdraft Damper. Fan systems that exchange air between the conditioned space and outdoors must have backdraft or automatic dampers

manually operated dampers in all openings to the outside, except combustion inlet and outlet air openings and elevator shaft vents. Protection of Insulation. Insulation must be protected from damage, sunlight, moisture, equipment maintenance, and wind. Insulation expose § 150.0(m)9: 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.

Porous Inner Core Flex Duct. Porous inner core flex ducts must have a non-porous layer between the inner core and outer vapor barrier. Duct System Sealing and Leakage Test. When space conditioning systems use forced air duct systems to supply conditioned air to an § 150.0(m)11: 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.

Air Filtration. Space conditioning systems with ducts exceeding 10 feet and the supply side of ventilation systems must have MERV 13 or § 150.0(m)12: 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.\*

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-handlin unit fan efficacy ≤ 0.62 watts per CFM. Field verification testing is required in accordance with Reference Residential Appendix RA3.3.\*

# 2019 Low-Rise Residential Mandatory Measures Summary

Requirements for Ventilation and Indoor Air Quality: Requirements for Ventilation and Indoor Air Quality. All dwelling units must meet the requirements of ASHRAE Standard 62.2, Ventilation 150.0(o)1: and Acceptable Indoor Air Quality in Residential Buildings subject to the amendments specified in § 150.0(o)1. 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.

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

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.

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 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.

**Covers.** Outdoor pools or spas that have a heat pump or gas heater must have a cover. Directional Inlets and Time Switches for Pools. Pools must have directional inlets that adequately mix the pool water, and a time switch that § 110.4(b)3: 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.

Pool Systems and Equipment Installation. Residential pool systems or equipment must meet the specified requirements for pump sizing, flow rate, piping, filters, and valves.\*

Lighting Measures: Lighting Controls and Components. All lighting control devices and systems, ballasts, and luminaires must meet the applicable requirements 150.0(k)1A: Luminaire Efficacy. All installed luminaires must meet the requirements in Table 150.0-A.

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, o § 150.0(k)1B: Recessed Downlight Luminaires in Ceilings. Luminaires recessed into ceilings must meet all of the requirements for: insulation contact (IC) § 150.0(k)1C: labeling; air leakage; sealing; maintenance; and socket and light source as described in § 150.0(k)1C.

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. 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 \$ 150 0(k)1F controlled by vacancy sensors provided they are rated to consume no more than 5 watts of power and emit no more than 150 lumens. Lighting Integral to Exhaust Fans. Lighting integral to exhaust fans (except when installed by the manufacturer in kitchen exhaust hoods)

§ 150.0(k)1F: 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.\* Light Sources in Enclosed or Recessed Luminaires. Lamps and other separable light sources that are not compliant with the JA8 elevated § 150.0(k)1H: temperature requirements, including marking requirements, must not be installed in enclosed or recessed luminaires. 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. All forward phase cut dimmers used with LED light sources must comply with NEMA SSL 7A. Interior Switches and Controls. Exhaust fans must be controlled separately from lighting systems.\* Interior Switches and Controls. Lighting must have readily accessible wall-mounted controls that allow the lighting to be manually

Interior Switches and Controls. Controls and equipment must be installed in accordance with manufacturer's instructions. Interior Switches and Controls. Controls must not bypass a dimmer, occupant sensor, or vacancy sensor function if the control is installed to 150.0(k)2E:

§ 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

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 § 150.0(k)2G: 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 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 be controlled by an occupant sensor or a vacancy sensor providing automatic-off functionality. If an occupant sensor is installed, it must be § 150.0(k)2I: 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.\* 5.150 0(k)2K: Interior Switches and Controls. Under cabinet lighting must be controlled separately from ceiling-installed lighting systems. Residential Outdoor Lighting. For single-family residential buildings, outdoor lighting permanently mounted to a residential building, or to other 150.0(k)3A: 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)3Aiii (astronomical time clock), or an EMCS. Residential Outdoor Lighting. For low-rise residential buildings with four or more dwelling units, outdoor lighting for private patios, entrances,

with the applicable requirements in Sections 110.9, 130.0, 130.2, 130.4, 140.7 and 141.0. 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. 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 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 150.0(k)6B:

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. 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). 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).

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

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

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

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

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.\* 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:

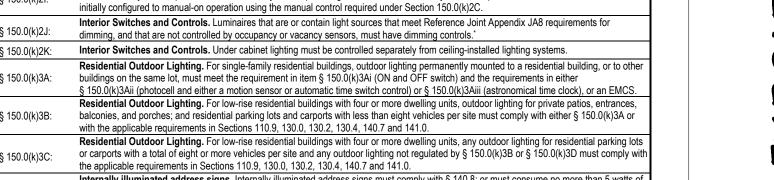
Shading. Any obstruction located on the roof or any other part of the building that projects above a solar zone must be located at least twice the 10.10(b)3B: distance, measured in the horizontal plane, of the height difference between the highest point of the obstruction and the horizontal projection of the nearest point of the solar zone, measured in the vertical plane.\* Structural Design Loads on Construction Documents. For areas of the roof designated as a solar zone, the structural design loads for roof 110.10(b)4: dead load and roof live load must be clearly indicated on the construction documents.

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. 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"

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





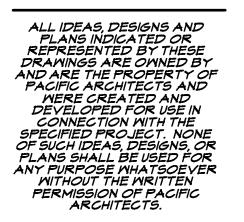
PACIFIC

ARCHITECTS

1117 COAST VILLAGE RD.

MONTECITO, CA 93108

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Revision	Description	Date

Date: 12.15.20

	<u>Description of Building</u> <u>Elements</u> <u>Roof</u>	Number and Type of Fastener	Spacing and Location	<u>Description of Building</u> <u>Elements</u> <u>Wall</u>	Number and Type of Fastener	Spacing and Location	<u>m</u>
1.	Blocking between ceiling joists, rafters or trusses to top plate or other framing below	3-8d common (2½"x0.131"); or 3-10d box (3" x 0.128"); or 3-3"x0.131" nails	Each end, toenail	19. 1" brace to each stud and plate	2-8d common (2½"x0.131"); or 2-10d box (3"x 0.128"); or 2-3"x0.131" nails; or 2-3" 14 gage staples, ¾" crown	Face nail	
	Training below	3-3" 14 gage staples, 7/6" crown		20. 1" x 6" sheathing to each bearing	2-8d common $(2\frac{1}{2}^{"}x0.131")$ ; or 2-10d box $(3^{"}x\ 0.128")$	Face nail	
	Blocking between rafters or truss not at the wall top plate, to rafter or	2-8d common (2½"x0.131") 2-3"x0.131" nails 2-3" 14 gage staples	Each end, toenail	21. 1" x 8" and wider sheathing to each bearing	3-8d common $(2\frac{1}{2}^{"}x0.131")$ ; or 3-10d box $(3"x 0.128")$	Face nail	
	truss	2-16d common (3½"x0.162) 2-3"x0.131" nails 2-3" 14 gage staples	End nail	Floor  22. Joist to sill, top plate, or airder	3-8d common (2½"x0.131"); or floor 3-10d box (3"x 0.128"); or 3-3"x0.131" nails; or	Toenail	
	Flat blocking to truss and web filler	16d common (3½"x0.162) @ 6"oc 2-3"x0.131" nails @ 6"oc 2-3" 14 gage staples @ 6"oc	Face nail	23. Rim joist, band joist, or	3-3" 14 gage staples, 7/6" crown  8d common (2½"x0.131"); or 10d box (3"x 0.128"); or	دال ال	
2.	Ceiling joists to top plate	3-8d common (2½" x 0.131"); or 3-10d box (3"x0.128"); or 3-3"x0.131" nails 3-3" 14 gage staples, ½" crown	Each joist, toenail	blocking to top plate, sill or other framing member	3"x0.131" nails; or 3" 14 gage staples, 7/6" crown 2-8d common (2½"x0.131"); or	6"oc, toenail  Face nail	
3.	Ceiling joist not attached to parallel rafter, laps over partitions (no thrust) (see Section 2308.7.3.1, Table 2308.7.3.1)	3-16d common (3½"x0.162"); or 4-10d box (3"x0.128"); or 4-3"x0.131" nails 4-3" 14 gage staples, ½" crown	Face nail	24. 1" x 6" subfloor or less to each joist  25. 2" subfloor to joist or girder	2-10d box (3"x 0.128")  2-16d common (3½"x0.162")	Face nail	
4.	Ceiling joist attached to parallel rafter (heel joint)	Per Table 2308.7.3.1	Face nail	26. 2" planks (plank \$ beam - floor \$ roof)	2-16d common (3½"x0.162")	Each bearing, face	nail
	(see Section 2308.7.3.1, Table 2308.7.3.1)			_	20d common (4"x0.192")	32"oc, face nail at and bottom stagge opposite sides	
5.	Collar tie to rafter	3-10d common (3"x0.148"); or 4-10d box (3"x0.128"); or 4-3"x0.131" nails 4-3" 14 gage staples, 7/6" crown	Face nail	27. Built-up girders & beams, 2" lumber layers	10d box (3"x 0.128"); or 3"x0.131" nails; or 3" 14 gage staples, 7/6" crown	24"oc, face nail at and bottom stagge opposite sides	
6.	Rafter or roof truss to top plate (See Secion 2308.7.5, Table 2308.7.5)	3-10d common (3"x0.148"); or 3-16d box (3½"x0.135"); or 4-10d box (3"x 0.128"); or 4-3"x0.131" nails	Toenail <sup>c</sup>		2-20d common (4"x0.192") 3-10d box (3"x 0.128"); or 3-3"x0.131" nails; or 3-3" 14 gage staples, 76" crown	Ends and at each s face nail	∍plic
		4-3" 14 gage staples, 7/6" crown  2-16d common (3½"x0.162"); or 3-10d box (3"x 0.128"); or		– 28. Ledger strip supporting joists or rafters	3-16d box (3½"x0.135"); or 4-10d box (3"x 0.128"); or 4-3"x0.131" nails 4-3" 14 gage staples, ½" crown	Each joist or rafte face nail	r,
7.	Roof rafters to ridge valley or hip rafters; or roof rafter to 2-inch ridge beam	3-3"x0.131" nails 3-3" 14 gage staples, 7/6" crown; or 3-10d common (3"x0.148"); or 3-16d box (3½"x0.135"); or 4-10d box (3"x 0.128"); or	End nail	29. Joist to band joist or rim joist	3-16d box (3½"x0.135"); or 4-10d box (3"x 0.128"); or 4-3"x0.131" nails 4-3" 14 gage staples, ½" crown	End nail	
	<u>Wall</u>	4-100 box (3 x 0.120 ); or 4-3"x0.131" nails 4-3" 14 gage staples, 7/6" crown	Toenail	30. Bridging or blocking to joist, rafter or truss	2-8d common (2½"x0.131"); or 2-10d box (3"x 0.128"); or 2-3"x0.131" nails	Each end, toenail	
8.	Stud to stud (not at	16d common $(3\frac{1}{2}^{1} \times 0.162^{1});$	24"oc face nail	Wood structural panels (WSP),	2-3" 14 gage staples, 7/6" crown	Intermed	
	braced wall panels)	10d box (3"x 0.128"); or 3-3"x0.131" nails 3-3" 14 gage staples, 7/6" crown	16"oc face nail	subfloor, roof and interior wall sheathing to framing and particleboard wall sheathing to framing and	6d common or deformed (2"x0.113") (subfloor and wall)	Edges Suppor (inches) (inche	rts s)
9.	Stud to stud and abutting studs at intersecting wall	16" common (3½"x0.162"); or 16d box (3½"x0.135"); or	16"oc face nail 12"oc face nail	31. 3/8" - 1/2"	8d box or deformed (2½"x0.131)(roof)	6 12	2
	corners (at braced wall panels)	3"x0.131" nails 3-3" 14 gage staples, 7/6" crown	12"oc face nail	31. 78 72	23%"x0.113" nail (subfloor and wall)	6 12	2
					$1\frac{3}{4}$ " 16 gage staple, $\frac{7}{6}$ " crown (subfloor and wall)	4 8	
10.	Built-up header (2" to 2") header)	16" common (3½"x0.162"); or 16d box (3½"x0.135");	16"oc each edge, face nail		2¾"x0.113" nail (roof) 1¾" 16 gage staple, ¼" crown (roof)	4 8 3 6	
11.	Continuous header to stud	4-8d common (2½"x0.131"); or 4-10d box (3"x0.128")	Toenail	32. <sup>1</sup> % <sub>32</sub> " - ¾ <sub>4</sub> "	8d common (2½"x0.131); or 6d deformed (2"x0.113")  23%"x0.113" nail; or	6 12	2
12.	Top plate to top plate	16" common (3½"x0.162"); or	16"oc face nail	7.00 (4.00	2" 16 gage staple, 7/6" crown  10d common (3"x0.148"); or	4 8	
		10d box (3"x 0.128"); or 3-3"x0.131" nails 3-3" 14 gage staples, 7/6" crown	12"oc face nail	33. 78" - 11/4"  Other exterior wall sheathing	8d deformed (2½"x0.131)  1½" galvanized roofing nail	6 12	· 
13.	Top plate to top plate, at end joints	8-16d box (3½"x0.135"); or 12-10d box (3"x 0.128"); or 12-3"x0.131" nails	Each side of end joint, face nail (minimum 24" lap splice length each side of end joint)	34. ½" fiberboard sheathing <sup>b</sup>	$(\overline{\mathcal{H}}_6")$ head diameter); or $1\overline{\mathcal{H}}_4"$ 16 gage staple with $\overline{\mathcal{H}}_6"$ or $1"$ crown	3 6	
14.	Bottom plate to joist, rim joist, band joist or	12-3" 14 gage staples, 7/6" crown  16" common (3½"x0.162"); or	16" oc face nail	35. <sup>25</sup> ⁄ <sub>32</sub> " fiberboard sheathing <sup>b</sup>	$1\frac{1}{2}$ " galvanized roofing nail ( $\frac{1}{16}$ " head diameter); or $1\frac{1}{4}$ " 16 gage staple with $\frac{1}{16}$ " or 1" crown	3 6	
	blocking (not at braced wall panels)	16d box (3½"x0.135"); or 3"x0.131" nails 12-3" 14 gage staples, ¾" crown	12"oc face nail	Wood structural panels combinations subfloor underlayment to framing	8d commerce (al/ll-10 121)		
15.	Bottom plate to joist, rim joist, band joist or blocking at braced wall	2-16d common (3½"x0.162"); or 3-16d box (3"x 0.135"); or 4-3"x0.131" noils	16"oc face nail	36. ¾" and less  37. ½" - 1"	8d common (2½"x0.131); or 6d deformed (2"x0.113") 8d common (2½"x0.131); or 8d deformed (2½"x0.131)	6 12	
	panels	4-3"x0.131" nails 4-3" 14 gage staples, 7/6" crown		38. 1/8" - 1/4"	10d common (3"x0.148); or 8d deformed (2½"x0.131)	6 12	2
16.	Stud to top or bottom	4-8d common (2½" x 0.131"); or 4-10d box (3"x 0.128"); or 4-3"x0.131" nails 4-3" 14 gage staples, 7%" crown; or	Toenail	Panel siding to framing  39. ½" or less	6d corrosion-resistant siding (1%"x0.106"); or 6d corrosion-resistant casing	6 12	2
	plate	2-16d common (3½"x0.162"); or 3-10d box (3"x 0.128"); or 3-3"x0.131" nails; or 3-3" 14 gage staples, ½" crown	End nail	40. 5/8"	6a corrosion-resistant casing (2"x0.099")  8d corrosion-resistant siding (23%"x0.128"); or 6d corrosion-resistant casing	6 12	?
17.	Top or bottom plate to stud	2-16d common (3½"x0.162"); or 3-10d box (3"x 0.128"); or 3-3"x0.131" nails; or 3-3" 14 gage staples, 7½" crown	End nail	Wood structural panels (WSP), subfloor, roof and interior wall sheathing to framing and particleboard wall sheathing to	(2½"x0.113)		
18.	Top plates, laps at	2-16d common (3½"x0.162"); or		framing <sup>a</sup> 41. ¼"	4d casing ( $1\frac{1}{2}$ "x0.080"); or 4d finish ( $1\frac{1}{2}$ "x0.072")	6 12	2
	corners and intersections	3-10d box (3"x 0.128"); or 3-3"x0.131" nails; or 3-3" 14 gage staples, 7/6" crown	Face nail	42. 3/8"	6d casing (2"x0.199"); or 6d finish (Panel supports at 24 inches)	6 12	2

Table 2304.10.1 Minimum Fastening Schedule (Wood)

# 1. General

following stages of construction:

3. Concrete placing operations.

1. Footing excavations completed.

2. Footing reinforcing bars in place.

4. Wood framing completed but not closed in.

- F. Reinforcina shall conform to ASTM A-615 Grade 40 or 60 for #4 and smaller and ASTM A-615 Grade 60 for #5 and larger. Epoxy coated reinforcing shall conform to ASTM A-775. See Sheet S1.2 for all required laps, bends \$ splices.
- G. All Masonry shall be laid true, level, plumb, and neatly in accordance with the plans. Use running bond, unless otherwise noted.
- H. No chipped, cracked, soiled, or otherwise imperfect block shall be used in the work.
- I. Consolidate all grout using an electric mechanical vibrator of suitable size for masonry work. Vibrate 3 minutes after grout is deposited.
- J. Maximum grout lifts shall be 5'-4" maximum. Cleanouts are not required.

# 5. Structural Steel and Miscellaneous Metals

5. High Strength Bolts:

weather or in processing areas.

- A. General: All structural steel work shall be done in accordance with the American Institude of Steel Construction Steel Construction Manual (AISC 360), Seismic Design Manual (AISC 341), and the CBC 2019 edition, chapter 22.
- B. Materials: All material specifications are to be retained by contractor and to be available to structural engineer at his request.

ASTM A-325 (120ksi)

- ASTM A-992 (50ksi) W Shapes: 2. Pipe Columns: ASTM A-53 Grade B (35ksi) 3. Hollow Structural Sections (HHS): ASTM A500 Grade B (46ksi) ASTM A-36 (36ksi) 4. Channels, Angles:
- ASTM A-307 or A-36 6. Anchor Bolts: 7. Weldina Rod: Heavily coated, conforming to American Welding Society "specifications for Arc welding electrodes" of E70xxx classification. Use low hydrogen electrodes
- for welding reinforcing bars. C. Galvanizing: Galvanize all miscellaneous iron angles, clips and other elements exposed to
- D. Shop Drawings: Submit a minimum of 2 sets of shop drawings to structural engineer for
- review (more sets shall be submitted if required by architect or general contractor).
- E. Shop Primer: Standard brand of rust inhibitive primer conforming to Federal Specification 2. Foundation Design TT-P-86E, Type III. Galvanized metal primer shall conform to Federal Specification TT-P-64LD, Type II. Do not paint areas to be welded or embedded into masonry or
- F. Erection: All field welding shall be in accordance with American Welding Society Structural Welding Code, AWS D1.1, and all applicable revisions. All welds shall be made only by welders, tackers, and welding operators who have been previously qualified by test as prescribed by the AWS Structural Welding Code, AWS D1.1, and applicable revisions. Weld electrodes shall be as specified by the American Institute of Steel Construction, "Specification for the Design, Fabrication, and Erection of Steel for Buildings": Erection shall be in accordance with the American Institute of Steel Construction "Code of Standard Practice". Adequate temporary guying and bracing shall be installed during erection where needed to secure the framing against wind \$ seismic forces, erection equipment, and erection operations. Do not use gas cutting torches for correcting fabrication errors in the structural framing. Report any errors to the structural engineer immediately. All bolts to be tightened to "snug tight" conditions,
- G. Special Inspection is required for all field welding and high strength bolt installation.
- H. Fabrication: Fabricate structural steel in accordance with AISC specifications and as indicated on the shop drawings as reviewed by the architect, structural engineer, and general contractor. Fabrication shop is to be licensed and approved by the building official. If fabrication shop is not licensed and approved, all welding performed in the shop is to be Special inspected by a licensed Special inspector.

# 6. Structural Wood

unless noted otherwise.

- A. General: All structural wood work shall be done in accordance with the National Design Specification for Wood Construction (NDS-2018 \$ SDPWS 2018) and the CBC 2019 edition, chapter 23.
- B. Structural members shall not be cut or drilled unless specifically noted or detailed.
- C. All lumber materials, unless otherwise noted or shown, shall be as follows:
- 1. Foundation sill, nailers, and ledgers embedded in or in direct contact with concrete or masonry shall be pressure treated D.F.
- 2. 6x Beam: No. 1 D.F. 3. Framing Members: a. Joists, headers, plates, subpurlins, nailers, and blocking shall be D.F. #2 or
- better unless noted otherwise. b. 2x4 studs shall be D.F. construction grade or better. c. All 2x joists and rafters are to be solid blocked at all points of bearing. Solid blocking is required at 8'-0"oc unless continuously braced on bottom edge.
- less in depth, unless noted otherwise on plans. 4. Glue-Laminated Beams: a. Glulam beams shall conform to industrial grade 24F-V8 unless noted
- otherwise. Use architectural grade where noted on architectural plans. b. All glulam beams shall be fabricated by a licensed fabricator and shall have AITC certifications.

Blocking may be omitted for ceiling joists and roof rafters eight inches and

- c. Adhesives and laminations shall conform to AITC Standard A190.1.
- 5. Prefabricated Joist Notes: a. TJI joists shall be as manufactured by Trus-Joist (by Weyerhaeuser) and shall have solid plywood or Oriented Strand Board webs as recommended by the manufacturer for the loads and spans indicated.
- b. Microlam beams shall be as manufactured by Trus-Joist (by Weyerhaeuser). Multiple pieces shall be joined as follows: 2 pieces (3) rows 16d nails @ 12"oc
- 3 or more pieces (2) rows ½ M.B. @ 12 oc c. The joists indicated on the plans are based on the manufacturer's load tables
- and must be verified by the manufacturer. Submit shop drawings and calculations for each different joist type, span, and loading condition.
- d. Install all joists and beams per the manufacturer's recommendations including all necessary stiffeners, bridging, blocking, and hangers. e. Flanges shall be designed to accommodate closely spaced plywood roof or floor diaphragm nailing where occurs on plans.
- f. Design loads shall be as indicated on plans. g. Parallam beams shall be as manufactured by Trus-Joist (by Weyerhaeuser) and shall have an E minimum = 2000 ksi.
- 6. Plywood Sheathing:
- a. Roof Sheathing shall be USDOC PSI or PS2 rated plywood or OSB as indicated on the plans. Plywood shall be fabricated using exterior glue. b. Floor Sheathing shall be USDOC PSI or PS2 rated plywood or OSB as indicated

on the plans. Glue all contact surfaces. Nail with ring shank or screw shank nails.

- c. Wall Sheathing shall be USDOC PSI or PS2 rated plywood or OSB as scheduled on the plans. Block all panel edges. d. Plywood machine nailing will be subject to satisfactory job site demonstration
- and approval by the structural engineer. The approval is subject to continued satisfactory performance. If nail heads penetrate the outer ply more than would be normal for a hand hammer or if minimum allowable edge distances are not maintained, the performance will be deemed unsatisfactory.
- e. At all unblocked plywood roof sheathing edges, provide one ply clip between
- each joist unless T & G plywood is used. f. Plywood sheet minimum dimensions shall be 24". Minimum area
- shall be 8 sa, ft. g. Face nail 2x6 T & G decking with (2) 16d to each support.
- 7. Exposed Beams and Joists: a. All exposed beams and joists shall be Select Structural D.F., Free of Heart Center and Void of Defects.
- D. Bolted Joints . Bolts shall be ASTM A-307, unless noted otherwise on plans.
- 2. Bolt Holes are to be 1/32" to 1/16" larger than bolt diameter. Locate
- 3. Washers are to be provided at each bolt head and nut. Place washer
- 4. Lag or Wood Screws shall be screwed and not driven into place. 5. Tighten bolts up snug and re-tighten at the latest practical time during
- E. Nailed Joints
- 1. Size and spacing shall be as shown on the drawings and nailing schedule, Sheet S1.3. 2. Sub-bore when nails tend to split wood. Sub-bore for 20d and larger nails. Drill diameter shall be 0.75 x nail diameter.
- 3. Nails shall be common or ICC approved plywood nails unless noted otherwise. Common nails shall have the following minimum shank diameters: 8d nail - 131" diameter 10d nail - .148" diameter 16d nail - .162" diameter
- F. Joist Hangers and Framing Connectors 1. By Simpson Strong Tie Co. ICC-ES # 209, #393, #413, #1211
- G. Fasteners 1. Expansion Anchors to be Hilti Kwik-Bolt TZ ICC-ES-ESR #1917.
- 2. Epoxy shall be two part epoxy. Use Simpson SET-XP Epoxy ICC-ESR #2508. 3. Powder driven "shot pins" to be Hilti NK72 or approved equal. For use on interior, non-bearing sill plates on slab only.

- 5. Ply nailing completed but not covered. 6. All structural work completed.
- B. Details shown on the structural drawings are typical, similar details apply to similar conditions. Contractor shall verify existing conditions. Any existing conditions requiring construction different from that shown shall be reported to the architect immediately.
- C. All drawings shall be read in conjunction with the specifications, architectural, mechanical, electrical, and all other contract drawings as applicable.

A. The contractor shall inform the Structural Engineer 48 hours in advance of reaching the

- D. Dimensions shown shall take precedence over scale on plans, sections, and details. Notes and details on the drawings shall take precedence over general notes and typical details. Discrepancies shall be brought to the attention of the architect immediately.
- E. The contract structural drawings and specifications represent the finished structure. Unless otherwise noted, they do not indicate the method of construction. The contractor shall provide all measures necessary to protect the structure, workmen, or other persons during construction. OSHA regulations are to be strictly adhered to in providing the protective measures as stated above to include, but not limited to, all shoring, bracing,
- F. Unless otherwise noted on the structural drawings, use typical details on sheet: \$1.2 as applicable.
- G. Dimensions are to be checked and verified by the contractor. Discrepancies are to be reported to the architect immediately. Discrepancies are to be resolved before proceeding with work.
- H. All Special inspections are to be performed by a licensed Special Inspector approved by the building official and the structural engineer. The Special Inspector is an Agent of the Owner and is paid by the Owner, per CBC 2019, chapter 17 "Structural Tests and Special Inspections"

Special Inspector.

and underpinning.

- A. General: All foundation work shall be done in accordance with the CBC 2019 edition, chapter 18.
- B. The Soils Report for this project was prepared by: Pacific Materials Laboratory File Number: 20-15166-2 Dated: April 6, 2020
- C. Foundation design is based on an allowable soil bearing pressure of: 1500 psf

D. Provide 90% minimum soil compaction under all slabs and structural foundation work,

- unless noted otherwise in the soils report. E. Earthwork shall be performed in accordance with the soils report and certified by a
- F. Prior to the contractor requesting a building department foundation inspection, the soils engineer (contractor, if soils report is not available) shall advise the building official in
- ) The building pad was prepared in accordance with the approved plans and the soils report (if available).
- 2) The utility trenches have been properly backfilled and compacted. 3) The foundation excayations, forming, and reinforcements comply with the approved plans and the soils report (if available).
- G. Foundation excavations shall not disturb adjacent existing structures.

# 3. Concrete

- A. General: All concrete work shall be done in accordance with the ACI Buildina Code (ACI 318-14), the ACI manuals of concrete practice, and the CBC 2019 edition,
- B. Mix Design: Concrete shall have the following 28 day compressive strengths (unless specifically noted otherwise on plans):

- .3000 psi \* Slabs on Grade, Footings.. Grade Beams, Caissons, Structural Slabs, Basement Walls.. ..3000 psi \* Retainina Walls., ..3000 psi \* \*Indicates Special Inspection is required.
- Residential: (Light Frame Construction, Two Stories or Less) Slabs on Grade, Footings.. ..2500 psi (Special Inspection is Not Required)
- Mix Designs shall be prepared by the concrete supplier or testing agency and reviewed by the structural engineer a minimum of 2 days prior to concrete pour.
- C. Cement: Shall Conform to ASTM C-150, Type 2, Low Alkali. Minimum 5 ½ sacks per
- D. Aggregate: Fine aggregate to conform to ASTM C-33. Coarse agareaate to comform to
- ASTM C-33. Maximum size to be 1" (maximum of 1 ½" will be acceptable for footings only). Aggregate gradation shall conform to ASTM C-33. Pea Gravel shall not be used.
- E. Reinforcing Materials: #4 and smaller shall conform to ASTM A-706 or A-615 Grade 40 or 60. #5 and larger shall conform to ASTM A-706 or A-615 Grade 60. Steel welded wire reinforcement shall conform to ASTM A-1064. Epoxy coated reinforcing shall conform to ASTM A-775 or A-884. See Sheet S1.2 for all required laps, bends \$ splices. #6 bars and larger are to be shop fabricated. Make all bends cold.
- F. Concrete consistency: Slump limits shall be a minimum of 2 ½" and a maximum of 4". Slabs on grade may be placed with a maximum slump of 5".
- G. Mix Designs shall be submitted as specified by the architect. If not specified, submit a minimum of two copies to the structural engineer a min. of 2 days prior to pour.
- H. Admixtures: Obtain structural engineers approval for all admixtures not noted: Flyash shall conform to ASTM C-618, type F; air entraining admixtures shall conform to ASTM C-260; water reducing admixtures shall conform to ASTM C-494 or ASTM C-1017.
- I. Check with all trades to insure proper placement of all inserts, sleeves, openings, conduits, etc. prior to pouring concrete. All penetrations through grade beams and all
- penetrations larger than 6" in diameter are to be approved by the structural engineer.
- J. All sleeves not specifically shown on the drawings shall be located by the trades involved and shall be reviewed by the structural engineer.
- K. Dry Pack: 1 Part Portland cement to 2 ½ parts sand; or use non-shrink metallic grout (submit proposal to structural engineer for review).
- L. Cover to Bars: Cover to reinforcing bars shall be as follows, unless otherwise shown or noted: Cover to reinforcing bars shall be increased by 50% (or epoxy coated reinforcing used) in corrosive environments or other severe exposure conditions.
- 1. When concrete is placed against ground . 2. When concrete is placed against forms, but after form removal will be in contact with ground .

3. Inside face of walls not exposed to the elements...

4. All others M. Curing: Keep concrete slab on grade wet for 7 days, or cover with approved curing

compound in strict accordance with manufacturer's installation recommendations.

N. Vibrate all concrete in place with a mechanical vibrator used by experienced personnel

O. Slab Finishes: Interior slab finish shall be troweled smooth. Exterior slab finish shall be

- with a light broom perpendicular to travel. Unless otherwise noted. P. Slab tolerance to be planar to within  $\frac{1}{6}$ " in 10 feet when checked with a 10' long rod in any direction.
- Q. Sill Plate Anchor Bolts: Provide minimum 5/11 diameter x 10/11 long anchor bolts spaced at 48" on center and within 12" of all sill plate ends or breaks. Provide additional anchor bolts as required by foundation plan and shear wall schedule. Anchor bolts shall be embedded 7" minimum into concrete.

# 4. Masonry

- A. General: All masonry work shall be done in accordance with the Masonry Standards Joint Committee (MSJC) Building Code requirements for masonry structures (TMS 402-13 / ACI 530-13 / ASCE 5-13), and the CBC 2019 edition, chapter 21.
- B. f'm = 1500 psi, (TMS 602 S-16 Table 2) Periodic Special Inspection is required.
- C. Concrete masonry units shall be of a quality at least equal to the requirements as set forth in ASTM C-90, medium weight units. Use open ended units with fully mortared joints. F'c = 1900 psi
- 1250 psi at 7 days and 2500 psi at 28 days. Use mix ratios of 3 parts sand and 1 part type 2 Portland cement. Do not use masonry cement. E. Grout (fine grout) shall conform to ASTM C-476 with a compressive strength of 1250 psi at 7 days and 2000 psi at 28 days. Slump limits shall be a minimum of 8" and a maximum of 11". All masonry cells are to be solid grouted unless

otherwise noted. Provide "Grout Aid" admixture in all arout. Follow manufacturer's

recommendations for quantities and procedures.

D. Mortar shall conform to ASTM C-270 type M or S with a compressive strength of

# Building Code: CBC 2019 Edition (based on IBC 2018 Edition)

# Structural Observation Program (CBC 2019; 1704.6)

- A. The owner shall employ the Engineer of Record licensed in the State of California
- who is responsible for the structural design, to do structural observation.
- B. Engineer of Record: Kevin L. Vandervort, Registration/License Number: S 3734 C. Designated Engineer to do Structural Observation: Kevin L. Vandervort, Registration/License Number: S 3734. EOR shall be contacted at least 48 hours in advance to schedule
- Structural Observations. D. The Engineer responsible for the Structural Observation, the Contractor, and appropriate
- Subcontractors shall hold a pre-construction meeting to review the details of the structural system to be structurally observed.
- E. Foundation: Structural elements to be observed prior to placement of concrete in the foundation. Footing excavations width and depth, reinforcing placement, holdown anchors and anchor bolts at shear walls, and utility line penetrations through structural elements.
- F. Floor Framing: Structural elements to be observed at each floor level. Shear wall construction, shear transfer, floor sheathing nailing.
- G. Roof Framing: Structural elements to be observed prior to roof covering. Shear wall construction, shear transfer, roof sheathing nailing, prefabricated roof truss installation
- H. FINAL OBSERVATION: Structural elements to be observed at the final observation visit. All drag straps and holdown straps installed, utility rough-ins, and all previous corrections completed.

# Project Design Gravity Loads

(where applicable).

# Roof Loads

Dead Loads: 20 psf (Composite Shinges)

# Live Loads: 20 psf (3:12 Slope) <u>Floor Loads</u>

Dead Loads: 18 psf (Carpet/Wood) Live Loads: 40 psf (Residential)

# Partition Loads N/A psf

# Project Design Lateral Loads

# Risk Category II

# (Directional Procedure, Simplified Method) (ASCE 7-16 27.4)

- Basic Wind Speed (Vult): 110 mph Exposure: **B**
- Height Above Ground Level (z): 25' Maximum Horizontal Design Pressure: 25.35 psf

## <u>Seismic Design Data</u> Equivalent Lateral Force Procedure (ASCE 7, 12.8)

- Site Latitude: 34,4358
- Site Longitude: -119.6439 Site Class: **D**
- R: **6.5** (Plywood Shear Walls)
- 0.780

ρ: **1.3** 

Sps: 1.413 Cs: **0.217** Seismic Design Category: E

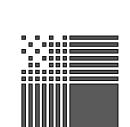
# Tests and Inspections (X)

 $V = \rho C_S M_{DL} = 0.283 M_{DL}$ 

The following items require Special Inspection per CBC 2019 edition, chapter 17. See plans and details for specific locations.

# STATEMENT OF SPECIAL INSPECTIONS

			-		
	QUIRING SPECIAL INSPECTION AND STRUCTURAL	SPECIA	L INSPECT.	STRUCT.	SOIL
	FION DURING: (TO BE SELECTED & CHECKED BY SN PROFESSIONAL OF RECORD PER CBC 2019)	CONT.	PERIODIC	OBSERV	ENG
THE BEGIC					
	PLACEMENT OF COMPACTED FILL, GRADING, AND EXCAVATIONS				X
GRADING &	HELICAL PIER INSTALLATION				^
FOUNDATION	CAISSON EXCAVATION				
	OTHER				
	MIX DESIGN				
CONCRETE	REINFORCING PLACEMENT			X	
CONCILIE	COMPRESSION TESTING				
	PNUEMATICALLY PLACED CONCRETE				
	STRUCTURAL - CONCRETE f' <sub>c</sub> ≥ 3,000 psi				
	FOUNDATION / SLAB ON GRADE. CONC. f'c = 2,500 psi			X	
	NON-SHRINK GROUT			_ ^	
	BOLTS INSTALLED IN CONCRETE				
	OTHER				
	INSTALLATION OF ADHESIVE ANCHORS, RODS & DOWELS				
	EXPANSION ANCHORS				
DRILLED	TITEN HD ANCHORS				
ANCHORS	OTHER				
	SHOP WELDING, NON-CERTIFIED & APPROVED SHOPS				
	FIELD WELDING				
	STRUCTURAL STEEL ERECTION				
STRUCTURAL STEEL &	HIGH STRENGTH BOLT CONNECTIONS				
WELDING	REINFORCING WELDING				
	METAL DECKING WELDING				
	OTHER				
	GROUT MIX DESIGN				
	REINFORCING PLACEMENT IN FOOTING				
	REINFORCING PLACEMENT IN WALL				
	SAMPLE & TEST MORTAR				
MASONRY	SAMPLE & TEST GROUT				
	MASONRY UNIT PLACING & GROUTING				
	PRISM TESTS				
	BRICK PUSH TESTS				
	OTHER STRUCTURAL FRAMING MEMBERS & CONNECTIONS				
	DIAPHRAGM NAILING			X	
WOOD	SHEAR WALLS, HOLDOWNS & SHEAR TRANSFER			X	
CONSTR.	DRAG BEAMS, STRAPS & CONNECTIONS				
· · · ·	FINAL FRAMING			X	
				Х	
MICC	OTHER  SERVING				
MISC. TESTS	SPRAY APPLIED FIREPROOFING OTHER				
12010	UTILIN				1



PACIFIC ARCHITECTS

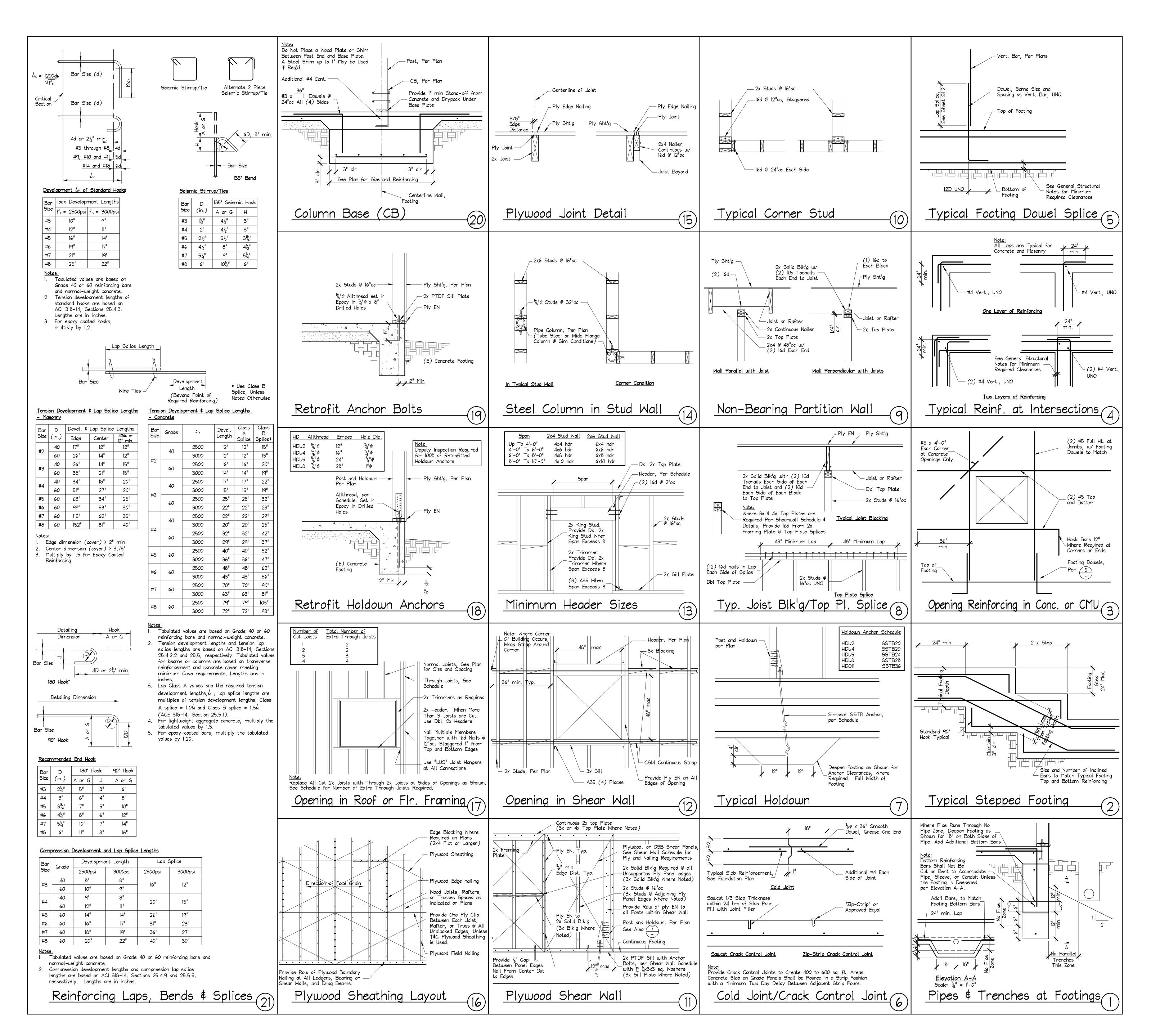
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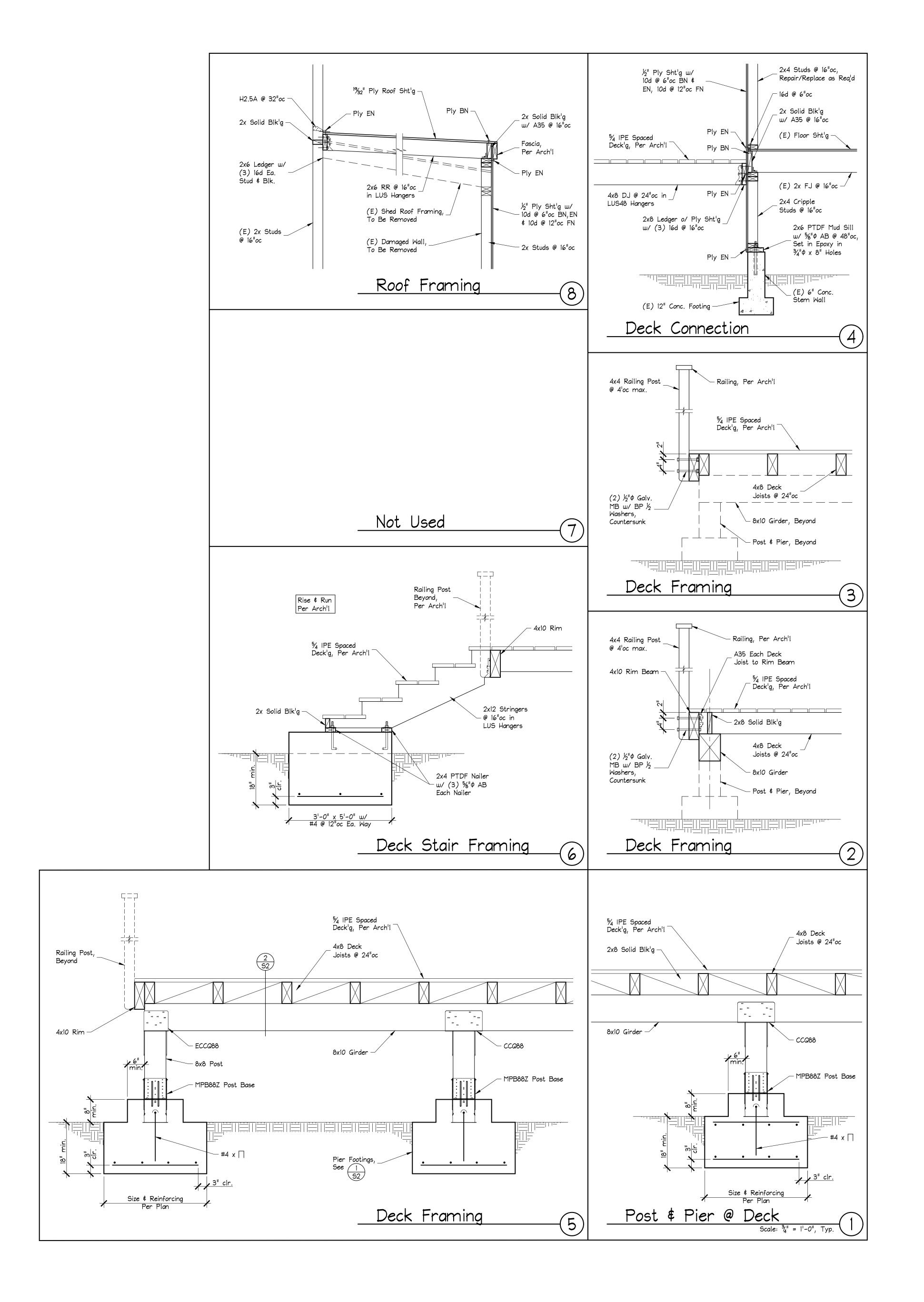
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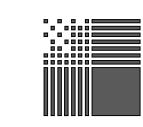


# TYPICAL FOUNDATION NOTES

- 1. Prepare Site per Soils Report By: Pacific Materials Lab Dated: April 6, 2020, File # 20-15166-2
- 2. Contractor to Verify all Dimensions and Coordinate with Architectural Plans.
- 3. All Anchor Bolts, Slab Dowels, etc. are to be Tied in Place and Holdown Anchors Set in Place by Template Prior to Requesting a Building Department Foundation
- For Shear Wall Anchor Bolting, See Shear Wall Schedule.
   Prior to the Contractor Requesting a Building Department Foundation Inspection, the Soils Engineer Shall Advise the
- Building Official in Writing that:

  a. The Building Pad was Prepared in Accordance with
- the Soils Report

  b. The Utility Trenches have been Properly Backfilled
  and Compacted
- c. The Foundation Excavations Comply with the Intent of the Soils Report.
- 6. Holdowns shall be Retightened just Prior to Covering the Wall Framing.
- 7. All Connectors and/or Fasteners in Contact with Pressure Treated Lumber shall be Stainless Steel (304 or 316) or Hot Dipped Galvanized (ASTM A-123 & A-153) G85 minimum.

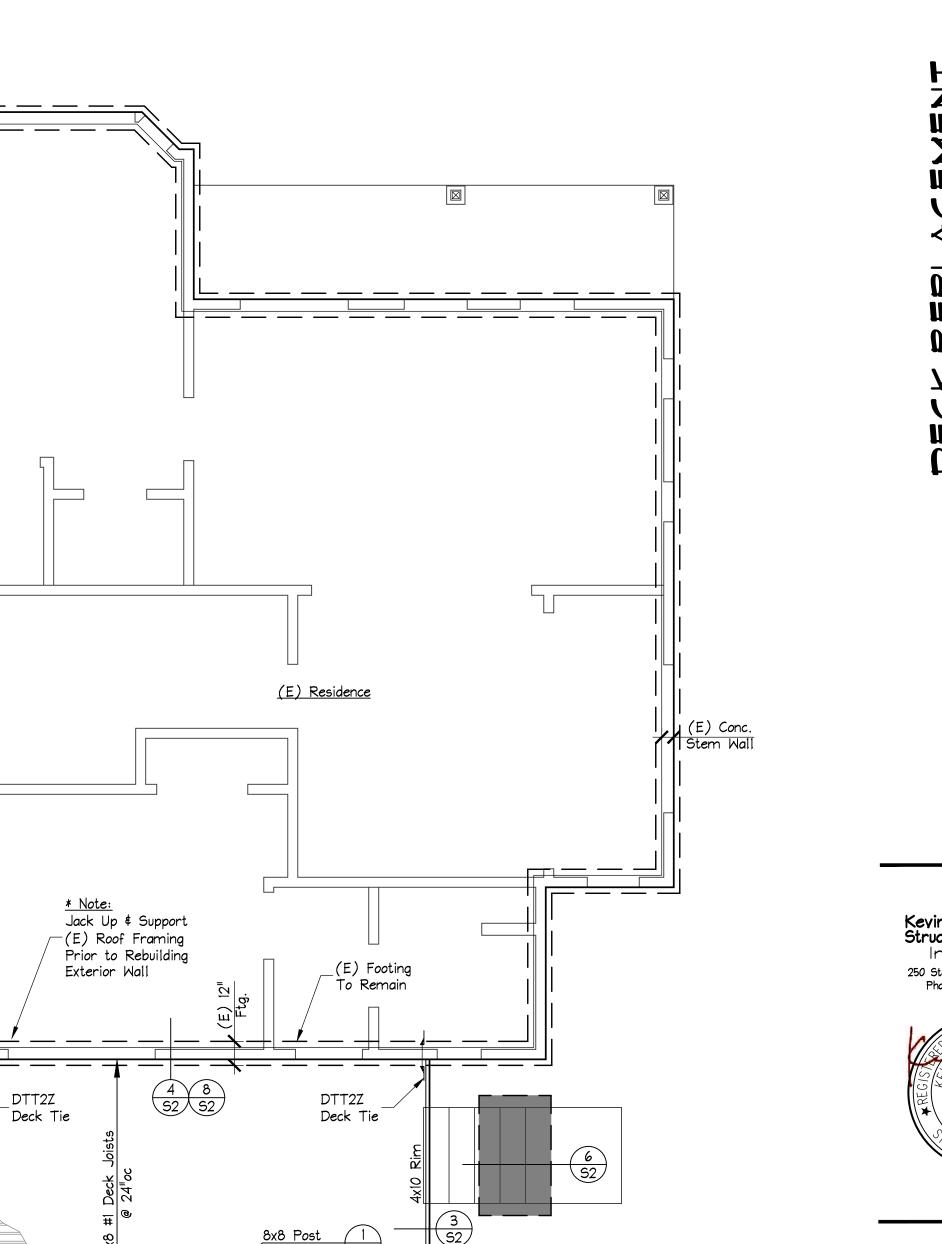


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Remove, Replace
Damaged Wall
Framing (Like
for Like)

½ IPE Spaced Deck'g, Per Arch'l

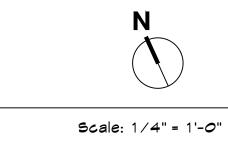
> 3'-0" Sq, Ftg. w/ -(4) #4 Ea. Way —

DECK FRAMING & FOUNDATION PLAN

Top \$ Bottom

Note: All Deck Framing Shall Be PTDF Material





NOTE:

1. EOR to be Notified 48 Hours in Advance to Schedule
Structural Observations as Noted in the Structural
Observation Program on Sheet S1.1

2. Required Special Inspections as Noted on S1.1 to be

Performed by an Approved and Licensed Special Inspector

3'-0" Sq, Ftg. w/ -(4) #4 Ea. Way Top & Bottom

Job Number :

Date :

Revision Description Date

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