

ENLARGED SITE PLAN WITH NEW ADDITION SCALE: 3/16" = 1'-0"

	AGENERAL CORPORATION WWW.AmGenCorp.com 34941 CALLE DEL SOL, CAPISTRANO BEACH, CA 92624
SUB PANEL IS TO BE GROUNDED BY 5/8 IN. X 8 FT. COPPER GROUND ROD DRIVEN INTO GROUND APROX 8'. WITH # 6 AWG SOLID COPPER WIRE TO PANEL	THESE DRAWINGS HAVE BEEN PREPARED FOR DESIGN ONLY. CIVIL, STRUCTURAL, MECHANICAL, AND OTHER RELATED ENGINEERING DESIGN AND SPECIFICATIONS ARE THE RESPONSIBILITY OF THE RESPECTIVE ENGINEERS.
WALL MOUNTED (SURFACE MOUNT) 60 AMP SUBPANEL	COMPLIANCE TO THESE DRAWINGS WILL BE THE RESPONSIBILITY OF THE
ampere minimum dedicated branch circuit and space(s) reserved to permit	GENERAL CONTRACTOR. ALL MEASUREMENTS SHALL BE VERIFIED
the installation or a branch circuit overcurrent protective device. 20 amp circuit (No other outlets).	BY THE CONTRACTORS DOING THE RESPECTIVE WORK. THESE DRAWINGS, AS INSTRUMENTS OF
dedicated for laundry	SERVICE ARE THE EXCLUSIVE PROPERTY OF THE DESIGNERS, AND ARE NOT TO BE USED IN WHOLE OR PART WITHOUT HIS EXPRESS WRITTEN PERMISSION.
(N) ELECTRIC TANKLESS W/H TO SERVE WHOLE HOUSE	UNAUTHORIZED USE OF THESE DRAWINGS WILL SUBJECT THE USER TO LEGAL REMEDY BEING SOUGHT BY THE DESIGNERS.
# 3 AWG FEEDER WIRE W/ 6 AWG GROUNDING CONDUTOR FROM MAIN PANEL TO SUBPANEL INSULATED W/ 1 1/2" PVC CONDUIT	
PROPERTY LINE	
(E) 200 A PANEL AND METER	
	REVISIONS
	6 6 22 CITY CORRECTIONS
	CLIENT INFO
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	922 MOLINO AVE LONG BEACH CA 90804
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	SHEET NAME
	ENLARGED SITE PLAN WITH NEW ADDITION
	Project number LB 1221 Date 6 13 22
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18/2022 11:32:55 PM

1 3/16" = 1'-0"

Alpie T., Pedro O

SHEET

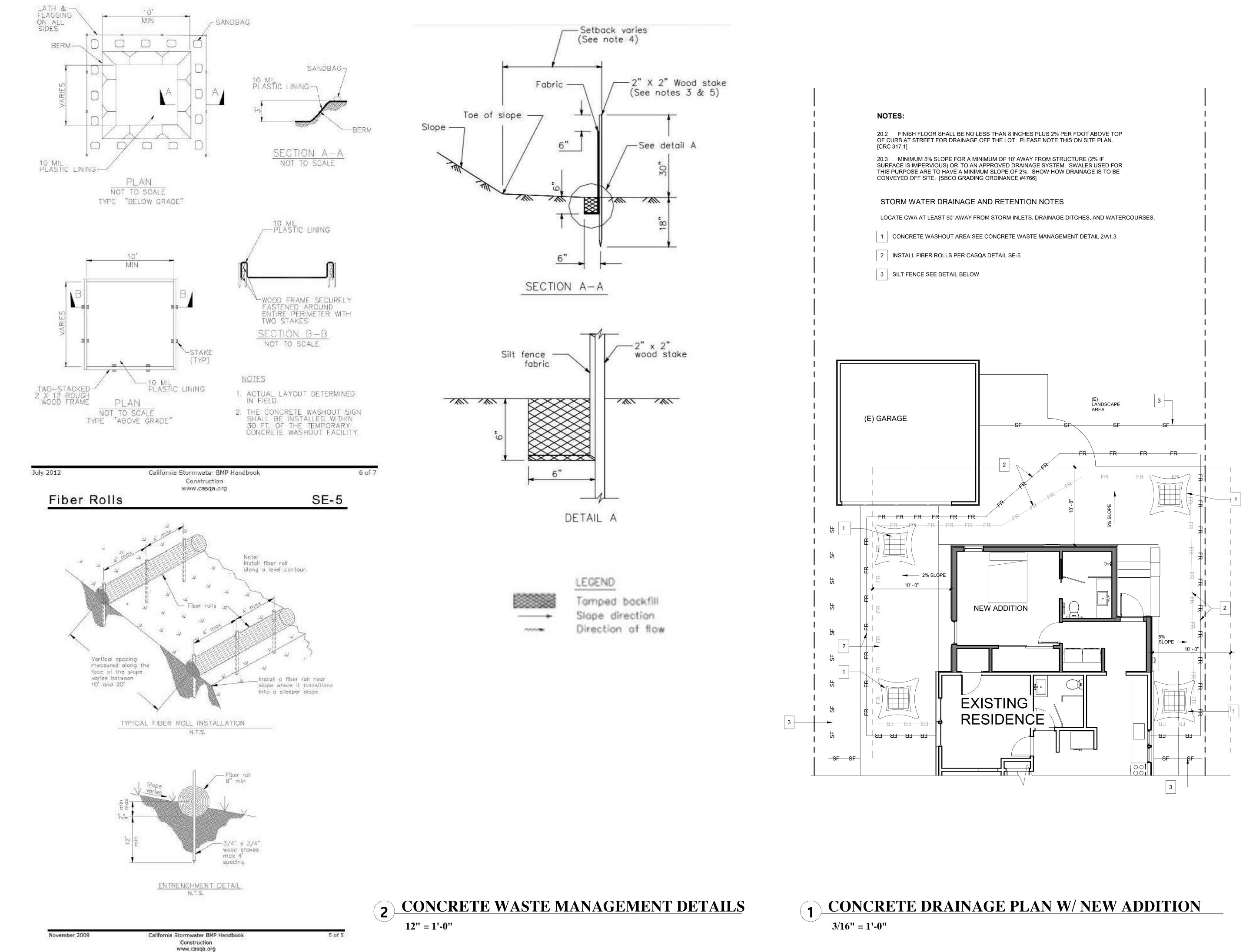
A1.1

Checker

Drawn by

Scale

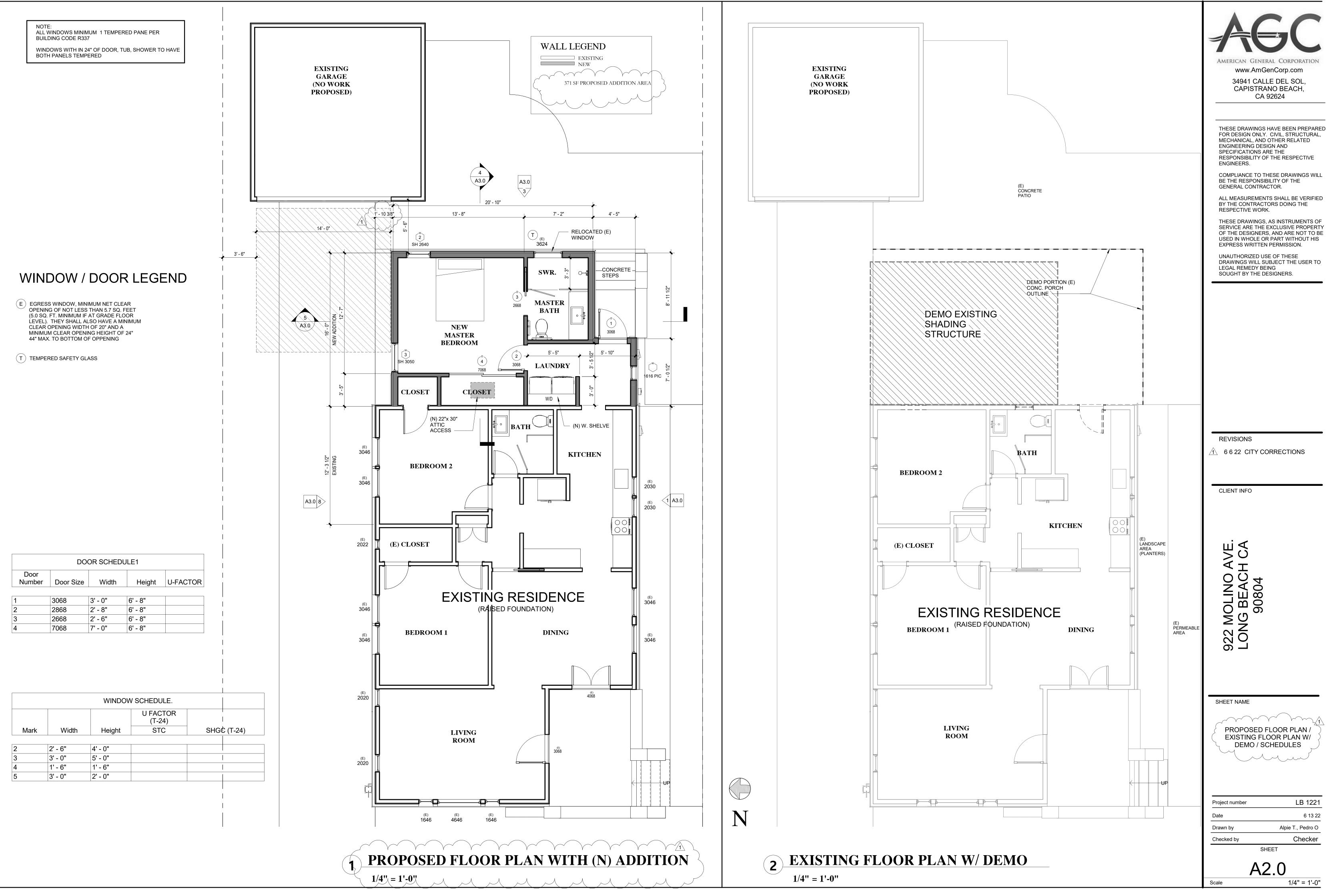
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REVISIONS 6 6 22 CITY CORRECTIONS CLIENT INFO
922 MOLINO AVE. LONG BEACH CA 90804
SHEET NAME
Project numberLB 1221Date6 13 22Drawn byAlpie T., Pedro OChecked byCheckerSHEET

A1.3

As indicated





open-end over-



existing windows and trim.

hang.



color and texture of siding.



Remove existing structure.

Entrance: No construction / no renovation.



shingle siding and horizontal siding / wainscoat.

over-hang with wood detailing.





Front of building: No construction / no renovation.

over-hang with wood detailing.



Remove existing structure.

Remove, relocate existing door.

existing wooden ends of overhang on the extension.

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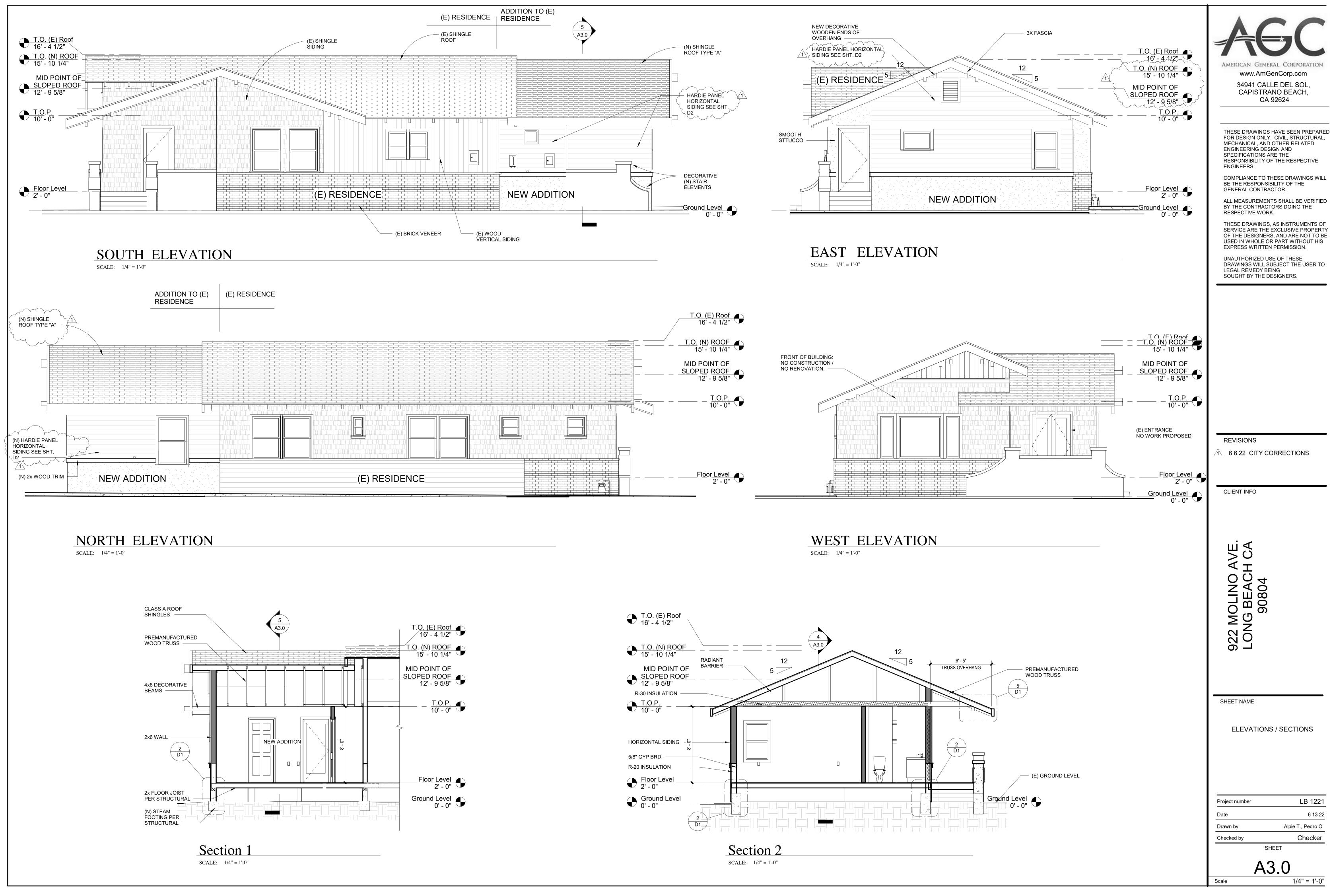
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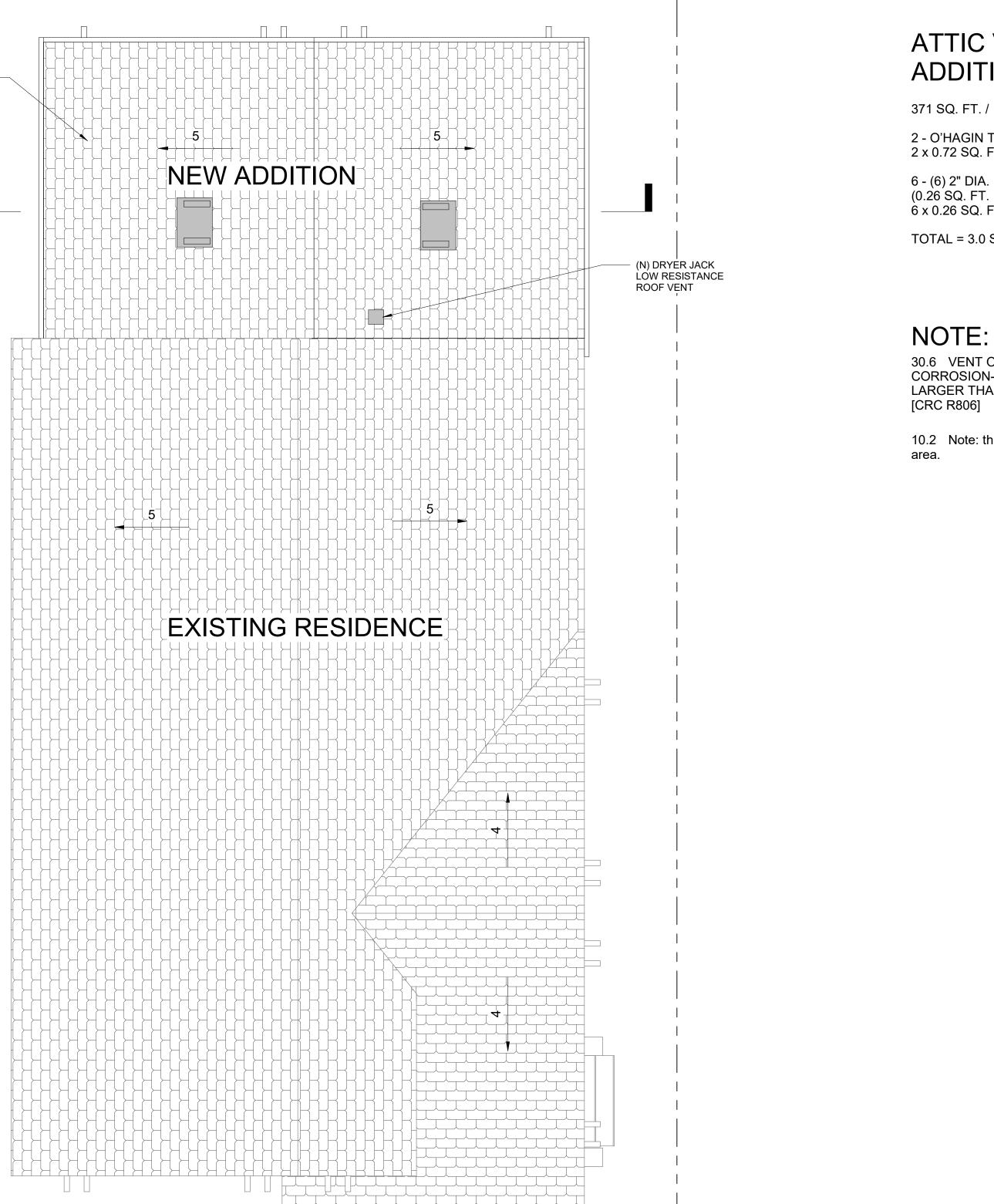
Scale

MOLINO VISUAL NOTES OF EXISTING CONDITIONS

Project number	LB 1221
Date	6 13 22
Drawn by	Alpie T., Pedro O
Checked by	Checker
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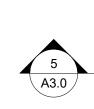
1 1/2" = 1'-0"













ROOF PLAN

1/4" = 1'-0"

ATTIC VENT CALCS. NEW ADDITION

371 SQ. FT. / 150 = 2.5 SQ. FT

2 - O'HAGIN TAPERED LOW-PROFILE (0.72 SQ. FT . EACH) 2 x 0.72 SQ. FT. = 1.44 SQ. FT.

6 - (6) 2" DIA. DRILLED HOLES - FREIZE BLOCKS EAVE VENT (0.26 SQ. FT. EACH) 6 x 0.26 SQ. FT. = 1.56 SQ. FT.

TOTAL = 3.0 SQ. FT

30.6 VENT OPENINGS ARE TO BE PROVIDED WITH CORROSION-RESISTANT SCREENING WITH OPENINGS NO LARGER THAN 1/4 INCH AND NO SMALLER THAN 1/16 INCH.

10.2 Note: this site is not located in a high fire



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CA 92624

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REVISIONS

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CLIENT INFO

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SHEET NAME

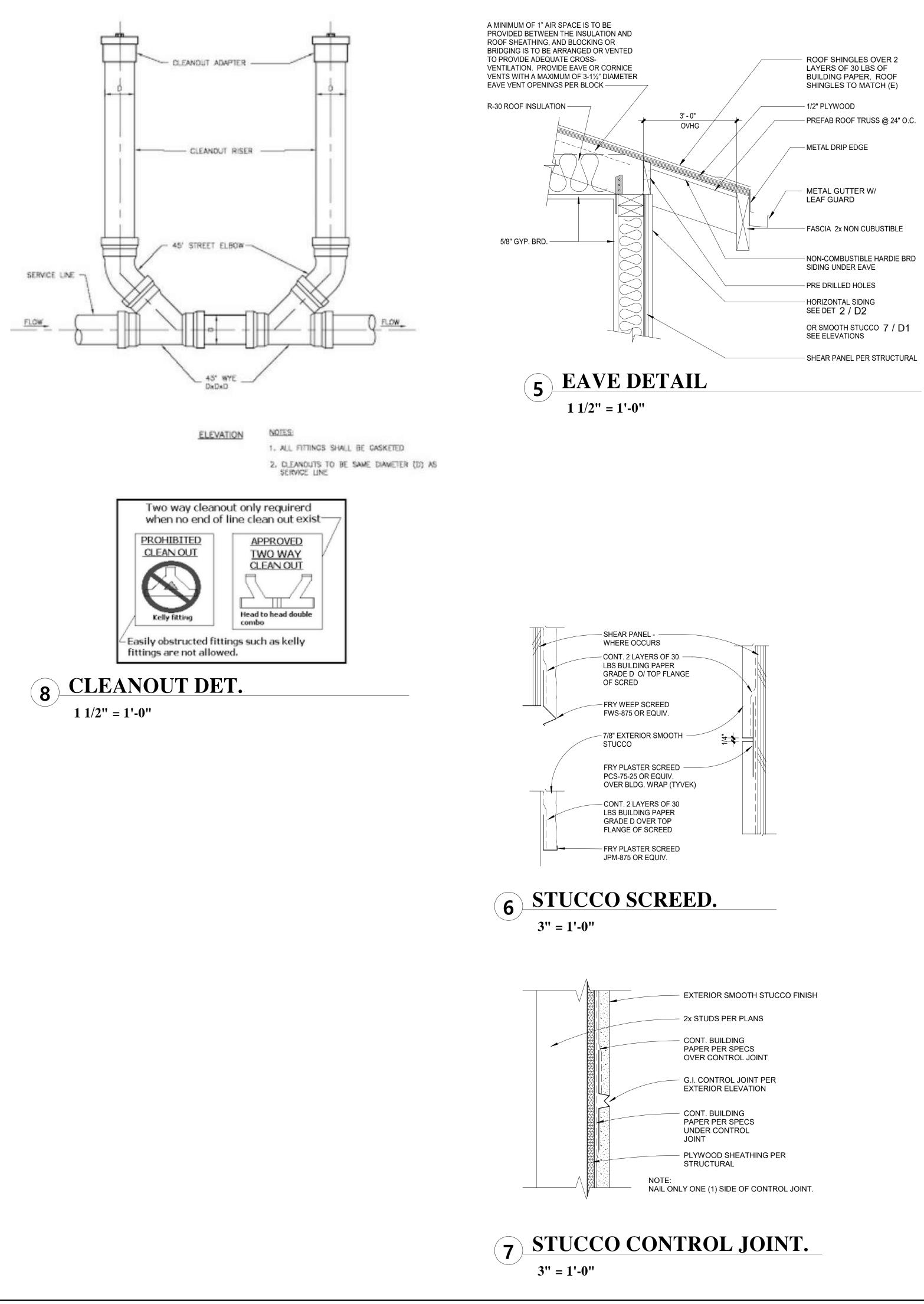
ROOF PLAN

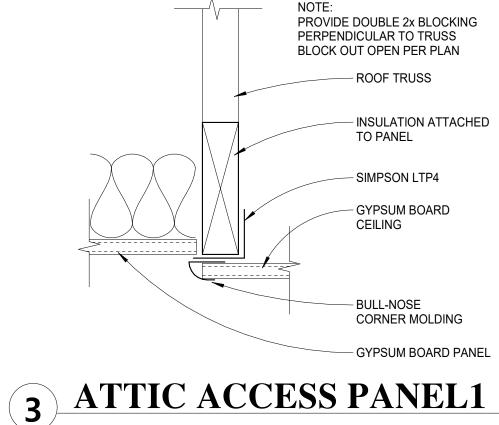
Project number	LB 1221
Date	6 13 22
Drawn by	Alpie T., Pedro O
Checked by	P.O.
	SHEET
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A5.0

Scale

1/4" = 1'-0"





3" = 1'-0"

NOTE: THIS DETAIL ILLUSTRATES TYPICAL WINDOW FLASHING CONDITIONS. ACTUAL FIELD CONDITIONS MAY VARY, MODIFICATIONS MAY BE NECESSARY TO ACCOMODATE THOSE CONDITIONS.

JAMB STRIP FLASHING: BARRIER COATED REINFORCED FLASHING MATERIAL (BCRFM) SISALKRAFT OR EQUIVALENT

- SILL STRIP FLASHING: TOP NAIL ONLY

HEAD FLASHING OVER WINDOW FLANGE (BCRFM)

- BCRFM

- WINDOW SYSTEM W/ FLANGE O/ JAMB & SILL FLASHING, PROVIDE CONT. BUTYL SEALANT BETWEEN JAMB & SILL WINDOW FLANGE & FLASHING STRIPS

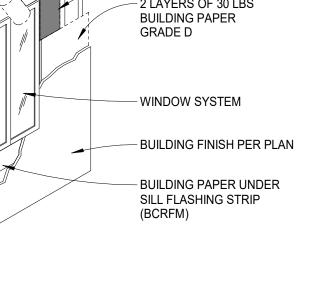
- BCRFM

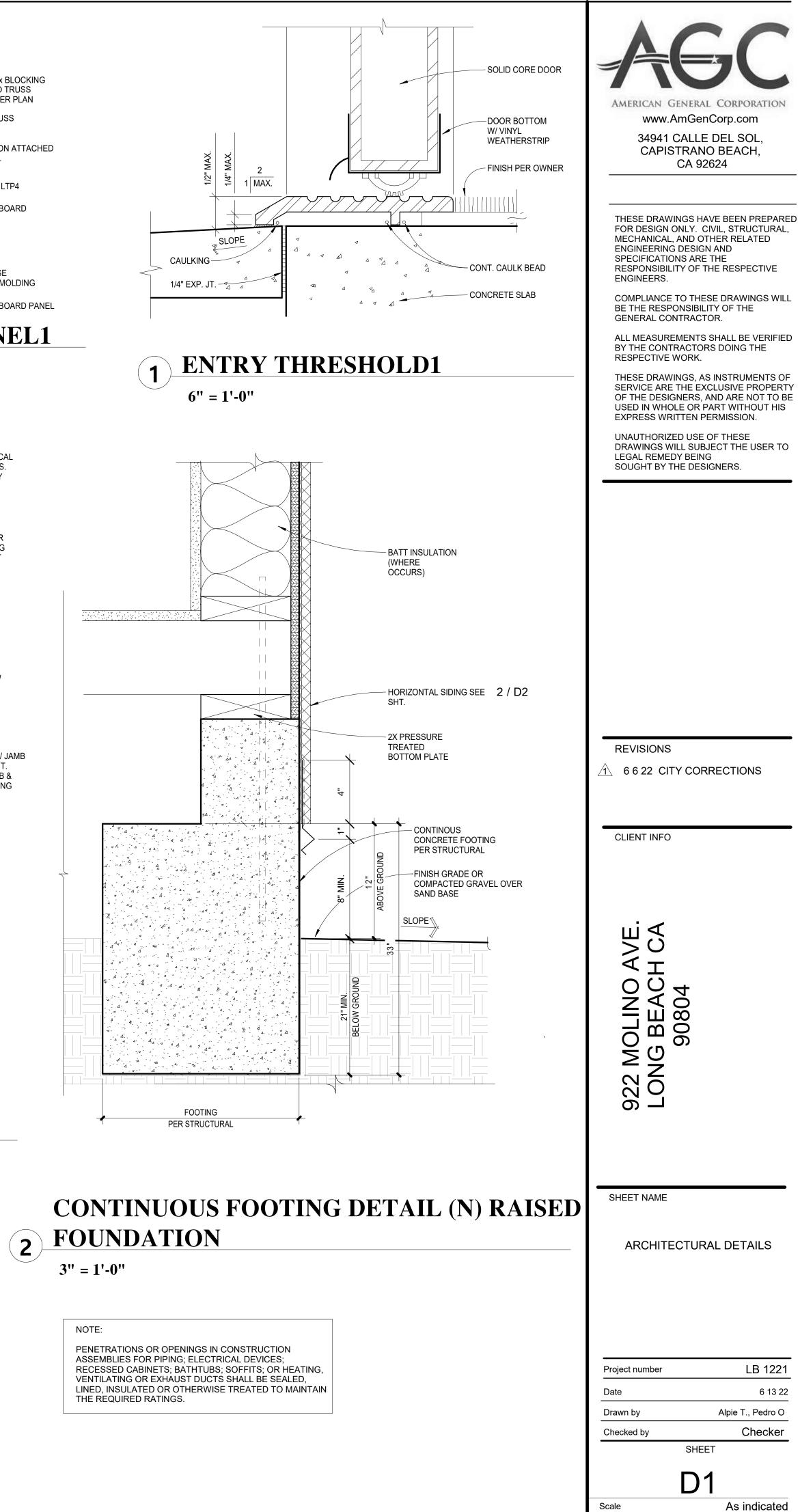
BCRFM

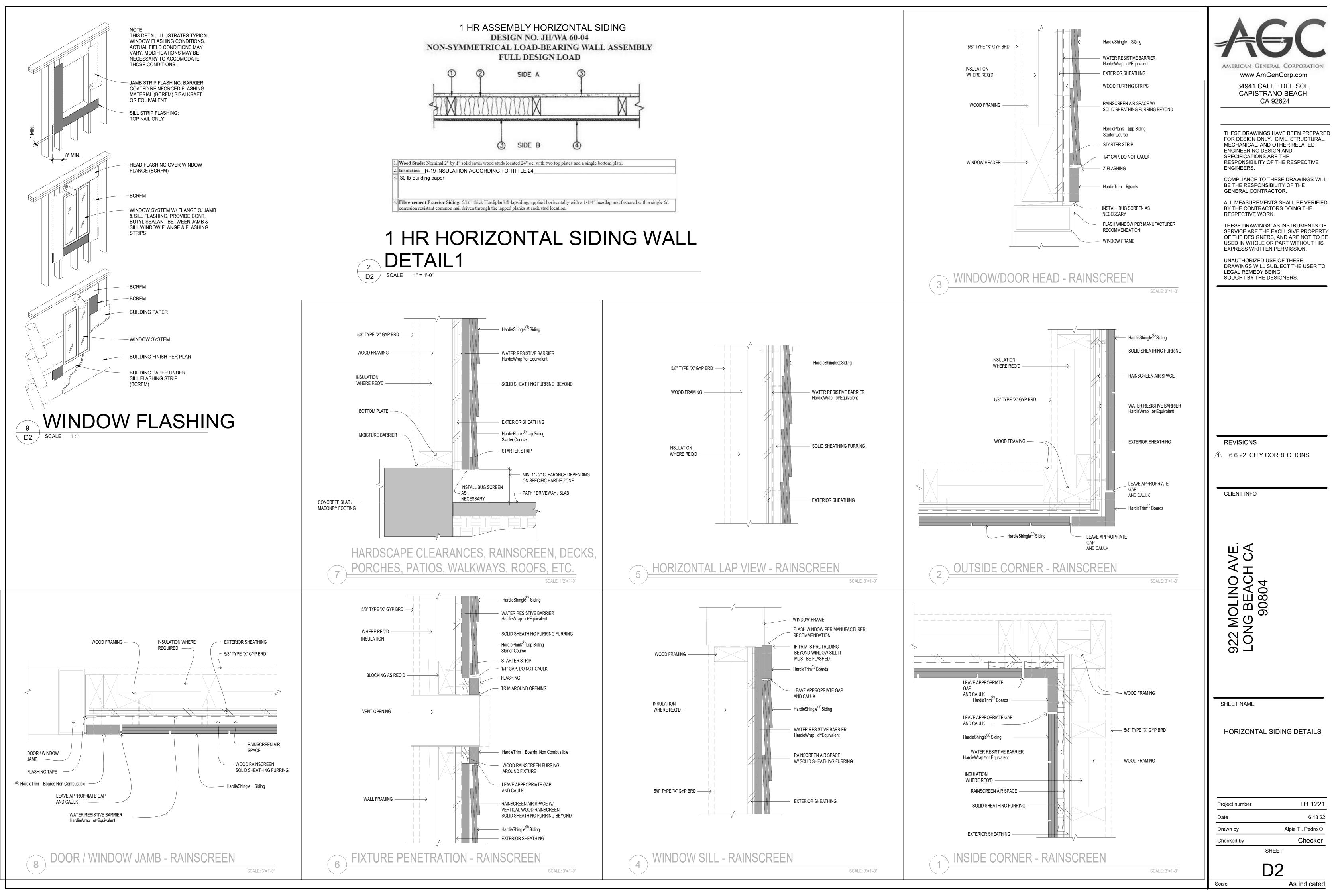
- 2 LAYERS OF 30 LBS BUILDING PAPER

4 WINDOW FLASHING

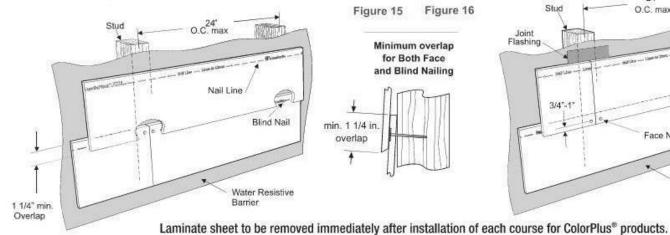
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FASTENER REQUIREMENTS continued



Pin-backed corners may be done for aesthetic purposes only. Finish nails are recommended for pin-backs. Headed siding nails are allowed. Place pin-backs no closer than 1 in. from plank ends and 3/4 in. from plank edge into min. 3/8 in. wood structural panel. Pin-backs are not a substitute for blind or face nailing.

GENERAL FASTENING REQUIREMENTS

Fasteners must be corrosion resistant, galvanized, or stainless steel. Electro-galvanized are acceptable but may exhibit premature corrosion. James Hardie recommends the use of quality, hot-dipped galvanized nails, James Hardie is not responsible for the corrosion resistance of fasteners. Stainless steel fasteners are recommended when installing James Hardie® products near the ocean, large bodies of water, or in very humid climates.

Manufacturers of ACQ and CA preservative-treated wood recommend spacer materials or other physical barriers to prevent direct contact of ACQ or CA preservative-treated wood and aluminum products. Fasteners used to attach HardieTrim Tabs to preservative-treated wood shall be of hot dipped zinc-coated galvanized steel or stainless steel and in accordance to 2009 IRC R317.3 or 2009 IBC 2304.9.5

- · Consult applicable product evaluation or listing for correct fasteners type and
- placement to achieve specified design wind loads. NOTE: Published wind loads may not be applicable to all areas where Local Building Codes have specific jurisdiction. Consult James Hardie Technical Services if you are unsure of applicable compliance documentation.
- · Drive fasteners perpendicular to siding and framing.
- · Fastener heads should fit snug against siding (no air space).
- NOTE: Whenever a structural member is present, HardiePlank should be fastened with even spacing to the structural member. The tables allowing direct to OSB or plywood should only be used when traditional framing is not available.

CUT EDGE TREATMENT

Caulk, paint or prime all field cut edges. James Hardie touch-up kits are required to touch-up ColorPlus products.

CAULKING

For best results use an Elastomeric Joint Sealant complying with ASTM C920 Grade NS, Class 25 or higher or a Latex Joint Sealant complying with ASTM C834. Caulking/Sealant must be applied in accordance with the caulking/sealant manufacturer's written instructions. Note: some caulking manufacturers do not allow "tooling".

PAINTING

DO NOT use stain, oil/alkyd base paint, or powder coating on James Hardie® Products. Factory-primed James Hardie products must be painted within 180 days of installation. 100% acrylic topcoats are recommended. Do not paint when wet. For application rates refer to paint manufacturers specifications. Back-rolling is recommended if the siding is sprayed.



PNEUMATIC FASTENING

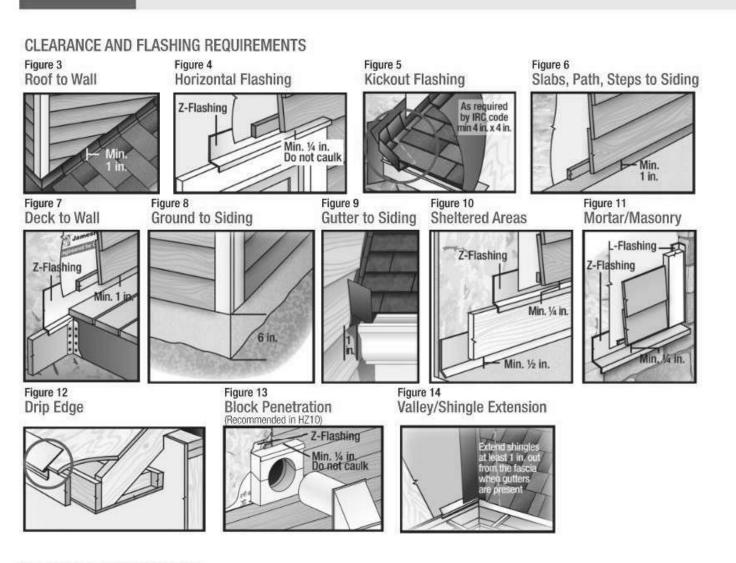






James Hardie products can be hand nailed or fastened with a pneumatic tool. Pneumatic fastening is highly recommended. Set air pressure so that the depth the nail is driven. If setting the nail depth proves difficult, choose a setting that under drives the nail. (Drive under driven nails snug with a smooth faced hammer - Does not apply for

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FASTENER REQUIREMENTS*

· HT10

Refer to the applicable ESR report online to determine which fastener meets your wind load design criteria.

Blind Nailing is the preferred method of installation for HardiePlank® lap siding products. Face nailing should only be used where required by code for high wind areas and must not be used in conjunction with Blind nalling (Please see JH Tech bulletin 17 for exemption when doing a repair).

BLIND NAILING

Nails - Wood Framing • Siding nail (0.09 in. shank x 0.221 in. HD x 2 in. long) 11ga. roofing nail (0.121 in. shank x 0.371 in. HD x 1.25 in. long)

Screws - Steel Framing Ribbed Wafer-head or equivalent (No. 8 x 1 1/4 in. long x 0.375 in. HD) Screws must penetrate 3 threads into metal framing.

Nails - Steel Framing • ET & F Panelfast® nails or equivalent (0.10 in. shank x 0.313 in. HD x 1-1/2 in. long) Nails must penetrate minimum 1/4 in. into metal framing.

OSB minimum 7/16 in. Siding nail (0.09 in. shank x 0.215 in. HD x 1-1/2 in. long Ribbed Wafer-head or equivalent (No. 8 x 1 5/8 in. long x 0.375 in. HD).

FACE NAILING Nails - Wood Framing • 6d (0.113 in. shank x 0.267 in. HD x 2 in. long) Siding nail (0.09" shank x 0.221" HD x 2" long)

Screws - Steel Framing Ribbed Bugle-head or equivalent (No. 8-18 x 1-5/8 in. long x 0.323 in. HD) Screws must penetrate 3 threads into metal framing.

Nails - Steel Framing • ET & F pin or equivalent (0.10 in. shank x 0.25 in. HD x 1-1/2 in. long) Nails must penetrate minimum 1/4 in. into metal framing.

OSB minimum 7/16 in. Siding nail (0.09 in. shank x 0.221 in. HD x 1-1/2 in. long)

*Also see General Fastening Requirements; and when considering alternative fastening options refer to James Hardie's Technical Bulletin USTB 5 - Fastening Tips for HardiePlank Lap Siding.

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HARDIEZONE.COM OR CALL 1-866-942-7343 (866-9-HARDIE)

HardiePlank® Lap Siding

STORAGE & HANDLING: Store flat and keep dry and covered prior to installation. Installing siding wet or saturated may result in shrinkage at butt joints. Carry planks on edge. Protect edges and corners from breakage. James Hardie is not responsible for damage caused by improper storage and handling of the product.



GENERAL REQUIREMENTS:

- before installing siding.
- of 6 in. in the first 10 ft.,

INSTALLATION: JOINT TREATMENT One or more of the following joint treatment options are

- A. Joint Flashing (James Hardie recommended) B. Caulking* (Caulking is not recommended for ColorPlus for aesthetic reasons as the Caulking and ColorPlus will weather
- differently. For the same reason, do not caulk nail heads on ColorPlus products.) C. "H" jointer cover

Visit jameshardiepros.com for the most recent version.



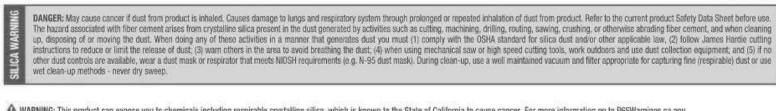
- residue or construction dust left on the product, then rinse with a garden hose.
- · Laminate sheet must be removed immediately after installation of each course.

PAINTING JAMES HARDIE® SIDING AND TRIM PRODUCTS WITH COLORPLUS® TECHNOLOGY When repainting ColorPlus products, James Hardie recommends the following regarding surface preparation and topcoat application:

- Repriming is normally not necessary 100% acrylic topcoats are recommended
- COVERAGE CHART/ESTIMATING GUIDE Number of 12 ft. planks, does not include waste

COVERAGE AREA LESS OF

ordering of product.



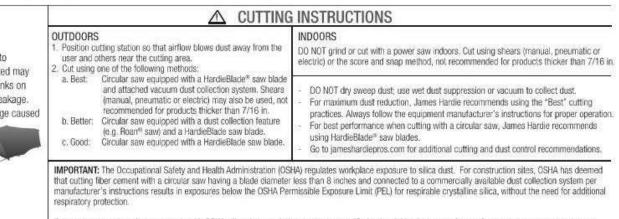
A WARNING: This product can expose you I **BECOGNITION:** I in accordance with ICC-ES Eva Dwellings, and the 2006, 2009, 2012 & 2015 I Miami-Dade County Florida NOA No. 17-0406.06, U.S. Dept. of HUD Materi

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Hardie Plank[®] Lap Siding

EFFECTIVE DECEMBER 2019

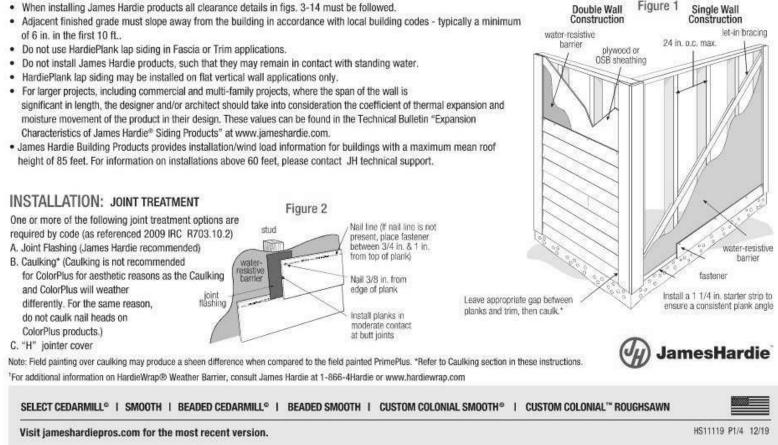
IMPORTANT: FAILURE TO FOLLOW JAMES HARDIE WRITTEN INSTALLATION INSTRUCTIONS AND COMPLY WITH APPLICABLE BUILDING CODES MAY VIOLATE LOCAL LAWS, AFFECT BUILDING ENVELOPE PERFORMANCE AND MAY AFFECT WARRANTY COVERAGE. FAILURE TO COMPLY WITH ALL HEALTH AND SAFETY REGULATIONS WHEN CUTTING AND INSTALLING THIS PRODUCT MAY RESULT IN PERSONAL INJURY. BEFORE INSTALLATION, CONFIRM YOU ARE USING THE CORRECT HARDIEZONE® PRODUCT INSTRUCTIONS BY VISITING



If you are unsure about how to comply with OSHA silica dust regulations, consult a qualified industrial hygienist or safety professional, or contact your James . Hardie technical sales representative for assistance. James Hardie makes no representation or warranty that adopting a particular cutting practice will assure your compliance with OSHA rules or other applicable laws and safety requirements.

• HardiePlank® lap siding can be installed over braced wood or steel studs, 20 gauge (33 mils) minimum to 16 gauge (54 mils) maximum, spaced a maximum of 24 in o.c. or directly to minimum 7/16 in thick OSB sheathing. See General Fastening Requirements. Irregularities in framing and sheathing can mirror through the finished application. Correct irregularities

• Information on installing James Hardie products over non-nailable substrates (ex: gypsum, foam,etc.) can be located in JH Tech Bulletin 19 at www.jamehardie.com A water-resistive barrier is required in accordance with local building code requirements. The water-resistive barrier must be appropriately installed with penetration and junction flashing in accordance with local building code requirements. James Hardie will assume no responsibility for water infiltration. James Hardie does manufacture HardieWrap® Weather Barrier, a non-woven non-perforated housewrap¹, which complies with building code requirements.



HardiePlank® Lap Siding

COLORPLUS® TECHNOLOGY CAULKING, TOUCH-UP & LAMINATE

• Care should be taken when handling and cutting James Hardie® ColorPlus® products. During installation use a wet soft cloth or soft brush to gently wipe off any

Touch up nicks, scrapes and nail heads using the ColorPlus® Technology touch-up applicator. Touch-up should be used sparingly.

If large areas require touch-up, replace the damaged area with new HardiePlank® lap siding with ColorPlus® Technology.

Terminate non-factory cut edges into trim where possible, and caulk. Color matched caulks are available from your ColorPlus[®] product dealer.

• Treat all other non-factory cut edges using the ColorPlus Technology edge coaters, available from your ColorPlus product dealer.

Note: James Hardie does not warrant the usage of third party touch-up or paints used as touch-up on James Hardie ColorPlus products.

Problems with appearance or performance arising from use of third party touch-up paints or paints used as touch-up that are not James Hardie touch-up will not be covered under the James Hardie ColorPlus Limited Finish Warranty.

Ensure the surface is clean, dry, and free of any dust, dirt, or mildew

DO NOT use stain, oil/alkyd base paint, or powder coating on James Hardie[®] Products.

Apply finish coat in accordance with paint manufacturers written instructions regarding coverage, application methods, and application temperature

DO NOT caulk nail heads when using ColorPlus products, refer to the ColorPlus touch-up section

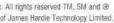
ERAGE AREA LESS OF ENINGS	meto-most station in	51/4	61/4	DIEPLANK		DINGWID	8 1/4	91/4	9 1/2	12
(1 SQ = 100 sq.ft.)	(exposure)	4	5	6	6 1/4	6 3/4	7	8	8 1/4	10 3/4
1		25 50	20	17	16 32 48	15 30 44	14	13	13	9
2		50	40	33	32	30	29	25	25	19
3		75	60	50	48	44	43	38	38	28
4		100	80	17 33 50 67	64	59	29 43 57	50	50	37
5		125	100	83	80	74	71	63	13 25 38 50 63 75	47
6		150	120	100	64 80 96	74 89	86	13 25 38 50 63 75 88	75	56
7		175	140	117	112	104	100	88	88	65
8		200	160	133	128	119	114	100	100	74
9		225	180	150	144	133	129	113	113	19 28 37 47 56 65 74 84 93
10 11		250	200	167	160	148	143	125	125	93
11		275	220	183	176	163	157	138	138	102
12 13		300	240	200	192	178	171	150	150	112
13		325	260	217	208	193	186	163	163	121
14		350	280	233	224	207	200	175	175	130
15		375	300	250	240	222	214	188	188	140
14 15 16 17		400	320	267	256	237	229	200	200	149
17		425	340	283	272	252	243	213	213	158
18 19 20		450	360	300	288	267	257	225	225	167
19		475	380	317	304	281	271	238	238	177
20		500	400	333	320	296	286	250	250	186

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LB 1221 Project number Date 6 13 22

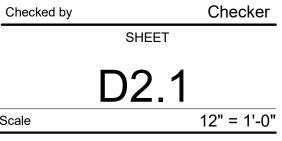
o chemicals including respirable crystalline silica, which is known to the State of California to cause cancer. For more information go to P65Warnings.ca.gov.
luation Report ESR-2290, HardiePlank® lap siding is recognized as a suitable alternate to that specified in the 2006, 2009, 2012 & 2015 International Residential Code for One and Two-Fa ternational Building Code. HardiePlank lap siding is also recognized for application in the following: City of Los Angeles Research Report No. 24862, State of Florida Product Approval FL#13
ternational balleting does name hank top adding a day recognized on appreciation in the following, day of the Angeles nearest in the stretch, date of in the an object top 200 per stretch and the stretch and

also be consulted for additional information concerning the suitability of this product for specific applications.



Product warranties, safety information and additional installation information are available at jameshardiepros.com

(VH) JamesHardie



www.AmGenCorp.com 34941 CALLE DEL SOL, CAPISTRANO BEACH, CA 92624

AMERICAN GENERAL CORPORATION

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6 6 22 CITY CORRECTIONS

CLIENT INFO



SHEET NAME

Drawn by

Scale

HORIZONTAL SIDING DETAILS

Alpie T., Pedro O

PERFORMANCE[™] tankless electric water heaters

Product	Rated Pressure	25 PSI min., 150 PSI max.
Specifications	Certifications	ETL Listed to UL 499 and CSA
(all models)	Std. Temp. Settings	120°F (Adjustable 80°F-140°F)
	Temp. Accuracy	+/-1° at steady state flow
	Turn-On	0.3 GPM

Suggested Specifications Unit shall have copper clad immersion heating element(s) with brass to UL499 and CSA C22.2 No.64.

Optional Inline Flow Regulator Enhanced outlet temperature control Install on the outlet side of the heater

ł	Limit maximum volume to the specified flow
	rate to ensure exiting temperature is within an
	acceptable range

 Flow Regulators for ½" and ¾" NPT plumbing connections

RHEEM	GPM RATING OF	CONNECTION
PART NUMBER	INSERTS PROVIDED	SIZE
RTE10001A	1.0, 1.5, 2.0	1/2* NPT

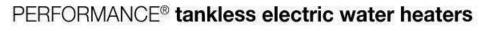
MODEL NUMBER	FLOW REGULATOR	GPM INSERT TO USE BASED ON INLET WATER TEMPERATURE					
	PART NO.	40°F	50°F	60°F	70°F		
RETEX-04	N/A	N/A	N/A	N/A	N/A		
RETEX-06	N/A	N/A	N/A	N/A	N/A		
RETEX-08	RTE10001A	1.0	1.0	1.0	1.5		
RETEX-11	RTE10001A	1.0	1.0	1.5	2.0		
RETEX-13	RTE10001A	1.0	1.0	1.5	2.0		
RETEX-18	RTE10001B	2.0	2.0	2.0	3.0		
RETEX-24	RTE10001B	2.0	2.0	3.0	4.0		
RETEX-27	RTE10001B	2.0	3.0	4.0	5.0		
RETEX-36	RTE10001B	3.0	4.0	5.0	5.0		

Rheem Water Heating · 101 Bell Road Montgomery, Alabama 36117-4305 · www.rheem.com

In keeping with its policy of continuous progress and product improvement, Rheem reserves the right to make changes without notice.



terminations for increased durability. External temperature control and display adjustable in 1° increments with a range of 80°-140°F. Display shall be capable of displaying setpoint temperature in Celsius or Fahrenheit temperature scales. Unit shall utilize a flow meter with a 0.3 gpm activation point and manage power based on actual flow rate and inlet temperature. Values should be processed 60 times per second. Unit shall be WQA certified lead free, certified





RETEX-08, RETEX-11 RETEX-13 Unique Features:

 External Adjustable Digital Thermostatic Control with LED display (+/- 1 degree Immersion two heating elements, field serviceable Simple Installation – Side 1/2" compression water connections with 1/2* NPT adapters included

RETEX-18



RETEX-24, RETEX-27 Unique Features:

 External Digital
 Thermostatic Control with LED display (+/- 1 degree modulation, adjust power to meet hot water demand Immersion three heating elements, field serviceable Bottom 3/4" NPT water

Rheem

The new degree of comfort!

Unique Features: External Digital
 Thermostatic Control with LED display (+/- 1 degree accuracy) Most advanced selfmodulation, adjust power to meet hot water demand Durable Copper Immersion four heating elements, field serviceable Simple Installation – Bottom 3/4" NPT water

SHIP WEIGHT (LBS.)

connections

ROUGHING IN DIMENSIONS (SHOWN IN INCHES)

RETEX-36

Simple Installation

Warranty

	MODEL NUMBER
1	SINGLE POIN
	RETEX-04
	RETEX-06
	MULTIPLE AP
	RETEX-08
1	RETEX-11
-	RETEX-13
	RETEX-18
-	RETEX-24
	RETEX-27
1	RETEX-36
1	Tomocratum elec

2 12/20 FORM NO. THD-PTE Rev. 2





DESCRIPTION

MODEL NUMBER

240V* 1 HEATIN

RETEX-04

RETEX-06

RETEX-18 240V* 3 HEATI

RETEX-27

RETEX-36

3

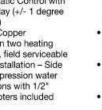
12/20 FORM NO. THD-PTE Rev. 2

240V* 4 HEATIN

officials prior to derating the electrical infrastructure.

RETEX-08 RETEX-11 RETEX-13 240V* 2 HEATING

RETEX-04, RETEX-06



PERFORMANCE[®] Tankless Electric Specifications

kW AMPS

RECOMMENDED BREAKER SIZE

 External Digital
 Thermostatic Control with LED display (+/- 1 degree accuracy) · Most advanced selfmodulation, adjust power to meet hot water demand Durable Copper Immersion two heating elements, field serviceable Simple Installation – Bottom 3/4" NPT water

Inique Features:

connections

FEATURES

* 240V units can be used on 208V single phase with 25% reduced temperature output. Please note per UL standards the rating plate and installation instructions will all be according to a 240V applied voltage. Check with local

accuracy) Most advanced self- Durable Copper Simple Installation – connections

VOLTAGE WIRE SIZE (CU) (GPM) (GPM) HEIGHT WIDTH DEPTH CONN.

3.5 29A (1x30)A 120 10 AWG 0.3 4.8 5-7/8 10-7/8 2-3/4 1/2 NPT 4.5

 6.0
 29A
 (1x30)A
 220
 10 AWG
 0.3
 4.8
 5-7/8
 10-7/8
 2-3/4
 1/2 NPT
 4.5

 7.3
 33A
 (1x40)A
 240
 8 AWG
 0.3
 4.8
 12-5/8
 8-1/4
 3-5/8
 1/2 CF
 7

 11.8
 46A
 (1x50)A
 240
 6 AWG
 0.3
 4.8
 12-5/8
 8-1/4
 3-5/8
 1/2 CF
 8.5

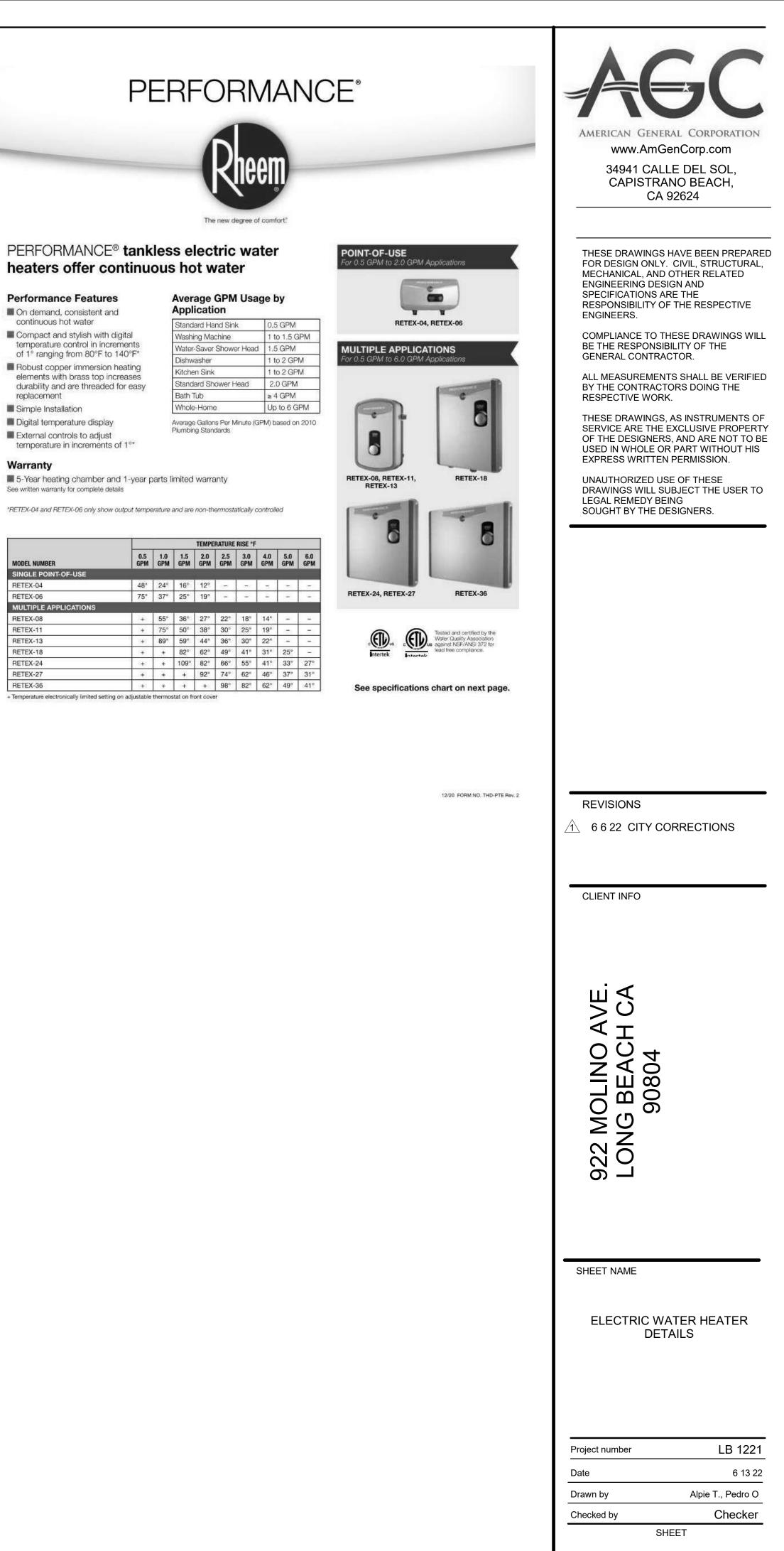
 13.0
 54A
 (1x60)A
 240
 6 AWG
 0.3
 4.8
 12-5/8
 8-1/4
 3-5/8
 1/2 CF
 8.5

18.0 75A (2x40)A 240 8 AWG 0.3 7.0 18-1/4 14-1/2 3-1/2 3/4 NPT 14.78

 24.0
 100A
 (3x40)A
 240
 8 AWG
 0.3
 7.0
 18-1/4
 17-5/8
 3-1/2
 3/4 NPT
 17.8

27.0 113A (3x40)A 240 8 AWG 0.3 7.0 18-1/4 17-5/8 3-1/2 3/4 NPT 17.8

36.0 150A (4x40)A 240 8 AWG 0.3 8.0 18-1/4 21-5/8 3-1/2 3/4 NPT 22.7



D3

ELECTRICAL SYMBOLS

			OUTDOOR LIGHTING NOTE:
O O HR	RECESSED CAN LIGHT (HIGH EFFICACY) WITH DIMMER RECESSED CAN LIGHT (HIGH EFFICACY) WITH DIMMER AND HUMIDITY RESISTANT	-Light fixtures permited In closets are as follows: (CEC 410, 16) A surface mounted or recessed incandescent fixture with a completely enclosed lamp.	60.4 Outdoor lighting permanently mounted same lot shall be high efficacy and must be co as listed below. Also, the lighting must by one
ю	WALL MTD LED LIGHT FIXTURE (HIGH EFFICACY)	A surface mounted or recessed fluorescent fixture. -Luminaire Types Not Pemitted. Incandescent luminatres with	i) Controlled by photocell and motion s
<i>⊲</i>)))	WALL MTD LED LIGHT FIXTURE W/	open or partialty enclosed lamps and pendant luminaires or lampholders shall not be permitted.	unless the override automatically reactivates the ii) Controlled by any of the following:
QQQ	M0TION SENSOR (HIGH EFFICACY) WALL MOUNTED BATH FIXTURE (HIGH EFFICACY)		 Photocell and automatic time switch allowed unless the override automatically retur its normal operation within 6 hours, or Astronomical time clock. Controls that override automatically return the astronomical programmed to automatically turn the outdoor I
-\$-	PENDANT LIGHT (HIGH EFFICACY)	ALL INSTALLED LUMINARIES TO BE HIGH EFFICACY IN ACCORDANE WITH TABLE 150.0-A	 (3) Energy management control system minimum provides the functionality of an astron the standards; meets the Installation Certificati
\bigcirc	WALL MTD WALL WASHER LIGHT FIXTURE		meets the requirements for an EMCS in Section by pass switch that allows the luminaire to be a
- \$ *	CEILING MTD WALL WASHER LIGHT FIXTURE	Each bathroom that contains a bathtub, shower or similar source of moisture shall have an exhaust fan ducted to the outside with a minimum ventilation rate of 50 cfm, The ducting shall be sized according to ASHRAE Standard 62.2 Table 7.1. (§150(0)	outdoor lighting OFF during daylight hours.
	FLUSH MTD CEILING LIGHT FIXTURE	CEnC]	
\bigcirc	(HIGH EFFICACY) EXHAUST FAN W/5 AIR CHANGES PER/HR (m Deluxe Quiet 65 CFM Ceiling Power Bath Fan. T	inimum ventilation rate of 50 cfm shall be provided and exhausted direct ested in accordance with figure #12 of ANSI/AMCA standard 210-07, ANS 300-08 and HVI standard 915/916	ly to the outside) N/ASHRAE standard 51-07, AMCA
©wн		N TO BE POSTED. Kitchen exhaust fan with an exhaust rate of 100 cfm n hood systems that vent air to the outside may be used for this purpose.	
``	POWER OF COM WIRING		
-	110V DUPLEX ELECTRICAL RECEPTICAL	All 125 Volt, 15 Amp, and 20 Amp shall	
÷	110V QUAD ELECTRICAL RECEPTICAL	be Tamper-resistant receptacles	
\ominus	110V SINGLE ELECTRICAL RECEPTICAL	Provide arc-fault circuit interrupter protection for fill outlets, not just	
220v	220V ELECTRICAL RECEPTICAL	receptacles, for the entire dwelling unit [§210.12 CEC)	
₽₽₽	110V WATER PROOF DUPLEX ELECTRICAL F	RECEPTICAL	
\bigcirc	110V FLOOR MTD DUPLEX ELECTRICAL REC	EPTICAL	
-S- ≪P	WATER PROOF SINGLE POLE LIGHT SWITCH	I	
-00-	SINGLE POLE LIGHT SWITCH		
-v-	3-WAY LIGHT SWITCH	FLUSH MTD CEILING FAN WITH LIGHT FIXTURE	
-N-4	4-WAY LIGHT SWITCH	(HIGH EFFICACY)	
∾ □	DIMMER LIGHT SWITCH		
∾ GEI	SINGLE POLE LIGHT SWITCH w/GROUND FAU	JLT INTERUPT	
-0- -0-	SINGLE POLE LIGHT SWITCH w/GROUND FAU	JLT INTERUPT	
$\neg 0 $	SINGLE POLE LIGHT SWITCH w/ VACANCY SI	ENSOR	
	JUNCTION BOX		
\bigcirc	HVAC THERMOSTAT		
(SD) CCM	SMOKE/CARBON MONOXIDE DETECTOR- 120 VOLT HARD-WIRED INTERCONNECTED W/BATTERY BACKUP		
	70.3 Clothes dryer to be vented outside back draft damper. Vent is to have maximum length including (2) 90 degree elbows of 14 fe shall be deducted for each elbow in excess o fan is proposed, please specify compatible fa 504.4]	vertical and horizontal eet. A length of 2 feet f two. If a dryer booster	

TYPICAL **ELECTRICAL/MECHANICAL** NOTES

110V ELEC & COMM RECEPTACLES ARE TO BE INSTALLED @ + 18" AFF EXCEPT WHEN OVER COUNTER TOPS - UNO

110V ELEC & COMM RECEPTACLES OVER +36" COUNTER TOPS ARE TO BE INSTALLED @ + 44" AFF - UNO

110V ELEC & COMM RECEPTACLES OVER +32" AFF COUNTER TOPS ARE TO BE INSTALLED @ +40" AFF - UNO

ALL 110V ELEC RECEPTACLES INSTALLED IN THE KITCHEN, UTILITY, BATHS, GARAGE, OR ANY INTERIOR ROOM WITH A WATER SOURCE ARE TO BE GROUND FAULT INTERRUPT DEVICES OR INSTALLED ON A GROUND FAULT INTERRUPT

ALL EXTERIOR ELEC RECEPTACLES ARE TO BE WATER PROOF ALL SWITCHES TO BE INSTALLED @ +44" AFF - UNO SWITCHES BY OWNER'S BED IN OWNER'S SUITE INSTALLED @ +36" AFF - UNO

VERIFY ALL HVAC EQUIP POWER & GAS REQ'D & LOCATIONS w/ HVAC SUB-CONTR & BLDR PRIOR TO INSTALLATION

VERIFY ALL POOL EQUIP POWER & GAS REQ'D & LOCATIONS w/ POOL SUB-CONTR & BLDR PRIOR TO INSTALLATION

FIELD VERIFY LOCATION OF ALL WALL WASHERS HOLD ALL SWITCHES AS CLOSE TO CORNER OR DOOR JAMB AS POSSIBLE

rmanently mounted to a single family dwelling or other buildings in the cy and must be controlled by an on/off switch that does not override to ON iting must by one of the following methods:

OUTDOOR LIGHTING NOTES:

cell and motion sensor. Controls that override to ON shall not be allowed ally reactivates the motion sensor within 6 hours, or matic time switch control. Controls that override to ON shall not be

utomatically return the photocontrol and automatic time switch control to clock. Controls that override to ON shall not be allowed unless the the astronomical clock its normal operation within 6 hours and which is turn the outdoor lighting OFF during daylight hours, or nt control system which meets all of the following requirements. At a

nality of an astronomical time clock in accordance with Section 110.9 of allation Certification requirements in Section 130.4 of the standards: n EMCS in Section 130.5 of the standards; does not have an override or luminaire to be always ON; and, is programmed to automatically turn the

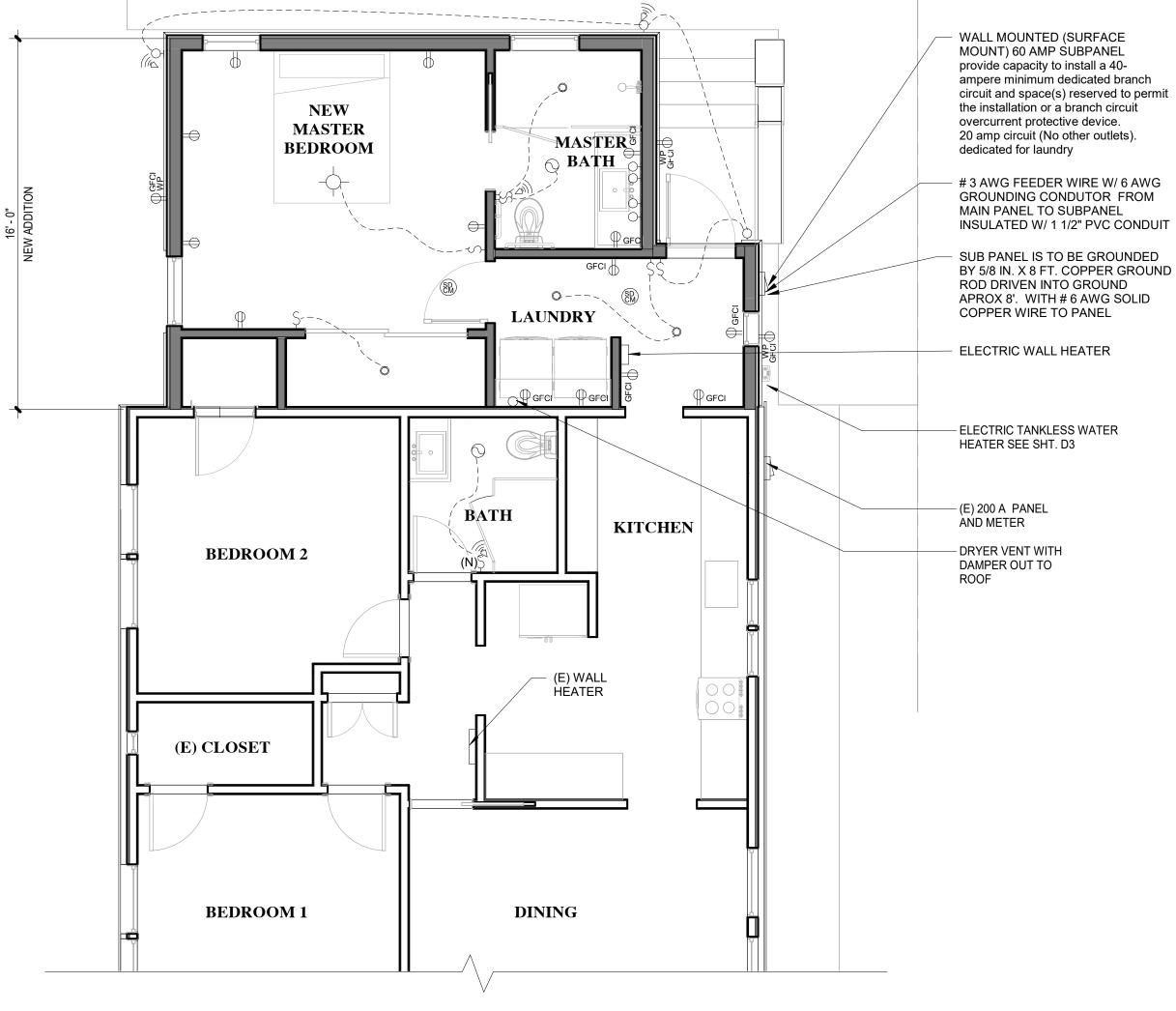
1. Unless in accordance with CEC 210.12 (A) Exception 1, 2, or 3, all 120-volt, single phase, 15 and 20 ampere branch circuits supplying outlets or devices installed in dwelling unit kitchen, family room, dining rooms, living rooms, parlors, libraries, dens, bedrooms, sunrooms, recreation rooms, closets, hallways, laundry areas, or similar rooms or areas shall be protected by a listed arcfault/branch circuit interrupter, combination type, a

branch/feeder type, a listed supplemental arc protection circuit breaker installed to provide protection of the branch 2. All exterior lighting is to be shielded and is not permitted to shine off site.

3. Luminaries providing outdoor lighting, including lighting for private patios, entrances. balconies, porches, etc...which are permanently mounted to a residential building shall be high efficacy or may be low efficacy if controlled by ON and Off switch, which does not override to ON motion sensor and photocontrol, motion sensor without override, photocontrol without owerride. (CEnC 150(k)9)

4. Lighting in attached and detached garages, laundry rooms and utility rooms shall be high efficacy luminaries and controlled by vacancy sensors. (CEnC 150(k)6)

5. All non-locking type 125-volt, 15 and 20 ampere receptacles in a dwelling unit shall be listed tamper-resistant receptacles. (Exceptions: (1) receptacles more than 5'-6" above the floor, (2) receptacles part of a luminaire or appliance, (3) a single receptacle or a duplex receptacle for two appliances that are not easily moved and located within dedicated space and are chord-and-plug connected as per CEC 400.7, and (4) non-grounding receptacles used for replacements as permitted in CEC 406.4 (D) (2) (a).



ELECTRICAL PLAN PARTIAL EXISTING WITH (N) ADDITION

1/4" = 1'-0"

(1

6.Light sources in ceiling recessed downlight luminaries_are high_ efficacy and California Certified is to be on site at the time of field inspection. Listing of CA certified fixtures is located on the California Energy Commission website at the following hyperlink: http://appliances.energy.ca.gov/advancedsearch.aspx . [California Energy Code Section 150(k)]

7. Rooms containing a bathtub, shower, spa, or similar source of moisture are to be provided with an exhaust fan with an exhaust rate of 50 cfm minimum intermittent or 20 cfm continuous, ducted to the exterior of the building. Unless it functions as a component of a whole house ventilation system, it must be controlled by a readily accessible humidistat and shall be Energy Star compliant. [CGBSC 4.506; California Energy Code Section 150(o)]

NOTES -BATHROOM LIGHT

1. The number of blank electrical boxes located more than 5 feet above finished floor and do not contain a luminarie 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)]

2. Recessed downlight in ceilings shall not contain screw base sockets; and shall contain lamps that comply with Joint Appendix JA8; and lamps shall be marked with "JA8-2016" or JA8-2016-E". [California Energy Code Section 150 (k) 1 (G)]

3. Except for luminaires in closets less than 70 SF and luminaires in hallways, all permanently installed luminaires with light sources compliant with Joint Appendix JA8 shall be controlled by dimmers or Vacancy sensors. [California Energy Code Section 150 (k) 2 (K)]

RFACE
PANEL
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evice.
outlets).

AMERICAN GENERAL CORPORATION www.AmGenCorp.com

> 34941 CALLE DEL SOL, CAPISTRANO BEACH, CA 92624

THESE DRAWINGS HAVE BEEN PREPARED FOR DESIGN ONLY. CIVIL, STRUCTURAL, MECHANICAL, AND OTHER RELATED ENGINEERING DESIGN AND SPECIFICATIONS ARE THE RESPONSIBILITY OF THE RESPECTIVE ENGINEERS.

COMPLIANCE TO THESE DRAWINGS WILL BE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR.

ALL MEASUREMENTS SHALL BE VERIFIED BY THE CONTRACTORS DOING THE RESPECTIVE WORK.

THESE DRAWINGS, AS INSTRUMENTS OF SERVICE ARE THE EXCLUSIVE PROPERTY OF THE DESIGNERS, AND ARE NOT TO BE USED IN WHOLE OR PART WITHOUT HIS EXPRESS WRITTEN PERMISSION.

UNAUTHORIZED USE OF THESE DRAWINGS WILL SUBJECT THE USER TO LEGAL REMEDY BEING SOUGHT BY THE DESIGNERS.

REVISIONS

6 6 22 CITY CORRECTIONS

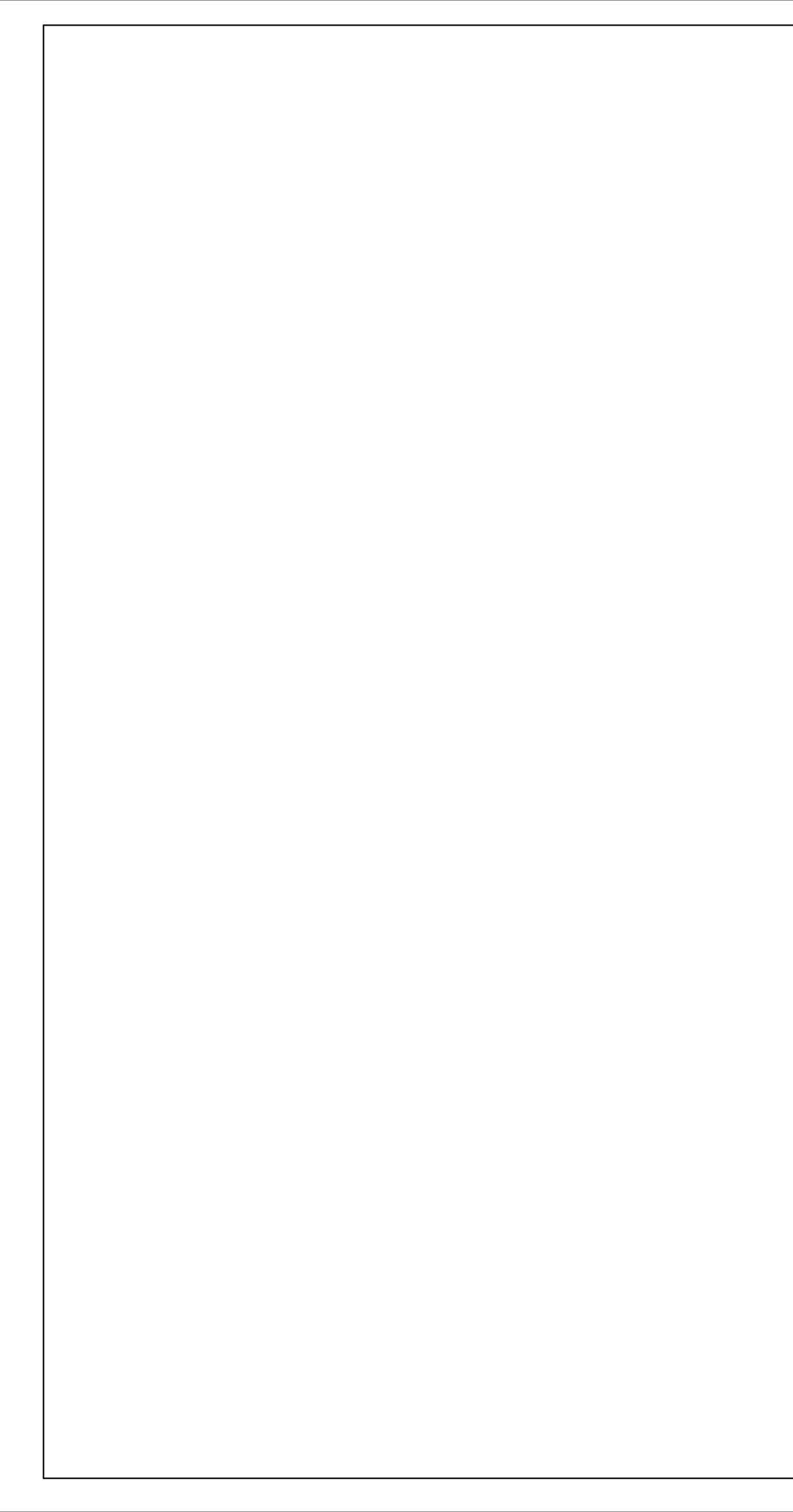
CLIENT INFO



SHEET NAME

ELECTRICAL PLAN NEW ADDITION

Project number	LB 1221
Date	6 13 22
Drawn by	Alpie T., Pedro O
Checked by	Checker
	SHEET



HIGH EFFICACY NOTES **GENERAL NOTES** such as metal halide or pressure sodium, etc. 1. Permanent vacuum breakers shall be included with all new hose bibs. Hose bibbs shall be fitted with a non-removable backflow device. 2. Provide Water Closets with a maximum flow of 1.28 gallons per flush (gpf). Astronomical time clock or Energy management control system (EMCS). 3. Provide lavatory faucets with a maximum flow of 1.2 gallons per minute (GPM) 2. High efficacy luminaires of 13 watts or higher must have electronic ballasts. (CEC150(k).1) 4. Shower head shall be approved for a maximum 1.8 gpm per 2019 California Green Building Standards code. ALSO A REQUIEMENT FOR PRIMARY DWELLING. 5. State Health and Safety Code Sec 17921.9 bans the use of chlorinated polyvinyl chloride (CPVC) and crosslinked polyethelyn (PEX) for interior water supply piping be high efficacy luminaries. 6. C Exhaust fan min. 5-Air changes per hour minimum 50 cfm. a. EXCEPTION to CEC Section 150 (k) 3 : Permanently installed luminaries that are not high 7. Smoke Alarms \bigotimes Provide smoke alarms at all of the following locations 2019 CBC Sec. R314 a. On the ceiling or wall outside of each separate sleeping area in the immediate to be always on. vicinity of bedrooms. b. In each room used for sleeping purposes. c. In each story within a dwelling unit, including basements. In dwellings or dwelling units with split levels and without an intervening door between vacancy sensors. the adjacent levels, a smoke alarm installed on the upper level shall suffice for the adjacent lower level provided that the lower level is less than one full story below the upper level. bedrooms, hallways, etc.). Smoke Alarm Notes: a. In new construction, required smoke alarms shall receive their primary power from the dimmer. Closets that are less than 70 square foot are exempt from this requirement. building wiring where such wiring is served from a commercial source and shall be equipped with a battery back-up. 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. b. Where more than one smoke alarm is required to be installed, 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 dwelling unit. The alarm shall be clearly audible in all bedrooms over background noise levels with all intervening doors closed. 8. Shower and tub-shower combination control valve must be pressure balanced. c. EXCEPTION 3 to CEC Section 150 (k) 4: Permanently installed luminaries that are not high efficacy luminaries SHALL BE ALLOWED IN CLOSETS LESS THAN 70 SQUARE FEET. 9. "PEX" piping is an approved material for water supply and distribution systems in California for residential occupancies. 10. All 120-volt, single phase, 15- and 20- ampere branch circuits supplying outlets installed in the family room, kitchen, laundry area, kitchen lighting if they are not separately switched from kitchen lighting. closets, and bedrooms are required to be protected by a listed arc fault circuit interrupter, combination-type, installed to provide protection of the branch circuit. 7. Recessed Luminaries in Insulated Ceilings: Outlets include receptacle outlets, lighting outlets, carbon monoxide and smoke alarm outlets. CEC 210.12(A) 11. Provide fluorescent lighting in the bathroom and kitchen (40 lumens per watt minimum). Conference of Building Officials. 12. All branch circuits that supply 125 volts, single-phase, 15 and 20-ampere receptacle outlets installed in dwelling unit bedrooms shall be protected by an arc-fault circuit interrupter(s). 13. Two dedicated 20-ampere branch circuits are required in kitchen/dining area. 14. Bathroom circuiting shall be either: a) 20-ampere circuit dedicated to each bathroom, or and insulation contact rated (IC-rated). b) at least one 20-ampere circuit supplying only bathroom receptacle outlets. 15. Manufactured windows shall have a label attached certified by the National Fenestration Rating Council (NFRC) and showing compliance with energy calculations. intensity discharge (HID) lams, etc). 16. Receptacle outlet locations will comply with NEC Article 210-52(a) on the same lot shall be high efficacy luminaries or controlled by a combination photo-control / motion sensor. 17. There shall be a floor or landing on each side of a door. Such floor or landing shall be at the same elevation on each side of the door. Landings shall be level except for exterior landings, which are permitted to have a slope not to exceed 0.25 unit vertical in 12 units horizontal controlled by a vacancy sensor. (2 - percent slope). 2019 CBC Sec. R311.3 Exceptions: 11. In kitchen, at least one-half of the wattage rating of the fixtures must be high efficacy. 1. A door is permitted to open at the top step of an interior flight of stairs, provided the door does not swing over the top step. 2. The landing at an exterior doorway shall not be more than 7.75 inches below the HIGH EFFICACY LAMPS top of the threshold, provided the door, other than an exterior storm or screen door, does not swing over the landing. 18. A 12" minimum access panel to bathtub trap connection is required unless plumbing is without slip joints. 19. Max. temperature of 120° to be provided by the use of pressure balance or thermostatic mixing valves. 20. Emergency escape and rescue. Basements and sleeping rooms below the fourth story above grade plane shall have at least one exterior emergency escape and rescue opening. Such openings shall open directly into a public way or to a yard or court that opens to a public way. 2019 CBC Sec. R310.2 атр епісасу

- 1. Emergency escape and rescue openings shall have a minimum net clear opening of 5.7 square feet. 2019 CBC R310.2.1
- 2. The minimum net clear opening height dimension shall be 24 inches. The minimum
- net clear opening width dimension shall be 20 inches. 2019 CBC Sec. R310.2.1
- 3. Emergency escape and rescue openings shall have the bottom of the clear opening not greater than 44 inches measured from the floor. 2019 CBC Sec. R310.2.2
- 21. All lights in closets shall comply with NEC 410-8 for clearance to combustibles.
- 22. In Kitchens and Dining areas of dwelling units a receptacle outlet shall be installed at each counter space wider than 12 inches. Receptacles shall be installed so that no point along the wall line is more than 24 inches measured horizontally from a receptacle outlet in that space. Island and peninsular countertops 12 inches by 24" long (or greater) shall have at least one receptacle. Counter top spaces separated by range tops, refrigerators, or sinks shall be considered as separate counter top spaces.
- 23. Elements of appliances which create a glow or spark must be located a minimum of 18" above the floor. Ducts through garage into dwelling shall be minimum 26-gauge galvanized steel.
- 24. Where an addition, alteration or repair to an individual dwelling unit or guestroom in Group R requires a permit, battery-operated smoke alarms shall be installed in the existing construction in accordance with the preceding item. Section R314.2.2

1. High efficacy <u>EXTERIOR</u> lighting can be fluorescent of high-intensity discharge lamp (HID)

Outdoor Lighting Requirement, all luminaries mounted to a building or to other buildings on the same lot shall be high efficacy luminaries or must be controlled by a motion sensor and controlled by one of these: photocontrol or

3. <u>NO SCREW BASE FIXTURES MEET THE HIGH EFFICACY DEFINITION.</u> Base to be 4 pin.

4. Permanently installed luminaries in bathrooms, garages, laundry rooms, and utility rooms shall

efficacy shall be allowed provided that they are <u>CONTROLLED BY AN OCCUPANT SENSOR(S)</u> certified to comply with Section 119(d). Such <u>MOTION SENSORS</u> shall not have a control that allows the luminaries to be turned on automatically or that has an override allowing the luminaries

Lighting in bathroom shall have one high efficacy luminaires and all low efficacy lighting must be controlled by

5. Permanently installed luminaries located other than in kitchens, bathrooms, garages, laundry rooms and utility rooms shall be high efficacy luminaries. (i.e. Interior rooms such as living room, dining room, Other room requirement, all luminaries shall either be high efficacy or shall be controlled by an vacancy sensor or

a. EXCEPTION 1 to CEC Section 150 (k) 4: Permanently installed luminaries that are not high efficacy luminaries shall be allowed provided that they are CONTROLLED BY A DIMMER SWITCH.

b. EXCEPTION 2 to CEC Section 150 (k) 4: Permanently installed luminaries that are not high efficacy luminaries shall be allowed provided that they are <u>CONTROLLED BY AN OCCUPANT SENSOR(S)</u> certified to comply with Section 119(d). Such motion sensors shall not have a control that allows the luminaries to be turned on automatically or that has an override allowing the luminaries to be always on.

6. Lighting in areas adjacent to the kitchen, including but not limited to dining and nook areas, are considered

a. Luminaries (Lights) recessed into insulated ceilings shall be <u>APPROVED FOR ZERO CLEARANCE</u> insulation cover (IC) by Underwriters Laboratories or other testing/rating laboratories recognized by the international

b. Shall include a label <u>CERTIFYING AIR TIGHT (AT)</u> or similar designation to show air leakage less than 2.0 CFM at 75 PASCAL's (or 1.57 lbs/ft2) WHEN TESTED IN ACCORDANCE WITH ASTM E283.

c. SHALL BE SEALED WITH A GASKET OR CAULK BETWEEN THE HOUSING AND CEILING to ensure all air leaks are sealed between the ceiling and fixture, and the conditioned and unconditioned space.

d. Recessed lights cans if installed in a ceiling with insulation, the light can must be rated to be airtight (AT-rated)

8. Permanently installed luminaires in kitchens shall be high efficacy luminaires (energy-efficacy fixtures such as Compact Fluorescent lamps (CFLs) with electronic ballasts, Fuorescent Lamps with electronic ballasts, High

9. Luminaaries provideing outdoor lighting and permanently mounted to a residential building or to other buildings

10. In bathrooms, at least one fixture shall be high efficacy and all remaining fistures ahsll be high efficacy or be

Lamp Power	Required lamp efficacy
Less than 15 watts	40 lumens/watt
15-40 watts	50 lumens/watt
More than 40 watts	60 lumens/watt
Note: Ballast wattage is not	included when determining

GENERAL CONTRACTOR.
ALL MEASUREMENTS SHALL BE VERIFIED BY THE CONTRACTORS DOING THE RESPECTIVE WORK.

COMPLIANCE TO THESE DRAWINGS WILL

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CA 92624

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MECHANICAL, AND OTHER RELATED

RESPONSIBILITY OF THE RESPECTIVE

BE THE RESPONSIBILITY OF THE

ENGINEERING DESIGN AND

SPECIFICATIONS ARE THE

ENGINEERS.

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REVISIONS

1 6 6 22 CITY CORRECTIONS

CLIENT INFO



SHEET NAME

Scale

ELECTRICAL NOTES AND GENERAL NOTES

Project number	LB 1221
Date	6 13 22
Drawn by	Alpie T., Pedro O
Checked by	Checker
	SHEET

E2



2019 CALIFORNIA GREEN BUILDING STANDARDS CODE RESIDENTIAL MANDATORY MEASURES, SHEET 1 (January 2020, Includes August 2019 Supplement

Y N/A RESPON. PARTY	CHAPTER 3 GREEN BUILDING	Y N/A RESPON. PARTY	_
	SECTION 301 GENERAL		
	301.1 SCOPE. Buildings shall be designed to include the green building measures specified as mandatory in the application checklists contained in this code. Voluntary green building measures are also included in the application checklists and may be included in the design and construction of structures covered by this code, but are not required unless adopted by a city, county, or city and county as specified in Section 101.7.		 4.106.4.2.1.1 Electric Vehicle required by Section 4.106.2.2, 1. The EV space shall be loca requirements of the Californian statements of the Californian statem
	301.1.1 Additions and alterations. [HCD] The mandatory provisions of Chapter 4 shall be applied to additions or alterations of existing residential buildings where the addition or alteration increases the building's conditioned area, volume, or size. The requirements shall apply only to and/or within the		requirements of the <i>Califor</i> from the accessible parking 2. The EV space shall be loca <i>Code</i> , Chapter 2, to the bu
	specific area of the addition or alteration. Note: On and after January 1, 2014, residential buildings undergoing permitted alterations, additions, or improvements shall replace noncompliant plumbing fixtures with water-conserving plumbing fixtures.		Exception: Electric veh California Building Code Section 4.106.4.2.2, Ite
	Plumbing fixture replacement is required prior to issuance of a certificate of final completion, certificate of occupancy or final permit approval by the local building department. See Civil Code Section 1101.1, et seq., for the definition of a noncompliant plumbing fixture, types of residential buildings affected and other important enactment dates.		Note: Electric Vehicle chargin Building Code, Chapter 11B. 4.106.4.2.2 Electric vehicle c
	301.2 LOW-RISE AND HIGH-RISE RESIDENTIAL BUILDINGS. [HCD] The provisions of		designed to comply with the for 1. The minimum length
	individual sections of CALGreen may apply to either low-rise residential buildings high-rise residential buildings, or both. Individual sections will be designated by banners to indicate where the section applies specifically to low-rise only (LR) or high-rise only (HR). When the section applies to both low-rise and high-rise buildings, no banner will be used.		 The minimum width One in every 25 EV wide minimum aisle minimum width of th a. Surface slope
	 SECTION 302 MIXED OCCUPANCY BUILDINGS 302.1 MIXED OCCUPANCY BUILDINGS. In mixed occupancy buildings, each portion of a building shall comply with the specific green building measures applicable to each specific occupancy. 		4.106.4.2.3 Single EV space volt dedicated branch circuit.
	ABBREVIATION DEFINITIONS: HCD Department of Housing and Community Development BSC California Building Standards Commission DSA-SS Division of the State Architect, Structural Safety OSUBD Office of State Architect, Structural Safety		diameter). The raceway shall cabinet, box or enclosure in cl documents shall identify the ra capacity to install a 40-ampere installation of a branch circuit
	OSHPD Office of Statewide Health Planning and Development LR Low Rise HR High Rise AA Additions and Alterations		4.106.4.2.4 Multiple EV spac termination point and propose
	N New CHAPTER 4		shall also provide information electrical load calculations to v including any on-site distribution at all required EV spaces at the 40-ampere minimum branch of installed underground, enclosed
	RESIDENTIAL MANDATORY MEASURES		time of original construction.
	DIVISION 4.1 PLANNING AND DESIGN SECTION 4.102 DEFINITIONS		_ 4.106.4.2.5 Identification. Th protective device space(s) res with the <i>California Electrical C</i>
	4.102.1 DEFINITIONS The following terms are defined in Chapter 2 (and are included here for reference)		4.106.4.3 New hotels and mo
	 FRENCH DRAIN. A trench, hole or other depressed area loosely filled with rock, gravel, fragments of brick or similar pervious material used to collect or channel drainage or runoff water. WATTLES. Wattles are used to reduce sediment in runoff. Wattles are often constructed of natural plant materials 		capable of supporting future ir of the EV spaces.
	 such as hay, straw or similar material shaped in the form of tubes and placed on a downflow slope. Wattles are also used for perimeter and inlet controls. 4.106 SITE DEVELOPMENT 		 Construction docume or facilitating future l There is no requiren are installed for use.
	 4.106.1 GENERAL. Preservation and use of available natural resources shall be accomplished through evaluation and careful planning to minimize negative effects on the site and adjacent areas. Preservation of slopes, management of storm water drainage and erosion controls shall comply with this section. 4.106.2 STORM WATER DRAINAGE AND RETENTION DURING CONSTRUCTION. Projects which disturb less 		4.106.4.3.1 Number of p on the total number of p Table 4.106.4.3.1. Calc 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 or more, shall manage storm water drainage during construction. In order to manage storm water drainage during construction, one or more of the following measures shall be implemented to prevent flooding of adjacent property, prevent erosion and retain soil runoff on the site.		TABLE 4.106.
	 Retention basins of sufficient size shall be utilized to retain storm water on the site. Where storm water is conveyed to a public drainage system, collection point, gutter or similar disposal method, water shall be filtered by use of a barrier system, wattle or other method approved by the enforcing agency. Compliance with a lawfully enacted storm water management ordinance. 		SPACES 0-9
	Note: Refer to the State Water Resources Control Board for projects which disturb one acre or more of soil, or are part of a larger common plan of development which in total disturbs one acre or more of soil.		26-50
	(Website: https://www.waterboards.ca.gov/water_issues/programs/stormwater/construction.html) 4.106.3 GRADING AND PAVING. Construction plans shall indicate how the site grading or drainage system will		51-75
	manage all surface water flows to keep water from entering buildings. Examples of methods to manage surface water include, but are not limited to, the following:		76-100 101-150
	 Swales Water collection and disposal systems French drains 		151-200 201 and over
	 Water retention gardens Other water measures which keep surface water away from buildings and aid in groundwater recharge. 		4.106.4.3.2 Electric vehicle char comply with the following:
	Exception: Additions and alterations not altering the drainage path. 4.106.4 Electric vehicle (EV) charging for new construction. New construction shall comply with Sections		1. The minimum length o 2. The minimum width of
	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 equipment (EVSE) shall be installed in accordance with the <i>California Electrical Code</i> , Article 625.		4.106.4.3.3 Single EV space req in accordance with Section 4.106.
	Exceptions: 1. 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: 1.1 Where there is no commercial power supply.		4.106.4.3.4 Multiple EV spaces r designed in accordance with Sect
	1.2 Where there is evidence substantiating that meeting the requirements will alter the local 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		4.106.4.3.5 Identification. The set 4.106.4.2.5.
	dwelling unit. 2. Accessory Dwelling Units (ADU) and Junior Accessory Dwelling Units (JADU) without additional parking facilities.		4.106.4.3.6 Accessible EV space hotels/motels and all EVSE, when stations in the <i>California Building</i>
	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 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 proposed location of an EV charger. Raceways are required to be continuous at enclosed, inaccessible or concealed areas and spaces. 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		DIVISION 4.2 ENERGY 4.201 GENERAL 4.201.1 SCOPE. For the purposes of many Commission will continue to adopt mar
	 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 raceway termination location shall be permanently and visibly marked as "EV CAPABLE". 		
	4.106.4.2 New multifamily dwellings. If residential parking is available, ten (10) percent of the total number of parking spaces on a building site, provided for all types of parking facilities, shall be electric vehicle charging spaces (EV spaces) capable of supporting future EVSE. Calculations for the required number of EV spaces shall be rounded up to the nearest whole number.		
	 Notes: 1. Construction documents are intended to demonstrate the project's capability and capacity for facilitating future EV charging. 2. There is no requirement for EV spaces to be constructed or available until EV chargers are installed for use. 		
	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 AS A MEANS TO INDICATE AREAS OF COMPLIANCE WITH THE CALIFOR	RNIA GREEN BUIL	DING STANDARDS (CALGREEN) CODE. DUE TO T

			RESPON. PARTY				Y	N/A	PART
	s (EVCS) When EV chargers are installed, EV spaces			DIVISION 4.3 WATER EFFICIENC	Y AND CONSERVA				
ted adjacent to an	ly with at least one of the following options: accessible parking space meeting the			4.303 INDOOR WATER USE 4.303.1 WATER CONSERVING PLUMBING FIXTURES AND	FITTINGS. Plumbing fixtures (wa	ter closets and			
nia Building Code, space.	Chapter 11A, to allow use of the EV charger ble route, as defined in the <i>California Building</i>			urinals) and fittings (faucets and showerheads) shall cor and 4.303.4.4.					
ding. cle charging statio , Chapter 11B, are	ns designed and constructed in compliance with the not required to comply with Section 4.106.4.2.1.1 and			Note: All noncompliant plumbing fixtures in any resident plumbing fixtures. Plumbing fixture replacement is completion, certificate of occupancy, or final perm Code Section 1101.1, et seq., for the definition of	s required prior to issuance of a ce nit approval by the local building de	rtificate of final partment. See Civil			
n 3. a stations serving r	public housing are required to comply with the California			buildings affected and other important enactment 4.303.1.1 Water Closets. The effective flush volume o		1 28 gallons per			
	V space) dimensions. The EV space shall be			flush. Tank-type water closets shall be certified to the p Specification for Tank-type Toilets.					
llowing:	an "A Sectored Construction (Sectored Sector), Trepretation (Sectored Sector), Statistical Constructions)			Note : The effective flush volume of dual flush toil of two reduced flushes and one full flush.	lets is defined as the composite, a	verage flush volume			
of each EV space spaces, but not les	shall be 18 feet (5486 mm). shall be 9 feet (2743 mm). ss than one EV space, shall have an 8-foot (2438 mm) n) wide minimum aisle shall be permitted provided the set (3658 mm)			4.303.1.2 Urinals. The effective flush volume of wall m The effective flush volume of all other urinals shall not e 4.303.1.3 Showerheads.		125 gallons per flush.			
	and the aisle shall not exceed 1 unit vertical in 48 units			4.303.1.3.1 Single Showerhead. Showerheads gallons per minute at 80 psi. Showerheads shall WaterSense Specification for Showerheads.					
he raceway shall r riginate at the mai	listed raceway capable of accommodating a 208/240- not be less than trade size 1 (nominal 1-inch inside n service or subpanel and shall terminate into a listed			4.303.1.3.2 Multiple showerheads serving one showerhead, the combined flow rate of all the sho a single valve shall not exceed 1.8 gallons per mi	owerheads and/or other shower ou nute at 80 psi, or the shower shall	tlets controlled by			
ceway termination minimum dedicate	e proposed location of the EV space. Construction point. The service panel and/or subpanel shall provide ed branch circuit and space(s) reserved to permit			allow one shower outlet to be in operation at a time Note : A hand-held shower shall be conside					
vercurrent protect	ive device. struction documents shall indicate the raceway			4.303.1.4 Faucets.					
l location of future on amperage of fut erify that the electr n transformer(s), h	EV spaces and EV chargers. Construction documents ure EVSE, raceway method(s), wiring schematics and rical panel service capacity and electrical system, have sufficient capacity to simultaneously charge all EVs			4.303.1.4.1 Residential Lavatory Faucets. The not exceed 1.2 gallons per minute at 60 psi. The not be less than 0.8 gallons per minute at 20 psi.					
rcuit. Required rac	ge of the EVSE. Plan design shall be based upon a seways and related components that are planned to be in concealed areas and spaces shall be installed at the			4.303.1.4.2 Lavatory Faucets in Common and faucets installed in common and public use areas buildings shall not exceed 0.5 gallons per minute	o (outside of dwellings or sleeping u at 60 psi.	units) in residential			
erved for future EV	subpanel circuit directory shall identify the overcurrent charging purposes as "EV CAPABLE" in accordance			4.303.1.4.3 Metering Faucets. Metering faucets more than 0.2 gallons per cycle.	s when installed in residential build	ings shall not deliver			
	nstructed hotels and motels shall provide EV spaces The construction documents shall identify the location			4.303.1.4.4 Kitchen Faucets. The maximum flo per minute at 60 psi. Kitchen faucets may tempor to exceed 2.2 gallons per minute at 60 psi, and m minute at 60 psi.	rarily increase the flow above the r	naximum rate, but not			
	,, ,, ,, ,, ,, ,, ,, ,, ,, ,, ,, ,, ,, ,, ,, ,,			Note : Where complying faucets are unavailable, reduction.	aerators or other means may be u	sed to achieve			
V charging.	o demonstrate the project's capability and capacity to be constructed or available until EV chargers			4.303.2 STANDARDS FOR PLUMBING FIXTURES AND FIT in accordance with the <i>California Plumbing Code</i> , and sl 1701.1 of the <i>California Plumbing Code</i> .	TINGS. Plumbing fixtures and fittin hall meet the applicable standards	ngs shall be installed referenced in Table			
arking spaces prov	es. The number of required EV spaces shall be based vided for all types of parking facilities in accordance with uired number of EV spaces shall be rounded up to the			NOTE: THIS TABLE COMPILES THE DATA I IS INCLUDED AS A CONVENIENCE F					
				TABLE - MAXIMUM FIXTUR	RE WATER USE				
1.3.1	NUMBER OF REQUIRED EV				FLOW RATE				
	SPACES			SHOWER HEADS (RESIDENTIAL)	1.8 GMP @ 80 PSI	8			
	0			LAVATORY FAUCETS (RESIDENTIAL)	MAX. 1.2 GPM @ 60 PSI MIN. 0.8 GPM @ 20 PSI				
	1			LAVATORY FAUCETS IN COMMON & PUBLIC USE AREAS	0.5 GPM @ 60 PSI	2			
	2			KITCHEN FAUCETS METERING FAUCETS	1.8 GPM @ 60 PSI 0.2 GAL/CYCLE				
	5			WATER CLOSET	1.28 GAL/FLUSH				
	7			URINALS	0.125 GAL/FLUSH				
	10 6 percent of total								
				4.304 OUTDOOR WATER USE 4.304.1 OUTDOOR POTABLE WATER USE IN LANDSCAPE					
ing space (EV sp	ace) dimensions. The EV spaces shall be designed to			a local water efficient landscape ordinance or the current Califo Efficient Landscape Ordinance (MWELO), whichever is more s		ces model water			
	nall be 18 feet (5486mm). all be 9 feet (2743mm)			NOTES: 1. The Model Water Efficient Landscape Ordinance (M)	NELO) is leasted in the Colifornia	Codo Poquilationo			
ired. When a sing	le EV space is required, the EV space shall be designed	8		Title 23, Chapter 2.7, Division 2. MWELO and suppo available at: https://www.water.ca.gov/					
quired. When mu	ultiple EV spaces are required, the EV spaces shall be								
on 4.106.4.2.4. rvice panels or sul	p-panels shall be identified in accordance with Section								
s. In addition to th nstalled, shall con ode, Chapter 11B	e requirements in Section 4.106.4.3, EV spaces for apply with the accessibility provisions for the EV charging								
EFFICIEN	CY								
atory energy efficio datory standards.	ency standards in this code, the California Energy								

4	0
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•	

EFFICIENCY

agency.

Exceptions:

management ordinance.

close to the jobsite.

1. Excavated soil and land-clearing debris.

reuse on the project or salvage for future use or sale.

Y = YES N/A = NOT APPLICABLE RESPON. PARTY = RESPONSIBLE PARTY (ie: ARCHITECT, ENGINEER, OWNER, CONTRACTOR, INSPECTOR ETC.)



AMERICAN GENERAL CORPORATION www.AmGenCorp.com

34941 CALLE DEL SOL, CAPISTRANO BEACH, CA 92624

THESE DRAWINGS HAVE BEEN PREPARED FOR DESIGN ONLY. CIVIL, STRUCTURAL, MECHANICAL, AND OTHER RELATED ENGINEERING DESIGN AND SPECIFICATIONS ARE THE RESPONSIBILITY OF THE RESPECTIVE ENGINEERS.

COMPLIANCE TO THESE DRAWINGS WILL BE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR.

ALL MEASUREMENTS SHALL BE VERIFIED BY THE CONTRACTORS DOING THE RESPECTIVE WORK.

THESE DRAWINGS, AS INSTRUMENTS OF SERVICE ARE THE EXCLUSIVE PROPERTY OF THE DESIGNERS, AND ARE NOT TO BE USED IN WHOLE OR PART WITHOUT HIS EXPRESS WRITTEN PERMISSION.

UNAUTHORIZED USE OF THESE DRAWINGS WILL SUBJECT THE USER TO LEGAL REMEDY BEING SOUGHT BY THE DESIGNERS.

 Specify if construction and demolition waste materials will be sorted on-site (source separated) or bulk mixed (single stream).
 Identify diversion facilities where the construction and demolition waste material collected will be

1. Identify the construction and demolition waste materials to be diverted from disposal by recycling,

DIVISION 4.4 MATERIAL CONSERVATION AND RESOURCE

4.406.1 RODENT PROOFING. Annular spaces around pipes, electric cables, conduits or other openings in

sole/bottom plates at exterior walls shall be protected against the passage of rodents by closing such

openings with cement mortar, concrete masonry or a similar method acceptable to the enforcing

4.408 CONSTRUCTION WASTE REDUCTION, DISPOSAL AND RECYCLING

percent of the non-hazardous construction and demolition waste in accordance with either Section 4.408.2, 4.408.3 or 4.408.4, or meet a more stringent local construction and demolition waste

4.408.1 CONSTRUCTION WASTE MANAGEMENT. Recycle and/or salvage for reuse a minimum of 65

2. Alternate waste reduction methods developed by working with local agencies if diversion or

3. The enforcing agency may make exceptions to the requirements of this section when isolated

4.408.2 CONSTRUCTION WASTE MANAGEMENT PLAN. Submit a construction waste management plan

necessary and shall be available during construction for examination by the enforcing agency.

jobsites are located in areas beyond the haul boundaries of the diversion facility.

recycle facilities capable of compliance with this item do not exist or are not located reasonably

in conformance with Items 1 through 5. The construction waste management plan shall be updated as

4.406 ENHANCED DURABILITY AND REDUCED MAINTENANCE

taken. 4. Identify construction methods employed to reduce the amount of construction and demolition waste

generated.5. Specify that the amount of construction and demolition waste materials diverted shall be calculated by weight or volume, but not by both.

4.408.3 WASTE MANAGEMENT COMPANY. Utilize a waste management company, approved by the enforcing agency, which can provide verifiable documentation that the percentage of construction and demolition waste material diverted from the landfill complies with Section 4.408.1.

Note: The owner or contractor may make the determination if the construction and demolition waste materials will be diverted by a waste management company.

4.408.4 WASTE STREAM REDUCTION ALTERNATIVE [LR]. Projects that generate a total combined weight of construction and demolition waste disposed of in landfills, which do not exceed 3.4 lbs./sq.ft. of the building area shall meet the minimum 65% construction waste reduction requirement in Section 4.408.1

4.408.4.1 WASTE STREAM REDUCTION ALTERNATIVE. Projects that generate a total combined weight of construction and demolition waste disposed of in landfills, which do not exceed 2 pounds per square foot of the building area, shall meet the minimum 65% construction waste reduction requirement in Section 4.408.1

4.408.5 DOCUMENTATION. Documentation shall be provided to the enforcing agency which demonstrates compliance with Section 4.408.2, items 1 through 5, Section 4.408.3 or Section 4.408.4.

Notes:

- 1. Sample forms found in "A Guide to the California Green Building Standards Code
- (Residential)" located at www.hcd.ca.gov/CALGreen.html may be used to assist in documenting compliance with this section.

 Mixed construction and demolition debris (C & D) processors can be located at the California Department of Resources Recycling and Recovery (CalRecycle).

4.410 BUILDING MAINTENANCE AND OPERATION

4.410.1 OPERATION AND MAINTENANCE MANUAL. At the time of final inspection, a manual, compact disc, web-based reference or other media acceptable to the enforcing agency which includes all of the following shall be placed in the building:

- Directions to the owner or occupant that the manual shall remain with the building throughout the life cycle of the structure.
- 2. Operation and maintenance instructions for the following:
 - Equipment and appliances, including water-saving devices and systems, HVAC systems, photovoltaic systems, electric vehicle chargers, water-heating systems and other major appliances and equipment.
 - b. Roof and yard drainage, including gutters and downspouts.c. Space conditioning systems, including condensers and air filters.
- d. Landscape irrigation systems.
- e. Water reuse systems.
- Information from local utility, water and waste recovery providers on methods to further reduce resource consumption, including recycle programs and locations.
- Public transportation and/or carpool options available in the area.
- 5. Educational material on the positive impacts of an interior relative humidity between 30-60 percent and what methods an occupant may use to maintain the relative humidity level in that range.
- Information about water-conserving landscape and irrigation design and controllers which conserve water.
- Instructions for maintaining gutters and downspouts and the importance of diverting water at least 5 feet away from the foundation.
- 8. Information on required routine maintenance measures, including, but not limited to, caulking,
- painting, grading around the building, etc. 9. Information about state solar energy and incentive programs available.

10. A copy of all special inspections verifications required by the enforcing agency or this code.

4.410.2 RECYCLING BY OCCUPANTS. Where 5 or more multifamily dwelling units are constructed on a building site, provide readily accessible area(s) that serves all buildings on the site and are identified for the 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 ordinance, if more restrictive.

Exception: Rural jurisdictions that meet and apply for the exemption in Public Resources Code Section 42649.82 (a)(2)(A) et seq. are note required to comply with the organic waste portion of this section.

DIVISION 4.5 ENVIRONMENTAL QUALITY

SECTION 4.501 GENERAL

4.501.1 Scope The provisions of this chapter shall outline means of reducing the quality of air contaminants that are odorous, irritating and/or harmful to the comfort and well being of a building's installers, occupants and neighbors.

SECTION 4.502 DEFINITIONS

5.102.1 DEFINITIONS The following terms are defined in Chapter 2 (and are included here for reference)

AGRIFIBER PRODUCTS. Agrifiber products include wheatboard, strawboard, panel substrates and door cores, not including furniture, fixtures and equipment (FF&E) not considered base building elements.

COMPOSITE WOOD PRODUCTS. Composite wood products include hardwood plywood, particleboard and medium density fiberboard. "Composite wood products" does not include hardboard, structural plywood, structural panels, structural composite lumber, oriented strand board, glued laminated timber, prefabricated wood I-joists or finger-jointed lumber, all as specified in California Code of regulations (CCR), title 17, Section 93120.1.

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.

1 6 6 22 CITY CORRECTIONS

REVISIONS



CLIENT INFO



SHEET NAME

GREEN CODE REQUIREMENTS

Project number	LB 1221
Date	6 13 22
Drawn by	Alpie T., Pedro O
Checked by	Checker
	SHEET

THE VARIABLES BETWEEN BUILDING DEPARTMENT JURISDICTIONS, THIS CHECKLIST IS TO BE USED ON AN INDIVIDUAL PROJECT BASIS AND MAY BE MODIFIED BY THE END USER TO MEET THOSE INDIVIDUAL NEEDS. THE END USER ASSUMES ALL RESPONSIBILITY ASSOCIATED WITH THE USE OF THIS DOCUMENT, INCLUDING VERIFICATION WITH THE FULL CODE.

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2019 CALIFORNIA GREEN BUILDING STANDARDS CODE RESIDENTIAL MANDATORY MEASURES, SHEET 1 (January 2020, Includes August 2019 Supplement)

ESPON.			Y N/A RESPON.			Y N/A RES	20.
PARTY			PARTY			PAI	
			Г Г	TABLE 4.504.2 - SEALANT VOC LIMIT	-		TABLE 4.504.5 - FORMALDEHYDE LIMITS
MAXIMUM INCREMENTAL REAC	ACTIVITY (MIR). The maximum chang	e in weight of ozone formed by adding a ght of compound added, expressed to					
hundredths of a gram (g O ³ /g ROC)	DC).			(Less Water and Less Exempt Compounds in Grams SEALANTS			MAXIMUM FORMALDEHYDE EMISSIONS IN PARTS PER MILLION
and 94701.	ompounds and hydrocarbon solvents a	are specified in CCR, Title 17, Sections 9470		ARCHITECTURAL	250		PRODUCT CURRENT LIMIT HARDWOOD PLYWOOD VENEER CORE 0.05
MOISTURE CONTENT. The weigh	ght of the water in wood expressed in	percentage of the weight of the oven-dry wo	~a 	MARINE DECK	760		HARDWOOD PLYWOOD VENEER CORE 0.05
-		or all ingredients in a product subject to this			300		PARTICLE BOARD 0.09
article. The PWMIR is the total proc product (excluding container and pa	roduct reactivity expressed to hundred	ths of a gram of ozone formed per gram of		ROADWAY	250		MEDIUM DENSITY FIBERBOARD 0.11
	ding to equations found in CCR, Title	17, Section 94521 (a).		SINGLE-PLY ROOF MEMBRANE	450		THIN MEDIUM DENSITY FIBERBOARD2 0.13
REACTIVE ORGANIC COMPOUN	JND (ROC). Any compound that has the	ne potential, once emitted, to contribute to		OTHER	420		1. VALUES IN THIS TABLE ARE DERIVED FROM THOSE SPECIFIED
ozone formation in the troposphere				SEALANT PRIMERS			BY THE CALIF. AIR RESOURCES BOARD, AIR TOXICS CONTROL
VOC. A volatile organic compound	nd (VOC) broadly defined as a chemica	al compound based on carbon chains or ring	gs	ARCHITECTURAL			MEASURE FOR COMPOSITE WOOD AS TESTED IN ACCORDANCE WITH ASTM E 1333. FOR ADDITIONAL INFORMATION, SEE CALIF.
with vapor pressures greater than (hydrogen and may contain oxygen	n 0.1 millimeters of mercury at room te en, nitrogen and other elements. See C	emperature. These compounds typically con CCR Title 17, Section 94508(a).	tain		250		CODE OF REGULATIONS, TITLE 17, SECTIONS 93120 THROUGH
4.503 FIREPLACES	,,			NON-POROUS	775		
4.503.1 GENERAL. Any installed g	d gas fireplace shall be a direct-vent s	ealed-combustion type. Any installed		POROUS			2. THIN MEDIUM DENSITY FIBERBOARD HAS A MAXIMUM THICKNESS OF 5/16" (8 MM).
woodstove or pellet stove shall com applicable, and shall have a perma	omply with U.S. EPA New Source Per nanent label indicating they are certifie	formance Standards (NSPS) emission limits ed to meet the emission limits. Woodstoves,		MODIFIED BITUMINOUS	500		
	also comply with applicable local ordir			MARINE DECK	760		
4.504 POLLUTANT CON	NTROL			OTHER	750		
CONSTRUCTION. At the time of re	PENINGS & PROTECTION OF MEC f rough installation, during storage on	the construction site and until final					DIVISION 4.5 ENVIRONMENTAL QUALITY (continued)
startup of the heating, cooling and	d ventilating equipment, all duct and o	ther related air distribution component ods acceptable to the enforcing agency to					4.504.3 CARPET SYSTEMS. All carpet installed in the building interior shall meet the testing and product
	t or debris which may enter the system						requirements of at least one of the following:
4.504.2 FINISH MATERIAL POLL	LUTANT CONTROL. Finish material	s shall comply with this section.					 Carpet and Rug Institute's Green Label Plus Program. California Department of Public Health, "Standard Method for the Testing and Evaluation of Volatile
4 504 2 1 Adhesives Seals	lants and Caulks Adhesives sealar	nt and caulks used on the project shall meet	the	TABLE 4.504.3 - VOC CONTENT LIN	1ITS FOR		Organic Chemical Emissions from Indoor Sources Using Environmental Chambers" Version 1.1.
requirements of the following	ng standards unless more stringent loo	cal or regional air pollution or air quality		ARCHITECTURAL COATINGS2,3			February 2010 (also known as Specification 01350). 3. NSF/ANSI 140 at the Gold level.
management district rules ap				GRAMS OF VOC PER LITER OF COATING, LES COMPOUNDS	S WATER & LESS EXEMPT		4. Scientific Certifications Systems Indoor Advantage™ Gold.
1. Adhesives, adhesi	esive bonding primers, adhesive prime h local or regional air pollution control	rs, sealants, sealant primers and caulks or air quality management district rules whe	re		VOC LIMIT		4.504.3.1 Carpet cushion. All carpet cushion installed in the building interior shall meet the
applicable or SCA	CAQMD Rule 1168 VOC limits, as show	wn in Table 4.504.1 or 4.504.2, as applicable	e.	FLAT COATINGS	50		requirements of the Carpet and Rug Institute's Green Label program.
compounds (chlore	also shall comply with the Rule 1168 pr oroform, ethylene dichloride, methylen	he chloride, perchloroethylene and			State of the second sec		4.504.3.2 Carpet adhesive. All carpet adhesive shall meet the requirements of Table 4.504.1.
tricloroethylene), e	, except for aerosol products, as speci	ified in Subsection 2 below.		NON-FLAT COATINGS	100		4.504.4 RESILIENT FLOORING SYSTEMS. Where resilient flooring is installed , at least 80% of floor area recei
		s, and sealant or caulking compounds (in		NONFLAT-HIGH GLOSS COATINGS	150		resilient flooring shall comply with one or more of the following:
units of product, le	less packaging, which do not weigh m	nore than 1 pound and do not consist of mor c standards and other requirements, includin	re l	SPECIALTY COATINGS	10000001		1. Products compliant with the California Department of Public Health, "Standard Method for the Testing a Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chamber
prohibitions on use	use of certain toxic compounds, of Cali			ALUMINUM ROOF COATINGS	400		Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chamber Version 1.1, February 2010 (also known as Specification 01350), certified as a CHPS Low-Emitting Mat
commencing with				BASEMENT SPECIALTY COATINGS	400		in the Collaborative for High Performance Schools (CHPS) High Performance Products Database. 2. Products certified under UL GREENGUARD Gold (formerly the Greenguard Children & Schools program
4.504.2.2 Paints and Coatir the ARB Architectural Sugar	tings. Architectural paints and coating	gs shall comply with VOC limits in Table 1 o Table 4.504.3, unless more stringent local li	f mits	BITUMINOUS ROOF COATINGS	50		Certification under the Resilient Floor Covering Institute (RFCI) FloorScore program.
apply. The VOC content limi	mit for coatings that do not meet the d	efinitions for the specialty coatings categorie	es	BITUMINOUS ROOF PRIMERS	350		 Meet the California Department of Public Health, "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers", Version 1.
coating, based on its gloss, a	as defined in subsections 4.21, 4.36,	ating as a Flat, Nonflat or Nonflat-High Gloss , and 4.37 of the 2007 California Air Resource	ces	BOND BREAKERS	350		February 2010 (also known as Specification 01350).
Board, Suggested Control Ma Table 4.504.3 shall apply.	Measure, and the corresponding Flat,	Nonflat or Nonflat-High Gloss VOC limit in		CONCRETE CURING COMPOUNDS	350		4.504.5 COMPOSITE WOOD PRODUCTS. Hardwood plywood, particleboard and medium density fiberboard
11.2				CONCRETE/MASONRY SEALERS	100		composite wood products used on the interior or exterior of the buildings shall meet the requirements for formaldehyde as specified in ARB's Air Toxics Control Measure for Composite Wood (17 CCR 93120 et seq.),
Limits for ROC in Section 94	94522(a)(2) and other requirements, in	patings shall meet the Product-weighted MIR ncluding prohibitions on use of certain toxic		DRIVEWAY SEALERS	50		by or before the dates specified in those sections, as shown in Table 4.504.5
compounds and ozone deple	pleting substances, in Sections 94522	(e)(1) and (f)(1) of California Code of	ie l	DRY FOG COATINGS	150		4.504.5.1 Documentation. Verification of compliance with this section shall be provided as requested
Quality Management District		reas under the jurisdiction of the Bay Area A t VOC by weight of product limits of Regulat			Sector Se		by the enforcing agency. Documentation shall include at least one of the following:
	1945 C	·····	ION	FAUX FINISHING COATINGS	350		
8, Rule 49.				FAUX FINISHING COATINGS	350		 Product certifications and specifications. Chain of custody certifications.
8, Rule 49. 4.504.2.4 Verification. Verification	erification of compliance with this section	on shall be provided at the request of the		FIRE RESISTIVE COATINGS	350		 Chain of custody certifications. Product labeled and invoiced as meeting the Composite Wood Products regulation (see
8, Rule 49. 4.504.2.4 Verification. Verification Verification Verification	entation may include, but is not limited	on shall be provided at the request of the		FIRE RESISTIVE COATINGS FLOOR COATINGS	350 100		 Chain of custody certifications. Product labeled and invoiced as meeting the Composite Wood Products regulation (see CCR, Title 17, Section 93120, et seq.). Exterior grade products marked as meeting the PS-1 or PS-2 standards of the Engineered
8, Rule 49. 4.504.2.4 Verification. Verification verification. Verification. 1. Manufacturer's pro	entation may include, but is not limited product specification.	on shall be provided at the request of the		FIRE RESISTIVE COATINGS FLOOR COATINGS FORM-RELEASE COMPOUNDS	350 100 250		 Chain of custody certifications. Product labeled and invoiced as meeting the Composite Wood Products regulation (see CCR, Title 17, Section 93120, et seq.). Exterior grade products marked as meeting the PS-1 or PS-2 standards of the Engineered Wood Association, the Australian AS/NZS 2269, European 636 3S standards, and Canadian CS/
8, Rule 49. 4.504.2.4 Verification. Verification verification. Verification verification. 1. Manufacturer's pro	entation may include, but is not limited	on shall be provided at the request of the		FIRE RESISTIVE COATINGS FLOOR COATINGS FORM-RELEASE COMPOUNDS GRAPHIC ARTS COATINGS (SIGN PAINTS)	350 100 250 500		 Chain of custody certifications. Product labeled and invoiced as meeting the Composite Wood Products regulation (see CCR, Title 17, Section 93120, et seq.). Exterior grade products marked as meeting the PS-1 or PS-2 standards of the Engineered
8, Rule 49. 4.504.2.4 Verification. Verification verification. Verification. 1. Manufacturer's pro	entation may include, but is not limited product specification.	on shall be provided at the request of the		FIRE RESISTIVE COATINGS FLOOR COATINGS FORM-RELEASE COMPOUNDS GRAPHIC ARTS COATINGS (SIGN PAINTS) HIGH TEMPERATURE COATINGS	350 100 250 500 420		 Chain of custody certifications. Product labeled and invoiced as meeting the Composite Wood Products regulation (see CCR, Title 17, Section 93120, et seq.). Exterior grade products marked as meeting the PS-1 or PS-2 standards of the Engineered Wood Association, the Australian AS/NZS 2269, European 636 3S standards, and Canadian CS/0121, CSA 0151, CSA 0153 and CSA 0325 standards. Other methods acceptable to the enforcing agency.
8, Rule 49. 4.504.2.4 Verification. Verification of the second s	entation may include, but is not limited product specification.	on shall be provided at the request of the to, the following:		FIRE RESISTIVE COATINGS FLOOR COATINGS FORM-RELEASE COMPOUNDS GRAPHIC ARTS COATINGS (SIGN PAINTS) HIGH TEMPERATURE COATINGS INDUSTRIAL MAINTENANCE COATINGS	350 100 250 500 420 250		 Chain of custody certifications. Product labeled and invoiced as meeting the Composite Wood Products regulation (see CCR, Title 17, Section 93120, et seq.). Exterior grade products marked as meeting the PS-1 or PS-2 standards of the Engineered Wood Association, the Australian AS/NZS 2269, European 636 3S standards, and Canadian CS/0121, CSA 0151, CSA 0153 and CSA 0325 standards.
8, Rule 49. 4.504.2.4 Verification. Verification of the second s	entation may include, but is not limited product specification. a of on-site product containers.	on shall be provided at the request of the to, the following: $\Gamma_{1,2}$		FIRE RESISTIVE COATINGS FLOOR COATINGS FORM-RELEASE COMPOUNDS GRAPHIC ARTS COATINGS (SIGN PAINTS) HIGH TEMPERATURE COATINGS INDUSTRIAL MAINTENANCE COATINGS LOW SOLIDS COATINGS1	350 100 250 500 420 250 120		 Chain of custody certifications. Product labeled and invoiced as meeting the Composite Wood Products regulation (see CCR, Title 17, Section 93120, et seq.). Exterior grade products marked as meeting the PS-1 or PS-2 standards of the Engineered Wood Association, the Australian AS/NZS 2269, European 636 3S standards, and Canadian CS/ 0121, CSA 0151, CSA 0153 and CSA 0325 standards. Other methods acceptable to the enforcing agency. 4.505 INTERIOR MOISTURE CONTROL 4.505.1 General. Buildings shall meet or exceed the provisions of the California Building Standards Code. 4.505.2 CONCRETE SLAB FOUNDATIONS. Concrete slab foundations required to have a vapor retarder by
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8, Rule 49. 4.504.2.4 Verification. Verifienforcing agency. Document 1. Manufacturer's pro 2. Field verification of TABLE 4.504. (Less Water and L	entation may include, but is not limited product specification. a of on-site product containers. 44.1 - ADHESIVE VOC LIMIT d Less Exempt Compounds in Grams CAL APPLICATIONS	on shall be provided at the request of the to, the following: Γ _{1,2} per Liter)		FIRE RESISTIVE COATINGS FLOOR COATINGS FORM-RELEASE COMPOUNDS GRAPHIC ARTS COATINGS (SIGN PAINTS) HIGH TEMPERATURE COATINGS INDUSTRIAL MAINTENANCE COATINGS LOW SOLIDS COATINGS1 MAGNESITE CEMENT COATINGS MASTIC TEXTURE COATINGS	350 100 250 500 420 250 120 450 100		 2. Chain of custody certifications. 3. Product labeled and invoiced as meeting the Composite Wood Products regulation (see CCR, Title 17, Section 93120, et seq.). 4. Exterior grade products marked as meeting the PS-1 or PS-2 standards of the Engineered Wood Association, the Australian AS/NZS 2269, European 636 3S standards, and Canadian CS/0121, CSA 0151, CSA 0153 and CSA 0325 standards. 5. Other methods acceptable to the enforcing agency. 4.505 INTERIOR MOISTURE CONTROL 4.505.1 General. Buildings shall meet or exceed the provisions of the California Building Standards Code. 4.505.2 CONCRETE SLAB FOUNDATIONS. Concrete slab foundations required to have a vapor retarder by California Building Code, Chapter 19, or concrete slab-on-ground floors required to have a vapor retarder by the California Residential Code, Chapter 5, shall also comply with this section.
8, Rule 49. 4.504.2.4 Verification. Verifienforcing agency. Document 1. Manufacturer's pro 2. Field verification of TABLE 4.504. (Less Water and L ARCHITECTURAL	entation may include, but is not limited product specification. a of on-site product containers. 4.1 - ADHESIVE VOC LIMIT d Less Exempt Compounds in Grams AL APPLICATIONS ET ADHESIVES	on shall be provided at the request of the d to, the following: Γ _{1.2} per Liter) VOC LIMIT		FIRE RESISTIVE COATINGS FLOOR COATINGS FORM-RELEASE COMPOUNDS GRAPHIC ARTS COATINGS (SIGN PAINTS) HIGH TEMPERATURE COATINGS INDUSTRIAL MAINTENANCE COATINGS LOW SOLIDS COATINGS1 MAGNESITE CEMENT COATINGS MASTIC TEXTURE COATINGS METALLIC PIGMENTED COATINGS	350 100 250 500 420 250 120 450 100 500		 Chain of custody certifications. Product labeled and invoiced as meeting the Composite Wood Products regulation (see CCR, Title 17, Section 93120, et seq.). Exterior grade products marked as meeting the PS-1 or PS-2 standards of the Engineered Wood Association, the Australian AS/NZS 2269, European 636 3S standards, and Canadian CS/0121, CSA 0151, CSA 0153 and CSA 0325 standards. Other methods acceptable to the enforcing agency. 4.505 INTERIOR MOISTURE CONTROL 4.505.1 General. Buildings shall meet or exceed the provisions of the California Building Standards Code. 4.505.2 CONCRETE SLAB FOUNDATIONS. Concrete slab foundations required to have a vapor retarder by California Building Code, Chapter 19, or concrete slab-on-ground floors required to have a vapor retarder by the
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8, Rule 49. 4.504.2.4 Verification. Verification of the enforcing agency. Document 1. Manufacturer's pro 2. Field verification of TABLE 4.504. (Less Water and Less Water	entation may include, but is not limited product specification. a of on-site product containers. ALAPPLICATIONS ET ADHESIVES ADHESIVES RPET ADHESIVES	on shall be provided at the request of the to, the following: Interpretent VOC LIMIT 50 50		FIRE RESISTIVE COATINGS FLOOR COATINGS FORM-RELEASE COMPOUNDS GRAPHIC ARTS COATINGS (SIGN PAINTS) HIGH TEMPERATURE COATINGS INDUSTRIAL MAINTENANCE COATINGS LOW SOLIDS COATINGS1 MAGNESITE CEMENT COATINGS MASTIC TEXTURE COATINGS METALLIC PIGMENTED COATINGS MULTICOLOR COATINGS PRETREATMENT WASH PRIMERS	350 100 250 500 420 250 120 450 100 500 420 250 120 450 100 500 250 420		 Chain of custody certifications. Product labeled and invoiced as meeting the Composite Wood Products regulation (see CCR, Title 17, Section 93120, et seq.). Exterior grade products marked as meeting the PS-1 or PS-2 standards of the Engineered Wood Association, the Australian AS/NZS 2269, European 636 3S standards, and Canadian CS/0121, CSA 0151, CSA 0153 and CSA 0325 standards. Other methods acceptable to the enforcing agency. 4.505 INTERIOR MOISTURE CONTROL 4.505.1 General. Buildings shall meet or exceed the provisions of the California Building Standards Code. 4.505.2 CONCRETE SLAB FOUNDATIONS. Concrete slab foundations required to have a vapor retarder by California Building Code, Chapter 19, or concrete slab-on-ground floors required to have a vapor retarder by the California Residential Code, Chapter 5, shall also comply with this section. 4.505.2.1 Capillary break. A capillary break shall be installed in compliance with at least one of the following: A 4-inch (101.6 mm) thick base of 1/2 inch (12.7mm) or larger clean aggregate shall be provided a vapor barrier in direct contact with concrete and a concrete mix design, which will address blee
8, Rule 49. 4.504.2.4 Verification. Verification of the enforcing agency. Document 1. Manufacturer's pro 2. Field verification of the enforce of the enforc	entation may include, but is not limited product specification. a of on-site product containers. ALAPPLICATIONS ET ADHESIVES ADHESIVES RPET ADHESIVES ING ADHESIVES	on shall be provided at the request of the d to, the following: Interpretent of the second		FIRE RESISTIVE COATINGS FLOOR COATINGS FORM-RELEASE COMPOUNDS GRAPHIC ARTS COATINGS (SIGN PAINTS) HIGH TEMPERATURE COATINGS INDUSTRIAL MAINTENANCE COATINGS LOW SOLIDS COATINGS1 MAGNESITE CEMENT COATINGS MASTIC TEXTURE COATINGS METALLIC PIGMENTED COATINGS MULTICOLOR COATINGS PRETREATMENT WASH PRIMERS PRIMERS, SEALERS, & UNDERCOATERS	350 100 250 500 420 250 120 450 100 500 420 120 450 100 500 250 100 100 100 100		 Chain of custody certifications. Product labeled and invoiced as meeting the Composite Wood Products regulation (see CCR, Title 17, Section 93120, et seq.). Exterior grade products marked as meeting the PS-1 or PS-2 standards of the Engineered Wood Association, the Australian AS/NZS 2269, European 636 3S standards, and Canadian CS/ 0121, CSA 0151, CSA 0153 and CSA 0325 standards. Other methods acceptable to the enforcing agency. 4.505 INTERIOR MOISTURE CONTROL 4.505.1 General. Buildings shall meet or exceed the provisions of the <i>California Building Standards Code</i>. 4.505.2 CONCRETE SLAB FOUNDATIONS. Concrete slab foundations required to have a vapor retarder by California Building Code, Chapter 19, or concrete slab-on-ground floors required to have a vapor retarder by the California Residential Code, Chapter 5, shall also comply with this section. 4.505.2.1 Capillary break. A capillary break shall be installed in compliance with at least one of the following: A 4-inch (101.6 mm) thick base of 1/2 inch (12.7mm) or larger clean aggregate shall be provided a vapor barrier in direct contact with concrete and a concrete mix design, which will address blee shrinkage, and curling, shall be used. For additional information, see American Concrete Institut ACI 302.2R-06.
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TABLE 4.504.2 - SEALANT VOC LI	MIT
(Less Water and Less Exempt Compounds in G	rams per Liter)
SEALANTS	VOC LIMIT
ARCHITECTURAL	250
MARINE DECK	760
NONMEMBRANE ROOF	300
ROADWAY	250
SINGLE-PLY ROOF MEMBRANE	450
OTHER	420
SEALANT PRIMERS	
ARCHITECTURAL	
NON-POROUS	250
POROUS	775
MODIFIED BITUMINOUS	500
MARINE DECK	760
OTHER	750

COMPOUNDS COATING CATEGORY	VOC LIMIT
FLAT COATINGS	50
NON-FLAT COATINGS	100
NONFLAT-HIGH GLOSS COATINGS	150
SPECIALTY COATINGS	1.22
ALUMINUM ROOF COATINGS	400
BASEMENT SPECIALTY COATINGS	400
BITUMINOUS ROOF COATINGS	50
BITUMINOUS ROOF PRIMERS	350
BOND BREAKERS	350
CONCRETE CURING COMPOUNDS	350
CONCRETE/MASONRY SEALERS	100
DRIVEWAY SEALERS	50
DRY FOG COATINGS	150
FAUX FINISHING COATINGS	350
FIRE RESISTIVE COATINGS	350
FLOOR COATINGS	100
FORM-RELEASE COMPOUNDS	250
GRAPHIC ARTS COATINGS (SIGN PAINTS)	500
HIGH TEMPERATURE COATINGS	420
INDUSTRIAL MAINTENANCE COATINGS	250
LOW SOLIDS COATINGS1	120
MAGNESITE CEMENT COATINGS	450
MASTIC TEXTURE COATINGS	100
METALLIC PIGMENTED COATINGS	500
MULTICOLOR COATINGS	250
PRETREATMENT WASH PRIMERS	420
PRIMERS, SEALERS, & UNDERCOATERS	100
REACTIVE PENETRATING SEALERS	350
RECYCLED COATINGS	250
ROOF COATINGS	50
RUST PREVENTATIVE COATINGS	250
SHELLACS	
CLEAR	730
	550
SPECIALTY PRIMERS, SEALERS & UNDERCOATERS	100
STAINS	250
STONE CONSOLIDANTS	450
SWIMMING POOL COATINGS	340
TRAFFIC MARKING COATINGS	100
TUB & TILE REFINISH COATINGS	420
WATERPROOFING MEMBRANES	250
WOOD COATINGS	275
WOOD PRESERVATIVES	350
ZINC-RICH PRIMERS	340
1. GRAMS OF VOC PER LITER OF COATING, INC EXEMPT COMPOUNDS	CLUDING WATER &
2. THE SPECIFIED LIMITS REMAIN IN EFFECT U ARE LISTED IN SUBSEQUENT COLUMNS IN THE 3. VALUES IN THIS TABLE ARE DERIVED FROM THE CALIFORNIA AIR RESOURCES BOARD, ARG SUGGESTED CONTROL MEASURE, FEB. 1, 2008 AVAILABLE FROM THE AIR RESOURCES BOARD	E TABLE. THOSE SPECIFIED BY CHITECTURAL COATINGS 3. MORE INFORMATION IS

	TABLE 4.504.5 - FORMALDEHYDE LIMITS	
	MAXIMUM FORMALDEHYDE EMISSIONS IN PARTS PER MILLION	
	PRODUCT CURRENT LIMIT	
	HARDWOOD PLYWOOD VENEER CORE 0.05	┦
1	HARDWOOD PLYWOOD COMPOSITE CORE 0.05	
	PARTICLE BOARD 0.09	
	MEDIUM DENSITY FIBERBOARD 0.11	
	THIN MEDIUM DENSITY FIBERBOARD2 0.13	
1	1. VALUES IN THIS TABLE ARE DERIVED FROM THOSE SPECIFIED	
	BY THE CALIF. AIR RESOURCES BOARD, AIR TOXICS CONTROL MEASURE FOR COMPOSITE WOOD AS TESTED IN ACCORDANCE	
	WITH ASTM E 1333. FOR ADDITIONAL INFORMATION, SEE CALIF. CODE OF REGULATIONS, TITLE 17, SECTIONS 93120 THROUGH	
	93120.12.	
	2. THIN MEDIUM DENSITY FIBERBOARD HAS A MAXIMUM THICKNESS OF 5/16" (8 MM).	
	DIVISION 4.5 ENVIRONMENTAL QUALITY (continued) 4.504.3 CARPET SYSTEMS. All carpet installed in the building interior shall meet the testing and product requirements of at least one of the following:	
	 Carpet and Rug Institute's Green Label Plus Program. California Department of Public Health, "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers" Version 1.1, 	
	February 2010 (also known as Specification 01350). 3. NSF/ANSI 140 at the Gold level.	
	 Scientific Certifications Systems Indoor Advantage™ Gold. 	
	4.504.3.1 Carpet cushion. All carpet cushion installed in the building interior shall meet the requirements of the Carpet and Rug Institute's Green Label program.	
	4.504.3.2 Carpet adhesive. All carpet adhesive shall meet the requirements of Table 4.504.1.	
	4.504.4 RESILIENT FLOORING SYSTEMS. Where resilient flooring is installed , at least 80% of floor area receiving	
	resilient flooring shall comply with one or more of the following:	
	 Products compliant with the California Department of Public Health, "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers," 	
	Version 1.1, February 2010 (also known as Specification 01350), certified as a CHPS Low-Emitting Material in the Collaborative for High Performance Schools (CHPS) High Performance Products Database.	
	 Products certified under UL GREENGUARD Gold (formerly the Greenguard Children & Schools program). Certification under the Resilient Floor Covering Institute (RFCI) FloorScore program. 	
	 Meet the California Department of Public Health, "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers", Version 1.1, 	
	Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers", Version 1.1, February 2010 (also known as Specification 01350).	
	4.504.5 COMPOSITE WOOD PRODUCTS. Hardwood plywood, particleboard and medium density fiberboard	
	composite wood products used on the interior or exterior of the buildings shall meet the requirements for formaldehyde as specified in ARB's Air Toxics Control Measure for Composite Wood (17 CCR 93120 et seq.),	
	by or before the dates specified in those sections, as shown in Table 4.504.5	
	4.504.5.1 Documentation. Verification of compliance with this section shall be provided as requested by the enforcing agency. Documentation shall include at least one of the following:	
	 Product certifications and specifications. Chain of custody certifications. 	
	 Product labeled and invoiced as meeting the Composite Wood Products regulation (see CCR, Title 17, Section 93120, et seq.). 	
	 Exterior grade products marked as meeting the PS-1 or PS-2 standards of the Engineered Wood Association, the Australian AS/NZS 2269, European 636 3S standards, and Canadian CSA 	
	0121, CSA 0151, CSA 0153 and CSA 0325 standards. 5. Other methods acceptable to the enforcing agency.	
	4.505 INTERIOR MOISTURE CONTROL	
	4.505.1 General. Buildings shall meet or exceed the provisions of the California Building Standards Code.	
	4.505.2 CONCRETE SLAB FOUNDATIONS. Concrete slab foundations required to have a vapor retarder by California Building Code, Chapter 19, or concrete slab-on-ground floors required to have a vapor retarder by the	
	California Residential Code, Chapter 5, shall also comply with this section.	
	4.505.2.1 Capillary break. A capillary break shall be installed in compliance with at least one of the	
	following:	
	 A 4-inch (101.6 mm) thick base of 1/2 inch (12.7mm) or larger clean aggregate shall be provided with a vapor barrier in direct contact with concrete and a concrete mix design, which will address bleeding, 	
	shrinkage, and curling, shall be used. For additional information, see American Concrete Institute, ACI 302.2R-06.	
	 Other equivalent methods approved by the enforcing agency. A slab design specified by a licensed design professional. 	
	4.505.3 MOISTURE CONTENT OF BUILDING MATERIALS. Building materials with visible signs of water damage	
	shall not be installed. Wall and floor framing shall not be enclosed when the framing members exceed 19 percent moisture content. Moisture content shall be verified in compliance with the following:	
	 Moisture content shall be determined with either a probe-type or contact-type moisture meter. Equivalent moisture verification methods may be approved by the enforcing agency and shall satisfy requirements found in Parties 101.0 of this parts. 	
	found in Section 101.8 of this code. 2. Moisture readings shall be taken at a point 2 feet (610 mm) to 4 feet (1219 mm) from the grade stamped end	
	of each piece verified. 3. At least three random moisture readings shall be performed on wall and floor framing with documentation	
	acceptable to the enforcing agency provided at the time of approval to enclose the wall and floor framing.	
	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	
	recommendations prior to enclosure.	
	4.506 INDOOR AIR QUALITY AND EXHAUST	
	4.506.1 Bathroom exhaust fans. Each bathroom shall be mechanically ventilated and shall comply with the following:	
	1. Fans shall be ENERGY STAR compliant and be ducted to terminate outside the building.	
	 Unless functioning as a component of a whole house ventilation system, fans must be controlled by a humidity control. 	
	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 adjustment.	
	b. A humidity control may be a separate component to the exhaust fan and is not required to be	
	integral (i.e., built-in)	
	Notes:	
	 For the purposes of this section, a bathroom is a room which contains a bathtub, shower or tub/shower combination. 	
	2. Lighting integral to bathroom exhaust fans shall comply with the <i>California Energy Code</i> . 4.507 ENVIRONMENTAL COMFORT	
	4.507.2 HEATING AND AIR-CONDITIONING SYSTEM DESIGN. Heating and air conditioning systems shall be sized, designed and have their equipment selected using the following 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), ASHRAE handbooks or other equivalent design software or methods. Select heating and cooling equipment according to ANSI/ACCA 3 Manual S - 2014 (Residential Equipment Selection), or other equivalent design software or methods. 	
	Exception: Use of alternate design temperatures necessary to ensure the system functions are	

t)	Y = YES N/A = NOT APPLICABLE RESPON. PARTY = RESPONSIBLE PARTY (ie: ARCHITECT, ENGINEER, OWNER, CONTRACTOR, INSPECTOR ETC.)	1700
N. Y		AMERICAN GENERAL CORPORATION www.AmGenCorp.com 34941 CALLE DEL SOL,
	CHAPTER 7 INSTALLER & SPECIAL INSPECTOR QUALIFICATIONS 702 QUALIFICATIONS	CAPISTRANO BEACH, CA 92624
	702.1 INSTALLER TRAINING. HVAC system installers shall be trained and certified in the proper 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 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:	THESE DRAWINGS HAVE BEEN PREPARED FOR DESIGN ONLY. CIVIL, STRUCTURAL, MECHANICAL, AND OTHER RELATED
	 State certified apprenticeship programs. Public utility training programs. Training programs sponsored by trade, labor or statewide energy consulting or verification organizations. Programs sponsored by manufacturing organizations. Other programs acceptable to the enforcing agency. 	ENGINEERING DESIGN AND SPECIFICATIONS ARE THE RESPONSIBILITY OF THE RESPECTIVE ENGINEERS.
	702.2 SPECIAL INSPECTION [HCD]. When required by the enforcing agency, the owner or the responsible entity acting as the owner's agent shall employ one or more special inspectors to provide inspection or other duties necessary to substantiate compliance with this code. Special inspectors shall demonstrate competence to the satisfaction of the enforcing agency for the particular type of inspection or task to be performed. In addition to other certifications or qualifications acceptable to the enforcing agency, the following certifications or education may be	COMPLIANCE TO THESE DRAWINGS WILL BE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR. ALL MEASUREMENTS SHALL BE VERIFIED BY THE CONTRACTORS DOING THE
	 considered by the enforcing agency when evaluating the qualifications of a special inspector: Certification by a national or regional green building program or standard publisher. Certification by a statewide energy consulting or verification organization, such as HERS raters, building performance contractors, and home energy auditors. Successful completion of a third party apprentice training program in the appropriate trade. Other programs acceptable to the enforcing agency. 	RESPECTIVE WORK. THESE DRAWINGS, AS INSTRUMENTS OF SERVICE ARE THE EXCLUSIVE PROPERTY OF THE DESIGNERS, AND ARE NOT TO BE USED IN WHOLE OR PART WITHOUT HIS
	 Notes: Special inspectors shall be independent entities with no financial interest in the materials or the project they are inspecting for compliance with this code. HERS raters are special inspectors certified by the California Energy Commission (CEC) to rate homes in California according to the Home Energy Rating System (HERS). 	EXPRESS WRITTEN PERMISSION. UNAUTHORIZED USE OF THESE DRAWINGS WILL SUBJECT THE USER TO LEGAL REMEDY BEING SOUGHT BY THE DESIGNERS.
	[BSC] When required by the enforcing agency, the owner or the responsible entity acting as the owner's agent shall employ one or more special inspectors to provide inspection or other duties necessary to substantiate compliance with this code. Special inspectors shall demonstrate competence to the satisfaction of the enforcing agency for the particular type of inspection or task to be performed. In addition, the special inspector shall have a certification from a recognized state, national or international association, as determined by the local agency. The area of certification shall be closely related to the primary job function, as determined by the local agency.	
	 Note: Special inspectors shall be independent entities with no financial interest in the materials or the project they are inspecting for compliance with this code. 703 VERIFICATIONS 	
	703.1 DOCUMENTATION. Documentation used to show compliance with this code shall include but is not limited to, construction documents, plans, specifications, builder or installer certification, inspection reports, or other methods acceptable to the enforcing agency which demonstrate substantial conformance. When specific documentation or special inspection is necessary to verify compliance, that method of compliance will be specified in the appropriate section or identified applicable checklist.	
		REVISIONS
		6 6 22 CITY CORRECTIONS
		CLIENT INFO
		ЩЧ
		922 MOLINO LONG BEACI 90804
		922 MG LONG
		SHEET NAME
		GREEN CODE REQUIREMENTS
		Project number LB 1221
		Date 6 13 22 Drawn by Alpie T., Pedro O Checked by Checker
A.:		SHEET GB-2
4LL	RESPONSIBILITY ASSOCIATED WITH THE USE OF THIS DOCUMENT, INCLUDING VERIFICATION WITH THE FULL CODE.	Scale

ACI

CERTIFICATE OF COMPLIANCE Project Name: Molino Ave Addition

Calculation Description: Title 24 Analysis

Calculation Date/Time: 2022-03-17T15:06:47-07: Input File Name: Molino Ave Addition (922).ribd

GENERAL IN	IFORMATION						
01	Project Name	Molino Ave Addition	Nolino Ave Addition				
02	Run Title	Title 24 Analysis					
03	Project Location	922 Molino Avenue					
04	City	Long Beach	05	Standards Version	2		
06	Zip code	90804	07	Software Version	E		
08	Climate Zone	6	09	Front Orientation (deg/ Cardinal)	2		
10	Building Type	Single family	11	Number of Dwelling Units	1		
12	Project Scope	AdditionAlteration	13	Number of Bedrooms	3		
14	Addition Cond. Floor Area (ft ²)	371	15	Number of Stories	1		
16	Existing Cond. Floor Area (ft ²)	996	17	Fenestration Average U-factor	0		
18	Total Cond. Floor Area (ft ²)	1367	19	Glazing Percentage (%)	1		
20	ADU Bedroom Count	n/a	21	ADU Conditioned Floor Area	n		
22	Is Natural Gas Available?	Yes					

COMPLIANCE RESULTS

01 Building Complies with Computer Performance Building does not require field testing or HERS verification 02 03 This building incorporates one or more Special Features shown below

ENERGY USE SUMMARY							
Energy Use (kTDV/ft ² -yr)	Standard Design	Proposed Design	Compliance				
Space Heating	27.13	27.39	-0.20				
Space Cooling	27.72	26.4	1.32				
IAQ Ventilation	0	0	0				
Water Heating	24.56	24.56	0				
Self Utilization/Flexibility Credit	n/a	0	0				
Compliance Energy Total	79.41	78.35	1.06				

Registration Number:

CA Building Energy Efficiency Standards - 2019 Residential Compliance

Registration Date/Time:

Report Version: 2019.2.000 Schema Version: rev 20200901

CERTIFICATE OF COMPLIANCE

Project Name: Molino Ave Addition Calculation Description: Title 24 Analysis Calculation Date/Time: 2022-03-17T15:06:47-07:00 Input File Name: Molino Ave Addition (922).ribd19x

CF1R-PRF-01E (Page 4 of 10)

CERTIFICATE OF COMPLIANCE

ENESTRATION / GL	AZING															Calculation Des	cription: Title 24	4 Ana
01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	-		200.026
Name	Туре	Surface	Orientation	Azimuth	Width (ft)	Height (ft)	Mult.	Area (ft ²)	U-factor	U-factor Source	SHGC	SHGC Source	Exterior Shading	Status	Verified Existing	OPAQUE SURFAC	ES 02	T
	0		-		(14)		-	(11.)		0.53.250.2730		1.0.000	Shading		Condition	Name	Zone	1
French Door	Window	Front Wall	Front	270			1	27	1.19	Table 110.6-A	0.83	Table 110.6-B	Bug Screen	Existing	No		10450	-
Window	Window	Front Wall	Front	270			1	7	1.19	Table 110.6-A	0.83	Table 110.6-B	Bug Screen	Existing	No	Front Wall	Existing Living Area	
Window 5	Window	Front Wall	Front	270			1	7	1.19	Table 110.6-A	0.83	Table 110.6-B	Bug Screen	Existing	No	Left Wall	Existing Living Area	
Window 6	Window	Front Wall	Front	270		-	1	7	1.19	Table 110.6-A	0.83	Table 110.6-B	Bug Screen	Existing	No	Right Wall	Existing Living Area	
	6	-		-		5				Table		Table	9-			Left Wall 2	New Living Area	ís -
Window 7	Window	Left Wall	Left	0			1	4	1.19	110.6-A	0.83	110.6-B	Bug Screen	Existing	No	Rear Wall	New Living Area	k 📃
Window 8	Window	Left Wall	Left	0			1	4	1.19	Table 110.6-A	0.83	Table 110.6-B	Bug Screen	Existing	No	Right Wall 2	New Living Area	8
Window 9	Window	Left Wall	Left	0			1	13.5	1.19	Table 110.6-A	0.83	Table 110.6-B	Bug Screen	Existing	No	Interior Surface	Existing Living Area>>New Living Area	
Window 10	Window	Left Wall	Left	o			1	13.5	1.19	Table 110.6-A	0.83	Table 110.6-B	Bug Screen	Existing	No	Roof	Existing Living Area	
Window 11	Window	Left Wall	Left	0			1	4	1.19	Table 110.6-A	0.83	Table 110.6-B	Bug Screen	Existing	No	Roof 2	New Living Area Existing Living	
Window 12	Window	Left Wall	Left	0			1	13.5	1.19	Table 110.6-A	0.83	Table 110.6-B	Bug Screen	Existing	No	Raised Floor	Area	R-0
Window 13	Window	Left Wall	Left	0			1	13.5	1.19	Table 110.6-A	0.83	Table 110.6-B	Bug Screen	Existing	No	Raised Floor 2	New Living Area	
Window 14	Window	Right Wall	Right	180			1	6	1.19	Table 110.6-A	0.83	Table 110.6-B	Bug Screen	Existing	No	ATTIC 01		
Window 15	Window	Right Wall	Right	180			1	6	1.19	Table 110.6-A	0.83	Table 110.6-B	Bug Screen	Existing	No	Name		
Window 16	Window	Right Wall	Right	180			1	13.5	1.19	Table 110.6-A	0.83	Table 110.6-B	Bug Screen	Existing	No	Attic Existing Livi	ng Area	Atti
	100	2010-2010-001-2012-2012-2012-2012-2012-							1999 (1999) (1999) (1999)	110.0-A		110.0-В				Attic New Livin	g Area	At

Registration Number:

Registration Date/Time:

HERS Provider:

Report Generated: 2022-03-17 15:07:19

Report Version: 2019.2.000 Schema Version: rev 20200901

CA Building Energy Efficiency Standards - 2019 Residential Compliance

-	CF1R-PRF-0
7:00	(Page 1 of 1
d19x	
2019	
EnergyPro 8.3	
270	
1	
3	
1	
0.3	
15.95%	
n/a	
1/10	
ce Margin	Percent Improvement
26	-1
32	4.8
)	
)	0
)	n/a
06	1.3

HERS Provider:

Report Generated: 2022-03-17 15:07:19

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Cover Dege	
Cover Page Table of Contents	
Form CF1R-PRF-01-E Certificate of Compliance	
Form RMS-1 Residential Measures Summary	
Form MF-1R Mandatory Measures Summary	
Room Load Summary	

New Living Area R-30 Roof Attic

Existing Living R-0 Floor Crawlspace

Project Name: Molino Ave Addition

Iculation Description: Title 24 Analysis

03

Construction

R-0 Wall

R-0 Wall

R-0 Wall

R-13 Wall

R-13 Wall

R-13 Wall

R-0 Wall1

R-11 Roof Attic

R-19 Floor

Crawlspace

02

Construction

Attic RoofExisting Living Area

Attic RoofNew Living Area

04 05

270

0

180

0

90

180

n/a

n/a

n/a

n/a

n/a

Azimuth | Orientation | Gross Area (ft²)

Front

Left

Right

Left

Back

Right

n/a

n/a

n/a

n/a

n/a

Type

Ventilated

Ventilated 4

06

224

336

336

128

168

128

168

996

371

996

371

Calculation Date/Time: 2022-03-17T15:06:47-07:00 Input File Name: Molino Ave Addition (922).ribd19x

08

Tilt (deg)

90

90

90

90

90

90

n/a

n/a

n/a

n/a

n/a

Roof Radiant

No

No

09

Wall Exceptions

none

none

none

none

none

none

10

Status

Existing

Existing

Existing

New

New

New

New

Existing

New

Existing

New

09

Status

Existing

New

07

Window and

Door Area (ft2)

48

66

59

15

48

2

0

n/a

n/a

n/a

n/a

03 04 05 06 07

0.1

0.1

(x in 12) Reflectance Emittance Barrier

0.85

0.85

Roof Rise Roof

CF1R-PRF-01E	
(Page 3 of 10)	

11

Verified Existing

Condition

No

No

No

n/a

n/a

n/a

n/a

No

n/a

No

n/a

10

Verified Existing

Condition

No

n/a

CERTIFICATE OF COMPLIANCE Project Name: Molino Ave Addition Calculation Description: Title 24 Analysis

2 3

13 15 19

REQUIRED SPECIAL FEA	TURES						
The following are featu	res that	must be installed as	condi				
New ductwork a	New ductwork added is less than 40 ft. in length						
HERS FEATURE SUMMA	ARY						
The following is a sumn detail is provided in the							
Building-level Verificati None Cooling System Verifica None Heating System Verifica None HVAC Distribution Syste None Domestic Hot Water Sy None	ations: ations: em Verif						
BUILDING - FEATURES	INFORM	ATION					
01		02					
Project Name	7	Conditioned Floor	Area				
Molino Ave Addit	ion	1367					
ZONE INFORMATION			15				
01		02					
Zone Name		Zone Type					
Existing Living Area		Conditioned					
New Living Area		Conditioned					
			Ļ				

Registration Number:

CA Building Energy Efficiency Standards - 2019 Residential Compliance

Registration Date/Time:

4

Report Version: 2019.2.000 Schema Version: rev 20200901

HERS Provider:

08

Cool Roof

No

No

Report Generated: 2022-03-17 15:07:19

Registration Number:

CA Building Energy Efficiency Standards - 2019 Resider

BUILDING ENERGY ANALYSIS REPORT	7100
	AMERICAN GENERAL CORPORATION www.AmGenCorp.com
PROJECT:	34941 CALLE DEL SOL,
Molino Ave Addition	CAPISTRANO BEACH, CA 92624
922 Molino Avenue Long Beach, CA 90804	
	THESE DRAWINGS HAVE BEEN PREPARED FOR DESIGN ONLY. CIVIL, STRUCTURAL,
Project Designer:	MECHANICAL, AND OTHER RELATED ENGINEERING DESIGN AND SPECIFICATIONS ARE THE
AGC 34941 Calle Del Sol	RESPONSIBILITY OF THE RESPECTIVE ENGINEERS.
Capistrano Beach, CA 92624	COMPLIANCE TO THESE DRAWINGS WILL BE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR.
	ALL MEASUREMENTS SHALL BE VERIFIED BY THE CONTRACTORS DOING THE
Report Prepared by:	RESPECTIVE WORK.
Timothy Carstairs, CEA, HERS, GPR Carstairs Energy Inc.	THESE DRAWINGS, AS INSTRUMENTS OF SERVICE ARE THE EXCLUSIVE PROPERTY OF THE DESIGNERS, AND ARE NOT TO BE
2238 Bayview Heights Drive, Suite E Los Osos, CA 93402	USED IN WHOLE OR PART WITHOUT HIS EXPRESS WRITTEN PERMISSION.
(805) 904-9048	UNAUTHORIZED USE OF THESE DRAWINGS WILL SUBJECT THE USER TO LEGAL REMEDY BEING
	SOUGHT BY THE DESIGNERS.
CARSTAIRS ENERGY	
Job Number: 22-031722	
Date:	
3/17/2022	
computer program has been used to perform the calculations summarized in this compliance report. This program has approval and is 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.	
	REVISIONS
	\triangle 6 6 22 CITY CORRECTIONS
CF1R-PRF-01E Calculation Date/Time: 2022-03-17T15:06:47-07:00 (Page 2 of 10)	
Input File Name: Molino Ave Addition (922).ribd19x	
ondition for meeting the modeled energy performance for this computer analysis.	CLIENT INFO
h	
be field-verified by a certified HERS Rater as a condition for meeting the modeled energy performance for this computer analysis. Additional red CF2Rs and CF3Rs are required to be completed in the HERS Registry	
	ШЧ
	A H
	S S S S
	OLINC BEAC 90804
03 04 05 06 07	MOL MO 90 90
Area (ft ²) Number of Dwelling Units Number of Bedrooms Number of Zones Number of Ventilation Cooling Systems Heating Systems	2 NO
1 3 2 0 1	92 L(
03 04 05 06 07	
HVAC System Name Zone Floor Area (ft ²) Avg. Ceiling Height Water Heating System 1 Water Heating System 2 HVAC System1 996 8 DHW Sys 1 N/A	
HVAC System1 371 8 DHW Sys 1 N/A	SHEET NAME
	TITTLE 24
Registration Date/Time: HERS Provider: ential Compliance Report Version: 2019.2.000 Report Generated: 2022-03-17	
Schema Version: rev 20200901	
	Project number LB 1221
	Date 6 13 22
	Drawn by Alpie T., Pedro O
	Checked by P.O. SHEET
	T24-1
	I Z4- I Scale

Carstairs Energy Inc. S/17/202 Address: CArstairs Energy Inc. Carstairs Energy Energy Inc. Carstairs Energy Engrave Energy Engrave	an State weeks and and	Iolino Ave Addition					14. 14.	ne: 2022-03-17T15:06			CF1R-PRF-01E (Page 7 of 10)	Project Nam Calculation	e OF COMPLIA ne: Molino Ave Description: 1	ve Addition Title 24 An							Without Street, Street	022-03-17T15 Ave Addition (CF1R-PRF-01E (Page 6 of 10)
	Calculation Desc	ription: Title 24 An	alysis			Inp	ut File Name: Mo	lino Ave Addition (922	?).ribd19x					8500.90 A.M. 900.90	- 1	204.00			12121	1	- 1					
	BUILDING ENVELO				02			03		04			Marca Barra and				n Type		1770	Total Ca	vity Inter	rior / Exterior	1. (2. (2. (2. (2. (2. (2. (2. (2. (2. (2			ers
	Quality Insu	lation Installation (C	XII) Hi	igh R-value Sp	oray Foam Insula	tion	Building Envel	ope Air Leakage		CFM50									0.000000000	K-Valu	ле	R-value			AL PROPERTY OF COMP	
	1	lot Required		Not	Required		Not R	equired		n/a		R-0 V	Wall1	Interio	r Walls V	Nood Frame	d Wall	2x4	@ 16 in. O. C.	R-0	No	one / None	0.277	Cavity	/ Frame: no in	nsul. / 2x4
	WATER HEATING S	SYSTEMS	s														-			-				100 100	45-04	1
						Solar Heati	ng Compac	t HERE Varification		Verified	Existing Water	5.5	200 L	Attic	Roofs			2x4	@ 24 in. O. C.	R-0	No	one / None	0.644	Sidir	Roof Deck: Wo ng/sheathing/o	ood decking
	DHW Sys 1			DHW F	Heater 1 (1)			100	Existing			REAM 1.1100005		Attic I	Roofs		and the second sec	2x4	@ 24 in. O. C.	R-0	No	one / None	0.644	Sidir	Roof Deck: Wo ng/sheathing/o	ood decking
		Water (DHW)	System							-10-				Floors	Over	1-								Flo	oor Surface: Car	rpeted
				1	1				1	1		R-0 Floor C	.rawispace		VOLDEN V	Vood Frame	d Floor	2x12	@ 16 m. O. C.	R-0	No	one / None	0.216			
	01	02 03	04 05	06	07		09	10 11	12	13	14															
	Name El	ement Tank Ty	pe # of Vol.	. Factor or	or Bilot	Insulation R-value	Loss or Rat	ing or Brand or Mor	or Ambient	Status	Existing	R-19 Floor	Crawlspace			Vood Frame	d Floor	2x10	@ 16 in. O. C.	R-19) No	one / None	0.046	Sidir	Floor Deck: Wo ng/sheathing/o	ood decking
	ATE (\$10.000)	Gas Small Stor	rage 1 50	0.57-EF	1 1 Sec. 5	0	80 1	n/a n/a	n/a	Existing	No	R-11 Ro	oof Attic		- HORSE			2x4	@ 24 in. O. C.	R-11	. No	one / None	0.081	Cavit	ty / Frame: R-9	9.1/2x4
	WATER HEATING -	HERS VERIFICATION	1		22									Callings	Ühalauu	Mand Fra								Over Co	eiling Joists: R-	20.9 insul.
Norm Norm <th< td=""><td>01</td><td>02</td><td></td><td>03</td><td>04</td><td></td><td></td><td>06</td><td></td><td></td><td></td><td>R-30 Ro</td><td>oof Attic</td><td></td><td></td><td></td><td></td><td>2x4</td><td>@ 24 in. O. C.</td><td>R-30</td><td>) No</td><td>one / None</td><td>0.032</td><td></td><td></td><td></td></th<>	01	02		03	04			06				R-30 Ro	oof Attic					2x4	@ 24 in. O. C.	R-30) No	one / None	0.032			
	Name	Pipe Insula	ation Para	allel Piping	Compact Dis	stribution		Recirculation Control		12 March 52 Mi	[27] [안만만] 알고 아버지가 M28(28) 전									1	-			1005450		10.0505.00000
Calculation beam plant Directify and the same Directify and the same<	CERTIFICATE OF O Project Name: M	COMPLIANCE olino Ave Addition				Schema Vers Calc	ion: rev 20200901 sulation Date/Tim		47-07:00		CF1R-PRF-01E	Project Nam	e: Molino Ave	e Addition	alysis						Margan Margan 181					
1 I control that this contribute of Companies documentation is accurate and complete. 0 1			19959999999999999999999999999999999999			inpl	It file Name: No	ino Ave Addition (922	j.ribd19x			HVAC - DISTR	IBUTION SYSTE	EMS	000				10187-20101					222		
Decementation Author Name: Timothy Carstains Energy Inc. Address: 2023 Bayview Heights Drive, Suite E 2023 Bayview Heights Drive, Suite E Chryster Energy 1. carstains Energy Inc. Address: 2023 Bayview Heights Drive, Suite E Chryster Energy 1. carstains energy Inc. Address: 2023 Bayview Heights Drive, Suite E Chryster Energy 1. carstains energy Inc. Address: 2023 Bayview Heights Drive, Suite E Chryster Energy 1. carstains energy Inc. Address: 2023 Bayview Heights Drive, Suite E 1. carstains energy Inc. Address: 2023 Bayview Heights Drive, Suite E Chryster Energy Inc. Address: 2023 Bayview Heights Drive, Suite E 1. carsty Heider Bayview Heights Drive, Suite E 2023 Bayview Heights Drive, Suite E 2024 Bay	The second devices of											01	02	0	3 04	05	06	07	08 09	10	11	12	13	14	15	16
			ance documentati	on is accurate	and complete.	Docu	mentation Author Sig	nature:							Duct In	is. R-value	Duct Loo	cation	Surface Area							
Carstairs Energy Inc. Carstairs Energy	Timothy Company:	y Carstairs, CEA	A, HERS, GPF	3				Northefit	C	J + + -		Name	Туре			Return	Supply	Return	Supply Return			Verification	Status	Existing	Distribution	C 2012/01/02/01/02/01/02/01/22/00/2000/0000/00000000
2238 Bayview Heights Drive, Suite E R16-06-10042 Image Service City/Stat/Zire Phone: (805) 904-9048 SEPONSIBE CFARTON STATEMENT (805) 904-9048 1 certify the following under penalty of payry, under the laws of the State of California: 01 02 03 04 Name Type Fan Power (Watts/CFM) Name 1 is neighbourde Division 3 of the Bouiness and Professions Code to accept responsibility of the builing design identified on this Certificate of Compliance codemato provided on the applicable compliance documents, worksheets, coleculations, plans and appedications submitted to the forcement agency for approvile within the builing generative identified on this Certificate of Compliance accessions with the builing design information provided on the applicable. Name HVAC Fan 1 HVAC Fan 1 <td< td=""><td></td><td>rs Energy Inc.</td><td></td><td></td><td></td><td></td><td></td><td>entification (If applicable):</td><td>California Association of Build</td><td>ing Energy Consultants</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></td<>		rs Energy Inc.						entification (If applicable):	California Association of Build	ing Energy Consultants																
Los Osos, CA 93402 (805) 904-9048 01 02 03 04 RESPONSIBLE PERSON'S DECLARATION STREMENT Ional (1) (1)	2238 B	ayview Heights	Drive, Suite E				R16-06-10					HVAC - FAN S	YSTEMS				<u>, a</u> a									
RESPONSIBLE PERSON'S DECLARATION STATEMENT Can all the following under penalty of perjuny, under the laws of the State of Canifornia: Can all the following under penalty of perjuny, under the laws of the State of Canifornia: Name Name 1 I all tigglible under Division 3 of the Busines and Perforsions Code to accept responsibility for the building design retaines identified on this Certificate of Compliance conform to the requirements of Title 2A, Part 1 and Part 6 of the California Code of Reguilations. HVAC Fan 1 HVAC	1.95 92 10	os. CA 93402						9048						01				02	2			03		11	04	
1 I am eligible under Division 3 of the Business and Professions Code to accept responsibility for the building design identified on this Certificate of Compliance. Intercent of the Applications of the Business and Professions Code to accept responsibility for the building 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. 1. Intercent of the Business and Professions Code to accept responsibility for the building 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. 1. Intercent of the Business and Professions Code to accept responsibility for the building 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. 1. Intercent of the Business and Professions Code to accept responsibility for the building design identified on this Certificate O Compliance conform to the requirements of Title 24, Part 1 and Part 6 of the California Code of Regulations. Califications Submitted to the enforcement agency for approval with this building permit applications. Public Design of Sample Company: Date Signed: 3 19 22 Address: Sate Design of Calificate Del Sol Sate Design of Calificate Design of Cal			STATEMENT			97.0	(000) 00 .						N	lame				Тур	be		Fan P	Power (Watts/C	CFM)		Name	
Calculations, plans and specifications submitted to the enforcement agency for approval with this building permit application. OI O	 I am eligil I certify the second second	ble under Division 3 of t hat the energy features	he Business and Prof and performance spo	fessions Code to ecifications iden	o accept responsib ntified on this Cert	ificate of Complia	nce conform to the re	quirements of Title 24, Part	1 and Part 6 of the Calif									HVAC	Fan			0.58			HVAC Fan 1-h	ers-fan
Responsible Designer Name: Responsible Designer Signature: Add Responsible Designer Signature: Responsible Designer Signat	 The build calculatio 	ing design features or synthesis on synthesis of synthesis and specifications and specifications and specifications and specifications are specificated as the synthesis of the synthesynthesis o	ystem design feature ions submitted to the	s identified on t e enforcement a	this Certificate of C agency for approva	Compliance are co I with this buildin	nsistent with the info g permit application.	rmation provided on other	applicable compliance de	ocuments, wor	ksheets,	HVAC FAN SYS	STEMS - HERS V		DN				03			1				
PEDRO ORNELAS Multiplication Company: AGC Date Signed: 3 19 22 Not Required O Address: 34941 Calle Del Sol License: Phone: Phone: Phone:						Resp	onsible Designer Signa		m.					10450AG				8	24200313	Draw		-	Require	9893	y (Watts/CFM	,
Address: 34941 Calle Del Sol City/State/Zip: Phone:	Company:	ORNELAS				Date		fieder (lle				11 ST 454 AND 3	- Noresones	an			31		V301101-3012			1997 - 1997 -	0		
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	^{City/State/Zip:} Capistr	ano Beach, CA	92624			Phon																				

Registration Number:

CA Building Energy Efficiency Standards - 2019 Residential Compliance

Registration Date/Time:

Report Version: 2019.2.000 Schema Version: rev 20200901 HERS Provider:

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Registration Number:

CA Building Energy Efficiency Standards - 2019 Residential Compliance

Registration Date/Time:

Report Version: 2019.2.000 Schema Version: rev 20200901 HERS Provider:

Report Generated: 2022-03-17 15:07:19

CERTIFICATE OF COMPLIANCE Project Name: Molino Ave Addition

Calculation Description: Title 24 Analysis

01	02	03	04	05
Name	Туре	Surface	Orientation	Azimuth
Window 17	Window	Right Wall	Right	180
Window 3	Window	Left Wall 2	Left	0
Window 2	Window	Rear Wall	Back	90
Window 1	Window	Rear Wall	Back	90
Window 18	Window	Rear Wall	Back	90
Door 1	Window	Rear Wall	Back	90
Window 4	Window	Right Wall 2	Right	180

Door		Right Wa	all		20			0.5		E	xisting		No	
Name		Side of Buil		,	Area (ft ²)		1.8367	factor		115	itatus	Verit	ied Existing	Condition
01		02			03			04			05		06	
OPAQUE DOORS				-										
Window 4	Window	Right Wall 2	Right	180		1	2	0.3	NFRC	0.23	NFRC	Bug Screen	New	n/a
Door 1	Window	Rear Wall	Back	90		1	20	0.3	NFRC	0.23	NFRC	Bug Screen	New	n/a
Window 18	Window	Rear Wall	Back	90	0 8	1	8	0.3	NFRC	0.23	NFRC	Bug Screen	New	n/a
Window 1	Window	Rear Wall	Back	90		1	10	0.3	NFRC	0.23	NFRC	Bug Screen	New	n/a

Width (ft)

Height (ft)

Calculation Date/Time: 2022-03-17T15:06:47-07:00

Input File Name: Molino Ave Addition (922).ribd19x

U-factor

SHGC

0.83

0.23

SHGC

Source

Table

110.6-B

0.3 NFRC 0.23 NFRC Bug Screen New n/a

Exterior

Shading

NFRC Bug Screen New

Bug Screen Existing

04 05 06 07 08 09 10 11 12 13 14 15 16

1.19 Table 110.6-A

0.3 NFRC

Mult. Area (ft²) U-factor Source

13.5

1 10

01	02	03	04	05	06	07	08
Construction Name	Surface Type	Construction Type	Framing	Total Cavity R-value	Interior / Exterior Continuous R-value	U-factor	Assembly Layers
R-0 Wall	Exterior Walls	Wood Framed Wall	2x4 @ 16 in. O. C.	R-0	None / None	0.361	Inside Finish: Gypsum Board Cavity / Frame: no insul. / 2x4 Exterior Finish: 3 Coat Stucco
R-13 Wall	Exterior Walls	Wood Framed Wall	2x4 @ 16 in. O. C.	R-13	None / None	0.101	Inside Finish: Gypsum Board Cavity / Frame: R-13 / 2x4 Exterior Finish: 3 Coat Stucco

Registration Number:

CA Building Energy Efficiency Standards - 2019 Residential Compliance

CERTIFICATE OF COMPLIANCE

Project Name: Molino Ave Addition Calculation Description: Title 24 Analysis

SPACE COND	ITIONING SY	STEMS								
	01			02						
Ν	lame		System Type							
HVAC	System1		Heating and o	cooling sys ther	stem					
HVAC - HEAT	ING UNIT TY	PES		1946						
	01									
	Nam	ne								
	Heating Con	ponent	: 1							
HVAC - COOL	ING UNIT TY	PES		tend						
01			02		03					
Nam	ie	Sys	stem Type	Nui	mber o					
Cooling Com	ponent 1	Cent	tral split AC		1					
HVAC - DISTR	IBUTION SY	STEMS								
01	02	-	03	04	05					
1				Duct Ins	. R-val					
Name	Туре		Design Type	Supply	Retu					
Air Distributi on System 1	Unconditi attic	oned	Non- Verified	R-6	R-I					

Registration Number:

CA Building Energy Efficiency Standards - 2019 Residential Compliance

	Δ.	-		
			*	
1	Z			

AMERICAN GENERAL CORPORATION www.AmGenCorp.com

CF1R-PRF-01

(Page 5 of 1

Verified

Existing

No

n/a

Condition

Status

34941 CALLE DEL SOL, CAPISTRANO BEACH, CA 92624

THESE DRAWINGS HAVE BEEN PREPARED FOR DESIGN ONLY. CIVIL, STRUCTURAL, MECHANICAL, AND OTHER RELATED ENGINEERING DESIGN AND SPECIFICATIONS ARE THE RESPONSIBILITY OF THE RESPECTIVE

ENGINEERS. COMPLIANCE TO THESE DRAWINGS WILL

BE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR.

ALL MEASUREMENTS SHALL BE VERIFIED BY THE CONTRACTORS DOING THE RESPECTIVE WORK.

THESE DRAWINGS, AS INSTRUMENTS OF SERVICE ARE THE EXCLUSIVE PROPERTY OF THE DESIGNERS, AND ARE NOT TO BE USED IN WHOLE OR PART WITHOUT HIS EXPRESS WRITTEN PERMISSION.

UNAUTHORIZED USE OF THESE DRAWINGS WILL SUBJECT THE USER TO LEGAL REMEDY BEING SOUGHT BY THE DESIGNERS.

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Report Version: 2019.2.000 Schema Version: rev 20200901 HERS Provider:

Report Generated: 2022-03-17 15:07:19

CF1R-PRF-01

(Page 8 of 10 1 6 6 22 CITY CORRECTIONS Calculation Date/Time: 2022-03-17T15:06:47-07:00 Input File Name: Molino Ave Addition (922).ribd19x 03 04 05 06 07 10 11 08 09 VerifiedHeatingCoolingExistingEquipmentEquipmentConditionCountCount Required Heating Unit Cooling Unit Distribution Fan Name Status Thermostat Name Name Name Туре Heating Cooling Air Distribution n/a HVAC Fan 1 Component Component Existing No 1 1 System 1 1 1 03 04 02

System	m Type	Numbe	er of Units	Heating Efficiency					
Central g	as furnace	}	1	AFUE-80					
03	04	05	06	07	08				
Number of Units	Efficiency EER/CEER	Efficiency SEER	Zonally Controlled	Mulit-speed Compressor	HERS Verification				
1	11.7	14	Not Zonal	Single Speed	Cooling Component 1-hers-cool				

)4	05	06	07	08	09	10	11	12	13	14	15	16
ct Ins	. R-value	Duct Lo	ocation	Surfac	e Area							*:
oply	Return	Supply	Return	Supply	Return	Bypass Duct	Duct Leakage	HERS Verification	Status	Verified Existing Condition	Existing Distribution system	New Ducts 40 ft
-6	R-6	Attic	Attic	n/a	n/a	No Bypass Duct	Existing (not specified)	Air Distributi on System	Existing + New	No	n/a	n/a

REVISIONS

CLIENT INFO

SHEET NAME

Scale

TITTLE 24

LB 1221 Project number 6 13 22 Date -----Drawn by Alpie T., Pedro O Checker Checked by SHEET

T24-2

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2019 Low-Rise Residential Mandatory Measures Summary

NOTE: Low-rise residential buildings subject to the Energy Standards must comply with all applicable used. Review the respective section for more information. *Exceptions may apply. (01/2020)

Building Envelop	e Measures:
§ 110.6(a)1:	Air Leakage. Manufactured fenestration, exterior doors, and exterior pet door
	when tested per NFRC-400, ASTM E283 or AAMA/WDMA/CSA 101/I.S.2/A4 Labeling. Fenestration products and exterior doors must have a label meetin
§ 110.6(a)5:	Field fabricated exterior doors and fenestration products must use U-factor
§ 110.6(b):	110.6-A, 110.6-B, or JA4.5 for exterior doors. They must be caulked and/or w
§ 110.7:	Air Leakage. All joints, penetrations, and other openings in the building enve gasketed, or weather stripped.
	Insulation Certification by Manufacturers. Insulation must be certified by th
§ 110.8(a):	and Services (BHGS).
§ 110.8(g):	Insulation Requirements for Heated Slab Floors. Heated slab floors must
§ 110.8(i):	Roofing Products Solar Reflectance and Thermal Emittance. The thermal material must meet the requirements of § 110.8(i) and be labeled per §10-113
§ 110.8(j):	Radiant Barrier. When required, radiant barriers must have an emittance of
3.110.00/	Ceiling and Rafter Roof Insulation. Minimum R-22 insulation in wood-frame
§ 150.0(a):	Minimum R-19 or weighted average U-factor of 0.054 or less in a rafter roof a insulation using adhesive or mechanical fasteners. The attic access must be
§ 150.0(a).	direct contact with a continuous roof or ceiling which is sealed to limit infiltration
	to placing insulation either above or below the roof deck or on top of a drywal
§ 150.0(b):	Loose-fill Insulation. Loose fill insulation must meet the manufacturer's requ
\$ 150 0/all	Wall Insulation. Minimum R-13 insulation in 2x4 inch wood framing wall or ha have a U-factor of 0.071 or less. Opaque non-framed assemblies must have a
§ 150.0(c):	must meet Tables 150.1-A or B.'
§ 150.0(d):	Raised-floor Insulation. Minimum R-19 insulation in raised wood framed floor
3	Slab Edge Insulation. Slab edge insulation must meet all of the following: ha
§ 150.0(f):	facings, no greater than 0.3 percent; have a water vapor permeance no great
	UV light deterioration; and, when installed as part of a heated slab floor, meet Vapor Retarder. In climate zones 1 through 16, the earth floor of unvented cr
§ 150.0(g)1:	retarder. This requirement also applies to controlled ventilation crawl space for
\$ 1E0 0(a)2	Vapor Retarder. In climate zones 14 and 16, a Class I or Class II vapor retar
§ 150.0(g)2:	insulation in all exterior walls, vented attics, and unvented attics with air-perm Fenestration Products. Fenestration, including skylights, separating condition
§ 150.0(q):	maximum U-factor of 0.58; or the weighted average U-factor of all fenestration
Fireplaces, Deco	rative Gas Appliances, and Gas Log Measures:
§ 110.5(e)	Pilot Light. Continuously burning pilot lights are not allowed for indoor and or
§ 150.0(e)1:	Closable Doors. Masonry or factory-built fireplaces must have a closable me
§ 150.0(e)2:	Combustion Intake. Masonry or factory-built fireplaces must have a combus
and a second	and is equipped with a readily accessible, operable, and tight-fitting damper of Flue Damper. Masonry or factory-built fireplaces must have a flue damper with
§ 150.0(e)3:	
Space Condition	ing, Water Heating, and Plumbing System Measures:
§ 110.0-§ 110.3:	Certification. Heating, ventilation and air conditioning (HVAC) equipment, wa appliances must be certified by the manufacturer to the California Energy Cor
§ 110.2(a):	HVAC Efficiency. Equipment must meet the applicable efficiency requirement
	Controls for Heat Pumps with Supplementary Electric Resistance Heate
§ 110.2(b):	must have controls that prevent supplementary heater operation when the he cut-on temperature for compression heating is higher than the cut-on temperature
	compression heating is higher than the cut-off temperature for supplementary
§ 110.2(c):	Thermostats. All heating or cooling systems not controlled by a central energy setback thermostat."
3	Water Heating Recirculation Loops Serving Multiple Dwelling Units. Wat
§ 110.3(c)4:	meet the air release valve, backflow prevention, pump priming, pump isolation
	§ 110.3(c)4. Isolation Valves. Instantaneous water heaters with an input rating greater the
§ 110.3(c)6:	bibbs or other fittings on both cold and hot water lines to allow for flushing the
	Pilot Lights. Continuously burning pilot lights are prohibited for natural gas: f
0.440.5	
§ 110.5:	appliances without an electrical supply voltage connection with pilot lights that
§ 110.5: § 150.0(h)1:	appliances without an electrical supply voltage connection with pilot lights tha Building Cooling and Heating Loads. Heating and/or cooling loads are calc Equipment Volume, Applications Volume, and Fundamentals Volume; the SN

ROOM LOAD	SUMMARY									
Project Name Molino Ave Addition								Date	3/17/20	122
System Name								Floor		122
HVAC System								11001	1,36	7
ROOM LOAD SUMM	IARY							4	1,00	5
		1	ROO		PEAK	COII	COOLING	PEAK	COLLHI	G. PEAK
Zone Name	Room Name	Mult.	CFM	Sensible	Latent	CFM	Sensible	Latent	CFM	Sensible
Existing Living Area	Existing 1st Floor	1	893	17,879	559	893	17,879	559	666	25,146
New Living Area	1st Floor Addition	1	176	3,519	208	176	3,519	208	92	3,479
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* Total includes ventilation	ioad for zonal systems.									

2019 Low-Rise Residential Mandatory Measures Summary

§ 150.0(k)2G:	Interior Switches and Controls. An energy management control system (EMCS) may be used to comply with control requirem provides functionality of the specified control according to § 110.9; meets the Installation Certificate requirements of § 130.4; me EMCS requirements of § 130.0(e); and meets all other requirements in § 150.0(k)2.
§ 150.0(k)2H:	Interior Switches and Controls. A multiscene programmable controller may be used to comply with dimmer requirements in § provides the functionality of a dimmer according to § 110.9, and complies with all other applicable requirements in § 150.0(k)2.
§ 150.0(k)2I:	Interior Switches and Controls. In bathrooms, garages, laundry rooms, and utility rooms, at least one luminaire in each of these controlled by an occupant sensor or a vacancy sensor providing automatic-off functionality. If an occupant sensor is installed initially configured to manual-on operation using the manual control required under Section 150.0(k)2C.
§ 150.0(k)2J:	Interior Switches and Controls. Luminaires that are or contain light sources that meet Reference Joint Appendix JA8 requirem dimming, and that are not controlled by occupancy or vacancy sensors, must have dimming controls.*
§ 150.0(k)2K:	Interior Switches and Controls. Under cabinet lighting must be controlled separately from ceiling-installed lighting systems.
§ 150.0(k)3A:	Residential Outdoor Lighting. For single-family residential buildings, outdoor lighting permanently mounted to a residential buildings on the same lot, must meet the requirement in item § 150.0(k)3Ai (ON and OFF switch) and the requirements in either § 150.0(k)3Aii (photocell and either a motion sensor or automatic time switch control) or § 150.0(k)3Aii (astronomical time clock Residential Outdoor Lighting. For low-rise residential buildings with four or more dwelling units, outdoor lighting for private pal
§ 150.0(k)3B:	balconies, and porches; and residential parking lots and carports with less than eight vehicles per site must comply with either § with the applicable requirements in Sections 110.9, 130.0, 130.2, 130.4, 140.7 and 141.0.
§ 150.0(k)3C:	Residential Outdoor Lighting. For low-rise residential buildings with four or more dwelling units, any outdoor lighting for reside 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 the applicable requirements in Sections 110.9, 130.0, 130.2, 130.4, 140.7 and 141.0.
§ 150.0(k)4:	Internally illuminated address signs. Internally illuminated address signs must comply with § 140.8; or must consume no mor power as determined according to § 130.0(c).
§ 150.0(k)5:	Residential Garages for Eight or More Vehicles. Lighting for residential parking garages for eight or more vehicles must com applicable requirements for nonresidential garages in Sections 110.9, 130.0, 130.1, 130.4, 140.6, and 141.0.
§ 150.0(k)6A:	Interior Common Areas of Low-rise Multifamily Residential Buildings. In a low-rise multifamily residential building where the common area in a single building equals 20 percent or less of the floor area, permanently installed lighting for the interior common building must be comply with Table 150.0-A and be controlled by an occupant sensor.
§ 150.0(k)6B:	Interior Common Areas of Low-rise Multifamily Residential Buildings. In a low-rise multifamily residential building where the common area in a single building equals more than 20 percent of the floor area, permanently installed lighting for the interior contract building must: i. Comply with the applicable requirements in Sections 110.9, 130.0, 130.1, 140.6 and 141.0; and ii. Lighting installed in corridors and stairwells must be controlled by occupant sensors that reduce the lighting power in each span 50 percent. The occupant sensors must be capable of turning the light fully on and off from all designed paths of ingress and egre
Solar Ready Bui	
§ 110.10(a)1:	Single Family Residences. Single family residences located in subdivisions with 10 or more single family residences and wher application for a tentative subdivision map for the residences has been deemed complete and approved by the enforcement age do not have a photovoltaic system installed, must comply with the requirements of § 110.10(b) through § 110.10(e).
§ 110.10(a)2:	Low-rise Multifamily Buildings. Low-rise multi-family buildings that do not have a photovoltaic system installed must comply w requirements of § 110.10(b) through § 110.10(d).
§ 110.10(b)1:	Minimum Solar Zone Area. The solar zone must have a minimum total area as described below. The solar zone must comply to pathway, smoke ventilation, and spacing requirements as specified in Title 24, Part 9 or other parts of Title 24 or in any requirem 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 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 the roof areas greater than 10,000 square feet. For single family residences, the solar zone must be located on the roof or overhang 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 the building, or on the roof or overhang of another structure located within 250 feet of the building, or on covered parking installe building project, and have a total area no less than 15 percent of the total roof area of the building excluding any skylight area. T requirement is applicable to the entire building, including mixed occupancy."
§ 110.10(b)2:	Azimuth. All sections of the solar zone located on steep-sloped roofs must be oriented between 90 degrees and 300 degrees of
§ 110.10(b)3A:	Shading. The solar zone must not contain any obstructions, including but not limited to: vents, chimneys, architectural features, mounted equipment.
§ 110.10(b)3B:	Shading. Any obstruction located on the roof or any other part of the building that projects above a solar zone must be located a distance, measured in the horizontal plane, of the height difference between the highest point of the obstruction and the horizon the nearest point of the solar zone, measured in the vertical plane.*
§ 110.10(b)4:	Structural Design Loads on Construction Documents. For areas of the roof designated as a solar zone, the structural design dead load and roof live load must be clearly indicated on the construction documents.
§ 110.10(c):	Interconnection Pathways. The construction documents must indicate: a location reserved for inverters and metering equipme pathway reserved for routing of conduit from the solar zone to the point of interconnection with the electrical service; and for sing residences and central water-heating systems, a pathway reserved for routing plumbing from the solar zone to the water-heating
§ 110.10(d):	Documentation. A copy of the construction documents or a comparable document indicating the information from § 110.10(b) t § 110.10(c) must be provided to the occupant.
§ 110.10(e)1:	Main Electrical Service Panel. The main electrical service panel must have a minimum busbar rating of 200 amps.
	Main Electrical Service Panel. The main electrical service panel must have a reserved space to allow for the installation of a d

ble mandatory measures, regardless of the compliance approach	RESIDENTIAL ME	EASURES SUMM	ARY			RMS-1
18 01 9890 Pr 1932	Project Name Molino Ave Addition	Buil	ding Type ☑ Single □ Multi I	Family D Addition Alone Family D Existing+ Additio	n/Alteration	Date 3/17/202
	Project Address	Cali	ifornia Energy Climate	nan nadi nan sana ana ana ana ana ana ana ana an	Addition	# of Units
s must limit air leakage to 0.3 CFM per square foot or less 40-2011.*	922 Molino Avenue Lo	1.0003213	CA Climate Zone	2011년 1936년 2011	371	1
g the requirements of § 10-111(a).	INSULATION		Area			
ors and solar heat gain coefficient (SHGC) values from Tables	Construction Type	Cav	vity (ft ²)	Special Features		Status
eather-stripped.* ope that are potential sources of air leakage must be caulked,	Wall Wood Framed	R 13	359			New
ope mar are potential sources of an leakage must be cauked,	Roof Wood Framed Attic	R 30	371			New
e Department of Consumer Affairs, Bureau of Household Goods						
be insulated per the requirements of § 110.8(g).						
emittance and aged solar reflectance values of the roofing						
when the installation of a cool roof is specified on the CF1R.						
0.05 or less and be certified to the Department of Consumer Affairs.						
ceiling; or the weighted average U-factor must not exceed 0.043, Iteration. Attic access doors must have permanently attached gasketed to prevent air leakage. Insulation must be installed in on and exfiltration as specified in § 110.7, including but not limited ceiling.	FENESTRATION Orientation Area(f	A	^B Glazing Percentage Overhang S	15.9 % New/Altered Avera New/Altered Avera		0.30 Status
ired density for the labeled R-value.						
ave a U-factor of 0.102 or less, or R-20 in 2x6 inch wood framing or an overall assembly U-factor not exceeding 0.102. Masonry walls						
or or 0.037 maximum U-factor.*						
ve a water absorption rate, for the insulation material alone without er than 2.0 perm per inch; be protected from physical damage and the requirements of § 110.8(g).						
awl space must be covered with a Class I or Class II vapor or buildings complying with the exception to § 150.0(d). der must be installed on the conditioned space side of all eable insulation.						
ned space from unconditioned space or outdoors must have a n must not exceed 0.58.*						
utdoor fireplaces.						
tal or glass door covering the entire opening of the firebox.						
tion outside air intake, which is at least six square inches in area	HVAC SYSTEMS Qty. Heating	Min. Eff Co	oling	Min. Eff The	rmostat	Status
th a readily accessible control.*						
ter heaters, showerheads, faucets, and all other regulated						
nmission."					Junet	
ts in Table 110.2-A through Table 110.2-K.	HVAC DISTRIBUTIO		- Derd		Duct	01-1
rs. Heat pumps with supplementary electric resistance heaters ating load can be met by the heat pump alone; and in which the iture for supplementary heating, and the cut-off temperature for heating.'	Location	Heating Co	ooling Duct	Location F	R-Value	Status
y management control system (EMCS) must have a						
er heating recirculation loops serving multiple dwelling units must n valve, and recirculation loop connection requirements of	WATER HEATING Qty. Type	Gallons	Min. Eff D	istribution		Status
an 6.8 kBtu per hour (2 kW) must have isolation valves with hose water heater when the valves are closed.						
an-type central furnaces; household cooking appliances (except t consume less than 150 Btu per hour); and pool and spa heaters."						
ulated in accordance with the ASHRAE Handbook, ACNA Residential Comfort System Installation Standards)2.	EnergyPro 8.3 by EnergySoft	User Number: 6249		ID: 22-031722		Page 14 of 1

ontrol system (EMCS) may be used to comply with control requirements if it: 110.9; meets the Installation Certificate requirements of § 130.4; meets the rements in § 150.0(k)2. ble controller may be used to comply with dimmer requirements in § 150.0(k) if it and complies with all other applicable requirements in § 150.0(k)2. undry rooms, and utility rooms, at least one luminaire in each of these spaces must oviding automatic-off functionality. If an occupant sensor is installed, it must be control required under Section 150.0(k)2C. tain light sources that meet Reference Joint Appendix JA8 requirements for cy sensors, must have dimming controls.* st be controlled separately from ceiling-installed lighting systems. buildings, outdoor lighting permanently mounted to a residential building, or to other § 150.0(k)3Ai (ON and OFF switch) and the requirements in either natic time switch control) or § 150.0(k)3Aiii (astronomical time clock), or an EMCS. lings with four or more dwelling units, outdoor lighting for private patios, entrances, ports with less than eight vehicles per site must comply with either § 150.0(k)3A or 30.2, 130.4, 140.7 and 141.0. tings with four or more dwelling units, any outdoor lighting for residential parking lots any outdoor lighting not regulated by § 150.0(k)3B or § 150.0(k)3D must comply with 130.4, 140.7 and 141.0. address signs must comply with § 140.8; or must consume no more than 5 watts of for residential parking garages for eight or more vehicles must comply with the ons 110.9, 130.0, 130.1, 130.4, 140.6, and 141.0. tial Buildings. In a low-rise multifamily residential building where the total interior of the floor area, permanently installed lighting for the interior common areas in that by an occupant sensor. tial Buildings. In a low-rise multifamily residential building where the total interior ent of the floor area, permanently installed lighting for the interior common areas in , 130.0, 130.1, 140.6 and 141.0; and led by occupant sensors that reduce the lighting power in each space by at least g the light fully on and off from all designed paths of ingress and egress. d in subdivisions with 10 or more single family residences and where the has been deemed complete and approved by the enforcement agency, which th the requirements of § 110.10(b) through § 110.10(e). ings that do not have a photovoltaic system installed must comply with the nimum total area as described below. The solar zone must comply with access, ecified in Title 24, Part 9 or other parts of Title 24 or in any requirements adopted by ised of areas that have no dimension less than 5 feet and are no less than 80 qual to 10,000 square feet or no less than 160 square feet each for buildings with residences, the solar zone must be located on the roof or overhang of the building rise multi-family buildings the solar zone must be located on the roof or overhang o ocated within 250 feet of the building, or on covered parking installed with the ent of the total roof area of the building excluding any skylight area. The solar zone ed occupancy. ped roofs must be oriented between 90 degrees and 300 degrees of true north. including but not limited to: vents, chimneys, architectural features, and roof art of the building that projects above a solar zone must be located at least twice the erence between the highest point of the obstruction and the horizontal projection of or areas of the roof designated as a solar zone, the structural design loads for rool

ust indicate: a location reserved for inverters and metering equipment and a to the point of interconnection with the electrical service; and for single family served for routing plumbing from the solar zone to the water-heating system. comparable document indicating the information from § 110.10(b) through panel must have a minimum busbar rating of 200 amps. panel must have a reserved space to allow for the installation of a double pole circuit

2019 Low-Rise Residential Mandatory Measures Summary quirements 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 § 150.0(o)1C: 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 § 150.0(o)1E: 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 § 150.0(o)1F: ventilation airflow for each dwelling unit served at a rate equal to or greater than the rate specified by Equation 150.0-B. All unit airflows must be within 20 percent of the unit with the lowest airflow rate as it relates to the individual unit's minimum required airflow rate needed for compliance \$ 150.0(o)1G: 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 § 150.0(o)2: rated by HVI to comply with the airflow rates and sound requirements as specified in Section 5 and 7.2 of ASHRAE 62.2. Pool and Spa Systems and Equipment Measures: 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 § 110.4(a): without adjusting the thermostat setting; a permanent weatherproof plate or card with operating instructions; and must not use electric esistance heating. 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 § 110.4(b)1: 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. 110.4(b)2: 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. 110.5: Pool Systems and Equipment Installation. Residential pool systems or equipment must meet the specified requirements for pump sizing, flow § 150.0(p): rate, piping, filters, and valves." Lighting Measures: Lighting Controls and Components. All lighting control devices and systems, ballasts, and luminaires must meet the applicable requirement 110.9: of § 110.9." Luminaire Efficacy. All installed luminaires must meet the requirements in Table 150.0-A. 150.0(k)1A: 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 § 150.0(k)1B: other device must be no greater than the number of bedrooms. These electrical boxes must be served by a dimmer, vacancy sensor control, or fan speed control. 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 § 150.0(k)1D: 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 controlled by vacancy sensors provided they are rated to consume no more than 5 watts of power and emit no more than 150 lumens. § 150.0(k)1E: Lighting Integral to Exhaust Fans. Lighting integral to exhaust fans (except when installed by the manufacturer in kitchen exhaust hoods) must meet the applicable requirements of § 150.0(k).* 150.0(k)1F: 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 § 150.0(k)1I: comply with Table 150.0-A or be controlled by vacancy sensors provided that they are rated to consume no more than 5 watts of power, emit no more than 150 lumens, and are equipped with controls that automatically turn the lighting off when the drawer, cabinet or linen closet is closed. 150.0(k)2A: Interior Switches and Controls. All forward phase cut dimmers used with LED light sources must comply with NEMA SSL 7A. 150.0(k)2B; Interior Switches and Controls. Exhaust fans must be controlled separately from lighting systems. Interior Switches and Controls. Lighting must have readily accessible wall-mounted controls that allow the lighting to be manually 150.0(k)2C: turned ON and OFF.* 150.0(k)2D: 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: comply with § 150.0(k). § 150.0(k)2F: Interior Switches and Controls. Lighting controls must comply with the applicable requirements of § 110.9.

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I by, a e. all of in reaker o the e base or hour.</td><td>DLINO AVE.</td><td>17Y CORRECTION</td><td>NS</td></th<>	§ 150.0(h)3A: § 150.0(h)3B: § 150.0(j)1: § 150.0(j)2A: § 150.0(j)3: § 150.0(n)1: § 150.0(n)2:	2019 Low-I Clearances. Air conditioner Liquid Line Drier. Air condi manufacturer's instructions. Storage Tank Insulation. U a minimum of R-12 external Water Piping, Solar Water- be insulated as specified in 3 insulation wall thickness of c water piping with a nominal of than 3/4 inch that is: associa buried below grade, and from Insulation Protection. Pipir wind as required by Section Insulation covering chilled w Class I or Class II vapor reta Gas or Propane Water Hear the following: A dedicated 12 copper branch circuit, within word "spare" and be electric for the branch circuit and lab outside termination and the of the water heater, and allo Recirculating Loops. 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space as confirmed through field verification and diagnostic testing (RA3.1.4.3.8). Portions of the aduct 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 ducts must be the applicable requirements of UL 181. UL 181. Q. UL 181. Bo arrossol sealant that needs the requirements of ulz 723. If mastic or tape is used to seal openings greater than 14. Inich, the combination of mastic and either mesh or tape must be used. Building cavities, support platforms may contain ducts. Duct is must not be used to corvey conditioned air. Building cavity frees and support platforms may contain ducts. Duct is must not be used to construction, connections, and closures; joints and seams of duct systems must comply with applicable requirements for duct construction, connections, and closures; joints and seams of duct systems must comply with applicable requirements for duct construction, free for functed Duct Systems. Field-Advanced duct systems must comply with applicable requirements for duct construction, field-ordinated Duct Systems. Field-Advanced duct systems must comply with applicable requirements for duct construction, mastics, sealants, and other requirements specified for duct construction. § 150.0(m)?: Backdraft Damper. Fars systems that exchange air between the conditioned space and uddoors must have backdraft or automatic dampers. Field-Pair/Lead Duct System Advance and pair duct advance and evaluation. Field-Pair/Lead Duct System shat exchange air between the conditioned space must have analy accessible. Field-Pair/Lead Duct System and the accessible for undoors must have backdraft or automatic dampers. Field-Pair/Lead Duct System and the accessible for undoors must have backdraft or automatic dampers. Field-Pair/Lead Duct System must have anal	§ 150.0(h)3A: § 150.0(h)3B: § 150.0(j)1: § 150.0(j)2A: § 150.0(j)3: § 150.0(n)1: § 150.0(n)2: § 150.0(n)3: Ducts and Fans Met § 110.8(d)3:	2019 Low-I Clearances. Air conditioner Liquid Line Drier. Air condi manufacturer's instructions. Storage Tank Insulation. U a minimum of R-12 external Water Piping, Solar Water- be insulated as specified in 3 insulation wall thickness of of water piping with a nominal than 3/4 inch that is: associa buried below grade, and fror Insulation Protection. 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§ 150.0(m)1: mechanically fastened: Openings must be sealed with mastic, tape, or other duct-losure system that meets the applicable requirements of UL. If 10, UL 181A, or UL 181A or exercise and support platforms for air handlers, and plenums designed or constructed with materials other than sealed sheat metal, duct board or facuble duct must not be used to convey conditioned air, Building cavities and support platforms may contain ducts. Ducks installed in cavities and support platforms for air handlers, and plenums designed or constructed with materials other than sealed sheat metal. ISE Sheat Shea	§ 150.0(h)3A: § 150.0(h)3B: § 150.0(j)1: § 150.0(j)2A: § 150.0(j)3: § 150.0(n)1: § 150.0(n)2: § 150.0(n)3: Ducts and Fans Met § 110.8(d)3:	2019 Low-I Clearances. Air conditioner Liquid Line Drier. Air condi manufacturer's instructions. Storage Tank Insulation. U a minimum of R-12 external Water Piping, Solar Water- be insulated as specified in 3 insulation wall thickness of of water piping with a nominal than 3/4 inch that is: associa buried below grade, and fror Insulation Protection. Pipir wind as required by Section Insulation covering chilled w Class I or Class II vapor reta Gas or Propane Water Hea the following: A dedicated 12 copper branch circuit, within word "spare" and be electric for the branch circuit and lab outside termination and the of the water heater, and allo Recirculating Loops. Recir Solar Water-heating Syste Corporation (SRCC), the Inte agency that is approved by the easures: Ducts. Insulation installed o contractor installs the insular CMC Compliance. All air-di and ANSI/SMACNA-006-200	Rise Resid and heat pump out tioners and heat pu Infired hot water tar insulation or R-16 in heating System Pi Section 609.11 of the section 609.11 of the cheating System Pi Section 609.11 of the inch or a minimu diameter equal to or ated with a domestic in the heating source in the feet of the wa ally isolated. Have a beled with the words space where the water isonal Associati the Executive Direct in an existing space tion, the contractor istribution system du D6 HVAC Duct Cons	door condensin mp systems mu- lks, such as sto nternal insulation ping, and Spa le California Plu um insulation R r greater than 3 chot water recir e to kitchen fixt e protected from exposed to we gerant suction n buried below terns using gas trical receptack ater heater without terns using gas trical receptack ater heater without reserved singlis "Future 240V fut ther heater is insi without pump a ng multiple dwe ating systems a on of Plumbing tor.	ing units must have ust be equipped w prage tanks and b on where the inter ice Conditioning umbing Code. In a l-value of 7.7: the b/4 inch and less to reculation system, ures.* m damage, include ather must be wa piping located our grade must be im- s or propane wate the connected to th out obstruction. B le pole circuit bre- Use"; a Category stalled; a condem assistance; and a elling units must m and collectors must and Mechanical uct must comply w the customer, in w ms must meet the ards Metal and Fla	e a clearance of a with liquid line filte packup storage tar rnal insulation R-w g System Line Insu addition, the follow first five feet of co than one inch; all from the heating st ding that due to su ater retardant and itside the condition stalled in a water er heaters to serve he electric panel w Both ends of the u paker space in the fill or IV vent, or a state drain that is gas supply line w meet the requirem st be certified and Officials, Researd with § 604.0 of the writing, that the insu- requirements of exible 3rd Edition.	es Summal at least five feet fror r driers if required, hks for solar water- value is indicated or sulation. All domes wing piping condition old water pipes fror hot water piping will source to storage ta unlight, moisture, ec protected from UV ned space must inco proof and non-crust a individual dwelling vith a 120/240 volt 3 nused conductor m electrical panel ad a Type B vent with a no more than two in vith a capacity of at tents of § 110.3(c)5 I rated by the Solar ch and Testing (IAF e California Mechar sulation meets this the CMC §§ 601.0, . Portions of supply	ry In the outlet of any dr as specified by the heating systems, mu in the exterior of the ta stic hot water piping r ons must have a minin in the storage tank; at th a nominal diamete ank or between tanks quipment maintenand light (no adhesive ta clude, or be protected hable casing or sleev g units must include a 3 conductor, 10 AWG units must include a 3 conductor, 10 AWG units be labeled with th jacent to the circuit b straight pipe betweer inches higher than the least 200,000 Btu per Rating and Certifical 2MO R&T), or by a lis nical Code (CMC). If requirement. 602.0, 603.0, 604.0, -air and return-air du	yer st have ank. nust mum ll hot r less s, ze, and opes). l by, a e. all of ine reaker o the base or hour. tion ting a 605.0 cts and	DLINO AVE.	17Y CORRECTION	NS
designed or constructed with materials other than sealed sheet metal, duct board or factble duct must not be used to convey conditioned air. SHEET NAME \$ 150.0(m)2: Factory-Fabricated Duct Systems, Factory-Fabricated duct systems must comply with applicable requirements for duct construction, connections, and dosures; joints and same of duct systems and their components must not be sealed with clot back rubber adhesive duct tapes unless such tape is used in combination with mastic and draw bands. SHEET NAME § 150.0(m)2: Field-Fabricated Duct Systems, Factory-Fabricated duct systems must comply with applicable requirements for pressure-sensitive tapes, mastics, sealans, and other requirements specified for duct construction. SHEET NAME § 150.0(m)2: Field-Fabricated Duct Systems, Factory-Fabricated actor systems must comply with applicable requirements for: pressure-sensitive tapes, mastics, sealans, and other requirements specified for duct construction. SHEET NAME § 150.0(m)7: Backdraft Damper, Fan systems that exchange air between the conditioned space and outdoors must have backdraft or automatic dampers. TITTLE 24 § 150.0(m)8: Protection of Insulation. Insulation must be protected from damage, sunlight, moisture, equipment maintenance, and wind. Insulation exposed Sheet must be sealed and duct leave seque to mostion adiation. § 150.0(m)10: Porous Inner Core Flex Duct. Porous inner core flex ducts must have a non-porous layer between the inner core and outer vapor barrier. Duct System Sealing and Leakage Test. When space conditioning systems use forced and duct leaves except. </td <td>§ 150.0(h)3A: § 150.0(h)3B: § 150.0(j)1: § 150.0(j)2A: § 150.0(j)3: § 150.0(j)3: § 150.0(n)1: § 150.0(n)2: § 150.0(n)3: Ducts and Fans Met § 110.8(d)3:</td> <td>2019 Low-I Clearances. Air conditioner Liquid Line Drier. Air condi manufacturer's instructions. Storage Tank Insulation. 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Filters for space conditioning systems must be access	§ 150.0(h)3A: § 150.0(h)3B: § 150.0(j)1: § 150.0(j)2A: § 150.0(j)3: § 150.0(j)3: § 150.0(n)1: § 150.0(n)2: § 150.0(n)3: Ducts and Fans Me § 110.8(d)3: § 150.0(m)1:	2019 Low-I Clearances. Air conditioner Liquid Line Drier. Air condi manufacturer's instructions. Storage Tank Insulation. U a minimum of R-12 external Water Piping, Solar Water- be insulated as specified in 3 insulation wall thickness of or water piping with a nominal than 3/4 inch that is: associa buried below grade, and fror Insulation Protection. Pipir wind as required by Section Insulation covering chilled w Class I or Class II vapor reta Gas or Propane Water Hea the following: A dedicated 12 copper branch circuit, within word "spare" and be electric for the branch circuit and lab outside termination and the of the water heater, and allo Recirculating Loops. Recir Solar Water-heating Syste Corporation (SRCC), the Inte agency that is approved by the deasures: Ducts. 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 § 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. § 150.0(m)3: Field-Fabricated Duct Systems. Field-fabricated duct systems use comply with applicable requirements for: pressure-sensitive tapes, mastics, sealants, and other requirements specified for duct construction. § 150.0(m)7: Backdraft Damper. Fan systems that exchange air between the conditioned space and outdoors must have backdraft or automatic dampers. § 150.0(m)8: Gravity Ventilation Dampers. Gravity ventilating systems serving conditioned space and outdoors must have backdraft or automatic dampers. § 150.0(m)8: Gravity Ventilation insulation must be protected from damage, sunlight, moisture, equipment maintenance, and wind. Insulation exposed to weather must be suitable for outdoor service. For example, protected by aluminum, sheet metal, painted canvas, or plastic cover. Cellular foam insulation must be protected ana above or painted with a coating that is water retardant and provides shielding from solar radiation. § 150.0(m)10: Porous Inner Core Flex Duct. Porous inner core flex ducts must have a non-porous layer between the inner core and outer vapor barrier. § 150.0(m)11: Docus Space conditioning systems with ducts exceeding 10 feet and the supply side of ventilation systems must have MERV 13 or equivalent filters. Filters for space conditioning systems must have a two inch depth or can be one inch if sized per Equation 150.0-A. Pressure drops and labeling must meet the requirements in § 150.0(m)12: differs must be accessible for regular service.* § 150.0(m)12: degrade and fuel terage and and trade and professore probe in the supply pleum. Airflow must be ≥ 350 CFM or to not nomial cooling capacity, and an airhandling unit fan efficacy ≤ 240 CFM per ton of nominal coolin	§ 150.0(h)3A: § 150.0(h)3B: § 150.0(j)1: § 150.0(j)2A: § 150.0(j)3: § 150.0(j)3: § 150.0(n)1: § 150.0(n)2: § 150.0(n)3: Ducts and Fans Me § 110.8(d)3: § 150.0(m)1:	2019 Low-I Clearances. Air conditioner Liquid Line Drier. Air condi manufacturer's instructions. Storage Tank Insulation. U a minimum of R-12 external Water Piping, Solar Water- be insulated as specified in 3 insulation wall thickness of or water piping with a nominal than 3/4 inch that is: associa buried below grade, and fror Insulation Protection. Pipir wind as required by Section Insulation covering chilled w Class I or Class II vapor reta Gas or Propane Water Heat the following: A dedicated 12 copper branch circuit, within word "spare" and be electric for the branch circuit and lab outside termination and the of the water heater, and allo Recirculating Loops. 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Insulation must be protected as above or painted with a coating that is water retardant and provides shielding from solar radiation. § 150.0(m)10: Porous Inner Core Flex Duct. Porous inner core flex ducts must have a non-porous layer between the inner core and outer vapor barrier. Put System Sealing and Leakage Test. When space conditioning systems use forced air duct systems to supply conditioned air to an occupiable space, the ducts must be sealed and duct leakage tested, as confirmed through field verification and diagnostic testing, in accordance with § 150.0(m)11: Peroject number LB 12 § 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. 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 § 150.0(m)8: 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 exposed to weather must be suitable for outdoor service. For example, protected by aluminum, sheet metal, painted canvas, or plastic cover. Cellular foam insulation must be protected as above or painted with a coating that is water retardant and provides shielding from solar radiation. § 150.0(m)10: Porous Inner Core Flex Duct. Porous inner core flex ducts must have a non-porous layer between the inner core and outer vapor barrier. Duct System Sealing and Leakage Test. When space conditioning systems use forced air duct systems to supply conditioned air to an accordance with § 150.0(m)11: accordance with § 150.0(m)11 and Reference Residential Appendix RA3. Air Filtration. 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Filters must be accessible for regular service.* Project number LB 12 § 150.0(m)13: Space Conditioning System Airflow Rate and Fan Efficacy. Space conditioning systems that use ducts to supply cooling must have a hole for the placement of a static pressure probe, or a permanently installed static pressure probe in the supply plenum. Airflow must be ≥ 350 CFM per ton of nominal cooling capacity, and an air-handling unit fan efficacy ≤ 0.45 watts per CFM for gas furnace air handlers and ≤ 0.58 watts per CFM for all others. Small duct high velocity systems must provide an airflow ≥ 250 CFM per ton of nominal cooling capacity, and an air-handling unit fan efficacy ≤ 0.45 watts per CFM for gas furnace air handlers and ≤ 0.58 watts per CFM for all others. 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§ 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 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.* Project number LB 12 Space Conditioning System Airflow Rate and Fan Efficacy. Space conditioning systems that use ducts to supply cooling must have a hole for the placement of a static pressure probe, or a permanently installed static pressure probe in the supply plenum. Airflow must be ≥ 350 CFM per ton of nominal cooling capacity, and an air-handling unit fan efficacy ≤ 0.45 watts per CFM for gas furnace air handlers and ≤ 0.58 watts per CFM for all others. Small duct high velocity systems must provide an airflow ≥ 250 CFM per ton of nominal cooling capacity, and an air-handling Drawn by Alpie T., Pedro Checked by Checked by Project hyper ton of nominal cooling capacity. Project hyper ton of nominal cooling capacity.	§ 150.0(h)3A: § 150.0(h)3B: § 150.0(j)1: § 150.0(j)2A: § 150.0(j)3: § 150.0(j)3: § 150.0(n)1: § 150.0(n)2: § 150.0(n)3: Ducts and Fans Me § 110.8(d)3: § 150.0(m)1: § 150.0(m)2: § 150.0(m)2: § 150.0(m)2: § 150.0(m)2: § 150.0(m)3: § 150.0(m)3: § 150.0(m)3: § 150.0(m)3: § 150.0(m)3: § 150.0(m)3:	Clearances. Air conditioner Liquid Line Drier. Air condi manufacturer's instructions. Storage Tank Insulation. 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CFM for all others. Small duct high velocity systems must provide an airflow ≥ 250 CFM per ton of nominal cooling capacity, and an air-handling Checked by	§ 150.0(h)3A: § 150.0(h)3B: § 150.0(j)1: § 150.0(j)2A: § 150.0(j)3: § 150.0(j)3: § 150.0(n)1: § 150.0(n)2: § 150.0(n)3: § 150.0(n)2: § 150.0(n)3: § 150.0(n)2: § 150.0(n)3: § 150.0(n)3: § 150.0(m)1: § 150.0(m)1: § 150.0(m)2: § 150.0(m)2: § 150.0(m)2: § 150.0(m)2: § 150.0(m)2: § 150.0(m)2: § 150.0(m)1: § 150.0(m)2: § 150.0(m)1: § 150.0(m)2: § 150.0(m)2: § 150.0(m)2: § 150.0(m)2:	2019 Low-I Clearances. Air conditioner Liquid Line Drier. Air condi manufacturer's instructions. Storage Tank Insulation. U a minimum of R-12 external Water Piping, Solar Water- be insulated as specified in S insulation wall thickness of or water piping with a nominal than 3/4 inch that is: associa buried below grade, and from Insulation Protection. 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