					J.A . 1	• 0¢ • I 675
		APPENDIX H	TABLE H 101. LOCATION OF SEWAGE DISI	8 POSAL SYSTEM		
		MINIMUM HORIZONTAL DISTANCE IN CLEAR REQUIRED FROM	BUILDING SEWER		DISPOSAL FIELD	SEEPAGE CESSP
		Building or structures ¹ Property line adjoining private property Water supply wells	2 feet Clear ² 50 feet ³	5 feet 5 feet	5 feet	8 fee 8 fee 150 f
		Streams and other bodies of water Trees	50 feet	50 feet 10 feet	100 feet ⁷	150 fe 10 fe
		Seepage pits or cesspools ⁸ Disposal field ⁸	-	5 feet 5 feet	5 feet 4 feet ⁴	12 fe 5 fe
ROOF LOAD DEAD LOAD: CONCRETE TILE 9.5 PSF		On-site domestic water service line Distribution box	1 foot ⁵	5 feet	5 feet 5 feet	5 fee 5 fee
SHTG2.0PSFFRAMING3.0PSFINSULATION1.0PSF		For SI units: 1 foot = 304.8 mm Notes:	10 feet ^o	10 feet	10 feet	10 fe
MISCELLANEOUS 2.0 PSF GYP BOARD 2.5 PSF TOTAL 20.0 PSF		 Including porches and steps, whether covered ways, and similar structures or appurtenances. 2 See Section 312.3. 	d or uncovered, breezeways, roofed p	porte cocheres, roofe	d patios, carports, covered	walks, cove
IVE LOAD: $\frac{20.0 \text{ PSF}}{W_T} = \frac{40.0 \text{ PSF}}{40.0 \text{ PSF}}$		 ³ Drainage piping shall clear domestic water sup 25 feet (7620 mm) where the drainage piping is ⁴ Plus 2 feet (610 mm) for each additional 1 foot (pply wells by not less than 50 feet (15 2) s constructed of materials approved for (305 mm) of depth in excess of 1 foot (2)	240 mm). This distan r use within a buildin 305 mm) below the bo	ce shall be permitted to be r g.	reduced to no
NTERIOR WALLS		 ⁵ See Section 720.0. ⁶ For parallel construction – For crossings, appr ⁷ The section of the sect	roval by the Health Department shall l	be required.		
GYP BOARD 4.0 PSF STUCCO 10.0 PSF (2000) FRAMING 2.0 PSF GYP BOARD 2.0 PSF (2000)	25 PSF AT VENEER)	 ⁷ These minimum clear horizontal distances shal ⁸ Where disposal fields, seepage pits, or both ar ground surface shall be 15 feet (4572 mm). 	l also apply between disposal fields, se e installed in sloping ground, the min	eepage pits, and the m imum horizontal dist	ean high-tide line. ance between any part of th	ne leaching s
FRAMING 2.0 PSF FRAMING 2.0 PSF TOTAL 16.0 PSF	31.0 PSF AT		TABLE H 201.1(CAPACITY OF SEPTIC TA	1) ANKS ^{1, 2, 3, 4}		
STONE VENEER IS ONLY 3'-0" HIGH (BOTTOM HALF OF WALL IS	VENEER)	SINGLE-FAMILY DWELLINGS - MULTIPLE NUMBER OF BEDROOMS APARTMENTS	DWELLING UNITS OR OTHER S - ONE BEDROOM EACH UNITS S	USES: MAXIMUM FIX SERVED PER TABLE	(TURE MINIMUM SEPT 702.1 (g	IC TANK Ca allons)
NOT INCLUDED IN LATERAL ANALYS	ilS)	3	- 2 units	20 25		1000 1200
		5 or 6	3 4	33 45		1500 2000
HECK UPLIFT AT OVERHANG (ASCE 7-22 FIG. 6-2) H = (24.0 PSF)(1' OVERHANG)(2' O/C TRUSSES) = 48 # UPLIFT < 455 # OK! USE "SIMPSON" H1 CLIP AT E	EACH RAFTER		5 6 7	<u> </u>		2250 2500 2750
NSTRUCTION OF THIS PROJECT SHALL BE IN CONFORMANCE WITH THE 2022 CALIFOR	NIA BUILDING CODE	-	8 9	80 90		3000 3250
		For SI units: 1 gallon = 3.785 L	10	100		3500
Lateral Analysis for: Pro J.A. Russo Ent. Date	oject: 21-4247 e: 8 Sep. 2021	 ¹ Extra bedroom, 150 gallons (568 L) each. ² Extra dwelling units over 10: 250 gallons (946 	L) each.			
Via Siena Parcel 20 Riverside, CA 92503		 ³ Extra fixture units over 100: 25 gallons (94.6 L ⁴ Septic tank sizes in this table include sludge store 	.) per fixture unit. orage capacity and the connection of o	domestic food waste	disposers without further v	olume incr
20 20		General Note	\$			
9 Wall Height (ft.) 16 Average Wall Weight (psf)		imber Not				
66 Length of Building (ft) (North / South Direction) 40 Length of Building (ft) (East / West Direction)		MINIMUM STANDARDS: A) STRUCTURAL LUMBER TO BE WEST COA	AST DOUG FIR NO. 2 OR BE	ETTER		
12 Mean Roof Height, n (ft) 70 Length of All Walls (Interior & Exterior, one Direction - lf) 59,540 # Seismic Load (lbs)	<u>0</u>	DIAGONAL BRACES, PLATFORMS, STRING (BEAMS 4 x 12 AND LARGER TO BE DOUG F	ERS, JOISTS, RAFTERS AN IR #1 & BTR.)	ID POSTS.		
ateral Load in N/S Direction $\rho = EQ$ Shear (plf)		B) STUDS MAY BE "CONSTRUCTION GRADE C) TOP PLATES MAY BE "CONSTRUCTION G D) SILL PLATES IN CONTACT WITH CONCRE	E" DOUGLAS FIR OR #1 & B GRADE" HEM FIR OR DOUG ETE SHALL BE PRESSURE	ETTER. ELAS FIR. TREATED		
$59,540 \ lbs. \qquad 1.30 \ 154.65 \ plf \qquad \downarrow$ $ateral Load in E/W Direction \qquad \rho \ EQ \ Shear (plf) \iff$		"WOLMANIZED" OR FOUNDATION GRADE R E) TRUSS MEMBERS AND COMPONENTS SI OR OTHERWISE ALTERED IN ANY WAY WIT	EDWOOD HALL NOT BE CUT,DRILLEE HOUT WRITTEN CONCURF	D, NOTCHED, RENCE AND		
59,540 lbs. 1.30 255.17 plf	2	APPROVAL OF A REGISTERED DESIGN PRO STRUCTURAL CONNECTOR REFERENCES	DFESSIONAL ARE TO "SIMPSON STRON	G-TIE"		
<i>ismic Base Shear</i> $1.50 = S_S$ $F_a = 1.20$ $1.80 = S_{MS} - F_a * S_S$ $1.20 = S_D$ $0.50 = S_S$ $F_a = N/A$ $N/A = S_{MS} - F_a * S_S$ $1.20 = S_D$	$s_{S} = 2/3 S_{MS}$ = 2/3 S	CONNECTORS. I.C.C. APPROVED NO STRUCTURAL MEMBER SHALL BE SERIO	OUSLY WEAKENED OR IMP	PAIRED BY		
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	DC {4	CONSTRUCTION OF THIS PROJECT SHALL CALIFORNIA MODIFIED VERSION (TITLE 24,	BE IN ACCORDANCE WITH 2022 EDITION) OF THE FO	THE)	
$\begin{array}{rcl} 12.00 &=& T_L = Long \ Period \ Transition \ (Fig. 22-12) \\ SCE \ 7-16 \ (Eq. \ 12.8-2) & Cs = S_{DS} \ ^sI_E/R & 0.13 \ GOVERNS \end{array}$		2022 CALIFORNIA BUILDING CODE, (2021 IB 2022 CALIFORNIA PLUMBING CODE, (2021 L	C) JPC)))	
$\begin{array}{llllllllllllllllllllllllllllllllllll$	is project)	2022 CALIFORNIA MECHANICAL CODE, (202 2022 CALIFORNIA ELECTRICAL CODE (2020 2022 CALIFORNIA FIRE CODE, (2021 IFC).	1 UMC) NEC))	
SCE 7-16 (Eq. 12.8-2) $Cs = 0.5^*S_{D1} * I_E / R$ N/A	Ę	2022 CALIFORNIA ENERGY CODE HEALTH AND SAFETY CODE (HSC), SECTIO CALIFORNIA CODE OF REGULATIONS (CCR	N 13145		1)	
	e e e e e e e e e e e e e e e e e e e	TITLE 24 2022 CAC ALL OTHER APPLICABLE LAWS AND REGUL	ATIONS			
	5	DRAINAGE PIPING IN THE GROUND SHALL ENTIRE LENGTH AND BACKFILLED IN THIN	BE LAID ON A FIRM BED FO LAYERS TO 12" ABOVE TO	DR ITS P OF PIPE		
	6	WITH CLEAN EARTH, FREE FROM STONES A MINIMUM OF 3" DIAMETER WITH 2% MIN.	AND BOULDERS. DRAIN PI SLOPE.	PE SHALL BE		
	7	FIXTURES, DEVICES AND EQUIPMENT SHAI REGULATIONS.	LL COMPLY WITH APPLICA	BLE CEC		
	8	FASTENERS FOR PRESERVATIVE TREATED WOOD SHALL BE OF HOT DIPPED ZINC-CO/ STEEL SILICON BRONZE OR COPPER THE	AND FIRE-RETARDANT-TI ATED GALVANIZED STEEL, COATING WEIGHTS FOR 7	REATED STAINLESS ZINC-COATED		
		FASTENERS SHALL BE IN ACCORDANCE W THAN NAILS, TIMBER RIVETS WOOD SCREW	ITH ASTM A 153. FASTENE	RS OTHER		
	9	COATING WEIGHTS IN ACCORDANCE WITH	ASTM B 695, CLASS 55 MII	NIMUM.		
Andresen Architectural Engineering 17087 Orange Way, Fontana, CA Tel.: (9	909) 355-6688	THE NATIONAL FENESTRATION RATING CO COMPLIANCE WITH THE ENERGY CALCULA	UNCIL (NFRC) AND SHOWI TIONS.			
Lateral Analysis for: Pro	oject: 21-4247	INCLUDE APPROVAL FOR ANY TYPE OF AL REQUIRED. SEPARATE APPROVALS FOR AL	ARM SYSTEM THAT MAY BI NY ALARM SYSTEMS MUST	E SHOWN OR T BE		
J.A. Russo Ent. Date Via Siena Parcel 20 Riverside CA 92502	e: 8 Sep. 2021 12	ALL STEEL REINFORCEMENT TO COMPLY V PROTECTION OF WOOD AND WOOD BASE	VITH ASTM-615, GRADE 40 DPRODUCTS FROM DECAN	AND 60		
e Story Lateral Analysis (Wind) ASCE 7-22 Section 28: Envelope Procedure 130 Basic Wind Speed (mph) (Fig. 26.5-1) A B C		PROVIDED IN THE LOCATIONS SPECIFIED F NATURALLY DURABLE WOOD OR WOOD TH ACCORDANCE WITH AWPA 111 FOR THE SP	PER SECTION R317.1 BY TH IAT IS PRESERVATIVE-TRE ECIES. PRODUCT PRESE	HE USE OF EATED IN RVATIVE AND		
0.85 Directionality Factor, Kd (Table 26-6.1) 26.6 -7 17.7 1.00 Risk Factor, I (Table 1.5-2) ⇒ → →	-3.9	END USE. PRESERVATIVES SHALL BE LIST	ED IN SECTION 4 OF AWPA	U1.		
1.00 Topographic Factor, Kzt (Sec. 26.8) 9.5 Terrain Exp. Constant. 0. (Table 26.9-1)	10 0	WHICH EXCEED THE QUANTITIES LISTED IN WALLS AND FENCES ARE TO BE REVIEWED APPLICATION (NOT A PART OF THIS PROJE	N CBC TABLES 307.1 (1) & 3 D UNDER SEPARATE PERM (CT)	su7.1 (2). 1IT		
1.15 Adjustment Factor, λ (Sec. 26.8) 900 Terrain Exposure Constant, Zg (feet)	16	ALL NEW RESIDENTIAL SINGLE-FAMILY PRO SYSTEM, AND FIRE SPRINKLER PLANS SHA	OJECTS REQUIRE A FIRE S ALL BE SUBMITTED TO THE	SPRINKLER FIRE		
0.85 Gust Factor, G or Gf (Sec. 26.9) Enclosed Enclosure Classification (Sec. 26.10) <u>Hip or Ge</u>	able End	AN AUTOMATIC RESIDENTIAL FIRE SPRINK	LER SYSTEM SHALL BE DE N R313.3 OR NFPA 13D SP	SIGNED AND RINKLERS	2-10 2-12	PR EX
0.18 Internal Pressure Coefficient, GCpi (Table 26.11-1) 3, C, & D Above External Pressure Coefficient, Cp (Fig. 28-6.1)	18	SHALL BE INSTALLED TO PROJECT ALL ARI EACH CONTRACTOR RESPONSIBLE FOR TH	EAS OF A DWELLING UNIT		2-14 2-239	PR NE WI
Rev below Design VVIna Loaa, $p = qGCp - qGCp1$ (Eq. 28-4.1) <u>Iding Data</u> 4 :12 Roof Slove (inches per foot) Fame He \Rightarrow		WIND OR SEISMIC FORCE RESISTING SYSTEM, D WIND OR SEISMIC RESISTING COMPONENT SPECIAL INSPECTIONS SHALL SUBMIT A W	LISTED IN THE STATEMEN RITTEN STATEMENT OF		2-504	AG NE
18.43 Theta Θ (degrees) 66 North / South Dimension (ft)	12 ft	COMMENCEMENT OF WORK ON THE SYSTE CONTRACTOR'S STATEMENT OF RESPONS	AL AND THE OWNER PRIOF EM OR COMPONENT. THE IBILITY SHALL CONTAIN T	THE	2-739 2-762	AF PF
40 East / West Dimension (ft) 10 Mean Roof Height, h (ft) (Hip or Gable End)	¥	FOLLOWING: (a) ACKNOWLEDGEMENT OF AWARENESS CONTAINED IN THE STATEMENT OF SPECIA	OF THE SPECIAL REQUIRE AL INSPECTIONS.	MENTS	2-778 2-779	6'-0 10/
I2 Kidge Height, h (ft) (Gable Facing Ridge) Gable Facing Ridge) Gable Facing Ridge) A	cing Kidge	(b) ACKNOWLEDGEMENT THAT CONTROL V CONFORMANCE WITH THE CONSTRUCTION BUILDING OFFICIAL.	VILL BE EXERCISED TO OE N DOCUMENTS APPROVED	BTAIN BY THE	2-811 2-816 2-871	DIS NE
orth-South Direction East-West Direction		(c) PROCEDURES FOR EXERCISING CONTR ORGANIZATION, THE METHOD AND FREQU	OL WITHIN THE CONTRAC ENCY OF REPORTING AND	TOR'S DTHE	2-971	UT
ration Trib. Pressure Load *@ ull Above 1.00 0.00 0.00 0.00	Load *0 0.00	(d) IDENTIFICATION AND QUALIFICATION OF CONTROL AND THEIR POSITION(S) IN THE (F THE PERSON(S) EXERCIS ORGANIZATION.	SING SUCH	3-65	(VE 4" ⁻ 1/4
Il Below 4.50 0.00 0.00 0.00 Wall Below 4.50 0.00 0 tal (plf) 0.00 0.00 Total (plf) Total (plf) Total (plf)	0.00 0.00	ALL HOT WATER PIPES FROM SOURCE TO 1" THICK PIPE INSULATION.	KITCHEN SHALL BE INSUL			DO 3'-(
ble Facing Ridge Gable Facing Ridge ation Trib. Pressure Load *ω Load Load Load Load	20 Load *ω	COATING TYPES AND WEIGHTS IN ACCORE MANUFACTURER'S RECOMMENDATION OR	DANCE WITH THE CONNEC IN THE ABSENCE OF		4-169 15-871	NE CO MII
I Above 3.00 0.00 0.00 0.00 Wall Above 3.00 0.00 0.00 Il Below 4.50 0.00 0.00 0.00 Wall Below 4.50 0.00 0	0.00 0.00 21	MANUFACTURERS RECOMMENDATION SHA G185 ZINC COATED GALVANIZED. (R217.3.1 FINISH GRADE AROUND THE STRUCTURE /	ALL BE A MINIMUM OF AST) ADDITION SHALL SLOPE A	M A653 TYPE	16-20	225 & C
tal (plf) 0.00 Total (plf)	0.00	THE FOUNDATION A MINIMUM OF 6" FOR A SHOWERS AND WALLS ABOVE BATHTUBS	MINIMUM DISTANCE OF 10 WITH SHOWER HEADS SH) FEET.	16-43	(PR 2'-6 PR
e all internal wind pressures for enclosed buildings act equally on all the internal surfaces (equally and in osite directions) these pressures cancel each other out in the lateral directions only. Net uplift pressures on components to be analyzed and designed separately.	23	FINISHED WITH A NONABSORBENT SURFACE FEET ABOVE THE FLOOR. A DRIP EDGE SHALL BE PROVIDED AT FAVE	ES AND RAKE FDGES OF S	5 THAN 6 SHINGLE	-	SOI
ng on componente to los unaryzou anu usegnou separatery.	23	ROOFS. "BUILDING SHALL HAVE AN ADDRESS NUMI	BERS PLACED IN A POSITI	ON THAT IS)	
	Š	PLAINLY LEGIBLE AND VISIBLE FROM THE S PROPERTY. NUMBERS SHALL CONTRAST V OR ALPHABETICAL LETTERS AND SHALL BI	VITH THE BACKGROUND, E A MIN OF 4" HIGH WITH A	MG THE BE ARABIC MIN		
	25	NEWLY CONSTRUCTED DWELLINGS SUBJE CODE SHALL BE DESIGNED AND CONSTRUCT	CT TO THE REQUIREMENT	TS OF THIS)	
Andresen Architectural Engineering 17087 Orange Way, Fontana, CA Tel.: (9 20 DOUG ANDRESEN, ARCHITECT EXPRESSI Y RESERVES HIS COMMON I AW CO	209) 355-6688 DPYRIGHT AND OTHER PI	THOUGH R327.1.4] FOR "AGING IN PLACE D	ESIGN AND FALL PREVEN		D. CHANGED OR	

Proposed Single Family Residence For: **J.A. Russo Enterprises, Inc.** 16750 Bella Villa, Riverside, CA 92503

TABLE H 101.8 LOCATION OF SEWAGE DISPOSAL SYSTEM

BUILDING SEWER	SEPTIC TANK	DISPOSAL FIELD	SEEPAGE PIT OR CESSPOOL
2 feet	5 feet	8 feet	8 feet
Clear ²	5 feet	5 feet	8 feet
50 feet ³	50 feet	100 feet	150 feet
50 feet	50 feet	100 feet ⁷	150 feet ⁷
_	10 feet	_	10 feet
-	5 feet	5 feet	12 feet
 -	5 feet	4 feet ⁴	5 feet
1 foot ⁵	5 feet	5 feet	5 feet
_	_	5 feet	5 feet
10 feet ⁶	10 feet	10 feet	10 feet

or uncovered, breezeways, roofed porte cocheres, roofed patios, carports, covered walks, covered drive-

ly wells by not less than 50 feet (15 240 mm). This distance shall be permitted to be reduced to not less than constructed of materials approved for use within a building. 05 mm) of depth in excess of 1 foot (305 mm) below the bottom of the drain line. (See Section H 601.0)

also apply between disposal fields, seepage pits, and the mean high-tide line. installed in sloping ground, the minimum horizontal distance between any part of the leaching system and

TABLE H 201.1(1) CAPACITY OF SEPTIC TANKS^{1, 2, 3, 4}

ELLING UNITS OR NE BEDROOM EACH	OTHER USES: MAXIMUM FIXTURE UNITS SERVED PER TABLE 702.1	MINIMUM SEPTIC TANK CAPACITY (gallons)
_	15	750
-	20	1000
units	25	1200
3	33	1500
4	45	2000
5	55	2250
6	60	2500
7	70	2750
8	80	3000
9	90	3250
10	100	3500

FORM TO THE FOLLOWING
DOUG FIR NO. 2 OR BETTER BEAMS, HEADERS, BLOCKING, , JOISTS, RAFTERS AND POSTS. 1 & BTR.) DUGLAS FIR OR #1 & BETTER. DE" HEM FIR OR DOUGLAS FIR. SHALL BE PRESSURE TREATED /OOD NOT BE CUT,DRILLED, NOTCHEI IT WRITTEN CONCURRENCE AND
LY WEAKENED OR IMPAIRED BY
N ACCORDANCE WITH THE 2 EDITION) OF THE FOLLOWING

E LAID ON A FIRM BED FOR ITS AYERS TO 12" ABOVE TOP OF PIPE ND BOULDERS. DRAIN PIPE SHALL BE LOPE.

PRODUCTS FROM DECAY SHALL B R SECTION R317.1 BY THE USE OF T IS PRESERVATIVE-TREATED IN CIES, PRODUCT, PRESERVATIVE AND D IN SECTION 4 OF AWPA U1. STORED WITHIN THE BUILDING

S OF A DWELLING UNIT
CONSTRUCTION OF A MAIN WIND
GNATED SEISMIC SYSTEM OR A
STED IN THE STATEMENT OF
TEN STATEMENT OF
AND THE OWNER PRIOR TO THE

Plan Notes

- PROPERTY LINE 2-10 EXISTING PROPERTY LINE (BEFORE STREET DEDICATION) 2-12 2-14 PROPOSED PROPERTY LINE (AFTER STREET DEDICATION) NEW CONCRETE PAVERS DRIVEWAY ON 1" SAND ON 4" CONCRETE SUB-SLAB 2-239 WITH 12" WIDE X 4" THICK COLORED CONCRETE EDGE WITH EXPOSED
- AGGREGATE NEW LANDSCAPING AREA 2-504
- DRAIN 5% MIN. FOR FIRST 10'-0" AWAY FROM BUILDING AND THEN 2% MIN. 2-739 AFTERWARDS

- PROVIDE DRAINAGE SWALE AS INDICATED (1% MINIMUM) 2-762
- 6'-0" DIAMETER x 25'-0" DEEP SEEPAGE PIT PER COUNTY STANDARDS 2-778 100% SEEPAGE PIT EXPANSION (RESERVE AREA) 2-779
- DISTRIBUTION BOX 2-811 2-816
- NEW 1,200 GALLON SEPTIC TANK AND 5' DIA. X 20'-0" DEEP SEEPAGE PIT 2-871 NEW GAS METER LOCATION (BY UTILITY). (VERIFY EXACT LOCATION WITH UTILITY COMPANY)
- POINT OF CONNECTION OF NEW 1 1/2" PVC MAIN TO EXISTING WATER METER 2-923 (VERIFY EXACT LOCATION WITH UTILITY) 4" THICK CONCRETE SLAB ON GRADE WITH MEDIUM BROOM FINISH. SLOPE 1/4" PER FOOT MINIMUM AWAY FROM BUILDING. PROVIDE A LANDING AT ALL
- DOORS A MINIMUM OF 2" BEYOND EACH SIDE OF DOOR AND A MINIMUM OF 3'-0" OUT FROM FACE OF DOOR. 4-169 NEW MASONRY RETAINING WALL (SEE FOUNDATION PLAN FOR HEIGHT) 15-871 CONDENSING UNIT. PROVIDE 3-1/2" THICK POLYETHYLENE PAD EXTENDED 3" MINIMUM ABOVE GROUND
- 16-20 225 AMP RECESSED MAIN PANEL (UNDERGROUND FEED WITH TWO #3/0 AWG & ONE #2 GROUND) (VERIFY EXACT LOCATION WITH UTILITY COMPANY) (PROVIDE GAS AND WATER BONDING TO SERVICE) PROVIDE 3'-0" DEEP BY 2'-6" WIDE MINIMUM CLEARANCE IN FRONT OF PANEL PER ARTICLE 110-26a
- 16-43 PROPOSED LOCATION FOR INVERTER AND METERING EQUIPMENT FOR SOLAR PANELS PER ENERGY CODE, SECTION 110.10





CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD

Project Name: La Bella Villa SFR Calculation Date/Time: 2023-06-18T17:39:58-07:00 Calculation Description: Title 24 Analysis Input File Name: Russo La Bella Villa (21-4247).ribd22x

GENERAL INFORMATION Project Name La Bella Villa SFR Run Title Title 24 Analysis Project Location 16750 Bella Villa 05 Standards Version 20 City Riverside Zip code 9 Software Version EnergyPro 9. Climate Zone 10 09 Front Orientation (deg/ Cardinal) Number of Dwelling Units Building Type Single family 11 Project Scope Newly Constructed 13 Number of Bedrooms Number of Stories 14 Addition Cond. Floor Area (ft²) 15 Fenestration Average U-factor 0.3 Existing Cond. Floor Area (ft²) n/a 17 Glazing Percentage (%) 17.50% 19 Total Cond. Floor Area (ft²) 1713 ADU Bedroom Count n/a COMPLIANCE RESULTS 01 Building Complies with Computer Performance This building incorporates features that require field testing and/or verification by a certified HERS rater under the supervision of a CEC-approved HERS provider. 02 03 This building incorporates one or more Special Features shown below

CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD Project Name: La Bella Villa SFR Calculation Date/Time: 2023-06-18T17:39:58-07:00 Input File Name: Russo La Bella Villa (21-4247).ribd22x Calculation Description: Title 24 Analysis

	<i>17</i>	Energy Design Ratings		Compliance Margins						
	Source Energy (EDR1)	Efficiency ¹ EDR (EDR2efficiency)	Total ² EDR (EDR2total)	Source Energy (EDR1)	Efficiency ¹ EDR (EDR2efficiency)	Total ² EDR (EDR2total)				
Standard Design	36	40.8	28.4							
Proposed Design	32.9	39.5	22.1	3.1	1.3	6.3				
		RESULT ³	: PASS		de de					
ifficiency EDR includes improvements lik fotal EDR includes efficiency and demanc Building complies when source energy, ef	e a better building envelope a I response measures such as p ficiency and total compliance	nd more efficient equipme photovoltaic (PV) system ar margins are greater than c	nt nd batteries or equal to zero and un	met load hour limits are	not exceeded					

PV System resized to 3.29 kWdc (a factor of 3.287) to achieve 'Maximum PV for Compliance Credit' PV scaling

CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD CF1R-PRF-01-E Calculation Date/Time: 2023-06-18T17:39:58-07:00 Project Name: La Bella Villa SFR (Page 3 of 12) Calculation Description: Title 24 Analysis Input File Name: Russo La Bella Villa (21-4247).ribd22x

ENERGY USE SUMMARY						
Energy Use	Standard Design Source Energy (EDR1) (kBtu/ft ² -yr)	Standard Design TDV Energy (EDR2) (kTDV/ft ² -yr)	Proposed Design Source Energy (EDR1) (kBtu/ft ² -yr)	Proposed Design TDV Energy (EDR2) (kTDV/ft ² -yr)	Compliance Margin (EDR1)	Compliance Margin (EDR2)
Space Heating	1.33	5.97	1.71	11.97	-0.38	-6
Space Cooling	0.97	22.89	0.75	19.88	0.22	3.01
IAQ Ventilation	0.36	3.79	0.36	3.79	0	0
Water Heating	1.48	15	0.97	10.58	0.51	4.42
Self Utilization/Flexibility Credit		NI		o		0
Efficiency Compliance Total	4.14	47.65	3.79	46.22	0.35	1.43
Photovoltaics	-1.71	-48	-2,19	-60.38		
Battery			0	0		
Flexibility						
Indoor Lighting	0.73	7.06	0.73	7.06		
Appl. & Cooking	3.28	21.23	3.27	21.12		
Plug Loads	3.2	32.67	3.2	32.67		
Outdoor Lighting	0.19	1.7	0.19	1.7		
TOTAL COMPLIANCE	9.83	62.31	8.99	48.39		

stration Number: 423-P010104720A-000-000-000000-0000 Registration Date/Time: 06/18/2023 17:44 HERS Provider: CHEERS ated to CHEERS. Therefore, CHEERS is not responsible for, This document has been generated by California Home Energy Efficiency Rating Services (CHEERS) usin It guarantee, the accuracy or completeness of the information contained in this document. Report Generated: 2023-06-18 17:40:21 CA Building Energy Efficiency Standards - 2022 Residential Compliance Report Version: 2022.0.000 Schema Version: rev 20220901

CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD CF1R-PRF-01-E Project Name: La Bella Villa SFR Calculation Date/Time: 2023-06-18T17:39:58-07:00 (Page 4 of 12) Calculation Description: Title 24 Analysis Input File Name: Russo La Bella Villa (21-4247).ribd22x ENERGY USE INTENSITY Standard Design (kBtu/ft² - yr) Proposed Design (kBtu/ft² - yr) Compliance Margin (kBtu/ft² - yr) Margin Percentage 14.71 13.68 Gross EUI¹ 1.03 7 Net EUI² 6 2.52 3.48 58 1. Gross EUI is Energy Use Total (not including PV) / Total Building Area. 2. Net EUI is Energy Use Total (including PV) / Total Building Area. REQUIRED PV SYSTEMS 05 06 07 08 09 10 11 01 02 03 04 Azimuth Tilt Array Angle Tilt: (x in Inverter Eff. Annual DC System Size Module Type Array Type **Power Electronics** Exception Solar Access (deg) Input (deg) 12) (%) (kWdc) (%) -<=7:12 96 3.29 Standard (14-17%) none Fixed true 150-270 n/a n/a NA REQUIRED SPECIAL FEATURES The following are features that must be installed as condition for meeting the modeled energy performance for this computer analysis Whole house fan

Raised heel truss (height above top plate) Non-standard roof reflectance Ceiling has high level of insulation Insulation below roof deck Window overhangs and/or fins

Northwest Energy Efficiency Alliance (NEEA) rated heat pump water heater; specific brand/model, or equivalent, must be installed

Project Name: La Bella V	illa SFR				Calculation Da	ate/Ti	me: 2023-06-18T	17:39	:58-07:00	(Page 5 of
Calculation Description:	Title 24 Analysis				Input File Nan	ne: Ru	isso La Bella Villa	(21-4	247).ribd22x	
HERS FEATURE SUMMARY	5									
The following is a summary detail is provided in the bui	of the features that must Iding tables below. Regist	be field-ve ered CF2Rs	erified by a certified HI and CF3Rs are require	RS Rater as a d to be comp	condition for m pleted in the HE	neeting RS Reg	g the modeled ener istry	gy per	formance for this comput	ter analysis. Addition
 Indoor air quality ver Minimum Airflow Verified SEER/SEER2 Verified Refrigerant (Fan Efficacy Watts/Cl Verified HSPF Verified heat pump r Duct leakage testing 	ntilation Charge FM ated heating capacity			X	X					
BUILDING - FEATURES INFO	RMATION									
01	02		03		04		05		06	07
Project Name	Conditioned Floor	Conditioned Floor Area (ft ²)		8 Number	r of Bedrooms	N	umber of Zones	N	umber of Ventilation Cooling Systems	Number of Wate Heating System
La Bella Villa SFR	la Villa SFR 1713		1		3		1		1	1
ZONE INFORMATION									97	
01	02		03	04		-	05		06	07
Zone Name	Zone Type	HVA	AC System Name	Zone Floor Area (ft ²)			Avg. Ceiling Height		ter Heating System 1	Status
SFR	Conditioned		Res HVAC1	171	1713		9		DHW Sys 1	New
OPAQUE SURFACES	40. Ta					-		612 	0.428	
01	02		03	04	05	~	06	8	07	08
Name	Zone	Cons	truction	Azimuth	Orientatio	on	Gross Area (ft	²)	Window and Door Area (ft2)	Tilt (deg)
Rear Wall (North)	SFR	R-2	1 Wall	0	Back		360		103.008	90
Right Wall (East)	SFR	R-2	1 Wall	90	Right		552	1	131	90
Left Wall (West)	SFR	R-2	1 Wall	270	Left		315		36	90
Front Wall (South)	SFR	R-2	1 Wall	180	Front	S.	174		54	90
Roof	SFR	R-49 Clg	+ B-19 Roof	n/a	n/a	1713		n/a		n/a

CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD Project Name: La Bella Villa SFR Calculation Description: Title 24 Analysi

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ATTIC													
01		02	0	3		04		05		06		07	08
Name	C	onstruction	Тур	pe	Roof R	ise (x in 12)	Roof	Reflectan	ce Roof	f Emittance	Radian	t Barrier	Cool Roof
Attic SFR Attic RoofSFR		Ventil		4		0.19		0.92	Y	/es	No		
FENESTRATION / G	GLAZING										17	11	Vi.
01	02	03	04	05	06	07	08	09	10	11	12	13	14
Name	Туре	Surface	Orientation	Azimuth	Width (ft)	Height (ft)	Mult.	Area (ft ²)	U-factor	U-factor Source	SHGC	SHGC Source	Exterior Shading
Rear Windows	Window	Rear Wall (North)	Back	0	6	8	2	103.0 1	0.3	NFRC	0.25	NFRC	Bug Screen
Right Windows	Window	Right Wall (East)	Right	90	4	5	6	131	0.3	NFRC	0.25	NFRC	Bug Screen
Left Windows	Window	Left Wall (West)	Left	270	4	5	1	36	0.3	NFRC	0.25	NFRC	Bug Screen
Front Windows	Window	Front Wall (South)	Front	180	6	5	1	30	0.3	NFRC	0.25	NFRC	Bug Screen
OPAQUE DOORS	1						-						10
orrigonocono	01			02			-	-	03			04	
	Name			Side of Build	ing		-		Area (ft ²)	7		U-factor	
	Door		F	ront Wall (So	uth)		-	24					

Report Version: 2022.0.000

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OVERHANGS AND FINS									
01		02		0					
Window		Depth	D	ist					
Rear Windows		1	1						
Right Windows		1							
Left Windows		1		1					
Front Windows		1		1					
SLAB FLOORS									
01		02							
Name		Zone		Γ					
Slab-on-Grade		SFR							
OPAQUE SURFACE CONS	TRUC	TIONS		_					
01		02							
Construction Name		Surface Typ	be						
R-21 Wall		Exterior Wa	lls						
Attic RoofSFR		Attic Roof	s						

CA Building Energy Efficiency Standards - 2022 Residential Compliance

CERTIFICATE OF CON	IPLIANCE - RES	SIDENTIAL I	PERFORMA	NCE COM	PLIANCE M	ETHOD							CF1R-PRF-01-E
Project Name: La Bel	la Villa SFR					с	alculat	ion Date/Ti	me: 2023	3-06-18T17	7:39:58-07	7:00	(Page 8 of 12)
Calculation Descripti	on: Title 24 Ar	alysis				Ir	nput Fi	le Name: Ru	sso La B	ella Villa (2	21-4247).r	ibd22x	
OPAQUE SURFACE CON	ISTRUCTIONS												
01	0	2	03			04		05		06	07		08
Construction Name	Surfac	е Туре	Constructio	on Type	F	raming		Total Cavity R-value	Interior Cont R-	/ Exterior tinuous value	U-factor	Asse	mbly Layers
R-49 Clg + R-19 Roof	Ceilings att	(below ic)	Wood Fra Ceilin	amed Ig	2x4 @ 24 Raised Hee	4 in. O.C. wit I Truss Heigh in	h t 12	R-49	None	e / None	0.02	Over Ceiling Cavity / Fr Inside Finis	Joists: R-39.9 insul. ame: R-9.1 / 2x4 h: Gypsum Board
			_										
BUILDING ENVELOPE -	HERS VERIFICAT	ION	100						-				
Ouality Insulation Installation (OII) High R-value		02	U3						04	3		05	
Quality Insulation Installation (QII) High R-value Spray Fo			ue Spray Foar	n Insulatio	n Build	ling Envelop	e Air Le	akage	1	CFM50	8		CFM50
Not Requir	red		Not Required	ł		N/A			2	n/a			n/a
WATER HEATING SYSTE	MS		_						1				d.
01	02		03		04	05		06		C)7	08	09
Name	System Type	Distril	bution Type	Water He	ater Name	Number of	f Units	Solar He Syste	eating em	Com Distri	pact bution	HERS Verification	Name (#)
DHW Sys 1	Domestic Hot Water (DHW)	St	tandard	DHW	Heater 1	1		n/a	a	No	one	n/a	DHW Heater 1 (1)
WATER HEATERS - NEE	A HEAT PUMP					-							
01	02		03		04			05		06		07	08
Name	# of Un	its	Tank Vol. (gal)	NEEA Heat Bran	t Pump d	NEEA	Heat Pump Model	Та	nk Location	n Du	ct Inlet Air Source	Duct Outlet Air Source
DHW Heater 1	1		40		Rhee	m	Rheem H	PROPH40T2R 137515		Outside		SFR	SFR

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CEPTIEICATE OF COMPLIANCE - RESIDENTIAL REPEOPMANCE COMPLIANCE METHOD

ERTIFICATE OF CO	MPLIANCE - RESID	ENTIAL PERFO	ORMAN	ICE CO	OMPLIAN	CE METH	OD								CF1R-PRF-01
roject Name: La B	ella Villa SFR						Calc	ulatio	on Date	/Time: 2023	8-06-18	17:39:58-07	2:00		(Page 9 of 1
alculation Descrip	tion: Title 24 Analy	/sis					Inpu	it File	Name:	: Russo La Be	ella Villa	(21-4247).ri	ibd22x		
VATER HEATING - HE	RS VERIFICATION														
01	0:	2		03	1	-	04			05			06		07
Name	Pipe Ins	ulation	Pa	rallel	Piping	Com	pact Distrib	ution	Ca	ompact Distri Type	bution	Recircula	lation Control		er Drain Water He Recovery
DHW Sys 1 - 1/1	Not Re	quired	No	ot Req	quired	1	Not Require	d		None		Not	Required		Not Required
PACE CONDITIONIN	G SYSTEMS	20 1	-	-				-	17	17	-		98		
01	02	03		K	04		05			06		07	08		09
Name	System Type	Heating Unit	t Name	Heat	ting Equipn Count	nent Coo	ling Unit N	ame	Cooling	Cooling Equipment Count		in Name	Distribution I	ibution Name Requ	
Res HVAC1	Heat pump Heat Pump Syst heating cooling 1		System		1	Hea	Heat Pump Syste 1			n 1		/AC Fan 1	Air Distribution System 1		Setback
IVAC - HEAT PUMPS			-							12	-				
01	02	03	04		05	06	07		08	09	10	11	12		13
				Heating		ng			Cooling						
Name	System Type	Number of Units	Efficie Typ	ency	HSPF / HSPF2 / COP	Cap 47	Cap 17	Effi	ciency Type	SEER / SEER2	EER / EER / CEER	Zonally Controlled	Compressor Type	Compressor Type HERS Verific	
Heat Pump System 1	Central split HP	1	HSP	PF	9.5	55000	28000	EE	RSEER	17.5	11.2	Not Zonal	Single Speed	н	eat Pump System 1-hers-htpump
VAC HEAT PUMPS -	HERS VERIFICATION		0	-		-		_			4			_	
01	02	03			04		05			06		07	08		09
Name	Verified Airflow	Airflow Ta	irget	Veri	fied EER/E	ER2	Verified SEER/SEER	2	Verified	d Refrigerant Charge	HS	/erified PF/HSPF2	Verified Hea Cap 47	nting	Verified Heating Cap 17
Heat Pump System 1-hers-htpump	Required	350		N	lot Require	d	Required		Yes		Yes		Yes		Yes

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Calculation Date/Time: 2023-06-18T17:39:58-07:00 Innut File Name: Russo La Bella Villa (21-4247) ribd22v

CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD Project Name: La Bella Villa SFR Calculation Date/Time: 2023-06-18T17:39:58-07:00

CF1R-PRF-01-E

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HVAC - DISTRIBUTION	I SYSTEMS			0								
01	02	03	04	05	06	07	08	09	10	11	12	
Namo	Tuno	Decign Tune	Duct Ins	. R-value	Duct Lo	ocation	Surfac	e Area	Pumper Dust	Duct Lookage	HERE Varification	
Name	туре	Design Type	Supply	Return	Supply	Return	Supply	Return	Bypass Duct	Duct Leakage	HERS Verification	
Air Distribution System 1	Unconditioned attic	Non-Verified	R-8	R-8	Attic	Attic	n/a	n/a	No Bypass Duct	Sealed and Tested	Air Distribution System 1-hers-dist	
HVAC DISTRIBUTION	- HERS VERIFICATION				, Maria				-	Mi	Ŋ.	
01	02	03		04	C	5	c	06	07	08	09	
Name	Duct Leakage Verification	Duct Leakage Target (%)	Verified Duct Location		Verified Duct Design		Buried Ducts		Deeply Buried Ducts	Low-leakage Air Handler	Low Leakage Ducts Entirely in Conditioned Space	
Air Distribution System 1-hers-dist	Yes	5.0	Not Required		Not Required		Not Required		Credit not taken	Not Required	No	
HVAC - FAN SYSTEMS							1			20	0	
	01			02					03	1	04	
Name			Туре				Fan Pow		ver (Watts/CFM)		Name	
HVAC Fan 1			HVAC Fan			0.45		HVAC Fan 1-hers-fan				
HVAC FAN SYSTEMIS -	ALC OF CALIFICATION		1			2				02		
	Name		UZ Varified Fee Wett Draw						U3 Required Ean Efficacy (M/atts /CEM)			
			Verified Fan Watt Draw						Required Fan Efficacy (Watts/CFM)			

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			Sche	ma Version:	rev 20220901							
ERF	ORMANCE C	Complian	CE METHOD) Calcula Input Fi	tion Date/Ti le Name: Ru	me: 2023 Isso La Be	-06-18T17:39: Ila Villa (21-42	58-07:00 247).ribd22	2x	CF1 (Pa	R-PRF-01- age 7 of 12	
	04	05	06	07	08	09	10	11	12	13	14	
Overhang					Left Fin				Righ	t Fin	Ż.	
p	Left Extent	Right Extent	Flap Ht.	Depth	Top Up	Dist L	Bot Up	Depth	Тор Up	Dist R	Bot Up	
	3	3	0.67	0	0	0	0	0	0	0	0	
	3	3	0.67	0	0	0	0	0	0	0	0	
	3	3	0.67	0	0	0	0	0	0	0	0	
	3	3	0.67	0	0	0	0	0	0	0	0	
_												
	03 04			05		06		07	08			
Į	Area (ft ²)	Per	Perimeter (ft)		nsul. R-value Id Depth	Edge	nsul. R-value nd Depth	Carpete	ed Fraction	He	Heated	
1713			0.1		none		0		80%		No	

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03	04	05	06	07	08
Construction Type	Framing	Total Cavity R-value	Interior / Exterior Continuous R-value	U-factor	Assembly Layers
Wood Framed Wall	2x6 @ 16 in. O. C.	R-21	None / None	0.069	Inside Finish: Gypsum Board Cavity / Frame: R-21 / 2x6 Exterior Finish: 3 Coat Stucco
Wood Framed Ceiling	2x6 @ 24 in. O. C.	R-19	None / 0	0.052	Roofing: 10 PSF (RoofTileAirGap) Tile Gap: present Roof Deck: Wood Siding/sheathing/decking Cavity / Frame: R-19 / 2x6

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 423-P010104720A-000-0000000-0000
 Registration Date/Time:
 06/18/2023
 17:44
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				Calculat	ion Data /Times 2022	00 10117.20.50 07		10000 11 061
roject Name: La Be				Calculat	ion Date/Time: 2023	-06-18117:39:58-07	:00	(Page 11 of .
alculation Descrip	tion: Title 24 Analy	/sis		Input Fi	le Name: Russo La Be	ella Villa (21-4247).ri	bd22x	
NDOOR AIR QUALITY	(IAQ) FANS			9 N:	1) 14	2	NG	
01	02	03	04	05	06	07	08	09
Dwelling Unit	Airflow (CFM)	Fan Efficacy (W/CFM)	IAQ Fan Type	Includes Heat/Energy Recovery?	IAQ Recovery Effectiveness - SRE	Includes Fault Indicator Display?	HERS Verification	Status
SFam IAQVentRpt	80	0.35	Exhaust	No	n/a	No	Yes	
				1				
.OOLING VENTILATIO					1			
01	02	03	04	05	06	07	80	09
Name	Airflow Rate (CFM/ft2)	Cooling Vent CFM	Cooling Vent Watts/CFM	Total Watts	Number of Fans	CFVCS Type	Exhausts to	HERS Verification
Whole House Fan	1.5	2569.5	0.14	359.73	1	Not a CFVCS	Attic	

CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE M	ETHOD	CF1R-PRF-01-E
Project Name: La Bella Villa SFR	Calculation Date/Time: 2023-06-18T17:39:58-07:00	(Page 12 of 12)
Calculation Description: Title 24 Analysis	Input File Name: Russo La Bella Villa (21-4247).ribd22x	
DOCUMENTATION AUTHOR'S DECLARATION STATEMENT		
1. I certify that this Certificate of Compliance documentation is accurate and complete.		
Documentation Author Name: Adriana Gomez	Documentation Author Signature: Adviana Gomez	
Company: Andresen Architecture, Inc.	Signature Date: 06/18/2023	
Address: 17087 Orange Way	CEA/ HERS Certification Identification (If applicable):	
City/State/Zip: Fontana, CA 92335	Phone: 909-355-6688	
RESPONSIBLE PERSON'S DECLARATION STATEMENT		
 I certify the following under penalty of perjury, under the laws of the State of California: I am eligible under Division 3 of the Business and Professions Code to accept responsib I certify that the energy features and performance specifications identified on this Certificate of 4 The building design features or system design features identified on this Certificate of 4 calculations, plans and specifications submitted to the enforcement agency for approximations 	ility for the building design identified on this Certificate of Compliance. ificate of Compliance conform to the requirements of Title 24, Part 1 and Part 6 of the Califo Compliance are consistent with the information provided on other applicable compliance do al with this building permit application.	rnia Code of Regulations. cuments, worksheets,
	Responsible Designer Signature:	
Responsible Designer Name: Adriana Gomez	Adriana Gomez	
Responsible Designer Name: Adriana Gomez Company: Andresen Architecture, Inc.	Adviana Gomez Date Signed: 06/18/2023	
Responsible Designer Name: Adriana Gomez Company: Andresen Architecture, Inc. Address: 17087 Orange Way	Adviana Gomez Date Signed: 06/18/2023 License: C 33098	

Digitally signed by California Home Energy Efficiency Rating Services (CHEERS). This digital signature is provided in order to secure the content of this registered document, and in no way implies Registration Provider responsibility for the accuracy of the information.

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	DENTIAL MEA	SURES SI	JMM	ARY			RMS-1
Project Nar	^{me} Villa Residence		Build	ding Type ☑ Sin □ Mu	ngle Family I ulti Family I	□ Addition Alone □ Existing+ Addition/Alteration	Date 6/18/202
Project Add	dress		Cali	fornia Energy Clim	ate Zone To	tal Cond. Floor Area Additio	n # of Units
16750 B	Bella Villa Riversid	e	C	A Climate Zo	ne 10	1,713 n/a	1
INSUL	ATION			Area			
Constr	uction Type		Cav	∕ity (ft²)	Spe	cial Features	Status
Roof	Wood Framed Attic		R 49	1,71.	3 Add=R-19.	0 Cool Roof	New
Wall	Wood Framed		R 21	1,07	7		New
Door	Opaque Door		- no in	sulation 24	4		New
Slab	Unheated Slab-on-Grade	9	- no in	sulation 1,71.	3 Perim = 0'		New
				_			
FENES	TRATION	Total Area:	300	Glazing Percent	age: 17.59	% New/Altered Average U-Factor	. 0.30
Orienta	ation Area(ft ²)	U-Fac S	HGC	Overhang	Sidefins	Exterior Shades	Status
Rear (N)	103.0	0.300	0.25	1.0	none	N/A	New
Right (E)	131.0	0.300	0.25	1.0	none	N/A	New
Left (W)	36.0	0.300	0.25	1.0	none	N/A	New
Front (S)	30.0	0.300	0.25	1.0	none	N/A	New
HVAC :	SYSTEMS	0074675 242,492874		570.4	1944-0942 Hz+-C	10000 0000 00000	100485 10251
Qty. I	Heating	Min. Eff	Co	oling	Min. E	ff Thermostat	Status
1 E	Electric Heat Pump	9.50 HSPF	Spi	it Heat Pump	17.5 SEE	ER Setback	New
						Duct	
HVAC	DISTRIBUTION		~			Duct	
HVAC Locatio	DISTRIBUTION on He	ating	Co	oling Du	ct Locatio	on R-Value	Status
HVAC Locatio	DISTRIBUTION on He	ating ^d	Co Duc	ted Attic	ct Locatio	on R-Value	Status _{New}
HVAC Locatio Res HVAC	DISTRIBUTION on He Ducte	eating	Duc	ted Attic	ct Locatio	on R-Value	Status New
HVAC Locatio Res HVAC WATEF Qty. 1	DISTRIBUTION on He Ducte	eating d Gall	Co Duc	oling Du- ted Attic Min. Eff	ct Locatio	tion	Status New Status
HVAC I Locatio Res HVAC WATEF Qty. 1	DISTRIBUTION on He Ducte R HEATING Type Heat Pump	eating d Gall 40	Co Duc	oling Duc ted Attic Min. Eff 3.10	ct Locatio	tion	Status New Status New
HVAC Locatio Res HVAC WATEF Qty. 1	DISTRIBUTION on He Ducte R HEATING Type Heat Pump	eating d Gall 40	Co Duc	oling Du- ted Attic Min. Eff 3.10	ct Locatio	tion	Status New Status New

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§ 150.0(m)1:

§ 150.0(m)2:

§ 150.0(m)7:

150.0(m)8:

§ 150.0(m)9:

150.0(m)10:

§ 110.4(a):

§ 110 4(b)1:

\$ 110.5:

150.0(k)1B

§ 150.0(k)1E:

§ 150.0(k)1F:

5/6/22

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2022 Single-Family Residential Mandatory Requirements Summary <u>NOTE:</u> Single-family residential buildings subject to the Energy Codes must comply with all applicable mandatory measures, regardless of the compliance approach used. Review the respective section for more information. Building Envelope Air Leakage. Manufactured fenestration, exterior doors, and exterior pet doors must limit air leakage to 0.3 CFM per square foot or § 110.6(a)1: less when tested per NFRC-400, ASTM E283, or AAMA/WDMA/CSA 101/I.S.2/A440-2011. Labeling. Fenestration products and exterior doors must have a label meeting the requirements of § 10-111(a Field fabricated exterior doors and fenestration products must use U-factors and solar heat gain coefficient (SHGC) values from § 110.6(b): Tables 110.6-A, 110.6-B, or JA4.5 for exterior doors. They must be caulked and/or weather-stripped. Air Leakage. All joints, penetrations, and other openings in the building envelope that are potential sources of air leakage must be caulked, gasketed, or weather stripped. Insulation Certification by Manufacturers. Insulation must be certified by the Department of Consumer Affairs, Bureau of Household § 110.8(a); Goods and Services (BHGS). Insulation Requirements for Heated Slab Floors. Heated slab floors must be insulated per the requirements of § 110.8(g) § 110.8(g): Roofing Products Solar Reflectance and Thermal Emittance. The thermal emittance and aged solar reflectance values of the § 110.8(i): roofing material must meet the requirements of § 110.8(i) and be labeled per §10-113 when the installation of a cool roof is specified on the CF1R. Radiant Barrier. When required, radiant barriers must have an emittance of 0.05 or less and be certified to the Department of Consum § 110.8(j): Roof Deck, Ceiling and Rafter Roof Insulation. Roof decks in newly constructed attics in climate zones 4 and 8-16 area-weighted average U-factor not exceeding U-0.184. Ceiling and rafter roofs minimum R-22 insulation in wood-frame ceiling; or area-weighted average U-factor must not exceed 0.043. Rafter roof alterations minimum R-19 or area-weighted average U-factor of 0.054 or less. Attic access § 150.0(a); loors must have permanently attached insulation using adhesive or mechanical fasteners. The attic access must be gasketed to prevent air leakage. Insulation must be installed in direct contact with a roof or ceiling which is sealed to limit infiltration and exfiltration as specified in § 110.7, including but not limited to placing insulation either above or below the roof deck or on top of a drywall ceiling. Loose-fill Insulation. Loose fill insulation must meet the manufacturer's required density for the labeled R-value. § 150.0(b): Wall Insulation. Minimum R-13 insulation in 2x4 inch wood framing wall or have a U-factor of 0.102 or less, or R-20 in 2x6 inch wood § 150.0(c): framing or have a U-factor of 0.071 or less. Opaque non-framed assemblies must have an overall assembly U-factor not exceeding 0.102 Masonry walls must meet Tables 150.1-A or B. § 150.0(d): Raised-floor Insulation. Minimum R-19 insulation in raised wood framed floor or 0.037 maximum U-factor. Slab Edge Insulation. Slab edge insulation must meet all of the following: have a water absorption rate, for the insulation material alone without facings, no greater than 0.3 percent; have a water vapor permeance no greater than 2.0 perm per inch; be protected from § 150.0(f): physical damage and UV light deterioration; and, when installed as part of a heated slab floor, meet the requirements of § 11 Vapor Retarder. In climate zones 1 through 16 the earth floor of unvented crawl space must be covered with a Class I or Class I § 150.0(g)1: vapor retarder. This requirement also applies to controlled ventilation crawl space for buildings complying with the exception to apor Retarder. In climate zones 14 and 16, a Class I or Class II vapor retarder must be installed on the conditioned space side of § 150.0(g)2: all insulation in all exterior walls, vented attics, and unvented attics with air-permeable insulation. Fenestration Products. Fenestration, including skylights, separating conditioned space from unconditioned space or outdoors must have § 150.0(q): a maximum U-factor of 0.45; or area-weighted average U-factor of all fenestration must not exceed 0.45. Fireplaces, Decorative Gas Appliances, and Gas Log: § 110.5(e) Pilot Light. Continuously burning pilot lights are not allowed for indoor and outdoor fireplaces. Closable Doors. Masonry or factory-built fireplaces must have a closable metal or glass door covering the entire opening of the firebox \$ 150.0(e)1: Combustion Intake. Masonry or factory-built fireplaces must have a combustion outside air intake, which is at least six square inche 150.0(e)2: area and is equipped with a readily accessible, operable, and tight-fitting damper or combustion-air control device. § 150.0(e)3: Flue Damper. Masonry or factory-built fireplaces must have a flue damper with a readily accessible control. * pace Conditioning, Water Heating, and Plumbing System: Certification. Heating, ventilation, and air conditioning (HVAC) equipment, water heaters, showerheads, faucets, and all other \$ 110.0-\$ 110.3: regulated appliances must be certified by the manufacturer to the California Energy Commission. HVAC Efficiency. Equipment must meet the applicable efficiency requirements in Table 110.2-A through Table 110.2-I Controls for Heat Pumps with Supplementary Electric Resistance Heaters. Heat pumps with supplementary electric resistance § 110.2(b): heaters must have controls that prevent supplementary heater operation when the heating load can be met by the heat pump alone; and in which the cut-on temperature for compression heating is higher than the cut-on temperature for supplementary heating, and the cut-off temperature for compression heating is higher than the cut-off temperature for supplementary heating. Thermostats. All heating or cooling systems not controlled by a central energy management control system (EMCS) must have a § 110.2(c): setback thermos nsulation. Unfired service water heater storage tanks and solar water-heating backup tanks must have adequate insulation, or tank surface heat loss rating. Isolation Valves. Instantaneous water heaters with an input rating greater than 6.8 kBtu per hour (2 kW) must have isolation valves with § 110.3(c)6: hose bibbs or other fittings on both cold and hot water lines to allow for flushing the water heater when the valves are closed.

2022 Single-Family Residential Mandatory Requirements Summary

§ 110.5:	Pilot Lights. Continuously burning pilot lights are prohibited for natural gas: fan-type central furnaces; household cooking appliances (except appliances without an electrical supply voltage connection with pilot lights that consume less than 150 Btu per hour); and pool and
	spa heaters.
§ 150.0(h)1:	Building Cooling and Heating Loads. Heating and/or cooling loads are calculated in accordance with the ASHRAE Handbook, Equipment Volume, Applications Volume, and Fundamentals Volume; the SMACNA Residential Comfort System Installation Standards Manual; or the ACCA Manual J using design conditions specified in § 150.0(h)2.
§ 150.0(h)3A:	Clearances. Air conditioner and heat pump outdoor condensing units must have a clearance of at least five feet from the outlet of any dryer.
§ 150.0(h)3B:	Liquid Line Drier. Air conditioners and heat pump systems must be equipped with liquid line filter driers if required, as specified by the manufacturer's instructions.
§ 150.0(j)1:	Water Piping, Solar Water-heating System Piping, and Space Conditioning System Line Insulation. All domestic hot water piping must be insulated as specified in § 609.11 of the California Plumbing Code.*
§ 150.0(j)2:	Insulation Protection. Piping insulation must be protected from damage, including that due to sunlight, moisture, equipment' maintenance, and wind as required by §120.3(b). Insulation exposed to weather must be water retardant and protected from UV light (no adhesive tapes). Insulation covering chilled water piping and refrigerant suction piping located outside the conditioned space must include, or be protected by, a Class I or Class II vapor retarder. Pipe insulation buried below grade must be installed in a waterproof and non-crushable casing or sleeve.
§ 150.0(n)1:	Gas or Propane Water Heating Systems. Systems using gas or propane water heaters to serve individual dwelling units must designate a space at least 2.5' x 2.5' x 7' suitable for the future installation of a heat pump water heater, and meet electrical and plumbing requirements, based on the distance between this designated space and the water heater location; and a condensate drain no more than 2" higher than the base of the water heater
§ 150.0(n)3:	Solar Water-heating Systems. Solar water-heating systems and collectors must be certified and rated by the Solar Rating and Certification Corporation (SRCC), the International Association of Plumbing and Mechanical Officials, Research and Testing (IAPMO R&T), or by a listing agency that is approved by the executive director.
Jucts and Fans:	
§ 110.8(d)3:	Ducts. Insulation installed on an existing space-conditioning duct must comply with § 604.0 of the California Mechanical Code (CMC). If a contractor installs the insulation, the contractor must certify to the customer, in writing, that the insulation meets this requirement.
	CMC Compliance. All air-distribution system ducts and plenums must meet CMC §§ 601.0-605.0 and ANSI/SMACNA-006-2006 HVAC Duct Construction Standards Metal and Flexible 3rd Edition. Portions of supply-air and return-air ducts and plenums must be insulated to R-6.0 or higher; ducts located entirely in conditioned space as confirmed through field verification and diagnostic testing (RA3.1.4.3.8)

do not require insulation. Connections of metal ducts and inner core of flexible ducts must be mechanically fastened. Openings must be sealed with mastic, tape, or other duct-closure system that meets the applicable UL requirements, or aerosol sealant that meets UL 723. The combination of mastic and either mesh or tape must be used to seal openings greater than ¼", If mastic or tape is used. Building cavities, air handler support platforms, and plenums designed or constructed with materials other than sealed sheet metal, duct board or flexible duct must not be used to convey conditioned air. Building cavities and support platforms may contain ducts; ducts installed in these spaces must not be compressed. Factory-Fabricated Duct Systems. Factory-fabricated duct systems must comply with applicable requirements for duct construction, connections, and closures; joints and seams of duct systems and their components must not be sealed with cloth back rubber adhesive duct tapes unless such tape is used in combination with mastic and draw bands. eld-Fabricated Duct Systems. Field-fabricated duct systems must comply with applicable requirements for: pressure-sensitive tapes, mastics, sealants, and other requirements specified for duct construction. Backdraft Damper. Fan systems that exchange air between the conditioned space and outdoors must have backdraft or automatic Gravity Ventilation Dampers. Gravity ventilating systems serving conditioned space must have either automatic or readily accessible manually operated dampers in all openings to the outside, except combustion inlet and outlet air openings and elevator shaft vents. Protection of Insulation. Insulation must be protected from damage due tosunlight, moisture, equipment maintenance, and wind. Insulation exposed to weather must be suitable for outdoor service (e.g., protected by aluminum, sheet metal, painted canvas, or plastic cover). Cellular foam insulation must be protected as above or painted with a water retardant and solar radiation-resistant coating. Porous Inner Core Flex Duct. Porous inner cores of flex ducts must have a non-porous layer or air barrier between the inner core and outer vapor barrier. Duct System Sealing and Leakage Test. When space conditioning systems use forced air duct systems to supply conditioned air to an § 150.0(m)11: occupiable space, the ducts must be sealed and duct leakage tested, as confirmed through field verification and diagnostic testing, in accordance with Reference Residential Appendix RA3.1. Air Filtration. Space conditioning systems with ducts exceeding 10 feet and the supply side of ventilation systems must have MERV 13

\$ 150.0(m)12: 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. Clean-filter pressure drop and labeling must meet the requirements in §150.0(m)12. Filters must be accessible for regular service. Filter racks or grilles must use gaskets, sealing, or other means to close gaps around the inserted filters to and prevents air from bypassing the 2022 Single-Family Residential Mandatory Requirements Summary

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 150.0(m)13: be ≥ 350 CFM per ton of nominal cooling capacity, and an air-handling unit fan efficacy ≤ 0.45 watts per CFM for gas furnace air handlers and ≤ 0.58 watts per CFM for all others. Small duct high velocity systems must provide an airflow ≥ 250 CFM per ton of nominal cooling capacity, and an air-handling unit fan efficacy ≤ 0.62 watts per CFM. Field verification testing is required in accordance with Reference Residential Appendix RA3.3. * entilation and Indoor Air Quality: Requirements for Ventilation and Indoor Air Quality. All dwelling units must meet the requirements of ASHRAE Standard 62.2, § 150.0(o)1: Ventilation and Acceptable Indoor Air Quality in Residential Buildings subject to the amendments specified in § 150.0(o)1.* Central Fan Integrated (CFI) Ventilation Systems. Continuous operation of CFI air handlers is not allowed to provide the whole-§ 150.0(o)1B: dwelling unit ventilation airflow required per §150.0(o)1C. A motorized damper(s) must be installed on the ventilation duct(s) that prevents all airflow through the space conditioning duct system when the damper(s) is closed and controlled per §150.0(o)1Biii&iv. CFI ventilation systems must have controls that track outdoor air ventilation run time, and either open or close the motorized damper(s) for compliance with §150.0(o)1C. Whole-Dwelling Unit Mechanical Ventilation for Single-Family Detached and townhouses . Single-family detached dwelling units § 150.0(o)1C: 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 specified in § 150.0(o)1Ci-iii. § 150.0(o)1G: Local Mechanical Exhaust. Kitchens and bathrooms must have local mechanical exhaust; nonenclosed kitchens must have demandcontrolled exhaust system meeting requirements of §150.0(o)1Giii,enclosed kitchens and bathrooms can use demand-controlled or continuous exhaust meeting §150.0(o)1Giii-iv. Airflow must be measured by the installer per §150.0(o)1Gv, and rated for sound per

§150.0(o)1Gvi. ' § 150.0(o)1H&I: Airflow Measurement and Sound Ratings of Whole-Dwelling Unit Ventilation Systems. The airflow required per § 150.0(o)1C must be measured by using a flow hood, flow grid, or other airflow measuring device at the fan's inlet or outlet terminals/grilles per Reference Residential Appendix RA3.7. Whole-Dwelling unit ventilation systems must be rated for sound per ASHRAE 62.2 §7.2 at no less than th ninimum airflow rate required by §150.0(o)10 ield Verification and Diagnostic Testing. Whole-Dwelling Unit ventilation airflow, vented range hood airflow and sound rating, § 150.0(o)2: and HRV and ERV fan efficacy must be verified in accordance with Reference Residential Appendix RA3.7. Vented range hoods must be verified per Reference Residential Appendix RA3.7.4.3 to confirm if it is rated by HVI or AHAM to comply with the airflow rates and sound requirements per §150.0(o)1G Pool and Spa Systems and Equipment: ertification by Manufacturers. Any pool or spa heating system or equipment must be certified to have all of the following: compliance with the Appliance Efficiency Regulations and listing in MAEDbS; an on-off switch mounted outside of the heater that allows shutting off the heater without adjusting the thermostat setting; a permanent weatherproof plate or card with operating instructions; and must not use electric resistance heating. * 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

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 § 110.4(b)3: switch that will allow all pumps to be set or programmed to run only during off-peak electric demand periods. Pilot Light. Natural gas pool and spa heaters must not have a continuously burning pilot light. Pool Systems and Equipment Installation. Residential pool systems or equipment must meet the specified requirements for pump sizing, flow rate, piping, filters, and valves. § 150.0(p): Lighting Controls and Components. All lighting control devices and systems, ballasts, and luminaires must meet the applicable requirements of § 110.9. § 150.0(k)1A: Luminaire Efficacy. All installed luminaires must meet the requirements in Table 150.0-A, except lighting integral to exhaust fans, kitchen range hoods, bath vanity mirrors, and garage door openers; navigation lighting less than 5 watts; and lighting internal to drawers, cabinets, and linen closets with an efficacy of at least 45 lumens per watt. Screw based luminaires. Screw based luminaires must contain lamos that comply with Reference Joint Appendix JA8. ecessed Downlight Luminaires in Ceilings. Luminaires recessed into ceilings must not contain screw based sockets, must be airtight § 150.0(k)1C:

and must be sealed with a gasket or caulk. California Electrical Code § 410.116 must also be met. Light Sources in Enclosed or Recessed Luminaires. Lamps and other separable light sources that are not compliant with the JA8 levated temperature requirements, including marking requirements, must not be installed in enclosed or recessed luminaires. Blank Electrical Boxes. The number of electrical boxes that are more than five feet above the finished floor and do not contain a luminaire or other device shall be no more than the number of bedrooms. These boxes must be served by a dimmer, vacancy senso control, low voltage wiring, or fan speed control. 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).*

	2022 Single-Family Residential I
§ 150.0(s)	Energy Storage System (ESS) Ready. All single-family re equipment with backed up capacity of 60 amps or more an main service to a subpanel that supplies the branch circuits source collocated at a single panelboard suitable to be sup near the primary exit, and one circuit supplying a sleeping in 225 amps; sufficient space must be reserved to allow future panelboard, with raceways installed between the panelboard
§ 150.0(t)	Heat Pump Space Heater Ready. Systems using gas or p unobstructed 240V branch circuit wiring installed within 3' or identified as "240V ready;" and a reserved main electrical s permanently marked as "For Future 240V use."
§ 150.0(u)	Electric Cooktop Ready. Systems using gas or propane c 240V branch circuit wiring installed within 3' of the cooktop "240V ready;" and a reserved main electrical service panel marked as "For Future 240V use."
§ 150.0(v)	Electric Clothes Dryer Ready. Clothes dryer locations wit dedicated unobstructed 240V branch circuit wiring installed the blank cover identified as "240V ready," and a reserved circuit breaker permanently marked as "For Future 240V us

Exceptions may apply.

La Bella Villa Residence

Light Sources in Enclosed or Recessed Luminaires. Lamps and other separable light sources that are not compliant with the JA8 elevated temperature requirements, including marking requirements, must not be installed in enclosed or recessed luminaires. Light Sources in Drawers, Cabinets, and Linen Closets, Light sources internal to drawers, cabinetry or linen closets are not require to comply with Table 150.0-A or be controlled by vacancy sensors provided that they are rated to consume no more than 5 watts of power, emit no more than 150 lumens, and are equipped with controls that automatically turn the lighting off when the drawer, cabinet or

Accessible Controls. Lighting must have readily accessible wall-mounted controls that allow the lighting to be manually turned Multiple Controls. Controls must not bypass a dimmer, occupant sensor, or vacancy sensor function if the dimmer or sensor is installed

Energy Management Control Systems. An energy management control system (EMCS) may be used to comply with dimming, Automatic Shutoff Controls. In bathrooms, garages, laundry rooms, utility rooms and walk-in closets, at least one installed luminaire must be controlled by an occupancy or vacancy sensor providing automatic-off functionality. Lighting inside drawers and cabinets with Diamers. Lighting in habitable spaces (e.g., living rooms, diving rooms, kitchens, and bedrooms) must have readily accessible wall-mounted dimming controls that allow the lighting to be manually adjusted up and down. Forward phase cut dimmers controlling LED light Residential Outdoor Lighting. For single-family residential buildings, outdoor lighting permanently mounted to a residential building, or to

Internally illuminated address signs. Internally illuminated address signs must either comply with § 140.8 or consume no more than 5 Residential Garages for Eight or More Vehicles. Lighting for residential parking garages for eight or more vehicles must comply with the

Minimum Solar Zone Area. The solar zone must have a minimum total area as described below. The solar zone must comply with access, pathway, smoke ventilation, and spacing requirements as specified in Title 24, Part 9 or other parts of Title 24 or in any requirements adopted by a local jurisdiction. The solar zone total area must be comprised of areas that have no dimension less than 5 feet and are no less than 80 square feet each for buildings with roof areas less than or equal to 10,000 square feet or no less than 160

Shading. The solar zone must not contain any obstructions, including but not limited to: vents, chimneys, architectural features, and roof Shading. Any obstruction located on the roof or any other part of the building that projects above a solar zone must be located at least twice the Structural Design Loads on Construction Documents. For areas of the roof designated as a solar zone, the structural design loads for

interconnection Pathways. The construction documents must indicate: a location reserved for inverters and metering equipment and a esidences and central water-heating systems, a pathway reserved for routing plumbing from the solar zone to the water-heating system.

Mandatory Requirements Summary

sidences must meet all of the following: Either ESS-ready interconnection nd four or more ESS supplied branch circuits, or a dedicated raceway from the is in § 150.0(s); at least four branch circuits must be identified and have their pplied by the ESS, with one circuit supplying the refrigerator, one lighting circuit g room receptacle outlet; main panelboard must have a minimum busbar rating of re installation of a system isolation equipment/transfer switch within 3' of the main ard and the switch location to allow the connection of backup power source. pane furnaces to serve individual dwelling units must include: A dedicated of the furnace with circuit conductors rated at least 30 amps with the blank cover service panel space to allow for the installation of a double pole circuit breaker pooktop to serve individual dwelling units must include: A dedicated unobstr

p with circuit conductors rated at least 50 amps with the blank cover identified as I space to allow for the installation of a double pole circuit breaker permanently gas or propane plumbing to serve individual dwelling units must include: A d within 3' of the dryer location with circuit conductors rated at least 30 amps with main electrical service panel space to allow for the installation of a double pole

		California 2022 (RESIDE
/A	RESPON. PARTY	CHAPTER 3 GREEN BUILDING
		SECTION 301 GENERAL
		301.1 SCOPE. Buildings shall be designed to include the green building measur the application checklists contained in this code. Voluntary green building meas application checklists and may be included in the design and construction of strubut are not required unless adopted by a city, county, or city and county as specified.
		301.1.1 Additions and alterations. [HCD] The mandatory provisions of additions or alterations of existing residential buildings where the addition building's conditioned area, volume, or size. The requirements shall apply specific area of the addition or alteration.
		The mandatory provision of Section 4.106.4.2 may apply to additions or facilities or the addition of new parking facilities serving existing multifami 4.106.4.3 for application.
		Note: Repairs including, but not limited to, resurfacing, restriping and rep lighting fixtures are not considered alterations for the purpose of this sect
		Note: On and after January 1, 2014, residential buildings undergoing per improvements shall replace noncompliant plumbing fixtures with water-corplumbing fixture replacement is required prior to issuance of a certificate of occupancy or final permit approval by the local building department. See et seq., for the definition of a noncompliant plumbing fixture, types of residutes other important enactment dates.
		301.2 LOW-RISE AND HIGH-RISE RESIDENTIAL BUILDINGS individual sections of CALGreen may apply to either low-rise residential building buildings, or both. Individual sections will be designated by banners to indicate specifically to low-rise only (LR) or high-rise only (HR). When the section applies high-rise buildings, no banner will be used.
		SECTION 302 MIXED OCCUPANCY BUILDINGS
		302.1 MIXED OCCUPANCY BUILDINGS. In mixed occupancy building shall comply with the specific green building measures applicable to each speci Exceptions:
		 [HCD] Accessory structures and accessory occupancies serving comply with Chapter 4 and Appendix A4, as applicable. [HCD] For purposes of <i>CAL</i>Green, live/work units, complying wit <i>Building Code</i>, shall not be considered mixed occupancies. Live/W Chapter 4 and Appendix A4, as applicable.
		ABBREVIATION DEFINITIONS:
		HCDDepartment of Housing and Community DevelopmentBSCCalifornia Building Standards CommissionDSA-SSDivision of the State Architect, Structural Safety
		OSHPD Office of Statewide Health Planning and Development LR Low Rise HR High Rise AA Additions and Alterations N New
		CHAPTER 4 RESIDENTIAL MANDATORY MEASURES
		SECTION 4.102 DEFINITIONS
		The following terms are defined in Chapter 2 (and are included here for reference)
		pervious material used to collect or channel drainage or runoff water.
		such as hay, straw or similar material shaped in the form of tubes and placed on a down used for perimeter and inlet controls. 4.106 SITE DEVELOPMENT
		4.106.1 GENERAL. Preservation and use of available natural resources shall be acco and careful planning to minimize negative effects on the site and adjacent areas. management of storm water drainage and erosion controls shall comply with this
		4.106.2 STORM WATER DRAINAGE AND RETENTION DURING CONSTRUCTION. than one acre of soil and are not part of a larger common plan of development we or more, shall manage storm water drainage during construction. In order to mar during construction, one or more of the following measures shall be implemented property, prevent erosion and retain soil runoff on the site.
		 Retention basins of sufficient size shall be utilized to retain storm water Where storm water is conveyed to a public drainage system, collection disposal method, water shall be filtered by use of a barrier system, wat by the enforcing agency. Compliance with a lawfully enacted storm water management ordinance
		Note: Refer to the State Water Resources Control Board for projects which disturate part of a larger common plan of development which in total disturbs one acre (Website: https://www.waterboards.ca.gov/water_issues/programs/stormwater/co
		4.106.3 GRADING AND PAVING. Construction plans shall indicate how the site gradir manage all surface water flows to keep water from entering buildings. Examples water include, but are not limited to, the following:
		 Swales Water collection and disposal systems French drains Water retention gardens Other water measures which keep surface water away from buildings a
		recharge. Exception: Additions and alterations not altering the drainage path.
		4.106.4 Electric vehicle (EV) charging for new construction. New construction shall 4.106.4.1 or 4.106.4.2 to facilitate future installation and use of EV chargers. Elected equipment (EVSE) shall be installed in accordance with the <i>California Electrical Co</i>
		Exceptions: 1. On a case-by-case basis, where the local enforcing agency has a infrastructure are not feasible based upon one or more of the foll 1.1 Where there is no local utility power supply or the local utility
		 1.2 Where there is evidence suitable to the local enforcing agend local utility infrastructure design requirements, directly related to 4.106.4, may adversely impact the construction cost of the project. 2. Accessory Dwelling Units (ADU) and Junior Accessory Dwelling parking facilities.
		4.106.4.1 New one- and two-family dwellings and townhouses with attached dwelling unit, install a listed raceway to accommodate a dedicated 208/240-volt b shall not be less than trade size 1 (nominal 1-inch inside diameter). The raceway service or subpanel and shall terminate into a listed cabinet, box or other enclosu proposed location of an EV charger. Raceways are required to be continuous at a concealed areas and spaces. The service panel and/or subpanel shall provide ca 208/240-volt minimum dedicated branch circuit and space(s) reserved to permit in overcurrent protective device.
		Exemption: A raceway is not required if a minimum 40-ampere 208/240-volt dedic installed in close proximity to the proposed location of an EV charger at the time of accordance with the <i>California Electrical Code</i> .
	, E	4 Jun 4 J J Identification The service nanel or subnanel circuit directory

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CALIFORNIA GREEN BUILDING STANDARDS CODE ENTIAL MANDATORY MEASURES SHEET 1 (Japuary 2023)

			DATONI MLAUUNLU, UIL		I (January 2023)		RESPON. PARTY = RESPONSIBLE PARTY (ie: ARCHITECT, OWNER, CONTRACTOR, INSPECTOR E
Y N/A RESPON. PARTY	CHAPTER 3	Y N/A RESPON. PARTY		Y N/A RESPON PARTY	Exception: A raceway is not required if a minimum 40-ampere 208/240-volt dedicated EV branch circuit is installed in close proximity to the location or the proposed location of the EV space at the time of original construction in accordance with the California Electrical Code.	Y N/A RESPON PARTY	
	GREEN BUILDING SECTION 301 GENERAL	4.1 Wi	106.4.2 New multifamily dwellings, hotels and motels and new residential parking facilities. Then parking is provided, parking spaces for new multifamily dwellings, hotels and motels shall meet the quirements of Sections 4.106.4.2.1 and 4.106.4.2.2. Calculations for spaces shall be rounded up to the nearest hole number. A parking space served by electric vehicle supply equipment or designed as a future EV charging		4.106.4.2.4 Identification. The service panel or subpanel circuit directory shall identify the overcurrent protective device space(s) reserved for future EV charging purposes as "EV CAPABLE" in accordance with the California Electrical Code		4.304 OUTDOOR WATER USE 4.304.1 OUTDOOR POTABLE WATER USE IN LANDSCAPE AREAS . Residential developments shall cor a local water efficient landscape ordinance or the current California Department of Water Resources' Model V
	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 upleas adopted by a city, equipt, and equipt, an entropy field in Section 101.7	sp. ap for	bace shall count as at least one standard automobile parking space only for the purpose of complying with any oplicable minimum parking space requirements established by a local jurisdiction. See Vehicle Code Section 22511.2 r further details.		4.106.4.2.5 Electric Vehicle Ready Space Signage . Electric vehicle ready spaces shall be identified by signage or pavement markings, in compliance with Caltrans Traffic Operations Policy Directive 13-01 (Zero Emission Vehicle Signs and Pavement Markings) or its		Efficient Landscape Ordinance (MWELO), whichever is more stringent. NOTES: 1. The Medel Weter Efficient Landscape Ordinance (MWELO) is leasted in the California Code Regul
	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	4.1 tha Th thi	106.4.2.1Multifamily development projects with less than 20 dwelling units; and hotels and motels with less an 20 sleeping units or guest rooms. The number of dwelling units, sleeping units or guest rooms shall be based on all buildings on a project site subject to is section.		 4.106.4.3 Electric vehicle charging for additions and alterations of parking facilities serving existing multifamily buildings. 		Title 23, Chapter 2.7, Division 2. MWELO and supporting documents, including water budget calcul available at: https://www.water.ca.gov/
	specific area of the addition or alteration. The mandatory provision of Section 4.106.4.2 may apply to additions or alterations of existing parking facilities or the addition of new parking facilities serving existing multifamily buildings. See Section		1.EV Capable. 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 Level 2 EVSE. Electrical load calculations shall demonstrate that the electrical panel service capacity and electrical		When new parking facilities are added, or electrical systems or lighting of existing parking facilities are added or altered and the work requires a building permit, ten (10) percent of the total number of parking spaces added or altered shall be electric vehicle charging spaces (EV spaces) capable of supporting future Level 2 EVSE.		EFFICIENCY
	4.106.4.3 for application. Note: Repairs including, but not limited to, resurfacing, restriping and repairing or maintaining existing lighting fixtures are not considered alterations for the purpose of this section.		system, including any on-site distribution transformer(s), have sufficient capacity to simultaneously charge all EVs at all required EV spaces at a minimum of 40 amperes. The service panel or subpanel circuit directory shall identify the overcurrent protective device space(s) reserved		Notes: 1.Construction documents are intended to demonstrate the project's capability and capacity for facilitating future EV charging.		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
	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. 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,		for future EV charging purposes as "EV CAPABLE" in accordance with the California Electrical Code. Exceptions: 1.When EV chargers (Level 2 EVSE) are installed in a number equal to or greater than the required number		2. There is no requirement for EV spaces to be constructed or available until EV chargers are installed for use. DIVISION 4.2 ENERGY EFFICIENCY		 4.408 CONSTRUCTION WASTE REDUCTION, DISPOSAL AND RECYCLING 4.408.1 CONSTRUCTION WASTE MANAGEMENT. Recycle and/or salvage for reuse a minimum of 65 percent of the non-hazardous construction and demolition waste in accordance with either Section 4.408.2 4.408.3 or 4.408.4 or meet a more stringent local construction and demolition waste
	et seq., for the definition of a noncompliant plumbing fixture, types of residential buildings affected and other important enactment dates.		 2.When EV chargers (Level 2 EVSE) are installed in a number less than the required number of EV capable spaces, the number of EV capable spaces required may be reduced by a number equal to the number of EV chargers installed 		 4.201 SCOPE. For the purposes of mandatory energy efficiency standards in this code, the California Energy Commission will continue to adopt mandatory standards. 		management ordinance. Exceptions:
	301.2 LOW-RISE AND HIGH-RISE RESIDENTIAL BUILDINGS. [HCD] The provisions of 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.		Notes: a.Construction documents are intended to demonstrate the project's capability and capacity for facilitating future EV charging.		 DIVISION 4.3 WATER EFFICIENCY AND CONSERVATION 4.303 INDOOR WATER USE 4.303.1 WATER CONSERVING PLUMBING FIXTURES AND FITTINGS. Plumbing fixtures (water closets and urinals) and fittings (faucets and showerheads) shall comply with the sections 4.303.1.1, 4.303.1.2, 4.303.1.3, and 4.303.4.4. 		 Excavated soil and land-clearing debris. Alternate waste reduction methods developed by working with local agencies if diversion or recycle facilities capable of compliance with this item do not exist or are not located reasonably close to the jobsite. The enforcing agency may make exceptions to the requirements of this section when isolated jobsites are located in areas beyond the haul boundaries of the diversion facility.
	SECTION 302 MIXED OCCUPANCY BUILDINGS 302.1 MIXED OCCUPANCY BUILDINGS. In mixed occupancy buildings, each portion of a building		 b.There is no requirement for EV spaces to be constructed or available until receptacles for EV charging or EV chargers are installed for use. 2 EV Ready. Twenty-five (25) percent of the total number of parking spaces shall be equipped with low power. 		Note: All noncompliant plumbing fixtures in any residential real property shall be replaced with water-conserving plumbing fixtures. 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		 4.408.2 CONSTRUCTION WASTE MANAGEMENT PLAN. Submit a construction waste management plan in conformance with Items 1 through 5. The construction waste management plan shall be updated as necessary and shall be available during construction for examination by the enforcing agency.
	 shall comply with the specific green building measures applicable to each specific occupancy. Exceptions: [HCD] Accessory structures and accessory occupancies serving residential buildings shall comply with Chapter 4 and Appendix A4, as applicable. [HCD] For purposes of CALGreen, live/work units, complying with Section 419 of the California 		Level 2 EV charging receptacles. For multifamily parking facilities, no more than one receptacle is required per dwelling unit when more than one parking space is provided for use by a single dwelling unit. Exception: Areas of parking facilities served by parking lifts.		 Code Section 1101.1, et seq., for the definition of a noncompliant plumbing fixture, types of residential buildings affected and other important enactment dates. 4.303.1.1 Water Closets. The effective flush volume of all water closets shall not exceed 1.28 gallons per flush. Tank-type water closets shall be certified to the performance criteria of the U.S. EPA WaterSense 		 Identify the construction and demolition waste materials to be diverted from disposal by recycling, reuse on the project or salvage for future use or sale. Specify if construction and demolition waste materials will be sorted on-site (source separated) or bulk mixed (single stream).
	Building Code, shall not be considered mixed occupancies. Live/Work units shall comply with Chapter 4 and Appendix A4, as applicable. DIVISION 4.1 PLANNING AND DESIGN	4.1 Sle Th thi	106.4.2.2 Multifamily development projects with 20 or more dwelling units, hotels and motels with 20 or more eeping units or guest rooms. The number of dwelling units, sleeping units or guest rooms shall be based on all buildings on a project site subject to is section.		Specification for Tank-type Toilets. Note: The effective flush volume of dual flush toilets is defined as the composite, average flush volume of two reduced flushes and one full flush.		 Identify diversion facilities where the construction and demolition waste material collected will be taken. Identify construction methods employed to reduce the amount of construction and demolition waste generated.
	ABBREVIATION DEFINITIONS: HCD Department of Housing and Community Development BSC California Building Standards Commission DSA-SS Division of the State Architect, Structural Safety OSHPD Office of Statewide Health Planning and Development		1.EV Capable . 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 Level 2 EVSE. Electrical load calculations shall demonstrate that the electrical panel service capacity and electrical system, including any on-site distribution transformer(s), have sufficient capacity to simultaneously charge all		 4.303.1.2 Urinals. The effective flush volume of wall mounted urinals shall not exceed 0.125 gallons per flush. The effective flush volume of all other urinals shall not exceed 0.5 gallons per flush. 4.303.1.3 Showerheads. 		 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
	LR Low Rise HR High Rise AA Additions and Alterations N New		EVs at all required EV spaces at a minimum of 40 amperes. The service panel or subpanel circuit directory shall identify the overcurrent protective device space(s) reserved for future EV charging purposes as "EV CAPABLE" in accordance with the California Electrical Code.		4.303.1.3.1 Single Showerhead. Showerheads shall have a maximum flow rate of not more than 1.8 gallons per minute at 80 psi. Showerheads shall be certified to the performance criteria of the U.S. EPA WaterSense Specification for Showerheads.		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.
	CHAPTER 4 RESIDENTIAL MANDATORY MEASURES		Exception: When EV chargers (Level 2 EVSE) are installed in a number greater than five (5) percent of parking spaces required by Section 4.106.4.2.2, Item 3, the number of EV capable spaces required may be reduced by a number equal to the number of EV chargers installed over the five (5) percent required.		4.303.1.3.2 Multiple showerheads serving one shower . When a shower is served by more than one showerhead, the combined flow rate of all the showerheads and/or other shower outlets controlled by a single valve shall not exceed 1.8 gallons per minute at 80 psi, or the shower shall be designed to only allow one shower outlet to be in operation at a time.		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
	SECTION 4.102 DEFINITIONS 4.102.1 DEFINITIONS The following terms are defined in Chapter 2 (and are included here for reference)		Notes: a.Construction documents shall show locations of future EV spaces.		Note : A hand-held shower shall be considered a showerhead. 4.303.1.4 Faucets.		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
	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.		 EV chargers are installed for use. 2.EV Ready. Twenty-five (25) percent of the total number of parking spaces shall be equipped with low power Level 2 EV charging receptacles. For multifamily parking facilities, no more than one receptacle is required per 		4.303.1.4.1 Residential Lavatory Faucets. The maximum flow rate of residential lavatory faucets shall not exceed 1.2 gallons per minute at 60 psi. The minimum flow rate of residential lavatory faucets shall not be less than 0.8 gallons per minute at 20 psi.		4.408.5 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
	WATTLES. Wattles are used to reduce sediment in runoff. Wattles are often constructed of natural plant materials 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.		dwelling unit when more than one parking space is provided for use by a single dwelling unit. Exception: Areas of parking facilities served by parking lifts.		 4.303.1.4.2 Lavatory Faucets in Common and Public Use Areas. The maximum flow rate of lavatory faucets installed in common and public use areas (outside of dwellings or sleeping units) in residential buildings shall not exceed 0.5 gallons per minute at 60 psi. 4.303.1.4.3 Metering Faucets. Metering faucets when installed in residential buildings shall not deliver 		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.
	 4.100 SITE DEVELOPMENT 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. 		Where common use parking is provided, at least one EV charger shall be located in the common use parking area and shall be available for use by all residents or guests. When low power Level 2 EV charging receptacles or Level 2 EVSE are installed beyond the minimum required,		more than 0.2 gallons per cycle. 4.303.1.4.4 Kitchen Faucets. The maximum flow rate of kitchen faucets shall not exceed 1.8 gallons per minute at 60 psi. Kitchen faucets may temporarily increase the flow above the maximum rate, but not		 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
	4.106.2 STORM WATER DRAINAGE AND RETENTION DURING CONSTRUCTION. Projects which disturb less than one acre of soil and are not part of a larger common plan of development which in total disturbs one acre or more, shall manage storm water drainage during construction. In order to manage storm water drainage during construction, one or more of the following measures shall be implemented to prevent flooding of adjacent property, prevent erosion and retain soil runoff on the site.		an automatic load management system (ALMS) may be used to reduce the maximum required electrical capacity to each space served by the ALMS. The electrical system and any on-site distribution transformers shall have sufficient capacity to deliver at least 3.3 kW simultaneously to each EV charging station (EVCS) served by the ALMS. The branch circuit shall have a minimum capacity of 40 amperes, and installed EVSE shall have a capacity of not less than 30 amperes. ALMS shall not be used to reduce the minimum required electrical capacity to the required EV capable spaces.		Note: Where complying faucets are unavailable, aerators or other means may be used to achieve reduction.		 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: 1. Directions to the owner or occupant that the manual shall remain with the building throughout the life cycle of the structure.
	 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 opacted storm water management ordinance. 		4.106.4.2.2.1 Electric vehicle charging stations (EVCS). Electric vehicle charging stations required by Section 4.106.4.2.2, Item 3, shall comply with Section 4.106.4.2.2.1.		When installed, shall meet the requirements in the <i>California Code of Regulations</i> , Title 20 (Appliance Efficiency Regulations), Sections 1605.1 (h)(4) Table H-2, Section 1605.3 (h)(4)(A), and Section 1607 (d)(7) and shall be equipped with an integral automatic shutoff.		 a. 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.
	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.		 shall not be required to comply with this section. See California Building Code, Chapter 11B, for applicable requirements. 4.106.4.2.2.1.1 Location. 		FOR REFERENCE ONLY: The following table and code section have been reprinted from the <i>California Code of Regulations</i> , Title 20 (Appliance Efficiency Regulations),Section 1605.1 (h)(4) and Section 1605.3 (h)(4)(A).		 c. Space conditioning systems, including condensers and air filters. d. Landscape irrigation systems. e. Water reuse systems. 3. Information from local utility, water and waste recovery providers on methods to further reduce
	 (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 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: 		EVCS shall comply with at least one of the following options: 1.The charging space shall be located adjacent to an accessible parking space meeting the requirements of the California Building Code, Chapter 11A, to allow use of the EV charger from the accessible parking space.		TABLE H-2 STANDARDS FOR COMMERCIAL PRE-RINSE SPRAY		 Public transportation and/or carpool options available in the area. 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 conserved
	 Swales Swales Water collection and disposal systems French drains 		2.The charging space shall be located on an accessible route, as defined in the California Building Code, Chapter 2, to the building. Exception: Electric vehicle charging stations designed and constructed in compliance with the California		VALUES MANUFACTURED ON OR AFTER JANUARY 28, 2019 PRODUCT CLASS MAXIMUM FLOW RATE (gpm)		 water. 7. Instructions for maintaining gutters and downspouts and the importance of diverting water at least feet away from the foundation. 8. Information on required routine maintenance measures, including, but not limited to, caulking,
	 Water retention gardens Other water measures which keep surface water away from buildings and aid in groundwater recharge. 		 Building Code, Chapter 11B, are not required to comply with Section 4.106.4.2.2.1.1 and Section 4.106.4.2.2.1.2, Item 3. 4.106.4.2.2.1.2 Electric vehicle charging stations (EVCS) dimensions. 		Product Class 1 (\leq 5.0 ozf)1.00		 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. 11. Information from the Department of Forestry and Fire Protection on maintenance of defensible space around residential structures.
	 4.106.4 Electric vehicle (EV) charging for new construction. New construction shall comply with Sections 4.106.4.1 or 4.106.4.2 to facilitate future installation and use of EV chargers. Electric vehicle supply equipment (EVSE) shall be installed in accordance with the California Electrical Code. Article 625. 		1. The minimum length of each EV space shall be 18 feet (5486 mm). 2. The minimum width of each EV space shall be 9 feet (2743 mm).		Product Class 2 (> 5.0 ozr and ≤ 8.0 ozr) 1.20 Product Class 3 (> 8.0 ozf) 1.28 Title 20 Section 1605.3 (h)(4)(A): Commercial prerinse spray values manufactured on or after January		 12. Information and/or drawings identifying the location of grab bar reinforcements. 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
	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:		3.One in every 25 charging spaces, but not less than one, shall also have an 8-foot (2438 mm) wide minimum aisle. A 5-foot (1524 mm) wide minimum aisle shall be permitted provided the minimum width of the EV space is 12 feet (3658 mm).		 1, 2006, shall have a minimum spray force of not less than 4.0 ounces-force (ozf)[113 grams-force(gf)] 4.303.2 Submeters for multifamily buildings and dwelling units in mixed-used residential/commercial buildings. 		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.
	 1.1 Where there is no local utility power supply or the local utility is unable to supply adequate power. 1.2 Where there is evidence suitable to the local enforcing agency substantiating that additional local utility infrastructure design requirements, directly related to the implementation of Section 4.106.4 may adversally impact the construction cost of the preject. 		a.Surface slope for this EV space and the aisle shall not exceed 1 unit vertical in 48 units horizontal (2.083 percent slope) in any direction.		 4.303.3 Standards for plumbing fixtures and fittings. Plumbing fixtures and fittings shall be installed in accordance with the <i>California Plumbing Code</i>, and shall meet the applicable standards referenced in Table 		42649.82 (a)(2)(A) et seq. are note required to comply with the organic waste portion of this section.
	 Accessory Dwelling Units (ADU) and Junior Accessory Dwelling Units (JADU) without additional parking facilities. 		In addition to the requirements in Sections 4.106.4.2.2.1.1 and 4.106.4.2.2.1.2, all EVSE, when installed, shall comply with the accessibility provisions for EV chargers in the California Building Code, Chapter 11B. EV ready spaces and EVCS in multifamily developments shall comply with California Building Code, Chapter 11A, Section 1109A.		1701.1 of the <i>California Plumbing Code</i> . NOTE: THIS TABLE COMPILES THE DATA IN SECTION 4.303.1, AND IS INCLUDED AS A		DIVISION 4.5 ENVIRONMENTAL QUALITY SECTION 4.501 GENERAL
	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		4.106.4.2.3 EV space requirements.		TABLE - MAXIMUM FIXTURE WATER USE		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
	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. Baceways are required to be continuous at enclosed, inaccessible or		1.Single EV space required. Install a listed raceway capable of accommodating a 208/240-volt dedicated 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, how or enclosure in close		FIXTURE TYPE FLOW RATE		SECTION 4.502 DEFINITIONS
	concealed areas and spaces. The service panel and/or subpanel shall provide capacity to install a 40-ampere 208/240-volt minimum dedicated branch circuit and space(s) reserved to permit installation of a branch circuit overcurrent protective device.		proximity to the location or the proposed location of the EV space. Construction documents shall identify the raceway termination point, receptacle or charger location, as applicable. The service panel and/ or subpanel shall have a 40-ampere minimum dedicated branch circuit, including branch circuit overcurrent protective device installed, or space(s) reserved to permit installation of a branch circuit overcurrent protective device		SHOWER HEADS (RESIDENTIAL) 1.8 GMP @ 80 PSI LAMATORY FALICETS (DESIDENTIAL) MAX. 1.2 GPM @ 60 PSI_MIN_ 0.8 GPM @ 20		 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
	Exemption: A raceway is not required if a minimum 40-ampere 208/240-volt dedicated EV branch circuit is installed in close proximity to the proposed location of an EV charger at the time of original construction in accordance with the <i>California Electrical Code</i> .		Exception: A raceway is not required if a minimum 40-ampere 208/240-volt dedicated EV branch circuit is installed in close proximity to the location or the proposed location of the EV space, at the time of original construction in accordance with the California Electrical Code.		LAVATORY FAUCETS (RESIDENTIAL) LAVATORY FAUCETS IN COMMON & PUBLIC USE AREAS		cores, not including turniture, 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 strend board, clued loginated timber, prefebricated
	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".		2.Multiple EV spaces required. Construction documents shall indicate the raceway termination point and the location of installed or future EV spaces, receptacles or EV chargers. Construction documents shall also provide		KITCHEN FAUCETS1.8 GPM @ 60 PSIMETERING FAUCETS0.2 GAL/CYCLE		wood I-joists or finger-jointed lumber, all as specified in California Code of regulations (CCR), title 17, Section 93120.1.
			information on amperage of installed or future receptacles or EVSE, raceway method(s), wiring schematics and electrical load calculations. Plan design shall be based upon a 40-ampere minimum branch circuit. Required raceways and related components that are planned to be installed underground, enclosed, inaccessible or in concealed areas and spaces shall be installed at the time of original construction.		WATER CLOSET1.28 GAL/FLUSHURINALS0.125 GAL/FLUSH		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.
DISCLAIMER:	THIS DOCUMENT IS PROVIDED AND INTENDED TO BE USED AS A MEANS TO INDICATE AREAS OF COMPLIANCE WITH THE CALIFOR	NIA GREEN BUILDING	STANDARDS (CALGREEN) CODE DUE TO THE VARIABLES BETWEEN BUILDING DEPARTMENT JURISDICTIONS. THIS CHECKLIS	IST IS TO BE USI	ED ON AN INDIVIDUAL PROJECT BASIS AND MAY BE MODIFIED BY THE END USER TO MEET THOSE INDIVIDUAL NEEDS. THE END	JSER ASSUMES AI	I RESPONSIBILITY ASSOCIATED WITH THE USE OF THIS DOCUMENT. INCLUDING VERIFICATION WITH THE FULL CODE.

Y	=	YES
N/A	=	NOT
RESPON. PARTY	=	RES

, APPLICABLE PONSIBLE PARTY (ie: ARCHITECT, ENGINEER, NER, CONTRACTOR, INSPECTOR ETC.)

al developments shall comply with Vater Resources' Model Water

he California Code Regulations, uding water budget calculator, are

ND RESOURCE

cies if diversion or ot located reasonably ection when isolated

any, approved by the ntage of construction and 8 1

enerate a total combined not exceed 2 pounds n waste reduction

andards Code used to assist in e located at the California

y between 30-60 percent level in that range. controllers which conserve of diverting water at least 5 t limited to, caulking,

aminants that are odorous, pants and neighbors.

stem that draws all air for le atmosphere.

PT 2'-6" 8'-0" 1 3/8"

PREFINISHED

PLASTIC LAMINATE

PRIME AND PAINT

READY FOR PAINT SOLID CORE

STEEL TEMPERED WOOD WOOD FRAME

STL

PRESSED STEEL (TIMELY

Window Schedule A					
Width	Height	Comments			
3'-0"	5'-0"	HT			
4'-0"	1'-6"	Т			
4'-0"	4'-0"	Т			
4'-0"	5'-0"	Т			
2'-0"	5'-0"	HT (DBL)			
5'-0"	5'-0"	Т			
6'-0"	5'-0"	HT			
6'-0"	8'-0"	Т			

		Fire	Fran	ne	
;	Glass	Rated	Material	Finish	Comments
	•				
	1/4" Temp.	20. MIN.	WDF	PT	2
		20. MIN.	WDF	PT	1,
			WDF	PT	
			WDF	PT	
			WDF	PT	
			WDF	PT	
			WDF	PT	
			WDF	PT	
8	3/16" Temp.	20. MIN.	WDF	PT	
_	futurit	20. MIN.	WDF	PT	
-	3/16" Temp.	20. MIN.	WDF	PT	

 $\frac{Floor Plan}{\frac{1}{4''}=1'-0''}$

Room Finish Legend

GENERAL NOTES: 1. 1/2" GYPSUM BOARD ON WALLS & 5/8" GYPSUM BOARD ON CEILINGS TO RECEIVE KNOCK-DOWN TEXTURE WITH TWO COATS LATEX FLAT ENAMEL

2. FLOOR MATERIAL CHANGES TO OCCUR IN CENTER OF DOOR WHEN IN A CLOSED POSITION

			Room	Finish S	Schedule				
Rooms	B	lase	Floe	or	Wal	ls	0	Ceilings	
Name	Height	Material	Material	Finish	Material	Finish	Material	Finish	Height
		1	L	1	1	1	L		
2 Car Garage	-	-	CONC	INT	GB	PT	GB	PT	9'-4"
Bathroom 2	6"	TL	TL	INT	WRGB	PT	WRGB	PT	8'-0"
Bedroom #2	4"	WBB	CPT	INT	GB	PT	GB	PT	9'-0"
Bedroom #3	4"	WBB	CPT	INT	GB	PT	GB	PT	9'-0"
Covered Patio			CONC	INT		PT		PT	9'-0"
Dining	4"	WBB	WD	INT	GB	PT	GB	PT	9'-0"
Entry	4"	WBB	WD	INT	GB	PT	GB	PT	9'-0"
Family Room	4"	WBB	WD	INT	GB	PT	GB	PT	9'-0"
Hall	4"	WBB	CPT	INT	GB	PPT	GB	PT	9'-0"
Kitchen	4"	WBB	WD	INT	GB	PT	GB	PT	9'-0"
Laundry	6"	TL	TL	INT	WRGB	PT	WRGB	PT	9'-0"
M. Bath	6"	TL	TL	INT	WRGB	PT	WRGB	PT	8'-0"
Mast. W.I.C.	4"	WBB	CPT	INT	GB	PT	GB	PT	9'-0"
Master Bedroom	4"	WBB	CPT	INT	GB	PT	GB	PT	9'-0"

Room Finish Abbreviation				
Abbreviation	Description			
CON	CONCRETE			
CONC	EXPOSED FINISHED CONC.			
CPT	CARPET			
E.C.	EXPOSED CONSTRUCTION			
EPOX	EPOXY FLOORING			
FRP	FIBER REINFORCED PANELS			
GB	GYPSUM BOARD			
INT	INTEGRAL			
PLY	PLYWOOD			
PT	PRIME AND PAINT			
RES	RESILIENT FLOORING			
RUB	RUBBER FLOORING			
SEAL	CLEAR CONCRETE FLOOR SEALER			
SV	SHEET VINYL			
T-BAR	SUSPENDED ACOUSTICAL CEILING			
TL	CERAMIC TILE			
TSB	TOP SET BASE			
V-T	VINYL COATED ACOUSTICAL CEILING			
WBB	WOOD BASE BOARD			
WD	WOOD FLOORING			
WRGB	WATER RESISTANT GYPSUM BOARD (PROVIDE CEILING FRAMING AT 12" O.C WHERE WATER RESISTANT GYPSUM WALL BOARD IS USED FOR CEILING APPLICATIONS)			

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Plan Notes

2-871 3-65	NEW GAS METER LOCATION (BY UTILITY). (VEF 4" THICK CONCRETE SLAB ON GRADE WITH ME MINIMUM AWAY FROM BUILDING. PROVIDE A L
8-410 9-365	EACH SIDE OF DOOR AND A MINIMUM OF 3'-0" (8' HIGH DRYWALL OPENING (SEE PLAN FOR WI 1/2" THICK GYPSUM BOARD GARAGE SIDE OF A SUPPORTING SECOND FLOOR, AND 5/8" TYPE HOUSE. PROVIDE MINIMUM 24" HORIZONTAL SI RECEPTACLES. GAS VENTS, METAL CHIMNEYS STOPPED WITH AN APPROVED ASSEMBLY. PLA
10-17	DOUBLE PLASTIC COATED WIRE SHELF (AT +8)
10-100	RECESSED MEDICINE CABINET (TOP AT +72" A
10-125	24" LONG TOWEL BAR (+54) PROVIDE 2 x 6 SOL
10-172	PROVIDE SOLID 2 x 8 BLOCKING REINFORCEM
11-30	DISHWASHER SPACE
11-52	REFRIGERATOR SPACE (PROVIDE RECESSED
11-86	BUILT-IN FIVE-BURNER GAS COOKTOP WITH R COOKTOP (MIN 100 CFM)
11-91	BUILT-IN CONVECTION OVEN WITH MICROWAV INSTALLED BY CONTRACTOR. PROVIDE 3/4" GA SEPARATE CIRCUIT.
12-35	LINE OF CABINETS ABOVE
12-47	BASE CABINET WITH GRANITE TOP AND 6" SPL
12-82	24" DEEP STAIN GRADE BASE CABINET
12-152	KNEE SPACE FOR MAKE-UP AREA
15-40	HOT AND COLD WATER SHUT-OFF IN RECESSE WASHER IS NIC)
15-50	CLOTHES DRYER (NIC)
15-80	60" x 32" x 72" HIGH FIBERGLASS COMBINATION CONNECTIONS ARE PERMITTED IN WASTE LINI FLOOR WITH METAL ESCUTCHEON. PROVIDE S TUB/SHOWERS SHALL BE PROVIDED WITH IND BALANCE OR THERMOSTATIC MIXING VALVE T
15-85	102" x 42" x 72" HIGH FIBERGLASS TUB AND SHO CONNECTIONS ARE PERMITTED IN WASTE LIN SHOWER HEAD IN WALL AT +76" ABOVE FLOOF SHATTERPROOF GLASS SHOWER ENCLOSURE SHOWERS & TUB/SHOWERS SHALL BE PROVID PRESSURE BALANCE OR THERMOSTATIC MIXIN (www.lascobathware.com)
15-200	TANK-TYPE WATER CLOSET (1.28 GALLONS PE
15-300	33" x 22" DOUBLE BOWL SELF-RIMMING ENAME DISPOSER
15-530	30" x 30" ATTIC ACCESS FOR ATTIC FAU. PROV ACCESS PANEL TO PREVENT DRAFTS. (ACCES OF LARGEST PIECE OF EQUIPMENT)
15-871	CONDENSING UNIT. PROVIDE 3-1/2" THICK POL GROUND
16-20	225 AMP RECESSED MAIN PANEL (UNDERGROU (VERIFY EXACT LOCATION WITH UTILITY COMP SERVICE) PROVIDE 3'-0" DEEP BY 2'-6" WIDE MI ARTICLE 110-26a
16-43	PROPOSED LOCATION FOR INVERTER AND ME ENERGY CODE, SECTION 110.10
16-711	EV READY PANEL (SEE ELECTRICAL FOR EV N

Water Notes

- 1. "WATER PIPE AND FITTINGS WITH A LEAD CONTENT WHICH EXCEEDS 8% SHALL BE PROHIBITED IN SYSTEMS
- CONVEYING POTABLE WATER 2. ALL FIXTURES, EQUIPMENT, PIPING, AND MATERIALS SHALL BE LISTED 3. ALL PLUMBING FIXTURES SHALL MEET
- THE FLOW REQUIREMENTS SPECIFIED IN THE CALIFORNIA GREEN BUILDING CODE. 4. THE FLOW RATES FOR ALL PLUMBING
- FIXTURES SHALL COMPLY WITH THE MAXIMUM FLOW RATES SPECIFIED IN SECTION 4.303.1

Proposed Single Family J.A. Russo En t	Residence For: terprises, I
16750 Bella Villa, River	side, CA 92503
27 June 2023	$\begin{array}{c c} \underline{/1} & 16 Mar. 20 \\ \hline \underline{/2} & 19 June 20 \\ \end{array}$
21-4247	\bigwedge^{-}
T1	

ANDRESEN ARCHITECTURE

RIFY EXACT LOCATION WITH UTILITY COMPANY) EDIUM BROOM FINISH. SLOPE 1/4" PER FOOT ANDING AT ALL DOORS A MINIMUM OF 2" BEYOND OUT FROM FACE OF DOOR. IDE)

ALL WALLS ADJACENT TO HOUSE AND "X" GYPSUM BOARD ON CEILING ADJACENT TO SEPARATION BETWEEN OFFSET ELECTRICAL S PENETRATING THE FINISH SHALL BE FIRE ASTIC PIPE SHALL NOT PIERCE FINISH. DUCTS ON AUGE SHEET METAL. 82" AND +67") AND SINGLE POLE AT +65" ABOVE 16" O/C MAX BOVE FLOOR)

LID BACKING MENT FOR OPTIONAL GRAB BARS PER CRC R327.1.1 SHUT-OFF IN PLASTIC BOX FOR ICEMAKER) ANGE HOOD ABOVE. CENTER HOOD OVER

VE ABOVE TO BE FURNISHED BY OWNER AND GAS AND 20 AMP 120 V. ELECTRICAL OUTLET ON

LASH WITH UNDERMOUNT LAVATORY

ED PLASTIC BOX FOR CLOTHES WASHER (CLOTHES

N TUB/SHOWER UNIT. NO SLIP JOINT IE. SET SHOWER HEAD IN WALL AT +76" ABOVE SHOWER CURTAIN ROD. SHOWERS & DIVIDUAL CONTROL VALVES OF THE PRESSURE TYPE PER SEC. 420.0 2000 UPC. IOWER COMBINATION UNIT. NO SLIP JOINT IE. ("LASCO MODEL #102HGS-2P" OR EQUAL) SET R WITH METAL ESCUTCHEON. PROVIDE E WITH TOWEL BAR TO 6'-0" ABOVE FLOOR. DED WITH INDIVIDUAL CONTROL VALVES OF THE ING VALVE TYPE PER SEC. 420.0 2000 UPC.

ER FLUSH MAXIMUM) ELED STEEL KITCHEN SINK WITH 1/2 HP GARBAGE IDE WEATHERSTRIP OR SEAL AT THE ATTIC

SS SHALL BE SIZED TO ACCOMMODATE REMOVAI LYETHYLENE PAD EXTENDED 3" MINIMUM ABOVE

UND FEED WITH TWO #3/0 AWG & ONE #2 GROUND) PANY) (PROVIDE GAS AND WATER BONDING TO INIMÚN CLEARANCE IN FRONT OF PANEL PER ETERING EQUIPMENT FOR SOLAR PANELS PER

IOTES)

(R-15 BATT INSULATION AT GARAGE TO

Floor Plans

WOOD STRUCTURAL PANELS SHALL CONFORM TO CBC SEC. 2303.1.4. 8. THE PLATE WASHER SHALL EXTEND TO WITHIN 1/2" OF THE BOTTOM PLATE ON THE SIDE (S) WITH SHEATHING (SDPWS 4.3.6.4.3) 9. SHEAR WALLS SHALL RUN CONTINUOUSLY FROM FOUNDATION TO ROOF/ FLOOR FRAMING.

	Shear	Wall Schedule (2019 C	CBC)				
	Extend Shear Panel From Floor to Floor or Floor to	Shear Value Per	"Simpson A35 or LTP4"	5/8" Dia.	Sill Plate		
Shear Wall	Roof Sheathing Above (Typical) Stud Spacing To Be 16"	C.B.C. Table	From Wall to Rim Joist	Anchor Bolt	Nailing at	Bolt	Sill
Number	O/C (Typical)	2306.4.1	or From Roof to Plates	Spacing	Second Floor	Length	Plate
1	3/8" WOOD STRUCTURAL PANEL (STRUCT I SHEATHING) WITH 8d NAILS AT 6" O/C EDGES AND 12" O/C IN FIELD (3x STUDS @ 48" O/C)	280 PLF (EARTHQUAKE) & 349 PLF (WIND)	12" O/C	16" O/C	16d STAGGERED AT 6" O/C	14"	2x
2	3/8" WOOD STRUCTURAL PANEL (STRUCT I SHEATHING) WITH 8d NAILS AT 4" O/C EDGES AND 12" O/C IN FIELD (3x STUDS @ 48" O/C)	430 PLF (EARTHQUAKE) & 602 PLF (WIND)	10" O/C	16" O/C	16d STAGGERED AT 4" O/C	14"	3x & 2x at 2nd
3	3/8" WOOD STRUCTURAL PANEL (STRUCT I SHEATHING) WITH 8d NAILS AT 3" O/C EDGES AND 12" O/C IN FIELD (3x STUDS @ 48" O/C)	550 PLF (EARTHQUAKE) & 770 PLF (WIND)	8" O/C	12" O/C	16d STAGGERED AT 2" O/C	14"	3x & 2x at 2nd

	Beam Schedule
Beam Calc #	Туре
1	3-1/2x11-1/4 PARALLAM
2	4x14 DF #1
3	4x6 DF #2

Found	lation	Notes

1. CE	MENT TYPE II (M	IN. f'c= 2,500 psi.	28 DAYS FO	R FLATWORK	, MIN.) MAXIN	IUM WATE	R-CEMENT
2 RA						ООТ	
2. SC 3 AN	CHOR BOI TS AN	ID EASTENERS I		WITH PRESE			ND SHALL BE
J. AN	T DIPPED ZINC-(NZED STEEL				D SHALL DL
4. SH	EAR WALL ANCH	IOR BOLTS AND	HOLDOWN	IARDWARE M	IUST BE SEC	URED IN PL	ACE PRIOR TO
FO	UNDATION INSP	ECTION.					
5. LIN	E, GRADE AND (COMPACTION TE	ST RESULTS	SHALL BE PR	RESENTED T	O THE BUIL	DING
INS	PECTOR AT INIT	IAL FOUNDATIO	N INSPECTIC	N.			
6. FIN	AL COMPACTIO	N REPORT SHAL	L BE SUBMIT	TED TO THE	BUILDING DE	PARTMEN	T TO VERIFY
FO	UNDATION PLAN	IS PRIOR TO FOL	JNDATION IN	ISPECTION.			
7. PR	IOR TO REQUES	TING A BUILDING	G DEPARTME	INT FOUNDAT	ION INSPEC	FION, THE S	SOILS
EN	GINEER SHALL I	NSPECT AND AP	PROVE THE	FOUNDATION	I EXCAVATIO	NS	
8. AN	INIMUM CLASS	A 10-MIL VAPOR	RETARDER	WITH JOINTS	LAPPED NOT	LESS THA	N 6" SHALL BE
PL	ACED BETWEEN	THE CONCRETE	E FLOOR SLA	B AND THE B	ASE COURSE	E / PREPAR	ED SUBGRADE
h	·······	·······	······	······	······	······	·······
		Simp	son Hardu	vare Schedi	ule		
		<i>p</i>					
Handanan	0	Min Stud /					

Hardware Number	Comments	Min. Stud/ Post Sized	Capacity
HD1	STHD14	4 X 4	3,815#
HD2	HDU5-SDS2.5	4 X 4	5,645#

Note

HOLDOWN STRAP WITH (36) 16D SINKERS AS SHOWN HOLDOWN WITH "SIMPSON SSTB24" HOLDOWN BOLT

AT EACH END AS SHOWN.

ANDRESEN ARCHITECTURE INC.

Plan Notes

4.5" THICK CONCRETE SLAB ON 2" SAND OVER 10 MIL "VISQUEEN" VAPOR BARRIER ON 2" 4.5" THICK CONCRETE GARAGE SLAB ON GRADE (2,500 PSI MIX) WITH #4 BARS AT 18" ON CENTER EACH WAY IN CENTER OF SLAB WITH SMOOTH TROWEL FINISH. SLOPE 2" TO

4" THICK CONCRETE SLAB ON GRADE WITH MEDIUM BROOM FINISH. SLOPE 1/4" PER FOOT MINIMUM AWAY FROM BUILDING. PROVIDE A LANDING AT ALL DOORS A MINIMUM OF 2"

12" WIDE x 18" DEEP (BELOW GRADE) CONTINUOUS CONCRETE FOOTING WITH (2) #4 REINFORCING BARS TOP AND BOTTÓM. PROVIDE 5/8" DIAMETER x 12" LONG ANCHOR BOLTS (ASTM A-307) AT 48" O/C AND 12" FROM CORNERS AND BREAKS IN SILL PLATE (7" MINIMUM ÈMBEDMENT INTO CONCRETE) WITH 3" x 3" x 0.229" SQUARE STEEL PLATE WASHERS TYPICAL. (CLOSER SPACING AND DEEPER FOOTING MAY BE REQUIRED AT SHEAR WALLS -

12" WIDE x 18" DEEP (BELOW GRADE) CONTINUOUS CONCRETE FOOTING WITH STEM AND (2) #4 REINFORCING BARS TOP AND BOTTOM (SEE FOUNDATION PLAN FOR STEM WIDTH). PROVIDE 5/8" DIAMETER x 14" LONG ANCHOR BOLTS (ASTM A-307) AT 48" O/C AND 12" FROM CORNERS AND BREAKS IN SILL PLATE (7" MINIMUM EMBEDMENT INTO CONCRETE) WITH 3" x 3" x 0.229" SQUARE STEEL PLATE WASHERS TYPICAL. (CLOSER SPACING AND DEÉPER

CONTINUOUS 12" WIDE x 18" DEEP CONCRETE FOOTING AT GARAGE DOOR OPENING WITH

PIER FOOTING (2,500 PSI MIX) LEVEL WITH HOUSE SLAB WITH TWO 58 DIAMETER x 12" LONG ANCHOR BOLTS (ASTM A-307) TWO SIDES AND ONE BOLT OTHER TWO SIDES (6 TOTAL) WITH 3 x 3 x 0.229 SQUARE STEEL PLATE WASHERS TYPICAL. BOTTOM 6 OF FOOTING TO EXTEND

TRIMMER EACH END. PROVIDE 1x TOP PLATE AND 2x PLATE AT INTERIOR NON-BEARING

LAP DOUBLE TOP PLATES ALONG THIS WALL 4'-0" MINIMUM WITH TWENTY (20) - 16d NAILS OR 15/32" APA RATED OSB FOIL-FACED ("LUMINOX", OR EQUAL. FOIL SIDE DOWN) ROOF SHEATHING 32/16 SPAN RATING EXTERIOR GLUE LAY PERPENDICULAR WITH RAFTERS AND

GIRDER TRUSS (PROVIDE DOUBLE 2 x 4 STUDS EACH END - TYPICAL UON) (DOUBLE TRUSS IF REQUIRED - SEE TRUSS MANUFACTURER'S CALCULATIONS FOR EXACT REQUIREMENTS) PROVIDE HANGERS OR PRESSURE BLOCKING AT TRUSS TO GIRDER CONNECTION (SEE

DRAG TRUSS (SEE PLAN FOR LOADING). PROVIDE BOUNDARY NAILING (8d NAILS AT 6" ON

DOUBLE TRUSSES FOR HORIZONTAL FURNACE IN ATTIC (IF REQUIRED - SEE TRUSS

SOLID 2x EAVE BLOCKING WITH "SIMPSON H1" CLIPS AT 24" ON CENTER FROM EACH ROOF TRUSS (OR RAFTER) TO DOUBLE TOP PLATES (OR BEAM). PROVIDE "SIMPSON A35" CLIPS TO EAVE BLOCKING AT SHEAR WALLS. SEE SHEAR PANEL SCHEDULE FOR ADDITIONAL "SIMPSON A35" CLIPS TO EAVE BLOCKING. ("H1 SPACING AT 24" ON CENTER STILL OCCURS

ACCESS PANEL TO PREVENT DRAFTS. (ACCESS SHALL BE SIZED TO ACCOMMODATE

n &	CALL
HC. 22 23	CFNSED ARCH GFNSED ARCH CFNSED ARCH Second

<u>Section B</u> 1/4" = 1'-0"

Plan Notes

	P IUN NOLES
2-600	FINISH GRADE
3-06	4.5" THICK CONCRETE SLAB ON 2" SAND OVER 10 MIL "VISQUEEN" VAPOR BARRIER ON 2" SAND WITH #4 BARS AT 15" ON CENTER EACH WAY IN CENTER OF SLAB.
3-14	4.5" THICK CONCRETE GARAGE SLAB ON GRADE (2,500 PSI MIX) WITH #4 BARS AT 18" ON CENTER EACH WAY IN CENTER OF SLAB WITH SMOOTH TROWEL FINISH. SLOPE 2" TO VEHICLE ENTRY. SAWCUT WITHIN 24 HOURS WHERE INDICATED
3-65	4" THICK CONCRETE SLAB ON GRADE WITH MEDIUM BROOM FINISH. SLOPE 1/4" PER FOOT MINIMUM AWAY FROM BUILDING. PROVIDE A LANDING AT ALL DOORS A MINIMUM OF 2" BEYOND EACH SIDE OF DOOR AND A MINIMUM OF 3'-0" OUT FROM FACE OF DOOR.
3-180	12" WIDE x 18" DEEP (BELOW GRADE) CONTINUOUS CONCRETE FOOTING WITH (2) #4 REINFORCING BARS TOP AND BOTTOM. PROVIDE 5/8" DIAMETER x 12" LONG ANCHOR BOLT (ASTM A-307) AT 48" O/C AND 12" FROM CORNERS AND BREAKS IN SILL PLATE (7" MINIMUM EMBEDMENT INTO CONCRETE) WITH 3" x 3" x 0.229" SQUARE STEEL PLATE WASHERS TYPICAL. (CLOSER SPACING AND DEEPER FOOTING MAY BE REQUIRED AT SHEAR WALLS - SEE SCHEDULE)
3-200	12" WIDE x 18" DEEP (BELOW GRADE) CONTINUOUS CONCRETE FOOTING WITH STEM AND (2) #4 REINFORCING BARS TOP AND BOTTOM (SEE FOUNDATION PLAN FOR STEM WIDTH). PROVIDE 5/8" DIAMETER x 14" LONG ANCHOR BOLTS (ASTM A-307) AT 48" O/C AND 12" FROM CORNERS AND BREAKS IN SILL PLATE (7" MINIMUM EMBEDMENT INTO CONCRETE) WITH 3" 3" x 0.229" SQUARE STEEL PLATE WASHERS TYPICAL. (CLOSER SPACING AND DEEPER FOOTING MAY BE REQUIRED AT SHEAR WALLS - SEE SCHEDULE)
6-657	15/32" APA RATED OSB FOIL-FACED ("LUMINOX", OR EQUAL. FOIL SIDE DOWN) ROOF SHEATHING 32/16 SPAN RATING EXTERIOR GLUE LAY PERPENDICULAR WITH RAFTERS AND NAIL WITH 8d NAILS AT 6" O/C EDGES AND BOUNDARY AND 12" O/C IN FIELD. INCLUDE FOIL-FACED SHEATHING AT ALL VERTICAL WALLS AT GABLED ENDS
6-695	FLAT BOTTOM ENGINEERED ROOF TRUSSES AT 24" O/C
6-697	FLAT BOTTOM ENGINEERED JACK TRUSSES AT 24" O/C
6-700	GIRDER TRUSS (PROVIDE DOUBLE 2 x 4 STUDS EACH END - TYPICAL UON) (DOUBLE TRUSS IF REQUIRED - SEE TRUSS MANUFACTURER'S CALCULATIONS FOR EXACT REQUIREMENTS)
6-701	PROVIDE HANGERS OR PRESSURE BLOCKING AT TRUSS TO GIRDER CONNECTION (SEE TRUSS DRAWINGS FOR REQUIREMENTS)
6-713	2 x 4 SOLID RIDGE BLOCKING BETWEEN TRUSSES
6-940	SOLID 2x EAVE BLOCKING WITH "SIMPSON H1" CLIPS AT 24" ON CENTER FROM EACH ROOF TRUSS (OR RAFTER) TO DOUBLE TOP PLATES (OR BEAM). PROVIDE "SIMPSON A35" CLIPS TO EAVE BLOCKING AT SHEAR WALLS. SEE SHEAR PANEL SCHEDULE FOR ADDITIONAL "SIMPSON A35" CLIPS TO EAVE BLOCKING. ("H1 SPACING AT 24" ON CENTER STILL OCCURS AT SHEAR WALLS IN ADDITION TO A35'S)
6-980	BEAM (SEE FRAMING PLAN)
7-215	R-15 FIBERGLASS BATT INSULATION
7-219	R-19 FIBERGLASS BATT INSULATION (PROVIDE WIRE SUPPORTS AT TOP CHORD OF TRUSS INSTALLATION)
7-221	R-21 FIBERGLASS BATT INSULATION
7-249	R-49 FIBERGLASS BATT INSULATION
9-110	STUCCO SOFFIT (USE HIGH-RIB METAL LATH AT ALL HORIZONTAL APPLICATIONS)
9-365	1/2" THICK GYPSUM BOARD GARAGE SIDE OF ALL WALLS ADJACENT TO HOUSE AND SUPPORTING SECOND FLOOR, AND 5/8" TYPE "X" GYPSUM BOARD ON CEILING ADJACENT TO HOUSE. PROVIDE MINIMUM 24" HORIZONTAL SEPARATION BETWEEN OFFSET ELECTRICAL RECEPTACLES. GAS VENTS, METAL CHIMNEYS PENETRATING THE FINISH SHALL BE FIRE STOPPED WITH AN APPROVED ASSEMBLY. PLASTIC PIPE SHALL NOT PIERC FINISH. DUCTS ON THE GARAGE SIDE SHALL BE A MINIMUM 26 GAUGE SHEET METAL.
15-530	30" x 30" ATTIC ACCESS FOR ATTIC FAU. PROVIDE WEATHERSTRIP OR SEAL AT THE ATTIC ACCESS PANEL TO PREVENT DRAFTS. (ACCESS SHALL BE SIZED TO ACCOMMODATE REMOVAL OF LARGEST PIECE OF EQUIPMENT)
15 640	A TON HEAT DUMD SET ON DUVWOOD DUATEORM IN ATTIC SEE TITLE 24

1st Floor

ANDRESEN ARCHITECTURE INC.

15-640 4 TON HEAT PUMP. SET ON PLYWOOD PLATFORM IN ATTIC. SEE TITLE 24.

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nc. 23	$\begin{array}{c} \hline \\ \hline $

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Rear Elevation (North) 1/4" = 1'-0"

Attic Ventilation Summary

ATTIC AREA : 1,713 SQ. FT. TOTAL VENTILATED ATTIC AREA = 1,713 SQ. FT. / 300 = 5.71 SQ. FT. SUB-TOTAL VENTILATION REQUIRED = $\frac{x \ 144 \ SQ. \ IN.}{822.24 \ SQ. \ IN.}$ 100,000 BTUH INPUT ATTIC FAU (<u>1 SQ. IN PER 2,000 BTUH x 2 (HIGH & LOW)</u> X 2 (50% AREA LOST DUE TO MESH)) 200.00 SQ. IN TOTAL VENTILATION **REQUIRED = 1,022.24 SQ. IN** (8) O'HAGIN CLOAKED VENTS (FIRE & ICE) AT 72 SQ. IN. EACH = 576.00 SQ. IN. (8) O'HAGIN CLOAKED VENTS (FIRE & ICE) AT 72 SQ. IN. EACH = 576.00 SQ. IN. TOTAL VENTILATION **PROVIDED = 1,152.00 SQ. IN**.

	PANEL									vo	120/2 LTAGE: 1PH 3	40V 3W 1 PH 3 W		
	_										BUS: 225 A			
	A								MAIN: 225 A					
					(N	IEW)				F	EEDER: (3)#4	(1)#8		
					((1)		
													NO	
	СКТ	AMP	POLES		4	В	В	POLES	AMP	СКТ	DE	ESCRIPTION	12	
	1	40 A	2	0 VA	0 VA			2	30 A	2	EV-PANEL			
	3					0 VA	0 VA			4				
	5	20 A	1	540 VA	521 VA			1	20 A	6	Lighting - BED	2&3, BATH2, HALL		
	7	20 A	1			1800 VA	900 VA	1	20 A	8	Receptacle - H	HALL		
	9	20 A	1	860 VA	1620 VA			1	20 A	10	Receptacle - F	AMILY & DINING		
	11	20 A	1			840 VA	1800 VA	1	20 A	12	Receptacle - F	REFRIGERATOR		
	13	20 A	1	1200 VA						14				
	15	20 A	1			420 VA	1260 VA	1	20 A	16	Receptacle - k	KITCHEN		
	17	20 A	1	1720 VA	1080 VA			1	20 A	18	Receptacle - N	ASTER BED		
	19	20 A	1			865 VA	3000 VA	1	20 A	20	Receptacle - L	AUNDRY		
	21	40 A	2	2000 VA	2351 VA			2	30 A	22	HVAC - FAU			
	23					2000 VA	2351 VA			24				
	25	20 A	1	180 VA	612 VA			1	20 A	26	Lighting - GAF	RAGE, LAUNDRY		
	27									28				
	29									30				
	31									32				
	33									34				
	35									36				
_	37									38				
	39									40				
	41									42				
	PHASE	SUBTO	TALS:	1089	1 VA	1339	9 VA			•	1			
		T	OTAL:	91	A	11	2 A							
											Panel To	otals		
											SUBTOTAL=	24288 VA		
											TOTAL=	21164 VA		
									T	OTAL C	CONNECTED=	101 A		
								(CONNEC	CTED L	OAD W/ LCL=	88 A		
								· · · ·						

Mechanical Notes

GC 4.506.1 - BATHROOM EXHAUST FANS: MECHANICAL EXHAUST FANS WHICH EXHAUST DIRECTLY FROM BATHROOMS SHALL COMPLY WITH THE FOLLOWING:

A. FANS SHALL BE ENERGY STAR COMPLIANT AND BE DUCTED TO TERMINATE OUTSIDE THE BUILDING. B. UNLESS FUNCTIONING AS A COMPONENT OF A WHOLE HOUSE VENTILATION SYSTEM, FANS MUST BE CONTROLLED BY A HUMIDISTAT RANGES OF 50% TO 80%.

WHOLE BUILDING VENTILATION REQUIREMENTS AND ASHRAE 62.2

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WHICH SHALL BE READILY ACCESSIBLE. HUMIDISTAT CONTROLS SHALL BE CAPABLE OF ADJUSTMENT BETWEEN RELATIVE HUMIDITY

- AT LEAST ONE MECHANICAL VENTILATION SYSTEM IN THE BUILDING MUST BE DESIGNATED FOR USE IN COMPLIANCE WITH THE WHOLE-BUILDING VENTILATION REQUIREMENT. ALTERNATIVELY, THE SUM OF THE RATED AIRFLOWS FROM MULTIPLE FANS CAN BE UTILIZED TO MEET THE REQUIRED WHOLE-BUILDING VENTILATION AIRFLOW. THE SYSTEM(S) MUST DELIVER CONTINUOUS VENTILATION AIRFLOW AT A RATE GREATER THAN OR EQUAL TO THE RATE SPECIFIED IN EQUATION 4.1A, AND FAN SONE RATINGS MUST NOT EXCEED 1.0, FOR DWELLING OCCUPANT DENSITIES KNOWN TO BE GREATER THAN (Nor + 1). THE RATE SHALL BE INCREASED BY 7.5 CFM FOR EACH ADDITIONAL PERSON.
 - CALCULATION: 1,713 SF HOME WITH 3 BEDROOMS Qfan = 80 CFM REQUIRED
 - USE (1) PANASONIC WHISPER CEILING FAN TOTAL CFM: 100.00, EDL:140.00 MODEL LIST: WHISPER CEILING FV-15VQ5
 - MECHANICAL SYSTEM NOTES 1. HEAT PUMP (IN ATTIC) 55 KBTU/H OUTPUT, 10.5 HSPF/COP. VERIFIED HSPF, VERIFIED HEAT PUMP RATED HEATING CAPACITY
 - (HERS VERIFICATION) 2. 4.75 TON AC UNIT 17.5 SEER, 11.2 EER, 57 KBTU TOTAL OUTPUT. MINIMUM AIRFLOW, VERIFFIED SEER/SEER2, FAN EFFICACY WATTS/CFM (HERS
 - VERIFICATION) **3. DISTRIBUTION SYSTEM** R-8 INSULATION. DUCTS LEAKAGE TESTING (HERS VERIFICATION)
 - 4. HEAT PUMP WATER HEATER (IN GARAGE) 40 GALLON, 3.1 UEF, LESS THAN 200 KBTUH 5. WHOLE HOUSE FAN
 - 1.5 x CFA = 1.5 x 1,713 SF = 2,569.5 CFM, 359.73 WATTS. PROVIDE QC CL-4700, 2,560 CFM, 415 WATTS AND 5.89 SQ. FT. ATTIC VENTILATION 6. INDOOR AIR QUALITY FAN
 - SEE CALCULATION ABOVE FOR WHOLE BUIDLING VENTILATION REQUIREMENTS. (HERS VERIFICATION) 7. PV SYSTEM
 - STANDARD DESIGN PV CAPACITY OF 2.57 kWdc

- MECHANICAL NOTES
- MECHANICAL EXHAUST FANS FROM BATHROOMS SHALL COMPLY WITH THE FOLLOWING (CALGREEN 4.506.1); 1) ENERGY STAR COMPLIANT AND DUCTED TO TERMINATE OUTSIDE BUILDING , 2) CONTROLLED BY READILY ACCESSIBLE HUMIDISTAT
- 2. INTERMITTENT LOCAL VENTILATION EXHAUST AIRFLOW RATES SHALL 100 CFM IN KITCHENS (ASHRAE STANDARD 62.2-2007) . PROVIDE VERTICAL/HORIZONTAL CHASES ON MECHANICAL AND PLUMBING PLANS TO ACCOMMODATE DUCTS AND VENTS AS REQUIRED PROVIDE THE FOLLOWING IN EACH BATHROOM, POWDER ROOM, AND WATER CLOSET COMPARTMENT (CRC R303.3):
- * LOCAL EXHAUST FAN TO EXTERIOR PROVIDING MINIMUM 50 CFM INTERMITTENT VENTILATION OR 20 CFM CONTINUOUS * ARTIFICIAL LIGHTING OR MINIMUM 3 SQUARE FEET OF WINDOW GLAZING 5. THE PASSAGEWAY SHALL BE UNOBSTRUCTED AND SHALL HAVE SOLID FLOORING NOT LESS THAN TWENTY-FOUR (24) INCHES WIDE FROM THE ENTRANCE OPENING
- TO THE APPLIANCE. (CMC 904. 10.2). 6. A LEVEL WORKING PLATFORM NOT LESS THAN THIRTY (30) INCHES BY THIRTY (30) INCHES SHALL BE PROVIDED IN FRONT OF THE SERVICE SIDE OF THE APPLIANCE. (CMC 904. 10.3). 7. A PERMANENT 120-VOLT RECEPTACLE OUTLET AND A LIGHTING FIXTURE SHALL BE
- INSTALLED NEAR THE APPLIANCE. THE SWITCH CONTROLLING THE LIGHTING FIXTURE SHALL BE LOCATED AT THE ENTRANCE TO THE PASSAGEWAY. (CMC 904. 10 4) 8. COMBUSTION AIR OPENINGS FOR FURNACE (IN ATTIC):
- PER CMC SECTION 701.6.1 TWO PERMANENT OPENING METHOD, ONE COMMENCING WITHIN 12 INCHES OF THE TOP AND ONE COMMENCING WITHIN 12 INCHES OF THE BOTTOM. - EACH OPENING SHALL HAVE A FREE AREA OF NOT LESS THAN 1 SQ. IN PER 2,000 BTU/H OF TOTAL INPUT RATING OF APPLIANCES IN THE ENCLOSURE: 100.000 BTU/H / 2,000 BTU/H = 50 SQ. IN.
- SEE ATTIC VENTILATION SUMMARY ON ROOF PLAN SHEET 9. EXHAUST DUCTS SHALL TERMINATE OUTSIDE THE BUILDING AND SHALL BE EQUIPPED WITH BACKDRAFT DAMPERS OR WITH MOTORIZED DAMPERS THAT AUTOMATICALLY SHUT WHERE THE SYSTEM OR SPACE SERVED ARE NOT IN USE CMC 504.1.1. 10. EXHAUST OPENINGS TERMINATING TO THE OUTSIDE SHALL BE COVERED WITH A
- CORROSION RESISTANT SCREEN HAVING NOT LESS THAN 1/4 OF AN INCH OPENINGS AND SHALL HAVE NOT MORE THAN 1/2 INCH OF AN OPENINGS. CMC
- 11. DUCTS IN THE GARAGE AND DUCTS PENETRATING THE WALLS OR CEILINGS SEPARATING THE DWELLING FROM THE GARAGE SHALL BE CONSTRUCTED OF MINIMUM NO. 26 GUAGE SHEET STEEL OR OTHER APPROVED MATERIAL AND SHALL NOT HAVE OPENINGS INTO THE GARAGE. "FLEX DUCT IS NOT ALLOWED"

-871	NEW GAS METER LOCATION (BY UTILITY). (\
1-30	DISHWASHER SPACE
1-52	REFRIGERATOR SPACE (PROVIDE RECESSI
1-86	BUILT-IN FIVE-BURNER GAS COOKTOP WITH COOKTOP (MIN 100 CFM)
5-40	HOT AND COLD WATER SHUT-OFF IN RECES (CLOTHES WASHER IS NIC)
5-50	CLOTHES DRYER (NIC)
5-350	50 GALLON ELECTRIC WATER HEATER ON 1 FOLLOWING: R-12 INSULATION BLANKET OV FIVE FEET OF HOT AND COLD WATER INTO OF FLOOR FROM PRESSURE AND TEMPERA ANCHORAGE TOP AND BOTTOM, AND REFE ENERGY FACTOR
5-513	STANDARD ON/OFF SWITCH FOR WHOLE HO SONE). SWITCH TO BE LABELED "OPERATE GONE FOR OVER 7 DAYS"
5-514	WHOLE HOUSE VENTILATION FOR INDOOR MANUFACTURER AND MODEL NUMBER)
5-516	WHOLE HOUSE FAN (SEE MECHANICAL SYS
5-530	30" x 30" ATTIC ACCESS FOR ATTIC FAU. PR ACCESS PANEL TO PREVENT DRAFTS. (ACC REMOVAL OF LARGEST PIECE OF EQUIPME
5-640	4 TON HEAT PUMP. SET ON PLYWOOD PLAT
5-871	CONDENSING UNIT. PROVIDE 3-1/2" THICK F ABOVE GROUND
6-20	225 AMP RECESSED MAIN PANEL (UNDERGE GROUND) (VERIFY EXACT LOCATION WITH U BONDING TO SERVICE) PROVIDE 3'-0" DEEP PANEL PER ARTICLE 110-26a
6-43	PROPOSED LOCATION FOR INVERTER AND ENERGY CODE, SECTION 110.10
6-140	OUTLET FOR GARAGE DOOR OPENER WITH REQUIREMENTS
6-142	AUTOMATIC GARAGE DOOR OPENER WITH FOR DOOR OPERATION
6-290	220 V. DISCONNECT SWITCH (VERIFY COND
6-384	WALL SCONCE LIGHT (+84" UON)
6-387	SURFACE MOUNTED ADJUSTABLE FLOOD L
6-602	BROAN MODEL 744LED EXHAUST FAN/LED L TWO-FUNCTION CONTROL. PROVIDE MINIM ENERGY STAR CERTIFIED
6-674	ALL NEW COMBINATION SMOKE / CARBON M POWER FROM THE BUILDING WIRING, HAVE BATTERIES ARE LOW, HAVE PERMANENT W OTHER THAN THOSE REQUIRED FOR OVER WHEN ONE IS ACTIVATED, ALL ARE ACTIVA ALARM THAT IS AUDIBLE IN ALL SLEEPING A EQUAL)
6-675	ALL NEW SMOKE DETECTORS SHALL: RECE WIRING, HAVE A BATTERY BACK-UP, EMIT A PERMANENT WIRING WITHOUT A DISCONNE FOR OVERCURRENT PROTECTION, BE WIRE ACTIVATED AND THE DETECTOR SHALL SO AREAS.
6-711 6-835	EV READY PANEL (SEE ELECTRICAL FOR EV ILLUMINATED ADDRESS LIGHT AT +84" ABOV

General Notes

ALL HOURS OF DARKNESS

Plan Notes

VERIFY EXACT LOCATION WITH UTILITY COMPANY) ED SHUT-OFF IN PLASTIC BOX FOR ICEMAKER)

H RANGE HOOD ABOVE. CENTER HOOD OVER SSED PLASTIC BOX FOR CLOTHES WASHER

18" HIGH WOOD PLATFORM. PROVIDE THE /ER TANK. R-4 PIPE INSULATION OVER THE FIRST TANK, 3/4" DIAMETER COPPER LINE TO WITHIN 6" ATURE RELIEF VALVE TO OUTSIDE, METAL STRAP R TO T-24 CALCULATIONS FOR REQUIRED

OUSE VENTILATION. (MAXIMUM SOUND LEVEL - 1 WHEN HOUSE IS IN USE. KEEP ON EXCEPT WHEN AIR QUALITY (SEE MECHANICAL NOTES FOR

STEM NOTES) OVIDE WEATHERSTRIP OR SEAL AT THE ATTIC CESS SHALL BE SIZED TO ACCOMMODATE

FORM IN ATTIC. SEE TITLE 24. POLYETHYLENE PAD EXTENDED 3" MINIMUM

ROUND FEED WITH TWO #3/0 AWG & ONE #2 UTILITY COMPANY) (PROVIDE GAS AND WATER BY 2'-6" WIDE MINIMUM CLEARANCE IN FRONT OF METERING EQUIPMENT FOR SOLAR PANELS PER

I REMOTE SAFETY CONTROLS PER FEDERAL

REVERSE SAFETY DEVICE AND BATTERY BACKUP OUCTOR SIZE AND FUSING WITH LOCAL CODES)

IGHTS (+84" UON) WITH MOTION DETECTOR LIGHT COMBO TO OUTSIDE AIR WITH "BROAN" UM 50 CFM (PROVIDE BACKDRAFT DAMPER)

MONOXIDE ALARMS SHALL: RECEIVE PRIMARY E A BATTERY BACK-UP. EMIT A SIGNAL WHEN THE /IRING WITHOUT A DISCONNECTING SWITCH CURRENT PROTECTION, BE WIRED SO THAT TED AND THE DETECTOR SHALL SOUND AN AREAS. ("FIRST ALERT" MODEL NO. SC9120B, OR

EIVE PRIMARY POWER FROM THE BUILDING SIGNAL WHEN THE BATTERIES ARE LOW, HAVE ECTING SWITCH OTHER THAN THOSE REQUIRED ED SO THAT WHEN ONE IS ACTIVATED, ALL ARE UND AN ALARM THAT IS AUDIBLE IN ALL SLEEPING

NOTES VE FLOOR LINE (UON) PER CITY STANDARD WITH 4" HIGH MINIMUM HEIGHT NUMBERS ON CONTRASTING BACKGROUND AND ILLUMINATED AT

HEATING SYSTEMS SHALL BE EQUIPPED WITH THERMOSTATS THAT HAVE A CLOCK

	PIPE MA	TERIA	L SCHE	DULE	
SERVICE	PIPE MATERIAL & WEIGHT	TYPE OF JOINTS	PRESSURE FITTING MATERIAL	SHUT-OF RATINGS PSI - Swi	F S VALVE P
COLD WATER ABV. GROUND	COPPER L TUBE	SOLDERED	CAST BRONZE/ WROUGHT COPPE	R 125	BALL GATE CHECK
COLD WATER BELOW GROUND TC OUTSIDE BUILDING	COPPER K TUBE	BRAZED	CAST BRONZE/ WROUGHT COPPE	R 125	BALL GATE
COLD WATER BELOW GROUND BEYOND 5'-0"	SCHEDULE 80 PVC	SOLVENT-WELD	PVC	125	GATE
HOT WATER ABV. GROUND	COPPER L TUBE	SOLDERED	CAST BRONZE/ WROUGHT COPPE	R 125	BALL CHECK
FUEL GAS	STEEL 40, BLACK	SCREWED WELDED	MALL. IRON STEEL WELD	150 150	SQR HEAD COCK
FUEL GAS	POLYETHYLENE PIPING STAINLESS STEEL TUBING	PER MANF.	STAINLESS STEEL TUB	PING PER MAN	F. PER MANF.
VENT	NO-HUB CAST IRON	NO-HUB	N/A	N/A	N/A
WASTE & SOIL	SCHEDULE 40 ABS	SALVENT-WELD	ABS	N/A	N/A
DRAINS BELOW GRADE	No-hub Cast Iron	No-hub	N/A	N/A	N/A
WASTE &	Copper L Tube	Soldered	Bronze	125	N/A
SOIL	NO-HUB CAST IRON	NO-HUB	N/A	N/A	N/A
<i>DRAINS 4BOVE GRADE</i>	Schedule 40 ABS	Solvent-Weld	ABS	N/A	N/A
CONDENSATE	COPPER M TUBE	SOLDERED	BRONZE	BRONZE 125	N/A
MEDICAL GAS ND AIR SYSTEMS	COPPER K TUBE	BRAZED	CAST BRONZE/ WROUGHT COPPER	125	BALL
PLUMBING PIPE INSULATION SCHEDULE					
			URE RUNOUTS	1 AND I FSG 1	.25 2.5
SERVICE		RANGE	(F) <i>UP TO 2</i>		IRU 2 THRU 4
			REQUIRED	INSULATION TH	HICKNESS (IN.)
DOMESIC HOT WA	TER RECIRCULATING LOOPS	ABOVE 1	05° 0.5	1.0	1.0 1.5
FIRST 8 FEET OF PIPING FROM STPRAGE & ELECTRIC TRACE TAPE SYSTEMS (NON-RECIRCULATING)			05° 0.5	1.0	1.0 1.5

17087 ORANGE WAY, FONTANA, CA 92335 (909) 355-6688 Plan Notes 6'-0" DIAMETER x 25'-0" DEEP SEEPAGE PIT PER COUNTY STANDARDS 2-778 2-811

DISTRIBUTION BOX
NEW 1,200 GALLON SEPTIC TANK AN
DISHWASHER SPACE
REFRIGERATOR SPACE (PROVIDE R ICEMAKER)
BASE CABINET WITH GRANITE TOP A
HOT AND COLD WATER SHUT-OFF IN WASHER (CLOTHES WASHER IS NIC)
60" x 32" x 72" HIGH FIBERGLASS CON JOINT CONNECTIONS ARE PERMITTE WALL AT +76" ABOVE FLOOR WITH M CURTAIN ROD. SHOWERS & TUB/SHO INDIVIDUAL CONTROL VALVES OF TH MIXING VALVE TYPE PER SEC. 420.0
102" x 42" x 72" HIGH FIBERGLASS TU JOINT CONNECTIONS ARE PERMITTE #102HGS-2P" OR EQUAL) SET SHOW WITH METAL ESCUTCHEON. PROVID ENCLOSURE WITH TOWEL BAR TO 6 TUB/SHOWERS SHALL BE PROVIDED PRESSURE BALANCE OR THERMOS 2000 UPC. (www.lascobathware.com)
TANK-TYPE WATER CLOSET (1.28 GA 33" x 22" DOUBLE BOWL SELF-RIMMI HP GARBAGE DISPOSER
HOSE BIB WITH BACKFLOW PREVEN

ANTI-SIPHON VALVE

2-816

11-30

11-52

12-47

15-40

15-80

15-85

15-200

15-300

15-400

15-405

Plumbing P

ANK AND 5' DIA. X 20'-0" DEEP SEEPAGE PIT

VIDE RECESSED SHUT-OFF IN PLASTIC BOX FOR

E TOP AND 6" SPLASH WITH UNDERMOUNT -OFF IN RECESSED PLASTIC BOX FOR CLOTHES

IS NIC) SS COMBINATION TUB/SHOWER UNIT. NO SLIP RMITTED IN WASTE LINE. SET SHOWER HEAD IN WITH METAL ESCUTCHEON. PROVIDE SHOWER UB/SHOWERS SHALL BE PROVIDED WITH S OF THE PRESSURE BALANCE OR THERMOSTATIC C. 420.0 2000 UPC. ASS TUB AND SHOWER COMBINATION UNIT. NO SLIP

RMITTED IN WASTE LINE. ("LASCO MODEL SHOWER HEAD IN WALL AT +76" ABOVE FLOOR PROVIDE SHATTERPROOF GLASS SHOWER R TO 6'-0" ABOVE FLOOR. SHOWERS & OVIDED WITH INDIVIDUAL CONTROL VALVES OF THE RMOSTATIC MIXING VALVE TYPE PER SEC. 420.0

(1.28 GALLONS PER FLUSH MAXIMUM) -RIMMING ENAMELED STEEL KITCHEN SINK WITH 1/2 REVENTER

HOSE BIB AND MAIN SHUT-OFF VALVE WITH PRESSURE REGULATOR AND

Plans	A-8		
22	★ C-14504 (J) 12-31-23 TP, CALIFORM OF CALIFORM		
nc.	CHISED ARCHISTO		

1. Strapping your water heater and making sure it is fitted

General Requirements

- <u>Mork performed</u> shall comply with the following: Compliance: These General Notes apply unless otherwise stated on plans or specifications. Codes: California modified version (2022 Edition) of the
- International Building Code, Uniform Plumbing Code, Uniform Mechanical Code, International Fire Code, National Electrical Code, 2022 Edition of the California Energy Standards and all other applicable laws and regulations governing the site of the work. ASTM: Standard Specifications (In case of conflict, the more
- expensive requirements shall govern. Quality of Work: All work needs to be performed by qualified
- and experienced contractors familiar with this type of work. Quality of Materials: All materials furnished shall be new and of first quality. No used materials or seconds will be permitted.
- "Or equal": The contractor shall submit for the Architect's or Builder's acceptance all materials or equipment which is considered "or equal" to that specified.
- <u>On Site Verification</u> of all dimensions and conditions shall be the responsibility of the Contractor and the Sub-Contractors. Noted dimensions take precedent over scale. Each Contractor or Sub-Contractor shall report to Project Superintendent all
- conditions which prevent the proper execution of their work. Project Superintendent: The on-site construction superintendent shall provide on site supervision to the extent necessary to assure that the improvements are being constructed in conformance with the construction documents and the performance standards of the industry trades. He/she shall inspect all structural framing members, concrete anchors, tie-downs, flashing framing members, roof materials and underlayment for each building. The inspection is to assure that all materials and applications meet the manufacturer's specifications and installation quidelines or A.S.T.M. requirements, whichever is more stringent, and to notify the Architect and Owner in sufficient time to prevent any defective materials from being incorporated into the work.
- Client's Architect and Project Superintendent to be notified immediately by the Contractor should any question arise or any discrepancies be found pertaining to the working drawings and/or specifications. The Contractor shall be held responsible for any errors, discrepancies, or omissions which the Contractor failed to notify the Architect of before construction or fabrication of the work.
- 10. The Builder has requested, contracted with, and is compensating Andresen Architecture, Inc. for the limited services of providing the minimum structural engineering drawing required, when combined with the other builders consultants drawings, to obtain a building permit for this project. These drawing are not intended to, nor do they, detail all conditions, identify all materials, or define or limit the scope of work required to complete the project. The builder has requested, accepts, and represents that he/she will select all materials and manufactures, qualify and select all sub-contractors and installers, direct all ways and means of construction, and provide all additional information, above and beyond these drawings, required to complete the project in conformance with all governing agencies and the work will meet or exceed accepted ndustry standards.
- Sub-Contractor shall: insure that all work is done in a professional and workmanlike manner by skilled mechanics and shall replace any materials or items damaged by Sub-Contractor's performance and no additional cost to Builder Sub-Contractors and Suppliers are hereby notified that they are to confer and to cooperate fully with each other during the course of construction to determine the exact extent and overlap of each other's work and to successfully complete the execution of the work. All Sub-Contractors shall be of quality to pass inspections by local authorities, lending institutions, Architect, or Builder. Any one or all of the above mentioned inspectors may inspect workmanship at any time and and corrections needed to enhance the quality of the building will be done immediately . Each Sub-Contractor, unless specifically exempted by his Sub-Contract Agreement, shall be responsible for cleaning up and removing from the job site all trash and debris not left by other Sub-Contractors. Builder will determine how soon after each Sub-Contractor completes each phase of
- his work that trash and debris will be removed from the site. 12. Drawings and Specifications represent the finished structure. All bracing, temporary supports, shoring, etc. is the sole responsibility of the Contractor. Observation visits to the job site by the Architect do not Include inspection of Construction procedures. The Contractor is solely responsible for all construction methods and for safety conditions of the worksite. These visits shall not be construed as continuous and detailed inspections.
- 13. Intent: It is the intent of the construction documents that all work be performed in a sound manner providing a completed project with all materials, assemblies, and systems correctly installed and performing in a manner consistent with the standards of the industry for this type of project.
- 14. Construction documents include, but are not limited to, working drawings, specifications, structural calculations, state mandated eneral calculations and notes, soil report, geology report, acoustical engineer's report, addendum and change orders, and these general notes unless otherwise noted on plans or specifications.
- Details: Contractors and Sub-Contractors recognize that the Architect cannot prepare plans and drawings that cover all conceivable construction details or site conditions. 16. <u>Interpretation</u>: Contractor and Sub-Contractor shall inform the Architect of any missing details or corrections which are
- believed by them to be necessary or appropriate for the proper construction of the project and which would not normally be their responsibility under standard industry practices and techniques. 17. Terminology, abbreviations, and symbols used on the construction
- documents are those recognized in the construction industry for the purposes indicated by the context in which used. In the event that industry publications do not adequately define any given term, the definitions found in Webster's unabridged dictionary of the American language will govern. Refer uncertainties to Architect before proceeding
- 18. Testing & Inspections: Arrange for all testing and inspections required by the construction documents, local building department, health department, and other agencies having jurisdiction over the project
- Manufacturer's name: Products specified on the construction documents by manufacturer's name or other designation are a project requirement, unless specifically noted otherwise. Substitutions are permitted only with prior written approval of the Architect and Owner. Selection of products which comply with requirements including applicable standards is Contractor's option where no product names are indicated by owner or documents. Contractor/Sub-Contractor shall bear all
- responsibility for products which he/she selects and installs 20. Substitution: No substitutions shall be made without Owner's written authorization. Any substitution shall be made known to Builder and Architect in advance to avoid any delay in the project schedule. The General Contractor and any Sub-Contractors shall not make structural substitutions or changes without prior written authorization from the Structural Engineer and written notification to the Architect. <u>Conflicts:</u> Where construction documents conflict with codes, the
- more stringent shall apply. 22. Changes: No changes are to be made on these plans without the prior knowledge and consent of the Architect whose signature appears hereon. Approval by city or county inspector does not constitute authority to deviate from plans or specifications.
- 23. Builder Set: This set of drawings is a "builder set". It is sufficient to obtain a building permit, however, all materials and methods of construction necessary to complete the project are not necessarily described in this "builder set". The implementation of the plans requires a Client/Contractor (General Contractor and Sub-Contractors) thoroughly knowledgeable with the applicable building codes and methods of construction. The plans and general notes delineate and describe only locations, dimensions, types of materials and general methods of assembling or fastening.
- 24. <u>Structural Analysis</u> for this project is done per applicable Building Code at the time of design considering standard of 25. Upon Completion of the above by the Architect and prior to the
- start of construction, the Contractor is responsible to check all dimensions, coordinate with the work or architectural, mechanical and other trades to ensure compliance with his/her requirements.

<u>Structural Engineering</u>:

- Refer to the current calculations for any question regarding lumber grades, beam and header sizes, footing and shear requirements.
- No deviations from structural details shall be made without the written approval of Andresen Architecture, Inc. Approval by the City Inspector does not constitute authority to deviate from plans or specifications. Contractor is to comply with manufacturer's instruction and recommendation to the extent that printed information is more detailed or stringent than requirements contained directly in construction documents.

Division 2 Sitework

- I. <u>All footings</u> shall rest on firm natural soil or approved compacted fill. All filling, backfilling, recompaction, etc., is to be accomplished only under the supervision of a Soils Engineer.
- No Soils Report (Assumed soil bearing value 1,000 PSF). All finish grade to drain away from the building footings. Termite Control: Soil shall be treated as per H.U.D./.M.P.S. 602-3.2 for termite control. 5. <u>Utilities:</u> Contractor is responsible for locating all existing
- utilities whether shown hereon or not and to protect them from damage. The Contractor shall bear all expenses for repair or replacement necessary in the prosecution of this work. 6. <u>Protection</u>: Protect structures, utilities, sidewalks, pavements,
- and other facilities in areas of work. Barricade open excavations and provide warning lights. Comply with regulations of authorities having jurisdiction. 7. <u>Retaining Walls:</u> Furnish foundation drainage pipe complete with bends, reducers, adapters, couplings, collars, and joint materials
- per plans. 8. Backfill: Use evenly graded mixture of gravel or crushed stone, and natural sand with 100% passing a 1-1/2" sieve and 0-5% passing a No. 50 sieve for filtering material. 9. Grading: Grade ground surface to conform to required
- contours and to provide surface drainage minimum 1% away from building for a minimum of 10 feet. 10. Pipe Backfill: Place supporting layer of filtering material over compacted subgrade where drainage pipe is to be laid to a compacted depth of not less than 4" after testing drain lines, place additional filtering material to a 4" depth around sides and top of drains. Lay drain pipe solidly bedded in filtering
- material. Provide full bearing for each pipe section throughout its length, to true grades and alignment. Test or check lines before backfilling to assure free flow. Remove obstructions, replace damaged components, and retest system until satisfactory.
- 12. <u>Backfill</u> shall not be placed until supporting foundations, walls, and/or slabs have attained sufficient strength to support lateral soil pressures.

Division 3 Concrete

- . All reinforced concrete materials and construction shall conform to Building Code, Chapter 19. 2. <u>Comply</u> with the following: A. ACI 301 "Specification of Structural Concrete Buildings"
- B. ACI 318 "Building Code Requirements for Reinforced Concrete' 3. <u>Mix designs</u> may be adjusted when material characteristics, job conditions, weather, test results or other circumstances warrant.
- Do not use revised concrete mixes until submitted to and accepted by Architect 4. Minimum design mix parameters: Use design mix that will provide a stable durable concrete surface free of pocks, spalls and other defects resulting from chemical incompatibility of constituent materials or adjacent conditions. Maximum 7-1/2 gallons of water per sack of cement. Maximum slump 4".
- Cement shall conform to Section 1903.2 of Building Code and shall be Portland Cement conforming to ASTM C-150, Type i or ii, low alkali. Use Type V cement for soil containing a sulfate
- concentration of 0.2% or more (min. f'c=2,500 psi, 28 days). Agaregates shall conform to Building Code 1903A.2 and shall be natural sand and rock conforming to ASTM C33, except local aggregates of proven suitability may be used when acceptable to Architect
- <u>Mater</u> shall be drinkable Air-entraining admixture, when required, shall be ASTM C-260. <u>Underslab vapor barrier</u> shall be polyethylene vapor barrier under all house slabs with sand fill above and below (see plans). Install vapor barrier with 12" minimum laps. Do not puncture with stakes or screened pins. Use blocking to support and level screeds and remove all such blocking after screeding.
- 6. Formwork shall be of materials with sufficient stability to withstand pressure of placed concrete without deflection. Special Exposure: Refer to Table 1904A.2.2 of Building Code for special exposure condition as required by soils engineer.
- <u>Reinforcing Steel</u> All reinforcina shall be ASTM A-615-40 for #4 bars and smaller. All reinforcing shall be ASTM A-615-60 for #5 bars and larger. Welded wire fabric is to be ASTM-185, lap 1-1/2 spaces, 9" min. for structural slabs, all reinforcing #5 and larger to be ASTM A-615-60. Unless otherwise noted or shown on plans, the minimum clear distance or reinforcement to face of concrete slab shall be: 2" (center of slab) Slab on grade ...
- Concrete against earth: Formed Without Form ... Concrete Exposed to weather..... I-I/2"
- All bars shall be deformed as per ASTM A-305 <u>All bars</u> shall be clean of loose flakey rust, grease, or other materials likely to impair bond.
- 4. <u>All bends</u> shall be made cold for #8 and smaller. 5. <u>Splicing of bars</u> shall have lapping of 30 dia. or 2'-0" min. in all continuous reinforcement of footings and concrete walls, except as noted on plans. Masonry reinforcement shall have lappings
- of 40 dia. or 2'-0" whichever is greater. 6. <u>All reinforcing bars</u> shall be accurately and securely placed
- before pouring concrete. Welding and reinforcing steel shall conform to AWS DI.4 using
- low hydrogen electrodes \$ A706 rebar. 8. <u>Splices of horizontal rebar</u> in walls and footings shall be
- staggered 4'-0" min. 9. <u>Dowels</u> for walls and columns shall be the same size and spacing as the wall/column reinforcing unless noted otherwise.
- <u>Concrete</u> Drupack shall be composed of one part Portland cement to not more than three parts sand & shall be non-shrink.
- <u>Construction</u> <u>All continuous exterior footing</u> shall have 5/8" dia. x min. 12" anchor bolts with 3"x3"x.229" plate washer, min. 7" embedment into concrete, at 48" O/C unless noted otherwise on plans. One anchor bolt should be located max. 12" away from the end of the sill plates. min. (2) A.B.'s per sill plate per shear panel. 2. <u>Sill fastening</u>:
- All Continuous Footings: Embed 5/8" diameter x 12" anchor bolts 7" into concrete. per sec. 2308.6 Monolithic Pour System: Embed anchor bolts 7" into concrete. Two-Pour System: Embed anchor bolts 4" past cold joint into footing. Use 5/8" diameter x 14" long anchor bolts at all 3x sill plate locations.
- 3. <u>All interior non-shear walls</u> shall have HILTI X-DNI (with a minimum penetration of I-I/4" into slab) at 24" O/C unless noted otherwise to be installed in accordance with I.C.C. ESR-1663 March 2014. Actual slab thickness to be minimum 4".
- <u>Strength</u> Concrete shall be proportioned to provide a minimum compressive strength, f'c, equal to 3,000 psi (after 28 days), unless noted otherwise per Building Code Sections 1805. All reinforcing, dowels, holdowns and other inserts shall be secured in position and approved by the local building official prior to the pouring of any concrete.

<u>Execution</u> Position, support and secure reinforcement agains displacement with metal chairs, runners, bolsters, spacers and hangers, as required. Direct wire ties into concrete, not toward exposed concrete surfaces. Maintain minimum clear distance between

- soil and reinforcing of 3" at bottom and 2" at sides of excavation. Lap reinforcing bars a minimum of 40 bar diameters. Provide construction, isolation, and control joints as required. Locate joints so as to not impair strength and appearance of structure. Place isolation and control joints in slab-on-grade to minimize random cracking.
- 4. <u>Use ICC-ES approved shot pins</u> with cadmium washers, 3'-0" O.C. max., 6" from corners and splices in interior bearing walls unless otherwise noted. Use same at 4'-0" max. for interior non-bearing walls. Slab to be thickened to 3 times pin penetration for 8" min. width where shot pins are to be used. Verify required thickness prior to placing concrete. 5. <u>Consolidate placed concrete</u> using mechanical vibrating
- equipment with hand, rodding, and tamping, so that concrete is worked around reinforcement and other embedded items and into forms. 6. Protect concrete from physical damage or reduced strength
- due to weather extremes during mixing, placement and curing. A. In cold weather comply with ACI 306. B. In hot weather comply with ACI 305.

7. Prior to placing concrete, remove all water, mud, loose earth, and debris from excavations 8. <u>Foundation (widths and depths)</u> and reinforcing as shown on plans are superseded by any local codes or ordinances which require

- increases in same. 9. <u>All load-bearing footings</u> shall be on-level, undisturbed soil to depth shown on drawings and shall conform to the Soils Report. 10. Do not place concrete until all reinforcement, conduit, outlet, boxes, anchors, hangers, sleeves, bolts and other embedded materials and items are securely and properly fastened in their proper places and positions. Sub-Contractor shall verify installation of hold-down and anchor bolts, "PA" straps and other anchorage material and items prior to placement of concrete. Holdowns to be installed in accordance with ICC-ES Report
- #ESR-2604. Pipes may pass through structural steel in sleeves, but shall not be embedded therein. Pipes or ducts exceeding one-third the slab or wall thickness shall not be placed in the structural concrete unless specifically detailed. For residential construction: The Concrete Sub-Contractor shall install a minimum of (1) 3/4" plastic pipe under the driveway, located at the street side of the entry walk, for future sprinkler system (verify with Landscape Sub-Contractor). Concrete Sub-Contractor shall also install plastic conduits in garage stem wall for power, telephone, CATV, and irrigation controller. Plastic pipe shall be provided by the Plumbing Contractor and the conduits by the Electrical Contractor.
- 12. <u>Refer to architectural drawings</u> and details for reveals, areas of textured concrete or special finishes, items required to be cast into the concrete, curbs, and slab depressions. 13. <u>Finish of slabs</u> shall be trowelled smooth and level around all
- plumbing pipes, electrical conduit, and miscellaneous iron straps protruding therefrom 14. <u>Repairs</u> shall be made promptly by the Concrete Sub-Contractor to remove any anchor bolts or any steel inadvertently misplaced in or at openings and shall patch any surface damaged by the
- removal thereof 15. Cleanup shall occur after completion of pouring each slab. Concrete sub-contractor shall remove all form lumber, miscellaneous lumber and cement debris, leaving the job-site clean and graded smooth for other workmen.
- 16. <u>Trenches</u> for footings shall be cleaned before concrete is poured. An imaginary line from the bottom corner of any footing, extending downward at 45° from the horizontal shall not intersect any excavation for gas, sewer, or drainage purposes.
- <u>Foundation</u> All holdowns and post anchors to be installed according to most current Simpson Strong-Tie specifications and requirements of ICC-ES Report #ESR-2604 shall be tied in place prior to
- foundation inspection Min. concrete width to be 8" for receiving STHD's. Verify locations
- of holdowns and anchor bolts with rough framing to assure prior and accurate installation 3. <u>Provide #3 x 24" dowel</u> at 24 O.C. and 12" from the corner at all concrete stoops and porches.
- 4. <u>Provide min. (1) #4 reinforcing</u> for electrical ground, location to be verified with the electrical contractor 5. Verify min. foundation depth, width, reinforcing steel and
- additional expansive soil requirements with valid soils report and if any more stringent they shall supersede the above minimum restrictions.
- See Division 3, Section "Strength" for concrete strength Admixtures in concrete mixture containing calcium chlorides shall not be used.
- 8. Footing shall be examined and certified in writing by the project Soil/Geology Engineer prior to inspection and placement of concrete. 9. Concrete shall be to the strength and slump as specified per structural design and consist of Portland cement ASTM CI50 Type V per Soils Engineer's recommendations and Building Code Table 1904.2.2 when concrete is exposed to sulfate containing solutions and aggregates per ASTM C33, water to be clean and potable. 10. Placement shall be in one continuous operation unless otherwise specified and slab surface shall be cured with Hunts compound or
- equal or other methods in accordance with good construction practices at Contractor's option. 11. Contractor shall dampen slab underlayment of sand/membrane just prior to concrete placement to assist uniform concrete curing. 12. The bottoms of footing excavations shall be level, clean, and free of loose material or water when concrete is placed. Over excavation shall be filled with concrete or properly compacted fill that has been tested and approved by the Soils Engineer. Backfill shall not be placed until supporting foundations, walls, and
- slab have attained sufficient strength to support lateral soil pressure. 13. Floor slab shall be poured level to 1/8" in 10'-0". 14. Requirements for pre-saturation of sub grade soil and daylight setback of footing from any descending slope shall comply with current soils report.
- 15. Finish grade around the perimeter of slab shall be constructed such that rain and irrigation water is drained away from the slab. 6. All site and pad preparation, such as but not limited to shading compacting of the fill, pre-saturation, and concrete slab base preparation, shall be performed in accordance with the Soils Engineer's recommendation and soil report.
- 17. Foundations drawings prepared by Andresen Architecture, Inc. reflect the structural requirements, refer to architectural plans for dimensions depressions, slope shelves patios, stoops, and porches not shown. Accuracy of the dimensions and final fit of the building shall be reviewed by the Architect and the Contractor prior to construction. 18. Waiting period for concrete slabs-on-grade prior to start of
- construction as follow: a) Walk on slab 24 hours after concrete has been poured. b) Begin wall framing 4-5 days after concrete poured. c) Begin roof/floor framing 7-10 days after concrete poured.
- d) Do not load roof prior to 14 days after concrete poured. 19. The Contractor shall arrange for observation of the work by the Soils Engineer. The following are reqt's of the Soils Engineer: a) All footing excavations shall be inspected and certified in compliance with the soils report by the Soils Engineer prior
- to placing of concrete or steel. b) Soil conditions, including compactions and moisture content, shall be inspected and certified in compliance with the soils report by the Soils Engineer prior to placing of concrete or
- c) A certificate of compliance shall be submitted to the Building Official prior to his foundation inspection, and to the Architect and Structural Engineer
- 23. Prior to the Contractor requesting a Building Department foundation inspection, the Soil Engineer shall advise the Building Official in writing that:

installation, with framing contractor.

a. The building pad was prepared in accordance with the soil report. b. The utility trenches have been properly backfilled and compacted. c. The foundation excavations, the soils expansive characteristics and bearing capacity conform to the soils report. 24. The Concrete Contractor is to verify location of holdowns and anchor bolts with rough framing to assure proper and accurate

Division 4 Masonru

<u>All Concrete masonry</u> materials and construction shall be in accordance with Building Code, Chapter 21. Mater used in mix shall be potable

- Sand shall meet the requirements for "Aggregate For Masonru Mortar," ASTM CI44. 4. Portland <u>Cement</u> shall meet the requirements for "Portland
- Cement" ASTM CI50. 5. <u>Plastic Cement</u> shall comply with the latest adopted edition of the Code
- 6. Lime putty shall be made of high calcium lime and aged to ensure complete slacking. Hydrated lime to meet the requirements for "Hydrated Lime For
- asonry Purposes" ASTM C207, Type "S". Steel reinforcing to be deformed bars to meet ASTM A615,
- Grade 40 for sizes #3 and #4 and Grade 60 for sizes #5 and larger. Lightweight concrete precision block to conform to standars for hollow load concrete masonry units and to conform to ASTM C90, Grade "N-I" (tab color). 10. Mortar to conform to Code and to the following:
- I part Portland cement 4-1/2 parts dry loose sand 1/3 to 1/2 lime putty or hydrated lime
- may be composed of the following: l part plastic cement
- 3 parts dry loose sand 1/10 parts lime
- Grout shall be 2,500 psi concrete. Solid grout all cells. 12. <u>Ultimate compressive strength</u> of foundation concrete shall be 2,500 psi at 28 days.
- 13. Brick shall be medium weight (MW) grade in accordance with ASTM C62, with an allowable compressive strength of 2,000 psi. 14. <u>Aggregate</u> shall conform to ASTM CI44 (Mortar) and ASTM C404 (Grout).

Samples: Masonry Sub-Contractor shall submit samples of veneer to Builder for written approval prior to proceeding with installation. <u>Materials</u>

- All materials making up finished concrete masonry construction shall conform to standards required by Building Code Sec. 2103. Lumber: Dimensional lumber shall be of Douglas Fir-Larch of the
- following product classification in grade indicated. Alignment of vertical cells: Masonry shall be built to preserve the unobstructed vertical continuity of the cells. The vertical alignment shall be sufficient to maintain a clear, unobstructed
- vertical opening not less than 2" x 3". Lay units clean and dry. 4. <u>Cleanouts</u>: Cleanout opening shall be provided at the bottoms of all cells to be filled at each lift or pour of grout, when such lift or pour of grout is in excess of 4'-0" in height. Cleanouts shall
- be sealed after inspection and before grouting. 5. <u>Grout solid</u> all cells which contain rebar, bolts, etc. Grout solid all cells below grade. All reinforcements shall have a minimum grout
- coverage of 3/4". All brick shall have a minimum of 2" grout space. 6. Nonexpansive fill shall be used in backfilling behind walls. All walls
- shall be adequately shored during the backfill operation. 7. When absolutely necessary for construction purposes to stop off longitudinal runs of masonry, stop off only by racking back one
- half unit length in each course. Toothing shall not be permitted. 8. Masonry shall comply with 2022 C.B.C. Reinforcing shall be accurately placed, and held in position top
- 10. <u>Masonry veneer:</u> Provide I" mortar between masonry veneer and "Aqua Lath" as manufactured by Tree Island Steel ICC-ES Report #ESR-2267 or equal.

The specified compressive strength of masonry, f'm, shall be 1500 psi, unless noted otherwise. If higher f'm is noted, it shall be verified by prism tests as required in Building Code, Section 2105.2.1

<u>Concrete Unit Masonry</u>

- Concrete masonry units for load bearing systems may be brick as specified by ASTM C55, Specifications for Concrete Building Brick. Grade N concrete bricks are for use as architectural veneer and facing limits in exterior walls. Grade S concreté bricks are for general use where moderate strength and resistance to frost action and moisture penetration is required.
- 2. Grout: Mix one part Portland cement, 1/10 hydrated lime, not more than 3 parts sand and not more than 2 parts 3/8" maximum size pea gravel by volume, and shall have a minimum compressive strenath of 2000 PSI at 28 days of age, aggregates per ASTM C476. Mortar-Mix: Type S ASTM C270 and consisting of one part
- Portland cement, I/10 hydrated lime, not more than 3 parts sand, all by volume. Type S mortar shall have a minimum compressive strenath of 1800 PSI at 28 days of age. No fire clay permitted in mortar used for structural units. All materials for mortars shall be measured by volume, sand and cement mixed dry, lime added, and then water added to bring to the proper consistency for use. No mortars that have stood for more than one hour shall be used.
- <u>Construction (General)</u> Walls shall be straight, plumb, and true, with all courses true to line and level, built to dimensions shown. Cells shall be filled solid with grout as indicated. Blocks shall be laid up with waterproof type 5 mortar. Clean units before placing. Use masonry saw for cutting.

<u>Special Inspection</u> For concrete masonry construction which is noted as requiring special inspection per drawings, such inspection shall be carried out in accordance with Building Code, Section 1704. Concrete masonry construction which requires special inspection also is required to have masonry prism testing prior to and during construction as described in Building Code, Section 2105A.3

Division 5 Metals

<u>Seneral</u> <u>Comply</u> with the following:

- A. AISC "Code of Standard Practice for Steel Buildings and Bridges." B. AISC "Specifications for the Design, Fabrication, and Erection of Structural Steel for Buildings" including "commentary." C. AWS "Structural Welding Code," comply with applicable
- provisions except as otherwise indicated. D. D.All structural steel materials and construction shall conform to the reqt's specified in Building Code, Ch. 22.

<u>Structural Steel and miscellaneous iron</u> shall be primed with a rust resistance primer \$ should conform to ASTM A36 as a minimum, unless otherwise noted. All W shapes to be ASTM A992. 2. <u>Cold-formed steel tubing</u> shall conform to ASTM A500, grade B

- (Fy=46 ksi). 3. Steel pipes shall conform to ASTM A53, Type E or S, Grade B (Fu=36 ksi).
- 4. <u>Fasteners</u> such as bolts, nuts, and screws shall conform to ASTM A325N, unless otherwise noted. Provide bolts, nuts, laq bolts, machine screws, wood screws, toggle bolts, masonry anchorage devices, lock washers as required for application indicated. Hot-dip galvanized fasteners for exterior applications to comply with ASTM A153.
- 5. Holes for bolts should be drilled or punched \$ shall be 1/16" laraer than bolt diameter 6. <u>Shop paint:</u> SSPC-Paint 13, shop prime structural steel except
- portions to be embedded in concrete or mortar. Galvanizing shall conform to ASTM A386 for assembly products; ASTM A123 for rolled, pressed and forqed steel shaped, plates,
- bars and strip 1/8" and thicker; galvanizing repair paint: MIL-P-21035 or SSPC-Paint-20 or "Galvaloy" paint. 8. <u>Welding rods</u> shall conform to AWS for intended use. 9. All structural welding procedures and materials shall conform to Building Code, Section 2204.1 All welding shall be by the
- submerged arc process using ETOXX-low hydrogen electrodes, u.n.o. Execution I. <u>Comply</u> with AWS DI.I code for procedure, appearance, and
- quality of welds. 2. Set base plates on cleaned bearing surfaces, using wedges or
- other adjustments as required. Solidly pack open spaces. 3. <u>Fabricate_steel_pipe_railings</u> to dimensions shown, with smooth bends and welded joints using 1-1/2 steel pipe, u.n.o.
- 4. Touch-up shop paint after installation. Clean field welds, bolted connections and abraded areas, and apply same type paint as used
- in shop. Use galvanizing repair paint on damaged galvanized surfaces. . <u>All shop welding</u> and fabrication must be done in a shop certified by AISC Quality Certification Program and approved by the Building Official. All field welding must be performed by a certified welder and a special inspector shall continuously inspect all structural field

welding. Both shall be approved by the Building Official. <u>Weld corners</u> and seam continuously, grind exposed welds smooth and flush. Weld cap on exposed ends of pipes and tubes.

Division 6 Nood

ROUGH CARPENTRY <u>General:</u>

<u>Materials:</u>

- 1. <u>All reference specifications</u> are the latest edition adopted or approved by the enacting authority. CBC Chapter 23.
 - NDS "National Design Specifications for Wood Construction" PS 20 "Softwood Lumber Standards
- WWPA "Standard Grading Rules for Western Lumber" RIS "Standard Specification for Grades of California
- Redwood Lumber Manufactured lumber, S4S and grade stamped, to comply with PS20 and applicable framing rules of inspection agencies
- certified by ALSC's board of review. Moisture Content: Provide seasoned lumber with 19% or less moisture content at time of dressing and shipment (for sizes 6" or areater in thickness).
- 4. <u>Refer to structural calculations</u> for any questions regarding lumber grades, beams, and header sizes. <u>Construction materials</u> shall be spread out if placed on framed floors or roof. Load shall not exceed the design live load per square foot. Provide adequate shoring and/or bracing where structure has not attained design strength.

<u>Framing:</u> A. Light-framing and Studs: (2"-4" thick, 2"-6" wide): Stud or standard grade

- B. Joists and Rafters: (2"-4" thick, 5" and wider): No. I grade or better
- Posts, Beams, Headers, and Timbers: (4" and thicker): No. 1 Grade, free of heart center Redwood Foundation Grade: all heart u.n.o. (if lumber species other than Douglas Fir-Larch is to be used,
- Contractor shall request in writing, approval from Architect and Structural Engineer prior to construction). E. Top Plates: All top plates to be Hem-Fir or Doug-Fir, standard grade or better.
- <u>Resawn:</u> Áll exterior fascias, trims, posts and beams shall be re-sawn lumber. 2. <u>Mood Panels:</u> A. <u>Particleboard underlayment:</u> ANSI A208.I, Grade I-M-I in
- thickness indicated. <u>Mall Sheathing:</u> American Plywood Association approved Oriented Strand Board (O.S.B.) Waferboard (Grade 2-M-W) may be used instead of Structural II plywood as indicated on shear panel schedule.
- Typical Floor Sheathing: A. 23/32" APA rated Sturd-I-Floor T&G EXP | with min. a panel index of 32/16" B. Refer to NER 108 for installation and conditions of use
- B.N.: IOd common nails at 6" O.C E.N.: IOd common nails at 6" O.C
- F.N.: IOd common nails at 12" O.C C. Use ring or screw shank nails and glue sheathing to framing using adhesives meeting APA specification AFG-OI or ASTM D. Apply glue in accordance with manufacturer's
- recommendations. Use Grabber plywood screw min. 2" long at 6" O.C. B.N., 6" O.C. E.N., and 12" O.C. field nailing (ICC-ES Report #ESR-1271, Dated January I, 2002, ANSI, ASME B 18.6.1)
- 4. Typical Roof Sheathing A. 15/32" APA rated sheathing Exp I with a min. panel index of 24/0. refer to NER 108 for installation and condition of use. B.N.: 8d common nails at 6" O.C. E.N.: 8d common nails at 6" O.C.
- F.N.: 8d common nails at 12" O.C. *Note: All structural rated panel must be stamped by one of the following agencies: APA, PFS/TECO, or Pittsburg. 5. Metal hangers and framing anchors of size and type recommended for intended use by manufacturer. Hot-dip galvanize fasteners and anchorages for work exposed to weather, in ground contact and high relative humidity.
- 6. <u>Preservative pressure-treated products:</u> A. <u>Preservatives</u>: Lumber and plymood with water-borne preservatives to comply with AWPA C2 and C9 respectively, and 2022 CBC SEC. 2303.1.8
- <u>Above Ground:</u> Wood for above-ground use: AWPB LP-2. Roofing: Treat cants, nailers, blocking, stripping, and similar items in conjunction with roofing, flashing, vapor barriers, and waterproofing, or use Redwood
- <u>Concrete</u> Contact: Treat sills. sleepers, blocking, furring, D. stripping and similar items in direct contact with masonry or concrete, or use Redwood. Sill Caulking: Apply a bead of mastic caulking under sill
- plates of all exterior walls at interior bottom of sill plate. <u>Shop Drawings</u> <u>Sufficient copies</u> of shop drawings for any member or product designed by an entity other than Andresen Architecture, Inc. shall
- be submitted to Andresen Architecture, Inc. prior to fabrication for review, to be reviewed and returned in 3 to 5 working days. Review of shop drawings by Andresen Architecture, Inc. does not relieve the Engineer responsible for the design or the
- Contractor from compliance with Building Code. 3. Andresen Architecture, Inc. review of the shop drawing consists of checking general conformance with structural drawings. Design accuracy of such product, dimensions, and quantity of the project is not reviewed by Andresen Architecture, Inc.
- 4. <u>Trusses</u> shall be designed in accordance with the latest local Building Code for all loads imposed, including lateral loads and mechanical equipment loads. <u>Wood truss manufacturer</u> shall supply to the Architect and the
- building department calculations and shop drawings for approval of design loads, configuration (2 or 3 point bearing), and shear transfer, prior to fabrication. It shall be the responsibility of the manufacturer to obtain building department approval of calculations and shop drawings prior to fabrication. 6. Trusses shall be designed in accordance with the latest local
- Building Code for all loads imposed, including lateral loads and mech. equipment loads. 7. <u>All connections</u> involving trusses shall be ICC-ES approved and of adequate strength to resist stresses due to the loadings involved and shall be designed and specified by the truss
- manufacturer. 8. <u>Dead load and live load deflections</u> shall be limited to min. L/240, live load deflection min. L/360 <u>Cross bridging and/or bracing</u> shall be provided and detailed by
- truss manufacturer as required to adequately brace all trusses. 10. <u>Truss</u> manufacturer to provide details which allow for normal deflection without imposing lateral loads on their supports (i.e., scissors trusses).
- 11. Truss manufacturer is responsible for providing additional shear and drag trusses as shown on the framing plan. 12. Truss manufacturer is responsible for reviewing framing plans and structural details prior to fabrication of trusses and specifying
- 13. All trusses designed by truss manufacturer shall be design to sustain all vertical, lateral, and other pertinent loads, including bracing of top and bottom chords, in addition to any connections related to trusses. Contractor is to coordinate with truss manufacturer.
- 14. The truss manufacturer is responsible to meet the profile as indicated in the drawings 15. All truss lumber shall be Douglas Fir-Larch (u.n.o.).
- 16. Each truss shall be legibly branded, marked, or otherwise have permanently affixed thereto the following information located within 2'-0" of the center of span on the face of the bottom a. Identity of the company manufacturing the truss
- b. The design load. c. The spacing of the trusses.
- . <u>Bracing</u>: All members shall be framed, anchored, tied and braced so as to develop the strength and rigidity necessary for the purposes for which they are used. Framing Sub-Contractor shall adequately brace floor joists to prevent sagging where materials are stockpiled prior to erection. 2. Let-in bracing: Provide I x 6 diagonal (at approx. 45 degrees)
- every 25'-0" maximum in stud walls not sheathed. Bracing shall run continuous from sill plate to top plate. Nail with two 8d per stud and three 8d each end to plates. All metal connectors shall be "Simpson Strong-Tie Connectors" or
- ICC-ES approved equivalent in structural design and load values. The nails for these connectors shall be joist hanger nails as manufactured by the Simpson Company (or equal). 4. Top plates of all stud walls shall be two pieces the same size as studs. Splices to lap 4'-0" minimum and be nailed with 16 - 16d
- nails minimum. 5. Bolting: Bolt holes in wood shall be 1/32" to 1/16" larger than the nominal bolt diameter. All bolts shall have standard cut washer under head and nut unless otherwise noted. All bolts shall be
- retightened prior to application of sheathing, gypsum board, plaster, etc. 6. <u>Structural members</u> shall not be cut for pipes, etc. unless
- specifically detailed. Predrill for nailing when nail spacing results in the wood splitting.

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General Notes

Division 6 (continued) Nood

8. <u>Beams and girders</u>

- A. <u>Bearing on masonry</u>: The ends of beams or girders supported on masonry or concrete shall have not less than 3" of bearing. B. <u>Bearing on wood:</u> All beams or girders supported on wood shall have full bearing and bearing shall be comprised of one (1) solid post (or multi-stud) constructed in an approved manner unless otherwise specified on plans.
- C. <u>Bracing</u>: Provide 2 x 4 temporary bracing to all beams projecting 3'-0" beyond building line to prevent warpage. Roof and Ceiling Framing A. Framing Rafters shall be framed directly opposite each other
- at the ridge. There shall be a ridge board at least 2" nominal thickness at all ridges and not less in depth than the cut end of the rafter. At all valleys or hips there shall be a single valley or hip rafter not less than 2" nominal thickness and not
- less than the cut end of the rafters. B. <u>Rafters</u> shall be nailed to an adjacent ceiling joist to form a continuous tie between exterior walls when such joists are parallel to the rafters. Where not parallel, rafters shall be tied to 2" by 4" (nominal) minimum size cross ties. Rafters ties shall be spaced not more than 4' on center.
- C. <u>Purlins</u> to support roof loads may be installed to reduce the span of rafters within allowable limits and shall be supported by struts to bearing walls. The maximum span of a 2" by 8" purlin shall be 8'. In no case shall a purlin be smaller than the supported rafter. The unbraced length of the 2 x 4 struts shall not exceed 8' (10'-0" for $2 \times \overline{6}$ struts) and the minimum slope of the struts shall not be less than 45 degrees above the horizontal.
- D. Blocking: Rafters more than 8" in depth shall be supported laterally at the ends and at each support by solid blocking not less than 2" in thickness and the full depth of the rafter unless nailed to a header, band or rim joist or to an adjoining stud and as required by Code. Provide 2x solid blocking a 10'-0" intervals for all rafters more than 8" deep.
- E. <u>Fascia and Barge Boards</u> shall be resawn materials, free of splinters and shall have a texture not so rough so as to be injurious or irritating to the skin if located where it can be touched under normal living conditions. If there are any questions regarding the acceptability of any material, contact the Project Superintendent. F. <u>California Framing</u> to be 2 x 6 Douglas Fir #2 or better
- rafters at 24" o.c., with a maximum span of 10'-0" typical. 10. Standards: For sheathing, underlayment and other products not covered in above standards, comply with recommendations of manufacturer of product involved for use intended.
- Bearing: Cut, shape, cope, plumb, level and turn all framing members to provide full bearing. 12. <u>Protection from deterioration</u>:
- A. Separation: Where wood is nearer than 8" to earth, use treated or natural decay resistant wood unless separated by a 3" concrete slab with an impervious membrane between earth and concrete.
- B. <u>Embedded:</u> Wood shall not be embedded in the ground or in direct contact with the earth and used for the support of permanent structures. Sills: All foundation plates, sills and sleepers on a concrete
- or masonry slab, which is in direct contact with earth shall be treated wood of the same species and should be marked or branded by an approved agency. As an alternate, use a layer of 22 gauge sheet metal between the sill and concrete/masonru. D. <u>Exposed</u>: Columns and posts located on concrete floors or
- decks exposed to weather or to water splash and which support permanent structures shall be supported by metal pedestals projecting at least 6" above exposed earth and at least I" above such floors. 13. Provide Fire-Stopping to cut off all concealed draft openings
- (both vertical and horizontal) and to form an effective barrier in pecific locations, as follows: A. Malls At Floor/Ceilings: In exterior or interior stud walls, at
- ceilings and floor levels. B. Stud spaces: In all stud walls and partitions, including furred spaces, so placed that the maximum dimensions of any
- concealed space is not over 10'-0". C. <u>Stringers</u>: Between stair stringers at top \$ bottom, between studs in line with run of stair if wall below stair is unfinished. D. <u>Pocket Doors</u>: Around top, bottom, sides and ends of sliding
- door pockets. E. <u>Vents:</u> In openings around vents, ducts, chimneys, fireplaces and similar openings with non-combustible fire stop material only. A metal collar tightly fitted to the chimney and nailed to
- the wood framing may be used. F. <u>Other</u>: Any other locations not specifically mentioned above, such as holes for pipes, shafting, behind furring strips and similar places which could afford a passage for flames.
- G. Thickness: Firestops of wood shall be 2" nominal thickness. If the width of the opening is such that more than one piece of lumber is necessary, there shall be 2 thickness of 1" nominal material with joints broken or one thickness of 3/4" Plywood. H. <u>Gypsum Board</u>: Firestops may also be of Gypsum wall board.
- 14. Openings in floor or roof structures: Where header span exceeds 4-feet, double header and trimmer members and support with metal 15. <u>Notching and drilling</u> of joists, rafters, and studs are permitted as
- detailed in standard details. 16. <u>Vertical Assemblies</u> Provide 2 x 4 studs at 16" O.C. for bearing and exterior walls on
- the top two stories and either 2×6 or 3×4 studs at 16" O.C. for bearing and exterior walls on floor below the top two stories. B. <u>Cutting, notching, and boring</u> of studs is permitted in accordance with #15 above. Minimum distance between hole and edge of stud 5/8".
- C. <u>Place</u> studs with wide dimension perpendicular to wall. Frame corners with 3 studs or where walls intersect back up cleats may be used when adequate backing is provided for finish material. Minimum stud length for foundation wall is 14", provide solid blocking where this length does not occur. Where foundation cripple wall exceeds 4" high frame as required for additional story.
- D. <u>At all walls</u> provide double top plates lap corners and stagger splices minimum 4'-0". At all walls, provide single bottom plate except where lightweight concrete floor fill is used. Provide double bottom plated where plates are cut or bored to pass other work. Provide 1/8" x 1-1/2" metal strap each side with 4-16d nails. All plates size 2x stud width min.
- E. Brace all exterior walls and main cross walls at or near ends and at max. 25'-O" intervals by an approved method. Brace cripple walls as required for full height walls. Framer is responsible for installing temporary bracing to adequately support framing during construction. This bracing is to remain in place until structural integrity has been achieved.
- <u>Cripple walls</u> shall be framed of studs not less in size than the studding above with a min. length of 24" or shall be framed of solid blocking. When exceeding 4'-O" in height, such walls shall be framed of studs having the size regid for an add'l story. G. Stud partitions containing plumbing, heating, or other pipes shall be so framed and the joists underneath it so spaced as
- to give proper clearance for the piping. H. <u>Blocking</u> $(2 \times 6 \text{ min})$ to be provided at all handrails and at all bath accessories.
- <u>Timber:</u> Douglas Fir-Larch 19% moisture content Lumber shall be free of heart center.
- Bridging: All stud partitions or walls with studs having a height-to-a-least-thickness ratio exceeding 50 shall have blocking not less than 2" in thickness and of the same width as the studs fitted snugly and nailed to provide adequate lateral support. <u>Window sills</u> 8'-0" in length or longer shall be doubled. All windows shall have a gypsum board stool u.n.o.
- 17. <u>Connections</u> A. <u>Post/Beam</u>: Provide positive connection between posts and beams to prevent up lift or lateral displacement and at beam splices to prevent separation.
- B. Nails may be common, box or vinyl coated sinkers unless specifically noted otherwise or required otherwise by the governing codes. Where necessary to prevent splitting, predrill pilot holes smaller than nail; provide maximum nailing per CBC 2304.9.1. Attic Ventilation:
- Enclosed attics and enclosed rafter spaces shall have cross-ventilation for each separate space by ventilating openings protected against entrance of rain. The net free ventilating area shall not be less than 1/150 of the area of the space ventilated. The openings shall be covered with corrosion resistant metal mesh openings of 1/4" in dimension. Do not block vents with insulation. 19. <u>Framing</u>
- <u>Stud walls</u> perpendicular to a concrete or masonry wall shall be bolted to the concrete or masonry wall with 5/8" diameter × 8" A307 bolts at top, mid-height and bottom B. <u>Structural information</u> shown on framing plans is for the main
- structural elements. Non-structural elements shall be constructed per approved code requirements. C. <u>Weight of the roof tile</u> is considered as 10 psf max. (total
- roof dead load of 20 psf). If roofing material exceeds this load, the Framing Contractor should notify Andresen Architecture, Inc. in writing prior to construction. D. All shear panels shall have continuous sheathing material from
- one end to the other and from plate to plate as specified on the drawings. Contractor shall coordinate framing such that continuity of shear panels is assured.
- E. <u>All ledgers</u> shall be spliced with ST22 strap, u.n.o.

Division 6 (continued) Nood

- F. <u>All shear transfer nailing</u> shall be per drawings. Contractor shall provide proper notification for inspections to review the same. G. <u>Provide posts</u> at lower floor under posts or multiple studs above. Provide full width and depth compression block
- between floors at such locations. H. <u>All joist hangers</u> shall be Simpson U hanger, all beam hangers shall be Simpson HU hangers u.n.o. on plan or detail. Follow manufacturer's recommendations for installation.
- I. If a double sill plate is used at light-weight concrete flooring, then the framing contractor shall apply sill plate nailing to both sill plates, at 16" O.C. max. or as specified per schedule. J. <u>Building Code 2308.9.1</u> balloon framed walls (non-bearing)
- stud heiahts: 2x4's @ 16" O.C. maximum 14'-0" height 2x6's @ 16" O.C. maximum 20'-0"height No multiples of 2x4's are allowed to span more than 14'-0" bearing walls, exceeding 10'-0" must be designed case by case.
- K. Use 4x4 header for openings less than 16" at bearing walls without point loads, or at openings less than 4'-O" at non-bearing walls. Use 2x framing @ medicine cabinet and qaraqe vent (u.n.o.). 20. <u>Ceiling Joists</u> Use this span table for ceiling joists given the following
- conditions, unless noted otherwise on plan. a. dead load = 6.0 psf live load = 10.0 psf total deflection = L/240
- with ceiling drywall e. use #2 Douglas Fir Larch SIZE SPACING MAX. SPAN 10'-6 9'-7" 16'
- 24' 8'-4" 2×6 16'-7" 12" 15'-1" - 16" 24" 13'-2" 2x8 2|'-||' 12" 19'-11"
- 24" 17'-4" 21. <u>Minimum Quality</u> E. <u>All machine bolts</u> shall conform to ASTM A307. Holes for bolts should be drilled 1/16" larger than bolt dia. <u>Square washers</u> shall be mild steel. Use min. 2" sq. x 3/16"
- thick washers for bolts with 5/8" dia., use 3-1/2" sq. x 3/8" thick washers for bolts with I" dia G. Adhesive used to attach floor floor sheathing to framing elements shall conform with APA specification AFG-OL.
- H. <u>Manufactured hardware</u> specified on the drawings are to be Simpson Strong Tie (unless specifically authorized in writing by Andresen Architecture, Inc.). Follow all manufacturer's requirements & recommendations for installation \$ handling of the product.
- Do not bend the Simpson PA straps. J. Sheet rock on framing: Stacked sheet rock loading shall be limited to the following quantities in any one room: 5/8": 16 individual 4x10 sheets (8 pairs of sheets) 1/2": 20 individual 4x10 sheets (10 pairs of sheets)
- The shoring of the 2nd floor is required if the number of sheet rock exceeds the quantities listed above. K. Fasteners specified on the drawings may be colored using manufacturer's brands that utilize the Trackers color coded system. Follow all manufacturer's requirements and recommendations for installation and handling of the products.

Ø=0.131 - L=2 1/2"	COLOR CI
	8d Cool
	8d Comm
$\emptyset = 0.162 - L = 3.1/2^{\circ}$	16d Shor
0=0.113 - L=2 1/4"	10d Comn
Ø=0.131 - L=2 7/8"	12d Comm (16d Sint
Ø=0.148 - L=3 1/4"	16d Comm

STRUCTURAL GLUE-LAMINATED UNITS <u>General:</u>

<u>All fabrication and workmanship</u> shall conform edition of the Standard Specifications for S Laminated Douglas Fir. (Coast Region) Lumber by Lumbermen's Association and the current edition of Tim

*ACTUAL NAIL SIZES

- <u>All glued-laminated members</u> shall be Douglas 1-1/2" outer and core laminations, combina waterproof resorcinol or phenol resorcinol glue Federal Specification MIL-A-397-B. Use Combina 24F-V5 for simply supported beams, and Combine 24F-VIO for cantilevered beams.
- Comply with ANSI/AITC AI90.1 "Structural quide laminated timber." Provide factory-glued structural units, produced by AITC-licensed firm, qualified to apply the AITC "Quality inspected" mark.
- <u>Factory mark</u> each piece of glued-laminated structural units with AITC quality inspected mark. 6. Design: Where portions of final design for glued-laminated timber members are indicated as manufacturer's responsibility (any
- element of design consideration), comply with applicable provisions of AITC 117- "Designing, Standard specifications for structural glued-laminated timber of softwood species." 7. <u>A certificate of inspection</u> for each Glu-lam beam from an approved Testing Agency shall be submitted to, and approved by the local Building Department and the Architect.
- Provide glued-laminated timber members sized as shown on drawings that meet or exceed the following stress values for normal loading duration and condition of use: Bending (Fb), 2400 psi.
- Horizontal shear (Fv), 165 psi. Compression perpendicular to grain (Fc-Tension Face), 560 psi. Compression perpendicular to grain (Fc-Compression Face), 560 psi. Modules of elasticity (E), 1,800,000 psi.
- Tension parallel to grain (Ft-Axially loaded), 1150 psi. Compression parallel to grain (Fc-Axially loaded), 1650 psi. ASTM D 2559 "Wet-use" adhesive, unless otherwise indicated. <u>Use manufacturer's standard</u> transparent, colorless wood sealer,
- effective in retarding transmission of moisture at cross grain cuts. 4. <u>Use manufacturer's standard</u> translucent penetrating wood sealer,
- which will not interfere with application of wood stain and transparent finish, or paint finish as indicated.
- 5. <u>Moisture content</u> of the lumber at the time of gluing shall not be more than 16% with a maximum variation of 5% in any beam. Execution
- Required camber for fabrication of each member is shown on drawings, and may be either circular or parabolic, at manufacturer's option. If not shown, use standard camber per manufacturer.
- 2. <u>Immediately after end-cutting</u> each member to final length, and after wood treatment, if any, apply a saturation coat of end sealer to ends and other cross-cut surfaces, keeping surfaces "flood coated" for not less than 10 minutes. Beams shall be load wrapped for protection during shipping.
- 3. After fabrication and sanding of each unit, and end coat sealing, apply a heavy saturation coat of penetration sealer on surfaces of each unit, except for treated wood where treatment has included a water repellent. 4. <u>Finish of the members</u> shall be industrial appearance grade
- (unless otherwise noted) in conformance with Standard Appearance Grades of the A.I.T.C.

NF	RT FOR STRUCT	URAL NAILS
R	SIZE & DIAMETER	COLORS
•	2 3/8 X .113	YELLOW
1	2 I/2 X .I3I	BLUE
	3 I/4 X .I3I	BLACK
n	2 /8-3X. 48	PURPLE
n -)	3 I/4 X .148	GREEN
n	2 /2 3 /2 × .162	ORANGE

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Struc	tura	I G	lued
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Division ' Thermal & Moisture Protection

ATTIC ACCESS I. <u>Provide attic access</u> with insulation where indicated on plans.

EXTERIOR WALL COVERINGS 1. <u>Meather-Resistive Barrier</u> provide one (1) layer of 60 pound asphalt saturated felt minimum under all exterior finishes. 2. Shear Walls and Horizontal Applications require a minimum of two (2) layers of grade "D" building paper.

Materials I. All exterior materials shall conform to the requirements of the Uniform Building Code, applicable edition, and all State and Local codes.

ROOFING AND MEMBRANES 1. <u>Scope:</u> Furnish and install roofing and waterproofing work complete, including cant strips and incorporating other trades

flashing, sleeves and jacks. 2. Installation: Install roofing and wall corrosion resistant metal flashing per manufacturer's recommendations including the use of fasteners and anchoring devices for high wind areas, and per

C.B.C. Chapter 1503, carefully incorporating flashing, scuppers, jacks, sleeves, roof drains, skylights, etc. supplied by others. 3. <u>Inspection</u>: Owner shall provide a waterproofing specialist to review built-up roofing, waterproof decking, foundation wall waterproofing, and flashing details and provide continuous inspection during field installation of all waterproof and flashing surfaces and materials to insure adherence to manufacturer's specifications and the highest standards of construction practice.

<u>Special Conditions</u>

Provide cant strips at all vertical surfaces. Provide crickets as indicated, and as necessary, for proper water drainage and to redirect channeled or runoff water away from vertical surfaces.

Materials: Refer to plans for type and manufacturer of roofing.

BUILT-UP ROOFING General

- Plymood Deck: This specification is applicable to built-up roofina systems applied directly to plywood substrates. Should any other substrate be encountered submit a written list of required modifications as recommended by standard reference specifications to the Architect for approval.
- 2. <u>Standard reference specifications:</u> A. NRCA: "Roofing & Waterproofing Manual".
- Published specifications, recommendations and instructions by manufacturer of products used. CBC Chapter 15.
- 3. <u>Coordinate</u> with other trades to insure proper sequencing of each installation. 4. <u>Manufacturer's guarantee/warranty:</u> MFR's Standard 10-year
- avarantee. <u>Roofing</u> warranty: Provide "Roofing Contractor's" standard 2-year roofing quarantee; NRCA Form 1970A or equivalent form. 6. Testing Lab: Each package of felts, cements, and base-, plu-,
- combination or cap sheets shall bear the label of an approved testing laboratory having a service for the inspection of materials and finished products during manufacture for such built-up roofing material. 7. <u>Roof Deck:</u> Built-up roofing shall be applied to solid roof
- sheathings as specified in Division 6 of these general notes.
- Provide materials complying with governing regulations and NRCA roofing and waterproofing manual specifications #31, NADA diagram A, as follows:
- A. Sheathing paper: single ply 5 lb. rosin sized sheathing Base plies: 2 plies #15 perforated asphalt-saturated organic felt complying with ASTM D-226.
- Plu felts: 3 plies #15 perforated asphalt-saturated organic felt complying with ASTM D-226.
- A. <u>Base plies:</u> 3 plies #15 asphalt impregnated glass fiber mat or complying with ASTM D-2178, Type IV. Interply bitumens roofing asphalt complying with ASTM D-312, Type 11.

Execution: Meather: Proceed with roofing work only when existing and forecasted weather conditions will permit work to be performed

- in accordance with recommendations. 2. <u>Substrate Corrections:</u> Examine substrate surfaces to receive built-up roofing systems and associated work; and conditions under which roofing will be installed. Do not proceed with roofing until unsatisfactory conditions have been corrected in a manner acceptable to installer.
- 3. <u>Substrate Surface</u>: Verify that substrate is securely fastened with no projecting fasteners and no adjacent units in excess of 1/16" out of plane.
- 4. <u>Protection</u>: Protect other work from spillage of built-up roofing materials. 5. <u>Heat and apply bitumen</u> in accordance with equiciscos
- temperature (EVT) method as recommended by NRCA. 6. Base sheets shall be nailed, using not less than one nailer each I-I/3 square feet with nails of the type required by the manufacturer for the type of deck. Successive layers shall be cemented to the base sheets using 20 pounds of hot asphalt for solid mopping (IO pounds for spot or strip-mopping), or not less than two gallons of cold bituminous compound in accordance with manufacturer's published specifications, or 30 pounds of hot coal tar pitch per roofing square.
- Minimum Weight: Mineral aggregate surfaced roofs shall be surfaced with not less than 60 pounds of hot asphalt or other cementing material in which is embedded not less than 400 pounds of gravel or other approved surfacing materials or other 350 pounds of crushed slag per roofing square. 8. Cap sheets shall be cemented to the base sheets using no less
- cementing material than that specified for solidly cemented base sheets. 9. Tape joints of substrate to prevent penetration by roofing materials.
- 10. Shingle multiple plies of roofing unless otherwise required by felt manufacturer's instructions II. On sloping substrates (sloping more than 3/8" for coaltar
- bitumen, 374" for asphalt with asbestos felts, or 1" for asphalt with other felts) comply with NRCA "roofing manual" for nailing plies of B.U.R. to substrate or to nailers in the substrate and comply with composition roofing manufacturer's instructions for nailing composition roofing.
- 12. Nail edges of roofing where possible (without causing leaks), and nail composition flashing to vertical surfaces at edges and penetrations of roofing.

INSULATION: <u>General:</u>

- 1. Certificate: After installing insulation, the Installer shall post in a conspicuous location in the building a certificate signed by the Installer that the installation conforms with the requirements of Title 24, Part 6, and that the materials installed conform with the requirements of Title 20, Chapter 2. The certificate shall state the Manufacturer's name and material identification, the installed R-value, and weight per square foot.
- Mineral fiber blanket/batt insulation of inorganic non-asbestos fibers formed into resilient batts. Semi-rigid type where required for self support.
- Execution: I. <u>Provide</u> insulation at all exterior walls, walls between living space and unheated garage or storage room, between jambs and framing, ceilings with cold areas above, attic access panel, knee walls adjacent to heated space, between combination rafter and ceiling joist (leave open space above for ventilation) to receive (batt) insulation.
- Malls to be minimum of R-13 unless otherwise noted. <u>Ceilings</u> to be minimum of R-30 unless otherwise noted.
- Floors Over Unconditioned: to be minimum of R-19 unless otherwise noted.
- 5. <u>See Energy Compliance Sheet</u> for California Energy Title 24 Requirements.
- 6. Infiltration: the following openings in the building envelope must be caulked, sealed, or weather stripped. A. Exterior joints ground window and door frames, between
- wall panels, wall and sill plates. B. Openings for plumbing, electrical and gas lines in exterior and interior walls, ceilings, and floors.
- C. Openings in attic floor (such as where ceiling panels meet interior and exterior walls, and masonry fireplaces) D. All other such openings in building envelope. (No gaps or
- voids will be accepted). 7. <u>Alternative approved techniques</u> may be used to meet the standard caulking reqt's for exterior walls, including but not limited to, continuous stucco, building wraps, or rigid wall insulation.
- Balcony and Deck Coating: <u>Elastomeric or membrane deck coatings</u> shall be installed per manufacturer's specifications. Color and finish and detailing to be approved by Aarchitect and/or Owner.

Division 7 (continued) Thermal & Moisture Protection

Exterior Decks: I. <u>Decks, balconies, landings, exterior stairways</u> and similar

- surfaces exposed to the weather and sealed underneath shall be waterproofed. All exterior decks and balconies exposed to weather shall be
- constructed with sufficient slope (minimum 1/4 inch per foot) to ensure adequate drainage 3. <u>Unless designed to drain</u> over deck edges, drains and overflows of
- adequate size shall be installed at the low points of the deck. Provide minimum 2 inch drop from finished interior floor to the

JOINT SEALERS <u>General:</u>

- I. <u>Compatibility</u>: Provide materials selected for compatibility with each other and with substrates in each joint system; confirm with manufacturer. 2. <u>General characteristics:</u> Provide type, grade, class, hardness and similar characteristics or material to comply with
- manufacturer's recommendations relative to exposures, traffic, weather conditions and other factors of the joint system for best possible overall performance. Joint sealers are required to permanently maintain airtight and waterproof seals, without failures in joint movement accommodation, cohesion, adhesion (where applicable), migrations, staining and other performances as specified.

Execution: Weather conditions: Install exterior elastomeric sealants when temperature is in lower third of temperature range

- recommended by manufacturer for installation. <u>Clean joint surfaces</u> and prime or seal as recommended by sealant manufacturer.
- <u>Support sealants</u> from back with construction as shown or with ioint filler or back rod.
- Install liquid sealants by proven methods which will ensure "wetting" of joint bond surfaces, without gaps or air pockets in beads, slightly concave on surface and slightly below adjoining surfaces, except form slight cove with sealant at inverted corner joints.

FLASHING AND SHEET METAL General:

- General reference specifications: A. Comply with "Architectural Sheet Metal Manual" by SMACNA for each general category for work required.
- NRCA" "Roofing and Waterproofing Manual". CBC Chapter 15
- D. Published installation instructions by manufacturer of roofing material used.
- 2. <u>Coordinate</u> with other trades to ensure proper sequencing of each installation.
- Zinc-coated steel: commercial quality, .20% copper, ASTM
- A-653, G 90 hot-dip galvanized, min. 26 gage. Aluminum: ASTM B-209, Alloy 3003, temper H 14, anodized or
- Solder: for steel 50, 50 tin/lead solder (ASTM B 32), with rosin flux. 4. <u>Epoxy seam sealer:</u> 2-part non-corrosive metal seam
- cementing compound for non-moving joints. Fasteners: compatible with metals being fastened.
- Bituminous coatings: (for use as a dielectric separation): FS TF0494 or SSPC-paint 12, solvent type. Nominally free of sulfur, compound for 15 mil dry thickness per coat. 7. <u>Roofing cement:</u> ASTM D-2822 asphalt.
- Execution: Seams: Fabricate sheet metal with flat-lock seams: solder with type solder and flux recommended by manufacturer, except
- seal aluminum seams with epoxy metal seam cement and where required for strength rivet seams and joints. 2. Shop fabricate to greatest extent possible in accordance with applicable reference standards to provide a permanently
- naterproof neather resistant installation provide for separation of non-compatible materials hem all exposed edges. Anchor units securely in place using concealed fasteners where possible in a manner that will be true to line plumb and level
- where indicated with a minimum of joints. Seal Laps: Set flanges in full bed of roofing cement. Expansion: Provide for thermal expansion of running sheet
- metal work 6. <u>Roof/Wall:</u> Flash and counter flass at all roof to wall conditions. G.I. flash and caulk wood beams and outlookers projecting through exterior walls or roof surfaces.
- Roof valley flashing shall be provided of not less than No. 26 galvanized sheet gauge corrosion-resistant metal and shall extend at least II" from the center line each way and shall have a splash diverter rib not less than I" high at the flow line formed as part of the flashing. Sections of flashing shall have an end lap of not less than 4" set in a bed of continuous roofing mastic. Seal moving joints in metal work with elastomeric sealants.
- Exterior openings exposed to the weather shall be flashed in such a manner as to make them waterproof. Flashing and counterflashing shall be provided at the junction of roof and vertical surfaces (walls, etc.) 10. <u>Mood beams and Outlookers</u> projecting through exterior walls
- and roof surfaces shall be flashed with galvanized iron flashing and caulked <u>Mood Trim Exposed to Meather</u> shall be flashed where butting to exterior finish.

Workmanship I. <u>Work shall be accurately fabricated</u> to match detail and fitted

to job conditions. 2. Molded and brake-formed members shall be finished true and straight with sharp lines and angles.

weather tight and waterproof connections.

connections.

by metal specialist.

Doors and Windows

and SMA 2005 apply to work.

type SGD-BL (residential).

only on each sliding panel.

infiltration.

<u>OVERHEAD DOOR SPRINGS</u>

meet performance requirements.

Housing and Community Development.

such materials.

<u>SKYLIGHTS</u>

<u>DOORS</u>

<u>General:</u>

Execution:

Standards".

apply to the work.

- highest floor level on any adjoining deck or balcony.

bakes enameled to match adjacent aluminum products min. 0.032" thick.

3. Lock seams flat and true to line, 1/2 inch wide, sweated full with solder where overlapping does not provide water tight

4. <u>Sheet metal work</u> shall be designed to provide complete 5. <u>All galvanized metal</u> shall be shop primed with one coat of zinc dust-zinc oxide primer over all surfaces and as recommended

Sheet metal used as flashing adjacent to wood surfaces shall be set in high quality sealant to ensure waterproofing between

Skylights are to be constructed and installed as per manufacturer's specifications and Section 2610 of CBC

I. <u>Standards</u>: Comply with requirements of ANSI/NWMA I.S. I and Section 1300 of AWI "Architectural Woodwork Quality 2. <u>Mood door standards:</u> the requirements of NMMA 1.5. 3-70

<u>Aluminum door standards:</u> requirements of ANSI/AAMA 402.9

I. Fire-rated doors to be labeled and listed with rating required by a testing inspection agency acceptable to authority. Door classification: provide aluminum sliding glass doors of

Install doors to comply with manufacturer's instructions. Maintain design concept as indicated (door sizes, member sizes,

basic profiles, and operating units), modify only as necessary to Install units with accurately aligned and tight joints manufacturer instructions. Apply hardware and adjust weather tight closure. Set sill members in a full bed of sealants and fillers. Provide pulls and keyless locking device, lockable from inside

Provide deadbolt and latchset at all exterior swinging doors, including house to garage doors, or as required by local codes. 6. <u>Viewer:</u> All main, or front entry doors shall be equipped with a wide angle viewer (180 degree) except where the occupant has

a clear vision of the area outside the door without opening the <u>Meather</u> stripping: All sliding, swinging doors and windows opening to the exterior or to unconditioned areas shall be fully weather stripped, gasketed or otherwise treated to limit air

Spring must be contained with a restraint device to anchor the spring or any part thereof in the event it fractures. Both the spring and the restraint devices must be identified as conforming to the requirements of the California Department of

Division 9 <u>Finishes</u>

GYPSUM DRYWALL

- General: <u>Gypsum board standard:</u> ASTM C-840.
- <u>Comply with the following:</u> A. CBC, Chapter 25.
- B. Fire resistant design manual, eleventh edition, gypsum association. All gypsum wallboard at tubs to be installed in such a manner that there are not surfaces out of alignment with adjacent surfaces and the true plane of the wall is maintained.

Exposed gypsum board: ASTM C-36. <u>Mater-resistant gypsum backing board:</u> ASTM C-630.

- Rounded Corner Bread: Provide rounded corner bread except at windows and wardrobes. <u>Sound</u> <u>reduction:</u> Where shown as "resilient", provide manufacturer's special type designed to reduce sound
- transmission type RC-1. Acoustical sealant: non-drying, non-hardening, non-staining, non-bleeding, gumable sealant for concealed sealant for exposed applications
- 6. <u>Sound attention blankets:</u> semi-qrid mineral fiber without membrane. Joint tape & compound: CBC standard 47-6.
- Fasteners: 5d cooler nails, except 6d cooler nails where necessary for structural or fire-restrictive requirements. Other fasteners with ICC-ES approvals may be used.
- Execution Taping: except as otherwise indicated, apply joint tape and joint compound at joints (both directions) between gypsum boards. Apply compound at accessory flanges, penetrations, fasteners heads and surface defects. 2. <u>Joints:</u> Treated joints, fastener heads, cut edges and
- penetrations in water-resistant backing board to comply with board manufacturer's directions. Protection: Gypsum wallboard shall not be installed until weather З. protection for the installation is provided.
- Edge Bearing: All edges and ends of aupsum wallboard shall occur on the framing members, except those edges and ends which are perpendicular to the framing members. Gypsum board nailing shall be as follows: (Unless otherwise noted
- on plans) Fasteners shall be spaced not less than 3/8 inch from edges and ends of gypsum wall board. Apply fasteners in a manner that does not fracture paper face. The size and spacing of fasteners shall comply with UBC application edition, state and local codes A. I/2" and 5/8" type "X" gypsum board to receive 6d cooler
- nails at 7" O.C. to all studs, plates and blocking. B. Gypsum board attached to trusses at 24" O.C. shall have long dimension perpendicular to framing members. Installation: Install board continuous behind tubs, showers, and under stairs, at all party, sound, and fire walls.
- Fire <u>Resistance:</u> Provide type "X" where indicated and where required in fire-resistance rated assemblies. TILEWORK

<u>Furnish</u> and install tile, grout, mastic, mortar, sealer, etc., complete. Work shall be clean, plumb, level, except at areas intended to drain, true to line with consistent joints.

- General Standards: apply to the work except as otherwise indicated. A. American National Standards Institute (ANSI), mortar and grout materials and installation standards. Standard specification for ceramic tile ANSI A137.1
- Single-component sealants: ASTM C-920, Type S, Grade NS, use NT for use in joints in non-traffic areas.
- <u>Tile on floor, slab or wood framed</u> shall be installed per the Ceramic Tile Institute standards and the Tile Council of America. Install mud set tile at counters, tubs and showers per the Ceramic
- Tile Institute and Tile Council of America Standards. 3. <u>Provide waterproof membrane</u> beneath tile over water resistant backing board as recommended by manufacturer and Ceramic Tile Institute and the Tile Council of America Standards at all areas subject to moisture and water (i.e., tubs and showers).

Materials Tile and grout as selected by Owner. Installation of grouted tile flooring is not recommended over

wood framed floor systems.

PAINTING:

5cope:

- Scope: Provide painting work as indicated and specified, complete including preparation of surfaces other than those that are factory primed.
- <u>Color Selection:</u> Seven (7) days prior to beginning work, furnish Architect with color ships for surfaces other than those that are factory primed. Submit samples for Architect's review of color and texture only.
- <u>Morkmanship:</u> Each coat shall be uniformly applied, well brushed out and free of brush marks, runs, sags, or skips. Paint finishes shall be cut sharply to line. Protect adjacent
- surfaces. Mix and apply paint and stains in accordance with the manufacturer's instructions.
- Hardware shall be masked or removed prior to painting or 4
- Subcontractor will be responsible for any damage resulting from overspray, and all necessary clean-up.
- <u>Semi-gloss paint</u> to be roller or brush applied. Preparation of Surfaces:
- <u>Surfaces</u> shall be clean and dry, and in suitable condition for finish specified. Remove all oil, grease, bond breaking agents, dust, mill scale and efflorescence. 2. <u>Cracks, holes, and knots</u> shall be filled, sanded smooth, and
- sealed. Wood surfaces, except resawn wood, shall be sanded perfectly smooth. Sanding dust shall be completely removed. Trim and other finish work shall be back-painted prior to installation, to minimize inconsistent shrinkage

Materials

- Mix, prepare, and store painting and finishing materials in accordance with manufacturer's directions. Submit list of materials and manufacturers for Owner's and Architect's approval. All materials shall be delivered to the site in sealed original З.
- manufacturer's containers. Execution:
- Preparation: Prepare cementitious surfaces of concrete, concrete block and similar materials to be painted by removing efflorescence, chalk, dust, dirt, grease and oils, and by roughing to remove glaze. Do not paint over surfaces where alkalinity or moisture content exceeds manufacturer's recommendations. Seal wood required to be job-painted, prime edges, ends, face,
- undersides and backsides of counters, cases, cabinets, etc., use spare varnish for back priming where transparent finish is required. 3. <u>Panelina:</u> Back prime interior paneling only where masonry, plaster
- or other wet wall construction occurs on backside. <u>Ferrous metal:</u> Clean ferrous surfaces which are not galvanized or shop-coated; remove oil, arease, loose dirt, mill scale and other foreign substances by solvent or mechanical cleaning. Touch-up shop-applied prime coats wherever damaged.
- Non-ferrous metal: Clean galvanized surfaces free of oil and surface contaminants with non-petroleum based solvent. Rough sawn and resawn surfaces to receive stain. DO NOT prime unless otherwise noted on plans.
- Roof Flashings: Painting Sub-Contractor shall provide paint to match roofing color for painting roof flashings and vents. Painting of such flashings and vents shall be by Roofing Sub-Contractor.

EXTERIOR PLASTER <u>General:</u>

- Comply with the following: "Plaster/Metal Framing Systems/Lath Manual."
- 3. California Lathing and Plastering Contractors Association recommendations.
- Plaster: Portland Cement Plaster, ASTM C150, Type 1, 11, 111. Lime: ASTM C-206.
- Aggregates: Clean and graded from coarse to fine, ASTM Cl44-
- <u>Mater:</u> Potable. Lath: Wire fabric over 15 lbs. paper or paper backed woven wire

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Ren. 12-31 General Notes

Division 9 (continued Finishes

- Execution: 1. <u>Meather:</u> Do not apply plaster when temperature is below 40 dearees F
- 2. Expansion Joints: Use metal expansion joints as required to control cracking 3. Corners: Use corner reinforcing at all corners, verify type
- with Architect 4. Scratch Coat: Apply scratch coat with sufficient material
- and pressure to form good keys on lath. Allow the scratch coat to cure for 48 hours before applying brown
- 5. Brown Coat: Apply brown coat to scratch coat, bring out grounds, straighten to a true surface, and leave tough to assure adequate bond for finish. Allow finish 48 hours for curina prior to finish
- 6. <u>Variation</u>: Brown coat to have no greater variation than 1/2" in
- Finish Coat: Apply finish coat of 1/8" minimum thickness. Soffits. Use only expanded metal or ribbed metal lath at horizontal surfaced such as bottom of soffits, etc. 9. <u>Coats:</u> Use not less than three (3) coats when applied over metal lath and not less than 2 coats when applied over
- masonru 10. <u>Apply</u> <u>building</u> <u>paper</u> <u>and</u> <u>lath</u> per manufacturer's
- recommendations, use 2 layers of Grade D paper minimum over wood based sheathing. II. <u>Weep Screed:</u> Provide continuous galvanized stucco based
- screed per Section 2512.1.2 of the CBC by Plaster Sub-Contractor 12. Finish: Exterior stucco to have a smooth float finish and shall be color-coated.

FLOORING Resilient Flooring:

- <u>Scope:</u> A. <u>Furnish and install</u> all resilient flooring material complete as scheduled B. <u>General Contractor</u> shall coordinate Flooring Sub-Contractor with Framing and Concrete Contractors to ensure
- compatibility of adhesives and subfloor surface texture, materials, and preparation. 2. Installation: Install all work in strict accordance with manufacturer's written instructions and only by contractors approved by the manufacturer. A. Subfloors shall be clean, free of dust and perfectly dry,
- level, and smooth. B. Surfaces shall be primed as recommended by the manufacturer.
- C. Materials shall be applied in accordance with the manufacturer's instructions.
- 3. <u>Materials:</u> Vinyl sheeting, as selected by owner. B. <u>Adhesives</u>: As recommended by the manufacturer of the floor coverina.
- Provide positive slope at tile sheets within showers and at floor towards floor drain.
- LAMINATE PLASTIC FINISHES Laminate plastic: Formica, Wilson art or Nevamar. 1/16th inch
- general purpose grade 10. <u>Application</u>: Laminate plastic shall be installed in strict accordance with the manufacturer's instructions. Splashes shall be fully formed (U.N.O.) range cuts and counters shall be self-edged
- SYNTHETIC COUNTER TOPS Where indicated on interior elevations, shall be cultured marble or Corian with splash. Colors shall be selected by owner. All Pullman tops shall be installed per manufacturer's recommendations.

Division 10 Specialties

installation procedures.

LOUVERS & VENTS <u>General:</u>

Performance standard: For performance-rated louvers, provide units whose ratings have been determined in compliance with AMCA Standard 500 2. <u>SMACNA</u> <u>Standard</u>: Comply with "Architectural Sheet Metal Manual" recommendations for fabrication, construction, and

Materials

- <u>Galvanized sheet steel:</u> ASTM A-653/A-653M-00, G90, Mill phosphatized not less than 16 gauge Cold-rolled sheet steel: ASTM A-1008, Class I, matte finish. Louver screens: on inside face of exterior louvers, provide 1/4"
- square mesh galvanized steel wire mesh.
- Execution Field measurements: verify size, location, and placement of louver units prior to fabrication, where possible. Preassemble units in shop to greatest extent possible.
- <u>Metal finish:</u> comply with NÁAMM "Metal Finished Manual" to provide uniformly finished products 4. Installation: Locate and place louver units plumb, level in proper
- alignment with adjoining work and in accordance with manufacturer's instructions 5. <u>Fastening</u>: Use non-ferrous metal or galvanized anchors and
- inserts for exterior installation and elsewhere where required for corrosion resistance 6. <u>Meather Protection</u>: Provide concealed gasket, flashing and joint
- fillers as indicated and as required to make installation water Attic ventilation: Enclosed attic spaces and enclosed roof rafters shall have cross ventilation for each separate space by ventilating openings protected against the entrance of rain. The net free ventilating area shall be not less than 1/150 of the area of the space ventilated, except that the area may be 1/300 provided at least 50 percent of the required ventilated area is provided by ventilators located in the upper portion of the space to be ventilated at least 3 feet above eave or cornice vents with the balance of the required ventilation provided by eave or
- cornice vents. Ventilation: Provide all concealed under floor spaces with ventilation which provides not less than I square foot of vent area for each 150 square feet under floor area. Such openings shall be approximately equally distributed along the length of at least two opposite sides.

Attachment: Mirrors shall be set in "J" metal at top of splash with a minimum of two clips at top.

Divisions II, 12, 13, 14 Not Applicable to this Project

Mechanical and Plumbing

HEATING

Supply all labor, transportation, materials, etc. for installation of a complete heating and air conditioning system to operate according to the best practices of the trade including, but not limited to: mechanical units, ducts, registers, catwalks, grilles boots, vent pipes, dampers, combustion air, fans, ventilators, refrigerant lines, refrigerant, etc. All materials, work, etc. to comply with all requirements of all legally constituted public authorities having jurisdiction including all County and State ordinances. Furnish and install all equipment complete and operable. Verify all material and installation requirements and limitations at fire and sound assemblies.

<u>Installation:</u> 1. <u>No alterations</u> to the structural frame, diaphragms, connections or

- shear panels shall be made which would compromise the designed structural integrity of such elements without prior written approval from the Structural Engineer. 2. Fuel burning equipment located in garages and subject to
- mechanical damage from the normal vehicular path shall be protected as indicated in drawings and as required by C.M.C.
- 3. <u>Provide high and low</u> combustion air in accordance with manufacturer's requirements. 4. Ducts piercing wall between house living area and garage shall
- be 26 GA G.I. material in the garage sealed at the edges with no opening into the garage. 2022 C.M.C
- 5. <u>Appliances</u> shall be accessible for inspection, service, repair and replacement without removing permanent construction. 6. Equipment regulated by the C.M.C. shall have an electrical disconnect within line of sight and a 120-volt receptacle located within 25-feet for service and maintenance purpose.
- Ducts: Constructed, installed and insulated per C.M.C. Dampers: Provide approved automatic fire dampers of minimum 26 gauge corrosion resistant metal material with sealed edges at all ductwork penetrating fire rated walls, floors or ceilings as required and allowed by the C.M.C. All fan systems exhausting air from the building envelope to the outside shall be provided with
- the backdraft dampers. Calculations and Drawings:
- 1. <u>Contractor to supply and submit</u> to the building department, calculations and drawings for approval. Submit one (1) set to the Architect for review for conformance with the visual design concept prior to commencing work. Equipment shall comply with State energy requirements for efficiency. Duct work "R" value shall also comply with State energy requirements.

<u>PLUMBING</u> <u>Scope:</u>

Supply all labor, transportation, materials, etc. for installation of complete plumbing system to operate according to the best practices of the trade and including, but not limited to: fixtures, hot and cold water piping, exhaust fuels, combustion air, gas piping, log lighters, drains, soil and vent piping, hot water heaters, pipe insulation, meters, valves, vaults, etc. All materials, work, etc., to comply with all requirements of all legally constituted public authorities having jurisdiction, including all County and State ordinances. Furnish and install plumbing work complete and operable, including trenching and backfilling. Verify all material and installation requirements and limitations at fire and sound assemblies.

Codes: Comply with the followina: 2022 California Plumbina Code.

2022 California Mechanical Code. 2022 California Electrical Code. 2022 Title 24 Local codes and ordinances.

Installation

- I. Roughing-in shall be completed, tested and inspected as required by code before closing-in with other work. 2. <u>Openings in pipes, drains, and fittings</u> shall be kept covered
- during construction Provide solid backing for securing fixtures. All fixtures to be set level Provide cleanouts at ends of all lines and where required by codes.
- Copper tubing shall be fully sweated to fittings. All copper pipe connections to ferrous piping shall be made with dielectric coupling or isolation flanges
- 6. <u>Black iron and galvanized steel pipe joints</u> shall be made with approved pipe thread compound.
- Provide shut-off valves at each fixture. Provide condensate line at each F.A.U. location. Provide primary and secondary condensate line to an approved drainage receptacle at attic F.A.U. locations.
- 9. Provide cold water line with shut off value to refrigerator space in recessed box or in cabinet immediately adjacent to refrigerator space. 10. <u>All vents</u> to lead outside air. Where practical locate all roof
- vents to rear side of ridges. Provide water heater seismic restraints as required by local code. 12. <u>Shower stalls</u> must conform to requirements of C.P.C. 417 (1024 sq. in.)

<u>Materials</u> I. <u>Water piping:</u>

- Copper tube for water piping shall have a weight of not less than copper water tube Type L. Exception: Type M copper tubing may be used for water piping when piping is above around, and the normal maximum pressure does not exceed 100 pounds, and the working temperature does not exceed 210 degrees F.
- Water heater: with non-rigid water connections shall be strapped for lateral support. 2. <u>Gas Piping:</u>
- A. All pipe used for the installation of any gas piping shall be standard weight wrought iron or steel (black), yellow brass (containing not more than seventy-five (75) percent copper), or internally timed or equivalently treated copper or iron pipe size.
- В. All fittings used in connection with the above piping shall be of malleable iron or yellow brass (containing not more than seventy-five (75) percent copper), or internally timed or equivalently treated copper or iron pipe size. 3. <u>Waste Piping:</u> All waste piping which penetrates walls with I hour fire
- resistive materials applied shall be cast iron. Oatey waste and overflow fittings shall be used in lieu of access panel as per IAPMO file No. 1646. 4. <u>Corrosive properties of soil</u>: Follow all recommendations in the
- final soils report for all materials placed within or in proximity of soil as necessary. 5. <u>Mater heaters</u> over 4 feet high with non-rigid water connections shall be secured to resist earthquakes, per C.M.C. requirements.
- 6. No gas piping shall be installed in or on the ground, under any building or structure. All exposed gas piping shall be kept at least 6 inches above grade or structure. The term "building or structure" shall include structures such as porches and steps
- whether covered or uncovered, breezeways, roo porte-cocheres, roofed patios, carports, covered walks, covered driveways, and similar structures or appurtenances. <u>All hose bibs</u> to have non-removable anti-siphon device.
- 8. Calculations and drawings: Contractor to supply and submit to the building department load calculations and drawings for approval prior to commencing work. Submit one (1) set to the Architect for review for conformance with the visual design concept prior to commencing work.

1. <u>Testing</u>: Perform hydrostatic testing of completed conduit lines in

- accordance with local authorities having jurisdiction. 2. Valves: Perform operational testing of valves by opening and closing under water pressure to ensure proper operation. 3. Backfilling: Conduct backfilling operations of open-cut trenches closely following laying, jointing and bedding of pipe, and after
- initial inspection and testing are completed. 4. <u>Combustion Air Vents:</u> Combustion air vents and ducts shall be provided with minimum unobstructed combustion air openings equal
- to that set forth in Chapter 7 of C.M.C. 5. Fan or other exhaust systems exhausting air from the building to the outside shall be provided with backdraft dampers or automatic dampers to prevent air leakage.
- 6. <u>Ducts</u> shall be constructed, installed and insulated according to Chapter 6 of C.M.C. (Title 24, Part 4). 7. <u>Setback</u> Thermostat: Thermostatically controlled heating or
- cooling systems, except electric heat pumps, shall have an automatic thermostat with a clock mechanism which the building occupant can manually program to automatically set back the thermostat set point for at least 2 periods within 24 hours. 8. <u>Mater Heating System Insulation:</u>
- A. Tank Wrapping: Storage type water heaters and storage and backup tanks for solar water heating systems shall be externally wrapped with insulation having an installed thermal resistance of R-12 or greater. Piping in unconditioned space leading to and from water heaters shall be insulated with an installed thermal resistance of R-4 or greater for the five feet of pipe closest to the water heater, or whatever shorter length is the unconditioned space.

Division 15 (continued) Mechanical and Plumbing

9. <u>Icemaker:</u> Provide recessed plastic box in wall for water stub-out at refrigerator space for icemaker. Locate 6" above floor line

- 10. Access Panel: Provide direct plumbing connection at tub/shower drain so that no access panel is required. II. Equipment Locations: No mechanical equipment shall be installed on roofs or within side yards less than 7'-O" wide.
- 12. <u>Clearances:</u> Range hood, vent exhaust ducts and cabinet clearances shall be as per Ch. 8 of the CMC. 13. The sound levels of kitchen exhaust range hood fans shall not
- exceed 8.0 sones. Bathroom exhaust shall not exceed 6.5 sones. 14. <u>Cleanouts:</u> An approved, two-way cast iron cleanout, shall be provided at the front of each new single family residence prior to final inspection. Do not locate soil line cleanout or condensate lines within front porch or entry walk. Locate in an inconspicuous location.
- 15. <u>All water heaters</u> shall be vented for combustion air and shall be equipped with a pressure and temperature relief value piped to within 6" of grade outside and shall be anchored or strapped to resist horizontal displacement due to earthquake motion. Strapping shall be at points within the upper one-third (1/3) and lower one-third (1/3) of its vertical dimensions. At the lower point, a minimum distance of four (4) inches above the controls with the strapping. Per California Plumbing Code, Section 510.5. 16. <u>HVAC System:</u> Sun-Contractor to follow plans for size and
- location of ducts, registers, and return air grilles. F.A.U. system shall be thermostatically controlled and properly sized with regards to the State Energy Ordinance Standards. Mechanical Contractor is responsible for all air balance adjusting of installed 17. Irrigation Pipe: Plumbing Sub-Contractor shall provide one 3/4
- inch schedule 40 PVC pipe for future sprinkler system under driveway (Verify with Landscape Contractor). Pipe shall be installed by Concrete Sub-Contractor 18. <u>Roof Vents</u>: Wherever possible, roof vents shall be ganged and carried to the back of the structure. 19. Maximum flow for shower heads is 1.8 qpm. For lavatory and sink
- faucets the maximum flow is 1.2 apm at 60 psi. Maximum flush volume for water closets is 1.28 gpf. The flow rate must be marked on the valves. 20. <u>"As-Builts":</u> Plumbing Sub-Contractor to provide an "As-Built" drawing of the sewer line and cleanout locations for approval by the Building Inspector at the time of inspection (before covering)
- of the underground plumbing. The "As-Built" drawing must show the building footprint and the location of the line and the cleanouts must be fully dimensioned. 21. Showerheads must be certified by California Energy Commission
- and be marked with a flow rate of 1.8 apm max. 22. Lavatory # Sink Faucets and tub spout diverters must be certified by California Energy Commission and be marked with a flow rate of 1.2 gpm at 60 psi.

Division 16 Electrical

- ELECTRICAL <u>Electrical System Layouts</u> are generally diagrammatic, location of outlets and equipment is approximate. Exact routing of wiring, locations of outlets to be governed by structural conditions and constructions. Wiring for equipment requiring maintenance and inspection to be readily accessible. 8. <u>Scope</u>: Supply all labor, transportation, materials, etc., for installation of complete electrical system to operate according to the best practices of the trade and including, but not limited
- to: fixtures, appliances, wiring, switches, outlets, television jacks, services, ground, temporary power, junction boxes, conduit, subpanels, etc. All work materials, etc. to comply with all requirements of all legally constituted authorities having jurisdiction, including all County and State ordinances. Furnish and install electrical work complete and operable. Verify all material and installation requirements and limitations at fire and sound assemblies.
- I. All work shall be in full accordance with all codes, rules and regulations of Governing Agencies and shall comply with all requirements of the serving power and telephone companies.
- <u>Standards:</u> I. <u>Electrical services:</u> Underground the serving utility will provide and install all primary and secondary service raceways and conductrs including transformer pads and connections to the line side of all building main disconnects. Raceways, sized as designated by the service utility, shall be provided by the electrical contractor from each building main disconnect to the exterior building line for continuation by the servicing utility. <u>Work and equipment</u> shall be in accordance with the best practices of the trade and conform to all local governing
- aaencies <u>Materials and equipment</u> shall be U.L. approved. Corrosive properties of soil: Follow all recommendations in the final soils report for all materials within or in proximity of soil as
- 5. <u>Should a conflict arise</u> between this specification, the drawings or another electrical specification issued as a part of these documents, the more stringent shall prevail.
- Installation: Provide separate circuits each for dishwasher, garbage disposal, refrigerator, washer, dryer, F.A.U. and microwave oven. Switched outlets shall be 1/2 hot.
- <u>All equipment installed outdoors</u> and exposed to weather shall be weatherproof
- 4. Provide ground fault circuit interrupters, G.F.I., at all baths, garages, outdoor and wet area outlets. 5. <u>Provide low voltage stub out</u> for house numbers if local code
- requires illumination 6. <u>Kitchen and bathroom lighting</u> shall be in accordance with State
- energy mandatory requirements. Each conductor of every system shall be permanently tagged in
- compliance with O.S.H.A 8. <u>All conduit</u> shall be installed concealed where physically possible. All exposed conduit shall be intermediate metal conduit or E.M.T. and installed parallel to or at right angles with the building walls. If viewed by the public, paint to match surface to which it is
- attached 9. <u>The complete electrical system</u> shall be grounded in accordance with the presently adopted edition of the C.E.C., Art. #250. 10. <u>Penetrations to fire-rated materials</u> shall be restored to equal rating as required by local enforcing agency. Flame seal as manufactured by Nelson Electric or approved equal. All electrical system conductors shall be installed in approved raceways. Non-metallic, sheathed cable "Romex" is not approved for
- penetrations of fire-rated assemblies. Use only competent and skilled personnel and perform all work, including aesthetic as well as electrical and mechanical aspects to standards consistent with the best practices of the trade. 2. <u>All conduit</u> only installations shall have a pull wire or rope.
- 13. No alterations to the structural frame, diaphragms, connections or shear panels shall be made which would compromise the designed structural integrity of such elements without prior written approval from the structural engineer. 14. <u>Electrical panels</u>, including mechanical equipment disconnects,
- require 30" wide, 36" deep and 75" high clear working space in front. Air conditioning equipment shall not be located in required path of bedroom egress. CEC Section 110-26: CBC 1026. 15. Exterior receptacles cannot be connected to a kitchen counter
- top GFCI protected receptacle. CEC Section 210-52(B)(2). 16. Bathroom receptacles must be connected to a 20 ampere branch circuit interrupters (GFCI). CEC Section 210-52(D) 17. <u>All kitchen counter receptacles</u> must be protected by ground
- fault circuit interrupters (GFCI). CEC Section 210.8(A)(6). 18. <u>Verify and locate</u> all outlets prior to installation of aupsum wallboard. Locate all switches and fixtures from finished floor per electrical plans and notes.

<u>Materials:</u> Aluminum wire No. 6 AWG and smaller shall not be used in electrical wiring. <u>Switches:</u> Silent type.

- Interior outlets: Duplex type, ISA, I25 volt. Exterior outlets: Single weatherproof tupe, G.F.I.
- Outlets and pullboxes: Galvanized or shearardized. Panel boxes: Circuit breaker type, recessed flush mounted, galvanized and prime coated with latch. Provide typewritten card
- identifying circuits. Conduit, cable, wire: Per presently adopted edition of the C.E.C. Fluorescent tubes and bulbs: Fill spectrum 3500K.
- Recessed incandescent light fixtures: In the proximity of attic, ceiling or floor insulation shall be I.C. type.

Division 16 (continued) Electrica

- 10. <u>All materials</u> shall be new and of the same manufacturer for each glass or group of equipment. Materials shall be listed and approved by Underwriter's Laboratories and shall bear the inspection label where subject to such approval. Materials shall meet with the approval of the Division of Industrial Safety and all governing bodies having jurisdiction. Materials shall be manufactured in accordance with applicable standards established by A.N.S.I., U.L., N.E.M.A., N.B.F.U. Install per manufacturer's recommendations.
- II. Conductors shall be code grade, 600 volt class, copper, marked 24 inch along its length showing manufacturer's name, maximum allowage voltage and size. Conductors shall be type "THWN"- wet. Deliver the wire to the site in unbroken packages. 12. If aluminum feeder conductors are approved for substitution, copper only within units, and installed, final connections to vibrating equipment shall be copper only and all aluminum terminations shall be made using a "Hypress" tool or other
- all aluminum terminations. No aluminum conductor smaller than #4 13. House service: Size per requirements, minimum 60A, 1 inch diameter, 3 W service.
- Execution: Outdoor Protection: All equipment installed outdoors and
- exposed to weather shall be weather-proof 2. Countertops: Receptacles in kitchen and bathrooms shall be installed above work top unless otherwise noted on plans. 3. <u>Receptacles</u> shall be installed vertically at 12"+ above floor.
- Electrical switches and boxes shall be plastic as per National Electric Code. 4. <u>Wall switches</u> to be 36" above floor to switch centerline. 5. <u>Fans & Suspended Fixtures:</u> Provide metal junction boxes with solid 2x backing where hanging fixtures and fans occur. Lighting
- fixture supplier to supply two (2) additional feet of chain and wiring at dining fixture and all other suspended fixtures. 6. <u>GFCI</u>: All receptacles in kitchen, bathrooms, garage, and at exterior shall be equipped with around fault circuit interrupter. GFCI test button shall be located in Master Bathroom electrical
- 7. <u>Grounding:</u> Provide two (2) spaces of electrical grounding: A. Clamp at hose bib. B. One additional #4 bar 20'-0" long in footing at electric meter location for "UFER Ground". 8. Provide exhaust fans at al baths and laundry areas which are
- not capable of being exhausted by natural means. Fans shall be capable of producing one complete air change every twelve (12) minutes. Fans shall be switched separately from lights. 9. Fluorescent fixtures: Provide direct connections to all luorescent fixtures. 10. Provide chimes in a central location or as indicated on the
- plans. Provide push button located at the front door. Street Numbers: Install low voltage illuminated street numbers easily visible from the street ($\overline{4}$ inches high). Verify exact location with Project Superintendent.
- 12. PVC Conduit in Footings: Electrical Sub-Contractor shall supply a separate I" diameter capped PVC conduit for irrigation controller, CATV, and telephone underground feed. Conduit shall be installed by Concrete Sub-Contractor.
- 13. <u>Required smoke detectors</u> shall receive their primary power from the building wiring. Such wiring shall be permanent and without a disconnecting switch other than those required for overcurrent protection. Smoke detectors shall be equipped with a battery backup power source and shall be wired so that when one is activated, all are activated.

Colors and Design Switch plates, covers, etc .: As selected by Owner.

2. <u>Fixtures</u>: As selected by Owner. <u>Fire warning system:</u> Smoke detectors and alarm system shall be hard-wired with battery back-up power and low battery signal and installed as required. Detectors shall be placed in corridors, adjacent rooms and sleeping rooms - per manufacturer's recommendations. Detectors shall be placed in close proximity to stairway when bedrooms are located on upper floor. All detectors shall be interconnected to sound a simultaneous alarm audible in all sleeping areas of the dwelling unit.

- I. Verify all requirements with governing utility company. Electrical plans and calculations: I. Shall be drawn and submitted by the Electrical Sub-Contractor
- to the building department for approval. Submit one (1) set to the Architect for review for conformance with the visual design concept. Electrical Sub-Contractor shall coordinate his drawings with the Architect's.

Equipment Requirements Mandatory requirements for the manufacture, construction, and

- installation of systems, equipment, and building components State of California. Any appliance for which there is a California standard
- established in the appliance efficiency regulations may be installed only if the Manufacturer has certified to the Commission that the appliance complies with the applicable standard for that appliance.
- 2. <u>Controls for heat pumps</u> with supplementary electric resistance heaters shall comply with the requirements of Section 112(b). 3. Any service water heating system or equipment may be installed
- only if the Manufacturer has certified that the system or equipment complies with the requirements of Section 113. 4. Any pool or spa heating system or equipment may be installed
- only if the Manufacturer has certified that the system or equipment complies with Section 114. 5. <u>Any natural gas system</u> or equipment listed below may be
- installed only if it does not have any continuously burning pilot (a) Fan type central furnaces. (b) Household cooking appliances.
- Exception: Household cooking appliances without an electrical supply voltage connection and in which each pilot consumes less than 150 btu/hr. (c) Pool heaters. (d) Spa heaters.
- 6. <u>Any manufactured doors</u> or <u>windows</u> or manufactured fenestration product may be installed only if the Manufacturer has certified to the Commission, or if an independent certifying organization approved by the Commission has certified, that the
- product complies with all applicable requirements of Section II6. 7. Joints and other openings in the building envelope that are potential sources of air leakage shall be caulked, gasketed, weather-stripped, or otherwise sealed to limit infiltration and exfiltration. Drop ceilings that are a component of the building envelope, including but not limited to those between conditioned
- and unconditioned spaces that create a vented attic space above, shall be caulked, gasketed, or otherwise sealed to limit infiltration and exfiltration 8. Any insulation of the type and form listed in Section 118 may be installed only if the Manufacturer has certified that the insulation
- complies with the California quality standards for insulating material. 9. Any automatic time switch control device, occupant-sensing device, automatic daylighting control device, lumen maintenance control device, or interior photocell sensor device may be
- installed only if the Manufacturer has certified to the Commission that the device complies with all applicable requirements of Section 119, and if the device is installed in compliance with Subsection 119(h).

manufacturer's recommendations. Provide anti-oxide compound on

Lowrise residential buildings subject to the standards must contain these measures regardless of the compliance approach used. Items marked with an asterisk (*) may be superseded by more stringent compliance requirements listed on the Certificate of Compliance. When this checklist is incorporated into the permit documents, the features noted shall be considered by all parties as binding minimum component performance specifications for the mandatory measures whether they are shown elsewhere in the documents or on this checklist only.

Building Envelope Measures:

Division 18

118:

116-17:

150(e):

150(m):

114:

115:

- *150(a): Minimum R-19 ceiling insulation Loose fill insulation manufacturers labeled R-value. 150(b): *150(c): Minimum R-13 wall insulation in framed walls (does not
- apply to exterior mass walls). Minimum R-13 raised floor insulation in framed floors; *|50(d): Minimum R-8 in concrete raised floors.
 - Insulation specified or installed meets CEC quality standards. Indicate type and form. Fenestration products, exterior doors and infiltration/exfiltration controls
 - a. Doors and windows between conditioned and unconditioned spaces designed to limit air leakaae b. Manufactured fenestration products have label
 - with certified U-value, and infiltration certification. c. Exterior doors and windows weather-stripped; all joints and penetration caulked and sealed. Installation of fireplaces, decorative gas appliances and
 - Masonry and factory-built fireplaces have: a. Closeable metal or glass doors covering the entire opening of the fire box which can be closed when the fire is burning
 - b. A combustion air intake to draw air from the outside of the building directly into the firebox, which is at least six $(\overline{6})$ sq. inches in area and is equipped with a readily accessible, operable and tight fitting damper or combustion air control device.
 - c. Flue damper with readily accessible control. 2. No continuous burning gas pilots allowed.

Vapor barriers mandatory in climate zones 14 and 16 only. Special infiltration barrier installed to comply with Section 151 meets CEC quality standards. Slab edge insulation - water absorption rate no greater than 2.0 perm.inch.

<u>Space Conditioning, Water Heating and Plumbing System Measures:</u> HVAC equipment, water heaters, showerheads and faucets certified by the CEC. 150(i):

- Pipe and tank insulation Indirect hot water tanks (e.g., unfired storage tanks or backup solar hot water tanks) have insulation
- blanket (R-12 or greater) or combined interior/exterior insulation (R-16 or greater) 2. First 5 feet of pipes closest to water heater tank,
- non-recirculation systems, insulated (R-4 or greater). 3. All buried or exposed piping insulated in
- re-circulation sections of hot water system. 4. Cooling system piping below 55 degrees insulated. 5. Piping insulated between heating source and indirect
- hot water tank. Ducts and fans
- Ducts constructed, installed and sealed to comply with CMC Chapter 6; ducts insulated to a minimum installed value of R-6 or ducts enclosed entirely within conditioned space.
- 2. Exhaust fan systems have back draft or automatic dampers 3. Gravity ventilating systems serving conditioned space have either automatic or readily accessible, manually
- operated dampers. Pool and spa heating systems and equipment I. System is certified with 78% thermal efficiency , on-off
- switch, weatherproof operating instructions, no electric resistance heating and no pilot light. 2. System installed with: a. At least 36 inches pipe between filter and heater
- for future solar heating b. Cover for outdoor pools or outdoor spa. 3. Pool system has directional inlets and a circulation
- pump time switch. Gas-fired central furnace, pool heater, spa heater or household cooking appliance have no continuously burning pilot light (exception: non-electrical cooking appliance with pilot <150 btu/hr).

Design Criteria

Foundation engineering has been predicated on data and recommendations contained in the soils report (when available). Report is considered part of the calculations and construction documents and is to be adhered to in all of its recommendations and requirements. Verify minimum foundation depth, width, reinforcing steel and additional expansive soil requirements with valid soils report and if they are any more restrictive, then they shall supersede the Andresen Architecture, Inc. minimums.

<u>Lateral Loads & Design Loads</u> (Refer to Structural Calculations for Loading Conditions)

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General Notes

HOMEOWNER: J.A. RUSS	O ENTERPRISES,	INC.		
ADDRESS: 16750 LA B RIVERSIDE APN: 269-2	ELLA VILLA , CA 92503 470-020		1.0	
PHOTOVOLTAIC SOLAR SYSTEM SIZE:	PROJECT INFO 2.720 kW (DC),	ORMATION: 2.320 kW (AC)		Diffe
MODULES:	(8) Q.CELLS Q.F PEAK POWER = MAX OPERATIN MAX OPERATIN OPEN CIRCUIT SHORT CIRCUIT MAX SERIES FU TEMP. COEFF. C DIMENSIONS = WEIGHT = 43.9	PEAK DUO BLK-G6+ 340 340 W IG CURRENT = 10.02 A IG VOLTAGE = 33.94 V VOLTAGE = 40.66 V CURRENT = 10.52 A SE RATING = 20 A DF Voc = -0.27%/C 68.5" X 40.6" X 1.3"		J.A. RU RESIDE
ARRAY:	INSTALLED WEI ROOF COVERAG	IGHT = 2.9 PSF GE = 155 SF, OF TOTAL ROOF AREA	2.5	VICINITY
MOUNTING HARDWARE:	IRONRIDGE XR1 IRONRIDGE FLA \$\frac{5}_{16}" STAINLESS 48" OC OR LESS 2\%" PENETRATI	IO LIGHT RAIL ASHED FOOT ATTACHMENTS STEEL LAG BOLTS @ 5 WITH A MINIMUM OF ON INTO ROOF RAFTERS	SHEET 1 SHEET 2 SHEET 3 SHEET 4 ATTACH	NTS PROJECT INFO, VICINITY MA SITE/ROOF PLAN, ELEVATIO ELECTRIC LINE DRAWING, O CALCULATIONS, SIGNS ED MODULE, INVERTER, MOUI
EXISTING ROOF INFO:	1 STORY, COMP 2 X 4 TRUSSES (OSITION SHINGLE @ 24" OC		
INVERTER/DC DISCONNECT:	(8) ENPHASE IC MICROINVERTE MAX DC INPUT START-UP VOLT OPERATING VO MAX INPUT SHO RATED AC POW AC VOLTAGE = 3 MAX AC OUTPL MAX AC OVERC MAX NUMBER NEMA TYPE 6 E DIMENSIONS = WEIGHT = 2.4 L	27PLUS-72-2-US RS VOLTAGE = 60 V TAGE = 22 V LTAGE RANGE = 16 V - 60 V ORT CIRCUIT CURRENT = 15.0 A 240 V 240 V JT CURRENT = 1.21 A URRENT PROTECTION = 20.0 A OF INVERTERS PER CIRCUIT = 1 NCLOSURE 8.4" X 6.9" X 1.2" BS	A A 13	
NOTICE: ANY CHANGES TO OR USES OF T	HESE DOCUMENTS	JORAWINGS WITHOUT THE		
WRITTEN CONSENT OF JENNIFER	KEMME OR SCOT	THARRIS ARE STRICTLY PROHIBITI	ED.	SCOPE OF WORK:
		AC CONSTRUCTIO 385 HALBERTA CIRCL CALIMESA, CA 92320 PH: 909.809.9221	E D	INSTALL (8) Q.CELLS Q.PEAK DUO B MODULES AND (8) ENPHASE IQ7PLU THE EXISTING 1ST STORY COMPOSIT MOUNTING HARDWARE, JUNCTION AND GROUNDING. INSTALL (1) ENPH DISCONNECT, AND INSTALL OCPD IN
HOMEOWNER: J.A. RUSS ADDRESS: 16750 LA B RIVERSIDE APN: 269-2	O ENTERPRISES, ELLA VILLA , CA 92503 470-020	INC.		NOTE: PV SYSTEI INTERFER OR MECH SEPARAT
IRONRIDGE X MOUNTING IRONRIDGE FLASH ATTACHM STAINLESS STEE 48" OC OR LESS WI EMBEDMENT OF RAFTERS), WA CONNECTION I MANUFACTURER'S	(R10 LIGHT RAIL G SYSTEM WITH IED FOOT ROOF MENTS (USE %6" L LAG BOLTS @ TH A MINIMUM 2½" INTO ROOF ATERPROOF ALL OCATIONS PER INSTRUCTIONS	EXISTING 1-STORY RO COMPOSITION SHING FELT & ½" SHEATHI OVER RAFTE MODULES: 68.5" X 40.6" 43.9 LBS EACH		906, SPG DESIGN IS "MAX. "MAX. USTING 2 X 4 RUSSES @ 24" OC
		NTS		
NOTICE				NOTE: DIMENSIONS AN SCALE BUT WERE
ANY CHANGES TO OR USES OF T WRITTEN CONSENT OF JENNIFER	HESE DOCUMENTS	DRAWINGS WITHOUT THE	ED.	APPROXIMATION
		AC CONSTRUCTIO 385 HALBERTA CIRCL CALIMESA, CA 92320 PH: 909.809.9221	PN E	SCOPE OF WORK: INSTALL (8) Q.CELLS Q.PEAK DUO B MODULES AND (8) ENPHASE IQ7PLU THE EXISTING 1ST STORY COMPOSIT MOUNTING HARDWARE, JUNCTION AND GROUNDING. INSTALL (1) ENPH

Data Sheet Enphase Microinverters Region: AMERICAS

Engineered in Germany

Enphase IQ 7 and IQ 7+ **Microinverters**

The high-powered smart grid-ready Enphase IQ 7 Micro[™] and Enphase IQ 7+ Micro[™] dramatically simplify the installation process while achieving the highest system efficiency. Part of the Enphase IQ System, the IQ 7 and IQ 7+ Microinverters integrate with the Enphase IQ Envoy[™], Enphase IQ Battery[™], and the Enphase Enlighten[™] monitoring and analysis software. IQ Series Microinverters extend the reliability standards set forth by previous generations and undergo over a million hours of power-on testing, enabling Enphase to provide an industry-leading warranty of up to 25 years.

QCELLS

To learn more about Enphase offerings, visit enphase.com

Easy to Install

 Lightweight and simple Faster installation with improved, lighter two-wire cabling Built-in rapid shutdown compliant (NEC 2014 & 2017)

Productive and Reliable

- Optimized for high powered 60-cell and 72-cell* modules
- · More than a million hours of testing Class II double-insulated enclosure
- UL listed
- Smart Grid Ready
- Complies with advanced grid support, voltage and frequency ride-through requirements
- Remotely updates to respond to changing
- grid requirements
- Configurable for varying grid profiles Meets CA Rule 21 (UL 1741-SA)
- * The IQ 7+ Micro is required to support 72-cell modules.

⊖ ENPHASE.

Hanwha Q CELLS America Inc. 400 Spectrum Center Drive, Suite 1400, Irvine, CA 92618, USA | TEL +1 949 748 59 96 | EMAIL inquiry@us.q-cells.com | WEB www.q-cells.us

Enphase IQ 7 and IQ 7+ Microinverters

INPUT DATA (DC)	IQ7-60-2-US /	IQ7-60-B-US	IQ7PLUS-72-2-US / IQ7PLUS-72-B-US			
Commonly used module pairings1	235 W - 350 W +		235 W - 440 W +			
Module compatibility	60-cell PV modules only		60-cell and 72-cell PV modules			
Maximum input DC voltage	48 V		60 V			
Peak power tracking voltage	27 V - 37 V	27 V - 37 V				
Operating range	16 V - 48 V		16 V - 60 V			
Min/Max start voltage	22 V / 48 V		22 V / 60 V			
Max DC short circuit current (module Isc)	15 A		15 A			
Overvoltage class DC port	11		11			
DC port backfeed current	0 A		0 A			
PV array configuration	1 x 1 ungrounde AC side protecti	d array; No addition on requires max 20	nal DC side protect A per branch circu	tion required; it		
OUTPUT DATA (AC)	IQ 7 Microinve	erter	IQ 7+ Microin	verter		
Peak output power	250 VA		295 VA			
Maximum continuous output power	240 VA		290 VA			
Nominal (L-L) voltage/range ²	240 V / 211-264 V	208 V / 183-229 V	240 V / 211-264 V	208 V / 183-229 V		
Maximum continuous output current	1.0 A (240 V)	1.15 A (208 V)	1.21 A (240 V)	1.39 A (208 V)		
Nominal frequency	60 Hz		60 Hz			
Extended frequency range	47 - 68 Hz		47 - 68 Hz			
AC short circuit fault current over 3 cycles	5.8 Arms		5.8 Arms			
Maximum units per 20 A (L-L) branch circuit ³	16 (240 VAC)	13 (208 VAC)	13 (240 VAC)	11 (208 VAC)		
Overvoltage class AC port	III		III			
AC port backfeed current	0 A		0 A			
Power factor setting	1.0		1.0			
Power factor (adjustable)	0.7 leading 0.	7 lagging	0.7 leading 0.	7 lagging		
EFFICIENCY	@240 V	@208 V	@240 V	@208 V		
Peak CEC efficiency	97.6 %	97.6 %	97.5 %	97.3 %		
CEC weighted efficiency	97.0 %	97.0 %	97.0 %	97.0 %		
MECHANICAL DATA						
Ambient temperature range	-40°C to +65°C					
Relative humidity range	4% to 100% (con	densing)				
Connector type (IQ7-60-2-US & IQ7PLUS-72-2-US) Connector type (IQ7-60-B-US & IQ7PLUS-72-B-US)	MC4 (or Amphe Friends PV2 (MC Adaptors for mo - PV2 to MC4: or - PV2 to UTX: or	nol H4 UTX with ad C4 intermateable). odules with MC4 or rder ECA-S20-S22 der ECA-S20-S25	ditional Q-DCC-5 a UTX connectors:	adapter)		
Dimensions (WxHxD)	212 mm x 175 m	nm x 30.2 mm (with	out bracket)			
Weight	1.08 kg (2.38 lbs	5)				
Cooling	Natural convecti	ion - No fans				
Approved for wet locations	Yes					
Pollution degree	PD3					
Enclosure	Class II double-i	insulated, corrosior	n resistant polyme	ric enclosure		
Environmental category / UV exposure rating	NEMA Type 6 / o	outdoor				
FEATURES						
Communication	Power Line Com	munication (PLC)				
Monitoring	Enlighten Manag Both options rec	ger and MyEnlighte guire installation of	n monitoring optic an Enphase IO Env	ins. /ov.		
Disconnecting means	The AC and DC of disconnect required	, connectors have be iired by NEC 690.	en evaluated and	approved by UL for use as the load-break		
Compliance	CA Rule 21 (UL UL 62109-1, UL1 CAN/CSA-C22.2 This product is I NEC-2017 section and DC conduct	1741-SA) 741/IEEE1547, FCC 2 NO. 107.1-01 UL Listed as PV Raj on 690.12 and C22. iors, when installed	Part 15 Class B, I bid Shut Down Equ 1-2015 Rule 64-218 according manufa	CES-0003 Class B, ipment and conforms with NEC-2014 and Rapid Shutdown of PV Systems, for AC acturer's instructions.		

1. No enforced DC/AC ratio. See the compatibility calculator at https://enphase.com/en-us/support/module-compatibility.

Nominal voltage range can be extended beyond nominal if required by the utility.
 Limits may vary. Refer to local requirements to define the number of microinverters per branch in your area.

2018-05-24

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Enphase **IQ Combiner 4/4C** X-IQ-AM1-240-4 X-IQ-AM1-240-4C

Built for solar's toughest roofs.

IronRidge builds the strongest mounting system for pitched roofs in solar. Our components have be the limit and proven in extreme environments, including Florida's high-velocity hurricane zones. Our rigorous approach has led to unique structural features, such as curved rails and reinforced flashings, and is also why our products are fully certified, code compliant and backed by a 25-year warranty.

Strength Tested All components evaluated for superior structural performance.

Class A Fire Rating Certified to maintain the fire resistance rating of the existing roof.

⊖ ENPHASE.

UL 2703 Listed System Entire system and components meet newest effective UL 2703 standard.

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	Enphase IQ Combiner 4	1/4C			
	MODEL NUMBER IQ Combiner 4 (X-IQ-AM1-240-4)	IQ Combiner 4 with Enphase I C12.20 +/- 0.5%) and consum	Q Gateway printed circuit board for integrated r ption monitoring (+/- 2.5%). Includes a silver sol	evenue grade PV production metering (ANS ar shield to match the IQ Battery system an	
	IQ Combiner 4C (X-IQ-AM1-240-4C)	System Controller 2 and to de IQ Combiner 4C with Enphase C12.20 +/- 0.5%) and consum M1-06-SP-05), a plug-and-pla Mexico, Puerto Rico, and the	flect heat. IQ Gateway printed circuit board for integrate ption monitoring (+/- 2.5%). Includes Enphase I ny industrial-grade cell modem for systems up US Virgin Islands, where there is adequate cellu	d revenue grade PV production metering (A Mobile Connect cellular modem (CELLMOI to 60 microinverters. (Available in the US, C Jar service in the installation area.) Include	
The Enphase IQ Combiner 4/4C with	MICPOINVERTERS ACCESSORIES	silver solar shield to match th	e IQ Battery and IQ System Controller and to d	eflect heat.	
IQ Gateway and integrated LTE-M1 cell	Supported Microinverters	IQ6, IQ7, IQ8. Do not mix IQ6	/7 Micro-inverters with IQ8		
modem (included only with IQ Combiner 4C)	Ensemble Communications Kit	- Includes COMMS-KIT-01 a	nd CELLMODEM-M1-06-SP-05 with 5-year Sp	rint data plan for	
consolidates interconnection equipment	COMMS-CELLMODEM-M1-06 CELLMODEM-M1-06-SP-05	Ensemble sites - 4G based LTE-M1 cellular r	nodem with 5-year Sprint data plan		
into a single enclosure and streamlines IQ	CELLMODEM-M1-06-AT-05	- 4G based LTE-M1 cellular r	nodem with 5-year AT&T data plan	alread headland	
microinverters and storage installations by	BRK-10A-2-240V	Circuit breaker, 2 pole, 10A	Eaton BR210 BR230, BR240, BR250, and BR260	circuit breakers.	
providing a consistent, pre-wired solution for	BRK-15A-2-240V BRK-20A-2P-240V	Circuit breaker, 2 pole, 15A Circuit breaker, 2 pole, 20A	Eaton BR215 Eaton BR220		
residential applications. It offers up to four	BRK-15A-2P-240V-B BRK-20A-2P-240V-B	Circuit breaker, 2 pole, 15A Circuit breaker, 2 pole, 20A	Eaton BR215B with hold down kit support Eaton BR220B with hold down kit support		
2-pole input circuits and Eston PR series	EPLC-01	Power line carrier (commun	cation bridge pair), quantity - one pair		
2-pole input circuits and Eaton BR series	XA-SOLARSHIELD-ES	Replacement solar shield fo	r IQ Combiner 4/4C		
busbar assembly.	XA-PLUG-120-3	Accessory receptacle for Po	wer Line Carrier in IQ Combiner 4/4C (required	I for EPLC-01)	
	XA-ENV-PCBA-3	Replacement IQ Gateway pr	nted circuit board (PCB) for Combiner 4/4C		
Smart			it breaker with screws.		
Includes IO Gateway for communication and control	Rating	Continuous duty			
Includes to Gateway to communication and control	System voltage	120/240 VAC, 60 Hz			
(CELLMODEM-M1-06-SP-05), included only with IQ	Eaton BR series busbar rating	125 A			
Combiner 4C	Max. continuous current rating	65 A			
aesthetics and deflect heat	Max. continuous current rating (input from PV/st	orage) 64 A			
Flexible networking supports Wi-Fi,	Max. fuse/circuit rating (output) Branch circuits (solar and/or storage)	90 A Up to four 2-pole Eaton BB s	eries Distributed Generation (DG) breakers o	nly (not included)	
Ethernet, or cellular	Max. total branch circuit breaker rating (inpu	t) 80A of distributed generatio	n / 95A with IQ Gateway breaker included	iny (normalided)	
Optional AC receptacle available for PLC bridge Provides production metering and consumption	IQ Gateway breaker	10A or 15A rating GE/Sieme	ns/Eaton included		
monitoring	Production metering CT	200 A solid core pre-installe	d and wired to IQ Gateway		
	Consumption monitoring CT (CT-200-SPLIT)	A pair of 200 A split core cu	rent transformers		
Simple	MECHANICAL DATA				
Centered mounting brackets support single	Dimensions (WxHxD)	37.5 x 49.5 x 16.8 cm (14.75	x 19.5" x 6.63"). Height is 21.06" (53.5 cm) w	ith mounting brackets.	
stud mounting	Weight	7.5 kg (16.5 lbs)			
Supports bottom, back and side conduit entry	Ambient temperature range	-40° C to +46° C (-40° to 115	° F)		
Up to four 2-pole branch circuits for 240 VAC	Cooling	Outdoor NPTL certified NE	Natural convection, plus neat snield		
80A total PV or storage branch circuits	Wire sizes	 20 A to 50 A breaker input: 	s: 14 to 4 AWG copper conductors		
Anna ang ang magnan na kana ang ang ang ang 💌 magna na pang mang ang ang ang ang ang ang ang ang ang		60 A breaker branch input Main lug combined output	4 to 1/0 AWG copper conductors		
Reliable		Neutral and ground: 14 to	1/0 copper conductors		
Durable NDTL-certified NEMA type 2P enclosure	Altitude	Up to 3000 meters (9,842 fe	et)		
Five-year limited warranty	INTERNET CONNECTION OPTIONS	1			
Two years labor reimbursement program coverage	Integrated Wi-Fi	802.11b/g/n			
included for both the IQ Combiner SKU's	Cellular	CELLMODEM-M1-06-SP-05,	CELLMODEM-M1-06-AT-05 (4G based LTE-M avirant for all Epsemble installations	1 cellular modem). Note that an Enphase	
· OL listed	Ethernet	Optional, 802.3, Cat5E (or Ca	at 6) UTP Ethernet cable (not included)		
	COMPLIANCE				
	Compliance, IQ Combiner	UL 1741, CAN/CSA C22.2 No Production metering: ANSI	0. 107.1, 47 CFR, Part 15, Class B, ICES 003 C12.20 accuracy class 0.5 (PV production)		
		Consumption metering: acc	uracy class 2.5		
	Compliance, IQ Gateway	UL 60601-1/GANCSA 22.2 N	0. 61010-1	Dec. 1	
Datasheet	© 2022 Enphase Energy, All rights reserved: Enp Enphase Energy, Inc. Data subject to change: 10 XR Rails 🖨	hase, the Enphase logo, IQ Combiner 4/4C, a +17-2022	nd other names are trademarks of	Datasheet	
Flush Mount System	VB10 Poil	VP100 Pail	VP1000 Pail	ROSSTM Rondod Splices	
	AR IO Rail	AR 100 Rall	AR 1000 Rail	BOSS - Bonded Splices	
	A low-profile mounting rail for regions with light snow. • 6' spanning capability • Moderate load capability • Clear and black finish	The ultimate residential solar mounting rail. • 8' spanning capability • Heavy load capability • Clear and black finish	A heavyweight mounting rail for commercial projects. • 12' spanning capability • Extreme load capability • Clear anodized finish	Bonded Structural Splices connect XR Rails together. • Integrated bonding • No tools or hardware • Self-centering stop tab	
	UFO™	Stopper Sleeves	CAMO™	Bonding Hardware	
	Universal Fastening Objects bond modules to rails. • Fully assembled & lubed • Single, universal size • Clear and black finish	Snap onto the UFO to turn into a bonded end clamp. • Bonds modules to rails • Sized to match modules • Clear and black finish	Bond modules to rails while staying completely hidden. • Universal end-cam clamp • Tool-less installation • Fully assembled	Bond and attach XR Rails to roof attachments. • T & Square Bolt options • Nut uses 7/16" socket • Assembled and lubricated	
			57 10		
ed roofs in solar. Our components have been tested to	Attachments 🗒				
lorida's high-velocity hurricane zones.	FlashFoot2™	FlashVue™	Knockout Tile	All Tile Hook	

Pre-stamped engineering letters available in most states.

Design Assistant Online software makes it simple to create, share, and price projects.

25-Year Warranty Products guaranteed to be free of impairing defects.

Flash and mount XR Rails Flash and mount conduit, with superior waterproofing. strut, or junction boxes. Twist-on Cap eases install
 Twist-on Cap eases install
 Flat, S, & W tile profiles
 Works on flat, S, & W tiles Wind-driven rain tested Wind-driven rain tested Secures ¾" or 1" conduit
 Single-lag universal base
 Optional deck flashing

> Design Assistant Go from rough layout to fully engineered system. For free. o to IronRidge.com/design

Replace tiles and ensure superior waterproofing.

*

STATE OF

Mount on tile roofs with a simple, adjustable hook. Form-fit compression seal
 Single-socket installation

> Endorsed by FL Building Commission Flush Mount is the first mounting system to receive Florida Product approval for 2017 Florida Building Code compliance. Learn More at bit.ly/floridacert

Mill and black finish

---- Resources

Product data sheet

Specifications

Safety switch, general duty, non fusible, 30A, 2 poles, 3 hp, 240 VAC, NEMA 3R, bolt-on provision DU221RB

Product availability : Stock - Normally stocked in distribution facility Price* : 177.00 USD

Main					
Product	Single Throw Safety Switch				
Duty Rating	General duty				
Device Application	Residential				
Disconnect Type	Non-fusible disconnect switch				
Factory Installed Neutral	None				
Phase	3 phase				
Number of Poles	2				
Current Rating	30 A				
Voltage Rating	240 V AC				
Enclosure Rating NEMA	NEMA 3R				
Motor power hp 3 hp at 240 V AC 60 Hz for 1 phase motors					
Complementary					
Mounting Type	Surface				
5 31	ounder .				
Electrical Connection	Lugs				
Electrical Connection Wiring configuration	Lugs 2 wires				
Electrical Connection Wiring configuration Wire Size	Lugs 2 wires AWG 14AWG 6 copper AWG 12AWG 6 aluminium				
Electrical Connection Wiring configuration Wire Size Tightening torque	Lugs 2 wires AWG 14AWG 6 copper AWG 12AWG 6 aluminium 30 lbf.in (3.39 N.m) 0.000.02 in ² (2.0813.3 mm ²) (AWG 14AWG 6)				
Electrical Connection Wiring configuration Wire Size Tightening torque Depth	Lugs 2 wires AWG 14AWG 6 copper AWG 12AWG 6 aluminium 30 lbf.in (3.39 N.m) 0.000.02 in² (2.0813.3 mm²) (AWG 14AWG 6) 3.75 in (95.25 mm)				
Electrical Connection Wiring configuration Wire Size Tightening torque Depth Width	Lugs 2 wires AWG 14AWG 6 copper AWG 12AWG 6 aluminium 30 lbf.in (3.39 N.m) 0.000.02 in² (2.0813.3 mm²) (AWG 14AWG 6) 3.75 in (95.25 mm) 7.75 in (196.85 mm)				
Electrical Connection Wiring configuration Wire Size Tightening torque Depth Width Height	Lugs 2 wires AWG 14AWG 6 copper AWG 12AWG 6 aluminium 30 lbf.in (3.39 N.m) 0.000.02 in² (2.0813.3 mm²) (AWG 14AWG 6) 3.75 in (95.25 mm) 7.75 in (196.85 mm) 9.63 in (244.60 mm)				
Electrical Connection Wiring configuration Wire Size Tightening torque Depth Width Height Net Weight	Lugs 2 wires AWG 14AWG 6 copper AWG 12AWG 6 aluminium 30 lbf.in (3.39 N.m) 0.000.02 in² (2.0813.3 mm²) (AWG 14AWG 6) 3.75 in (95.25 mm) 7.75 in (196.85 mm) 9.63 in (244.60 mm) 16.98 lb(US) (7.7 kg)				
Electrical Connection Wiring configuration Wire Size Tightening torque Depth Width Height Net Weight Environment	Lugs 2 wires AWG 14AWG 6 copper AWG 12AWG 6 aluminium 30 lbf.in (3.39 N.m) 0.000.02 in² (2.0813.3 mm²) (AWG 14AWG 6) 3.75 in (95.25 mm) 7.75 in (196.85 mm) 9.63 in (244.60 mm) 16.98 lb(US) (7.7 kg)				

Ordering and shipping details Category 00106-D & DU SW,NEMA3R, 30-200A

Jan 25, 2023

* Price is "List Price" and may be subject to a trade discount - check with your local distributor or retailer for actual price.

Ulets Cir Schneider

Discount Schedule	DE1A
GTIN	785901490340
Returnability	Yes
Country of origin	MX
Packing Units	
Unit Type of Package 1	PCE
Number of Units in Package 1	1
Package 1 Height	5.40 in (13.716 cm)
Package 1 Width	7.80 in (19.812 cm)
Package 1 Length	9.90 in (25.146 cm)
Package 1 Weight	4.65 lb(US) (2.109 kg)
Unit Type of Package 2	PAL
Number of Units in Package 2	160
Package 2 Height	46.50 in (118.11 cm)
Package 2 Width	40.00 in (101.6 cm)
Package 2 Length	48.00 in (121.92 cm)
Package 2 Weight	814.00 lb(US) (369.224 kg)
Unit Type of Package 3	CAR
Number of Units in Package 3	5
Package 3 Height	10.80 in (27.432 cm)
Package 3 Width	10.50 in (26.67 cm)
Package 3 Length	23.80 in (60.452 cm)
Package 3 Weight	24.60 lb(US) (11.158 kg)
Offer Sustainability	
Sustainable offer status	Green Premium product
California proposition 65	WARNING: This product can expose you to chemicals including: Lead and lead compounds, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov
REACh Regulation	REACh Declaration
REACh free of SVHC	Yes
EU RoHS Directive	Compliant EU RoHS Declaration
Toxic heavy metal free	Yes
Mercury free	Yes
RoHS exemption information	Yes
China RoHS Regulation	China RoHS declaration Pro-active China RoHS declaration (out of China RoHS legal scope)
Environmental Disclosure	Product Environmental Profile
PVC free	Yes

Contractual warranty

Warranty

2 Liete On Schneider Jan 25, 2023

18 months

Jan 25, 2023

3

4

Lietz On Schneider

Jan 25, 2023

Liets On Schneider

GRADING PLAN GENERAL NOTES

GENERAL

- 1. ALL GRADING SHALL CONFORM TO THE 2019 CALIFORNIA BUILDING CODE (CBC) CHAPTERS 17, 18 & APPENDIX-J AS AMENDED BY ORDINANCE 457.
- 2. ALL PROPERTY CORNERS, GRADING BOUNDARIES AND ALL CONSERVATION AREAS/LEAST SENSITIVE AREA (LSA) DETERMINED BY THE ENVIRONMENTAL PROGRAMS DEPARTMENT (EDP) SHALL BE CLEARLY DELINEATED AND STAKED IN THE FIELD PRIOR TO COMMENCEMENT OF ANY CONSTRUCTION/GRADING.
- 3. ALL WORK UNDER THIS PERMIT SHALL BE LIMITED TO WORK WITHIN THE PROPERTY LINES. ALL WORK WITHIN THE ROAD RIGHT-OF-WAY WILL REQUIRE SEPARATE PLANS AND A SEPARATE REVIEW-APPROVAL (PERMIT) FROM THE TRANSPORTATION DEPARTMENT.
- 4. ALL GRADING SHALL BE DONE UNDER THE SUPERVISION OF A SOILS ENGINEER IN CONFORMANCE WITH THE RECOMMENDATIONS OF THE PRELIMINARY SOILS INVESTIGATION PREPARED BY ARCH ENGINEERING, INC. DATED MAY 19, 2021
- 5. COMPACTED FILL TO SUPPORT ANY STRUCTURES SHALL COMPLY WITH SECTION 1803.5.8. PROJECTS WITHOUT A PRELIMINARY SOILS REPORT SHALL INCLUDE DETAILED SPECIFICATIONS IN ACCORDANCE WITH SECTION 1803.2 AND 1803.5 PREPARED BY THE ENGINEER OF RECORD.
- 6. THE CONTRACTOR SHALL NOTIFY THE BUILDING AND SAFETY DEPARTMENT AT LEAST 24 HOURS IN ADVANCE TO REQUEST FINISH LOT GRADE AND DRAINAGE INSPECTION. THIS INSPECTION MUST 27. A REGISTERED CIVIL ENGINEER SHALL SUBMIT TO THE BUILDING AND SAFETY DEPARTMENT BE APPROVED PRIOR TO BUILDING PERMIT FINAL INSPECTION FOR EACH LOT.
- 7. THE CONTRACTOR SHALL NOTIFY UNDERGROUND SERVICE ALERT, TWO DAYS BEFORE DIGGING AT 1-800-422-4133.
- 8. PRIOR TO GRADING, A MEETING SHALL BE SCHEDULED WITH A RIVERSIDE COUNTY ENVIRONMENTAL COMPLIANCE INSPECTOR PRIOR TO COMMENCEMENT OF GRADING OPERATIONS.

CUT/FILL

- 9. MAXIMUM CUT AND FILL SLOPE = 2:1 (HORIZONTAL TO VERTICAL)
- 10. NO FILL SHALL BE PLACED ON EXISTING GROUND UNTIL THE GROUND HAS BEEN CLEARED OF WEEDS, TOPSOIL AND OTHER DELETERIOUS MATERIAL. FILLS SHOULD BE PLACED IN THIN LIFT (8-INCH MAX OR AS RECOMMENCED IN THE SOILS REPORT). COMPACTED AND TESTED THROUGHOUT THE GRADING PROCESS UNTIL FINAL GRADING ARE ATTAINED. ALL FILLS ON SLOPES STEEPER THAN 5 TO 1 (HORIZONTAL TO VERTICAL) AND A HEIGHT GREATER THAN 5 FEET SHALL BE KEYED AND BENCHED INTO FIRM NATURAL SOIL FOR FULL SUPPORT. THE BENCH UNDER THE 3 TOE MUST BE 10 FEET WIDE MINIMUM.
- 11. THE SLOPE STABILITY FOR CUT AND FILL SLOPES OVER 30 FEET IN VERTICAL HEIGHT, OR CUT SLOPES STEEPER THAN 2:1 HAVE BEEN VERIFIED WITH A FACTOR OF SAFETY OF AT LEAST 1.5.
- 12. NO ROCK OR SIMILAR IRREDUCIBLE MATERIAL WITH A MAXIMUM DIMENTION GREATER THAN 12 INCHES SHALL BE BURIED OR PLACED IN FILLS CLOSER THAN 10 FEET TO THE FINISHED GRADE.

DRAINAGE EROSION / DUST CONTROL

- 13. DRAINAGE ACROSS PROPERTY LINES SHALL NOT EXCEED THAT WHICH EXISTED PRIOR TO GRADING. EXCESS OR CONCENTRATED DRAINAGE SHALL BE CONTAINED ON SITE OR DIRECTED TO AN APPROVED DRAINAGE FACILITY. EROSION OF THE GROUND IN THE AREA OF DISCHARGE SHALL BE PREVENTED BY INSTALLATION OF NON-EROSIVE DOWN DRAINS OR OTHER DEVICES.
- 14. PROVIDE A PAVED SLOPE INTERCEPTOR DRAIN ALONG THE TOP OF CUT SLOPES WHERE THE DRAINAGE PATH IS GREATER THAN 40 FEET TOWARD THE CUT SLOPE.
- 15. PROVIDE 5' WIDE BY 1' HIGH BERM ALONG THE TOP OF ALL FILL SLOPES STEEPER THAN 3:1 (HORIZONTAL TO VERTICAL).
- 16. THE GROUND SURFACE IMMEDIATELY ADJACENT TO THE BUILDING FOUNDATION SHALL BE SLOPED AWAY FROM THE BUILDING AT A SLOPE OF NOT LESS THAN ONE UNIT VERTICAL IN 20 UNITS HORIZONTAL (5-PERCENT SLOPE) FOR A MINIMUM DISTANCE OF 10 FEET MEASURED PERPENDICULAR TO THE FACE OF THE FOUNDATION.
- 17. NO OBSTRUCTION OF NATURAL WATER COURSES SHALL BE PERMITTED.
- 18. DURING ROUGH GRADING OPERATIONS AND PRIOR TO CONSTRUCTION OF PERMANENT DRAINAGE STRUCTURES, TEMPORARY DRAINAGE CONTROL (BEST MANAGEMENT PRACTICES, BMPs) SHALL BE PROVIDED TO PREVENT PONDING WATER AND DRAINAGE TO ADJACENT PROPERTIES.
- 19. DUST CONTROL SHALL BE CONTROLLED BY WATERING OR OTHER APPROVED METHODS.
- 20. FUGITIVE DUST CONTROL: CONSTRUCTION SITES SUBJECT TO PM10 FUGITIVE DUST MITIGATION SHALL COMPLY WITH AQMD RULE 403.1.
- 21. ALL EXISTING DRAINAGE COURSES AND STORM DRAIN FACILITIES SHALL CONTINUE TO FUNCTION. PROTECTIVE MEASURES AND TEMPORARY DRAINAGE PROVISIONS MUST BE USED TO PROTECT ADJOINING PROPERTIES DURING GRADING OPERATIONS.
- 22. FOR ALL SLOPES STEEPER THAN 4 TO 1 (H/V): ALL SLOPES EQUAL TO OR GREATER THAN 3' IN VERTICAL HEIGHT ARE REQUIRED TO BE PLANTED WITH AN APPROVED DROUGHT-TOLERANCE GROUND COVER AT A MINIMUM SPACING OF 12" ON CENTER OR AS APPROVED BY THE ENGINEER OF RECORD OR THE REGISTERED LANDSCAPE ARCHITECT AND DROUGHT-TOLERANCE SHRUBS SPACED AT NO MORE THAN 10' ON CENTER. SLOPES EXCEEDING 15' IN VERTICAL HEIGHT SHALL BE PLANTED WITH APPROVED SHRUBS NOT TO EXCEED 10' ON CENTER, OR TREES SPACED NOT TO EXCEED 20' ON CENTER, OR A COMBINATION OF SHRUBS AND TREES NOT TO EXCEED 15' IN ADDITION TO THE GRASS OR GROUND COVER. SLOPES THAT REQUIRE PLANTING SHALL BE PROVIDED WITH AN IN-GROUND IRRIGATION SYSTEM EQUIPPED WITH AN APPROPRIATE BACKFLOW DEVICE PER C.P.C. CHAPTER 6. THE SLOPE PLANTING AND IRRIGATION SYSTEM SHALL BE INSTALLED AS SOON AS POSSIBLE UPON COMPLETION OF ROUGH GRADING. ALL PERMANENT SLOPE PLANTING SHALL BE ESTABLISHED AND IN GOOD CONDITION PRIOR TO SCHEDULING PRECISE GRADING INSPECTION.

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ROUGH GRADE

- PERMIT FINAL.

PRECISE GRADE

NPDES: WHEN ONE ACRE OR MORE IS BEING DISTURBED

- CONSTRUCTION.
- CONSTRUCTION SITES.
- EXTENT FEASIBLE.
- AS FEASIBLE AFTER SOIL DISTURBANCE.
- RUNOFF, VEHICLE TRACKING, OR WIND.
- REQUIREMENTS.

- DOCUMENTATION SHALL BE MAINTAINED IN THE SWPPP.
- BOARD.

JNDERGROUND SERVICE ALER CALL: TOLL FREE

TWO WORKING DAYS BEFORE YOU DIG

NOTE:

WORK CONTAINED WITHIN THESE PLANS SHALL NOT COMMENCE UNTIL AN ENCROACHMENT PERMIT AND/OR A GRADING PERMIT HAS BEEN ISSUED

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PRECISE GRADING PLAN

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23. A REGISTERED CIVIL ENGINEER SHALL PREPARE FINAL COMPACTION REPORT/GRADING REPORT AND IT SHALL BE SUBMITTED TO THE DEPARTMENT OF BUILDING AND SAFETY FOR REVIEW AND APPROVAL. THE REPORT SHALL INCLUDE BUILDING FOUNDATION DESIGN PARAMETERS (ALLOWABLE SOIL PRESSURES, ETC.), EXPANSION INDEX (AND DESIGN ALTERNATIVE IF EI>20), WATER SOLUBLE SULFATE CONTENT. CORROSIVITY AND REMEDIAL MEASURES IF NECESSARY.

24. EXCEP FOR NON-TRACT SINGLE RESIDENTIAL LOT GRADING, THE COMPACTION REPORT SHALL INCLUDE THE SPECIAL INSPECTION VERIFICATIONS LISTED ON TABLE 1705.6 OF 2019 CBC.

25. THE COUNTY OF RIVERSIDE REQUIRES A LICENSED PROFESSIONAL ENGINEER TO SUBMIT A WET SIGNED AND STAMPED ROUGH GRADING CERTIFICATE WHICH INCLUDES PAD ELEVATIONS PRIOR TO REQUESTING INSPECTION AND ISSUANCE OF THE BUILDING PERMIT.

26. ROUGH GRADE ONLY PERMITS; IN ADDITION TO OBTAINING ALL REQUIRED INSPECTIONS AND APPROVAL OF ALL FINAL REPORTS, ALL SITES PERMITTED FOR ROUGH GRADE ONLY SHALL PROVIDE VEGETATIVE COVERAGE (100 PERCENT) OR OTHER MEANS OF SITE STABILIZATION APPROVAL BY ENVIRONMENTAL COMPLIANCE DIVISION, PRIOR TO RECEIVING A ROUGH GRADE

WRITTEN FINAL CERTIFICATION OF COMPLETION OF GRADING IN ACCORDANCE WITH THE APPROVED GRADING PLAN PRIOR TO THE REQUEST OF PRECISE GRADING INSPECTION.

CONSTRUCTION SITE BEST MANAGEMENT PRACTICE (BMPs) FOR THE MANAGEMENT OF STORM WATER AND NON-STORMWATER DISCHARGES SHALL BE DOCUMENTED ON THE GRADING PLAN. ARRANGEMENTS SHALL BE MADE BY THE DEVELOPER TO RETAIN THE SWPPP ON THE JOBSITE THROUGHOUT THE TIME OF CONSTRUCTION. THE IMPLEMENTATION AND MAINTENANCE OF THE SITE BMPs IS REQUIRED TO MINIMIZE JOBSITE EROSION AND SEDIMENTATION. ARRANGEMENTS SHALL BE MADE BY THE DEVELOPER TO MAINTAIN THOSE BMPs THROUGHOUT THE TIME OF

EROSION CONTROL BMPs SHALL BE IMPLEMENTED AND MAINTAINED TO PREVENT AND/OR MINIMIZE THE ENTRAINMENT OF SOIL IN RUNOFF FROM DISTURBED SOIL AREAS ON

SEDIMENT CONTROL BMPs SHALL BE IMPLEMENTED AND MAINTAINED TO PREVENT AND/OR MINIMIZE THE TRANPORT OF SOIL FROM THE CONSTRUCTION SITE.

GRADING SHALL BE PHASED TO LIMIT THE AMOUNT OF DISTURBED AREA EXPOSED TO THE

AREAS THAT ARE CLEARED AND GRADED SHALL BE LIMITED TO ONLY THE PORTION OF THE SITE THAT IS NECESSARY FOR CONSTRUCTION. THE CONSTRUCTION SITE SHALL BE MANAGED TO MINIMIZE THE EXPOSURE TIME OF DISTURBED SOIL AREAS THROUGH PHASING AND SCHEDULING OF GRADING AND THE USE OF TEMPORARY AND PERMANENT SOIL STABILIZATION.

6. ONCE DISTURBED, SLOPES (TEMPORARY OR PERMANENT) SHALL BE STABILIZED IF THEY WILL NOT BE WORKED WITHIN 21 DAYS. DURING STORM SEASON, ALL SLOPES SHALL BE STABILIZED PRIOR TO PREDICTED STORM EVENT. CONSTRUCTION SITES SHALL BE REVEGETATED AS EARLY

STOCKPILES OF SOIL SHALL BE PROPERLY CONTAINED TO ELIMINATE OR REDUCE SEDIMENT TRANSPORT FROM THE SITE OR STREETS, DRAINAGE FACILITIES OR ADJACENT PROPERTIES VIA

CONSTRUCTION SITES SHALL BE MAINTAINED IN SUCH A CONDITION THAT A STORM DOES NOT CARRY WASTES OR POLLUTANTS OFF THE SITE. DISCHARGES OTHER THAN STORMWATER (NON-STORMWATER DISCHARGES) ARE PROHIBITED. EXCEPT AS AUTHORIZED BY AN INDIVIDUAL NPDES PERMIT, THE STATEWIDE GENERAL PERMIT-CONSTRUCTION ACTIVITY. POTENTIAL POLLUTANTS INCLUDE BUT ARE NOT LIMITED TO: SOLID OR LIQUID CHEMICAL SPILLS; WASTES FROM PAINTS, STAINS, SEALANTS, SOLVENTS, DETERGENTS, GLUES, LIME, PESTICIDES, HERBICIDES, FERTILIZERS, WOOD PRESERVATIVES, AND ASBESTOS FIBERS, PAINT FLAKES OR STUCCO FRAGMENTS, FUELS, OILS, LUBRICANTS, AND HYDRAULIC, RADIATOR OR BATTERY FLUIDS, CONCRETE AND RELATED CUTTING OR CURING RESIDUES; FLOATABLE WASTES; WASTES FROM ENGINE/EQUIPMENT STEAM CLEANING OR CHEMICAL DEGREASING: WASTES FROM STREET CLEANING; AND SUPER-CHLORINATED POTABLE WATER FROM LINE FLUSHING AND TESTING. DURING CONSTRUCTION, DISPOSAL OF SUCH MATERIALS SHOULD OCCUR IN A SPECIFIED AND CONTROLLED TEMPORARY AREA ON-SITE PHYSICALLY SEPARATED FROM POTENTIAL STORMWATER RUNOFF. WITH ULTIMATE DISPOSAL IN ACCORDANCE WITH LOCAL, STATE AND FEDERAL

RUNOFF FROM EQUIPMENT AND VEHICLE WASHING SHALL BE CONTAINED AT CONSTRUCTION SITE AND MUST NOT BE DISCHARGED TO RECEIVING WATERS OR LOCAL STORM DRAIN SYSTEM.

10. APPROPRIATE BMPs FOR CONSTRUCTION-RELATED MATERIAL, WASTES, SPILLS OR RESIDUES SHALL BE IMPLEMENTED TO ELIMINATE OR REDUCE TRANSPORT FROM THE SITE TO STREETS. DRAINAGE FACILITIES, OR ADJOINING PROPERTIES BY WIND OR RUNOFF.

11. ALL CONSTRUCTION CONTRACTORS AND SUBCONTRACTOR PERSONNEL ARE TO BE TRAINED IN THE IMPLEMENTATION AND USE OF THE REQUIRED BMPs AND GOOD HOUSEKEEPING MEASURES FOR THE PROJECT SITE AND ANY ASSOCIATED CONSTRUCTION STAGING AREA AND ALL TRAINING

12. DISCHARGING CONTAMINATED GROUNDWATER PRODUCED BY DEWATERING GROUNDWATER THAT HAS INFILTRATED INTO THE CONSTRUCTION SITE IS PROHIBITED. DISCHARGING OF CONTAMINATED SOILS VIA SURFACE EROSION IS ALSO PROHIBITED. DISCHARGING NON-CONTAMINATED GROUNDWATER PRODUCED BY DEWATERING ACTIVITIES MAY REQUIRE A NATIONAL POLLUTANT

DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT FROM THE REGIONAL WATER QUALITY CONTROL

13. BMPs SHALL BE MAINTAINED AT ALL TIMES. IN ADDITION, BMPs SHALL BE INSPECTED PRIOR TO PREDICTED STORM EVENTS AND FOLLOWING STORM EVENTS.

14. AT THE END OF EACH DAY OF CONSTRUCTION ACTIVITY, ALL CONSTRUCTION DEBRIS AND WASTE MATERIALS SHALL BE COLLECTED AND PROPERLY DISPOSED OF IN TRASH OR RECYCLE BINS.

PRIVATE ENGINEER'S NOTICE TO CONTRACTOR THE CONTRACTOR AGREES THAT HE/SHE SHAL COMPLETE RESPONSIBILITY FOR JOB SITE CONI COURSE OF CONSTRUCTION OF THIS PROJECT. OF ALL PERSONS AND PROPERTY; THAT THIS APPLY CONTINUOUSLY AND NOT BE LIMITTED 1 HOURS: AND THAT THE CONTRACTOR SHALL DE AND HOLD THE OWNER AND ENGINEER HARMLE ALL LIABILITY, REAL OR ALLEGED, IN CONNECTI PERFORMANCE OF THE WORK ON THIS PROJEC THE LIABILITY ARISING FROM THE SOLE NEGLEG OWNER OR THE ENGINEER. THE EXISTANCE AND UNDERGROUND UTILITY OR STRUCTURES SHOWN WERE OBTAINED BY A SEARCH OF AVAILABLE F LOCATIONS ARE APPROXIMATE AND SHALL BE FIELD BY THE CONTRACTOR, SO THET ANY NEC ADJUSTMENT CAN BE MADE IN ALIGNMENT AND PROPOSED IMPROVEMENT. THE CONTRACTOR IS DUE PRECAUTIONARY MEASURES TO PROTECT A SHOWN AND ANY OTHER LINES NOT OF RECORD ON THESE PLANS.

SPECIAL NOTES:

- 1- A PRE-GRADING/PRE-CONSTRUCTION MEETING AND SITE INSPECTION SHALL BY THE SITE DEVELOPER PRIOR TO COMMENCING GRADING OPERATIONS. THO TO ATTEND THE PRE-CONSTRUCTION MEETING SHALL INCLUDE BUT ARE NOT DEVELOPER, PROJECT SUPERINTENDENT, ENGINEER OF RECORD, SOILS ENGINI CONTRACTOR, AND UNDERGROUND UTILITIES CONTRACTOR. REPRESENTING THE BUILDING AND SAFETY SHALL BE THE GRADING PLAN-CHECKER AND/OR GRA THE FOCUS OF THE PRE-CONSTRUCTION MEETING SHALL BE TO DISCUSS TH AND RESPONSIBILITIES OF THE GRADING PROJECT AND TO PROVIDE AN APPRO FOR THE COMPLETION OF ROUGH GRADING. ARRANGE FOR A PRE-GRADING/F MEETING BY CALLING THE DISTRICT OFFICE RESPONSIBLE FOR PROVIDING YOU BUILDING INSPECTION. CALL COUNTY DISPATCH AT (951) 955-1800 AND FIF (951) 955-4777 TO SETUP PRE-CONSTRUCTION MEETING.
- 2- THE ENGINEER OF RECORD HAS EVALUATED THE DRAINAGE AND DETERMINED ACROSS THE PROPERTY LINE DOES NOT EXCEED THAT WHICH EXISTED PRIOR
- 3- THE ENGINEER OF RECORD WHO PREPARED AND SIGNED THE GRADING PLAN THE PROPOSED DRAINAGE SYSTEM IS CONSISTENT WITH NATURAL DRAINAGE F AND WILL NOT ADVERSELY AFFECT ADJACENT PROPERTIES.
- 4- THE ENGINEER OF RECORD HAS DETERMINED THAT CONSIDERING THE SITE CO THE SOIL AND THE CLIMATE, THE PROPOSED SITE DRAINAGE SLOPES SHALL AND DO NOT WARRANT THE MORE CONSRVATIVE REQUIREMENTS OF THE BUIL
- 5- EXCEPT FOR THE RETAINING WALLS IN CONJUCTION WITH THIS GRADING, ALL ASSOCIATED WITH BUILDINGS (INCLUDING SETBACKS AND FINISH FLOOR ELEVA REFERENCE ONLY AND THE APPROVAL OF THIS GRADING PLAN DOES NOT INC PROVISIONS ASSOCIATED WITH BUILDINGS.

FIRE DEPARTMENT NOTES:

- 1- THE FIRE DEPARTMENT ACCESS SHALL BE CAPABLE OF WITHSTANDING 40,00 OVER TWO AXLES, DRIVEWAY GRADE SHALL NOT EXCEED 15%, VERTICAL CLE OF 13'-6" SHALL BE MAINTAINED UNOBSTRUCTED, ANY GATES SHALL BE AP BY THE FIRE DEPARTMENT AND EQUIPPED WITH THE KNOX RAPID ENTRY SYS
- THE DRIVEWAY IS ON MAX. 12" CUT OR FILL. 4" CONCRETE PAVEMENT OVER COMPACTED FILL SUBGRADE WILL SATISFY THIS REQUIREMENT
- 100 FEET OF VEGETATION CLEARANCE SHALL BE MAINTAINED AROUND ALL STRUCTURES IN ACCORDANCE WITH RIVERSIDE COUNTY ORDINANCE 787.8.
- 4- THE BUILDING OWNER SHALL BE RESPONSIBLE IN MAINTAINING THE FIRE APP ACCESS ROAD AS DESIGNED.

NOTE:

- 1- THE ENGINEER WHO PREPARED THE GRADING PLAN HAS VERIFIED THE PLAN CONSISTED BY THE TRANSPORTATION DEPARTMENT.
- 2_ THE ENGINEER WHO PREPARED AND SIGNED THESE PLANS HAS VERIFIED THAT INFORMATION SHOWN ON THESE PLANS IS CONSISTENT WITH THE ROAD PLAN APPROVED BY THE TRANSPORTATION DEPARTMENT.
- 3_ CUT AREA UNDER THE BUILDING SHOULD BE OVER EXCAVATED 5 FEET BELOW FOOTING AND 5 FEET BEYOND THE BUILDING LINE.

CONSTRUCTION NOTES: (1) EXIST. AC PAVEMENT

- ② CONSTRUCT 4" THICK CONCRETE WITH #4 REBAR @ 15"
- (3) CONSTRUCT 3" THICK CONCRETE WALKWAY (4) CONSTRUCT DOWN DRAIN PER DETAIL HEREON
- (5) CONSTRUCT 5'X5' RIP-RAP PER DETAIL HEREON (6) CONSTRUCT TYPE 1 RETAINING WALL PER COUNTY STANDA
- (7)CONSTRUCT TYPE 2 RETAINING WALL PER COUNTY STANDA

7-06-2022

DATE

NOTES:

A SEPARATE PERMIT IS REQUIRED FOR RETAINING WALLS OVER FOUR (4) FEET IN HEIGHT (MEASURED FROM THE BOTTOM OF FOOTING) SHOWN ON THIS GRADING PLAN OR WHERE SUPPORTING A SURCHARGE.

THESE GRA THE UNDE CONFORMA SPECIFICA1 GEOLOGICA FOR THIS

> Fred FRED JALEH

BENCHM

RIVERSIDE COU A BASS DISK, THE TOP OF C GROUND. ALON FROM INTERSEC AVE/VICTORIA SOBRANTE, 200 ELV: 1266.566

SEAL-ENGINEER ROFESS C 59993 EXP.6-30-2024 AR

ENGINEER OF WORK

MASSOUD GHIAM 24 OAKHURST RD IRVINE, CA 92620 (949) 307-5410 MASSOUDG98@YAHOO.COM Massoud Ghiam MASSOUD GHIAM RCE 59993, EXP. 6-30-2024

GRADING DISTURBANCE CALC.

AREA OF PROPOSED CONSTRUCTION/GRADING DISTURBANCE HOUSE PAD, SLOPE, AND D/W =4.500 S.F. OR 0.10 ACR

TOTAL IMPERVIOUS AREA = 2,830 (SQUARE FEET) DISTURBANCE OF LESS THAN ONE ACRE DO NOT REQUIRE SWPPP.

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			PROPOSED RETAINING WALL	
PARATUS				
			COUNTY LYING WITHIN SECTION 29, TO	WNSHIP 5 WEST, BEING LOT 21 AS
			SHOWN ON ASSESSOR'S MAP NO. 65 ON RECORDS OF SAID COUNTY	FILE IN BOOK 2 PAGE 22 OFFICIAL
			COC20007 A.P.N. 26	69-470-020
			OWNER	PROPERTY ADDRESS
			REYNALDO EDWARD ESPINOZA	16750 LA BELLA VILLA
			C/O JOHN RUSSO 1260 CORONA POINTE CT, STE 102	RIVERSIDE, CA 92503
			CORONA, CA 92879 (951) 836-0530	
			JRUSSO@E-EQUITIES.COM	
			SOURCE OF TOPOGRAPHY:	BASIS OF BEARING
	QUAN	ITITY	RIVERSIDE COUNTY FLOOD CONTROL AND FIELD SURVEY BY	CENTER LINE OF VIA TUSCANY HAVING BEARING
			LAKESHORE ENGINEERING DATED	OF N 00° 08' 13" W AS SHOWN
O.C. OVER 6" BASE DRIV	/EWAY 407 S	SF		
	80 5	SF		JULJ ENGINEEK FRED IALEH
	23		PROPOSED FILLS: 450 CY	ARCH ENGINEERING, INC.
	25 5	F	PROPOSED EXPORT: 0 CY PROPOSED IMPRORT: 425 CY	117 S. MAIN STREET LAKE ELSINORE, CA 92530
RDS (SEDARATE DEDMIT)			SOURCE OF IMPORT DIRT FROM	(951) 245-2444 ARCHENG117@GMAIL.COM
(JELANAIE FERMII)	50 L		APN: 269-201-013, BGR 2100328 (35 CY) APN: 269-000-064, BGR 2100620 (200 GY)	LAND USE: VACANT
RDS (SEPARATE PERMIT)	94 L	ŀ	PROPOSED OR ADDIO ADD MOUST	ZONING: R-A-1 SITE AREA: 8,2500 SF. (0.19)AC
			PAD, SLOPE, AND D/W= 4,500 SF	PROJECT DISTURBED AREA=5,250 SF IMPERVIOUS AREA= 2 806 SE
	F//FWFN RV		TOTAL IMPERVIOUS AREA= 2,830 SF	2
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ANCE WITH THE RECOMMENDATIONS OUTLINED IN THE SOU	ations AND _s and			
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-CHIAN GE# 433 E	Date	SHEET SHEFT	NU. 1 GENERAL NOTES NO. 2 GRADING PLAN	BGR <u>2100496</u>
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AKK:	DESIGNED	- C	<u>oun</u> ty of river	SIDE SHEET NO.
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G LA SIERRA AVE, 2.5 MILES CTION OF LA SIERRA	SCALE AS SHOWN	1	16750 LA BELLA VILLA	OFSHEETS
ST., 250' SOUTH OF EL	JOB NUMBER	-	RIVERSIDE CA 92503	FILE NO.
			$\operatorname{Riv}\operatorname{LRSIDL}, \operatorname{CR}$ $J2303$	
)' EAST OF LA SIERA AVE.	DATE	FOR:	w.o. c	

	CONSTRUCTION NOTES:	QUANTITY
\bigcirc	EXIST. AC PAVEMENT	
2	CONSTRUCT 4" THICK CONCRETE WITH #4 REBAR @ 15" O.C. OVER 6" BASE DRIVEWAY	407 SF
3	CONSTRUCT 3" THICK CONCRETE WALKWAY	80 SF
(4)	CONSTRUCT DOWN DRAIN PER DETAIL HEREON	23 LF
5	CONSTRUCT 5'X5' RIP-RAP PER DETAIL HEREON	25 SF
6	CONSTRUCT TYPE 1 RETAINING WALL PER COUNTY STANDARDS (SEPARATE PERMIT)	50 LF
\bigcirc	CONSTRUCT TYPE 2 RETAINING WALL PER COUNTY STANDARDS (SEPARATE PERMIT)	94 LF

ENGINEER OF WORK

MASSOUD GHIAM 24 OAKHURST RD IRVINE, CA 92620 (949) 307-5410 MASSOUDG98@YAHOO.COM Massoud Ghiam MASSOUD GHIAM

RCE 59993, EXP. 6-30-2024

7-06-2022 DATE

BWL BGR 2100496 BMP <u>2100605</u> BENCHMARK: SHEET NO. COUNTY OF RIVERSIDE DESIGNED \cap RIVERSIDE COUNTY #ML87 M. G. PRECISE GRADING PLAN \angle A BASS DISK, STAMPED ML 87 1971 SET IN CHECKED THE TOP OF CONCRETE POST 3" ABOVE APN: 269-470-020 OF<u>3</u>SHEETS GROUND. ALONG LA SIERRA AVE, 2.5 MILES SCALE FROM INTERSECTION OF LA SIERRA 16750 LA BELLA VILLA AS SHOWN FILE NO. AVE/VICTORIA ST., 250' SOUTH OF EL JOB NUMBER RIVERSIDE, CA 92503 SOBRANTE, 200' EAST OF LA SIERA AVE. ELV: 1266.566 COUNTY FILE NO. W.O.

EROSION CONTROL NOTES

- 1- EROSION CONTROL IS REQUIRED FOR GRADING OPERATION ON A YEAR ROUND BASIS. APPROVED PLANS ARE REQUIRED FOR ALL WORK REQUIRING A GRADING PERMIT.
- 2- IN CASE OF EMERGENCY CALL MR. JOHN RUSSO AT (951) 836-0530.
- 3- THE ENGINEER OF RECORD WILL SUPERVISE EROSION CONTROL WORK AND ENSURE THAT WORK IS IN ACCORDNCE WITH THE APPROVED PLANS.
- 4- COUNTY APPROVAL OF PLANS DOES NOT RELIEVE THE DEVELOPER FROM RESPONSIBILITY FOR THE CORRECTION OF ERROR AND OMISSION DISCOVERED DURING CONSTRUCTION. UPON REQUEST, THE REQUIRED PLAN REVISION SHALL BE PROMPTLY SUBMITTED TO THE PUBLIC WORKS DIRECTOR FOR APPROVAL.
- 5- THE PUBLIC WORKS DIRECTOR RESERVES THR RIGHT TO MAKE CHANGES OR MODIFICATIONS TO THIS PLAN AS DEEMED NECESSARY.
- 6- STANDBY CREW FOR EMERGENCY WORK SHALL BE MADE AVAILABLE AT ALL TIMES. NECESSARY MATERIALS SHALL BE AVAILABLE ON THE SITE AND STOCKPILED AT CONVENIENT LOCATIONS TO FACILITATE RAPID CONSTRUCTION OF TEMPORARY EROSION AND SEDIMENT CONTROL BEST MANAGEMENT PRACTIES (BMPS) OR TO REPAIR ANY DAMAGED BMPS WHEN RAIN IS IMMINENT.
- 7- AN EFFECTIVE COMBINATION OF EROSION AND SEDIMENT CONTROL BMPS SHALL BE IMPLEMENTED AND MAINTAINED TO PREVENT AND/OR MINIMIZE THE TRANSPORT OF SOIL IN RUNOFF FROM DISTURBED SOIL AREA ON THE CONSTRUCTION SITE AT ALL TIMES. IN ADDITION, BMPS SHALL BE INSPECTED PRIOR TO PREDICTED STORM EVENTS AND FOLLOWING STORM EVENTS. BMPS SHALL NOT BE MOVED OR MODIFIED WITHOUT THE APPROVAL OF THE CITY INSPECTOR.
- 8- ALL REMOVABLE PROTECTIVE DEVICES SHOWN SHALL BE IN PLACE AT THE END OF EACH WORKING DAY WHEN THE 5-DAY RAIN PROBABILITY FORCAST EXCEEDS 40%, AS FORCAST BY THE NATIONAL WEATHER SERVICE.
- 9- AFTER A RAIN EVENT EXCEEDING ONE-QUARTER INCH IN ANY 12 HOUR PERIOD, OR UPON DIRECTION OF THE PUBLIC WORKS DIRECTOR, ALL SILT AND DEBRIS SHALL BE REMOVED FROM THE CHECK DAMS, SILT FENCES, AND DESILTING BASINS; AND THE BASIN SHALL BE PUMPED DRY AND RESTORD TO ORIGINAL DESIGN CONDITION. ANY EROSION CONTROL MEASURES DAMAGED DURING A RAIN EVENT SHALL ALSO BE IMMEDIATELY REPAIRED.
- 10- DESILTING BASINS ARE TO BE CONSTRUCTED AS GRADING OF INDIVIDUAL GRADING AREAS ARE COMPLETED PER ROUGH GRADING PLANS.
- 11- THE CONTRACTOR SHALL BE RESPONSIBLE AND SHALL TAKE NECESSARY PRECAUTIONS TO PREVENT PUBLIC TRESPASS ONTO AREAS WHERE IMPOUNDED WATER CREATES A HAZARDOUS CONDITION.
- 12- AREAS SHALL BE MAINTAINED IN SUCH A STATE THAT FIRE ACCESS SHALL BE MAINTAINED AT ALL TIMES (INCLUDING ACCESS TO NEIGHBORING PROPERTIES).
- 13- GRADED AREAS AROUND THE SITE PERIMETER MUST DRAIN AWAY FROM THE FACE OF SLOPE AT THE CONCLUSION OF EACH WORKING DAY.
- 14- TEMPORARY EROSION PROTECTION IS REQUIRED FOR MANUFACTURED SLOPES PRIOR TO PERMANENT PLANTING.
- 15- ALL DISTURBED SLOPES SHALL BE PLANTED AND PROTECTED WITHIN 45 DAYS OF THE COMPLETION OF EACH STAGE OF GRADING. SUITABLE MEASURES TO PREVENT SLOPE EROSION INCLUDING, BUT NOT LIMITED TO, RAPID GROWTH VEGETATION SUFFICIENT TO STABILIZE THE SOIL, SHALL BE INSTALLED ON ALL DISTURBED AREAS UNTIL SUCH TIME AS THE PERMANENT VEGETATIVE COVER SUFFICIENTLY MATURES TO PROVIDE PERMANENT STABILITY.
- 16- NO OBSTRUCTION OR DISTURBANCE OF NATURAL DRAINAGE COURSE OR EXISTING STORM DRAIN INLET SHALL OCCUR DURING GRADING OPERATIONS, UNLESS ADEQUATE TEMPORARY/PERMANENT DRAINAGE FACILITIES HAVE BEEN APPROVED AND INSTALLED TO CARY SURFACE WATER TO THE THE NEAREST PRACTICAL STREET, STORM DRAIN OR NATURAL WATER COURSE. ALL EXISTING DRAINAGE COURSES ON THE PROJECT SITE MUST BE MAINTAINED IN A STATE TO ALLOW FOR CONTINOUS FUNCTION.
- 17- THE CONTRACTOR SHALL CONDUCT HIS OPERATIONS IN SUCH A MANNER THAT STORM RUNOFF WILL BE CONTAINED WITHIN THE PROJECT OR CHANNELED INTO THE STORM DRAIN SYSTEM WHICH SERVES THE RUNOFF AREA. STORM RUNOFF FROM ONE AREA NOT BE ALLOWED TO DIVERT TO ANOTHER RUNOFF AREA.
- 18- CONFORMANCE WITH THE REQUIREMENTS OF THESE PLANS SHALL IN NO WAY RELIEVE THE CONTRUCTOR FROM HIS RESPONSIBILITIES TO THIS SITE AND ADJACENT PROPERTIES. DURING GRADING OPERATIONS, TEMPORARY DRAINAGE CONTROL SHALL BE PROVIDED TO PREVENT PONDING WATER AND DAMAGE TO ADJACENT PROPERTIES. TEMPORARY DRAINAGE CONTROL SHALL CONSIST OF, BUT NOT BE LIMITED TO, CONSTRUCTING SUCH FACILITIES AND TAKING SUCH MEASURES AS ARE NECESSARY TO PREVENT, CONTROL AND ABATE WATER, MUD AND EROSION DAMAGE TO PUBLIC AND PRIVATE PROPERTY AS A RESULT OF THE CONSTRUCTION OF THE PROJECT.

19- FILL AREAS WHILE BEING BROUGHT UP TO GRADE AND DURING PERIOD OF COMPLETION PRIOR TO FINAL GRADE, SHALL BE PROTECTED BY VARIOUS MEASURES TO ELIMINATE EROSION AND THE SILTATION OF DOWNSTREAM FACILITIES AND ADJACENT AREAS. THESE MEASURES MAY INCLUDE, BUT SHALL NOT BE LIMITED TO: TEMPORARY DOWN DRAIN, EITHER IN THE FORM OF PIPES OR PAVED DITCHES TO DESILT RUNOFF; PROTECTION SUCH AS SAND BAGS AROUND INLETS WHICH HAVE NOT BEEN BROUGHT UP TO GRADE; AND EARTH BERMS AND APPROPRIATE GRADING TO DIRECT DRAINAGE AWAY FROM THE EDGE OF THE TOP OF SLOPES SHALL BE CONSTRUCTED AND MAINTAINED ON THOSE FILL AREAS WHERE EARTHWORK OPERATIONS ARE NOT IN PROGRESS.

- 20- CLEARING AND GRUBBING SHOULD BE LIMITED TO AREAS THAT WILL RECEIVE IMMEDIATE GRADING, EROSION CONTROL MEASURES WILL BE REQUIRED TO PROTECT AREAS WHICH HAVE BEEN CLEARED AND GRUBBED PRIOR TO GRADING OPERATION, AND WHICH ARE SUBJECT TO RUNOFF DURING A RAIN EVENT. THESE MEASURES MAY INCLUDE BUT SHALL NOT BE LIMITED TO; GRADED DITCHES; BRUSH BARRIERS AND SILT FENCES. CARE SHALL BE EXERCISED TO PRESERVE VEGETATION BEYOND LIMITS OF GRADING.
- 21- CONSTRUCTION SITES SHALL BE MANAGED TO MINIMIZE THE EXPOSURE TIME OF DISTURBED SOIL AREA THROUGH PHASING AND SCHEDULING OF GRADING TO THE EXTENT FEASIBLE AND THE USE OF TEMPORARY AND PERMANENT SOIL STABILIZATION.
- 22- STOCKPILES OF SOIL SHALL BE PROPERLY CONTAINED TO ELIMINATE OR REDUCE SEDIMENT TRANSPORT FROM THE SITE TO STREET, DRAINAGE FACILITIES OR ADJACENT PROPERTIES VIA RUNOFF, VEHICLE TRACKING, OR WIND.
- 23- CONSTRUCTION SITES SHALL BE MAINTAINED IN SUCH A CONDITION THAT WIND OR RUNOFF DOES NOT CARRY WASTES OR POLLUTANTS OFF THE SITE TO STREET, DRAINAGE FACILITIES OR ADJOINING PROPERTIES.

- 24-DISCHARGES OTHER THAN STORM WATER (NON-STORM WATER DISCHARGES) ARE PROHIBITED, EXCEPT AS AUTHORIZED BY AN INDIVIDUAL NPDES PERMIT, THE STATEWIDE GENERAL PERMIT FOR STORM WATER DISCHARGE ASSOCIATED WITH CONSTRUCTION ACTIVITY, OR OTHER APPLICABLE GENERAL NPDES PERMIT. POTENTIAL POLLUTANT INCLUDE BUT ARE NOT LIMITED TO: SOLID OR GLUES, LIME, PESTICIDES, HERBICIDES, FERTILIZER, WOOD PRESERVATIVES, AND ASBESTOS FIBERS, PAINT FLAKES OR STUCCO FRAGMENTS, FUELS, OILS, LUBRICANTS, AND HYDRAULIC, RADIATOR OR BATTERY FLUIDS: CONCRETE AND RELATED CUTTING OR CURING RESIDUES; FLOATABLE WASTES; WASTES FROM STREET CLEANING; SUPER-CHLORINATED PATABLE WATER FROM LINE FLUSHING AND TESTING; AND RUNOFF FROM EQUIPMENT AND VEHICLE WASHING. DURING CONSTRUCTION, DISPOSAL OF SUCH MATERIALS SHOULD OCCUR IN A SPECIFIED AND CONTROLLED TEMPORARY AREA ONSITE PHYSICALLY SEPARATED FROM POTENTIAL STORM WATER RUNOFF. WITH ULTIMATE DISPOSAL IN ACCORDANCE WITH LOCAL, STATE AND FEDERAL REQUIREMENTS.
- 25- AT THE END OF EACH DAY OF CONSTRUCTION ACTIVITY ALL CONSTRUCTION DEBRIS AND WASTE MATERIALS SHALL BE COLLECTED AND PROPERLY DISPOSED IN TRAS OR RECYCLE BINS.
- 26-PAVED STREETS, SIDEWALKS AND OTHER IMPROVEMENTS SHALL BE MAINTAINED NEAT AND CLEAN CONDITION, FREE OF LOOSE SOIL, CONSTRUCTION DEBRIS AND TRASH. STREET SWEEPING OR OTHER EQUALLY EFFECTIVE MEANS SHALL BE USE ON A REGULAR BASIS TO CONTROL SILT THAT HAS BEEN DEPOSITED ON STREET OR SIDEWALKS. WATERING SHALL NOT BE USED TO CLEAN STREET.
- 27- DISCHARGING CONTAMINATED GROUNDWATER PRODUCES BY DEWATERING GROUNDWATER THAT HAS INFILTRATED INTO THE CONSTRUCTION SITE IS PROHIBI DISCHARGING CONTAMINATED SOILS VIA SURFACE EROSION IS ALSO PROHIBITED. DISCHARGING NON-CONTAMINATED GROUNDWATER PRODUCED BY DEWATERING ACTIVITIES MAY REQUIRE A NPDES PERMIT FROM THE SANTA ANA REGIONAL BOA
- 28-ALL CONSTRUCTION CONTRACTOR AND SUBCONTRACTOR PERSONNEL ARE TO BE MADE AWARE OF THE REQUIRED BEST MANAGEMENT PRACTICES AND GOOD HOUSEKEEPING MEASURES FOR THE PROJECT SITE AND ANY ASSOCIATED CONSTRUCTION STAGING AREAS.

CONSTRUCTION NOTES: UNDERGROUND SERVICE ALER INSTALL STABILIZED CONSTRUCTION ENTRANCE/EXIT PER DETAI CALL: TOLL FREE 1-800-422-4133 2 – INSTALL SANDBAG BARRIER SE-8 PER CASQA BMP HANDBOOK (3) - INSTALL CONCRETE WASTE MANAGEMENT WM-8 PER CASQA BN TWO WORKING DAYS BEFORE YOU DIG SEAL-COUNTY NOIE: WORK CONTAINED WITHIN THESE PLANS SHALL NOT COMMENCE UNTIL AN ENCROACHMENT PERMIT AND/OR A GRADING PERMIT HAS BEEN ISSUED. APPR. DATE COUNTY MARK BY DATE ENGINEER REVISIONS

<u>GRADING DISTURBANCE CALC.</u> SEE SHEET 1 OF 3	SEAL-ENGINEER PROFESSION C 59993 EXP.6-30-2024 C C VIL OF CALIFORNIA	ENGINEER OF WORK MASSOUD GHIAM 24 OAKHURST RD IRVINE, CA 92620 (949) 307–5410 MASSOUDG98@YAHOO.COM <u>Massoud GHIAM</u> RCE 59993 EXP 6–30–20	7-06-2022 DATE	BENCHMARK: RIVERSIDE COUNTY #ML87 A BASS DISK, STAMPED ML & THE TOP OF CONCRETE POST GROUND. ALONG LA SIERRA A FROM INTERSECTION OF LA S AVE/VICTORIA ST., 250' SOUT SOBRANTE, 200' EAST OF LA ELV: 1266.566	7 1971 SET IN 3" ABOVE VE, 2.5 MILES IERRA H OF EL SIERA AVE.	DESIGNED M. G. CHECKED SCALE AS SHOWN JOB NUMBER DATE FOR:	COUNTY OF RIVERSIDE EROSION CONTROL PLAN APN: 269-470-020 16750 LA BELLA VILLA RIVERSIDE, CA 92503	SHEET NO. 3 OF <u>3</u> SHEETS FILE NO.
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