

SITE INFORMATION

JURISDICTION ZONE FIRE DISTRICT WATER

SEWAGE DISPOSAL

SOLANO COUNTY RR2.5 VACAVILLE FIRE DISTRICT

RURAL NORTH VACAVILLE WATER DISTRICT NEW SEPTIC SYSTEM

65% OF NONHAZARDOUS WASTE SHALL BE RECYCLED AND/OR SALVAGED PER SECTION 4.408 OF THE 2019 CALIFORNIA GREEN BUILDING CODE. DOCUMENTATION DEMONSTRATING COMPLIANCE WITH SECTION 4.408.2, 4.408.3, OR 4.408.4 SHALL BE EMAILED TO NUNTAL@SOLANOCOUNTY.COM AND APPROVED PRIOR TO FINAL INSPECTION.

Rural North Vacaville Water Distric

Site Plan Scale 1" = 75'

Rural North Vacaville Water District-

707'-1'

イノ

TWO (2) COPIES OF EACH DEFERRED SUBMITTAL WILL FIRST BE SUBMITTED TO THE ARCHITECT/ENGINEER-OF-RECORD, WHO WILL REVIEW THEM AND FORWARD THEM TO THE BUILDING DEPARTMENT WITH NOTATIONS INDICATING THAT THE SUBMITTALS CONFORM TO THE DESIGN OF THE BUILDING. THE ENGINEER(S) RESPONSIBLE FOR THE DESIGN OF THE DEFERRED SUBMITTAL ITEMS SHALL STAMP AND WET-SIGN THOSE DRAWINGS AND CALCULATIONS FOR WHICH HE/SHE IS RESPONSIBLE.

CUT = 1766 CY FILL = 1601 CY

B2022-1152

Found 3/4" Iron Pipe 11 PM 74 11 PM 57-68

© Found 3/4" Iron Pipe 11 PM 74 15 RS 57-68

Right of Way 30' C/L_____ Gibson Canyon Rd

Table of Contents

- A1.0 Site Plan and Contents
- A1.1 Elevations
- A1.2 Floor Plan
- A1.3 Cross Sections G1.0 - Grading and Driveway Plans
- EC1.0 Erosian Control
- U1.1 Electrical and Gas Plans
- S1.1 Shear Plan
- S1.2 Foundation Plan
- S1.3 Roof Plan
- T24.1 Title 24
- T24.2 Cal Green
- FP1 Fire Sprinker Plans

WILDLAND-URBAN INTERFACE BUILDING REQUIREMENTS:

* ALL ROOFING MATERIALS ARE REQUIRED TO HAVE AND SHALL BE INSTALLED TO MEET A CLASS "A" ASSEMBLY. WHEN PROVIDED, VALLEY FLASHINGS SHALL BE INSTALLED OVER ONE LAYER 72# MINERAL-SURFACED NONPERFORATED CAP SHEET RUNNING THE ENTIRE LENGTH OF THE VALLEY.

* ROOF GUTTERS SHALL BE PROVIDED WITH THE MEANS TO PREVENT THE ACCUMULATION OF LEAVES AND DEBRIS IN THE GUTTER.

* EXTERIOR WALLS SHALL BE APPROVED NONCOMBUSTIBLE OR IGNITION-RESISTANT MATERIALS, HEAVY TIMER, OR LOG WALL CONSTRUCTION OR SHALL PROVIDE PROTECTION FROM INTRUSION OF FLAMES AND EMBERS. COVERINGS SHALL EXTEND FROM TOP OF FOUNDATION TO THE ROOF AND TERMINATE AT 2-INCH NOMINAL SOLID WOOD BLOCKING BETWEEN RAFTERS AT ALL ROOF OVERHANGS, OR IN THE CASE OF ENCLOSED EAVES, TERMINATE AT THE ENCLOSURE.

* EAVES OR SOFFITS SHALL BE PROTECTED BY INGNITION-RESISTAN MATERIALS OR NONCOMBUSTIBLE CONSTRUCTION ON THE EXPOSEI UNDERSIDE.

* VENTING OF BUILDING IS NOT ALLOWED IN EAVES OR CORNICES UNLESS USING STATE APPROVED VENTING DEVICES SPECIFICALLY APPROVED FOR INSTALLATION IN THESE AREAS.

* VENTILATION OPENINGS IN WALLS SHALL RESIST THE INTRUSION OF FLAME AND EMBERS INTO THE STRUCTURE OR VENTS SHALL BE SCREENED WITH A CORROSION-RESISTANT NONCOMBUSTIBLE WIRE MESH WITH 1/8" OPENINGS OR ITS EQUIVALENT.

* EXTERIOR GLAZING SHALL BE INSULATING-GLASS UNITS WITH A MINIMUM OF ONE TEMPERED PANE OR HAVE A FIRE-RESISTIVE RATING OF NOT LESS THAN 20 MINUTES.

* EXTERIOR DOOR ASSMBLIES SHALL MEET THE STANDARDS OF SFM 12/7A-1, BE APPROVED NONCOMBUSTIBLE CONTRUCTION, SOLID CORE WOOD NOT LESS THAN 1-3/8" THICK, OR SHALL HAVE A FIRE-RESISTANCE RATING OF NOT LESS THAN 20-MINUTES. GARAGE DOORS SHALL MEET THE REQUIREMENT IF THEY ARE NONCOMBUSTIBLE OR EXTERIOR FIRE-RETARDANT TREATED WOOD VEHICLE ACCESS DOORS.

SPECIAL INSPECTION REQUIRED

- CBC Chapt. 17 ☐ High Strength Bolts
- Welding

Geotechnical compaction

□ Other

PRIOR TO FINAL INSPECTION SIGN-OFF REQUIRED BY:

- □ PLANNING □ PUBLIC WORKS
- ✓ FIRE
- ☑ ENV. HEALTH □ OTHER

FIRE SPRINKLER SYSTEM REQUIRED

HOLDOWN ANCHOR BOLTS AND STANDARD ANCHOR BOLTS SHALL BE IN PLACE PRIOR TO FOUNDATION INSPECTION.

> ALL WORK SHALL **COMPLY WITH THE** LATEST CALIFORNIA EDITION OF THE BUILDING, ELECTRICAL **MECHANICAL & PLUMBIING** CODES

> > HERS VERIFICATION REQUIRED



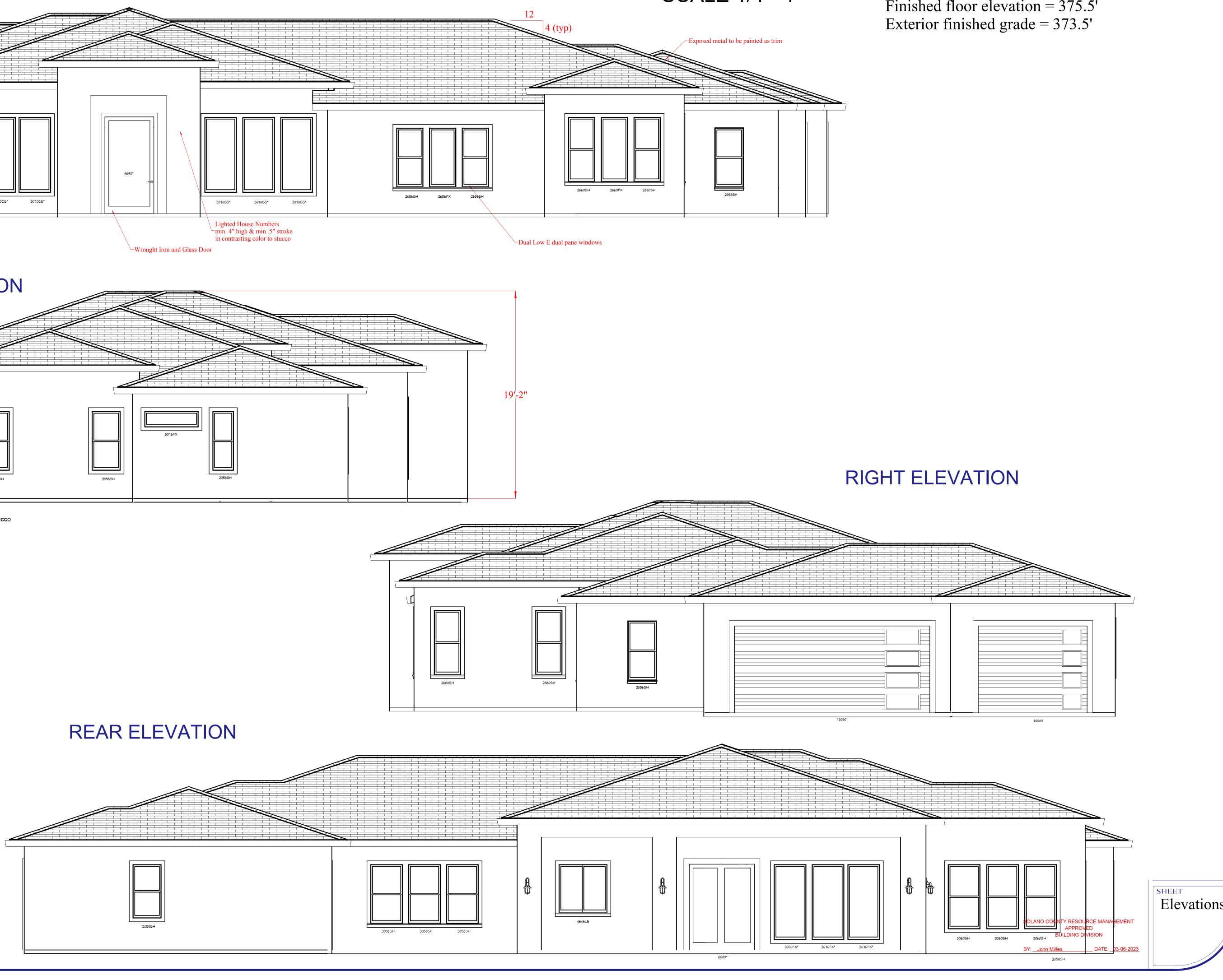
SOLANO COUNTY RESOURCE MANAGEMENT APPROVED **BUILDING DIVISION**

BY: John Millea DATE: 03-06-2023



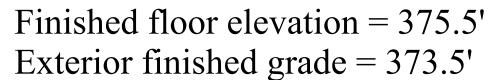


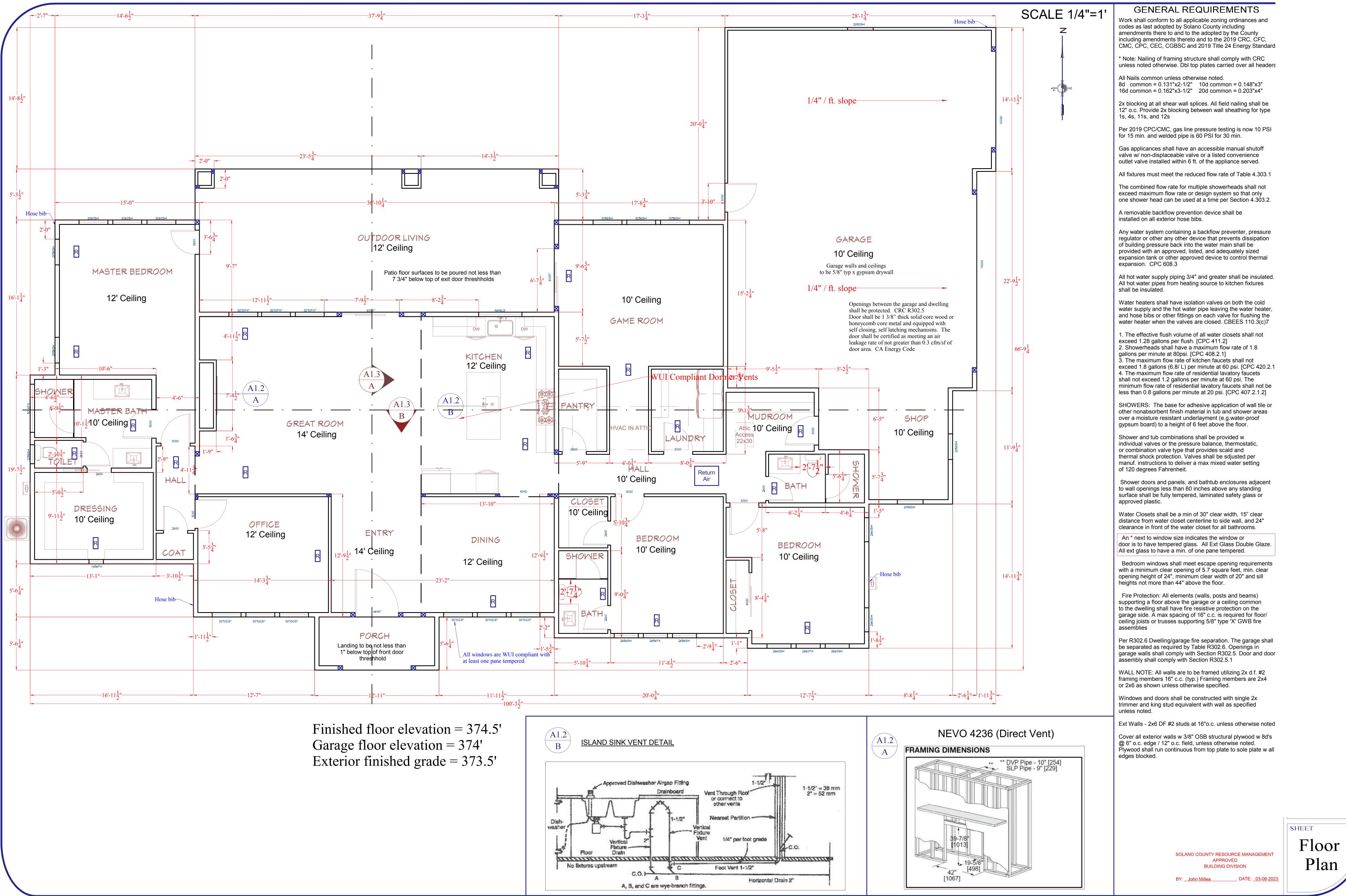


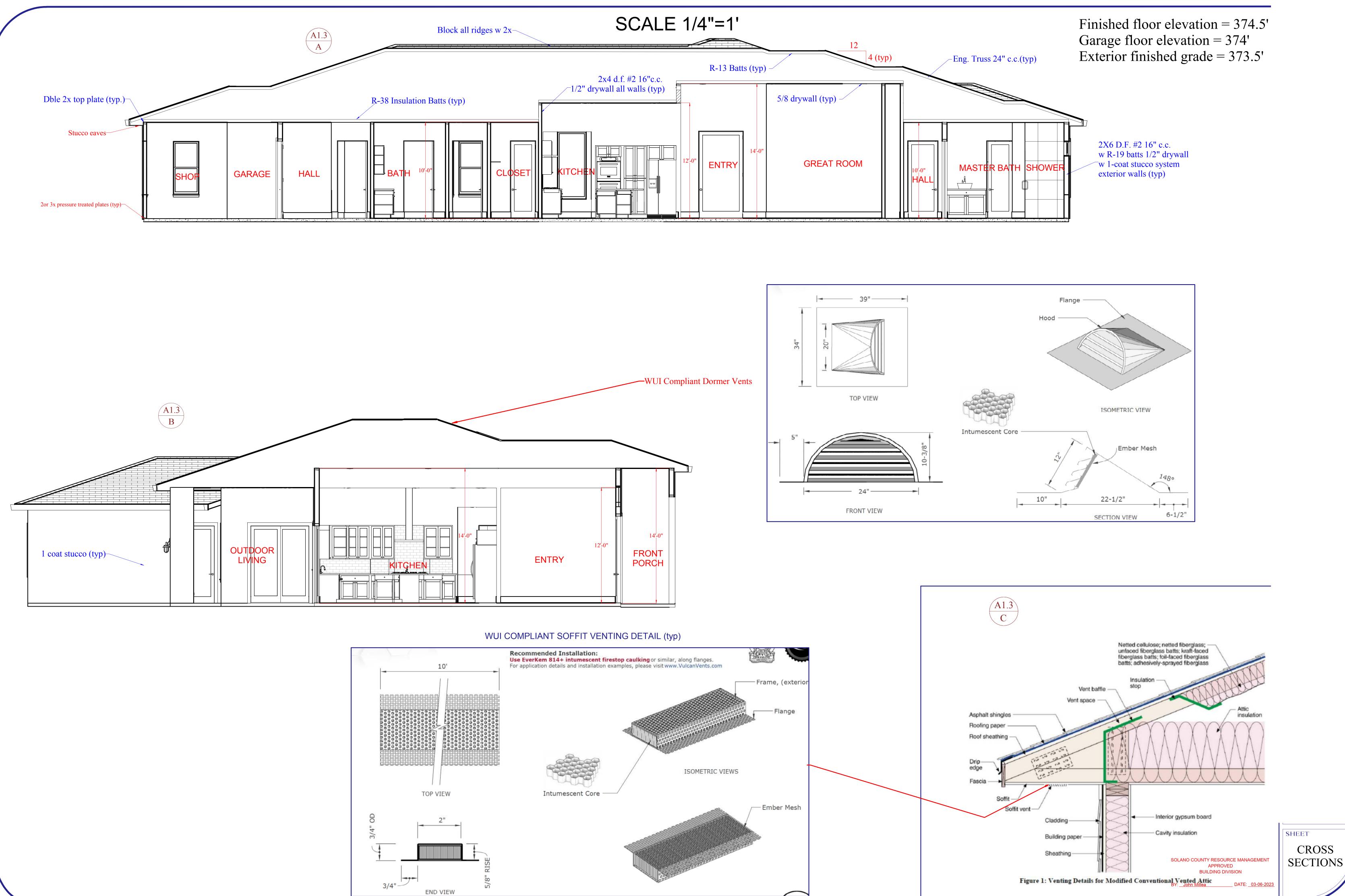


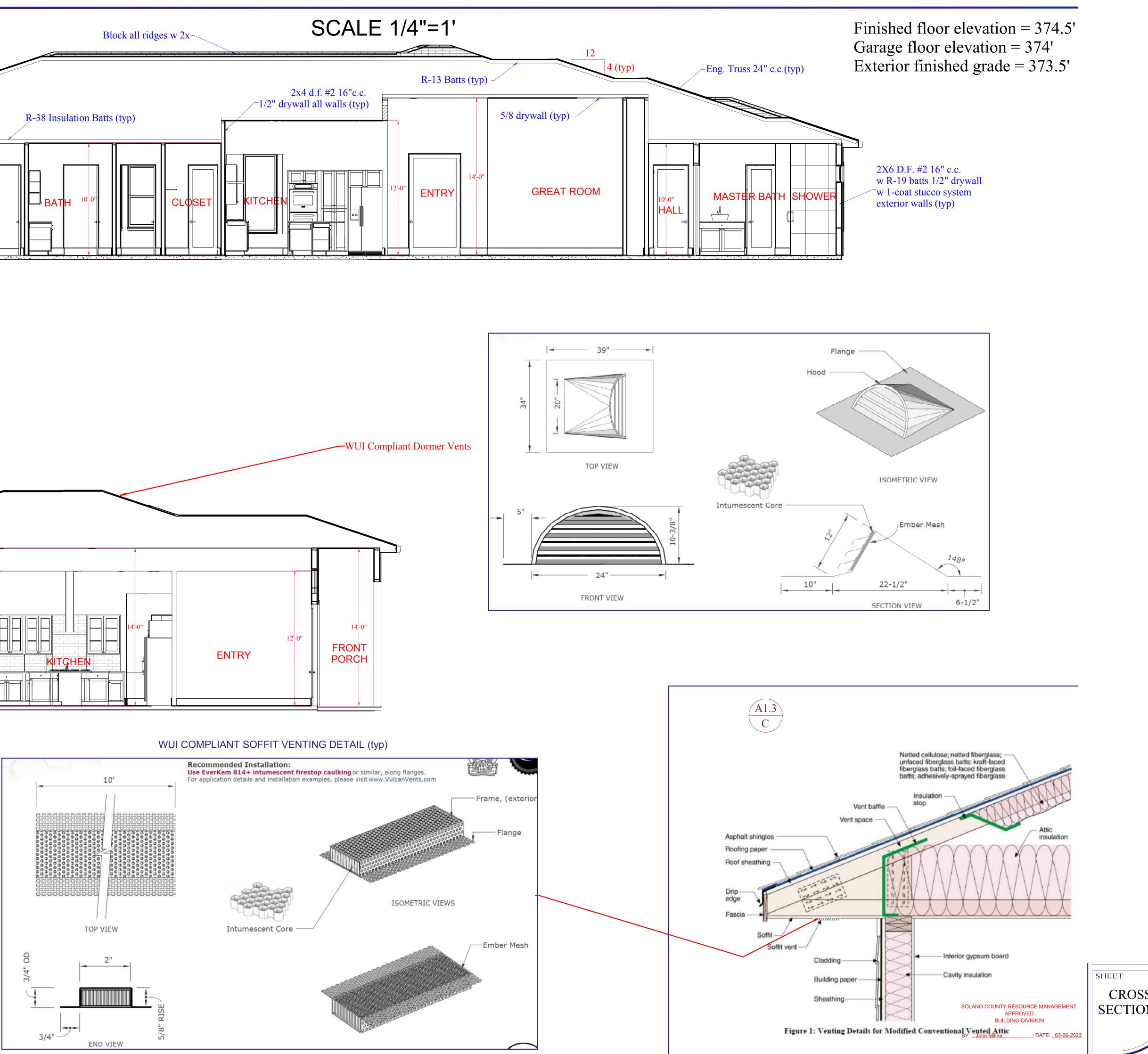
SCALE 1/4"=1'

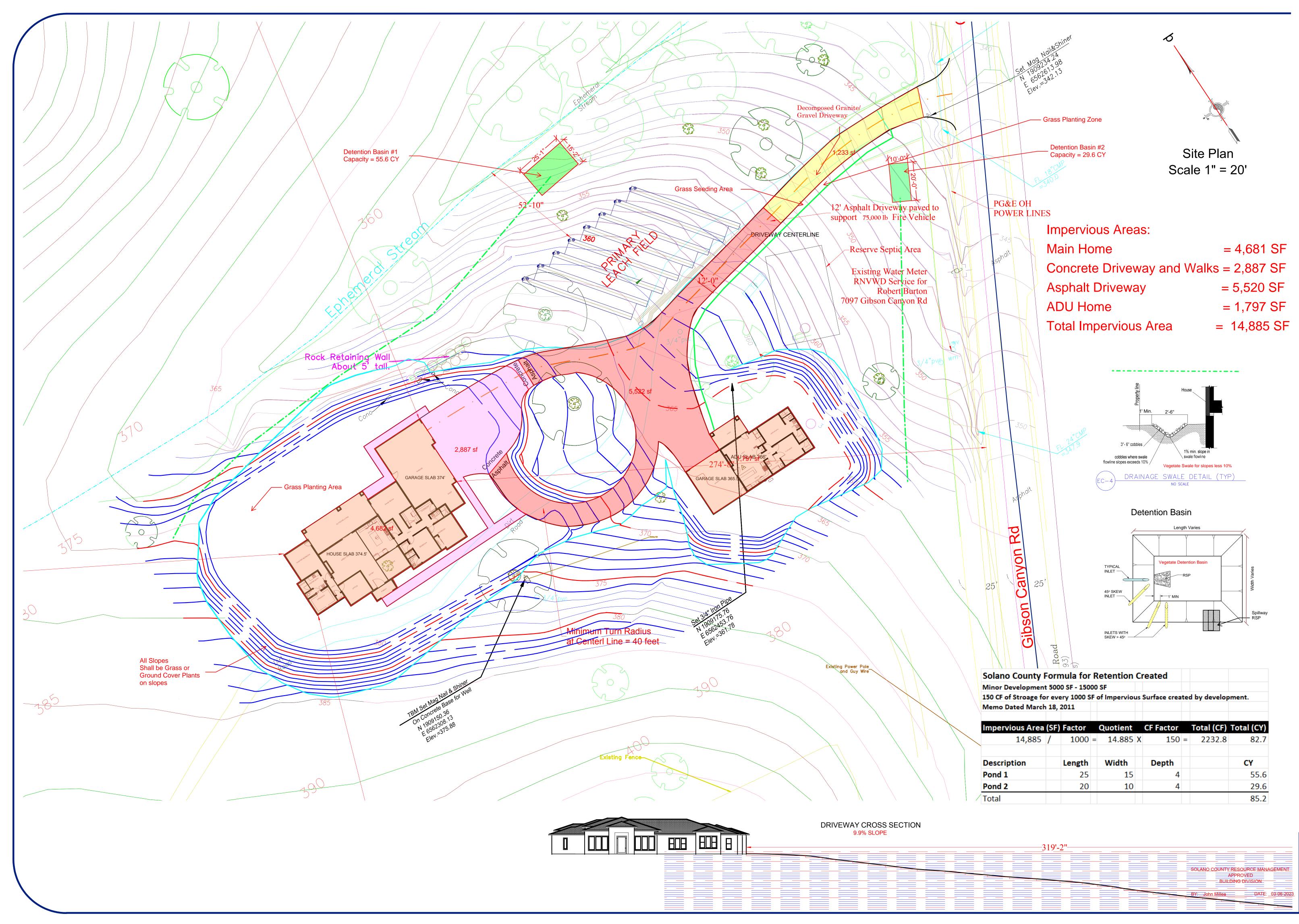




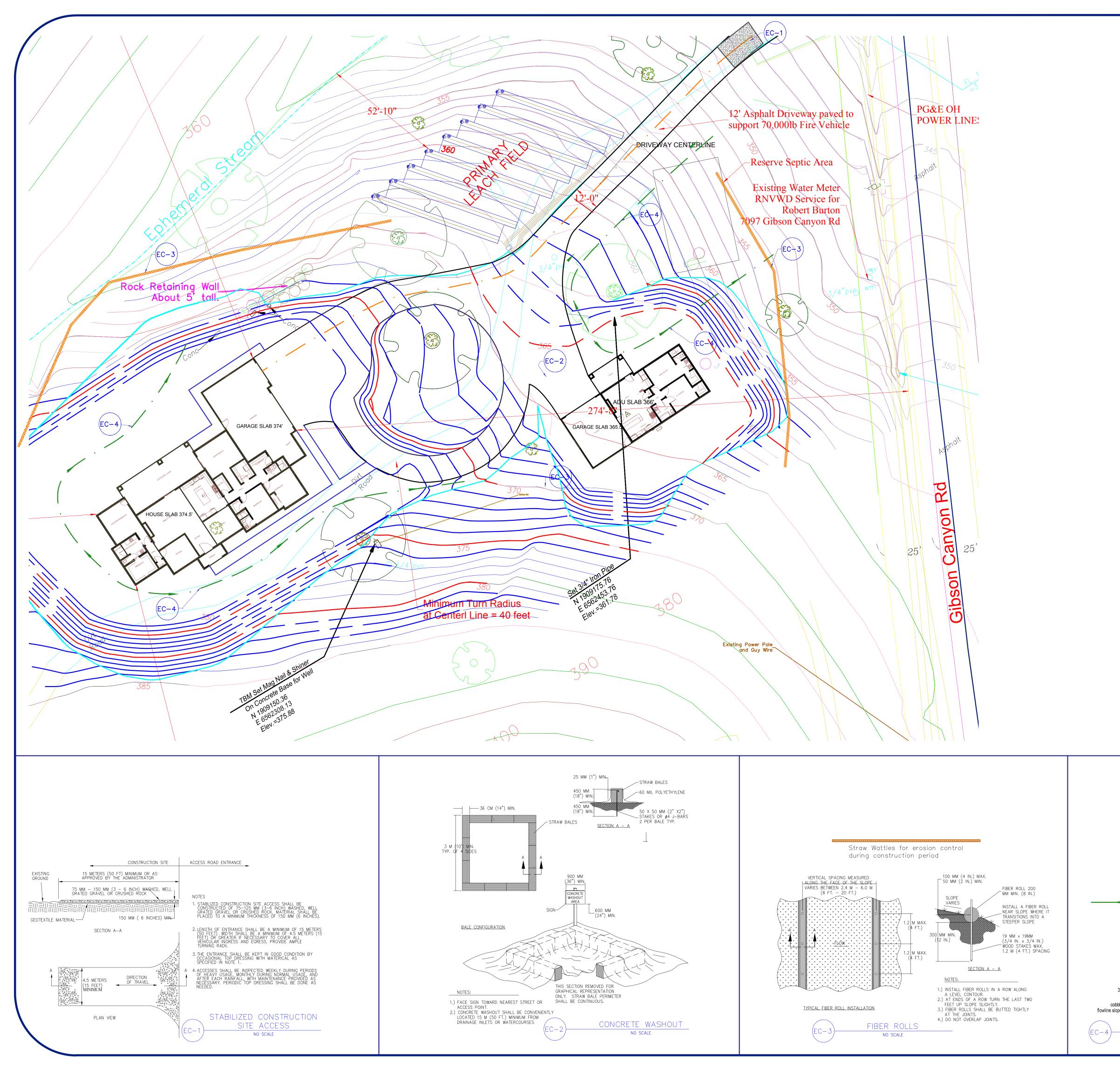


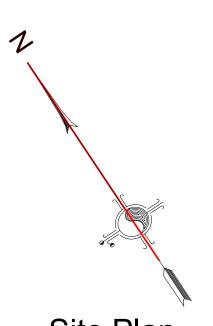






SHEET Grading and Driveway Drainage





Site Plan Scale 1" = 20' **GRADING NOTES**

1. AN ENCROACHMENT PERMIT IS REQUIRED FOR ALL WORK TO BE DONE WITHIN PUBLIC RIGHTS-OF-WAY OR EASEMENTS, AND FOR CONNECTIONS TO PUBLICLY-OWNED AND MAINTAINED FACILITIES. 2. CALL UNDERGROUND SERVICE ALERT (USA) AT 811 OR 800-642-2444, FORTY-EIGHT (48) HOURS PRIOR TO ANY GRADING/ EXCAVATION ACTIVITY. 3. THE OWNER/CONTRACTOR SHALL NOTIFY CITY OF FOLSOM CONSTRUCTION INSPECTION SERVICES AT 916-355-7210.

TWENTY-FOUR (24) HOURS PRIOR TO COMMENCEMENT OF ANY GRADING. 4. CONTRACTOR SHALL OBTAIN AN APPROVED WATER METER FROM THE CITY AT THE OWNER'S EXPENSE. 5. ALL REFERENCES TO "STANDARD SPECIFICATIONS" SHALL MEAN THE LATEST EDITION OF THE CITY OF FOLSOM STANDARD CONSTRUCTION SPECIFICATIONS AND DESIGN AND PROCEDURES MANUAL.

BRAINAGE SWALES ARE TO BE CONSTRUCTED PER CITY STANDARD DETAIL.
 CLEARING AND GRUBBING SHALL CONFORM TO THE PROVISIONS OF SECTION 16 OF THE STANDARD SPECIFICATIONS.
 ALL EXCAVATION, EMBANKMENT, BACKFILL, ETC., SHALL CONFORM TO THE PROVISIONS IN SECTION 19, "EARTHWORK," OF THE STANDARD SPECIFICATIONS.

9. CUSTOM HOMES AND/OR SWIMMING POOLS SHALL BE CHALKED OUT ON THE GROUND AND ALL OAK TREES SHALL BE FENCED WITH HIGH VISIBILITY FENCING BEFORE THE PRE-SITE INSPECTION IS SCHEDULED. 10. NO WORK SHALL BE DONE UNDER OR WITHIN THE TREE PROTECTION ZONE (TPZ) OF ANY EXISTING TREE WITHOUT A VALID TREE

11. GRADING ACTIVITIES SHALL IMPLEMENT EROSION AND DUST CONTROL MEASURES AT ALL TIMES. EROSION CONTROL PLANS SHAL BE SUBMITTED TO THE CITY OF FOLSOM, COMMUNITY DEVELOPMENT DEPARTMENT FOR REVIEW AND APPROVAL. 12. THERE SHALL BE NO TRESPASSING OF ANY KIND INTO PUBLIC OR PRIVATE OPEN SPACE AREAS. 13. ALL GRADING SHALL BE DONE IN ACCORDANCE WITH THE SOILS REPORT REFERENCE NO. 99231.3

14. ALL GRADING INCLUDING COMPACTION, EXCAVATION, PLACEMENT OF FILL MATERIALS, ETC., SHALL BE DONE UNDER THE DIRECT OF A GEOTECHNICAL ENGINEER. 15. THE OWNER/CONTRACTOR SHALL PROVIDE A GRADING REPORT CONSISTING OF THE OBSERVATIONS MADE DURING EARTHWORK OPERATIONS, SIGNED AND STAMPED BY A LICENSED GEOTECHNICAL ENGINEER, PRIOR TO ISSUANCE OF A BUILDING PERMIT FOR THE STRUCTURE. RECOMMENDATIONS PROVIDED IN THE GRADING REPORT SHALL BE COMPLETED PRIOR TO ANY STRUCTURAL IMPROVEMENTS

AMENDED CONSTRUCTION DOCUMENTS: WORK SHALL BE INSTALLED IN ACCORDANCE WITH THE APPROVED CONSTRUCTION DOCUMENTS, AND ANY CHANGES MADE DURING CONSTRUCTION THAT ARE NOT IN COMPLIANCE WITH THE APPROVED CONSTRUCTION DOCUMENTS SHALL BE RESUBMITTED FOR APPROVAL AS AN AMENDED SET OF CONSTRUCTION DOCUMENTS.

INSPECTION REQUESTS. IT SHALL BE THE DUTY OF THE PERMIT HOLDER OR THEIR AGENT TO NOTIFY THE CITY OF FOLSOM BUILDING OFFICIAL THAT SUCH WORK IS READY FOR INSPECTION. IT SHALL BE THE DUTY OF THE PERSON REQUESTING ANY INSPECTIONS REQUIRED BY THIS CODE TO PROVIDE ACCESS TO AND MEANS FOR INSPECTION OF SUCH WORK PER 2016 CRC R109.3. INSPECTIONS: CONSTRUCTION OR WORK FOR WHICH A PERMIT IS REQUIRED SHALL BE SUBJECT TO INSPECTION

BY THE CITY OF FOLSOM BUILDING OFFICIAL (OR HIS/HER REPRESENTATIVE), AND SUCH CONSTRUCTION OR WORK SHALL REMAIN ACCESSIBLE AND EXPOSED FOR INSPECTION PURPOSES UNTIL APPROVED. APPROVAL AS A RESULT OF AN INSPECTION SHALL NOT BE CONSTRUCTED TO BE AN APPROVAL OF A VIOLATION OF THE PROVISIONS OF THIS CODE OR OTHER REGULATIONS OF THE DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT PER 2016 CRC R109

AT COMPLETION OF TRUSSES FABRICATION, THE TRUSS MANUFACTURER, SHALL SUBMIT A CERTIFICATE OF COMPLIANCE STATING THAT WORK WAS PERFORMED IN ACCORDANCE WITH APPROVED CONSTRUCTION DOCUMENT. THIS CERTIFICATION SHALL BE PRESENTED TO THE CITY OF FOLSOM BUILDING INSPECTOR AT TIME OF PRODUCT

DELIVERY. CONTRACTOR SHALL PROVIDE CERTIFICATION LETTER FROM SOIL ENGINEER AT TIME OF FOUNDATION INSPECTION. LETTER SHALL BE DATED AFTER ISSUANCE OF PERMIT AND CERTIFY THAT THE PAD AND FOOTING EXCAVATIONS ARE

READY TO RECEIVE IMPROVEMENTS. LOT SHALL BE GRADED TO DRAIN SURFACE WATER AWAY FROM FOUNDATION WALLS. THE GRADE SHALL FALL A MINIMUM OF 6 INCHES WITHIN THE FIRST 10 FEET. CRC R401.3 COMPLETE THE CITY FORM "DETERMINATION OF APPLICABILITY TO THE MODEL WATER EFFICIENCY LANDSCAPE ORDINANCE (AB1881)" AVAILABLE ON THE CITY'S WEB PAGE AND SUBMIT TO THE CITY ARBORIST FRO REVIEW. IF IT IS DETERMINED THAT LANDSCAPE AND IRRIGATION PLANS ARE REQUIRED, PLANS, CALCULATIONS AND A CERTIFICATION STATEMENT SHALL BE SUBMITTED AS A DEFERRED SUBMITTAL. BEFORE ISSUANCE OF A CERTIFICATE OF OCCUPANCY, THE LANDSCAPE AND IRRIGATION WORK SHALL BE COMPLETE, INSPECTIONS OF THE PLANTS AND

IRRIGATION INSTALLATION BY THE CITY AND A THIRD PART WATER AUDIT MUST BE PERFORMED AND SUBMITTED FOR APPROVAL TO THE CITY ARBORIST. NO GRADING IS TO TAKE PLACE OFF SITE, PORTION OF PROPERTY LABELED (DRAINAGE EASEMENT).

ASBESTOS NOTES

AREAS OF ONE ACRE OF LESS MEETING THE CRITERIA IN SUBSECTIONS (B) (1) OR (B) (2):
CONSTRUCTION VEHICLE SPEED AT THE WORK SITE MUST BE LIMITED TO FIFTEEN (15) MILES PER HOUR OR LESS.
PRIOR TO ANY GROUND DISTURBANCE, SUFFICIENT WATER MUST BE APPLIED TO THE AREA TO BE DISTRIBUTED TO PREVENT VISIBLE EMISSIONS FROM CROSSING THE PROPERTY LINE.
AREAS TO BE GRADED OR EXCAVATED MUST BE KEPT ADEQUATELY WETTED TO PREVENT VISIBLE EMISSIONS FROM CROSSING THE PROPERTY LINE.
STORAGE PILES MUST BE KEPT ADEQUATELY WETIED, TREATED WITH A CHEMICAL DUST SUPPRESSANT, OR COVERED WHEN MATERIAL IS NOT BEING ADDED TO OR REMOVED FROM THE PILE.
EQUIPMENT MUST BE WASHED DOWN BEFORE MOVING FROM THE PROPERTY ONTO A PAVED PUBLIC ROAD.
VISIBLE TRACK-OUT ON THE PAVED PUBLIC ROAD MUST BE CLEANED USING WET SWEEPING OR A HEPA FILTER EQUIPPED VACUUM DEVICE WITHIN TWENTY FOUR (24) HOURS.

EROSION & SEDIMENT CONTROL

1. THE PROJECT SHALL CONFORM TO THE COUNTY CODE FOR PROTECTION OF SURFACE WATERS AND URBAN RUN-OFF. IN ADDITION, SITES OF ONE ACRE OR MORE SHALL COMPLY WITH THE STATE'S NPDES GENERAL CONSTRUCTION PERMIT.

2. THE PROJECT OWNER SHALL DESIGNATE AN EROSION AND SEDIMENT CONTROL (ESC) MANAGER WHO SHALL PROVIDE THEIR NAME, PHONE NUMBER, AND E-MAIL ADDRESS TO THE PUBLIC WORKS STORMWATER QUALITY MANAGER OR THE DESIGNATED CITY INSPECTOR. CHANGES TO THE ESC MANAGER'S CONTACT INFORMATION SHALL PROMPTLY BE REPORTED TO THE PUBLIC WORKS STORMWATER QUALITY MANAGER. THE ESC MANAGER SHALL BE RESPONSIBLE FOR ALL PROJECT PERSONNEL INCLUDING SUBCONTRACTORS AND MATERIAL SUPPLIERS.

 THE ESC MANAGER SHALL INSPECT AND MAKE NECESSARY CORRECTIONS AND ADJUSTMENTS TO THE STORMWATER CONTROLS ON THE FOLLOWING SCHEDULE:
 WEEKLY, 2) 48 HOURS PRIOR TO A STORM EVENT PREDICTED BY THE NATIONAL OCEANIC ATMOSPHERIC ADMINISTRATION TO EXCEED 0.10 INCH,
 DURING A STORM EVENT EXCEEDING 0.10 INCH AND 4) WITHIN 48 HOURS AFTER A STORM EVENT EXCEEDING 0.10 INCH.
 BEST MANAGEMENT PRACTICES (BMPS) DESCRIBED HEREIN AND ON THE

APPROVED EROSION CONTROL PLAN ARE THE MINIMUM REQUIRED BMPS TO BE IMPLEMENTED AND MAINTAINED ON THE CONSTRUCTION SITE YEAR ROUND IN ORDER TO COMPLY WITH CHAPTER 8.70 OF THE FMC. ADDITIONAL MEASURES MAY BE REQUIRED AS SITE CONDITIONS DICTATE, THROUGHOUT THE COURSE OF THE WORK, TO ENSURE THAT WATER QUALITY RUN-OFF INTO COUNTY DRAINAGE FACILITIES IS PROTECTED. 5. SEDIMENT CONTROL BMPS SHALL BE INSTALLED AND MAINTAINED YEAR

ROUND AND AT A MINIMUM SHALL INCLUDE PERIMETER CONTROLS, DRAIN INLET PROTECTION, AND STABILIZED ACCESS. PUBLIC STREETS AND SIDEWALKS SHALL BE SWEPT DAILY WHEN VEHICLES ARE ACCESSING THE SITE. WASHING THE STREET SHALL NOT BE PERMITTED UNLESS OTHERWISE APPROVED BY THE CITY. 6. THE CONTRACTOR SHALL ANTICIPATE AND ACCOMMODATE ANY RUN-ON FROM NEIGHBORING PROPERTIES, INCLUDING EXISTING WATER COURSES. EXISTING WATER COURSES SHALL BE MAINTAINED IN THEIR ORIGINAL CONDITION, EXCEPT WHERE MODIFICATIONS ARE APPROVED BY THE COUNTY. 7. ALL AREAS DISTURBED DURING CONSTRUCTION SHALL BE PROTECTED FROM EROSION DURING THE WET SEASON. HYDROSEED, IF USED, SHALL BE PLACED ON OR BEFORE SEPTEMBER 15TH. HYDROSEED PLACED AFTER SEPTEMBER 15TH

SHALL BE USED WITH A SECONDARY PROTECTION METHOD SUCH AS A MAT OR BLANKET SPECIFICALLY DESIGNED TO FACILITATE GERMINATION AND GROWTH. 8. PROTECTED AREAS SHALL BE PROTECTED WITH ORANGE CONSTRUCTION FENCING. ADDITIONAL SIGNAGE MAY BE REQUIRED TO IDENTIFY THE RESOURCE BEING PROTECTED AND/OR PROVIDE ADDITIONAL INSTRUCTIONS TO CONSTRUCTION PERSONNEL. 9. CEMENTITIOUS, PAINT, WASTE, AND HAZARDOUS MATERIALS SHALL BE

HANDLED, COVERED, AND/OR STORED PROPERLY TO AVOID SPILLS, LEAKAGE, AND CONTACT WITH RAIN OR STORMWATER RUNOFF.
10. UPON COMPLETION OF THE PROJECT, ALL BMP'S SHALL BE REMOVED ONCE LANDSCAPING IS INSTALLED AND FUNCTIONING TO THE SATISFACTION OF THE COUNTY.

1. ALL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE CONSTRUCTED AND MAINTAINED IN ACCORDANCE WITH THE LATEST EDITION OF THE COUNTY IMPROVEMENT STANDARDS AND THE COUNTY OF SACRAMENTO EROSION AND SEDIMENT CONTROL GUIDELINES OR AS OTHERWISE DIRECTED BY THE SPECIAL PROVISIONS FOR THIS PROJECT.

2. EROSION CONTROL BEST MANAGEMENT PRACTICES (BMPS) SHALL BE INSTALLED AND MAINTAINED YEAR ROUND AND AN EFFECTIVE COMBINATION OF EROSION AND SEDIMENT CONTROL BMPS SHALL BE INSTALLED AND MAINTAINED DURING THE WET SEASON (OCTOBER 1 THROUGH APRIL 30) AND PRIOR TO THE ONSET OF ANY STORM. 3. ALL STORM DRAIN INLETS WITHIN THE WORK AREA, AND OFFSITE STORM DRAIN INLETS WITH THE POTENTIAL TO RECEIVE RUNOFF FROM THE PROJECT SITE, SHALL BE ADEQUATELY PROTECTED WITH SEDIMENT CONTROL BMPS TO EFFECTIVELY REMOVE SEDIMENT FROM RUNOFF PRIOR TO DISCHARGE TO THE STORM DRAIN. ADDITIONAL BMP SHALL BE USED AS NEEDED TO REMOVE SEDIMENT FROM RUNOFF. UPON COMPLETION OF THE PROJECT. ALL SEDIMENT CONTROL BMPS SHALL BE REMOVEE 4. ALL STABILIZED CONSTRUCTION ACCESS LOCATIONS SHALL BE CONSTRUCTED PER THE LATEST ADDITION OF COUNTY STANDARDS TO EFFECTIVELY PREVENT TRACKING OF SEDIMENT ONTO PAVED AREAS. THE

STABILIZED ACCESS SHALL BE MAINTAINED ON A YEAR ROUND UNTIL ALL AREAS
ARE FINALLY STABILIZED.
5. ALL AREAS DISTURBED DURING CONSTRUCTION, BY GRADING, TRENCHING, OR
OTHER ACTIVITIES, SHALL BE PROTECTED FROM EROSION DURING THE WET
SEASON (OCTOBER 1 THROUGH APRIL 30). HYDROSEED, IF UTILIZED, SHALL

IDEALLY BE PLACED BY SEPTEMBER 15. HYDROSEED PLACED DURING THE WET SEASON SHALL USE A SECONDARY EROSION PROTECTION METHOD. 6. PROTECTED AREAS AND AREAS WHERE EXISTING VEGETATION IS BEING PRESERVED SHALL BE PROTECTED WITH ORANGE CONSTRUCTION FENCING. ADDITIONAL SIGNAGE MAY BE REQUIRED TO IDENTIFY THE RESOURCE BEING PROTECTED AND/OR PROVIDE ADDITIONAL INSTRUCTIONS TO CONSTRUCTION

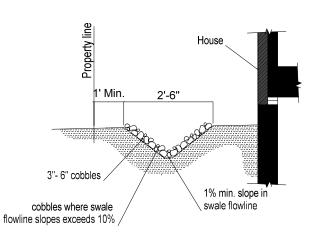
PERSONNEL. EROSION, SEDIMENT, AND DIVERSION CONTROL BMPS SHALL BE INSTALLED AND MAINTAINED TO ENSURE THAT CONSTRUCTION RUNOFF DOES NOT ENTER THE PROTECTED AREAS.

7. SEDIMENT CONTROL BMPS SHALL BE PLACED ALONG THE PROJECT PERIMETER WHEREVER THERE IS A POTENTIAL FOR DRAINAGE TO LEAVE THE PROJECT. PERIMETER SEDIMENT CONTROL BMPS SHALL BE MAINTAINED YEAR ROUND UNTIL THE CONSTRUCTION IS COMPLETE OR THE DRAINAGE PATTERN HAS BEEN CHANGED AND NO LONGER LEAVES THE SITE AT THOSE LOCATIONS. 8. CONTRACTOR SHALL MAINTAIN A LOG AT THE SITE OF ALL INSPECTIONS OR MAINTENANCE OF BMPS, AS WELL AS, ANY CORRECTIVE CHANGES TO THE BMPS OR THE EROSION AND SEDIMENT CONTROL PLAN. ADD NOTE 9 IF THE PROJECT DISTURBS MORE THAN ONE ACRE:

9. EROSION AND SEDIMENT CONTROL MEASURES FOR THIS PROJECT SHALL BE IN SUBSTANTIAL COMPLIANCE AT ALL TIMES WITH THE STORMWATER POLLUTION PREVENTION PLAN (SWPPP) PREPARED FOR THE PROJECT IN ACCORDANCE WITH THE STATE OF CALIFORNIA GENERAL CONSTRUCTION PERMIT. THIS PERMIT REQUIRES THAT THE SWPPP BE KEPT UP TO DATE TO REFLECT THE CHANGING SITE CONDITIONS AND THE SWPPP IS TO BE AVAILABLE ON SITE AT ALL TIMES FOR REVIEW BY STATE AND LOCAL INSPECTORS. THE CONTRACTOR SHALL MEET AND FOLLOW ALL NPDES REQUIREMENTS IN EFECTAND THE DISPLASS A MEASURE

OF EROSION CONTROL ON NEWLY EXPOSED DIRT. BUILDING DIVISION
BY: John Millea DATE: 03-06-2023





DRAINAGE SWALE DETAIL (TYP) NO SCALE

		Electri	c Load	Calcula	ati	ons		
General Li	ghting Loads		220-4(c)	2,900	sq.	ft. x 3 VA =	8,700	VA
	Minimum number of c	ircuits						
8,700	VA / 120 Volts =			72.5		Amperes		
72.5	Amperes /	15	amperes	=	5	circuits		
Small App	liance Branch Circui					,500 VA =	4,500	VA
	220-4(b) (min. of two s	small appli	cance curcu	its required	l)			
Laundry E	quipment Load		220-4(c)	1	x 1	,500 VA =	1,500	VA
						_		
Total Gene	eral Lighting	Small app	liance & La	undry Circu	it Lo	pad	14,700	VA
Applicatio	n of Demand Factors			Table 220-	11		0.000	
	First 3,000 Volt-Ampe		%	44 700			3,000	
	Total minus 3,000 Va			11,700	at :	35%	4,095	
	Net general lighting	and smal	applianc	eload			7,095	VA
	Annilanas lassi da		(200	17		
	Appliance load - dw	ening un			220)-17		
	Appliques			Nemeralst				
	Appliance 1 Dishwashers			Nameplat 17.2	r'	<u>oad</u> 4,128		
				8		· · ·		
	1 Disposals Microwave			14		1,920 3,360		
	1 - 5 ton split A/C sys	tome		50		36,000		
	1 - 5 ton spiit A/C sys			50	A		VA	
	EV Charging Circuit			50	Δ	12,000	VA	
				50	^	12,000		
	Total			139	Δ	57.408	\/Δ	
	Four +			57,408		- ,	43,056	
				57,400	~ '	0.00	40,000	VA
Add Range	and Dryer Loads							
Add Marige	Range Load	Table 220-	-19	30.2	Α		7,248	VA
	Dryer Load	Table 220		24			5,760	
					-		3,130	
			Total Calc	ulated loa	d		63,159	VA
	Minimum size of un	grounded				ctors	,	
			P	VA / 240 w			263.16	Amperes
						<u> </u>		
Minimum \$	ize of Grounded (ne	utral Serv	vice Entran	ce Condu	ctor	s)		
	`							
	Lighting and small ap						14,700	VA
	Range load of 8,000 V	olt-ampere	es at 70%				5,074	
	Dryer load of 5,000 Vo	olt-amperes	s at 70%				5,760	VA
	HVAC Load Volt-amp						0	VA
	EV Charging Circuit a						8,400	VA
	Total for grounded						33,934	VA
	33.934	Volt-ampe	res / 240 vc	olts =			141.39	Amperes

Table: Average Gas Use					Derived from									Gas Piping	g (Inlet P	ressure le	ss than 2	psi)
TOTAL HOM	ME GAS REQ	UIREMENTS						of pipe										
Appliance (typical)*	Btu/hr	Cubic Ft/Hr	Qty.	Total Btu/hr	Size	10		30		50	60	70	80	90	100	125	150	175
Barbecue (residential	75,000	75	1	75,000	1/2	332	228	183	157	139	126	116	108	101	95	84	76	70
Domestic Clothes Dryer	35,000	35	1	35,000	3/4	695	478	384	328	291	264	243	226	212	200	177	161	148
Gas Range					1	1,310	900	722	618	548	497	457	425	399	377	334	302	278
36" Dual-Fuel Professional Range	86,000	86			1.25	2,690	1,850	1,480	1,270	1,130	1,020	938	873	819	773	685	621	571
48" Dual-Fuel Professional Range	100,000	100			1.5	4,030	2,770	2,220	1,900	1,690	1,530	1,410	1,310	1,230	1,160	1,030	930	856
Oven	25,000	25			2	7,760	5,330	4,280	3,660	3,250	2,940	2,710	2,520	2,360	2,230	1,980	1,790	1650
Gas Cooktop					2.5	12,400	8,500	6,820	5,840	5,170	4,690	4,310	4,010	3,770	3,560	3,150	2,860	2630
30" Gas Cooktop	45,000	45			3	21,900	15,000	12,100		9,150	8,290	7,630	7,090	6,660	6,290	5,570	5,050	4650
36" Gas Cooktop	86,000	86	1	86,000				ED PROP	PANE						a – 1			
48" Gas Cooktop	120,000	120				Pressure:		1										
Furnaces						ure Drop:												
3 ton	56,000	56			Specifi	c Gravity:	1.5											
4 ton	80,000	80							100									
5 ton	100,000	100	1	100,000	Line Desig	(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)	(K)	(L)	(M)
Water Heaters					Ind Length	10	25	20	12	3	39	8	6	10	12	45	12	32
50 gallon	50,000	50			Total Feet		35		42		72		47		63		108	128
75 gallan	75,000	75			Max Run	128		128		128		128		128		128		
					Total BTU	70.4	75	050	35	001	200	10.1	100	224	86		35	200
Tankless	200,000	200	2	400,000	BTU at End	731		656	1/2	621		421		321	410	235		
Takagi TK-JR.	140,000	140			Size Req'd	1 1/2	1/2	1 1/2	1/2	1 1/4	3/4	1 1/4	1/2	1 1/4	1/2	1	1/2	1
Fireplaces		59 		2 2 3 S														
30"	20,000	20																
42"	35,000	35	1	35,000														
84"	55,000	55																
Pool	400,000	400																
TOTAL GAS REQUIREMENTS				731,000														
																		

_Gas Bbq 75,000 BTU

GAME ROOM

VAC I

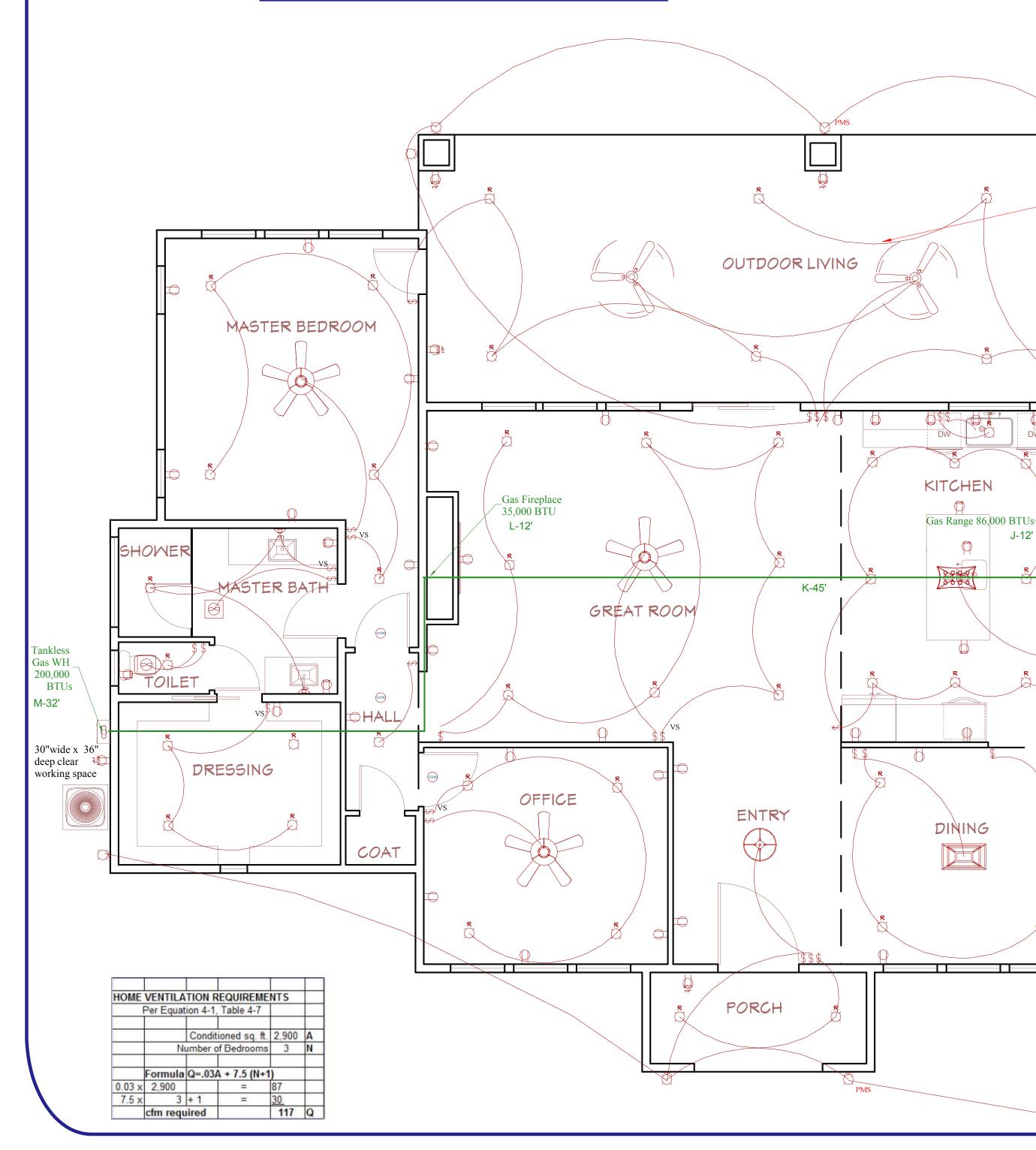
Cont. Operating

fan 120 cfm

Panasonic

Whisper Quiet

B-25'



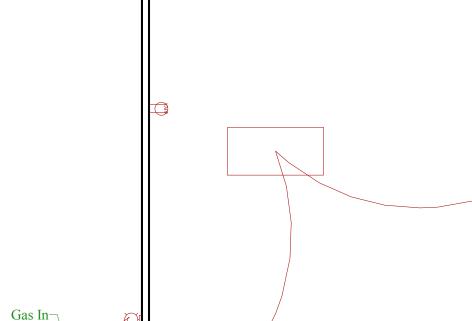
greater.

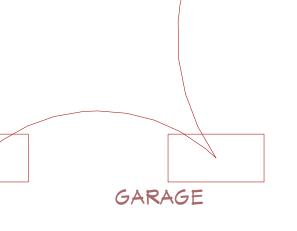
to terminate outside the building.

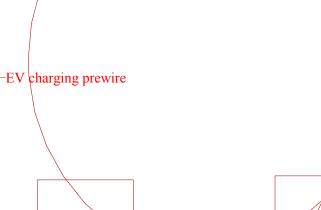
SCALE 1/4"=1'

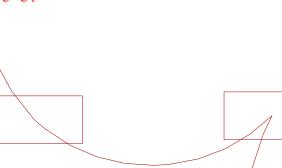
J-12'

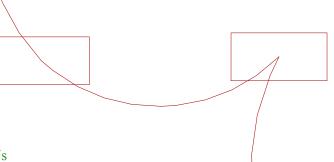
000

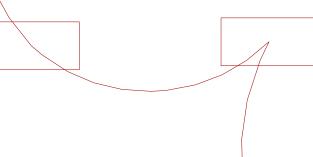


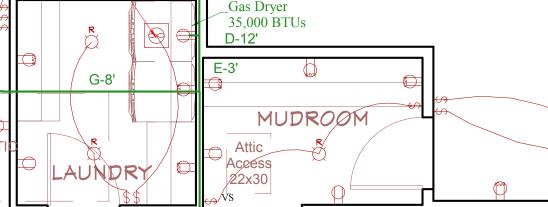




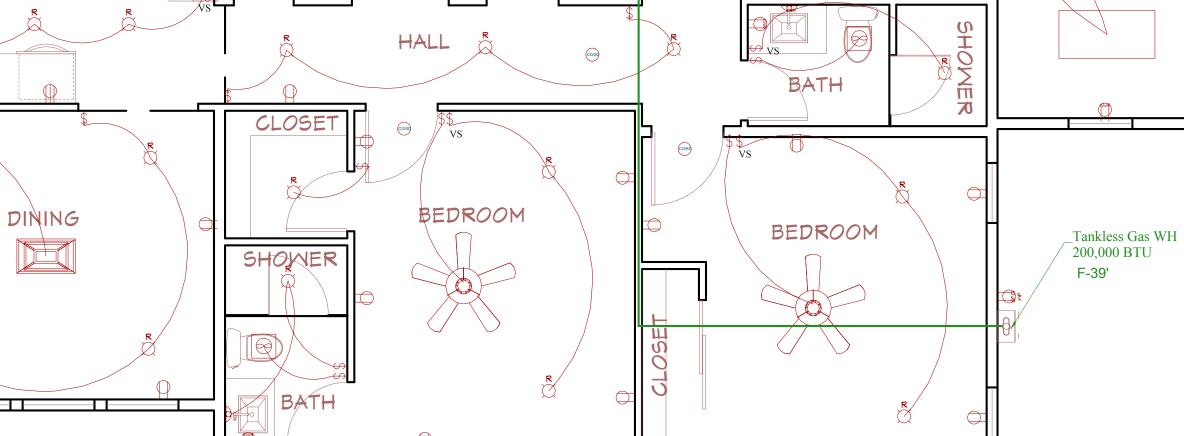








C-20'



WUI Compliant Dormer Vents

A-10'

Receptacle outlets shall be spaced not more than 12' w/min. 6' from ends of walls or openings. Outlets req'd in walls 2' or

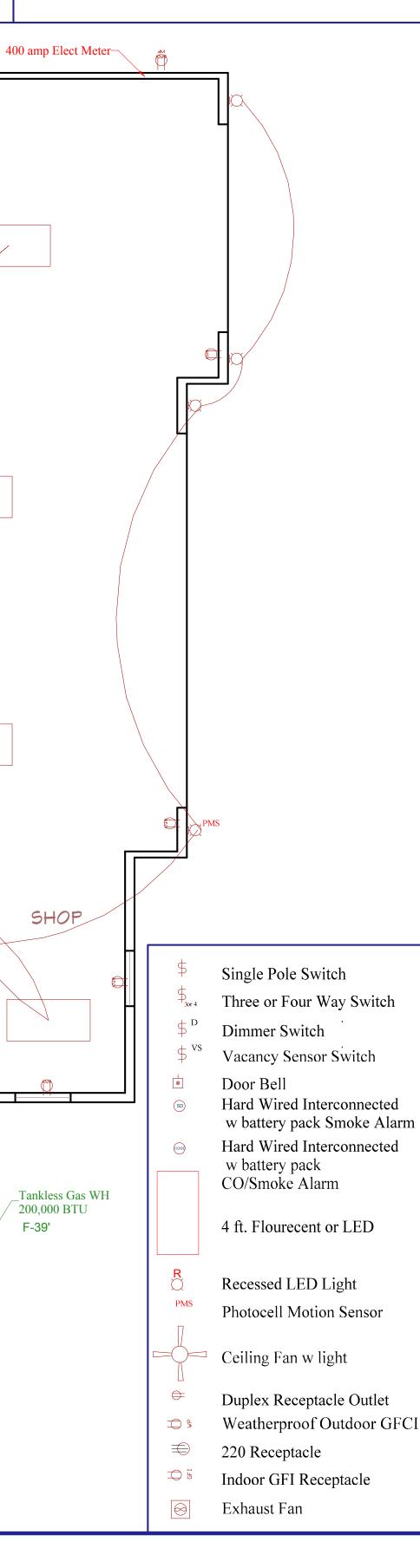
Ceiling fans, fixtures, lamp holders, and receptacles shall be securely supported. A fixture that weighs more than 6 lbs. or exceeds 16" in any dimension shall not be supported by the screw shell of a lamp holder. Outlet boxes shall not be used as sole support for ceiling (paddle) fans.

Bathroom exhaust fans which exhaust directly from

bathrooms shall comply with the following: 1. Fans shall be ENERGY STAR compliant and be ducted

2. Unless functioning as a component of a whole house ventilation system, fans must be controlled by a humidistat which shall be readily accessible. Humidistat controls shall be capable of adjustment between a relative humidity range of 50 to 80%. Bathrooms, water closet compartments and other similar rooms shall be provided with aggregate glazing area in windows of not less than 3 square feet, one-half of which must be openable. Exception: The glazed areas shall not be required where artificial light and a mechanical ventilation system are provided. The minimum ventilation rates shall be 50 cubic feet per minute (24 L/s) for intermittent ventilation or 25 cubic feet per minute (12 L/s) for continuous ventilation. Ventilation air from the space

shall be exhausted directly to the outside.



LIGHTING NOTES: All installed luminaires shall be high-efficacy in accordance with Table 150.0-A

In bathrooms, garages, laundry rooms, and utility rooms, at least one luminaire in each of these spaces shall be controlled by a vacanc sensor.

Branch circuit serving garage receptacles shall not serve outlets outside garage.

A/C condenser units supported from ground shall rest on concrete o other approved base extending not less than 3" above ground level. A dedicated circuit is required for the furnace

A minimum of one 120-Volt 20-amp dedicated circuit required for each garage.

110V smoke detector req'd w/battery backup audible in all sleepin areas. In dwelling units a smoke detector shall be installed in each sleeping room and outside each separate sleeping area within the immediate vicinity of bedrooms.

Smoke detectors shall receive their primary ower from the building wiring and shall be equipped with a battery backup and emit a signal when the battery is low. Wiring shall be permanent and without a disconnecting switch other than as required for overcurrent protection Where more than one smoke alarm is required to be installed they shall be interconnected in such a manner that the activation of one alarm will activate all of the alarms in the individual unit.

An approved carbon monoxide alarm shall be installed in dwelling units and sleeping units within which fuelburning appliances are installed and in dwelling units that have attached garages. Carbon monoxide alarms shall receive their primary power from the building wiring and shall be equipped with a battery backup. Wiring shall be permanent and without a disconnecting switch other than as required for overcurrent protection. Where more than one Carbon monoxide alarm is required to be installed they shall be interconnected in such a manner that the activation of one alarm will activate all of the alarms in the individual unit.

An Intersystem Bonding Electrode which includes provisions for connecting at least three grounding or bonding conductors required for communications systems shall be installed externally at the service entrance panel.

All 125-volt, 15 and 20 amp receptacles in the dwelling shall be listed tamper-resistant.

Vents for fuel burning appliances other than direct-vent appliances shall terminate at least 4' below, 4' horizontally from, or 1' above any door, operable window, or gravity air inlet into the building. The bottom of the vent shall be located at least 12" above the grade.

Environmental air duct exhaust; such as for kitchen range exhausts, bathroom exhausts, and clothes dryer exhausts, shall terminate 3' from property lines and 3' from any openings into the building.

When a room is designed for the installation of a clothes dryer, a minimum opening of 100 square inches for makeup air shall be provided in the door or by other approved means. Kitchen hoods, bathroom fans and other exhaust fan ducts shall

terminate outside the building and have a back draft damper. When the exhaust fan operates continuously a back draft damper is not required

All 15 & 20 amp, 125 volt receptacles, including the garbage disposal receptacle, within 6' of the kitchen sink shall be GFCI protected.

A listed raceway shall be installed to accommodate a dedicated 208/240-volt branch circuit. The raceway shall not be less than trade size 1 (nominal 1-inch inside diameter). The raceway shall originate at the main service or subpanel and shall terminate into a listed cabinet, box or other enclosure in close proximity to the proposed location of an EV charger. Raceways are required to be continuous at enclosed, inaccessible or concealed areas and spaces. The service panel and/or subpanel shall provide capacity to install a 40-ampere minimum dedicated branch circuit and space(s) reserved to permit installation of a branch circuit overcurrent protective device. The service panel or subpanel circuit directory shall identify the overcurrent protective device space(s) reserved for future EV charging as (IEV CAPABLE". The raceway termination location shall be permanently and visibly marked as "EV CAPABLE". Provide min. 1-20 Amp branch circuit for bathrooms.

No additional outlets on said circuits. Bathroom receptacles shall be supplied by a seperate 20A circuit and shall not have lighting, exhaust fans, or other outlets on it.

Ranges, ovens, and dryers shall be on a 4-wire receptacle. All 120-volt, single phase, 15- and 20-ampere branch circuits supplying outlets installed in dwelling shall be protected by a listed arc-fault circuit interrupter, combination-type, installed to provide protection of the branch circuit.

Provide a Uffer Ground, a 20' section of #4 rebar incased in at least 2" of concrete with a grounding wire #4 copper clamped to water & gas line accessible from the exterior of the structure. Working space width between A/C equip shall be 30". Receptacle location for service of A/C equip shall be on same level & within 25 ft. of equip.

Provide smooth metal duct for dryer exhaust extending to outside w back damper not to exceed total combined horiz and vert length of 14' including two 90 deg. elbows. Two feet shall be deducted for ea. 90 deg. elbow in excess of two. Provide steel electrical box in fire-resistive ceiling and walls.

Box area shall not exceed 16 sq. in. Kitchen and Bath fans rated 3 sons or less are required and must be vented to the outside. Kitchen range hoods required 100cfm, Bathrooms required 50cfm.

A continuously running bath fan that meets ANSI/AHRESA Standard 62.2. The sound level cannot exceed 1.0 some, and the CFM required req'd to meet Table 4-7 of the Residential Compliance Manual.

An automatic garage door opener that is installed in a residence shall have a battery backup function that is designed to operate when activated because of an electrical outage.

All receptacles and devices in the habitable portion of a dwelling unit, except for bathrooms, shall be protected by a listed and readily accessible AFCI. 2019 California Electrical Code (CEC) 21 0.12 (A) Two or more small appliance branch circuits for the kitchen are limited to supplying wall and the counter space outlets including the refrigerator (note they cannot serve the dining room, outside plugs, range hood, disposal. dishwasher or microwaves). CEC 21 0.52(B) Laundry Branch Circuits: In addition to the other branch circuit requirements, at least one 20-amp branch circuit shall be provided to supply receptacle outlets required by CEC 21 0.52(F). CEC 210.11(C)(2)

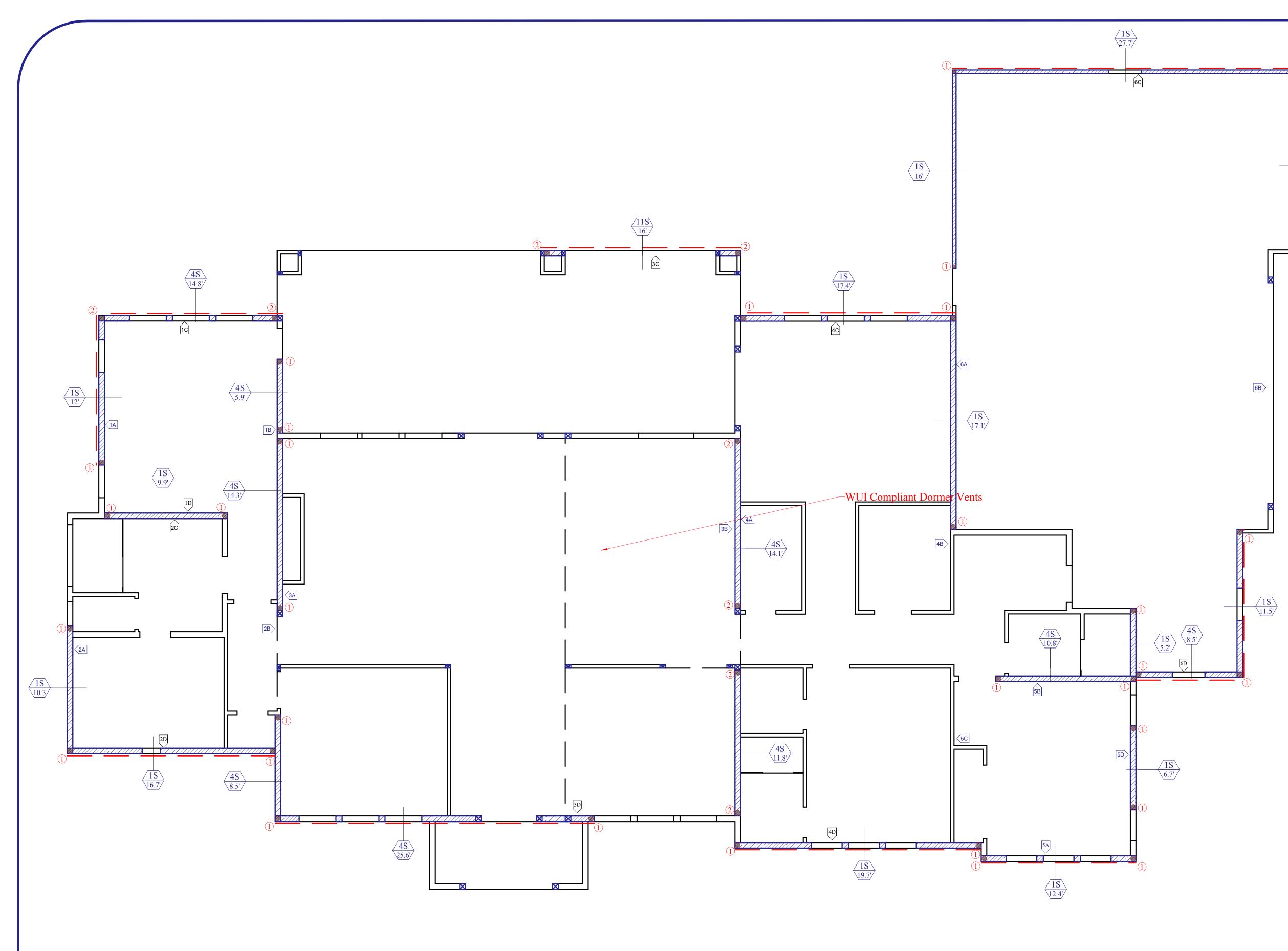
Provide a dedicated 20-amp branch circuit to serve the required bathroom outlets. This circuit cannot supply any other receptacles, lights, fans, etc.

Provide a dedicated branch circuit at the garage. This circuit shall not supply receptacles outside of the garage. Provide at least one receptacle for each car space note more than 5'-6" above the floor. GFCI protection shall be provided at all receptacles in bathrooms, garages, crawl spaces, unfinished basements, laundry areas, within 6 feet of sinks, within 6 feet of bathtub and shower stalls, receptacles serving kitchen countertop surfaces and dishwashers, and outdoor receptacles.

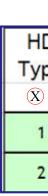
APPROVED BUILDING DIVISION

BY: John Millea DATE: 03-06-2023

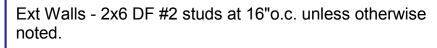




			$\langle XS \\ X' \rangle$	SHEAR	WALL SC	CHEDULE	XC ZONI		
Wall Type	Chord	Fndn Bolt Space in Feet	Fndn Bolt	2nd Flo Naili		Sheathing	Nails	Edge Nail Spac	Requires 3x Sole and Joint
15	2 @ 2x4	4	5/8"	16d	@ 6"	3/8"	8d	6"	N
4 5	2 @ 2x6	4	<mark>5/8</mark> "	16d	@ <mark>6</mark> "	3/8"	8d	4"	N



HD ype	Name	Anchor Diameter	Simpson Anchor	Bolt (or equal)	Stud Bolts/SDS Screws	Vert Memb
<u>X</u> 🗶		inches	Stem Wall	Slab		
1	HTT4	5/8	SSTB16	SSTB16	18-10dx1-1/2	2 @ 2x4
2	HDU5	5/8	SB5/8x24	SSTB20	14 @ 1/4x2-1/2	2 @ 2x4



Cover all exterior walls w 3/8" OSB structural plywood w 8d's @ 6" o.c. edge / 12" o.c. field, unless otherwise noted. Plywood shall run continuous from top plate to sole plate w all edges blocked.

HOLDOWNS ON 1ST AND 2ND FLOORS: 1. If holdown is in alignment with shearwall below -

- apply connector to chord below2. If holdown is offset, but within the limits of a shearwall below, provide duplicate chord within shearwall. Apply edge nailing at embedded chord and attach holdown
- to chord below.
 3. If holdown is offset and there is no shearwall below, provide duplicate chord below within stud wall, come off holdown at both ends and continue to foundation. Provide holddown at foundation.
- 4. If holdown is located at a door or window below, connect holdown (strap) to window header. Connect additional strap at each end of header to support studs below. Provide holdown at the bottom of support studs to the foundation at each end of window or door.

FIREBLOCKING:

1S 14.7'

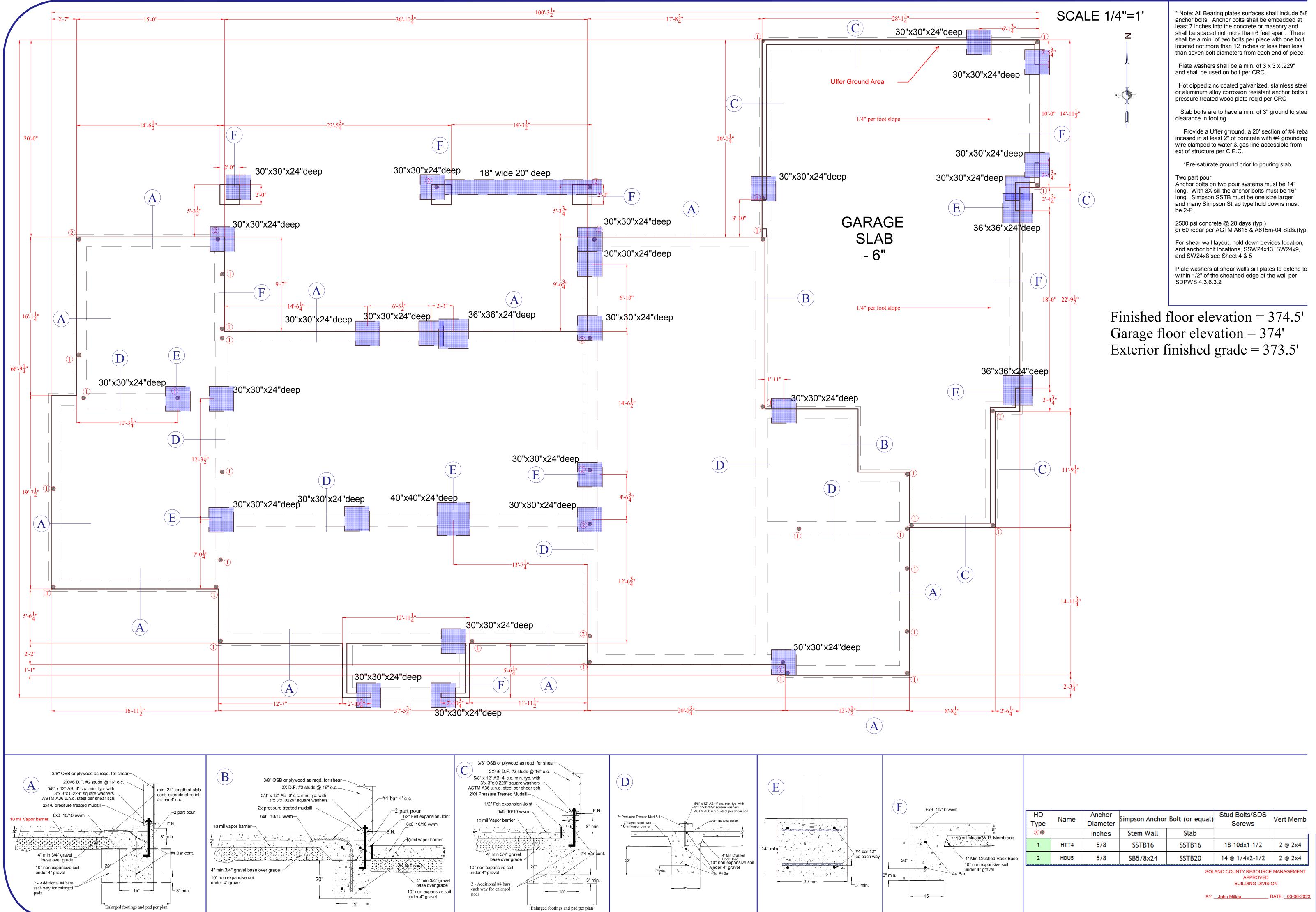
> is required to provide a separation between concealed vert. and horiz. spaces, in walls, at stair stringers (top@bottom), at soffits, drop ceilings, cove ceilings, and openings around ducts, vetns, pipes, and flue chases. To be provided vertically at ceiling and flooor levels and horz. at intervals not exceeding 10'

All nails shall be common. All field nailing shall be 12" o.c. Provide 2x blocking between wall sheathing for type 1s, 4s, 11s, and 12s

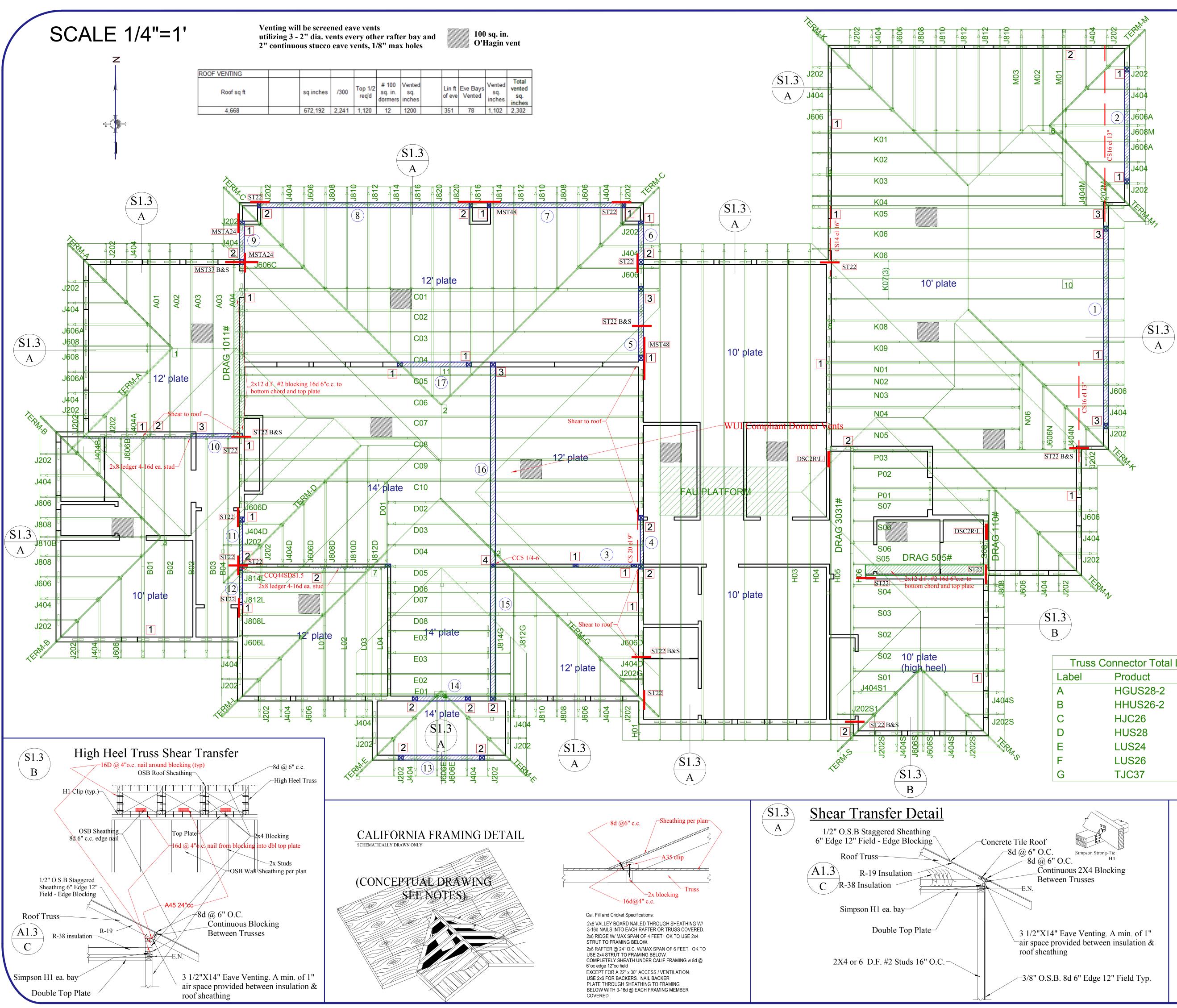
OPENINGS IN PERFORATED SHEAR WALLS

Block and strap the top and bottom of all openings, or groups of openings, with Simpson CS14 continuously, and beyond the opening the full width of the opening(s) on both sides, or the entire length of the perforated shear wall. For door openings on concrete slabs, strap only the top of the opening.





_	
	SHEET
	Foundation
IT	Plan
<u>:023</u>	



Truss C	Connector Total	List
Label	Product	Qty
Α	HGUS28-2	1
В	HHUS26-2	5
С	HJC26	5
D	HUS28	9
E	LUS24	62
F	LUS26	1
G	TJC37	92

\sim	\sim
, Set	
\leq	
\leq	
Simpson St	0
O.C.	H1
nuous 2X4 E	Blocking
	\mathcal{O}
een Trusses	

ROOF FRAMING NOTES:

1. All framing material to be #2 Douglas Fir minimum, unless noted otherwise.

2. Roof sheathing to be minimum 15/32" CDX/OSB APA rated for 24" O.C. framing. Nail with 8d at 6" O.C. edge, 12" O.C. field. Install with face grain perpendicular to framing.

3. All top plates to be lapped 48" min. with 24-16d per lap, typ.

4. Nail roof sheathing at drag trusses with 8d at 6" O.C. min. and as noted on plans.

- 5. Rafters and overframing to be:
- 2x4 #2 DF up to 7' 0" Max. Span 2x6 #2 DF up to 10' - 0" Max. Span
- 2x8 #2 DF up to 14' 0" Max. Span

Provide purlins of same size material as supported rafters. Brace to bearing locations with struts at 6' -0" O.C. max. Struts to be same size as supported rafters and shall be braced where lengths exceed 6' -0".

6. Provide min. double 2X Post at each end of all girder trusses, and as noted on plans.

7. Connection hardware to be Simpson only. No Substitutions.

8. All nails in diaphragms and shear walls to be common wire nails, U.N.O.

9. 2x blocking all ridges

10. B&S or b&s indicates the framer is to provide blocking in each location so specified along entire length of strap which will enable strap to be nailed in location shown in accordance with manuf. spec.. Each block to be min. 2x6 d.f. nailed to supporting/ cross members w min. 3-16d end nails @ ea. end so strap is set to wide side of block. Any additional cross members req'd shall be 2x6 d.f.

ATTIC ACCESS

An unobstructed passageway which is no more than 20' in length when measured along the center line of the passageway from the access opening to the equipment, and has continuous solid flooring not less that 24" wide throughout its length; and a level service space (inspection repair and replacement) not less than 30" in depth, width and height of the working space and 30" wide located at the front or service side of the equipment.

	DESCRIPTION		05 00405	SIZE VE
BEAM	DESCRIPTION	SIZE - DF	DF GRADE	PARAL
1	Roof - Garage HDR Plan Front			5.25x
2	Roof - Garage HDR Plan Rear	6x12	No. 1 & Btr	
3	Roof - Dining to Kitchen	4x12	No. 2	
4	Roof - Kitchen to Poweder HDR	4x12	No. 2	
5	Roof - Kitchen to OL HDR	4x12	No. 2	
6	Roof - Outdoor Lvg Plan Rt	4x12	No. 2	
7	Roof - Outdoor Lvg RearRt	6x12	No. 1 & Btr	
8	Roof - Outdoor Lvg Rear Left			5.25x
9	Roof - Outdoor Lvg Plan Left	4x12	No. 2	
10	Roof - MBR to M Bath	4x12	No. 2	
11	Roof - MBR to Great Room	4x12	No. 2	
12	Roof - MBR to Office	4x12	No. 2	
13	Roof - Entry HDR	6x12	No. 1 & Btr	
14	Roof - Front Door HDR	6x12	No. 1 & Btr	
15	Roof - Entry to Dining			5.25x11
16	Roof - Great Room to Kitchen			5.25x
17	Roof - GR Rm to Outdoor Living HDR	6x12	No. 1 & Btr	

COLUMN	DESCRIPTION	SIZE - DF	DF GRADE	SIZE VERSA LAM 2800
1	At B2-7, 9, 11-14,17	2@2x4	No. 2	3.5x3.5
2	At B4/L, 6/L, 8, 11/12/L,, 21R	2@2x6	No. 1 & Btr	5.25x3.5
3	At B1, 5/G, 8/L, 10, 15L, 16L	3@2x6	No. 1 & Btr	3.5x5.5
4	At B15/16, 16R	6x6	No. 1 & Btr	
			NTY RESOURC APPROVED UILDING DIVIS	



BY: John Millea DATE: 03-06-2023

				с	alculation D	ate/Time: 202	2-10-29T11:52:02-0	7:00		(Page 1 of 12)	Project Name: Burtor	h Kanch House	
CENERAL INFOR	escription: Title 24 Analysis	5		Ir	nput File Nar	ne: Burton Ra	nch House.ribd19x				Calculation Description	on: Title 24 Analys	sis
01	RMATION Project	Name									OPAQUE SURFACES 01	02	
02	Ru	ın Title		_							Name	Zone	\neg
03	Project Lo	City		I	05		Standards Version	2019			Front Wall Front Porch Wall	House	\neg
06 08		p code e Zone		- +	07	Front Orient	Software Version ation (deg/ Cardinal)		2		Left Wall	House	\pm
10	Buildin Project			- +	11		ber of Dwelling Units lumber of Bedrooms				Left Wall Rear Porch Rear Wall	House	\pm
14	Addition Cond. Floor Are	ea (ft ²) ⁽⁾		†	15		Number of Stories	1			Rear Porch Wall Right Wall	House	
16	Existing Cond. Floor Are Total Cond. Floor Are	_			17		ion Average U-factor azing Percentage (%)				Interior Surface Roof	House>>Garag	ge
20	ADU Bedroom Is Natural Gas Ava	Count n/a	Cal	CEL	21	ADU Co	nditioned Floor Area	n/a			Roof 2	Garage	1
22							MPED 21 2021				Front Wall 2 Left Wall 2	Garage Garage	
COMPLIANCE RI		VALID ONLY	FOR NEW PERI			OUGH DECE	MBER 31, 2021				Rear Wall 2 Right Wall 2	Garage Garage	-
01	Building Complies with Cor	-									ATTIC	·	
02	This building incorporates This building incorporates	-	-	-	y a certified H	IERS rater unde	r the supervision of a	CEC-approve	d HERS provide	r.	01 Name	02 Construction	n
	F COMPLIANCE Burton Ranch House			6	deulation Da	te/Time: 202	2-10-29T11:52:02-0	7-00		CF1R-PRF-01E (Page 2 of 12)	AtticGarage Attic House	Attic Garage Roof Attic RoofHous	
-	scription: Title 24 Analysis						ch House.ribd19x		,		CERTIFICATE OF COM		20
NERGY DESIGN	RATING		1		a		1	e			Project Name: Burton Calculation Descriptio		is
			Efficiency	Energy Design ¹ (EDR)	Total ²	(EDR)	Efficiency ¹ (E	Compliance DR)	Margins Total ² (EDR)	FENESTRATION / GLAZIN		
	Standard Design		44.1		30						01	02	<u> </u>
	Proposed Design		43.2	2	29	.6	0.9		0.9	,	Name	Туре	
: Efficiency SDC	includes improvements to th	e building envolu	pe and more officia-	RESULT: ^{3:} CO	MPLIES						Window	Window	
2: Total EDR inclu	R includes improvements to th udes efficiency and demand re plies when efficiency and total	esponse measure	s such as photovolta	iic (PV) systems an	d batteries						Window 2 Window 3	Window	
Standard	Design PV Capacity: 3.82 kWd n resized to 3.82 kWdc (a facto	lc									Window 4	Window	Le
			Call	ENERGY USE SU	JMMARY	· .					Window 5 Window 6	Window	
	Energy Use (kTDV/ft ² -yr)		Standard Desi		\leftarrow	d Design	Compliant	e Margin	Percent In	nprovement	Window 7 Window 8	Window	
	Space Heating Space Cooling		H E _{\$7} R	SP		.43	ER 4.1 0.			7.4	Window 9 Window 10	Window	
	IAQ Ventilation		2.83		2.	83	C			0	Window 11	Window	
	Water Heating f Utilization/Flexibility Credit		22.59 n/a			.97 0	-1.		1	6.1 n/a	Window 12 OPAQUE DOORS	Window	<u> </u>
	Compliance Energy Total		101.45		98	.04	3.4	1		3.4	0PAQUE DOORS	1	
01	YSTEMS - SIMPLIFIED 02	03	04	05	06	07	08 09	10	11	12	Nar		+
DC System Size	Exception	Module Type	Array Type	Power Electro	nics CFI	Azimuth	Tilt Array Ang			Annual Solar Access	Doc		\mp
(kWdc)	NA					(deg)	Input (deg)	12)	(%)	(%)	CERTIFICATE OF COM		
3.82		Standard	Fixed	none	true	150-270	n/a n/a	<=7:12		100	Project Name: Burtor Calculation Description		sis
	F COMPLIANCE : Burton Ranch House			c	alculation D	ate/Time: 202	2-10-29T11:52:02-0	7:00		CF1R-PRF-01E (Page 3 of 12)			
	escription: Title 24 Analysis	5		Ir	nput File Nar	ne: Burton Ra	nch House.ribd19x				01	02	03
*	re features that must be instal	lled as condition f	for meeting the mod	leled energy perfo	rmance for th	is computer ana	lysis.				Window	Depth	Dist U
	n below roof deck overhangs and/or fins										L I	Depth	Just
											Window 2	6	0.1
HERS FEATURE S			140 · · ·								Window 2 Window 4	6 15	0.1
HERS FEATURE S The following is detail is provide	a summary of the features th ed in the buildng tables below.						deled energy perform	ance for this o	computer analys	is. Additional			
HERS FEATURE S The following is detail is provide Building-level Vi • Quality in	a summary of the features th ed in the buildng tables below.						deled energy perform	ance for this o	computer analys	is. Additional	Window 4 Window 6 Window 7	15 15 15	0.1
HERS FEATURE S The following is detail is provide Building-level Vi Quality in Indoor ai Kitchen ra Cooling System	a summary of the features th ed in the building tables below. erifications: insulation installation (QII) ir quality ventilation range hood Verifications:						deled energy perform	ance for this o	computer analys	is. Additional	Window 4 Window 6 Window 7 Window 8	15	0.1
HERS FEATURE S The following is detail is provide Building-level Vi • Quality in • Indoor ai • Kitchen ai Cooling System • Minimum • Verified E • Verified S	a summary of the features the ed in the building tables below. Ferifications: insulation installation (QII) ir quality ventilation range hood Verifications: n Airflow EER SEER						deled energy perform	ance for this o	computer analys	is. Additional	Window 4 Window 6 Window 7	15 15 15	0.1
HERS FEATURE S The following is detail is provide Building-level V • Quality in • Indoor ai • Kitchen r • Cooling System • Minimum • Verified E • Verified S • Fan Effica Heating System	a summary of the features the ed in the building tables below. Verifications: insulation installation (QII) ir quality ventilation range hood Verifications: n Airflow EER SEER acy Watts/CFM Verifications:	Registered CF2R	s and CF3Rs are requ	uired to be comple	ted in the HE	RS Registry		ance for this o	computer analys	is. Additional	Window 4 Window 6 Window 7 Window 8 SLAB FLOORS	15 15 15 15	0.1
HERS FEATURE S The following is detail is provide Building-level Vi Quality in Indoor ai Kitchen ri Cooling System Minimum Verified E Verified S Fan Effica Heating System - None HVAC Distributio Duct leak	a summary of the features the ed in the building tables below. Verifications: insulation installation (QII) ir quality ventilation range hood Verifications: in Airflow EER SEER acy Watts/CFM Verifications: - ion System Verifications: kage testing	Registered CF2R	s and CF3Rs are requ	uired to be comple	ted in the HE	RS Registry		ance for this o	computer analys	is. Additional	Window 4 Window 6 Window 7 Window 8 SLAB FLOORS 01	15 15 15 15 15 02	0.1
HERS FEATURE S The following is detail is provide Building-level Vi Quality in Indoor ai Kitchen ri Cooling System Minimum Verified E Verified S Fan Effica Heating System None HVAC Distributio Duct leak	a summary of the features the ed in the building tables below. 'erifications: insulation installation (QII) ir quality ventilation ange hood Verifications: in Airflow EER SEER acy Watts/CFM Verifications: - on System Verifications: kage testing Water System Verifications:	Registered CF2R		uired to be comple	ted in the HE	RS Registry		ance for this o	computer analys	is. Additional	Window 4 Window 6 Window 7 Window 8 SLAB FLOORS 01 Name	15 15 15 15 15 02 Zone	0.1
HERS FEATURE S The following is detail is provide Building-level Vi Quality in Indoor ai Kitchen ri Kitchen ri Ooling System Minimur Verified E Verified S Fan Effica Heating System None HVAC Distributi Duct leak Domestic Hot Vi None BUILDING - FEA	a summary of the features the ad in the building tables below. Verifications: insulation installation (QII) ir quality ventilation range hood Verifications: in Airflow EER SEER acy Watts/CFM Verifications: on System Verifications: on System Verifications: 	Registered CF2R:	cal HER				1C. E R		computer analys		Window 4 Window 6 Window 7 Window 8 SLAB FLOORS 01 Name Slab Slab-on-Grade	15 15 15 15 02 Zone House Garage	0.1
HERS FEATURE S The following is detail is provide Building-level W • Quality in • Indoor ai • Kitchen r • Cooling System • Minimum • Verified E • Verified S • Fan Effica Heating System • None HVAC Distributi • Duct leak Domestic Hot W • None BUILDING - FEA	a summary of the features the ed in the building tables below. Verifications: insulation installation (QII) ir quality ventilation range hood Verifications: in Airflow EER SEER acy Watts/CFM Verifications: - ion System Verifications: - age testing Vater System Verifications: - -	Registered CF2R	s and CF3Rs are required to the contract of th		ted in the HE	RS Registry	C. E R	06 er of Ventilati	on Num	07 ber of Water	Window 4 Window 6 Window 7 Window 8 SLAB FLOORS 01 Name Slab Slab-on-Grade OPAQUE SURFACE CON 01		0.1 0.1 0.1
HERS FEATURE S The following is detail is provide Building-level W Quality in Indoor ai Kitchen r Cooling System Minimum Verified E Verified E Verified S Fan Effica Heating System None HVAC Distributio Duct leak Domestic Hot W None BUILDING - FEA 0 Project	a summary of the features the ad in the building tables below. Verifications: insulation installation (QII) ir quality ventilation range hood Verifications: in Airflow EER SEER acy Watts/CFM Verifications: - ion System Verifications: - ion System Verifications: - - ITURES INFORMATION D1 t Name Conditione	02	s and CF3Rs are required to the contract of Dural District Contract of Dural Distribution Contract of Distribution Contract		eted in the HE	RS Registry	C. E R	06	on Num	07	Window 4 Window 6 Window 7 Window 8 SLAB FLOORS 01 Name Slab Slab-on-Grade	15 15 15 15 02 Zone House Garage	0.1 0.1 0.1
HERS FEATURE S The following is detail is provide Building-level Vi • Quality in • Indoor ai Cooling System • Minimur • Verified E • Verified S • Fan Effica Heating System • None HVAC Distributi • Duct leak Domestic Hot W • None BUILDING - FEA 0 Project Burton Ra ZONE INFORMA	a summary of the features the ad in the building tables below. Verifications: insulation installation (QII) ir quality ventilation range hood Verifications: in Airflow EER SEER acy Watts/CFM Verifications: - ion System Verifications: - water System Verifications: - TURES INFORMATION D1 t Name Inch House	02 D2	and CF3Rs are required Caller HER 03 Number of Dwel Units 1	lling Number	of Bedrooms	RS Registry	C. E R	06 er of Ventilati ling Systems 0	on Numi Heat	07 ber of Water ing Systems 1	Window 4 Window 6 Window 7 Window 8 SLAB FLOORS 01 Name Slab Slab-on-Grade OPAQUE SURFACE CON 01		0.1 0.1 0.1
HERS FEATURE S The following is detail is provide Building-level W • Quality in • Indoor ai • Kitchen r Cooling System • Minimum • Verified E • Verified E • Verified S • Fan Effica Heating System • None HVAC Distributi • Duct leak Domestic Hot W • None BUILDING - FEA 0	a summary of the features the ad in the building tables below. Verifications: insulation installation (QII) ir quality ventilation range hood Verifications: in Airflow EER SEER acy Watts/CFM Verifications: - ion System Verifications: - ion System Verifications: - ion System Verifications: - TURES INFORMATION D1 t Name Conditione inch House ATION	02 d Floor Area (ft ²) 2900	and CF3Rs are required Cal HER 03 Number of Dwel Units		of Bedrooms 6	RS Registry	Zones Numb Coc	06 er of Ventilati ling Systems	on Numi Heat	07 Der of Water ing Systems	Window 4 Window 6 Window 7 Window 8 SLAB FLOORS 01 Name Slab Slab-on-Grade OPAQUE SURFACE CON 01 Construction Name		0.1 0.1 0.1
HERS FEATURE S The following is detail is provide Building-level W • Quality in • Indoor ai • Kitchen r Cooling System • Minimum • Verified E • Verified E • Verified S • Fan Effica Heating System • None HVAC Distributio Duct leak Domestic Hot W • None BUILDING - FEA 0 Project Burton Ra ZONE INFORMA	a summary of the features the ad in the building tables below. Verifications: insulation installation (QII) ir quality ventilation range hood Verifications: in Airflow EER SEER acy Watts/CFM Verifications: - on System Verifications: - on System Verifications: - on System Verifications: - TURES INFORMATION D1 t Name Conditione inch House ATION 02 ame Zone Typ	02 d Floor Area (ft ²) 2900	o3 Number of Dwel Units 1	Iling Number of	04 of Bedrooms 6	RS Registry	Zones Number Coordinates States State	06 er of Ventilati ling Systems 0 06	on Num Heat	07 ber of Water ing Systems 1 07	Window 4 Window 6 Window 7 Window 8 SLAB FLOORS 01 Name Slab Slab-on-Grade OPAQUE SURFACE CON 01 Construction Name R-0 Wall	ISTRUCTIONS ISTRUC	0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.1
HERS FEATURE S The following is detail is provide Building-level W • Quality in • Indoor ai • Kitchen r Cooling System • Minimum • Verified E • Verified S • Fan Effica Heating System • None HVAC Distributio • Duct leak Domestic Hot W • None BUILDING - FEA 0 Project Burton Ra 20NE INFORMA	a summary of the features the ad in the building tables below. Verifications: insulation installation (QII) ir quality ventilation range hood Verifications: in Airflow EER SEER acy Watts/CFM Verifications: - on System Verifications: - on System Verifications: - on System Verifications: - trures INFORMATION D1 t Name Conditione inch House ATION 02 ame Zone Typ	02 d Floor Area (ft ²) 2900	and CF3Rs are required Called Called Called O3 Number of Dwel Units 1 O3 VAC System Name	Iling Number	04 of Bedrooms 6	RS Registry	Zones Number Coordinates States State	06 or of Ventilati ling Systems 0 06 eating System	on Num Heat	07 ber of Water ing Systems 1 07 ating System 2	Window 4 Window 6 Window 7 Window 7 Window 8 SLAB FLOORS 01 Name Slab Slab-on-Grade OPAQUE SURFACE CON 01 Construction Name R-0 Wall CERTIFICATE OF COM Project Name: Burton Calculation Descripti	ISTRUCTIONS IPLIANCE ISTRUCTIONS IPLIANCE IN Ranch House ISTRUCTIONS ISTRUCTIONS ISTRUCTIONS ISTRUCTIONS	0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.1
HERS FEATURE S The following is detail is provide Building-level W • Quality in • Indoor ai • Kitchen r Cooling System • Werified E • Verified S • Fan Effica Heating System • None HVAC Distributio • Duct leak Domestic Hot W • None BUILDING - FEA 0 Project Burton Ra 20NE INFORMA	a summary of the features the ad in the building tables below. Verifications: insulation installation (QII) ir quality ventilation range hood Verifications: in Airflow EER SEER acy Watts/CFM Verifications: - on System Verifications: - on System Verifications: - on System Verifications: - trures INFORMATION D1 t Name Conditione inch House ATION 02 ame Zone Typ	02 d Floor Area (ft ²) 2900	and CF3Rs are required Called Called Called O3 Number of Dwel Units 1 O3 VAC System Name	Iling Number	04 of Bedrooms 6	RS Registry	Zones Number Coordinates States State	06 or of Ventilati ling Systems 0 06 eating System	on Num Heat	07 ber of Water ing Systems 1 07 ating System 2	Window 4 Window 6 Window 7 Window 8 SLAB FLOORS 01 Name Slab Slab-on-Grade OPAQUE SURFACE CON 01 Construction Name R-0 Wall CERTIFICATE OF COM Project Name: Burton Calculation Descripti	ISTRUCTIONS ISTRUCTIONS ISTRUCTIONS ISTRUCTIONS ISTRUCTIONS ISTRUCTIONS IPLIANCE In Ranch House on: Title 24 Analys	0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.1
HERS FEATURE S The following is detail is provide Building-level W Quality in Indoor ai Kitchen r Cooling System Minimum Verified E Verified S Fan Effica Heating System None HVAC Distributio Duct leak Domestic Hot W None BUILDING - FEA 0 Project Burton Ra ZONE INFORMA 01 Zone Na	a summary of the features the ad in the building tables below. Verifications: insulation installation (QII) ir quality ventilation range hood Verifications: in Airflow EER SEER acy Watts/CFM Verifications: - on System Verifications: - on System Verifications: - on System Verifications: - trures INFORMATION D1 t Name Conditione inch House ATION 02 ame Zone Typ	02 d Floor Area (ft ²) 2900	and CF3Rs are required Called Called Called O3 Number of Dwel Units 1 O3 VAC System Name	Iling Number	04 of Bedrooms 6	RS Registry	Zones Number Coordinates States State	06 or of Ventilati ling Systems 0 06 eating System	on Num Heat	07 ber of Water ing Systems 1 07 ating System 2	Window 4 Window 6 Window 7 Window 8 SLAB FLOORS 01 Name Slab Slab-on-Grade OPAQUE SURFACE CON 01 Construction Name R-0 Wall CERTIFICATE OF COM Project Name: Burton Calculation Descripti OPAQUE SURFACE CON 01	ISTRUCTIONS ISTRUC	0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.1
HERS FEATURE S The following is detail is provide Building-level W Quality in Indoor ai Kitchen r Cooling System Minimum Verified E Verified S Fan Effica Heating System None HVAC Distributio Duct leak Domestic Hot W None BUILDING - FEA 0 Project Burton Ra ZONE INFORMA 01 Zone Na	a summary of the features the ad in the building tables below. Verifications: insulation installation (QII) ir quality ventilation range hood Verifications: in Airflow EER SEER acy Watts/CFM Verifications: - on System Verifications: - on System Verifications: - on System Verifications: - trures INFORMATION D1 t Name Conditione inch House ATION 02 ame Zone Typ	02 d Floor Area (ft ²) 2900	and CF3Rs are required Called Called Called O3 Number of Dwel Units 1 O3 VAC System Name	Iling Number	04 of Bedrooms 6	RS Registry	Zones Number Coordinates States State	06 or of Ventilati ling Systems 0 06 eating System	on Num Heat	07 ber of Water ing Systems 1 07 ating System 2	Window 4 Window 6 Window 7 Window 8 SLAB FLOORS 01 Name Slab Slab-on-Grade OPAQUE SURFACE CON 01 Construction Name R-0 Wall CERTIFICATE OF COM Project Name: Burton Calculation Descripti OPAQUE SURFACE CON 01	ISTRUCTIONS ISTRUC	pe alls
HERS FEATURE S The following is detail is provide Building-level W Quality in Indoor ai Kitchen r Cooling System Minimum Verified E Verified S Fan Effica Heating System None HVAC Distributio Duct leak Domestic Hot W None BUILDING - FEA 0 Project Burton Ra ZONE INFORMA 01 Zone Na	a summary of the features the ad in the building tables below. Verifications: insulation installation (QII) ir quality ventilation range hood Verifications: in Airflow EER SEER acy Watts/CFM Verifications: - on System Verifications: - on System Verifications: - on System Verifications: - trures INFORMATION D1 t Name Conditione inch House ATION 02 ame Zone Typ	02 d Floor Area (ft ²) 2900	and CF3Rs are required Called Called Called O3 Number of Dwel Units 1 O3 VAC System Name	Iling Number	04 of Bedrooms 6	RS Registry	Zones Number Coordinates States State	06 or of Ventilati ling Systems 0 06 eating System	on Num Heat	07 ber of Water ing Systems 1 07 ating System 2	Window 4 Window 6 Window 7 Window 8 SLAB FLOORS 01 Name Slab Slab-on-Grade OPAQUE SURFACE CON 01 Construction Name R-0 Wall CERTIFICATE OF COM Project Name: Burtor Calculation Descripti OPAQUE SURFACE CON 01 Construction Name	ISTRUCTIONS IPLIANCE In Ranch House IPLIANCE In Ranch House ISTRUCTIONS ISTRUC	pe alls
HERS FEATURE S The following is detail is provide Building-level W Quality in Indoor ai Kitchen r Cooling System Minimum Verified E Verified S Fan Effica Heating System None HVAC Distributio Duct leak Domestic Hot W None BUILDING - FEA 0 Project Burton Ra ZONE INFORMA	a summary of the features the ad in the building tables below. Verifications: insulation installation (QII) ir quality ventilation range hood Verifications: in Airflow EER SEER acy Watts/CFM Verifications: - on System Verifications: - on System Verifications: - on System Verifications: - trures INFORMATION D1 t Name Conditione inch House ATION 02 ame Zone Typ	02 d Floor Area (ft ²) 2900	and CF3Rs are required Called Called Called O3 Number of Dwel Units 1 O3 VAC System Name	Iling Number	04 of Bedrooms 6	RS Registry	Zones Number Coordinates States State	06 or of Ventilati ling Systems 0 06 eating System	on Num Heat	07 ber of Water ing Systems 1 07 ating System 2	Window 4 Window 6 Window 7 Window 8 SLAB FLOORS 01 Name Slab Slab-on-Grade OPAQUE SURFACE CON 01 Construction Name R-0 Wall CERTIFICATE OF COM Project Name: Burtor Calculation Descripti OPAQUE SURFACE CON 01 Construction Name	ISTRUCTIONS IPLIANCE In Ranch House IPLIANCE In Ranch House ISTRUCTIONS ISTRUC	0.1 0.1 </td
HERS FEATURE S The following is detail is provide Building-level We Quality in Indoor ai Kitchen ri Cooling System Werified E Verified S Fan Effica Heating System None HVAC Distribution Duct leak Domestic Hot We None BUILDING - FEA 0 Project Burton Ra 20NE INFORMA 01 Zone Na	a summary of the features the ad in the building tables below. Verifications: insulation installation (QII) ir quality ventilation range hood Verifications: in Airflow EER SEER acy Watts/CFM Verifications: - on System Verifications: - on System Verifications: - on System Verifications: - trures INFORMATION D1 t Name Conditione inch House ATION 02 ame Zone Typ	02 d Floor Area (ft ²) 2900	and CF3Rs are required Called Called Called O3 Number of Dwel Units 1 O3 VAC System Name	Iling Number	04 of Bedrooms 6	RS Registry	Zones Number Coordinates States State	06 or of Ventilati ling Systems 0 06 eating System	on Num Heat	07 ber of Water ing Systems 1 07 ating System 2	Window 4 Window 6 Window 7 Window 8 SLAB FLOORS 01 Name Slab Slab Slab-on-Grade OPAQUE SURFACE CON 01 Construction Name R-0 Wall CERTIFICATE OF COM Project Name: Burton Calculation Descripti OPAQUE SURFACE CON 01 Construction Name R-0 Wall Centrification Descripti OPAQUE SURFACE CON 01 Calculation Descripti OPAQUE SURFACE CON 01 Construction Name R-11 Wall	ISTRUCTIONS ISTRUC	0.1 0.1 </td
HERS FEATURE S The following is detail is provide Building-level W Quality in Indoor ai Kitchen r Cooling System Minimum Verified E Verified S Fan Effica Heating System None HVAC Distributio Duct leak Domestic Hot W None BUILDING - FEA 0 Project Burton Ra ZONE INFORMA	a summary of the features the ad in the building tables below. Verifications: insulation installation (QII) ir quality ventilation range hood Verifications: in Airflow EER SEER acy Watts/CFM Verifications: - on System Verifications: - on System Verifications: - on System Verifications: - trures INFORMATION D1 t Name Conditione inch House ATION 02 ame Zone Typ	02 d Floor Area (ft ²) 2900	and CF3Rs are required Called Called Called O3 Number of Dwel Units 1 O3 VAC System Name	Iling Number	04 of Bedrooms 6	RS Registry	Zones Number Coordinates States State	06 or of Ventilati ling Systems 0 06 eating System	on Num Heat	07 ber of Water ing Systems 1 07 ating System 2	Window 4 Window 6 Window 7 Window 8 SLAB FLOORS 01 Name Slab Slab Slab-on-Grade OPAQUE SURFACE CON 01 Construction Name R-0 Wall CERTIFICATE OF COM Project Name: Burton Calculation Descripti OPAQUE SURFACE CON 01 Construction Name R-0 Wall Centrification Descripti OPAQUE SURFACE CON 01 Calculation Descripti OPAQUE SURFACE CON 01 Construction Name R-11 Wall	ISTRUCTIONS ISTRUC	0.1 0.1 </td
HERS FEATURE S The following is detail is provide Building-level W Quality in Indoor ai Kitchen r Cooling System Minimum Verified E Verified S Fan Effica Heating System None HVAC Distributio Duct leak Domestic Hot W None BUILDING - FEA 0 Project Burton Ra 20NE INFORMA 01 Zone Na	a summary of the features the ad in the building tables below. Verifications: insulation installation (QII) ir quality ventilation range hood Verifications: in Airflow EER SEER acy Watts/CFM Verifications: - on System Verifications: - on System Verifications: - on System Verifications: - trures INFORMATION D1 t Name Conditione inch House ATION 02 ame Zone Typ	02 d Floor Area (ft ²) 2900	and CF3Rs are required Called Called Called O3 Number of Dwel Units 1 O3 VAC System Name	Iling Number	04 of Bedrooms 6	RS Registry	Zones Number Coordinates States State	06 or of Ventilati ling Systems 0 06 eating System	on Num Heat	07 ber of Water ing Systems 1 07 ating System 2	Window 4 Window 6 Window 7 Window 7 Window 8 SLAB FLOORS 01 Name Slab Slab-on-Grade Slab Slab-on-Grade OPAQUE SURFACE CON 01 Construction Name R-0 Wall CERTIFICATE OF COM Project Name: Burton Calculation Descripti OPAQUE SURFACE CON 01 Construction Name R-11 Wall R-19 Wall w/1 XPS	In Ranch House In Ranch House	0.1 0.1 </td
HERS FEATURE S The following is detail is provide Building-level We Quality in Indoor ai Kitchen ri Cooling System Werified E Verified S Fan Effica Heating System None HVAC Distribution Duct leak Domestic Hot We None BUILDING - FEA 0 Project Burton Ra 20NE INFORMA 01 Zone Na	a summary of the features the ad in the building tables below. Verifications: insulation installation (QII) ir quality ventilation range hood Verifications: in Airflow EER SEER acy Watts/CFM Verifications: - on System Verifications: - on System Verifications: - on System Verifications: - trures INFORMATION D1 t Name Conditione inch House ATION 02 ame Zone Typ	02 d Floor Area (ft ²) 2900	and CF3Rs are required Called Called Called O3 Number of Dwel Units 1 O3 VAC System Name	Iling Number	04 of Bedrooms 6	RS Registry	Zones Number Coordinates States State	06 or of Ventilati ling Systems 0 06 eating System	on Num Heat	07 ber of Water ing Systems 1 07 ating System 2	Window 4 Window 6 Window 7 Window 7 Window 8 SLAB FLOORS 01 Name Slab Slab-on-Grade OPAQUE SURFACE CON 01 Construction Name R-0 Wall CERTIFICATE OF COM Project Name: Burton Calculation Descripti OPAQUE SURFACE CON 01 Construction Name R-11 Wall R-19 Wall w/1 XPS1	Interior Wa	0.1 0.1 </td
HERS FEATURE S The following is detail is provide Building-level W Quality in Indoor ai Kitchen r Cooling System Minimum Verified E Verified S Fan Effica Heating System None HVAC Distributio Duct leak Domestic Hot W None BUILDING - FEA 0 Project Burton Ra 20NE INFORMA 01 Zone Na	a summary of the features the ad in the building tables below. Verifications: insulation installation (QII) ir quality ventilation range hood Verifications: in Airflow EER SEER acy Watts/CFM Verifications: - on System Verifications: - on System Verifications: - on System Verifications: - trures INFORMATION D1 t Name Conditione inch House ATION 02 ame Zone Typ	02 d Floor Area (ft ²) 2900	and CF3Rs are required Called Called Called O3 Number of Dwel Units 1 O3 VAC System Name	Iling Number	04 of Bedrooms 6	RS Registry	Zones Number Coordinates States State	06 or of Ventilati ling Systems 0 06 eating System	on Num Heat	07 ber of Water ing Systems 1 07 ating System 2	Window 4 Window 6 Window 7 Window 7 Window 8 SLAB FLOORS 01 Name Slab Slab-on-Grade Slab Slab-on-Grade OPAQUE SURFACE CON 01 Construction Name R-0 Wall CERTIFICATE OF COM Project Name: Burton Calculation Descripti OPAQUE SURFACE CON 01 Construction Name R-11 Wall R-19 Wall w/1 XPS	Interior Wa	0.1 0.1 </td
HERS FEATURE S The following is detail is provide Building-level W Quality in Indoor ai Kitchen r Cooling System Minimum Verified E Verified S Fan Effica Heating System None HVAC Distributio Duct leak Domestic Hot W None BUILDING - FEA 0 Project Burton Ra 20NE INFORMA 01 Zone Na	a summary of the features the ad in the building tables below. Verifications: insulation installation (QII) ir quality ventilation range hood Verifications: in Airflow EER SEER acy Watts/CFM Verifications: - on System Verifications: - on System Verifications: - on System Verifications: - trures INFORMATION D1 t Name Conditione inch House ATION 02 ame Zone Typ	02 d Floor Area (ft ²) 2900	and CF3Rs are required Called Called Called O3 Number of Dwel Units 1 O3 VAC System Name	Iling Number	04 of Bedrooms 6	RS Registry	Zones Number Coordinates States State	06 or of Ventilati ling Systems 0 06 eating System	on Num Heat	07 ber of Water ing Systems 1 07 ating System 2	Window 4 Window 6 Window 7 Window 7 Window 8 SLAB FLOORS 01 Name Slab Slab-on-Grade OPAQUE SURFACE CON 01 Construction Name R-0 Wall CERTIFICATE OF COM Project Name: Burton Calculation Descripti OPAQUE SURFACE CON 01 Construction Name R-11 Wall R-19 Wall w/1 XPS1	Interior Wa	0.1 0.1 </td
HERS FEATURE S The following is detail is provide Building-level W • Quality in • Indoor ai • Kitchen r Cooling System • Werified E • Verified S • Fan Effica Heating System • None HVAC Distributio • Duct leak Domestic Hot W • None BUILDING - FEA 0 Project Burton Ra 20NE INFORMA	a summary of the features the ad in the building tables below. Verifications: insulation installation (QII) ir quality ventilation range hood Verifications: in Airflow EER SEER acy Watts/CFM Verifications: - on System Verifications: - on System Verifications: - on System Verifications: - trures INFORMATION D1 t Name Conditione inch House ATION 02 ame Zone Typ	02 d Floor Area (ft ²) 2900	and CF3Rs are required Called Called Called O3 Number of Dwel Units 1 O3 VAC System Name	Iling Number	04 of Bedrooms 6	RS Registry	Zones Number Coordinates States State	06 or of Ventilati ling Systems 0 06 eating System	on Num Heat	07 ber of Water ing Systems 1 07 ating System 2	Window 4 Window 6 Window 7 Window 7 Window 8 SLAB FLOORS 01 Name Slab Slab-on-Grade OPAQUE SURFACE CON 01 Construction Name R-0 Wall CERTIFICATE OF COM Project Name: Burton Calculation Descripti OPAQUE SURFACE CON 01 Construction Name R-11 Wall R-19 Wall w/1 XPS1	Interior Wa	0.1 0
HERS FEATURE S The following is detail is provide Building-level W Quality in Indoor ai Kitchen r Cooling System Minimum Verified E Verified S Fan Effica Heating System None HVAC Distributio Duct leak Domestic Hot W None BUILDING - FEA 0 Project Burton Ra 20NE INFORMA 01 Zone Na	a summary of the features the ad in the building tables below. Verifications: insulation installation (QII) ir quality ventilation range hood Verifications: in Airflow EER SEER acy Watts/CFM Verifications: - on System Verifications: - on System Verifications: - on System Verifications: - trures INFORMATION D1 t Name Conditione inch House ATION 02 ame Zone Typ	02 d Floor Area (ft ²) 2900	and CF3Rs are required Called Called Called O3 Number of Dwel Units 1 O3 VAC System Name	Iling Number	04 of Bedrooms 6	RS Registry	Zones Number Coordinates States State	06 or of Ventilati ling Systems 0 06 eating System	on Num Heat	07 ber of Water ing Systems 1 07 ating System 2	Window 4 Window 7 Window 7 Window 8 SLAB FLOORS 01 Name Slab Slab-on-Grade OPAQUE SURFACE CON 01 Construction Name R-0 Wall CERTIFICATE OF COM Project Name: Burtor Calculation Descripti OPAQUE SURFACE CON 01 Construction Name R-11 Wall R-19 Wall w/1 XPS1 R-19 Wall w/1 XPS1	ISTRUCTIONS ISTRUC	0.1 0
HERS FEATURE S The following is detail is provide Building-level W Quality in Indoor ai Kitchen r Cooling System Minimum Verified E Verified S Fan Effica Heating System None HVAC Distributio Duct leak Domestic Hot W None BUILDING - FEA 0 Project Burton Ra ZONE INFORMA	a summary of the features the ad in the building tables below. Verifications: insulation installation (QII) ir quality ventilation range hood Verifications: in Airflow EER SEER acy Watts/CFM Verifications: - on System Verifications: - on System Verifications: - on System Verifications: - trures INFORMATION D1 t Name Conditione inch House ATION 02 ame Zone Typ	02 d Floor Area (ft ²) 2900	and CF3Rs are required Called Called Called O3 Number of Dwel Units 1 O3 VAC System Name	Iling Number	04 of Bedrooms 6	RS Registry	Zones Number Coordinates States State	06 or of Ventilati ling Systems 0 06 eating System	on Num Heat	07 ber of Water ing Systems 1 07 ating System 2	Window 4 Window 7 Window 7 Window 8 SLAB FLOORS 01 Name Slab Slab-on-Grade OPAQUE SURFACE CON 01 Construction Name R-0 Wall CERTIFICATE OF COM Project Name: Burton Calculation Descripti OPAQUE SURFACE CON 01 Construction Name R-11 Wall R-19 Wall w/1 XPS1 R-19 Wall w/1 XPS1	ISTRUCTIONS O2 Surface Type Carage Exterior Wa IPLIANCE IN Ranch House O1: Title 24 Analys ISTRUCTIONS O2 Surface Type Carage ISTRUCTIONS O2 Surface Type Carage INTERCE IN Ranch House INTERCE IN Ranch House INTERCE	0.1 0
HERS FEATURE S The following is detail is provide Building-level W • Quality in • Indoor ai • Kitchen r Cooling System • Werified E • Verified S • Fan Effica Heating System • None HVAC Distributio • Duct leak Domestic Hot W • None BUILDING - FEA 0 Project Burton Ra 20NE INFORMA	a summary of the features the ad in the building tables below. Verifications: insulation installation (QII) ir quality ventilation range hood Verifications: in Airflow EER SEER acy Watts/CFM Verifications: - on System Verifications: - on System Verifications: - on System Verifications: - trures INFORMATION D1 t Name Conditione inch House ATION 02 ame Zone Typ	02 d Floor Area (ft ²) 2900	and CF3Rs are required Called Called Called O3 Number of Dwel Units 1 O3 VAC System Name	Iling Number	04 of Bedrooms 6	RS Registry	Zones Number Coordinates States State	06 or of Ventilati ling Systems 0 06 eating System	on Num Heat	07 ber of Water ing Systems 1 07 ating System 2	Window 4 Window 7 Window 7 Window 8 SLAB FLOORS 01 Name Slab Slab-on-Grade OPAQUE SURFACE CON 01 Construction Name R-0 Wall CERTIFICATE OF COM Project Name: Burtor Calculation Descripti OPAQUE SURFACE CON 01 Construction Name R-11 Wall R-19 Wall w/1 XPS1 R-19 Wall w/1 XPS1	ISTRUCTIONS ISTRUC	0.1 0

CERTIFICATE OF Project Name: Calculation Des	IR-PRF-01E ge 4 of 12)					00				ne: 2022 ton Ran								
BUILDING ENVEL				_														
Quality in		04		+	nd Door	07 dow.an	Wi		06		_	05	+		04		03	
Quality Ins		Tilt (e		\downarrow	ft2)	Area (ft		ft ²)	Area (Gros	on	Drientat		ith	Azimu		Constructio	
	-	90		+		190.1 40.5			741 130			Front	+		180		-19 Wall w/1 -19 Wall w/1	_
WATER HEATING		90		┥		47.76			445			Left	+		270		t-19 Wall w/1	_
Name		90				48			96			Left			270		t-19 Wall w/1	
DHW Sys		90		+		103.5			800 378		-	Back Back	+		0		t-19 Wall w/1	
	0	90		1)	50			450			Right			90	L XPS	t-19 Wall w/1	
WATER HEATERS		n/		+		0 n/a			443 2900		_	n/a n/a	+		n/a n/a		-19 Wall w/1 R-38 HP Att	F
01		n/		┥		n/a			1143		-	n/a	b -	_	n/a		R-O Roof At	
Name		90				14.63			132	П	٦.	Front		_	180	_	R-0 Wall	_1
	-	90		+		24			200	D	√″I	Left Back	R	P	270 5 0		R-0 Wall R-11 Wall	
DHW Heater	0	90			63	238.6			495			Right			90		R-0 Wall	
WATER HEATING		04		\square		07			06			05			04		03	
01 Name		Cool		+		diant Ba No	R	nce	Emitta 0.85	Roof	tance	0.1	:) Roc	x in 12	Roof Rise (: 4	1	Type Ventilated	
		N		┥		No			0.85			0.1			4		Ventilated	
DHW Sys 1 - 3	R-PRF-01E	CF1F																
Project Name:	ge 5 of 12)	(Pag				00				e: 2022								
Calculation De							38	e.nou.	n hous	on Rand	le: Duri	ne wan	nputr					
SPACE CONDITIO	14		13	Т	12	11		10	09	08	07	06	05		04		03	
01	Exterior Shading	. "	SHGC Sourc e		SHGC	J-factor Source	or	U-fac	Area (ft ²)	Mult.	Height (ft)	Width (ft)	muth	Azir	Orientation		Surface	
Nam	ug Screen	Bu	NFRC	3	0.23	NFRC		0.3	190.1 3	1			80	1	Front		ont Wall	F
HVAC Sy	ug Screen	-	NFRC	-	0.23	NFRC	+	0.3	40.5 47.76	1	9	4.5	80 70	-	Front Left	\rightarrow	t Porch Wall eft Wall	
	ig Screen ig Screen	-	NFRC	-	0.23	NFRC	+	0.3	47.76	1	8	6	70		Left	,	all Rear Porch	
HVAC - HEATING	ug Screen		NFRC	-	0.23	NFRC	\downarrow	0.3	103.5	1			0		Back		ear Wall	_
	ug Screen	-	NFRC	-	0.23	NFRC	+	0.3	20.25 48	1	4.5 8	4.5 6	0	+	Back Back	\rightarrow	Porch Wall Porch Wall	_
Hea	ug Screen	-	NFRC	-	0.23	NFRC	+	0.3	63	1	7	9	0		Back		Porch Wall	_
	ug Screen	-	NFRC	-	0.23	NFRC	-	0.3	30 14.63	1	-	5	90 80		Right Front	2	ight Wall ont Wall 2	
HVAC - COOLING	ug Screen ug Screen	-	NFRC	-	0.23	NFRC	+	0.3	13.3	1			0	-	Back	E	ar Wall 2	-
Name	ug Screen	Bu	NFRC	3	0.23	NFRC		0.3	14.63	1		-	90	9	Right		tht Wall 2	Ri
Cooling Compo							_											
cooling compo				04						3				\rightarrow	-	02	614-	
HVAC COOLING			ctor 2	0.2						(ft ²)				+	g	of Buildin		
0: Nar			.2	0.2	0					4	2					ft Wall 2	Le	
Cooling Co	0.005.015	651	.2	0.2	0					24	2					ht Wall 2	Rig	
1-hers CERTIFICATE O Project Name:	R-PRF-01E ge 6 of 12)					00				ne: 2022 ton Ran	-							
Calculation De																		
HVAC - DISTRIB	14	3	13		12		1	10		09	8	0	07	\top	06	05	04	
01			t Fin	ight	Righ						Left i			+		Right	Overhang	
Name	Bot Up	tR	Dist	1	Тор Uр	th	De	t Up	Bo	Dist L	Up	Тор	Depth		Flap Ht.	Extent	Left Extent	Up
	0)	0	\downarrow	0		(0		0	D		0		0	6	6	
Air Distributio System 1	0)	0	4	0	\perp	(0	\perp	0	2	_	0	\perp	0	12	12	
5,550.11	0)	0	4	0	\perp	(0	\perp	0	2		0	\perp	0	12	12	
HVAC DISTRIBU	0)	0	4	0	_	(0	\perp	0	2		0	\perp	0	12	12	
01	0)	0		0		(0		0	D		0		0	12	12	
			_				_					Т)	_			-	
Name	8	0			7	07			06),	05			04	.0	03	
Air Distributi	ated	Hea			Fraction	rpeted F	¢	-value th	Insul. R nd Dep			Insul. R and Dep		P	Perimeter (ft)	1 E	Area (ft ²)	
System 1-hers-	lo	N			196	80%			0			none			238		2900	_
HVAC - FAN SYS	io	N			%	0%			0			none			111		1143	
			08				07		6	Interior	5	0			04		03	
	-											-						

03	04	05	00		00
Construction Type	Framing	Total Cavity R-value	Interior / Exterior Continuous R-value	U-factor	Assembly Layers
Wood Framed Wall	2x4 @ 16 in. O. C.	R-0	None / None	0.361	Inside Finish: Gypsum Board Cavity / Frame: no insul. / 2x4 Exterior Finish: 3 Coat Stucco
					CF1R-PRF-01E

Calculation Date/Time: 2022-10-29T11:52:02-07:00

Input File Name: Burton Ranch House.ribd19x							
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	2x4 @ 16 in. O. C.	R-11	None / None	0.11	Inside Finish: Gypsum Board Cavity / Frame: R-11 / 2x4 Exterior Finish: 3 Coat Stucco		
Wood Framed Wall	2x6 @ 16 in. O. C.	R-19	None / R-5	0.051	Inside Finish: Gypsum Board Cavity / Frame: R-19 in 5-1/2 in. (R-18) / 2x6 Sheathing / Insulation: R-5 Sheathing Exterior Finish: 3 Coat Stucco		
Wood Framed Wall	2x6 @ 16 in. O. C.	R-19	None / R-5	0.049	Inside Finish: Gypsum Board Cavity / Frame: R-19 in 5-1/2 in. (R-18) / 2x6 Sheathing / Insulation: R-5 Sheathing Other Side Finish: Gypsum Board		
Wood Framed Ceiling	E R S P R 2x4 @ 24 in. 0. C.	0 V I	DER None / None	0.644	Roofing: Light Roof (Asphalt Shingle) Roof Deck: Wood Siding/sheathing/decking Cavity / Frame: no insul. / 2x4		
Wood Framed Ceiling	2x4 @ 24 in. O. C.	R-13	None / None	0.078	Roofing: Light Roof (Asphalt Shingle) Roof Deck: Wood Siding/sheathing/decking Cavity / Frame: R-13.0 / 2x4 Around Roof Joists: R-0.0 insul.		
Wood Framed Ceiling	2x4 @ 24 in. O. C.	R-0	None / None	0.481	Cavity / Frame: no insul. / 2x4 Inside Finish: Gypsum Board		
Wood Framed Ceiling	2x4 @ 24 in. O. C.	R-38	None / None	0.025	Over Ceiling Joists: R-28.9 insul. Cavity / Frame: R-9.1 / 2x4 Inside Finish: Gypsum Board		

(Page 7 of 12)

UILDING ENVELOPE - HE 01 Quality Insulation I Requir			High R-v	02 alue Spray					03					04			
	auon		- ingn K-\	VBIGG WAY	Foam Incuto	tion	n-	uilding Enve	alone At-	Leakers				CFM50			
	red			Not Req		anell	В	-	elope Air Required	-				CFM50 n/a			
ATER HEATING SYSTEM															_		
01 Name	<u> </u>	02 em Type	Distrib	03 ution Type	v	0 Vater Heat	4 er Name (#	05 (#) Solar Heating System				06 Compact Distribution			07 HERS Verification		
DHW Sys 1		c Hot Water HW)		Distribution	1	DHW He	ater 1 (2)			n/a		None			n/a		
ATER HEATERS																	
01	02	03		4 05	06	0)7	08	09	9	10		11			12	
	Heating Element Type	Tank Ty	10.0	of Tank Vol. (gal)	Energy Factor or Efficiency	01	Pilot	Tank nsulation R-value	or Rec	NO MONO	st Hr. Rating or Flow Rate	,					
DHW Heater 1	Propane	Consun		2 0	0.93-UEF		200 u/hr	(Int/Ext) 0		/a	n/a	n/a				n/a	
TER HEATING - HERS V	VERIFICATIO		6005			ND4	uy m										
01	02		03		04			05 Distribution		06		07 Central		sh.		08 Drain Water	
Name DHW Sys 1 - 1/2	Pipe Insu Not Reg		Parallel P		Compact Dis		יד	ype one	Reci	Not Regu		Distrib Not Rec	ution		Heat	Recovery Required	
RTIFICATE OF COMP		uneu	normete	ired	not neg	anea		UTIC .		normeda	nea	HOL NO.	quirea			F1R-PRF-0	
ject Name: Burton culation Description											9T11:52:02 use.ribd19				(1	age 9 of 1	
CE CONDITIONING S															_		
01		02		03	0		05	06	_	07 Required	80	05 Verif		10 Heating		11 Cooling	
Name		System Ty	pe	Heating Un Name	nit Coolin Nar		Fan Name	Distribu Name		Thermost Type			ting	Equipme Count	int	Equipment Count	
HVAC System1	Hea	ting and cool other	ng system	Heating Component		onent H	IVAC Fan 1	Air Distribut System		Setback	New	N	A	1		1	
AC - HEATING UNIT TY	PES			1				system	•								
01	L			02					03					04	_		
Nan Heating Con		-		System Central gas				Numb	oer of Un	nits			He	AFUE-93			
AC - COOLING UNIT T		7		C	16	F	RT	-ς		n	8						
01	02	-	03	H	04	5 P	RC	05		06	~	0 Mulit-				08	
Name	System		Number o	f Units	Efficiency E	ER/CEER		ncy SEER	Zo	onally Con		Comp		· _ '	HERS Verification		
- Ken Composed 1	Central :	nlit AC									Single Speed			ooling	Component		
Soling Component 1		ipin Ac	1		12.	5		16		Not Zor	าอเ	Single	Speed	1 ^{CI}		Component ers-cool	
	ERIFICATION				03	5		04		Not Zor	05	Single	Speed	1 0			
AC COOLING - HERS V 01 Name Cooling Component 1-hers-cool	t	N	irflow						R	Not Zor		SEER		Verified R	1-h 06 tefrige	rant Charge	
AC COOLING - HERS V 01 Name Cooling Componen 1-hers-cool ERTIFICATE OF COMI roject Name: Burton alculation Descriptio	t PLIANCE Ranch Hou on: Title 24	N Verified A Requi JSE Analysis	irflow	04	03 Airflow Targ 350	et	Calculati	04 Verified EEF Required on Date/1	fime: 20	022-10-2 Ranch Ho	05 Verified	seeR ed		Verified R	1-h 06 tefrige ot Requ	rant Charge iired F1R-PRF-0	
AC COOLING - HERS V 01 Name Cooling Component 1-hers-cool RTIFICATE OF COMM roject Name: Burton alculation Description VAC - DISTRIBUTION ST 01	t PLIANCE Ranch Hou on: Title 24 YSTEMS 02	N Verified A Requi	irflow red 03	04	03 Airflow Targ 350 t Ins. R-valu	et 5	Calculati Input File 06 Duct Locat	04 Verified EEF Required on Date/T e Name: B 07 ion	fime: 20 Gurton R 08	022-10-2 Ranch Ho Surface A	05 Verified Requir 9T11:52:02 use.ribd19 09 rea	SEER ed 2-07:00 x 10 Bypas	15	Verified R No	1-hr 06 tefrige 01 Requ (P	rant Charge iired F1R-PRF-0 age 10 of 1 12 HERS	
AC COOLING - HERS V 01 Name Cooling Component 1-hers-cool ERTIFICATE OF COMM roject Name: Burton alculation Descriptio	t PLIANCE Ranch Hou on: Title 24 YSTEMS	N 02 Verified A Requi	irflow red	04 Due Supp	03 Airflow Targ 350 	et s arn Su	Calculati Input File Duct Locati	04 Verified EEF Required on Date/T e Name: B	Fime: 20 Burton R 08	022-10-2 Ranch Ho Surface A	05 Verified Requir 9T11:52:02 use.ribd19 09	seer ed 2-07:00 x 10	35 :	Verified R	1-h	rant Charge iired F1R-PRF-0 age 10 of 1 12 HERS Verification Air Distribution System	
AC COOLING - HERS V 01 Name Cooling Component 1-hers-cool ERTIFICATE OF COMM roject Name: Burton alculation Description VAC - DISTRIBUTION ST 01 Name Air Distribution System 1	t PLIANCE Ranch Hou on: Title 24 YSTEMS 02 Typ Unconditio	N O2 Verified A Requi Use Analysis e ned attic	irflow ed 03 Design Tyj	04 Due Supp	03 Airflow Targ 350 	et s arn Su	Calculati Input File Duct Locati	04 Verified EEF Required on Date/T e Name: B 07 ion leturn	fime: 20 Surton R 08 Suppl	022-10-2 Ranch Ho Surface A	05 Verified Requir 9T11:52:02 uuse.ribd19 09 rea Return	SEER ed 2-07:00 x 10 Bypas Duct No Bypas	35 :	Verified R No 11 Duct Leaka Sealed an	1-h	rant Charge iired F1R-PRF-0 age 10 of 2 12 HERS Verification Air Distributio System	
AC COOLING - HERS V 01 Name Cooling Component 1-hers-cool RTIFICATE OF COMI oject Name: Burton Iculation Description VAC - DISTRIBUTION ST 01 Name Air Distribution System 1	t PLIANCE Ranch Hou on: Title 24 YSTEMS 02 Typ Unconditio	N O2 Verified A Requi Use Analysis e ned attic	irflow ed 03 Design Tyj	04 Due Supp	03 Airflow Targ 350 	et ie irm Su B A	Calculati Input File Duct Locati	04 Verified EEF Required on Date/T e Name: B 07 ion leturn Attic	fime: 20 Surton R 08 Suppl	022-10-2 Ranch Ho Surface A	05 Verified Requir 9T11:52:02 uuse.ribd19 09 rea Return	SEER ed 2-07:00 x 10 Bypas Duct No Bypas	35 :	Verified R No 11 Duct Leaka Sealed an Tested	1-h	rant Charge iired F1R-PRF-0 age 10 of 1 12 HERS Verification Air Distribution System	
AC COOLING - HERS V 01 Name Cooling Component 1-hers-cool RTIFICATE OF COMP roject Name: Burton Iculation Description VAC - DISTRIBUTION ST 01 Name Air Distribution System 1	t PLIANCE Ranch Hou on: Title 24 YSTEMS 02 Typ Unconditio	N 02 Verified A Requi	irflow red 03 Design Tyj Non-Verifi 03	ed R-8	03 Airflow Targ 350 t Ins. R-valu	et	Calculati Input File O6 Duct Locati	04 Verified EEF Required on Date/T e Name: B 07 ion leturn Attic	fime: 20 Burton R 08 Suppl n/a	022-10-2 Ranch Ho Surface A	05 Verified Requir 9T11:52:02 use.ribd19 09 rea Return n/a	SEER ed 2-07:00 x 10 Bypas Duct No Bypas	is : :08	Verified R No 11 Duct Leaka Sealed an Tested	1-h	rant Charge irred F1R-PRF-0 age 10 of 1 12 HERS Verification Air Distribution System 1-hers-dist 09 w Leakage	
AC COOLING - HERS V 01 Name Cooling Component 1-hers-cool RTIFICATE OF COMM oject Name: Burton Iculation Description AC - DISTRIBUTION ST 01 Name Air Distribution System 1	t PLIANCE Ranch Hou on: Title 24 YSTEMS 02 Typ Unconditio IERS VERIFIC 02 Duct Leaka Verificatio	N 02 Verified A Requi	irflow red 03 Design Typ Non-Verifi 03 ict Leakage farget (%)	ed R-8	03 Airflow Targ 350 t Ins. R-valu it Ins. R-valu Ny Retu 8 R-1 04	et arm Su 8 A	Calculati Input File 06 Duct Locati Ipply R Attic 05	04 Verified EEF Required on Date/T e Name: B 07 ion leturn Attic	fime: 20 Burton R 08 Suppl n/a 06 d Ducts	022-10-2 Ranch Ho Surface A	05 Verified Requir 9T11:52:02 use.ribd19 09 rea Return n/a 07 07	SEER ed 2-07:00 x 10 Bypas Duct	is :: 08 v-leak	Verified R No 11 Duct Leaka Sealed an Tested	1-h	rant Charge iired F1R-PRF-0 age 10 of 1 12 HERS Verification Air Distribution System 1-hers-dist 09 w Leakage ss Entirely in nditioned Space	
AC COOLING - HERS V 01 Name Cooling Component 1-hers-cool RTIFICATE OF COMI oject Name: Burton Iculation Description /AC - DISTRIBUTION ST 01 Name Air Distribution System 1 01 Name Air Distribution	t PLIANCE Ranch Hou on: Title 24 YSTEMS 02 Typ Uncondition ERS VERIFIC 02 Duct Leaka	N 02 Verified A Requi	irflow red 03 Design Tyj Non-Verifi 03	ed R-8	03 Airflow Targ 350 it Ins. R-value oly Retu 8 R-1 04	et arm Su 8 A	Calculati Input File Duct Locati Attlic	04 Verified EEF Required on Date/T e Name: B 07 ion leturn Attic	fime: 20 Surton R 08 Suppl n/a	022-10-2 Ranch Ho Surface A	05 Verified Requir 9T11:52:02 use.ribd19 09 rea Return n/a 07 07	SEER ed 2-07:00 x 10 Bypas Duct	is :: 08 v-leak	Verified R No 11 Duct Leaka Sealed an Tested	1-h	rant Charge irred F1R-PRF-0 age 10 of 1 12 HERS Verification Air Distribution System 1-hers-dist 09 w Leakage ts Entirely in nditioned	
AC COOLING - HERS V 01 Name Cooling Component 1-hers-cool RTIFICATE OF COMM roject Name: Burton alculation Description VAC - DISTRIBUTION S 01 Name Air Distribution System 1 Name Air Distribution - H	t PLIANCE Ranch Hou on: Title 24 YSTEMS 02 Typ Unconditio IERS VERIFIC 02 Duct Leaka Verificatio	N 02 Verified A Requi	irflow red 03 Design Typ Non-Verifi 03 ict Leakage farget (%)	ed R-8	03 Airflow Targ 350 t Ins. R-valu it Ins. R-valu Ny Retu 8 R-1 04	et	Calculati Input File 06 Duct Locati Ipply R Attic 05	04 Verified EEF Required on Date/T e Name: B 07 ion ieturn Attic	fime: 20 Burton R 08 Suppl n/a 06 d Ducts	022-10-2 Ranch Ho Surface A	05 Verified Requir 9T11:52:02 use.ribd19 09 rea Return n/a 07 07 eeply Buried Ducts	SEER ed 2-07:00 x 10 Bypas Duct	is :: 08 v-leak	Verified R No 11 Duct Leaka Sealed an Tested	1-h	rant Charge iired F1R-PRF-0 age 10 of 1 12 HERS Verification Air Distribution System 1-hers-dist 09 w Leakage ss Entirely in nditioned Space	
AC COOLING - HERS V 01 Name Cooling Component 1-hers-cool RTIFICATE OF COMM oject Name: Burton Iculation Description VAC - DISTRIBUTION ST 01 Name Air Distribution System 1 Name Air Distribution System 1 Name Air Distribution System 1-hers-dist	t PLIANCE Ranch Hou on: Title 24 YSTEMS 02 Typ Unconditio IERS VERIFIC 02 Duct Leaka Verificatio Yes 01 Name	N 02 Verified A Requi	irflow red 03 Design Typ Non-Verifi 03 ict Leakage farget (%)	ed R-8	03 Airflow Targ 350 t Ins. R-valu it Ins. R-valu it Ins. R-valu s R-i cation 04 cation Required 0, Typ	et	Calculati Input File 06 Duct Locati Ipply R Attic 05	04 Verified EEF Required on Date/T e Name: B 07 ion ieturn Attic	fime: 20 Surton R 9 Suppl n/a 06 d Ducts	022-10-2 Ranch Ho Surface A ly De Cre 03 Power (W	05 Verified Requir 9T11:52:02 use.ribd19 09 rea Return n/a 07 07 eeply Buried Ducts dit not take	SEER ed 2-07:00 x 10 Bypas Duct	is :: 08 v-leak	Verified R No 11 Duct Leaka Sealed an Tested	1-h	rant Charge iired F1R-PRF-0 age 10 of 1 12 HERS Verification Air Distribution System 1-hers-dist 09 w Leakage ts Entirely in nditioned Space No	
AC COOLING - HERS V 01 Name Cooling Component 1-hers-cool RTIFICATE OF COMM oject Name: Burton ilculation Description VAC - DISTRIBUTION ST 01 Name Air Distribution System 1 Name Air Distribution System 1-hers-dist VAC - FAN SYSTEMS	t PLIANCE Ranch Hou on: Title 24 YSTEMS 02 Typ Uncondition ERS VERIFIC 02 Duct Leaka Verification Yes 01 Name HVAC Fan 1	Verified A Requi	irflow red 03 Design Typ Non-Verifi 03 ict Leakage farget (%)	ed R-8	03 Airflow Targ 350 it Ins. R-value oly Retu s R- ied Duct cation Required 0	et	Calculati Input File 06 Duct Locati Ipply R Attic 05	04 Verified EEF Required on Date/T e Name: B 07 ion ieturn Attic	fime: 20 Surton R 9 Suppl n/a 06 d Ducts	022-10-2 Ranch Ho Surface A ly	05 Verified Requir 9T11:52:02 use.ribd19 09 rea Return n/a 07 07 eeply Buried Ducts dit not take	SEER ed 2-07:00 x 10 Bypas Duct	is :: 08 v-leak	Verified R No 11 Duct Leaka Sealed an Tested	1-h	rant Charge iired F1R-PRF-0 age 10 of 1 12 HERS Verification Air Distribution System 1-hers-dist 09 w Leakage ts Entirely in nditioned Space No	
AC COOLING - HERS V 01 Name Cooling Component 1-hers-cool ERTIFICATE OF COMM roject Name: Burton alculation Description VAC - DISTRIBUTION ST 01 Name Air Distribution System 1 Name Air Distribution - H 01 Name Air Distribution system 1-hers-dist	t PLIANCE Ranch Hou on: Title 24 YSTEMS 02 Typ Unconditio HERS VERIFIC 02 Duct Leaka Verificatio Yes 01 Name HVAC Fan 1 ERS VERIFIC 01	Verified A Requi	irflow red 03 Design Typ Non-Verifi 03 ict Leakage farget (%)	ed R-8	03 Airflow Targ 350 it Ins. R-valu it Ins. R-valu it Ins. R-valu it Ins. R-valu Required ied Duct cation Required	et	Calculati Input File O6 0 Duct Locati apply R Attlic 0 ied Duct esign tequired 0 02	04 Verified EEF Required on Date/T e Name: B 07 ion Attic Buried Not Ro Not Ro	fime: 20 Surton R 9 Suppl n/a 06 d Ducts	022-10-2 Ranch Ho Surface A ly De Cre 03 Power (W	05 Verified Requir 9T11:52:02 use.ribd19 09 rea Return n/a 07 07 ceply Buried Ducts dit not take	SEER ed 2-07:00 x 10 Bypas Duct I Low n No	08 v-leak Hand ot Req	Verified R No 11 Duct Leaka Sealed an Tested	1-h	rant Charge iired F1R-PRF-0 age 10 of 1 12 HERS Verification Air Distribution System 1-hers-dist 09 w Leakage is Entirely in nditioned Space No	
AC COOLING - HERS V 01 Name Cooling Component 1-hers-cool RTIFICATE OF COMM oject Name: Burton Iculation Description VAC - DISTRIBUTION ST 01 Name Air Distribution System 1 Name Air Distribution System 1-hers-dist VAC - FAN SYSTEMS - HE	t PLIANCE Ranch Hou on: Title 24 YSTEMS 02 Typ Unconditio IERS VERIFIC 02 Duct Leaka Verificatio Yes 01 Name HVAC Fan 1 ERS VERIFIC/	Verified A Requi	irflow red 03 Design Typ Non-Verifi 03 ict Leakage farget (%)	ed R-8	03 Airflow Targ 350 it Ins. R-valu it Ins. R-valu it Ins. R-valu it Ins. R-valu Required ied Duct cation Required	et s s s s s s s s s s s s s s s s s s s	Calculati Input File 06 0 Duct Locati apply R Attlic 0 ied Duct esign	04 Verified EEF Required on Date/T e Name: B 07 ion Attic Buried Not Ro Not Ro	fime: 20 Surton R 9 Suppl n/a 06 d Ducts	022-10-2 Ranch Ho Surface A ly De Cre 03 Power (W	05 Verified Requir 9T11:52:02 use.ribd19 09 rea Return n/a 07 07 ceply Buried Ducts dit not take	SEER ed 2-07:00 x 10 Bypas Duct I Low n No	08 v-leak Hand ot Req	Verified R No 11 Duct Leaka Sealed an Tested	1-h	rant Charge iired F1R-PRF-0 age 10 of 1 12 HERS Verification Air Distribution System 1-hers-dist 09 w Leakage is Entirely in nditioned Space No	
VAC COOLING - HERS V 01 Name Cooling Component 1-hers-cool ERTIFICATE OF COMM roject Name: Burton alculation Descriptio VAC - DISTRIBUTION S 01 Name Air Distribution System 1 Name Air Distribution System 1-hers-dist VAC - FAN SYSTEMS VAC - FAN SYSTEMS VAC - FAN SYSTEMS	t PLIANCE Ranch Hou on: Title 24 YSTEMS 02 Typ Unconditio IERS VERIFIC 02 Duct Leaka Verificatio Yes 01 Name HVAC Fan 1 Ras VERIFIC 01 Name PLIANCE Ranch Hou	N O2 Verified A Requi USE Analysis e ned attic CATION USE ATION USE	irflow red 03 Design Typ Non-Verifi 03 ict Leakage farget (%)	ed R-8	03 Airflow Targ 350 it Ins. R-valu it Ins. R-valu it Ins. R-valu it Ins. R-valu Required ied Duct cation Required	et s s s s s s s s s s s s s s s s s s s	Calculati Input File Calculati Input vile Calculati Calculati Calculati Calculati	04 Verified EEF Required on Date/T e Name: B 07 ion leturn Attic Buried Not Re Not Re Not Re	fime: 20 Burton R 08 Suppl n/a 06 d Ducts equired Fan F	022-10-2 Ranch Ho Surface A Iy Cre Cre 03 Power (W 0.45	05 Verified Requir 9T11:52:02 use.ribd19 09 rea Return n/a 07 07 ceply Buried Ducts dit not take	SEER ed 2-07:00 x 10 Bypas Duct Bypas Duct	08 v-leak Hand ot Req	Verified R No 11 Duct Leaka Sealed an Tested	1-h	rant Charge iired F1R-PRF-0 age 10 of 1 12 HERS Verification Air Distribution System 1-hers-dist 09 w Leakage ts Entirely in nditioned Space No	
Name Cooling Component 1-hers-cool ERTIFICATE OF COMI roject Name: Burton alculation Descriptio VAC - DISTRIBUTION ST 01 Name Air Distribution System 1 VAC DISTRIBUTION - H 01 Air Distribution System 1-hers-dist VAC - FAN SYSTEMS VAC - FAN SYSTEMS VAC FAN SYSTEMS - HE COMI ROJECT NAME: Burton alculation Descriptio VAC (INDOOR AIR QUALI	t PLIANCE Ranch Hou on: Title 24 YSTEMS 02 Typ Unconditio IERS VERIFIC 02 Duct Leaka Verificatio Yes 01 Name HVAC Fan 1 RS VERIFIC 01 Name PLIANCE Ranch Hou on: Title 24	Verified A Requi	irflow red 03 Design Tyj Non-Verifi 03 oct Leakage farget (%) 5.0	ed R-8	03 Airflow Targ 350 it Ins. R-value bly Retu s R-i 04 ied Duct cation Required 0 Tyj HVAC	et s s s s s s s s s s s s s s s s s s s	Calculati Input File Calculati Input vile Calculati Calculati Calculati Calculati	04 Verified EEF Required on Date/T e Name: B 07 ion Attic Buried Not R Buried Not R	fime: 20 Burton R 08 Suppl n/a 06 d Ducts equired Fan F	022-10-2 Ranch Ho Surface A Iy Cre Cre 03 Power (W 0.45	05 Verified Requir 9T11:52:02 use.ribd19 09 rea Return n/a 07 07 ceply Buriec Ducts dit not take dit not take ratts/CFM) 5 Re 9T11:52:02 use.ribd19	SEER ed 2-07:00 x 10 Bypas Duct buct l buct l buct l buct l buct l buct l buct	08 v-leak Hand ot Req	Verified R No 11 Duct Leaka Sealed an Tested	1-h	rant Charge irred F1R-PRF-0 age 10 of 1 12 HERS Verification Air Distribution System 1-hers-dist 09 w Leakage is Entirely in ditioned Space No ers-fan	
VAC COOLING - HERS V 01 Name Cooling Component 1-hers-cool ERTIFICATE OF COMP roject Name: Burton alculation Descriptio VAC - DISTRIBUTION ST 01 Name Air Distribution System 1 Name Air Distribution System 1-hers-dist VAC - FAN SYSTEMS VAC - FAN SYSTEMS VAC - FAN SYSTEMS - HE COMPOSITION - HE System 1-hers-dist VAC - FAN SYSTEMS VAC - FAN SYSTEMS - HE HV ERTIFICATE OF COMP roject Name: Burton alculation Descriptio	t PLIANCE Ranch Hou on: Title 24 YSTEMS 02 Typ Unconditio IERS VERIFIC 02 Duct Leaka Verificatio Yes 01 Name HVAC Fan 1 RS VERIFIC 01 Name PLIANCE Ranch Hou on: Title 24	Verified A Requi	irflow red 03 Design Typ Non-Verifi 03 ict Leakage larget (%) 5.0	ed R-8	03 Airflow Targ 350 tins. R-valu oly Retu do Required 04 Cation	et s arm Su arm Su be arm Su	Calculati Input File O6 0 Duct Locati apply R Attic 0 ied Duct esign 0 tequired 0 02 0 an Watt Drai quired 0	04 Verified EEF Required on Date/T e Name: B 07 ion Attic Attic Buried Not R Not R Not R Not R	Fime: 20 Surton R 9 Suppl n/a 06 d Ducts equired Fan F	022-10-2 Ranch Ho Surface A Iy Cre O3 Power (W 0.45	05 Verified Requir 9T11:52:02 use.ribd19 09 rea Return n/a 07 07 ceply Buried Ducts dit not take dit not take ratts/CFM) 5 Re 9T11:52:02 use.ribd19	SEER ed 2-07:00 x 10 Bypas Duct I Low n No Bypas Duct	v-leak Hand	Verified R No 11 Duct Leaka Sealed an Tested age Air ller quired HVAC Fi acy (Watts) 5	1-h	rant Charge irred F1R-PRF-0 age 10 of 2 I2 HERS Verification Air Distribution System 1-hers-dist 09 w Leakage is Entirely in nditioned Space No F1R-PRF-0 age 11 of 2	
VAC COOLING - HERS V 01 Name Cooling Component 1-hers-cool ERTIFICATE OF COMM roject Name: Burton alculation Descriptio VAC - DISTRIBUTION ST 01 Name Air Distribution System 1 Name Air Distribution System 1-hers-dist VAC - FAN SYSTEMS VAC - FAN SYSTEMS - HE COMMENDED VAC - FAN SYSTEMS - HE COMMENDED	t PLIANCE Ranch Hou on: Title 24 YSTEMS 02 Typ Unconditio IERS VERIFIC 02 Duct Leaka Verificatio Yes 01 Name HVAC Fan 1 Ranch Hou on: Title 24 ITY) FANS ITY) FANS ITY) FANS ITY) FANS ITY	Verified A Requi	irflow red 03 Design Typ Non-Verifi 03 ct Leakage larget (%) 5.0	ed R-8	03 Airflow Targ 350 it Ins. R-value bly Retu s R-i 04 ied Duct cation Required 0 Tyj HVAC	et s arm Su arm Su be arm Su	Calculati Input File O6 0 Duct Locati apply R Attic 0 ied Duct esign 0 tequired 0 02 0 an Watt Drai quired 0	04 Verified EEF Required on Date/T e Name: B 07 ion Attic Buried Not R Buried Not R	Fime: 20 Surton R 9 Suppl n/a 06 d Ducts equired Fan F	022-10-2 Ranch Ho Surface A Iy Cre O3 Power (W 0.45	05 Verified Requir 9T11:52:02 use.ribd19 09 rea Return n/a 07 07 ceply Buriec Ducts dit not take dit not take ratts/CFM) 5 Re 9T11:52:02 use.ribd19	SEER ed 2-07:00 x 10 Bypas Duct I Low n No Bypas Duct	v-leak Hand	Verified R No 11 Duct Leaka Sealed an Tested age Air ller quired HVAC Fi acy (Watts) 5	1-h	rant Charge irred F1R-PRF-0 age 10 of 1 12 HERS Verification Air Distribution System 1-hers-dist 09 w Leakage I hers-dist 09 w Leakage I hers-dist 09 w Leakage Space No F1R-PRF-0 age 11 of 1 fectiveness E	
VAC COOLING - HERS V 01 Name Cooling Component 1-hers-cool ERTIFICATE OF COMP roject Name: Burton alculation Description VAC - DISTRIBUTION S 01 Name Air Distribution System 1 Name Air Distribution System 1-hers-dist VAC - FAN SYSTEMS VAC - FAN SYSTEMS VAC - FAN SYSTEMS VAC - FAN SYSTEMS - HE CONTRIBUTION - HE System 1-hers-dist VAC - FAN SYSTEMS - HE CONTRIBUTION - HE System 1-hers-dist VAC - FAN SYSTEMS - HE CONTRIBUTION - HE System 1-hers-dist VAC - FAN SYSTEMS - HE CONTRIBUTION - HE System 1-hers-dist	t PLIANCE Ranch Hou on: Title 24 YSTEMS 02 Typ Unconditio IERS VERIFIC 02 Duct Leaka Verificatio Yes 01 Name HVAC Fan 1 ERS VERIFIC/ 01 NAME	Verified A Requi	irflow red 03 Design Typ Non-Verifi 03 ct Leakage larget (%) 5.0	ed R-8	03 Airflow Targ 350 it Ins. R-valu	et s arm Su arm Su be arm Su	Calculati Input File 06 0 Duct Locati apply R Attic 0 ied Duct esign 0 ied Duct esign 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	04 Verified EEF Required on Date/T e Name: B 07 ion Attic Buried Not R Buried Not R Not R Not R Not R Not R Not R	fime: 20 Surton R 08 Suppl n/a 06 d Ducts equired Fan F	022-10-2 Ranch Ho Surface A ly Dr Cre 03 Power (W 0.45	05 Verified Requir 9T11:52:02 use.ribd19 09 rea Return n/a 07 07 ceply Buried Ducts dit not take dit not take returs/CFM) 5 Return 07 07 07 07 07 07 07 07 07 07 07 07 07	SEER ed 2-07:00 x 10 Bypas Duct I Low n No Bypas Duct	v-leak Hand	Verified R No 11 Duct Leaka Sealed an Tested age Air ller quired HVAC Fi acy (Watts) 5	1-h 06 tefrige tr Requ (P (P 06 04 Name an 1-h Co Co 04 Name covery - SR n/a C	rant Charge irred F1R-PRF-0 age 10 of 1 12 HERS Verification Air Distribution System 1-hers-dist 09 w Leakage I hers-dist 09 w Leakage I hers-dist 09 w Leakage Space No F1R-PRF-0 age 11 of 1 fectiveness E	

Joints and Openings - Openings in the building envelope separating conditioned space from unconditioned space needed to accommodate gas, plumbing, electrical lines and other necessary penetrations must be sealed in compliance with the CEC with the following exception in annular spaces around pipes, electric cables, conduits or other openings in plates at exterior walls shall be protected against the passage of rodents by closing such openings with cement mortar, concrete masonry or a similar method acceptable per 2019 CalGreen Section 4.406 Moisture Content of Building Materials:

Building materials with visible signs of water damage shall not be used. Wall and floor framing not to be enclosed until moisture content is equal to or less than 19% verified by the following per 2019 CalGreen Section 4.505:

Moisture content shall be determined with either a probe-type or a. contact-type moisture meter.

b. Readings to be taken 2 feet to 4 feet from grade stamped end of each piece to be verified.

c. At least 3 random readings to be performed on wall and floor framing with acceptable documentation at frame inspection.

d. Wet or damp insulation products to be replaced, or allowed to dry prior to close up. Wet applied insulation products shall follow manufacturer's drying recommendations prior to close up per 2019 CalGreen Section 4.505.3.

Composite Wood Products:

Provide one of the following showing that hardwood plywood, particle board and medium density fiberboard composite wood products used on the interior or exterior of the building meet the requirements by or before the dates shown on 2019 CalGreen Table 4.504.5 or by the ARB's Air Toxics Control Measure for Composite Wood (17 CCR93120 et seq.) per 2019 CalGreen 5.504.5:

a. Product certifications and specifications.

b. Chain of custody certifications. c. Other methods acceptable by the Building Official.

Operation and Maintenance Manual - At the time of final inspection,

provide an owner's manual in print or digital format containing the following:

a. Directions to the owner or occupant that the manual stays with structure for life of structure.

b. Operation and maintenance for the following i. Equipment and appliance, including water saving devices and systems, HVAC, water heater and other major appliances and equipment.

ii. Roof and yard drainage including gutters and down spouts. iii. Space conditioning systems including condensers and air filters.

iv. Landscape irrigation systems. v. Water reuse systems.

c. Information from local utility, water and waste recovery providers or methods to further reduce resource consumption including recycle programs and locations.

d. Public transportation and/or carpool options available in the area. e. Educational material on the positive impacts of an interior relative humidity between 30-60% and what methods an occupant may use to

maintain the relative humidity level at that range. f. Information about water conserving landscape and irrigation design and controller which conserve water.

g. Instructions or maintaining gutters and downspouts and the importance of diverting water at least 5 feet from foundation.

h. Information on required routine maintenance measures including but not limited to caulking, painting, and grading around the building, etc.

i. Information about state solar energy and incentive programs available j. A copy of all special inspection verifications required by the Building Official

CALGreen

Covering of Duct Openings and Protection of Mechanical Equipment during Construction:

a. At rough inspection and during storage until startup, all duct and related equipment to be covered with tape, plastic sheet metal or other acceptable methods per 2019 CalGreen Section 4.504.1. Finish Material Pollutant Control:

b. Adhesives, Sealants, and Caulks: Provide specifications for adhesives sealants, and caulks to be used. Products must meet the VOC requirements of 2019 Tables 4.504.1 and 4.504.2 or SCAQMD rule

1168 VOC limits per 2019 CalGreen 4.504.2.1. c. Paints and Coatings: Provide specifications paints and coatings to be used. Products must meet the requirements of 2019 CalGreen Table 5.504.4.3 or Table 1 of the ARB Architectural Coating Suggested

Control Measure per 2019 CalGreen 4.504.2.2. d. Aerosol Paints and Coatings: Provide specifications showing that

aerosol paints and coatings meet the Product-Weighted MIR limits for RaC in Section 94522(a)(3) and other requirements including prohibitions on use of certain toxic compounds and ozone depleting

substances in Section 94522(c)(2) and (d)(2) of CCR Title 17 per 2019 CalGreen Section 4.504.2.3. e. Carpet Systems: Provide specifications for carpets to be used.

Products must meet the testing and product requirements of one of the following:

i. Carpet and Rug Institute's Green Label Plus Program. ii. California Department of Public Health Standard Practice for the testing of vacs (specification 01350).

iii. NSF/ANSI 140 at Gold level.

iv. Scientific Certifications Systems Indoor Advantage Gold per 2019 CalGreen Section 4.504.3. f. Carpet Cushion: Provide specifications for carpet padding to be used.

Product must meet the requirements of the Carpet and Rug Institute Green Label Program per 2019 CalGreen Section 4.504.3.1.

g. Carpet Adhesive: Provide specifications for carpet adhesive to be used. Product must meet the vac requirements of 2019 CalGreen

Table 4.504.1 per 2019 CalGreen 4.504.3.2. h. Resilient Flooring Systems: Provide specifications for at least 50% of floor area receiving resilient flooring showing that the product used

meets one of the following: i. VaC-emission limits defined in the 2009 Collaborative for High Performance School (CHPS) criteria and listed on its Low-emitting Materials List (or Product Registry)

www.chps.net/dev/Drupallnode/381 or www.chpregistry.com/live ii. Certified under the Resilient Floor Covering Institute (RFCI) Floor Score program www.rfci.com/int FS-ProdCert.htm per 2019 CalGreen 4.504.4.

.303.1.1 Water closets shall not exceed 1.28 gallons per flush

4.303.1.3.1 Single showerheads shall have a maximum flow rate of not more than 1.8.0 gpm at 80 psi.

4.303.1.3.2 Multiple combined flow rate of all showerheads and/or other shower outlets controlled by a single valve shall not exceed 1.8 gpm (a) 80 psi or only one shower outlet in operation at a time.

4.303.1.4.1 Residential lavatory faucets shall not exceed 1.2 gpm at 60 psi. APPROVED BUILDING DIVISION

4.303.1.4.4 Kitchen faucets shall not exceed 1.8 gpm at 60 psi. They may temporarily increase to 282/:gptohrbutten ust default to TE: 8 gptoh-2023

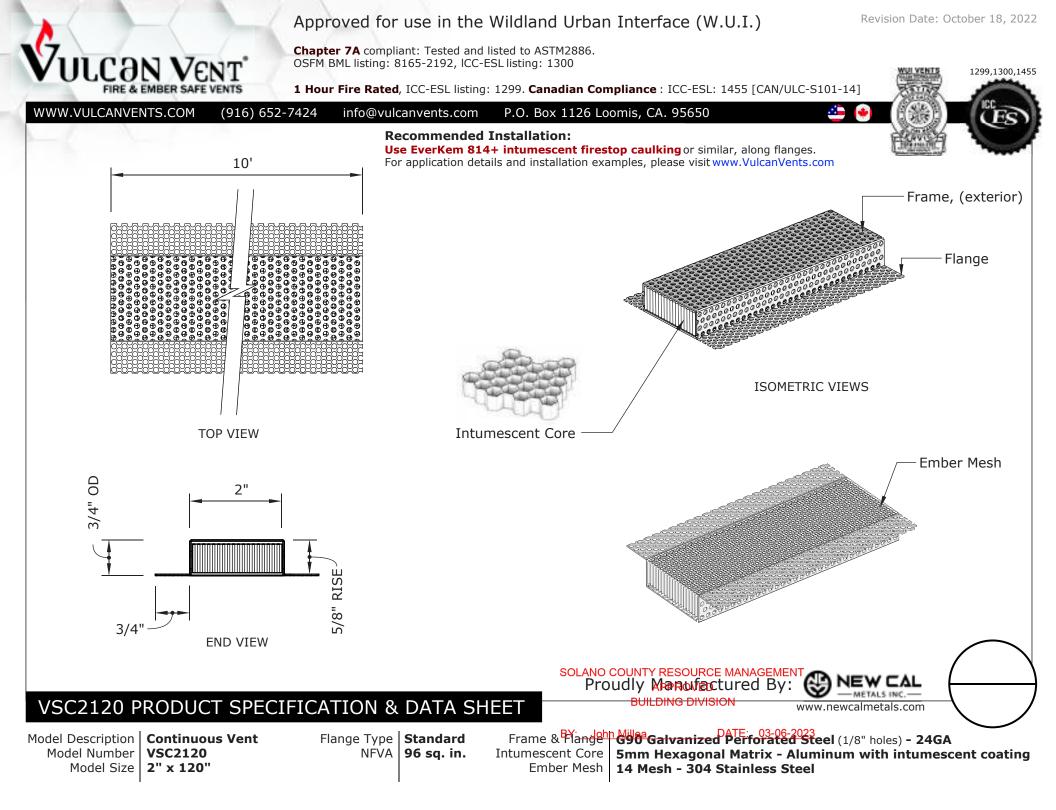


AIA California

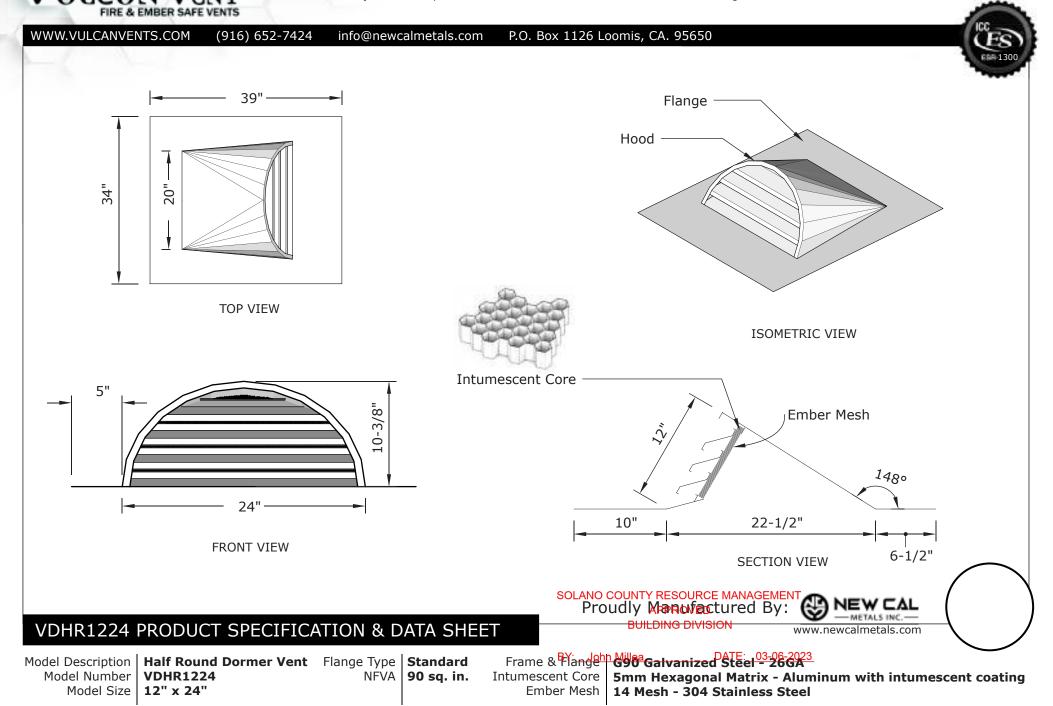
2019 CALIFORNIA GREEN BUILDING STANDARDS CODE RESIDENTIAL MANDATORY MEASURES. SHEET 1 (January 2020, Includes August 2019 Supplement)

RESIDENTIAL MA	AND	ATORY MEASURES, SHEET	_ 1 (Ja	anuary 2020, Includes August 2019 Supple	ment) Y = YES N/A = NOT APPLICABLE RESPON. PARTY = RESPONSIBLE PARTY (IN: ARCHITE) OWNER, CONTRACTOR, INSPECTOR
CHAPTER 3 GREEN BUILDING	Y N/A RESPON PARTY	N	Y N/A RESPON PARTY	NL. 7	Y N/A RESPON. PARTY
SECTION 301 GENERAL		4.106.4.2.1.1 Electric Vehicle Charging Stations (EVCS) When EV chargers are installed, EV spaces		DIVISION 4.3 WATER EFFICIENCY AND CONSERVATION	DIVISION 4.4 MATERIAL CONSERVATION AND RESOURCE
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,		required by Section 4.106.2.2, Item 3, shall comply with at least one of the following options: 1. The EV space shall be located adjacent to an accessible parking space meeting the		4.303 INDOOR WATER USE 4.303.1 WATER CONSERVING PLUMBING FIXTURES AND FITTINGS. Plumbing fixtures (water closets and	4.406 ENHANCED DURABILITY AND REDUCED MAINTENANCE
but are not required unless adopted by a city, county, or city and county as specified in Section 101.7. 301.1.1 Additions and alterations. [HCD] The mandatory provisions of Chapter 4 shall be applied to		 requirements of the <i>California Building Code</i>, Chapter 11A, to allow use of the EV charger from the accessible parking space. 2. The EV space shall be located on an accessible route, as defined in the <i>California Building</i> 		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.	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
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 specific area of the addition or alteration.		Code, Chapter 2, to the building. Exception: Electric vehicle charging stations designed and constructed in compliance with the		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	agency. 4.408 CONSTRUCTION WASTE REDUCTION, DISPOSAL AND RECYCLING
Note: On and after January 1, 2014, residential buildings undergoing permitted alterations, additions, or	n -	California Building Code, Chapter 11B, are not required to comply with Section 4.106.4.2.1.1 and Section 4.106.4.2.2, Item 3.		Code Section 1101.1, et seq., for the definition of a noncompliant plumbing fixture, types of residential buildings affected and other important enactment dates.	4.408.1 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
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,		Note: Electric Vehicle charging stations serving public housing are required to comply with the California Building Code, Chapter 11B.		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	4.408.2, 4.408.3 or 4.408.4, or meet a more stringent local construction and demolition waste management ordinance.
et seq., for the definition of a noncompliant plumbing fixture, types of residential buildings affected and other important enactment dates.		4.106.4.2.2 Electric vehicle charging space (EV space) dimensions. The EV space shall be designed to comply with the following:		Specification for Tank-type Toilets. Note: The effective flush volume of dual flush toilets is defined as the composite, average flush volume	Exceptions: 1. Excavated soil and land-clearing debris.
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		 The minimum length of each EV space shall be 18 feet (5486 mm). The minimum width of each EV space shall be 9 feet (2743 mm). 		of two reduced flushes and one full flush. 4.303.1.2 Urinals. The effective flush volume of wall mounted urinals shall not exceed 0.125 gallons per flush.	 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
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.		 One in every 25 EV spaces, but not less than one EV space, shall 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). 		The effective flush volume of all other urinals shall not exceed 0.5 gallons per flush.	 close to the jobsite. 3. 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.
		a. Surface slope for this EV space and the aisle shall not exceed 1 unit vertical in 48 units		4.303.1.3 Showerheads. 4.303.1.3.1 Single Showerhead. Showerheads shall have a maximum flow rate of not more than 1.8	4.408.2 CONSTRUCTION WASTE MANAGEMENT PLAN. Submit a construction waste management platin conformance with Items 1 through 5. The construction waste management plan shall be updated
SECTION 302 MIXED OCCUPANCY BUILDINGS 302.1 MIXED OCCUPANCY BUILDINGS. In mixed occupancy buildings, each portion of a building		horizontal (2.083 percent slope) in any direction.		gallons per minute at 80 psi. Showerheads shall be certified to the performance criteria of the U.S. EPA WaterSense Specification for Showerheads.	necessary and shall be available during construction for examination by the enforcing agency. 1. Identify the construction and demolition waste materials to be diverted from disposal by recycling
shall comply with the specific green building measures applicable to each specific occupancy.		4.106.4.2.3 Single EV space required. Install a listed raceway capable of accommodating a 208/240- 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		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	reuse on the project or salvage for future use or sale. 2. Specify if construction and demolition waste materials will be sorted on-site (source separated) of
ABBREVIATION DEFINITIONS: HCD Department of Housing and Community Development BSC California Building Standards Commission		cabinet, box or enclosure in close proximity to the proposed location of the EV space. Construction documents shall identify the raceway termination point. The service panel and/or subpanel shall provide		allow one shower outlet to be in operation at a time.	 bulk mixed (single stream). Identify diversion facilities where the construction and demolition waste material collected will be taken.
DSA-SS Division of the State Architect, Structural Safety OSHPD Office of Statewide Health Planning and Development LR Low Rise		capacity to install a 40-ampere minimum dedicated branch circuit and space(s) reserved to permit installation of a branch circuit overcurrent protective device.		Note: A hand-held shower shall be considered a showerhead. 4.303.1.4 Faucets.	 Identify construction methods employed to reduce the amount of construction and demolition was generated. Specify that the amount of construction and demolition waste materials diverted shall be calculated.
HR High Rise AA Additions and Alterations		4.106.4.2.4 Multiple EV spaces required. Construction documents shall indicate the raceway termination point and proposed location of future EV spaces and EV chargers. Construction documents shall also provide information on amperage of future EVSE, raceway method(s), wiring schematics and		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	by weight or volume, but not by both. 4.408.3 WASTE MANAGEMENT COMPANY. Utilize a waste management company, approved by the
N New		electrical load calculations to verify that the electrical panel service capacity and electrical system, including any on-site distribution transformer(s), have sufficient capacity to simultaneously charge all EVs at all required EV spaces at the full rated amperage of the EVSE. Plan design shall be based upon a		not be less than 0.8 gallons per minute at 20 psi.	enforcing agency, which can provide verifiable documentation that the percentage of construction at demolition waste material diverted from the landfill complies with Section 4.408.1.
CHAPTER 4 RESIDENTIAL MANDATORY MEASURES		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		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.	Note: The owner or contractor may make the determination if the construction and demolition waste materials will be diverted by a waste management company.
DIVISION 4.1 PLANNING AND DESIGN		4.106.4.2.5 Identification. The service panel or subpanel circuit directory shall identify the overcurrent		4.303.1.4.3 Metering Faucets. Metering faucets when installed in residential buildings shall not deliver more than 0.2 gallons per cycle.	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
SECTION 4.102 DEFINITIONS		protective device space(s) reserved for future EV charging purposes as "EV CAPABLE" in accordance with the California Electrical Code.		4.303.1.4.4 Kitchen Faucets. The maximum flow rate of kitchen faucets shall not exceed 1.8 gallons per minute at 60 psi. Kitchen faucets may temporarily increase the flow above the maximum rate, but not	Ibs./sq.ft. of the building area shall meet the minimum 65% construction waste reduction requirement Section 4.408.1
The following terms are defined in Chapter 2 (and are included here for reference)		4.106.4.3 New hotels and motels. All newly constructed hotels and motels shall provide EV spaces		to exceed 2.2 gallons per minute at 60 psi, and must default to a maximum flow rate of 1.8 gallons per minute at 60 psi.	4.408.4.1 WASTE STREAM REDUCTION ALTERNATIVE. Projects that generate a total combine weight of construction and demolition waste disposed of in landfills, which do not exceed 2 pounds
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.		capable of supporting future installation of EVSE. The construction documents shall identify the location of the EV spaces.		Note: Where complying faucets are unavailable, aerators or other means may be used to achieve reduction.	per square foot of the building area, shall meet the minimum 65% construction waste reduction requirement in Section 4.408.1
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.		Notes: 1. Construction documents are intended to demonstrate the project's capability and capacity or facilitating future EV charging.		4.303.2 STANDARDS FOR PLUMBING FIXTURES AND FITTINGS. Plumbing fixtures and fittings shall be installed in accordance with the California Plumbing Code, and shall meet the applicable standards referenced in Table 1701.1 of the California Plumbing Code.	4.408.5 DOCUMENTATION. Documentation shall be provided to the enforcing agency which demonstration compliance with Section 4.408.2, items 1 through 5, Section 4.408.3 or Section 4.408.4 Notes:
 4.106 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, 		There is no requirement for EV spaces to be constructed or available until EV chargers are installed for use.		NOTE:	 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
management of storm water drainage and erosion controls shall comply with this section. 4.106.2 STORM WATER DRAINAGE AND RETENTION DURING CONSTRUCTION. Projects which disturb less		4.106.4.3.1 Number of required EV spaces. The number of required EV spaces shall be based on the total number of parking spaces provided for all types of parking facilities in accordance with Table 4.106.4.3.1. Calculations for the required number of EV spaces shall be rounded up to the		THIS TABLE COMPILES THE DATA IN SECTION 4.303.1, AND IS INCLUDED AS A CONVENIENCE FOR THE USER.	documenting compliance with this section. 2. Mixed construction and demolition debris (C & D) processors can be located at the Califord Department of Resources Recycling and Recovery (CalRecycle).
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		nearest whole number.		TABLE - MAXIMUM FIXTURE WATER USE	4.410 BUILDING MAINTENANCE AND OPERATION 4.410.1 OPERATION AND MAINTENANCE MANUAL. At the time of final inspection, a manual, compact
property, prevent erosion and retain soil runoff on the site.	`	TABLE 4.106.4.3.1 TOTAL NUMBER OF PARKING NUMBER OF REQUIRED EV		FIXTURE TYPE FLOW RATE SHOWER HEADS	disc, web-based reference or other media acceptable to the enforcing agency which includes all of following shall be placed in the building:
 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 		SPACES SPACES		(RESIDENTIAL) 1.8 GMP @ 80 PSI LAVATORY FAUCETS MAX. 1.2 GPM @ 60 PSI	 Directions to the owner or occupant that the manual shall remain with the building throughout the life cycle of the structure.
by the enforcing agency. 3. Compliance with a lawfully enacted storm water management ordinance.				(RESIDENTIAL) MIN. 0.8 GPM @ 20 PSI	 Operation and maintenance instructions for the following: Equipment and appliances, including water-saving devices and systems, HVAC systems photovoltaic systems, electric vehicle chargers, water-heating systems and other major
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.		10-25 1		COMMON & PUBLIC USE AREAS 0.5 GPM @ 60 PSI KITCHEN FAUCETS 1.8 GPM @ 60 PSI	appliances and equipment. b. Roof and yard drainage, including gutters and downspouts.
(Website: https://www.waterboards.ca.gov/water_issues/programs/stormwater/construction.html)		26-50 2 51-75 4		METERING FAUCETS 0.2 GAL/CYCLE	 c. Space conditioning systems, including condensers and air filters. d. Landscape irrigation systems. e. Water reuse systems.
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:	2	76-100 5		WATER CLOSET 1.28 GAL/FLUSH URINALS 0.125 GAL/FLUSH	 Information from local utility, water and waste recovery providers on methods to further reduce resource consumption, including recycle programs and locations. Public transportation and/or carpool options available in the area.
1. Swales 2. Water collection and disposal systems		101-150 7 151-200 10			 Educational material on the positive impacts of an interior relative humidity between 30-60 perce 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 const
3. French drains 4. Water retention gardens		201 and over 6 percent of total		4.304 OUTDOOR WATER USE 4.304.1 OUTDOOR POTABLE WATER USE IN LANDSCAPE AREAS. Residential developments shall comply with	water. 7. Instructions for maintaining gutters and downspouts and the importance of diverting water at lea
 Other water measures which keep surface water away from buildings and aid in groundwater recharge. 		4.106.4.3.2 Electric vehicle charging space (EV space) dimensions. The EV spaces shall be designed to comply with the following:		a local water efficient landscape ordinance or the current California Department of Water Resources' Model Water Efficient Landscape Ordinance (MWELO), whichever is more stringent.	feet away from the foundation. 8. Information on required routine maintenance measures, including, but not limited to, caulking, painting, grading around the building, etc.
Exception: Additions and alterations not altering the drainage path. 4.106.4 Electric vehicle (EV) charging for new construction. New construction shall comply with Sections		 The minimum length of each EV space shall be 18 feet (5486mm). The minimum width of each EV space shall be 9 feet (2743mm) 		NOTES:	 Information about state solar energy and incentive programs available. A copy of all special inspections verifications required by the enforcing agency or this code.
4.106.4.1, 4.106.4.2, or 4.106.4.3 to facilitate future installation and use of EV chargers. Electric vehicle supply equipment (EVSE) shall be installed in accordance with the <i>California Electrical Code</i> , Article 625.		4.106.4.3.3 Single EV space required. When a single EV space is required, the EV space shall be designed in accordance with Section 4.106.4.2.3.		 The Model Water Efficient Landscape Ordinance (MWELO) is located in the California Code Regulations, Title 23, Chapter 2.7, Division 2. MWELO and supporting documents, including water budget calculator, are available at: https://www.water.ca.gov/ 	4.410.2 RECYCLING BY OCCUPANTS. Where 5 or more multifamily dwelling units are constructed on building site, provide readily accessible area(s) that serves all buildings on the site and are identified for depositing, storage and collection of non-hazardous materials for recycling, including (at a minimum) paper of the site and are identified for the site and collection of non-hazardous materials for recycling, including (at a minimum) paper of the site and are identified for the site and collection of non-hazardous materials for recycling, including (at a minimum) paper of the site and
Exceptions: 1. On a case-by-case basis, where the local enforcing agency has determined EV charging and		4.106.4.3.4 Multiple EV spaces required. When multiple EV spaces are required, the EV spaces shall be			corrugated cardboard, glass, plastics, organic waster, and metals, or meet a lawfully enacted local recycl ordinance, if more restrictive.
infrastructure are not feasible based upon one or more of the following conditions: 1.1 Where there is no commercial power supply. 1.2 Where there is evidence substantiating that meeting the requirements will alter the local		designed in accordance with Section 4.106.4.2.4.4.106.4.3.5 Identification. The service panels or sub-panels shall be identified in accordance with Section			Exception: Rural jurisdictions that meet and apply for the exemption in Public Resources Code Se 42649.82 (a)(2)(A) et seq. are note required to comply with the organic waste portion
utility infrastructure design requirements on the utility side of the meter so as to increase the utility side cost to the homeowner or the developer by more than \$400.00 per dwelling unit.	2	4.106.4.2.5. 4.106.4.3.6 Accessible EV spaces. In addition to the requirements in Section 4.106.4.3, EV spaces for			this section.
Accessory Dwelling Units (ADU) and Junior Accessory Dwelling Units (JADU) without additional parking facilities.	1	hotels/motels and all EVSE, when installed, shall comply with the accessibility provisions for the EV charging stations in the <i>California Building Code</i> , Chapter 11B.			
4.106.4.1 New one- and two-family dwellings and townhouses with attached private garages. For each					DIVISION 4.5 ENVIRONMENTAL QUALITY
dwelling unit, install a listed raceway to accommodate a dedicated 208/240-volt branch circuit. The raceway shall not be less than trade size 1 (nominal 1-inch inside diameter). The raceway shall originate at the main service or subpanel and shall terminate into a listed cabinet, box or other enclosure in close proximity to the		DIVISION 4.2 ENERGY EFFICIENCY 4.201 GENERAL			SECTION 4.501 GENERAL 4.501.1 Scope The provisions of this chapter shall outline means of reducing the quality of air contaminants that are odd
proposed location of an EV charger. Raceways are required to be continuous at enclosed, inaccessible or concealed areas and spaces. The service panel and/or subpanel shall provide capacity to install a 40-ampere minimum dedicated branch circuit and space(s) reserved to permit installation of a branch circuit overcurrent		4.201.1 SCOPE. For the purposes of mandatory energy efficiency standards in this code, the California Energy Commission will continue to adopt mandatory standards.			irritating and/or harmful to the comfort and well being of a building's installers, occupants and neighbors. SECTION 4.502 DEFINITIONS
protective device. 4.106.4.1.1 Identification. The service panel or subpanel circuit directory shall identify the overcurrent protective device space(s) reserved for future EV charging as "EV CAPABLE". The raceway termination					5.102.1 DEFINITIONS The following terms are defined in Chapter 2 (and are included here for reference)
location shall be permanently and visibly marked as "EV CAPABLE". 4.106.4.2 New multifamily dwellings. If residential parking is available, ten (10) percent of the total number of					AGRIFIBER PRODUCTS. Agrifiber products include wheatboard, strawboard, panel substrates and door cores, not including furniture, fixtures and equipment (FF&E) not considered base building elements.
parking spaces on a building site, provided for all types of parking facilities, shall be electric vehicle charging spaces (EV spaces) capable of supporting future EVSE. Calculations for the required number of EV spaces shall be rounded up to the nearest whole number.					COMPOSITE WOOD PRODUCTS. Composite wood products include hardwood plywood, particleboard a medium density fiberboard. "Composite wood products" does not include hardboard, structural plywood, structural panels, structural composite lumber, oriented strand board, glued laminated timber, prefabricat wood I-joists or finger-jointed lumber, all as specified in California Code of regulations (CCR), title 17, Sec. 03120.1
Notes: 1. Construction documents are intended to demonstrate the project's capability and capacity for facilitating future EV charging					93120.1. DIRECT-VENT APPLIANCE. A fuel-burning appliance with a sealed combustion system that draws all a
 facilitating future EV charging. There is no requirement for EV spaces to be constructed or available until EV chargers are installed for use. 					combustion from the outside atmosphere and discharges all flue gases to the outside atmosphere.
4.106.4.2.1 Electric vehicle charging space (EV space) locations. Construction documents shall indicate the location of proposed EV spaces. Where common use parking is provided at least one EV space					SOLANO COUNTY RESOURC
shall be located in the common use parking area and shall be available for use by all residents.					APPROVED BUILDING DIVIS
					BY: <u>John Millea</u>

SHEET Cal-Green Checklist



Approved for use in the Wildland Urban Interface (W.U.I.) Chapter 7A compliant: Tested and listed to ASTM E2886. ICC-ESL listing: 1300



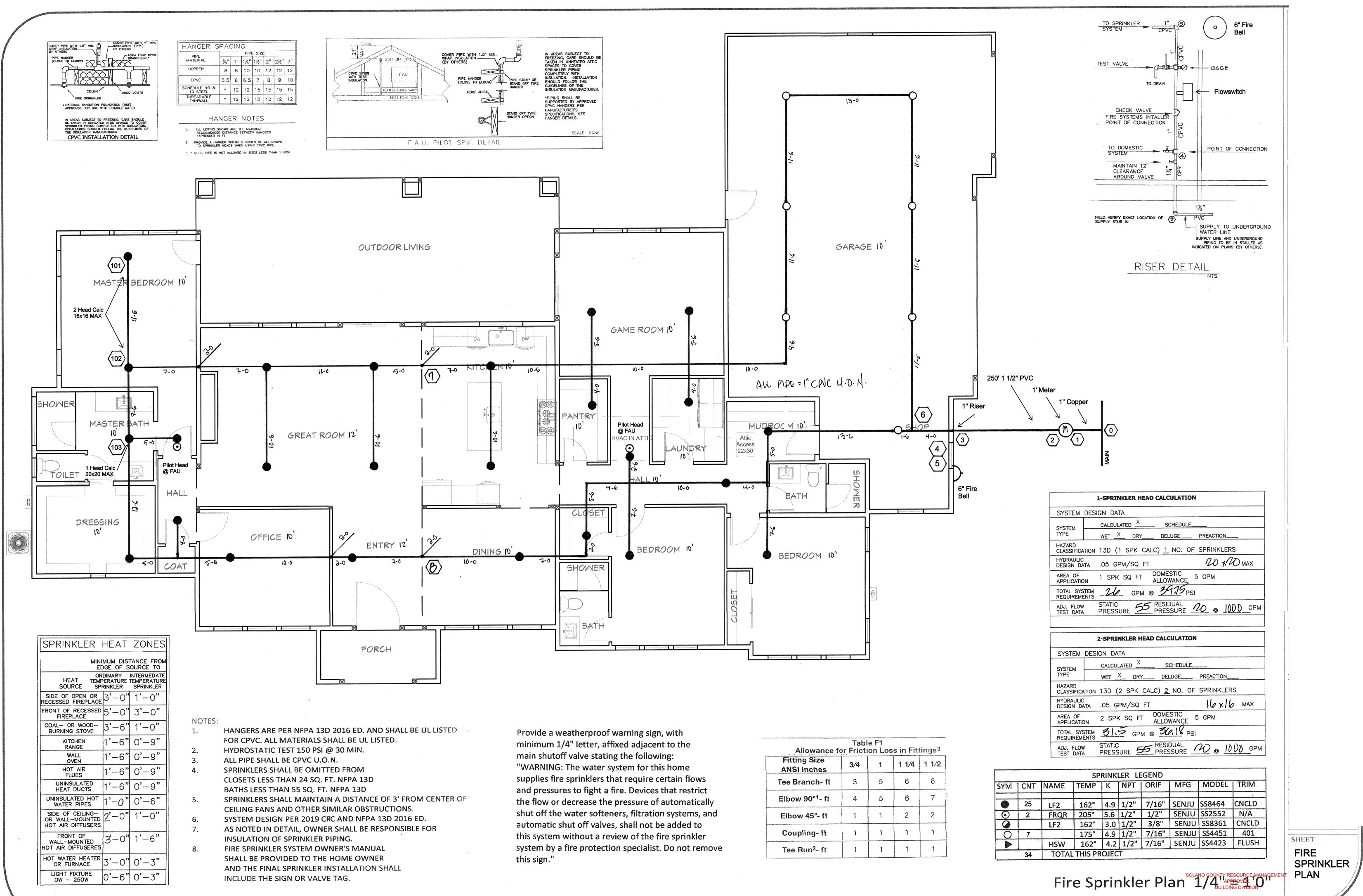


Table F1 Allowance for Friction Loss in Fittings ³										
Fitting Size ANSI Inches	3/4	1	1 1/4	1 1/2						
Tee Branch- ft	3	5	6	8						
Elbow 90° ¹ - ft	4	5	6	7						
Elbow 45°- ft	1	1	2	2						
Coupling- ft	1	1	1	1						
Tee Run ² - ft	4	1	1	1						

BY: John Millea DATE: 03-06-2023

PROJECT DATA

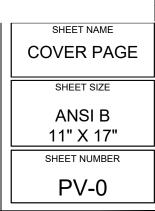
NOTES GENERAL NOTES: SCOPE OF WORK PROJECT SITE 12.0 THESE CONSTRUCTION DOCUMENTS HAVE BEEN BASED ON FIELD INSPECTIONS AND OTHER INFORMATION AVAILABLE AT THE TIME. ACTUAL FIELD CONDITIONS MAY REQUIRE TO INSTALL A ROOF MOUNTED SOLAR PHOTOVOLTAIC SYSTEM AT MODIFICATIONS IN CONSTRUCTION DETAILS. THE OWNER RESIDENCE LOCATED AT 7097 GIBSON CANYON RD CONTRACTOR SHALL FURNISH ALL LABOR, MATERIAL, EQUIPMENT, TOOLS, OBTAINS ALL VACAVILLE, CA 95688 PERMITS, LICENSES AND PAY ALL REQUIRED FEES AND COMPLETE INSTALLATION. THE POWER GENERATED BY THE PV SYSTEM WILL BE CONTRACTOR HAS THE FULL RESPONSIBILITY TO CHECK AND VERIFY ALL DIMENSIONS AND INTERCONNECTED WITH THE UTILITY GRID THROUGH THE EXISTING EXISTING CONDITIONS. ANY DISCREPANCIES SHALL BE REPORTED TO THE ENGINEER ELECTRICAL SERVICE EQUIPMENT. BEFORE PROCEEDING WITH THE WORK. ANY WORK STARTED BEFORE CONSULTATION AND THE PV SYSTEM DOES NOT INCLUDE STORAGE BATTERIES ACCEPTANCE BY THE ENGINEER SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND SHALL BE SUBJECT TO CORRECTION BY THEM WITHOUT ADDITIONAL COMPENSATION. 0105-200-200 **APN NUMBER** DAMAGE CAUSED TO THE EXISTING STRUCTURE, PIPES, DUCTS, WINDOWS, WALL, FLOORS, ETC. SHALL BE REPAIRED TO THE ORIGINAL CONDITION OR REPLACED BY THE SHEET INDEX CONTRACTOR AT NO ADDITIONAL COST. THE CONTRACTOR SHALL BE HELD RESPONSIBLE FOR THE PROPER INSTALLATION AND PV-0 COVER PAGE COMPLETION OF THE WORK WITH APPROVED MATERIALS. PV-1 SITE PLAN CONTRACTOR SHALL OBTAIN BUILDING PERMIT. NO WORK TO START UNLESS BUILDING PV-2 **ROOF PLAN & MODULES** PERMIT IS PROPERLY DISPLAYED. PV-2A **STRING LAYOUT & BOM** ALL WORKMANSHIP AND MATERIALS SHALL BE OF FIRST QUALITY AND IN COMPLIANCE WITH PV-3 ATTACHMENT DETAILS THE REQUIREMENTS OF THE CA BUILDING CODE, THE DEPARTMENT OF ENVIRONMENTAL PV-4 **ELECTRICAL LINE DIAGRAM & CALCS** PROTECTION AND ALL PERTINENT AGENCIES. PV-4A SPECIFICATIONS & CALCULATION ALL EXPOSED PLUMBING, HVAC, ELECTRICAL DUCTWORK, PIPING AND CONDUITS ARE TO BE **VICINITY MAP** PV-5 PAINTED BY GENERAL CONTRACTOR. SIGNAGE THE CONTRACTOR SHALL PERFORM THE WORK IN STRICT CONFORMANCE WITH THE LOCAL PV-6+ EQUIPMENT SPECIFICATIONS LAWS, REGULATIONS AND THE CALIFORNIA ELECTRIC CODE. PROJECT SITE **ELECTRICAL NOTES: GOVERNING CODES** THE EQUIPMENT AND ALL ASSOCIATED WIRING AND INTERCONNECTION SHALL BE INSTALLED 2019 CALIFORNIA ELECTRICAL CODE. TITLE 24. PART 3 ONLY BY QUALIFIED PEOPLE. A QUALIFIED PERSON IS ONE WHO HAS RECEIVED SAFETY 2019 CALIFORNIA RESIDENTIAL CODE.TITLE 24, PART 2.5 TRAINING TO RECOGNIZE AND AVOID THE HAZARDS INVOLVED. 2019 CALIFORNIA FIRE CODE. TITLE 24, PART 9 LOCAL UTILITY PROVIDER SHALL BE NOTIFIED PRIOR TO USE AND ACTIVATION OF ANY 2019 CALIFORNIA BUILDING CODE.TITLE 24, PART 2 SOLAR PHOTOVOLTAIC INSTALLATION, FOR A LINE SIDE TAP CONNECTION, UTILITY NEEDS TO 2019 CALIFORNIA GREEN BUILDING STANDARDS CODE. TITLE BE NOTIFIED WELL IN ADVANCE TO COORDINATE BUILDING ELECTRICAL SHUT OFF. Ranch Solary NEW CONDUIT ROUTING SHOWN IS ESSENTIALLY SCHEMATIC. SUBCONTRACTOR SHALL LAY 24.PART 11 OUT RUNS TO SUIT FIELD CONDITIONS AND THE COORDINATION REQUIREMENTS OF OTHER 2019 CALIFORNIA ENERGY CODE, TITLE 24, PART 6 97 Gibson Canvon TRADES. Vacaville, CA 2019 CALIFORNIA PLUMBING CODE. TITLE 24, PART 5 ALL EXTERIOR CONDUIT, FITTINGS, AND BOXES SHALL BE WATERTIGHT AND APPROVED FOR 2019 CALIFORNIA MECHANICAL CODE. TITLE 24, PART 4 USE IN WET LOCATIONS. WIRING METHODS FOR PV SYSTEM CONDUCTORS AREN'T PERMITTED WITHIN 10 IN. OF THE Bucktow AUTHORITY HAVING JURISDICTION(AHJ) ROOF DECKING OR SHEATHING EXCEPT WHERE LOCATED DIRECTLY BELOW THE ROOF SURFACE THAT'S COVERED BY PV MODULES AND ASSOCIATED EQUIPMENT WIRING. **CITY OF VACAVILLE** CONTRACTOR SHALL FOLLOW ALL ELECTRICAL EQUIPMENT LABELING REQUIREMENTS IN CFC 2019 PV SOURCE, OUTPUT AND INVERTER CIRCUITS SHALL BE IDENTIFIED AT ALL POINTS OF SYSTEM RATING TERMINATION, CONNECTION, AND SPLICES, THE MEANS OF ID CAN BE SEPARATE COLOR. CODING, MARKING TAPE, TAGGING ETC. 3.69 KWDC DC SYSTEM SIZE MEASURE THE LINE-TO-LINE AND LINE-TO-NEUTRAL VOLTAGE OF ALL SERVICE ENTRANCE CONDUCTORS PROIR TO INSTALLING ANY SOLAR EQUIPMENT. THE VOLTAGES FOR THE AC SYSTEM SIZE 2.70 KWAC 240VAC RATED. WIRING AND CONDUIT NOTES: **EQUIPMENT SUMMARY** ALL CONDUIT SIZES AND TYPES, SHALL BE LISTED FOR ITS PURPOSE AND APPROVED FOR THE SITE APPLICATIONS ALL PV CABLES AND HOMERUN WIRES BE #10AWG *USE-2, PV WIRE, OR PROPRIETARY SOLAR CABLING SPECIFIED BY MFR, OR EQUIVALENT; ROUTED TO 9 JINKO JKM410M-72HL-V-(410W) SOURCE CIRCUIT COMBINER BOXES AS REQUIRED MODULE ALL CONDUCTORS AND OCPD SIZES AND TYPES SPECIFIED ACCORDING TO CEC 2019 FOR MULTIPLE CONDUCTORS 9 ENPHASE IQ8PLUS-72-2-US(240V) ALL PV DC CONDUCTORS IN CONDUIT EXPOSED TO SUNLIGHT SHALL BE DERATED ACCORDING TO CEC 2019 BLACK ONLY** **INVERTER** EXPOSED ROOF PV DC CONDUCTORS SHALL BE USE-2, 90°C RATED, WET AND UV RESISTANT, AND UL LISTED RATED FOR 600V, UV RATED SPIRAL WRAP MICROINVERTERS SHALL BE USED TO PROTECT WIRE FROM SHARP EDGES PHASE AND NEUTRAL CONDUCTORS SHALL BE DUAL RATED THHN/THWN-2 INSULATED, 90°C RATED, WET AND UX RESISTANT, RATED FOR 1000V PER CEC 2019 4-WIRE DELTA CONNECTED SYSTEMS HAVE THE PHASE WITH THE HIGHER VOLTAGE TO GROUND MARKED ORANGE OR IDENTIFIED BY OTHER EFFECTIVE MEANS **VOLTAGE DROP LIMITED TO 2%** . NEGATIVE GROUNDED SYSTEMS DC CONDUCTORS SHALL BE COLOR CODED AS FOLLOWS: DC POSITIVE - RED OR MARKED RED), DC TE GATIVE OR . MARKED GREY)

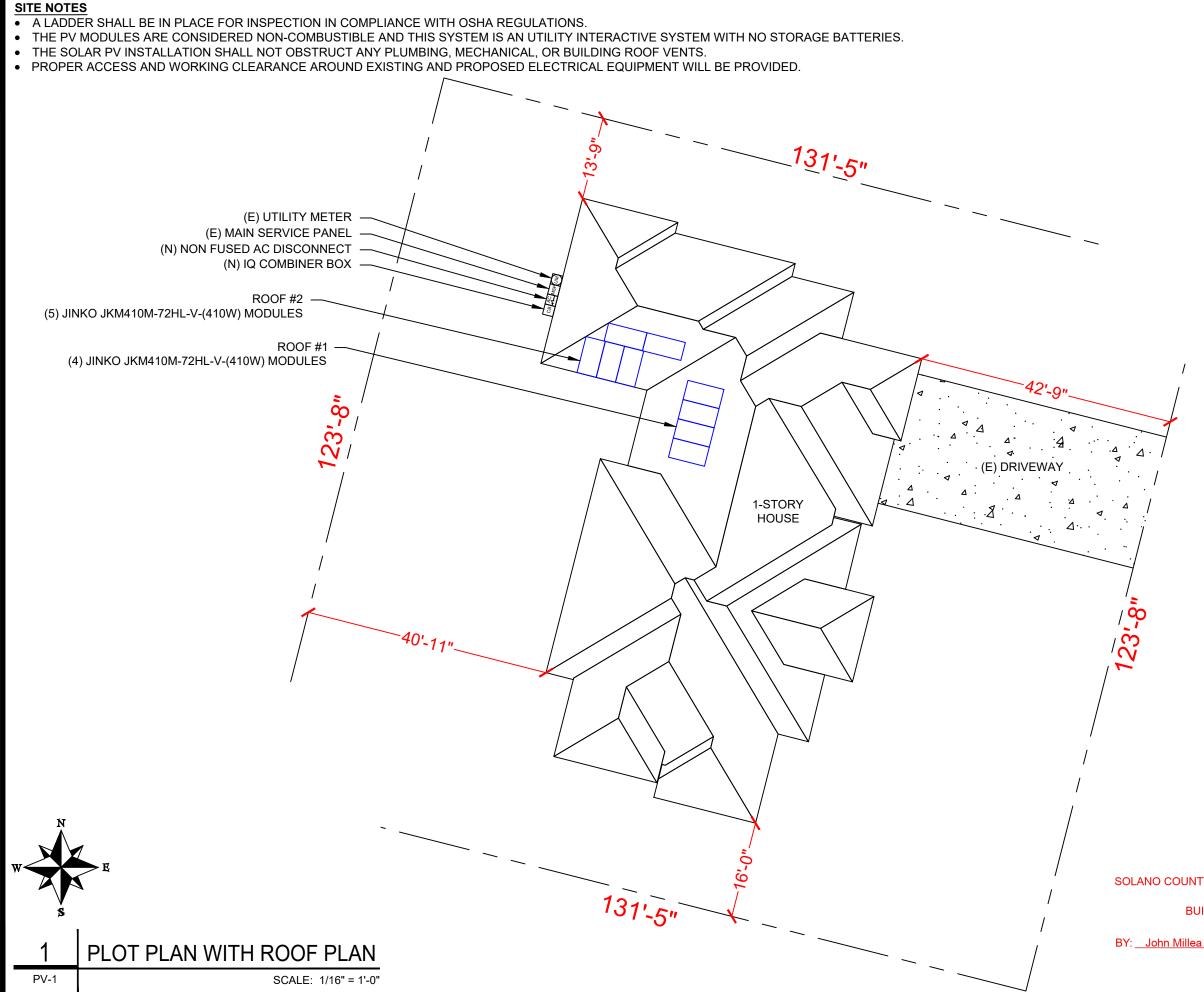
HOUSE PHOTO





POSITIVE GROUNDED SYSTEMS DC CONDUCTORS COLOR CODED: DC POSITIVE - GREY (OR MARKED GREY), DC NEGATIVE - BLACK (OR MARKED BLACK) AC CONDUCTORS >4AWG COLOR CODED OR MARKED: PHASE A OR L1- BLACK. PHASE B OR L2- RED. PHASE C OR L3- BLUE. NEUTRAL- WHITE/GRAY





BUILDING DIVISION	

DATE: 03-06-2023

11" X 17" SHEET NUMBER

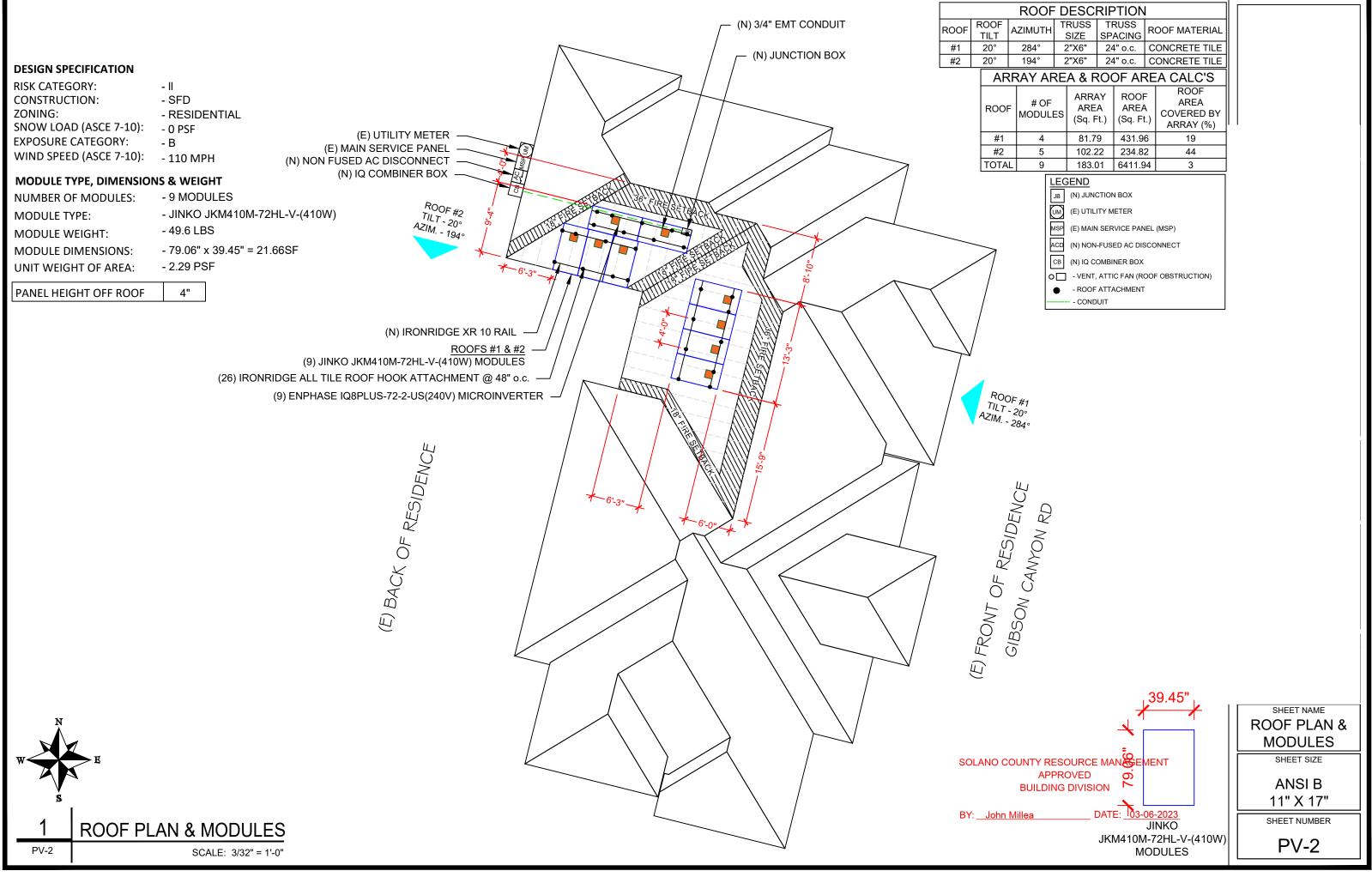
PV-1

SHEET SIZE

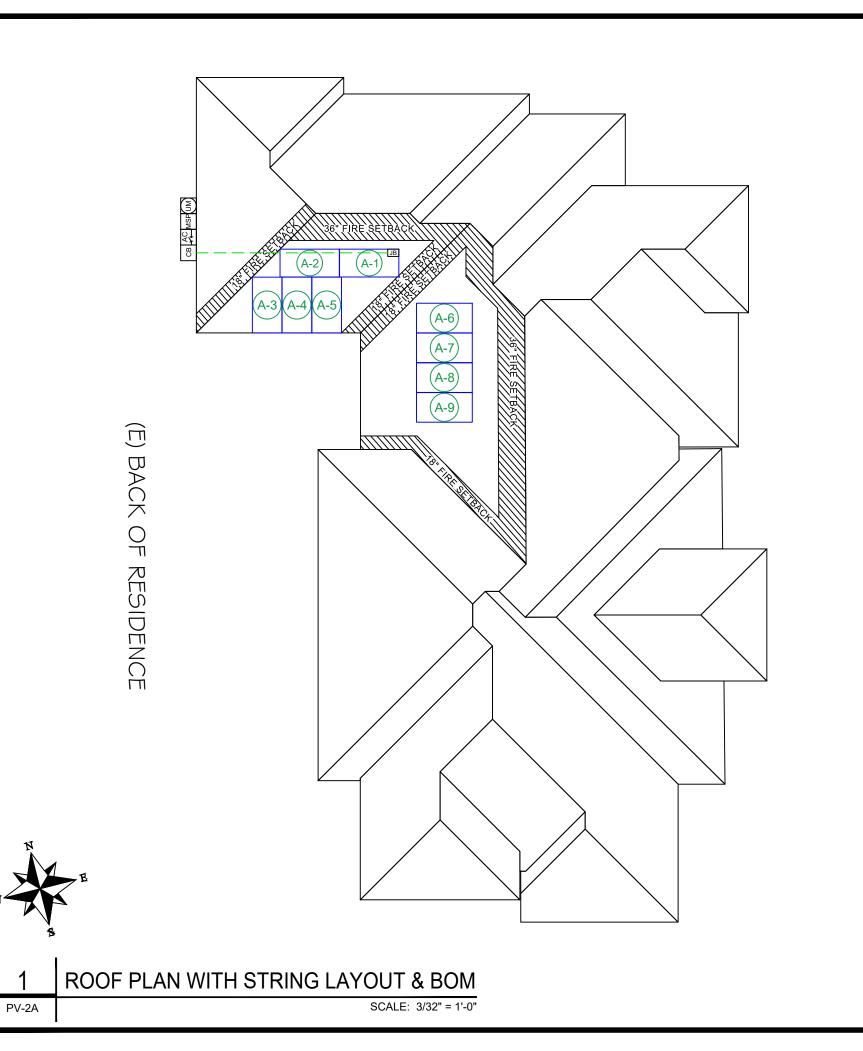
ANSI B

SHEET NAME SITE PLAN

SOLANO COUNTY RESOURCE MANAGEMENT APPROVED



	ROOF	DESC	RIP			
AZIMUTH TRUSS TRUSS SIZE SPACING			-	ROOF MATER	RIAL	
284° 2"X6" 24" o.c.			" o.c.	CONCRETE TI	ILE	
	194° 2"X6" 24" o.c.			" 0.C.	CONCRETE TI	ÎLE
RF	RAY AF	REA & F	ROC	DF AF	REA CALC'S	S
=	# OF MODULES ARRAY AREA (Sq. Ft.) (Sq. Ft.)					
	4	81.7	9	431.9	6 19	
	5	5 102.22 234.82 44				
L	9	183.0)1	6411.9	94 3	
			ITY MI I SER' -FUSE OMBIN ATTIC ATTA	ETER VICE PAN ED AC DIS NER BOX	OOF OBSTRUCTION	۹)



	E	BILL OF MAT
EQUIPMENT	QTY	
SOLAR PV MODULE	9	JINKO JKM410M
INVERTER	9	ENPHASE IQ8P
JUNCTION BOX	1	JUNCTION BOX,
COMBINER BOX	1	ENPHASE IQ CO
AC DISCONNECT	1	SQUARE D DU2 SWITCH NON F NEMA 3R
ATTACHMENT	52	BOLT, LAG 5/16
ATTACHMENT	26	ASSY, BASE, C
ATTACHMENT	26	ASSY, ARM, CL
ATTACHMENT	26	BOLT, CARRIAO
ENPHASE Q CABLE	15	ENPHASE Q CA
BRANCH TERMINATOR	1	BRANCH TERM
IQ WATER TIGHT CAP	6	IQ WATER TIGH
RAILS	6	IRONRIDGE XR
BONDED SPLICE	0	SPLICE KIT
MID CLAMP	12	UNIVERSAL FA
END CLAMP	12	STOPPER SLEE
CLAMP	12	IRONRIDGE CA CLAMP
GROUNDING LUG	3	IRONRIDGE GR

GIBSON CANYON RD

(E) FRONT OF RESIDENCE

BY: John Millea

TERIALS

DESCRIPTION

M-72HL-V-(410W)

PLUS-72-2-US(240V)

, NEMA 3R, UL LISTED

OMBINER W/ IQ ENVOY (X-IQ-AM1-240-4)

222RB PV SYSTEM AC DISCONNECT FUSED VISIBLE OPEN 30A, 120/240V 2P

6 x 4"

LEAR EAR

GE 5/16 x 1"

ABLE 240V (PER CONNECTOR) **INATOR**

HT CAPS

R-10 RAIL- 14 FEET (168")

STENING OBJECT (UFO)

EVE

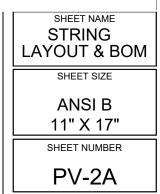
AMO-01-M1 HIDDEN UNIVERSAL END

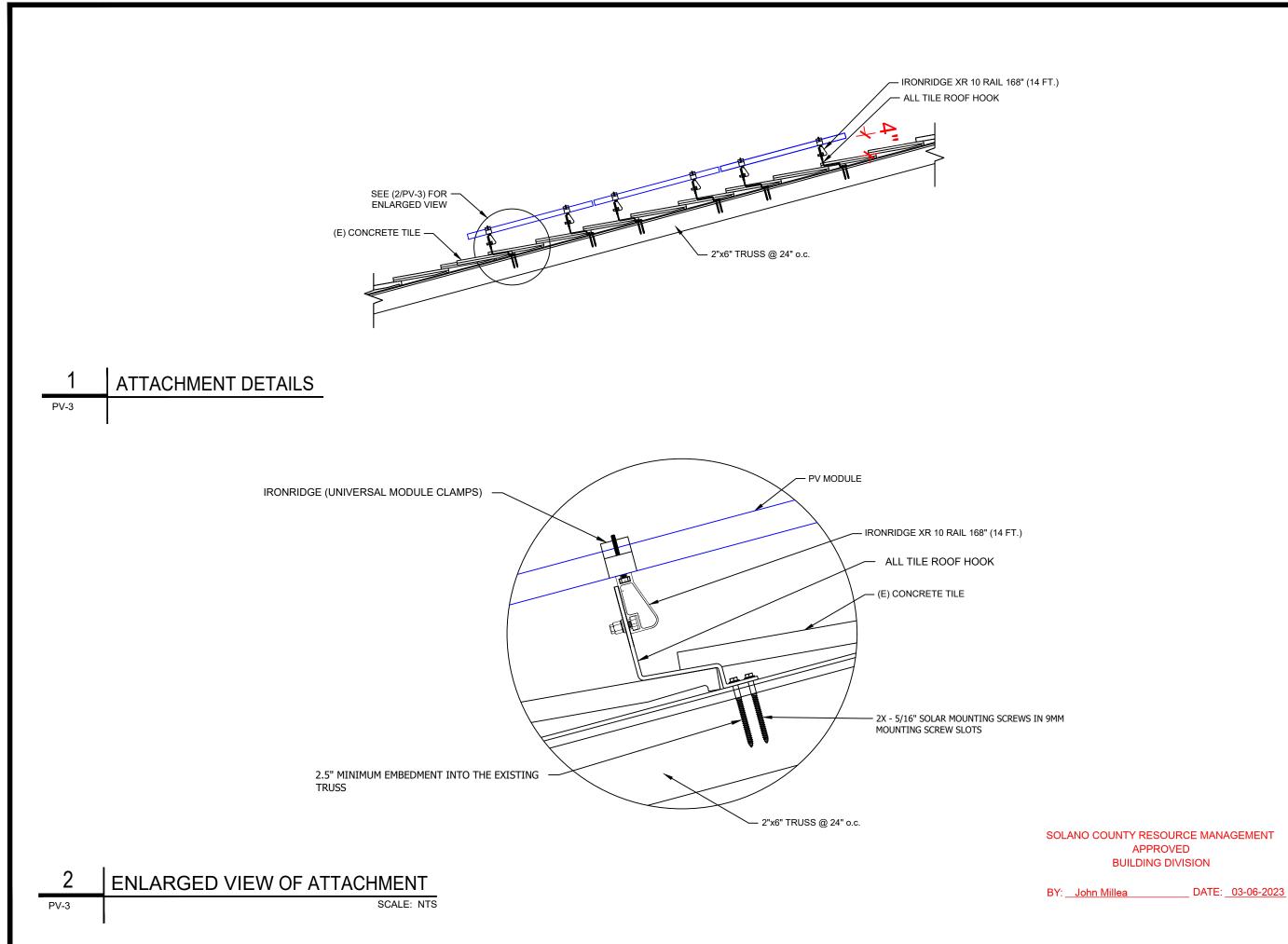
ROUNDING LUG

- MODULE STRINGING Α

SOLANO COUNTY RESOURCE MANAGEMENT APPROVED **BUILDING DIVISION**

DATE: 03-06-2023



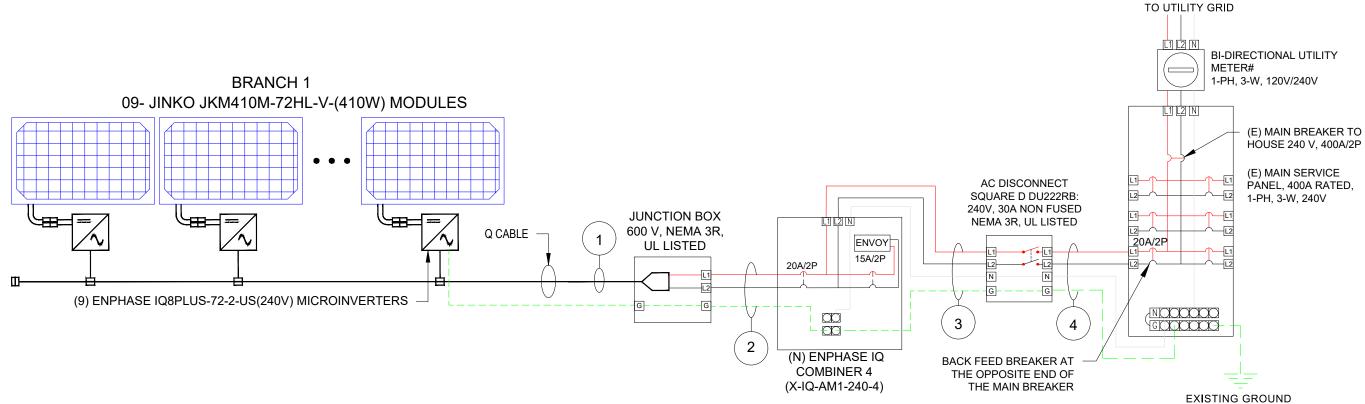


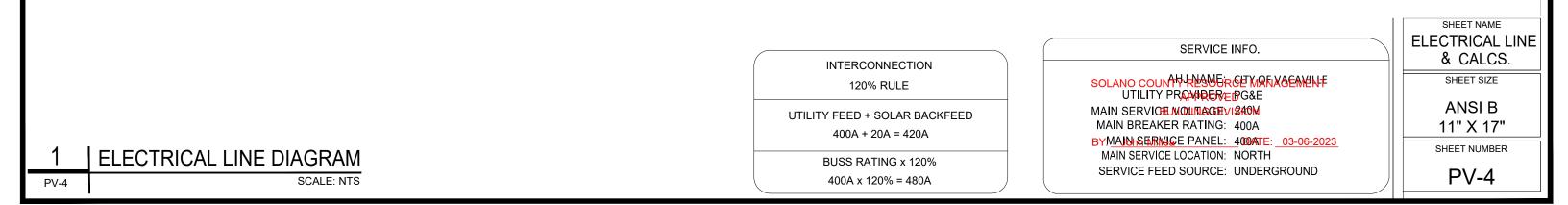
SOLANO COUNTY RESOURCE MANAGEMENT APPROVED **BUILDING DIVISION**

SHEET NAME ATTACHMENT DETAIL
SHEET SIZE
ANSI B
11" X 17"
SHEET NUMBER
PV-3

ID	Т	TYPICAL	INITIAL CONDUCTOR LOCATION	FINAL CONDUCTOR LOCATION		CONDUCTO	R CONDUIT	# OF PARALLEL CIRCUITS	CURRENT-CARRYING CONDUCTORS IN CONDUIT	CONDUIT FILL PERCENT	OCPD	E	GC		. CORR. CTOR	CONDUIT FILL FACTOR	CONT. CURRENT	MAX. CURRENT	BASE AMP.	DERATED AMP.	term. Temp. Rating	LENGTH	VOLTAGE DROP
1		2	ARRAY	JUNCTION BOX	12 AWG	Q CABLE		1	2	N/A	N/A	6 AWG	BARE COPPER	0.71	(58°C)	N/A	10.89A	13.6A	N/A	N/A	90°C	46FT	0.38%
2		1	JUNCTION BOX	IQ COMBINER BOX	10 AWG	THWN-2	COPPER MIN 0.75" Dia EMT	1	2	11.45%	20A	8 AWG	THWN-2, COPPER	0.91	(36°C)	1	10.89A	13.6A	40A	36.4A	90°C	32FT	0.37%
3		1	IQ COMBINER BOX	AC DISCONNECT	10 AWG	THWN-2	COPPER MIN 0.75" Dia EMT	1	3	15.27%	N/A	8 AWG	THWN-2, COPPER	0.91	(36°C)	1	10.89A	13.6A	40A	36.4A	90°C	5FT	0.06%
4		1	AC DISCONNECT	MSP	10 AWG	THWN-2	COPPER MIN 0.75" Dia EMT	1	3	15.27%	20A	8 AWG	THWN-2, COPPER	0.91	(36°C)	1	10.89A	13.6A	40A	36.4A	90°C	5FT	0.06%







ELECTRODE CONDUCTOR

SOLAR MODULE SPECIFICATIONS							
MANUFACTURER / MODEL	JINKO JKM410M-72HL-V-(410W)						
VMP	40.68 V						
IMP	10.08 A						
VOC	49.6 V						
ISC	10.76 A						
TEMP. COEFF. VOC	-0.29%/°C						
PTC RATING	367.7 W						
MODULE DIMENSION	79.06"(L) x 39.45"(W)						
PANEL WATTAGE	410W						

INVERTER	SPECIFICATIONS
MANUFACTURER / MODEL	ENPHASE IQ8PLUS-72-2-US(240V)
MAX DC SHORT CIRCUIT CURRENT	15 A
CONTINUOUS OUTPUT CURRENT	1.21A (240V)

AMBIENT TEMPERATURE SPECS	5
RECORD LOW TEMP	-3°C
AMBIENT TEMP (HIGH TEMP 2%)	36°C
CONDUIT HEIGHT	0.5"
ROOF TOP TEMP	90°C
CONDUCTOR TEMPERATURE RATE	58°C
MODULE TEMPERATURE COEFFICIENT OF VOC	-0.29%/°C

PERCENT OF VALUES	NUMBER OF CURRENT CARRYING CONDUCTORS IN EMT
0.80	4-6
0.70	7-9
0.50	10-20

Voltage rise in Q Cable from the Microinverters to the Junction Box

For branch circuit #1 of 9 IQ 8+ Micros, the voltage rise on the 240 VAC Q Cable is 0.38%

Voltage rise from the Junction Box to the IQ Combiner box

VRise = (amps/inverter × number of inverters) × (resistance in Ω/ft) × (2-way wire length in ft) = $(1.21 \text{ amp } \times 9) \times (0.00129 \Omega/\text{ft}) \times (32 \text{ ft} \times 2)$

= $10.89 \text{ amps} \times 0.00129 \Omega/\text{ft} \times 64 \text{ ft}$

= 0.90 volts

%VRise = 0.90 volts ÷ 240 volts = 0.37%

The voltage rise from the Junction Box to the IQ Combiner Box is 0.37%

Voltage rise from the IQ Combiner box to AC Disconnect

VRise = (amps/inverter × number of inverters) × (resistance in Ω/ft .) × (2-way wire length in ft.) = $(1.21 \text{ amp} \times 9) \times (0.001290 \Omega/\text{ft}) \times (5 \text{ ft.} \times 2)$

= 10.89 amps × 0.001290 Ω/ft × 10 ft.

= 0.14 volts

%VRise = 0.14 volts ÷ 240 volts = 0.06%

The voltage rise from the IQ Combiner Box to the AC Disconnect is 0.06%

Voltage rise from the AC Disconnect to the Main Service Panel

VRise = (amps/inverter × number of inverters) × (resistance in Ω/ft) × (2-way wire length in ft)

= $(1.21 \text{ amp} \times 9) \times (0.001290 \Omega/\text{ft}) \times (5 \text{ ft} \times 2)$

= 10.89 amps × 0.001290 $\Omega/ft \times 10 ft$

= 0.14 volts

%VRise = 0.14 volts ÷ 240 volts = 0.06%

The voltage rise from the AC Disconnect to the Main Service Panel is 0.06%

Total system voltage rise for all three wire sections

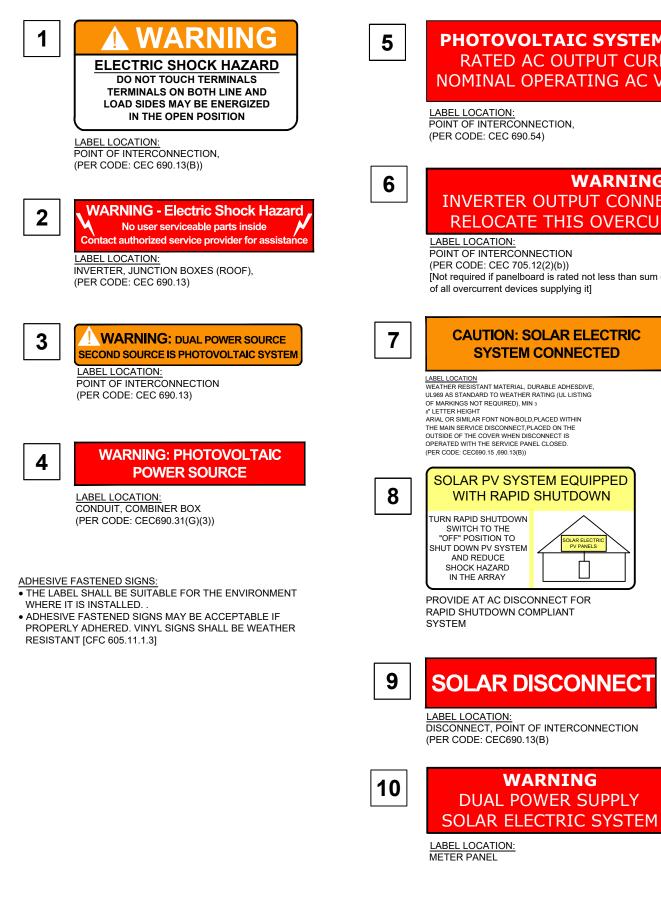
0.38% + 0.37% + 0.06% + 0.06% = 0.87%

SOLANO COUNTY RESOURCE MANAGEMENT APPROVED **BUILDING DIVISION**

BY: John Millea

DATE: 03-06-2023

SHEET NAME **SPECIFICATIONS** & CALC. SHEET SIZE ANSI B 11" X 17" SHEET NUMBER PV-4A



PHOTOVOLTAIC SYSTEM AC DISCONNECT 11 RATED AC OUTPUT CURRENT 10.89 AMPS NOMINAL OPERATING AC VOLTAGE 240 VOLTS LABEL LOCATION: POINT OF INTERCONNECTION, (PER CODE: CEC 690.54) WARNING 12 INVERTER OUTPUT CONNECTION DO NOT **RELOCATE THIS OVERCURRENT DEVICE** LABEL LOCATION: POINT OF INTERCONNECTION (PER CODE: CEC 705.12(2)(b)) [Not required if panelboard is rated not less than sum of ampere ratings of all overcurrent devices supplying it] **CAUTION: SOLAR ELECTRIC** SYSTEM CONNECTED LABEL LOCATION WEATHER RESISTANT MATERIAL, DURABLE ADHESDIVE, UL969 AS STANDARD TO WEATHER RATING (UL LISTING OF MARKINGS NOT REQUIRED), MIN 3 8" LETTER HEIGHT ARIAL OR SIMILAR FONT NON-BOLD, PLACED WITHIN THE MAIN SERVICE DISCONNECT, PLACED ON THE OUTSIDE OF THE COVER WHEN DISCONNECT IS OPERATED WITH THE SERVICE PANEL CLOSED. (PER CODE: CEC690.15 ,690.13(B)) SOLAR PV SYSTEM EQUIPPED WITH RAPID SHUTDOWN

WARNING

CAUTION: SOLAR CIRCUIT LABEL LOCATION: MARKINGS PLACED ON ALL INTERIOR AND EXTERIOR DC CONDUIT, RACEWAYS, ENCLOSURES, AND CABLE ASSEMBLIES AT LEAST EVERY 10 FT, AT TURNS AND ABOVE/BELOW PENETRATIONS AND ALL COMBINER/JUCTION BOXES. (PER CODE: CFC 605.11.1.4)

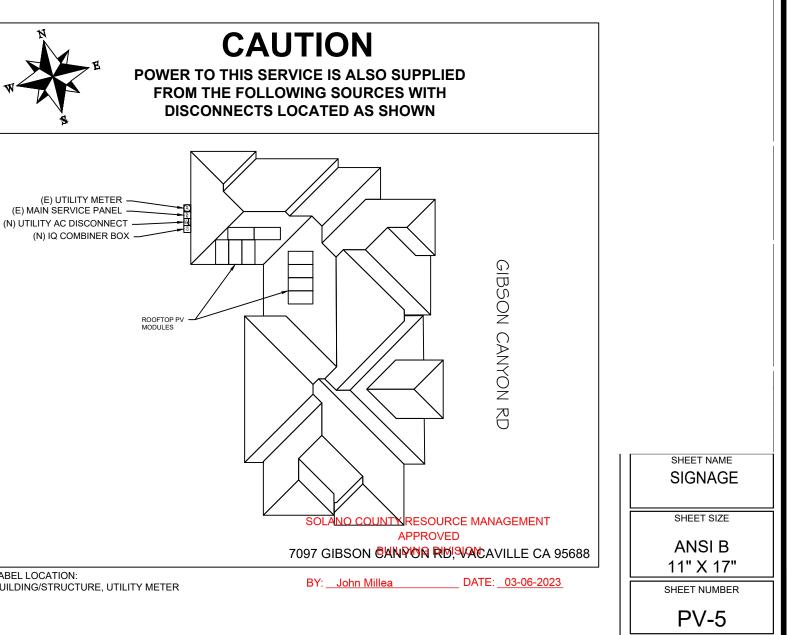




INVERTER OUTPUT CONNECTION. DO NOT **RELOCATE THIS OVERCURRENT DEVICE.**

LABEL LOCATION: POINT-OF-INTERCONNECTION OR AT MAIN SERVICE DISCONNECT (MSP)





LABEL LOCATION: BUILDING/STRUCTURE, UTILITY METER

EAGL

THE MOST DEPENDABLE SOLAR BRAND

EAGLE 72HM G2

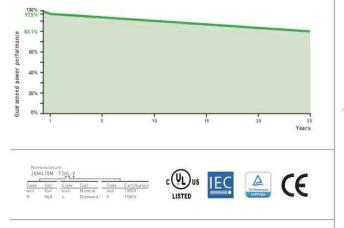
390-410 WATT • HALF CELL MONO PERC MODULE

Positive power tolerance of 0~+3%

- NYSE-listed since 2010, Bloomberg Tier 1 manufacturer
- · Best-selling module globally for last 4 years
- Top performance in the strictest 3rd party labs
- 99.9% on-time delivery to the installer
- Automated manufacturing utilizing artificial intelligence
- Vertically integrated, tight controls on quality
- Premium solar panel factories in USA and Malaysia

LINEAR PERFORMANCE WARRANTY

25-Year Performance Warranty



- IS09001:2008 Quality Standards IS014001:2004 Environmental Standards

Health & Safety Standards IEC61215, IEC61730 certified products
 UL1703 certified products

OHSAS18001 Occupational

BUILDING YOUR TRUST IN SOLAR. JINKOSOLAR.US

KEY FEATURES

Diamond Half Cell Technology \bigcirc World-record breaking efficient mono PERC half cut

盁

P.

0

GAN:

solar cells deliver high power in a small footprint.

Designed for Long Life

Uses the same DuPont protective film as the Space Station, Mars Lander, and jetliners. 25-year warranty.

Shade Tolerant



Power Boost in Cloudy Conditions

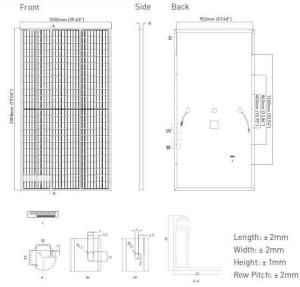
A special film diffuses light, boosting performance even with shading by trees or debris.

Protected Against All Environments

Certified to withstand humidity, heat, rain, marine environments, wind, hailstorms, and packed snow.



ENGINEERING DRAWINGS



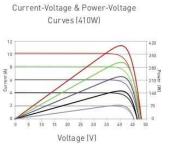
MECHANICAL CHARACTERISTICS

Mono PERC Diamond Cell (158.75x158.75mm) 144 (6×24)
1.012.02.0
2008×1002×40mm (79.06×39.45×1.57in)
22.5kg (49.6lbs)
3.2mm, Anti-Reflection Coating High Transmission, Low Iron, Tempered Glass
Anodized Aluminum Alloy
IP67 Rated
12 AWG, 1400mm (55.12in) or Customized Length
Туре 1
5400Pa (Snow) & 2400Pa (Wind)

TEMPERATURE CHARACTERISTICS

Temperature Coefficient Temperature Coefficient Temperature Coefficient Nominal Operating Cell 1

ELECTRICAL PERFORMANCE & TEMPERATURE DEPENDENCE



of Isc, Voc, Pmax

Temperature Dependence

(Two pallets = One stack)

ELECTRICAL CHARACTERISTICS

Module Type	JKM390M-72HL-V		JKM395M-72HL-V		JKM400M-72HL-V		JKM405M-72HL-V		JKM410M-72HL-V	
	STC	NOCT	STC	NOCT	STC	NOCT	SCT	NOCT	SCT	NOCT
Maximum Power (Pmax)	390Wp	287Wp	395Wp	291Wp	400Wp	294Wp	405Wp	298Wp	410Wp	302Wp
Maximum Power Voltage (Vmp)	39.64V	37.0V	39.90V	37.4V	40.16V	37.6V	40.42V	37.8V	40.68V	38.0V
Maximum Power Current (Imp)	9.84A	7.75A	9.90A	7.77A	9.96A	7.82A	10.02A	7.88A	10.08A	7.94A
Open-circuit Voltage (Voc)	48.6V	45.8V	48.8V	46.0V	49.1V	46.2V	49.4V	46.5V	49.6V	46.7V
Short-circuit Current (lsc)	10.46A	8.45A	10.54A	8.51A	10.61A	8.57A	10.69A	8.63A	10.76A	8.69A
Module Efficiency STC (%)	19.3	8%	19.6	53%	19.8	38%	20.	13%	20.	38%

*STC: . Irradiance 1000W/m² NOCT: Irradiance 800W/m² *Power measurement tolerance: ±3%

Cell Temperature 25°C Ambient Temperature 20°C

→ AM = 1.5 🔗 AM = 1.5

The company reserves the final right for explanation on any of the information presented hereby. JKM390-410M-72HL-V-A4-US

BUILDING YOUR TRUST IN SOLAR. JINKOSOLAR.US

BY: John Millea

Cell Temperature (°C)

s of Pmax	-0.35%/°C	
s of Voc	-0.29%/°C	
soflsc	0.048%/°C	
femperature (NOCT)	45±2°C	

MAXIMUM RATINGS

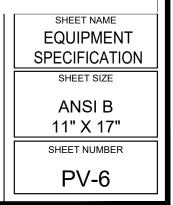
Operating Temperature (°C)	-40°C~+85°C
Maximum System Voltage	1500VDC (UL and IEC)
Maximum Series Fuse Rating	20A

PACKAGING CONFIGURATION

27pcs/pallet, 54pcs/stack, 594pcs/40'HQ Container

🚔 Wind Speed 1m/s





ENPHASE



IQ8 and IQ8+ Microinverters

Our newest IQ8 Microinverters are the industry's first microgrid-forming, softwaredefined microinverters with split-phase power conversion capability to convert DC power to AC power efficiently. The brain of the semiconductor-based microinverter is our proprietary application-specific integrated circuit (ASIC) which enables the microinverter to operate in grid-tied or off-grid modes. This chip is built in advanced 55nm technology with high speed digital logic and has super-fast response times to changing loads and grid events, alleviating constraints on battery sizing for home energy systems.



Part of the Enphase Energy System, IQ8 Series Microinverters integrate with the Enphase IQ Battery, Enphase IQ Gateway, and the Enphase App monitoring and analysis software.



Connect PV modules quickly and easily to IQ8 Series Microinverters using the included Q-DCC-2 adapter cable with plug-n-play MC4 connectors.



IQ8 Series Microinverters redefine reliability standards with more than one million cumulative hours of power-on testing, enabling an industry-



IQ8 Series Microinverters are UL Listed as PV Rapid Shut Down Equipment and conform with various regulations, when installed according to manufacturer's instructions.

© 2022 Enphase Energy. All rights reserved. Enphase, the Enphase logo, IQ8 Microinverters, and other names are trademarks of Enphase Energy, Inc. Data subject to change.

IQ8SP-DS-0002-01-EN-US-2022-03-17

leading limited warranty of up to 25 years.



requirements

Easy to install

· Lightweight and compact with

plug-n-play connectors

Power Line Communication

(PLC) between components

· Faster installation with simple

High productivity and reliability Produce power even when the

More than one million cumulative

· Optimized for the latest high-

powered PV modules

· Complies with the latest advanced grid support**

range of grid profiles

Remote automatic updates for

· Configurable to support a wide

Meets CA Rule 21 (UL 1741-SA)

the latest grid requirements

Microgrid-forming

two-wire cabling

grid is down*

enclosure

hours of testing · Class II double-insulated

* Only when installed with IQ System Controller 2, meets UL 1741. ** IQ8 and IQ8Plus supports split phase, 240V installations only.

DATA SHEET

Commonly used module pairings' Addule compatibility APPT voltage range Deprating range Ain/max start voltage Max input DC voltage Max DC current ² [module lsc] Devrvoltage class DC port DC port backfeed current Avaray configuration UTPUT DATA (AC) Peak output power Aax continuous output power Max continuous output power Max continuous output current Adax units per 20 A (L-L) branch circuit ⁴⁴ Adax units per 20 A (L-L) branch circuit ⁴⁵ Adax units per 20 A (L-L) branch circuit ⁴⁵ Adax units per 20 A (L-L) branch circuit ⁴⁶ Adax units per 20 A (L-L) branch circuit ⁴⁶ Adax units per 20 A (L-L) branch circuit ⁴⁷ Adax units per 20 A (L-L) branch circuit	VA VA V A Hz Arms	235 - 350 60-cell/120 half-cell 27 - 37 25 - 48 30 / 48 50 rounded array; No additional DC side protect 108-60-2-US 245 240 10 10 10 10 10 10 10 10 10 1	235 - 440 60-cell/120 half-cell, 66-cell/132 half-cell and 72-cell/144 half-cell 60-cell/120 half-cell, 66-cell/132 half-cell and 72-cell/144 half-cell 29 - 45 29 - 45 30 / 58 30 / 58 60 15 10 10 11 0 12 13
APPT voltage range Deperating range Aax input DC voltage Aax input DC voltage Aax DC current ² [module lsc] DC port backfeed current DC port backfeed current CC port backfeed current V array configuration UTPUT DATA (AC) Peak output power Aax continuous output power Aax continuous output power Aax continuous output current Aax units per 20 A (L-L) branch circuit ⁴ otal harmonic distortion Devervoltage class AC port Acc port backfeed current Acc power factor setting CEC weighted efficiency Light-time power consumption IECHANICAL DATA Arbient temperature range Acc connector type	V V V V A A A A A A A A A A A A A A A A	27 - 37 25 - 48 30 / 48 50 rounded array; No additional DC side protect 108-60-2-US 245 240 10	half-cell 29-45 25-58 30/58 60 15 0 ton required; AC side protection requires max 20A per branch circuit 108PLUS-72-2-US 290 290 240 /211-264 50-68 2
Deparating range Ain/max start voltage Max input DC voltage Max DC current ² [module lsc] Deparating range Deparating range class DC port V array configuration UTPUT DATA (AC) Peak output power Max continuous output power Max continuous output current dominal frequency Aax continuous output current over Schort circuit fault current over C short circuit fault current over Schort circuit fault current over Overvoltage class AC port AC port backfeed current Overvoltage class AC port AC port backfeed current Power factor setting Prid-tied power factor (adjustable) Peak efficiency DE cweighted efficiency Dight-time power consumption IECHANICAL DATA Ambient temperature range Relative humidity range DC Connector	V V V V A A A A A A A A A A A A A A A A	25 - 48 30 / 48 50 prounded array; No additional DC side protection 108-60-2-US 245 240 10	29 - 45 25 - 58 30 / 58 60 15 II 0 tion required; AC side protection requires max 20A per branch circuit 108PLUS-72-2-US 108PLUS-72-2-US 240 / 211 - 264 1.21 60 50 - 68 2
Min/max start voltage Max input DC voltage Max DC current ² [module lsc] DVervoltage class DC port DC port backfeed current VV array configuration UTPUT DATA (AC) Peak output power Max continuous output power Max continuous output power Max continuous output current Max continuous output current Max continuous output current Max continuous output current Commal (requency range C short circuit fault current over s cycles Max units per 20 A (L-L) branch circuit Cotal harmonic distortion DVervoltage class AC port AC port backfeed current Power factor setting Prid-tied power factor (adjustable) Peak efficiency DEC weighted efficiency Might-time power consumption IECHANICAL DATA whilent temperature range telative humidity range DC Connector type	V V V A A Tx1Ung VA VA VA VA LX VA LX VA LX A A A A A A A A A A A A A A A A A A	30 / 48 50 rounded array; No additional DC side protect 108-60-2-US 245 240 10	30 / 58 60 15 11 0 tion requires max 20A per branch circuit 108PLUS-72-2-US 240 / 211 - 264 290 240 / 211 - 264 1.21 60 50 - 68
Ain/max start voltage Aax input DC voltage Aax input DC voltage Aax DC current ² [module lsc] DVervoltage class DC port DC port backfeed current V array configuration UTPUT DATA (AC) Peak output power Aax continuous output power Aax continuous output current Iominal (L-L) voltage/range ³ Aax continuous output current Iominal frequency xtended frequency range C short circuit fault current over cycles Max units per 20 A (L-L) branch circuit ⁴ otal harmonic distortion Dvervoltage class AC port C port backfeed current vower factor setting Prid-tied power factor (adjustable) Peak efficiency DEC weighted efficiency Light-time power consumption IECHANICAL DATA mbient temperature range Lelative humidity range C Connector type	V A MA 11x1Ung VA VA VA Hz Hz Arms	50 prounded array; No additional DC side protect 108-60-2-US 245 240 10	60 15 II 0 tion required: AC side protection requires max 20A per branch circuit 108PLUS-72-2-US 300 290 240 / 211 - 264 1.21 60 50 - 68 2
ax DC current ² [module lsc] vervoltage class DC port C port backfeed current Varray configuration Varray configuration ITPUT DATA (AC) aak output power aax continuous output power aax continuous output power ominal (L-L) voltage/range ³ aax continuous output current ominal frequency at continuous output current or current contral frequency range C short circuit fault current over cycles aax units per 20 A (L-L) branch circuit ⁴ otal harmonic distortion vervoltage class AC port C port backfeed current cower factor setting rid-tied power factor (adjustable) eak efficiency EC weighted efficiency ght-time power consumption CHANICAL DATA mbient temperature range	A mA 1x1 Ung VA VA A Hz Arms A A A A A A A A A	rounded array; No additional DC side protect 108-60-2-US 245 240 10	15 II 0 stion required; AC side protection requires max 20A per branch circuit 108PLUS-72-2-US 300 290 240 / 211 - 264 1.21 60 50 - 68 2
ax DC current ² [module lsc] ervoltage class DC port C port backfeed current array configuration TPUT DATA (AC) ak output power ax continuous output power ax continuous output power ax continuous output current ominal (L-L) voltage/range ³ ax continuous output current ominal frequency tended frequency range c short circuit fault current over cycles ax units per 20 A (L-L) branch circuit ⁴ tal harmonic distortion vervoltage class AC port cort backfeed current cycles cort backfeed current cycles cort backfeed current cycles cort backfeed current cort backfeed current cycles cort backfeed current cycles	mA Ix1Uns VA VA HZ HZ	108-60-2-US 245 240 1.0	II 0 tion required; AC side protection requires max 20A per branch circuit 108PLUS-72-2-US 200 200 200 200 200 200 200 20
Vervoltage class DC port C port backfeed current (* array configuration TPUT DATA (AC) ak output power ax continuous output power ax continuous output power ax continuous output current ominal frequency tended frequency range c short circuit fault current over cycles ax units per 20 A (L-L) branch circuit ⁴⁴ tal harmonic distortion vervoltage class AC port C port backfeed current wer factor setting id-tied power factor (adjustable) ak efficiency cf weighted efficiency add the power consumption CHANICAL DATA mbient temperature range lative humidity range	mA Ix1Uns VA VA HZ HZ	108-60-2-US 245 240 1.0	0 tion required; AC side protection requires max 20A per branch circuit 108PLUS-72-2-US 300 290 240 / 211 - 264 1.21 60 50 - 68 2
Array configuration PUT DATA (AC) Ak output power Ac continuous output power Ac continuous output power Ac continuous output current minal (L-L) voltage/range ³ Ac continuous output current minal frequency ended frequency range short circuit fault current over cles short circuit fault current over short circuit fault current short circuit fault	VA VA VA Hz Arms	108-60-2-US 245 240 1.0	tion required; AC side protection requires max 20A per branch circuit
PUT DATA (AC) ak output power x continuous output power minal (L-L) voltage/range ³ x continuous output current minal frequency ended frequency range short circuit fault current over ycles x units per 20 A (L-L) branch circuit ⁴ al harmonic distortion ervoltage class AC port port backfeed current wer factor setting d-tied power factor (adjustable) ak efficiency C weighted efficiency ht-time power consumption CHANICAL DATA bient temperature range ative humidity range	VA VA V A Hz Arms	108-60-2-US 245 240 1.0	108PLUS-72-2-US 300 290 240 / 211 - 264 1.21 60 50 - 68 2
ak output power ax continuous output power ominal (L-L) voltage/range ³ ax continuous output current ominal frequency tended frequency range c short circuit fault current over cycles c short circuit fault current over cycles ax units per 20 A (L-L) branch circuit ⁴ tal harmonic distortion vervoltage class AC port c port backfeed current wer factor setting id-tied power factor (adjustable) ak efficiency c weighted efficiency ght-time power consumption CHANICAL DATA mbient temperature range lative humidity range	VA V A Hz Hz Arms	245 240 10	300 290 240 / 211 - 264 1.21 60 50 - 68 2
x continuous output power minal (L-L) voltage/range ³ x continuous output current minal frequency ended frequency range short circuit fault current over ycles x units per 20 A (L-L) branch circuit ⁴ al harmonic distortion ervoltage class AC port port backfeed current wer factor setting d-tied power factor (adjustable) ak efficiency C weighted efficiency ak efficiency C weighted efficiency cht-time power consumption CHANICAL DATA abient temperature range ative humidity range	VA V A Hz Hz Arms	240	290 240 / 211 - 264 1.21 60 50 - 68 2
minal (L-L) voltage/range ³ ax continuous output current minal frequency ended frequency range short circuit fault current over cycles ax units per 20 A (L-L) branch circuit at harmonic distortion ervoltage class AC port port backfeed current evoltage class AC port port backfeed current backfeed current at efficiency coveighted efficiency coveighted efficiency chartime power consumption cHANICAL DATA bibent temperature range lative humidity range	V A Hz Arms	10	240 / 211 - 264 1.21 60 50 - 68 2
x continuous output current minal frequency ended frequency range short circuit fault current over ycles x units per 20 A (L-L) branch circuit ⁴ al harmonic distortion ervoltage class AC port port backfeed current wer factor setting d-tied power factor (adjustable) ak efficiency C weighted efficiency ht-time power consumption CHANICAL DATA bient temperature range ative humidity range	A Hz Hz Arms		1.21 60 50 - 68 2
minal frequency ended frequency range short circuit fault current over ycles x units per 20 A (L-L) branch circuit al harmonic distortion ervoltage class AC port port backfeed current wer factor setting d-tied power factor (adjustable) ak efficiency C weighted efficiency hth-time power consumption CHANICAL DATA bient temperature range ative humidity range	Hz Hz Arms		60 50 - 68 2
ended frequency range short circuit fault current over ycles x units per 20 A (L-L) branch circuit ⁴ al harmonic distortion ervoltage class AC port port backfeed current wer factor setting d-tied power factor (adjustable) ak efficiency C weighted efficiency ak efficiency C weighted efficiency cht-time power consumption CHANICAL DATA abient temperature range ative humidity range	Hz Arms	16	50 - 68 2
short circuit fault current over cles kunits per 20 A (L-L) branch circuit al harmonic distortion ervoltage class AC port port backfeed current ver factor setting d-tied power factor (adjustable) d-tied power factor (adjustable) kefficiency C weighted efficiency ht-time power consumption HANICAL DATA bient temperature range ative humidity range Connector type	Arms	16	2
ycles x units per 20 A (L-L) branch circuit ⁴ al harmonic distortion ervoltage class AC port port backfeed current wer factor setting d-tied power factor (adjustable) ak efficiency C weighted efficiency ht-time power consumption CHANICAL DATA bient temperature range ative humidity range		16	
al harmonic distortion ervoltage class AC port port backfeed current wer factor setting d-tied power factor (adjustable) ak efficiency C weighted efficiency ht-time power consumption CHANICAL DATA bient temperature range ative humidity range Connector type		16	13
ervoltage class AC port port backfeed current ver factor setting d-tied power factor (adjustable) ak efficiency C weighted efficiency C weighted efficiency cht-time power consumption HANICAL DATA bient temperature range ative humidity range Connector type			
port backfeed current ver factor setting 4-tied power factor (adjustable) k efficiency C weighted efficiency nt-time power consumption HANICAL DATA Dient temperature range ative humidity range Connector type			<5%
Ver factor setting J-tied power factor (adjustable) k efficiency C weighted efficiency ht-time power consumption HANICAL DATA bient temperature range ative humidity range Connector type			M.
d-tied power factor (adjustable) ak efficiency C weighted efficiency th-time power consumption HANICAL DATA bient temperature range ative humidity range Connector type	mA		30
ak efficiency C weighted efficiency Int-time power consumption CHANICAL DATA Ibient temperature range lative humidity range Connector type			1.0
C weighted efficiency ht-time power consumption HANICAL DATA bient temperature range ative humidity range Connector type		0.85	leading – 0.85 lagging
ght-time power consumption CHANICAL DATA Ibient temperature range lative humidity range C Connector type	%	97.5	97.6
HANICAL DATA bient temperature range tive humidity range Connector type	%	97	97
tive humidity range Connector type	mW		60
Connector type		-40°C t	o +60°C (-40°F to +140°F)
			to 100% (condensing)
iensions (HxWxD)			MC4
		212 mm (8.3")	x 175 mm (6.9") x 30.2 mm (1.2")
ight			1.08 kg (2.38 lbs)
oling		Natur	al convection – no fans
proved for wet locations			Yes
llution degree			PD3
nclosure		Class II double-insulate	d, corrosion resistant polymeric enclosure
nviron. category / UV exposure rating		NE	MA Type 6 / outdoor
OMPLIANCE			
	CA Rule 21	(UL 1741-SA), UL 62109-1, UL1741/IEEE1547, F	CC Part 15 Class B, ICES-0003 Class B, CAN/CSA-C22.2 NO. 107.1-01
ertifications	690.12 and	C22.1-2018 Rule 64-218 Rapid Shutdown of	ment and conforms with NEC 2014, NEC 2017, and NEC 2020 section PV Systems, for AC and DC conductors, when installed according to
	manufactu	irer's instructions.	
Maximum continuous input DC curren	11 13 10.0A (0) NOTIN	har vortage range can be extended beyond n	ominal if required APPROVED branch in your area. BUILDING BIVISION-01-EN-US-2022-03-
			BY: <u>John Millea</u> DATE: <u>03-06-202</u>
			DATE. 03-00-20

Data Sheet Enphase Networking

Enphase IQ Combiner 4/4C

X-IQ-AM1-240-4 X-IQ-AM1-240-4C



To learn more about Enphase offerings, visit enphase.com

The Enphase IQ Combiner 4/4C with Enphase IQ Gateway and integrated LTE-M1 cell modem (included only with IQ Combiner 4C) consolidates interconnection equipment into a single enclosure and streamlines IQ microinverters and storage installations by providing a consistent, pre-wired solution for residential applications. It offers up to four 2-pole input circuits and Eaton BR series

Smart

busbar assembly.

- · Includes IQ Gateway for communication and control
- Includes Enphase Mobile Connect cellular modem (CELLMODEM-M1-06-SP-05), included only with IQ Combiner 4C
- · Includes solar shield to match Enphase IQ Battery aesthetics and deflect heat
- Flexible networking supports Wi-Fi, Ethernet, or cellular
- · Optional AC receptacle available for PLC bridge
- · Provides production metering and consumption monitoring

Simple

- · Centered mounting brackets support single stud mounting
- · Supports bottom, back and side conduit entry
- Up to four 2-pole branch circuits for 240 VAC plug-in breakers (not included)
- · 80A total PV or storage branch circuits

Reliable

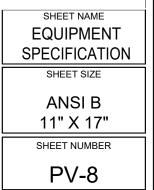
- Durable NRTL-certified NEMA type 3R enclosure
- Five-year limited warranty
- · Two years labor reimbursement program coverage included for both the IQ Combiner SKU's
- UL listed



Enphase IQ Combiner 4/4C

MODEL NUMBER	
IQ Combiner 4 (X-IQ-AM1-240-4)	IQ Combiner 4 with Enphase IQ Gateway printed circuit board C12.20 +/- 0.5%) and consumption monitoring (+/- 2.5%). Inclu IQ System Controller 2 and to deflect heat.
IQ Combiner 4C (X-IQ-AM1-240-4C)	IQ Combiner 4C with Enphase IQ Gateway printed circuit boar (ANSI C12.20 +/- 0.5%) and consumption monitoring (+/- 2.5% (CELLMODEM-M1-06-SP-05), a plug-and-play industrial-grad (Available in the US, Canada, Mexico, Puerto Rico, and the US the installation area.) Includes a silver solar shield to match th
ACCESSORIES AND REPLACEMENT PARTS	(not included, order separately)
Ensemble Communications Kit COMMS-CELLMODEM-M1-06 CELLMODEM-M1-06-SP-05 CELLMODEM-M1-06-AT-05	 Includes COMMS-KIT-01 and CELLMODEM-M1-06-SP-05 Ensemble sites 4G based LTE-M1 cellular modem with 5-year Sprint data 4G based LTE-M1 cellular modem with 5-year AT&T data page 100 million
Circuit Breakers BRK-10A-2-240V BRK-15A-2-240V BRK-20A-2P-240V BRK-15A-2P-240V-B BRK-20A-2P-240V-B	Supports Eaton BR210, BR215, BR220, BR230, BR240, BR2 Circuit breaker, 2 pole, 10A, Eaton BR210 Circuit breaker, 2 pole, 15A, Eaton BR215 Circuit breaker, 2 pole, 20A, Eaton BR220 Circuit breaker, 2 pole, 15A, Eaton BR215B with hold down Circuit breaker, 2 pole, 20A, Eaton BR220B with hold down
EPLC-01	Power line carrier (communication bridge pair), quantity - o
XA-SOLARSHIELD-ES	Replacement solar shield for IQ Combiner 4/4C
XA-PLUG-120-3	Accessory receptacle for Power Line Carrier in IQ Combiner
XA-ENV-PCBA-3	Replacement IQ Gateway printed circuit board (PCB) for Co
X-IQ-NA-HD-125A	Hold down kit for Eaton circuit breaker with screws.
ELECTRICAL SPECIFICATIONS	
Rating	Continuous duty
System voltage	120/240 VAC, 60 Hz
Eaton BR series busbar rating	125 A
Max. continuous current rating	65 A
Max. continuous current rating (input from PV/storage)	64 A
Max. fuse/circuit rating (output)	90 A
Branch circuits (solar and/or storage)	Up to four 2-pole Eaton BR series Distributed Generation (E
Max. total branch circuit breaker rating (input)	80A of distributed generation / 95A with IQ Gateway break
Production metering CT	200 A solid core pre-installed and wired to IQ Gateway
Consumption monitoring CT (CT-200-SPLIT)	A pair of 200 A split core current transformers
MECHANICAL DATA Dimensions (WxHxD)	37.5 x 49.5 x 16.8 cm (14.75" x 19.5" x 6.63"). Height is 21.0
Weight	7.5 kg (16.5 lbs)
7	-40° C to +46° C (-40° to 115° F)
Ambient temperature range	
Cooling	Natural convection, plus heat shield
Enclosure environmental rating	Outdoor, NRTL-certified, NEMA type 3R, polycarbonate cor
Wire sizes	 20 A to 50 A breaker inputs: 14 to 4 AWG copper conduct 60 A breaker branch input: 4 to 1/0 AWG copper conduct Main lug combined output: 10 to 2/0 AWG copper conduct Neutral and ground: 14 to 1/0 copper conductors Always follow local code requirements for conductor sizing
Altitude	To 2000 meters (6,560 feet)
INTERNET CONNECTION OPTIONS	22232 / /
Integrated Wi-Fi	802.11b/g/n
Cellular	CELLMODEM-M1-06-SP-05, CELLMODEM-M1-06-AT-05 (40 Mobile Connect cellular modem is required for all Ensemble in:
Ethernet	Optional, 802.3, Cat5E (or Cat 6) UTP Ethernet cable (not in
COMPLIANCE Compliance, IQ Combiner	UL 1741, CAN/CSA C22.2 No. 107.1, 47 CFR, Part 15, Class
ouriprintee, recombiner	Production metering: ANSI C12.20 accuracy class 0.5 (PV Consumption metering: accuracy class 2.5
Compliance, IQ Gateway	UL 60601-1/CANCSA 22.2 No. 61010-1

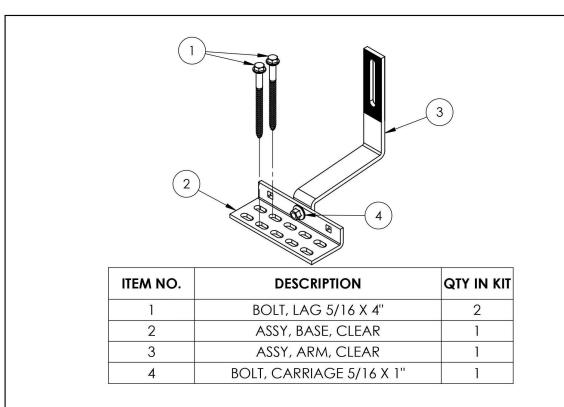
for integrated revenue grade PV production metering (ANSI udes a silver solar shield to match the IQ Battery system and ard for integrated revenue grade PV production metering 5%). Includes Enphase Mobile Connect cellular modern ade cell modem for systems up to 60 microinverters. S Virgin Islands, where there is adequate cellular service in the IQ Battery and IQ System Controller and to deflect heat. with 5-year Sprint data plan for plan plan 250, and BR260 circuit breakers. vn kit support vn kit support one pair er 4/4C (required for EPLC-01) Combiner 4/4C (DG) breakers only (not included) iker included 06" (53.5 cm) with mounting brackets. Instruction ctors tors uctors 4G based LTE-M1 cellular modem). Note that an Enphase installations. included) s B, ICES 003 / production) SOLANO COUNTY RESOURCE MANAGEMENT APPROVED ENPHASE. To learn more about Enphase offerings, visit enphase.com © 2021 Enphase Energy, All rights reserved. Enphase, the Enphase logo, IQ Combiner 4/4C, and other names are trademarks oBUILDING DIVISION Enphase Energy, Inc. Data subject to change. 10-21-2021 BY: John Millea DATE: 03-06-2023

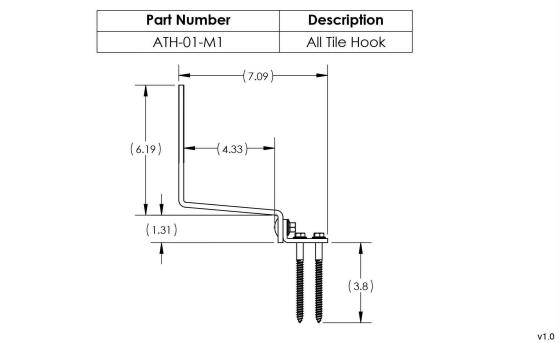


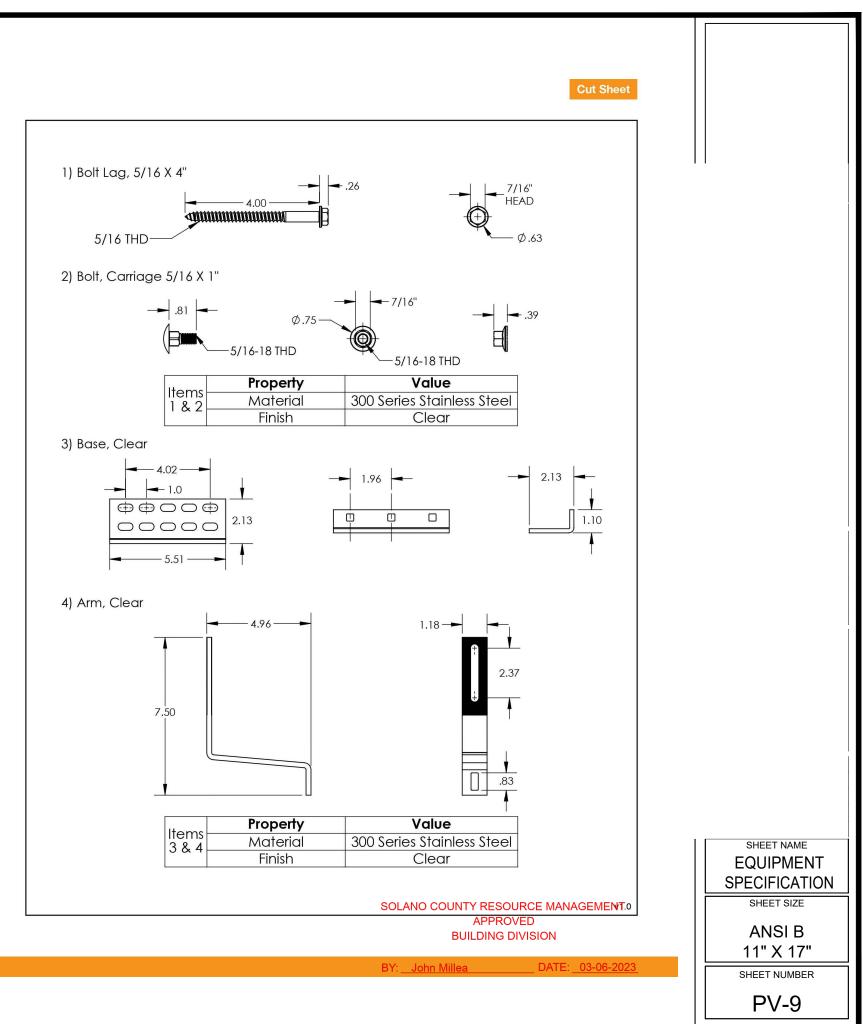


IRONRIDGE Π

All Tile Hook











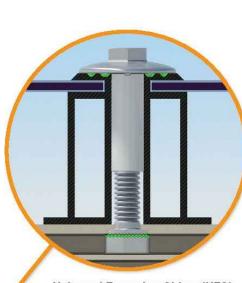
UFO Family of Components

Simplified Grounding for Every Application

The UFO family of components eliminates the need for separate grounding hardware by bonding solar modules directly to IronRidge XR Rails. All system types that feature the UFO family-Flush Mount, Tilt Mount and Ground Mount-are fully listed to the UL 2703 standard.

UFO hardware forms secure electrical bonds with both the module and the rail, resulting in many parallel grounding paths throughout the system. This leads to safer and more reliable installations.





Universal Fastening Object (UFO) The UFO securely bonds solar modules to XR Rails. It comes assembled and lubricated, and can fit a wide range of module heights.

Bonded Splice

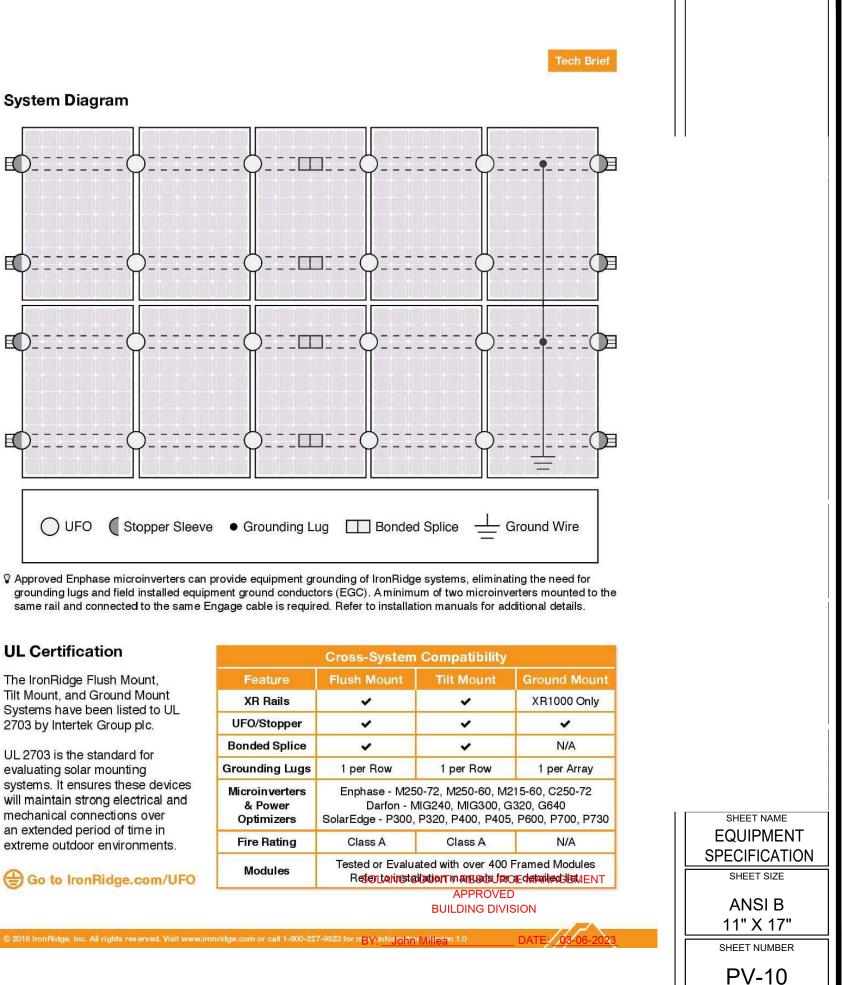
Each Bonded Splice uses self-drilling screws to form a secure connection. No bonding strap needed.



Grounding Lug A single Grounding Lug connects an entire row of PV modules to the grounding conductor.



Bonded Attachments The bonding bolt attaches and bonds the L-foot to the rail. It is installed with the same socket as the rest of the system



	Cross-System	n C
Feature	Flush Mount	
XR Rails	~	
UFO/Stopper	~	
Bonded Splice	~	
Grounding Lugs	1 per Row	
Microinverters & Power Optimizers	Enphase - M25 Darfon - I SolarEdge - P300	MIG
Fire Rating	Class A	
Modules	Tested or Evalu Resertarinste	