ALAMEDA COUNTY COMMUNITY DEVELOPMENT AGENCY
PLANNING DEPARTMENT

STAFF REPORT

TO: CASTRO VALLEY MUNICIPAL ADVISORY COUNCIL

HEARING DATE: April 13, 2026

GENERAL INFORMATION

APPLICATION TYPE AND NUMBER: Site Development Review, PLN2025-00142

OWNER/ APPLICANT: Yates Jangid

PROPOSAL: To allow a garage conversion as part of a 583 sq. ft. addition with a new attached two-car garage

ADDRESS AND SIZE OF PARCEL: 4538 Grenadier Place, northeast corner, intersection of Grenadier with Almond Road, Castro Valley area of unincorporated Alameda County, Designated Assessor's Parcel Numbers: 084D-1250-057-00. Approximately 12,632 square feet in area.

ZONING: This site is zoned R-1-B-E-RV-HO (Single Family Residence, 10,000-square foot Minimum Building Site Area, 80-foot Medium Lot Width, combining Recreational Vehicle, Hillside Overlay) District.

GENERAL PLAN: The site lies within the boundaries of the *Castor Valley General Plan,* which designates the site land use RH (Hillside Residential)

ENVIRONMENTAL REVIEW: Categorically exempt from the requirements of the California Environmental Quality Act, Section 15301, "Existing Facilities".

RECOMMENDATION

Staff recommends that the Castro Valley Municipal Advisory Council recommend to the Alameda County Board of Supervisors, approval of Site Development Review, PLN2025-00142, to allow a garage conversion as part of a project renovating and adding a 583 square foot front addition with a new attached two-car garage, based on drawings marked "Exhibit A" dated November 23, 2025 on file with the Alameda County Planning Department. Planning Department staff will convey the recommendation of Castro Valley Municipal Advisory Council to the West County Board of Zoning Adjustments during their deliberations of this item. Should the Castro Valley Municipal Advisory Council recommend approval of this application, the enclosed conditions of approval should be considered.

PARCEL ZONING HISTORY

June 21, 1951, the 12th Zoning Unit, ZU-12 designated the site and surrounding areas as R-1-B-E (Single Family Residential, 10,000 square-foot Minimum Building Site Area) District.

April 7, 1988, then the 1695th Zoning Unit (ZU-1695) rezoned the site to R-1-B-E-CSU (Single Family Residential, 10,000 square-foot Minimum Building Site Area, Conditional Secondary Unit) District.

June 4, 1988, 1812th Zoning Unit (ZU-1812) rezoned the site to R-1-B-E-CSU-RV (Single Family Residential, 10,000 square-foot Minimum Building Site Area, Conditional Secondary Unit, Recreational Vehicle) District.

July 30, 1996, Vesting Tentative Map, Tract 6399 (TR-6399) divided one parcel into 14 lots, in the R-1-B-E-CSU-RV (Single Family Residential, 10,000 square-foot Minimum Building Site Area, Conditional Secondary Unit, Recreational Vehicle) District.

SITE AND CONTEXT DESCRIPTION

Physical Features: The subject property is a corner lot approximately 12,632 square feet in area with a frontage of about 93 feet along Grenadier Place and 137 feet off Almond Road. The site is developed with a single-story, single-family dwelling approximately 1,800 square feet in area. The house is located near the back of the lot, with a setback of 20 feet from the rear property line. An existing driveway measuring 52 feet from the front property line with improvements along the property frontages.

Adjacent Area: Adjacent properties are developed with single family dwellings.

PROJECT DESCRIPTION

The request proposes converting the existing attached two-car garage into habitable space and constructing a 545-square-foot addition. The project also includes building a new two-car garage in front of the existing garage.

REFERRAL RESPONSES

Public Works Agency, Development Engineering: In a referral response dated September 19, 2025, Land Development Services staff stated Development Engineering has no comment to offer regarding the subject project application; however, the following should be disclosed to the Applicant:

- Submit building permit application with complete construction and demolition document via the permit portal https://acpermit.acgov.org/Portal/#/.
- Construction documents shall comply with the current Alameda County Building Ordinance, California Building Standards Codes and Regulations.
- Refer to the following website for construction document requirements https://www.acpwa.org/permits/forms-and-handouts.page.

Alameda County Fire Department: In a referral response dated January 1, 2026, Fire Department staff stated Review of Planning referrals are usually based on information and plans that

lacking details for specific comments. The primary focus of our review is to assure fire access to the site. Specific fire and building code issues will be addressed during the regular building permit submittal and review process.

Conditions of Approval
The following conditions shall be met prior the issuance of a building permit and fire clearance for occupancy.

1. Project must comply with all building and fire code requirements in effect at time of building permit submittal.

STAFF ANALYSIS

Conformance with the General Plan: This site is located within the RH (Hillside Residential) land use designation of *Castro Valley General Plan* adopted by the Alameda County Board of Supervisors in March 2012. This designation is used in areas of steep slopes and/or high fire hazard areas to ensure that adequate mitigations are identified for the development of one-family detached dwellings. The site is developed with a single-story, single-family dwelling approximately 1,800 square feet in area.

Required Yards: For the R-1-B-E-RV-HO (Single Family Residence, 10,000-square foot M.B.S.A., 80-foot M.L.W., Recreational Vehicle, Hillside Overlay) zoning district, the required yards are a 9-foot side yard, a 10-foot street side yard and 20-foot front and rear yards. The project proposes a 10-foot side yard and 19.75-foot street side yard, 26.5-foot front yard, and 20-foot rear yard (no change). The required yards are met.

Lot Coverage: The lot coverage permitted for the site is 45%, based on a lot size of 12,632 square feet and a single-story dwelling. The 45% lot coverage results in 5,684 square feet that is permitted to be covered on the lot, while the project proposes to cover a total of 3,599 square feet with structures. Which is under the permitted amount of lot coverage for the site.

Maximum Floor Area Ratio: The Castro Valley regulates Floor Area Ratio (FAR) in addition to lot coverage which is limited to 0.40 or 4,500 sq. ft. whichever is less for a lot size between 10,000 to 20,000 sq. ft. This parcel is limited to a maximum FAR of 4,500 square feet (12,632 x 0.4 = 5,052.8 sq. ft.) The Section 17.08.110 – Floor area ratio of the Zoning Ordinance has the following exclusions to FAR calculations "[1.] Portions of a lot included in private street easements shall be excluded from lot size calculation when determining floor area ratio. [2.] Floor area ratio (FAR) is the total square feet of floor area divided by the total square feet of lot area. Floor area excludes areas devoted to parking, garages and covered porches/patios, and areas located below finished grade, if the ceiling does not extend more than five feet above finished grade." Therefore, the proposed two-car garage and covered front porch will not be included in the FAR for the parcel. The project proposes coverage of 3,151 sq. ft. of land where 4,500 sq. ft. would be permitted. Therefore, the floor area ratio resulting from the project is within the permitted range.

Conformance with the Zoning Ordinance: Garage Conversions are governed by Sections 17.52.955 and 17.54.220(B) of the Zoning Ordinance. The subject property is located in the R-1-B-E-RV-HO (Single Family Residence, 10,000-square foot M.B.S.A., 80-foot M.L.W., Recreational Vehicle, Hillside Overlay) District and therefore the Garage Conversion ordinance applies. Under code Section 17.52.955, garage conversions to non-garage uses may only be approved or legalized when the seven conditions listed in the ordinance are met.

Zoning Ordinance Section 17.52.955 requires:

A. *These regulations apply in all zoning Districts except for parcels larger than one acre in the "A" District.*

The converted garage is in an R-1-B-E-RV-HO (Single Family Residence, 10000-square foot M.B.S.A., 80-foot M.L.W., Recreational Vehicle, Hillside Overlay) District. Therefore, the regulations do apply.

B. *The garage conversion is found to be architecturally consistent with the rest of the primary structure(s) located on the property and surrounding neighborhood to the extent a pattern exists in the area.*

The proposal includes the removal of the existing garage door and constructing an attached two-car garage in front with a pitched roof and siding wall to be architecturally consistent with the rest of the home. The Applicant will have to comply with Building and Fire Code requirements to convert the garage into habitable space.

C. *The converted garage, if attached to the primary structure, includes an internal connection to the rest of the primary structures.*

The converted garage is attached to the primary dwelling and has an internal connection to the primary dwelling. The floor of the converted garage is at the same level with access to the existing family room area. If this application receives favorable decision from the Board, the Applicant shall be required to obtain clearance from County Fire and Building Department for safe use of the area for a new bedroom.

D. *Other conforming on-site parking space(s)is (are) available at a one-to-one ratio for the number of on-site parking spaces being removed as part of the conversion, such parking spaces to include uncovered but on a paved surface, or covered by a structural carport with a design consistent with the existing structure and neighborhood character, or enclosed within a new garage, and all such spaces must meet the zoning ordinance required minimum dimensions are area and be located outside of required yards; and*

The proposal meets the conditions set forth in the section. The property has a deep driveway that can accommodate proposed two-car parking garage. There is over 50 feet from the existing garage door to the property line. The parking area is required to provide two covered parking spaces measuring 180 square feet each (360 square feet total), which is provided in the existing driveway apron.

E. *There is evidence in the public record that all required conforming on-site replacement parking will be continuously maintained using materials such as asphalt, concrete, pavers, or similar permanent improvements and readily accessible from the public right-of-way; and*

The proposed replacement garage is located in the driveway apron, beyond the required 10-foot street side and 20-foot front yard setback, and it is paved and readily accessible from the public right-of-way. Applicant would be required to maintain it at all times as part of conditions of approval if this application receives a favorable resolution.

F. *Conforming enclosed storage space of at least 800 cubic feet is provided such space to be located in a garage, shed, or other structure on the property; and*

Applicant proposes the use of a 3,800-cubic foot 20' X 20' X 9.5') part of the replacement garage as storage area. Therefore, providing more than the required 800 cubic feet of enclosed storage space. Note: there is also 180 square feet per parking space (360 square feet total).

G. *The replacement storage space complies with the Neighborhood Preservation Ordinance standards. (Chapters 6.64 and 6.65 of the Alameda County General Ordinance Code).*

All properties are required to comply with the Neighborhood Preservation Ordinance standards at all times.

Private Garage**:** The project proposes constructing an attached two-car garage to provide the required covered parking spaces. The proposed garage meets the applicable street-side and front-yard setbacks from the property line and therefore complies with Table 2.2-1 of the Residential Design Standards and Guidelines and Section 17.52.300 Accessory Building-Private garage. See attachment A.

CONCLUSION

Approval subject to plans marked "Exhibit A" dated November 23, 2025, on file with the Planning Department and the following conditions:

1. Approval of this Site Development Review application authorizes the conversion of the existing attached garage and the construction of a 583-square-foot addition with a new attached two-car garage, as shown on the plans marked "Exhibit A," received on November 23, 2025. This approval allows the two required parking spaces to be located in front of the converted garage within the replacement garage and on a paved driveway, outside the required 10-foot street-side setback and 20-foot front-yard setback

2. The applicant, owner, or successor shall comply with all other local, state, or federal regulations, laws, and ordinances, during the life of this Permit. Failure to comply with all other local, state, or federal may subject the permit to revocation in accordance with conditions of approval herein and per the Alameda County Zoning Ordinance Section 17.54.030.

3. The Permittee shall comply with all Federal, State and Local Laws Regulations and Alameda County Ordinances

4. Indemnification. Applicant, property owner, and successor shall defend, indemnify, and hold harmless Alameda County and its agents, officers, and employees from any claim, action, or proceeding against Alameda County and its agents, officers and employees to attack, set aside, void, or annul **PLN2025-00142**, or any subsequent Permit. Such indemnification shall include, but not be limited to, an award of costs and attorney's fees incurred by Alameda County in its defense. The County shall promptly notify owner or successor of any such challenge.

5. The replacement garage shall remain comply with Section 17.52.300 Accessory Building-Private garage in the Zoning Ordinance.

6. The existing garage door shall be removed and replaced with a new attached two-car garage at the front of the residence. All exterior materials shall match the existing single-family home and remain architecturally consistent with the rest of the dwelling.

7. Internal connection must be maintained from the converted garage to the main structure.

8. Meet and maintain compliance with the requirements of the following agencies:

    a. Alameda County Public Works Agency
    b. Alameda County Fire Department

9. The Permittee shall comply with all Federal, State, and Local Laws, Regulations and Alameda County Ordinances.

10. The property owner, permittee, and its successor, shall defend, indemnify, and hold harmless Alameda County and its agents, officers, and employees from any claim, action, or proceeding against Alameda County or its, agents, officers or employees to attack, set aside, void, or annul this SDR, **PLN2025-00142**, the findings of the CEQA determination, or any combination thereof. Such indemnification shall include, but not be limited to, an award of costs and attorney's fees incurred by Alameda County in its defense. The County shall promptly notify applicant of any such challenge.

11. The project shall be initiated within 3 years of approval, or the Site Development Review approval shall be null and void.

12. Negligible or de minimis changes or additions to permit conditions stated herein or the approved site plan may be authorized by the Planning Director subject to a determination that any proposed change or addition is found to be in substantial compliance with the original approved permit conditions or site plan.

ATTACHMENTS

Attachment A
Referrals
Graphics

PREPARED BY: Pat Anekayuwat, Planner
REVIEWED BY: Damien Curry, Senior Planner

TABLE 2.2-1: SINGLE-FAMILY SUBDIVISION STANDARDS

Standard[1]	*R-1*	*-B-8*	*-B-10*	*-B-20*	*-B-40*	*Additional Standards*
DEVELOPMENT INTENSITY AND NEIGHBORHOOD COMPATIBILITY						
Minimum Building Site and Lot Size (sq ft)	5,000	8,000	10,000	20,000	40,000	In addition, Castro Valley and Fairview require consistency with existing development in the area. See Chapter 7: Lot Size Consistency.
Minimum Lot Width (ft)	50	80	100	150	150	
Minimum Lot Width, Corner Lot (ft)	60					
Maximum Lot Coverage (%)	40	40	40	40	40	
One-Story Building (%)	45	45	45	45	45	
BUILDING HEIGHT AND FORM						
Maximum Height (ft)	25	25	25	25	25	The building height limitation does not apply to chimneys, church spires, flag poles, or to mechanical appurtenances necessary and incidental to the permitted use of a building.
Height Exception (ft)	Up to 30	Up to 30	Up to 30	Up to 30	Up to 30	Provided that the roof is pitched and the portion of the roof over 25 feet in height is at least 15 feet away from building site property lines. See Figure 2.2-2.
Maximum Stories	2	2	2	2	2	
Maximum Second Story Floor Area (%) (Percentage of First Story Building Footprint)	80	80	80	80	80	The second story cannot exceed 80 percent of the first story building footprint area.
BUILDING RELATIONSHIP TO STREET						
Maximum Front Yard Paving (%)	50	50	50	50	50	See Figure 2.2-3.
Street Facing Façade Design	Required. Street facing facades must be designed to orient towards the public street, or private street if lot does not abut public street. Windows, entry door, and other elements must be incorporated to create an attractive street appearance that enhances the surrounding neighborhood.					
Building Entrances on Streets	Required. The principal entry shall be located in a visible location from the public street, or private street if lot does not abut public street.					
Covered Front Porch or Covered Recessed Entry	Required.					
Minimum Depth (ft)	5	5	5	5	5	Alternative designs that create a welcoming entry feature visible from the street, such as a trellis or landscaped courtyard entry may be approved by Staff. See Figure 2.2-4.
Minimum Area of Porch and/or Recessed Entrance (sq ft)	5 percent of the first story building footprint area; up to a maximum of 100 square feet					

Table 2.2-1: Single-Family Subdivision Standards

Standard[1]	***R-1***	***-B-8***	***-B-10***	***-B-20***	***-B-40***	***Additional Standards***
SETBACKS FOR LIGHT AND AIR						
Minimum Setbacks (ft)						Building site setbacks apply along the perimeter of a building site and lot setbacks apply to individual lots within a building site. In the event of conflict between building site setback requirements and lot setback requirements, the project must comply with whichever standard results in the greater setback. Projects located in State Responsibility Fire Areas must maintain a 30 feet setback to other structures and property lines. Additional setbacks may be required from creeks and riparian corridors.
Building Site (ft)						
Front (Facing Public Street)	20	25	30	30	30	Must be landscaped.
Side (Facing Adjacent Neighboring Property)	5' + 1' for each full 10' by which the building site width exceeds 50', up to a maximum requirement of 10'	10	15	15	20	For R-1: Lot Width < 60' = Side Setback 5' Lot Width < 70' = Side Setback 6' Lot Width < 80' = Side Setback 7' Lot Width < 90' = Side Setback 8' Lot Width < 100' = Side Setback 9' Lot Width ≥ 100' = Side Setback 10'
Rear (Facing Adjacent Neighboring Property)	20	20	20	20	20	
Lot (ft)						
Front	20	25	30	30	30	Must be landscaped.
Side	5' + 1' for each full 10' by which the lot width exceeds 50', up to a maximum requirement of 10'	10	15	15	20	For R-1: Lot Width < 60' = Side Setback 5' Lot Width < 70' = Side Setback 6' Lot Width < 80' = Side Setback 7' Lot Width < 90' = Side Setback 8' Lot Width < 100' = Side Setback 9' Lot Width ≥ 100' = Side Setback 10'
Side, Corner	10					
Rear	20	20	20	20	20	

Table 2.2-1: Single-Family Subdivision Standards

Standard[1]	***R-1***	***-B-8***	***-B-10***	***-B-20***	***-B-40***	***Additional Standards***
First Story Exception	10	10	10	10	10	Rear yard setback may be a minimum of 10 feet if that portion of the rear yard less than 20 feet in depth is compensated by open area within the same or adjacent yards on the same building site that exceed side and rear yard requirements by an area at least equal to extent of building coverage of the 20 feet rear yard with a minimum dimension of 10 feet. See Figure 2.2-6.
Second Story Exception	25	25	25	25	25	The second story is required to be set back a minimum of 25 feet from the rear property line if the second story exceeds 80 percent of the first story building footprint.
Setback From Access Driveway (ft)	10	10	10	10	10	Must be landscaped.
Setback From Access Driveway Exception (ft)	3	3	3	3	3	Landscaped setback from access driveway may be reduced to 3 feet on narrow building sites (typically less than 80 feet wide), with Staff approval. See Figure 2.2-7.
AUTO CIRCULATION: SITE ACCESS AND DRIVEWAYS						
Minimum Access Driveway/ Private Street Width (ft)	20	20	20	20	20	
Minimum Access Driveway/ Private Street Width Exception (ft)	12	12	12	12	12	Minimum 12 feet if lots are narrow and driveways serve fewer than 5 units. Fire Department may consider this exception if the rear-most corner of the rear-most building is within 150 feet of the curb and alternative means and methods are incorporated to meet Fire Code safety objectives.
Minimum Driveway Gates Setback (ft)	20	20	20	20	20	Gates are strongly discouraged. Gates across driveways shall be set back a minimum of 20 feet behind the property line, or greater depending on location in State Responsibility Fire Area and street travel speed.
PARKING LOCATION AND DESIGN						
Maximum Garage Width (ft)						See Figure 2.2-5.
Facing Public Street	Where garage doors face a public street, garage width shall not exceed 50 percent of the width of the front façade of the building.					
Facing Access Driveway/Private Street	Where garage doors face a private street or access driveway, garage width shall not exceed 60 percent of the width of the front façade of the building.					
For garages with three or more doors, or designed to accommodate three or more non-tandem parked cars see design guidelines section.						

Table 2.2-1: Single-Family Subdivision Standards

Standard[1]	***R-1***	***-B-8***	***-B-10***	***-B-20***	***-B-40***	***Additional Standards***
Maximum Driveway Apron Width (ft)	Driveway apron width shall not exceed the garage door width by more than one foot in either direction.					Garage aprons leading to three-car garages shall be treated with decorative or permeable paving for a minimum of 35 percent of the driveway apron area.
Unit Parking (per dwelling unit)	2	2	2	2	2	Minimum of two spaces must be covered spaces in a garage or carport.
Guest Parking (per dwelling unit)	1	1	1	1	1	Space along the public street frontage of a building site can be counted towards guest parking requirements. However, guest spaces may be required to be on the building site if there is existing parking congestion, as defined by the Planning Director, on the street. A parking study may be required to determine existing parking congestion. Driveway aprons are not counted towards the required guest parking of a private single-family subdivision development.
FACILITIES FOR PEDESTRIANS, BICYCLES, AND TRANSIT						
Pedestrian Walkway Next to Access Driveway/Private Street	Required for 5 units or more					
Minimum Width of Pedestrian Walkway (ft)	4	4	4	4	4	
SITE LANDSCAPING						
Minimum Width of Landscaped Buffer Between Pedestrian Walkway and Access Driveway/Private Street (ft)	3	3	3	3	3	
Minimum Side Landscaping for Access Driveway/Private Street/Parking Area (ft)	5					Applies between the access driveway/private street/parking areas and the building site side and rear property lines.
Minimum Side Landscaping Exception (ft)	3					The minimum side landscaping shall be 3 feet when the building site width is less than 80 feet. Staff may approve a minimum side landscaping of 3 feet for building sites that are 80 feet or wider if vertical landscaping (e.g. trees, shrubs, bushes) is planted along this side landscaping area.

Note:

[1] *For the -B-E Combining District, standards are as specified in the amendment creating the district.*

17.52.300 Accessory building—Private garage.

Except as otherwise provided in Section 17.52.310 no private garage in any R district shall be so located upon a lot that the door providing vehicular access thereto is within twenty (20) feet of any lot line of such lot toward which the door faces.

(Prior gen. code § 8-60.30)

Anekayuwat, Pat, CDA

From: DevEng
Sent: Friday, September 19, 2025 10:35 AM
To: Anekayuwat, Pat, CDA
Subject: RE: PLN2025-00142 SDR, Planning Referral

Hi Pat,

Reference is made to your project referral for Site Development Review, to allow a Garage Conversion and to add 583 sq. ft. of front addition with new 2 car garage, located at 4538 Grenadier Place Castro Valley area of unincorporated Alameda County.

Development Engineering has no comment to offer regarding the subject project application; however, the following should be disclosed to the Applicant:

- Submit building permit application with complete construction and demolition document via the permit portal https://acpermit.acgov.org/Portal/#/.

- Construction documents shall comply with the current Alameda County Building Ordinance, California Building Standards Codes and Regulations.

- Refer to the following website for construction document requirements https://www.acpwa.org/permits/forms-and-handouts.page.

Let me know should you have questions

Thank you.

Rosemarie L. De Leon
Assistant Engineer
Development Engineering & Permits | Alameda County Public Works Agency
399 Elmhurst Street | Hayward, CA 94544
e-mail: roseld@acpwa.org | (510) 670-5209

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From: Anekayuwat, Pat, CDA <pat.anekayuwat@acgov.org>
Sent: Tuesday, September 16, 2025 1:38 PM
To: County FP Plan Checks <countyfpplanchecks@acgov.org>; DevEng <DevEng@acpwa.org>
Subject: SDR, Planning Referral

Hi All,

I have an SDR (garage conversion and front addition) for your review and comment, please. See attachment.
If you have any questions, please feel free to contact me.

Best regards,

Alameda County Fire Department

Division of Fire Code Administration

Plan Review Comments

6363 Clark Ave, Dublin California 94568 Phone (925) 833-3473 Fax (925) 875-9387

PLN #	PLN2025-00142		
Address	4538 Grenadier Pl., Castro Valley		
Job Description	Garage Conversion and Residential Additions		
Reviewed By	CountyFCA@alamedacountyfire.gov	**Date**	01/12/26

Review of Planning referrals are usually based on information and plans that lacking details for specific comments. The primary focus of our review is to assure fire access to the site. Specific fire and building code issues will be addressed during the regular building permit submittal and review process.

Conditions of Approval

The following conditions shall be met prior the issuance of a building permit and fire clearance for occupancy.

1. Project must comply with all building and fire code requirements in effect at time of building permit submittal.

STRUCTURE'S INFORMATION:

EXISTING
SINGLE FAMILY HOME WITH 3 BEDROOM, 2.5 BATH AND KITCHEN WITH 2587 SF ON 0.29 ACRES LOT.

SCOPE OF WORK:

1) TOTAL OF 583 SF ADDITION WITH 483 IN FRONT, 55 SF ON FRONT PORCH& 45 SF ON SIDE ENTRYWAY
2) INTERIOR REMODEL

PROJECT DATA:

ADDRESS: 4538 GRENADIER PL, CASTRO VALLEY, CA 94546

OCCUPANCY: R-1 (SINGLE FAMILY HOME)

CONSTRUCTION TYPE: V-B

ZONING: R1-BE-RV-HO

LOT SIZE: 0.29 ACRE (12632 SQ. FT.)

STORIES: ONE

SPRINKLER: NONE

PARKING: (E) GARAGE

AREA STATEMENT:

LIVING AREA CALCULATIONS (IN SF)			
	EXISTING	PROPOSED/ADDITION	TOTAL NEW
LIVING AREA	2623	490	3113
GARAGE	445	430	430
PORCH/COVERED AREA	0	55	55
FAR	0.207		0.246
MAX. ALLOWED FAR	0.40 OR 4500 (WHICHEVER IS LESS PER 17.08.110)		
LOT COVERAGE CALCULATIONS			
LOT SIZE	12632	-	12632
LOT COVERAGE	3077	529	3599
% LOT COVERAGE	24.35	4.61	28.90
ALLOWED MAX. LOT COVERAGE	0.40		
FRONT SET BACK	52'6"	26'6"	
SIDE SET BACK	NO CHANGE	NO CHANGE	
REAR SET BACK	NO CHANGE	NO CHANGE	

APN: 84D-1250-57

PROJECT PROVISIONS:

PLANS AND CALCULATIONS FOR THIS PROJECT ARE IN COMPLIANCE WITH THE 2022 CALIFORNIA BUILDING CODE, 2022 CALIFORNIA RESIDENTIAL CODE, 2022 CALIFORNIA ELECTRICAL CODE, 2022 CALIFORNIA MECHANICAL CODE, 2022 CALIFORNIA PLUMBING CODE, 2022 CALIFORNIA ENERGY CODE, 2022 CALIFORNIA HISTORICAL CODE, 2022 CALIFORNIA EXISTING BUILDING CODE AND 2022 CALIFORNIA GREEN BUILDING CODE STANDARDS CODE AS APPLICABLE CODES TO THIS PROJECT.

·All remodelling should not damage the integrity of the structure and increase gross area

·Contractor is responsible for the safety of public and the workers. He will also be held LIABLE FOR ALL PROPERTY DAMAGES

·All changes shall be reported to designer and approval is required after field inspection IS COMPLETED

·Contractor is responsible to report any discrepancies in the plans to the designer (ARCHITECT / ENGINEER) AND THE OWNER IN A TIMELY MANNER PRIOR TO THE CONSTRUCTION. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CORRECTIONS AND ERRORS IN CASE OF FAILURE TO INFORM THE DESIGNER (ARCHITECT / ENGINEER)

·Contractor is responsible for confirming all existing information shown on the plans or MIGHT AFFECT THE CONSTRUCTION AND ARE NOT ADDRESSED ON THE PLANS THAT INCLUDES BUT NOT LIMITED TO; STRUCTURES, FACILITIES, DRAINAGE AND SEWAGE SYSTEMS, UTILITIES, ELECTRICAL & COMMUNICATION LINES, EASEMENTS, TERRAIN, ARCHAEOLOGICAL, HISTORICAL, ENVIRONMENTAL, PUBLIC PROPERTIES, DRIVEWAYS, SIDEWALKS, TRAILS AND ROADS. HE SHALL REPORT ANY DISCREPANCIES WITH THE PLANS TO THE DESIGNER (ARCHITECT / ENGINEER) IN A TIMELY MANNER PRIOR TO THE CONSTRUCTION

·Proper housekeeping of the construction site is expected from the contractor

·CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS PRIOR TO THE CONSTRUCTION. THIS PROCESS AND RELATED EXPENDITURES ARE NOT THE RESPONSIBILITY OF THE DESIGNER (ARCHITECT / ENGINEER)

·Contractor is responsible for the quality of the construction and material to be used. ALSO HE SHALL HOLD THE DESIGNER (ARCHITECT / ENGINEER) HARMLESS, INDEMNIFY AND DEFEND IF ANY LEGAL ACTION INITIATED BY THE OWNERS (PRESENT AND FUTURE) DUE TO CONSTRUCTION MODIFICATIONS, DISCREPANCIES, DEFICIENCIES AND OR LACK OF QUALITY
·Contractor and the owner are responsible to request for clarification of the drawings by THE DESIGNER IN A TIMELY MANNER PRIOR TO THE BID SUBMITTAL FOR THIS PROJECT

·Contractor is responsible for setting up inspection as it seems deemed by the city and or COUNTY PUBLIC WORKS BUILDING DEPARTMENT AND IN A TIMELY MANNER

ABBREVIATIONS

AB	= ANCHOR BOLT
ABV	= ABOVE
ADJ	= ADJACENT
ALT	= ALTERNATE
BLK	= BLOCKING OR BLOCKED
BOT	= BOTTOM
B/W	= BETWEEN
CL	= CENTER LINE
CLR	= CLEAR
CONT	= CONTINUOS
CONC	= CONCRETE
CONN	= CONNECTION
DBL	= DOUBLE
DF	= DOUGLAS FIR
DIA	= DIAMETER
DN	= DOWN
EMBD	= EMBEDMENT
EN	= EDGE NAIL
EQ	= EQUAL
EXT	= EXTERIOR
(E)	= EXISTING
FN	= FIELD NAIL
MFR	= MANUFACTURER
MID	= MIDDLE
(N)	= NEW
OC	= ON CENTER
(P)	= PROPOSED
PT	= PRESSURE TREATED
PLY	= PLYWOOD
(R)	= REMODEL
SHTG	=SHEATHING
SIM	= SIMILAR
SAD	= SEE ARCHITECTURAL DRAWINGS
SF	= SQUARE FEET
SOG	= SLAB ON DGARE
STGR	=STAGGERED
SW	= SHEAR WALL
SWS	= SHEARWALL SCHEDULE
T&B	= TOP AND BOTTOM
TN	= TOE NAIL
TYP	= TYPICAL
UNO	= UNLESS NOTED OTHERWISE
VERT	= VERTICAL
W/	= WITH

SHEET SCHEDULE

SHEET#	DESCRIPTION
A-0	COVER SHEET
A-0.1	VICINITY STUDY
A-1	FLOOR PLANS
A-2	ELEVATIONS
A-3	ELEVATIONS
A-3	ROOF PLAN & SECTIONS
E-1	ELECTRICAL
T-1	TITLE-24
T-2	TITLE-24
G-1	CA GREEN
G-2	CA GREEN
S-0	STRUCTURAL NOTES
SD-1	STRUCTURAL DETAILS
SD-2	STRUCTURAL DETAILS
S-1	FOUNDATION PLAN
S-2	STRUCTURAL PLANS

SITE PLAN LEGEND

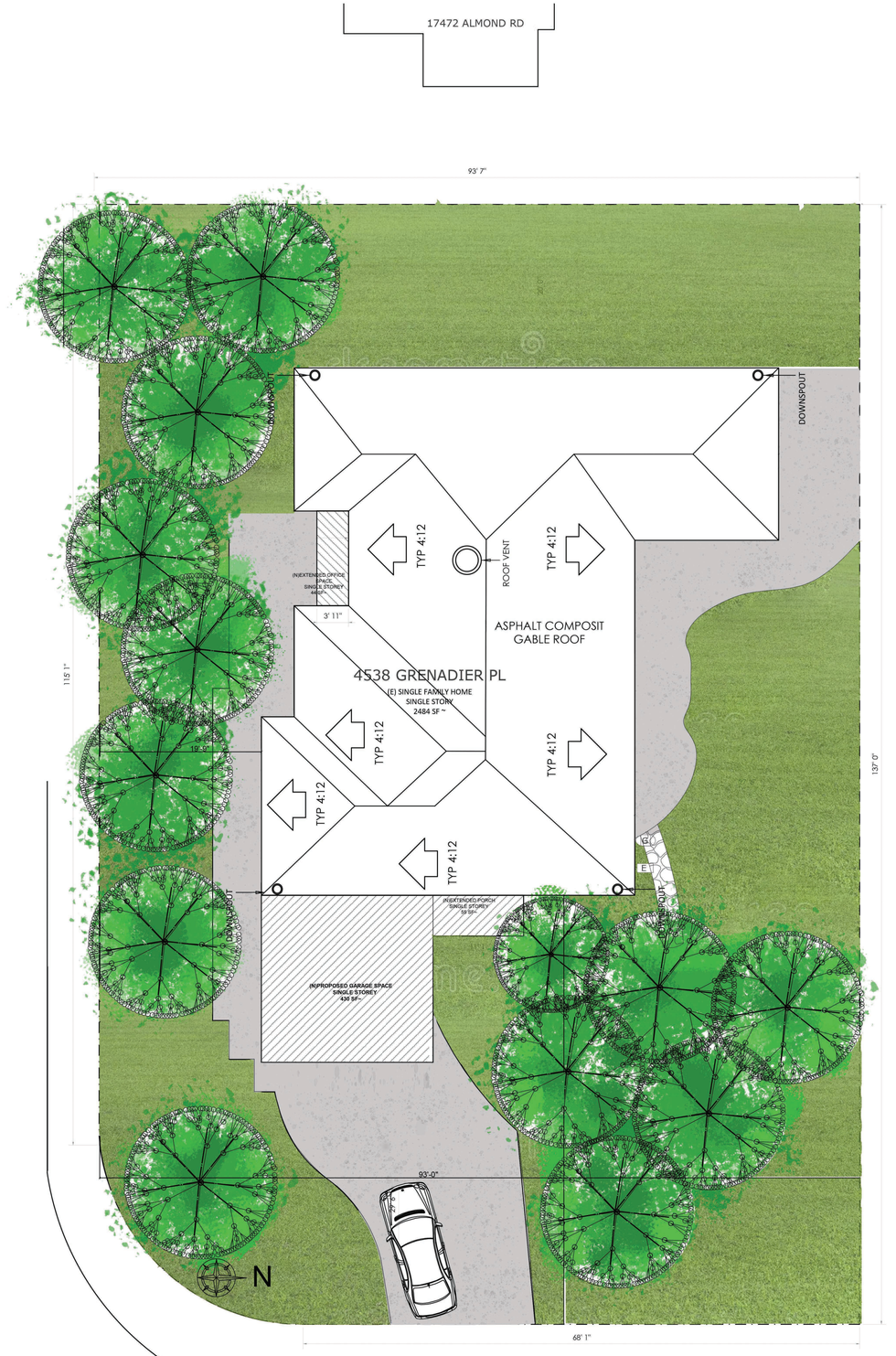
— · — · — ·	PROPERTY LINE
—×—×—×—	FENCE
	EXISTING STRUCTURE
	ADJACENT PROPERTY
	(E) DRIVE AREA
	PROPOSED WORK AREA
	(E) TREES
	(E) LANDSCAPE AREA
	(N) LANDSCAPE AREA
DS	DOWNSPOUT
G	(E) GAS METER
(E) WM	(E) WATER METER
2%	SITE DRAINAGE WITH 2% SLOPE
E	ELECTRIC PANEL
. . . . .	WATER LINE
_ _ _ _ _	ROOF LINE

LANDSCAPE LEGEND

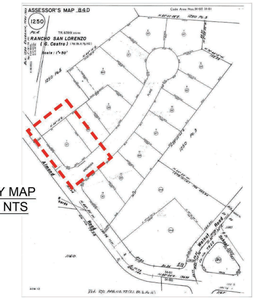
- Blue Yuca
- Bladderpod
- Desert Spoon
- Desert Broom

LANDSCAPE SCHEDULE

SHRUB	SPECIES	SIZE	QTY.	IRRIGATION
	Blue Yuca	1 Gal	4	Drip
	Bladderpod	1 Gal	5	Drip
	Desert Spoon	1 Gal	6	Drip

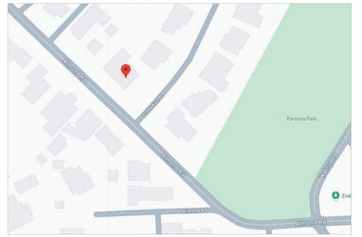


SITE PLAN (N)
Scale : 1" = 8'0"



VICINITY MAP
SCALE : NTS

ASSESSOR MAP
Scale : NTS



VICINITY MAP
Scale : NTS

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4101 DUBLIN BLVD
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YKJ@SNBDG.NET
925-237-7244

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DRAWN BY
CHECK BY
JOB NUMBER

REVISION

PROJECT ADDRESS

ADDITION & INTERIOR REMODEL
4538 GRENADIER PL
CASTRO VALLEY, CA, 94546

SHEET TITLE:

COVER SHEET, VICINITY & SITE PLAN

STAMP:

REGISTERED PROFESSIONAL ENGINEER
YETENDRA K. JANGID
Yetendra Jangid
77767
Exp: 06/30/27
CIVIL
STATE OF CALIFORNIA

SHEET NUMBER

A-0

SUBJECT PROPERTY
4538 GRENADIER PL

4558 GRENADIER PL

4568 GRENADIER PL



ADJCADENT PROPERTIES (RIGHT SIDE/GRENADIER PL)

4608 GRENADIER PL

4628 GRENADIER PL



ADJCADENT PROPERTIES (RIGHT SIDE/GRENADIER PL)

17438 ALMOND RD

17454 ALMOND RD

17456 ALMOND RD



ADJCADENT PROPERTIES (LEFT SIDE/ALMOND RD)

17462 ALMOND RD

17472 ALMOND RD



ADJCADENT PROPERTIES (LEFT SIDE/ALMOND RD)

4563 GRENADIER PL

4583 GRENADIER PL

4603 GRENADIER PL

4553 GRENADIER PL

4533 GRENADIER PL

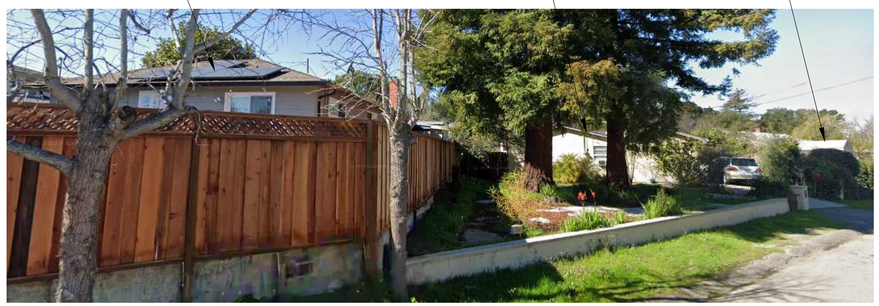


ACCROSS STREET PROPERTIES (FRONT/GRENADIER PL)

17555 ALMOND RD

17547 ALMOND RD

17543 ALMOND RD



ACCROSS STREET PROPERTIES (FRONT/ALMOND RD)

17531 ALMOND RD

17485 ALMOND RD



ACCROSS STREET PROPERTIES (FRONT/ALMOND RD)

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REVISION

PROJECT ADDRESS

ADDITION & INTERIOR REMODEL

4538 GRENDIER PL
CASTRO VALLEY,94546, CA

SHEET TITLE:

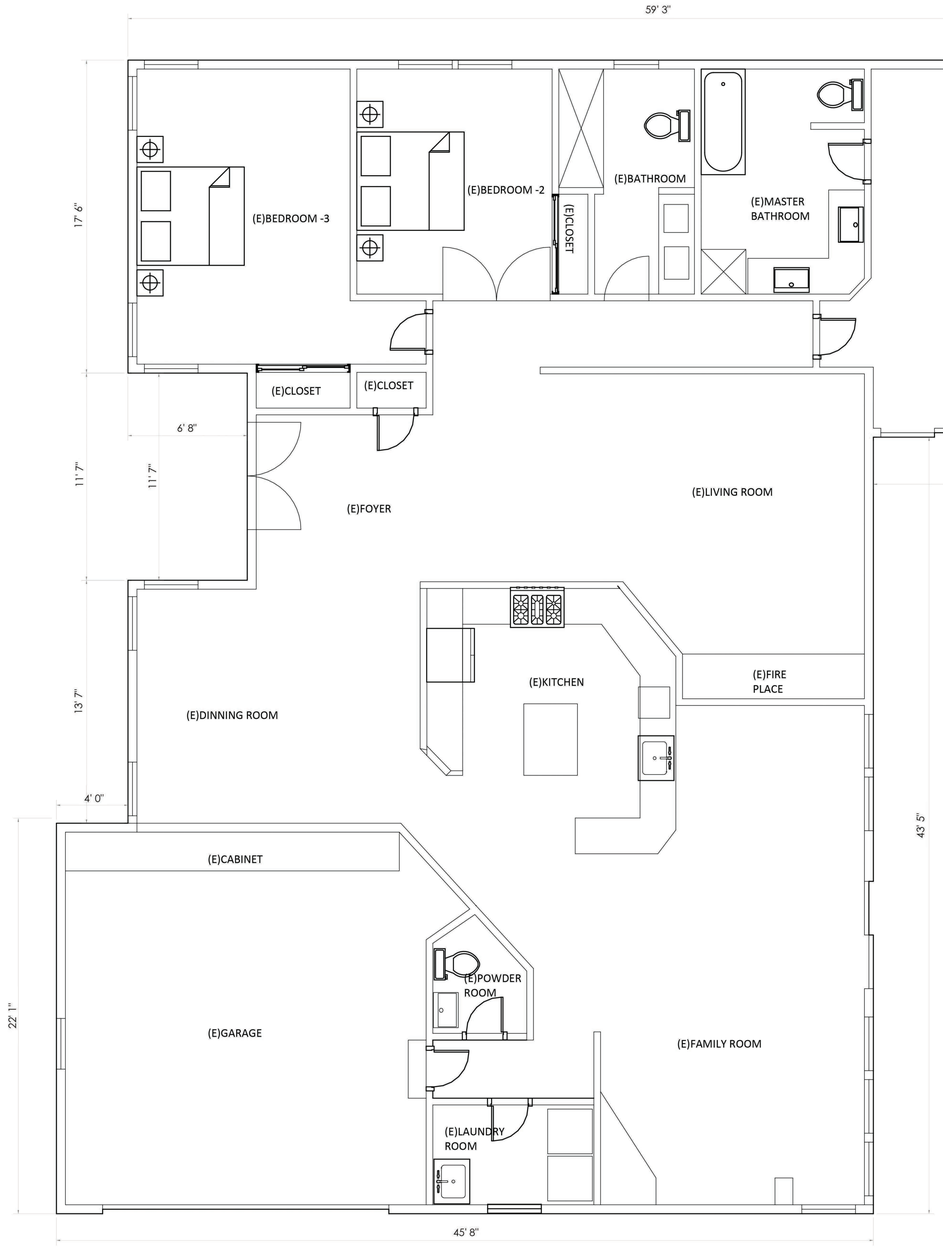
VICINITY STUDY

STAMP:

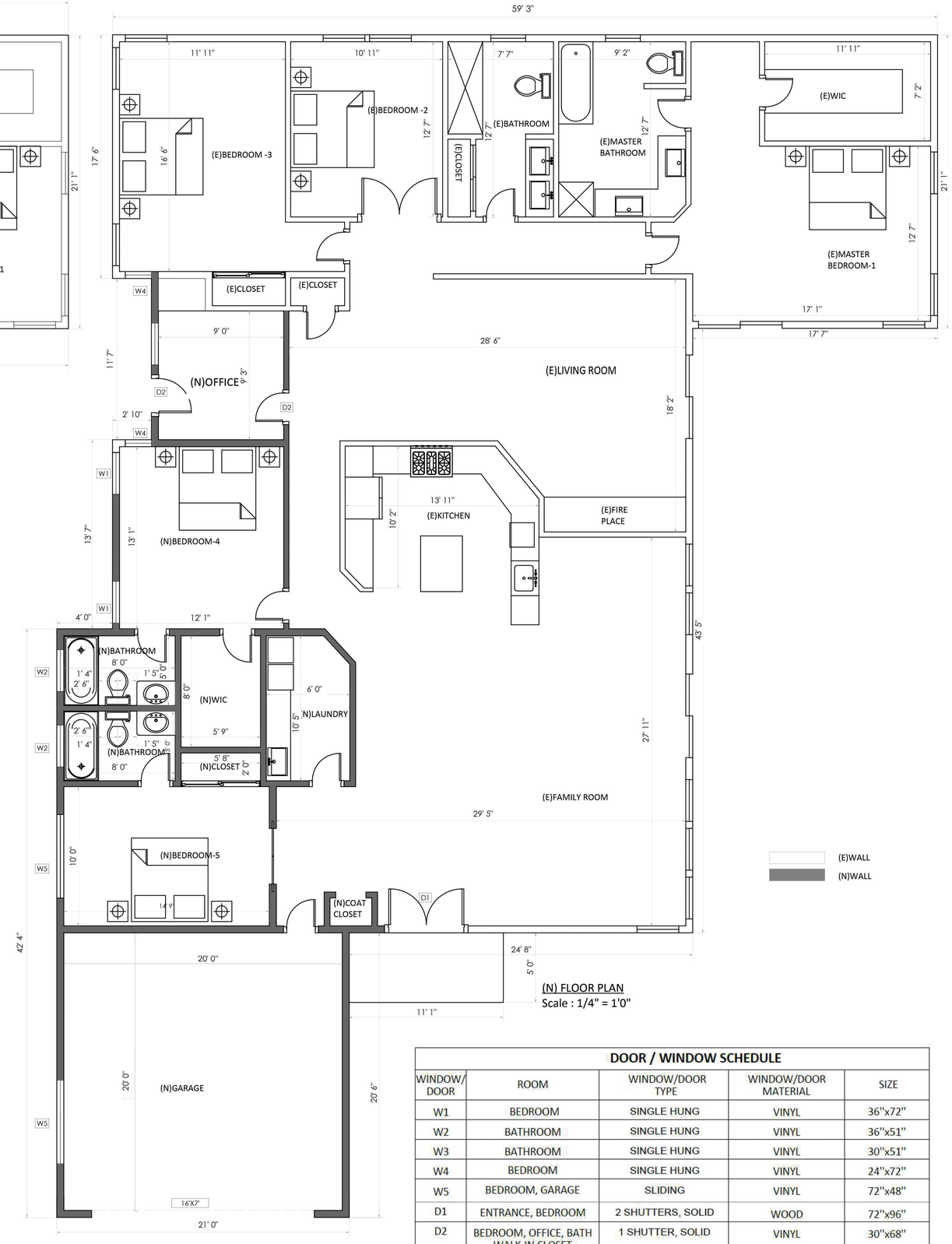
REGISTERED PROFESSIONAL ENGINEER
YETENDRA K. JANGID
Yetendra Jangid
77767
Exp: 06/30/27
CIVIL
STATE OF CALIFORNIA

SHEET NUMBER

A-0.1



(E) FLOOR PLAN
Scale : 1/4" = 1'0"



(E)WALL
(N)WALL

(N) FLOOR PLAN
Scale : 1/4" = 1'0"

DOOR / WINDOW SCHEDULE

WINDOW/ DOOR	ROOM	WINDOW/DOOR TYPE	WINDOW/DOOR MATERIAL	SIZE
W1	BEDROOM	SINGLE HUNG	VINYL	36"x72"
W2	BATHROOM	SINGLE HUNG	VINYL	36"x51"
W3	BATHROOM	SINGLE HUNG	VINYL	30"x51"
W4	BEDROOM	SINGLE HUNG	VINYL	24"x72"
W5	BEDROOM, GARAGE	SLIDING	VINYL	72"x48"
D1	ENTRANCE, BEDROOM	2 SHUTTERS, SOLID	WOOD	72"x96"
D2	BEDROOM, OFFICE, BATH WALK-IN CLOSET	1 SHUTTER, SOLID	VINYL	30"x68"

NOTE: ATLEAST ONE BEDROOM WINDOWS SHALL COMPLY WITH EGRESS REUIREMENTS.

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4538 GRENDIER PL
CASTRO VALLEY,94546, CA

SHEET TITLE:

(E) & (N) FLOOR PLANS

STAMP:

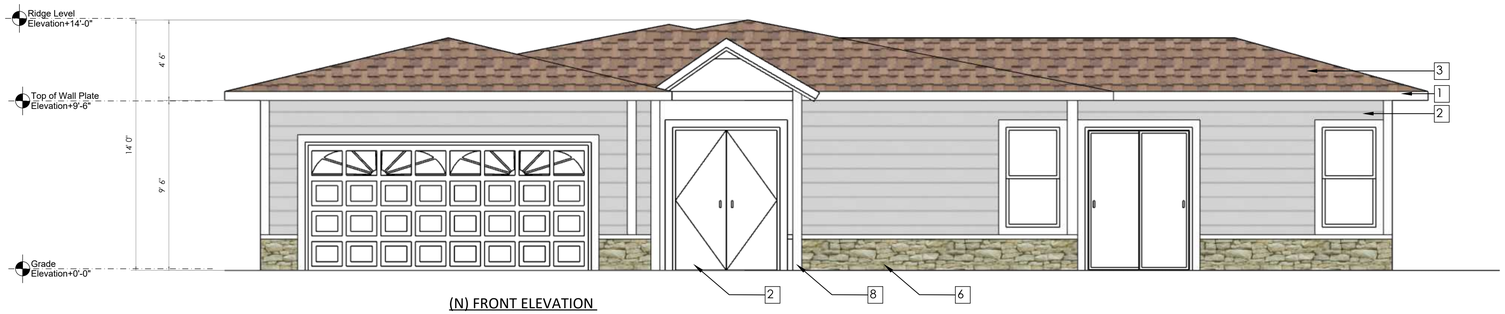
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Yetendra Jangid
77767
Exp: 06/30/27
CIVIL
STATE OF CALIFORNIA

SHEET NUMBER

A-1



(E) FRONT ELEVATION
Scale : 1/4" = 1'0"



(N) FRONT ELEVATION
Scale : 1/4" = 1'0"



(E) REAR ELEVATION (NO CHANGE)
Scale : 1/4" = 1'0"

ELEVATION KEY NOTE:

1- FASCIA / GUTTER
2- HORIZONTAL SIDING
3- CONCRETE TILES/GABLE ROOF
4- WOODEN DOOR
5- SLIDING WINDOW
6- STONE DECORATIVE CLADDING
7- SLIDING FDOOR
8- POST
9- SINGLE HUNG

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ADDITION & INTERIOR REMODEL
4538 GRENDIER PL
CASTRO VALLEY,94546, CA

SHEET TITLE:

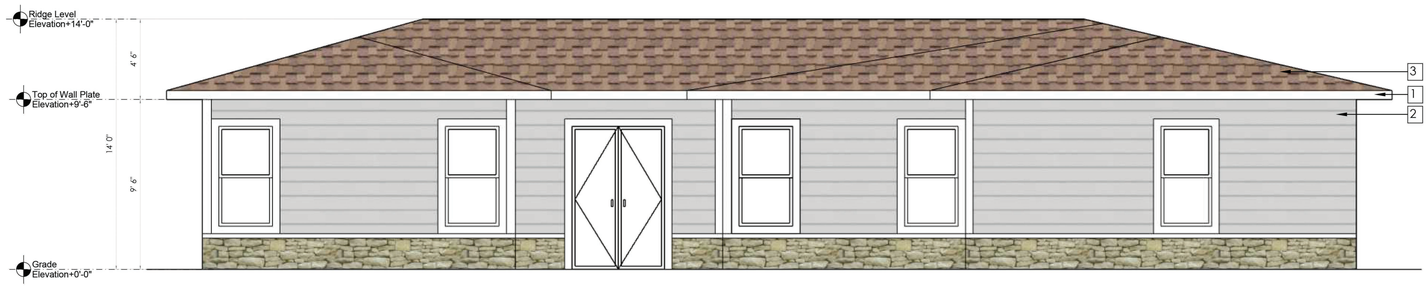
(N) ELEVATIONS

STAMP:

REGISTERED PROFESSIONAL ENGINEER
YETENDRA K. JANGID
Yetendra Jangid
77767
Exp: 06/30/27
CIVIL
STATE OF CALIFORNIA

SHEET NUMBER

A-2



(E) LEFT ELEVATION
Scale : 1/4" = 1'0"



(N) LEFT ELEVATION
Scale : 1/4" = 1'0"



(E) RIGHT ELEVATION
Scale : 1/4" = 1'0"



(N) RIGHT ELEVATION
Scale : 1/4" = 1'0"

ELEVATION KEY NOTE:

1- FASCIA / GUTTER
2- HORIZONTAL SIDING
3- CONCRETE TILES/GABLE ROOF
4- WOODEN DOOR
5- SLIDING WINDOW
6- STONE DECORATIVE CLADDING
7- SLIDING FDOOR
8- POST
9- SINGLE HUNG

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ADDITION & INTERIOR REMODEL
4538 GRENDIER PL
CASTRO VALLEY,94546, CA

SHEET TITLE:

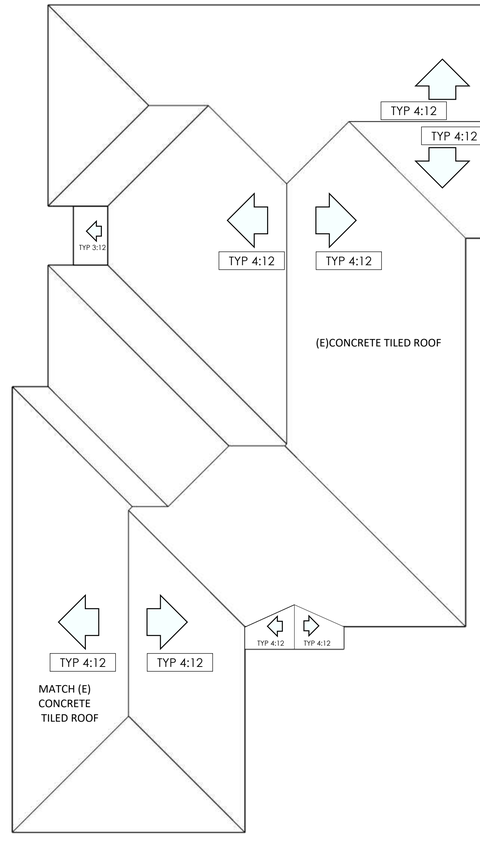
(N) ELEVATIONS

STAMP:

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YETENDRA K. JANGID
77767
Exp: 06/30/27
CIVIL
STATE OF CALIFORNIA

SHEET NUMBER

A-3



(N) ROOF PLAN
Scale : 1/8" = 1'0"

ROOF	AREA	VENTILATION REQ.	COMMENTS/VENTS
(N)ROOFS	=23 x26 +5X12+4X7= 686 S	=686/150=4.58SF =4.58x144=660 SQ.IN.	
	SOFFIT VENT = 50%	=660/2= 330 SQ.IN. (OR 165 SQ.IN. EACH SIDE)	PROVIDE 3 HOLES OF 2 IN DIA. THE BLOCKING B/W RAFTERS ON EACH SIDE OF ROOF
	RIDGE VENT = 50%	=660/2= 330 SQ.IN. (OR 165 SQ.IN. EACH SIDE)	PROVIDE MUSHROOM VENTS OR SIMILAR (132 SQ. IN OF NET AREA AIRFLOW) A TOTAL OF 2 ON THE ROOF

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ADDITION & INTERIOR REMODEL
4538 GRENDIER PL
CASTRO VALLEY,94546, CA

SHEET TITLE:

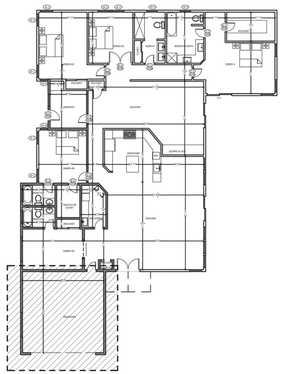
ROOF PLAN & DETAILS

STAMP:

REGISTERED PROFESSIONAL ENGINEER
YETENDRA K. JANGID
Yetendra Jangid
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Exp: 06/30/27
CIVIL
STATE OF CALIFORNIA

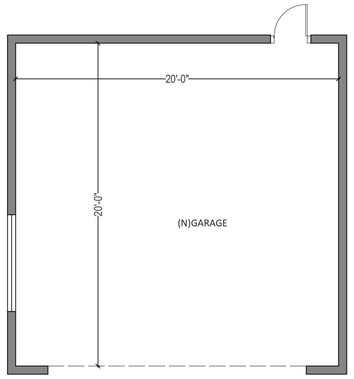
SHEET NUMBER

A-4



KEY PLAN

SCALE: 1/8 " = 1'



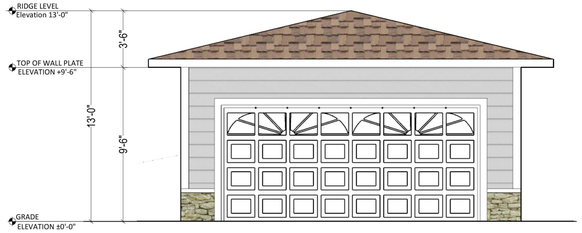
PROPOSED PLAN

SCALE: 1/4 " = 1'



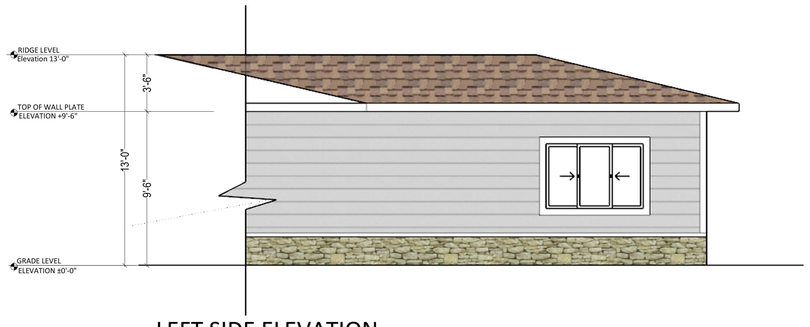
VICINITY STUDY (GARAGE)

SCALE: 1/4 " = 1'



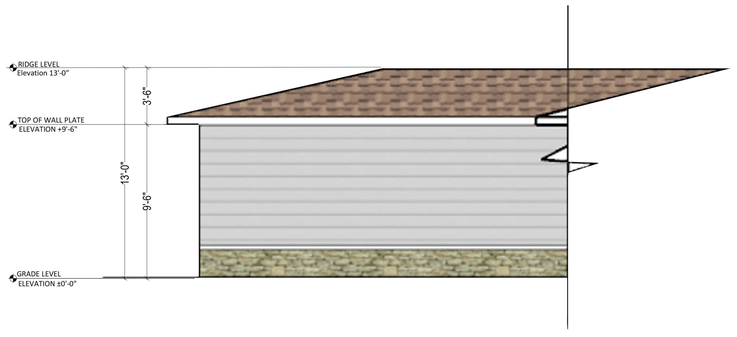
FRONT VIEW ELEVATION

SCALE: 1/4 " = 1'



LEFT SIDE ELEVATION

SCALE: 1/4 " = 1'



RIGHT SIDE ELEVATION

SCALE: 1/4 " = 1'

N

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ADDITION & INTERIOR REMODEL

4538 GRENDIER PL
CASTRO VALLEY,94546, CA

SHEET TITLE:

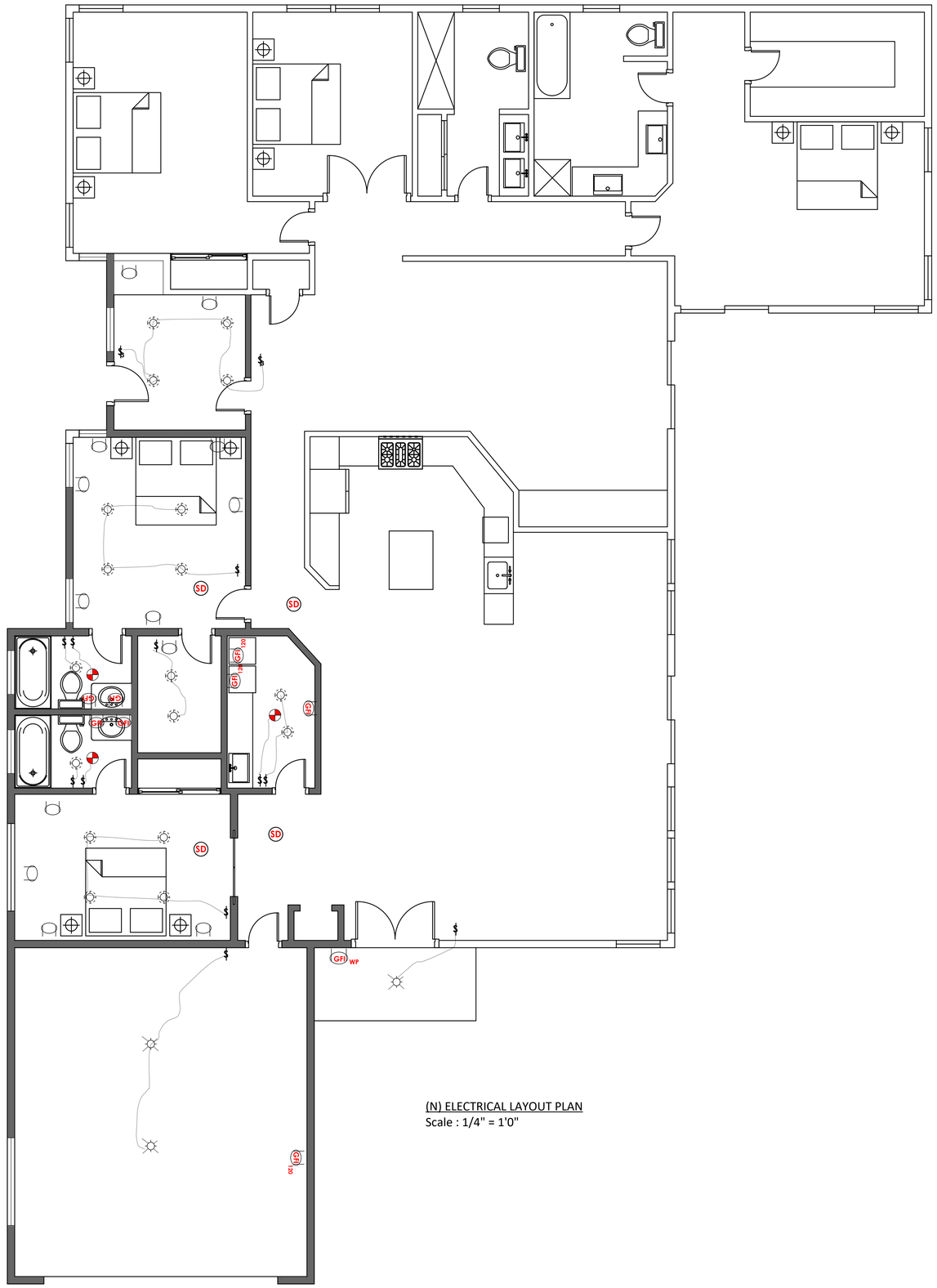
PROPOSED
GARAGE PLANS AND
ELEVATIONS FOR SDR

STAMP:

REGISTERED PROFESSIONAL ENGINEER
YETENDRA K. JANGID
77767
Exp: 06/30/27
CIVIL
STATE OF CALIFORNIA

SHEET NUMBER

A-4.1



(N) ELECTRICAL LAYOUT PLAN
Scale : 1/4" = 1'0"

A. At least one luminaire in the bathroom and laundry shall be controlled by a vacancy sensor per CA Energy Code 150.0(k)2J.
B. A dedicated 20 amp branch circuit shall be provided to supply bathroom receptacles outlets per CEC 210.11(C)(3).
C. Revise electrical note to include AFCIprotection for kitchens per CEC 210.12(A).
D. 125-volt, 15 amp and 20 amp receptacle outlets shall be listed tamper-resistant receptacles per CEC 406.11.
E. Each bathroom shall be mechanically ventilated with an ENERGY STAR exhaust fan (CALGreen Section 4.506.1).

a. Water closets: 1.28 gallons per flush
b. Showerheads: 1.8 gallons per minute
c. Lavatory faucets: 1.2 gallons per minute
d. Kitchen faucets: 1.8 gallons per minute with 2.2 gallons per minute temporary flow.

(N) 6" X 12" REGISTER TO BE PROVIDE FOR SUPPLY AND RETURN AIR.

Electrical Symbol Legend

	Duplex Outlet
GFI	GFI 110v Receptacle Regular Outlet
GFI WP	Weather Proof Outlet
GFI 120	GFI 120v Receptacle Outlet
$	Switch
$3	3-Way Switch
SD	Smoke and CO Combo Detector
	Recessed Light
	Light Fixture
T	Thermostat
	Ventilation Fan
	Instantaneous water heater

HVAC Symbol Legend

	Return Air Regidter
	Supply Air Register
	Forced Air Unit (FAU)

NOTE: Outdoor lighting to be controlled by photocell and motion sensor, photo control, astronomical time clock, or an energy management control system.

NOTE: Light fixture in bathroom and laundry shall be controlled by a vacancy sensor.

NOTE:PROVIDE individual control valves of the pressure balance, thermostatic, or combination pressure alance/thermostatic mixing valve type.

NOTE: Exhaust fan ratings shall be 50 cfm for intermittent ventilation or 20 cfm for continuous ventilation.

NOTE: supply bathroom receptacle outlet(s) shall have no other outlets except with the same.

NOTE: All receptacles shall be listed tamper-resistant receptacles.

NOTE: light fixture over the new showers shall be suitable for damp locations.

NOTE: Field verified are carbon monoxide detector in area outside of the bedrooms per CRC R315.2. If not install carbon monoxide detector Field verified are smoke detector in sleeping areas and in area outside of the bedrooms per CRC R314.3. If not install, smoke detector in those.

NOTE: All 120-volt, 15- and 20- ampere receptacle outlets shall be listed tamper-resistant receptacles per CEC 406.12.

NOTE: Provide additional receptacle outlet on wall space measures 2-ft or more in width per CEC 210.52(A)(2).

NOTE: All new circuits are to be Arch fault Breakers.

NOTE: All newly installed interior and exterior lighting to be high efficacy per CEnC 150.0(k)(2)(A.

NOTE: No Electrical, heating/furnace, ventilation, plumbing, duct work and air conditioning equipment and other service facilities shall be located in the crawl space of the structure. All the equipment should be located on the lower, upper levels or attic of the structure.

ALL BEDROOM SHALL HAVE ATLEAST ONE EGRESS WINDOW:
Minimum Opening Requirements:
Net Clear Opening Area: 5.7 square feet (5.0 square feet for grade floor openings).
Net Clear Opening Height: 24 inches.
Net Clear Opening Width: 20 inches.
Maximum Sill Height: 44 inches from the finished floor

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DRAWN BY
CHECK BY
JOB NUMBER

REVISION

PROJECT ADDRESS

ADDITION & INTERIOR REMODEL
4538 GRENDIER PL
CASTRO VALLEY,94546, CA

SHEET TITLE:

ELECTRICAL, HVAC & FIRE SPRINKLER LAYOUT PLAN

STAMP:

REGISTERED PROFESSIONAL ENGINEER
YETENDRA K. JANGID
Yetendra Jangid
77767
Exp: 06/30/27
CIVIL
STATE OF CALIFORNIA

SHEET NUMBER

E-1

CALIFORNIA ENERGY COMMISSION

PRESCRIPTIVE ADDITIONS 1000 FT2 OR LESS

CF1R-ADD-01-E

CERTIFICATE OF COMPLIANCE

Project Name:	addition & Remodel	**Enforcement Agency:**	Alameda, County of
Dwelling Address:	4538 Grenadier Pl	**Permit Number:**	
City and Zip Code	Castro Valley, 94546	**Permit Application Date:**	2025-06-30

A. General Information

01	Project Name	addition & Remodel	02	Date Prepared	2025-06-30
03	Project Location	4538 Grenadier Pl	04	Building Front Orientation (deg)	270
05	CA City	Castro Valley	06	Number of Dwelling Units with Additions	1
07	Zip Code	94546	08	Fuel Type	Natural gas
09	Climate Zone	3	10	Total Conditioned Floor Area (ft^2) (Addition)	583
11	Building Type	Single family	12	Slab Area (ft^2)	583
13	Project Scope	Addition 400 ft^2 to 700 ft^2	14	Fenestration Exceptions	NA (do not allow other entries)

B. Building Insulation Details - Framed Walls/ Framed Floors (Section 150.2(a))

This section does not apply to this project.

C. Building Insulation Details - Non-framed (Section 150.1(c)1)

This section does not apply to this project.

D. Building Insulation Details - Mass Walls (Section 150.1(c)1Bii)

This section does not apply to this project.

CALIFORNIA ENERGY COMMISSION

PRESCRIPTIVE ADDITIONS 1000 FT2 OR LESS

CF1R-ADD-01-E

G. Roofing Products (Cool Roof) (Section 150.1(c).11)

01	02	03	04	05	06	07	08	09	10	11	12	13
						Proposed				Required		
Tag/ID	Exception	Roof Pitch	Method of Compliance	Product Type	CRRC Product ID Number	Initial Solar Reflectance	Aged Solar Reflectance	Thermal Emittance	SRI (optional)	Aged Solar Reflectance	Thermal Emittance	SRI (optional)

Notes:
- Exception 1 Any roof area covered by building integrated photovoltaic (PV) panels and solar thermal panels are exempt from the above Cool Roof requirements
- Exception 2: Roof construction with a weight of 25 pounds per square foot (lb/ft^2) are also exempt.
- Liquid field applied coatings must comply with installation criteria from Section 110.8(i)4

H. Fenestration/Glazing Allowed Areas and Efficiencies (Section 150.2(a)1)

This section does not apply to this project.

I. Fenestration Proposed Areas and Efficiencies

This section does not apply to this project.

J. Opaque Swinging Doors to Exterior (Section 150.1(c)5)

This section does not apply to this project.

K. Space Conditioning (SC) Systems - Heating/ Cooling (Section 150.2(b) or (Section 150.1(c)7)

This section does not apply to this project.

L. Water Heating Systems (Section 150.2(a)1D)

This section does not apply to this project.

M. Indoor Air Quality (IAQ) Fan Information

This section does not apply to this project.

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CALIFORNIA ENERGY COMMISSION

PRESCRIPTIVE ADDITIONS 1000 FT2 OR LESS

CF1R-ADD-01-E

E. Slab On Grade/Concrete Raised Floor Insulation (Table 150.1-A)

01	02	03	04	05	06
	Proposed		Required		
Floor Type	Insulation R-value	Insulation U-factor	Insulation R-value	Insulation U-factor	
Slab on grade	n/a	n/a	n/a	n/a	

Note:
- Heated slab floors require mandatory slab insulation (see Table 110.8-A).

F. Radiant Barrier (Section 150.1(c).2)

01	02
Radiant Barrier installed below the roof deck and on all gable end walls	Comments
Yes	Yes

A radiant barrier is required (for Climate Zones 2-15)
- Radiant barriers shall meet specific eligibility and installation criteria to receive energy credit for compliance with the Building Energy Efficiency Standards for low-rise residential buildings. Refer to Reference Appendices, Residential Appendix RA4.2.1.
- The emittance of the radiant barrier shall be less than or equal to 0.05 as tested in accordance with American Society for Testing and Materials (ASTM) C1371 or ASTM E408.
- For Prescriptive Compliance the attic shall be ventilated to provide a minimum free ventilation area of not less than 1 square foot (ft^2 of vent area for each 300 square feet ft^2 of attic floor area with a minimum of 40 percent to no more than 50 percent upper vents. Ridge vents or gable end vents are recommended to achieve the best performance. The material should be cut to allow for full airflow to the venting.

G. Roofing Products (Cool Roof) (Section 150.1(c).11)

01	02	03	04	05	06	07	08	09	10	11	12	13
						Proposed				Required		
Tag/ID	Exception	Roof Pitch	Method of Compliance	Product Type	CRRC Product ID Number	Initial Solar Reflectance	Aged Solar Reflectance	Thermal Emittance	SRI (optional)	Aged Solar Reflectance	Thermal Emittance	SRI (optional)
Concrete Tiles	Mass roof 25 lbs/ft2 or greater	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a

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CALIFORNIA ENERGY COMMISSION

PRESCRIPTIVE ADDITIONS 1000 FT2 OR LESS

CF1R-ADD-01-E

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT

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

Documentation Author Name: Yates Jangid	Documentation Author Signature: Yates Jangid
Company: SN Building Design Group.	Signature Date: 2025-06-30
Address: 4101 Dublin Blvd	CEA/ HERS Certification Identification (if applicable):
City/State/Zip: Dublin CA 94568	Phone: 9252377244

RESPONSIBLE PERSON'S DECLARATION STATEMENT

I certify the following under penalty of perjury, under the laws of the State of California:
1. The information provided on this Certificate of Compliance is true and correct.
2. I am eligible under Division 3 of the Business and Professions Code to accept responsibility for the building design or system design identified on this Certificate of Compliance (responsible designer).
3. The energy features and performance specifications, materials, components, and manufactured devices for the building design or system design identified on this Certificate of Compliance conform to the requirements of Title 24, Part 1 and Part 6 of the California Code of Regulations.
4. The building design features or system design features identified on this Certificate of Compliance are consistent with the information provided on other applicable compliance documents, worksheets, calculations, plans and specifications submitted to the enforcement agency for approval with this building permit application.
5. I understand that a registered copy of this Certificate of Compliance shall be made available with the building permit(s) issued for the building, and made available to the enforcement agency for all applicable inspections, and I will take the necessary steps to accomplish this requirement.
6. I understand that a registered copy of this Certificate of Compliance is required to be included with the documentation the builder provides to the building owner at occupancy, and I will take the necessary steps to accomplish these requirements.

Responsible Designer Name: Yates Jangid	Responsible Designer Signature: Yates Jangid
Company : SN Building Design Group.	Date Signed: 2025-06-30
Address: 4101 Dublin Blvd	License:
City/State/Zip: Dublin CA 94568	Phone: 9252377244

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

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DATE

DRAWN BY

CHECK BY

JOB NUMBER

REVISION

PROJECT ADDRESS

ADDITION & INTERIOR REMODEL
4538 GRENDIER PL
CASTRO VALLEY, 94546, CA

SHEET TITLE:

TITLE 24

STAMP:

REGISTERED PROFESSIONAL ENGINEER
YETENDRA K. JANGID
Yetendra Jangid
77767
Exp: 06/30/27
CIVIL
STATE OF CALIFORNIA

SHEET NUMBER

T-1

3. A gas or propane instantaneous water heater with an input of 200,000 Btu per hour or less and no storage tank; or
4. For addition that are 500 square feet or less, an instantaneous electric water heater with point of use distribution as specified in the Reference Appendices, Residential Appendix, RA4.4.5

1. Water Heating System Identification or Name: Name of the Water Heating System or any other identifying name.
2. Water Heating System Type: Domestic Hot Water (DHW), Hydronic, or Combined Hydronic. DHW is for domestic hot water, hydronic is a water heating system used for space heating only; combined hydronic is when the water heater will provide both space conditioning and domestic hot water.
3. System Option (from §150.2(a)1D): Indicate the prescriptive system option: 1, 2, 3, or 4.
4. Water Heater Type: Consumer Instantaneous, Heat pump water heater, or NEEA Tier 3 heat pump water heater
5. Number of Water Heaters/Compressors in System: Enter the total number of water heaters or compressors for each system.
6. Fuel Type: Natural Gas, Propane, Heat Pump, or Electricity.
7. Rated Input: Enter the numeric value of rated input.
8. Tank Location: For heat pump water heaters, indicated whether the storage tank is located in the garage or conditioned space. Otherwise, enter 'n/a'.
9. Distribution Type: If pursuing Option 4, then this will be point of use distribution. Otherwise, enter 'Standard'.

Documentation Declaration Statements

1. The person who prepared the CF1R will sign and complete the fields for their name, company (if applicable), address, phone number, certification information (if applicable), date and signature.
2. The person who is assuming responsibility for the project being built to comply with Title 24, Part 6, will complete the fields for their name, company (if applicable), address, phone number, license number (if applicable), date and signature.

CF1R-ADD-02-E User Instructions

NOTE: If more space is needed, print a duplicate page and fill in.

Minimum requirements for prescriptive addition compliance can be found in Building Energy Efficiency Standards Section 150.2(a), and Table 150.1-A or Table 150.1-B. Completing these forms will require that you have the Reference Appendices for the 2022 Building Energy Efficiency Standards, which contain the Joint Appendices used to determine climate zone and to complete the section for opaque surfaces. When the term CF1R is used it means the CF1R-ADD-02. Worksheets are identified by their entire name and subsequently by only the worksheet number, such as ENV-02.

Instructions for sections with column numbers and row numbers are given separately.

If any part of the addition does not comply, prescriptive compliance fails, in which case the performance (or computer) compliance approach may be used in an attempt to achieve compliance. Only the new construction is required to meet the requirements specified in this documentation. If any alterations to the existing building are occurring, those are documented on one or more of the CF1R-ALT forms.

A. General Information

1. Project Name: Identifying information, such as owner's name.
2. Date Prepared: Date of document preparation.
3. Project Location: Legal street address of property or other applicable identifying information.
4. Building Front Orientation: Building front orientation expressed in degrees, where North = 0, East = 90, South = 180, and West = 270. The Standards (section 100.1) include the following additional details for determining orientation:
   - North is oriented to within 45 degrees of true north, including 45 degrees east of north;
   - East is oriented to within 45 degrees of true east, including 45 degrees south of east;
   - South is oriented to within 45 degrees of true south, including 45 degrees west of south;
   - West is oriented to within 45 degrees of true west, including 45 degrees north of west.
5. CA City: Legal city/town of property.
6. Number of Dwelling Units with Additions: 1 for single-family
7. Zip Code: 5-digit zip code for the project location (used to determine climate zone).
8. Fuel Type: Natural Gas, Liquefied Propane Gas, or Electricity.

   NOTE: Prescriptive compliance only allows electricity if natural gas is not connected to the building.

9. Climate Zone: From Reference Appendices, Joint Appendix, JA2.1.1.
10. Total Conditioned Floor Area: Enter the new conditioned floor area, in square feet (ft^2), as measured from the outside of exterior walls of the addition.
11. Building Type: Single Family (includes duplex)
12. Slab Area: Area of the first floor slab of the addition (if any) in square feet (ft^2).
13. Project Scope: 300 square feet (ft^2) or less, greater than 300 ft^2 up to 400 ft^2, greater than 400 ft^2 up to 700 ft^2, or greater than 700 ft^2 up to 1000 ft^2.
14. Exceptions to Fenestration U-factor and SHGC: Installing less than or equal to 3 square feet (ft^2) glass in door, Installing less than or equal to 3 ft^2 tubular skylight, Installing less than or equal to 16 ft^2 skylight, or NA.

B. Opaque Surface Details - Framed

Walls: Additions of any size must meet the requirements of Table 150.1-A when using prescriptive compliance. However, extensions of existing walls require only R-15 wall insulation in 2x4 constructions, or R-21 wall insulation in 2x6 or larger constructions.

1. Tag/ID: A label (if any) from the plans, such as A1.4 or wall.
2. Assembly Type: Roof, Ceiling, Wall, Floor, Attic.
3. Frame Type: Wood or Metal.
4. Frame Depth: Nominal dimensions (in inches) of framing material such as 2x4, 2x6, 2x8, 2x10.
5. Frame Spacing: 16 or 24 (inches on center).
6. Proposed Cavity R-value: Insulation installed between framing members.
   Proposed Continuous Insulation: R-value of rigid or continuous insulation (not interrupted by framing). See applicable table of the Reference Appendices for construction type.
7. Proposed U-factor: The U-factor for the proposed assembly must be less than or equal to column 10 or have an attached Area Weighted Average Calculation Worksheet (CF1R-ENV-02-E) to show that a weighted U-factor for multiple assemblies will meet the maximum value in column 10.
8. Joint Appendix JA4 Reference Table: Table number used to determine the R-value or U-factor (e.g., an attic assembly is 4.2.1).
9. Joint Appendix JA4 Reference Cell: Cell number used to determine the R-value or U-factor (e.g., an R-38 ceiling with 24-inch on center framing and no continuous insulation is A21).
10. Required U-factor or R-value: From Table 150.1-A or B. Value required based on climate zone and assembly type.
11. Comments: Any notes regarding location, unique conditions, or attachments.

C. Opaque Surface Details – Non-Framed Walls

1. Tag/ID: A label (if any) from the plans, for example, A1.4 or wall.
2. Assembly Type: Roof, Wall.
3. Assembly Materials: SIP OSB, SIP I-Joist, SIP Single 2x, SIP Double 2x, ICF see JA4 for guidance.
4. Thickness: Thickness in inches.
5. Proposed Core Insulation R-value: Insulation installed within the materials or on the inside. See Reference Appendices, Joint Appendix, JA4 for guidance.
6. Proposed Continuous Insulation R-value: Insulation installed on the exterior. See Reference Appendices, Joint Appendix, JA4 for guidance.
7. Proposed U-factor: Proposed U-factor from Reference Appendices, Joint Appendix, JA4 or CF1R-ENV-02-E. Must be less than or equal to column 10.
8. Appendix JA4 Reference Table: Table number used to determine the R-value or U-factor (e.g., a SIP wall is 4.3.2).
9. Appendix JA4 Reference Cell: Cell number used to determine the R-value or U-factor (e.g., a 4.5-inch thick Oriented Strand Board (OSB) wall with R-18 core insulation and no continuous insulation is A5).
10. Required U-factor from Table 150.1-A: Based on assembly type and climate zone.
11. Comments: Any notes regarding location, unique conditions, or attachments.

D. Opaque Surface Details – Mass Walls

1. Tag/ID: A label (if any) from the plans, for example, A1.4 or wall.
2. Above Grade/Below Grade: Indicate whether the mass wall is installed above grade o below grade.
3. Mass Type: Masonry, Clay Brick, Clay Hollow Unit, Concrete Masonry Unit (CMU) Light Weight, CMU Medium Weight, CMU Normal Weight, Concrete. See Reference Appendices, Joint Appendix, JA4 for guidance.
4. Mass Thickness: Thickness (in inches) of mass.
5. Joint Appendix JA4 Reference Table: Table number used to determine the R-value or U-factor (e.g., an Insulation Concrete Form (ICF) wall is 4.3.13).
6. Joint Appendix JA4 Reference Cell: Cell number used to determine the R-value or U-factor (e.g., an 8-inch thick Insulating Concrete Form (ICF) wall with 2 inches of Expanded Polystyrene (EPS) (R-15.4) is C1).
7. Interior Furring Strip Thickness: If furring strips are required to meet the required wall R-value, indicate the thickness of the furring strip (in inches). See Table 4.3.14 of Reference Appendices, Joint Appendix, JA 4.
8. Proposed Interior Insulation R-value : Enter the R-value of proposed insulation on the inside surface of the mass wall. See Reference Appendices, Joint Appendix, JA4 for guidance.
9. Exterior Furring Strip Thickness: If furring strips are required to meet the required wall R-value, indicate the thickness of the furring strip (in inches). See Table 4.3.14 of Reference Appendices, Joint Appendix, JA 4.

10. Proposed Exterior Insulation R-value: Enter the R-value of proposed insulation on the outside surface of the mass wall. See Reference Appendices, Joint Appendix, JA4 for guidance.
11. Joint Appendix JA4 Reference Table: Table number used to determine the R-value or U-factor.
12. Joint Appendix JA4 Reference Cell: Cell number used to determine the R-value or U-factor.
13. Total Assembly U-factor
14. Required Interior Insulation R-value: The required R-value for interior insulation will be completed based on the Table 150.1-A requirements for the wall type.
15. Required Exterior Insulation R-value: The required R-value for exterior insulation will be completed based on the Table 150.1-A requirements for the wall type.
16. Total Assembly U-factor

E. Slab Insulation

Slab edge performance specifications and installation criteria are found in Sections 150.0(l) and 150.1(c)1D (Table 150.1-A or Table 150.1-B). Requirements vary by climate zone and slab conditions.

1. Floor Type: Types include slab-on-grade or raised slab.
   - Unheated slab-on-grade floors require slab edge insulation in climate zone 16 only.
   - Raised slab must be insulated to R-8 in climate zones 1, 2, 11, 13, 14 and 16, R-4 in climate zones 12 and 15, and no insulation is required in climate zones 3-10.
2. Proposed Insulation R-value: When required, insulation can be specified by either R-value or U-factor. When specifying an R-value complete column 2. Use the same descriptor (R-value or U-factor) throughout Table E.
3. Proposed Insulation U-Factor: When required, specify the U-factor of proposed insulation in column 3. Use the same descriptor (R-value or U-factor) throughout Table E.
4. Required Insulation R-value: Specify the value required, which will vary by climate zone and type of slab. Values are from Table 150.1-A.
5. Required Insulation U-factor: Specify the value required, which will vary by climate zone and type of slab. Values are from Table 150.1-A.
6. Comments: Any notes regarding location, unique conditions, or attachments.
   NOTE: There is a mandatory slab edge insulation requirement for heated slab floors. Since mandatory requirements are not listed on the Certificate of Compliance, this is provided for information purposes only. The specific requirements are in Sections 110.8(g) and Table 110.8-A.

F. Radiant Barrier

1. Radiant Barrier installed below the roof deck and on all gable end walls: Yes or No. Radiant barriers are required in climate zones 2-15.
2. Comments: Any notes regarding location, unique conditions, or attachments.
   NOTE: Radiant barrier performance specifications and installation criteria are found in Sections 110.8(j) and 150.1(c)2, and in Reference Appendices, Residential Appendix RA4.2.1.

G. Roofing Products (Cool Roof)

Roofing requirements are found in Section 110.8(i) and 150.1(c)11. Depending on the climate zone and roof slope, a cool roof (defined as a minimum aged solar reflectance and thermal emittance, or a minimum SRI) may be required by Table 150.1-A.

NOTE: Exceptions include (1) additions of 300 square feet (ft^2) or less, (2) low-slope roofs (pitch less than 2:12) in climate zones 1-12, 14 and 16; (3) steep slope roof (pitch greater than or equal to 2:12) in climate zones 1-9 and 16; (4) roof constructions that have thermal mass over the roof membrane with at least 25 pounds per square foot (lb/ft^2); and (5) any roof area covered by building integrated photovoltaic (PV) panels and solar thermal panels (the area of roof not covered by PV panels would still need to meet any applicable cool roof requirements).

1. Exception: User indicates any exceptions. Mass roofs are not required to have a cool roof even if the climate zone specifies minimum performance requirements.
2. Roof Pitch: Expressed as 4:12, for example, which means the roof rises 4 foot within a span of 12 feet. When roofs have multiple pitches the requirements are based on the pitch of 50 percent or more of the roof.
3. Method of Compliance: Indicate if the method of compliance is going to be based on Aged Solar Reflectance and Thermal Emittance or if it is going to be based on the Solar Reflectance Index (SRI).
4. Product Type: See Cool Roof Rating Council's directory. Generally, product types include single-ply roof, wood shingles, asphalt roof, metal roof, tile roof.
5. Cool Roof Rating Council (CRRC) Product ID Number: The CRRC Product ID Number is obtained from the Cool Roof Rating Council's Rated Product Directory. Products are listed by manufacturer, brand, type of installation, roofing material, and color, as well as product performance.
6. Proposed Initial Solar Reflectance: Based on the product chosen from the Cool Roof Rating Council's Rated Product Directory. If using default assumption indicate NA since the Aged solar reflectance is available.
7. Proposed Aged Solar Reflectance: Value is from the Cool Roof Rating Council's Rated Product Directory. If the aged value is not available, calculate the Aged Solar Reflectance using the Solar Reflectance Index (SRI) Calculator located on the California Energy Commission website or the aging equation $\rho_{aged}=[0.2+\beta(\rho_{initial}-0.2)$, where $\rho_{initial}$ = the initial solar reflectance and soiling resistance β is listed by product type below.

VALUES OF SOILING RESISTANCE β BY PRODUCT TYPE

Product Type	CRRC Product Category	β
Field-Applied Coating	Field-Applied Coating	0.65
Other	Not A Field-Applied Coating	0.70

8. Proposed Thermal Emittance: From the product specification default value. If using a calculated SRI, enter the Thermal Emittance used to calculate SRI.
9. Proposed Solar Reflectance Index (SRI): It is optional to meet the SRI but if chosen to do so, use the Solar Reflectance Index (SRI) Calculator found on the California Energy Commission website.
10. Required Aged Solar Reflectance: Based on climate zone and roof slope.
11. Required Thermal Emittance: Based on climate zone and roof slope.
12. Required SRI: Based on climate zone and roof slope.

If the cool roofing requirements will be met by a liquid field applied coating, Section 110.8(i)4 requires the coating be applied across the entire roof surface and meet the dry mil thickness or coverage recommended by the manufacturer.

H. Fenestration/Glazing Allowed Areas and Efficiencies

Fenestration areas are expressed in square feet, not square inches. The climate zone and size of the addition will affect the area of fenestration (also known as glazing) allowed. If limited to 20%, for example, this is calculated as Conditioned Floor Area (CFA) of the addition x 0.20 =total square footage (ft^2) of fenestration allowed.

For additions that are 1000 square feet (ft^2) or less, but greater than 700 ft^2, the limit of total fenestration is the greater of 175 ft^2 or 20 percent of the conditioned floor area (CFA) of the addition.
For additions that are 700 ft^2 or less, but greater than 400 ft^2, the limit of total fenestration is the greater of 120 ft^2 or 25 percent of the CFA of the addition.

For additions that are 400 ft^2 or less, the limit of total fenestration is the greater of 75 ft^2 or 30 percent of the CFA of the addition.
For additions that are 1,000 ft^2 or less, when west-facing fenestration is limited (in climate zones 2, 4, and 6-15), it is limited to either 70 ft^2 or 5 percent of the CFA (for additions greater than 700 ft^2) or 60 ft^2 (for additions that are 700 ft^2 or less).

1. Addition Type ft^2: Based on "Project Scope." The addition's area in square feet: less than or equal to 400 ft^2, greater than400 ft^2 to less than or equal to 700 ft^2, or greater than 700 ft^2 to less than or equal to 1,000 ft^2.

2. - 9. These fields will be completed based on conditioned floor area of the addition and/or climate zone.

Maximum allowed fenestration area for all orientations is the greater of the values in columns 2 or 3:

2. Maximum Calculated based on Allowed %: The addition's conditioned floor area (CFA) multiplied by the allowed percentage. The maximum total fenestration area is 30 percent for additions up to 400 square feet (ft^2), 25 percent for additions greater than 400 ft^2 but no greater than 700 ft^2, and 20 percent for additions greater than 700 ft^2.
3. Maximum Calculated Allowed ft^2: The maximum total fenestration area is 75 square feet (ft^2) for additions up to 400 ft^2, 120 ft^2 for additions greater than 400 ft^2 but no greater than 700 ft^2, and 175 ft^2 for additions greater than 700 ft^2.

Maximum allowed west-facing area is the greater of the values in columns 4 or 5:

4. Maximum Calculated based on Allowed %: The maximum west-facing fenestration area (in climate zones 2, 4, and 6-15) is 5 percent for additions greater than 700 ft^2.
5. Maximum Calculated Allowed ft^2: The maximum west-facing fenestration area (in climate zones 2, 4, and 6-15) is 60 square feet (ft^2) for additions no greater than 700 ft^2, and 70 ft^2 for additions greater than 700 ft^2.

Addition CFA:	≤ 400 ft^2		> 400 ft^2 to ≤ 700 ft^2		> 700 ft^2 to ≤ 1,000 ft^2	
	The Greater Of:		The Greater Of:		The Greater Of:	
Orientation	Percentage	Area (ft^2)	Percentage	Area (ft^2)	Percentage	Area (ft^2)
West-facing (CZs 2, 4, 6-15)	-	60	-	60	5%	70
All Orientations	30%	75	25%	120	20%	175

NOTE: West includes any vertical fenestration oriented to within 45 degrees of true west (in either direction), including 45 degrees north of west, any skylights oriented west, and skylights facing any direction with a pitch of less than 1:12.

6. Maximum Allowed U-factor (Windows): Maximum area-weighted average of 0.30 for all climate zones.
7. Maximum Allowed U-factor (Skylights): Maximum area-weighted average of 0.30 for all climate zones, unless meeting one of the Exceptions to 150.1(c)3A. If meeting one of Exceptions, enter 0.55.
8. Maximum Allowed SHGC (Windows): Maximum area-weighted average of 0.23 for climate zones 2, 4, and 6-15; otherwise N/A.
9. Maximum Allowed SHGC (Skylights): Maximum area-weighted average of 0.23 for all climate zones, unless meeting one of the Exceptions to 150.1(c)3A. If meeting one of the Exceptions, enter 0.30.
10. Comments: Any notes regarding location, unique conditions, or attachments.

I. Fenestration Proposed Areas and Efficiencies

1. Tag/ID: Provide a name or designator for each unique type of fenestration surface. This designator should be used consistently throughout the plan set (elevations, finish schedules, etc.) such as Window-1, Skylight-1, etc. to identify each surface. It should also be consistently used on the other compliance documents.
2. Fenestration Type: Indicate the type of fenestration construction e.g., Fixed Window, Operable Window, Skylight, Tubular Skylight, or Glass in Door.
   NOTE: Doors with glazing are counted in one of two ways. The entire area of a door with 25 percent or more glazing is considered a glazed door and is treated as fenestration. A door with less than 25 percent glazing can be considered an opaque swinging door, or can be calculated as the actual glass area with a 2-inch (0.17 ft) frame all around.
3. Frame Type: Metal, Metal Thermal Break, Nonmetal.
4. Dynamic Glazing: Indicate whether the fenestration has an integrated shading device, chromogenic glazing, or none for no dynamic glazing.
   NOTE: Chromogenic glazing shall be considered separately from other fenestration types.
5. Orientation: Orientation can be North, East, South, West, or degrees. If documentation is for a building that may be built in any direction, in a climate zone that limits west-facing fenestration, complete this section assuming the side of the building with the most fenestration faces west.
   NOTE: West includes any vertical fenestration oriented to within 45 degrees of true west, excluding 45 degrees south of west; any skylights oriented west; and skylights facing any direction with a pitch of less than 1:12.
6. Number of Panes: Indicate the number of panes for each Tag/ID; is it a single, double, or triple pane window? Enter either: 1, 2, or 3 to represent the panes.
7. Proposed Fenestration Area ft^2: The size of any windows, doors with glass, or skylights within the floor area of the addition (combine windows with the same characteristics). Indicate the area in square feet (ft^2) of each exterior fenestration type, including west-facing fenestration.
8. Proposed West Facing Fenestration Area ft^2: In climate zones 2, 4, and 6-15, enter the size of any west-facing windows, doors with glass, or skylights within the floor area of the addition. Indicate the area in square feet (ft^2) of each exterior west-facing fenestration type separately.
9. Proposed U-factor: Enter
   (a) the National Fenestration Rating Council (NFRC) U-factor based on the proposed brand and type of fenestration using NFRC certified values; or
   (b) the default value from Table 110.6-A; or
   (c) the NA6.2 alternate default U-factor (for non-rated site-built fenestration only); or
   (d) the area-weighted average from CF1R-ENV-02-E.

   If any products (other than the exceptions noted below) have a higher U-factor than 0.30, first complete a CF1R-ENV-02-E to calculate the area-weighted average U-factor, which must be 0.30 or less, and attach it to the CF1R-ADD-02-E.

NOTES: (1) An exception allows up to 3 square feet (ft^2) of tubular skylights and up to 3 square feet (ft^2) of glazing in a door without having to meet the maximum U-factor; this field can be N/A. For up to 16 square feet (ft^2) of skylight area this value can be 0.55 or less.
(2)Dynamic glazing is a glazing system that changes its performance U-factor and SHGC based on the physical environment. Dynamic glazing includes chromogenic glazing or integrated shading systems (this does not include internally or externally mounted shading devices). If using dynamic glazing, use the lowest tested U-factor and solar heat gain coefficient (SHGC) in Columns 9 and 10.

10. Proposed U-factor Source: The source of the U-factor data for the fenestration product – indicate whether NFRC, Tables 110.6-A, Equations NA6-1, or Area-weighted Average Worksheet (ENV-02).
11. Proposed SHGC: In climate zones 2, 4, and 6-16, enter
    (a) the National Fenestration Rating Council (NFRC) solar heat gain coefficient (SHGC) based on the proposed brand and type of fenestration using NFRC certified values; or
    (b) the default value from Table 110.6-B; or
    (c) the NA6.3 alternate default SHGC) (for non-rated site-built fenestration only); or
    (d) the area-weighted average from CF1R-ENV-02-E.

    If any products (other than the exceptions noted below) have a higher solar heat gain coefficient (SHGC) than 0.23 in a climate zone with a maximum SHGC value, first complete a CF1R-ENV-02-E to calculate the area-weighted average SHGC, which must be 0.23 or less, and attach it to the CF1R-ADD-02-E.
    NOTES: An exception allows up to 3 square feet (ft^2) of tubular skylights and up to 3 square feet (ft^2) of glazing in a door without having to meet the maximum SHGC; this field can be N/A. For up to 16 square feet (ft^2) of skylight area this value can be 0.30 or less.
12. Source: The source of the U-factor and solar heat gain coefficient (SHGC) data for the fenestration product—indicate whether National Fenestration Rating Council (NFRC), Tables 110.6-B, Equations NA6-2, or the Area-weighted Average Worksheet (CF1R-ENV-02).
13. Exterior Shading Device: If exterior shading devices are used to meet the solar heat gain coefficient (SHGC) requirement, indicate the type of device (from Table S-1 of CF1R-ENV-03-E Solar Heat Gain Coefficient Worksheet) and attach the CF1R-ENV-03-E.
    NOTES: An exterior shading device is not used for products with a National Fenestration Rating Council (NFRC) rated U-factor and solar heat gain coefficient (SHGC); based on a factory integrated shading device.
14. Combined SHGC from CF1R-ENV-03: If exterior shading devices are combined with the solar heat gain coefficient (SHGC) value of the fenestration to meet the prescriptive SHGC requirements (as indicated in column I. 11), indicate the SHGC calculated on form CF1R-ENV-03 and attach the form for each window with an exterior shading device.

To determine compliance with allowable fenestration areas and efficiencies, complete rows 15-32.

15. Total Proposed Fenestration Area: The sum of column I. 07 plus I. 08.
16. Maximum Allowed Fenestration Area: From Section H., report the greater value of column 02 or 03.
17. Compliance Statement: Verify whether I. 15 is less than or equal to I. 16. Indicate Yes or No. If No, the project fails prescriptive compliance—specified fenestration areas must be reduced, or compliance may be attempted using the performance approach.
18. Total Proposed West-Facing Fenestration Area: The sum of column I. 08.
19. Maximum Allowed West-Facing Fenestration Area: From Section H., report the greater value of column 04 or 05.
20. Compliance Statement: Verify whether I. 18 is less than or equal to I. 19. Indicate Yes or No. If No, the project fails prescriptive compliance—specified west-facing fenestration areas must be reduced, or compliance may be attempted using the performance approach.
21. Proposed Fenestration U-factor (Windows): If necessary, report the area-weighted average U-factor from the completed CF1R-ENV-02-E. Otherwise, report the largest value from column I. 09.
22. Required Fenestration U-factor (Windows): From Section H., report the value of column 6.
23. Compliance Statement: Verify whether I. 21 is less than or equal to I. 22. Indicate Yes or No. If No, the project fails prescriptive compliance—specified fenestration U-factors must be reduced, or compliance may be attempted using the performance approach.
24. Proposed Fenestration SHGC (Windows): If necessary, report the area-weighted average SHGC from the completed CF1R-ENV-02-E. Otherwise, report the largest value from column I. 11 or I. 14.
25. Required Fenestration SHGC (Windows): From Section H., report the value of column 08.
26. Compliance Statement: Verify whether I. 24 is less than or equal to I. 25. Indicate Yes or No. If No, the project fails prescriptive compliance—specified fenestration SHGC must be reduced, or compliance may be attempted using the performance approach.
27. Proposed Fenestration U-factor (Skylights): If necessary, report the area-weighted average U-factor from the completed CF1R-ENV-02-E. Otherwise, report the single largest associated value from column I. 09.
28. Required Fenestration U-factor (Skylights): From Section H., report the value of column 07.
29. Compliance Statement: Verify whether I. 27 is less than or equal to I. 28. Indicate Yes or No. If No, the project fails prescriptive compliance – specified fenestration U-factor must be reduced, or compliance may be attempted using the performance approach.
30. Proposed Fenestration SHGC (Skylights): If necessary, report the area-weighted average SHGC from the completed CF1R-ENV-02-E. Otherwise report the single largest associated value from column I. 11 or I. 14.
31. Required Fenestration SHGC (Skylights): From Section H., report the value from column 09.
32. Compliance Statement: Verify whether I. 30 is less than or equal to I. 31. Indicate Yes or No. If No, the project fails prescriptive compliance – specified fenestration SHGC must be reduced, or compliance may be attempted using the performance approach.

J. Opaque Swinging Doors to Exterior

1. Tag/ID: Provide a name or designator for each unique door. This designator should be used consistently throughout the plan set (elevations, door schedules, etc.)
2. Area: Calculated area in square feet (ft^2) for each unique door.

2. Proposed U-factor: Enter the proposed U-factor. If value is greater than 0.20, column 06 will autocomplete as Yes.
3. Source: National Fenestration Rating Council (NFRC) or Reference Appendices, Joint Appendix, Table 4.5.1, 110.6-A and 110.6-B, Equations NA6-1 and NA6-2, or Area-Weighted Average Worksheet (CF1R-ENV-02).
4. Required Maximum U-factor. This field will always be 0.20.
5. Weighted Average: If column 03 is greater than 0.20 U-factor, attach form CF1R-ENV-02-E:
6. Comments: Any notes regarding location, unique conditions, or attachments.

K. Space Conditioning (SC) Systems – Heating/Cooling

If an existing space conditioning system will condition an addition, the prescriptive requirements do not apply to that system (Exception 4 to Section 150.2(a)). The enforcement agencies may require verification that the capacity of the existing heating system is adequate to meet the added load of the additional conditioned floor area. Since there is no health and safety code requirement to provide cooling, the enforcement agency will not ask for verification that the capacity of the existing cooling system is adequate to meet the added load of the additional conditioned floor area.

If a new system is installed complete a Certificate of Compliance for Alterations to Space Conditioning Systems (CF1R-ALT-02).

1. Space Conditioning (SC) System Identification or Name: Name of the Space Condition (SC) System or any other identifying name.
2. Space Conditioning (SC) System Location or Area Served: Zone, or area, served by the Space Conditioning (SC) System.
3. Exemption from HERS Verification: Section 150.2(b)1E
   a. Space Conditioning (SC) System was not altered.
   b. Duct systems with less than 25 linear feet in unconditioned spaces as determined by visual inspection.
   c. Existing duct systems constructed, insulated or sealed with asbestos.
   d. Duct systems that have been documented to have been previously sealed as confirmed through field verification and diagnostic testing in accordance with procedures in the Reference Appendices, Residential Appendix, RA3.1

L. Water Heating Systems

Water heating compliance for an addition is described in Section 150.2(a)1D. When a water heater is added as part of an addition in a single dwelling the Prescriptive Standards allow five options under Section 150.2(a)1D.

1. A single heat pump water heater. The storage tank shall not be located outdoors and shall be placed on an incompressible, rigid insulated surface with a minimum thermal resistance of R-10. The water heater shall be installed with a communication interface that meets either the requirements of Section 110.12(a) or has an ANSI/CTA-2045-B communication port; or
2. A single heat pump water heater that meets the requirements of NEEA Advanced Water Heater Specification Tier 3 or higher; or

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DATE
DRAWN BY
CHECK BY
JOB NUMBER

REVISION

PROJECT ADDRESS

ADDITION & INTERIOR REMODEL
4538 GRENDIER PL
CASTRO VALLEY, 94546, CA

SHEET TITLE:

TITLE 24

STAMP:

REGISTERED PROFESSIONAL ENGINEER
YETENDRA K. JANGID
Yetendra Jangid
77767
Exp: 06/30/27
CIVIL
STATE OF CALIFORNIA

SHEET NUMBER

T-2

2022 CALIFORNIA GREEN BUILDING STANDARDS CODE (RESIDENTIAL MANDATORY MEASURES SHEET-1)

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

Section 301 General:
301.1 Scope. Buildings shall be designed to include the green building measures specified as mandatory in the application checklists contained in this code. Voluntary green building measures are also included in the application checklists and may be included in the design and construction of structures covered by this code, but are not required unless adopted by a city, county, or city and county as specified in Section 101.7.
301.1.1 Additions and alterations
[HCD] The mandatory provisions of Chapter 4 shall be applied to additions or alterations of existing residential buildings where the addition or alteration increases the building's conditioned area, volume, or size. The requirements shall apply only to and/or within the specific area of the addition or alteration.
Note: On and after January 1, 2014, residential buildings undergoing permitted alterations, additions or improvements shall replace noncompliant plumbing fixtures with water-conserving plumbing fixtures. Plumbing fixture replacement is required prior to issu-ance of a certificate of final completion, certificate of occupancy or final permit approval by the local building department. See Civil Code Section 1101.1, et seq., for the definition of a noncompliant plumbing fixture, types of residential buildings affected and other important enactment dates.
301.2 Low-rise and high-rise residential buildings
[HCD] The provisions of individual sections of CALGreen may apply to either low-rise residential buildings, high-rise residential buildings, or both. Individual sections will be designated by banners to indicate where the section applies specifically to low-rise only (LR) or high-rise only (HR). When the section applies to both low-rise and high-rise buildings, no banner will be used.

Section 302 Mixed Occupancy Buildings:
302.1 Mixed occupancy buildings: In mixed occupancy buildings, each portion of a building shall comply with the specific green building measures applicable to each specific occupancy.

Abbreviation Definitions:
HCD Department of Housing and Community Development
BSC California Building Standards Cimmission
DSA-SS Division of the state Architect Structural Safety
OSHPD Office of Statewide Health Planning and Development
LR Low Rise
HR High Rise
AA Addition and Alteration
N New

CHAPTER 4 RESIDENTIAL MANDATORY MEASURES:
Division 4.1 PLANNING AND DESIGN
4.102.1 Definitions
The following terms are defined in (and are included here for reference)
FRENCH DRAIN: A trench, hole or other depressed area loosely filled with rock, gravel, fragments of brick or similar pervious material used to collect or channel drainage or runoff water.
WATTLES: Wattles are used to reduce sediment in runoff. Wattles are often constructed of natural plant materials 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.

Section 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, 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 than one acre of soil and are not part of a larger common plan of development which in total disturbs one acre or more, shall manage storm water drainage during construction. In order to manage storm water drainage during construction, one or more of the following measures shall be implemented to prevent flooding of adjacent property, prevent erosion and retain soil runoff on the site.

1. Retention basins of sufficient size shall be utilized to retain storm water on the site.
2. Where storm water is conveyed to a public drainage system, collection point, gutter or similar disposal method, water shall be filtered by use of a barrier system, wattle or other method approved by the enforcing agency.
3. Compliance with a lawfully enacted storm water management ordinance.

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:
1. Swales
2. Water collection and disposal systems
3. French drains
4. Water retention gardens
5. Other water measures which keep surface water away from buildings and aid in groundwater recharge.
Exception: Additions and alterations not altering the drainage path.
4.106.4 Electric vehicle (EV) charging for new construction: New construction shall comply with Section 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 California Electrical Code, Article 625
Exceptions: On a case-by-case basis, where the local enforcing agency has determined EV charging and infrastructure are not feasible based upon one or more of the following conditions:
1. Where there is no commercial power supply.
2. Where there is evidence substantiating that meeting the requirements will alter the local utility infrastructure design requirements on the utility side of the meter so as to increase the utility side cost to the homeowner or the developer by more than $400.00 per dwelling unit.
4.106.4.1 New one- and two-family dwellings and townhouses with attached private garages: For each dwelling unit, install a listed raceway to accommodate a dedicated 208/240-volt branch circuit. The raceway shall not be less than trade size 1 (nominal 1-inch inside diameter). The raceway shall originate at the main service or subpanel and shall terminate into a listed cabinet, box or other enclosure in close proximity to the proposed location of an EV charger. Raceways are required to be continuous at enclosed, inaccessible or concealed areas and spaces. The service panel and/or subpanel shall provide capacity to install a 40-ampere minimum dedicated branch circuit and space(s) reserved to permit installation of a branch circuit overcurrent protective device.
4.106.4.1.1 Identification: The service panel or subpanel circuit directory shall identify the overcurrent protective device space(s) reserved for future EV charging as "EV CAPABLE". The raceway termination location shall be permanently and visibly marked as "EV CAPABLE".

4.106.4.2 New multifamily dwellings: Where 17 or more multifamily dwelling units are constructed on a building site, 3 percent of the total number of parking spaces provided for all types of parking facilities, but in no case less than one, 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.
Note: Construction documents are intended to demonstrate the project's capability and capacity for facilitating future EV charging. There is no requirement for EV spaces to be constructed or available until EV chargers are installed for use.

4.106.4.2.1 Electric vehicle charging space (EV space) locations:
Construction documents shall indicate the location of proposed EV spaces. At least one EV space shall be located in common use areas and available for use by all residents.

When EV chargers are installed, EV spaces required by Section 4.106.4.2.2, 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 requirements of the California Building Code, 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 California Building Code, Chapter 2, to the building.

4.106.4.2.2 Electric vehicle charging space (EV space) dimensions: The EV spaces shall be designed to comply with the following:
1. The minimum length of each EV space shall be 18 feet (5486 mm).
2. The minimum width of each EV space shall be 9 feet (2743 mm).
3. One in every 25 EV spaces, but not less than one, shall also have an 8-foot (2438 mm) wide minimum aisle. A 5-foot (1524 mm) wide minimum aisle shall be permitted provided the minimum width of the EV space is 12 feet (3658 mm).
a. Surface slope for this EV space and the aisle shall not exceed 1 unit vertical in 48 units horizontal (2.083 percent slope) in any direction.

4.106.4.2.3 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 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 capacity to install a 40-ampere minimum dedicated branch circuit and space(s) reserved to permit installation of a branch circuit overcurrent protective device.

4.106.4.2.4 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 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 40-ampere minimum branch circuit. Required raceways and related components that are planned to be installed underground, enclosed, inaccessible or in concealed areas and spaces shall be installed at the time of original construction.

4.106.4.2.5 Identification: The service panel or subpanel circuit directory shall identify the overcurrent protective device space(s) reserved for future EV charging purposes as "EV CAPABLE" in accordance with the California Electrical Code
Notes:
1. The California Department of Transportation adopts and publishes the "California Manual on Uniform Traffic Control Devices (California MUTCD)" to provide uniform standards and specifications for all official traffic control devices in California. Zero Emission Vehicle Signs and Pavement Markings can be found in the New Policies & Directives Number 13-01. Website: http://www.dot.ca.gov/trafficops/policy/13-01.pdf
2. See Vehicle Code Section 22511 for EV charging space signage in off-street parking facilities and for use of EV charging spaces.
3. The Governor's Office of Planning and Research (OPR) published a "Zero-Emission Vehicle Community Readiness Guidebook" which provides helpful information for local governments, residents and businesses. Website: http://opr.ca.gov/docs/ZEV_Guidebook.pdf.

4.106.4.3 New hotels and motels: All newly constructed hotels and motels shall provide EV spaces capable of supporting future installation of EVSE. The construction documents shall identify the location of the EV spaces.
Notes:
1. Construction documents are intended to demonstrate the project's capability and capacity for facilitating future EV charging.
2. There is no requirement for EV spaces to be constructed or available until EV chargers are installed for use.

4.106.4.3.1 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 nearest whole number.

TABLE 4.106.4.3.1	
TOTAL NUMBER OF PARKING SPACES	NUMBER OF REQUIRED EV SPACES
0-9	0
10-25	1
26-50	2
51-75	4
76-100	5
101-150	7
151-200	10
200 and over	6 percent of total

4.106.4.3.2 Electric vehicle charging space (EV space) dimensions: The EV spaces shall be designed to comply with the following:
1. The minimum length of each EV space shall be 18 feet (5486 mm).
2. The minimum width of each EV space shall be 9 feet (2743 mm).

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.

4.106.4.3.4 Multiple EV spaces required: When multiple EV spaces are required, the EV spaces shall be designed in accordance with Section 4.106.4.2.4.

4.106.4.3.5 Identification: The service panels or subpanels shall be identified in accordance with Section 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 hotels/motels and all EVSE, when installed, shall comply with the accessibility provisions for EV charging stations in the California Building Code, Chapter 11B.

Notes:
1. The California Department of Transportation adopts and publishes the "California Manual on Uniform Traffic Control Devices (California MUTCD)" to provide uniform standards and specifications for all official traffic control devices in California. Zero Emission Vehicle Signs and Pavement Markings can be found in the New Policies & Directives Number 13-01. Website: http://www.dot.ca.gov/ trafficops/policy.html.
2. See Vehicle Code Section 22511 for EV charging space signage in off-street parking facilities and for use of EV charging spaces.
3. The Governor's Office of Planning and Research (OPR) published a "Zero-Emission Vehicle Community Readiness Guidebook" which provides helpful information for local governments, residents and businesses. Website: https://opr.ca.gov/docs/ZEV_Guidebook.pdf.
4. The Governor's Interagency Working Group on Zero-Emission Vehicles, 2016, "2016 ZEV Action Plan, An Updated Roadmap toward 1.5 Million Zero-Emission Vehicles on California Roadways by 2025." https://www.gov.ca.gov/ docs/2016_ZEV_Action_Plan.pdf

Division 4.2 ENERGY EFFICIENCY
Section 4.201 General
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.

Division 4.3 WATER EFFICIENCY AND CONSERVATION
Section 4.303 Indoor Water Use
4.303.1 Water conserving plumbing fixtures and fittings: Plumbing fixtures (water closets and urinals) and fittings (faucets and showerheads) shall comply with the following:

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 Specification for Tank-type Toilets.
Note: The effective flush volume of dual flush toilets is defined as the composite, average flush volume of two reduced flushes and one full flush.
4.303.1.2 Urinals: The effective flush volume of wall-mounted urinals shall not exceed 0.125 gallons per flush. The effective flush volume of all other urinals shall not exceed 0.5 gallons per flush.

4.303.1.3 Showerheads
4.303.1.3.1 Single showerhead: Showerheads shall have a maximum flow rate of not more than 1.8 gallons per minute at 80 psi. Showerheads shall be certified to the performance criteria of the U.S. EPA WaterSense Specification for Showerheads.
4.303.1.3.2 Multiple showerheads serving one shower: When a shower is served by more than one showerhead, the combined flow rate of all showerheads and/or other shower outlets controlled by a single valve shall not exceed 1.8 gallons per minute at 80 psi, or the shower shall be designed to allow only one shower outlet to be in operation at a time.

Note: A hand-held shower shall be considered a showerhead.

4.303.1.4 Faucets:
4.303.1.4.1 Residential lavatory faucets: The maximum flow rate of residential lavatory faucets shall not exceed 1.2 gallons per minute at 60 psi. The minimum flow rate of residential lavatory faucets shall not be less than 0.8 gallons per minute at 20 psi.

4.303.1.4.2 Lavatory faucets in common and public use areas: The maximum flow rate of lavatory faucets installed in common and public use areas (outside of dwellings or sleeping units) in residential buildings shall not exceed 0.5 gallons per minute at 60 psi.

4.303.1.4.3 Metering faucets: Metering faucets when installed in residential buildings shall not deliver more than 0.25 gallons per cycle.

4.303.1.4.4 Kitchen faucets: The maximum flow rate of kitchen faucets shall not exceed 1.8 gallons per minute at 60 psi. Kitchen faucets may temporarily increase the flow above the maximum rate, but not 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.

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

4.303.2 Standards for plumbing fixtures and fittings: Plumbing fixtures and fittings 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.

Note: This table compiles the data in section 4.303.1, and is included as a convenience for the user.

TABLE- MAXIMUM FIXTURE WATER USE	
FIXTURE TYPE	FLOW RATE
Shower Heads (Residential)	1.8 GMP @ 80 PSI
Lavatory Faucet (Residential)	Max. 1.2 GPM @ 60 PSI Min. 0.8 GPM @ 20 PSI
Lavatory Faucet in common & Public use areas.	0.5 GPM @ 60 PSI
Kitchen Faucet	1.8 GPM @ 60 PSI
Metering Faucet	0.25 Gal / Cycle
Water Closet	1.28 Gal / Flush
Urinals	0.125 Gal / Flush

Section 4.304 Outdoor Water Use
4.304.1 Outdoor potable water use in landscape areas: After December 1, 2015, new residential developments with an aggregate landscape area equal to or greater than 500 square feet shall comply with one of the following options:
1. A local water efficient landscape ordinance or the current California Department of Water Resources' Model Water Efficient Landscape Ordinance (MWELO), whichever is more stringent; or
2. Projects with aggregate landscape areas less than 2,500 square feet may comply with the MWELO's Appendix D Prescriptive Compliance Option.
Notes:
1. The Model Water Efficient Landscape Ordinance (MWELO) and supporting documents are available at: http://www.water.ca.gov/wateruseefficiency/landscapeordinance/
2. A water budget calculator is available at: http://www.water.ca.gov/wateruseefficiency/landscapeordinance/

Division 4.4 MATERIAL CONSERVATION AND RESOURCE EFFICIENCY
Section 4.406 Enhanced Durability and Reduced Maintenance:
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 agency.

Section 4.408 Construction Waste Reduction, Disposal and Recycling:
4.408.1 Construction waste management: Recycle and/or salvage for reuse a minimum of 65 percent of the nonhazardous construction and demolition waste in accordance with either Section 4.408.2, 4.408.3 or 4.408.4, or meet a more stringent local construction and demolition waste management ordinance.
Exceptions:
1. Excavated soil and land-clearing debris.
2. Alternate waste reduction methods developed by working with local agencies if diversion or recycle facilities capable of compliance with this item do not exist or are not located reasonably close to the jobsite.
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.
4.408.2 Construction waste management plan: Submit a construction waste management plan in conformance with Items 1 through 5. The construction waste management plan shall be updated as necessary and shall be available during construction for examination by the enforcing agency.
1. Identify the construction and demolition waste materials to be diverted from disposal by recycling, reuse on the project or salvage for future use or sale.
2. Specify if construction and demolition waste materials will be sorted on-site (source-separated) or bulk mixed (single stream).
3. Identify diversion facilities where the construction and demolition waste material will be taken.
4. Identify construction methods employed to reduce the amount of construction and demolition waste generated.
5. Specify that the amount of construction and demolition waste materials diverted shall be calculated by weight or volume, but not by both.
4.408.3 Waste management company: Utilize a waste management company, approved by the enforcing agency, which can provide verifiable documentation that the percentage of construction and demolition waste material diverted from the landfill complies with Section 4.408.1.
Note: The owner or contractor may make the determination if the construction and demolition waste materials will be diverted by a waste management company.
4.408.4 Waste stream reduction alternative [LR]: Projects that generate a total combined weight of construction and demolition waste disposed of in landfills, which do not exceed 3.4 pounds per square foot of the building area shall meet the minimum 65 percent construction waste reduction requirement in Section 4.408.1.
4.408.4.1 Waste stream reduction alternative: Projects that generate a total combined weight of construction and demolition waste disposed of in landfills, which do not exceed 2 pounds per square foot of the building area, shall meet the minimum 65-percent construction waste reduction requirement in Section 4.408.1.

Section 4.410 Building Maintenance and Operation
4.410.1 Operation and maintenance manual: At the time of final inspection, a manual, compact disc, web-based reference or other media acceptable to the enforcing agency which includes all of the following shall be placed in the building:
1. Directions to the owner or occupant that the manual shall remain with the building throughout the life cycle of the structure.
2. Operation and maintenance instructions for the following:
a. Equipment and appliances, including water-saving devices and systems, HVAC systems, photovoltaic
systems, electric vehicle chargers, water-heating systems and other major appliances and equipment.
b. Roof and yard drainage, including gutters and downspouts.
c. Space conditioning systems, including condensers and air filters.
d. Landscape irrigation systems.
e. Water reuse systems.
3. Information from local utility, water and waste recovery providers on methods to further reduce resource consumption, including recycle programs and locations.
4. Public transportation and/or carpool options available in the area.
5. Educational material on the positive impacts of an interior relative humidity between 30–60 percent and what methods an occupant may use to maintain the relative humidity level in that range.
6. Information about water-conserving landscape and irrigation design and controllers which conserve water.
7. Instructions for maintaining gutters and downspouts and the importance of diverting water at least 5 feet away from the foundation.
8. Information on required routine maintenance measures, including, but not limited to, caulking, painting, grading around the building, etc.
9. Information about state solar energy and incentive programs available.
10. A copy of all special inspection verifications required by the enforcing agency or this (California Green Building Standards) code.
4.410.2 Recycling by occupants: Where 5 or more multifamily dwelling units are constructed on a building site, provide readily accessible area(s) that serves all buildings on the site and is identified for the depositing, storage and collection of non-hazardous materials for recycling, including (at a minimum) paper, corrugated cardboard, glass, plastics, organic waste, and metals, or meet a lawfully enacted local recycling ordinance, if more restrictive.
Exception: Rural jurisdictions that meet and apply for the exemption in Public Resources Code Section 42649.82 (a)(2)(A) et seq. are not required to comply with the organic waste portion of this section.

Division 4.5 ENVIRONMENTAL QUALITY
Section 4.501 General
4.501.1 Scope: The provisions of this chapter shall outline means of reducing the quantity of air contaminants that are odorous, irritating and/or harmful to the comfort and well-being of a building's installers, occupants and neighbors.

Section 4.502 Definitions
4.502.1 Definitions:
The following terms are defined in Chapter 2. (and are included here for reference)

AGRIFIBER PRODUCTS.: Agrifiber products include wheatboard, strawboard, panel substrates and door cores, not including furniture, fixtures and equipment (FF&E) not considered base building elements.
COMPOSITE WOOD PRODUCTS: Composite wood products include hardwood plywood, particleboard and medium density fiberboard. "Composite wood products" does not include hardboard, structural plywood, structural panels, structural composite lumber, oriented strand board, glued laminated timber, prefabricated wood I-joists or finger-jointed lumber, all as specified in California Code of Regulations (CCR), Title 17, Section 93120.1(a).

Note: See CCR, Title 17, Section 93120.1.

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CIVIL
STATE OF CALIFORNIA

SHEET NUMBER

G-1

2022 CALIFORNIA GREEN BUILDING STANDARDS CODE (RESIDENTIAL MANDATORY MEASURES SHEET-2)

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

DIRECT-VENT APPLIANCE: A fuel-burning appliance with a sealed combustion system that draws all air for combustion from the outside atmosphere and discharges all flue gases to the outside atmosphere.

MAXIMUM INCREMENTAL REACTIVITY (MIR): The maximum change in weight of ozone formed by adding a compound to the "Base Reactive Organic Gas (ROG) Mixture" per weight of compound added, expressed to hundredths of a gram (g O3/g ROC).

Note: MIR values for individual compounds and hydro-carbon solvents are specified in CCR, Title 17, Sections 94700 and 94701.

MOISTURE CONTENT: The weight of the water in wood expressed in percentage of the weight of the oven-dry wood.

PRODUCT-WEIGHTED MIR (PWMIR): The sum of all weighted-MIR for all ingredients in a product subject to this article. The PWMIR is the total product reactivity expressed to hundredths of a gram of ozone formed per gram of product (excluding container and packaging).

Note: PWMIR is calculated according to equations found in CCR, Title 17, Section 94521(a).
REACTIVE ORGANIC COMPOUND (ROC): Any compound that has the potential, once emitted, to contribute to ozone formation in the troposphere.

VOC: A volatile organic compound (VOC) broadly defined as a chemical compound based on carbon chains or rings with vapor pressures greater than 0.1 millimeters of mercury at room temperature. These compounds typically contain hydrogen and may contain oxygen, nitrogen and other elements. See CCR Title 17, Section 94508(a).

Section 4.503 Fireplaces

4.503.1 General: Any installed gas fireplace shall be a direct-vent sealed-combustion type. Any installed woodstove or pellet stove shall comply with U.S. EPA New Source Performance Standards (NSPS) emission limits as applicable, and shall have a permanent label indicating they are certified to meet the emission limits. Woodstoves, pellet stoves and fireplaces shall also comply with applicable local ordinances.

Section 4.504 Pollutant Control

4.504.1 Covering of duct openings and protection of mechanical equipment during construction: At the time of rough installation, during storage on the construction site and until final startup of the heating, cooling and ventilating equipment, all duct and other related air distribution component openings shall be covered with tape, plastic, sheet metal or other methods acceptable to the enforcing agency to reduce the amount of water, dust and debris, which may enter the system.

4.504.2 Finish material pollutant control: Finish materials shall comply with this section.

4.504.2.1 Adhesives, sealants and caulks: Adhesives, sealants and caulks used on the project shall meet the requirements of the following standards unless more stringent local or regional air pollution or air quality management district rules apply:
1. Adhesives, adhesive bonding primers, adhesive primers, sealants, sealant primers, and caulks shall comply with local or regional air pollution control or air quality management district rules where applicable or SCAQMD Rule 1168 VOC limits, as shown in Table 4.504.1 or 4.504.2, as applicable. Such products also shall comply with the Rule 1168 prohibition on the use of certain toxic compounds (chloroform, ethylene dichloride, methylene chloride, perchloroethylene and trichloroethylene), except for aerosol products, as specified in Subsection 2 below.
2. Aerosol adhesives, and smaller unit sizes of adhesives, and sealant or caulking compounds (in units of product, less packaging, which do not weigh more than 1 pound and do not consist of more than 16 fluid ounces) shall comply with statewide VOC standards and other requirements, including prohibitions on use of certain toxic compounds, of California Code of Regulations, Title 17, commencing with Section 94507.

4.504.2.2 Paints and coatings: Architectural paints and coatings shall comply with VOC limits in Table 1 of the ARB Architectural Suggested Control Measure, as shown in Table 4.504.3, unless more stringent local limits apply. The VOC content limit for coatings that do not meet the definitions for the specialty coatings categories listed in Table 4.504.3 shall be determined by classifying the coating as a Flat, Nonflat or Nonflat-high Gloss coating, based on its gloss, as defined in subsections 4.21, 4.36, and 4.37 of the 2007 California Air Resources Board, Suggested Control Measure, and the corresponding Flat, Nonflat or Nonflat-high Gloss VOC limit in Table 4.504.3 shall apply.

4.504.2.3 Aerosol paints and coatings: Aerosol paints and coatings shall meet the Product-weighted MIR Limits for ROC in Section 94522(a)(2) and other requirements, including prohibitions on use of certain toxic compounds and ozone depleting substances, in Sections 94522(e)(1) and (f)(1) of California Code of Regulations, Title 17, commencing with Section 94520; and in areas under the jurisdiction of the Bay Area Air Quality Management District additionally comply with the percent VOC by weight of product limits of Regulation 8, Rule 49.

4.504.2.4 Verification: Verification of compliance with this section shall be provided at the request of the enforcing agency. Documentation may include, but is not limited to, the following:
1. Manufacturer's product specification.
2. Field verification of on-site product containers.

TABLE 4.504.1 - ADHESIVE VOC LIMIT [1, 2]

ADHESIVE VOC LIMIT1, 2 Less Water and Less Exempt Compounds in Grams per Liter

ARCHITECTURAL APPLICATIONS	VOC LIMIT
Indoor carpet adhesives	50
Carpet pad adhesives	50
Outdoor carpet adhesives	150
Wood flooring adhesive	100
Rubber floor adhesives	60
Subfloor adhesives	50
Ceramic tile adhesives	65
VCT and asphalt tile adhesives	50
Drywall and panel adhesives	50
Cove base adhesives	50
Multipurpose construction adhesives	70
Structural glazing adhesives	100
Single-ply roof membrane adhesives	250
Other adhesives not specifically listed	50
SPECIALTY APPLICATIONS	
PVC welding	510
CPVC welding	490
ABS welding	325
Plastic cement welding	250
Adhesive primer for plastic	550
Contact adhesive	80
Special purpose contact adhesive	250
Structural wood member adhesive	140
Top and trim adhesive	250
SUBSTRATE SPECIFIC APPLICATIONS	
Metal to metal	30
Plastic foams	50
Porous material (except wood)	50
Wood	30
Fiberglass	80

1. If an adhesive is used to bond dissimilar substrates together, the adhesive with the highest VOC content shall be allowed.
2. For additional information regarding methods to measure the VOC content specified in this table, see South Coast Air Quality Management District Rule 1168.

TABLE 4.504.2: SEALANT VOC LIMIT:

Less Water and Less Exempt Compounds in Grams per Liter

SEALANTS	VOC LIMIT
Architectural	250
Marine deck	760
Nonmembrane roof	300
Roadway	250
Single-ply roof membrane	450
Other	420
SEALANT PRIMERS	
Architectural	
Nonporous	250
Porous	250
Modified bituminous	500
Marine deck	760
Other	750

TABLE 4.504.3: VOC CONTENT LIMITS FOR ARCHITECTURAL COATINGS[2, 3]

Grams of VOC per Liter of Coating, Less Water and Less Exempt Compounds

COATING CATEGORY	VOC LIMIT
Flat coatings	50
Nonflat coatings	100
Nonflat-high gloss coatings	150
SPECIALTY COATINGS	
Aluminum roof coatings	400
Basement specialty coatings	400
Bituminous roof coatings	50
Bituminous roof primers	350
Bond breakers	350
Concrete curing compounds	350
Concrete/masonry sealers	100
Driveway sealers	50
Dry fog coatings	150
Faux finishing coatings	350
Fire resistive coatings	350
Floor coatings	100
Form-release compounds	250
Graphic arts coatings (sign paints)	500
High temperature coatings	420
Industrial maintenance coatings	250
Low solids coatings[1]	120
Magnesite cement coatings	450
Mastic texture coatings	100
Metallic pigmented coatings	500
Multicolor coatings	250
Pretreatment wash primers	420
Primers, sealers, and undercoaters	100
Reactive penetrating sealers	350
Recycled coatings	250
Roof coatings	50
Rust preventative coatings	250
Shellacs	
Clear	730
Opaque	550
Specialty primers, sealers and undercoaters	100
Stains	250
Stone consolidants	450
Swimming pool coatings	340
Traffic marking coatings	100
Tub and tile refinish coatings	420
Waterproofing membranes	250
Wood coatings	275
Wood preservatives	350
Zinc-rich primers	340

1. Grams of VOC per liter of coating, including water and including exempt compounds.
2. The specified limits remain in effect unless revised limits are listed in subsequent columns in the table.
3. Values in this table are derived from those specified by the California Air Resources Board, Architectural Coatings Suggested Control Measure, February 1, 2008. More information is available from the Air Resources Board.

TABLE 4.504.5: FORMALDEHYDE LIMITS [1]

FORMALDEHYDE LIMITS[1] Maximum Formaldehyde Emissions in Parts per Million

PRODUCT	CURRENT LIMIT
Hardwood plywood veneer core	0.05
Hardwood plywood composite core	0.05
Particleboard	0.09
Medium density fiberboard	0.11
Thin medium density fiberboard[2]	0.13

1. Values in this table are derived from those specified by the California Air Resources Board, Air Toxics Control Measure for Composite Wood as tested in accordance with ASTM E1333. For additional information, see California Code of Regulations, Title 17, Sections 93120 through 93120.12.
2. Thin medium density fiberboard has a maximum thickness of 5/16 inch (8 mm).

Division 4.5 ENVIRONMENTAL QUALITY (continued)

4.504.3 Carpet systems: All carpet installed in the building interior shall meet the testing and product requirements of one of the following:
1. Carpet and Rug Institute's Green Label Plus Program.
2. California Department of Public Health, "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers," Version 1.1, February 2010 (also known as Specification 01350.)
3. NSF/ANSI 140 at the Gold level.
4. Scientific Certifications Systems Indoor Advantage™ Gold.

4.504.3.1 Carpet cushion: All carpet cushion installed in the building interior shall meet the requirements of the Carpet and Rug Institute's Green Label program.

4.504.3.2 Carpet adhesive: All carpet adhesive shall meet the requirements of Table 4.504.1.

4.504.4 Resilient flooring systems: Where resilient flooring is installed, at least 80 percent of floor area receiving resilient flooring shall comply with one or more of the following:
1. Products compliant with the California Department of Public Health, "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers," Version 1.1, February 2010 (also known as Specification 01350), certified as a CHPS Low-Emitting Material in the Collaborative for High Performance Schools (CHPS) High Performance Products Database.
2. Products certified under UL GREENGUARD Gold (formerly the Greenguard Children & Schools program).
3. Certification under the Resilient Floor Covering Institute (RFCI) FloorScore program.
4. Meet the California Department of Public Health, "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers," Version 1.1, February 2010 (also known as Specification 01350).

Section 4.505 Interior Moisture Control
4.505.1 General: Buildings shall meet or exceed the provisions of the California Building Standards Code.

4.505.2 Concrete slab foundations: Concrete slab foundations required to have a vapor retarder by the California Building Code Chapter 19 or concrete slab-on-ground floors required to have a vapor retarder by the California Residential Code, Chapter 5, shall also comply with this section.

4.505.2.1 Capillary break: A capillary break shall be installed in compliance with at least one of the following:
1. A 4-inch-thick (101.6 mm) base of 1/2 inch (12.7 mm) or larger clean aggregate shall be provided with a vapor retarder in direct contact with concrete and a concrete mix design, which will address bleeding, shrinkage, and curling, shall be used. For additional information, see American Concrete Institute, ACI 302.2R-06.
2. Other equivalent methods approved by the enforcing agency.
3. A slab design specified by a licensed design professional.

4.505.3 Moisture content of building materials: Building materials with visible signs of water damage shall not be installed. Wall and floor framing shall not be enclosed when the framing members exceed 19-percent moisture content. Moisture content shall be verified in compliance with the following:
1. Moisture content shall be determined with either a probe-type or contact-type moisture meter. Equivalent moisture verification methods may be approved by the enforcing agency and shall satisfy requirements found in Section 101.8 of this code.
2. Moisture readings shall be taken at a point 2 feet (610 mm) to 4 feet (1219 mm) from the grade stamped end of each piece to be verified.
3. At least three random moisture readings shall be performed on wall and floor framing with documentation acceptable to the enforcing agency provided at the time of approval to enclose the wall and floor framing.

Insulation products which are visibly wet or have a high moisture content shall be replaced or allowed to dry prior to enclosure in wall or floor cavities. Wet-applied insulation products shall follow the manufacturers' drying recommendations prior to enclosure.

Section 4.506 Indoor Air Quality and Exhaust
4.506.1 Bathroom exhaust fans: Each bathroom shall be mechanically ventilated and shall comply with the following:
1. Fans shall be ENERGY STAR compliant and be ducted to terminate outside the building.
2. Unless functioning as a component of a whole house ventilation system, fans must be controlled by a humidity control.
a) Humidity controls shall be capable of adjustment between a relative humidity range of ≤ 50 percent to a maximum of 80 percent. A humidity control may utilize manual or automatic means of adjustment.
b) A humidity control may be a separate component to the exhaust fan and is not required to be integral (i.e., built-in).

Notes:
1. For the purposes of this section, a bathroom is a room which contains a bathtub, shower, or tub/ shower combination.
2. Lighting integral to bathroom exhaust fans shall comply with the California Energy Code.

Section 4.507 Environmental Comfort
4.507.2 Heating and air-conditioning system design: Heating and air-conditioning systems shall be sized, designed and have their equipment selected using the following methods:
1. The heat loss and heat gain is established according to ANSI/ACCA 2 Manual J—2011 (Residential Load Calculation), ASHRAE handbooks or other equivalent design software or methods.
2. Duct systems are sized according to ANSI/ACCA 1 Manual D—2014 (Residential Duct Systems), ASHRAE handbooks or other equivalent design software or methods.
3. Select heating and cooling equipment according to ANSI/ACCA 3 Manual S—2014 (Residential Equipment Selection) or other equivalent design software or methods.

Exception: Use of alternate design temperatures necessary to ensure the systems function are acceptable.

CHAPTER 7 INSTALLER AND SPECIAL INSPECTOR QUALIFICATIONS

Section 702 Qualifications
702.1 Installer training: HVAC system installers shall be trained and certified in the proper installation of HVAC systems including ducts and equipment by a nationally or regionally recognized training or certification program. Uncertified persons may perform HVAC installations when under the direct supervision and responsibility of a person trained and certified to install HVAC systems or contractor licensed to install HVAC systems. Examples of acceptable HVAC training and certification programs include but are not limited to the following:
1. State certified apprenticeship programs.
2. Public utility training programs.
3. Training programs sponsored by trade, labor or statewide energy consulting or verification organizations.
4. Programs sponsored by manufacturing organizations.
5. Other programs acceptable to the enforcing agency.

702.2 Special inspection [HCD]: When required by the enforcing agency, the owner or the responsible entity acting as the owner's agent shall employ one or more special inspectors to provide inspection or other duties necessary to substantiate compliance with this code. Special inspectors shall demonstrate competence to the satisfaction of the enforcing agency for the particular type of inspection or task to be performed. In addition to other certifications or qualifications acceptable to the enforcing agency, the following certifications or education may be considered by the enforcing agency when evaluating the qualifications of a special inspector:
1. Certification by a national or regional green building program or standard publisher.
2. Certification by a statewide energy consulting or verification organization, such as HERS raters, building performance contractors, and home energy auditors.
3. Successful completion of a third party apprentice training program in the appropriate trade.
4. Other programs acceptable to the enforcing agency.

Notes:
1. Special inspectors shall be independent entities with no financial interest in the materials or the project they are inspecting for compliance with this code.
2. HERS raters are special inspectors certified by the California Energy Commission (CEC) to rate homes in California according to the Home Energy Rating System (HERS).

[BSC-CG] When required by the enforcing agency, the owner or the responsible entity acting as the owner's agent shall employ one or more special inspectors to provide inspection or other duties necessary to substantiate compliance with this code. Special inspectors shall demonstrate competence to the satisfaction of the enforcing agency for the particular type of inspection or task to be performed. In addition, the special inspector shall have a certification from a recognized state, national or international association, as determined by the local agency. The area of certification shall be closely related to the primary job function, as determined by the local agency.

Note: Special inspectors shall be independent entities with no financial interest in the materials or the project they are inspecting for compliance with this code.

Section 703 Verifications

703.1 Documentation: Documentation used to show compliance with this code shall include but is not limited to, construction documents, plans, specifications, builder or installer certification, inspection reports, or other methods acceptable to the enforcing agency which demonstrate substantial conformance. When specific documentation or special inspection is necessary to verify compliance, that method of compliance will be specified in the appropriate section or identified in the application checklist.

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