Planning Commission

AGENDA
November 10, 2026
6:30 PM

City Council Chambers
401 E Chapman Ave, Placentia, CA 92870

Planning Division | (714) 993-8124
www.placentia.org

Agenda Materials

Copies of all agenda materials are available online at www.placentia.org and at the City Clerk's Office. For questions regarding any agenda item, please contact the Planning Division at (714) 993-8124. In compliance with California Government Code § 54957.5, any materials submitted to the majority of the Commission Members after distribution of this agenda that are non-exempt public records will be made available for public inspection at the City Clerk's Office during normal business hours.

How to View the Meeting

The public can observe the meeting via livestream on the City's website atwww.placentia.org/pctv, live on cable television on AT&T Universe (Channel 99), Spectrum (Channel 3), or in person in the Council Chamber.

Procedures for Addressing the Commission Members

Public comments are received during the Oral Communications section of the agenda. Members of the public may address the Commission on any agenda item by completing a "Speaker Request Form" indicating the agenda item or subject matter you wish to address and submit it to the recording Secretary before the item is called. All speakers shall observe civility, decorum, and good behavior.

PLEASE SILENCE ALL ELECTRONIC DEVICES WHILE THE MEETING IS IN SESSION.

Special Accommodations

In compliance with the Americans with Disabilities Act, if you need accommodations contact the City Clerk's Office at (714) 993-8231. Notification at least 48 hours in advance of the meeting will enable the City to make arrangements to assure accessibility. (28 CFR 35.102.35.104 ADA Title II)

PLACENTIA PLANNING COMMISSION
REGULAR MEETING
November 10, 2026
6:30 p.m. - City Council Chambers
401 E. Chapman Avenue, Placentia, CA

CALL TO ORDER

ROLL CALL
Commissioner Davis
Commissioner Rocke
Commissioner Guerrero
Commissioner Navarro
Commissioner Evans
Vice Chair Perez
Chair Smith

PLEDGE OF ALLEGIANCE

ORAL COMMUNICATIONS
At this time the public may address the Planning Commission concerning any agenda item, which is not a public hearing item, or on matters within the jurisdiction of the Planning Commission. There is a five (5) minute time limit for each individual addressing the Planning Commission.

1. CONSENT CALENDAR

1.a APPROVAL OF MINUTES - JULY 14, 2026

2. PUBLIC HEARINGS

3. REGULAR AGENDA

3.a SITE PLAN REVIEW NO. SPR 2026-05; 1649 OAK STREET

Recommended Action: It is recommended that the Planning Commission take the following actions:

1. Receive the staff report and ask any questions of staff; and,

2. Adopt Resolution PC-2026-12, a Resolution of the Planning Commission of the City of Placentia finding the project categorically exempt pursuant to the California Environmental Quality Act (CEQA), as set forth in Title 14, CCR, Section 15332 (Class 32 - In-Fill Development Projects), and the City of Placentia Environmental Guidelines, and making findings approving Site Plan Review No. SPR 2026-05 for the development of a two-story, single-family residence using modified development standards pursuant to PMC Section 23.12.090, at 1649 Oak Street, within the Single-Family Residential (R-1) Zoning District.

OLD BUSINESS

NEW BUSINESS

DEVELOPMENT REPORT

DIRECTOR'S REPORT

PLANNING COMMISSIONER REQUESTS
Commission members may make requests or ask questions of Staff. If a Commission member would like to have formal action taken on a requested matter, it will be placed on a future Commission Agenda.

ADJOURNMENT
The Planning Commissioners ADJOURN to the next regular meeting on December 8, 2026, at 6:30 p.m. in the Placentia City Hall City Council Chambers located at 401 East Chapman Avenue, Placentia CA 92870.

CERTIFICATION OF POSTING
I, Joseph M. Lambert, Secretary to the Planning Commission of the City of Placentia, hereby certify that the Agenda for November 10, 2026, Regular Meeting of the Planning Commission of the City of Placentia was posted on November 5, 2026.

/s/ Joseph M. Lambert
Planning Commission Secretary

PLACENTIA PLANNING COMMISSION
MINUTES
REGULAR MEETING
July 14, 2026
6:30 p.m. – City Council Chambers
401 E. Chapman Avenue, Placentia, CA

CALL TO ORDER: Chair Perez called the meeting to order at 6:38 p.m.

ROLL CALL:
PRESENT: Davis, Smith, Guerrero, Navarro, Evans, Perez
ABSENT: Rocke

STAFF PRESENT:
Assistant City Attorney Kristi J. Smith, Director of Development Services Joseph Lambert, Planning Manager Andrew Gonzales, Associate Planner Lesley Whitaker, Administrative Assistant Margie McCoy.

PLEDGE OF ALLEGIANCE: Commissioner Guerrero

ORAL COMMUNICATIONS: None

CONSENT CALENDAR:

1.a APPROVAL OF MINUTES
Placentia Planning Commission Meeting of June 9, 2026
Recommended Action: Approve
(Approved 4-0-2-1 as recommended)

Motion by Davis second by Evans and carried on a (4-0-2-1) vote to approve the Consent Calendar.

Ayes: Davis, Guerrero, Evans, Perez
Noes: None
Abstain: Smith, Navarro
Absent: Rocke

PUBLIC HEARING:

2.a Applicant: Duyum Dulom, representing OC Pickleball, LLC

Project Location: 1240 E. Yorba Linda Boulevard

USE PERMIT NO. UP 2026-04 TO ESTABLISH AND OPERATE AN INDOOR PICKLEBALL FACILITY WITH ACCESSORY RETAIL SALES AND RELATED RECREATIONAL ACTIVITIES WITHIN AN EXISTING APPROXIMATELY 22,410-SQUARE-FOOT TENANT SPACE LOCATED AT 1240 E. YORBA LINDA BOULEVARD.
Recommended Action: Approve
(Approved 6-0-0-1 as recommended)

Chair Perez opened the Public Hearing at 6:45 p.m.

Director of Development Services Joseph Lambert introduced Planning Manager Andrew Gonzales to present the Staff Report. The proposal is to establish an indoor pickleball facility at 1240 East Yorba Linda Boulevard. The facility will include seven courts, a pro shop, and various community programs. Planning Manager Gonzales detailed the land uses, and adaptive use of the space. The facility will have sound attenuation panels and a reception lounge. Hours of operation will be from 6:00 a.m. to 10:00 p.m., Monday through Sunday, with a six-month review to consider extending the hours to midnight.

Questions from Commissioners included whether there were any inquiries from adjacent property owners, if there were site visits to similar facilities, ADA compliance, parking requirements and trip generation memos.

Guy Castillo, representing Pro Con Development, confirmed compliance with all conditions of approval.

Michael Lim, co-owner was also present to answer questions pertaining to the hours of operation as well as confirmation of compliance with all conditions of approval.

Chair Perez closed the Public Hearing at 7:05 p.m.

Motion by Navarro second by Guerrero and carried on a (6-0-0-1) vote to approve Staff recommendation.

Ayes:	Davis, Smith, Guerrero, Navarro, Evans, Perez
Noes:	None
Abstain:	None
Absent:	Rocke

REGULAR AGENDA: None

OLD BUSINESS: None

NEW BUSINESS:

SELECTION OF COMMISSION CHAIR AND VICE CHAIR

Motion by Navarro second by Davis to nominate Commissioner David Smith to the position of Chair of the Planning Commission and Commissioner Frank Perez to the position of Vice Chair of the Planning Commission. Motion carried on a (6-0-0-1) vote to approve.

Ayes:	Davis, Smith, Guerrero, Navarro, Evans, Perez
Noes:	None
Abstain:	None
Absent:	Rocke

DEVELOPMENT REPORT:
Director Lambert provided updates on Sumner Village and Toll Bros. Developments, the latter of which is finishing the final phases of construction.

DIRECTOR'S REPORT:
Director Lambert mentioned the importance of Commissioners' roles and thanked them for their service to the community.

PLANNING COMMISSION REQUESTS: None

ADJOURNMENT:
Vice Chair Perez adjourned the Regular Meeting of the Planning Commission at 7:15 p.m. to the regular meeting of Tuesday, August 11, 2026, at 6:30 p.m. in the City Council Chambers at 401 East Chapman Avenue, Placentia, CA.

Submitted by,

_____
Joseph M. Lambert,
Secretary to the Planning Commission

Agenda Item No: 3.a

PLACENTIA PLANNING COMMISSION AGENDA REPORT

Meeting Date: November 10, 2026

Submitted by: Lesley Whittaker

From: Development Services

Subject:
SITE PLAN REVIEW NO. SPR 2026-05; 1649 OAK STREET

Summary:
The applicant, Nick Rocco, is requesting approval of a Site Plan Review (SPR) to construct a 1,374-square-foot, two-story, single-family residence with an attached 468-square-foot, two-car garage and a 492-square-foot attached Accessory Dwelling Unit (ADU). The applicant proposes the use of modified development standards for the single-family residence. The subject site is a vacant lot within the R-1 (Single-Family Residential) Zoning District at 1649 Oak Street.

Recommended Action:
It is recommended that the Planning Commission take the following actions:

1. Receive the staff report and ask any questions of staff; and,

2. Adopt Resolution PC-2026-12, a Resolution of the Planning Commission of the City of Placentia finding the project categorically exempt pursuant to the California Environmental Quality Act (CEQA), as set forth in Title 14, CCR, Section 15332 (Class 32 - In-Fill Development Projects), and the City of Placentia Environmental Guidelines, and making findings approving Site Plan Review No. SPR 2026-05 for the development of a two-story, single-family residence using modified development standards pursuant to PMC Section 23.12.090, at 1649 Oak Street, within the Single-Family Residential (R-1) Zoning District.

Strategic Plan Statement:
This item is consistent with the City Council's adopted Strategic Goal No. 3 (Infrastructure, Facilities & Public Spaces), and Goal No. 4 (Economic Development). The proposed development of a vacant property with new housing units represents investment in the neighborhood and within the city. The project introduces new housing opportunities, private capital improvements, and long-term property value stabilization in the Atwood neighborhood. Development of the site will generate ongoing property tax revenue, increase assessed valuation and contribute to the City's overall fiscal stability. Additionally, the project replaces a vacant lot with a new residential building, landscaped open space and site improvements.

Discussion:
Background

The subject property is an unimproved 4,500-square-foot vacant parcel located at 1649 Oak Street (APN: 346-181-23) within the Single-Family Residential (R-1) Zoning District. The project site is situated within the Atwood neighborhood, an established residential area characterized primarily by single-family detached dwellings on non-conforming lots, many of which were subdivided prior to the City establishing current lot standards and development requirements. Many of the lots in the neighborhood are legal non-conforming in that they do not meet today's minimum lot size or minimum lot dimensions.

The Atwood community was historically an unincorporated town within Orange County and was annexed by the City of Placentia in 1970. The annexation was motivated, in part, by the City's desire to preserve the predominantly residential character of the neighborhood while providing municipal services and consistent land use regulation. As a result, the Atwood area contains a mix of older parcels that do not always conform to current lot size and width requirements, which has led to the application of modified standards for certain infill residential projects over time. The R-1 Zoning District regulations include provisions that allow staff and/or the Planning Commission to consider modified development standards for these legal non-conforming lots where strict application of standard requirements would preclude development.

Description

The applicant, Nick Rocco, has constructed and sold three single-family homes in the Atwood neighborhood. He is requesting approval of an SPR to permit the development of a new 1,374-square-foot, two-story, single-family residence with a 468-square-foot attached two-car garage, and an attached 492-square-foot accessory dwelling unit. The proposed primary residence would include three bedrooms and two bathrooms, and would be two stories, with 574 square feet on the second story, along the front portion of the house, and the first floor containing 800-square feet of living space and an attached 468-square-foot two-car garage. The 492-square-foot attached ADU would be located in the rear easterly portion of the house.

Pursuant to PMC Section 23.12.090, the applicant is requesting approval to utilize modified development standards to accommodate construction of the proposed single-family residence on the existing substandard lot. Specifically, the applicant proposes a 10-foot rear yard setback, a 6-foot side yard setback along the westerly property line, and a 5-foot side yard setback along the easterly property line. These reduced setbacks are requested pursuant to the modified development standards permitted under this section. The associated 492-square-foot attached ADU will maintain minimum 4-foot side and rear yard setbacks, consistent with applicable State ADU law, and will be processed ministerially.

Applicable Code Section: Placentia Municipal Code Chapter 23.12

The subject property is within the R-1 Zoning District and is required to comply with the development standards and use requirements set forth in the Placentia Municipal Code (PMC Chapter 23.12, "R-1" – Single-Family Residential District).

The subject parcel is an existing, legally established lot that does not meet the current minimum lot area and width requirements for interior lots within the R-1 Zoning District as set forth in PMC Chapter 22.16 (Lots). Due to the lot's size and configuration, the project proposes the use of modified development standards pursuant to PMC Section 23.12.090, which allows reduced setbacks and alternative standards for initial construction on substandard lots.

While construction of a single-family residence that complies with all standard development requirements may be reviewed and approved administratively by staff, PMC Section 23.12.090 requires Planning Commission review and approval when modified development standards are requested. As the proposed project relies on modified setbacks and alternative standards to facilitate development of the substandard lot, the request is subject to discretionary review by the Planning Commission rather than administrative staff review.

The project will remain subject to other applicable provisions of the PMC and development standards including but not limited to building height, lot coverage, and off-street parking.

General Plan Consistency

The General Plan features policies that promote the reinvestment of underutilized properties while being sensitive to the suburban atmosphere and requires new developments to provide adequate improvements and pay impact fees to offset the demand costs on city services and facilities. The proposed development is consistent with the following Land Use policies of the General Plan:

Policy LU-1.2 – Allow for a variety of residential infill opportunities including single family, multi-family, mixed-use, manufactured housing and mobile homes, in designated areas to satisfy regional housing needs.

Setbacks

Pursuant to PMC Section 23.12.090, which allows modified development standards for initial construction on existing, legally subdivided lots that do not meet the minimum lot size requirements, the applicant is requesting Planning Commission approval to utilize the reduced setback provisions established by this section.

The proposed primary dwelling will maintain a minimum rear yard setback of 10 feet. The required side yard setbacks are calculated at 10 percent of the parcel width, resulting in a 6-foot setback along the westerly property line and a 5-foot setback along the easterly property line.

The proposed accessory dwelling unit (ADU) will maintain minimum 4-foot setbacks, consistent with applicable State ADU requirements.

All other applicable development standards and requirements of the R-1 Zoning District shall be met. The architectural design of the home is reminiscent of both traditional and ranch designs, bringing a timeless style to the neighborhood. Although a portion of the residence is two stories, staff finds that the design and scale of the proposed home is consistent with and will be complementary to the surrounding neighborhood.

Other Departments Concerns and Requirements

The Divisions of Planning and Building, the Public Works Department, as well as the Placentia Fire and Life Safety Department, have reviewed the application materials and have raised no major concerns with the proposal. All applicable conditions of approval have been incorporated into a draft resolution for consideration by the Planning Commission.

Conclusion

The project represents an infill development on a 4,500-square-foot residential lot, which is less than the average lot size within an established residential neighborhood. If approved, the

development would result in the construction of a single-family dwelling and accessory dwelling unit, that is consistent with the residential land use pattern of the surrounding area while utilizing modified standards intended to facilitate reasonable development on a nonconforming lot. Staff finds that the design and scale of the proposed home is consistent with and will be complementary to the surrounding neighborhood.

Recommendation

Staff recommends that the Planning Commission adopt Resolution PC-2026-12 finding the project categorically exempt from further environmental review pursuant to Section 15332 of the State CEQA Guidelines and approving Site Plan Review No. SPR 2026-05, including the request to utilize modified development standards pursuant to PMC Section 23.12.090.

CEQA:

The proposed project has been reviewed in accordance with the requirements of the California Environmental Quality Act (CEQA), Public Resources Code Sections 21000 et seq., the State CEQA Guidelines, Title 14, California Code of Regulations, Sections 15000 et seq., and the City of Placentia Environmental Guidelines.

Staff recommends that the Planning Commission find the project categorically exempt from further environmental review pursuant to Section 15332 (Class 32 – In-Fill Development Projects) of the State CEQA Guidelines.

The proposed development consists of a new single-family residence with an attached accessory dwelling unit on an existing 4,500-square-foot residential parcel within an established urban neighborhood. The project is consistent with the General Plan and applicable zoning regulations, subject to approval of the requested modified development standards, and meets the applicable criteria for the Class 32 exemption.

Attachments

1.RESOLUTION_NO_PC_2026-12.docx
1.a.Conditions_of_Approval_-_SPR_2026-05.docx
2. Project Plans - 1649 Oak St.

RESOLUTION NO. PC-2026-12

A RESOLUTION OF THE PLANNING COMMISSION OF THE CITY OF PLACENTIA MAKING FINDINGS THAT THE PROJECT IS CATEGORICALLY EXEMPT PURSUANT TO THE CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA) AS SET FORTH IN TITLE 14 CCR § 15332 (CLASS 32 - INFILL DEVELOPMENT PROJECTS) AND THE CITY OF PLACENTIA ENVIRONMENTAL GUIDELINES, AND MAKING FINDINGS APPROVING SITE PLAN REVIEW NO. SPR 2026-05 FOR THE DEVELOPMENT OF A TWO-STORY SINGLE-FAMILY RESIDENCE USING MODIFIED DEVELOPMENT STANDARDS PURSUANT TO PMC SECTION 23.12.090, AT 1649 OAK STREET, WITHIN THE SINGLE-FAMILY RESIDENTIAL (R-1) ZONING DISTRICT

A. Recitals.

WHEREAS Nick Rocco, ("Applicant" hereinafter), property owner of a parcel located at 1649 Oak Street, filed an application for approval of Site Plan Review No. SPR 2026-05, as described in the title of this Resolution. Hereinafter, in this Resolution, the subject Site Plan Review request is referred to as the "Application"; and

WHEREAS, on November 10, 2026, the Planning Commission reviewed all elements of the proposed Site Plan Review, and after careful consideration of all pertinent testimony and the staff report offered in the case, the Planning Commission voted to approve SPR 2026-05; and

WHEREAS all legal prerequisites to the adoption of this Resolution have occurred.

B. Resolution.

NOW, THEREFORE, it is hereby found, determined, and resolved by the Planning Commission of the City of Placentia as follows:

SECTION NO. 1: Based on the evidence presented and the findings set forth, SPR 2026-05 is hereby found to be consistent with the Placentia General Plan and the implementation thereof.

SECTION NO. 2: Site Plan Review. The development, as modified by the attached Conditions of Approval and Standard Development Requirements (Attachment "A"), meets the overall requirements of PMC Chapter 23.12 ("R-1"-Single-Family Residential District) and PMC Chapter 23.75 (Development Plan Review), Section 23.75.015 (Site Plan Review), of the Zoning Code. As such, the Planning Commission finds as follows:

a. The project meets or exceeds the criteria established in PMC Section 23.75.020 in terms of compliance with all development standards of the R-1 Zoning District such as minimum lot size, minimum setbacks, maximum building height, maximum lot coverage, and minimum onsite parking; and

b. Conditions of Approval have been prepared as necessary to prevent: (A) detriment to the health, safety or general welfare of the persons residing or working within the neighborhood of the proposed development or within the city, or (B) injurious to the property or improvements within the neighborhood or within the city as the development is consistent with other surrounding residential uses and has been designed to visually blend into the neighborhood context of the existing Atwood district; and

c. The proposed development will be consistent with the latest adopted General Plan as it is consistent with the maximum density of the Land Use designation of Low Density Residential and reinforces Land Use Policy LU-1.2, which encourages a variety of residential infill opportunities, including single-family uses, in designated areas to satisfy regional housing needs; and

d. Conditions necessary to secure the purposes of PMC Section 23.75.020, including guarantees and evidence of compliance with conditions, are made part of the development approval and are attached hereto.

SECTION NO. 3: Based upon the environmental review of the project, the Planning Commission finds that SPR 2026-05 is exempt from the California Environmental Quality Act ("CEQA"), Public Resources Code §§ 21000 et seq., the State CEQA Guidelines, 14 C.C.R. §§ 15000 et seq., and the Environmental Guidelines of the City of Placentia pursuant to the State CEQA Guidelines § 15332 (Class 32 - Infill Development Projects) as the permit would be issued to an infill development project in an urbanized area on a site less than five acres.

SECTION NO. 4: The Planning Commission hereby directs that, upon approval of SPR 2026-05, a Notice of Exemption shall be filed with the Orange County Clerk/Recorder.

SECTION NO. 5: Based upon the findings and conclusions set forth herein, this Planning Commission hereby approves SPR 2026-05, subject to the Conditions of approval contained in Attachment A hereto.

SECTION NO. 6: The Secretary to the Planning Commission shall:

a. Certify to the adoption of this Resolution; and

b. Forthwith transmit a certified copy of this Resolution, by certified mail, to the Applicant at the address of record set forth in the Application.

ADOPTED AND APPROVED THIS 10TH DAY OF NOVEMBER 2026

_____
DAVID SMITH, CHAIR

I, Joseph M. Lambert, Secretary to the Planning Commission of the City of Placentia, do hereby certify that the foregoing Resolution was introduced at a regular meeting of the Planning Commission of the City of Placentia held on the 10th day of November, 2026, and was passed at this regular meeting of the Planning Commission of the City of Placentia held on the 10th day of November, 2026, by the following vote:

AYES:
NOES:
ABSENT:
ABSTAINED:

ATTEST:

_____
JOSEPH M. LAMBERT,
SECRETARY TO THE PLANNING COMMISSION

APPROVED AS TO FORM

_____
CITY ATTORNEY

Attachment A: Conditions of Approval for Site Plan Review No. SPR 2026-05

Attachment A:

Special Conditions of Approval and Standard Development Requirements for Site Plan Review (SPR) 2026-05

If the above referenced application is approved, applicant and/or property owner shall comply with the Placentia Municipal Code, the Special Conditions of Approval listed below, and the Standard Development Requirements (attached).

***ALL OF THE FOLLOWING CONDITIONS OF APPROVAL OF SITE PLAN REVIEW 2026-05 SHALL BE FULLY COMPLIED WITH PRIOR TO THE FINAL INSPECTION FOR USE AND OCCUPANCY OF THE PREMISES.**

PLANNING DIVISION

1. Site Plan Review No. SPR 2026-05 is valid for a period of twenty-four (24) months from the date of final determination, unless extended, pursuant to Placentia Municipal Code (PMC) Section 23.75.080. If the development of the site and/or use approved by this action is not established by obtaining Building Permits within such a period of time, this approval shall be terminated and shall be null and void, unless an extension is applied for and approved.

2. Failure to abide by and faithfully comply with any and all conditions attached to this action shall constitute grounds for revocation or amendment of said actions by the City of Placentia Planning Commission.

3. The development shall be constructed in substantial conformance with the plans approved as part of Site Plan Review No. SPR 2026-05. Any proposed changes shall be subject to review and approval by the Director of Development Services.

4. All mechanical equipment and utility equipment shall be screened from public view to the satisfaction of the Director of Development Services.

5. Exterior lighting shall be designed and maintained to prevent glare onto adjoining properties and public rights-of-way. All lighting fixtures shall be shielded and directed downward.

6. Any graffiti appearing on the property shall be removed within 48 hours of notification by the City.

7. The project site shall be maintained in a neat and orderly condition throughout construction. Construction debris shall be removed on a regular basis and shall not be permitted to accumulate on-site or within the public right-of-way.

8. Exterior building materials, colors, roof materials, windows, doors, fencing, and architectural details shall be consistent with the plans approved by staff unless otherwise approved by the Director of Development Services.

9. The applicant shall, as a condition of project approval, at its sole expense, defend, indemnify and hold harmless the City, its officers, employees, agents and consultants from any claim, action, proceeding, liability or judgment against the City, its officers, employees, agents and/or consultants, which action seeks to set aside, void, annul or otherwise challenge any approval by the City Council, Planning Commission, or other City decision-making body or City staff action concerning applicant's project. The applicant shall pay the City's defense costs, including attorney fees and all other litigation-related expenses, and shall reimburse the City for any and all court costs, which the City may be required to pay as a result of such defense. The applicant shall further pay any adverse financial award which may issue against the City including but not limited to any award of attorney fees to a party challenging such project approval. The City shall retain the right to select its counsel of choice in any action referred to herein. The City agrees to promptly notify the applicant of any such claim filed against the City and to fully cooperate in the defense of any such action.

10. The applicant shall comply with all provisions of the Placentia Municipal Code (PMC), including Chapter 23.76, Noise Control.

11. Trash and recycling containers shall be stored within garages or behind side-yard fencing except on collection days.

12. Applicant/builder shall comply with all applicable Water Quality Management Plan (WQMP) requirements and Best Management Practices (BMPs) to control pollutant run-off from the subject site during construction.

13. Complete project Landscape and irrigation plans shall comply with the provisions of PMC Chapter 23.77, Model Water Efficient Landscape Ordinance (MWELO) of the Placentia Municipal Code.

14. Applicant/builder is responsible, at its sole cost and expense, to cause all cable, telephone, electrical, and other utility services serving the property to be placed underground within the subject site. Prior to the issuance of building permits, Applicant/builder shall submit a separate utility plan for each such utility service. The utility plan shall indicate the precise location of where all cable, telephone, electrical, and other utility services serving the property will be placed underground within the subject site, as well as the points of connection at the proposed building or buildings on the site and the public right-of-way. Prior to the submittal of the utility plans to the City, the plans shall be reviewed and approved by the utility companies. Evidence of approvals shall be in the form of a signed and dated approval stamp

and/or approval letter. Applicant/builder shall provide the City with "as built" plans showing the precise locations where all cable, telephone, electrical, and other utility services serving the property were placed underground within the subject site, as well as the points of connection at the building or buildings on the site and the public right-of-way.

15. Applicant/Builder shall establish a rodent abatement program prior to any site work. A detailed description of how this program will work shall be submitted to the City Planning Division for approval prior to obtaining a building permit.

16. Prior to the issuance of building permits, the developer shall submit for City approval a construction staging plan that indicates how safe vehicular and pedestrian access to the site will be maintained for the duration of the construction period. The construction staging plan shall include measures such as, but not limited to the following:

    a. A telephone number and a name of a contact person for registering complaints or comments shall be posted in a clearly visible manner along the perimeter of the site.

    b. If deemed necessary by the Director of Development Services, a flag person shall be employed to direct traffic when construction vehicles access the project site and the construction staging area.

    c. Alternate pedestrian routes to the site shall be clearly delineated with safe access to and the site.

    d. If any sidewalk is blocked during construction, alternate routes for pedestrians and bicycles shall be clearly marked with signs approved by the City.

    e. All access points shall be clearly marked during construction, and if an access point is blocked during construction, a detour sign to an alternate access point shall be clearly posted.

17. During grading and construction, site shall be regularly sprinkled with water to minimize fugitive dust emissions. Also, compliance shall be required with the permitted working hours as specified in Section 23.81.170, Grading, construction and maintenance of real property of the Placentia Municipal Code. Signs shall be posted at all construction entrances to the project site indicating the permitted working days and hours.

18. A solid block wall, a minimum of 6'-0" high shall be installed around the perimeter boundaries of the parcel except that within the front yard setback. If a solid block wall is to be installed in the front yard setback, then the maximum height shall be 3'-0". No chain link fencing is permitted. Applicant shall repair any existing walls that

will remain to the satisfaction of the City Building Official and Development Services Department.

19. Developer shall pay in full to the City of Placentia, any and all applicable citywide Development Impact Fees (including, but not limited to fees relating to recreational facilities, sewer facilities, transportation infrastructure, storm drain facilities, general government impacts, public safety impacts and affordable housing impacts) adopted by and set forth by the City Council in effect at the time building permits are issued prior to issuance of the first building permit for the project.

20. Developer and/or property owner agrees to approve the incorporation of the project into Community Facilities District No. CFD 2014-01 (Public Services) pursuant to the provisions of California Government Code Section 53311, et seq. Said annexation into CFD No. 2014-01 shall be fully completed in accordance with California law prior to issuance of any Certificate of Occupancy for the project.

21. Developer and/or property owner agrees to approve the incorporation of the project into the Landscape Maintenance District No. LMD 1992-01 pursuant to the provisions of California Streets and Highways Code Section 22500, et seq. Said annexation into LMD No. 1992-01 shall be fully completed in accordance with California law prior to issuance of any Certificate of Occupancy for the project.

22. Developer and/or property owner agrees to approve the incorporation of the project into the Street Lighting District No. SLD 1981-01 pursuant to the provisions of California Streets and Highways Code Section 22500, et seq. Said annexation into SLD No. 1981-01 shall be fully completed in accordance with California law prior to issuance of any Certificate of Occupancy for the project.

23. Developer and/or property owner agrees that the City may, at its sole election, require that, instead of annexing into Community Facilities District No. CFD 2014-01 (Public Services), SLD 1981-01 and/or LMD 1992-1, the project shall be incorporated into a successor Community Facilities District to be created by the City pursuant to the provision of California Government Code Section 53311, et seq; the purpose of which, will be substantially the same, in whole or in part, as CFD 2014-01, SLD 1981-1 and/or LMD 1992-1. Developer and/or property owner agrees to approve the incorporation of the project into said Community Facilities District, provided that the incorporation of the new CFD does not otherwise delay the development of the project; in which event the project shall instead be annexed into CFD 2014-01, SLD 1981-01 and/or LMD 1992-1. Any automatic fee increases for the Community Services District shall not be inconsistent with the approved rate study.

24. Developer/Applicant shall pay all applicable fees to the PYLSD (school district) and Placentia Library District prior to issuance of building permits.

25. Prior to final release of the buildings for occupancy:

    a. All Special Conditions of Approval and Standard Development Requirements shall have been completed and final inspections approved.

    b. Landscape and irrigation plans shall be approved and on file with the City Building Division and all landscape materials established and the irrigation system properly functioning.

BUILDING DIVISION

26. The submitted plans for plan checking shall conform to the 2025 CRC, CBC, CMC, CEC, CPC, CFC, CALGreen, and California Energy Standards codes.

27. The plans to be submitted for plan checking shall contain complete architectural, structural, electrical, mechanical and plumbing plans. All plans must be prepared, sealed and signed by a California Licensed Professional within their scope of work or per the Business and Professions Code.

28. The Subject property shall have all individual utilities, which shall receive approval from the corresponding utility companies. Alternatively, if the existing utilities are going to be used, proof shall be provided showing existing utilities provide sufficient sources to serve both new SFDs.

29. The Mandatory Measures of the CALGreen and Title 24 Energy Standards Codes including the Compliance Forms shall be printed on the plans to be submitted. CalGreen shall be completed and shall specify where on the plans the applicable measures are shown.

ENGINEERING DIVISION

General Requirements:

30. The following items are required for plan check:
    a. Grading plan.
    b. Geotechnical report.
    c. Project is exempt from WQMP requirements due to it being less than 5,000 SF
    d. Offsite Improvement Plan

31. Applicant must fill out and submit a Red Imported Fire Ant-pest Exclusion Program(RIFA) Form to California Department of Food and Agriculture and provide the City of Placentia a copy of the approved form.

32. Provide Signature block for City Engineer: License Number: C82756

33. It is the applicant's responsibility to notify all utility companies and the City of Placentia for disconnection and removal of the existing utilities, vaults and meters. It is also the applicant's responsibility to notify the Public Works and Building Inspection Division to inspect and to ensure that these utilities have been properly disconnected.

34. Provide details for the required driveway approach. Install a 7' wide sidewalk along the entire property frontage of the property. Improvements to be per the City of Placentia Standards (OC Standard Plans) and the latest Standard Specifications of Public Works Construction (Green Book.) All new sidewalk and driveway improvements must be ADA compliant and replaced from joint to joint over the entire frontage of the parcel. Applicant must hire a CASp consultant to certify all ADA Improvements, per the latest ADA requirements for design, construction and obtain a final CASp certification for all ADA ramps and pathways within the public right-of-way.

35. Prior to issuance of a Certificate of Occupancy, the engineer of record shall submit all approved project plans on an approved electronic format to the Public Works Department. If the required files are unavailable, the applicant shall pay a scanning fee to cover the cost of scanning the as-built plans.

36. Applicant agrees to annex itself into the City's existing Public Safety Services CFD 2014-01 as a condition of approval and prior to receiving a grading permit.

Sewer line Improvements and Construction:

37. Confirm existing sewer lateral connection exists onsite. If none exists applicant will be required to connect to the City main sewer line following County of Orange standard plans.

38. Applicant will be required to CCTV sewer connection point from City main and provide footage to the City for review and approval prior to certificate of occupancy.

Storm Drain Improvements and Construction:

39. The project street and lot grading shall be designed in a manner that perpetuates the existing natural drainage patterns with respect to tributary drainage area and outlet points. Unless otherwise approved by the Public Works Director.

40. The project shall be designed to accept and properly dispose of all off-site drainage flowing onto or through the site.

41. Provide a hydrology report demonstrating the post development peak flow rate generated from the project site shall be less than or equal to the pre-development peak flow rate from the site for all frequency storms up to and including 100-year event.

Public Improvements and Construction

42. The existing pavement surface along the property frontage is under moratorium. Any cuts into the pavement are subject to stringent moratorium restoration requirements.

43. Prior to issuance of occupancy permit, all new public improvements shall be constructed satisfactorily to City Standards.

Grading:

44. Provide volumes of cut and fill on the grading plan.

45. The development site shall be graded to drain surface water to the existing City storm drain system with no cross-lot drainage permitted. Drainage shall be indicated on the precise grading plans.

46. Prior to approval of the final design plans and issuance of a grading permit, the applicant shall conduct a site-specific geotechnical investigation for the entire site and prepare a report that fully assesses the geologic and soil conditions of the site. As part of the report preparation, soil sampling and any geotechnical testing will be completed at each location where structures are to be erected. The report shall provide grading and structural design recommendations for avoiding liquefaction, subsidence or collapse for each of the proposed structures. The recommendations shall be implemented by Applicant.

47. Prior to the issuance of grading permits, the applicant shall prepare and submit a precise grading plan prepared by a licensed civil engineer to the Engineering Division of the Public Works Department showing building footprints, new and revised pads and elevations of finished grades, drainage routes, retaining walls, erosion control, slope easements, structural best management practices (BMPs) conforming to the approved water quality management plan, and other pertinent information. The project development shall accept and make provisions for the existing surface water that are the natural flows from the adjacent properties immediately abutting to the development site.

48. The site grading, landscape, irrigation, and street improvement plans shall be coordinated for consistency with each other and for consistency with the requirements and standards of the City of Placentia.

49. Prior to the issuance of a grading permit, erosion control plans and notes shall be submitted and approved by the Engineering Division of Public Works Department.

PLACENTIA FIRE & LIFE SAFETY DEPARTMENT

The following conditions have been applied to the above-mentioned special event pursuant to the City of Placentia Fire and Life Safety Department adopted codes and standards, the California Fire Code and applicable rules, regulations, and standards. Conditions must be complied with as directed by the Placentia Fire and Life Safety Department and shall be reviewed, permitted, inspected, tested, and approved in accordance with the requirements set forth.

Prior to issuance of a building permit

50. The Placentia Fire & Life Safety Department, at time of plan or permit submission, will charge certain fees for plan review and inspections. Fees will be determined at the time of plan review and/or inspections.

51. The proposed project shall comply with the applicable codes and standards of Title 24, Part 1-12.

52. The referenced standards shall include the 2025 California Fire Code as adopted and amended by the City of Placentia.

Prior to Occupancy

53. The new house and ADU require an automatic fire sprinkler system in compliance with NFPA 13D and shall be installed per SB1069 requirements. Plans and specifications must be submitted, reviewed, approved and permits issued by PFLSD prior to commencing this work.

54. CO alarms are required to be installed in each bedroom that is served by a forced air unit. Devices shall be interconnected so that when one activates, all the devices activate. Alarms shall be hardwired with battery backup.

55. Smoke alarms are required to be installed in each room intended for sleeping. Devices shall be interconnected so that when one activates, all the devices activate. Alarms shall be hardwired with battery backup.

56. Permanent residential three-dimensional street numbers, minimum 4 inches in height, shall be provided on the address side of the building at the highest point and furthest projection of the structure. The address shall be illuminated and visible from the street and shall not be obstructed in any manner.



BUILDING CODE DATA:

OCCUPANCY: R3/U
TYPE OF CONSTRUCTION: V-B
SPRINKLERS: YES-REQUIRED

GOVERNING BODY: CITY OF PLACENTIA, CALIFORNIA

APPLICABLE CODES:

2022 CALIFORNIA RESIDENTIAL CODE
2022 CALIFORNIA BUILDING CODE
2022 CALIFORNIA MECHANICAL CODE
2022 CALIFORNIA PLUMBING CODE
2022 CALIFORNIA FIRE CODE
2022 CALIFORNIA ELECTRIC CODE
2022 CALIFORNIA T-24 ENERGY CONSERVATION REGULATIONS
2022 CALIFORNIA GREEN BUILDING CODE
ALL LOCAL CODES, AMENDMENTS, AND CITY ORDINANCE

LEGAL DESCRIPTION:

LOT NUMBER 39 AND 41 IN TRACT 144 M.B. 12/3 ,
RECORDS OF ORANGE COUNTY , CALIFORNIA
ASSESSORS PARCEL NUMBER: 346-181-23

ADDRESS

1649 OAK STREET
PLACENTIA, CA.

PROJECT SCOPE

(N) WORK
NEW SINGLE FAMILY RESIDENCE WITH ATTACHED 2 CAR GARAGE.

(N) PROPOSED ADU
WITH 2 BEDROOM AND 1 BATH

LOT SIZE AND COVERAGE RATIO

LOT SQUARE FOOTAGE; 4500 SQUARE FEET

HOUSE AREA lower level	800	S.F.
GARAGE	468	S.F.
HOUSE FOOTPRINT	1,268	S.F.
ADU FOOTPRINT	442	S.F.
FOOTPRINT WITH ADU	1,758	S.F.
1754 / 4500	39% LOT COVERAGE	

SQUARE FOOTAGE

LOWER LEVEL	800	S.F
UPPER LEVEL	574	S.F.
TOTAL HOUSE S.F.	1,374	S.F.
ADU S.F.	442	S.F.
TOTAL HOUSE & ADU.	1,866	S.F.
2 CAR GARAGE	468	S.F.

MISCELLANEOUS NOTES:

1. WALLS AND FENCES REQUIRE SEPARATE PERMTS

DEFFERED SUBMITTALS

FIRE-SPRINKLERS

PROJECT PARTICIPANTS

OWNER
NICK ROCCO
13032 BIRCHWOOD STREET
GARDEN GROVE, CA. 92843
PH. 714 748-8218
E-MAIL NROCCO@DSLEXTREME.COM

ARCHITECT
STEVEN PHILLIPS ARCHITECT
26 WINDSONG
IRVINE, CA. 92614
(949) 400-5760 ph
License #C11314

STRUCTURAL ENGINEER
AQX ENGINEERING
MAHDI KHALEGHI
1520 BROOKHOLLOW DR SUITE 45.
SANTA ANA, CA. 92705
PH. 714 662 9510

CIVIL ENGINEER
FORESIGHT ENGINEERING
17621 IRVINE BLVD STE 10
TUSTIN, CA.
(714) 542-1214 EXT. 22
E-MAIL nader@foresight-eng.com
contact Nader Gobofsi

SOIL ENGINEER
GEO-ETKA, INC.
1801 EAST HEIM AVENUE, SUITE 202
ORANGE, CALIFORNIA 92865
PH (714) 771-6911
E-MAIL GEOETKA@AOL.COM
CONTACT AHMED ALI

SHEET INDEX:

ARCHITECTURAL
T-1 COVER SHEET / SITE PLAN
A-1 1/4" FLOOR PLAN
A-2 1/4" ELEVATIONS
A-3 1/4" SECTIONS
A-4 ROOF PLAN
A-5 SHEDULES DOOR AND WINDOW
A-6 ARCHITECTURAL DETAILS
A-7 ARCHITECTURAL DETAILS
A-8 CAL GREEN REQUIREMENTS
A-9 CAL GREEN REQUIREMENTS

STRUCTURAL PLANS
SN-1 STRUCTURAL NOTES
SN-2 STRUCTURAL NOTES
S-1 FOUNDATION PLAN
S-2 FLOOR/LOW ROOF FRAMING
S-3 ROOF FRAMING
SD-1 FOUNDATION DETAILS
SD-2 FRAMING DETAILS
SD-3 STRUCTURAL DETAILS
SD-4 STRUCTURAL DETAILS
HFX-1 HFX PANELS
HFX-2 HFX PANELS

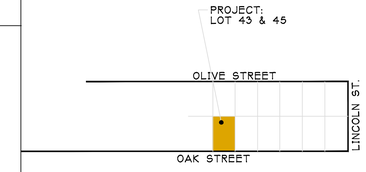
T-24.1 TITLE 24
T-24.2 TITLE 24
T-24.3 TITLE 24
T-24.4 TITLE 24
T-24.5 TITLE 24

CIVIL PLANS REFERENCE ONLY
1 TITLE SHEET AND GENERAL NOTES
2 GRADING PLAN
3 EROSION CONTROL PLAN

PLAN NOTES

1. BUILDING SHALL HAVE ADDRESS NUMBERS PLACED IN POSITIONS THAT IS PLAINLY LEGIBLE AND VISABLE FROM THE STREET OR ROAD FRONTING THE PROPERTY NUMBERS SHALL CONTRAST WITH BACKGROUND.BE ARABIC OR ALPHABETICAL LETTERS AND BE A MINIMUM OF 4" HIGH WITH A MINIMUM STROKE OF 1/2" (R319.1 CRC)

2. SURFACE DRAINAGE AROUND THE BUILDING SHALL SLOPE AWAY FROM THE BUILDING AT 1/4" PER FOOT MINIMUM.



VICINTY MAP

NOT TO SCALE

NORTH

REVISIONS:

steven phillips - architect,
76 STONEYKIRK DRIVE
BELLA VISTA ARKANSAS 72715
949.400.5760

STEVEN PHILLIPS ARCHITECT

A CUSTOM HOME FOR NICK ROCCO
PLACENTIA
1649 OAK STREET
LOT 43 AND 45 OAK STREET
PLACENTIA, CA.

LICENSED ARCHITECT
STEVEN LOWELL PHILLIPS
C-11314
REN. 3-31-21
STATE OF CALIFORNIA

SHEET TITLE:
SITE PLAN/INDEX

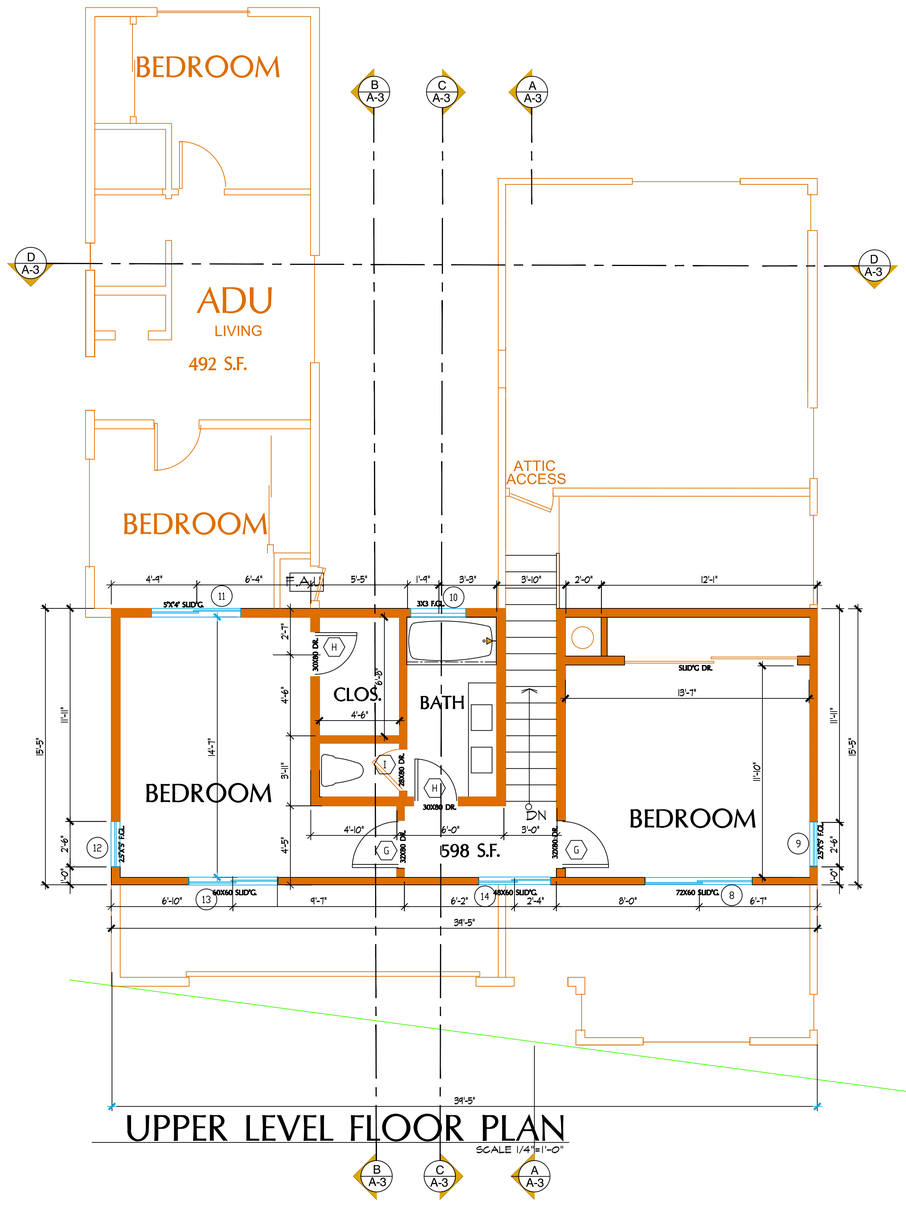
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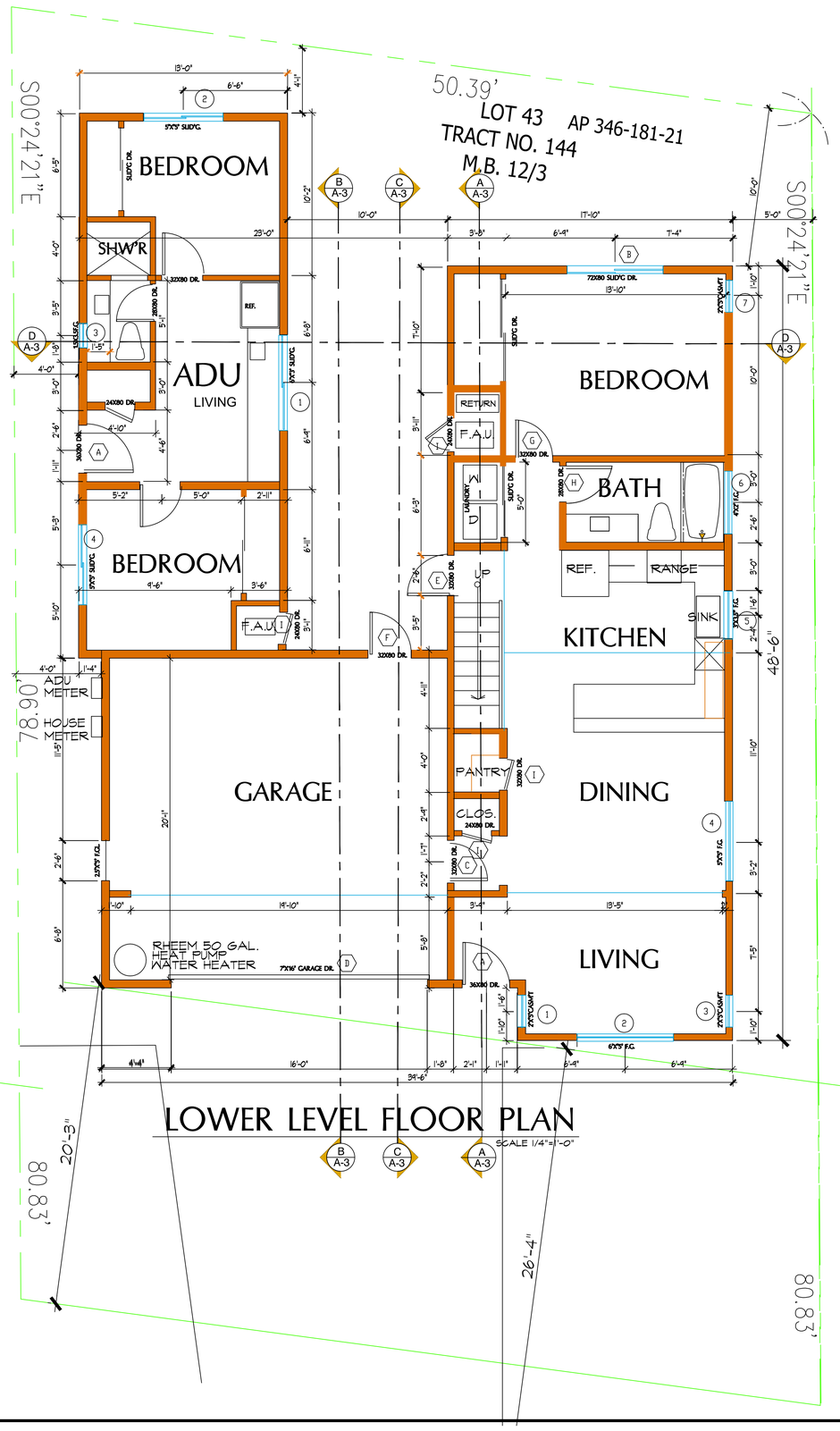
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UPPER LEVEL FLOOR PLAN

SCALE 1/4"=1'-0"



LOWER LEVEL FLOOR PLAN

SCALE 1/4"=1'-0"

REVISIONS:

steven phillips - architect
76 STONEYKIRK DRIVE
BELLA VISTA ARKANSAS 72715
949.400.5760

A CUSTOM HOME FOR NICK ROCCO

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LICENSED ARCHITECT
STEVEN LOWELL PHILLIPS
C-11314
REN. 3-31-27
STATE OF CALIFORNIA

SHEET TITLE:
FLOOR PLAN

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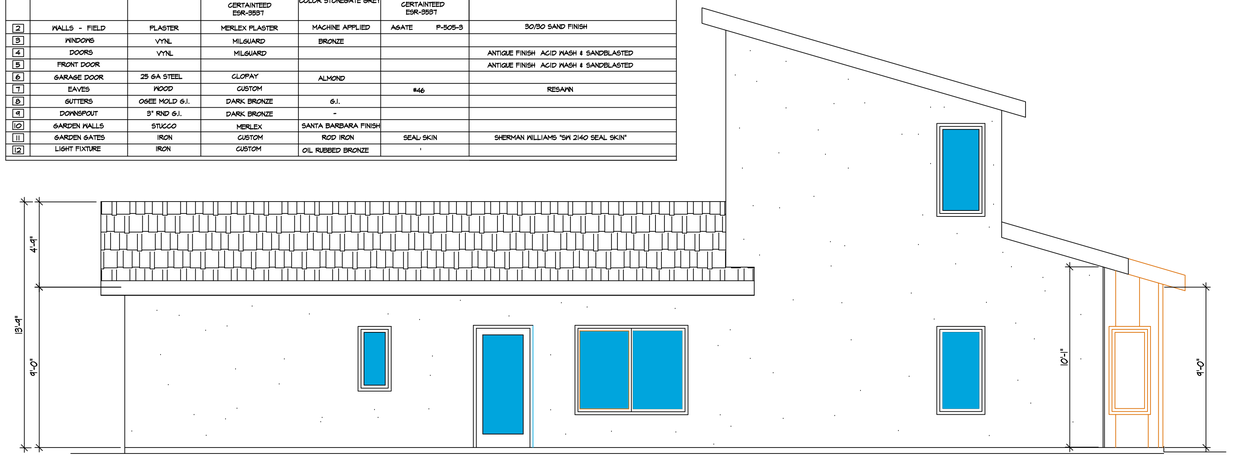
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A-1

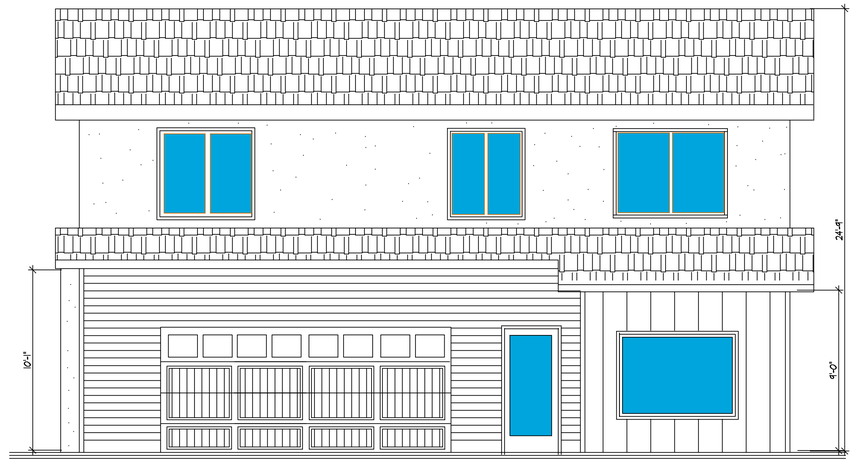
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NO.	ITEM	MATERIAL	MANUFACTURER	COLOR NAME	COLOR NUMBER	REMARKS
1	ROOF	ASPHALT SHINGLE	ROOF TILE BY; CERTAINTEED ESR-3537	GRAND MANOR COLOR STONEGATE GREY	ROOF TILE BY; CERTAINTEED ESR-3537	INSTALL TILES PER MANUFACTURES RECOMENDATIONS
2	WALLS - FIELD	PLASTER	MERLEX PLASTER	MACHINE APPLIED	AGATE P-505-3	30/30 SAND FINISH
3	WINDOWS	VYNL	MILGUARD	BRONZE		
4	DOORS	VYNL	MILGUARD			ANTIQUE FINISH ACID WASH & SANDBLASTED
5	FRONT DOOR					ANTIQUE FINISH ACID WASH & SANDBLASTED
6	GARAGE DOOR	25 GA STEEL	CLOPAY	ALMOND		
7	EAVES	WOOD	CUSTOM		#46	RESAWN
8	GUTTERS	OGEE MOLD 6.1.	DARK BRONZE	6.1.		
9	DOWNSPOUT	3" RND 6.1.	DARK BRONZE	-		
10	GARDEN WALLS	STUCCO	MERLEX	SANTA BARBARA FINISH		
11	GARDEN GATES	IRON	CUSTOM	ROD IRON	SEAL SKIN	SHERMAN WILLIAMS "SW 2140 SEAL SKIN"
12	LIGHT FIXTURE	IRON	CUSTOM	OIL RUBBED BRONZE	-	



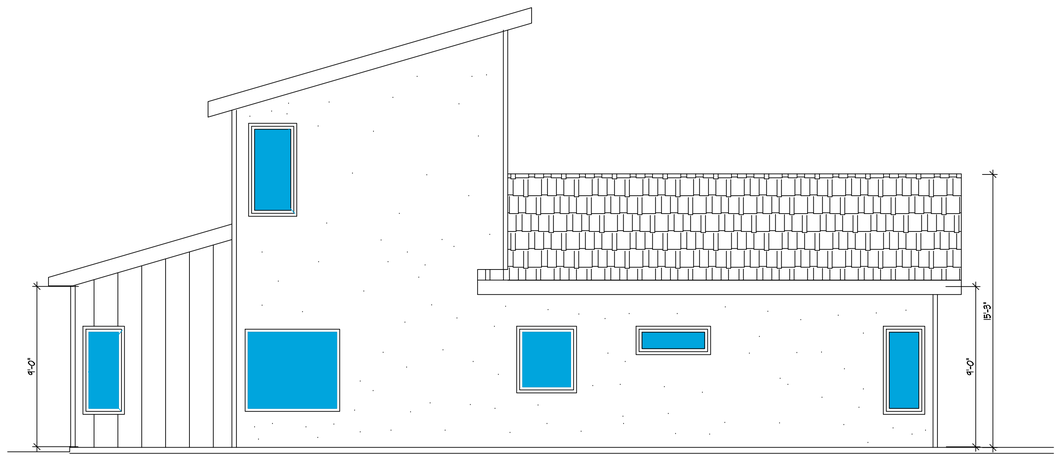
WEST ADU ELEVATION

SCALE 1/4" = 1'-0"



STREET ELEVATION

SCALE 1/4" = 1'-0"



EAST ELEVATION

SCALE 1/4" = 1'-0"

REAR ELEVATION

SCALE 1/4" = 1'-0"

REVISIONS:

steven phillips - architect.
76 STONEYKIRK DRIVE
BELLA VISTA ARKANSAS 72715
949.400.5760

steven phillips architect

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STATE OF CALIFORNIA
STEVEN LOWELL PHILLIPS
C-11314
REN. 3-31-27

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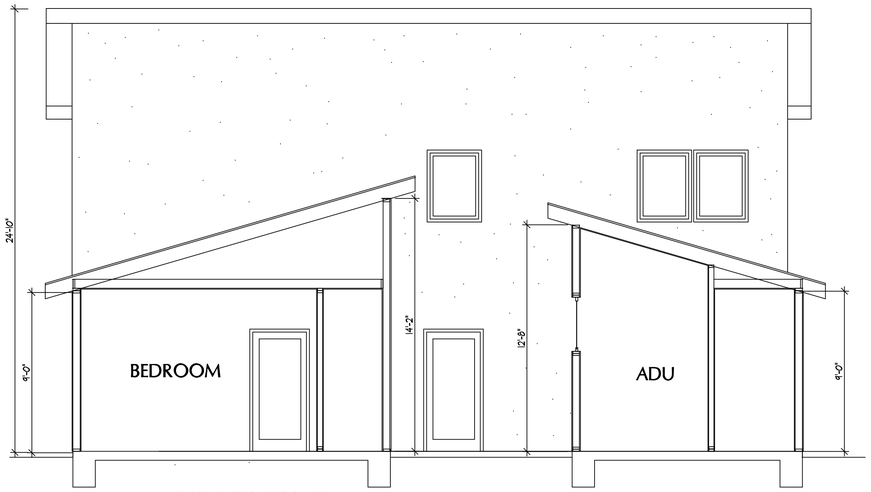
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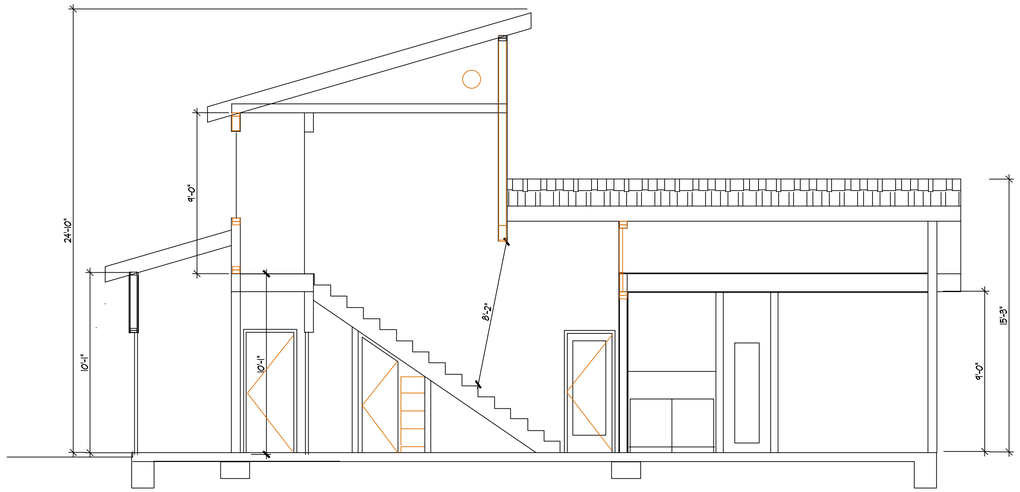
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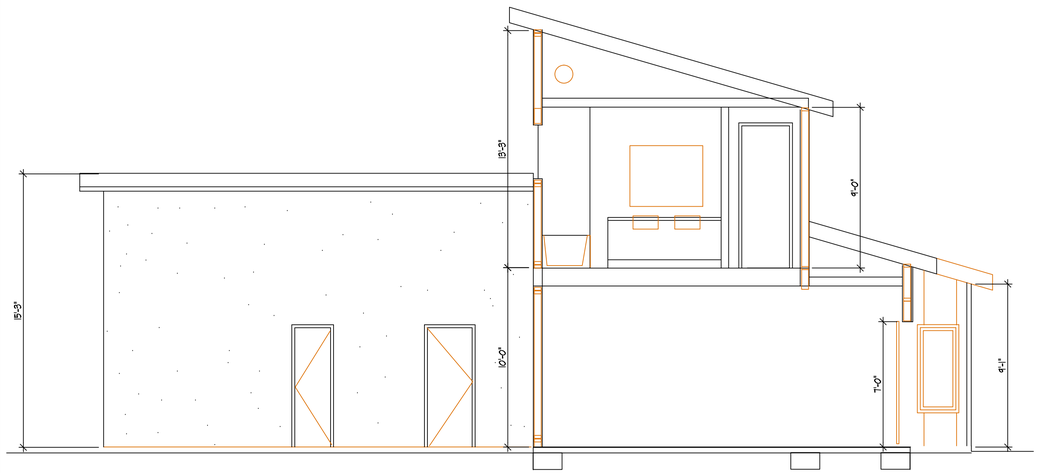
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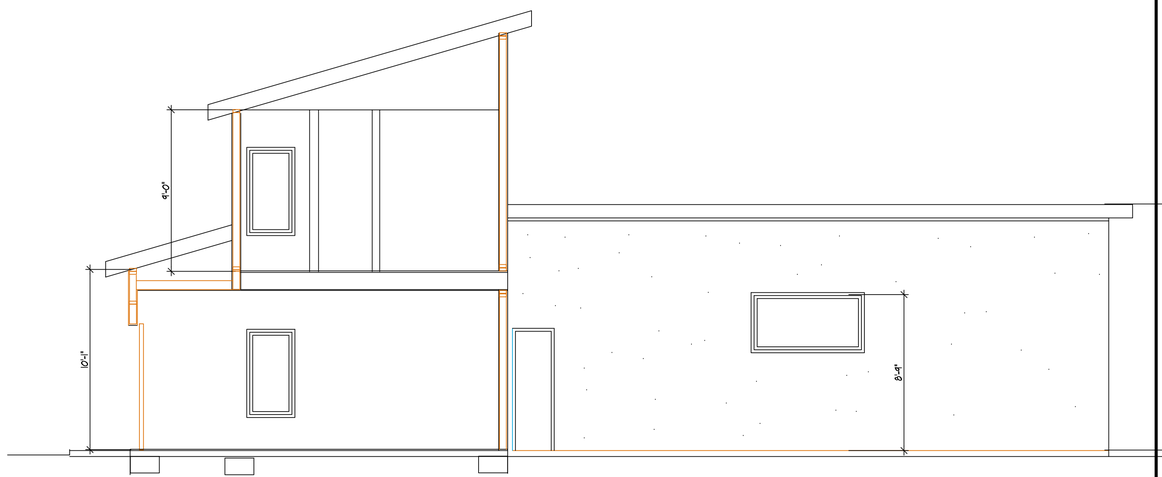
SECTION D



SECTION A



SECTION B EAST ELEVATION



SECTION B COURTYARD ADU ELEVATION

REVISIONS:

steven phillips - architect,
76 STONEKIRK DRIVE
BELLA VISTA ARKANSAS 72715
949.400.5760

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LICENSED ARCHITECT
STEVEN LOWELL PHILLIPS
C-11314
REN 3-31-21
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ROOFING MATERIAL

A

CERTAINTEED ASPHALT SHINGLES
LANDMARK SERIES COLOR TERRA COTA
ROOF TILE BY: CERTAINTEED
MATCH EXISTING SECOND UNIT AT REAR
GRAND MANOR COLOR GEORGIAN RED
ROOF PITCH 5/12

INSTALL TILES PER MANUFACTURER'S RECOMMENDATIONS
CLASS "A" MIN. RATING FOR ALL ROOFING ASSEMBLIES

KEYNOTES

5/12

CERTAINTEED ASPHALT SHINGLES
LANDMARK SERIES COLOR TERRA COTA
ROOF TILE BY: CERTAINTEED
MATCH EXISTING SECOND UNIT AT REAR
GRAND MANOR COLOR GEORGIAN RED
ROOF PITCH 5/12

D

SEE DETAIL 12 /AD-2
DORMER TYPE VENT
71 CUBIC INCHES
THUNDERBIRD PRODUCTS

RADIANT BARRIER PLYWOOD

RADIANT BARRIER PLYWOOD IS REQUIRED.

ATTIC VENTILATION

ATTIC VENTS:
NEW ADDITION IS ENTIRELY VUALTED CEILINGS
SPRAY FOAM INSULATION IN EVERY BAY IN RESTICT AIR MOVEMENT

ATTIC VENT CALCULATION

ZONE 1 AREA: 1,020 SF

USE 1/350 WITH LOW AND HIGH DORMERS
446 SQ. INCHES REQUIRED

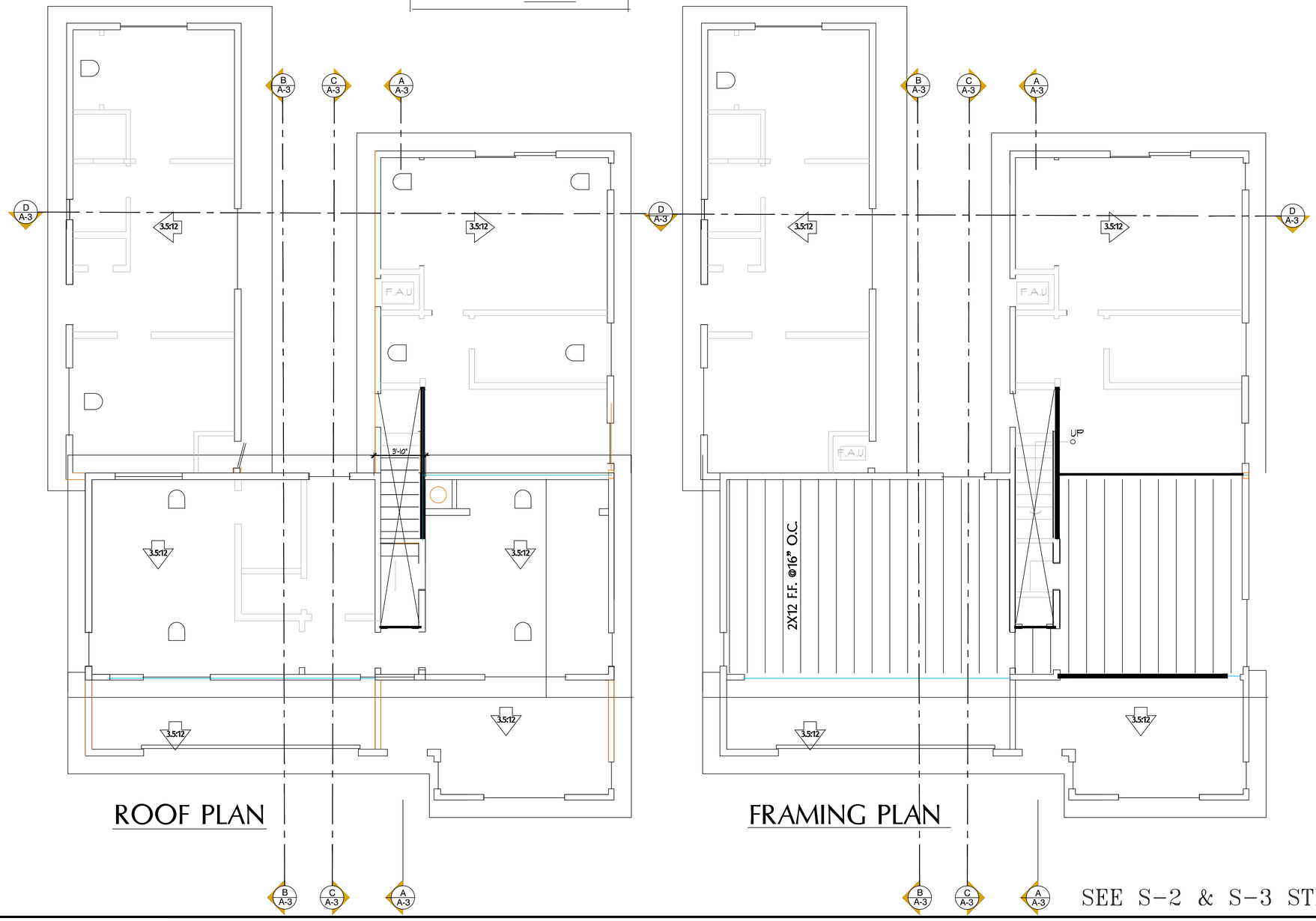
THUNDERBIRD DORMERS VENTS .
AT 74 SQ. IN EACH

8 NUMBER OF VENTS

EAVE VENTS: USE ONLY AT VAULTED AREA

TOTAL REQUIRED: 446 SQ. IN.

TOTAL PROVIDED: 592 SQ. IN.



ROOF PLAN

FRAMING PLAN

SEE S-2 & S-3 STRUCTURAL DRAWINGS

REVISIONS:

steven phillips - architect,
76 STONEYKIRK DRIVE
BELLA VISTA ARKANSAS 72715
949.400.5760

STEVEN PHILLIPS ARCHITECT

A CUSTOM HOME FOR NICK ROCCO
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LOT 43 AND 45 OAK STREET
PLACENTIA, CA.

SHEET TITLE
ROOF PLAN

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A4

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DOOR SCHEDULE

EXTERIOR

SYM	DOOR SIZE WIDTH	DOOR SIZE HEIGHT	DOOR SIZE THICKNESS	TYPE	U-FACTOR	SHGC	AREA	DIRECTION	FRAME MAT	FRAME FINISH	FRAME INTERIOR/ EXTERIOR	THRESHOLD MAT	THRESHOLD	GLAZING	FIRE RATING	LOCKSET	REMARKS	QTY
A	3'-0"	6'-8"	-	A	0.32	0.32	19	SOUTH		-	EXTERIOR			DUAL TEMP	-	-	FRONT DOOR	1
B	6'-0"	6'-8"	-	B	-	-	38	NORTH		-	EXTERIOR			DUAL TEMP	-	-	SLIDING GLASS DOOR	1
C	2'-8"	6'-8"	-	C	-	-	18			-	GARAGE/HOUSE			DUAL TEMP	-	-	GARAGE/HOUSE	1
D	16'-0"	7'-0"	-	D	-	-		S		-	GARAGE DOOR			NA	-	-	GARAGE DOOR	1
E	2'-8"	6'-8"	-	E	-	-	18	WEST		-	EXTERIOR			NA	-	-	GARAGE DOOR	1
F	2'-8"	6'-8"	-	D	-	-		NORTH			GARAGE MAN DR.			NA			GARAGE MAN DOOR	1

INTERIOR

SYM	DOOR SIZE WIDTH	DOOR SIZE HEIGHT	DOOR SIZE THICKNESS	TYPE	U-FACTOR	SHGC	AREA	DIRECTION	FRAME MAT	FRAME FINISH	FRAME INTERIOR/ EXTERIOR	THRESHOLD MAT	THRESHOLD	GLAZING	FIRE RATING	LOCKSET	REMARKS	QTY
G	2'-8"	6'-8"	1 1/2"	D	2 PANEL		-	-		-	INTERIOR				-	-	-	3
H	2'-6"	6'-8"	1 1/2"	D	2 PANEL		-	-		-	INTERIOR				-	-	-	3
I	2'-4"	6'-8"	1 1/2"	D	2 PANEL		-	-		-	INTERIOR							3
							-	-		-					-	-	-	
							-	-		-					-	-	-	

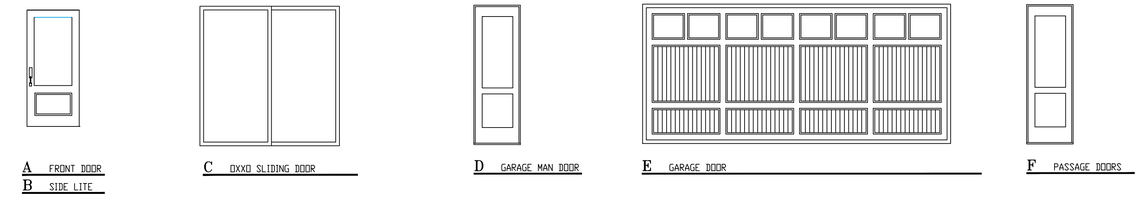
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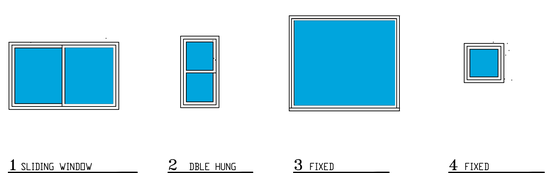
SYM	DOOR SIZE WIDTH	DOOR SIZE HEIGHT	DOOR SIZE THICKNESS	TYPE	U-FACTOR	SHGC	AREA	DIRECTION	FRAME MAT	FRAME FINISH	FRAME INTERIOR/ EXTERIOR	THRESHOLD MAT	THRESHOLD	GLAZING	FIRE RATING	LOCKSET	REMARKS	QTY
A	3'-0"	6'-8"	-	A	0.32	0.32	19	SOUTH		-	EXTERIOR			DUAL TEMP	-	-	FRONT DOOR	1

INTERIOR

SYM	DOOR SIZE WIDTH	DOOR SIZE HEIGHT	DOOR SIZE THICKNESS	TYPE	U-FACTOR	SHGC	AREA	DIRECTION	FRAME MAT	FRAME FINISH	FRAME INTERIOR/ EXTERIOR	THRESHOLD MAT	THRESHOLD	GLAZING	FIRE RATING	LOCKSET	REMARKS	QTY
G	2'-8"	6'-8"	1 1/2"	D	2 PANEL		-	-		-	INTERIOR				-	-	-	2
H	2'-6"	6'-8"	1 1/2"	D	2 PANEL		-	-		-	INTERIOR				-	-	-	1
I	2'-4"	6'-8"	1 1/2"	D	2 PANEL		-	-		-	INTERIOR							1

DOOR TYPES





WINDOW SCHEDULE

EXTERIOR

SYM	WINDOW SIZE WIDTH	WINDOW SIZE HEIGHT	TYPE	U-FACTOR	SHGC	AREA	DIRECTION	MATERIAL	FRAME	GLAZING	REMARKS	QTY
1	2'-6"	5'-0"	1	0.32	0.32	7.5	SOUTH	-		DUAL TEMP.	FIXED GLASS	1
2	6'-0"	5'-0"	2	0.32	0.32	30	SOUTH	-		DUAL TEMP.	FIXED GLASS	1
3	2'-6"	5'-0"	3	0.32	0.32	7.5	EAST	-		DUAL TEMP.	CASEMENT	1
4	5'-0"	5'-0"	3	0.32	0.32	25	EAST	-		DUAL TEMP.	FIXED GLASS	1
5	3'-0"	3'-0"	3	0.32	0.32	9	EAST	-		DUAL TEMP.	FIXED GLASS	1
6	2'-6"	5'-0"	3	0.32	0.32	11	EAST	-		DUAL TEMP.	FIXED GLASS	1
7	6'-0"	5'-0"	3	0.32	0.32	7.5	EAST	-		DUAL TEMP.	FIXED GLASS	1
8	6'-0"	5'-0'	2	0.32	0.32	30	SOUTH	-		DUAL TEMP.	SLIDING WINDOW	1
9	2'-6"	5'-0"	3	0.32	0.32	7.5	EAST	-		DUAL TEMP.	FIXED GLASS	1
10	3'-0	3'-0"	3	0.32	0.32	9	NORTH	-		DUAL TEMP.	FIXED GLASS	1
11	5'-0"	5'-0"	3	0.32	0.32	25	NORTH	-		DUAL TEMP.	SLIDING WINDOW	1
12	2'-6"	5'-0"	3	0.32	0.32	7.5	WEST	-		DUAL TEMP.	FIXED GLASS	1
13	5'-0"	5'-0"	3	0.32	0.32	25	SOUTH	-		DUAL TEMP.	SLIDING WINDOW	1
14	4'-0"	5'-0"	3	0.32	0.32	20	SOUTH	-		DUAL TEMP.	SLIDING WINDOW	1

ADU

SYM	WINDOW SIZE WIDTH	WINDOW SIZE HEIGHT	TYPE	U-FACTOR	SHGC	AREA	DIRECTION	MATERIAL	FRAME	GLAZING	REMARKS	QTY
1	6'-0"	3'-0"	1	0.32	0.32	18	EAST	-		DUAL TEMP.	SLIDING WINDOW	1
2	5'-0"	5'-0"	2	0.32	0.32	25	NORTH	-		DUAL TEMP.	SLIDING WINDOW	1
3	2'-0"	3'-0"	3	0.32	0.32	6	WEST	-		DUAL TEMP.	FIXED GLASS	1
4	5'-0"	5'-0"	3	0.32	0.32	25	WEST	-		DUAL TEMP.	SLID'G	1

WINDOW TYPES

NOTES

WINDOW MANUFACTURER:
×
×
×
×
×

A. CONTRACTOR SHALL VERIFY ALL WINDOW SIZES WITH PLANS AND EXTERIOR ELEVATIONS PRIOR TO CONSTRUCTION.

B. CONTRACTOR SHALL FIELD VERIFY ALL ROUGH FRAMING OPENINGS PRIOR TO FABRICATION.

C. CONTRACTOR SHALL VERIFY MINIMUM BEDROOM EGRESS REQUIREMENTS AND SIZES WITH WINDOW MANUFACTURER.
PROVIDE EMERGENCY EXIT DOOR OR WINDOW FROM ALL SLEEPING ROOMS WITH A NET CLEAR WINDOW OPENING AREA OF NOT LESS THAN 5.7 SQ. FT. (821 SQ. IN.). MIN. NET WINDOW OPENING HEIGHT DIMENSION, 24" CLEAR; MIN. NET OPENING WIDTH DIMENSION, 20" CLEAR. FINISHED SILL HEIGHT MAXIMUM 44" ABOVE THE FLOOR. (UBC SECTION 310.4)

D. CONTRACTOR SHALL VERIFY ALL SLIDING PANEL OF DOORS OR WINDOWS ARE LOCATED WITH A MIN. 3'-0" DISTANCE FROM ANY EXHAUST DISCHARGE & PROVIDE XO OR OX SLIDING PANELS ARE REQUIRED.

E. ALL DOORS AND WINDOWS SHALL MEET MIN. INFILTRATION REQUIREMENTS PER CALIFORNIA ENERGY STANDARDS AND TITLE-24.

F. ALL DOORS AND WINDOWS SHALL MEET MIN. STC RATINGS. AS MINIMUM STANDARDS ALL RESIDENTIAL ENTRY DOORS SHALL HAVE STC RATING NOT LESS THAN 26.

G. ALL OUT SWING DOORS EXTERIOR DOORS SHALL HAVE NON-REMOVABLE & NON-CORROSIVE PIN HINGES.

H. FENESTRATIONS WITH 'U' FACTOR LOWER THAN DEFAULT VALUE MUST HAVE PERMANENT LABEL. OTHER FENESTRATIONS MAY HAVE A FACTORY REMOVABLE LEBEL.



Clopay ›

Classic Collection 8 ft. x 7 ft. Non-Insulated Almond Garage Door with Plain Window

★★★½☆ (22) Write a Review Questions & Answers (69)

- 1-layer, 25-Gauge steel frame construction
- Raised panel details provide a classic look
- Can be painted to complement your home's exterior

$573.00

OR

$96.00 per month* suggested payments with 6 months* financing on this $573.00 purchase*.

Apply for a Home Depot Consumer Card

Garage Door Color: **Almond**

REVISIONS:

steven phillips - architect.
76 STONEKIRK DRIVE
LADERA RANCH, CA. 92715
BELLA VISTA ARCHITECTS
949.400.5760

steven phillips architect

A CUSTOM HOME FOR NICK ROCCO
PLACENTIA
1649 OAK STREET
LOT 43 AND 45 OAK STREET
PLACENTIA, CA.

LICENSED ARCHITECT
STEVEN LOWELL PHILLIPS
C-11314
REN. 3-31-27
STATE OF CALIFORNIA

SHEET TITLE:
WINDOW & DOOR SCHEDULE

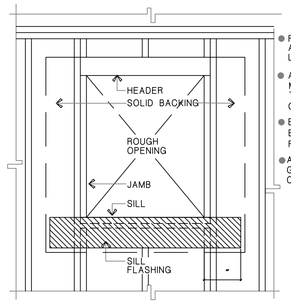
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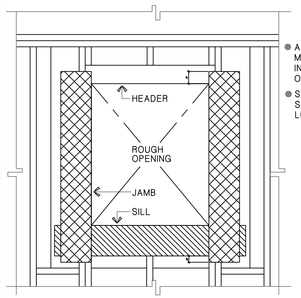
SHEET NO.
A5

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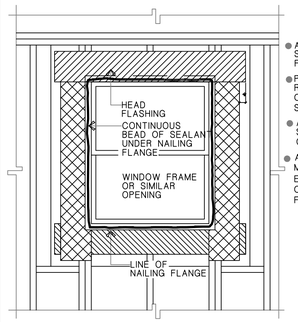
STEP 1 :

- PROVIDE SOLID BACKING AT ALL AREAS WHERE FLASHING MATERIAL LAPPING WILL OCCUR.
- ATTACH SILL STRIP OF 12" WIDE MOISTOP FLASHING MATERIAL WITH THE TOP EDGE EVEN WITH THE TOP OF THE ROUGH SILL.
- EXTEND THIS STRIP AT LEAST 14" BEYOND THE EDGE OF THE ROUGH OPENING.
- ATTACH FLASHING MATERIAL WITH GALVANIZED ROOFING NAILS OR CORROSION-RESISTANT STAPLES.



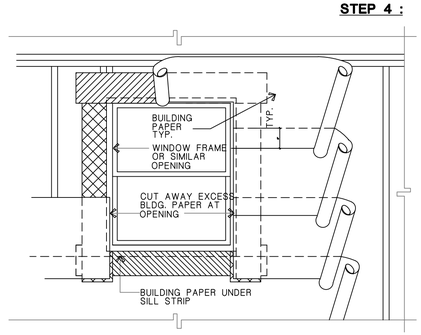
STEP 2 :

- ATTACH JAMB STRIPS OF 12" WIDE MOISTOP FLASHING MATERIAL WITH INSIDE EDGE EVEN WITH THE JAMB OF THE ROUGH OPENING.
- START JAMB STRIPS 2" BELOW SILL STRIP AND EXTEND 4" ABOVE LOWER EDGE OF HEADER.



STEP 3 :

- APPLY A CONTINUOUS BEAD OF SEALANT TO THE BACK OF THE FRAME NAILING FLANGE
- PLACE AND SECURE FRAME INTO ROUGH OPENING WITH FLANGES OVER THE INSTALLED JAMB AND SILL MOISTOP FLASHING MATERIAL.
- APPLY A CONTINUOUS BEAD OF SEALANT TO THE FRONT FACE OF THE HEAD NAILING FLANGE.
- ATTACH 12" WIDE MOISTOP FLASHING MATERIAL OVER THE HEAD FLANGE. EXTEND THIS STRIP 2" BEYOND THE OUTER EDGE OF THE JAMB FLASHING MATERIAL.



STEP 4 :

STARTING FROM THE BASE OF THE WALL, APPLY BUILDING PAPER UNDER THE SILL STRIP AND CUT ANY EXCESS BUILDING PAPER THAT MAY EXTEND ABOVE THE SILL AND BETWEEN THE JAMBS OF THE OPENING.

APPLY THE NEXT COURSE OF BUILDING PAPER (BUTTING TO THE FRAME OPENING) OVER THE JAMB FLASHING MATERIAL.

APPLY SUCCEEDING LAYERS OF BUILDING PAPER IN SHINGLE BOARD FASHION UP THE WALL, LAPPING COURSES A MINIMUM OF 6".

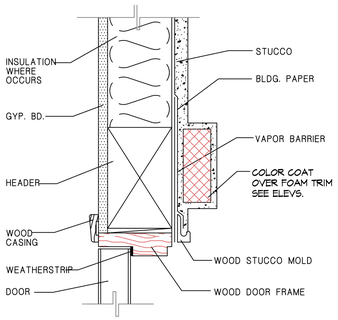
NOTES :

SECTION 1402 OF THE C.B.C. STATES "EXTERIOR OPENINGS EXPOSED TO THE WEATHER SHALL BE FLASHED IN A MANNER AS TO MAKE THEM WEATHERPROOF." THE PROCEDURE ABOVE IS RECOMMENDED TO ACHIEVE THIS INTENT FOR THE FLASHING OF WALL OPENINGS TO INCLUDE BUT NOT LIMITED TO: WINDOWS, DOORS, VENTS, ETC.

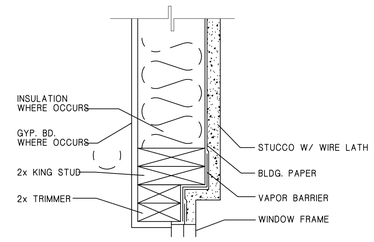
ALL MATERIALS SHALL BE IN STRICT CONFORMANCE WITH U.B.C. STANDARD 14-1.

APPLICATION OF FINISH MATERIALS OVER FLASHING MATERIALS SHOWN SHALL BE AS SPECIFIED BY CODE REQUIREMENTS, MANUFACTURER'S INSTRUCTIONS AND THE BEST PRACTICES OF THE TRADE.

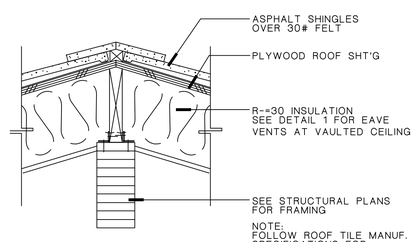
ADDITIONAL MATERIALS,i.e. METAL HEAD FLASHING,ELASTOMERIC SHEET WATERPROOFING ETC. MAY OCCUR, DEPENDING ON THE SPECIFIC FINISH MATERIALS BEING USED. REFER TO INDIVIDUAL DETAILS FOR ADDITIONAL INFORMATION.



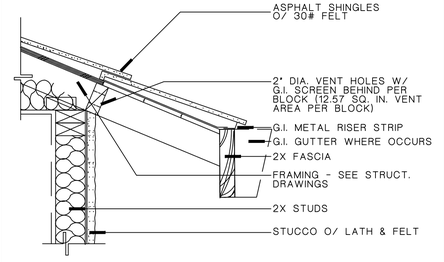
DOOR HEAD | SCALE: 3"=1'-0" | 13



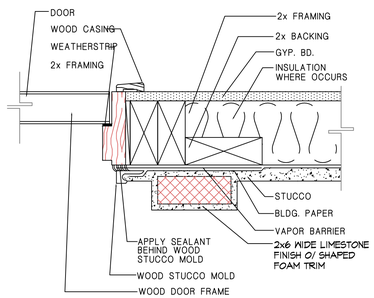
WINDOW HEAD | SCALE: 3"=1'-0" | 9



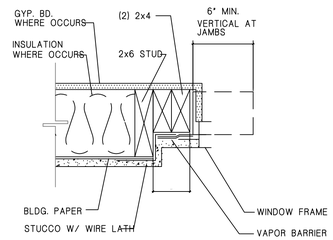
RIDGE AT VAULTED CEILING | ~~SCALE: 1/2"=1'-0"~~ | 5



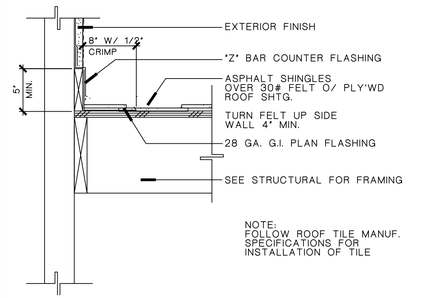
EAVE | SCALE: 3"=1'-0" | 1



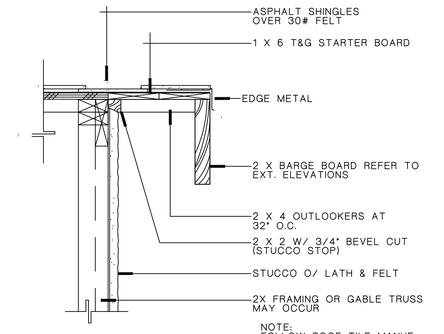
DOOR JAMB | SCALE: 3"=1'-0" | 14



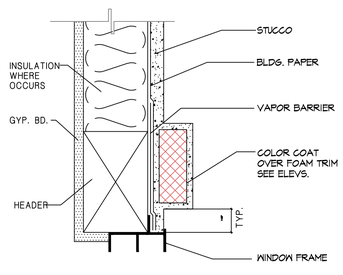
WINDOW JAMB | SCALE: 3"=1'-0" | 10



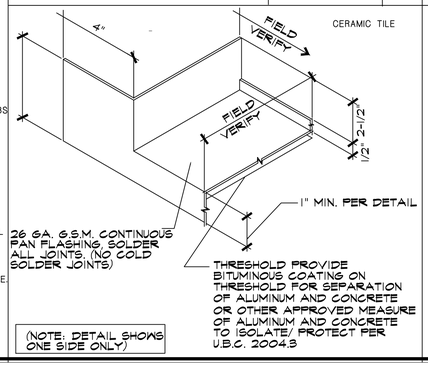
ROOF @ WALL | SCALE: 3"=1'-0" | 6



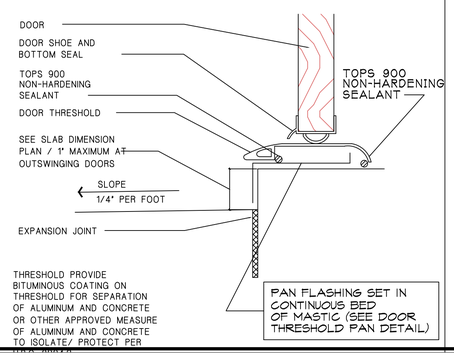
RAKE | SCALE: 3"=1'-0" | 2



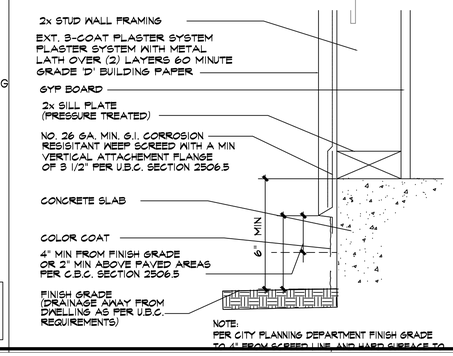
WINDOW HDR | | 15



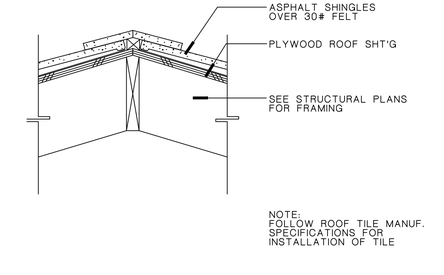
WINDOW SILL | SCALE: 3"=1'-0" | 11

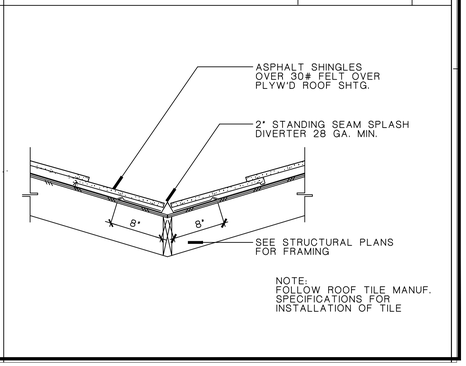


STUCCO CORNER | SCALE: 3"=1'-0" | 7



RIDGE | SCALE: 1 1/2"=1'-0" | 3





REVISIONS:

steven phillips - architect.
76 STONEKIRK DRIVE
BELLA VISTA ARKANSAS 72715
949-400-5760

steven phillips architect

A CUSTOM HOME FOR NICK ROCCO
PLACENTIA
1649 OAK STREET
LOT 43 AND 45 OAK STREET
PLACENTIA, CA.

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C-11314
REN. 3-31-21
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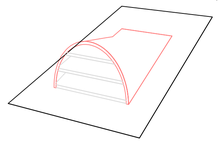
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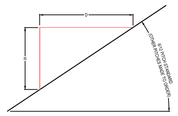
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1148 NORTH MARSHALL AVE.
EL CAJON, CA 92020
PHONE: 619-448-3567
FAX:619-448-9072
www.thunderbirdproducts.com

☑ SELECT DESIRED VENT OPTION:

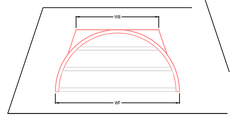
☐ 18" HALF-ROUND LOUVERED DORMER VENT (RM-DHR18)
☐ 24" HALF-ROUND LOUVERED DORMER VENT (RM-DHR24)



ISOMETRIC VIEW



SIDE ELEVATION



FRONT ELEVATION

PART #	WF	WB	H	D	# OF BLADES	FREE AREA
RM-DHR18	18"	9"	9"	18"	3"	31 SQ. IN
RM-DHR24	24"	16 1/2"	12"	21 1/2"	4"	74 SQ. IN

NOTES:
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2. DO NOT SCALE DRAWING.
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5. CONTRACTOR'S NOTE: FOR PRODUCT AND COMPANY INFORMATION VISIT www.CADdetails.com/info AND ENTER REFERENCE NUMBER xp11649.

ROOF VENTS
HALF-ROUND LOUVERED DORMER VENT

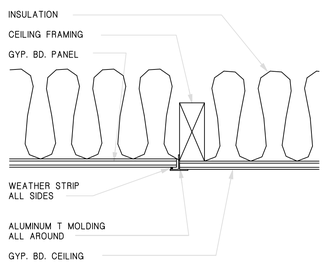
xp11649 REVISION DATE 13/03/2019

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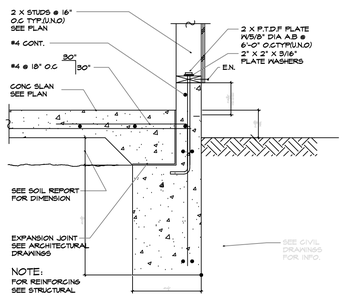
DORMER VENT | 12

see page a-2 for location

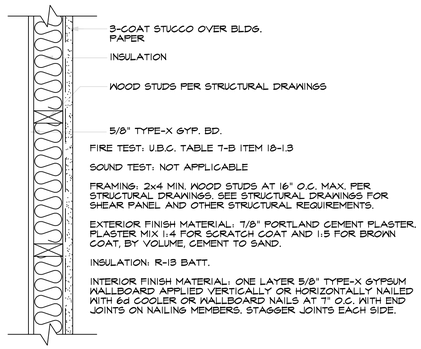
13



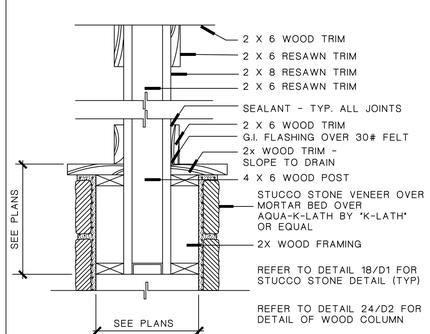
ATTIC ACCESS | SCALE: 3"=1'-0" | 8



GARAGE CURB | SCALE: 3"=1'-0" | 9

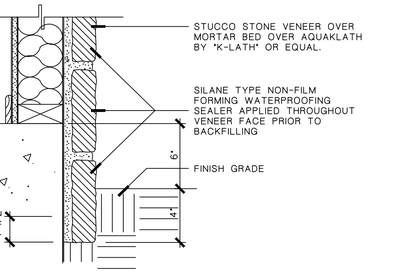


EXTERIOR WALL | SCALE: 3"=1'-0" | 10

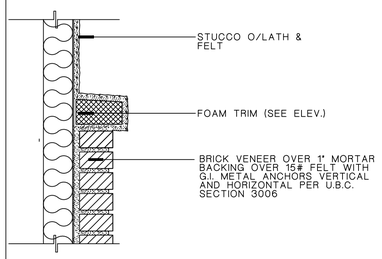


WOOD COLUMN | 11

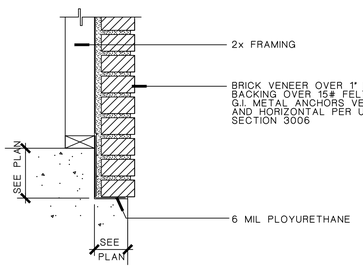
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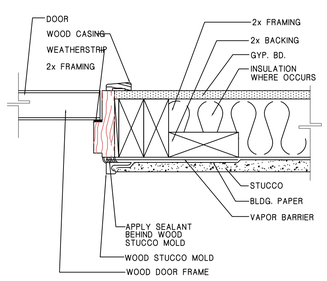
VENEER STONE | SCALE: 3"=1'-0" | 4



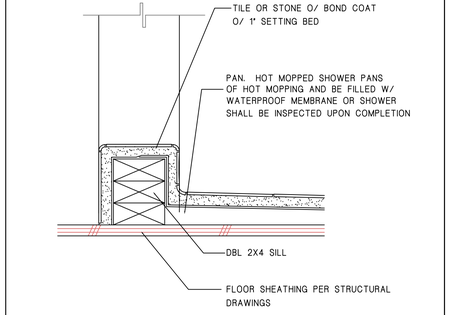
VENEER STONE | SCALE: 3"=1'-0" | 5



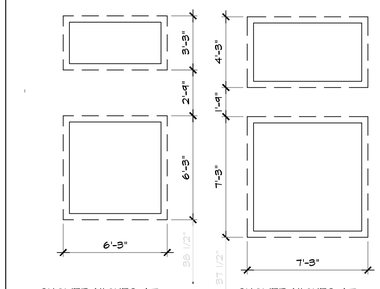
VENEER STONE | SCALE: 3"=1'-0" | 6



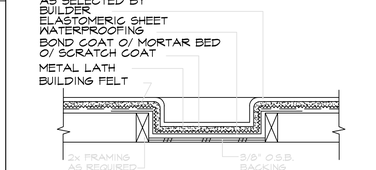
DOOR JAMB | SCALE: N.T.S. | 7



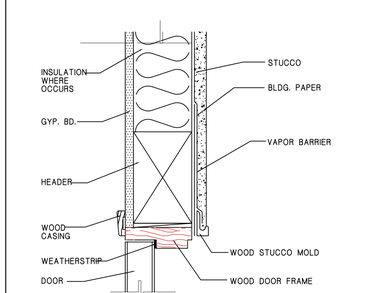
SHOWER CURB | SCALE: 3"=1'-0" | 1



NOTE:
DIMENSIONS ARE TO FRAMED OPENING - TYP.



SHOWER NICHE | SCALE: 1 1/2"=1'-0" | 2



DOOR HEAD | SCALE: N.T.S. | 3

REVISIONS:

steven phillips - architect.
76 STONEYKIRK DRIVE
BELLA VISTA, ARKANSAS 72715
949.400.5760

steven phillips architect

A CUSTOM HOME FOR NICK ROCCO
PLACENTIA
1649 OAK STREET
LOT 43 AND 45 OAK STREET
PLACENTIA, CA.

LICENSED ARCHITECT
STEVEN LOWELL PHILLIPS
C-11314
REN. 3-31-27
STATE OF CALIFORNIA

SHEET TITLE:
ARCHITECTURAL DETAILS

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7-31-26

SHEET NO.
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2025 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.)

Y | N/A | RESPON. PARTY

CHAPTER 3
GREEN BUILDING
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.

The mandatory provision of Section 4.106.4.2 may apply to additions or alterations of existing parking facilities or the addition of new parking facilities serving existing multifamily buildings. See Section 4.106.4.3 for application.

Note: Repairs including, but not limited to, resurfacing, restriping and repairing or maintaining existing lighting fixtures are not considered alterations for the purpose of this section.

Note: On and after January 1, 2014, residential buildings undergoing permitted alterations, additions, or improvements shall replace noncompliant plumbing fixtures with water-conserving plumbing fixtures. Plumbing fixture replacement is required prior to issuance of a certificate of final completion, certificate of occupancy or final permit approval by the local building department. See Civil Code Section 1101.1, 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.
Exceptions:
1. [HCD] Accessory structures and accessory occupancies serving residential buildings shall comply with Chapter 4 and Appendix A4, as applicable.
2. [HCD] For purposes of *CALGreen*, live/work units, complying with Section 419 of the *California Building Code*, shall not be considered mixed occupancies. Live/Work units shall comply with Chapter 4 and Appendix A4, as applicable.

DIVISION 4.1 PLANNING AND DESIGN

ABBREVIATION DEFINITIONS:

HCD	Department of Housing and Community Development
BSC	California Building Standards Commission
DSA-SS	Division of the State Architect, Structural Safety
OSHPD	Office of Statewide Health Planning and Development
LR	Low Rise
HR	High Rise
AA	Additions and Alterations
N	New

CHAPTER 4
RESIDENTIAL MANDATORY MEASURES

SECTION 4.102 DEFINITIONS

4.102.1 DEFINITIONS
The following terms are defined in Chapter 2 *(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.

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.

Note: Refer to the State Water Resources Control Board for projects which disturb one acre or more of soil, or are part of a larger common plan of development which in total disturbs one acre or more of soil.

(Website: https://www.waterboards.ca.gov/water_issues/programs/stormwater/construction.html)

4.106.3 GRADING AND PAVING. Construction plans shall indicate how the site grading or drainage system will manage all surface water flows to keep water from entering buildings. Examples of methods to manage surface water include, but are not limited to, the following:

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 or 4.106.4.2. Electric vehicle supply equipment (EVSE) shall comply with the *California Electrical Code*.

Exceptions:
1. On a case-by-case basis, where the local enforcing agency has determined EV charging and infrastructure are not feasible based upon one or more of the following conditions:
   1.1 Where there is no local utility power supply or the local utility is unable to supply adequate power.
   1.2 Where there is evidence suitable to the local enforcing agency substantiating that additional local utility infrastructure design requirements, directly related to the implementation of Section 4.106.4, may adversely impact the construction cost of the project.
2. Accessory Dwelling Units (ADU) and Junior Accessory Dwelling Units (JADU) without additional parking facilities.

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 208/240-volt minimum dedicated branch circuit and space(s) reserved to permit installation of a branch circuit overcurrent protective device.

Exemption: A raceway is not required if a minimum 40-ampere 208/240-volt dedicated EV branch circuit is installed in close proximity to the proposed location of an EV charger at the time of original construction in accordance with the *California Electrical Code*.

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, hotels and motels and new residential parking facilities.
When parking is provided, parking spaces for new multifamily dwellings, hotels and motels shall meet the requirements of Section 4.106.4.2.2. Calculations for spaces shall be rounded up to the nearest whole number. A parking space served by electric vehicle supply equipment or designed as an EV charging space shall count as at least one standard automobile parking space only for the purpose of complying with any applicable minimum parking space requirements established by a local jurisdiction. See Vehicle Code Section 22511.2 for further details.

4.106.4.2.1 Reserved.

4.106.4.2.2 Multifamily dwellings, hotels and motels

1. EV ready parking spaces with receptacles.

a. Multifamily parking facilities with assigned parking. Where dwelling units are provided with assigned parking spaces equal to or greater than the number of dwelling units, at least one low power Level 2 EV charging receptacle shall be provided at an assigned parking space for each dwelling unit.

1. Where the total number of dwelling units exceeds the number of assigned parking spaces, all assigned parking spaces shall be provided with one low power Level 2 EV charging receptacle.

Exception: Areas of parking facilities served by parking lifts, including but not limited to, automated mechanical-access open parking garages as defined in the California Building Code; or parking facilities otherwise incapable of supporting electric vehicle charging.

b. Multifamily parking facilities with unassigned parking. Where dwelling units are provided with unassigned parking spaces equal to or greater than the number of dwelling units, at least one low power Level 2 EV charging receptacle shall be provided at an unassigned parking space for each dwelling unit.

1. Where the total number of dwelling units exceeds the number of unassigned parking spaces, all unassigned parking spaces shall be provided with one low power Level 2 EV charging receptacle.

Exception: Areas of parking facilities served by parking lifts, including but not limited to, automated mechanical-access open parking garages as defined in the California Building Code; or parking facilities otherwise incapable of supporting electric vehicle charging.

3. Multifamily parking facilities with assigned and unassigned parking. Where multifamily buildings are provided with both assigned and unassigned parking spaces equal to or greater than the number of dwelling units, at least one low power Level 2 EV charging receptacle shall be provided for each dwelling unit at either the assigned or unassigned parking space, but not both.

d. Receptacle power source, EV charging receptacles in multifamily parking facilities at assigned parking spaces shall be provided with a dedicated branch circuit connected to the dwelling unit's electrical panel, unless determined as infeasible by the project builder or designer and subject to concurrence of the local enforcing agency.

Exception: Areas of parking facilities served by parking lifts, including but not limited to, automated mechanical-access open parking garages as defined in the California Building Code; or parking facilities otherwise incapable of supporting electric vehicle charging.

e. Receptacle configurations. 208/240V EV charging receptacles shall comply with one of the following configurations:
1. For 20-ampere receptacles, NEMA 6-20R
2. For 30-ampere receptacles, NEMA 14-30R
3. For 50-ampere receptacles, NEMA 14-50R

2. EV ready parking spaces with EV chargers

a .Multifamily parking facilities with unassigned or common use parking. In addition to the low power Level 2 EV charging receptacle requirements of Section 4.106.4.2.2 (1), twenty-five (25) percent of unassigned or common use parking spaces not already provided with low power Level 2 EV charging receptacles, pursuant to Section 4.106.4.2.2 (1), shall be equipped with Level 2 EV chargers and shall be made available for use by all residents or guests.

b. EV charger connectors. EV chargers shall be equipped with J1772 or J3400 connectors.

c. An automatic load management system (ALMS) may be used to reduce the maximum required electrical capacity to each space served by the ALMS. The electrical system and any on-site distribution transformers shall have sufficient capacity to deliver at least 3.3 kW simultaneously to each EV charging station (EVCS) served by the ALMS. The branch circuit shall have a minimum capacity of 40 amperes, and installed EV chargers shall have a capacity of not less than 30 amperes.

4.106.4.2.2.1 Electric vehicle charging stations (EVCS).
Electric vehicle charging stations required by Section 4.106.4.2.2, Item 2, with EV chargers installed shall comply with Section 4.106.4.2.2.1.1.

Exception: Electric vehicle charging stations serving public accommodations, public housing, motels and hotels shall not be required to comply with this section. See *California Building Code*, Chapter 11B, for applicable requirements.

4.106.4.2.2.1.1 Electric vehicle charging stations (EVCS) spaces with EV chargers installed; dimensions and location.

EVCS spaces shall be designed to comply with the following:

1. The minimum length of each EVCS space shall be 18 feet (5486 mm).
2. The minimum width of each EVCS space shall be 9 feet (2743 mm).
3. One in every 25 EVCS 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 EVCS space is 12 feet (3658 mm). Surface slope for this EVCS space and the aisle shall not exceed 1 unit vertical in 48 units horizontal (2.083 percent slope) in any direction. These EVCS spaces shall also comply with at least one of the following:

   a. The EVCS 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.

   b. The EVCS space shall be located on an accessible route, as defined in the *California Building Code*, Chapter 2, to the building.

   Exception: Electric vehicle charging stations designed and constructed in compliance with the *California Building Code*, Chapter 11B, are not required to comply with Section 4.106.4.2.2.1.1.

4.106.4.2.2.1.2 Accessible electric vehicle charging station spaces.
In addition to the requirements in Section 4.106.4.2.2.1.1, all EV chargers, where installed, shall comply with the accessibility provisions for EV chargers in the *California Building Code*, Chapter 11B. EV ready spaces and EVCS in multifamily developments shall comply with *California Building Code*, Chapter 11A, Section 1109A.

4.106.4.2.3 Reserved.

4.106.4.2.4 Reserved.

4.106.4.2.5 Electric vehicle ready space signage.
Electric vehicle ready spaces shall be identified by signage or pavement markings, in compliance with Caltrans Traffic Operations Policy Directive 13-01 (Zero Emission Vehicle Signs and Pavement Markings) or its successor(s).

4.106.4.2.6 Hotels and motels.

1. EV ready parking spaces with receptacles.

a. Hotels and motels. Forty (40) percent of the total number of parking spaces shall be equipped with low power Level 2 EV charging receptacles.

Exception: Areas of parking facilities served by parking lifts, including but not limited to automated mechanical-access open parking garages as defined in the California Building Code; or parking facilities otherwise incapable of supporting electric vehicle charging.

b. Receptacle configurations. 208/240V EV charging receptacles shall comply with one of the following configurations:
1.For 20- ampere receptacles, NEMA 6-20R
2.For 30- ampere receptacles, NEMA 14-30R
3.For 50- ampere receptacles, NEMA 14-50R2.

2. EV Ready parking spaces with EV chargers.

a. Hotels and motels. Twenty-five (25) percent of the total number of parking spaces shall be equipped with Level 2 EV chargers.

b. EV charger connectors. EV chargers shall be equipped with J1772 or J3400 connectors.

Exception: Areas of parking facilities served by parking lifts, including but not limited to, automated mechanical-access open parking garages as defined in the California Building Code; or parking facilities otherwise incapable of supporting electric vehicle charging.

c. An automatic load management system (ALMS) may be used to reduce the maximum required electrical capacity to each space served by the ALMS. The electrical system and any on-site distribution transformers shall have sufficient capacity to deliver at least 3.3 kW simultaneously to each EV charging station (EVCS) served by the ALMS. The branch circuit shall have a minimum capacity of 40 amperes, and installed EV chargers shall have a capacity of not less than 30 amperes.

4.106.4.3 Electric vehicle charging for additions and alterations of parking facilities serving existing multi-family buildings, hotels and motels.
When existing parking facilities are altered or new parking spaces are added to existing parking facilities, and the work requires a building permit, each parking space added or altered shall have access to either a low power Level 2 EV charging receptacle or Level 2 EV charger, unless determined as infeasible by the project builder or designer and subject to concurrence of the local enforcing agency.

Exception: Where work requiring a permit is being performed for the installation of 120-volt electrical receptacle(s) for level 1 EV charging.

4.106.4.4 Bicycle parking. Bicycle parking shall comply with Sections 4.106.4.4.1 through 4.106.4.4.3.

4.106.4.4.1 Short-term bicycle parking for multifamily buildings, hotels and motels. Provide on-site bicycle parking at a ratio of one parking space for every 10,000 square feet, but not less than two spaces. Short-term bicycle parking shall be located within 200 feet of building entrances, and readily visible to passers-by. Acceptable parking facilities shall be conveniently accessed from the street and may include, but not be limited to:

1.Permanently anchored bicycle parking devices, racks, or lockers in an unsheltered, open area.
2.Covered or uncovered enclosures with permanently anchored bicycle parking devices or racks.

4.106.4.4.2 Long-term bicycle parking for multifamily buildings.
Provide on-site bicycle parking at a ratio of one parking space for every two dwelling units. Acceptable parking facilities shall be conveniently accessed from the street and may include, but not be limited to:
1. Covered, lockable enclosures with permanently anchored bicycle parking devices or racks.
2. Lockable bicycle storage rooms with permanently anchored bicycle parking devices or racks.
3. Lockable, weatherproof, permanently anchored bicycle lockers.

4.106.4.4.3 Long-term bicycle parking for hotel and motel buildings.
Provide one on-site long-term bicycle parking space for every 25,000 square feet, but not less than two. Acceptable parking facilities shall be conveniently accessed from the street and may include, but not be limited to:
1. Covered, lockable enclosures with permanently anchored bicycle parking devices or racks.
2. Lockable bicycle storage rooms with permanently anchored bicycle parking devices or racks.
3. Lockable, weatherproof, permanently anchored bicycle lockers.

DIVISION 4.2 ENERGY EFFICIENCY

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

4.303 INDOOR WATER USE

4.303.1 WATER CONSERVING PLUMBING FIXTURES AND FITTINGS. Plumbing fixtures (water closets and urinals) and fittings (faucets and showerheads) shall comply with the sections 4.303.1.1, 4.303.1.2, 4.303.1.3, and 4.303.4.4.

Note: All noncompliant plumbing fixtures in any residential real property shall be replaced with water-conserving plumbing fixtures. Plumbing fixture replacement is required prior to issuance of a certificate of final completion, certificate of occupancy, or final permit approval by the local building department. See Civil Code Section 1101.1, et seq., for the definition of a noncompliant plumbing fixture, types of residential buildings affected and other important enactment dates.

4.303.1.1 Water Closets. The effective flush volume of all water closets shall not exceed 1.28 gallons per flush. Tank-type water closets shall be certified to the performance criteria of the U.S. EPA WaterSense 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 the showerheads and/or other shower outlets controlled by a single valve shall not exceed 1.8 gallons per minute at 80 psi, or the shower shall be designed to only allow one shower outlet to be in operation at a time.

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 0.2 gallons per cycle.

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

4.303.1.4.5 Pre-rinse spray valves.
When installed, commercial pre-rinse spray values shall meet the requirements in the California Plumbing Code, Section 420.3.

4.303.2 Submeters for multifamily buildings and dwelling units in mixed-used residential/commercial buildings.
Submeters shall be installed to measure water usage of individual rental dwelling units in accordance with the *California Plumbing Code*.

4.303.3 Standards for plumbing fixtures and fittings. Plumbing fixtures and fittings shall be installed in accordance with the *California Plumbing Code*, and shall meet the applicable standards referenced in Table 1701.1 of the *California Plumbing Code*.

4.304 OUTDOOR WATER USE

4.304.1 OUTDOOR POTABLE WATER USE IN LANDSCAPE AREAS. Residential developments shall comply with a local water efficient landscape ordinance or the current California Department of Water Resources' Model Water Efficient Landscape Ordinance (MWELO), whichever is more stringent.

NOTES:

1. The Model Water Efficient Landscape Ordinance (MWELO) is located in the *California Code Regulations*, Title 23, Chapter 2.7, Division 2. MWELO and supporting documents, including water budget calculator, are available at: https://www.water.ca.gov/

DIVISION 4.4 MATERIAL CONSERVATION AND RESOURCE EFFICIENCY

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.

4.408 CONSTRUCTION WASTE REDUCTION, DISPOSAL AND RECYCLING

4.408.1 CONSTRUCTION WASTE MANAGEMENT. Recycle and/or salvage for reuse a minimum of 65 percent of the non-hazardous construction and demolition waste in accordance with either Section 4.408.2, 4.408.3 or 4.408.4, or meet a more stringent local construction and demolition waste 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 collected 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 lbs./sq.ft. of the building area shall meet the minimum 65% construction waste reduction requirement in Section 4.408.1

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

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

Notes:

1. Sample forms found in "A Guide to the California Green Building Standards Code (Residential)" located at www.hcd.ca.gov/CALGreen.html may be used to assist in documenting compliance with this section.
2. Mixed construction and demolition debris (C & D) processors can be located at the California Department of Resources Recycling and Recovery (CalRecycle).

4.410 BUILDING MAINTENANCE AND OPERATION

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

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 inspections verifications required by the enforcing agency or this code.
11. Information from the Department of Forestry and Fire Protection on maintenance of defensible space around residential structures.
12. Information and/or drawings identifying the location of grab bar reinforcements.

4.410.2 RECYCLING BY OCCUPANTS. Where 5 or more multifamily dwelling units are constructed on a building site, provide readily accessible area(s) that serves all buildings on the site and are identified for the depositing, storage and collection of non-hazardous materials for recycling, including (at a minimum) paper, corrugated cardboard, glass, plastics, organic waster, and metals, or meet a lawfully enacted local recycling ordinance, if more restrictive.

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

DIVISION 4.5 ENVIRONMENTAL QUALITY

SECTION 4.501 GENERAL

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

SECTION 4.502 DEFINITIONS

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

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

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

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

REVISIONS:

steven phillips - architect
76 STONEYKIRK DRIVE
BELLA VISTA, ARKANSAS 72715
949.400.5760

STEVEN PHILLIPS ARCHITECT

A CUSTOM HOME FOR NICK ROCCO
PLACENTIA
1649 OAK STREET
LOT 43 AND 45 OAK STREET
PLACENTIA, CA.

LICENSED ARCHITECT
STEVEN LOWELL PHILLIPS
C-11314
REN. 3-31-27
STATE OF CALIFORNIA

SHEET TITLE:
CAL-GREEN 1

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2025 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.)

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 O^3/g ROC).
Note: MIR values for individual compounds and hydrocarbon 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).

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.

4.504 POLLUTANT CONTROL
4.504.1 COVERING OF DUCT OPENINGS & 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 or 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, sealant 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]
(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 ADHESIVES	100
RUBBER FLOOR ADHESIVES	60
SUBFLOOR ADHESIVES	50
CERAMIC TILE ADHESIVES	65
VCT & ASPHALT TILE ADHESIVES	50
DRYWALL & PANEL ADHESIVES	50
COVE BASE ADHESIVES	50
MULTIPURPOSE CONSTRUCTION ADHESIVE	70
STRUCTURAL GLAZING ADHESIVES	100
SINGLE-PLY ROOF MEMBRANE ADHESIVES	250
OTHER ADHESIVES NOT 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 & 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	
NON-POROUS	250
POROUS	775
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 & LESS EXEMPT COMPOUNDS

COATING CATEGORY	VOC LIMIT
FLAT COATINGS	50
NON-FLAT 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, & UNDERCOATERS	100
REACTIVE PENETRATING SEALERS	350
RECYCLED COATINGS	250
ROOF COATINGS	50
RUST PREVENTATIVE COATINGS	250
SHELLACS	
CLEAR	730
OPAQUE	550
SPECIALTY PRIMERS, SEALERS & UNDERCOATERS	100
STAINS	250
STONE CONSOLIDANTS	450
SWIMMING POOL COATINGS	340
TRAFFIC MARKING COATINGS	100
TUB & TILE REFINISH COATINGS	420
WATERPROOFING MEMBRANES	250
WOOD COATINGS	275
WOOD PRESERVATIVES	350
ZINC-RICH PRIMERS	340

1. GRAMS OF VOC PER LITER OF COATING, INCLUDING WATER & 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, FEB. 1, 2008. MORE INFORMATION IS AVAILABLE FROM THE AIR RESOURCES BOARD.

TABLE 4.504.5 - 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
PARTICLE BOARD	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 CALIF. AIR RESOURCES BOARD, AIR TOXICS CONTROL MEASURE FOR COMPOSITE WOOD AS TESTED IN ACCORDANCE WITH ASTM E 1333. FOR ADDITIONAL INFORMATION, SEE CALIF. CODE OF REGULATIONS, TITLE 17, SECTIONS 93120 THROUGH 93120.12.
2. THIN MEDIUM DENSITY FIBERBOARD HAS A MAXIMUM THICKNESS OF 5/16" (8 MM).

DIVISION 4.5 ENVIRONMENTAL QUALITY (continued)
4.504.3 CARPET SYSTEMS. All carpet installed in the building interior shall meet the requirements of 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 1.2, January 2017 (Emission testing method for California Specification 01350)

See California Department of Public Health's website for certification programs and testing labs.

https://www.cdph.ca.gov/Programs/CCDPHP/DEODC/EHLB/IAQ/Pages/VOC.aspx.

4.504.3.1 Carpet cushion. All carpet cushion installed in the building interior shall meet the requirements of 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 1.2, January 2017 (Emission testing method for California Specification 01350)

See California Department of Public Health's website for certification programs and testing labs.

https://www.cdph.ca.gov/Programs/CCDPHP/DEODC/EHLB/IAQ/Pages/VOC.aspx.

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

4.504.4 RESILIENT FLOORING SYSTEMS. Where resilient flooring is installed , at least 80% of floor area receiving resilient flooring shall meet the requirements of 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 1.2, January 2017 (Emission testing method for California Specification 01350)

See California Department of Public Health's website for certification programs and testing labs.

hhttps://www.cdph.ca.gov/Programs/CCDPHP/DEODC/EHLB/IAQ/Pages/VOC.aspx.

4.504.5 COMPOSITE WOOD PRODUCTS. Hardwood plywood, particleboard and medium density fiberboard composite wood products used on the interior or exterior of the buildings shall meet the requirements for formaldehyde as specified in ARB's Air Toxics Control Measure for Composite Wood (17 CCR 93120 et seq.), by or before the dates specified in those sections, as shown in Table 4.504.5

4.504.5.1 Documentation. Verification of compliance with this section shall be provided as requested by the enforcing agency. Documentation shall include at least one of the following:

1. Product certifications and specifications.
2. Chain of custody certifications.
3. Product labeled and invoiced as meeting the Composite Wood Products regulation (see CCR, Title 17, Section 93120, et seq.).
4. Exterior grade products marked as meeting the PS-1 or PS-2 standards of the Engineered Wood Association, the Australian AS/NZS 2269, European 636 3S standards, and Canadian CSA 0121, CSA 0151, CSA 0153 and CSA 0325 standards.
5. Other methods acceptable to the enforcing agency.

4.505 INTERIOR MOISTURE CONTROL
4.505.1 General. Buildings shall meet or exceed the provisions of the *California Building Standards Code*.

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

4.505.2.1 Capillary break. A capillary break shall be installed in compliance with at least one of the following:

1. A 4-inch (101.6 mm) thick base of 1/2 inch (12.7mm) or larger clean aggregate shall be provided with a vapor barrier in direct contact with concrete and a concrete mix design, which will address bleeding, shrinkage, and curling, shall be used. For additional information, see American Concrete Institute, ACI 302.2R-06.
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 verified.
3. At least three random moisture readings shall be performed on wall and floor framing with documentation acceptable to the enforcing agency provided at the time of approval to enclose the wall and floor framing.

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

4.506 INDOOR AIR QUALITY AND EXHAUST
4.506.1 Bathroom exhaust fans. Each bathroom shall be mechanically ventilated and shall comply with the following:

1. Fans shall be ENERGY STAR compliant and be ducted to terminate outside the building.
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 less than or equal to 50% to a maximum of 80%. A humidity control may utilize manual or automatic means of adjustment.
   b. A humidity control may be a separate component to the exhaust fan and is not required to be integral (i.e., built-in)

Notes:

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*.

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 system functions are acceptable.

CHAPTER 7
INSTALLER & SPECIAL INSPECTOR QUALIFICATIONS
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] When required by the enforcing agency, the owner or the responsible entity acting as the owner's agent shall employ one or more special inspectors to provide inspection or other duties necessary to substantiate compliance with this code. Special inspectors shall demonstrate competence to the satisfaction of the enforcing agency for the particular type of inspection or task to be performed. In addition, the special inspector shall have a certification from a recognized state, national or international association, as determined by the local agency. The area of certification shall be closely related to the primary job function, as determined by the local agency.

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

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

REVISIONS

steven phillips - architect.
76 STONEYKIRK DRIVE
BELLA VISTA ARKANSAS 72715
949.400.5760

STEVEN PHILLIPS ARCHITECT

LICENSED ARCHITECT
STEVEN LOWELL PHILLIPS
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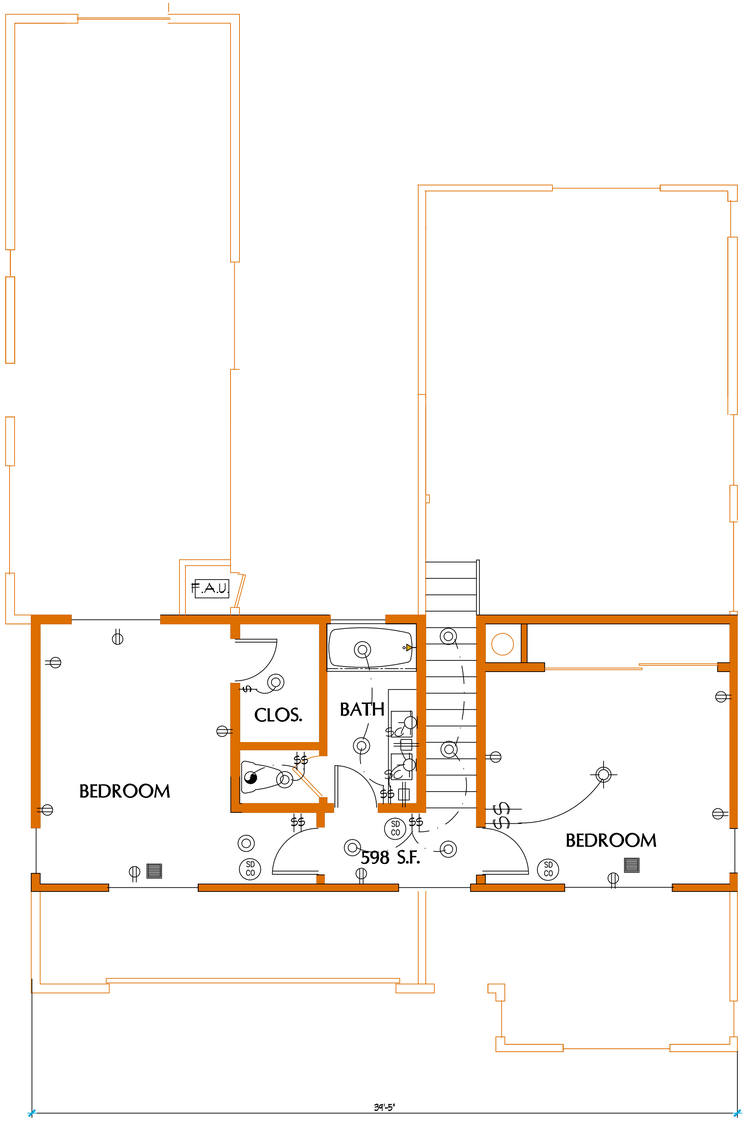
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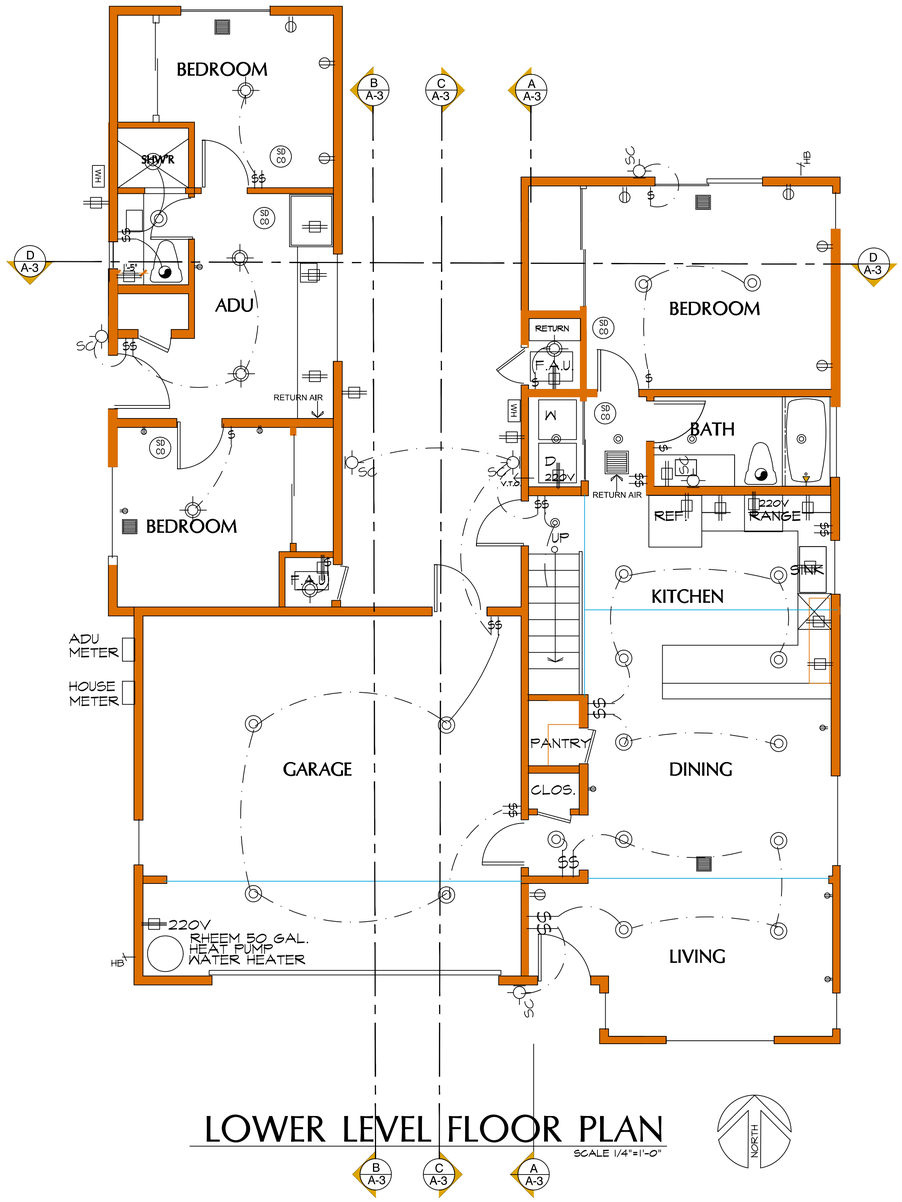
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UPPER LEVEL FLOOR PLAN

SCALE 1/4"=1'-0"



LOWER LEVEL FLOOR PLAN

SCALE 1/4"=1'-0"

ELECTRICAL LEGEND

1. ALL RECEPTACLES WITHIN THE BEDROOMS, LIVING ROOMS, AND HALLWAYS SHALL BE AFCI. RECEPTACLES IN BATHROOMS, GARAGES & LAUNDRY ROOM SHALL BE GFCI. WHICH SHALL BE ADDRESS O
2. ALL INTERIOR LIGHTING SHALL BE LED OR CONTROLLED BY SENSOR MOTIONS, AS SPECIFIED ON THE LEGEND.
3. BATHROOM EXHAUST FAN SHALL HAVE 50 CFM CAPACITY MIN. KITCHEN HOOD EXHAUST FAN TO HAVE 100 CFM CAPACITY. MIN.
4. AIR EXHAUST AND INTAKE OPENINGS THAT TERMINATE OUTDOORS SHALL BE PROTECTED WITH CORROSION-RESISTANT SCREENS, LOUVERS OR GRILLES HAVING AN OPENING SIZE OF NOT LESS THAN 1/4" INCH (6MM) AND A MAXIMUM OPENING SIZE OF 1/2" (13MM) IN ANY DIMENSION. OPENINGS SHALL BE PROTECTED AGAINST LOCAL WEATHER CONDITIONS. OUTDOOR AIR EXHAUST AND INTAKE OPENINGS SHALL MEET THE PROVISIONS FOR EXTERIOR WALL OPENING PROTECTIVES IN ACCORDANCE WITH THIS CODE. R303.7

- SWITCH
- 110 RECEPT. AFCI
- GFCI
- 220V (LED)
- SCONSE LIGHT (w) photo senscer
- (LED) LED DOWN LIGHT
- FAN
- PENDANT LIGHT
- SD CO HARDWIRED INTERCONNECTED -BATTERY BA
  SMOKE DETECTOR
  CARBON MONOXIDE DETECTOR
- HB HOSE BIB
- FUEL GAS PER PREVOUS APP. PLAN

UTILTIES NOTES

1. LIGHTING IN THE HALLWAYS AND BEDROOMS SHALL BE HIGH EFFICACY OR LIGHTING SHALL BE CONTROLLED BY MANUAL-ON OCCUPANT SENSORS OR DIMMER SWITCHES.
2. OUTDOOR LIGHTING ATTACHED TO THE BUILDING SHALL BE HIGH EFFICACY OR MUST BE CONTROLLED BY A MOTION SENSOR WITH INTEGRAL PHOTO CONTROL.
3. LUMINAIRES RECESSED IN INSULATED CEILING MUST BE RATED FOR DIRECT INSULATION CONTACT (IC), CERTIFIED AS AIRTIGHT CONSTRUCTION AND MUST HAVE A SEALED GASKET OR CAULKING BETWEEN THE HOUSING AND CEILING.
4. PROVIDE A MINIMUM OF 100 AMPERE ELECTRICAL SERVICE PANEL WITH 1/2" DIAMETER x 20' LONG REBAR FOR BACKUP UFER GROUND BONDED TO THE COLD WATER PIPE. CONTACT EDISON FOR METER LOCATION AND UNDERGROUND SERVICE IF REQUIRED.
5. PROVIDE HEATING TO PRODUCE THE REQUIRED MINIMUM ROOM TEMPERATURE OF 70 DEGREES FAHRENHEIT 3 FT. ABOVE FLOOR LEVEL. SHOW LOCATION, SIZE AND OTHER REQUIRED SPECS ON PLANS. UNDERCUT DOORS FOR NON-DUCTED HEATING SYSTEM FOR WARM AIR CIRCULATION, CBC SECTION 310.1.

ELECTRICAL NOTES

1. PROVIDE SMOKE ALARMS WITH BATTERY BACKUP IN THE EXISTING BEDROOMS AND IN THE AREAS GIVING ACCESS TO THOSE ROOMS PER CRC R314.3. HARD WIRE DETECTORS WHERE ACCESS IS AVAILABLE WITHOUT THE REMOVAL OF BUILDING FINISHES PER R314.4. INTERCONNECT ALL SMOKE ALARMS WHERE ACCESS IS AVAILABLE WITHOUT THE REMOVAL OF BUILDING FINISHES PER R314.5.
2. PROVIDE A CARBON MONOXIDE ALARM IN DWELLING UNITS OR SLEEPING UNITS WITH FUEL-BURNING APPLIANCES OR ATTACHED GARAGE PER CRC R315.1. HARD WIRE DETECTORS WHERE ACCESS IS AVAILABLE WITHOUT THE REMOVAL OF BUILDING FINISHES PER R315.1.2. INTERCONNECT ALL DETECTORS WHERE ACCESS IS AVAILABLE WITHOUT THE REMOVAL OF BUILDING FINISHES PER R315.1.3.
3. ALL WORK TO COMPLY WITH 2022 CALIFORNIA ELECTRICAL CODE (CEC) CALIFORNIA GREEN BUILDING STANDARD (CalGSC), CALIFORNIA ENERGY CODE (CEC) AND CALIFORNIA ENERGY STANDARDS.
4. ALL ELECTRICAL EQUIPMENT SHALL BE LISTED.
5. ALL 120 VOLT, SINGLE PHASE, 15-20 AMPERE BRANCH CIRCUITS SUPPLYING OUTLETS INSTALLED IN DWELLING UNITS (INCLUDING CLOSETS AND HALLWAYS) SHALL BE PROTECTED BY A LISTED ARC-FAULT CIRCUIT INTERRUPTER, COMBINATION TYPE, INSTALLED TO PROVIDE PROTECTION OF THE BRANCH CIRCUIT (CEC210.12.B)
6. TAMPER RESISTANT OUTLETS: IN ALL AREAS SPECIFIED IN SECTION 210.52, ALL NON-LOCKING 125 VOLT, 15-AND 20- AMPERE RECEPTACLES SHALL BE LISTED TAMPER RESISTANT RECEPTACLES (CEC 406.11)
6. BATHROOM CIRCUITING SHALL BE EITHER: A. A 20 AMPERE CIRCUIT DEDICATED TO EACH BATHROOM, OR B. AT LEAST 20 AMPERE CIRCUIT SUPPLYING ONLY BATHROOM RECEPTACLE OUTLETS.
7. BATHROOM RECEPTACLES SHALL BE SERVED BY DEDICATED 20 AMP CIRCUITS, NEC 201-11(B).
8. SECTION 680-12 FOR REQUIRED ELECTRICAL EQUIPMENT ACCESSIBILITY. SECTION 680-13 FOR BONDING REQUIREMENTS.
7. BRANCH CIRCUITS IN EASH DWELLING UNIT SHALL SUPPLY ONLY LOADS WITHIN THAT DWELLING UNIT OR LOADS ASSOCIATED WITH THAT DWELLING UNIT (CEC 210.25A)
8. HALLWAYS 10' OR MORE IN LENGTH SHALL HAVE AT LEAST ONE RECEPTACLE. SEE PLAN FOR LOCATION
9. RECEPTACLES INSTALLED IN THE FOLLOWING LOCATIONS MUST BE GFCI AND ARC-FAULT PROTECTED: BATHROOMS, GARAGE LAUNDRY ROOMS AND ABOVE KITCHEN COUNTER TOPS. BEDROOMS, LIVING ROOMS AND HALLWAYS SHALL BE AFCI.
10. OUTDOOR LIGHTING MUST BE HIGH EFFICACY LIKE INDOOR LIGHTING AND MUST INCLUDE MANUAL ON/OFF SWITCH AND ONE OF THE FOLLOWING. PHOTOCONTROL AND MOTION SENSOR

    PTOCONTROL AND AUTOMATIC TIME SWITCH CONTROL
    ENERGY MONAGEMENT CONTROL SYSTEMS

MECHANICAL LEGEND

SYMBOL	DESCRIPTION
	SUPPLY REGISTER ceiling mount 9 vents total
	RETURN AIR
F.A.U.	UPFLOW FAU 50,000 14 SEER
WH	RHEEM 50 GAL. HEAT PUMP WATER HEATER
ATTIC ACCESS	30X30 ATTIC ACCESS W/ LIGHT & SWITCH
HB	HOSE BIB

REVISIONS:

steven phillips - architect,
76 STONEYKIRK DRIVE
BELLA VISTA ARKANSAS 72715
949.400.5760

A CUSTOM HOME FOR NICK ROCCO
PLACENTIA
1649 OAK STREET
LOT 43 AND 45 OAK STREET
PLACENTIA, CA.

LICENSED ARCHITECT
STEVEN LOWELL PHILLIPS
C-11314
REN. 3-31-27
STATE OF CALIFORNIA

SHEET TITLE:
UTILITY PLAN

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DRAWN BY
DLB

DATE
7-31-26

SHEET NO.
A-10

THESE DRAWINGS ARE NOT AUTHORIZED FOR CONSTRUCTION UNTIL STAMPED WITH STEVEN PHILLIPS STATE REGISTERED ARCHITECT SEAL

GENERAL STRUCTURAL NOTES

GENERAL

1. GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR CONDITIONS OF ALL WORK AND MATERIALS INCLUDING THOSE FURNISHED BY SUB-CONTRACTORS. STRUCTURAL ENGINEER OF RECORD SHALL BE NOTIFIED IMMEDIATELY OF ANY DISCREPANCIES FROM STRUCTURAL PLANS.
2. ALL MATERIALS AND WORKMANSHIP SHALL BE PERFORMED IN ACCORDANCE WITH 2025 CALIFORNIA BUILDING CODE.
3. ALL DIMENSIONS SHALL TAKE PRECEDENCE OVER SCALE SHOWN ON PLANS, SECTIONS AND DETAILS.
4. NOTES AND DETAILS ON THE DRAWINGS SHALL TAKE PRECEDENCE OVER GENERAL NOTES AND TYPICAL DETAILS.
5. WHERE NO DETAILS SHOWN OR NOTED ON THE DRAWINGS, THE DETAILS SHALL BE THE SAME AS FOR OTHER SIMILAR WORK.
6. OPENINGS, POCKETS, SLEEVES, ETC., SHALL NOT BE PLACED IN SLABS, BEAMS, WALLS, COLUMNS AND FOOTINGS UNLESS SPECIFICALLY DETAILED ON THE STRUCTURAL DRAWINGS.
7. CONSTRUCTION MATERIALS SHALL BE SPREAD OUT IF PLACED ON FRAMED FLOORS OR ROOF. LOADS SHALL NOT EXCEED DESIGN LIVE LOADS FOR EACH PARTICULAR LEVEL. PROVIDE ADEQUATE SHORING AND BRACING IF LOAD EXCEED DESIGN LIVE LOAD OR WHERE STRUCTURE HAS NOT ATTAINED DESIGN STRENGTH.
8. THIS SET OF DRAWINGS REPRESENT THE FINISHED STRUCTURE, METHOD OF CONSTRUCTION NOT NECESSARY INDICATED. THE CONTRACTOR SHALL PROVIDE ALL MEASURES NECESSARY TO PROTECT THE STRUCTURE, WORKERS AND OTHER PERSONS DURING CONSTRUCTION. SUCH MEASURES SHALL INCLUDE BUT NOT BE LIMITED TO BRACING, SHORING, SCAFFOLDING, ETC.

FOUNDATION

1. THE SOILS BEARING PRESSURE = 1,500 p.s.f.
2. FOUNDATION DESIGN SHALL BE 24" MIN. DEPTH OF FTG BELOW LOWEST ADJACENT FINAL GRADE, AND 12" MINIMUM WIDTH FOR 1 STORY, 15" MIN. WIDTH FOR 2 STORY, BEAR ON FIRM NATIVE OR PROPERLY COMPACTED SOILS.
3. NOT USED
4. GEOTECHNICAL ENGINEER OR DEPUTY INSPECTOR SHALL VERIFY THAT CONSTRUCTION AT THE SITE IS IN ACCORDANCE WITH THE RECOMMENDATIONS AND CONCLUSIONS OF HIS REPORT. FINISHED EXCAVATION FOR FOUNDATION SHALL BE NEAT AND TRUE TO LINE WITH ALL LOOSE MATERIAL AND STANDING WATER REMOVED FROM EXCAVATIONS.
5. BEFORE ANY CONCRETE IS PLACED, EXCAVATIONS SHALL BE CHECKED AND APPROVED BY A QUALIFIED SOILS ENGINEER OR DEPUTY INSPECTOR TO ENSURE COMPLIANCE WITH THE REQUIREMENTS.
6. ALL FILL MATERIAL IS TO BE APPROVED BY THE SOILS ENGINEER OR DEPUTY INSPECTOR AND APPROVED BY A QUALIFIED SOILS ENGINEER OR DEPUTY INSPECTOR TO ENSURE COMPLIANCE W/ THE REQUIREMENTS.
7. NOT USED
8. SIDE OF FOUNDATION MAY BE POURED AGAINST STABLE EARTH UNLESS SHOWN OR NOTED OTHERWISE.
9. CONTRACTOR SHALL PROVIDE TEMPORARY AND PERMANENT DEWATERING FOR EITHER SURFACE WATER, GROUND WATER OR SEEPAGE WATER.
10. CONTRACTOR SHALL PROTECT ALL UTILITY LINES, ETC. ENCOUNTERED DURING EXCAVATIONS AND BACKFILLING.
11. CONTRACTOR SHALL PROVIDE AND INSTALL ALL CRIBBING SHEATHING AND SHORING REQUIRED TO SAFELY RETAIN THE EARTH BANK.
12. FOOTING AND SLAB BACKFILL AND UTILITY TRENCH BACKFILL SHALL BE PROPERLY COMPACTED (90% MIN).
13. CONTRACTOR SHALL BRACE OR PROTECT FROM LATERAL LOADS FOR THE PIT AND RETAINING WALLS UNTILL ATTACHING SLABS ARE COMPLETELY IN PLACE AND HAVE ATTAINED FULL STRENGTH.
14. NO VERTICAL EXCAVATIONS 4'-0" OR MORE IN DEPTH INTO WHICH A PERSON IS REQUIRED TO DESEND SHALL BE PERMITTED.

STRUCTURAL DESIGN CRITERIA

ROOF LOAD: DL= 19 PSF LL= 20 PSF

WIND DESIGN DATA:
BASIC WIND SPEED ..... 100 MPH
IMPORTANCE FACTOR I 1
RISK CATEGORY II
WIND EXPOSURE C

EARTHQUAKE DESIGN DATA:
IMPORTANCE FACTOR I 1
SITE CLASS ..... D (D-DEFAULT)
Ss 1.74
S1 ..... 0.69
SDs 1.27
SD1 ..... 0.97
SEISMIC DESIGN CATEGORY ..... D
BASIC SEISMIC FORCE-RESISTING SYSTEM ...A-15 (ASCE 7-22 TABLE 12.2-1)
DESIGN BASE SHEAR ..... 0.7V=0,101*W (ASD LEVEL)
Cs 0.16
R 6.5
ρ 1.3
USE EQUVALENT LATERAL FORCE PROCEDURE

EPOXY ANCHORS

1. EPOXY FOR EPOXY ANCHORS SHALL BE SET-3G EPOXY BY "SIMPSON STRONG-TIE" (ICC-ES ESR. #4057)
2. ANCHORS USED FOR EPOXY ANCHORS SHALL BE ASTM A-307 THREADED RODS UNO. SIZE AND EMBEDMENT SHALL BE AS INDICATED ON PLANS.
3. ANCHORS SHALL BE INSTALLED IN ACCORDANCE WITH THE EPOXY MANUFACTURER'S RECOMMENDATIONS AND THE CURRENT ICC REPORT.
4. SPECIAL INSPECTION SHALL BE PROVIDED IN ACCORDANCE WITH CBC-2025 SECTION 1704 AND IN ACCORDANCE WITH THE SPECIFIC SPECIAL INSPECTION REQUIREMENTS SET FORTH IN THE CORRESPONDING ICC REPORT.
5. DRILLED HOLES SHALL BE CLEANED OF DUST AND ANY DEBRIS USING NYLON BRUSH AND COMPRESSED AIR. OIL, SCALE, AND RUST SHALL BE REMOVED FROM THREADED RODS PRIOR TO INSTALLATION.
6. UNLESS NOTED OTHERWISE IN THE PLANS, EPOXY ANCHORS SHALL HAVE THE FOLLOWING MINIMUM EMBEDMENT

BAR SIZE	MINIMUM EMBEDMENT *	REMARKS
#3	3 1/2"	
#4 OR 1/2"∅	4 1/4"	
#5 OR 5/8"∅	5 1/2"	
#6 OR 3/4"∅	6 3/4"	

* UNLESS NOTED OR DETAILED

CONCRETE

1. ALL CONCRETE SHALL BE NORMAL WEIGHT CONFORMING TO THE FOLLOWING:

LOCATION	28-DAY MIN. COMPRESSIVE STRENGTH	MAXIMUM AGGREGATE SIZE (IN.)	MIX DESIGN SLUMP (INCHES)
A. SLAB ON GRADE	4500 psi	1	3 (4" MAX)
B. FOOTING	4500 psi	1	4 (5" MAX)

W/C=0.45

2. ALL CONCRETE MIX DESIGN SHALL BE REVIEWED BY THE ENGINEER PRIOR TO CONSTRUCTION.
3. PORTLAND CEMENT SHALL CONFORM TO ASTM C-150, TYPE V CEMENT.
4. AGGREGATE SHALL CONFORM TO ASTM C-33.
5. WATER SHALL BE CLEAN, FREE FROM DELETERIOUS AMOUNTS OF ACIDS, ALKALIS OR ORGANIC MATERIALS, OILS, SALTS AS PER ACI 318.
6. CONCRETE MIXING OPERATIONS, ETC. SHALL CONFORM TO ASTM C-94, WATER-CEMENT RATIO IS LESS THAN 0.45
7. UNLESS SHOWN OR NOTED OTHERWISE, CONCRETE COVERAGE FOR REINFORCING BAR TO FACE OF BAR SHALL BE AS FOLLOWS:

A. CONCRETE IN CONTACT WITH EARTH, UNFORMED	3"
B. CONCRETE IN CONTACT WITH EARTH, FORMED	2"
C. WALLS	1.5"
D. BEAMS, GIRDERS & COLUMNS (TO TIES OR STIRRUPS)	1.5"

8. CONDUIT PLACED IN A CONCRETE SLAB SHALL NOT EXCEED 1/3 OF THE THICKNESS OF THE SLAB AND SHALL BE PLACED BETWEEN THE TOP AND BOTTOM REINFORCING STEEL. MINIMUM CLEAR DISTANCE BETWEEN CONDUITS SHALL BE 6".
9. CONSTRUCTION JOINTS:
   THE SURFACES OF ALL CONSTRUCTION JOINTS SHALL BE CLEAN, FREE FROM LOOSE DEBRIS. IMMEDIATELY BEFORE NEW CONCRETE IS PLACED, ALL CONSTRUCTION JOINTS SHALL BE WETTED AND STANDING WATER REMOVED.
10. CONCRETE SHALL BE CURED IN ACCORDANCE WITH SECT 1905.11 OF 2025 C.B.C.
11. REMOVAL OF CONCRETE FORMS AND SHORES SHALL BE IN ACCORDANCE WITH SECTION 1906.2 OF 2025 C.B.C.
12. CONDUITS AND PIPES EMBEDDED IN CONCRETE SHALL COMPLY WITH THE PROVISION OF SECTION 1906.3 OF 2025 C.B.C.
13. DESIGN AND CONSTRUCTION OF CONCRETE FORMWORK SHALL CONFORM TO ACI 347 "RECOMMENDED PRACTICE FOR CONCRETE FORMWORK".
14. ALL SAW CUTS IN SLAB ON GRADE SHALL BE MADE NOT LATER THAN 24 HOURS AFTER PLACING CONCRETE.

REINFORCING STEEL

1. ALL REINFORCING BARS SHALL BE ASTM A-615 GRADE 60 DEFORMED BILLET STEEL BARS.
2. GRADE 60 BARS SHALL BE MARKED SO ITS IDENTIFICATION CAN BE MADE WHEN THE FINAL IN PLACE INSPECTION IS MADE.
3. THE TIE WIRE USED SHALL BE BLACK ANNEALED WIRE, 16 GA. OR HEAVIER.
4. BAR SUPPORTS SHALL CONFORM TO THE BAR SUPPORT SPECIFICATIONS CONTAINED IN THE "MANUAL OF STANDARD PRACTICE" BY ACI.
5. A CERTIFIED COPY OF MILL TEST ON EACH HEAT OF REINFORCING STEEL DELIVERED SHOWING PHYSICAL AND CHEMICAL ANALYSIS SHALL BE PROVIDED UPON REQUEST AT THE TIME OF SHIPMENT.
6. ALL REQUIREMENT OF CONCRETE REINFORCEMENT NOT COVERED ON THE DRAWINGS SHALL BE IN ACCORDANCE WITH ACI "MANUAL OF STANDARD PRACTICE".
7. REINFORCING STEEL AT THE TIME OF THE CONCRETE IS PLACED SHALL BE FREE FROM MUD, OIL, OR OTHER NON METALLIC COATINGS THAT ADVERSELY AFFECT BONDING CAPACITY.
8. ALL HOOKS SHALL CONFORM TO THE BEND DIMENSION PER ACI "STANDARD HOOK" UNLESS OTHERWISE SHOWN ON THE DRAWINGS.
9. REINFORCING BARS SHALL NOT BE BENT OR STRAIGHTENED IN A MANNER THAT WILL INJURE THE MATERIAL.
10. REINFORCING BARS SHALL CONFORM ACCURATELY TO THE DIMENSIONS SHOWN ON THE DRAWINGS WITH THE FABRICATING TOLERANCES PER ACI "MANUAL OF STANDARD PRACTICE."
11. BARS SHALL BE SECURELY TIED TO PREVENT DISPLACEMENT DURING THE CONCRETE OPERATION AND ALL DOWELS SHALL BE WIRED IN PLACE BEFORE DEPOSITING CONCRETE.
12. DOWELS BETWEEN FOOTINGS AND WALLS OR COLUMNS SHALL HAVE SAME SIZE AS THE VERTICAL REINFORCEMENT. EMBEDMENT OF DOWELS SHALL BE 36 BAR DIAMETER OR 2'-0" MINIMUM UNLESS OTHERWISE SHOWN.
13. MINIMUM LAP OF MESH SHALL BE NOT LESS THAN THE SPACING OF THE CROSS WIRE PLUS TWO INCHES OR 60 DIA. OR 8 IN. WHICHEVER IS GREATER.

WOOD . WITH DOC PS 20

1. ALL LUMBER SHALL BE GRADE MARKED DOUGLAS FIR-LARCH AND SHALL HAVE THE FOLLOWING GRADES, UNLESS NOTED OTHERWISE:

JOISTS & RAFTERS	GRADE NO. 2 OR BETTER
BEAMS & STRINGERS	GRADE NO. 1 AND BETTER
DOUBLE TOP PLATES	GRADE NO. 1 AND BETTER
2X4 STUDS	CONSTRUCTION GRADE OR BETTER
3X4 & 2X6 STUDS	GRADE NO. 2 OR BETTER
POSTS AND TIMBERS	GRADE NO. 1 AND BETTER
LAGGING	GRADE NO. 2 AND BETTER

2. PLYWOOD SHEATHING SHALL BE FULL SIZE SHEET WHERE POSSIBLE WITH 48" X 32" MINIMUM SHEET SIZE AND LAID CONTINUOUSLY OVER TWO OR MORE SPANS WITH FACE GRAIN PERPENDICULAR TO SUPPORTS.
   A. FLOOR OR TERRACE SHEATHING SHALL BE GRADE MARKED "D.F.P.A. EXTERIOR SHEATHING C-D GRADE" 3/4" THICK WITH EXTERIOR GLUE, PANEL I.D. RATING 32/16 OR BETTER. EDGES SHALL HAVE APPROVED TONGUE-AND-GROOVE JOINTS. NAILED WITH 10d DEFORMED SHANK NAILS AT 6" O.C. AT EDGES AND BOUNDARIES, AT 10" O.C. IN FIELD. U.N.O.
   B. ROOF SHEATHING SHALL BE GRADE MARKED "D.F.P.A. EXTERIOR SHEATHING C-D GRADE" 1/2" THICK WITH EXTERIOR GLUE. PANEL SPAN RATING 24/0 OR BETTER. NAILED WITH 8d COMMON NAILS AT 6" O.C. AT EDGES AND BOUNDARIES, AT 12" O.C. IN FIELD UNLESS NOTED OTHERWISE.
   C. WOOD STRUCTURAL PANELS, WHEN USED STRUCTURALLY, SHALL CONFORM TO THE REQUIREMENTS FOR THEIR TYPE IN DOC PS I-09 AND PS 2-10.
3. ALL NAILS SHALL BE COMMON WIRE NAILS UNLESS NOTED OTHERWISE. SEE FRAMING PLANS OR DETAILS FOR NAIL SIZES AND SPACINGS. NAILS THAT NOT DETAILED OR NOTED SHALL BE IN ACCORDANCE WITH 2025 CBC TABLE 2304.10.2 - FOR NAILING SCHEDULE.
4. ALL JOIST HANGERS AND FRAMING CONNECTORS SHALL BE "SIMPSON" OR APPROVED EQUAL.
5. NO STRUCTURAL MEMBER SHALL BE CUT FOR PIPES, ETC. UNLESS SPECIFICALLY NOTED.
6. BOLT HOLES SHALL BE SAME DIAMETER AS THAT OF THE BOLTS. PROVIDE WASHERS BETWEEN BOLT HEADS OR NUTS AND WOOD MEMBERS.
7. A PROPERLY SIZED NUT AND WASHER SHALL BE TIGHTENED ON EACH ANCHOR BOLT TO THE PLATE BEFORE CLOSING IN COMPLETION OF JOB.
8. ALL SILL PLATES RESTING ON CONCRETE OR MASONRY THAT ARE LESS THAN 8" ABOVE GRADE SHALL BE PRESSURE TREATED DOUGLAS FIR.
9. ALL SILL BOLTS SHALL BE PLACED STARTING 9" FROM THE ENDS OF A BOARD OR FROM A NOTCH AND SPACED AT INTERVALS AS NOTED ON THE PLANS.
10. BLOCKING OR BRIDGING SHALL BE PROVIDED AS REQUIRED PER C.B.C.
11. PROVIDE DOUBLE JOISTS UNDER ALL PARTITIONS THAT ARE PARALLEL TO JOISTS. USE 2-16d NAILS AT 16" O.C. TO NAIL THE DOUBLE JOISTS TOGETHER.
12. TOP PLATES FOR ALL STUD WALLS SHALL BE 2-2X. LAP FOR TOP PLATES SHALL BE 48" LONG MINIMUM NAILED WITH 16d AT 4" AT EACH LAP UNLESS NOTED OTHERWISE. SPLICES IN UPPER AND LOWER PLATES SHALL BE STAGGERED 10'-0" MINIMUM.
13. PRE-DRILL FOR NAILING AS REQUIRED WHEN NAIL SPACING RESULTS IN WOOD SPLITTING. PRE-DRILL HOLES SHALL BE SMALLER THAN THE DIAMETER OF THE NAILS.
14. ALL WOOD STUD WALLS SHALL HAVE 2X4 STUDS AT 16" O.C. WHEN HEIGHT BETWEEN LATERAL SUPPORTS LESS THAN 10'-0". WHEN HEIGHT BETWEEN LATERAL SUPPORTS MORE THAN 10'-0", USE 2X6 STUDS AT 16" O.C, UNLESS NOTICED OTHERWISE.
15. THE BOLT HOLES SHALL BE 1/16" (MAX.) OVERSIZED AT THE CONNECTOR OF THE HOLD-DOWN TO THE POST. "INSPECTOR TO VERIFY."
16. THE HOLD-DOWN CONNECTORS SHALL BE TIGHTENED JUST PRIOR TO COVERING THE WALL FRAMING.
17. APPROVED PLATE WASHERS, IN-LIEU OF CUT WASHERS, SHALL BE PROVIDED FOR ALL PLYWOOD SHEARWALL SILL PLATE ANCHOR BOLTS.
18. THE SILL PLATE ANCHOR BOLTS AND HOLD-DOWN CONNECTOR BOLTS AT ALL PLYWOOD SHEARWALL SHALL HAVE THE PLATE WASHERS AS LISTED IN ITEM 20.
19. CUTTING OR NOTCHING OF WOOD STUDS OR PLATES SHALL NOT EXCEED 25% OF THE STUD/PLATE WIDTH WITH THE EXTERIOR AND BEARING WALL AND NOT TO EXCEED 40% OF THE STUD/PLATE WIDTH IN NONBEARING PARTITIONS. BORED HOLES DIAMETER IS LIMITED TO 40% OF THE STUD/PLATE WIDTH IN ANY STUD AND MAY BE 60% IN NONBEARING PARTITIONS OR WHEN THE BORED STUD IS DOUBLED.
20. PLATE WASHERS FOR ALL ANCHOR BOLTS TYPICAL:

BOLT SIZE	PLATE SIZE (ASTM A-36)	MIN. EDGE DISTANCE (in)
5/8"∅	0.229"x3"x3"	1 7/8
3/4"∅	0.229"x3"x3"	2 1/2
7/8"∅	5/16"x3"x3"	2 5/8
1 1/4"∅	3/8"x3 1/2"x3 1/2"	3 3/4

NOTE:
1. APPROVE PLATE WASHERS TO BE USED FOR PLYWOOD SHEARWALL SILL PLATE ANCHOR BOLTS* AND FOR HOLDOWN CONNECTOR BOLTS AT SHEARWALLS. FOR WOOD TO WOOD OR WOOD TO STEEL CONNECTION.

NOTES:

1. ALL THE FASTENERS IN PRESSURE-TREATED AND FIRE-RETARDANT, TREATED WOOD SHALL BE OF HOT-DIPPED, ZINC-COATED GALVANIZED STEEL, STAINLESS, SILICON BRONZE OR COPPER.
2. SHEAR WALL ANCHOR BOLTS AND HOLD-DOWN HARDWARE MUST BE SECURED IN PLACE PRIOR TO FOUNDATION INSPECTION.
3. SILLS AND SLEEPERS IN DIRECT CONTACT WITH CONCRETE OR MASONRY THAT IS IN DIRECT CONTACT WITH THE GROUND AND GIRDERS WITH LESS THAN 1/2" CLEARANCE TO MASONRY AND CONCRETE SHALL BE PRESSURE TREATED OR NATURALLY DURABLE TO DECAY.
4. ALL WOOD FRAMING MEMBERS THAT REST ON CONCRETE OR MASONRY EXTERIOR FOUNDATION WALLS AND ARE LESS THAN 8" TO THE EXPOSED GROUND SHALL BE PRESSURE TREATED OR NATURALLY DURABLE TO DECAY.

FASTENING SCHEDULE

	CONNECTION	NAILING *
1.	JOIST TO SILL OR GIRDER, TOENAIL	3-8d
2.	BRIDGING TO JOIST, TOENAIL EACH END	2-8d
3.	1" X 6" SUBFLOOR OR LESS TO EACH JOIST, FACE NAIL	2-8d
4.	WIDER THAN 1" X 6" SUBFLOOR TO EACH JOIST, FACE NAIL	3-8d
5.	2" SUBFLOOR TO JOIST OR GIRDER, BUND AND FACE NAIL	2-16d
6.	SOLE PLATE TO JOIST OR BLOCKING FACE NAIL	16d AT 16" O.C.
	SOLE PLATE TO JOIST, AT BRACED WALL PANEL	3"-16d PER 16"
7.	TOP PLATE TO STUD, END NAIL	2-16d
8.	STUD TO SOLE PLATE	4-8d, TOE NAIL OR
	SUPERSEDE THE SPECIFICATIONS OF WPSE. (END NAIL)	2-16d, END NAIL
9.	DOUBLE STUDS, FACE NAIL	16d AT 24" O.C.
10.	DOUBLE TOP PLATES, FACE NAIL	16d AT 16" O.C.
	DOUBLE TOP PLATES, LAP SPLICE	8-16d
11.	BLOCKING BETWEEN JOIST OR RAFTERS TO TOP PLATE, TOE NAIL	3-8d
12.	RIM JOIST TO TOP PLATE, TOE NAIL	8d AT 6" O.C.
13.	TOP PLATES, LAPS AND INTERSECTIONS, FACE NAIL	2-16d
14.	CONTINUOUS HEADER TO STUD, TOE NAIL	16d AT 16" O.C. ALONG EACH EDGE
15.	CEILING JOISTS TO PLATE, TOE NAIL	3-8d
16.	CONTINUOUS HEADER TO STUD, TOE NAIL	4-8d
17.	CEILING JOISTS, LAPS OVER PARTITIONS, FACE NAIL	3-16d
18.	CEILING JOISTS TO PARALLEL RAFTERS, FACE NAIL	3-16d
19.	RAFTER TO PLATE, TOE NAIL	3-8d
20.	1" BRACE TO EACH STUD AND PLATE, FACE NAIL	2-8d
21.	1" X 8" SHEATHING OR LESS TO EACH BEARING, FACE NAIL	3-8d
22.	WIDER THAN 1" X 8" SHEATHING TO EACH BEARING, FACE NAIL	3-8d
23.	BUILT-UP CORNER STUDS	16d AT 24" O.C.
24.	BUILT-UP GIRDER AND BEAMS	20d AT 32" O.C. AT TOP AND BOTTOM AND STAGGERED 2-20d AT ENDS AND AT EACH SPLICE
25.	2" PLANKS	2-16d AT EACH BEARING
26.	COLLAR TIE TO RAFTER	3-10d
27.	JACK RAFTER TO HIP	3-10d TOENAIL 2-16d FACE NAIL
28.	ROOF RAFTER TO 2-BY RIDGE BEAM	2-16d
29.	JOIST TO BAND JOIST	3-16d

* NOTE: COMMON OR BOX NAILS MAY BE USED (U.N.O.)

GLUED LAMINATED WOOD

1. MATERIALS, MANUFACTURE, AND QUALITY CONTROL FOR STRUCTURAL GLUED LAMINATED TIMBER SHALL BE IN CONFORMANCE WITH AMERICAN NATIONAL STANDARD ANSI/AITC A190.1-1983, "STRUCTURAL GLUED LAMINATED TIMBER", AND AITC 117, "DESIGN AND MANUFACTURING".
2. ALL GLU-LAM BEAMS SHALL BE FABRICATED USING EXTERIOR GLUE (WATERPROOF). ADHESIVES SHALL MEET THE REQUIREMENTS FOR DRY CONDITIONS OF SERVICE FOR INTERIOR USE AND WET CONDITIONS OF SERVICE FOR EXTERIOR BEAMS EXCEPT AS NOTED.
3. ALL GLU-LAM BEAMS SHALL BE IN ACCORDANCE WITH CBC TABLE 25C-1 AND SHALL HAVE THE FOLLOWING COMBINATION:
   SIMPLE SPAN ..... 24F-V4 DF/DF
   CANTILEVER ..... 24F-V8 DF/DF
4. MANUFACTURER OF GLU-LAM BEAMS SHALL STAMP MEMBERS WITH AN I.D. MARK OF A QUALIFIED CENTRAL INSPECTION ORGANIZATION AND A CERTIFICATE OF CONFORMANCE SHALL BE SUBMITTED TO THE BUILDING INSPECTION DEPARTMENT AND ENGINEER PRIOR TO INSTALLATION.
5. ALL GLU-LAM BEAMS EXPOSED TO WEATHER SHALL CONFORM TO THE REQUIREMENTS SET FORTH IN SECTION 2306.12 OF THE IBC.
6. ALL LAMINATIONS SHALL BE 1 1/2" THICK. LAMINATION COMBINATIONS SHALL MEET REQUIREMENTS OF PS 56 LATEST EDITION.
7. MOISTURE CONTENT SHALL BE BETWEEN 6 AND 16 PERCENT.
8. APPEARANCE SHALL BE INDUSTRIAL GRADE UNO.
9. PROVIDE TEMPORARY BRACING, BRIDGING AND SUPPORT UNTIL ROOF AND/OR FLOOR DIAPHRAGMS ARE SECURELY NAILED IN PLACE.
10. USE STANDARD CAMBER FOR ALL GIVE-LAM BEAM, U.N.O. ON FRAMING PLAN.
11. ADHESIVES SHALL MEET THE REQUIREMENTS FOR DRY CONDITIONS OF SERVICE FOR INTERIOR USE AND WET CONDITIONS OF SERVICE FOR EXTERIOR BEAMS EXCEPT AS NOTED.
12. THE CERTIFICATE OF INSPECTION TO BE GIVEN TO BUILDING INSPECTOR.

SHEET INDEX

SN-1 GENERAL NOTES
SN-2 GENERAL NOTES
S-1 FOUNDATION PLAN
S-2 FLOOR FRAMING PLAN
S-3 ROOF FRAMING PLAN
SD-1 STRUCTURAL DETAILS
SD-2 STRUCTURAL DETAILS
SD-3 STRUCTURAL DETAILS
SD-4 STRUCTURAL DETAILS

MANUFACTURED WOOD MEMBERS

1. WHERE PARALLAM 'PSL' MEMBERS ARE INDICATED ON THE PLANS AND SCHEDULES THEY SHALL BE MANUFACTURED BY THE ILEVEL TRUSS-JOIST "PSL" (ICC ESR-1387), GRADE: 2.0E. E=2000ksi, Fb=2900psi, Fv=290psi
2. PLYWOOD WEB JOISTS DENOTED TJI ARE TO BE MANUFACTURED

#	REVISION	DATE

AQX ENGINEERING INC.
1520 Brookhollow, Suite #45
Santa Ana, CA 92705
Off. (714) 662-0510
Fax. (714) 662-0559
Mahdi@aqxeng.com

REGISTERED PROFESSIONAL ENGINEER QIANG XIAO NO. S. 5289 CIVIL STATE OF CALIFORNIA

PROJECT NAME
THE ROCCO RESIDENCE
1649 OAK ST,
LOT 43 & 45 OAK ST,
PLACENTIA, CA

SHEET TITLE
GENERAL NOTES

PROJECT#: MK26-049
DATE 09/9/2026
SCALE AS REFERENCED
SHEET NO.
SN-1

GENERAL STRUCTURAL NOTES

STRUCTURAL OBSERVATION

1. STRUCTURAL OBSERVATIONS BY AN INDEPENDENT ENGINEER OR THE ENGINEER OF RECORD SHALL BE MADE IN ACCORDANCE WITH SECTION 1709 OF THE CALIFORNIA BUILDING CODE AT THE EXPENSE OF THE OWNER TO REVIEW THE CONSTRUCTION OF THE PROJECT. STRUCTURAL OBSERVATION NEED TO PERFORM AS DEFINED IN SECTION 1702. STRUCTURAL OBSERVATION IS THE VISUAL OBSERVATION OF THE ELEMENTS AND CONNECTIONS OF THE STRUCTURAL SYSTEM AT SIGNIFICANT CONSTRUCTION STAGES, AND THE COMPLETED STRUCTURE FOR GENERAL CONFORMANCE TO THE APPROVED PLANS AND SPECIFICATIONS. STRUCTURAL OBSERVATION DOES NOT WAVE THE RESPONSIBILITY FOR THE INSPECTIONS REQUIRED OF THE BUILDING INSPECTOR OR THE DEPUTY INSPECTOR(S).
2. THE OWNER SHALL EMPLOY THE STRUCTURAL ENGINEER OR ARCHITECT OF RECORD OR THEIR DESIGNATED AGENT TO PERFORM THE STRUCTURAL OBSERVATION.
3. EVIDENCE OF EMPLOYMENT BY THE OWNER SHALL BE PROVIDED TO THE BUILDING INSPECTOR BEFORE THE FIRST SITE VISIT. THE OWNER SHALL BE MADE AWARE OF ANY PRECONSTRUCTION MEETING TO BE ATTENDED BY THE STRUCTURAL OBSERVER.
4. IN THE PRECONSTRUCTION MEETING ATTENDED BY THE GENERAL CONTRACTOR, APPROPRIATE SUBCONTRACTORS, AND DEPUTY INSPECTORS, THE MAJOR STRUCTURAL ELEMENTS AND CONNECTIONS WHICH REQUIRE STRUCTURAL OBSERVATION WILL BE IDENTIFIED. A RECORD OF THE MEETING SHALL BE INCLUDED IN THE FIRST OBSERVATION REPORT.
5. REQUIRED OBSERVATIONS ARE TO OCCUR AT THE FOLLOWING STAGES OF CONSTRUCTION AS A MINIMUM, FOR EACH BUILDING. NOTIFY ENGINEER 72 HOURS PRIOR TO EACH OBSERVATION.

REQUIRED IF CHECKED	ITEMS
●	A. PRIOR TO PLACEMENT OF CONCRETE FOR THE FIRST FOUNDATION POUR.
	B. REBAR LAYOUTS AND HOLDOWN ANCHORS AT BASEMENT WALLS
●	C. AFTER NAILING OF ALL OR ANY PLYWOOD SHEAR WALLS AND ALL HOLDOWNS, DRAGS, STRAPS ARE IN PLACE. PRIOR TO COVERING.
	D. AFTER NAILING OF FLOOR PLYWOOD DIAPHRAGM(S); PRIOR TO COVERING.
●	E. AFTER NAILING OF ROOF PLYWOOD DIAPHRAGM(S); PRIOR TO COVERING.

6. A REPORT PREPARED ON DEPARTMENT FORMS OR FORMS PREPARED BY THE ENGINEER OR ARCHITECT OF RECORD FOR EACH SIGNIFICANT STAGE OF CONSTRUCTION OBSERVED, SHALL BE SENT TO THE CONTRACTOR OR LEFT AT THE PROJECT SITE FOR THE CONTRACTOR TO FORWARD TO THE BUILDING INSPECTOR. THE FORMS SHALL BE WET SIGNED AND SEALED BY THE RESPONSIBLE STRUCTURAL OBSERVER, AN ADDITIONAL SINGED COPY OF THE REPORT SHALL BE PROVIDED TO THE OWNER, CONTRACTOR, AND DEPUTY INSPECTOR AS REQUESTED.
7. A FINAL OBSERVATION REPORT MUST BE SUBMITTED TO THE BUILDING OFFICIAL WHICH SHOWS THAT THE STRUCTURAL SYSTEM GENERALLY CONFORMS TO THE APPROVED PLANS AND SPECIFICATIONS. IF ALL DEFICIENCIES HAVE NOT BEEN ADEQUATELY ADDRESS TO THE STRUCTURAL ENGINEERS KNOWLEDGE, THIS FINAL OBSERVATION REPORT WILL DELINEATE OUTSTANDING ISSUES.
8. IF THE OWNER ELECTS TO CHANGE THE STRUCTURAL OBSERVER OF RECORD, THE OWNER SHALL:
   A. NOTIFY THE BUILDING INSPECTOR IN WRITING BEFORE THE NEXT INSPECTION.
   B. CALL AN ADDITIONAL PRECONSTRUCTION MEETING, AND, FURNISH THE REPLACEMENT STRUCTURAL OBSERVER WITH A COPY OF PREVIOUS OBSERVER REPORTS.
   C. THE NEW OBSERVER SHALL BE RESPONSIBLE FOR APPROVAL OF THE CORRECTION OF ALL THE ORIGINAL OBSERVED NOTED DEFICIENCIES.
9. THE ENGINEER OR ARCHITECT OF RECORD SHALL DEVELOP ALL CHANGES TO THE STRUCTURAL SYSTEMS AT THE CONTRACTORS EXPENSE.

SPECIAL INSPECTION PROGRAM AND STRUCTURAL TEST

1. THIS SECTION APPLIES TO THE STRUCTURAL PORTIONS OF THE PROJECT REQUIRING SPECIAL INSPECTION. THE SPECIAL INSPECTOR'S DUTIES ARE AS DESCRIBED IN CBC 1701.1 AND CBC 1704.4. COPIES OF TEST RESULTS AND FINAL REPORTS SHALL BE FURNISHED TO THE ENGINEER IN ADDITION TO OTHER NORMAL DISTRIBUTIONS WITHIN ONE WEEK OF THE TEST OR INSPECTION.
2. ALL TEST AND INSPECTIONS SHALL BE PERFORMED BY AN INDEPENDENT TESTING AND INSPECTION AGENCY EMPLOYED BY THE OWNER OR THE ENGINEER OR THE ARCHITECT AND NOT THE CONTRACTOR PER CBC SECTION 106.3.5. JOB SITE VISITS BY THE STRUCTURAL ENGINEER DO NOT CONSTITUTE A SPECIAL INSPECTION.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING THE TEST AND INSPECTION FIRM WITH A SCHEDULE TO FACILITATE THE PROPER COORDINATION OF WORK.
4. IN ADDITION TO THE REQUIRED INSPECTIONS, THE FOLLOWING CHECKED ITEMS WILL REQUIRE SPECIAL INSPECTION IN ACCORDANCE WITH SECTION 1704.5 OF THE CALIFORNIA BUILDING CODE.

ITEM	REQ'D. IF CHECKED	REMARKS
GRADING AND SOILS COMPLIANCE PRIOR TO FOUNDATION INSPECTION SEE FOUNDATION THIS SHEET.		TO BE PROVIDED BY THE GEOTECHNICAL ENGINEER
DURING THE TAKING OF TEST SPECIMENS AND PLACING OF ALL REINFORCED CONCRETE, WITH THE EXCEPTION OF FOUNDATION CONCRETE WHEN THE STRUCTURAL DESIGN STRENGTH IS GREATER THAN F'C = 2500 PSI. U.N.O.	●	SLAB ON GRADE DOES NOT REQUIRE SPECIAL INSPECTION
DURING PLACING OF AND STRESSING OF PT TENDONS		
ALL STRUCTURAL FIELD WELDING, INCLUDING WELDING OF STRUCTURAL STEEL, REINFORCING STEEL, AND STEEL DECKING.		
INSTALLATION AND TIGHTENING OPERATIONS FOR ALL HIGH-STRENGTH FRICTION BOLTING (A325F) AND (A490F). INSTALLATION AND TIGHTENING OPERATIONS FOR HIGH-STRENGTH ANCHOR BOLTS.	●	HARDY FRAME
DURING INSTALLATION OF EPOXY AND/OR EXPANSION ANCHORS.	●	FOR REPAIR ONLY
DURING THE PLACEMENT OF AND TAKING OF TEXT SPECIMENS FOR ALL MASONRY UNLESS SPECIFICALLY INDICATED AS NOT REQUIRING SPECIAL INSPECTION.		
DURING PLACING OF REINFORCING STEEL		
ANCHOR BOLTS IN CONCRETE AND/OR MASONRY.		INCLUDING HARDY FRAMES, HDU
WOOD SHEAR WALLS AND DIAPHRAGMS WITH NAILING 4"O.C. OR LESS.	●	

5. APPROVED FABRICATORS: (MUST SUBMIT CERTIFICATE OF COMPLIANCE) FOR ALL OFFSITE FABRICATION SUCH AS STRUCTURAL STEEL, GLU-LAMS, PRECAST CONCRETE, ETC.
6. ALL STRUCTURAL CONCRETE SHALL BE TESTED IN ACCORDANCE WITH CBC SECTION 1905.6. RESULTS OF TESTS SHALL BE SUBMITTED BY THE TESTING AGENCY TO THE ENGINEER FOR REVIEW. WHERE STRENGTH TEST RESULTS INDICATE A STRENGTH LOWER THAN THE SPECIFIED COMPRESSIVE STRENGTH, FURTHER INVESTIGATION SHALL BE MADE PER CBC SECTION 1905.6.4 AT THE EXPENSE OF THE CONTRACTOR.
7. ALL STRUCTURAL MASONRY SHALL BE TESTED IN ACCORDANCE WITH CBC SECTION 2105 (INCLUDING MORTAR AND GROUT). MASONRY PRISMS SHALL BE PREPARED AND TESTED IN ACCORDANCE WITH CBC STANDARD 21-17. (NOTE - FULL ALLOWABLE MASONRY STRESSES HAVE BEEN USED IN DESIGN) ADDITIONAL TESTING AND WORK REQUIRED AS A RESULT OF DEFICIENT MASONRY STRENGTH SHALL BE AT THE EXPENSE OF THE CONTRACTOR. TEST RESULTS SHALL BE SUBMITTED BY THE TESTING AGENCY TO THE ENGINEER FOR REVIEW.

STANDARD ABBREVIATIONS:

A.B.	ANCHOR BOLT	HDR.	HEADER
A.W.P.A.	ALIGN WITH POST ABOVE	HT.	HEIGHT
ABV./A.	ABOVE	HORIZ.	HORIZONTAL
B	BOTTOM	JT.	JOINT
BAR	REINF. BAR	K	KIPS
BD	BOARD	KCJ	KEYED CONTROL JOINT
BLD'G.	BUILDING	KSF	KIPS PER SQUARE FOOT
BLW.	BELOW	L	LENGTH
BM	BEAM	LT.	LIGHT
B.N.	BOUNDARY NAIL	LT.WT.	LIGHT WEIGHT
BOT.	BOTTOM	MAS.	MASONRY
B.W.	BOTH WAYS	MAT'L.	MATERIAL
C	CHANNEL	MAX.	MAXIMUM
CANT.	CANTILEVERED MEMBER	MIN.	MINIMUM
C/F	CONTINUOUS FOOTING	M.B.	MACHINE BOLT
C/J	CEILING JOIST	(N)	NEW
CL	CENTERLINE	N.G.	NATURAL GRADE
CLR.	CLEAR	O/C	ON CENTER
COL.	COLUMN	P.	POST
CONC.	CONCRETE	PJ	POUR JOINT
CONN.	CONNECTION	PL.	PLATE
CONT.	CONTINUOUS	PLYWD	PLYWOOD
D	DEPTH	PSI	POUNDS PER SQUARE INCH
db	DIAMETER OF BAR	P.T.	PRESSURE TREATED
DBA	DEFORMED BAR ANCHOR	P.T.	POST-TENSIONED
DBL	DOUBLE	REVE.	REVERSE
DIA.	DIAMETER	REINF.	REINFORCING
DIM.	DIMENSION	REQ'D	REQUIRED
DO	DITTO	RF	ROOF
(E)	EXISTING	RJ	ROOF JOIST
EA.	EACH	RR	ROOF RAFTER
E.F.	EACH FACE	SECT.	SECTION
EL.	ELEVATION	SHT.	SHEET
E.J.	EXPANSION JOINT	SHT'G	SHEATHING
E.N.	EDGE NAILING	SIM	SIMILAR
E.O.S.	EDGE OF SLAB	SIMP.	SIMPSON PRODUCT
EQ.	EQUAL	SQ.	SQUARE
E.S.	EDGE SCREW	STD.	STANDARD
E/W	EACH WAY	STL	STEEL
EXP.	EXPANSION	SW	SHEAR WALL
FB	FLOOR BEAM	T	TOP
F.D.	FOUNDATION DRAIN	T.F.	TOP OF FOOTING
FDN.	FOUNDATION	THK.	THICK
FG	FINISH GRADE	T.O.B.	TOP OF BEAM
F/J	FLOOR JOIST	T.O.C.	TOP OF CONCRETE
FL.	FLUSH	T.O.L.	TOP OF LEDGER
FLR.	FLOOR	T.O.M.	TOP OF MASONRY
FMG.	FRAMING	T.O.S.	TOP OF STEEL/SHT'G/SLAB
F.N.	FIELD NAILING	T.O.W.	TOP OF WALL
		TS	TUBE STEEL

Notes :
1. All concrete shall be Pc=4500 psi (minimum) with type V cement maximum water cement ratio of 0.45.
2. "The contractor shall notify inspector prior to starting excavations or any grading work."
3. "extend all excavations for footings below natural grade as shown on structural drawing."
4. "all excavations for footings must be inspected and approved by inspector prior to pouring of concrete."
5. "All fill shall be placed in maximum 2" layers and compacted to 90% density to support footings."
6. Sill plates shall be 8" min. above grade. Reminder: alternate detail of 3 1/2" wide, 2" tall curb can be added on to meet the requirement.
~~7. Pre-construction meeting with the city inspector is required~~.
8. Verify the size of existing footing, show the depth and width to be verified.

Note: "Scarify top 12" and provide compaction report (90% compaction)after trenching for the utility and or foundation. Damp proofing, base course and presaturation are required."

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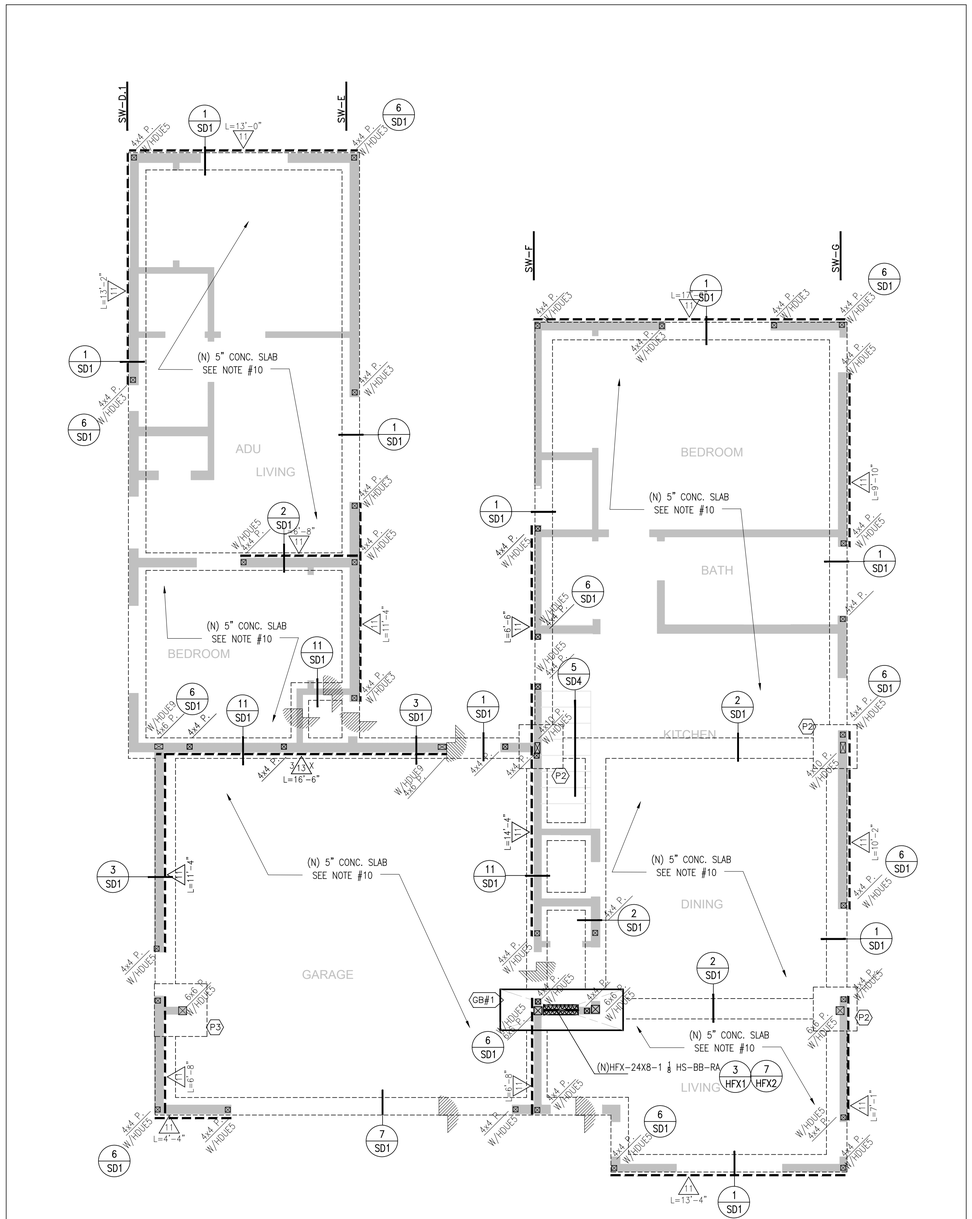
AQX ENGINEERING INC.
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Santa Ana, CA 92705
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SHEET TITLE
GENERAL NOTES

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SN-2



FOUNDATION PLAN

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

NOTE: COORDINATE AND VERIFY ALL DIMENSIONS WITH ARCH'L DRAWINGS

FOUNDATION NOTES

1. SEE SPECIFICATIONS ON SHEET SN-1 FOR ADDITIONAL INFORMATION.
2. BUILDING PAD SOIL BEARING VALUE SHOULD BE AT LEAST 1500 p.s.f.
3. CEMENT USED IN FOUNDATIONS SHALL BE TYPE V UNLESS OTHERWISE REQUIRED BY THE SOIL ENGINEER.
4. THE FLOOR SLAB SHALL BE POURED LEVEL TO WITHIN 1/8 INCH IN 10 FEET.
5. THE FLOOR SLAB AND FOUNDATION MAY BE POURED HOMOGENEOUSLY (AT THE SAME TIME) OR IN TWO POURS, WITH A COLD JOINT BETWEEN THE SLAB AND FOUNDATION, AT THE CONTRACTORS DISCRESSION. THE DETAILS DRAWN GENERALLY SHOW TWO POURS.
6. ANCHOR BOLTS: AT ALL EXTERIOR WALLS, INSTALL A 5/8" DIA. ANC. BOLTS @ 48" O.C. WITH MINIMUM EMBEDMENT OF 7 INCHES INTO CONCRETE (U.N.O. ON SHEAR WALL SCHED.) INCLUDING AT LEATST ONE WITHIN A MAXIMUM OF 12" FROM EACH END. PLATES SMALLER THAN 24" IN LENGTH, SHALL BE PROVIDED WITH AT LEAST TWO ANC. BOLTS UNLESS OTHERWISE INDICATED ON PLANS. PROVIDE ALL EXTERIOR WALLS AS INDICATED ON PLANS. SEE FLOOR FRAMING PLAN FOR REFERENCE IN PROVIDING AN EXTENSION OF ANCHOR BOLTS ABOVE CONCRETE. HARDWARE SHALL BE TIED INPLACE PRIOR TO PLACEMENT OF CONCRETE.
7. ANY PENETRATIONS INTO PRESSURE TREATED WOOD MUST BE GALVANIZED, STAINLESS STEEL, SILICON BRONZE OR COPPER NAILS.
8. FOUNDATION SILL PLATE SHALL BE TREATED LUMBER OR FOUNDATION RED WOOD.
9. HOLDOWNS: SEE FOUNDATION PLAN OR FLOOR FRAMING PLAN FOR REFERENCE TO HOLDOWN LOCATION AND HARDWARE EXTENSIONS TO CONCRETE FOUNDATION.

   SEE: 6/SD1, 14/SD1, 17/SD1 FOR HOLDOWN DETAILS.
10. RESIDENTIAL FLOOR SLAB: PLACE SLAB REINFORCEMENT IN CENTER OF SLAB. REINFORCEMENT SHALL BE CHAIRED AND TIED IN PLACE PRIOR TO PLACEMENT OF CONCRETE. A VISQUEEN VAPOR BARRIER SHALL BE PLACED AT ALL MOISTURE SENSITIVE FLOOR AREAS. PROVIDE SEAMS WITH AT LEAST A 6" OVERLAP AND SEAL TAPE.

FLOOR SLAB THICKNESS	FLOOR SLAB REINFORCEMENT	UPPER LAYER	VAPOUR BARRIER PER ASTM E 1745.	LOWER LAYER
5"	#4 BARS AT 16" O.C. EACH WAY	2" SAND	15 MIL	4"THK. BASE OF 1/2" OR LAGER CLEAR AGGREGATE

11. REFER TO ARCH. DWG. FOR TOP-OF-SLAB ELEVATIONS.
12. NEW / EXISTING OR DEMO STUD WALLS NEED TO BE VERIFIED WITH ARCH. DRAWINGS.
13. ALL HOLDOWNS ANCHOR BOLTS AND STRAPS MUST BE TIED IN PLACE PRIOR TO FOUNDATION INSPECTION AND POURING CONCRETE.
14. SHOT PINS: AT ALL INTERIOR, NON BEARING, NON SHEAR WALLS AND PARTITIONS, INSTALL A 0.145" DIA. X 2.875" LONG, SHANK AND METAL PLATE WASHER AT 36" O.C. ADDING ONE AT EACH END. PLATES SMALLER THAN 16" IN LENGTH SHALL HAVE A MINIMUM OF TWO FASTENERS, ONE AT EACH END. PLATES 16" OR LONGER AND INDICATED AS SHEAR WALLS, PLACE TWO ADDITIONAL FASTENERS, ONE AT 6" AND ANOTHER AT 10" FROM EACH END.
15. COORDINATE AND VERIFY ALL DIMENSIONS WITH ARCHITECT DRAWINGS.

SYMBOLS & LEGENDS

- WOOD STUD WALL
- (N) CONTINUE/PAD FTG.
- DEMO (E) WALL
- (E) CONTINUE FTG.
- SHEAR PANEL NUMBER, MIN. LENGTH NOTED, REFER TO DETAIL 14/SD2 FOR PANEL TYPE
- DETAIL NUMBER / DETAIL SHEET NUMBER

PAD FOOTING SCHEDULE

NO.	SIZE	THICKNESS	REINFORCEMENT EACH WAY
P1	2'-0" SQ.	2'-0"	(3)-#4, BOTTOM
P2	2'-6" SQ.	2'-0"	(3)-#4, BOTTOM
P3	3'-0" SQ.	2'-0"	(4)-#5, BOTTOM
G.B.#1	28"WIDEX84" LONGX24"DEEP.		SEE DETAIL 16/SD4

Note "Scarify top 12" and provide compaction report (90% compaction)after trenching for the utility and or foundation. Damp proofing, base course and presaturation are required."

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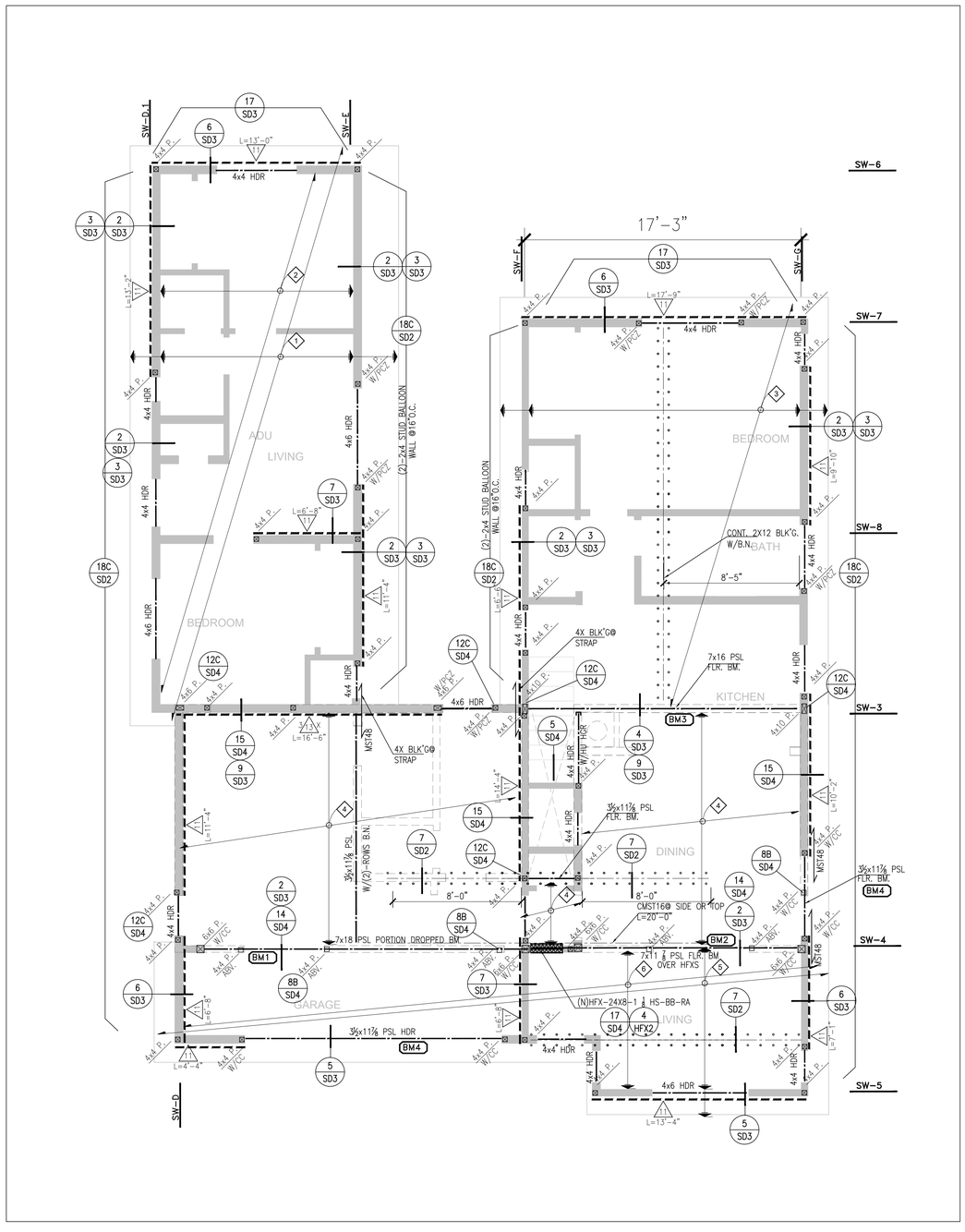
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FLOOR/LOW ROOF FRAMING PLAN

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

NOTE: COORDINATE AND VERIFY ALL DIMENSIONS WITH ARCH'L DRAWINGS

FRAMING NOTES

1. FOR GENERAL NOTE SEE SN–1.
2. VERIFY ALL DIMENSIONS WITH ARCHITECTURAL DRAWINGS. FOR DIMENSIONS NOT SHOWN SEE ARCHITECTURAL DRAWINGS.
3. DOUBLE TOP PLATES SHOULD BE CONTINUOUS OVER ALL HEADERS. U.N.O. ON FRAMING PLAN OR DETAILS, SEE 18/SD2 FOR DOUBLE TOP PLATES SPLICES.
4. ALL BEAMS AT HARDY FRAME SHEAR LINES, SHOULD BE CONTINUED OVER HARDY–FRAMES, (U.N.O. ON FRAMING PLAN OR RELATED DETAILS. SEE DETAIL PER PLAN.
5. ALL BEAMS WITH WIDTH 5¼" OR MORE, OR MARKED AS "DRAG" NEED TO HAVE (2) ROWS OF B.N.
6. FOR PLYWOOD X SHEAR WALL SCHEDULE SILL PLATE AND ANCHOR BOL REQUIREMENTS SEE DETAIL. 14/SD2 FOR NAILING SCHEDULE SEE
7. FOR TYPICAL DIAPHRAGM DET. SEE 17/SD2
   FOR ROOF DIAPHRAGM 1/2" CDX, PLYWOOD W/8d @ 6:6:12 (COMMON NAIL) PANEL SPAN RATING 24/0 OR BETTER.
   FLOOR/DECK DIAPHRAGM 3/4" CDX, PLYWOOD W/10d @ 6:6:10 (COMMON NAIL), U.N.O. PANEL I.D. RATING 32/16 OR BETTER, T&G.
8. NOT USED.
9. FOR LOCATION AND FRAMING OF NON–BEARING WALLS, SEE ARCHITECTURAL DRAWINGS.
10. NOT USED.
11. ALL GLU–LAM BEAMS SHALL BE 24F V4 DF/DF U.N.O.
12. MULTIPLE ELEMENT MEMBERS (i.e. DBL JOISTS, DBL STUDS, etc.) SHALL BE NAILED TOGETHER W/ 16d's @ 16" O.C. STAGGERED. BEAMS COMPOSED OF MULTIPLE PIECES (4x OR LARGER) SHALL BE BOLTED TOGETHER W/ 5/8"ø M.B.'S @ 12" O.C., STAG'D. ALSO SEE DET. 1/SD2 FOR DBL. JOIST CONNECTION.
13. WALL STUDS:
    1) EXTERIOR WALLS:
       a) 2x6 STUDS @16" O.C., U.N.O. ON ARCHITECTURAL PLAN.
       b) ALL OUTSIDE WALL OF EXTERIOR WALL ARE BEARING WALL (U.N.O.).
    2) INTERIOR WALLS:
       a) ALL INTERIOR SHEAR/ BEARING WALLS SHALL BE 2x4 MIN. STUD GRADE OR BETTER STUDS @16" O.C.. FOR 4" WALLS & 2X6 MIN. DFL STUD GRADE OR BETTER STUDS @16" O.C.. FOR 6" WALLS,
       b) ALL INTERIOR NON–BEARING/ NON–SHEAR WALL SHALL BE 2x4 OR 2x6 STUD GRADE OR BETTER STUDS @16" O.C. U.N.O.
14. U.N.O. PROVIDE SOLID BLOCKING OR DBL. JOIST UNDER ALL WALLS ABOVE.
15. WHERE HANGERS ARE NEEDED, WHETHER INDICATED ON PLAN OR NOT, U.N.O., USE "U" "ITT" OR "LB" HANGERS FOR JOISTS/RAFTERS, & "HUTF" OR "HW" HANGERS FOR BEAMS OR MULTIPLE JOISTS.
16. WHERE SHEAR WALLS ARE THRU WALLS AS INDICATED ON PLANS, SHEAR MATERIAL SHALL BE CONT. THRU WALLS.
17. ALL POSTS/MULTIPLE STUDS IN WALLS SHALL RECEIVE EDGE NAILING FROM WALL SHEATHING. ALL BM'S, DRAGS GIRDER TRUSSES SHALL RECEIVE BOUNDARY NAILING FROM SHEATHING.
18. WHENEVER A DETAIL IS CALLED ON A WALL LINE (FOR EXAMPLE, 2/S6. WITH A35'S AT 18" O.C.), IT NEEDS TO BE APPLIED TO THE FULL LENGTH OF THAT WALL. NOT JUST AT THE SPOTS IT IS KEYED OUT OR JUST AT SHEAR PANEL PORTION OF THE WALL.
19. CONTRACTOR SHALL VERIFY EXACT HEIGHT AND LOCATION OF HARDY FRAME.
20. FURR CEILINGS TO CONCEAL VALLEY OR HIP THAT ARE BELOW TOP PLATE LINE.
21. FURR ALL WALL AS REQ'D IF SHEAR WALL DOES NOT COVER ENTIRE WALL TO WALL FLUSH.
22. SHEAR WALLS ARE TO ROOF SHEATHING.
23. WHERE TOP PLATES OR SOLE PLATES ARE CUT FOR WIDE SHALL BE FASTENED TO EACH PLATE ACROSS AND TO EACH SIDE OF THE OPENING WITH NOT LESS THAN 6–16d NAILS.
24. ALL WATER HEATERS SHALL BE PROVIDED WITH SEISMIC STRAPS.

FRAMING MEMBERS:

1. 2X10 DF#1 R.R. @16"O.C.
2. 2X10 C.J. @16"O.C.
3. 2X12 DF#1 R.R. @16"O.C.
4. 11 7/8" TJI 360 F.J. @16"O.C.
5. 2X8 R.R. @16"O.C.
6. 2X8 C.J. @16"O.C.

SYMBOLS & LEGENDS

- COLUMN OR TRIMMER AS NOTED
- (E) WOOD STUD WALL
- SPAN AND DIRECTION OF JOIST FRAMING MEMBER PER PLAN
- WALL ABV.
- WOOD STUD WALL
- SHEAR PANEL NUMBER, MIN. LENGTH NOTED, REFER TO DETAIL 14/SD2 FOR PANEL TYPE
- FLOOR/ROOF JOIST / CEILING JOIST
- DETAIL NUMBER / DETAIL SHEET NUMBER

CONTRACTOR NOTE:

- CONTRACTOR TO VERIFY ALL EXISTING FRAMING/CONDITIONS AND NOTIFY THE ENGINEER OF ANY DISCREPANCIES IMMEDIATELY PRIOR TO COMMENCING ANY WORK.

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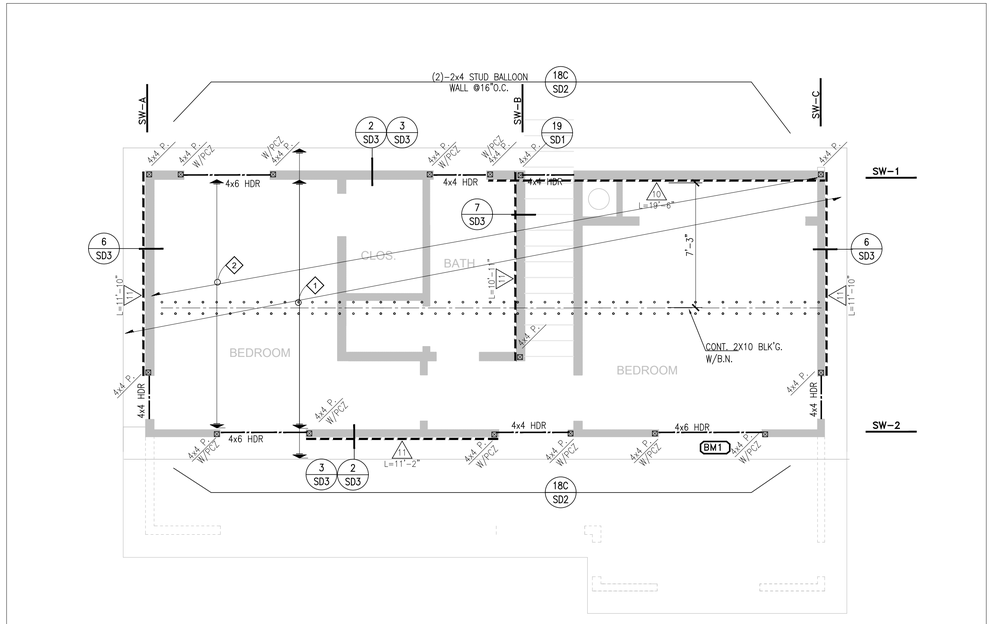
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ROOF FRAMING PLAN

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

NOTE: COORDINATE AND VERIFY ALL DIMENSIONS WITH ARCH'L DRAWINGS

FRAMING NOTES

1. FOR GENERAL NOTE SEE SN-1.
2. VERIFY ALL DIMENSIONS WITH ARCHITECTURAL DRAWINGS. FOR DIMENSIONS NOT SHOWN SEE ARCHITECTURAL DRAWINGS.
3. DOUBLE TOP PLATES SHOULD BE CONTINUOUS OVER ALL HEADERS. U.N.O. ON FRAMING PLAN OR DETAILS, SEE 18/SD2 FOR DOUBLE TOP PLATES SPLICES.
4. ALL BEAMS AT HARDY FRAME SHEAR LINES, SHOULD BE CONTINUED OVER HARDY-FRAMES, (U.N.O. ON FRAMING PLAN OR RELATED DETAILS. SEE DETAIL PER PLAN.
5. ALL BEAMS WITH WIDTH 5½" OR MORE, OR MARKED AS "DRAG" NEED TO HAVE (2) ROWS OF B.N.
6. FOR PLYWOOD X SHEAR WALL SCHEDULE SILL PLATE AND ANCHOR BOL REQUIREMENTS SEE DETAIL. 14/SD2 FOR NAILING SCHEDULE SEE
7. FOR TYPICAL DIAPHRAGM DET. SEE 17/SD2
   FOR ROOF DIAPHRAGM 1/2" CDX, PLYWOOD W/8d @ 6:6:12 (COMMON NAIL) PANEL SPAN RATING 24/0 OR BETTER.
   FLOOR/DECK DIAPHRAGM 3/4" CDX, PLYWOOD W/10d @ 6:6:10 (COMMON NAIL), U.N.O. PANEL I.D. RATING 32/16 OR BETTER, T&G.
8. NOT USED.
9. FOR LOCATION AND FRAMING OF NON-BEARING WALLS, SEE ARCHITECTURAL DRAWINGS.
10. NOT USED.
11. ALL GLU-LAM BEAMS SHALL BE 24F V4 DF/DF U.N.O.
12. MULTIPLE ELEMENT MEMBERS (i.e. DBL JOISTS, DBL STUDS, etc.) SHALL BE NAILED TOGETHER W/ 16d's @ 16" O.C. STAGGERED. BEAMS COMPOSED OF MULTIPLE PIECES (4x OR LARGER) SHALL BE BOLTED TOGETHER W/ 5/8"ø M.B.'S @ 12" O.C., STAG'D. ALSO SEE DET. 1/SD2 FOR DBL. JOIST CONNECTION.
13. WALL STUDS:
    1) EXTERIOR WALLS:
       a) 2x6 STUDS @16" O.C., U.N.O. ON ARCHITECTURAL PLAN.
       b) ALL OUTSIDE WALL OF EXTERIOR WALL ARE BEARING WALL (U.N.O.).
    2) INTERIOR WALLS:
       a) ALL INTERIOR SHEAR/ BEARING WALLS SHALL BE 2x4 MIN. STUD GRADE OR BETTER STUDS @16" O.C.. FOR 4" WALLS & 2X6 MIN. DFL STUD GRADE OR BETTER STUDS @16" O.C.. FOR 6" WALLS,
       b) ALL INTERIOR NON-BEARING/ NON-SHEAR WALL SHALL BE 2x4 OR 2x6 STUD GRADE OR BETTER STUDS @16" O.C. U.N.O.
14. U.N.O. PROVIDE SOLID BLOCKING OR DBL. JOIST UNDER ALL WALLS ABOVE.
15. WHERE HANGERS ARE NEEDED, WHETHER INDICATED ON PLAN OR NOT, U.N.O., USE "U" "ITT" OR "LB" HANGERS FOR JOISTS/RAFTERS, & "HUTF" OR "HW" HANGERS FOR BEAMS OR MULTIPLE JOISTS.
16. WHERE SHEAR WALLS ARE THRU WALLS AS INDICATED ON PLANS, SHEAR MATERIAL SHALL BE CONT. THRU WALLS.
17. ALL POSTS/MULTIPLE STUDS IN WALLS SHALL RECEIVE EDGE NAILING FROM WALL SHEATHING. ALL BM'S, DRAGS GIRDER TRUSSES SHALL RECEIVE BOUNDARY NAILING FROM SHEATHING.
18. WHENEVER A DETAIL IS CALLED ON A WALL LINE (FOR EXAMPLE, 2/S6. WITH A35'S AT 18" O.C.), IT NEEDS TO BE APPLIED TO THE FULL LENGTH OF THAT WALL. NOT JUST AT THE SPOTS IT IS KEYED OUT OR JUST AT SHEAR PANEL PORTION OF THE WALL.
19. CONTRACTOR SHALL VERIFY EXACT HEIGHT AND LOCATION OF HARDY FRAME.
20. FURR CEILINGS TO CONCEAL VALLEY OR HIP THAT ARE BELOW TOP PLATE LINE.
21. FURR ALL WALL AS REQ'D IF SHEAR WALL DOES NOT COVER ENTIRE WALL TO WALL FLUSH.
22. SHEAR WALLS ARE TO ROOF SHEATHING.
23. WHERE TOP PLATES OR SOLE PLATES ARE CUT FOR WIDE SHALL BE FASTENED TO EACH PLATE ACROSS AND TO EACH SIDE OF THE OPENING WITH NOT LESS THAN 6-16d NAILS.
24. ALL WATER HEATERS SHALL BE PROVIDED WITH SEISMIC STRAPS.

FRAMING MEMBERS:

1 2X10 DF#1 R.R. @16"O.C.

2 2X10 C.J. @16"O.C.

SYMBOLS & LEGENDS

- COLUMN OR TRIMMER AS NOTED
- SPAN AND DIRECTION OF JOIST FRAMING MEMBER PER PLAN
- WOOD STUD WALL
- SHEAR PANEL NUMBER, MIN. LENGTH NOTED, REFER TO DETAIL 14/SD2 FOR PANEL TYPE
- FLOOR/ROOF JOIST / CEILING JOIST
- DETAIL NUMBER / DETAIL SHEET NUMBER

#	REVISION	DATE

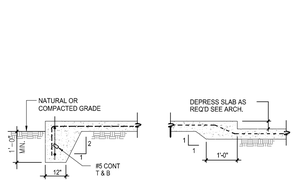
AQX ENGINEERING INC.
1520 Brookhollow, Suite #45
Santa Ana, CA 92705
Off. (714) 662-0510
Fax. (714) 662-0559
Mahdi@aqxeng.com

REGISTERED PROFESSIONAL ENGINEER
QIANG XIAO
NO. S. 5289
STRUCTURAL
STATE OF CALIFORNIA

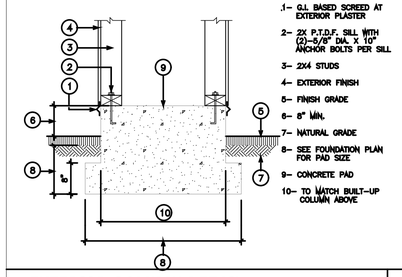
PROJECT NAME
THE ROCCO RESIDENCE
1649 OAK ST.
LOT 43 & 45 OAK ST,
PLACENTIA, CA

SHEET TITLE
ROOF FRAM'G. PLAN

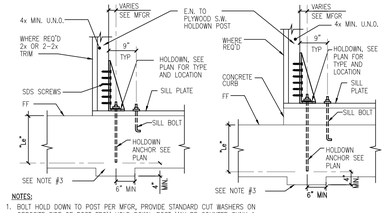
PROJECT#: MK26-049
DATE 09/9/2026
SCALE AS REFERENCED
SHEET NO.
S-3



EXT. WALL TYP. SECTION @ SLAB ON GRADE @ FTG — 13

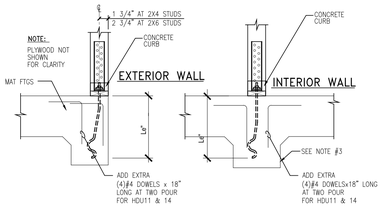


EXTERIOR COLUMN DETAIL — 18



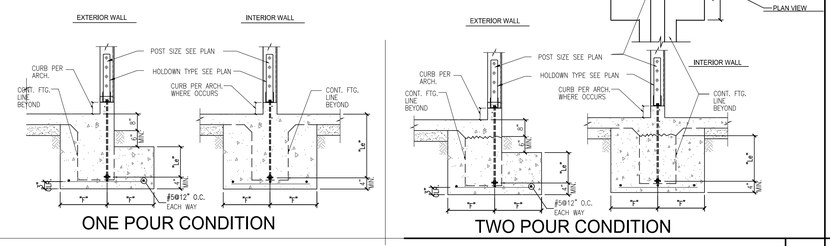
NOTES:
1. BOLT HOLD DOWN TO POST PER MFGR, PROVIDE STANDARD CUT WASHERS ON OPPOSITE SIDE OF POST FROM HOLD DOWN. POST MAY BE COUNTER SUNK A MAXIMUM OF 1/2 INCH TO RECESS BOLT AND WASHER.
2. TO PROPERLY LOCATE HOLDOWN ANCHOR BOLTS, CONTRACTOR TO CHECK STRUCTURAL AND ARCHITECTURAL DRAWINGS, FOR OPENINGS ETC. BEFORE PLACING BOLTS.
3. DEEPEN FOOTING AREA AS REQUIRED AT HOLDOWN ANCHORS TO INSURE PROPER EMBEDMENT.
4. FOR SPECIAL HD LOCATIONS SEE FOUNDATION PLAN.
5. MATERIAL OF SSTB & SB IS ASTM F1554 GRADE36 PER ICC ESR-2611
6. THE EMBEDMENT DEPTH, "Le" IS MEASURED FROM THE COLD JOINT FOR TWO POUR CONDITION.

ANCHOR TYPE	EMBEDMENT "Le"	EDGE DIST. "J"	WASHER PLATE	
PAB5	12"	10"	3/8" x 1 1/2" x 1 1/2"	
PAB8	14"	18"	3/8" x 2 1/2" x 2 1/2"	

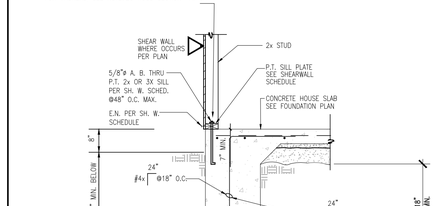


HOLDOWN AND EMBEDMENT SCHEDULE (MIN. 2500 PSI CONCRETE)						
MODEL NO	MIMIMUM POST SIZE	ANCHOR BOLT SIZE	MIN. EMBED "Le"	ANCHOR * TYPE	CAPACITY (lbs.) CORNER	CAPACITY (lbs.) END
HDUE3-SDS3	2-2X (4X @ CORNER)	5/8"	21"	SSTB24	3790	3790
HDUE5-SDS3	2-2X (4X @ CORNER)	5/8"	18"	SB5/8X24	5375	5375
HDUE7-SDS3	2-2X (4X @ CORNER)	5/8"	18"	SB5/8X24	7015	7015
HDUE9-SDS3.5	4x6	7/8"	25"	SSTB28	9390	**
HDUE13-SDS3.5	4x8	1"	28"	SABR1X30	12950	
HDUE17-SDS4.5	6x6	1"	28"	SABR1X30	17685	

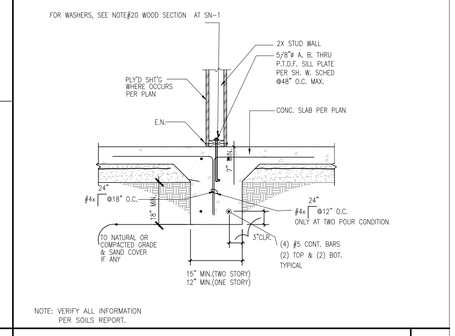
* ANCHOR TYPE "SB1x30 IS ONLY FOR CONCRETE POURED MONOLITHICALLY. USE "PAB8" IN LIEU OF "SB1x30" FOR TWO-POUR CONCRETE APPLICATIONS.
** ANCHOR TYPE "SB1x30 IS ONLY FOR CONCRETE POURED MONOLITHICALLY. USE "PAB7" IN LIEU OF "SSTB28" FOR TWO-POUR CONCRETE APPLICATIONS.



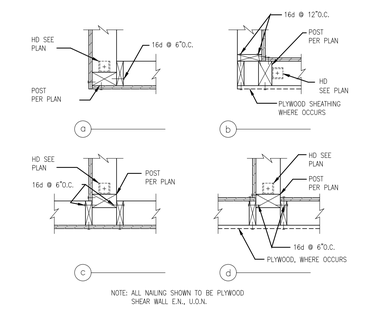
TYP. H.D. INSTALLATION AT WALLS — 6



EXT. WALL AT FTG — 1

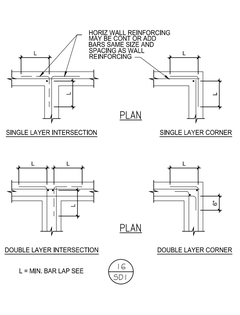


INT. WALL AT FTG — 2

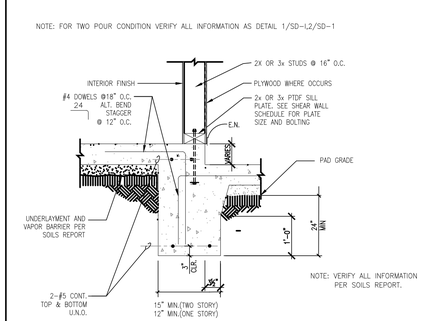


NOTE: ALL NAILING SHOWN TO BE PLYWOOD SHEAR WALL E.N., U.O.N.

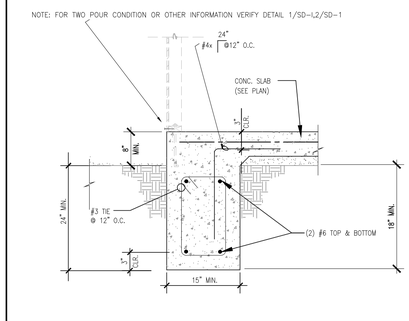
SHEAR WALL INTERSECTIONS — 19



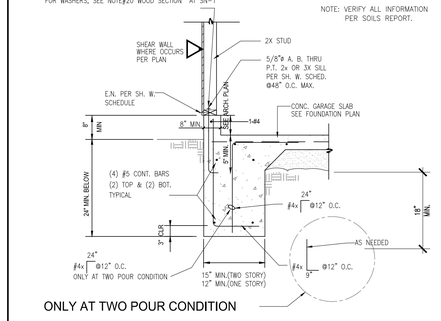
TYP. REINFORCING BENDS — 15



HOUSE TO PATIO/GARAGE — 11



EXT. GARAGE ENTRY — 7

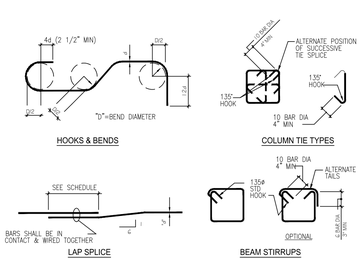


EXT. WALL AT GARAGE FTG — 3

BEND DIAMETER SCHEDULE	
BAR SIZE	BEND DIAMETER
#3 THRU #5	D = 4d
#6 THRU #8	D = 6d
#9 THRU #11	D = 8d
#14 THRU #18	D = 10d

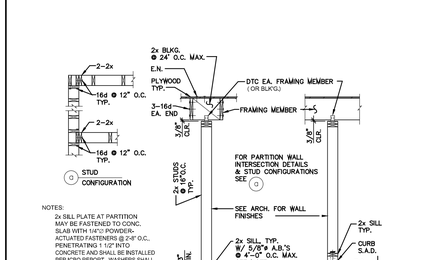
2500 PSI MIN. CONCRETE REINFORCING BAR LAP SPLICE				CONCRETE BLOCK
BAR #	MINIMUM CLEAR BAR SPACING (BAR DIAMETER)	LAP SPLICE LENGTH (INCHES) * TOP BARS	LAP SPLICE LENGTH (INCHES) OTHER BARS	BAR LAP IN INCHES
#4	MORE THAN 2	30	23	24"
#5	MORE THAN 2	37	29	30"
#6	MORE THAN 2	44	34	54"
#7	MORE THAN 2	81	62	63"
#8	MORE THAN 2	93	72	72"
#9	MORE THAN 2	104	80	82"
#10	MORE THAN 2	116	89	92"
#11	MORE THAN 2	127	98	102"

* HORIZONTAL REINFORCEMENT SO PLACED THAT MORE THAN 12" OF FRESH CONCRETE IS CAST IN THE MEMBER BELOW THE DEVELOPMENT LENGTH OR SPLICE



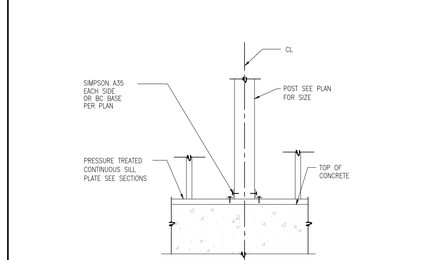
NOTE: FOR SIZE AND SPACING OF ALL TIES AND STIRRUPS, REFER TO FOOTING SCHEDULE AND/OR DETAILS.

TYPICAL REINFORCEMENT DETAILS — 20



NOTES:
2x SILL PLATE AT PARTITION MAY BE FASTENED TO CONC. SLAB WITH 1/4"ø POWDER-ACTUATED FASTENERS @ 2'-9" O.C., PENETRATING 1 1/2" INTO CONCRETE AND SHALL BE INSTALLED PER ICBO REPORT. WASHERS SHALL BE 1 1/2"x1"x14 GA. POWDER-ACTUATED FASTENERS SHALL NOT BE PERMITTED THRU 3x SILLS AT BEARING AND SHEAR WALLS, NOR IN CONC. CURBS.

NON-STRUCTRAL PARTITION — 12



WOOD POST ON SILL PLATE — 4

#	REVISION	DATE

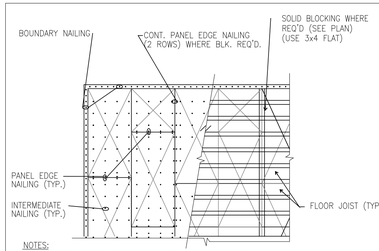
AQX ENGINEERING INC.
1520 Brookhollow, Suite #45
Santa Ana, CA 92705
Off. (714) 662-0510
Fax. (714) 662-0559
Mahdi@aqxeng.com

REGISTERED PROFESSIONAL ENGINEER — QIANG XIAO — NO. S. 5289 — CIVIL — STATE OF CALIFORNIA

PROJECT NAME
THE ROCCO RESIDENCE
1649 OAK ST.
LOT 43 & 45 OAK ST,
PLACENTIA, CA

SHEET TITLE
STRUCTURAL DETAILS

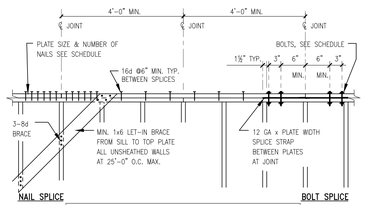
PROJECT#: MK26-049
DATE 09/9/2026
SCALE AS REFERENCED
SHEET NO.
SD-1



NOTES:
1.) SEE PLAN FOR PLYWOOD SIZE & NAILING SCHEDULE.
2.) LAY PLYWOOD FACE GRAIN PERPENDICULAR TO FLOOR JOISTS. (STAGGERED)
3.) 4' SIDE OF PLYWOOD. SHEETS TO BE SPLICED OVER JOISTS
4.) ALL NAILING TO BE 3/8" MIN. TO EDGE OF SUPPORT & SHT.

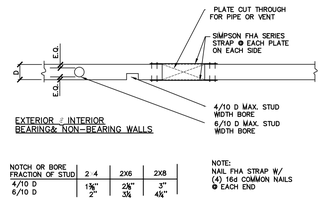
TYPE	PLYWOOD THICKNESS	NAIL SIZE	BOUNDARY	EDGE	FIELD	PANEL INDEX
ROOF	7/16" CDX	8d	6"	6"	12"	32/16
FLOOR	3/4"	10d	6"	6"	10"	32/16

PLY.FLR./ROOF DIAPHRAGM 17



SCHEDULE		
TYPE	NO. NAILS OR BOLTS EACH SIDE OF JOINT	PLATE SIZE UNO
A	8 – 16d NAILS	2 – 2x
B	12 – 16d NAILS	2 – 2x
C	16 – 16d NAILS	2 – 2x
D	22 – 16d NAILS	2 – 2x
E	3 – 3/4" ø BOLTS OR MST60	2x 2x

TOP PLATE SPLICE 18



NOTCH OR BORE FRACTION OF STUD	2 4	2X6	2X8
4/10 D	1⅝"	2⅝"	3"
6/10 D	2"	3⅜	4⅛"

NOTE:
NAIL FHA STRAP W/ (4) 16d COMMON NAILS @ EACH END

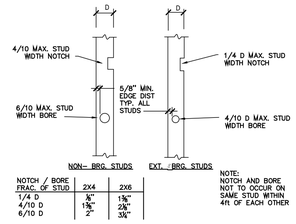
BORE & NOTCH @ PLATE 19

SHEAR SCHEDULE

SYM	SIDE	#FT	MATERIAL	NAILS	EDGE	FIELD	GRD. FLOOR	UPPER FLR.	A35
1/A	ONE	180	7/8" PAPER BACKED LATH I.C.B.O.#1923 UNBLK'D W/16 GA. STAPLES		6	12	5/8" @ 48"	16d @ 10"	24" O.C.
2/A	ONE	280	3/8" PLYWD (24/0)	8d	6	12	5/8" @ 48"	16d @ 6"	18" O.C.
	TWO	560	3/8" PLYWD (24/0)	8d	6	12	5/8" @ 24"	3/8"Ø@6" O.C.	10" O.C.
	WALL CONSTRUCTION: 3X SILL, 3X STUDS @ BOUNDARIES, & 3X TOP PLATE, OFFSET ADJOINING PANELS ON OPPOSING SIDES. USE MIN. 4X END POST.								
1/A	ONE	350	3/8" PLYWD (24/0)	8d	4	12	5/8" @ 32"	16d @ 5"	16" O.C.
	WALL CONSTRUCTION: 2X SILL, STUDS, & TOP PLATES, USE END POST PER HOLDOWN REQUIREMENTS								
3/A 1/A	ONE	430	3/8" PLYWD (24/0)	8d	4	12	5/8" @ 32"	16d @ 4"	12" O.C.
	WALL CONSTRUCTION: 3X SILL@ FOUNDATION, 2X SILL @ RAISED FLOOR OR SECOND STORY, 3X STUDS @ ADJOINING PANELS, & 2X TOP PLATES. USE 3X END POST (MIN) OR AS REQD BY HOLDOWN								
3/A 2/A	TWO	860	3/8" PLYWD (24/0)	8d	4	12	5/8" @ 16"	3/8"Ø@3" O.C.	6" O.C.
	WALL CONSTRUCTION: 3X SILL, 3X STUDS @ BOUNDARIES, & 3X TOP PLATE, OFFSET ADJOINING PANELS ON OPPOSING SIDES. USE MIN. 4X END POST.								
3/A 2/A	ONE	550	3/8" PLYWD (24/0)	8d	3	12	5/8" @ 24"	16d @ 3"	10" O.C.
	WALL CONSTRUCTION: 3X SILL@ FOUNDATION, 2X SILL @ RAISED FLOOR OR SECOND STORY, 3X STUDS @ ADJOINING PANELS, & 2X2X TOP PLATES. USE 3X END POST (MIN) OR AS REQD BY HOLDOWN								
	TWO	1100	3/8" PLYWD (24/0)	8d	3	12	5/8" @ 12"	1/2"Ø@4" O.C.	8" O.C. @ E.S.
	WALL CONSTRUCTION: 3X SILL, 3X STUDS @ BOUNDARIES, & 3X TOP PLATE, OFFSET ADJOINING PANELS ON OPPOSING SIDES. USE MIN. 4X END POST.								
3/A 3/A	ONE	730	3/8" PLYWD (24/0)	8d	2	12	5/8" @ 16"	16d @ 2"	8" O.C.
	WALL CONSTRUCTION: 3X SILL@ FOUNDATION, 2X SILL @ RAISED FLOOR OR SECOND STORY (O/3X BLKG. 3X STUDS @ ADJOINING PANELS, & 2X2X TOP PLATES. USE 3X END POST (MIN) OR AS REQD BY HOLDOWN								
	TWO	1460	3/8" PLYWD (24/0)	8d	2	12	5/8" @ 8"	1/2"Ø@3" O.C.	6" O.C. @ E.S.
	WALL CONSTRUCTION: 3X SILL, 3X STUDS @ BOUNDARIES, & 3X TOP PLATE, OFFSET ADJOINING PANELS ON OPPOSING SIDES. USE MIN. 4X END POST.								
3/A 3/A	ONE	870	1/2" PLYWD (32/16)	10d	2	12	5/8" @ 16"	16d @ 2"	5" O.C.
	WALL CONSTRUCTION: 3X SILL@ FOUNDATION, 2X SILL @ RAISED FLOOR OR SECOND STORY (O/3X BLKG. 3X STUDS @ ADJOINING PANELS, & 2X2X TOP PLATES. USE 3X END POST (MIN) OR AS REQD BY HOLDOWN								
	TWO	1740	1/2" PLYWD (32/16)	10d	2	12	5/8" @ 8"	1/2"Ø@3" O.C.	5" O.C. @ E.S.
	WALL CONSTRUCTION: 3X SILL, 3X STUDS @ BOUNDARIES, & 3X TOP PLATE, OFFSET ADJOINING PANELS ON OPPOSING SIDES. USE MIN. 4X END POST.								

NOTES:
1. WHERE PANEL NAILING IS SPACED @4" O.C. OR CALCULATED SHEAR LOAD EXCEEDS 350 PLF, USE:
   a) 3x STUDS @ ADJOINING PANELS w/ STAGGERED NAILS
   b) 3x SILLS @ FOUNDATION LEVEL.
   c) NAIL DOUBLE TOP PLATES TOGETHER w/ 16d SINKER NAILS @4" O.C.
2. WHERE PLYWOOD SHEAR PANELS OCCUR ON BOTH SIDES OF WALL:
   a) USE 3x STUDS @ ALL BOUNDARIES (BOT. PLATES, TOP PLATES, & ADJOINING PANELS)
   b) OFFSET ADJOINING PANELS ON OPPOSING SIDES.
3. WHERE SILL NAILING IS 2" OR LESS, OR LAG SCREW IS USED PROVIDE 3x BLKG. RIM JOIST, OR BEAM INSURE THAT THE WOOD BEAM BELOW AND DOES NOT TEND TO SPLIT. PRE-DRILL FOR NAILS IF SPLITTING IS OBSERVED, USING A DRILL SIZE 3/4 OF THE DIAMETER OF THE SILL NAILING.
4. SHOT PINS BY "HILTI", CONFORMING TO I.C.C. # 1917 MAY BE USED IN LIEU OF A.B. FOR INTERIOR NON-SHEAR WALLS ONLY ON CONCRETE FOUNDATION.
5. USE 5/8" x 8" SIMPSON SET-XP (ICC ES ESR-2508 EPOXY ADHESIVE AS A FIX SILL PLATE BOLT @ EXISTING FOUNDATIONS PER SHEAR SCHEDULE SPACING.
6. ALL PLYWOOD EDGES TO BE BLOCKED-USE 3X BLOCKING AT 2" O.C. NAILING.
7. PLYWOOD USE STRUCTURAL 1.
8. TABLE BASED ON C.B.C. 2022 EDITION, SEISMIC FORCE IS INCREASED 25% FOR CONNECTIONS OF DIAPHRAGM TO SHEAR WALL.

SHEAR WALL SCHEDULE 14



NOTCH / BORE FRAC. OF STUD	2X4	2X6
1/4 D	⅝"	1⅜"
4/10 D	1⅝"	2⅝"
6/10 D	2"	3⅜

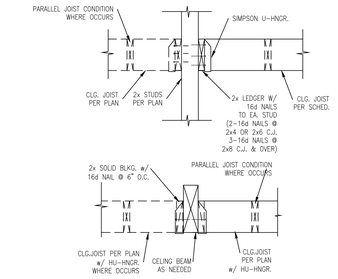
NOTE:
NOTCH AND BORE NOT TO OCCUR ON SAME STUD WITHIN 4ft OF EACH OTHER

BORE & NOTCH @ STUDS 15

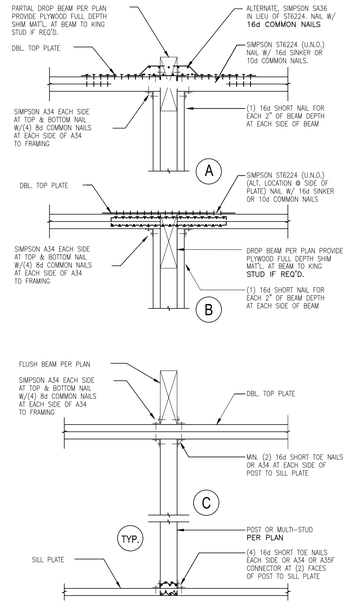
PLAN VIEW

PIPE PENETRATION AT PLATES 20

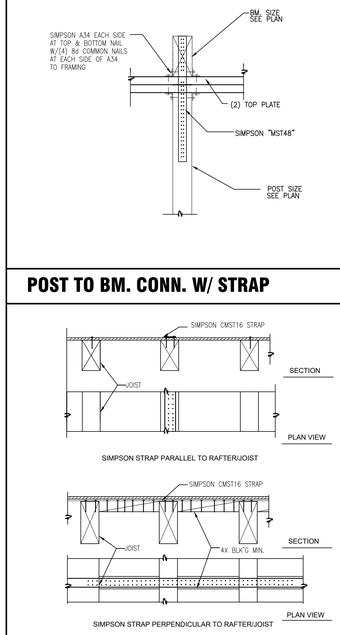
TYP. BEAM TO POST CONNECTION W/ PCZ 16



TYPICAL CEILING JOIST DETAILS 9



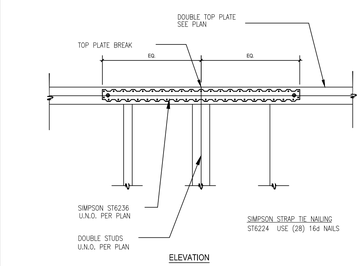
TYP. BEAM TO POST WITH TOP PLATE 11



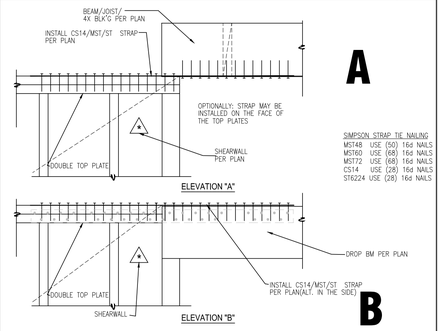
POST TO BM. CONN. W/ STRAP 6

DRAG DET, 7

TYP. FRAMING DETAIL 1



TOP PLATE CONNCETION 3



DRAG STRUT TYP. 4

#	REVISION	DATE

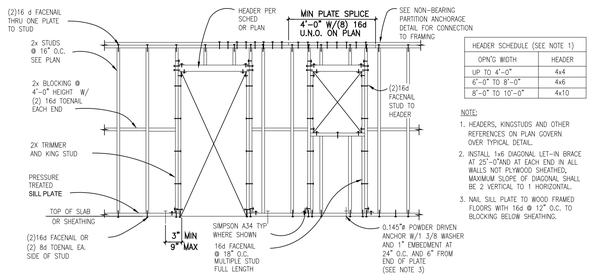
AQX ENGINEERING INC.
1520 Brookhollow, Suite #45
Santa Ana, CA 92705
Off. (714) 662-0510
Fax. (714) 662-0559
Mahdi@aqxeng.com

REGISTERED PROFESSIONAL ENGINEER
DIANG JIAO
NO. S. 5289
CIVIL
STATE OF CALIFORNIA

PROJECT NAME
THE ROCCO RESIDENCE
1649 OAK ST,
LOT 43 & 45 OAK ST,
PLACENTIA, CA

SHEET TITLE
STRUCTURAL DETAILS

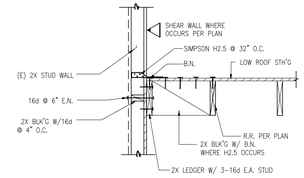
PROJECT#: MK26-049
DATE 09/9/2026
SCALE AS REFERENCED
SHEET NO.
SD-2



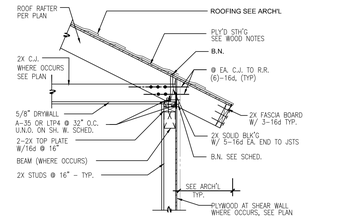
HEADER SCHEDULE (SEE NOTE 1)	
OPN'G WIDTH	HEADER
UP TO 4'-0"	4x4
4'-0" TO 6'-0"	4x6
8'-0" TO 10'-0"	4x10

NOTE:
1. HEADERS, KINGSTUDS AND OTHER REFERENCES ON PLAN GOVERN OVER TYPICAL DETAIL.
2. INSTALL 1x6 DIAGONAL LET-IN BRACE AT 25'-0"AND AT EACH END IN ALL WALLS NOT PLYWOOD SHEATHED, MAXIMUM SLOPE OF DIAGONAL SHALL BE 2 VERTICAL TO 1 HORIZONTAL.
3. NAIL SILL PLATE TO WOOD FRAMED FLOORS WITH 16d @ 12" O.C. TO BLOCKING BELOW SHEATHING.

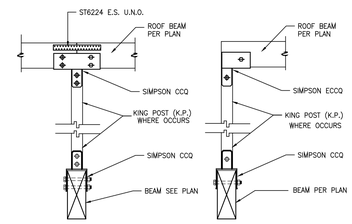
INTERIOR NON-BEARING STUD WALL FRAMING | 14



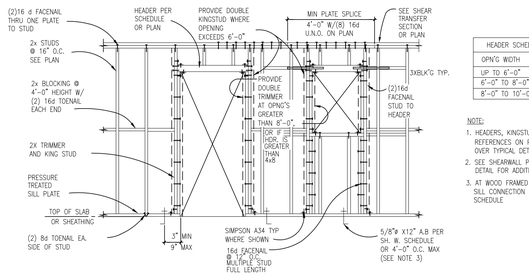
SHEAR TRANSFER | 9



EXT. BEARING WALL @ ROOF | 5



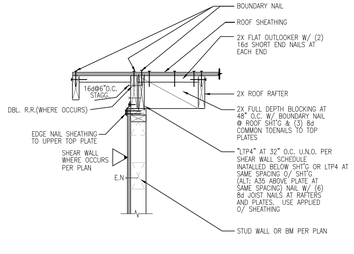
KING POST | 1



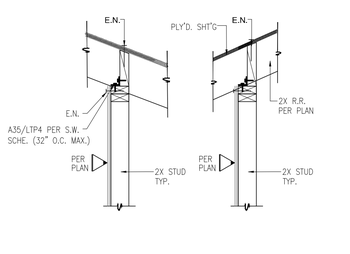
HEADER SCHEDULE (SEE NOTE 1)	
OPN'G WIDTH	HEADER
UP TO 6'-0"	4x6
6'-0" TO 8'-0"	4x8
8'-0" TO 10'-0"	4x10

NOTE:
1. HEADERS, KINGSTUDS AND OTHER REFERENCES ON PLAN GOVERN OVER TYPICAL DETAIL
2. SEE SHEARWALL PLYWOOD NAILING DETAIL FOR ADDITIONAL INFORMATION
3. AT WOOD FRAMED WALLS USE SILL CONNECTION PER SHEARWALL SCHEDULE

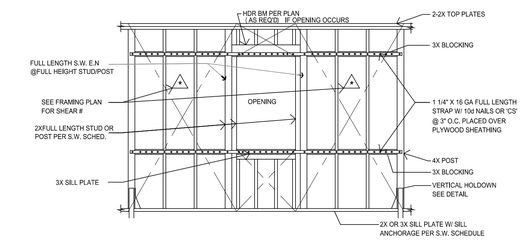
EXTERIOR AND INTERIOR BEARING/SHEAR WALL FRAMING | 15



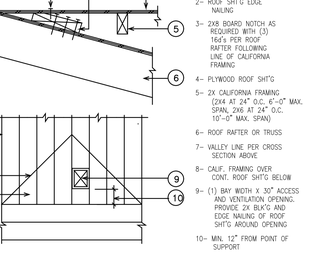
SHEAR TRANSFER | 6



ROOF S.T. @ EXT. BEARING WALL | 2

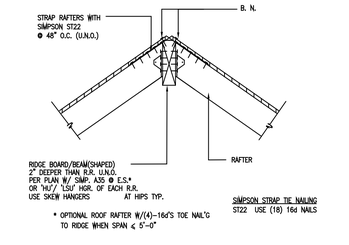


TYP. PIER WALL DETAIL | 17

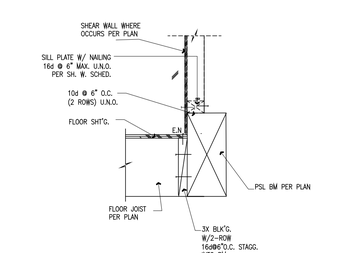


FRAMING DETAIL | 11

CALIF. FRAMING | 12



INT. SHEAR WALL SECTION | 7



2X C.J./ WALL CONN | 3

TYP. ROOF FRAMING DETAIL | 8

INT. SHEAR WALL/BM SECTION | 4

#	REVISION	DATE

AQX ENGINEERING INC.
1520 Brookhollow, Suite #45
Santa Ana, CA 92705
Off. (714) 662-0510
Fax. (714) 662-0559
Mahdi@aqxeng.com

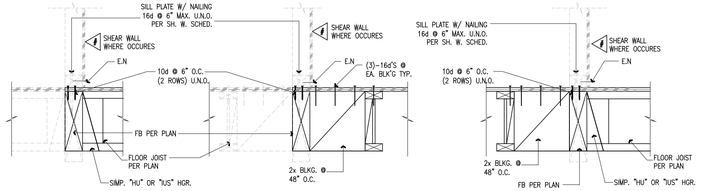
REGISTERED PROFESSIONAL ENGINEER
GIANG X.AO
NO. S. 5289
STATE OF CALIFORNIA

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STRUCTURAL DETAILS

PROJECT#: MK26-049
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SCALE AS REFERENCED
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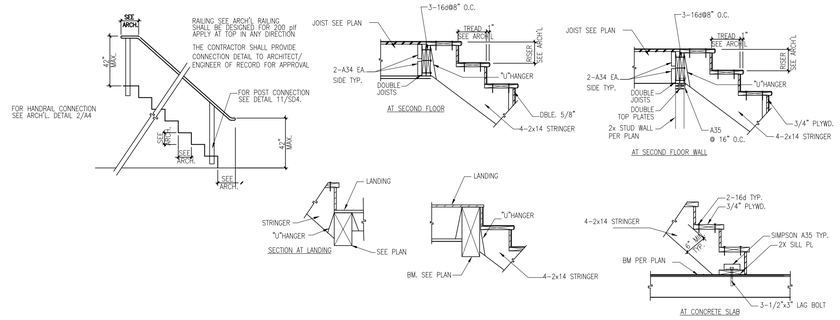
SD-3



Ⓐ F.J. PERP. TO BEAM Ⓑ F.J. PARL. TO BEAM Ⓒ TWO DIFFRENT DIRECTION OF F.J. TO BEAM

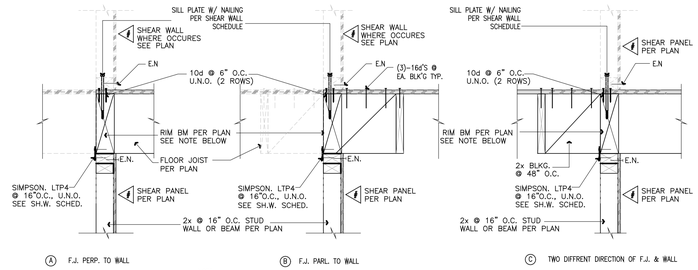
NOTE:
* SEE PLAN FOR PLYWOOD SHEATING SIZE

TYP. SHEAR WALL @ BEAM DETAIL — 14



WOOD STAIR FRAMING DETAIL — 5

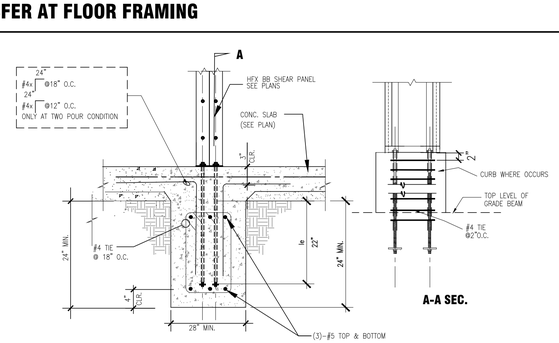
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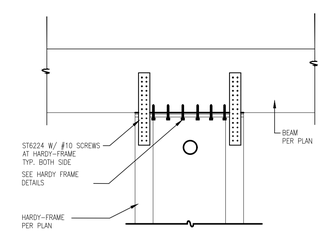
Ⓐ F.J. PERP. TO WALL Ⓑ F.J. PARL TO WALL Ⓒ TWO DIFFRENT DIRECTION OF F.J. & WALL

NOTE:
1. SEE PLAN FOR PLYWOOD SHEATING SIZE
2. 3x RIM JOIST OR 3x BLK'G FOR SHEARWALL SCHED.

TYP. SHEAR TRANSFER AT FLOOR FRAMING — 15

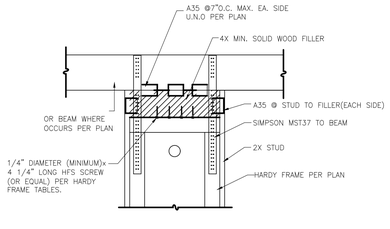


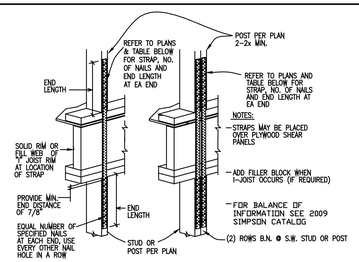
GRADE BEAM AT BB HARDY FRAME AREA(TYP.) — 16



HFX/BM CONN. — 17

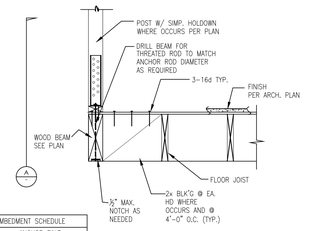
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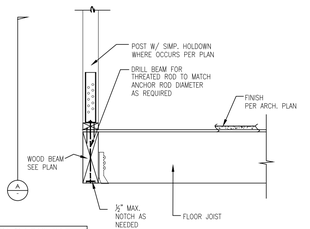
TYPE	STRAP	NAILING(MIN)	END LENGTH (MIN)
A	MST37	22-16d	EQUAL BASED ON
B	MST48	34-16d	STRAPSTANDARD
C	MST60	48-16d	LENGTH
D	CMST14	56-16d	30"
E	CMST12	74-16d	38"

TYP. HD @ FLOOR FRAMING — 12



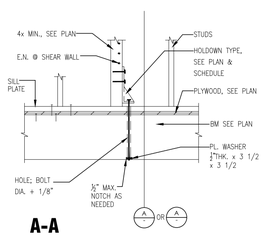
HOLDOWN AND EMBEDMENT SCHEDULE			
	HOLDOWN NO.	ANCHOR BALT DIAMETER	ASTM
A	HDUE2-SDS2.5	5/8"	A36
B	HDUE5-SDS2.5	5/8"	A36
C	HDUE7-SDS2.5	5/8"	A36
D	HDUE9-SDS2.5	7/8"	A36
E	HDUE13-SDS2.5	1"	A36
F	HDUE17-SDS2.5	1"	A36

TYP. HD @ WOOD BEAM (PARALLEL)



HOLDOWN AND EMBEDMENT SCHEDULE			
	HOLDOWN NO.	ANCHOR BALT DIAMETER	ASTM
A	HDUE2-SDS2.5	5/8"	A36
B	HDUE5-SDS2.5	5/8"	A36
C	HDUE7-SDS2.5	5/8"	A36
D	HDUE9-SDS2.5	7/8"	A36
E	HDUE13-SDS2.5	1"	A36
F	HDUE17-SDS2.5	1"	A36

TYP. HD @ WOOD BEAM (PERPEN.)



A-A

8

2

4

3

#	REVISION	DATE

AQX ENGINEERING INC.
1520 Brookhollow, Suite #45
Santa Ana, CA 92705
Off. (714) 662-0510
Fax. (714) 662-0559
Mahdi@aqxeng.com

REGISTERED PROFESSIONAL ENGINEER
QIANG XIAO
NO. S. 5289
CIVIL
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LOT 43 & 45 OAK ST,
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SHEET TITLE
STRUCTURAL DETAILS

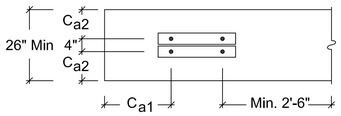
PROJECT#: MK26-049
DATE 09/9/2026
SCALE AS REFERENCED
SHEET NO.
SD-4

BACK TO BACK REINFORCED ANCHORAGE (BB-RA)

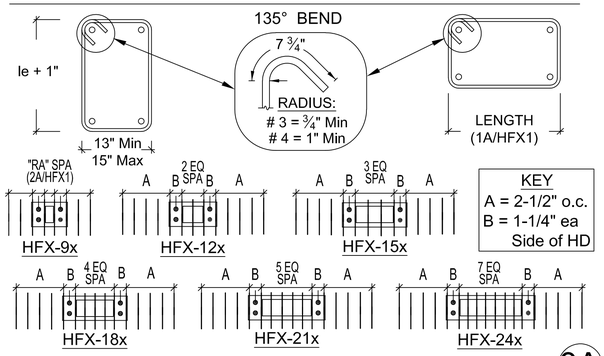
Model	Panel Width (in)	Anchorage[1]	Rod Dia (in)	Rod Grade[2,3]	BB-RA le[4] (in)	BB-RA C_{a1}[5] (in)	BB-RA C_{a2}[6] (in)	Stirrups[9] (in)	Shear Ties[7]
HFX-9x	9	1-1/8-STD-BB-RA	1-1/8	STD	15	19-3/4	11	8 - # 4	# 3 (min) @ 3-3/4" OC
HFX-12x	12	1-1/8-STD-BB-RA		STD	23			13 - # 4	# 3 (min) @ 4" OC
		1-1/8-HS-BB-RA		HS					
HFX-15x	15	1-1/8-STD-BB-RA		STD		20-5/8		14 - # 4	# 4 (min) @ 4" OC
		1-1/8-HS-BB-RA		HS					
HFX-18x	18	1-1/8-STD-BB-RA		STD				15 - # 4	
		1-1/8-HS-BB-RA		HS					
HFX-21x	21	1-1/8-STD-BB-RA		STD				16 - # 4	
		1-1/8-HS-BB-RA		HS					
HFX-24x	24	1-1/8-STD-BB-RA		STD				18 - # 4	
		1-1/8-HS-BB-RA		HS					

BACK TO BACK REINFORCED ANCHORAGE NOMENCLATURE

1-1/8 - STD - BB - RA
- REINFORCED ANCHORAGE
- "BACK TO BACK" INSTALLATION
- ROD GRADE
- ROD DIAMETER



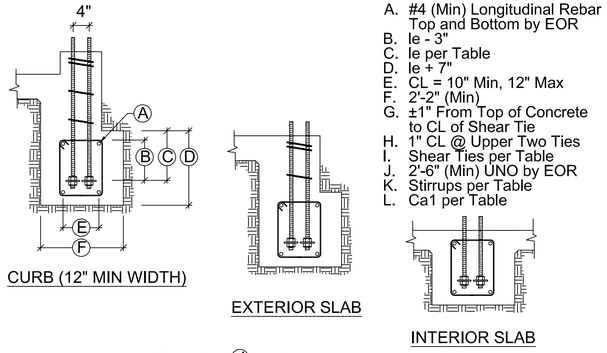
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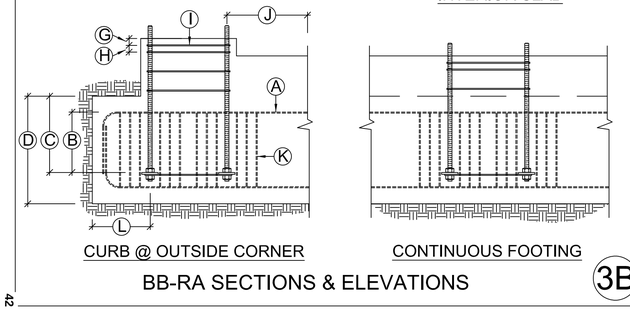
KEY
A = 2-1/2" o.c.
B = 1-1/4" ea Side of HD

BB-RA SHEAR TIES & STIRRUPS

3A



A. #4 (Min) Longitudinal Rebar Top and Bottom by EOR
B. le - 3"
C. le per Table
D. le + 7"
E. CL = 10" Min, 12" Max
F. 2'-2" (Min)
G. ±1" From Top of Concrete to CL of Shear Tie
H. 1" CL @ Upper Two Ties
I. Shear Ties per Table
J. 2'-6" (Min) UNO by EOR
K. Stirrups per Table
L. Ca1 per Table



BB-RA SECTIONS & ELEVATIONS

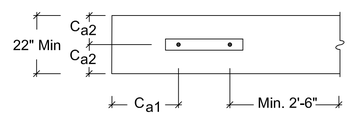
3B

REINFORCED ANCHORAGE (RA)

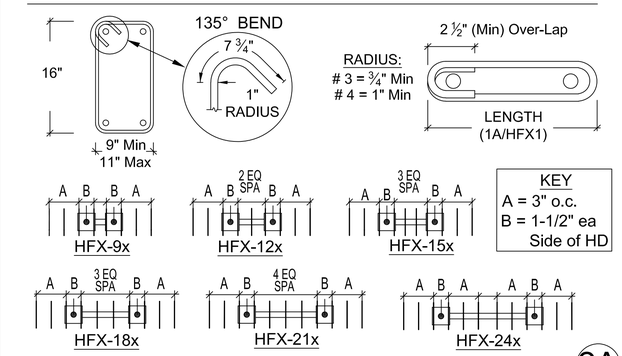
Model	Panel Width (in)	Anchorage[1]	Rod Dia (in)	Rod Grade[2,3]	RA le[4] (in)	RA C_{a1}[5] (in)	RA C_{a2}[6] (in)	Stirrups[9] (in)	Shear Ties[7]
HFX-9x	9	1-1/8-STD-RA	1-1/8	STD	15	19-3/4	11	8 - # 4	# 3 (min) @ 3-3/4" OC
HFX-12x	12	1-1/8-STD-RA		STD				9 - # 4	# 3 (min) @ 4" OC
		1-1/8-HS-RA		HS					
HFX-15x	15	1-1/8-STD-RA		STD		20-5/8		10 - # 4	
		1-1/8-HS-RA		HS					
HFX-18x	18	1-1/8-STD-RA		STD					
		1-1/8-HS-RA		HS					
HFX-21x	21	1-1/8-STD-RA		STD				11 - # 4	
		1-1/8-HS-RA		HS					# 4 (min) @ 4" OC
HFX-24x	24	1-1/8-STD-RA		STD				12 - # 4	
		1-1/8-HS-RA		HS					

REINFORCED ANCHORAGE NOMENCLATURE

1-1/8 - STD - RA
- REINFORCED ANCHORAGE
- ROD GRADE
- ROD DIAMETER



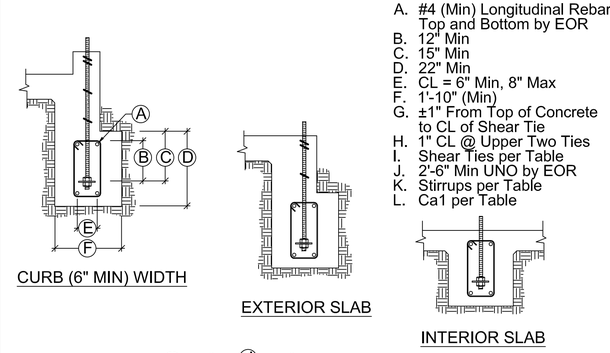
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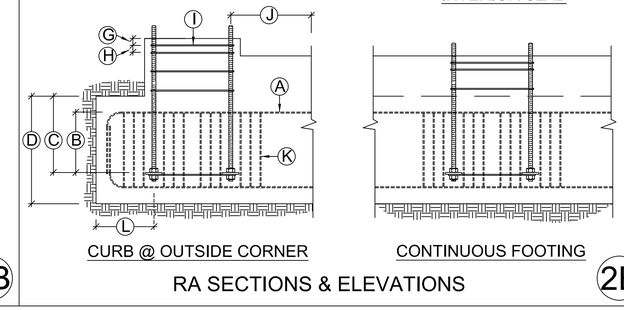
KEY
A = 3" o.c.
B = 1-1/2" ea Side of HD

RA SHEAR TIES & STIRRUPS

2A



A. #4 (Min) Longitudinal Rebar Top and Bottom by EOR
B. 12" Min
C. 15" Min
D. 22" Min
E. CL = 6" Min, 8" Max
F. 1'-10" (Min)
G. ±1" From Top of Concrete to CL of Shear Tie
H. 1" CL @ Upper Two Ties
I. Shear Ties per Table
J. 2'-6" Min UNO by EOR
K. Stirrups per Table
L. Ca1 per Table



RA SECTIONS & ELEVATIONS

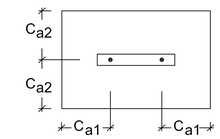
2B

UNREINFORCED ANCHORAGE (UA)

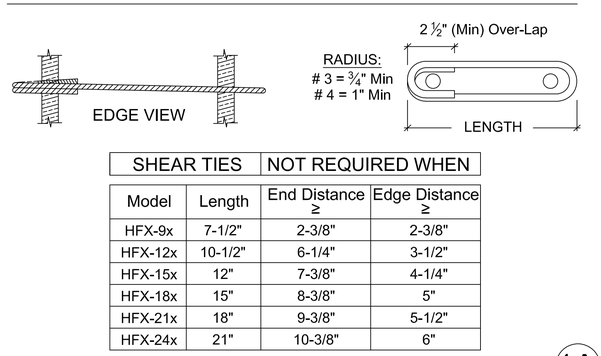
Model	Panel Height	Anchorage[1]	Rod Dia (in)	Rod Grade[2,3]	UA le[4] (in)	UA C_{a1} & C_{a2}[5,6] (in)	Shear Ties[7,8]
HFX-9x	79.5" - 8'	1-1/8-STD-13-19	1-1/8	STD	13	19	1 - # 3
HFX-12x	78" - 10'	1-1/8-HS-20-30		HS	20	30	
HFX-15x, 18x	78" - 13'	1-1/8-STD-14-20		STD	14	20	
HFX-15x, 18x Balloon	14' - 20'	1-1/8-HS-20-30		HS	20	30	
HFX-21x, 24x	78" - 13'	1-1/8-STD-14-20		STD	14	20	
		1-1/8-HS-23-34			23	34	2 - # 3
HFX-21x, 24x Balloon	14' - 20'	1-1/8-HS-20-30		HS	20	30	

UNREINFORCED ANCHORAGE NOMENCLATURE

1-1/8 - STD - 14 - 20
- END & EDGE DISTANCE (C_{a1} & C_{a2})
- EMBEDMENT DEPTH (l_e)
- ROD GRADE
- ROD DIAMETER



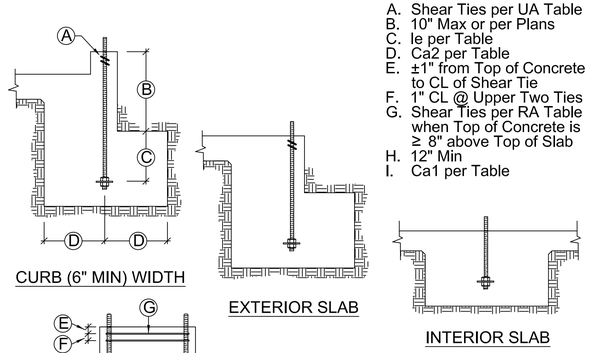
1



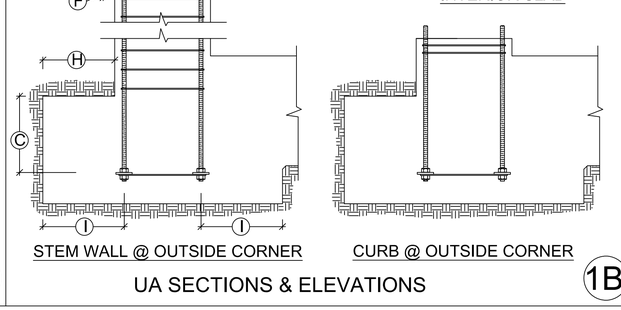
SHEAR TIES	NOT REQUIRED WHEN	
Model	Length	End Distance ≥	Edge Distance ≥
HFX-9x	7-1/2"	2-3/8"	2-3/8"
HFX-12x	10-1/2"	6-1/4"	3-1/2"
HFX-15x	12"	7-3/8"	4-1/4"
HFX-18x	15"	8-3/8"	5"
HFX-21x	18"	9-3/8"	5-1/2"
HFX-24x	21"	10-3/8"	6"

UA SHEAR TIES

1A



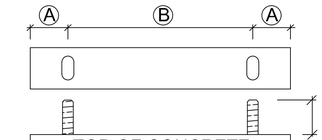
A. Shear Ties per UA Table
B. 10" Max or per Plans
C. le per Table
D. Ca2 per Table
E. ±1" from Top of Concrete to CL of Shear Tie
F. 1" CL @ Upper Two Ties
G. Shear Ties per RA Table when Top of Concrete is ≥ 8" above Top of Slab
H. 12" Min
I. Ca1 per Table



UA SECTIONS & ELEVATIONS

1B

1. DESIGNS ARE TO RESIST LOADING PER ACI 318-19, SEC 17.10.5.3.
2. STD INDICATES ANCHORS COMPLYING WITH ASTM F1554 GRADE 36 WITH A HARDY FRAME BOLT BRACE (HFXBB) INSTALLED WITH STD OR GRADE 8 DOUBLE NUTS ON THE EMBED END.
3. HS INDICATES ANCHORS COMPLYING WITH ASTM A193 GRADE B7 WITH A 1/2"x3"x3"(MIN) HFPW PLATE WASHER INSTALLED WITH DOUBLE NUTS ON THE EMBED END (HFXBB NOT REQUIRED).
4. LE = LENGTH OF EMBEDMENT FROM THE TOP OF FOOTING OR GRADE BEAM TO THE TOP OF THE HFXBB BOLT BRACE (TOP OF THE EMBEDDED HFPW PLATE WASHER @ HS ANCHORS)
5. CA1 = DISTANCE FROM HD CENTERLINE TO THE END OF THE FOOTING OR GRADE BEAM.
6. CA2 = DISTANCE FROM HD CENTERLINE TO BOTH THE FRONT AND THE BACK FACE OF THE FOOTING OR GRADE BEAM.
7. SHEAR TIES ARE GRADE 60 (MIN) REBAR AND REQUIRED FOR NEAR EDGE DISTANCE CONDITIONS PER ACI 318-19, F'C = 2,500 PSI. CURBS AND STEM WALLS MUST BE 6 INCH (MIN) WIDTH FOR UA AND RA, 12 INCH (MIN) WIDTH FOR BB-RA.
8. FOR UA APPLICATIONS, ADDITIONAL TIES MAY BE REQUIRED AT STEM WALLS. SHEAR TIES ARE NOT REQUIRED FOR INSTALLATION AWAY FROM EDGE (SEE DETAIL 1A), INSTALLATION ON WOOD FRAMING, OR FOR IRC BRACED WALL PANEL APPLICATIONS.
9. STIRRUPS ARE GRADE 60 (MIN) REBAR. SEE TABLE FOR SIZE AND SPACING. SEE "STIRRUP LAYOUT" DIAGRAMS AND "KEY" FOR LAYOUT PATTERNS.
10. CONCRETE EDGE DISTANCES MUST COMPLY WITH ACI 318-19, SECTION 17.9.2. COATED REINFORCEMENT MAY BE SPECIFIED BY THE EOR TO LIMIT EXPOSURE AND THEREFORE REDUCE MINIMUM CONCRETE COVER. COATED REINFORCEMENT MUST COMPLY WITH ACI 318-19, SECTION 20.5.2.



Model	Width	Ⓐ	Ⓑ
HFX-9x	9"	1-3/4"	5-1/2"
HFX-12x	12"		8-1/2"
HFX-15x	15"	2-5/8"	9-3/4"
HFX-18x	18"		12-3/4"
HFX-21x	21"		15-3/4"
HFX-24x	24"		18-3/4"

HFX ANCHOR CENTERLINES

A

IMPORTANT!

1. ANCHORAGE IS DESIGNED FOR TENSION AND SHEAR TRANSFER ONLY, FOUNDATION DESIGN PER EOR.
2. REINFORCEMENT SHOWN IS THE MINIMUM REQUIREMENT AND IS NOT INTENDED TO REPLACE REINFORCEMENT DESIGNED BY THE EOR.
3. FOR RA AND BB-RA INSTALLATIONS, THE HFXBB BOLT BRACE MAY BE PLACED ON TOP OF THE STIRRUPS WITH DOUBLE-NUTS INSTALLED AT EMBED END OF STANDARD GRADE ANCHOR RODS. (NOTE: ½" x 3" x 3" MIN. HFPW PLATE WASHERS ARE REQUIRED TO BE DOUBLE-NUTTED AT EMBED END OF HIGH STRENGTH ANCHOR RODS.)
4. HIGH STRENGTH ALL-THREAD RODS PROVIDED BY HARDY FRAMES ARE STAMPED ON BOTH ENDS. HF B7

IMPORTANT NOTES

B

REVISIONS	DATE

ANCHORAGE DETAILS - HFX PANELS

THIS DETAIL SHEET IS NOT PROPRIETARY AND IS NOT REQUIRED FOR PLAN SUBMITTAL WITH *HARDY FRAME* PRODUCTS

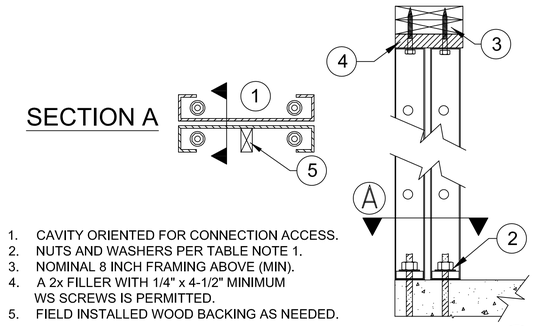
HARDY FRAME SHEAR WALL SYSTEMS
16023 SWINGLEY RIDGE RD
CHESTERFIELD, MO 63017
(800) 325-8075
WWW.HARDYFRAME.COM

MiTek®

REGISTERED PROFESSIONAL ENGINEER JESSE E. KADO No. 4321 STRUCTURAL STATE OF CALIFORNIA

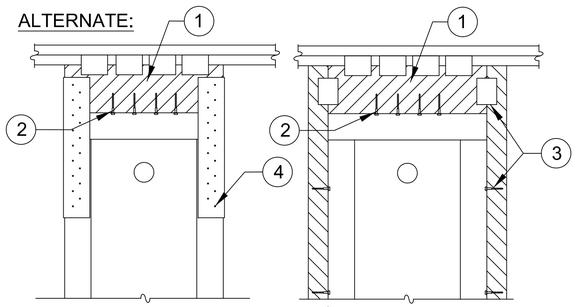
DATE:
1-1-2023

HFX1



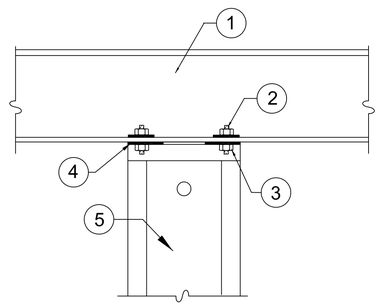
1. CAVITY ORIENTED FOR CONNECTION ACCESS.
2. NUTS AND WASHERS PER TABLE NOTE 1.
3. NOMINAL 8 INCH FRAMING ABOVE (MIN).
4. A 2x FILLER WITH 1/4" x 4-1/2" MINIMUM WS SCREWS IS PERMITTED.
5. FIELD INSTALLED WOOD BACKING AS NEEDED.

BACK TO BACK INSTALLATION 3



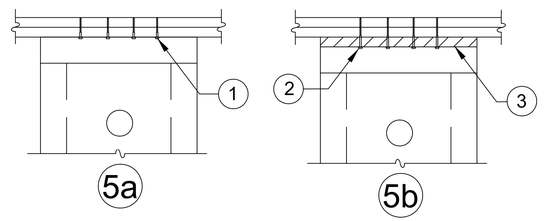
1. WOOD FILLER (13 3/8" MAX DEPTH) WITH USP MP4F CONNECTORS BOTH SIDES, QUANTITY BY BUILDING DESIGN PROFESSIONAL.
2. 1/4" x 3" (MINIMUM) WS SCREWS, QUANTITY PER TABLES
3. ADJACENT FRAMING WITH 1/4" DIAMETER SCREWS INSTALLED THROUGH PRE-PUNCHED HOLES IN PANEL EDGES REQ'D WHEN INSTALLING A FILLER GREATER THAN 1-1/2" ABOVE TO BRACE OUT-OF-PLANE HINGE OR WHEN SPECIFIED BY THE DESIGN PROFESSIONAL.
4. MiTek HFFB FILLER BRACE WITH 1/4" x 1-1/2" WS SCREWS TO FILLER (FILL ALL HOLES) AND 1/4" SELF-TAPPING SCREWS TO PANEL (5 MIN. EACH FACE) REQ'D WHEN INSTALLING A FILLER GREATER THAN 3-1/4" ABOVE TO BRACE OUT-OF-PLANE HINGE OR WHEN SPECIFIED BY THE BUILDING DESIGN PROFESSIONAL.

FILLER GREATER THAN 1-1/2 IN. 6



1. STEEL BEAM PER PLANS
2. ALL THREAD RODS THRU-BOLTED TO STEEL BEAM BY BUILDING DESIGN PROFESSIONAL.
3. NUTS AND WASHERS PER TABLE NOTE 1.
4. *HARDY FRAME*® STACKING WASHERS (HFSW) REQUIRED TO BE WELDED INSIDE TOP CHANNEL OF LOWER PANEL.
5. *HARDY FRAME*® "STK" PANEL WITH STACKING WASHERS WELDED INSIDE THE TOP CHANNEL BY MANUFACTURER.

STEEL BEAM ABOVE THRU-BOLT 2



1. 1/4" x 3" (MINIMUM) WS SCREWS, QUANTITY PER TABLES
2. 1/4" x 4-1/2" (MINIMUM) WS SCREWS, QUANTITY PER TABLES
3. 2x WOOD FILLER.

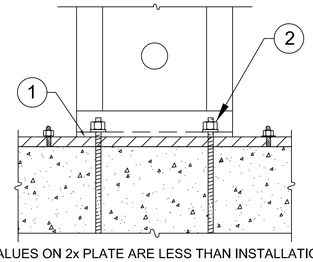
TOP PLATE CONNECTIONS 5

1. 15# FELT OR EQUIVALENT MOISTURE BARRIER RECOMMENDED BETWEEN PANEL BASE AND CONCRETE.
2. NUTS AND WASHERS PER TABLE NOTE 1.
3. ADJACENT FRAMING WITH 1/4" DIAMETER SCREWS INSTALLED AT THE PANEL EDGES WHEN INSTALLING A FILLER GREATER THAN 1-1/2" ABOVE OR WHEN SPECIFIED BY DESIGN PROFESSIONAL.

RAISED FLOOR HEAD-OUT 8

1. 15# FELT OR EQUIVALENT MOISTURE BARRIER RECOMMENDED BETWEEN PANEL BASE AND CONCRETE.
2. NUTS AND WASHERS PER TABLE NOTE 1.

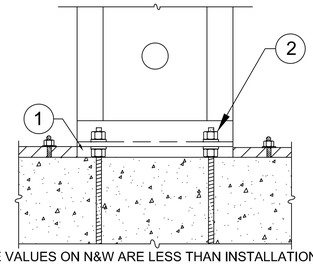
INSTALLATION ON CONCRETE 7



ALLOWABLE VALUES ON 2x PLATE ARE LESS THAN INSTALLATION ON CONCRETE

1. 15# FELT OR EQUIVALENT MOISTURE BARRIER RECOMMENDED BETWEEN PANEL BASE AND TREATED PLATE.
2. NUTS AND WASHERS PER TABLE NOTE 1.

INSTALLATION ON 2x PLATE 11

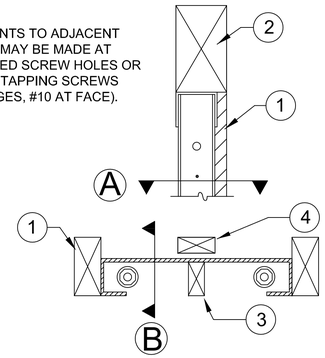


ALLOWABLE VALUES ON N&W ARE LESS THAN INSTALLATION ON CONCRETE

1. PLUS OR MINUS 1-1/2" GAP TO BE FILLED WITH 5,000 PSI NON-SHRINK GROUT (MINIMUM).
2. NUT AND WASHER GRADES PER TABLE NOTE 1.

INSTALLATION ON NUTS & WASHERS 10

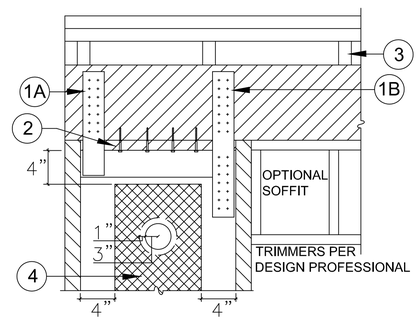
NOTE:
ATTACHMENTS TO ADJACENT TRIMMERS MAY BE MADE AT PREPUNCHED SCREW HOLES OR WITH SELF TAPPING SCREWS (#12 AT EDGES, #10 AT FACE).



1. TRIMMERS PROVIDE FULL BEARING FOR HEADER ABOVE, DESIGN AND CONNECTIONS BY BUILDING DESIGN PROFESSIONAL.
2. 6x HEADER.
3. WOOD MEMBERS FOR BACKING MAY BE INSERTED VERTICALLY OR HORIZONTALLY IN THE PANEL CAVITY AS NEEDED.
4. WOOD MEMBER FLUSH TO FACE OF WALL FOR BACKING AS NEEDED.

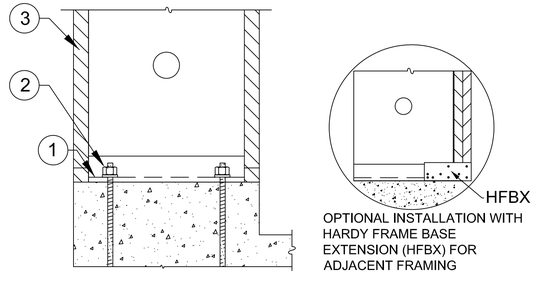
6x HEADER ABOVE-SECTIONS 1

NOTE:
TO PREVENT DRILLING ADDITIONAL HOLES ORIENT THE PANEL CAVITY TOWARD THE FIXTURE BEING INSTALLED.



1. (A) PRE-WELDED STRAPS ARE PROVIDED ON 78" AND 79-1/2" PANEL HEIGHTS. THEY ARE AVAILABLE FOR OTHER HEIGHTS UPON REQUEST.
   (B) FIELD INSTALLED STRAPS WITH SELF TAPPING SCREWS ARE PERMITTED. THE DESIGN AND CONNECTION IS BY THE DESIGN PROFESSIONAL.
2. A 2x WOOD FILLER WITH 1/4"x4-1/2" (MIN.) WS SCREWS IS PERMITTED.
3. WHEN CRIPPLE STUDS OCCUR, SHEAR TRANSFER DESIGN TO BE PER THE BUILDING DESIGN PROFESSIONAL.
4. A 1" DIA. HOLE MAY BE ADDED IN THE PANEL FACE WHEN IT IS LOCATED IN THE UPPER HALF OF THE PANEL HEIGHT AND IS 4" MINIMUM FROM ANY EDGE. FOR PANELS MORE THAN 12" WIDE, ADDITIONAL HOLES MUST BE OFFSET 1" MINIMUM FROM THE 3" DIA. PREPUNCHED HOLE. FOR HOLES LARGER THAN 1" DIAMETER OR TO ADD MORE THAN ONE HOLE CONTACT MITEK HARDY FRAME TECHNICAL SUPPORT AT (800) 754-3030.

TOP CONNECTION TO HEADER 4



OPTIONAL INSTALLATION WITH HARDY FRAME BASE EXTENSION (HFBX) FOR ADJACENT FRAMING

1. 15# FELT OR EQUIVALENT MOISTURE BARRIER RECOMMENDED BETWEEN PANEL BASE AND CONCRETE.
2. NUTS AND WASHERS PER TABLE NOTE 1.
3. ADJACENT FRAMING OPTIONAL U.N.O. BY BUILDING DESIGN PROFESSIONAL.

INSTALLATION ON CURB 9

HFX PANELS 78 IN. THROUGH NOMINAL 13 FEET

Model Number	Net Height (in)	Depth (in)	Hold Down Diameter[1] (in)	Top Screw Qty[2] (ea)	Screw Qty Available at Edges (ea)[3]
HFX-12,15,18,21 & 24x78	78	3-1/2	1-1/8	9" Width = 5 12" Width = 6 15" Width = 8	4
HFX-9x79.5	79-1/2				
HFX-12,15,18,21 & 24x8	92-1/4				
HFX-9x8	93-3/4				
HFX-12,15,18,21 & 24x9	104-1/4				
HFX-12,15,18,21 & 24x10	116-1/4			18" Width = 10 21" Width = 12	5
HFX-15,18,21 & 24x11	128-1/4				
HFX-15,18,21 & 24x12	140-1/4			24" Width = 14	6
HFX-15,18,21 & 24x13	152-1/4				

BALLOON PANELS 14 FEET THROUGH 20 FEET

Model Number	Net Height (in)	Depth (in)	Hold Down Diameter[1] (in)	Top Screw Qty[2] (ea)	Screw Qty Available at Edges (ea)[3]
HFX-15,18,21 & 24x14	164-1/4	3-1/2	1-1/8	15" Width = 8 18" Width = 10	6
HFX-15,18,21 & 24x15	176-1/4				
HFX-15,18,21 & 24x16	188-1/4				
HFX-15,18,21 & 24x17	200-1/4			21" Width = 12	7
HFX-15,18,21 & 24x18	212-1/4				
HFX-15,18,21 & 24x19	224-1/4			24" Width = 14	8
HFX-15,18,21 & 24x20	236-1/4				

TABLE NOTES

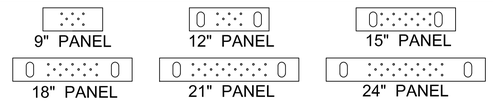
1. FOR STD OR HS GRADE HOLD DOWN ANCHOR BOLTS CONNECT TO THE PANEL BASE WITH HARDENED ROUND WASHERS BELOW GRADE 8 NUTS. ALTERNATE WASHERS ARE (2 EA) ROUND-FLAT OR (2 EA) SAE WASHERS ON EACH BOLT. ALTERNATE NUTS ARE 2H HEAVY HEX.
2. 1/4" DIAMETER MITEK®PRO SERIES™ WS SCREWS. LENGTH IS 3" (MINIMUM) WHEN ATTACHED DIRECTLY TO THE COLLECTOR AND 4-1/2" (MINIMUM) WHEN INSTALLING A 2x FILLER ABOVE THE PANEL.
3. ADJACENT FRAMING WITH 1/4" DIAMETER SCREWS IS REQUIRED AT THE PANEL EDGES WHEN INSTALLING A FILLER ABOVE THE TOP CHANNEL THAT IS GREATER THAN 1-1/2" OR WHEN SPECIFIED BY THE DESIGN PROFESSIONAL.

A

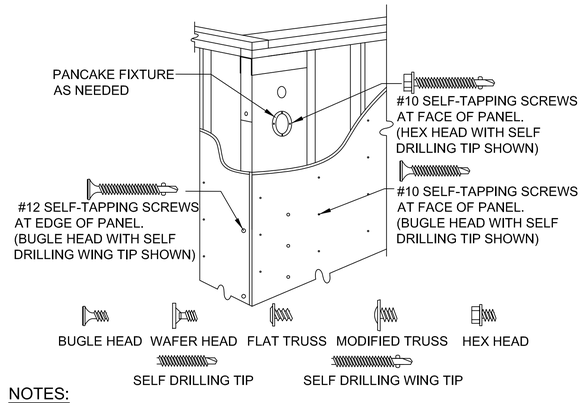
INSTALLATION INSTRUCTIONS

1. WHEN INSTALLING ON CONCRETE CONNECT WITH (1 EA) HARDENED ROUND WASHER BELOW (1 EA) GRADE 8 NUT, SECURE WITH A DEEP SOCKET (RECOMMENDED) UNTIL SNUG TIGHT. ALTERNATE WASHERS AND NUTS ARE PROVIDED IN TABLE NOTE 1.
2. INSTALLATION ON CONCRETE PROVIDES THE HIGHEST ALLOWABLE VALUES. CONFIRM WITH THE DESIGN PROFESSIONAL BEFORE INSTALLING ON OTHER SUPPORTING SURFACES.
3. USE 1/4"X4-1/2" MITEK® PRO SERIES™ WS SCREWS AT TOP CONNECTIONS WITH A 2x FILLER. IF THE TOP OF PANEL IS IN DIRECT CONTACT WITH THE COLLECTOR ABOVE (TOP PLATES, HEADER, BEAM, ETC.) USE1/4 x 3" (MIN)
4. FOR INSTALLATIONS WITH A FILLER GREATER THAN 1-1/2" ABOVE, OR WHEN SPECIFIED BY THE DESIGN PROFESSIONAL, ADJACENT KING POSTS TO BRACE THE OUT-OF-PLANE HINGE CAN BE CONNECTED WITH 1/4" DIA. SCREWS THROUGH PRE-PUNCHED HOLES AT THE PANEL EDGES.

B



C



NOTES:

A. SURFACE FINISHES, CONNECTORS AND FIXTURES ARE ATTACHED TO THE PANEL FACE WITH # 10 SELF-TAPPING SCREWS SPACED NO LESS THAN 2-1/4" OC.
B. ATTACHMENTS TO THE PANEL EDGES ARE MADE WITH # 12 SELF-TAPPING SCREWS.
C. STRUCTURAL CONNECTIONS ARE TO BE DESIGNED BY THE DESIGN PROFESSIONAL.
D. STRUCTURAL HARDWARE USED TO TRANSFER LOADS SHOULD NOT EXCEED 12 GAUGE.

D

REVISIONS	DATE

FRAMING DETAILS - HFX PANELS

THIS DETAIL SHEET IS NOT PROPRIETARY AND IS NOT REQUIRED FOR PLAN SUBMITTAL WITH MITEK® *HARDY FRAME*® PRODUCTS

HARDY FRAME SHEAR WALL SYSTEMS
16023 SWINGLEY RIDGE RD
CHESTERFIELD, MO 63017
(800) 325-8075
WWW.HARDYFRAME.COM

MiTek®

REGISTERED PROFESSIONAL ENGINEER JOSE E. KING No.4321 STRUCTURAL STATE OF CALIFORNIA

DATE: 1-1-2023

HFX2

CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD **CF1R-PRF-01-E**

Project Name: Residential Building **Calculation Date/Time:** 2026-09-29T19:13:55-07:00 **(Page 1 of 11)**

Calculation Description: Title 24 Analysis **Input File Name:** Building1.ribd25x

GENERAL INFORMATION					
01	**Project Name**	Residential Building			
02	**Run Title**	Title 24 Analysis			
03	**Project Location**	1649 OAK ST.			
04	**City**	PLACENTIA	05	**Standards Version**	2025
06	**Zip code**		07	**Software Version**	EnergyPro 10.0
08	**Climate Zone**	8	09	**Front Orientation (deg/ Cardinal)**	180
10	**Building Type**	Single family	11	**Number of Dwelling Units**	1
12	**Project Scope**	Newly Constructed	13	**Number of Bedrooms**	4
14	**Addition Cond. Floor Area (ft^2)**	0	15	**Number of Stories**	1
16	**Existing Cond. Floor Area (ft^2)**	n/a	17	**Fenestration Average U-factor**	0.27
18	**Total Cond. Floor Area (ft^2)**	1374	19	**Glazing Percentage (%)**	23.86%
20	**ADU Bedroom Count**	n/a	21	**ADU Conditioned Floor Area**	n/a
22	**Fuel Type**	All electric	23	**No Dwelling Unit:**	No

COMPLIANCE RESULTS
Building Complies with Computer Performance
This building incorporates features that require field testing and/or verification by a certified ECC rater under the supervision of a CEC-approved ECC provider.
Building does not incorporate Special Features

REQUIRED SPECIAL FEATURES
The following are features that must be installed as condition for meeting the modeled energy performance for this computer analysis.
• NO SPECIAL FEATURES REQUIRED

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CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD **CF1R-PRF-01-E**

Project Name: Residential Building **Calculation Date/Time:** 2026-09-29T19:13:55-07:00 **(Page 2 of 11)**

Calculation Description: Title 24 Analysis **Input File Name:** Building1.ribd25x

ECC FEATURE SUMMARY
The following is a summary of the features that must be field-verified by a certified ECC Rater as a condition for meeting the modeled energy performance for this computer analysis. Additional detail is provided in the building tables below. Registered CF2Rs and CF3Rs are required to be completed in the ECC Registry
• Quality insulation installation (QII) • Indoor air quality ventilation • Kitchen range hood • Minimum Airflow • Verified EER/EER2 • Fan Efficacy Watts/CFM • Verified HSPF2 • Verified heat pump rated heating capacity • Duct leakage testing

Compliance Summary

	Long Term System Cost (LSC)[1]		Source Energy Use	Peak Cooling**
	Efficiency[2] ($/ft^2$-yr)	**Total[3] ($/ft^2$-yr)**	**Total[3] (kBtu/ft^2-yr)**	**Electricity (kWh)**
Standard Design	10.69	24.23	13.26	337.168
Proposed Design	10.04	24.23	7.62	47.9392
Compliance Margins	0.65	0	5.64	289
	Pass	Pass	Pass	Pass

RESULT*: Complies

[1]Long-term System Cost (LSC) is a 30-year present value cost to California's energy system. LSC is not a predicted utility bill.
[2]Efficiency measures include energy efficient improvements such as better building envelope and more efficient mechanical equipment
[3]Total includes the sum of efficiency measures, solar photovoltaic (PV) measures and battery storage measures
* Building complies when Proposed Design is equal to or less than Standard Design in all applicable compliance categories
** Peak cooling target represents 120% of the standard design building peak cooling energy use.

PV System resized to 2.18 kWdc (a factor of 2.175) to achieve 'Standard Design PV' PV scaling
Standard Design PV Capacity: 2.18 kWdc

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CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD **CF1R-PRF-01-E**

Project Name: Residential Building **Calculation Date/Time:** 2026-09-29T19:13:55-07:00 **(Page 3 of 11)**

Calculation Description: Title 24 Analysis **Input File Name:** Building1.ribd25x

LSC AND SOURCE ENERGY COMPLIANCE RESULTS FOR PERFORMANCE COMPONENTS

Energy Use	Standard Design Source Energy (kBtu/ft^2 -yr)	Standard Design LSC[1] ($/$ft^2$ -yr)	Proposed Design Source Energy (kBtu/ft^2 -yr)	Proposed Design LSC[1] ($/$ft^2$ -yr)	Compliance Margin Source (kBtu/ft^2 -yr)	Compliance Margin LSC[1] ($/$ft^2$ -yr)
Space Heating	0.56	1.03	1.29	2.93	-0.73	-1.9
Space Cooling	0.53	3.54	0.28	1.41	0.25	2.13
IAQ Ventilation	0.3	1.17	0.3	1.17	0	0
Water Heating	7.28	4.95	1.13	4.53	6.15	0.42
Self Utilization/Flexibility Credit	n/a	n/a	0	0	0	0
Efficiency Compliance Total	**8.67**	**10.69**	**3**	**10.04**	**5.67**	**0.65**
Photovoltaics And Battery	-1.36	-9.98	-1.36	-9.44	0	-0.54
Flexibility	n/a	n/a	0	n/a	0	n/a
Indoor Lighting	0.52	1.79	0.52	1.79	0	0
Appl. & Cooking	2.15	9.44	2.18	9.55	-0.03	-0.11
Plug Loads	3.15	11.86	3.15	11.86	0	0
Outdoor Lighting	0.13	0.43	0.13	0.43	0	0
TOTAL COMPLIANCE	**13.26**	**24.23**	**7.62**	**24.23**	**5.64**	**0**

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CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD **CF1R-PRF-01-E**

Project Name: Residential Building **Calculation Date/Time:** 2026-09-29T19:13:55-07:00 **(Page 4 of 11)**

Calculation Description: Title 24 Analysis **Input File Name:** Building1.ribd25x

ENERGY USE INTENSITY

	Standard Design (kBtu/ft^2 - yr)	Proposed Design (kBtu/ft^2 - yr)	Margin (kBtu/ft^2 - yr)	Margin Percentage
Gross EUI[1]	17.27	16.83	0.44	2.55
Net EUI[2]	8.52	8.07	0.45	5.28

Notes
1. Gross EUI is Energy Use Total (not including PV) / Total Building Area.
2. Net EUI is Energy Use Total (including PV) / Total Building Area.

UNMET LOAD HOURS (UMLH)

Zone Name	Cooling Unmet Load Hour Limit for Zone	Proposed Cooling Unmet Load Hours	Heating Unmet Load Hour Limit for Zone	Proposed Heating Unmet Load Hours
Zone 1	150.1	2939.45	150.1	0
Zone 2	150.1	3649.65	150.1	0

REQUIRED PV SYSTEMS

01	02	03	04	05	06	07	08	09	10	11	12
DC System Size (kWdc)	**Exception**	**Module Type**	**Array Type**	**Power Electronics**	**CFI**	**Azimuth (deg)**	**Tilt Input**	**Array Angle (deg)**	**Tilt: (x in 12)**	**Inverter Eff. (%)**	**Annual Solar Access (%)**
2.18	NA	Standard (14-17%)	Fixed	none	true	150-270	n/a	n/a	<=7:12	96	98

BUILDING - FEATURES INFORMATION

01	02	03	04	05	06	07
Project Name	**Conditioned Floor Area (ft^2)**	**Number of Dwelling Units**	**Number of Bedrooms**	**Number of Zones**	**Number of Ventilation Cooling Systems**	**Number of Water Heating Systems**
Residential Building	1374	1	4	2	0	1

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CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD **CF1R-PRF-01-E**

Project Name: Residential Building **Calculation Date/Time:** 2026-09-29T19:13:55-07:00 **(Page 5 of 11)**

Calculation Description: Title 24 Analysis **Input File Name:** Building1.ribd25x

ZONE INFORMATION

01	02	03	04	05	06	07
Zone Name	**Zone Type**	**HVAC System Name**	**Zone Floor Area (ft^2)**	**Avg. Ceiling Height**	**Water Heating System 1**	**Status**
Zone 1	Conditioned	HVAC System1	800	8	DHW Sys 1	New
Zone 2	Conditioned	HVAC System1	574	8	DHW Sys 1	New

OPAQUE SURFACES SUMMARY

01	02	03	04	05	06	07	08
Name	**Zone**	**Construction**	**Azimuth**	**Orientation**	**Gross Area (ft^2)**	**Window and Door Area (ft2)**	**Tilt (deg)**
Front Wall	Zone 1	R-15 Wall	180	Front	144	50.1	90
Left Wall	Zone 1	R-15 Wall	270	Left	304	30.6	90
Rear Wall	Zone 1	R-15 Wall	0	Back	144	40.2	90
Right Wall	Zone 1	R-15 Wall	90	Right	304	89	90
Front Wall 2	Zone 2	R-15 Wall	180	Front	240	75	90
Left Wall 2	Zone 2	R-15 Wall	270	Left	144	12.5	90
Rear Wall 2	Zone 2	R-15 Wall	0	Back	240	18	90
Right Wall 2	Zone 2	R-15 Wall	90	Right	144	12.5	90
Roof	Zone 1	R-38 Roof Attic	n/a	n/a	800	n/a	n/a
Roof 2	Zone 2	R-38 Roof Attic	n/a	n/a	574	n/a	n/a
Floor	Zone 2	R-19 Floor Crawlspace	n/a	n/a	574	n/a	n/a

ATTIC

01	02	03	04	05	06	07	08a
Name	**Construction**	**Type**	**Roof Rise (x in 12)**	**CRRC Rated Roof Reflectance**	**CRRC Rated Roof Emittance**	**Radiant Barrier**	**Above Roof Deck Air Gap**
Attic Zone 1	Attic RoofZone 1	Ventilated	3.5	0.1	0.85	No	No
Attic Zone 2	Attic RoofZone 2	Ventilated	3.5	0.1	0.85	No	No

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CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD **CF1R-PRF-01-E**

Project Name: Residential Building **Calculation Date/Time:** 2026-09-29T19:13:55-07:00 **(Page 6 of 11)**

Calculation Description: Title 24 Analysis **Input File Name:** Building1.ribd25x

FENESTRATION / GLAZING

01	02	03	04	05	06	07	08	09	10	11
Name	**Type**	**Surface**	**Orientation**	**Azimuth**	**Mult.**	**Area (ft^2)**	**U-factor**	**SHGC**	**Rating Source**	**Exception to 150.0 (q)***
2	Window	Front Wall	Front	180	1	30	0.27	0.23	NFRC	☐
A	Window	Front Wall	Front	180	1	20.1	0.27	0.23	NFRC	☐
1	Window	Left Wall	Left	270	1	12.5	0.27	0.23	NFRC	☐
E	Window	Left Wall	Left	270	1	18.1	0.27	0.23	NFRC	☐
B	Window	Rear Wall	Back	0	1	40.2	0.27	0.23	NFRC	☐
7	Window	Right Wall	Right	90	1	30	0.27	0.23	NFRC	☐
6	Window	Right Wall	Right	90	1	12.5	0.27	0.23	NFRC	☐
5	Window	Right Wall	Right	90	1	9	0.27	0.23	NFRC	☐
4	Window	Right Wall	Right	90	1	25	0.27	0.23	NFRC	☐
3	Window	Right Wall	Right	90	1	12.5	0.27	0.23	NFRC	☐
13	Window	Front Wall 2	Front	180	1	25	0.27	0.23	NFRC	☐
14	Window	Front Wall 2	Front	180	1	20	0.27	0.23	NFRC	☐
8	Window	Front Wall 2	Front	180	1	30	0.27	0.23	NFRC	☐
12	Window	Left Wall 2	Left	270	1	12.5	0.27	0.23	NFRC	☐
10	Window	Rear Wall 2	Back	0	1	9	0.27	0.23	NFRC	☐
11	Window	Rear Wall 2	Back	0	1	9	0.27	0.23	NFRC	☐
9	Window	Right Wall 2	Right	90	1	12.5	0.27	0.23	NFRC	☐

*Project includes fenestration not subject to maximum U-factor requirement per Exception 1 / Exception 2 / Exception 3 to Section 150.0(q).

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STRUCTURAL ENGINEER
AQX ENGINEERING INC.
1520 BROOKHOLLOW, SUITE #45,
SANTA ANA, CA 92705
OFF: (714) 662-0510
FAX: (714) 662-0559
info@aqxengineering.com

PROJECT TITLE

SHEET TITLE

TITLE 24

REVISIONS
1
2
3
4

JOB NO.
DATE
DRAWN: M.K.

SHEET NUMBER

T24.1

CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD **CF1R-PRF-01-E**

Project Name: Residential Building **Calculation Date/Time:** 2026-09-29T19:13:55-07:00 **(Page 7 of 11)**

Calculation Description: Title 24 Analysis **Input File Name:** Building1.ribd25x

FENESTRATION / GLAZING

01 Name	02 Type	03 Surface	04 Orientation	05 Azimuth	06 Mult.	07 Area (ft²)	08 U-factor	09 SHGC	10 Rating Source	11 Exception to 150.0 (q)*
Total North Facing Fenestration						58.2				
Total East Facing Fenestration						101.5				
Total South Facing Fenestration						125.1				
Total West Facing Fenestration						43.1				

SLAB FLOORS

01 Name	02 Zone	03 Area (ft²)	04 Perimeter (ft)	05 Edge Insul. R-value	06 Edge Insul. Depth	07 Heated
Slab	Zone 1	800	112	none	0	No

OPAQUE SURFACE CONSTRUCTIONS

01 Construction Name	02 Surface Type	03 Construction Type	04 Framing	05 Total Cavity R-value	06 Interior / Exterior Continuous R-value	07 U-factor	08 Assembly Layers	09 Non-Std Spray Foam
R-15 Wall	Exterior Walls	Wood Framed Wall	2x4 @ 16 in. O. C.	R-15	None / None	0.095	Inside Finish: Gypsum Board Cavity / Frame: R-15 / 2x4 Exterior Finish: 3 Coat Stucco	☐

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CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD **CF1R-PRF-01-E**

Project Name: Residential Building **Calculation Date/Time:** 2026-09-29T19:13:55-07:00 **(Page 8 of 11)**

Calculation Description: Title 24 Analysis **Input File Name:** Building1.ribd25x

OPAQUE SURFACE CONSTRUCTIONS

01 Construction Name	02 Surface Type	03 Construction Type	04 Framing	05 Total Cavity R-value	06 Interior / Exterior Continuous R-value	07 U-factor	08 Assembly Layers	09 Non-Std Spray Foam
Attic RoofZone 1	Attic Roofs	Wood Framed Ceiling	2x4 @ 24 in. O. C.	R-0	None / 0	0.644	Roofing: Light Roof (Asphalt Shingle) Roof Deck: Wood Siding/sheathing/decking Cavity / Frame: no insul. / 2x4	☐
Attic RoofZone 2	Attic Roofs	Wood Framed Ceiling	2x4 @ 24 in. O. C.	R-0	None / 0	0.644	Roofing: Light Roof (Asphalt Shingle) Roof Deck: Wood Siding/sheathing/decking Cavity / Frame: no insul. / 2x4	☐
R-19 Floor Crawlspace	Floors Over Crawlspace	Wood Framed Floor	2x12 @ 16 in. O. C.	R-19	None / None	0.045	Floor Surface: Carpeted Floor Deck: Wood Siding/sheathing/decking Cavity / Frame: R-19 / 2x12	☐
R-38 Roof Attic	Ceilings (below attic)	Wood Framed Ceiling	2x8 @ 16 in. O. C.	R-38	None / None	0.026	Over Ceiling Joists: R-19.1 insul. Cavity / Frame: R-18.9 / 2x8 Inside Finish: Gypsum Board	☐

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CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD **CF1R-PRF-01-E**

Project Name: Residential Building **Calculation Date/Time:** 2026-09-29T19:13:55-07:00 **(Page 9 of 11)**

Calculation Description: Title 24 Analysis **Input File Name:** Building1.ribd25x

WATER HEATING SYSTEMS

01 Name	02 System Type	03 Distribution Type	04 Water Heater Name	05 Number of Units	06 Solar Heating System	07 Compact Distribution	08 ECC Verification	09 Water Heater Name (#)
DHW Sys 1	Domestic Hot Water (DHW)	Standard	DHW Heater 1	1	n/a	None	n/a	DHW Heater 1 (1)

WATER HEATERS

01 Name	02 Heating Element Type	03 Tank Type	04 # of Units	05 Tank Vol. (gal)	06 Heating Efficiency Type	07 Efficiency	08 Rated Input Type	09 Input Rating or Pilot	10 Tank Insulation R-value (Int/Ext)	11 Standby Loss or Recovery Eff	12 1st Hr. Rating or Flow Rate	13 Tank Location
DHW Heater 1	Heat Pump	Standard Design 50 gal HPWH	1	50	UEF	2	n/a	n/a	n/a	n/a	n/a	Outside

HVAC - HEAT PUMPS

01 Name	02 System Type	03 Number of Units	04 Heating Efficiency Type	05 HSPF/HSPF2/COP	06 Heating Cap 47	06b Heating Cap 17	07 Heating Backup	08 Cooling Efficiency Type	09 Cooling SEER/SEER2	10 Cooling EER/EER2/CEER	11 Airflow Target	12 Fan Power (Watts/CFM)	13 Variable Speed
Heat Pump System 1	Central split HP	1	HSPF2	9	60000	50000	Electric	EER2/SEER2	14	12.2	0	0.58	☐

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CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD **CF1R-PRF-01-E**

Project Name: Residential Building **Calculation Date/Time:** 2026-09-29T19:13:55-07:00 **(Page 10 of 11)**

Calculation Description: Title 24 Analysis **Input File Name:** Building1.ribd25x

HVAC - DISTRIBUTION SYSTEMS

01 Name	02 Type	03 Design Type	04 Duct Ins. R-value	05	06 Duct Location	07
			04 Supply/Return		06 Supply	07 Return
Air Distribution System 1	Unconditioned attic	Non-Verified	R-6		Attic	Attic

INDOOR AIR QUALITY (IAQ) FANS

01 Dwelling Unit	02 Airflow (CFM)	03 Fan Efficacy (W/CFM)	04 IAQ Fan Type	05 Includes Heat/Energy Recovery?	06 IAQ Recovery Effectiveness - ASRE	07 Includes Fault Indicator Display?	08 Status
SFam IAQVentRpt	78	0.35	Exhaust	No	n/a / n/a	No	

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CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD **CF1R-PRF-01-E**

Project Name: Residential Building **Calculation Date/Time:** 2026-09-29T19:13:55-07:00 **(Page 11 of 11)**

Calculation Description: Title 24 Analysis **Input File Name:** Building1.ribd25x

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT

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

Documentation Author Name:	Documentation Author Signature:
Mahdi Khaleghi	
Company:	Signature Date:
AQX Engineering Inc - Huntington Beach	09/29/2026
Address:	CEA/AEA/ECC Certification Identification (if applicable):
1520 Brookhollow Drive,#45	
City/State/Zip:	Phone:
Santa Ana, CA 92705	714-662-0510

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 shall be made available to the enforcement agency for all applicable inspections. I will take the necessary steps to fulfill 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. I will take the necessary steps to fulfill this requirement.

Responsible Designer Name:	Responsible Designer Signature:
Mahdi Khaleghi	
Company:	Date Signed:
AQX Engineering Inc - Huntington Beach	09/29/2026
Address:	License:
1520 Brookhollow Drive,#45	
City/State/Zip:	Phone:
Santa Ana, CA 92705	714-662-0510

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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STRUCTURAL ENGINEER
AQX ENGINEERING INC.
1520 BROOKHOLLOW, SUITE #45,
SANTA ANA, CA 92705
OFF: (714) 662-0510
FAX: (714) 662-0559
info@aqxengineering.com

PROJECT TITLE

SHEET TITLE

TITLE 24

REVISIONS
1
2
3
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JOB NO.
DATE
DRAWN: M.K.

SHEET NUMBER

T24.2

CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD **CF1R-PRF-01-E**

Project Name: Residential Building **Calculation Date/Time:** 2026-09-29T20:23:23-07:00 **(Page 1 of 10)**

Calculation Description: Title 24 Analysis **Input File Name:** Building1-ADU.ribd25x

GENERAL INFORMATION					
01	**Project Name**	Residential Building			
02	**Run Title**	Title 24 Analysis			
03	**Project Location**	1649 OAK ST.			
04	**City**	PLACENTIA	05	**Standards Version**	2025
06	**Zip code**		07	**Software Version**	EnergyPro 10.0
08	**Climate Zone**	8	09	**Front Orientation (deg/ Cardinal)**	270
10	**Building Type**	Single family	11	**Number of Dwelling Units**	1
12	**Project Scope**	Newly Constructed	13	**Number of Bedrooms**	2
14	**Addition Cond. Floor Area (ft²)**	0	15	**Number of Stories**	1
16	**Existing Cond. Floor Area (ft²)**	n/a	17	**Fenestration Average U-factor**	0.27
18	**Total Cond. Floor Area (ft²)**	492	19	**Glazing Percentage (%)**	20.35%
20	**ADU Bedroom Count**	n/a	21	**ADU Conditioned Floor Area**	n/a
22	**Fuel Type**	All electric	23	**No Dwelling Units**	No

COMPLIANCE RESULTS
Building Complies with Computer Performance
This building incorporates features that require field testing and/or verification by a certified ECC rater under the supervision of a CEC-approved ECC provider.
This building incorporates one or more Special Features shown below

REQUIRED SPECIAL FEATURES
The following are features that must be installed as condition for meeting the modeled energy performance for this computer analysis.
• PV exception 2: No PV required when minimum PV size (Section 150.1(c)14) < 1.8 kWdc (0 kW)

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CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD **CF1R-PRF-01-E**

Project Name: Residential Building **Calculation Date/Time:** 2026-09-29T20:23:23-07:00 **(Page 2 of 10)**

Calculation Description: Title 24 Analysis **Input File Name:** Building1-ADU.ribd25x

ECC FEATURE SUMMARY

The following is a summary of the features that must be field-verified by a certified ECC Rater as a condition for meeting the modeled energy performance for this computer analysis. Additional detail is provided in the building tables below. Registered CF2Rs and CF3Rs are required to be completed in the ECC Registry

- Quality insulation installation (QII)
- Indoor air quality ventilation
- Kitchen range hood
- Minimum Airflow
- Verified EER/EER2
- Fan Efficacy Watts/CFM
- Verified HSPF2
- Verified heat pump rated heating capacity
- Duct leakage testing

Compliance Summary

	Long Term System Cost (LSC)[1]		Source Energy Use	Peak Cooling**
	Efficiency[2] ($/ft²-yr)	Total[3] ($/ft²-yr)	Total[3] (kBtu/ft²-yr)	Electricity (kWh)
Standard Design	19.57	69.3	29.73	229.61
Proposed Design	16.83	66.58	16.85	47.8789
Compliance Margins	2.74	2.72	12.88	182
	Pass	Pass	Pass	Pass

RESULT*: Complies

[1]Long-term System Cost (LSC) is a 30-year present value cost to California's energy system. LSC is not a predicted utility bill.
[2]Efficiency measures include energy efficient improvements such as better building envelope and more efficient mechanical equipment
[3]Total includes the sum of efficiency measures, solar photovoltaic (PV) measures and battery storage measures
* Building complies when Proposed Design is equal to or less than Standard Design in all applicable compliance categories
** Peak cooling target represents 120% of the standard design building peak cooling energy use.

PV System(s) removed due to Reduced PV Requirement of 0 kWdc
Standard Design PV Capacity: 0.00 kWdc

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CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD **CF1R-PRF-01-E**

Project Name: Residential Building **Calculation Date/Time:** 2026-09-29T20:23:23-07:00 **(Page 3 of 10)**

Calculation Description: Title 24 Analysis **Input File Name:** Building1-ADU.ribd25x

LSC AND SOURCE ENERGY COMPLIANCE RESULTS FOR PERFORMANCE COMPONENTS

Energy Use	Standard Design Source Energy (kBtu/ft² -yr)	Standard Design LSC[1] ($/ft² -yr)	Proposed Design Source Energy (kBtu/ft² -yr)	Proposed Design LSC[1] ($/ft² -yr)	Compliance Margin Source (kBtu/ft² -yr)	Compliance Margin LSC[1] ($/ft² -yr)
Space Heating	0.16	0.37	0.99	2.27	-0.83	-1.9
Space Cooling	1.02	7.45	0.67	3.49	0.35	3.96
IAQ Ventilation	0.39	1.55	0.39	1.55	0	0
Water Heating	15.71	10.2	2.35	9.52	13.36	0.68
Self Utilization/Flexibility Credit	n/a	n/a	0	0	0	0
Efficiency Compliance Total	**17.28**	**19.57**	**4.4**	**16.83**	**12.88**	**2.74**
Photovoltaics And Battery	n/a	n/a	0	0	0	0
Flexibility	n/a	n/a	0	n/a	0	n/a
Indoor Lighting	0.78	2.73	0.78	2.73	0	0
Appl. & Cooking	5.28	23	5.28	23.02	0	-0.02
Plug Loads	6.24	23.49	6.24	23.49	0	0
Outdoor Lighting	0.15	0.51	0.15	0.51	0	0
TOTAL COMPLIANCE	**29.73**	**69.3**	**16.85**	**66.58**	**12.88**	**2.72**

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CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD **CF1R-PRF-01-E**

Project Name: Residential Building **Calculation Date/Time:** 2026-09-29T20:23:23-07:00 **(Page 4 of 10)**

Calculation Description: Title 24 Analysis **Input File Name:** Building1-ADU.ribd25x

ENERGY USE INTENSITY

	Standard Design (kBtu/ft² - yr)	Proposed Design (kBtu/ft² - yr)	Margin (kBtu/ft² - yr)	Margin Percentage
Gross EUI[1]	35.24	33.64	1.6	4.54
Net EUI[2]	35.24	33.64	1.6	4.54

Notes
1. Gross EUI is Energy Use Total (not including PV) / Total Building Area.
2. Net EUI is Energy Use Total (including PV) / Total Building Area.

UNMET LOAD HOURS (UMLH)

Zone Name	Cooling Unmet Load Hour Limit for Zone	Proposed Cooling Unmet Load Hours	Heating Unmet Load Hour Limit for Zone	Proposed Heating Unmet Load Hours
Zone 1	150.1	3139.75	150.1	0

REQUIRED PV SYSTEMS

01	02	03	04	05	06	07	08	09	10	11	12
DC System Size (kWdc)	**Exception**	**Module Type**	**Array Type**	**Power Electronics**	**CFI**	**Azimuth (deg)**	**Tilt Input**	**Array Angle (deg)**	**Tilt: (x in 12)**	**Inverter Eff. (%)**	**Annual Solar Access (%)**
0	No PV - required PV less than 1.8kWdc	Standard (14-17%)	Fixed	none	true	n/a	n/a	n/a	n/a	n/a	

BUILDING - FEATURES INFORMATION

01	02	03	04	05	06	07
Project Name	**Conditioned Floor Area (ft²)**	**Number of Dwelling Units**	**Number of Bedrooms**	**Number of Zones**	**Number of Ventilation Cooling Systems**	**Number of Water Heating Systems**
Residential Building	492	1	2	1	0	1

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CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD **CF1R-PRF-01-E**

Project Name: Residential Building **Calculation Date/Time:** 2026-09-29T20:23:23-07:00 **(Page 5 of 10)**

Calculation Description: Title 24 Analysis **Input File Name:** Building1-ADU.ribd25x

ZONE INFORMATION

01	02	03	04	05	06	07
Zone Name	**Zone Type**	**HVAC System Name**	**Zone Floor Area (ft²)**	**Avg. Ceiling Height**	**Water Heating System 1**	**Status**
Zone 1	Conditioned	HVAC System1	492	8	DHW Sys 1	New

OPAQUE SURFACES SUMMARY

01	02	03	04	05	06	07	08
Name	**Zone**	**Construction**	**Azimuth**	**Orientation**	**Gross Area (ft²)**	**Window and Door Area (ft2)**	**Tilt (deg)**
Front Wall	Zone 1	R-15 Wall	270	Front	150	57.6	90
Left Wall	Zone 1	R-15 Wall	0	Left	90	30	90
Rear Wall	Zone 1	R-15 Wall	90	Back	200	12.5	90
Right Wall	Zone 1	R-15 Wall	180	Right	90	0	90
Roof	Zone 1	R-38 Roof Attic	n/a	n/a	492	n/a	n/a

ATTIC

01	02	03	04	05	06	07	08a
Name	**Construction**	**Type**	**Roof Rise (x in 12)**	**CRRC Rated Roof Reflectance**	**CRRC Rated Roof Emittance**	**Radiant Barrier**	**Above Roof Deck Air Gap**
Attic Zone 1	Attic RoofZone 1	Ventilated	3.5	0.1	0.85	No	No

FENESTRATION / GLAZING

01	02	03	04	05	06	07	08	09	10	11
Name	**Type**	**Surface**	**Orientation**	**Azimuth**	**Mult.**	**Area (ft²)**	**U-factor**	**SHGC**	**Rating Source**	**Exception to 150.0 (q)***
4	Window	Front Wall	Front	270	1	25	0.27	0.23	NFRC	☐
A	Window	Front Wall	Front	270	1	20.1	0.27	0.23	NFRC	☐
3	Window	Front Wall	Front	270	1	12.5	0.27	0.23	NFRC	☐

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CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD **CF1R-PRF-01-E**

Project Name: Residential Building **Calculation Date/Time:** 2026-09-29T20:23:23-07:00 **(Page 6 of 10)**

Calculation Description: Title 24 Analysis **Input File Name:** Building1-ADU.ribd25x

FENESTRATION / GLAZING

01	02	03	04	05	06	07	08	09	10	11
Name	**Type**	**Surface**	**Orientation**	**Azimuth**	**Mult.**	**Area (ft²)**	**U-factor**	**SHGC**	**Rating Source**	**Exception to 150.0 (q)***
2	Window	Left Wall	Left	0	1	30	0.27	0.23	NFRC	☐
1	Window	Rear Wall	Back	90	1	12.5	0.27	0.23	NFRC	☐

**Project includes fenestration not subject to maximum U-factor requirement per Exception 1 / Exception 2 / Exception 3 to Section 150.0(q).*

Total North Facing Fenestration	30
Total East Facing Fenestration	12.5
Total South Facing Fenestration	0
Total West Facing Fenestration	57.6

SLAB FLOORS

01	02	03	04	05	06	07
Name	**Zone**	**Area (ft²)**	**Perimeter (ft)**	**Edge Insul. R-value**	**Edge Insul. Depth**	**Heated**
Slab	Zone 1	492	112	none	0	No

OPAQUE SURFACE CONSTRUCTIONS

01	02	03	04	05	06	07	08	09
Construction Name	**Surface Type**	**Construction Type**	**Framing**	**Total Cavity R-value**	**Interior / Exterior Continuous R-value**	**U-factor**	**Assembly Layers**	**Non-Std Spray Foam**
R-15 Wall	Exterior Walls	Wood Framed Wall	2x4 @ 16 in. O. C.	R-15	None / None	0.095	Inside Finish: Gypsum Board Cavity / Frame: R-15 / 2x4 Exterior Finish: 3 Coat Stucco	☐

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STRUCTURAL ENGINEER
AQX ENGINEERING INC.
1520 BROOKHOLLOW, SUITE #45,
SANTA ANA, CA 92705
OFF: (714) 662-0510
FAX: (714) 662-0559
info@aqxengineering.com

PROJECT TITLE

SHEET TITLE

TITLE 24

REVISIONS
1
2
3
4

JOB NO.
DATE
DRAWN: M.K.

SHEET NUMBER

T24.3

CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD **CF1R-PRF-01-E**

Project Name: Residential Building **Calculation Date/Time:** 2026-09-29T20:23:23-07:00 **(Page 7 of 10)**

Calculation Description: Title 24 Analysis **Input File Name:** Building1-ADU.ribd25x

OPAQUE SURFACE CONSTRUCTIONS

01	02	03	04	05	06	07	08	09
Construction Name	Surface Type	Construction Type	Framing	Total Cavity R-value	Interior / Exterior Continuous R-value	U-factor	Assembly Layers	Non-Std Spray Foam
Attic RoofZone 1	Attic Roofs	Wood Framed Ceiling	2x4 @ 24 in. O. C.	R-0	None / 0	0.644	Roofing: Light Roof (Asphalt Shingle) Roof Deck: Wood Siding/sheathing/decking Cavity / Frame: no insul. / 2x4	☐
R-38 Roof Attic	Ceilings (below attic)	Wood Framed Ceiling	2x8 @ 16 in. O. C.	R-38	None / None	0.026	Over Ceiling Joists: R-19.1 insul. Cavity / Frame: R-18.9 / 2x8 Inside Finish: Gypsum Board	☐

WATER HEATING SYSTEMS

01	02	03	04	05	06	07	08	09
Name	System Type	Distribution Type	Water Heater Name	Number of Units	Solar Heating System	Compact Distribution	ECC Verification	Water Heater Name (#)
DHW Sys 1	Domestic Hot Water (DHW)	Standard	DHW Heater 1	1	n/a	None	n/a	DHW Heater 1 (1)

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CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD **CF1R-PRF-01-E**

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WATER HEATERS

01	02	03	04	05	06	07	08	09	10	11	12	13
Name	Heating Element Type	Tank Type	# of Units	Tank Vol. (gal)	Heating Efficiency Type	Efficiency	Rated Input Type	Input Rating or Pilot	Tank Insulation R-value (Int/Ext)	Standby Loss or Recovery Eff	1st Hr. Rating or Flow Rate	Tank Location
DHW Heater 1	Heat Pump	Standard Design 50 gal HPWH	1	50	UEF	2	n/a	n/a	n/a	n/a	n/a	Outside

HVAC - HEAT PUMPS

01	02	03	04	05	06	06b	07	08	09	10	11	12	13
Name	System Type	Number of Units	Heating					Cooling			Airflow Target	Fan Power (Watts/CFM)	Variable Speed
			Heating Efficiency Type	HSPF/HSPF2/COP	Cap 47	Cap 17	Backup	Cooling Efficiency Type	SEER/SEER2	EER/EER2/CEER			
Heat Pump System 1	Central split HP	1	HSPF2	9	60000	50000	Electric	EER2/SEER2	14	12.2	0	0.58	☐

HVAC - DISTRIBUTION SYSTEMS

01	02	03	04	05	06	07
Name	Type	Design Type	Duct Ins. R-value		Duct Location	
			Supply/Return		Supply	Return
Air Distribution System 1	Unconditioned attic	Non-Verified	R-6		Attic	Attic

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INDOOR AIR QUALITY (IAQ) FANS

01	02	03	04	05	06	07	08
Dwelling Unit	Airflow (CFM)	Fan Efficacy (W/CFM)	IAQ Fan Type	Includes Heat/Energy Recovery?	IAQ Recovery Effectiveness - ASRE	Includes Fault Indicator Display?	Status
SFam IAQVentRpt	37	0.35	Exhaust	No	n/a / n/a	No	

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Calculation Description: Title 24 Analysis **Input File Name:** Building1-ADU.ribd25x

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT

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

Documentation Author Name:	Documentation Author Signature:
Mahdi Khaleghi	M.K.
Company:	Signature Date:
AQX Engineering Inc - Huntington Beach	09/29/2026
Address:	CEA/AEA/ECC Certification Identification (if applicable):
1520 Brookhollow Drive,#45	
City/State/Zip:	Phone:
Santa Ana, CA 92705	714-662-0510

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 shall be made available to the enforcement agency for all applicable inspections. I will take the necessary steps to fulfill 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. I will take the necessary steps to fulfill this requirement.

Responsible Designer Name:	Responsible Designer Signature:
Mahdi Khaleghi	M.K.
Company:	Date Signed:
AQX Engineering Inc - Huntington Beach	09/29/2026
Address:	License:
1520 Brookhollow Drive,#45	
City/State/Zip:	Phone:
Santa Ana, CA 92705	714-662-0510

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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STRUCTURAL ENGINEER
AQX ENGINEERING INC.
1520 BROOKHOLLOW, SUITE #45,
SANTA ANA, CA 92705
OFF: (714) 662-0510
FAX: (714) 662-0559
info@aqxengineering.com

PROJECT TITLE

SHEET TITLE

TITLE 24

REVISIONS

1
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3
4

JOB NO.
DATE
DRAWN: M.K.

SHEET NUMBER

T24.4

2025 Single-Family Residential Mandatory Requirements Summary

NOTE: Single-family residential buildings subject to the Energy Code must comply with all applicable mandatory measures, regardless of the compliance approach used. Review the respective sections for more information.

Space Conditioning, Water Heating, and Plumbing System:

§ 110.0-110.3:	**Certification.** Heating, ventilation, and air conditioning (HVAC) equipment, water heaters, and all other regulated appliances must be certified by the manufacturer to the California Energy Commission.
§ 110.2(a):	**HVAC Efficiency.** Equipment must meet the applicable efficiency requirements in Tables 110.2-A through -L. *
§ 110.2(b):	**Controls for Heat Pumps with Supplementary Heaters.** Heat pumps with supplementary heaters must have control requirements as specified in § 150.0(h)7 and § 150.0(i)2. *
§ 110.2(c):	**Thermostats.** All heating or cooling systems not controlled by a central energy management control system (EMCS) must have a setback thermostat. *
§ 110.3(c)3:	**Insulation.** Unfired service water heater storage tanks and solar water-heating backup tanks must have adequate insulation, or tank surface heat loss rating.
§ 110.3(c)6:	**Isolation Valves.** Instantaneous water heaters with an input rating greater than 6.8 kBtu per hour (2 kW) must have isolation valves with hose bibbs or other fittings on both cold and hot water lines to allow for flushing the water heater when the valves are closed.
§110.3(c)7:	**Backup Heat and Ventilation.** Air-source heat pump water heaters must have backup heat (internal or external) if inlet air is unconditioned, unless compressor cut-off temperature is below Heating Winter Median of Extremes from Reference Appendix JA2. Heat pump water heater installation space and/or communicating space(s) must meet minimum volume, ducting, and/or grille net free area by kBtu/h of compressor capacity.
§ 110.5:	**Pilot Lights.** Continuously burning pilot lights are prohibited for natural gas: fan-type central furnaces; household cooking appliances (except appliances without electrical supply voltage connection with pilot lights that consume less than 150 Btu/h); pool and spa heaters. *
§ 150.0(h)1:	**Building Cooling and Heating Loads.** Heating and/or cooling loads are calculated in accordance with the ASHRAE Handbook, Equipment Volume, Applications Volume, and Fundamentals Volume; the SMACNA Residential Comfort System Installation Standards Manual; or the ACCA Manual J using design conditions specified in § 150.0(h)2. *
§ 150.0(h)3A:	**Clearances.** Air conditioner and heat pump outdoor condensing units must have a clearance of at least five feet from any dryer outlet or vent.
§ 150.0(h)3B:	**Liquid Line Drier.** Air conditioners and heat pump systems must be equipped with liquid line filter driers if required, as specified by the manufacturer's instructions.
§ 150.0(h)5:	**System Selection.** Equipment sizing and selection must meet the cooling and heating loads of § 150.0(h)1 & 2, and systems must be sized per ACCA Manual S-2023 with no minimum cooling capacity. Furnace heating capacity must meet ACCA Manual S. Heat pump heating capacity must meet minimum CBC requirements without including supplementary heat with no limit on maximum heating capacity.
§ 150.0(h)6:	**Defrost.** Installer-adjustable defrost delay timers must be set to greater than or equal to 90 minutes. CF2R certification required. *
§ 150.0(h)7:	**Supplementary Heating Control Configuration:** Heat pumps with supplementary heating must have controls to lock supplementary heating above outside air temperature no greater than 35°F, allowed during defrost or emergency operation. CF2R certification required. *
§ 150.0(h)8:	**Sizing of Electric Resistance Supplementary Heat:** When heat pumps have electric resistance heat, the capacity of electric resistance heat must not exceed the heat pump nominal cooling capacity (at 95°F ambient conditions) multiplied by 2.7 kW per ton, rounded up to the closest kW.
§ 150.0(h)9:	**Capacity Variation with Third-party Thermostats:** For variable or multi-speed systems, the space conditioning system and thermostat must be capable of responding to heating and cooling loads by modulating system compressor speed and must meet thermostat requirements of § 150.0(i)2. CF2R certification required.
§ 150.0(i):	**Thermostat.** All heating or cooling systems including heat pumps which are not controlled by energy management control system (EMCS) must have setback thermostat. Additional requirements for thermostats that control heat pumps with supplemental heating include thermostat must display outdoor air temperature, must lock out supplementary heat when outdoor air temperature is above 35°F, and must notify when supplemental heat is in use.*
§ 150.0(j)1:	**Water Piping, Solar Water-heating System Piping, and Space Conditioning System Line Insulation.** All domestic hot water piping must be insulated as specified in § 609.12 of the California Plumbing Code. *
§ 150.0(j)2:	**Insulation Protection.** Piping insulation must be protected from damage, including from sunlight, moisture, equipment maintenance, and wind, as required by §120.3(b). Insulation exposed to weather must be water retardant and protected from UV light (no adhesive tapes). Insulation covering chilled water piping and refrigerant suction piping located outside the conditioned space must include, or be protected by, a Class I or II vapor retarder. Pipe insulation buried below grade must be installed in a waterproof and non-crushable casing or sleeve.
§ 150.0(n)1:	**Gas or Propane Water Heating Systems.** Systems using gas or propane water heaters to serve individual dwelling units must designate a space at least 2.5' x 2.5' x 7' suitable for the future installation of a heat pump water heater, and meet electrical and plumbing requirements, based on the distance between this designated space and the water heater location; and a condensate drain no more than 2" higher than the base of the water heater.
§ 150.0(n)2:	**Solar Water Heating Systems.** Solar water heating systems and collectors must be certified and rated by the Solar Rating and Certification Corporation (SRCC), the International Association of Plumbing and Mechanical Officials, Research and Testing (IAPMO R&T), or by a listing agency that is approved by the Executive Director.

Ducts and Fans

§110.8(d)3:	**Ducts.** Insulation installed on an existing space-conditioning duct must comply with § 604.0 of the California Mechanical Code (CMC). If a contractor installs the insulation, the contractor must certify to the customer, in writing, that the insulation meets this requirement.
§ 150.0(m)1:	**CMC Compliance.** All air-distribution system ducts and plenums must meet CMC §§ 601.0-605.0 and ANSI/SMACNA-006-2006 HVAC Duct Construction Standards Metal and Flexible 3rd Edition. Portions of supply- and return-air ducts and plenums must be insulated to R-6.0 or higher. Ducts located entirely in conditioned space as confirmed via field verification and diagnostic testing (RA3.1.4.3.8) do not require insulation; in dwelling units with attics, the ducts must be below the ceiling separating occupiable space from the attic. Connections of metal ducts and inner core of flexible ducts must be mechanically fastened. Openings must be sealed with mastic, tape, or other duct-closure system that meets applicable UL requirements; or aerosol sealant that meets UL 723. The combination of mastic and either mesh or tape must be used to seal openings greater than ¼", if mastic or tape is used. Building cavities, air handler support platforms, and plenums designed or constructed with materials other than sealed sheet metal, duct board or flexible duct must not be used to convey conditioned air. Building cavities and support platforms may contain ducts; ducts installed in these spaces must not be compressed. *
§ 150.0(m)2:	**Factory-Fabricated Duct Systems** must comply with applicable requirements of UL 181 for duct construction, connections, and closures; joints and seams of duct systems and their components must not be sealed with cloth back rubber adhesive duct tapes unless such tape is used in combination with mastic and draw bands.
§ 150.0(m)3:	**Field-Fabricated Duct Systems** must comply with applicable requirements for: pressure-sensitive tapes, mastics, sealants, and other requirements specified for duct construction.
§ 150.0(m)7:	**Backdraft Damper.** Fan systems that exchange air between conditioned space and outdoors must have backdraft or automatic dampers.
§ 150.0(m)8:	**Gravity Ventilation Dampers.** Gravity ventilating systems serving conditioned space must have either automatic or readily accessible, manually operated dampers in all openings to the outside, except combustion inlet and outlet air openings and elevator shaft vents.
§ 150.0(m)9:	**Protection of Insulation.** Insulation must be protected from damage due to sunlight, moisture, equipment maintenance, and wind. Insulation exposed to weather must be suitable for outdoor service (e.g., protected by aluminum, sheet metal, painted canvas, or plastic cover). Cellular foam insulation must be protected as above or painted with a water retardant and solar radiation-resistant coating.
§ 150.0(m)10:	**Porous Inner Core Flex Duct.** Flex ducts with porous inner cores must have a non-porous layer or air barrier between the inner core and outer vapor barrier.
§ 150.0(m)11:	**Duct System Sealing and Leakage Test.** When space conditioning systems use forced air duct systems to supply conditioned air to an occupiable space, the ducts must be sealed and duct leakage tested, as confirmed through field verification and diagnostic testing, in accordance with Reference Residential Appendix RA3.1.
§ 150.0(m)12:	**Air Filtration.** Space conditioning systems with ducts exceeding 10 feet and the supply side of ventilation systems must have MERV 13 or equivalent filters. Filters for space conditioning systems must have a two inch depth, or can be one inch if sized per Equation 150.0-A. Clean-filter pressure drop and labeling must meet the requirements in §150.0(m)12. Filters must be accessible for regular service. Filter racks or grilles must use gaskets, sealing, or other means to close gaps around the inserted filters and prevents air from bypassing the filter. *
§ 150.0(m)13:	**Space Conditioning System Airflow Rate and Fan Efficacy.** Space conditioning systems that use ducts to supply cooling must have a hole for the placement of a static pressure probe, or a permanently installed static pressure probe in the supply plenum. Airflow must be ≥ 350 CFM per ton of nominal cooling capacity, and an air-handling unit fan efficacy ≤ 0.45 watts per CFM for gas furnace air handlers and ≤ 0.58 watts per CFM for all others. Small duct high velocity systems must provide an airflow ≥ 250 CFM per ton of nominal cooling capacity, and an air-handling unit fan efficacy ≤ 0.62 watts per CFM. Field verification testing is required in accordance with Reference Residential Appendix RA3.3. *

Ventilation and Indoor Air Quality:

§ 150.0(o)1:	**Requirements for Ventilation and Indoor Air Quality.** All dwelling units shall meet the requirements of ASHRAE Standard 62.2, Ventilation and Acceptable Indoor Air Quality in Residential Buildings subject to the amendments specified in §150.0(o)1. *
§ 150.0(o)1B:	**Central Fan Integrated (CFI) Ventilation Systems.** Continuous operation of CFI air handlers used in CFI systems is not a permissible method to provide whole-dwelling unit ventilation airflow required per §150.0(o)1C. A motorized damper(s) shall be installed on the ventilation duct(s) that prevents all airflow through the space conditioning duct system when the damper(s) is closed and controlled per §150.0(o)1Biii&iv. CFI ventilation systems must have controls that track outdoor air ventilation run time, and either open or close the motorized damper(s) for compliance with §150.0(o)1C.
§ 150.0(o)1C:	**Whole-Dwelling Unit Mechanical Ventilation for Single-Family dwellings.** Single-family dwellings shall have mechanical ventilation specified in §150.0(o)1Ci and 150.0(o)1Civ.Single family detached dwelling units and attached dwelling units not sharing ceilings or floors with other dwelling units, occupiable spaces, public garages, or commercial spaces may reduce their required mechanical ventilation rates in accordance with §150.0(o)1Cii–iii.* Vertically attached dwelling units shall not reduce their minimum ventilation rates in accordance with §150.0(o)1Cii–iii.
§ 150.0(o)1G:	**Local Mechanical Exhaust.** Kitchens and bathrooms shall have local mechanical exhaust; nonenclosed kitchens shall have demand-controlled exhaust system meeting requirements of §150.0(o)1Giii, enclosed kitchens and bathrooms shall either use demand-controlled as specified in §150.0(o)1Giii or continuous exhaust as specified in §150.0(o)1Giv. Airflow shall be measured by the installer per §150.0(q)1Gv, and rated for sound per §150.0(o)1Gvi. *
§ 150.0(o)1H-J:	**Airflow Measurement, Sound Ratings, Label of Whole-Dwelling Unit Ventilation Systems.** The airflow required per §150.0(o)1C shall be measured by using a flow hood, flow grid, or other airflow measuring device at the fan's inlet or outlet terminals/grilles per Reference Residential Appendix RA3.7. Whole-Dwelling unit ventilation systems shall be rated for sound per ASHRAE 62.2 §7.3 at no less than the minimum airflow rate required by §150.0(o)1C. Manual on-off switches must be labeled per §150.0(o)1J.
§ 150.0(o)2:	**Field Verification and Diagnostic Testing.** Whole-Dwelling Unit ventilation airflow, vented range hood airflow and sound rating, and HRV and ERV fan efficacy shall be verified in accordance with Reference Residential Appendix RA3.7. Vented range hoods shall be verified per Reference Residential Appendix RA3.7.4.3 to confirm if it is rated by HVI or AHAM to comply with the airflow rates and sound requirements per §150.0(o)1G

Electric and Battery Energy Storage Ready:

§ 150.0(s):	**Battery Energy Storage System (BESS) Ready.** All single-family residences that include one or two dwelling units, which a load serving entity provides with electrical service for the dwelling unit that is greater than 125 amps, shall meet at least one of the following: Either BESS-ready interconnection equipment with backed up capacity of 60 amps or more and four or more BESS supplied branch circuits in §150.0(s)2, or a dedicated raceway from the main service to a subpanel that supplies the branch circuits in § 150.0(s)2; at least four branch circuits must be identified and have their source collocated at a single panelboard suitable to be supplied by the BESS, with one circuit supplying the refrigerator, one lighting circuit near the primary exit, and one circuit supplying a sleeping room receptacle outlet; main panelboard must have a minimum busbar rating of 225 amps; sufficient space must be reserved to allow future installation of a system isolation equipment/transfer switch within 3 feet of the main panelboard, with raceways installed between the panelboard and the switch location to allow the connection of backup power source. *
§ 150.0(t):	**Heat Pump Space Heater Ready.** Systems using gas or propane furnaces to serve individual dwelling units must include: A dedicated unobstructed 240V branch circuit wiring installed within 3' of the furnace with circuit conductors rated at least 30 amps with the blank cover identified as "240V ready;" and a reserved main electrical service panel space to allow for the installation of a double pole circuit breaker permanently marked as "For Future 240V use."
§ 150.0(u):	**Electric Cooktop Ready.** Systems using gas or propane cooktop to serve individual dwelling units must include: A dedicated unobstructed 240V branch circuit wiring installed within 3' of the cooktop with circuit conductors rated at least 50 amps with the blank cover identified as "240V ready;" and a reserved main electrical service panel space to allow for the installation of a double pole circuit breaker permanently marked as "For Future 240V use."
§ 150.0(v):	**Electric Clothes Dryer Ready.** Clothes dryer locations with gas or propane plumbing to serve individual dwelling units must include: A dedicated unobstructed 240V branch circuit wiring installed within 3' of the dryer location with circuit conductors rated at least 30 amps with the blank cover identified as "240V ready;" and a reserved main electrical service panel space to allow for the installation of a double pole circuit breaker permanently marked as "For Future 240V use."

Lighting:

§ 110.9:	**Lighting Controls and Components.** All lighting control devices and systems, light sources, and luminaires must meet the applicable requirements of §110.9. *
§ 150.0(k)1A:	**Luminaire Efficacy.** All installed luminaires and light sources must meet the requirements of Reference Joint Appendix JA8, except lighting integral to exhaust fans, kitchen range hoods, bath vanity mirrors, and garage door openers; navigation lighting less than 5 watts; lighting internal to drawers, cabinets, and linen closets with an efficacy of at least 45 lumens per watt; and ceiling fan kits subject to DOE's Appliance and Equipment Standards. *
§ 150.0(k)1C:	**Recessed Downlight Luminaires in Ceilings.** Luminaires recessed into ceilings must not contain screw-based sockets, be airtight with air leakage rate < 2.0 cfm at 75 Pascals, and leak paths be sealed with a gasket or caulk. California Electrical Code Article 410.116 must also be met. *
§ 150.0(k)1D:	**Light Sources in Enclosed or Recessed Luminaires.** Lamps and other separable light sources installed in enclosed or recessed luminaires must meet the JA8 elevated temperature requirements, including marking requirements.
§ 150.0(k)1E:	**Blank Electrical Boxes.** The number of electrical boxes that are more than five feet above the finished floor and do not contain a luminaire or other device shall be no more than the number of bedrooms. These boxes must be served by a dimmer, vacancy sensor control, low voltage wiring, or fan speed control.
§ 150.0(k)2A:	**Indoor Lighting Controls.** Lighting must have readily accessible wall-mounted controls that allow the lighting to be manually turned on and off.
§ 150.0(k)2D:	**Controls Permitted.** An energy management control system (EMCS) may be used to comply with dimming, occupancy, and control requirements if it provides the functionality of the specified control per §110.9 and the physical controls specified in §150.0(k)2A. Controls must not bypass a dimmer, occupancy sensor, or vacancy sensor function installed to comply with §150.0(k)2.
§ 150.0(k)2E:	**Automatic Shutoff Controls.** In bathrooms, garages, laundry rooms, utility rooms and walk-in closets, at least one installed luminaire must be controlled by an occupancy or vacancy sensor providing automatic-off functionality. Lighting inside drawers and cabinets with opaque fronts or doors must have controls that turn the light off when the drawer or door is closed.
§ 150.0(k)2F:	**Dimmers.** Lighting in habitable spaces (e.g., living rooms, dining rooms, kitchens, bedrooms) must have readily accessible wall-mounted dimming controls that allow the lighting to be manually adjusted up and down, except lighting integral to kitchen range hoods and bathroom exhaust fans, navigation lighting less than 5 watts, lighting internal to drawers, cabinetry with opaque fronts or doors and controlled by automatic-off controls, luminaires in a circuit with controlled lighting power less than 20 watts or controlled by an occupancy or vacancy sensor. Forward phase cut dimmers controlling LED light sources in these spaces must comply with NEMA SSL 7A. Lighting integrated with ceiling fan may be controlled via a remote control.
§ 150.0(k)2G:	**Independent Controls.** Lighting integral to exhaust fans shall be controlled independently from the fans. Lighting under cabinets or shelves, lighting in display cabinets, and switched outlets must be controlled separately from ceiling-installed lighting.
§ 150.0(k)3:	**Residential Outdoor Lighting.** Outdoor lighting permanently mounted to a single-family residential building or other buildings on the same lot must meet luminaire efficacy requirements of §150.0(k)1A, have a manual on/off switch and either a photocell and motion sensor, a photocell and automatic time switch, or an astronomical time clock. Controls that override to ON are not allowed, unless that override automatically returns the automatic control to its normal operation within 6 hours. An EMCS or other controls that provides the specified control functionality may be used but must meet all applicable requirements.
§ 150.0(k)4:	**Internally Illuminated Address Signs** must either comply with §140.8 or consume no more than 5 watts of power.
§ 150.0(k)5:	**Residential Garages for Eight or More Vehicles.** Lighting for residential parking garages for eight or more vehicles must comply with the applicable requirements for nonresidential garages in §§ 110.9, 130.0, 130.1, 130.4, 140.6, and 141.0.

2025 Single-Family Residential Mandatory Requirements Summary

Building Envelope:

§ 110.6(a)1:	**Air Leakage.** Manufactured fenestration, exterior doors, and exterior pet doors must limit air leakage to 0.3 CFM per square foot or less when tested per NFRC-400, ASTM E283, or AAMA/WDMA/CSA 101/I.S.2/A440-2011. *
§110.6(a)2-4:	**U-factor, Solar heat gain coefficient, Visible transmittance.** The fenestration product and exterior door's U-factor and solar heat gain coefficient (SHGC) shall be rated in accordance with NFRC 100 and NFRC 200, or use the applicable defaults in Table 110.6-A and TABLE 110.6-B. The visible transmittance (VT) shall be rated in accordance with NFRC 200 or ASTM E972, for tubular daylighting devices VT shall be rated using NFRC 203. *
§ 110.6(a)5:	**Labeling.** Fenestration products and exterior doors must have a label meeting the requirements of §10-111(a).
§ 110.6(b):	**Field-fabricated Exterior Doors and Fenestration** products must use U-factors from Table 110.6-A and solar heat gain coefficient (SHGC) values from Table 110.6-B. Must be caulked and/or weather-stripped. *
§ 110.7:	**Air Leakage.** All joints, penetrations, and other openings in the building envelope that are potential sources of air leakage must be caulked, gasketed, or weather-stripped.
§ 110.8(a):	**Insulation Certification by Manufacturers.** Insulation must be certified by the Department of Consumer Affairs, Bureau of Household Goods and Services (BHGS).
§ 110.8(g):	**Insulation Requirements for Heated Slab Floors.** Heated slab floors must be insulated per the requirements of §110.8(g).
§ 110.8(i):	**Roofing Products Solar Reflectance and Thermal Emittance.** The thermal emittance and aged solar reflectance values of the roofing material must meet the requirements of § 110.8(i) and be labeled per §10-113 when the installation of a cool roof is specified on the CF1R.
§ 110.8(j):	**Radiant Barrier.** When required, radiant barriers must have an emittance of 0.05 or less and be certified to the Department of Consumer Affairs.
§ 150.0(a):	**Roof Deck, Ceiling, and Rafter Roof Insulation.** Roof decks in newly constructed attics above conditioned space in climate zones 4 and 8-16 area-weighted average U-factor not exceeding U-0.184. Ceiling and rafter roofs minimum R-22 insulation in wood-frame ceiling; or area-weighted average U-factor must not exceed 0.043. Rafter roof alterations minimum R-19 or area-weighted average U-factor of 0.054 or less. Attic access doors must have permanently attached insulation using adhesive or mechanical fasteners. The attic access must be gasketed to prevent air leakage. Insulation must be installed in direct contact with a roof or ceiling that is sealed to limit infiltration and exfiltration as specified in §110.7, including but not limited to placing insulation either above or below the roof deck or on top of a drywall ceiling. *
§ 150.0(b):	**Loose-fill Insulation.** Loose fill insulation must meet the manufacturer's required density for the labeled R-value.
§ 150.0(c):	**Wall Insulation.** Minimum R-15 insulation in 2x4 inch wood framing wall or have a U-factor of 0.095 or less, or R-21 in 2x6 inch wood framing or have a U-factor of 0.069 or less. Opaque non-framed assemblies must have an overall assembly U-factor not exceeding 0.102. Masonry walls must meet Tables 150.1-A. *
§ 150.0(d):	**Raised-floor Insulation.** Minimum R-19 insulation in wood framed raised-floor or 0.037 maximum U-factor. *
§ 150.0(f):	**Slab Edge Insulation.** Slab edge insulation must meet the following: water absorption rate no greater than 0.3 percent for insulation material alone without facings; water vapor permeance no greater than 2.0 perm per inch; protected from physical damage and UV light deterioration; and, when installed as part of a heated slab floor, meet the requirements of §110.8(g).
§ 150.0(g)1:	**Vapor Retarder.** In climate zones 1 through 16, the earth floor of unvented crawl space must be covered with a Class I or Class II vapor retarder. This requirement also applies to controlled ventilation crawl space for buildings complying with the exception to §150.0(d).
§ 150.0(g)2:	**Vapor Retarder.** In climate zones 14 and 16, a Class I or Class II vapor retarder must be installed on the conditioned space side of all insulation in all exterior walls, vented attics, and unvented attics with air-permeable insulation.
§ 150.0(q):	**Fenestration Products.** Fenestration, including skylights, separating conditioned space from unconditioned space or outdoors must have a maximum area-weighted average U-factor of 0.40.

Solar Readiness:

§ 110.10(a)1:	**Single-family Residences.** Single-family residences located in subdivisions with 10 or more single-family residences and where the application for a tentative subdivision map for the residences has been deemed complete and approved by the enforcement agency, which do not have a photovoltaic system installed, must comply with the requirements of §110.10(b)-(e).
§110.10(b)1A:	**Minimum Solar Zone Area.** The solar zone must comply with access, pathway, smoke ventilation, and spacing requirements per Title 24, Part 9, or other parts of Title 24, or any requirements adopted by a local jurisdiction. The solar zone must be located on the roof or overhang of the building and have a total area no less than 250 square feet. The solar zone total area must be comprised of areas with no dimension less than 5 feet and no less than 80 square feet each for buildings with roof areas up to 10,000 square feet; or no less than 160 square feet each for buildings with roof areas greater than 10,000 square feet. *
§ 110.10(b)2:	**Azimuth.** All sections of the solar zone located on steep-sloped roofs must have an azimuth between 90-300° of true north.
§ 110.10(b)3A:	**Shading.** No obstructions in solar zone, including but not limited to: vents, chimneys, architectural features, and roof mounted equipment. *
§ 110.10(b)3B:	**Shading.** Any obstruction located on the roof or any other part of the building that projects above a solar zone must be located at least twice the horizontal distance of the height difference between the highest point of the obstruction and the horizontal projection of the nearest point of the solar zone, measured in the vertical plane. *
§ 110.10(b)4:	**Structural Design Loads on Construction Documents.** For areas of the roof designated as a solar zone, the structural design loads for roof dead load and roof live load must be clearly indicated on the construction documents.
§ 110.10(c):	**Interconnection Pathways.** The construction documents must indicate: a location reserved for inverters and metering equipment and a pathway reserved for routing of conduit from the solar zone to the point of interconnection with the electrical service; and for single-family residences and central water-heating systems, a pathway reserved for routing plumbing from the solar zone to the water-heating system.

2025 Single-Family Residential Mandatory Requirements Summary

§ 110.10(d):	**Documentation.** A copy of the construction documents or a comparable document indicating the information from §110.10(b)-(c) must be provided to the occupant.
§ 110.10(e)1:	**Main Electrical Service Panel.** The main electrical service panel must have a minimum busbar rating of 200 amps.
§ 110.10(e)2:	**Main Electrical Service Panel.** The main electrical service panel must have a reserved space to allow for the installation of a double pole circuit breaker for a future solar electric installation. The reserved space must be permanently marked as "For Future Solar Electric."

Fireplaces, Decorative Gas Appliances, and Gas Log:

§ 110.5(e):	**Pilot Light.** Continuously burning pilot lights are not allowed for indoor and outdoor fireplaces.
§ 150.0(e)1:	**Closable Doors.** Masonry or factory-built fireplaces must have a closable metal or glass door covering the entire opening of the firebox.
§ 150.0(e)2:	**Combustion Intake.** Masonry or factory-built fireplaces must have a combustion outside air intake, which is at least six square inches in area and is equipped with a readily accessible, operable, and tight-fitting damper or combustion-air control device. *
§ 150.0(e)3:	**Flue Damper.** Masonry or factory-built fireplaces must have a flue damper with a readily accessible control. *

Pool and Spa Systems and Equipment:

§ 110.4(a):	**Certification by Manufacturers.** Pool/spa heating equipment must be certified as compliant with Appliance Efficiency Regulations; have an externally mounted, readily accessible on-off switch that allows shutting off the heater without adjusting the thermostat; permanent, easily readable weatherproof plate or card with energy efficiency rating and operating instructions.
§ 110.4(b)1:	**Heating Equipment.** Pool/spa heating equipment must meet applicable standards, by fuel type.
§ 110.4(b)2:	**Piping.** At least 18 inches of horizontal or vertical pipe installed between the filter and the heater; or dedicated suction and return lines; or built-in or built-up connections installed to allow for the future addition of solar heating equipment.
§ 110.4(b)3:	**Covers.** Outdoor pools or spas with electric or gas heater must have a cover.
§ 110.4(b)4:	**Directional Inlets and Time Switches for Pools.** Pools must have directional inlets that adequately mix the pool water, and a permanently installed time switch that will allow all pumps to be set or programmed to run only during off-peak electric demand periods.
§ 110.4(c):	**Heat Source Sizing.** Pool/spa heating systems must be solar heating system with collector area of at least 60% of pool/spa surface area; heat pump sized per JA16.3; combination of solar and heat pump; or use 60% or more on-site renewable/recoverable energy. *
§ 110.4(d):	**Heat Pump Pool Heaters with Supplementary Heating.** Controls for such systems must limit supplementary heating when the heating load can be met by the heat pump alone.
§ 110.5:	**Pilot Light.** Natural gas pool and spa heaters must not have a continuously burning pilot light.
§ 150.0(p):	**Pool Systems and Equipment Installation.** Single-family pool systems or equipment must meet the specified requirements for pump sizing, flow rate, piping, filters, and valves.

*Exceptions may apply.

STRUCTURAL ENGINEER
AQX ENGINEERING INC.
1520 BROOKHOLLOW, SUITE #45,
SANTA ANA, CA 92705
OFF: (714) 662-0510
FAX: (714) 662-0559
info@aqxengineering.com

PROJECT TITLE

SHEET TITLE

TITLE 24

REVISIONS
1
2
3
4

JOB NO.
DATE
DRAWN: M.K.

SHEET NUMBER

T24.5