

Exhibit A

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DRAFT RESOLUTION

Before the Zoning Administrator in and for the County of Monterey, State of California

In the matter of the application of:

LA FUERZA PROPERTIES LLC (PLN240078)

RESOLUTION NO. 25--

Resolution by the County of Monterey Zoning
Administrator:

- 1) Finding that the project qualifies for a Class 1 Categorical Exemption pursuant to CEQA Guidelines section 15301 and there are no exceptions pursuant to section 15300.2; and
- 2) Approving after-the-fact Coastal Development Permit to partially clear Code Enforcement Case No. 00085164 and allow reconstruction of a legal non-conforming 1,046 square foot second single-family dwelling with an 80 square foot porch.

[PLN240078, La Fuerza Properties LLC, 35 Live Oak Road, Royal Oaks (Assessor's Parcel Number 181-032-003-000), North County Land Use Plan, Coastal Zone]

The La Fuerza Properties application (PLN240078) came on for a public hearing before the County of Monterey Zoning Administrator on August 28, 2025. Having considered all the written and documentary evidence, the administrative record, the staff report, oral testimony, and other evidence presented, including the conditions of approval and project plans, the County of Monterey Zoning Administrator finds and decides as follows:

FINDINGS

1. **FINDING:** **CONSISTENCY** – The Project, as conditioned, is consistent with the applicable plans and policies which designate this area as appropriate for development.
EVIDENCE:
 - a) During the course of review of this application, the project has been reviewed for consistency with the text, policies, and regulations in:
 - the 1982 County of Monterey General Plan;
 - North County Land Use Plan; and
 - County of Monterey Zoning Ordinance (Title 20).No conflicts were found to exist. No communications were received during the course of review of the project indicating any inconsistencies with the text, policies, and regulations in these documents.
 - b) Allowed Use. The property is located at 35 Live Oak Road, Royal Oaks (Assessor's Parcel Number 181-032-003-000), within the North County Land Use Plan, Coastal Zone. The parcel is split-zoned Agricultural Conservation (“AC”) and Rural Density Residential (“RDR”). The front half of the property, adjacent to Live Oak Road, is zoned AC and is

developed with two single-family dwellings. The AC zoning allows for the construction of up to three single-family dwellings for an owner, operator, or employees employed on-site. After-the-fact reconstruction of the property's second single-family dwelling, which is legal non-conforming as to allowable structure use, is subject to the granting of a Coastal Development Permit pursuant to Title 20 section 20.68.050 (see subsequent Evidence "f"). Therefore, the project is an allowed land use for this site.

- c) Lot Legality. The subject property (3.5 acres) is identified in its current configuration and under separate ownership in the 1964 and 1972 Assessor's Parcel Maps, Book 181, Page 3. Further, construction permits have been issued on the subject property. Therefore, the County recognizes the subject property as a legal lot of record.
- d) Development Standards. Site development standards for the AC zoning district are identified in Title 20 section 20.32.060. Required setbacks for main structures are 30 feet (front) and 20 feet (sides and rear). Per the attached plans, the proposed second single-family dwelling complies with these requirements. Site coverage in the AC zoning district is limited to 3 percent. The 3.5-acre (149,410 square feet) property is currently developed with two single-family dwellings and a detached garage. With the implementation of the proposed project (After-the-fact construction), the resulting site coverage will not exceed the allowed square footage (4,482 square feet). The second residence will not exceed the allowed height of 35 feet. Therefore, the proposed project complies with the required site development standards.
- e) Cultural Resources. Per County of Monterey GIS, the project site has a low archaeological sensitivity. Pursuant to NC CIP section 20.144.110.B.1.b, project sites in low archaeological sensitivity zones which requires environmental assessment shall provide an archaeological survey. The proposed project does not involve any environmental documents and therefore a report was not required. Additionally, all construction activities have been completed and no additional ground disturbance is proposed with this project. Therefore, there will be no impacts on archaeological resources.
- f) According to Assessor Records and County of Monterey Records, the subject property was first developed with a 1,046 square foot single-family dwelling in 1937 and a 870 square foot second single-family dwelling in 1962. The subject property was zoned "Rural" in 1965, but did not have zoning prior to this date. Accordingly, no regulations were in place in 1962 that prohibited the construction of two single-family dwellings. Currently, the property is split-zoned Agricultural Conservation ("AC") and Rural Density Residential ("RDR"). The front half of the property, adjacent to Live Oak Road, is zoned AC and is developed with two single-family dwellings. The AC zoning allows for the construction of up to three single-family dwellings for an owner, operator, or employees employed on-site, subject to the granting of a Coastal Administrative Permit.

The Applicant/Owner has informed HCD-Planning that the rebuilt 1,046 square foot single-family dwelling (built in 1937) is occupied by off-site

agricultural employees and/or family members, and the other 870 square foot single-family dwelling (built in 1962) is occupied by the Owner. Given that the current zoning district requires that second single-family dwellings be occupied by operators or on-site employees supporting on-site agricultural operations, the rebuilt single-family dwelling's use (housing for off-site employees/extended family) is a legal non-conforming structure use pursuant to Title 20 section 20.68.040. However, pursuant to Title 20 section 20.68.030, a nonconforming use of a structure may continue or be changed to a more restricted nature, subject to the issuance of a Coastal Development Permit. The project is an after the fact permit to allow for the reconstruction of the existing 1,046 square foot single family dwelling and continued use of the single-family dwelling as housing for off-site employees and family members would remain, subject to the issuance of the requested Coastal Development Permit.

Code Enforcement Case No. 00085164 cites the property for unpermitted conversion of the 1,046 square foot residence into a duplex. HCD-Building Services File No. 23CP01313 was issued to abate this violation by requiring the removal of interior walls and allowing interior and exterior modifications (removal of interior load-bearing walls, limited exterior wall changes, electrical upgrades, and replacement windows). Upon demolition of interior load-bearing walls and portions of the exterior walls, the 1,046 square foot residence collapsed in 2024 winter storms. The Applicant/Owner was unaware of the non-conforming status of this residence and thus proceeded to rebuild the structure to its prior configuration, as modified through 23CP01313. Following the rebuild of this structure, the property's existing Code Enforcement Case (No. 00085164) was updated, citing that the rebuild of the residence exceeded 23CP01313's allowed scope of work (remodel). However, evidence has been submitted demonstrating that the demolished/collapsed condition of the residence was due to an act of God (storm), rather than intentional exceedance of scope. Title 20 section 20.68.050 allows for damaged or destroyed legal nonconforming structures to be rebuilt, provided the replacement structure does not exceed the total floor area of the original structure and that a Coastal Development Permit be obtained. Per County Assessor's Records, the 1937 residence was 1,046 square feet. The rebuilt single-family dwelling maintains the historical total floor area. Therefore, subject to issuance of this after-the-fact Coastal Development Permit, reconstruction of the 1,046 square foot single-family dwelling would be allowed, and the code enforcement case would be partially abated. Upon issuance and final inspection of a construction permit, this property will come into compliance with applicable Monterey County Code.

- g) Land Use Advisory Committee (LUAC) Review. The proposed project was not referred to a LUAC because it does not meet the Board of Supervisor adopted referral criteria: Design Approval subject to a public hearing, lot line adjustment in the Coastal Zone or of Williamson Act land, Variances, or preparation of an environmental document.

- h) The application, project plans, and related support materials submitted by the project applicant to County of Monterey HCD-Planning found in Project File PLN240078.

2. FINDING: SITE SUITABILITY – The site is physically suitable for the proposed development and/or use.

- EVIDENCE:**
- a) The project has been reviewed for site suitability by the following departments and agencies: HCD-Planning, HCD-Engineering Services, HCD-Environmental Services, Environmental Health Bureau, and North County Fire Protection District. County staff reviewed the application materials and plans to verify that the project on the subject site conforms to the applicable plans and regulations, and there has been no indication from these departments/agencies that the site is not suitable for the development. Conditions recommended have been incorporated.
 - b) Staff identified potential impacts to local roadways and archaeological resources. The following reports have been prepared:
 - “Geotechnical Soils-Foundation and Geotechnical Site Evaluation & Inspection” (County of Monterey Library No. LIB240226) prepared by John Kasunich, August 21, 2024.County staff independently reviewed these reports and concurs with their conclusions. There are no physical or environmental constraints that would indicate that the site is not suitable for the use. All development shall be in accordance with these reports.
 - c) The application, project plans, and related support materials submitted by the project applicant to County of Monterey HCD-Planning found in Project File PLN240078.

3. FINDING: HEALTH AND SAFETY – The establishment, maintenance, or operation of the project applied for will not under the circumstances of this particular case be detrimental to the health, safety, peace, morals, comfort, and general welfare of persons residing or working in the neighborhood of such proposed use, or be detrimental or injurious to property and improvements in the neighborhood or to the general welfare of the County.

- EVIDENCE:**
- a) The project was reviewed by HCD-Planning, HCD- Engineering Services, HCD-Environmental Services, Environmental Health Bureau (EHB), and North County Fire Protection District. The respective agencies have recommended conditions, where appropriate, to ensure that the project will not have an adverse effect on the health, safety, and welfare of persons either residing or working in the neighborhood.
 - b) Necessary facilities are provided at the project site. Viking Septic Performance Evaluation received dated 10/7/24 showing tank and dispersal field are in good working order. The property is served potable water from an existing on-site private well. This well serves both residences. Accordingly, a small water system permit must be obtained and is required as Condition No. 3.
 - c) The application, project plans, and related support materials submitted by the project applicant to County of Monterey HCD-Planning found in Project File PLN240078.

4. **FINDING:** **VIOLATIONS** – The subject property is not in compliance with all rules and regulations pertaining to zoning uses, subdivision, and any other applicable provisions of the County’s zoning ordinance. Issuance of this permit will partially abate the existing code violation.
- EVIDENCE:** a) Staff reviewed County of Monterey HCD-Planning and HCD-Building Services records and is aware of a violation existing on subject property. Code Enforcement Case No. 00085164 cites the property for unpermitted conversion of the 1,046 square foot residence into a duplex and exceedance of work allowed under HCD-Building Services File No. 23CP01313. HCD-Building Services File No. 23CP01313 was issued to abate this violation by requiring the removal of interior walls and allowing interior and exterior modifications. As described in Finding No. 1, Evidence “f”, upon demolition of interior walls, this residence collapsed during winter storms. This residence was subsequently rebuilt without obtaining the necessary discretionary and ministerial permits. Issuance of this Coastal Development Permit allows for after-the-fact construction of the replacement single-family dwelling. Upon issuance and final inspection of a construction permit, this property will come into compliance with applicable Monterey County Code.
- b) The application, project plans, and related support materials submitted by the project applicant to County of Monterey HCD-Planning found in Project File PLn240078.
5. **FINDING:** **CEQA (Exempt)** – The project is categorically exempt from environmental review and no unusual circumstances were identified to exist for the proposed project.
- EVIDENCE:** a) California Environmental Quality Act (CEQA) Guidelines section 15301, categorically exempts existing facilities.
- b) The 1,046 square foot single-family dwelling has already been rebuilt. Accordingly, this structure already exists. No additional work is proposed under this permit. Therefore, the project qualifies as a Class 1 Categorical Exemption.
- c) None of the exceptions under CEQA Guidelines Section 15300.2 apply to this project. There is no substantial evidence of an unusual circumstance because there is no feature or condition of the project that distinguishes the project from the exempt class. The project does not involve a designated historical resource, a hazardous waste site, unusual circumstances that would result in a significant effect, or development that would result in a cumulative significant impact. There is no substantial evidence that would support a fair argument that the project has a reasonable possibility of having a significant effect on the environment or that it would result in a cumulative significant impact.
- d) See supporting Finding Nos. 1 and 2. The application, project plans, and related support materials submitted by the project applicant to County of Monterey HCD-Planning found in Project File PLn240078.
6. **FINDING:** **PUBLIC ACCESS** – The project is in conformance with the public access and recreation policies of the Coastal Act (specifically Chapter 3 of the Coastal Act of 1976, commencing with Section 30200 of the

- Public Resources Code) and applicable Local Coastal Program, and does not interfere with any form of historic public use or trust rights.
- EVIDENCE:**
- a) No public access is required as part of the project as no substantial adverse impact on access, either individually or cumulatively, as described in Section 20.140.150 of the County of Monterey Coastal Implementation Plan can be demonstrated.
 - b) No evidence or documentation has been submitted or found showing the existence of historic public use or trust rights over this property.
 - c) The subject property is not described as an area where the Local Coastal Program requires visual or physical public access (Figure 4, Public Access and Recreation, and Figure 6, Shoreline Access/Trail, in the North County Land Use Plan).
 - d) The application, project plans, and related support materials submitted by the project applicant to County of Monterey HCD-Planning found in Project File PLN230258.

7. FINDING: APPEALABILITY – The decision on this project may be appealed to the Board of Supervisors and California Coastal Commission.

- EVIDENCE:**
- a) Board of Supervisors. Pursuant to Title 20 section 20.86.030, an appeal may be made to the Board of Supervisors by any public agency or person aggrieved by a decision of an Appropriate Authority other than the Board of Supervisors.
 - b) Coastal Commission. Pursuant to Title 20 section 20.86.080.A, the project is subject to appeal by/to the California Coastal Commission because it involves development that is permitted in the underlying zone as a conditional use.

DECISION

NOW, THEREFORE, based on the above findings and evidence, the Zoning Administrator does hereby:

1. Find that the project qualifies for a Class 1 Categorical Exemption pursuant to CEQA Guidelines section 15301 and there are no exceptions pursuant to section 15300.2; and
2. Approve an after-the-fact Coastal Development Permit to partially clear Code Enforcement Case No. 00085164 and allow reconstruction of a legal non-conforming 1,046 square foot second single-family dwelling with an 80 square foot porch.

All of which are in general conformance with the attached sketch and operations plan, and subject to the attached conditions, all being attached hereto and incorporated herein by reference.

PASSED AND ADOPTED this 28th day of August, 2025.

Mike Novo, AICP
Zoning Administrator

COPY OF THIS DECISION MAILED TO APPLICANT ON DATE

THIS APPLICATION IS APPEALABLE TO THE BOARD OF SUPERVISORS. IF ANYONE WISHES TO APPEAL THIS DECISION, AN APPEAL FORM MUST BE COMPLETED AND SUBMITTED TO THE CLERK TO THE BOARD ALONG WITH THE APPROPRIATE FILING FEE ON OR BEFORE DATE.

THIS PROJECT IS LOCATED IN THE COASTAL ZONE AND IS APPEALABLE TO THE COASTAL COMMISSION. UPON RECEIPT OF NOTIFICATION OF THE FINAL LOCAL ACTION NOTICE (FLAN) STATING THE DECISION BY THE FINAL DECISION MAKING BODY, THE COMMISSION ESTABLISHES A 10 WORKING DAY APPEAL PERIOD. AN APPEAL FORM MUST BE FILED WITH THE COASTAL COMMISSION. FOR FURTHER INFORMATION, CONTACT THE COASTAL COMMISSION AT (831) 427-4863 OR AT 725 FRONT STREET, SUITE 300, SANTA CRUZ, CA.

This decision, if this is the final administrative decision, is subject to judicial review pursuant to California Code of Civil Procedure Sections 1094.5 and 1094.6. Any Petition for Writ of Mandate must be filed with the Court no later than the 90th day following the date on which this decision becomes final.

NOTES

1. You will need a building permit and must comply with the County of Monterey Building Ordinance in every respect.

Additionally, the Zoning Ordinance provides that no building permit shall be issued, nor any use conducted, otherwise than in accordance with the conditions and terms of the permit granted or until ten days after the mailing of notice of the granting of the permit by the appropriate authority, or after granting of the permit by the Board of Supervisors in the event of appeal.

Do not start any construction or occupy any building until you have obtained the necessary permits and use clearances from County of Monterey HCD-Planning and HCD-Building Services Department office in Salinas.

2. This permit expires 3 years after the above date of granting thereof unless construction or use is started within this period.

Form Rev. 1-27-2021

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County of Monterey HCD Planning

DRAFT Conditions of Approval/Implementation Plan/Mitigation Monitoring and Reporting Plan

PLN240078

1. PD001 - SPECIFIC USES ONLY

Responsible Department: Planning

Condition/Mitigation Monitoring Measure: This After-the-fact Coastal Development Permit to partially clear Code Enforcement Case No. 00085164 allows reconstruction of a legal non-conforming 1,046 square foot second single-family dwelling with an 80 square foot porch. The property is located at 35 Live Oak Road, Royal Oaks (Assessor's Parcel Number 181-032-003-000), North County Land Use Plan, Coastal Zone. This permit was approved in accordance with County ordinances and land use regulations subject to the terms and conditions described in the project file. Neither the uses nor the construction allowed by this permit shall commence unless and until all of the conditions of this permit are met to the satisfaction of the Director of HCD - Planning. Any use or construction not in substantial conformance with the terms and conditions of this permit is a violation of County regulations and may result in modification or revocation of this permit and subsequent legal action. No use or construction other than that specified by this permit is allowed unless additional permits are approved by the appropriate authorities. To the extent that the County has delegated any condition compliance or mitigation monitoring to the Monterey County Water Resources Agency, the Water Resources Agency shall provide all information requested by the County and the County shall bear ultimate responsibility to ensure that conditions and mitigation measures are properly fulfilled. (HCD - Planning)

Compliance or Monitoring Action to be Performed: The Owner/Applicant shall adhere to conditions and uses specified in the permit on an on-going basis unless otherwise stated.

2. PD002 - NOTICE PERMIT APPROVAL

Responsible Department: Planning

Condition/Mitigation Monitoring Measure: The applicant shall record a Permit Approval Notice. This notice shall state:
"An after-the-fact Coastal Development Permit (Resolution Number _____) was approved by [Name of Hearing Body] for Assessor's Parcel Number 181-032-003-000 on August 28, 2025. The permit was granted subject to 4 conditions of approval which run with the land. A copy of the permit is on file with Monterey County HCD - Planning."

Proof of recordation of this notice shall be furnished to the Director of HCD - Planning prior to issuance of grading and building permits, Certificates of Compliance, or commencement of use, whichever occurs first and as applicable. (HCD - Planning)

Compliance or Monitoring Action to be Performed: Prior to the issuance of grading and building permits, certificates of compliance, or commencement of use, whichever occurs first and as applicable, the Owner/Applicant shall provide proof of recordation of this notice to the HCD - Planning.

3. EHSP01 – NEW WATER SYSTEM PERMIT

Responsible Department: Health Department

Condition/Mitigation Monitoring Measure: Pursuant to Monterey County Code Chapter 15.04, Domestic Water Systems, obtain a new water system permit from the Environmental Health Bureau. (Environmental Health)

Compliance or Monitoring Action to be Performed: Prior to issuance of grading/construction permits, submit necessary water system application, reports and testing results to Environmental Health Bureau for review and approval.

4. PW0005 – DRIVEWAY IMPROVEMENTS

Responsible Department: Public Works

Condition/Mitigation Monitoring Measure: Applicant/Owner shall improve the existing roadway connections to Live Oak Road. The design and construction is subject to the approval of the HCD -PWFP. Encroachment Permits are required for all work within the public right-of-way.

Compliance or Monitoring Action to be Performed: Owner/Applicant shall submit the design for review and approval of the HCD-PWFP, obtain an encroachment permit from the HCD -PWFP prior to issuance of building or grading permits, and construct and complete improvements prior to occupancy or commencement of use. Applicant is responsible to obtain all permits and environmental clearances.

MONTEREY COUNTY
RESOURCE MANAGEMENT AGENCY

Carl P. Holm, AICP, Director

LAND USE & COMMUNITY DEVELOPMENT | PUBLIC WORKS & FACILITIES | PARKS
1441 Schilling Place, South 2nd Floor (831)755-4800
Salinas, California 93901-4527 www.co.monterey.ca.us/rma



Construction Waste Management Plan (CWMP) – CW 1

Project Name: _____
Project Location: 33 & 35 LIVE OAK RD ROYAL OAKS CA 95075
Building Permit No.: _____ Project Sq. Ft.: 1046 SF.
Contractors Name: _____ Phone: _____
Fax: _____ Email: _____
Owners Name: _____ Phone: _____
Fax: _____ Email: _____

This construction waste management plan is hereby submitted to comply with Section 4.408.2 of the 2019 California Green Building Standards Code.

The purpose of this plan is to identify and outline the methods to be used as the minimum requirements for a construction waste management ordinance per Section 4.408.2.

1. The method of waste tracking to be used on this project will be: (Check one box)
☐ Volume ☐ Weight ☐ 4 Lbs. per Sq. Ft. ☐ Recycling Facility

2. Construction waste generated on this project for transport to a recycling facility will be:
☐ Site Sorted/Source Separated ☐ Mixed (Commingled)

3. The facility (or facilities) where the construction waste material will be taken is:
Name of Facility: _____
Address: _____
Phone: _____
(Attach separate sheet for additional facilities)

4. The following construction methods will be used to reduce the amount of waste generated: (Check all that apply)
☐ Efficient design (dimensions of building components are designed to available material sizes or standard sizes).
☐ Careful and accurate material ordering.
☐ Careful material handling and storage.
☐ Panelized or prefabricated construction.
☐ Other _____
☐ Other _____

Updated 6/20/17

RMA-ENVIRONMENTAL SERVICES

PRIOR TO ISSUANCE OF THE CONSTRUCTION PERMIT:

The applicant shall submit (3) copies of an erosion control plan in conformance with the requirements of Monterey County Code Chapter 16.12. The erosion control plan shall be clearly identified and shall include stockpile area(s), material storage area(s), portable sanitation facilities and waste collection area(s), where appropriate.

PRIOR TO COMMENCEMENT OF ANY LAND DISTURBANCE:

The applicant shall schedule an inspection (300-Environmental Services Initial Inspection) with RMA-Environmental Services to ensure all necessary sediment controls are in place and the project is compliant with Monterey County regulations.

DURING CONSTRUCTION:

The applicant shall schedule an inspection (305-Environmental Services Active Construction) with RMA-Environmental to inspect drainage device installation, review the maintenance and effectiveness of BMPs installed, and to verify that pollutants of concern are not discharged from the site. At the time of the inspection, the applicant shall provide certification that all necessary geotechnical inspections have been completed to that point.

PRIOR TO FINAL BUILDING

The applicant shall schedule an inspection (310-Environmental Services Hold Final Inspection) with RMA-Environmental Services to ensure that all disturbed areas have been stabilized and That all temporary erosion and sediment control measures, that are no longer needed, have been removed.

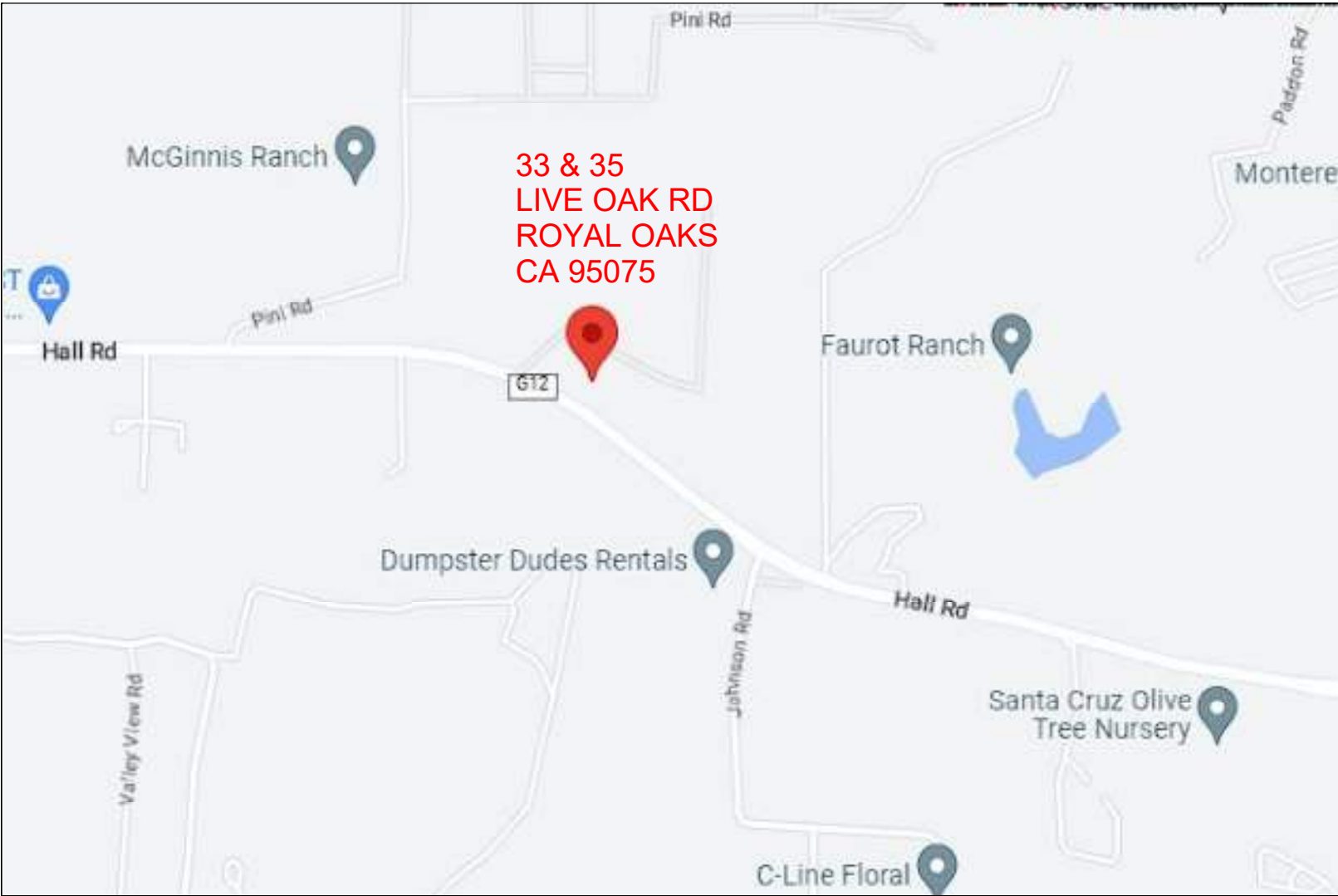
FIRE DEPARTMENT NOTES:

ADDRESS NUMBERS POSTED

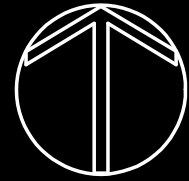
- Address Numbers to be posted. Before construction begins, temporary or permanent address numbers shall be posted. Permanent address numbers shall be posted prior to request of a final inspection. All address numbers (permanent or temporary) shall be posted on the property so as to be clearly visible from the road. Where visibility cannot be provided, a post or sign bearing the address numbers shall be set adjacent to the driveway or access road to the property.

CLEAR VEGETATION-

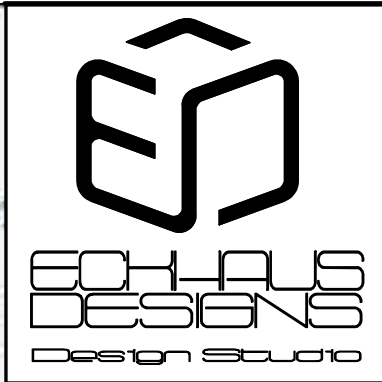
Clear Vegetation. All flammable vegetation or other combustible growth shall at all times maintain clear distance of not less than 30 feet on each side from structures or buildings.



VICINITY MAP



PROJECT DATA:	
ZONING _____ AC(CZ) 	
_____ RDR/S(CZ)	
DESCRIPTION OF USE _____ RESIDENTIAL	
OCCUPANCY _____ R-3	
NUMBER OF STORIES _____ 1	
TYPE OF CONSTRUCTION _____ V-B	
SPRINKLER SYSTEMS _____ YES	
RESIDENCE TO BE DEMOLISH _____ 1,046 SF.	
<E> FRONT PORCH TO BE DEMOLISH _____ 80 SF.	
<E> 2 CAR GARAGE DETACHED _____ 440 SF.	
NEW RESIDENCE TO REBUILD _____ 1,046 SF.	
<E> FRONT PORCH TO REBUILD _____ 80 SF.	
MAX HEIGHT _____ 17'-7"	
LOT AREA _____ 149,410 SF.	
OPEN SPACE _____ N/A	
LOT COVERAGE _____ N/A	
SCOPE OF WORK	
PROPOSE.	
<E> RESIDENCE 1,046 SF. TO TEARDOWN/REBUILD	
<E> FRONT DECK 196 SF. TO TEARDOWN/REBUILD	
<E> FRONT PORCH 80 SF. TO TEARDOWN/REBUILD	
<N> RESIDENCE 1,046 SF. TO BE REBUILD.	
<N> FRONT PORCH 80 SF. TO BE REBUILD.	



ENRIQUE ECKHAUS GIL.

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eckhaus@pacbell.net
eeckhaus@gmail.com

OWNER.
ISRAEL RANGEL
PROJECT.

**33 & 35
LIVE OAK RD
ROYAL OAKS CA
95075**

**APN
181-032-003-000**

CODES.
2022 California Building Standards Code (Cal. Code Regs., Tit. 24)

• Part 1 – California Administrative Code
• Part 2 – California Building Code
• Part 2.5 – California Residential Code
• Part 3 – California Electrical Code
• Part 4 – California Mechanical Code
• Part 5 – California Plumbing Code
• Part 6 – California Energy Code
• Part 8 – California Historical Building Code
• Part 9 – California Fire Code
• Part 10 – California Existing Building Code
• Part 11 – California Green Building Standards Code (CALGreen)
• Part 12 – California Referenced Standards Code

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A4 PROP. ELEVATIONS
A5 STAKING
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P1 PLUMBING PLAN
P2 PLUMBING PLAN
M1 MECHANICAL PLAN
S1 FOUNDATION PLAN
S2 ROOF FRAMING PLAN
T24 ENERGY CALC.
T24.1 ENERGY CALC.

REVISIONS
NOVEMBER-15-23
FEBRUARY-29-24
DATE AUGUST-01-23
DRAWN E.ECKHAUS/F.BALDERAS/A.ALONSO
JOB 2023-078
SHEET.

A0

PLAN NOTES:

ALL OBSTRUCTIONS, IMPROVEMENTS AND/OR CONSTRUCTION WORK IN THE PUBLIC RIGHT-OF-WAY REQUIRE AN ENCROACHMENT PERMIT. APPLICANT SHALL COMPLETE AND SUBMIT A CITY OF CONCORD ENCROACHMENT PERMIT APPLICATION (ENCLOSED) ALONG WITH THE CURRENT BUILDING PERMIT PLANS RESUBMITTAL. THE APPLICATION MAY REQUIRE CHANGES TO THE QUANTITIES FOR IMPROVEMENTS WITHIN THE PUBLIC RIGHT-OF-WAY. DUE TO INSURANCE LIABILITY REQUIREMENTS, THE WORK/IMPROVEMENTS WITHIN THE PUBLIC RIGHT-OF-WAY SHALL BE PERFORMED BY A CA STATE LICENSED CONTRACTOR WITH EITHER OF THE FOLLOWING LICENSES (A, B OR C8); THUS, ENCROACHMENT PERMITS WILL ONLY BE ISSUED TO A CA STATE LICENSED CONTRACTOR.

EMAIL TO THE ENGINEERING DIVISION ENCROACHMENT FOR INSPECTION 24 HOURS IN ADVANCE FOR BASE, SUBGRADE, FORM/REBAR, CONCRETE PAVEMENT, AND FOR FINAL INSPECTION (30 DAYS FROM POUR DATE).

GREEN BUILDING NOTE:

THIS PROJECT SHALL COMPLY WITH THE 2022 CALIFORNIA GREEN BUILDING STANDARDS CODE (CGBSC) AND CURRENT EDITION

APPLICABLE CODES:

ALL CODES REFERENCED ARE TO BE USED AS AMENDED BY THE STATE OF CALIFORNIA AND LOCAL JURISDICTION.
2022 CALIFORNIA BUILDING CODE (STRUCTURAL DESIGN)
2022 CALIFORNIA RESIDENTIAL CODE
2022 CALIFORNIA ELECTRICAL CODE
2022 CALIFORNIA MECHANICAL CODE
2022 CALIFORNIA PLUMBING CODE
2022 CALIFORNIA ENERGY CODE
2022 CALIFORNIA FIRE CODE
2022 CALIFORNIA GREEN BUILDING CODE
2022 CALIFORNIA REFERENCE STANDARDS CODE

PHOTOVOLTAIC NOTE:

PHOTOVOLTAIC SYSTEM DEFERRAL SUBMITAL

FIRE DEPARTMENT NOTE:

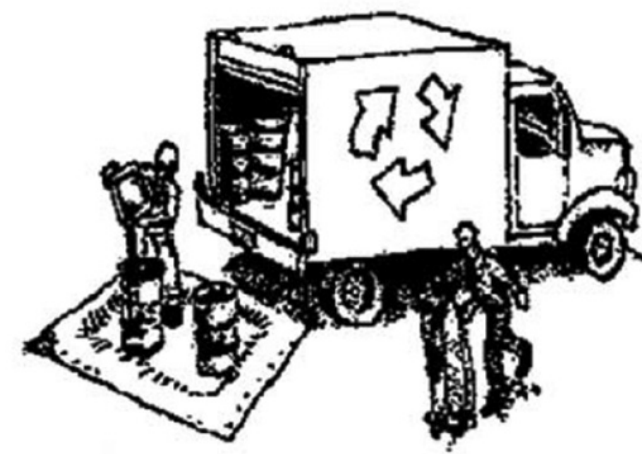
FIRE SPRINKLERS SYSTEM DEFERRAL SUBMITAL



CONSTRUCTION BEST MANAGEMENT PRACTICES (BMPs)

Construction Projects Are Required to Implement the Stormwater Best Management Practices (BMP) on this Page, as they Apply to Your Project, All Year Long

1



MATERIALS & WASTE MANAGEMENT

Non-Hazardous Materials

- q Berm and cover stockpiles of sand, dirt or other construction material with tarps when rain is forecast or if not actively being used within 14 days.
- q Use (but don't overuse) reclaimed water for dust control.

Hazardous Materials

- q Label all hazardous materials and hazardous wastes (such as pesticides, paints, thinners, solvents, fuel, oil, and antifreeze) in accordance with city, county, state and federal regulations.
- q Store hazardous materials and wastes in water tight containers, store in appropriate secondary containment, and cover them at the end of every work day or during wet weather or when rain is forecast.
- q Follow manufacturer's application instructions for hazardous materials and be careful not to use more than necessary. Do not apply chemicals outdoors when rain is forecast within 24 hours.
- q Arrange for appropriate disposal of all hazardous wastes.

Waste Management

- q Cover waste disposal containers securely with tarps at the end of every work day and during wet weather.
- q Check waste disposal containers frequently for leaks and to make sure they are not overfilled. Never hose down a dumpster on the construction site.
- q Clean or replace portable toilets, and inspect them frequently for leaks and spills.
- q Dispose of all wastes and debris properly. Recycle materials and wastes that can be recycled (such as asphalt, concrete, aggregate base materials, wood, gyp board, pipe, etc.)
- q Dispose of liquid residues from paints, thinners, solvents, glues, and cleaning fluids as hazardous waste.

Construction Entrances and Perimeter

- q Establish and maintain effective perimeter controls and stabilize all construction entrances and exits to sufficiently control erosion and sediment discharges from site and tracking off site.
- q Sweep or vacuum any street tracking immediately and secure sediment source to prevent further tracking. Never hose down streets to clean up tracking.

5



EQUIPMENT MANAGEMENT & SPILL CONTROL

Maintenance and Parking

- q Designate an area, fitted with appropriate BMPs, for vehicle and equipment parking and storage.
- q Perform major maintenance, repair jobs, and vehicle and equipment washing off site.
- q If refueling or vehicle maintenance must be done onsite, work in a bermed area away from storm drains and over a drip pan big enough to collect fluids. Recycle or dispose of fluids as hazardous waste.
- q If vehicle or equipment cleaning must be done onsite, clean with water only in a bermed area that will not allow rinse water to run into gutters, streets, storm drains, or surface waters.
- q Do not clean vehicle or equipment onsite using soaps, solvents, degreasers, steam cleaning equipment, etc.

Spill Prevention and Control

- q Keep spill cleanup materials (rags, absorbents, etc.) available at the construction site at all times.
- q Inspect vehicles and equipment frequently for and repair leaks promptly. Use drip pans to catch leaks until repairs are made.
- q Clean up spills or leaks immediately and dispose of cleanup materials properly.
- q Do not hose down surfaces where fluids have spilled. Use dry cleanup methods (absorbent materials, cat litter, and/or rags).
- q Sweep up spilled dry materials immediately. Do not try to wash them away with water, or bury them.
- q Clean up spills on dirt areas by digging up and properly disposing of contaminated soil.
- q Report significant spills immediately. You are required by law to report all significant releases of hazardous materials, including oil. To report a spill: 1) Dial 911 or your local emergency response number, 2) Call the Governor's Office of Emergency Services Warning Center, (800) 852-7550 (24 hours).



EARTHWORK & CONTAMINATED SOILS

Erosion Control

- q Schedule grading and excavation work for dry weather only.
- q Stabilize all denuded areas, install and maintain temporary erosion controls (such as erosion control fabric or bonded fiber matrix) until vegetation is established.
- q Seed or plant vegetation for erosion control on slopes or where construction is not immediately planned.

Sediment Control

- q Protect storm drain inlets, gutters, ditches, and drainage courses with appropriate BMPs, such as gravel bags, fiber rolls, berms, etc.
- q Prevent sediment from migrating offsite by installing and maintaining sediment controls, such as fiber rolls, silt fences, or sediment basins.
- q Keep excavated soil on the site where it will not collect into the street.
- q Transfer excavated materials to dump trucks on the site, not in the street.
- q Contaminated Soils
 - q If any of the following conditions are observed, test for contamination and contact the Regional Water Quality Control Board:
 - Unusual soil conditions, discoloration, or odor.
 - Abandoned underground tanks
 - Abandoned wells
 - Buried barrels, debris, or trash.



PAVING/ASPHALT WORK

- q Avoid paving and seal coating in wet weather, or when rain is forecast before fresh pavement will have time to cure.
- q Cover storm drain inlets and manholes when applying seal coat, tack coat, slurry seal, fog seal, etc.
- q Collect and recycle or appropriately dispose of excess abrasive gravel or sand. Do NOT sweep or wash it into gutters.
- q Do not use water to wash down fresh asphalt concrete pavement.

Sawcutting & Asphalt/Concrete Removal

- q Completely cover or barricade storm drain inlets when saw cutting. Use filter fabric, catch basin inlet filters, or gravel bags to keep slurry out of the storm drain system.
- q Shovel, absorb, or vacuum saw-cut slurry and dispose of all waste as soon as you are finished in one location or at the end of each work day (whichever is sooner!).
- q If sawcut slurry enters a catch basin, clean it up immediately.



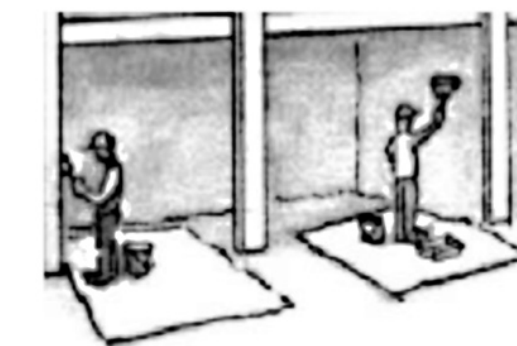
CONCRETE, GROUT & MORTAR APPLICATION

- q Store concrete, grout and mortar under cover, on pallets and away from drainage areas. These materials must never reach a storm drain.
- q Wash out concrete equipment/trucks offsite or in a contained area, so there is no discharge into the underlying soil or onto surrounding areas. Let concrete harden and dispose of as garbage.
- q Collect the wash water from washing exposed aggregate concrete and remove it for appropriate disposal offsite.



LANDSCAPE MATERIALS

- q Contain stockpiled landscaping materials by storing them under tarps when they are not actively being used.
- q Stack erodible landscape material on pallets. Cover or store these materials when they are not actively being used or applied.
- q Discontinue application of any erodible landscape material within 2 days before a forecast rain event or during wet weather.



PAINTING & PAINT REMOVAL

Painting cleanup

- q Never clean brushes or rinse paint containers into a street, gutter, storm drain, or surface waters.
- q For water-based paints, paint out brushes to the extent possible. Rinse to the sanitary sewer once you have gained permission from the local wastewater treatment authority. Never pour paint down a drain.
- q For oil-based paints, paint out brushes to the extent possible and clean with thinner or solvent in a proper container. Filter and reuse thinners and solvents. Dispose of residue and unusable thinner/solvents as hazardous waste.

Paint Removal

- q Chemical paint stripping residue and chips and dust from marine paints or paints containing lead or tributyltin must be disposed of as hazardous waste.
- q Paint chips and dust from non-hazardous dry stripping and sand blasting may be swept up or collected in plastic drop cloths and disposed of as trash.

To Report a Spill: Call 911 or (831) 394-6811

If you see paint, cement, motor oil, antifreeze or other hazardous materials flowing into or being dumped into a storm drain, immediately call 911 to report it.

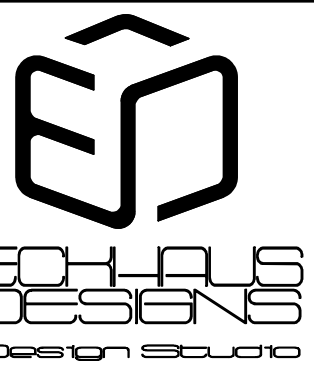
Additional Contact Numbers (Non-Emergency):

City of Carmel-by-the-Sea: (831) 620-2000
City of Del Rey Oaks: (831) 394-8511
City of Monterey: (831) 646-3921
City of Pacific Grove: (831) 648-5722
City of Sand City: (831) 394-3054
City of Seaside: (831) 899-6825
County of Monterey: (831) 755-4800

* Adapted with permission from the San Mateo Countywide Water Pollution Prevention Program

STORM DRAIN POLLUTERS MAY BE LIABLE FOR FINES OF UP TO \$10,000 PER DAY!

v.3 Oct 2015



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OWNER:
ISRAEL RANGEL

PROJECT:

**33 & 35
LIVE OAK RD
ROYAL OAKS CA
95075**

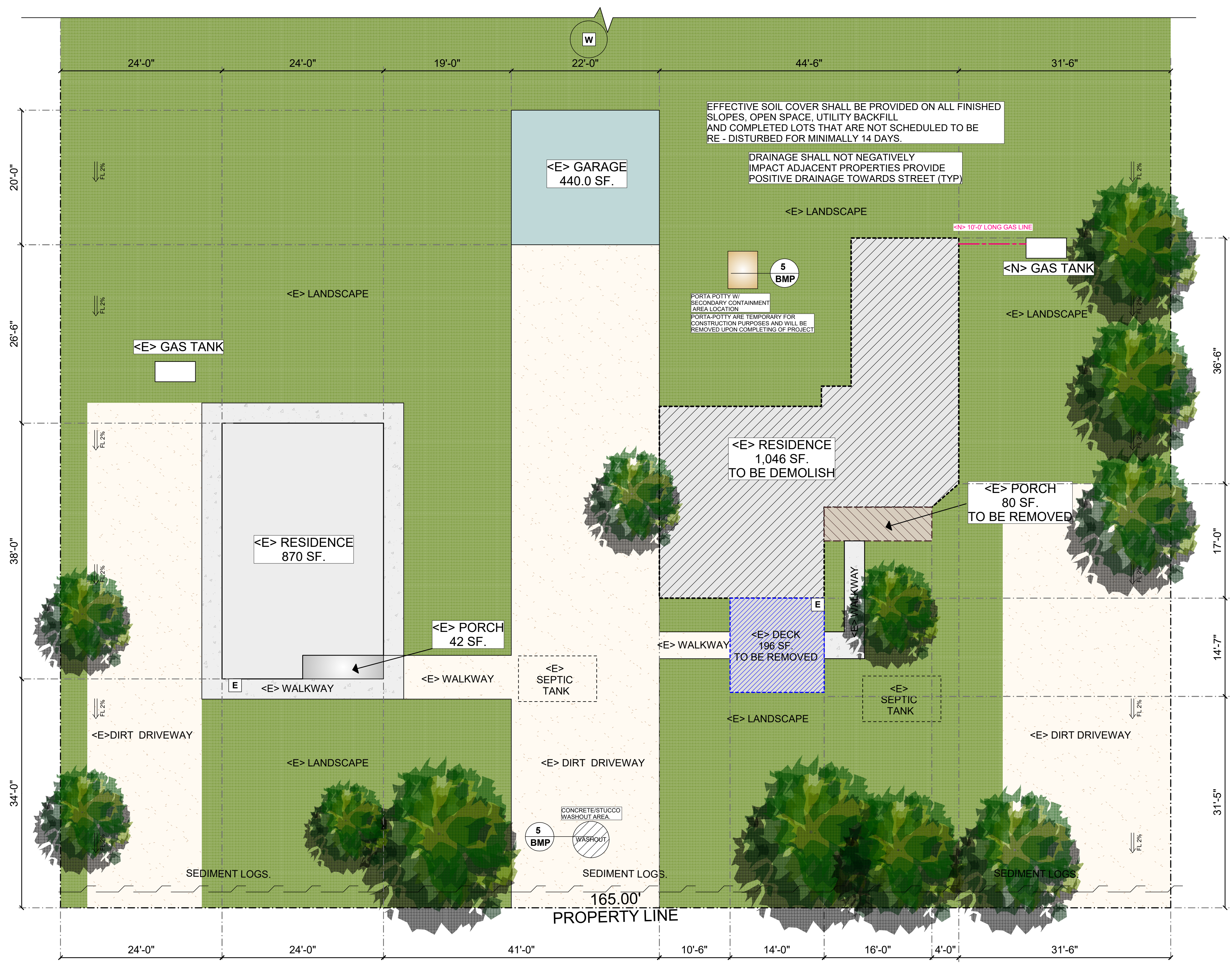
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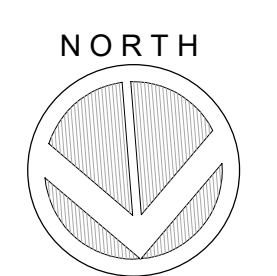
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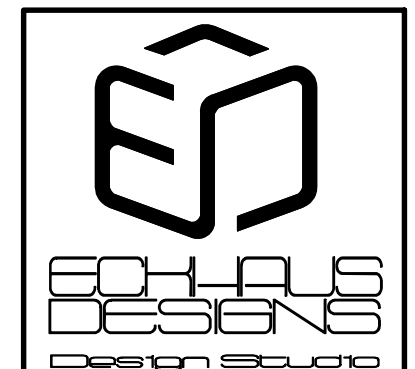
LIVE OAK RD

SITE PLAN

EXISTING CONDITIONS



SCALE: 1/8" = 1'-0"



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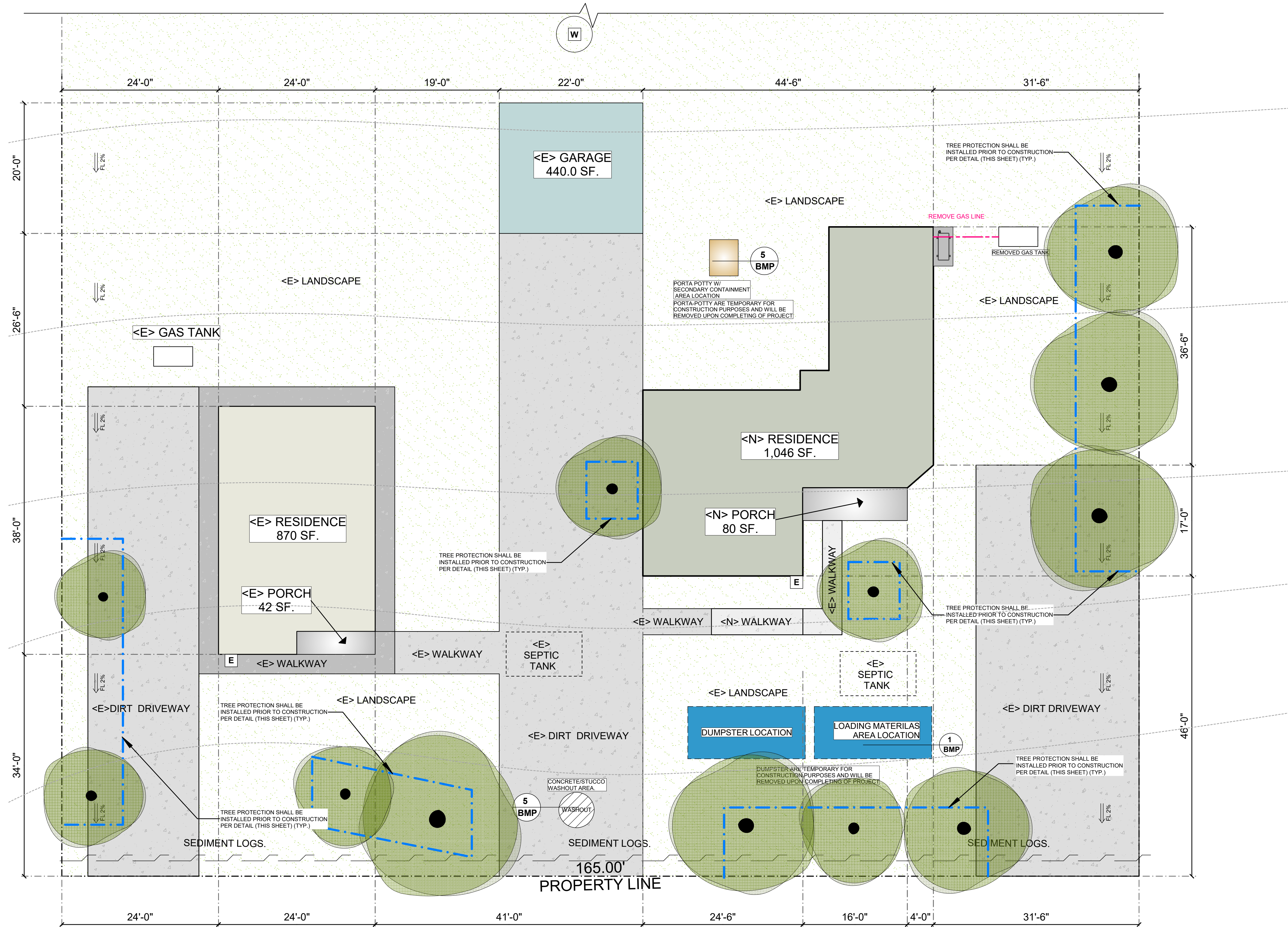
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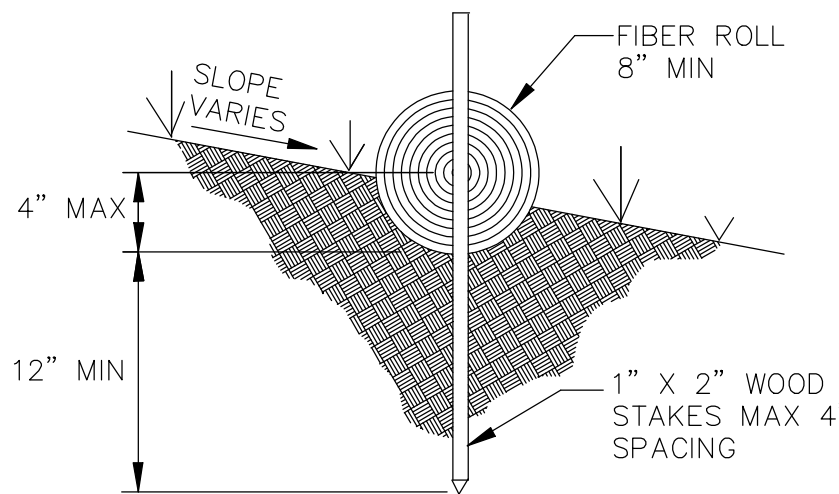
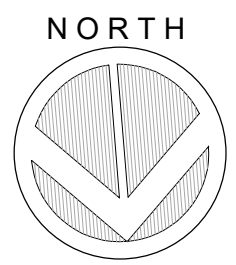
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GRADING PLAN

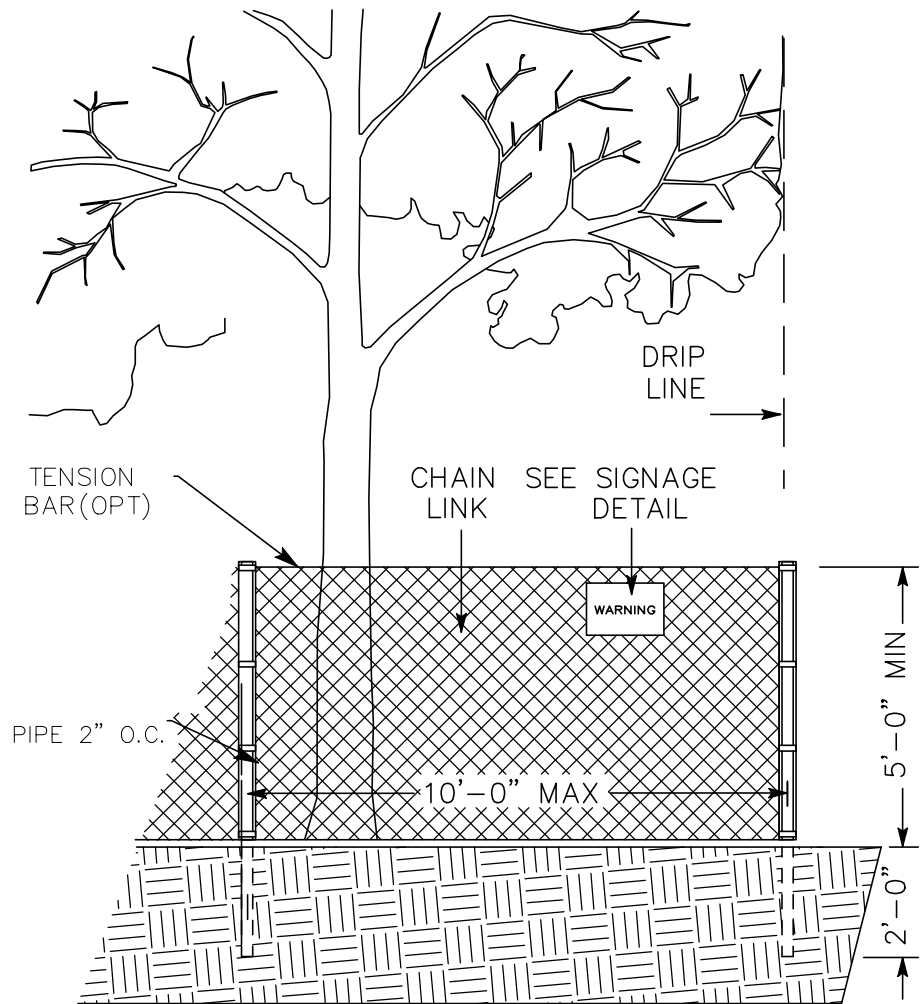
PROPOSED

SCALE: 1/8" = 1'-0"



FIBER ROLL DETAIL IN SLOPE AREA

NTS



TREE PROTECTION DETAIL

NTS

SITE HOUSEKEEPING REQUIREMENTS

CONSTRUCTION MATERIALS

- ALL LOOSE STOCKPILED CONSTRUCTION MATERIALS THAT ARE NOT ACTIVELY BEING USED (I.E. SOIL, SPOILS, AGGREGATE, FLY-ASH, STUCCO, HYDRATED LIME, ETC.) SHALL BE COVERED AND BERMED.
- ALL CHEMICALS SHALL BE STORED IN WATERTIGHT CONTAINERS (WITH APPROPRIATE SECONDARY CONTAINMENT TO PREVENT ANY SPILLAGE OR LEAKAGE) OR IN A STORAGE SHED (COMPLETELY ENCLOSED).
- EXPOSURE OF CONSTRUCTION MATERIALS TO PRECIPITATION SHALL BE MINIMIZED. THIS DOES NOT INCLUDE MATERIALS AND EQUIPMENT THAT ARE DESIGNED TO BE OUTDOORS AND EXPOSED TO ENVIRONMENTAL CONDITIONS (I.E. POLES, EQUIPMENT PADS, CABINETS, CONDUCTORS, INSULATORS, BRICKS, ETC.).
- BEST MANAGEMENT PRACTICES TO PREVENT THE OFF-SITE TRACKING OF LOOSE CONSTRUCTION AND LANDSCAPE MATERIALS SHALL BE IMPLEMENTED.

LANDSCAPE MATERIALS

- CONTAIN STOCKPILED MATERIALS SUCH AS MULCHES AND TOPSOIL WHEN THEY ARE NOT ACTIVELY BEING USED.
- CONTAIN FERTILIZERS AND OTHER LANDSCAPE MATERIALS WHEN THEY ARE NOT ACTIVELY BEING USED.
- DISCONTINUE THE APPLICATION OF ANY ERODABLE LANDSCAPE MATERIAL WITHIN 2 DAYS BEFORE A FORECASTED RAIN EVENT OR DURING PERIOD OF PRECIPITATION.
- APPLY ERODABLE LANDSCAPE MATERIAL AT QUANTITIES AND APPLICATION RATES ACCORDING TO MANUFACTURE RECOMMENDATIONS OR BASED ON WRITTEN SPECIFICATIONS BY KNOWLEDGEABLE AND EXPERIENCED FIELD PERSONNEL.
- STACK ERODABLE LANDSCAPE MATERIAL ON PALLETS AND COVERING OR STORING SUCH MATERIALS WHEN NOT BEING USED OR APPLIED.

VEHICLE STORAGE AND MAINTENANCE

- MEASURES SHALL BE TAKEN TO PREVENT OIL, GREASE, OR FUEL TO LEAK IN TO THE GROUND, STORM DRAINS OR SURFACES WATERS.
- ALL EQUIPMENT OR VEHICLES, WHICH ARE THE BE FUELED, MAINTAINED AND STORED ONSITE SHALL BE IN A DESIGNATED AREA FITTED WITH APPROPRIATE BMP'S.
- LEAKS SHALL BE IMMEDIATELY CLEANED AND LEAKED MATERIALS SHALL BE DISPOSED OF PROPERLY.

WASTE MANAGEMENT

- DISPOSAL OF ANY RINSE OR WASH WATERS OR MATERIALS ON IMPERVIOUS OR PERVIOUS SITE SURFACES OR INTO THE STORM DRAIN SYSTEM SHALL BE PREVENTED.
- SANITATION FACILITIES SHALL BE CONTAINED (E.G., PORTABLE TOILETS) TO PREVENT DISCHARGES OF POLLUTANTS TO THE STORM WATER DRAINAGE SYSTEM OR RECEIVING WATER, AND SHALL BE LOCATED A MINIMUM OF 20 FEET AWAY FROM AN INLET, STREET OR DRIVEWAY, STREAM, RIPARIAN AREA OR OTHER DRAINAGE FACILITY.
- SANITATION FACILITIES SHALL BE INSPECTED REGULARLY FOR LEAKS AND SPILLS AND CLEANED OR REPLACED AS NECESSARY.
- COVER WASTE DISPOSAL CONTAINERS AT THE END OF EVERY BUSINESS DAY AND DURING A RAIN EVENT.
- DISCHARGES FROM WASTE DISPOSAL CONTAINERS TO THE STORM WATER DRAINAGE SYSTEM OR RECEIVING WATER SHALL BE PREVENTED.
- STOCKPILED WASTE MATERIAL SHALL BE CONTAINED AND SECURELY PROTECTED FROM WIND AND RAIN AT ALL TIMES UNLESS ACTIVELY BEING USED.
- PROCEDURES THAT EFFECTIVELY ADDRESS HAZARDOUS AND NON-HAZARDOUS SPILLS SHALL BE IMPLEMENTED.
- EQUIPMENT AND MATERIALS FOR CLEANUP OF SPILLS SHALL BE AVAILABLE ON SITE AND THAT SPILLS AND LEAKS SHALL BE CLEANED UP IMMEDIATELY AND DISPOSED OF PROPERLY; AND
- CONCRETE WASHOUT AREAS AND OTHER WASHOUT AREAS THAT MAY CONTAIN ADDITIONAL POLLUTANTS SHALL BE CONTAINED SO THERE IS NO DISCHARGE INTO THE UNDERLYING SOIL AND ONTO THE SURROUNDING AREAS.

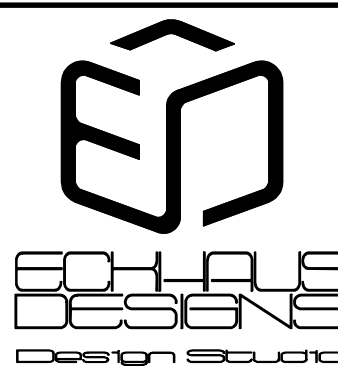
EROSION CONTROL MEASURES

- EROSION IS TO BE CONTROLLED AT ALL TIMES ALTHOUGH SPECIFIC MEASURES SHOWN ARE TO BE IMPLEMENTED AT A MINIMUM BY OCTOBER 15.
- UNLESS SPECIFIC MEASURES ARE SHOWN OR NOTED ON THIS PLAN, ALL COLLECTED RUNOFF SHALL BE CARRIED TO DRAINAGE COURSES IN LINED CONDUITS. DISCHARGE SHALL BE IN THE LOCATIONS SHOWN ON THE PLANS.
- THE DESIRED END RESULT OF THESE MEASURES IS TO CONTROL, SITE EROSION AND PREVENT SEDIMENT TRANSPORT OFF THE SITE. IT SHALL BE THE DEVELOPER'S RESPONSIBILITY TO SEE THAT ANY ADDITIONAL MEASURES NECESSARY TO MEET THIS GOAL ARE IMPLEMENTED. IF FAILED INSPECTIONS BY COUNTY STAFF SHOW THIS GOAL IS NOT BEING MET, ADDITIONAL MEASURES MAY BE REQUIRED.
- SEE PLANTING PLAN ON SHEET A1.1 FOR PLANTING REQUIREMENTS
- AFTER SEEDING, STRAW MULCH WILL BE APPLIED IN 4" (AVG.) LAYERS.
- SILT BARRIERS SHALL BE PLACED END TO END AND STAKED DOWN ALONG THE BOTTOM OF ALL GRADED SLOPES.
- COVER ALL EXPOSED SLOPES
- STRAW 2 TONS/ACRE ON SLOPES $\leq 20\%$ WITH SOIL BINDER
- USE NORTH AMERICAN GREEN C125 OR EQUAL ON SLOPES $>20\%$.

ALL EROSION CONTROL MEASURES INCLUDING BUT NOT LIMITED TO SILT FENCES, FIBER ROLLS AND SLOPE PROTECTION SHALL BE IN PLACE BY OCTOBER 15TH. THE ENGINEER OF RECORD SHALL INSPECT ONCE EROSION CONTROL MEASURES HAVE BEEN INSTALLED.

EXISTING TREE PROTECTION DETAILS

- PRIOR TO THE COMMENCEMENT OF ANY GRADING, TREE PROTECTIVE FENCING SHALL BE IN PLACE IN ACCORDANCE WITH THE TREE PRESERVATION PLAN AND INSPECTED BY A CERTIFIED ARBORIST. THE ARBORIST SHALL MONITOR CONSTRUCTION ACTIVITY TO ENSURE THAT THE TREE PROTECTION MEASURES ARE IMPLEMENTED AND ADHERED TO DURING CONSTRUCTION. THIS CONDITION SHALL BE INCORPORATED INTO THE GRADING PLANS.
- FENCE SHALL BE MINIMUM 5 FEET TALL CONSTRUCTED OF STURDY MATERIAL (CHAIN-LINK OR EQUIVALENT STRENGTH/DURABILITY).
- FENCE SHALL BE SUPPORTED BY VERTICAL POSTS DRIVEN 2 FEET (MIN) INTO THE GROUND AND SPACED NOT MORE THAN 10 FEET APART.
- TREE FENCING SHALL BE MAINTAINED THROUGHOUT THE SITE DURING THE CONSTRUCTION PERIOD, INSPECTED PERIODICALLY FOR DAMAGE AND PROPER FUNCTION, REPAIRED AS NECESSARY TO PROVIDE A PHYSICAL BARRIER FROM CONSTRUCTION ACTIVITIES, AND REMAIN IN PLACE UNTIL THE FINAL INSPECTION.



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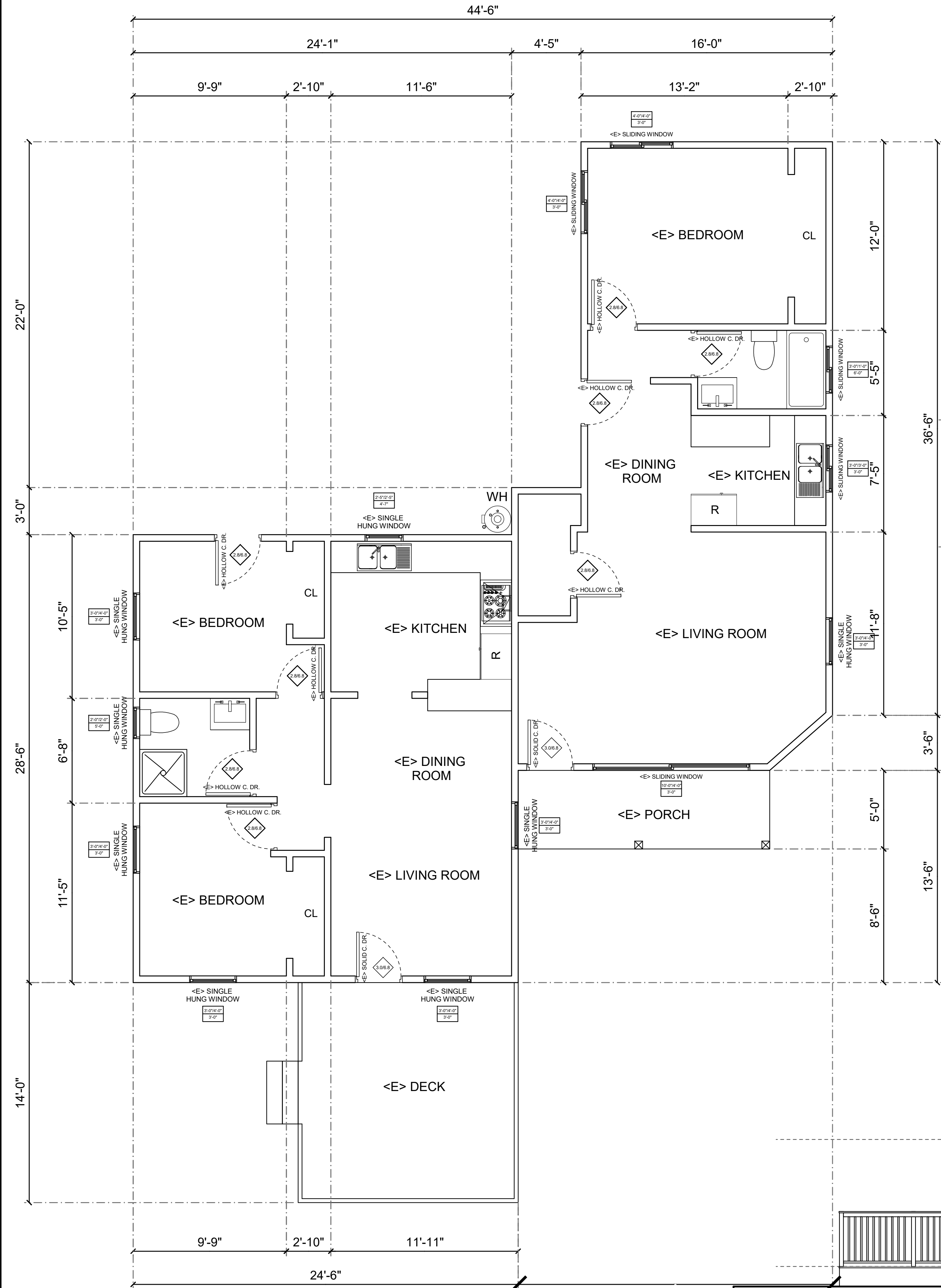
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GR.1



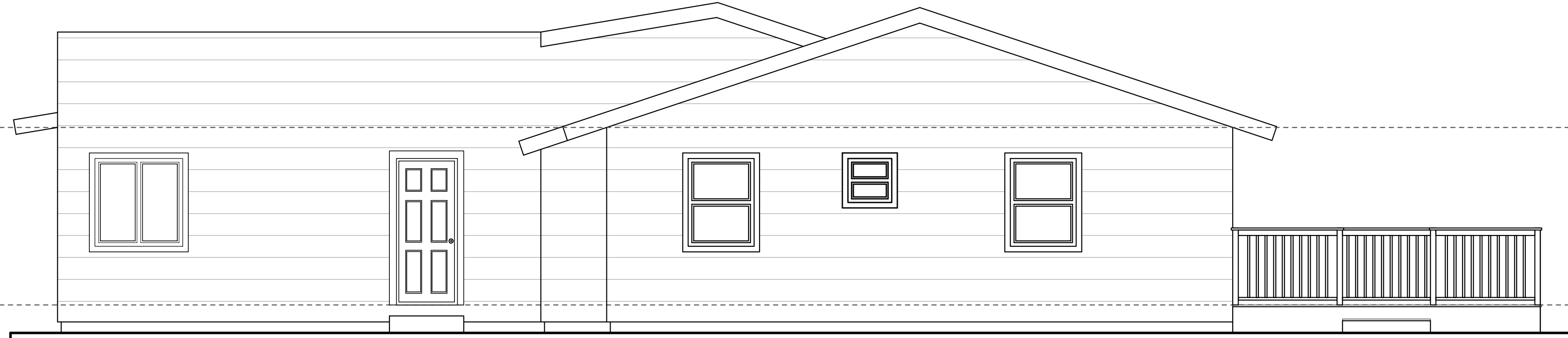
FLOOR PLAN

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



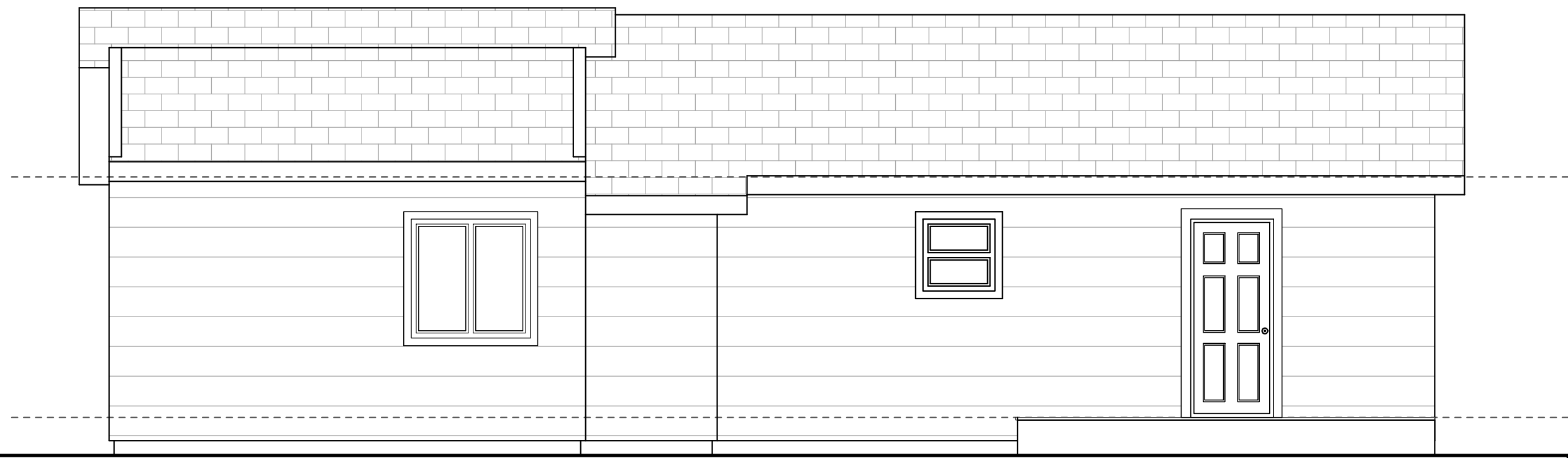
FRONT ELEVATION

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



LEFT ELEVATION

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



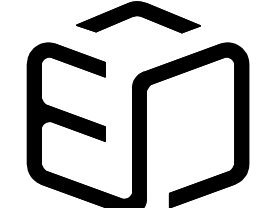
REAR ELEVATION

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



RIGHT ELEVATION

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



**ECKHAUS
DESIGNS**
DESIGN STUDIO

ENRIQUE ECKHAUS GIL.

Signature

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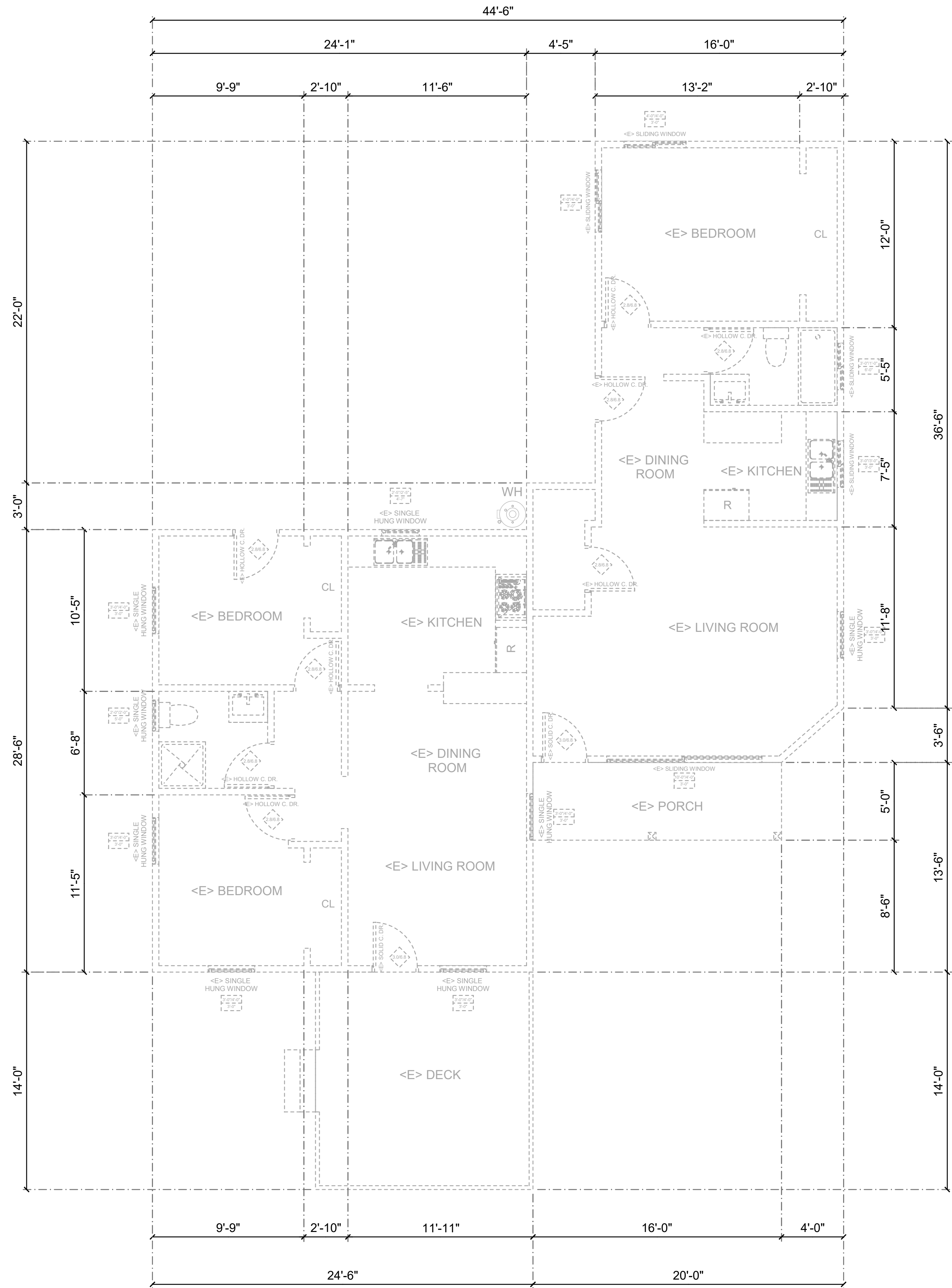
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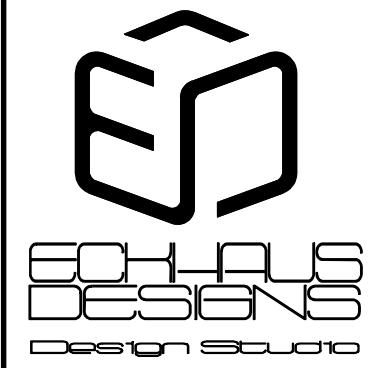
A2



FLOOR PLAN

DEMOLITION

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



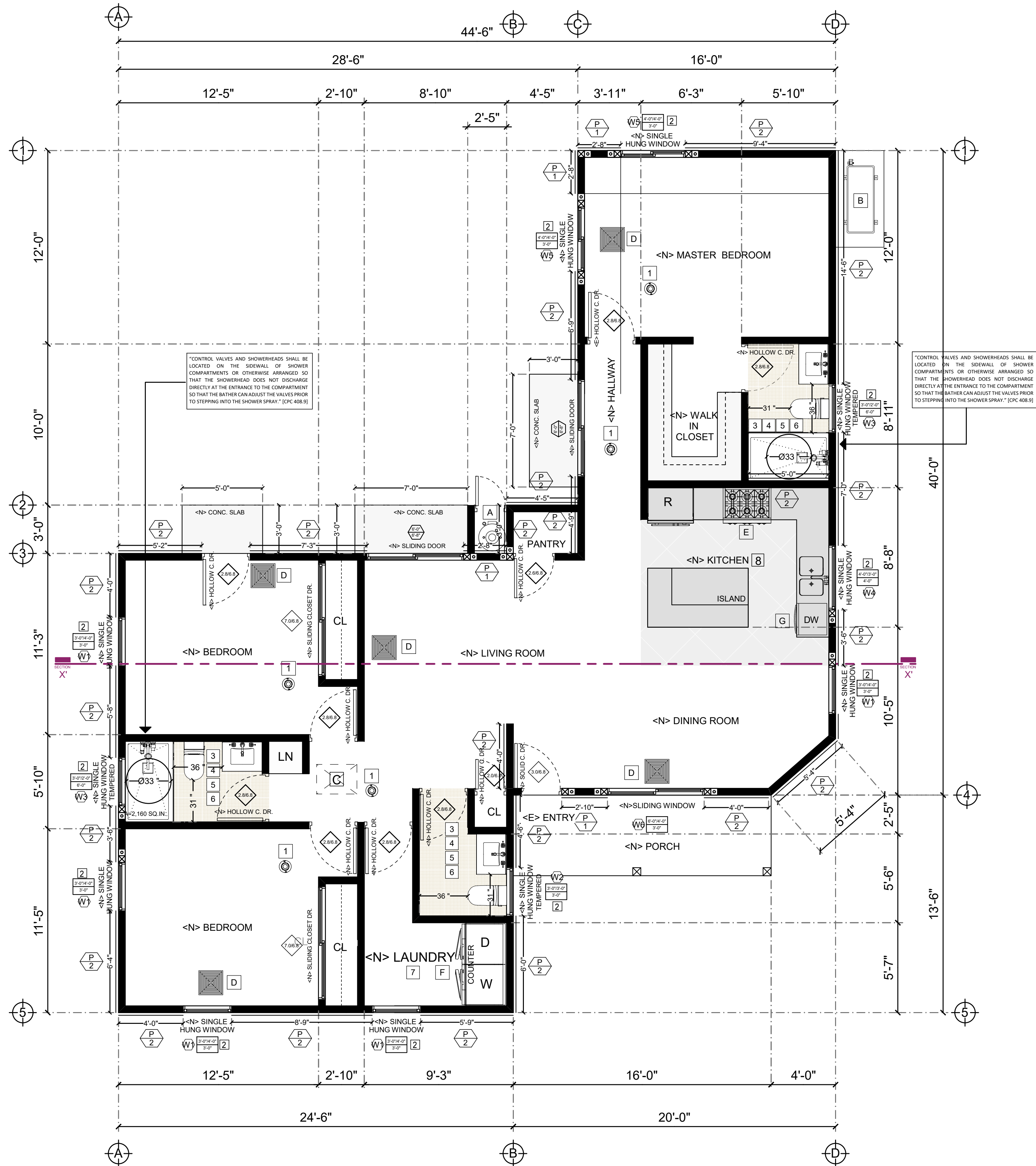
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REVISIONS
1 NOVEMBER-15-23
2 FEBRUARY-29-24
DATE AUGUST-01-23
DRAWN E.ECKHAUS/F.BALDERAS/A.ALONSO
JOB 2023-078



FLOOR PLAN

PROPOSED #1 05-12-23

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

RESIDENTIAL KITCHEN REQUIREMENTS

ELECTRICAL

- ALL KITCHEN COUNTERTOP OUTLETS SHALL BE GFCI PROTECTED. [CEC 210.8(A)(6)]
- WHEN ADDING OR REPLACING 6' OR MORE OF A 120-VOLT, SINGLE PHASE 15 OR 20 AMPERE CIRCUIT SUPPLYING OUTLETS OR DEVICES INSTALLED IN DWELLING UNIT KITCHENS THE CIRCUITS SHALL BE PROTECTED BY AN ARC-FAULT CIRCUIT INTERRUPTER LOCATED IN A READILY ACCESSIBLE LOCATION.[CEC 210.12(D)] [CEC 210.12(A)]
- ALL 15 & 20 AMPERE 125 & 250-VOLT NON- LOCKING TYPE RECEPTACLE OUTLETS SHALL BE LISTED AS TAMPER RESISTANT [CEC 406.12]
- 12" OR WIDER COUNTERTOPS REQUIRE AN OUTLET. [CEC 210.52(C)(1)]
- OUTLETS ARE REQUIRED WITHIN 24" OF ANY LOCATION ALONG THE COUNTERTOP. [CEC 210.52(C)(1)]
- KITCHEN OUTLETS POSITIONED A MAXIMUM 20" ABOVE COUNTERTOP. [CEC 210.52(C)(5)]
- APPLIANCE OUTLETS ARE NOT COUNTED AS REQUIRED COUNTERTOP OUTLETS. [CEC 210.52(C)(5)]
- APPLIANCES AND SINKS BREAK UP THE COUNTERTOP RUN, REQUIREMENT EACH SIDE TO COMPLY INDIVIDUALLY. [CEC 210.52(C)(4)]
- THE ELECTRICAL OUTLET REQUIREMENTS INCLUDE ISLANDS, PENINSULAS, KITCHEN DESKTOPS, WET BARS, AND SERVING BARS.
- A LARGE WINDOW ACROSS THE BACK OF A SINK OR LACK OF A BACKSPASH DOES NOT EXEMPT THE COUNTERTOP FROM THE OUTLET REQUIREMENTS. THESE OUTLETS MAY BE IN A DROP FRONT CABINET FACE, UNDER CABINET PLUG STRIP, POP UP OR TOMBSTONE-TYPE RECEPTACLE. [CEC 210.52(C)(2),(3),(4)]
- TWO SMALL APPLIANCE OUTLET CIRCUITS, 20 AMPS EACH, ARE REQUIRED FOR KITCHENS. CIRCUITS SHALL BE BALANCED AND HAVE NO OTHER OUTLETS. [CEC 210.52(B)(1),(2)]
- INDIVIDUAL DEDICATED CIRCUITS ARE REQUIRED FOR ALL MAJOR APPLIANCES, THE RATING OF AN INDIVIDUAL BRANCH CIRCUIT SHALL NOT BE LESS THAN THE MARKED RATING OF THE APPLIANCE OR THE MARKED RATING OF AN APPLIANCE HAVING COMBINED LOADS AS PROVIDED IN [CEC 422.62][CEC 210.11(C)][CEC 422.10(A)]
- GARBAGE DISPOSAL CORD AND PLUG CONNECTION TO BE 18" TO 36" LONG. [CEC 422.16(B)(1)]
- DISHWASHER CORD 36" TO 78" LONG. ROMEX INSTALLED WITH A PLUG IS NOT AN APPROVED FLEXIBLE CORD. [CEC 422.16(B)(2)]
- MINIMUM 15 AMP GFCI PROTECTED CIRCUIT FOR THE DISHWASHER AND A 15 AMP CIRCUIT FOR THE DISPOSAL [CEC 210.23(A)][CEC 210.8(D)]
- IF USING A SPLIT OUTLET (TWO CIRCUITS ON THE SAME YOKE) FOR DISHWASHER/DISPOSAL, PROVIDE A LISTED HANDLE TIE AT THE TWO CIRCUIT BREAKERS AT THE PANEL. [CEC 210.7]
- ALL INSTALLED LUMINAIRES IN RESIDENTIAL KITCHENS SHALL MEET THE REQUIREMENTS OF TABLE 150.0-A OF THE CEC.
- IC RATED CANS ARE REQUIRED FOR RECESSED LIGHTING IF INSTALLED IN AN INSULATED CEILING. [CEC 410.11(A)(2)] FOR OCCUPANCIES WITH A HORIZONTAL (FLOOR/CEILING ASSEMBLY) RATED SEPARATION, THE RECESSED FIXTURES SHALL BE PROTECTED TO THE RATING OF SEPARATION (1 HOUR) OR BE LISTED FOR THE REQUIRED PROTECTION, THIS GENERALLY APPLIES TO RESIDENTIAL CONDOMINIUM CONSTRUCTION WHERE UNITS ARE ABOVE OR BELOW OTHER UNITS. [CEC 410.11(B)(8)]
- FLORESCENT RECESSED LIGHTING, WHEN USED TO COMPLY WITH THE LIGHTING REQUIREMENTS, MUST BE OF A PIN BASE TYPE DESIGN. INCANDESCENT SCREW TYPE BASE IS NOT APPROVED.[CEC (TBL 150.0-A)]

MECHANICAL

- A DUCTED RESIDENTIAL EXHAUST HOOD IS REQUIRED. A METAL, SMOOTH INTERIOR SURFACE DUCT REQUIRED ON VENT HOOD OR DOWN DRAFT EXHAUST VENT. ALUMINUM FLEX DUCT NOT APPROVED. PROVIDE BACK DRAFT DAMPER [CMC 504.3]
- MINIMUM 30" VERTICAL CLEARANCE TO COMBUSTIBLES FROM COOK TOP SURFACE. REDUCTION OF CLEARANCE TO 24" IS PERMITTED BY METHODS LISTED IN THE CALIFORNIA MECHANICAL CODE [CMC 900.3.2]
- KITCHEN LOCAL EXHAUST VENTILATION REQUIRES A MINIMUM RATE OF 100CFM MEETING THE REQUIREMENTS OF ASHRAE 62.2.

PLUMBING

- A GAS TEST IS REQUIRED ON PIPING MODIFICATIONS (10 PSI FOR 15 MINUTES). A MAXIMUM 15 PSI GAUGE IS REQUIRED FOR THE GAS TEST.[CPC 1213.3]
- GAS PIPES THAT RUN UNDERGROUND BENEATH BUILDINGS SHALL RUN THROUGH AN APPROVED, VENTED, INSULATED GAS CONDUIT
- GAS LINES SHALL BE ENCASED IN AN APPROVED CONDUIT DESIGNED TO WITHSTAND THE IMPOSED LOADS OR IN AN ENCASEMENT SYSTEM THAT IS LISTED FOR INSTALLATION BENEATH BUILDING[CPC 1210.1.6][CPC 1210.1.6.1][CPC1210.1.6.2]
- AN ACCESSIBLE SHUTOFF VALVE SHALL BE INSTALLED OUTSIDE AND WITHIN 6 FEET EACH APPLIANCE AND AHEAD OF THE UNION CONNECTED THERETO AND IN ADDITION TO ANY VALVE ON THE APPLIANCE [CPC 1211.6]
- PROVIDE A LISTED GAS FLEXIBLE CONNECTOR AND SHUT OFF TO FREESTANDING RANGE.
- A LISTED AIR GAP IS REQUIRED FOR THE DISHWASHER DRAIN. [CPC 807.4]
- THE MAXIMUM FLOW RATE FOR THE SINK FAUCETS ARE 1.8 GPM AT 60PSI. KITCHEN FAUCETS MAY TEMPORARILY INCREASE THE FLOW ABOVE THE MAXIMUM RATE, BUT NOT TO EXCEED 2.2 GPM AT 60PSI, AND MUST DEFAULT TO A MAXIMUM FLOW RATE OF 1.8 GPM. [CPC 420.2.1]
- ISLAND DRAIN AND VENTING SHALL BE INSTALLED PER SECTION 909 OF THE CPC.
- TRAP ARM LENGTH SHALL BE DETERMINED BY TABLE 1002.2 OF THE CPC.

PLUMBING FIXTURE REPLACEMENT:

EFFECTIVE JANUARY 1, 2014, SENATE BILL (SB) 407 AND CALIFORNIA CIVIL CODE SECTION 1101.1-1101.8 REQUIRES ALL NONCOMPLIANT PLUMBING FIXTURES TO BE REPLACED WITH WATER-CONSERVING PLUMBING FIXTURES WHEN BUILDING IS UNDERGOING ALTERATIONS OR IMPROVEMENTS IF THE RESIDENTIAL PROPERTY WAS BUILT AND AVAILABLE FOR USE ON OR BEFORE JANUARY 1, 1994. PLEASE REFER TO "PLUMBING FIXTURE REPLACEMENT (SB407) REQUIREMENTS AND POLICY" TO DETERMINE IF THE PROJECT REQUIRES COMPLIANCE.

SMOKE ALARMS & CARBON MONOXIDE ALARMS:

KITCHEN RENOVATIONS WILL REQUIRE SMOKE AND CARBON MONOXIDE ALARMS FOR THE DWELLING TO MEET THE CURRENT CODE PRIOR TO THE FINAL INSPECTION AS FOLLOWS: [CRC R314 & R315]

SMOKE ALARMS ARE REQUIRED IN ALL SLEEPING ROOMS, OUTSIDE EACH SLEEPING AREA AND IN THE IMMEDIATE VICINITY OF THE BEDROOMS, ON EACH FLOOR LEVEL INCLUDING BASEMENTS AND HABITABLE ATTICS, BUT NOT INCLUDING CRAWL SPACES AND UNINHABITABLE ATTICS.

CARBON MONOXIDE ALARMS ARE REQUIRED IN DWELLING UNITS AND SLEEPING UNITS WHEN FUEL-BURNING APPLIANCES ARE INSTALLED AND/OR DWELLING UNITS HAVE ATTACHED GARAGES. EITHER CONDITION REQUIRES ALARMS.

WHEN MORE THAN ONE ALARM OF EITHER TYPE IS REQUIRED TO BE INSTALLED WITHIN AN INDIVIDUAL DWELLING UNIT, THE ALARM DEVICES SHALL BE INTERCONNECTED IN SUCH A MANNER THAT ACTIVATION OF ONE ALARM WILL ACTIVATE ALL THE OTHER ALARMS.

IN EXISTING CONDITIONS, ALARMS MAY BE BATTERY OPERATED WHEN THE REPAIRS OR ALTERATIONS DO NOT RESULT IN THE REMOVAL OF THE WALL AND CEILING FINISHES OR THERE IS NO ACCESS BY MEANS OF AN ATTIC, BASEMENT OR CRAWLSPACE.

MULTIPURPOSE ALARMS THAT COMBINE BOTH A SMOKE ALARM AND CARBON MONOXIDE ALARM SHALL COMPLY WITH ALL APPLICABLE STANDARDS OF BOTH CRC SECTIONS R314 AND R315.

LEGEND :

- NEW WALL (2X4 STUD WALL @ 16" O.C.)
- NEW WALL (2X4 STUD WALL @ 16" O.C.) 1HR FIRE WALL
- DENOTES WINDOWS AND DOOR SIZE OPENINGS
- DENOTES BRACED WALL

- <N> REHEEM 50 GAL. TANK-HEAT PUMP-WATER HEATER @ OUTSIDE 4,200 BTU/HR
- <N> BLUERIDGE HEAT PUMP-MINI SPLIT @ CONDITIONED FIVE ZONES 57,000 BTU/HR
- <N> 22" X 30" ATTIC ACCESS
- <N> CEILING CASSETTE HEAT PUMP AIR HANDLER
- <N> 36" INDUCTION GAS RANGE/OVEN 8,400 W-29,000 BTU/H
- <N> WASHER/DRYER SET ELECTRICAL-DRYER 10,000 BTU/H
- <N> 24" DISHWASHER 1440 W.

PLAN NOTES.

DUAL CARB/ SMOKE ALARMS.

SMOKE ALARMS:

DWELLINGS ARE TO BE EQUIPPED WITH SMOKE ALARMS INSTALLED IN THE FOLLOWING LOCATIONS: [CRC §314]

IN EACH EXISTING SLEEPING ROOM.

OUTSIDE EACH SEPARATE SLEEPING AREA IN THE IMMEDIATE VICINITY OF THE BEDROOMS. ON EACH STORY INCLUDING BASEMENTS AND HABITABLE ATTICS AND NOT INCLUDING CRAWL SPACES AND UNINHABITABLE ATTICS.

INSTALLED NOT LESS THAN 3 FEET HORIZONTALLY FROM THE DOOR OR OPENING OF A BATHROOM THAT CONTAINS A BATHTUB OR SHOWER UNLESS THIS WOULD PREVENT PLACEMENT OF A SMOKE ALARM REQUIRED BY CRC §R314.3.

CARBON MONOXIDE ALARMS:

DWELLINGS THAT HAVE ATTACHED GARAGES WITH AN OPENING THAT COMMUNICATES WITH THE DWELLING UNIT, OR FUEL BURNING APPLIANCES, OR FIRE PLACE ARE TO BE EQUIPPED WITH CARBON MONOXIDE ALARMS INSTALLED IN THE FOLLOWING LOCATIONS: [CRC §315.3]

OUTSIDE EACH SEPARATE SLEEPING AREA IN THE IMMEDIATE VICINITY OF THE BEDROOMS.

ON EVERY OCCUPABLE LEVEL OF A DWELLING UNIT INCLUDING BASEMENTS.

WHERE A FUEL-BURNING APPLANCE IS LOCATED WITHIN A BEDROOM OR ITS ATTACHED BATHROOM, A CARBON MONOXIDE ALARM SHALL BE INSTALLED WITHIN THE BEDROOM.

ALARM INTERCONNECTION AND POWER:

SMOKE AND CARBON MONOXIDE ALARMS ARE REQUIRED TO BE INTERCONNECTED SUCH THAT ACTIVATION OF ONE ALARM WILL ACTIVATE ALL OF THE ALARMS AND SHALL RECEIVE THEIR PRIMARY POWER FROM THE BUILDING WIRING. EXCEPTION: WHERE REPAIRS OR ALTERATIONS TO EXISTING BUILDINGS DO NOT RESULT IN THE REMOVAL OF WALL AND CEILING FINISHES AND THERE IS NO ACCESS BY MEANS OF ATTIC, BASEMENT OR CRAWL SPACE. [CRC §314 AND §315]

WINDOWS.

GLAZING AND WET SURFACES:

SAFETY GLAZING SHALL BE PROVIDED IN WALLS OR ENCLOSURES CONTAINING BATHTUBS OR SHOWERS, OR FACING TUBS WHERE THE BOTTOM EXPOSED EDGE OF THE GLAZING IS LESS THAN 60 INCHES MEASURED VERTICALLY ABOVE ANY STANDING OR WALKING SURFACE. EXCEPTION: GLAZING THAT IS MORE THAN 80 INCHES MEASURED HORIZONTALLY AND IN A STRAIGHT LINE, FROM THE WATER'S EDGE OF A BATHTUB, HOT TUB, SPA OR WHIRLPOOL. [CRC §R308.4.5] CODE COMPLIANCE CHECKLIST - BATHROOMS AND LAUNDRY PAGE 3 OF 3

WINDOW MODIFICATIONS:

REPLACEMENT AND NEW WINDOWS SHALL HAVE A U-FACTOR EQUAL TO 0.32 OR LOWER. EXCEPTIONS: REPLACEMENT SKYLIGHTS, OR NEW SKYLIGHTS UP TO 16 SQUARE FEET MAY HAVE A U-FACTOR OF 0.55. WHEN 75 SQUARE FEET OR LESS OF FENESTRATION IS REPLACED WINDOWS MAY HAVE A U-FACTOR OF 0.45. [CEC §150.2(B)] FOR WINDOW MODIFICATIONS IN HILLSIDE FIRE ZONES 2 AND 3, REFER TO WINDOW AND DOOR CODE COMPLIANCE CHECKLIST.

BATHROOM.

WATER CLOSET SETTING:

WATER CLOSET SHALL BE SET NO CLOSER THAN 15 INCHES FROM ITS CENTER TO ANY SIDE WALL OR OBSTRUCTION NOR CLOSER THAN 30 INCHES CENTER TO CENTER TO ANY OTHER PLUMBING FIXTURE. [CPC §402.5]

WATER CLOSET CLEARANCE:

THE MINIMUM CLEAR SPACE IN FRONT OF THE WATER CLOSET SHALL BE NOT LESS THAN 24 INCHES. [CPC §402.5]

SHOWER SIZE:

SHOWER COMPARTMENT SHALL HAVE A MINIMUM FINISHED INTERIOR OF 1,024 SQUARE INCHES AND SHALL ALSO BE CAPABLE OF ENCOMPASSING A 30 INCH DIAMETER CIRCLE. THE MINIMUM REQUIRED AREA AND DIMENSIONS SHALL BE MEASURED AT A HEIGHT EQUAL TO THE TOP OF THRESHOLD. THE AREA AND DIMENSIONS SHALL BE MAINTAINED TO A POINT OF NOT LESS THAN 70 INCHES ABOVE THE SHOWER DRAIN OUTLET WITH NO PROTRUSIONS OTHER THAN THE FIXTURE VALVE OR VALVES, SHOWERHEAD, SOAP DISHES, SHELVES AND SAFETY GRAB BARS OR RAILS. [CPC §408.6]

SHOWER DOORS:

SHOWER DOORS SHALL OPEN OUTWARD SO AS TO MAINTAIN A 22 INCH UNOBSTRUCTED OPENING WIDTH. [CPC §408.9]

BACKING BOARD MATERIALS:

SHOWER AND TUB/SHOWER WALLS SHALL BE PROVIDED WITH A MOISTURE RESISTANT UNDERLAYMENT (E.G. FIBER-CEMENT BACKER BOARD, FIBER-REINFORCED GLASS PANEL, GLASS MAT GYPSUM BACKING PANEL, OR FIBER MAT REINFORCED CEMENTITIOUS BACKER UNITS) TO A MINIMUM HEIGHT OF 72 INCHES ABOVE THE FLOOR. [CRC SEC R307.2, R702.4]

WATER CONSERVING PLUMBING FIXTURES:

MAXIMUM FLOW RATE FOR WATER CLOSETS IS 1.28 GALLONS PER FLUSH. [CGBSC 4.303.1.1]

MAXIMUM FLOW RATE FOR SHOWERHEADS IS 1.8 GALLONS PER MINUTE. FOR MULTIPLE SHOWERHEADS SERVING ONE SHOWER, THE COMBINED FLOW RATE OF ALL SHOWERHEADS AND/OR OTHER SHOWER OUTLETS CONTROLLED BY A SINGLE VALVE SHALL NOT EXCEED 1.8 GALLONS PER MINUTE AT 80 POUNDS PER SQUARE INCH. OR THE SHOWER SHALL BE DESIGNED TO ALLOW ONLY ONE SHOWER OUTLET TO BE IN OPERATION AT A TIME. A HANDHELD SHOWER IS CONSIDERED A SHOWERHEAD. [CGBSC 4.303.1.3]

FLOW RATE FOR LAVATORY FAUCETS IS 1.2 GALLONS PER MINUTE MAXIMUM AND 0.8 GALLONS PER MINUTE MINIMUM. [CGBSC 4.303.1.4.1.1] PRIOR TO FINAL INSPECTION ALL NON-COMPLIANT PLUMBING FIXTURES SHALL BE UPGRADED WITH WATER-CONSERVING FIXTURES AS REQUIRED BY CIVIL CODE §1101.1.

A COMPLETED AND SIGNED CERTIFICATE OF COMPLIANCE SHALL BE PROVIDED TO THE BUILDING INSPECTOR.

ELECTRICAL

REQUIREMENTS:

AT LEAST ONE 120-VOLT, 20-AMP CIRCUIT SHALL BE PROVIDED FOR BATHROOM RECEPTACLE OUTLETS OR PROVIDE A DEDICATED 20-AMP CIRCUIT FOR EACH INDIVIDUAL BATHROOM WHEN ALTERED. BATHROOM LIGHTING SHALL NOT BE ON AN OUTLET CIRCUIT. [CEC §210.11(C)(3)]

AT LEAST ONE 20-AMP CIRCUIT SHALL BE PROVIDED FOR LAUNDRY APPLIANCES. LAUNDRY LIGHTING SHALL NOT BE ON AN OUTLET CIRCUIT. [CEC §210.11(C)(2)]

AT LEAST ONE RECEPTACLE OUTLET SHALL BE PROVIDED WITHIN 3 FEET OF THE OUTSIDE EDGE OF EACH BASIN. THE RECEPTACLE OUTLET SHALL BE LOCATED ON A WALL THAT IS ADJACENT TO THE BASIN, OR ON THE SIDE OR FACE OF THE BASIN CABINET NOT MORE THAN 12 INCHES BELOW THE COUNTER TOP. [CEC §210.52(D)]

ALL RECEPTACLE OUTLETS IN THE REMODELED BATHROOMS) AND IN LAUNDRY AREA SHALL BE GFCI PROTECTED. GROUND FAULT CIRCUIT INTERRUPTERS SHALL BE LOCATED IN A READILY ACCESSIBLE LOCATION. [CEC §210.8(A)]

RECEPTACLES ARE INSTALLED WITHIN 8 FEET OF THE OUTSIDE EDGE OF A SINK, BATHTUB OR SHOWER STALL SHALL BE GFCI PROTECTED. [CEC §210.8(A)]

ALL ADDED/REPLACED RECEPTACLES SHALL BE LISTED TAMPER-RESISTANT [CEC §406.12]

LIGHTING

REQUIREMENTS:

ALL INSTALLED LUMINAIRES SHALL BE HIGH EFFICACY. [CEC §150.0(K)(1A) AND TABLE 150.0-A]

IN BATHROOMS AND LAUNDRY ROOMS, AT LEAST ONE LUMINAIRE IN EACH OF THESE SPACES SHALL BE CONTROLLED BY A VACANCY SENSOR. [CEC §150.0 (K)(2)]

LUMINAIRES RECESSED INTO INSULATED CEILINGS: (A) SHALL BE LISTED FOR ZERO CLEARANCE INSULATION COVER (IC RATED); (B) SHALL INCLUDE A LABEL CERTIFYING AIR TIGHT (AT) WITH AIR LEAKAGE LESS THAN 2.0 CFM AT 75 PASCALS; (C) SHALL BE SEALED WITH A GASKET OR CAULK BETWEEN THE LUMINARY HOUSING AND CEILING; (D) IF RECESSED LIGHTS ARE EQUIPPED WITH BALLASTS, SHALL ALLOW BALLAST MAINTENANCE AND REPLACEMENT WITHOUT REQUIRING CUTTING OF HOLES IN THE CEILING; AND (E) SHALL NOT CONTAIN SCREW BASE SOCKETS. [CECS SEC 150(K)(12)]

ALL LUMINAIRES INSTALLED IN DAMP LOCATIONS SHALL BE MARKED "SUITABLE FOR WET LOCATIONS" OR "SUITABLE FOR DAMP LOCATIONS". [CEC §410.10 (D)]

VENTILATION REQUIREMENTS:

EACH BATHROOM CONTAINING A BATHTUB, SHOWER OR TUB/SHOWER COMBINATION SHALL BE MECHANICALLY VENTILATED AND SHALL COMPLY WITH THE FOLLOWING: [CRC §R303.3, CMC §402.5 AND CGBSC §4.506.1]

FANS SHALL BE ENERGY STAR COMPLIANT AND DUCTED TO TERMINATE OUTSIDE THE BUILDING. BATHROOM EXHAUST FANS) MUST BE CONTROLLED BY A HUMIDISTAT WHICH SHALL BE READILY ACCESSIBLE - A HUMIDITY CONTROL MAY BE A SEPARATE COMPONENT TO THE EXHAUST FAN AND IS NOT REQUIRED TO BE INTEGRAL (I.E., BUILT IN).

EXHAUST FANS SHALL BE SWITCHED SEPARATELY FROM LIGHTING SYSTEM. [CEC §150.0(K)(2)(B)]

TOILET ROOMS, WHICH ARE NOT EQUIPPED WITH A WINDOW THAT PROVIDES A VENTILATION OPENING OF AT LEAST 1.5 SQUARE FEET, SHALL BE PROVIDED WITH MECHANICAL VENTILATION WITH AN EXHAUST CAPACITY OF AT LEAST 50 CUBIC FEET PER MINUTE. [CRC §R303.3]

TERMINATION OF ALL ENVIRONMENTAL AIR DUCTS (E.G., BATH FAN, DRYER VENT, ETC.) SHALL BE AT LEAST 3 FEET FROM A PROPERTY LINE AND FROM OPENINGS INTO THE BUILDING, AND 10 FEET FROM A FORCED AIR INLET. [CMC §504.2.1]

LAUNDRY

DRYER MOISTURE EXHAUST:

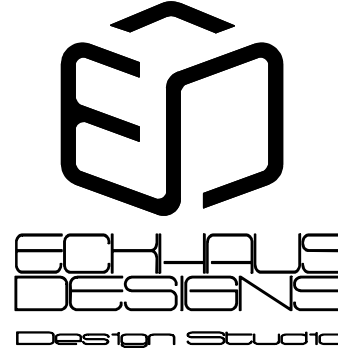
MOISTURE EXHAUST DUCT SHALL TERMINATE TO THE OUTSIDE AND SHALL BE EQUIPPED WITH A BACKDRAFT DAMPER. EXHAUST DUCT LENGTH IS LIMITED TO A COMBINED HORIZONTAL AND VERTICAL LENGTH OF 14 FEET WITH 2 ELBOWS. TWO FEET SHALL BE DEDUCTED FOR EACH 90 DEGREE ELBOW IN EXCESS OF TWO. [CMC §504.4.2.1 AND §504.1.1]

LAUNDRY MAKEUP AIR:

A MINIMUM OPENING OF 100 SQUARE INCHES FOR MAKEUP AIR SHALL BE PROVIDED IN THE LAUNDRY CLOSET DOOR OR BY OTHER APPROVED MEANS. [CMC §504.4.1]

BUILDING ENVELOPE MODIFICATIONS:

EXTERIOR WALL, FLOOR AND ROOF FRAMING SPACES OPENED UP DURING THE COURSE OF REMODEL SHALL BE INSULATED. R-13 (2X4 WALL), R-19 (2X6 WALL), R-19 (FLOOR), R-30 (ATTIC ROOF), AND R-19 (CATHEDRAL CEILING INSULATION. [CEC §150.0 (A)(C)(D)]



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Signature of Enrique Eckhaus Gil

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PROJECT:

**33 & 35
LIVE OAK RD
ROYAL OAKS CA
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**APN
181-032-003-000**

CODES.

2022 California Building Standards Code
(Cal. Code Regs., Tit. 24)

- Part 1 - California Administrative Code
- Part 2 - California Building Code
- Part 2.5 - California Residential Code
- Part 3 - California Electrical Code
- Part 4 - California Mechanical Code
- Part 5 - California Plumbing Code
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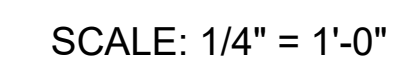
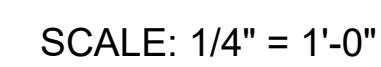
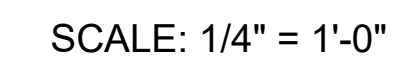
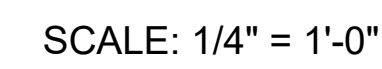
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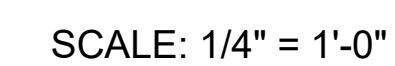
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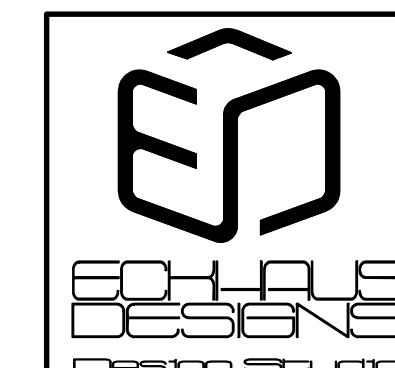
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A3



DOOR SCHEDULE					
CONDITION	TYPE	SIZE	MATERIAL / DESCRIPTION	LOCATION	QTY
NEW	SOLID	3.0 X 6.8	WOOD / ENTRY	LIVING ROOM	1
NEW	HOLLOW	2.8 X 6.8	ALUMINIUM / INTERIOR	BEDROOMS BATHROOM LAUNDRY	8
NEW	HOLLOW	2.0 X 6.8	ALUMINIUM / INTERIOR	CLOSET ENTRY	1
NEW	HOLLOW	2.6 X 6.8	ALUMINIUM / INTERIOR	PANTRY	1
NEW	HOLLOW	7.0 X 6.8	WOOD / CLOSET	BEDROOM #1,2	1
NEW	HOLLOW	6.0 X 6.8	ALUM. / GLASS / SLIDING	LIVING ROOM HALLWAY	1





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T24.1	ENERGY CALC.

REVISIONS

1 NOVEMBER-15-23

2 FEBRUARY-29-24



DATE _____

AUGUST-01-
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E.ECKHAUS/F.BALDERAS/A.ALONSO

2023-07

SHEET

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2022 CALIFORNIA ELECTRICAL CODE CEC

110.14(D) (D) **TERMINAL CONNECTION TORQUE.** TIGHTENING TORQUE VALUES FOR TE CONNECTIONS SHALL BE AS INDICATED ON EQUIPMENT OR IN INSTA INSTRUCTIONS PROVIDED BY THE MANUFACTURER. AN APPROVED MEANS SHALL TO ACHIEVE THE INDICATED TORQUE VALUE. INFORMATIONAL NOTE NO.

1: EXAMPLES OF APPROVED MEANS OF ACHIEVING THE INDICATED TORQUE VALUES I TORQUE TOOLS OR DEVICES SUCH AS SHEAR BOLTS OR BREAKAWAY-STYLE DEVICI VISUAL INDICATORS THAT DEMONSTRATE THAT THE PROPER TORQUE HAS BEEN APPI INFORMATIONAL NOTE NO.

2: THE EQUIPMENT MANUFACTURER CAN BE CONTACTED IF NUMERIC TORQUE VAL NOT INDICATED ON THE EQUIPMENT OR IF THE INSTALLATION INSTRUCTIONS A AVAILABLE. INFORMATIVE ANNEX I OF UL STANDARD 486A-486B, STANDARD FOR WIRE CONNECTORS, PROVIDES TORQUE VALUES IN THE ABSENCE OF MANUFAC RECOMMENDATIONS. INFORMATIONAL NOTE NO.

3: ADDITIONAL INFORMATION FOR. TORQUING THREADED CONNECTION TERMINATIONS CAN BE FOUND IN SECTION 8.11 OFNPPA 70B-2019, RECOMM PRACTICE FOR ELECTRICAL EQUIPMENT MAINTENANCE.

210.8 **GROUND-FAULT CIRCUIT-INTERRUPTER PROTECTION FOR PERSONNEL.** GROUND CIRCUIT-INTERRUPTER PROTECTION FOR PERSONNEL SHALL BE PROVIDED AS REQ 210.8(A) THROUGH (F). THE GROUND-FAULT CIRCUIT INTERRUPTER SHALL BE INSTAL READILY ACCESSIBLE LOCATION.

210.8(A) **DWELLING UNITS.** ALL 125-VOLT THROUGH 250-VOLT RECEPTACLES INSTALLED LOCATIONS SPECIFIED IN 210.8(A)(L) THROUGH (A) (11) AND SUPPLIED BY SINGL BRANCH CIRCUITS RATED 150 VOLTS OR LESS TO GROUND SHALL HAVE GROUND CIRCUIT-INTERRUPTER PROTECTION FOR PERSONNEL.

(1) BATHROOMS
(2) GARAGES AND ALSO ACCESSORY BUILDINGS THAT HAVE A FLOOR LOCATED AT OF GRADE LEVEL NOT INTENDED AS HABITABLE ROOMS AND LIMITED TO STORAGE WORK AREAS, AND AREAS OF SIMILAR USE
(3) OUTDOORS

EXCEPTION TO (3): RECEPTACLES THAT ARE NOT READILY ACCESSIBLE AND ARE SUPPL BRANCH CIRCUIT DEDICATED TO ELECTRIC SNOW-MELTING, DEICING, OR PIPELI VESSEL HEATING EQUIPMENT SHALL BE PERMITTED TO BE INSTALLED IN ACCORDAN 426.28 OR 427.22, AS APPLICABLE.
(4) CRAWL SPACES - AT OR BELOW GRADE LEVEL
(5) BASEMENTS

EXCEPTION TO (5): A RECEPTACLE SUPPLYING ONLY A PERMANENTLY INSTALLED FIRE OR BURGLAR ALARM SYSTEM SHALL NOT BE REQUIRED TO HAVE GROUND-FAULT CIRCUIT-INTEF PROTECTION.

INFORMATIONAL NOTE: SEE 760.41(8) AND 760.121(8) FOR POWER REQUIREMENTS FOR FIRE ALARM SYSTEMS. RECEPTACLES INSTALLED UNDER THE EXCEPTION TO 210.8(A)(5) SHALL NOT BE CON AS MEETING THE REQUIREMENTS OF 210.52(0).

(6) KITCHENS - WHERE THE RECEPTACLES ARE INSTALLED TO SERVE THE COUN SURFACES
(7) SINKS - WHERE RECEPTACLES ARE INSTALLED WITHIN 1.8 M (6 FT) FROM THE TO EDGE OF THE BOWL OF THE SINK
(8) BOATHOUSES

(9) BATHTUBS OR SHOWER STALLS - WHERE RECEPTACLES ARE INSTALLED WITHIN 1.8 OF THE OUTSIDE EDGE OF THE BATHTUB OR SHOWER STALL

445.18 (A) **DISCONNECTING MEANS AND EMERGENCY SHUTDOWN.**
DISCONNECTING MEANS. GENERATORS OTHER THAN CORD-AND-PLUG-CON PORTABLE GENERATORS SHALL HAVE ONE OR MORE DISCONNECTING MEAN: DISCONNECTING MEANS SHALL SIMULTANEOUSLY OPEN ALL ASSOCIATED UNGR CONDUCTORS. EACH DISCONNECTING MEANS SHALL BE LOCKABLE OPEN IN ACCO WITH 110.25.

(B) **EMERGENCY SHUTDOWN OF PRIME MOVER.** GENERATORS SHALL HAVE PROVISIONS DOWN THE PRIME MOVER. THE MEANS OF SHUTDOWN SHALL COMPLY WITH ALL FOLLOWING:
(1) BE EQUIPPED WITH PROVISIONS TO DISABLE ALL PRIME MOVER START C CIRCUITS TO RENDER THE PRIME MOVER INCAPABLE OF STARTING
(2) INITIATE A SHUTDOWN MECHANISM THAT REQUIRES A MECHANICAL RESET THE PROVISIONS TO SHUT DOWN THE PRIME MOVER SHALL BE PERMITTED TO SATI REQUIREMENTS OF 445.15(A) WHERE IT IS CAPABLE OF BEING LOCKED IN THE OPEN POSITION IN ACCO WITH 110.25.

(C) **REMOTE EMERGENCY SHUTDOWN.** GENERATORS WITH GREATER THAN 15 KW SHALL BE PROVIDED WITH A REMOTE EMERGENCY STOP SWITCH TO SHUT DOWN TH MOVER. THE REMOTE EMERGENCY STOP SWITCH SHALL BE LOCATED OUTSI EQUIPMENT ROOM OR GENERATOR ENCLOSURE AND SHALL ALSO MEET THE REQUIR OF 445.18(8)(1) AND (8)(2).

(D) **EMERGENCY SHUTDOWN IN ONE- AND TWO-FAMILY DWELLING UNITS.** FOR OTIH CORD-AND-PLUG-CONNECTED PORTABLE GENERATORS, AN EMERGENCY SHUTDOWN SHALL BE LOCATED OUTSIDE THE DWELLING UNIT AT A READILY ACCESSIBLE LOCATIC

(E) **GENERATORS INSTALLED IN PARALLEL.** WHERE A GENERATOR IS INSTALLED IN PARALL OTHER GENERATORS, THE PROVISIONS OF 445. L 8(A) SHALL BE CAPABLE OF ISOLAT GENERATOR OUTPUT TERMINALS FROM THE PARALLELING EQUIPMENT. THE DISCONNECTING MEANS SHALL NOT BE REQUIRE LOCATED AT THE GENERATOR.

480.7 **DC DISCONNECT METHODS.**
480.7(B) **EMERGENCY DISCONNECT.** FOR ONE-FAMILY AND TWO-FAMILY DWELLING A DISCONI MEAN. OR ITS REMOTE CONTROL FOR A STATIONARY BATTERY SYSTEM, SHALL BE L AT A READILY ACCESSIBLE LOCATION OUTSIDE THE BUILDING FOR EMERGENCY L DISCONNECT SHALL BE LABELED "EMERGENCY DISCONNECT".

(10) LAUNDRY AREAS
EXCEPTION TO (1) THROUGH (3), (5) THROUGH (8), AND (10): LISTED LOCKING SUPPC MOUNTING RECEPTACLES UTILIZED IN COMBINATION WITH COMPATIBLE ATTAI FITTINGS INSTALLED FOR THE PURPOSE OF SERVING A CEILING LUMINAIRE OR CEILU SHALL NOT BE REQUIRED TO BE GROUND-FAULT CIRCUIT- INTERRUPTER PROTECT GENERAL-PURPOSE CONVENIENCE RECEPTACLE IS INTEGRAL TO THE CEILING LUMIN CEILING FAN, GFCI PROTECTION SHALL BE PROVIDED.
(11) LINDOOR DAMP AND WET LOCATIONS

210.8(B) (B) **OTHER THAN DWELLING UNITS.** ALL 125-VOLT THROUGH 250- VOLT RECE SUPPLIED BY SINGLE-PHASE BRANCH CIRCUITS RATED 150 VOLTS OR LESS TO GRO AMPERES OR LESS, AND ALL RECEPTACLES SUPPLIED BY THREE-PHASE BRANCH C RATED 150 VOLTS OR LESS TO GROUND, 100 AMPERES OR LESS, INSTALLED IN THE LO • SPECIFIED IN 210.8(B)(L) THROUGH (B)(12) SHALL HAVE GROUND-FAULT I INTERRUPTER PROTECTION FOR PERSONNEL.

(8) GARAGES, ACCESSORY BUILDINGS, SERVICE BAYS, AND SIMILAR AREAS OTHE VEHICLE EXHIBITION HALLS AND SHOWROOMS
EXCEPTION TO (1) THROUGH (5), (8), AND (10): LISTED LOCKING SUPPORT AND MO RECEPTACLES UTILIZED IN COMBINATION WITH COMPATIBLE ATTACHMENT F INSTALLED FOR THE PURPOSE OF SERVING A CEILING LUMINAIRE OR CEILING FAN SH BE REQUIRED TO BE GROUND-FAULT CIRCUIT-INTERRUPTER PROTECTED. IF A G PURPOSE CONVENIENCE RECEPTACLE IS INTEGRAL TO THE CEILING LUMINAIRE OR FAN, GFCI PROTECTION SHALL BE PROVIDED.

210.8(E) **EQUIPMENT REQUIRING SERVICING.** GFCI PROTECTION SHALL BE PROVIDED I RECEPTACLES REQUIRED BY 210.63.
210.8(F) **OUTDOOR OUTLETS.** ALL OUTDOOR OUTLETS FOR DWELLINGS, OTHER THAN THOSE C IN 210.8(A)(3), EXCEPTION TO (3), THAT ARE SUPPLIED BY SINGLE-PHASE BRANCH C RATED 150 VOLTS TO GROUND OR LESS, 50 AMPERES OR LESS, SHALL HAVE GROUND CIRCUIT-INTERRUPTER PROTECTION FOR PERSONNEL. EXCEPTION: GROUND-FAULT I INTERRUPTER PROTECTION SHALL NOT BE REQUIRED ON LIGHTING OUTLETS OTIH THOSE COVERED IN 210.8(C).

210.15 **RECONDITIONED EQUIPMENT. THE FOLLOWING SHALL NOT BE RECONDITIONED:**
(1) EQUIPMENT THAT PROVIDES GROUND-FAULT CIRCUIT-INTERRUPTER PROTECTI PERSONNEL
(2) EQUIPMENT THAT PROVIDES ARC-FAULT CIRCUIT-INTERRUPTER PROTECTION
(3) EQUIPMENT THAT PROVIDES GROUND-FAULT PROTECTION OF EQUIPMENT

210.52(C)(2) **ISLAND AND PENINSULAR COUNTERTOPS AND WORK SURFACES.** RECEPTACLE C SHALL BE INSTALLED IN ACCORDANCE WITH 210.52(C)(2)(A) AND (C)(2)(B).
(A) AT LEAST ONE RECEPTACLE OUTLET SHALL BE PROVIDED FOR THE FIRST 0.8- FT2), OR FRACTION
THEREOF, OF THE COUNTERTOP OR WORK SURFACE. A RECEPTACLE OUTLET S PROVIDED FOR EVERY ADDITIONAL 1.7 M2 (18 FT2), OR FRACTION THEREOF, COUNTERTOP OR WORK SURFACE.

(B) AT LEAST ONE RECEPTACLE OUTLET SHALL BE LOCATED WITHIN 600 MM (2 FT) OUTER END OF A PENINSULAR COUNTERTOP OR WORK SURFACE. ADDITIONAL RE RECEPTACLE OUTLETS SHALL BE PERMITTED TO BE LOCATED AS DETERMINED INSTALLER, DESIGNER, OR BUILDING OWNER. THE LOCATION OF THE RECI OUTLETS SHALL BE IN ACCORDANCE WITH 210.52(C)(3).

210.63 **EQUIPMENT REQUIRING SERVICING.** A 125-VOLT, SINGLE- PHASE, 15- OR 20-AMPERE RECEPTACLE OUTLET SHALL BE INSTALLED AT AN ACCESSIBLE LOCATION WITHIN 7. FT) OF THE EQUIPMENT AS SPECIFIED IN 210.63(A) AND (8).

230.62(C) (C) **BARRIERS.** BARRIERS SHALL BE PLACED IN SERVICE EQUIPMENT SUCH T UNINSULATED, UNGROUNDED SERVICE BUSBAR OR SERVICE TERMINAL IS EXPC INADVERTENT CONTACT BY PERSONS OR MAINTENANCE EQUIPMENT WHILE SERVICIN TERMINATIONS.

230.67(A) **SURGE-PROTECTIVE DEVICE.** ALL SERVICES SUPPLYING DWELLING UNITS SHALL BE PF WITH A SURGE- PROTECTIVE DEVICE (SPD).

230.82 **EQUIPMENT CONNECTED TO THE SUPPLY SIDE OF SERVICE DISCONNECT.** ONLY THE FOLL EQUIPMENT SHALL BE PERMITTED TO BE CONNECTED TO THE SUPPLY SIDE OF THE DISCONNECTING MEANS:
230.82(10) EMERGENCY DISCONNECTS IN ACCORDANCE WITH 230.85. IF ALL METAL HOUSIN SERVICE ENCLOSURES ARE GROUNDED IN ACCORDANCE WITH PART VII AND BOI ACCORDANCE WITH PART V OF ARTICLE 250.
230.82(11) METER-MOUNTED TRANSFER SWITCHES NOMINALLY RATED NOT IN EXCESS OF 100 THAT HAVE A SHORT- CIRCUIT CURRENT RATING EQUAL TO OR GREATER THAN THE AVAILABLE FAULT CUF METER-MOUNTED TRANSFER SWITCH SHALL BE LISTED AND BE CAPABLE OF TRANSI THE LOAD SERVED. A METER-MOUNTED TRANSFER SWITCH SHALL BE MARKED EXTERIOR WITH BOTH OF THE FOLLOWING:
A. A. METER-MOUNTED TRANSFER SWITCH B. B. NOT SERVICE EQUIPMENT

230.85 **EMERGENCY DISCONNECTS.** FOR ONE- AND TWO-FAMILY DWELLING UNITS, ALL CONDUCTORS SHALL TERMINATE IN DISCONNECTING MEANS HAVING A SHORT- CURRENT RATING EQUAL TO OR GREATER THAN THE AVAILABLE FAULT CURRENT, IN IN A READILY ACCESSIBLE OUTDOOR LOCATION. IF MORE THAN ONE DISCON PROVIDED, THEY SHALL BE GROUPED. EACH DISCONNECT SHALL BE ONE OF THE FOLL (1) SERVICE DISCONNECTS MARKED AS FOLLOWS: EMERGENCY DISCONNECT, SERVICE DISCONNECT
(2) METER DISCONNECTS INSTALLED PER 230.82(3) AND MARKED AS FOLLOWS: EME DISCONNECT, METER DISCONNECT,
(3) OTHER LISTED DISCONNECT SWITCHES OR CIRCUIT BREAKERS ON THE SUPP OF EACH SERVICE DISCONNECT THAT ARE SUITABLE FOR USE AS SERVICE EQL AND MARKED AS FOLLOWS:
EMERGENCY DISCONNECT,
NOT SERVICE EQUIPMENT
MARKINGS SHALL COMPLY WITH 110.21(B).

406.9(C) **BATHTUB AND SHOWER SPACE.** RECEPTACLES SHALL NOT BE INSTALLED WITHIN MEASURED 900 MM (3 FT) HORIZONTALLY AND 2.5 M (8 FT) VERTICALLY FROM THE THE BATHTUB RIM OR SHOWER STALL THRESHOLD. THE IDENTIFIED ZONE ENCOMPASSING AND SHALL INCLUDE THE SPACE DIRECTLY OVER THE TUB OR SHOWE EXCEPTION: IN BATHROOMS WITH LESS THAN THE REQUIRED ZONE THE RECEPTACLE(BE PERMITTED TO BE INSTALLED OPPOSITE THE BATHTUB RIM OR SHOWER STALL THR ON THE FARTHEST WALL WITHIN THE ROOM.

406.12 **TAMPER-RESISTANT RECEPTACLES.** ALL 15- AND 20-AMPERE, 125- AND 2 NONLOCKING-TYPE RECEPTACLES IN THE AREAS SPECIFIED IN 406.12(1) THROUGH (I BE LISTED TAMPER-RESISTANT RECEPTACLES.
(1) DWELLING UNITS, INCLUDING ATTACHED AND DETACHED GARAGES AND ACC BUILDINGS TO DWELLING UNITS. AND COMMON AREAS OF MULTIFAMILY DW SPECIFIED IN 210.52 AND 550.13

408.2(A) **CALIFORNIA ENERGY CODE REQUIREMENTS FOR PANELBOARDS IN SINGLE BUILDINGS [CEC].** IN SINGLE-FAMILY RESIDENTIAL BUILDINGS THAT INCLUDE ONE I DWELLINGS, PANELBOARDS SERVING THE INDIVIDUAL DWELLING UNIT SHALL BE PF WITH CIRCUIT BREAKER SPACES FOR HEAT PUMP WATER HEATERS, HEAT PUM HEATERS, ELECTRIC COOKTOPS AND ELECTRIC CLOTHES DRYERS AS SPECIFIED IN CAL ENERGY CODE SECTION 150.0 (N), (T), (U) AND (V).

230.82 **EQUIPMENT CONNECTED TO THE SUPPLY SIDE OF SERVICE DISCONNECT.** ONLY THE FOLL EQUIPMENT SHALL BE PERMITTED TO BE CONNECTED TO THE SUPPLY SIDE OF THE DISCONNECTING MEANS:
230.82(10) EMERGENCY DISCONNECTS IN ACCORDANCE WITH 230.85. IF ALL METAL HOUSIN SERVICE ENCLOSURES ARE GROUNDED IN ACCORDANCE WITH PART VII AND BOI ACCORDANCE WITH PART V OF ARTICLE 250.
230.82(11) METER-MOUNTED TRANSFER SWITCHES NOMINALLY RATED NOT IN EXCESS OF 100 THAT HAVE A SHORT- CIRCUIT CURRENT RATING EQUAL TO OR GREATER THAN THE AVAILABLE FAULT CUF METER-MOUNTED TRANSFER SWITCH SHALL BE LISTED AND BE CAPABLE OF TRANSI THE LOAD SERVED. A METER-MOUNTED TRANSFER SWITCH SHALL BE MARKED EXTERIOR WITH BOTH OF THE FOLLOWING:
A. A. METER-MOUNTED TRANSFER SWITCH B. B. NOT SERVICE EQUIPMENT

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(2) METER DISCONNECTS INSTALLED PER 230.82(3) AND MARKED AS FOLLOWS: EME DISCONNECT, METER DISCONNECT,
(3) OTHER LISTED DISCONNECT SWITCHES OR CIRCUIT BREAKERS ON THE SUPP OF EACH SERVICE DISCONNECT THAT ARE SUITABLE FOR USE AS SERVICE EQL AND MARKED AS FOLLOWS:
EMERGENCY DISCONNECT,
NOT SERVICE EQUIPMENT
MARKINGS SHALL COMPLY WITH 110.21(B).

406.9(C) **BATHTUB AND SHOWER SPACE.** RECEPTACLES SHALL NOT BE INSTALLED WITHIN MEASURED 900 MM (3 FT) HORIZONTALLY AND 2.5 M (8 FT) VERTICALLY FROM THE THE BATHTUB RIM OR SHOWER STALL THRESHOLD. THE IDENTIFIED ZONE ENCOMPASSING AND SHALL INCLUDE THE SPACE DIRECTLY OVER THE TUB OR SHOWE EXCEPTION: IN BATHROOMS WITH LESS THAN THE REQUIRED ZONE THE RECEPTACLE(BE PERMITTED TO BE INSTALLED OPPOSITE THE BATHTUB RIM OR SHOWER STALL THR ON THE FARTHEST WALL WITHIN THE ROOM.

406.12 **TAMPER-RESISTANT RECEPTACLES.** ALL 15- AND 20-AMPERE, 125- AND 2 NONLOCKING-TYPE RECEPTACLES IN THE AREAS SPECIFIED IN 406.12(1) THROUGH (I BE LISTED TAMPER-RESISTANT RECEPTACLES.
(1) DWELLING UNITS, INCLUDING ATTACHED AND DETACHED GARAGES AND ACC BUILDINGS TO DWELLING UNITS. AND COMMON AREAS OF MULTIFAMILY DW SPECIFIED IN 210.52 AND 550.13

408.2(A) **CALIFORNIA ENERGY CODE REQUIREMENTS FOR PANELBOARDS IN SINGLE BUILDINGS [CEC].** IN SINGLE-FAMILY RESIDENTIAL BUILDINGS THAT INCLUDE ONE I DWELLINGS, PANELBOARDS SERVING THE INDIVIDUAL DWELLING UNIT SHALL BE PF WITH CIRCUIT BREAKER SPACES FOR HEAT PUMP WATER HEATERS, HEAT PUM HEATERS, ELECTRIC COOKTOPS AND ELECTRIC CLOTHES DRYERS AS SPECIFIED IN CAL ENERGY CODE SECTION 150.0 (N), (T), (U) AND (V).

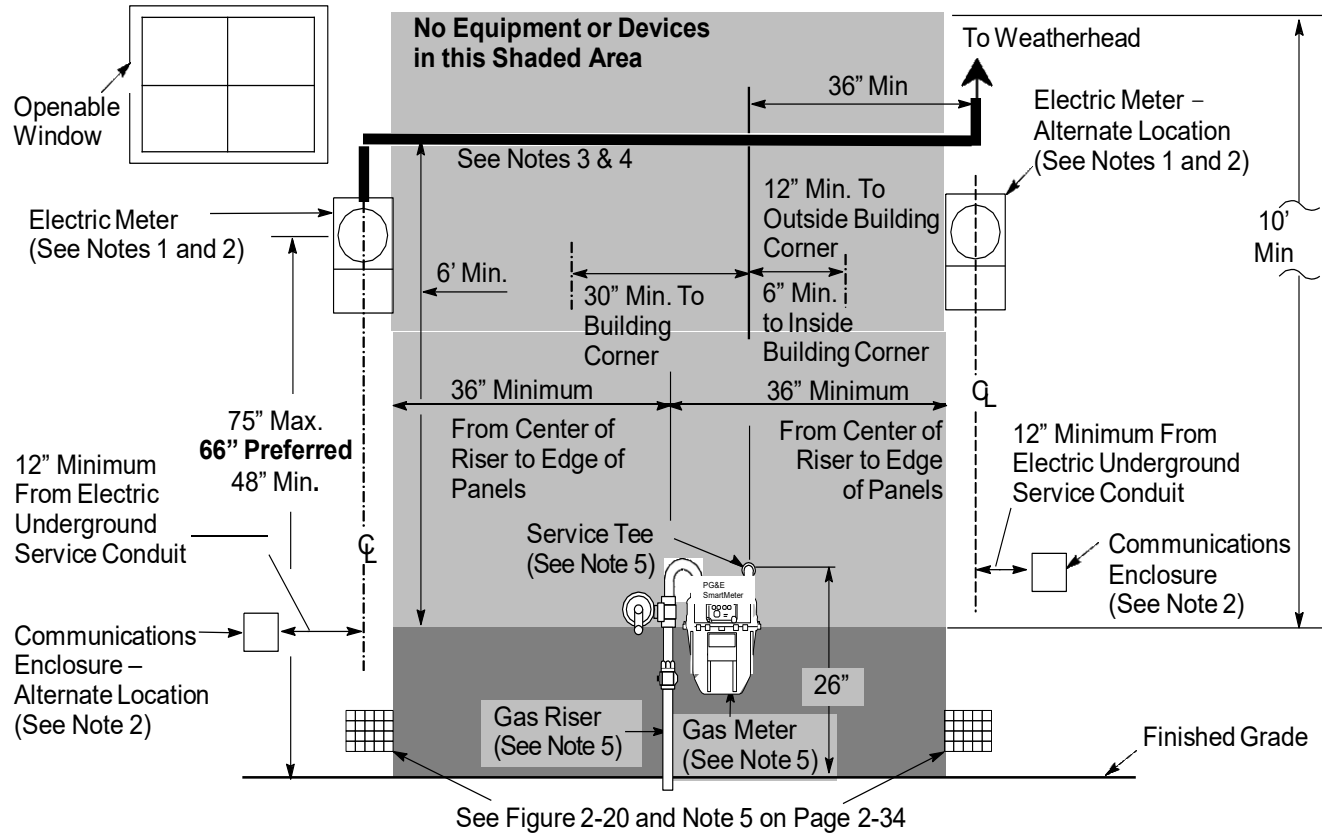
MINIMUM ELECTRIC AND GAS METER SET SEPARATION

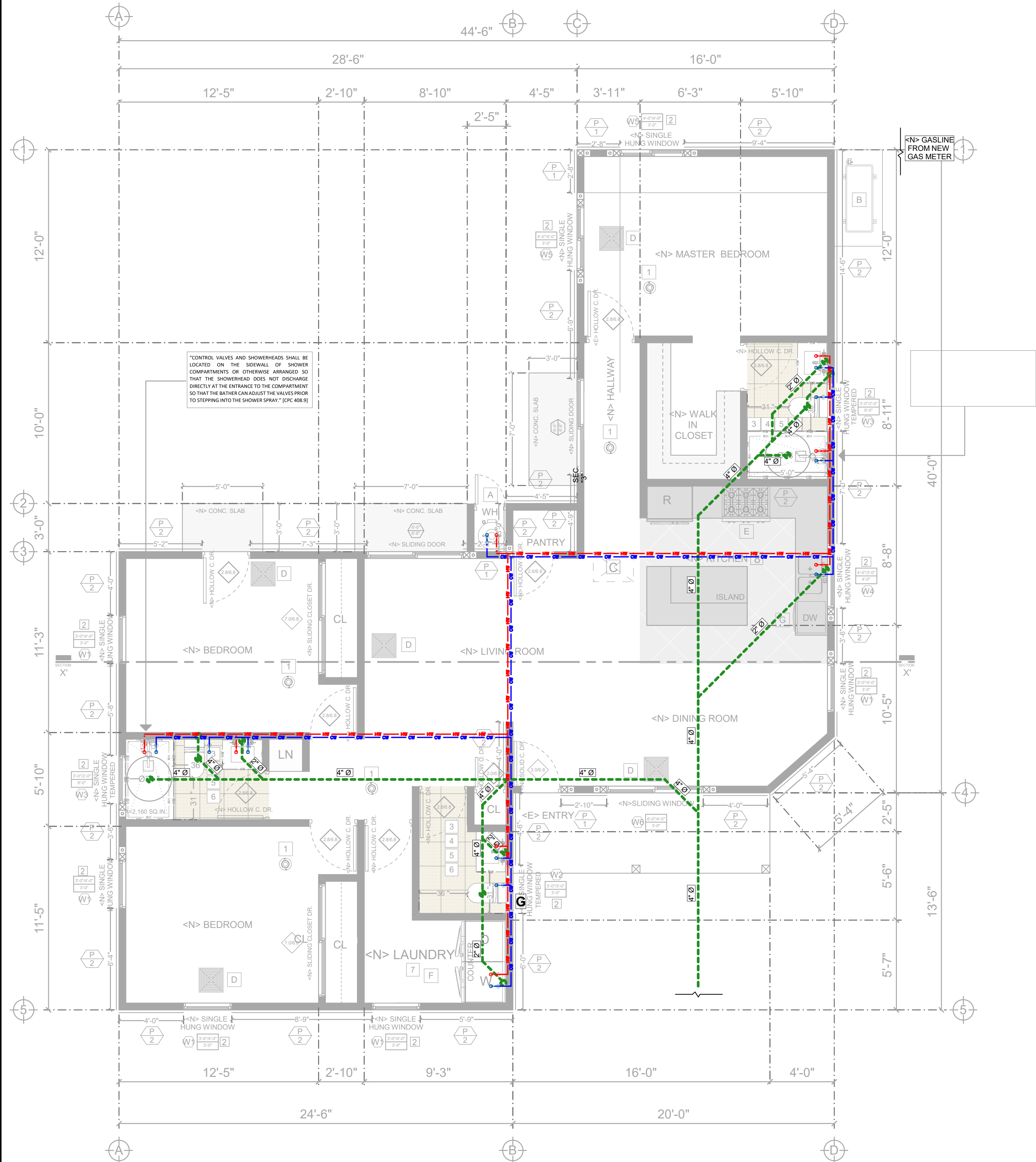
Section 2, Gas Service

2.4.2. (continued)

D. Minimum Meter Set Clearance Requirements

Figure 2-19, "Electric and Gas Meter Set Separation Dimensions and Clearances," below; Figure 2-20, "Gas Meter Set Clearance From Building Openings," on Page 2-34; and Figure 2-21, "Gas Regulator Set Clearance Requirement From Sources of Ignition," on Page 2-35, all represent various metering facilities' clearance requirements. If applicants install enclosures on their premises, the enclosures must meet the specifications provided in these illustrations.





BATHROOM REQUIREMENTS:

407.0 LAVATORIES

407.1 APPLICATION

LAVATORIES SHALL COMPLY WITH ASME A112.19.1/CSA B45.2, ASME A112.19.2/CSA B45.1, ASME A112.19.3/CSA B45.4, ASME A112.19.12, CSA B45.5/IAPMO Z124, OR CSA B45.11/IAPMO Z401.

407.2 WATER CONSUMPTION

THE MAXIMUM WATER FLOW RATE OF FAUCETS SHALL COMPLY WITH [SECTION 407.2.1](#) THROUGH [SECTION 407.2.2.1](#).

407.2.1 MAXIMUM FLOW RATE

THE MAXIMUM FLOW RATE FOR PUBLIC LAVATORY FAUCETS SHALL NOT EXCEED 0.5 GPM AT 60 PSI (1.9 L/M AT 414 KPA).

407.2.1.1 RESIDENTIAL LAVATORY FAUCETS [HCD 1]

THE MAXIMUM FLOW RATE OF RESIDENTIAL LAVATORY FAUCETS SHALL NOT EXCEED [1.2](#) GALLONS (4.54 L) PER MINUTE AT 60 PSI. THE MINIMUM FLOW RATE OF RESIDENTIAL LAVATORY FAUCETS SHALL NOT BE LESS THAN 0.8 GALLONS (3.03 L) PER MINUTE AT 20 PSI.

407.5 WASTE OUTLET

LAVATORIES SHALL HAVE A WASTE OUTLET AND FIXTURE TAILPIECE NOT LESS THAN 1 1/4 INCHES (32 MM) IN DIAMETER. CONTINUOUS WASTES AND FIXTURE TAILPIECES SHALL BE CONSTRUCTED FROM THE MATERIALS SPECIFIED IN [SECTION 701.4](#). WASTE OUTLETS SHALL BE PROVIDED WITH AN APPROVED STOPPER OR STRAINER.

408.0 SHOWERS

408.1 APPLICATION

MANUFACTURED SHOWER RECEPTORS AND SHOWER BASES SHALL COMPLY WITH ASME A112.19.1/CSA B45.2, ASME A112.19.2/CSA B45.1, ASME A112.19.3/CSA B45.4, OR CSA B45.5/IAPMO Z124.

408.2 WATER CONSUMPTION [HCD 1]

SHOWERHEADS SHALL HAVE A MAXIMUM FLOW RATE OF 1.8 GALLONS (6.81 L) PER MINUTE MEASURED AT 80 PSI AND MUST COMPLY WITH DIVISION [4.3](#) OF THE CALIFORNIA GREEN BUILDING STANDARDS CODE (CALGREEN).

408.2.1 SINGLE SHOWERHEAD [BSC-CG]

SHOWERHEADS SHALL HAVE A MAXIMUM FLOW RATE OF NOT MORE THAN 1.8 GALLONS (6.81 L) PER MINUTE AT 80 PSI. SHOWERHEADS SHALL BE CERTIFIED TO THE PERFORMANCE CRITERIA OF THE U.S. EPA WATERSENSE SPECIFICATION FOR SHOWERHEADS IN COMPLIANCE WITH [CHAPTER 5](#), DIVISION [5.3](#), OF THE CALIFORNIA GREEN BUILDING STANDARDS CODE (CALGREEN).

408.4 WASTE OUTLET

SHOWERS SHALL HAVE A WASTE OUTLET AND FIXTURE TAILPIECE NOT LESS THAN 2 INCHES (50 MM) IN DIAMETER. FIXTURE TAILPIECES SHALL BE CONSTRUCTED FROM THE MATERIALS SPECIFIED IN [SECTION 701.2](#) FOR DRAINAGE PIPING. STRAINERS SERVING SHOWER DRAINS SHALL HAVE A WATERWAY AT LEAST EQUIVALENT TO THE AREA OF THE TAILPIECE.

408.5 FINISHED CURB OR THRESHOLD

WHERE A SHOWER RECEPTOR HAS A FINISHED DAM, CURB, OR THRESHOLD IT SHALL BE NOT LESS THAN 1 INCH (25.4 MM) LOWER THAN THE SIDES AND BACK OF SUCH RECEPTOR. IN NO CASE SHALL A DAM OR THRESHOLD BE LESS THAN 2 INCHES (51 MM) OR EXCEEDING 9 INCHES (229 MM) IN DEPTH WHERE MEASURED FROM THE TOP OF THE DAM OR THRESHOLD TO THE TOP OF THE DRAIN. EACH SUCH RECEPTOR SHALL BE PROVIDED WITH AN INTEGRAL NAILING FLANGE TO BE LOCATED WHERE THE RECEPTOR MEETS THE VERTICAL SURFACE OF THE FINISHED INTERIOR OF THE SHOWER COMPARTMENT. THE FLANGE SHALL BE WATERTIGHT AND EXTEND VERTICALLY NOT LESS THAN 1 INCH (25.4 MM) ABOVE THE TOP OF THE SIDES OF THE RECEPTOR. THE FINISHED FLOOR OF THE RECEPTOR SHALL SLOPE UNIFORMLY FROM THE SIDES TOWARDS THE DRAIN NOT LESS THAN 1/4 INCH PER FOOT (20.8 MM/M), NOR MORE THAN 1/2 INCH PER FOOT (41.8 MM/M).

THRESHOLDS SHALL BE OF SUFFICIENT WIDTH TO ACCOMMODATE A MINIMUM 22 INCH (559 MM) DOOR. SHOWER DOORS SHALL OPEN SO AS TO MAINTAIN NOT LESS THAN A 22 INCH (559 MM) UNOBSTRUCTED OPENING FOR EGRESS. THE IMMEDIATE ADJOINING SPACE TO SHOWERS WITHOUT THRESHOLDS SHALL BE CONSIDERED A WET LOCATION AND SHALL COMPLY WITH THE REQUIREMENTS OF THE CALIFORNIA BUILDING, CALIFORNIA RESIDENTIAL AND CALIFORNIA ELECTRICAL CODES.

408.6 SHOWER COMPARTMENTS

SHOWER COMPARTMENTS, REGARDLESS OF SHAPE, SHALL HAVE A MINIMUM FINISHED INTERIOR OF 1024 SQUARE INCHES (0.6606 M²) AND SHALL ALSO BE CAPABLE OF ENCOMPASSING A 30 INCH (762 MM) CIRCLE. THE MINIMUM REQUIRED AREA AND DIMENSIONS SHALL BE MEASURED AT A HEIGHT EQUAL TO THE TOP OF THE THRESHOLD AND AT A POINT TANGENT TO ITS CENTERLINE. THE AREA AND DIMENSIONS SHALL BE MAINTAINED TO A POINT OF NOT LESS THAN 70 INCHES (1778 MM) ABOVE THE SHOWER DRAIN OUTLET WITH NO PROTRUSIONS OTHER THAN THE FIXTURE VALVE OR VALVES, SHOWERHEADS, SOAP DISHES, SHELVES, AND SAFETY GRAB BARS, OR RAILS. FOLD-DOWN SEATS IN ACCESSIBLE SHOWER STALLS SHALL BE PERMITTED TO PROTRUDE INTO THE 30 INCH (762 MM) CIRCLE.

409.0 BATHTUBS AND WHIRLPOOL BATHTUBS

409.1 APPLICATION

BATHTUBS SHALL COMPLY WITH ASME A112.19.1/CSA B45.2, ASME A112.19.2/CSA B45.1, ASME A112.19.3/CSA B45.4, OR CSA B45.5/IAPMO Z124. WHIRLPOOL BATHTUBS SHALL COMPLY WITH ASME A112.19.7/CSA B45.10. PRESSURE SEALED DOORS WITHIN A BATHTUB OR WHIRLPOOL BATHTUB ENCLOSURE SHALL COMPLY WITH ASME A112.19.15.

409.2 WASTE OUTLET

BATHTUBS AND WHIRLPOOL BATHTUBS SHALL HAVE A WASTE OUTLET AND FIXTURE TAILPIECE NOT LESS THAN 1 1/2 INCHES (40 MM) IN DIAMETER. FIXTURE TAILPIECES SHALL BE CONSTRUCTED FROM THE MATERIALS SPECIFIED IN [SECTION 701.2](#) FOR DRAINAGE PIPING. WASTE OUTLETS SHALL BE PROVIDED WITH AN APPROVED STOPPER OR STRAINER.

409.6 INSTALLATION AND ACCESS

BATHTUBS AND WHIRLPOOL BATHTUBS SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S INSTALLATION INSTRUCTIONS. ACCESS OPENINGS SHALL BE OF SIZE AND OPENING TO PERMIT THE REMOVAL AND REPLACEMENT OF THE CIRCULATION PUMP.

WHIRLPOOL PUMP ACCESS LOCATED IN THE CRAWL SPACE SHALL BE LOCATED NOT MORE THAN 20 FEET (6096 MM) FROM AN ACCESS DOOR, TRAP DOOR, OR CRAWL HOLE.

THE CIRCULATION PUMP SHALL BE LOCATED ABOVE THE CROWN WEIR OF THE TRAP.

THE PUMP AND THE CIRCULATION PIPING SHALL BE SELF-DRAINING TO MINIMIZE WATER RETENTION. SUCTION FITTINGS ON WHIRLPOOL BATHTUBS SHALL BE LISTED IN ACCORDANCE WITH ASME A112.19.7/CSA B45.10.

409.6.1 FLEXIBLE PVC HOSES AND TUBING

FLEXIBLE PVC HOSES AND TUBING INTENDED TO BE USED ON WHIRLPOOL BATHTUB WATER CIRCULATION SYSTEMS OR PNEUMATIC SYSTEMS SHALL BE IN ACCORDANCE WITH IAPMO Z1033.

411.0 WATER CLOSETS

411.1 APPLICATION

WATER CLOSETS SHALL COMPLY WITH ASME A112.19.2/CSA B45.1, ASME A112.19.3/CSA B45.4, OR CSA B45.5/IAPMO Z124. WATER CLOSET BOWLS FOR PUBLIC USE SHALL BE OF THE ELONGATED TYPE. IN NURSERIES, SCHOOLS, AND OTHER SIMILAR PLACES WHERE PLUMBING FIXTURES ARE PROVIDED FOR THE USE OF CHILDREN LESS THAN 6 YEARS OF AGE, WATER CLOSETS SHALL BE OF A SIZE AND HEIGHT SUITABLE FOR CHILDREN'S USE.

411.2 WATER CONSUMPTION

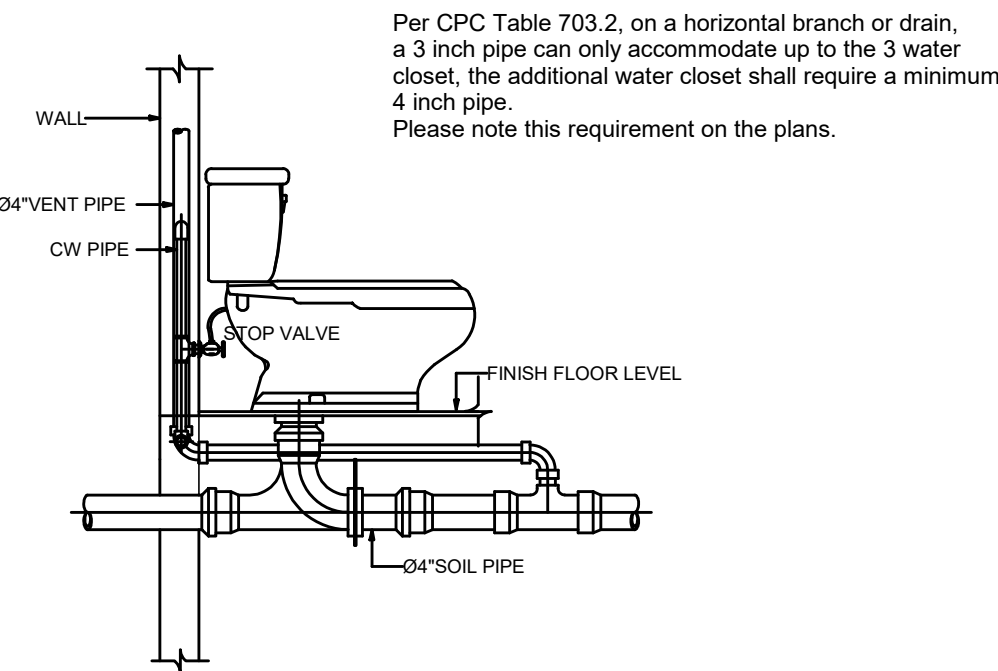
THE EFFECTIVE FLUSH VOLUME OF ALL WATER CLOSETS SHALL NOT EXCEED 1.28 GALLONS (4.8 L) PER FLUSH WHEN TESTED IN ACCORDANCE WITH ASME A112.19.2/CSA B45.1.

411.2.1 DUAL FLUSH WATER CLOSETS

DUAL FLUSH WATER CLOSETS SHALL COMPLY WITH ASME A112.19.14. THE EFFECTIVE FLUSH VOLUME FOR DUAL FLUSH WATER CLOSETS SHALL BE DEFINED AS THE COMPOSITE, AVERAGE FLUSH VOLUME OF TWO REDUCED FLUSHES AND ONE FULL FLUSH.

PLUMBING NOTES:

- 1. WASTE WATER PIPES TO BE 3" MIN. PVC PIPING
- 2. ALL SUPPLY LINES TO BE 1/2" COPPER.
- 3. ALL VENTS TO BE LOCATED AT PLUMBERS DISCRETION.



WATER CLOSET WITH FLUSH TANK (WC)

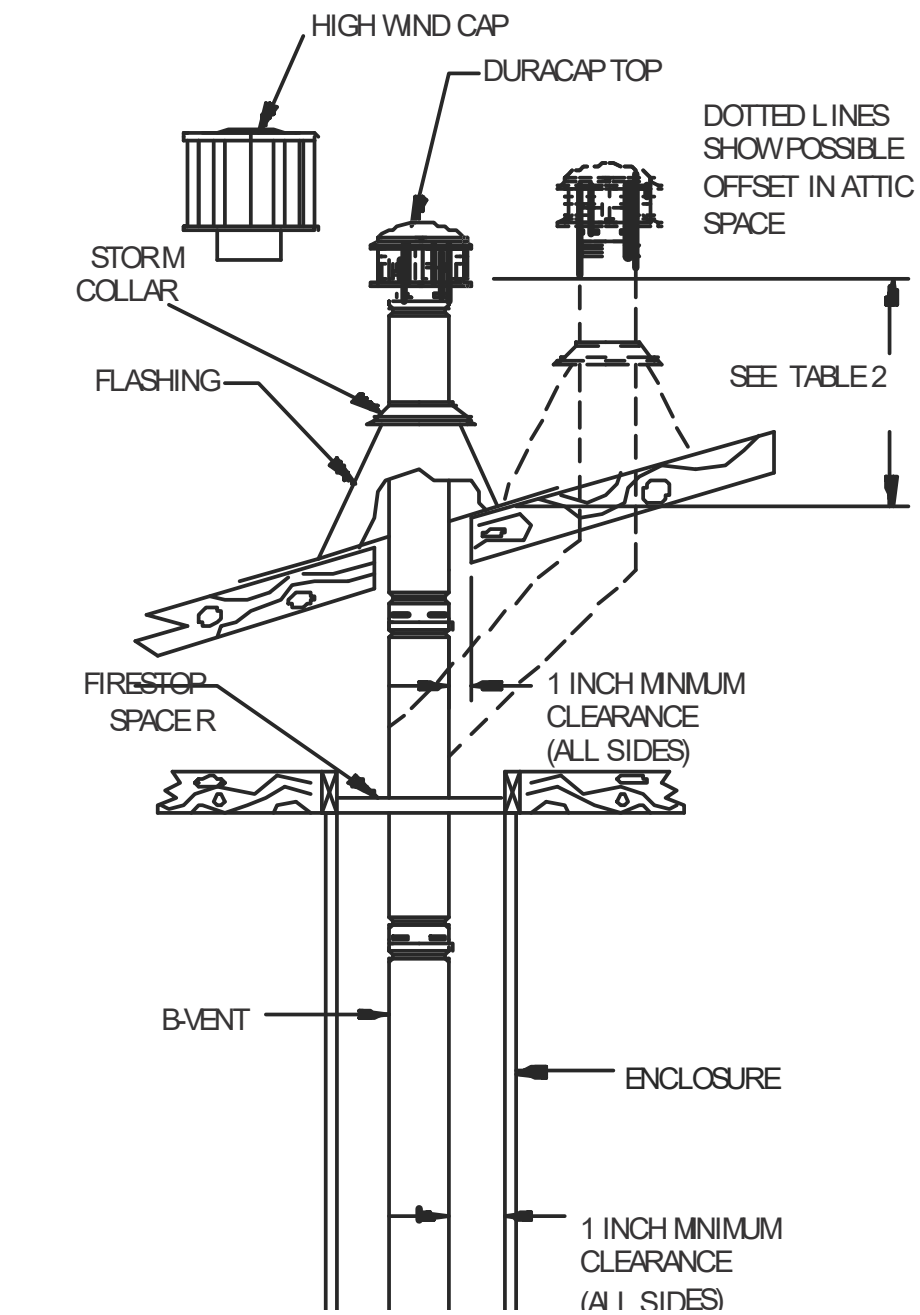
VENTING AND DRAINAGE PIPING FOR THE ADDITIONAL WATER CLOSET. PER CPC TABLE 703.2, ON A HORIZONTAL BRANCH OR DRAIN, A 3 INCH PIPE CAN ONLY ACCOMMODATE UP TO THE 3 WATER CLOSET, REQUIRE A MINIMUM 4 INCH PIPE.

ALL NEW PLUMBING FIXTURES SHALL COMPLY WITH THE MAXIMUM FLOW FOR CONSERVING FIXTURES IN THE TABLE BELOW.

FOR HOMES BUILT ON OR BEFORE JANUARY 1, 1994, ALL NON-COMPLIANT PLUMBING FIXTURES IN THE DWELLING UNITS SHALL BE REPLACED WITH WATER CONSERVING FIXTURES AS LISTED IN THE TABLE BELOW.

FIXTURE TYPE	NON-COMPLIANT (FLOW RATE OVER)	CONSERVING FIXTURES (MAX FLOW RATE)
SHOWER HEADS	2.5 GAL/MIN.	1.8 GAL/MIN. @ 80 psi
LAVATORY FAUCETS	2.2 GAL/MIN.	MAX. 1.2 GAL/MIN. @ 60 psi MIN. 0.8 GAL/MIN. @ 60 psi
KITCHEN FAUCETS	2.2 GAL/MIN.	1.8 GAL/MIN. @ 60 psi
WATER CLOSET	1.6 GAL/FLUSH	1.28 GAL/FLUSH
URINALS	1.6 GAL/FLUSH	0.125 GAL/FLUSH

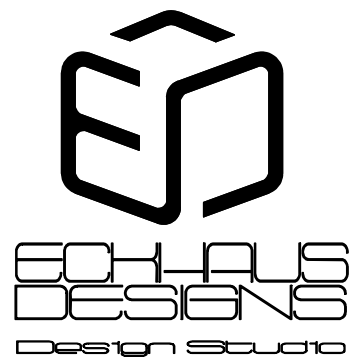
*FLOW RATES COMBINED FOR ALL SHOWERHEADS AND/OR OTHER OUTLETS CONTROLLED BY A SINGLE VALVE (CAL. STATE LAW SB407)



VENT CAP DETAIL

LEGEND:

- <N> WASTE LINE
- <E> WASTE LINE
- HW --- <N> HOT WATER LINE
- CW --- <N> COLD WATER LINE
- HW --- <E> HOT WATER LINE
- CW --- <E> COLD WATER LINE
- <N> GAS LINE
- <E> GAS LINE



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OWNER:
ISRAEL RANGEL

PROJECT:
**33 & 35
LIVE OAK RD
ROYAL OAKS CA
95075**

APN
181-032-003-000

- CODES.
- 2022 California Building Standards Code (Cal. Code Regs., Tit. 24)
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 - Part 2 – California Building Code
 - Part 2.5 – California Residential Code
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REVISIONS	
1	NOVEMBER-15-23
2	FEBRUARY-29-24
	DATE
	AUGUST-01-23
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	E. ECKHAUS / F. BALDERAS / A. ALONSO
	JOB
	2023-078
	SHEET

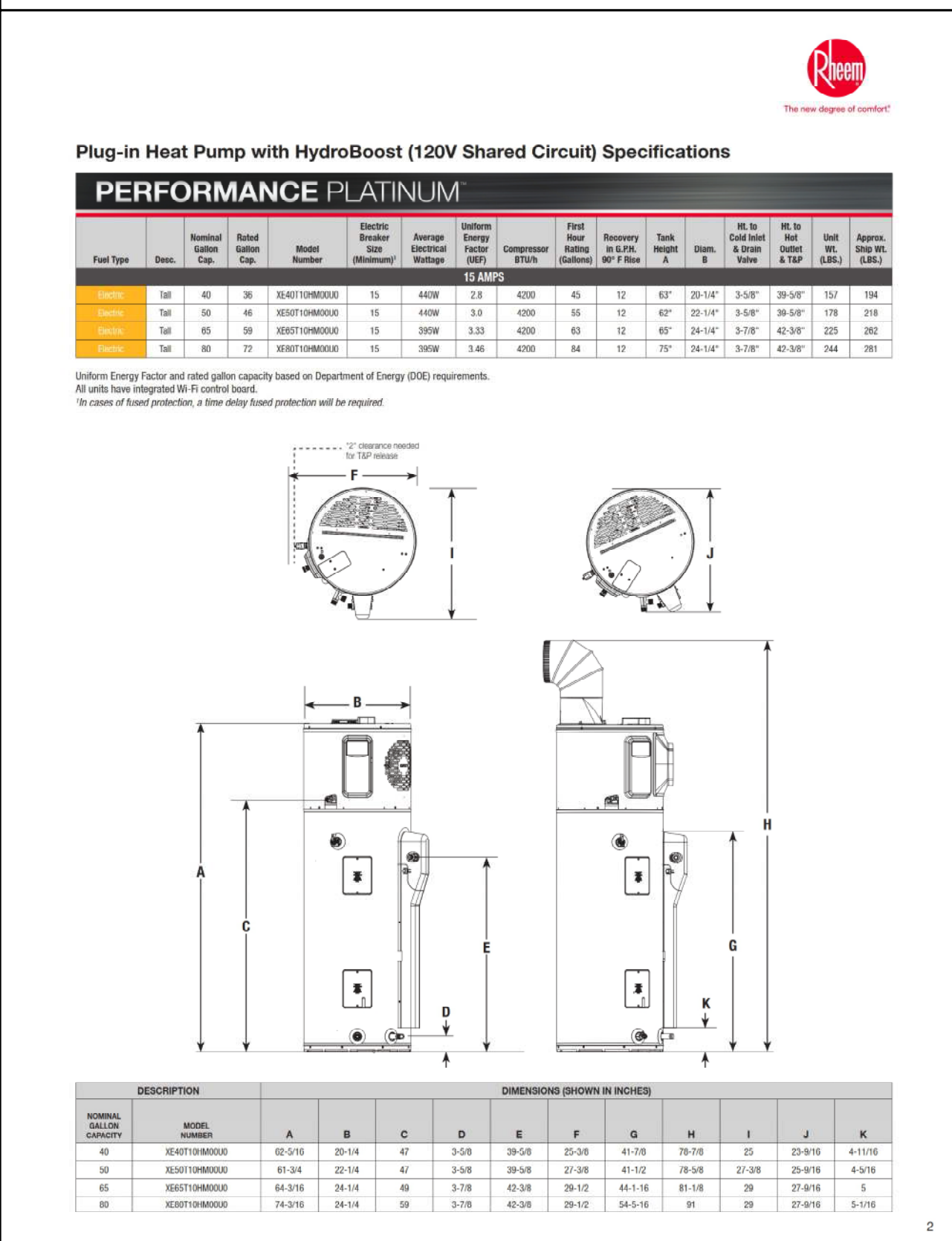
P1

PLUMBING PLAN

PROPOSED

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

REFRIGERANT PIPE DATA		Rated current (RLA) (A)		VGS74	
Refrigerant charge (PSIG)		Refrigerant oil/ohl charge (m)			
Design pressure (PSIG)		Outdoor fan motor			
Refrigerant Type		Dry		ZKFN-85-S-	
Refrigerant charge (lb)		Qty			
Refrigerant precharge (lb)		Input (W)		126	
Additional charge for each ft (96, 12 (1/4" input pipe)		Output (W)		85	
(oz/ft) (oz/ft)		Flow (mm)		900/8500-8500	
Additional charge for each ft (96, 12 (3/8" input pipe)		Air Speed & Noise level			
(oz/ft) (oz/ft)		Outdoor air flow (Max.) (CFM)		4500	
(oz/ft) (oz/ft)		Outdoor noise level (dB(A))		62	
Liquid side (mm)		Outdoor unit			
(mm) (mm)		Dimension (WxHxD) (inch)		37.48x16.32	
Gas side (mm)		Packing (WxHxD) (mm)		952x115x1	
(mm) (mm)		Net/ Gross weight (lb.)		225.5/259.5	
Max. length for all rooms (ft)		(kg)		102.31	
Max. length for one indoor unit (ft)					
(ft) (ft)					
Max. height difference between indoor and outdoor unit (ft)					
(ft) (ft)					
Max. height difference between indoor units (ft)					
(ft) (ft)					

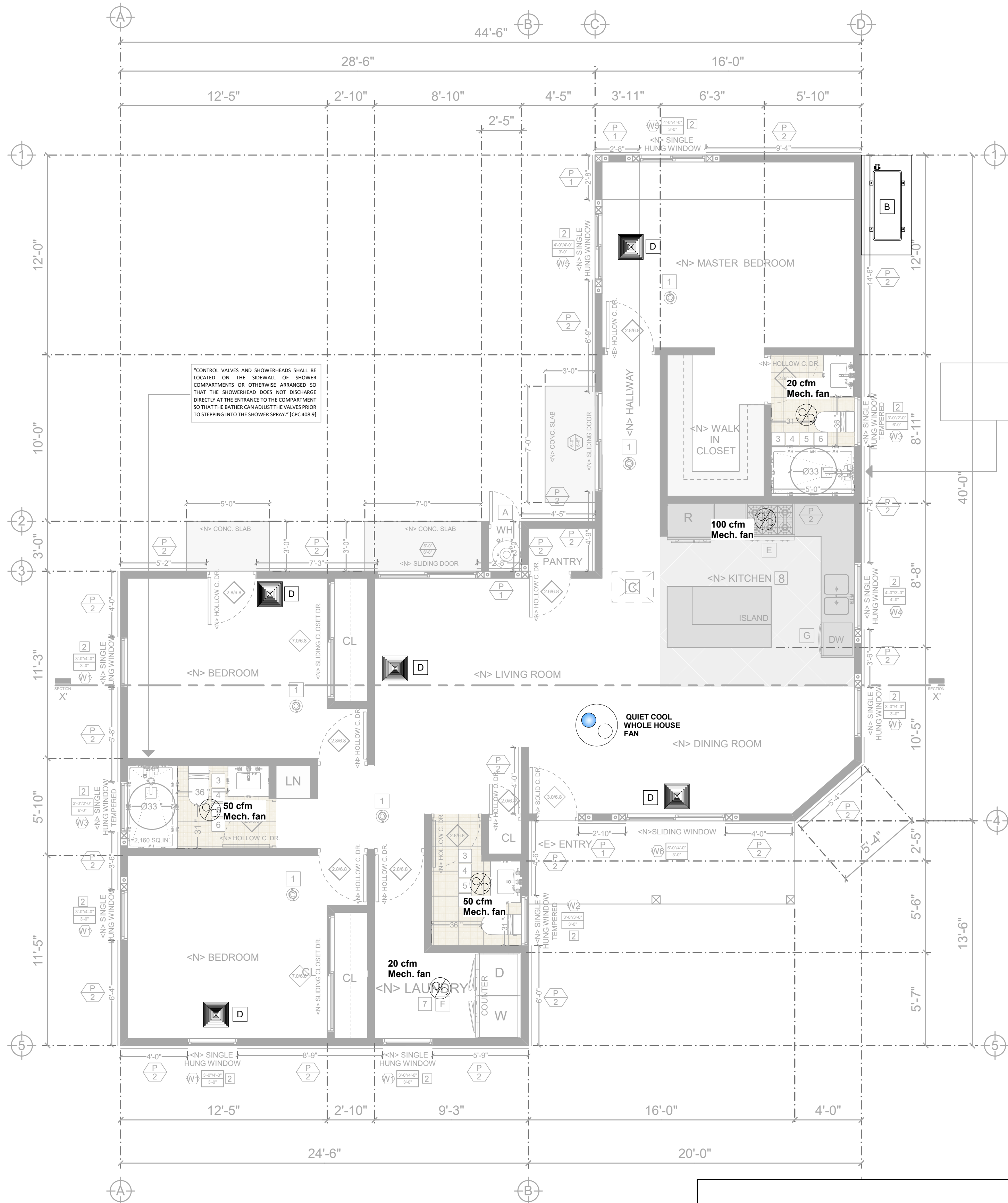


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P2



MECHANICAL PLAN

PROPOSED

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

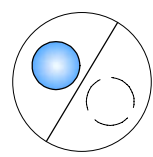


QC STL PRO-1.5X
QuietCool Stealth Pro Line



QC STL PRO-1.5X Specifications

Air Flow	1,478 CFM
VAV-B16 Airflow (for CA Title 24 New Construction)	1,040 CFM
Recommended SQFT Coverage @ 2-3 CFM per SQFT	Covers 439 SQFT to 739 SQFT
Energy Use	66.7 Watts
Amps	0.9
Motor Voltage	120 VAC, 60 Hz
# of Speeds	1
JBA	37.2
Minimum Attic Clearance	32"
Duct Diameter	14"
Duct Length	6 feet
Motor Head Diameter	14 1/2"
Motor Head Length	13 1/2"
Dampers	Barometric Pressurized RS Dampers
Controls (Sold Separately)	Included: 8 W Electronic Timer Optional: IT-3600 QuietCool RF Wireless Control Kit
Warranty	15 Years
Framing	None Required
Joist Cutting	None Required; fits 16" or 24" on center
Minimum Suggested Attic Venting	1.98 SQ FT net free area
Ceiling Rough Opening	14 1/4" x 14 1/4"
Removable Grille Outside Dimension	16" x 16"
Shipping Weight	43 lbs.
Box Dimensions	20" x 20" x 38"
In The Box	-QC STL PRO-1.5X Motorhead -Dampers Box -Ceiling Grille -6 Foot Duct -Cut-out Template -Accessory Bag -Window Locks -Controls



For more information, visit our website at:
QUIETCOOLSYSTEMS.COM

MECHANICAL NOTES:

THE WHOLE HOUSE VENTILATION SHALL BE BY MEANS OF CONTINUOUS EXHAUST VENTILATION [R106.1.1]

COOKING APPLIANCES SHALL HAVE A CLEARANCE ABOVE THE COOKING TOP OF NOT LESS THAN 30". A MINIMUM CLEARANCE OF 24" IS PERMITTED WHEN A VENTILATING HOOD CONSTRUCTED OF SHEET METAL NOT LESS THAN 0.0122" THICK IS INSTALLED ABOVE THE COOKING TOP WITH A CLEARANCE OF NOT LESS THAN 1/4" BETWEEN THE HOOD AND UNDERSIDE OF CABINET. [CMC 921.3.2]

A MINIMUM INTERMITTENT VENTILATION AIRFLOW RATE OF 100 CFM AND A MAXIMUM OF 3.0 SONE RATES ARE REQUIRED FOR KITCHEN EXHAUST FAN. [CMC 150(O) & ASHRAE 62.2]

CLOTHES DRYER MOISTURE EXHAUST SHALL TERMINATE OUTSIDE THE BUILDING AND HAVE A BACK-DRAFT DAMPER. EXHAUST DUCT IS LIMITED TO 14' WITH TWO ELBOWS. THIS SHALL BE REDUCED 2' FOR EVERY ELBOW IN EXCESS OF TWO. SHOW MINIMUM 4" DIAMETER, SMOOTH, METAL DUCT AND SHOW DUCT ROUTE ON PLANS. [CMC 504.4.2 & 504.4.2.1 & 504.4.2.2]

AIR DUCT EXHAUST SHALL TERMINATE NOT LESS THAN 3 FEET FROM OPENING INTO THE BUILDING. [CMC 502.2]

TABLE 1208.4.1

APPROXIMATE GAS INPUT FOR TYPICAL APPLIANCES
[NFPA 54: TABLE 5.4.2.1]

APPLIANCE	INPUT (Btu/h approx.)
Space Heating Units	
Warm air furnace	
Single family	100000
Multifamily, per unit	60000
Hydronic boiler	
Single family	100000
Multifamily, per unit	60000
Space and Water Heating Units	
Hydronic boiler	
Single family	120000
Multifamily, per unit	75000
Water Heating Appliances	
Water heater, automatic storage	
30 to 40 gallon tank	35000
50 gallon tank	50000
Water heater, automatic instantaneous	
Capacity at 2 gallons per minute	142800
Capacity at 4 gallons per minute	285000
Capacity at 6 gallons per minute	428400
Water heater, domestic, circulating or side-arm	35000
Cooking Appliances	
Range, freestanding, domestic	65000
Built-in oven or broiler unit, domestic	25000
Built-in top unit, domestic	40000
Other Appliances	
Refrigerator	3000
Clothes dryer, Type 1 (domestic)	35000
Gas fireplace direct vent	40000
Gas log	80000
Barbecue	40000
Gaslight	2500

For SI units: 1000 British thermal units per hour = 0.293 kW

Indoor Air Quality & Mechanical Ventilation (Mandatory Measure)

Under ASHRAE 62.2, there are several prescriptive methods of how to meet the Local Exhaust and Whole-Building Ventilation requirements. This summary guide will only discuss the simplest methods of Prescriptive Approach for meeting the ANSI/ASHRAE 62.2 requirements, which contractors will most likely use to meet these requirements as required by the 2008 Building Energy Efficiency Standards.

Code Requirements (Residential 2019 California Energy Code and ASHRAE 62.2)

The Mandatory Measures, Section 150-(c) is NEW for the 2019 California Energy Code. These mandatory measures required that low-rise residential buildings meet the requirements of ASHRAE Standard 62.2 for "Indoor Air Quality and Mechanical Ventilation". This is a health and safety measure developed by ASHRAE to ensure that dwelling units have acceptable indoor air quality.

1) **When Required?**

It is mandated for all newly-constructed low-rise residential buildings (up to 3 stories) and additions greater than 1,000 square feet (original building must also comply).

2) **Local Exhaust Ventilation Bathroom and Kitchen**

Each bathroom is required to have a 50 cfm minimum exhaust fan ducted to the outside. Bathroom is any room with a bathtub, shower, spa or similar sources of moisture. Toilet room is not considered a bathroom.

Each kitchen is required to have a 100 cfm minimum exhaust fan ducted to the outside. The range hood over the stove may be used to meet this requirement, but the range hood must be vented to the outside. Re-circulating range hoods cannot be used.

The ducting for the exhaust fan shall be sized according to ASHRAE Standard 62.2, Table 7.1 (see item

4). **Flex duct shall not be used in range hood.**

3) **Whole-Building Ventilation**

ANSI/ASHRAE STANDARD 62.2-2019

Table 4-15: Prescriptive Duct Sizing for Single-Fan Exhaust Systems
(ASHRAE 62.2 Table 4-15)
a. For rectangular ducts, calculate the diameter as four times the cross-sectional area divided by the perimeter.
b. The table assumes no elbows. Ducts 15/16" or 1/2" diameter duct length 15' or more above.
c. NL = no limit on duct length of this size.
d. If not listed, any length of duct of this size with assumed turns and fitting will exceed the rated pressure drop.

Duct Type	Flex Duct										Smooth Duct									
	50	60	70	80	90	100	110	120	130	140	50	60	70	80	90	100	110	120	130	140
Flow Rate, CFM @ 0.15 in. w.c. (ft. x 4.71 ft.)	(25)	(40)	(50)	(65)	(75)	(100)	(125)	(150)	(25)	(40)	(50)	(65)	(75)	(100)	(125)	(150)	(25)	(40)	(50)	(65)
Pressure, in. (mm)	Maximum Lengths (ft.)																			
31(75)	x	x	x	x	x	x	x	x	5(2)	x	x	x	x	x	x	x	x	x	x	x
41(100)	56	x	x	x	x	x	x	x	114	31	10	x	x	x	x	x	x	x	x	x
51(125)	1(7)	(1)							(5)	(9)	(1)									
61(150)	NL	81	42	16	2	x	x	x	NL	152	91	51	28	4	x	x				
71(175)		(25)	(40)	(50)	(65)	(75)	(100)	(125)	x	NL	NL	NL	NL	NL	NL	NL	148	86	54	9
81(200) and above	NL	NL	NL	NL	NL	NL	NL	NL	NL	NL	NL	NL	NL	NL	NL	NL	NL	NL	NL	NL

Required Information on Plans:

A note block should be provided on the plans that identifies a local exhaust ventilation and whole building ventilation.

1) **Local Exhaust Ventilation**

Bathroom	? Specify Bathroom Fan Flow (cfm) = <u>50</u> ; ? Duct Type = <u>flex duct</u> ; ? Duct Size (in) = <u>5</u> and Maximum Allowable Duct Length (ft) = <u>NL</u> ; ? This exhaust fan is required to be rated for sound at a maximum of 3 sones.
-----------------	--

Kitchen	? Specify Kitchen Fan Flow (cfm) = <u>100</u> ; ? Duct Type = <u>SMOOTH DUCT</u> ; ? Duct Size (in) = <u>6</u> and Maximum Allowable Duct Length (ft) = <u>NL</u> ; ? This exhaust fan is required to be rated for sound at a maximum of 3 sones.
----------------	--

2) **Whole-Building Ventilation**

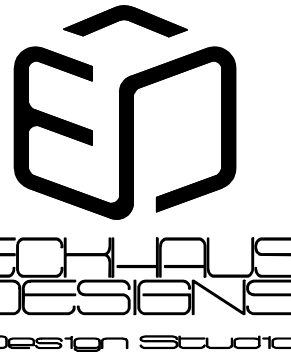
	? Specify Building Fan Flow (cfm) = <u>30</u> and Duct Type = <u>SD</u> ; ? Duct Size (in) = <u>6</u> and Maximum Allowable Duct Length (ft) = <u>NL</u> ; ? This exhaust fan is required to be rated for sound at a maximum of 1 sone; ? This exhaust fan is intended to operate continuously to ensure indoor air quality.
--	---

Note: Sone = unit of loudness. Normal talking at 3 feet away ranges from 1 to 4 sones.

ANSI/ASHRAE STANDARD 62.2-2019

Qfan = 0.03A_{floor} + 7.5(N_{br} + 1)
Qfan = 0.03 (1,046) + 7.5(1 + 1) = 96 cfm

REQUIRED 96 cfm
PROVIDED 450 cfm



ENRIQUE ECKHAUS GIL

Signature

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REVISIONS

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M1

FOUNDATION PLAN

PROPOSED

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

3. KEEP MINIMUM 1/16" CLEAR BETWEEN ALL PLYWOOD PANEL EDGES. 4. USE ONE PIECE PLYWOOD SHEETS AT BRACE WALLS - WHICH ARE 48" OR LESS IN WIDTH. 5. ALL PLYWOOD PANELS SHALL HAVE MINIMUM DIMENSION OF 24". 6. ALL NAILS SHALL BE COMMON NAILS. NOTIFY DESIGNER FOR ALTERNATE SPACING FOR BOX NAILS. 7. USE 3X STUDS AND 3X BLOCKING AT ALL PLYWOOD JOINTS. 8. ALL NAILING SHALL BE STAGGERED.				
MARK Existing	BRACING METHODS	BRACE WALL SHEATHING	BRACE WALL NAILING	SILL PLATE NAILING
	ABW	3/8" CDX PLYWOOD BLOCKED EDGES	8d @ 6" O.C. E.N. 8d @ 12" O.C. F.N.	HOLDOWN
	WSP	3/8" CDX PLYWOOD BLOCKED EDGES	8d @ 6" O.C. E.N. 8d @ 12" O.C. F.N.	16d @ 6" O.C.

B) ANCHOR BOLTS SHALL BE MINIMUM 1/2-INCH DIAMETER IN SDC D (5/8-INCH IN SDC E). [CRC R403.1.6]
C) ANCHOR BOLTS SHALL BE EMBEDDED AT LEAST 7 INCHES INTO THE FOUNDATION. [CRC R403.1.6]
D) ANCHOR BOLT SHALL BE SPACED NOT MORE THAN 6 FEET APART. [CRC R403.1.6.1]
E) THERE SHALL BE A MINIMUM OF TWO BOLTS PER SILL PIECE WITH ONE BOLT LOCATED NOT MORE THAN 12 INCHES OR LESS THAN 4 INCHES FROM EACH END OF THE SILL PIECE. [CRC R403.1.6]
F) INDICATE ON FOUNDATION PLAN PLATE WASHERS FOR THE ANCHOR BOLTS. MINIMUM 3 INCH BY 3 INCH BY 0.229 INCH THICK. STEEL PLATE WASHER MAY BE SLOTTED. [CRC R602.11.1]
G) MINIMUM CONCRETE COMPRESSIVE STRENGTH OF NOT LESS THAN 2500 PSI. [CRC TABLE 402.2]



AREA VENTILATION 1/150

6" X 14" = .58 sf.
144

VENTS REQ'D = $\frac{1,046}{150}$ = 6.97 VENTS

VENTS PROVIDED= 7 VENTS
openings to have 1/4" corrosion
resistant metal mesh covering

ATTENTION: All material specs, hardware and connection callouts, detail flags and section cuts, etc. that are given on the MASTER PLAN shall also be applied to the PARTIAL PLANS (although not graphically displayed) with the exception that the specs and callouts given on the PARTIAL PLANS shall supersede those on the MASTER PLAN.

1. foundation notes are given here for your convenience, contractor

2. CONCRETE:

- Concrete shall be of normal weight and $F_c' = 2,500$ psi minimum at 28 days
* Cement to be Portland cement ASTM C-150 type I or II. Type V may be required, see General Notes for additional requirements
* Aggregate per ASTM C-33
* Water to be clean and potable.
* High alumina cement must not be used in concrete because of high sulfide contents.
* No admixtures containing calcium chlorides or other chlorides shall be added to the concrete
- Unless shown otherwise on plans, cold joints are not allowed.
- Concrete placement shall be in one continuous operation, uniformly placed and must be vibrated and well consolidated.
- Concrete shall be cured per ACI 318-0.5 section 5.11 and ACI Committee 308 "Standard Practice for Curing Concrete".

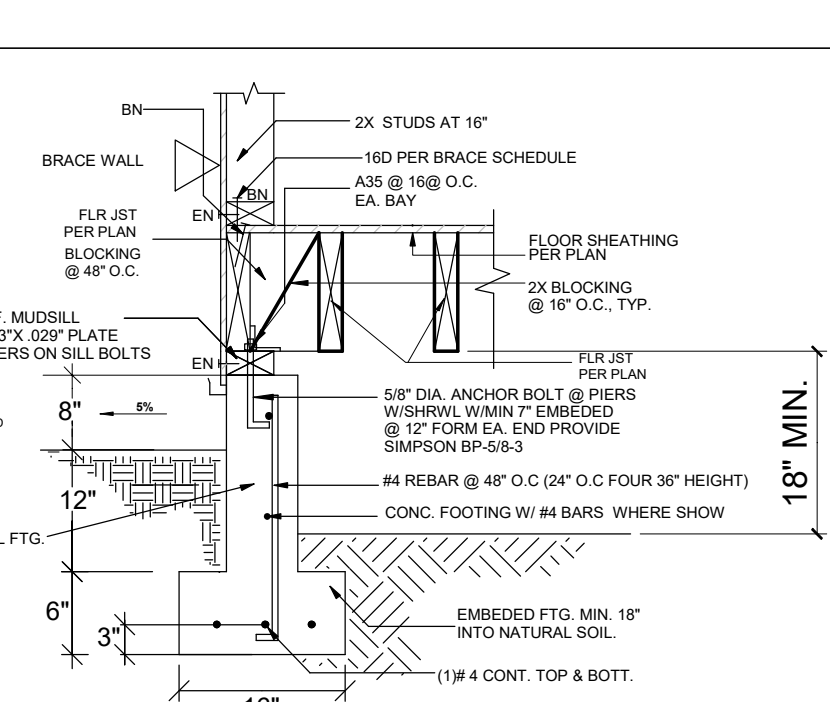
FOUNDATION NOTES

- REBARS:
 - Reinforcing steel shall be ASTM A615 Grade 60 for #5 & greater. Grade 40 for #3 & #4
 - rebars to be welded shall be ASTM A706
 - Lap all reinforcing splices a minimum 48 bar diameters but in no cases less than 24".
- HOLDOWN NOTES:
 - Holdown rods/straps shall be set in place prior to foundation inspection and concrete pouring.
 - Where strap holdowns are, foundation rebar must be located above and near the holdown return hook.
 - Simpson "STAB" bolts shall be used if so specified on plans or details. Where not specified, holdown rods may be standard "J" or "L" bolts, or threaded rod with double nut and washer at bottom.
- POST BASE: U.O.N., individual isolated posts bearing on concrete shall be secured by Simpson PB connectors (PBS at exterior locations) placed in the concrete.
- ANCHOR BOLTS:
 - Unless noted otherwise on the foundation plans, sill plates for all the exterior walls, interior bearing walls and interior shearwalls shall be anchored to the foundation with 5/8" diameter anchor bolts at a maximum spacing of 4 feet on center.
 - each anchor bolt shall be mounted on sill/mud plate with an iron plate washer of 3"x3"x0.229".
 - Replacement of anchor bolts to use MAS anchors is not permitted unless approved by Designer
- SUB-BASE preparation, see soils report for subbase and vapor barrier requirements.
- FRAMING ISSUES:
 - Unless specified otherwise, all holdowns (strap and rod) shall be attached to a 4x post which receives shearwall edge nailing along full height.
 - Where multiple studs are approved as a holdown post, the multiple pieces shall be internalized together with a minimum of 16d at 6" o.c.
 - ICC approved powder driven anchor pins (shot pins) may be used on interior non-shear and non-bearing walls. Shot pins shall be used in conjunction with plate washers and shall be spaced no more than 32" on center.

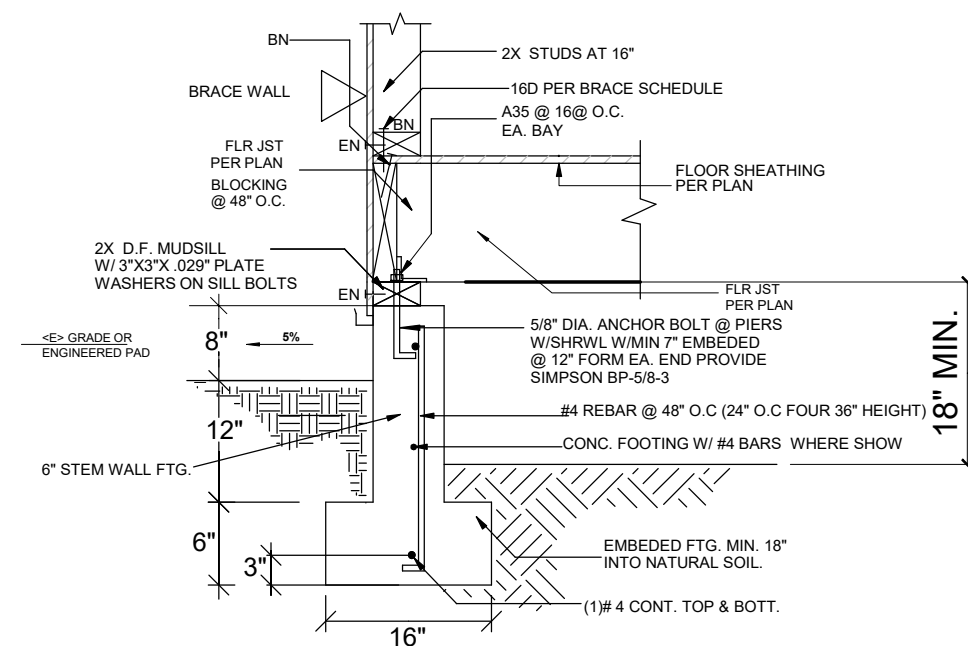
NEW 2 X 6 FLR. JOIST
@ 16" O.C. W/ OSB SHT.



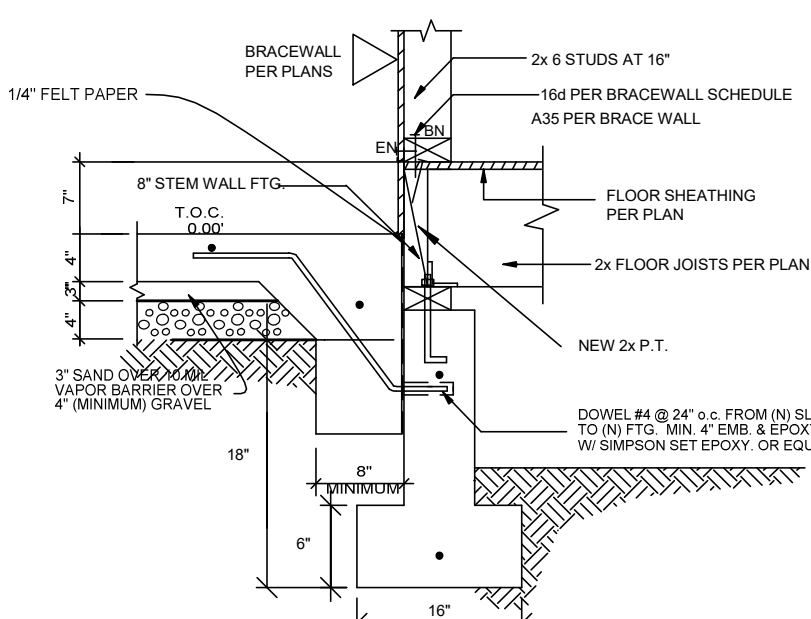
BEARING WALL CONSTRUCTION, PLAN NOTES:



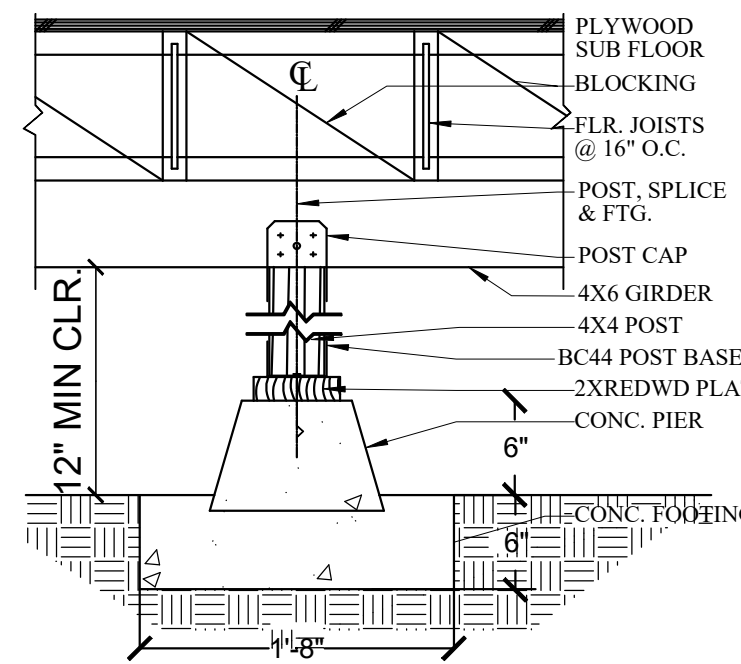
TYP. PERIMETER FTG. #7



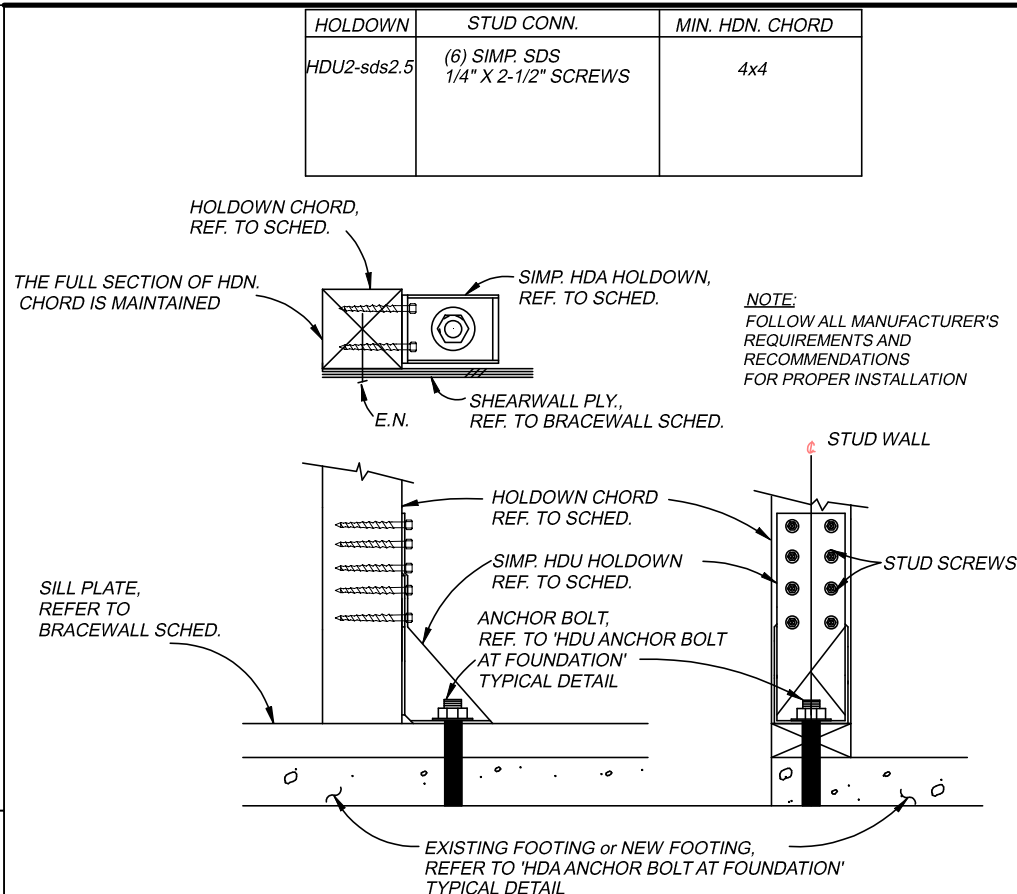
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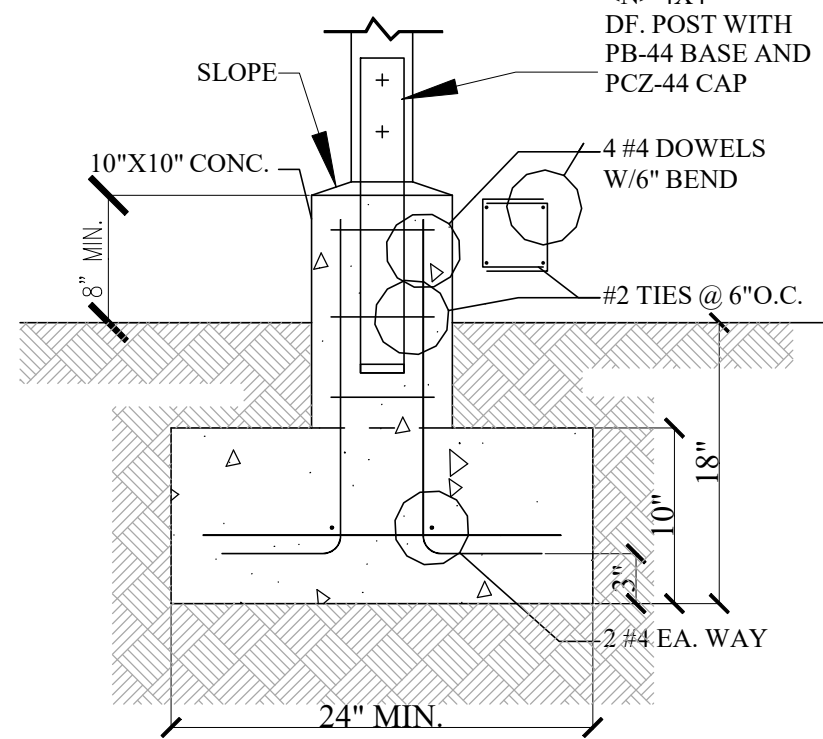
FLOOR CONNECTION #9.



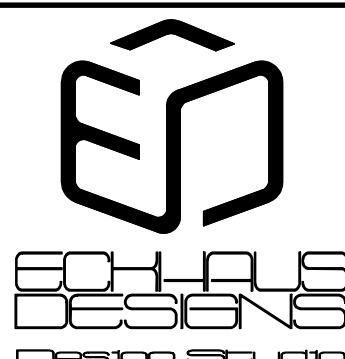
TYP. PIER DETAIL # 11



TYPICAL HDU HOLDOWNS # 5



COLUMN DETAIL. #5



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- Part 10 - California Existing Building Code
- Part 11 - California Green Building Standards Code (CALGreen)
- Part 12 - California Referenced Standards Code

INDEX PLANS.

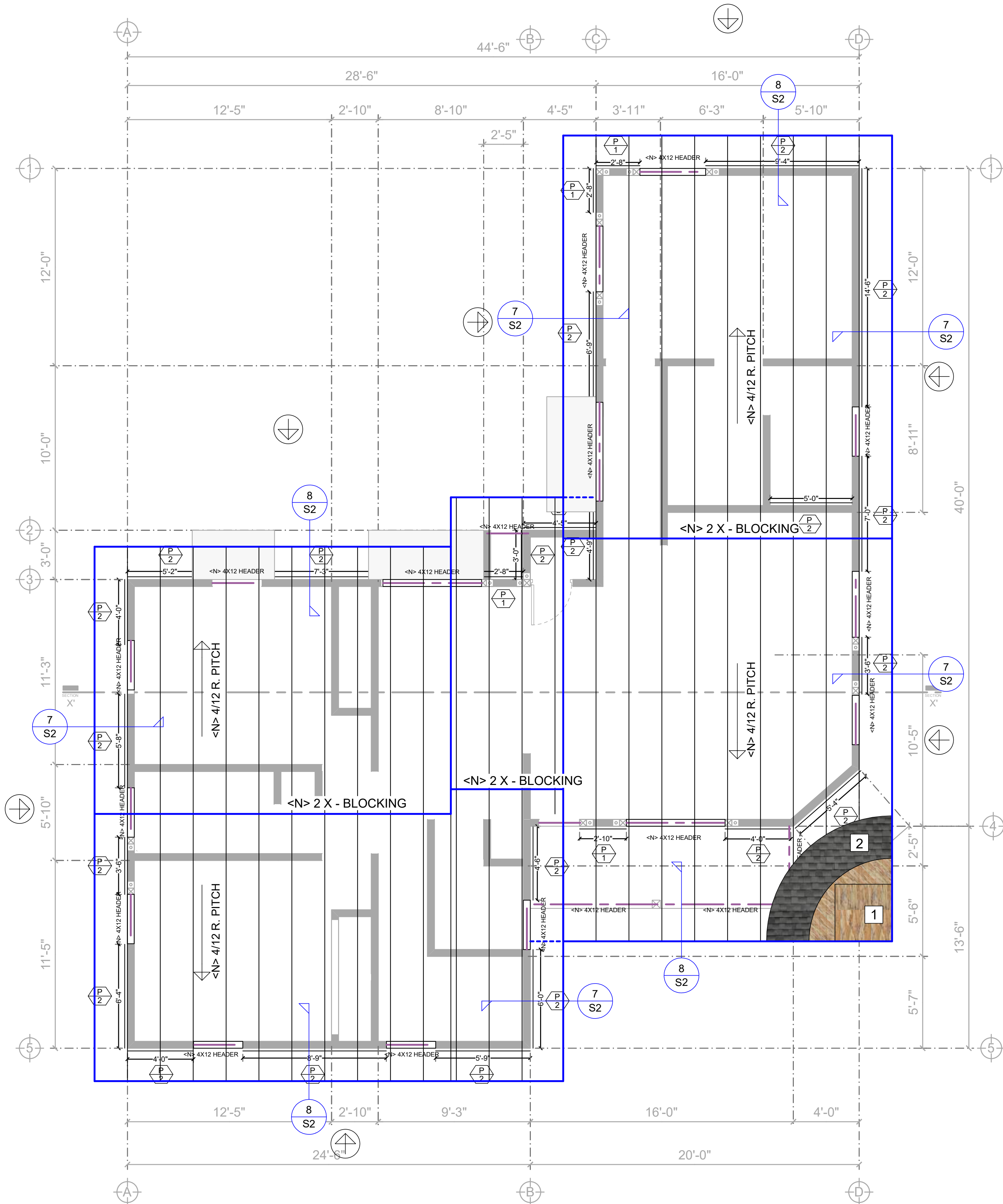
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- A2.1 DEMOLITION PLAN
- A3 PROPOSED FLR. PLAN
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- P2 PLUMBING PLAN
- M1 MECHANICAL PLAN
- S1 FOUNDATION PLAN
- S2 ROOF FRAMING PLAN
- T24 ENERGY CALC.
- T24.1 ENERGY CALC.

REVISIONS

NOVEMBER-15-23	DATE
FEBRUARY-29-24	DRAWN
AUGUST-01-23	DATE
E. ECKHAUS/F. BALDERAS/A. ALONSO	DRAWN
2023-078	DATE

SHEET.

S1



ROOF FRAMING PLAN

PROPOSED

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

NEW 2"X3" DOWNSPOT @ NEW ROOF WITH SPLASH BLOCK
ALL NEW OPENINGS TO BE 4X12 DF. #1

NOTES:
*MIN. ROOF MATERIALS REQUIRED THAT A FIRE-RETARDANT
ROOF COVERING INSTALLED THAT IS AT LEAST CLASS "B"
RATING, AS DEFINED IN THE 2019 CRC, AND IN HEALTH
AND SAFETY CODE SECTION

PACKAGING FOR ROOFING MATERIALS SHALL BE AT THE MANUFACTURER'S
AND APPROVED TESTING AGENCY'S LABELS FOR FIELD INSPECTION

BEARING WALL CONSTRUCTION, PLAN NOTES:

B) ANCHOR BOLTS SHALL BE MINIMUM 1/2-INCH DIAMETER IN SDC D (5/8-INCH IN SDC E).
[CRC R403.1.6]
C) ANCHOR BOLTS SHALL BE EMBEDDED AT LEAST 7 INCHES INTO THE FOUNDATION.
[CRC 403.1.6]
D) ANCHOR BOLT SHALL BE SPACED NOT MORE THAN 6 FEET APART. [CRC R403.1.6.1]
E) THERE SHALL BE A MINIMUM OF TWO BOLTS PER SILL PIECE WITH ONE BOLT LOCATED NOT
MORE THAN 12 INCHES OR LESS THAN 4 INCHES FROM EACH END OF THE SILL PIECE.
[CRC R403.1.6]
F) INDICATE ON FOUNDATION PLAN PLATE WASHERS FOR THE ANCHOR BOLTS, MINIMUM 3 INCH
BY 3 INCH BY 0.229 INCH THICK. STEEL PLATE WASHER MAY BE SLOTTED. [CRC R602.11.1]
G) MINIMUM CONCRETE COMPRESSIVE STRENGTH OF NOT LESS THAN 2500 PSI. [CRC TABLE 402.2]

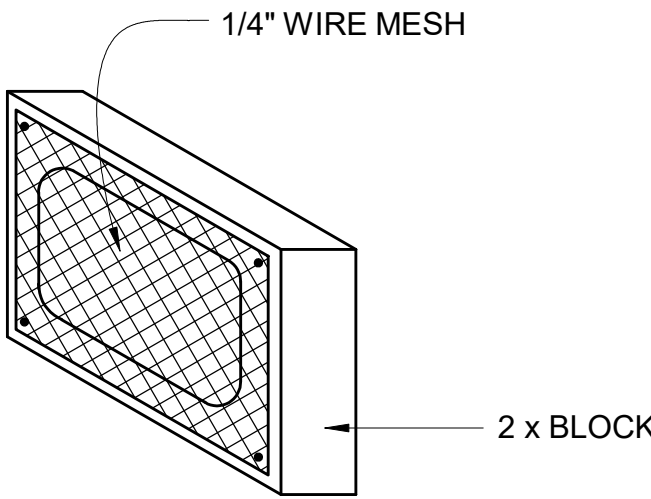
ATTIC VENTILATION

AREA OF 1 VENT = .85 S.F

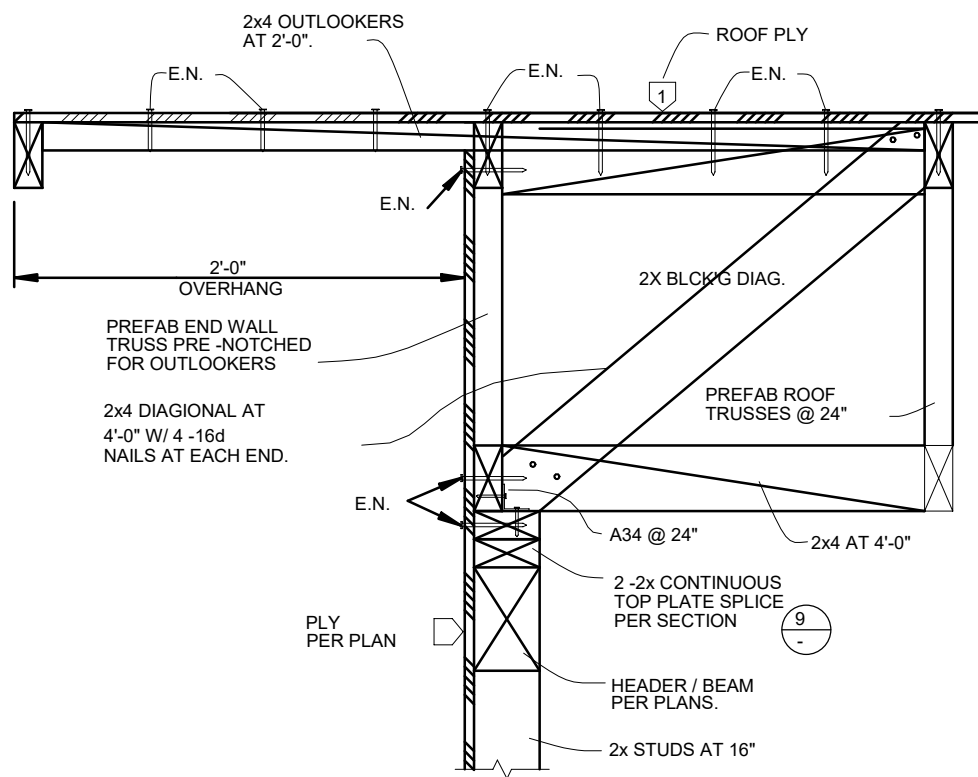
3.5" X 22.5" = .54 sf.
144
VENTS REQ'D = $\frac{1,046}{150} = 6.97$ AREA

VENTS PROVIDED= 7 VENTS
openings to have 1/4" corrosion
resistant metal mesh covering

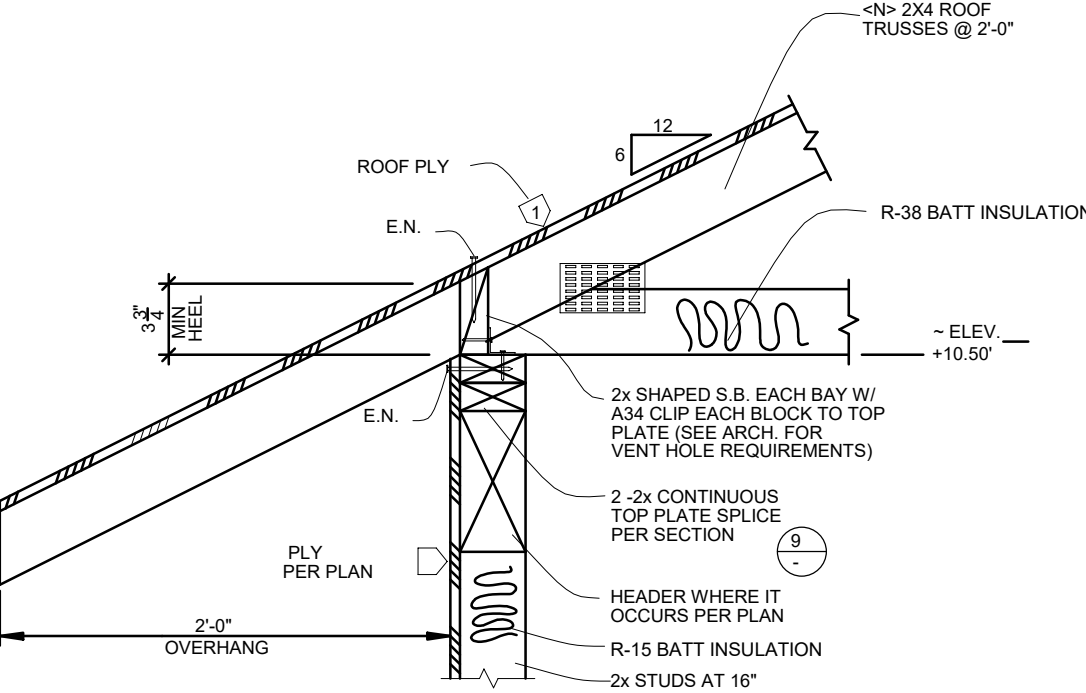
- 1 ASPHALT COMPO. SHINGLES
OVER 15# ROOFING FELT OVER
5/8" THK. PLY. SHEETING
- 2 <N> 5/8" DF. PLYWD. SHTG. C. D. X. GR.
AND A.C.X. @ OVERHANG NAIL WITH
8D NAIL @ 6" O.C. EDGES, 12" O.C. FIELD



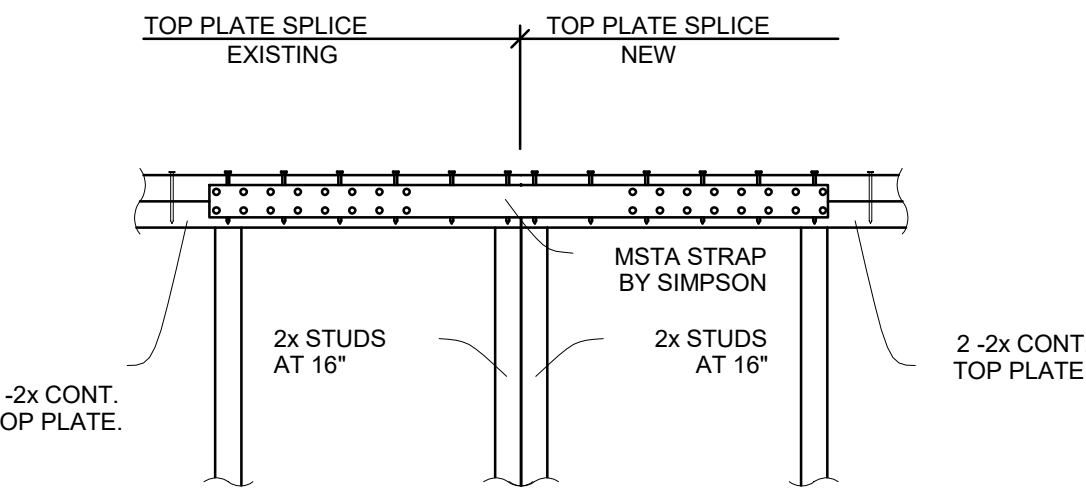
WIRE MESH VENT TYP.



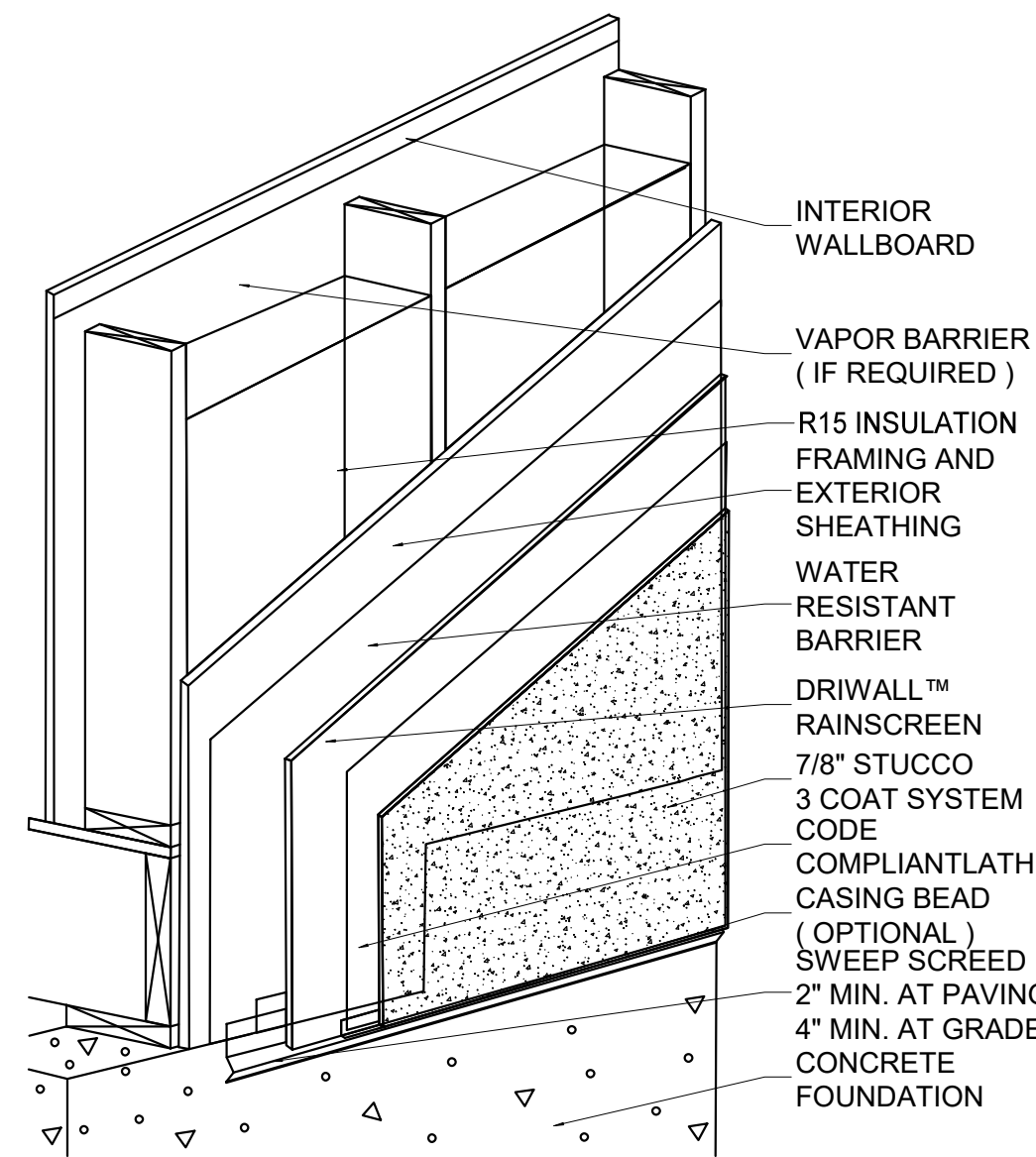
GABLE END AT TRUSS #7



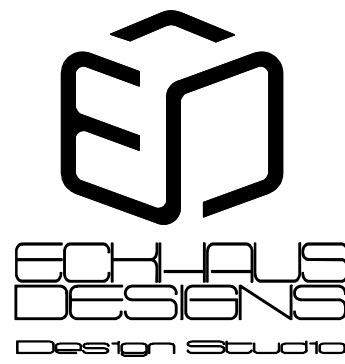
OVERHANG #8



DOUBLE PLATE SPLICE #9



DETAIL. B
WALL COVERING



ENRIQUE ECKHAUS GIL.

P.O. BOX 783 - SALINAS, CA 93902
PH (831) 784-2461
FX (831) 287-0121
eeckhaus@pacbell.net
eeckhaus@gmail.com

OWNER.
ISRAEL
RANGEL

PROJECT.

33 & 35
LIVE OAK RD
ROYAL OAKS CA
95075

APN
181-032-003-000

CODES.
2022 California Building
Standards Code
(Cal. Code Regs., Tit. 24)

- Part 1 - California Administrative Code
- Part 2 - California Building Code
- Part 2.5 - California Residential Code
- Part 3 - California Electrical Code
- Part 4 - California Mechanical Code
- Part 5 - California Plumbing Code
- Part 6 - California Energy Code
- Part 8 - California Historical Building Code
- Part 9 - California Fire Code
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- 2 FEBRUARY-29-24
- DATE
AUGUST-01-23
- DRAWN
E.ECKHAUS/F.BALDERAS/A.ALONSO
- JOB
2023-078

SHEET.

S2

GENERAL INFORMATION											
01	Project Name Residential Building										
02	Run Title Title 24 Analysis										
03	Project Location 35 LIVE OAK RD										
04	City ROYAL OAKS										
05	Standards Version 2022										
06	Zip code 95075										
07	Software Version EnergyPro 9.2										
08	Climate Zone 11										
09	Front Orientation (deg/ Cardinal) 0										
10	Building Type Single family										
11	Number of Dwelling Units 1										
12	Project Scope Newly Constructed										
13	Number of Bedrooms 3										
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 0.3										
18	Total Cond. Floor Area (ft²) 1046										
19	Glazing Percentage (%) 23.42%										
20	ADU Bedroom Count n/a										
21	ADU Conditioned Floor Area n/a										
22	Fuel Type Natural gas										
23	No Dwelling Unit: No										

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

ENERGY USE INTENSITY				
	Standard Design (kBtu/ft² · yr)	Proposed Design (kBtu/ft² · yr)	Compliance Margin (kBtu/ft² · yr)	Margin Percentage
Gross EUI¹	29.36	26.66	2.7	9.2
Net EUI²	13.92	10.62	3.3	23.71

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.

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 (%)
3.11	NA	Premium (~18-20%)	Fixed	DC Power Optimizers	false	180	Degrees	22	4.85	96	100

BATTERY SYSTEMS						
01	02	03	04	05	06	07
Control	Capacity (kWh)	Charging		Discharging		Round Trip Efficiency
		Charging Efficiency	Charging Rate (kW)	Discharging Efficiency	Discharging Rate (kW)	
Basic	5	0.95	n/a	0.95	n/a	0.9

FENESTRATION / GLAZING													
01	02	03	04	05	06	07	08	09	10	11	12	13	14
Name	Type	Surface	Orientation	Azimuth	Width (ft)	Height (ft)	Mult.	Area (ft²)	U-factor	U-factor Source	SHGC	SHGC Source	Exterior Shading
Patio Dr.	Window	Left Wall	Left	90			1	40	0.3	NFRC	0.3	NFRC	Bug Screen
Window 8	Window	Left Wall	Left	90			1	16	0.3	NFRC	0.3	NFRC	Bug Screen
Window 9	Window	Rear Wall	Back	180			1	40	0.3	NFRC	0.3	NFRC	Bug Screen
Window 10	Window	Rear Wall	Back	180			1	16	0.3	NFRC	0.3	NFRC	Bug Screen
Window 11	Window	Right Wall	Right	270			1	6	0.3	NFRC	0.3	NFRC	Bug Screen
Window 12	Window	Right Wall	Right	270			1	12	0.3	NFRC	0.3	NFRC	Bug Screen
Window 13	Window	Right Wall	Right	270			1	12	0.3	NFRC	0.3	NFRC	Bug Screen
Window 14	Window	Right Wall	Right	270			1	9	0.3	NFRC	0.3	NFRC	Bug Screen

OPAQUE DOORS			
01	02	03	04
Name	Side of Building	Area (ft²)	U-factor
Door	Front Wall	20	0.2
Door 2	Rear Wall	20	0.2

OPAQUE SURFACE CONSTRUCTIONS							
01	02	03	04	05	06	07	08
Construction Name	Surface Type	Construction Type	Framing	Total Cavity R-value	Interior / Exterior Continuous R-value	U-factor	Assembly Layers
R-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: All Other Siding

ENERGY DESIGN RATINGS						
	Energy Design Ratings			Compliance Margins		
	Source Energy (EDR1)	Efficiency¹ EDR (EDR2efficiency)	Total² EDR (EDR2total)	Source Energy (EDR1)	Efficiency¹ EDR (EDR2efficiency)	Total² EDR (EDR2total)
Standard Design	39.5	42.6	32.8			
Proposed Design	29.4	41.8	30.2	10.1	0.8	2.6
RESULT³: PASS						
¹Efficiency EDR includes improvements like a better building envelope and more efficient equipment. ²Total EDR includes efficiency and demand response measures such as photovoltaic (PV) system and batteries. ³Building complies when source energy, efficiency and total compliance margins are greater than or equal to zero and unmet load hour limits are not exceeded						
• Standard Design PV Capacity: 3.11 kWdc • PV System resized to 3.11 kWdc (a factor of 3.112) to achieve "Standard Design PV" PV scaling						

REQUIRED SPECIAL FEATURES	
The following are features that must be installed as condition for meeting the modeled energy performance for this computer analysis.	
• PV module type: Premium • PV Power Electric DC Power Optimizer • Battery System: 5 kWh (Self Utilization Credit taken) • Whole house fan • Insulation above roof deck • Non-standard duct location (any location other than attic) • Northwest Energy Efficiency Alliance (NEEA) rated heat pump water heater; specific brand/model, or equivalent, must be installed	

HERS FEATURE SUMMARY	
The following is a summary of the features that must be field-verified by a certified HERS 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 HERS Registry	
• Indoor air quality ventilation • Kitchen range hood • Minimum Airflow • Verified EER/EER2 • Fan Efficiency Watts/CFM • Verified HSPF2 • Verified heat pump rated heating capacity • Duct leakage testing • Ducts located entirely in conditioned space confirmed by duct leakage testing	

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	1046	1	3	1	1	1

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
NEW SFD	Conditioned	Ductless Mini-Split Heat1	1046	8	DHW Sys 1	New

OPAQUE SURFACE CONSTRUCTIONS							
01	02	03	04	05	06	07	08
Construction Name	Surface Type	Construction Type	Framing	Total Cavity R-value	Interior / Exterior Continuous R-value	U-factor	Assembly Layers
Attic RoofNEW SFD	Attic Roofs	Wood Framed Ceiling	2x4 @ 24 in. O. C.	R-0	None / None	0.046	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	2x6 @ 16 in. O. C.	R-19	None / None	0.049	Floor Surface: Carpeted Floor Deck: Wood Siding/Sheathing/decking Cavity / Frame: R-19 / 2x6
R-38 HP Attic	Ceilings (below attic)	Wood Framed Ceiling	2x4 @ 24 in. O. C.	R-38	None / None	0.025	Over Ceiling Joists: R-28.9 insul. Cavity / Frame: R-9.1 / 2x4 Inside Finish: Gypsum Board

BUILDING ENVELOPE - HERS VERIFICATION				
01	02	03	04	05
Quality Insulation Installation (QII)	High R-value Spray Foam Insulation	Building Envelope Air Leakage	CFM50	CFM50
Not Required	Not Required	N/A	n/a	n/a

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	HERS 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)

ENERGY USE SUMMARY						
Energy Use	Standard Design Source Energy (EDR1) (kBtu/ft² · yr)	Standard Design TDV Energy (EDR2) (kTDV/ft² · yr)	Proposed Design Source Energy (EDR1) (kBtu/ft² · yr)	Proposed Design TDV Energy (EDR2) (kTDV/ft² · yr)	Compliance Margin (EDR1)	Compliance Margin (EDR2)
Space Heating	5.74	25.67	4.88	36.29	0.86	-10.62
Space Cooling	2.44	55.18	2.64	63.93	-0.2	-8.75
IAQ Ventilation	0.45	4.81	0.45	4.81	0	0
Water Heating	2.88	28.86	1.55	17.07	1.33	11.79
Self Utilization/Flexibility Credit				-9.64		9.64
Efficiency Compliance Total	11.51	114.52	9.52	112.46	1.99	2.06
Photovoltaics	-2.48	-80.68	-2.57	-88.99		
Battery			-3.2	0		
Flexibility						
Indoor Lighting	0.84	8.39	0.84	8.39		
Appl. & Cooking	5.39	35.07	5.38	34.98		
Plug Loads	5.21	54.36	5.21	54.36		
Outdoor Lighting	0.2	1.83	0.2	1.83		
TOTAL COMPLIANCE	20.67	133.49	15.38	123.03		

HVAC HEAT PUMPS - HERS VERIFICATION											
01	02	03	04	05	06	07	08	09			
Name	Verified Airflow	Airflow Target	Verified EER/EER2	Verified SEER/SEER2	Verified Refrigerant Charge	Verified HSPF/HSPF2	Verified Heating Cap 47	Verified Heating Cap 17			
Heat Pump System 1-hers-htpump	Required	350	Required	Not Required	No	Yes	Yes	Yes			

HVAC - DISTRIBUTION SYSTEMS											
01	02	03	04	05	06	07	08	09	10	11	12
Name	Type	Design Type	Duct Ins. R-value Supply	Duct Location Return	Surface Area	Bypass Duct	Duct Leakage	HERS Verification			
Air Distribution System 1	Conditioned space-entirely	Non-Verified	R-8	R-8	Condtioned Zone	Condtioned Zone	n/a	n/a	No Bypass Duct	Sealed and Tested	Air Distribution System 1-hers-dist

HVAC DISTRIBUTION - HERS VERIFICATION											
01	02	03	04	05	06	07	08	09			
Name	Duct Leakage Verification	Duct Leakage Target (%)	Verified Duct Location	Verified Duct Design	Buried Ducts	Deeply Buried Ducts	Low-leakage Air Handler	Low Leakage Ducts Entirely in Conditioned Space			
Air Distribution System 1-hers-dist	Yes	5.0	Required	Not Required	Not Required	Credit not taken	Not Required	No			

HVAC - FAN SYSTEMS											
01	02	03	04								
Name	Type	Fan Power (Watts/CFM)	Name								
HVAC Fan 1	HVAC Fan	0.45	HVAC Fan 1-hers-fan								

HVAC FAN SYSTEMS - HERS VERIFICATION											
01	02	03									
Name	Verified Fan Watt Draw	Required Fan Efficacy (Watts/CFM)									
HVAC Fan 1-hers-fan	Required	0.45									

INDOOR AIR QUALITY (IAQ) FANS											
01	02	03	04	05	06	07	08	09			
Dwelling Unit	Airflow (CFM)	Fan Efficacy (W/CFM)	IAQ Fan Type	Includes Heat/Energy Recovery?	IAQ Recovery Effectiveness - SRE/ASRE	Includes Fault Indicator Display?	HERS Verification	Status			
SfAm IAQVentRpt	61	0.35	Exhaust	No	n/a / n/a	No	Yes				

COOLING VENTILATION											
01	02	03	04	05	06	07	08	09			
Name	Airflow Rate (CFM/R2)	Cooling Vent CFM	Cooling Vent Watts/CFM	Total Watts	Number of Fans	CFVCS Type	Exhausts to	HERS Verification			
Whole House Fan	1.5	1569	0.14	219.66	1	Not a CFVCS	Attic				

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT

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

Documentation Author Name:
ENRIQUE ECKHAUS

Documentation Author Signature:

Company:
eckhaus designs

Signature Date:
2024-03-04 18:24:27

Address:
p.o. box 783
Salinas, CA 93902

CEA/HERS Certification Identification (if applicable):
NA
Phone:
831-794-2461

RESPONSIBLE PERSON'S DECLARATION STATEMENT

I certify the following under penalty of perjury, under the laws of the State of California:

1. I am eligible under Division 3 of the Business and Professions Code to accept responsibility for the building design identified on this Certificate of Compliance.

2. I certify that the energy features and performance specifications identified on this Certificate of Compliance conform to the requirements of Title 24, Part 1 and Part 6 of the California Code of Regulations.

3. 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.

Responsible Designer Name:
ENRIQUE ECKHAUS

Responsible Designer Signature:

Company:
eckhaus designs

Date Signed:
2024-03-04 18:24:27

Address:
p.o. box 783
Salinas, CA 93902

License:
NA
Phone:
831-794-2461

2022 Single-Family Residential Mandatory Requirements Summary

NOTE: Single-family residential buildings subject to the Energy Codes must comply with all applicable mandatory measures, regardless of the compliance approach used. Review the respective section for more information. (04/2022)

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 AIAA/WDMA/CASEA 101/1.5.2/440-2011. *

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 and solar heat gain coefficient (SHGC) values from Tables 110.6A, 110.6B, or 110.6C for exterior doors. They must be caulked and/or weather-stripped.

110.6(a): **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.

110.7: **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(g): **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(h) and be labeled per 10-113 when the installation of a cool roof is specified on the CFI.

110.8(i): **Radiant Barrier.** When required, radiant barriers must have an emittance of 0.05 or less and be certified to the Department of Consumer Affairs.

110.8(g): **Roof Deck, Ceiling and Rafter Roof Insulation.** Roof decks in newly constructed attics in climate zones 4 and 8-16 area-weighted average U-factor not exceeding U-0.194. 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 which is sealed to limit infiltration and exfiltration, as specified in 110.7, including but not limited to placing insulation either above or below the roof deck or on top of a drywall ceiling.

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-13 insulation in 2x4 inch wood framing wall or have a U-factor of 0.102 or less, or R-20 in 2x6 inch wood framing or have a U-factor of 0.077 or less. Opaque non-framed assemblies must have an overall assembly U-factor not exceeding 0.102. Masonry walls must meet Tables 150.1-A or B. *

150.0(d): **Raised-floor Insulation.** Minimum R-19 insulation in raised wood framed floor or 0.037 maximum U-factor. *

150.0(f): **Slab Edge Insulation.** Slab edge insulation must meet all of the following: have a water absorption rate, for the insulation material alone without loadings, no greater than 0.3 percent; have a vapor permeance no greater than 2.0 perm per inch; be 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 conditioned ventilation crawl space for buildings complying with the exception to 150.0(h).

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(c): **Fenestration Products.** Fenestration, including skylights, separating conditioned space from unconditioned space or outdoors must have a maximum U-factor of 0.45; or area-weighted average U-factor of all fenestration must not exceed 0.45.

Fireplaces, Decorative Gas Appliances, and Gas Logs:

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. *

Space Conditioning, Water Heating, and Plumbing Systems:

110.0, 110.3: **Certification, Heating, ventilation, and air conditioning (HVAC) equipment, water heaters, showerheads, faucets, and all other regulated appliances must be certified by the manufacturer to the California Energy Commission. ***

150.0(e)1: **HVAC Efficiency.** Equipment must meet the applicable efficiency requirements in Table 110.2A through Table 110.2N. *

110.2(b): **Controls for Heat Pumps with Supplementary Electric Resistance Heaters.** Heat pumps with supplementary electric resistance heaters must have controls that prevent supplementary heater operation when the heating load can be met by the heat pump alone; and which the cut-on temperature for compression heating is higher than the cut-on temperature for supplementary heating, and the cut-off temperature for compression heating is higher than the cut-off temperature for supplementary heating.

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.** Unlined 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.

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110.5: **Pilot Lights.** Continuously burning pilot lights are prohibited for natural gas, fan-type central furnaces, household cooking appliances (except appliances without an electrical supply voltage connection with pilot lights that consume less than 150 Btu per hour), and pool and spa heaters. *

150.0(h)1: **Building Cooling and Heating Loads.** Heating and/or cooling loads are calculated in accordance with the ASHRAE Handbook, Equipment Volume, Applications Volume, and Fundamentals Volume; the SMACNA Residential Comfort System Installation Standards Manual; or the ACCA Manual J using design conditions specified in 150.0(h)2.

150.0(h)3A: **Clearances.** Air conditioner and heat pump outdoor condensing units must have a clearance of at least five feet from the outlet of any duct.

150.0(h)3B: **Liquid Line Drier.** Air conditioners and heat pump systems must be equipped with liquid line filter driers if required, as specified by the manufacturer's instructions.

150.0(j): **Water Piping, Solar Water-heating System Piping, and Space Conditioning System Line Insulation.** All domestic hot water piping must be insulated as specified in 609.11 of the California Plumbing Code. *

150.0(j)2: **Insulation Protection.** Piping insulation must be protected from damage, including that due to sunlight, moisture, equipment maintenance, and wind as required by 120.3(b). Insulation exposed to weather must be water resistant and protected from UV light (no adhesive tapes). Insulation covering chilled water piping and refrigerant suction piping located outside the conditioned space must include, or be protected by, a Class I or Class II vapor retarder. Pipe insulation buried below grade must be installed in a waterproof and non-shrinkable casing or sleeve.

150.0(j)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(h)3: **Solar Water-Heating Systems.** Solar water-heating systems and collectors must be certified and rated by the Solar Rating and Certification Corporation (SRCC), the International Association of Plumbing and Mechanical Officials, Research and Testing (IAPMO RST), 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(h)1: **CMC Compliance.** All air-distribution system ducts and plenums must meet CMC: 601.0-605.0 and ANSI/SMACNA-005-2006 HVAC Duct Construction Standards Metal and Flexible 3rd Edition. Portions of supply-air and return-air ducts and plenums must be insulated to R-6.0 or higher; ducts located entirely in conditioned space as confirmed through field verification and diagnostic testing (RA3.1, 4.3, 8.3) do not require insulation. Connections of metal ducts and inner core of flexible ducts must be mechanically fastened. Openings must be sealed with mastic, tape, or other duct-closure system that meets the applicable UL requirements, or aerosol sealed that meets UL 723. The combination of mastic and either mesh or tape must be used to seal openings greater than 1/4". 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(h)2: **Factory-Fabricated Duct Systems.** Factory-fabricated duct systems must comply with applicable requirements for duct construction, connections, and closures; joints and seams of duct systems and their components must not be sealed with duct-bond rubber adhesive duct tapes unless such tape is used in combination with mastic and draw bands.

150.0(m)3: **Field-Fabricated Duct Systems.** Field-fabricated duct systems must comply with applicable requirements for: pressure-sensitive tapes, mastic, sealants, and other requirements specified for duct construction.

150.0(m)7: **Backdraft Damper.** Fan systems that exchange air between the conditioned space and outdoors must have backdraft or automatic dampers.

150.0(m)8: **Gravity Ventilation Dampers.** Gravity ventilating systems serving conditioned space 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 resistant and solar radiation-resistant coating.

150.0(m)10: **Porous Inner Core Flex Duct.** Porous inner cores of flex ducts must have a non-porous layer or air barrier between the inner core and outer vapor barrier.

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 Circulation.** 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-air pressure drop and labeling must meet the requirements in 150.0(m)12. Filters must be accessible for regular service. Filter racks or grilles must use gaskets, sealing, or other means to close gaps around the inserted filters to and prevents air from bypassing the filter. *

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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 = 0.88 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(c)1: **Requirements for Ventilation and Indoor Air Quality.** All dwelling units must 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(c)1. *

150.0(c)1B: **Control Fan Integrated (CFI) Ventilation Systems.** Continuous operation of CFI air handlers is not allowed to provide the whole-dwelling unit ventilation airflow required per 150.0(c)1C. A motorized damper(s) must be installed on the ventilation duct(s) that prevents all airflow through the space conditioning duct system when the damper(s) is closed and/or controlled per 150.0(c)1B(8)(b). 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(c)1C.

150.0(c)1C: **Whole-Dwelling Unit Mechanical Ventilation for Single-Family Detached and townhouses.** Single-family detached dwelling units, and attached dwelling units not sharing ceilings or floors with other dwelling units, occupiable spaces, public garages, or commercial spaces must have mechanical ventilation airflow specified in 150.0(c)1C(4)(i).

150.0(c)1C: **Local Mechanical Exhaust.** Kitchens and bathrooms must have local mechanical exhaust; nonrescued kitchens must have demand-controlled exhaust system meeting requirements of 150.0(c)1C(4)(i) and bathrooms can use demand-controlled or continuous exhaust meeting 150.0(c)1C(4)(i). Airflow must be measured by the installer per 150.0(c)1C(4)(i), and rated for sound per 150.0(c)1C(4)(i).

150.0(c)1F(8): **Airflow Measurement and Sound Ratings of Whole-Dwelling Unit Ventilation Systems.** The airflow required per 150.0(c)1C must be measured by using a flow hood, flow grid, or other airflow measuring device at the fan's inlet or outlet terminals/grilles per Reference Residential Appendix RA3.7. Whole-Dwelling unit ventilation systems must be rated for sound per ASHRAE 62.2, 7.2 at no less than the minimum airflow rate required by 150.0(c)1C.

150.0(c)2: **Field Verification and Diagnostic Testing.** Whole-Dwelling Unit ventilation airflow, vented range hood airflow and sound rating, and HRV and ERV fan efficacy must be verified in accordance with Reference Residential Appendix RA3.7. Vented range hoods must be verified per Reference Residential Appendix RA3.7.4.3 to confirm if it is rated by HM or AHAM to comply with the airflow rates and sound requirements per 150.0(c)1C.

Pool and Spa Systems and Equipment:

110.4(a): **Certification by Manufacturers.** Any pool or spa heating system or equipment must be certified to have all of the following: compliance with the Appliance Efficiency Regulations and listing in IAPMO EHS; an on-off switch mounted outside of the heater that allows shutting off the heater without adjusting the thermostat setting, a permanent weatherproof plate or card with operating instructions; and must not use electric resistance heating. *

110.4(b)1: **Piping.** Any pool or spa heating system or equipment must be installed with at least 36 inches of pipe between the filter and the heater, or dedicated suction and return lines, or built-in or built-up connections to allow for future solar heating.

110.4(b)2: **Covers.** Outdoor pools or spas that have a heat pump or gas heater must have a cover.

110.4(b)3: **Directional Inlets and Time Switches for Pools.** Pools must have directional inlets that adequately mix the pool water, and a time switch that will allow all pumps to be set or programmed to run only during off-peak electric demand periods.

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.** Residential pool systems or equipment must meet the specified requirements for pump sizing, flow rate, piping, filters, and valves.

Lighting:

110.9: **Lighting Controls and Components.** All lighting control devices and systems, ballasts, and luminaires must meet the applicable requirements of 110.9. *

150.0(k)1A: **Luminaire Efficacy.** All installed luminaires must meet the requirements in Table 150.0.A, except lighting integral to exhaust fans, kitchen range hoods, both vanity mirrors, and garage door openers; navigation lighting less than 5 watts; and lighting integral to drawers, cabinets, and linen closets with an efficacy of at least 45 lumens per watt.

150.0(k)1B: **Screw-based Luminaires.** Screw-based luminaires must contain lamps that comply with Reference Joint Appendix JA8.

150.0(k)1C: **Recessed Downlight Luminaires in Ceilings.** Luminaires recessed into ceilings must not contain screw-based sockets, must be airtight, and must be sealed with a gasket or caulk. California Electrical Code 410.116 must also be met.

150.0(k)1D: **Light Sources in Enclosed or Recessed Luminaires.** Lamps and other separable light sources that are not compliant with the JA8 elevated temperature requirements, including marking requirements, must not be installed in enclosed or recessed luminaires.

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)1F: **Lighting Integral to Exhaust Fans.** Lighting integral to exhaust fans (except when installed by the manufacturer in kitchen exhaust hoods) must meet the applicable requirements of 150.0(k).

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150.0(k)1G: **Screw-based luminaires.** Screw-based luminaires must contain lamps that comply with Reference Joint Appendix JA8. *

150.0(k)1H: **Light Sources in Enclosed or Recessed Luminaires.** Lamps and other separable light sources that are not compliant with the JA8 elevated temperature requirements, including marking requirements, must not be installed in enclosed or recessed luminaires.

150.0(k)1I: **Light Sources in Drawers, Cabinets, and Linen Closets.** Light sources internal to drawers, cabinetry or linen closets are not required to comply with Table 150.0-A or be controlled by vacancy sensors provided that they are rated to consume no more than 5 watts of power, emit no more than 150 lumens, and are equipped with controls that automatically turn the lighting off when the drawer, cabinet or linen closet is closed.

150.0(k)2A: **Interior Switches and Controls.** All forward phase out dimmers used with LED light sources must comply with NEMA SSL 7A.

150.0(k)2B: **Interior Switches and Controls.** Exhaust fans must be controlled separately from lighting systems. *

150.0(k)2A: **Accessible Controls.** Lighting must have readily accessible wall-mounted controls that allow the lighting to be manually turned on and off. *

150.0(k)2B: **Multiple Controls.** Controls must not bypass a dimmer, occupant sensor, or vacancy sensor function if the dimmer or sensor is installed to comply with 150.0(k).

150.0(k)2C: **Manually Illuminated Address Signs.** Manually illuminated address signs must be used to meet these requirements.

150.0(k)2D: **Emergency Management Control Systems.** 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.

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 frontals 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, and bedrooms) must have readily accessible wall-mounted dimming controls that allow the lighting to be manually adjusted up and down. Forward phase out dimmers controlling LED light sources in these spaces must comply with NEMA SSL 7A.

150.0(k)2K: **Independent controls.** Integrated lighting of 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)3A: **Residential Outdoor Lighting.** For single-family residential buildings, outdoor lighting permanently mounted to a residential building, or to other buildings on the same lot, must have a manual on/off switch and either a photoacoustic and motion sensor or automatic time switch control) or an astronomical time clock. An energy management control system that provides the specified control functionality and meets all applicable requirements may be used to meet these requirements.

150.0(k)4: **Internally Illuminated Address Signs.** 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.

Solar Readiness:

5/6/22, 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)(6).

110.10(b)1: **Minimum Solar Zone Area.** The solar zone must have a minimum total area as described below. The solar zone must comply with access, pathway, smoke ventilation, and spacing requirements as specified in Title 24, Part 6 or other Parts of Title 24, and in any requirements adopted by a local jurisdiction. The solar zone total area must be comprised of areas that have no dimension less than 5 feet and are no less than 80 square feet each for buildings with roof areas less than or equal to 10,000 square feet or no less than 160 square feet each for buildings with roof areas greater than 10,000 square feet. For single-family residences, the solar zone must be located on the roof or overhanging of the building and have a total area no less than 250 square feet.

110.10(b)1A: **Main Electrical Service Panel.** The main electrical service panel must have a minimum busbar rating of 200 amps.

110.10(b)2: **Shading.** 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.** The solar zone must not contain any obstructions, 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 of the obstruction from the highest point of the obstruction and the horizontal projection of the nearest point of the 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.

110.10(d): **Documentation.** A copy of the construction documents or a comparable document indicating the information from 110.10(b)(6) 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."

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