CALAHA

CaliforniaAffordableHousingAgency

AGENDA

THE EXECUTIVE COMMITTEE OF THE BOARD OF DIRECTORS
CALIFORNIA AFFORDABLE HOUSING AGENCY

October 14, 2024

10:00 am

806 W. 19th Street
Merced, CA 95340
(209) 384-0001

Zoom
https://us06web.zoom.us/j/5600363167?pwd=RmZTR0NabzcrY0ZYQlZyYUd6blpwZz09

Meeting ID: 560 036 3167
Passcode: 293018
Phone Number:
1(720) 707-2699

Executive Committee Member Locations

2039 Forest Avenue Suite 10
Chico, California 95928

1612 Sisk Road
Modesto, California 95350

1402 D Street
Brawley, California 92227

1400 West Hillcrest Drive
Newbury Park, California 91302

815 W. Ocean Ave
Lompoc, CA 93436

I. CALL TO ORDER AND ROLL

II. DIRECTORS' AND/OR AGENCY ADDITIONS/DELETIONS TO THE AGENDA

(M/S/C): _____/_____/_____

III. APPROVAL OF MEETING MINUTES

1. January 8, 2024

(M/S/C): _____/_____/_____

IV. UNSCHEDULED ORAL COMMUNICATIONS

NOTICE TO THE PUBLIC

At this time, any person(s) may comment on any item that is not on the Agenda. Please state your name and address for the record. Action will not be taken on an item that is not on the Agenda. If it requires action, it will be referred to Staff and/or placed on the next Agenda. In order that all interested parties have an opportunity to speak, please limit comments to a maximum of five (5) minutes.

V. FINANCIAL REPORT OF ADMINISTRATOR

Current Financial Report

VI. RESOLUTION, ACTION AND INFORMATION ITEMS

A. RESOLUTIONS:

None.

B. ACTION ITEMS:

1. **Action Item 2024-01A**
   Authority to move forward with the proposed Partnership with KH Equities for the Chatsworth Project in Granada Hills, CA provided that proper jurisdictional approval is obtained

   (M/S/C): _____/_____/_____

2. **Action Item 2024-02A**
   Acceptance/Approval of the Purchase and Sale Agreements for the ten (10) Stanislaus Regional Housing Authority Vermont Avenue Properties in Turlock, CA

   (M/S/C): _____/_____/_____

3. **Action Item 2024-03A**
   Authority to move forward with the proposed Tuscany Properties Project in Ceres, CA with Stanislaus Regional Housing Authority

   (M/S/C): _____/_____/_____

4. **Action Item 2024-04A**
   Approval of amendment to Executive Director Agreement

   (M/S/C): _____/_____/_____

C. INFORMATION/DISCUSSION ITEM(S)

1. Executive Director's Report;
2. Update on Annual CalAHA Retreat for 2025;
3. Current update on Trio Program;
4. Current update on prospective projects and financings;
5. Current update on member projects and administrative matters.

VII. CLOSED SESSION

None.

VIII. DIRECTORS' COMMENTS

I X. SCHEDULING OF FUTURE EXECUTIVE BOARD MEETINGS

(The second Monday of the month): 10:00 am on November 11, 2024 and December 9, 2024.

X. ADJOURNMENT

CaliforniaAffordableHousingAgency

MINUTES

THE EXECUTIVE COMMITTEE OF THE BOARD OF DIRECTORS
CALIFORNIA AFFORDABLE HOUSING AGENCY MEETING

January 8, 2024
10:00 a.m.

806 West 19th Street
Merced, CA

I. The Board Meeting of the Executive Board of the California Affordable Housing Agency was called to order by Bob Havlicek at 10:04 a.m. The roll was taken and a quorum declared present. The following Executive Board Members were present for the meeting:

CalAHA Executive Board Members Present:

1. Bob Havlicek, Chairperson and Executive Director, Housing Authority of the County of Santa Barbara
2. Jim Kruse, Vice Chair and Executive Director, Stanislaus Regional Housing Authority
3. Kirk Mann, Secretary/Treasurer and Executive Director, Imperial Valley Housing Authority
4. Ed Mayer, Executive Director, Housing Authority of the County of Butte

Absent:

5. Michael Nigh, Executive Director, Housing Authority of the County of Ventura

Others Present:

6. Thomas E. Lewis, General Counsel
7. Nick Benjamin, Executive Director - CalAHA

EQUAL HOUSING OPPORTUNITY

8. Kao Xiong, Law Office of Thomas E. Lewis
9. Scott Collins, Executive Director, Housing Authority of the City of San Luis Obispo
10. Ian Evans, Executive Director, Yolo County Housing Authority
11. Patrick Howard, Founding Member, Evergreen Pacific Capital
12. Julie Wunderlich, Bond Counsel, Jones Hall
13. Kelsie Schroll, Executive Assistant, Housing Authority of the County of Santa Barbara
14. Elenore Vaughn, Executive Director, Housing Authority of the City of Santa Paula (joined at 10:19 am)

II. Directors' and/or Agency Additions/Deletions to the Agenda:

Mr. Havlicek indicated that closed session will be moved to next month's meeting.

(M/S/C): E. Mayer/J. Kruse - Motion to approve
Approved: 4-0-1

III. Approval of the Minutes:

1. Minutes of December 11, 2023

(M/S/C): E. Mayer/J. Kruse - Motion to approve
Approved: 4-0-1

IV. Unscheduled Oral Communication:

None.

V. FINANCIAL REPORT OF ADMINISTRATOR:

Mr. Benjamin provided a brief overview of the current financials. Mr. Benjamin indicated that CalAHA received payment from ARCA and the check was deposited into CalAHA's account in mid December 2023.

Mr. Lewis indicated that the agency would benefit from investing its money. UBS has good rates and is wondering if the Board is interested in investing. Mr. Mayer indicated that the FDIC only covers up to $250,000 so we should take the agency's money and put some in separate accounts. The Board discussed putting half of the agency's funds into money market account to generate interest income.

Mr. Benjamin indicated that the agency made about $103,000 in income. Mr. Mayer indicated that the agency is also a business and we need to pay attention to our clients and income. We need to take our assets and redevelop more housing/projects. Mr. Lewis indicated that with the sale of Olive Tree Senior Apartments, the agency should bring in additional revenues.

Mr. Havlicek welcomed Elenore Vaughn, Executive Director of the Housing Authority of the City of Santa Paula, to the meeting. Ms. Vaughn approached Mr. Lewis and Mr. Havlicek about 3 weeks ago regarding a short term loan needed. Ms. Vaughn is on the board of a nonprofit that has been awarded Homekey funds. The nonprofit is buying the 4 to 5 units outright with cash of their own and they need a short-term loan of $1.1M. Ms. Vaughn would like to see if the Board would be interested in providing the loan at 10% interest. Patrick Howard indicated that doing a short term loan wouldn't be precedent. The big issue is understanding the credit and timing. Mr. Havlicek indicated that he ran into an issue with Homekey 2.0. He acquired an $11.5M hotel and it took a 1.5 years to get the money from Homekey fund. Ms. Vaughn indicated that the closing date is tomorrow.

VI. RESOLUTION, ACTION AND INFORMATION/DISCUSSION ITEMS:

A. RESOLUTION ITEMS:

None.

B. ACTION ITEMS:

None.

C. INFORMATION/DISCUSSION ITEMS.

1. Executive Director's Report – Mr. Benjamin indicated that on February 21, 2024, Mr. Lewis and himself will be attending the ARCA quarterly training in Sacramento, CA. They have prepared presentation materials and will be going over tax credit projects. Mr. Lewis indicated that Mountain Valley Regional Center has scheduled a meeting with Stanislaus Regional Housing Authority in two weeks to help or educate the regional center. Mr. Lewis indicated that a lot of the regional centers does not have a dedicated person to work on projects, but this particular regional center does have a designated person and she is very excited to start.

2. Current update on Trio Program: Patrick Howard indicated that there are 4 houses remaining under the Trio Lease to Own program. 2 are going to

become available. Mr. Howard will follow up with Mr. Lewis and Mr. Benjamin to go over plans with those units whether to sell them or keep them and convert to the Link Home Loan model. The Trio Lease to Own model will be phased out. Mr. Howard indicated that the Link Home Loan Program will allow the consumer to convert to long term financing. It gives them the opportunity to easily leave as it works like a regular home loan.

Mr. Mayer asked how CalAHA can be of help to Link Home Loan. Mr. Howard indicated that this just depends on where CalAHA will like to work with Link Home Loan as a borrower. Mr. Howard indicated that they had their best year ever last year. They did a $300 million loan through Link. 98% serviced Latino borrower to long term financing. Link Home Loan helped with consumer from 15-20% down payment to 3.5%. Mr. Howard indicated that they are looking at adding more products to target different communities.

3. Current update on prospective projects and financings: None.

4. Current update on member projects and administrative matters: None.

VII. CLOSED SESSION:

Executive Director Evaluation (Government Code Section 54957.6)
(One Matter)

Mr. Havlicek indicated that Closed Session will be deferred to next meeting.

VIII. DIRECTORS' COMMENTS:

None.

IX. SCHEDULING OF FUTURE EXECUTIVE BOARD MEETINGS:

(The second Monday of the month):

10:00 AM on February 12, 2024; March 11, 2024; April 8, 2024; May 13, 2024; June 10, 2024; July 8, 2024; August 12, 2024; September 9, 2024; October 14, 2024; November 11, 2024 and December 9, 2024.

X. ADJOURNMENT:

Meeting adjourned @ 10:56 am.

(M/S/C): E. Mayer/K. Mann - Motion to approve

Approved: 4-0-1

_____
Secretary

_____
Date

CALIFORNIA AFFORDABLE HOUSING AGENCY JPA

COMPILED FINANCIAL STATEMENTS

MAY 2024

Grey B. Roberts & Co.
2824 Park Avenue, Suite B
Merced, CA 95348

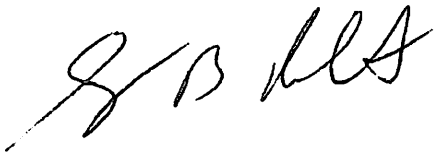
GREY B. ROBERTS & CO.
CERTIFIED PUBLIC ACCOUNTANTS
2824 PARK AVENUE, SUITE B
MERCED, CALIFORNIA 95348
TELEPHONE (209) 383-2442
FAX (209) 383-3583

Board of Directors
California Affordable Housing Agency JPA

We have compiled the accompanying cash basis statement of net assets of the general fund of California Affordable Housing Agency JPA as of May 31, 2024, and the related cash basis statement of activities for the five months ended in accordance with Statements on Standards for Accounting and Review Services issued by the American Institute of Certified Public Accountants.

A compilation is limited to presenting in the form of financial statements information that is the representation of management. We have not audited or reviewed the accompanying financial statements and, accordingly, do not express an opinion or any other form of assurance on them.

Management has elected to omit substantially all the disclosures and the Statement of Cash Flows required by generally accepted accounting principles. If the omitted disclosures and statements were included in the financial statements, they might influence the user's conclusions about the Company's financial position, results of operations, and cash flows. Accordingly, these financial statements are not designed for those who are not informed about such matters.



July 17, 2024

California Affordable Housing Agency
Balance Sheet
As of May 31, 2024

	May 31, 24
ASSETS	
Current Assets	
Checking/Savings	
Mechanics Bank Checking	42,066.23
Mechanics Money Market	979,470.23
F & M Bank - Checking	51,446.82
F & M Bank - Money Market	100,978.70
Total Checking/Savings	1,173,961.98
Other Current Assets	
Accounts Receivable	
Ben Harvy Investments, LLC	0.33
A/R Court of Fountains	-0.30
Accounts Receivable - Other	-0.16
Total Accounts Receivable	-0.13
Intercompany Due To	0.17
Prepaid Insurance	0.36
Mortgage Escrow Deposits	-0.29
Other Reserves	-0.41
Total Other Current Assets	-0.30
Total Current Assets	1,173,961.68
Fixed Assets	
Other Reserves Court of Fountai	721,961.92
Buildings and Improvements	0.03
Total Fixed Assets	721,961.95
Other Assets	
AHA Organizational Costs	0.48
Accum Amort of Costs	-0.48
Bond and loan fees	-0.48
Accumulated amortizations	0.48
Total Other Assets	0.00
TOTAL ASSETS	**1,895,923.63**

See accountants' report and notes to financial statements

California Affordable Housing Agency
Balance Sheet
As of May 31, 2024

	May 31, 24
LIABILITIES & EQUITY	
Liabilities	
Current Liabilities	
Accounts Payable	
Accounts Payable	59,999.82
Total Accounts Payable	59,999.82
Other Current Liabilities	
Series 2009A Bonds	-0.34
Bonds payable Court of Fountain	721,962.03
Total Other Current Liabilities	721,961.69
Total Current Liabilities	781,961.51
Total Liabilities	781,961.51
Equity	
Change in Net Assets	-3,038,628.00
Unrestricted Net Assets	-819,602.00
Restricted Net Assets	776,639.00
Owner Contributions	3,782,855.00
Fund Balance	718,614.62
Net Income	-305,916.50
Total Equity	1,113,962.12
TOTAL LIABILITIES & EQUITY	1,895,923.63

See accountants' report and notes to financial statements

California Affordable Housing Agency
Profit & Loss
January through May 2024

	Jan - May 24
Ordinary Income/Expense	
Income	
Other Income	1,620.00
Total Income	1,620.00
Expense	
Administrative Expenses	450.00
Bank fees/wires	575.57
Insurance Expense	5,895.00
Accounting & Auditing Fee	15,751.00
Legal Expense	153,458.37
Training & Travel	8,307.54
Contract Costs	87,000.00
Office Rent	6,000.00
Meals & Entertainment	53.54
Website & Internet Expenses	635.50
Annual Retreat/Conference	47,977.90
Dues & Memberships	995.00
Conference fees	920.00
Total Expense	328,019.42
Net Ordinary Income	-326,399.42
Other Income/Expense	
Other Income	
Interest Income	20,482.92
Total Other Income	20,482.92
Net Other Income	20,482.92
Net Income	-305,916.50

See accountants' report and notes to financial statements

CALAHA

CaliforniaAffordableHousingAgency

October 14, 2023

TO: CalAHA Executive Committee

FROM: Nick Benjamin, Executive Director

SUBJECT: Information and preliminary approval to consider partnering with KH Equities for a project in Granada Hills, California.

On September 3, 2024, the agency was approached by Daniel Mense, a principal with KH Equities, a development and acquisition company based in Los Angeles, CA.

KH Equities is planning a new construction project in Granada Hills. The Project Summary is attached for your review. In an effort to qualify for property tax abatement, they are seeking to partner with CalAHA in a qualified structure. CalAHA would be asked to prepare and submit a regulatory agreement for the project along with annual monitoring responsibility. In addition, CalAHA would be asked to submit a "grant" to the project of $10,000. Although the fees can be negotiated, KH suggests an initial fee of $100,000 with the annual monitoring fee +/- $30,000. The proposed structure is used by many developers who do not have access to a nonprofit partner who qualifies for tax abatement purposes.

One caveat in the transaction is that the project falls within the Los Angeles city limits. Accordingly, a Cooperation Agreement would have to be approved/executed with the Housing Authority of the City of Los Angeles (HACLA) in order for CalAHA to participate as a partner.

I recommend that the Executive Committee approve the partnership/structure with KH Equities.

806 West 19th Street, Merced, CA 95340
(209) 384-0001

EQUAL HOUSING OPPORTUNITY

CALAHA

CaliforniaAffordableHousingAgency

October 14, 2023

TO: CalAHA Executive Committee

FROM: Nick Benjamin, Executive Director

SUBJECT: Approval/Ratification of Necessary Activity for Vermont Properties (Stanislaus Regional Housing Authority) Purchase of ten (10) single family homes located in Turlock, California

In August 2024, the Stanislaus Regional Housing Authority (SRHA) Executive Director, Jim Kruse, was presented with an opportunity to purchase ten (10) single family homes off Vermont Ave. in Turlock, CA.

Given the agency's long-standing partnership with TRIO/Link Home, SRHA developed a purchase/marketing approach with Patrick Howard of Link Home. The approach involves qualifying buyers for the homes through Link Home and closing the sale on respective homes as construction is completed. CalAHA will act as the mortgagee and provide $4,000 per home cash deposit as down payment for the initial purchase until such time as the qualified buyer is prepared to close the transaction as purchaser.

SRHA has the expressed mission to sell the homes at affordable pricing for the local area. Even with that constraint, a small profit margin (est. $20,000 to $25,000 per home) is planned for CalAHA as partner in the project (dependent on independent appraisal).

The Purchase Sale Agreements (PSA) for each property have already been executed along with the required $40,000 down payment to secure the total transaction (one home is due to close shortly).

I am asking the Executive Committee to ratify the signing of the PSA's for the project and approve necessary activities to complete the sale/resale of the Vermont Ave. properties in partnership with Link Home.

806 West 19th Street, Merced, CA 95340
(209) 384-0001

EQUAL HOUSING OPPORTUNITY

CALAHA

CaliforniaAffordableHousingAgency

October 14, 2023

TO: CalAHA Executive Committee

FROM: Nick Benjamin, Executive Director

SUBJECT: Information and preliminary approval to consider partnering with KH Equities for a project in Granada Hills, California.

On September 3, 2024, the agency was approached by Daniel Mense, a principal with KH Equities, a development and acquisition company based in Los Angeles, CA.

KH Equities is planning a new construction project in Granada Hills. The Project Summary is attached for your review. In an effort to qualify for property tax abatement, they are seeking to partner with CalAHA in a qualified structure. CalAHA would be asked to prepare and submit a regulatory agreement for the project along with annual monitoring responsibility. In addition, CalAHA would be asked to submit a "grant" to the project of $10,000. Although the fees can be negotiated, KH suggests an initial fee of $100,000 with the annual monitoring fee +/- $30,000. The proposed structure is used by many developers who do not have access to a nonprofit partner who qualifies for tax abatement purposes.

One caveat in the transaction is that the project falls within the Los Angeles city limits. Accordingly, a Cooperation Agreement would have to be approved/executed with the Housing Authority of the City of Los Angeles (HACLA) in order for CalAHA to participate as a partner.

I recommend that the Executive Committee approve the partnership/structure with KH Equities.

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(209) 384-0001

EQUAL HOUSING OPPORTUNITY

CALAHA

CaliforniaAffordableHousingAgency

October 14, 2023

TO: CalAHA Executive Committee

FROM: Nick Benjamin, Executive Director

SUBJECT: Approval of Necessary Activity for Tuscany Properties (Stanislaus Regional Housing Authority) Purchase of twenty (20) single family homes located in Ceres, California

In September 2024, the Stanislaus Regional Housing Authority (SRHA) Executive Director Jim Kruse was presented with an opportunity to purchase twenty (20) single family homes in a distressed subdivision (contractor failure to complete) named Tuscany in Ceres, CA.

This opportunity will require close partnership with the TRIO/Link Home program very similar to that of the Vermont properties project also being considered by the Executive Committee. TRIO/Link Home will work closely with SRHA staff in marketing the homes to eligible buyers in the local area. The initial purchase by SRHA involves improved, but vacant lots, within the subdivision. The lots would be "built out" with plans/models already approved by local planning staff. Concurrently, TRIO/Link Home program will be pre-marketing the homes to interested buyers in the area.

As seen in previous agency activities, CalAHA will act as buyer with a similar profit goal/structure as previous ($20,000-$25,000 per home). I am asking the Executive Committee to approve necessary activities to complete the sale/resale of the Tuscany properties in partnership with TRIO/Link Home and SRHA.

806 West 19th Street, Merced, CA 95340
(209) 384-0001

EQUAL HOUSING OPPORTUNITY

CALAHA

CaliforniaAffordableHousingAgency

October 14, 2023

TO: CalAHA Executive Committee

FROM: Tom Lewis, General Counsel

SUBJECT: Amendment to Executive Director Agreement with Nick Benjamin

Nick Benjamin had previously informed the Executive Committee that he planned to retire on September 1, 2024. As that date approached, numerous discussions were held with Board Chair, Bob Havlicek, Nick Benjamin and general counsel. With the pending work load and numerous projects being worked on by CalAHA, and based on his excellent leadership of CalAHA, Mr. Benjamin was encouraged to find a way to continue to work with CalAHA after his planned retirement.

Mr. Benjamin then presented a proposed amendment to his current agreement whereby he would reduce his workload so that he could take some time off to travel with his family at different times throughout the year.

Bob Havlicek and Nick Benjamin then negotiated a reduced monthly rate from the current $14,500 per year month to a reduced monthly amount of $11,000 per month as of September 1, 2024.

As always, Mr. Benjamin makes himself available for all zoom meetings and conference calls as he has done previously. It has been a very smooth transition during the first month of this amendment to the agreement.

It is recommended that the Executive Committee ratify this amendment to Mr. Benjamin's agreement with CalAHA.

He is an invaluable leader and member of the CalAHA team. We have many new projects and financing opportunities in this coming year.

806 West 19th Street, Merced, CA 95340
(209) 384-0001

EQUAL HOUSING OPPORTUNITY

Amendment to Agreement for Professional Services

RECITALS

Whereas, on or about December 1, 2021, Nicholas Benjamin (hereinafter referred to as "Benjamin"), a sole proprietor doing business at Benjamin Executive and Development Services and the California Affordable Housing Agency (hereinafter referred to as "CalAHA") entered into an Agreement for Professional Services, a copy of which is attached hereto as Exhibit "A;" and

Whereas, the parties to that Agreement, based on and pursuant to the approval of Action Item 2024-04A by the CalAHA Executive Committee, by roll call vote, at the meeting of October 14, 2024; and

Whereas, this Amendment will extend the term of the Agreement and will change the rate of compensation under the existing Agreement.

NOW THEREFORE:

The California Affordable Housing Agency and Nicholas Benjamin hereby modify the original Agreement as follows:

Paragraph 2 is amended to read:

2. The term of this Agreement shall be extended for an additional one year term beyond the present term which ends on November 30, 2024 from December 1, 2024 to November 30, 2025. CalAHA may opt for two (2) additional one year terms of this Agreement by not providing Benjamin with a notice of cancellation that is sent to Benjamin at least sixty (60) days prior to the end of any optional extended twelve (12) month term.

Paragraph 4 is amended to read:

4. Benjamin's current monthly compensation amount of $14,500.00 per month shall decrease to $11,000.00 per month, based on Benjamin's reduced work hours beginning on September 1, 2024 and shall continue at that monthly rate until changed by the parties hereto, in writing, in a form of amendment to this Agreement.

Benjamin shall maintain his California Department of Housing and Community Development dealership license and permit to sell modular and manufactured housing units in the State of California throughout the term, and any extension thereof, of this Agreement.

All other paragraphs and provisions of the Agreement shall remain unchanged as originally written and agreed to as of December 1, 2021.

This amendment shall be effective as of September 1, 2024.

We, the parties to this Amendment to Agreement for Professional Services hereby agree to this Amendment as set forth herein.

Dated: _____, 2024

Benjamin Executive and Development Services

By:_____
Nicholas Benjamin

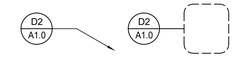
Dated: _____, 2024

California Affordable Housing Agency

By:_____
Robert P. Havlicek
Board Chair

ARCHITECTURAL SYMBOLS LEGEND

DETAIL INDICATOR - REFERENCE & DETAIL INDICATOR - SECTION

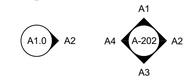


DETAIL INDICATOR - ITEM & DETAIL INDICATOR - AREA

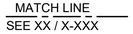
SECTION INDICATOR - PARTIAL BUILDING/WALL

SECTION INDICATOR - BUILDING

ELEVATION INDICATOR - EXTERIOR



ELEVATION INDICATOR - INTERIOR, SINGLE & MULTIPLE VIEW

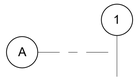


MATCH LINE INDICATOR

ROOM IDENTIFIER WITH ROOM NAME & NUMBER

REVISION INDICATOR & REVISION CLOUD

ELEVATION INDICATOR - LEVEL & SPOT



REFERENCE GRID WITH REFERENCE GRID LINES

WINDOW OR LOUVER IDENTIFIER

DEMO KEYNOTE INDICATOR

KEYNOTE INDICATOR

FURNITURE, FIXTURE & EQUIPMENT INDICATOR

DOOR TAG IDENTIFIER

PLAN NORTH & TRUE NORTH INDICATOR

PROJECT DIRECTORY

DESIGNER

JKS DESIGN

DESIGNER: JUSTIN SMITH

628 CODINGTON WAY
MODESTO, CA 95357
P: 209.614.3725
JKSDESIGN14@GMAIL.COM

STRUCTURAL DESIGNER

AXIOM STRUCTURAL DESIGN INC.

ENGINEER: ANDREW GREGORIO

MODESTO, CA 95354
P: 209.604.2898
ANDREW@AXIOMSD.COM

TUSCANY VILLAGE

UNIT A
CERES, CA
1578 E. WHITMORE AVE.
CERES CA. 95307

PROJECT DATA

SITE ADDRESS:	1578 E. WHITMORE AVE CERES CA. 95307
PROJECT AREA 1ST FLOOR:	663 SF
PROJECT AREA 2ND FLOOR:	981SF
PROJECT AREA GARAGE:	461 SF
CONSTRUCTION:	VB
OCCUPANCY TYPE:	R-3
SPRINKLERED:	NO
NUMBER OF FLOORS:	2

ABBREVIATIONS

AC	ASPHALTIC CONCRETE
ACC	ACCESSIBLE
AGG	AGGREGATE
A/C	AIR CONDITIONER
AL	ALUMINUM
AB	ANCHOR BOLT
@	AT
ABV	ABOVE
AFF	ABOVE FINISH FLOOR
BLK	BLOCK
BLKG	BLOCKING
BD	BOARD
CB	CATCH BASIN
CFCI	CONTRACTOR FURNISHED & INSTALLED
CG	CORNER GUARD
CLG	CEILING
COL	COLUMN
CONC	CONCRETE
CMU	CONCRETE MASONRY UNIT
CONT	CONTINUOUS OR CONTINUE
DIAG	DIAGONAL
DS	DOWN SPOUT
DWGS	DRAWINGS
"	DIAMETER
ELECT	ELECTRICAL
ELEV	ELEVATION
EQ	EQUAL
(E)	EXISTING
EXH	EXHAUST
EXT	EXTERIOR
FOS	FACE OF STUD
FLUOR	FLUORESCENT
FIN	FINISH
FLR	FLOOR
FD	FLOOR DRAIN
FTG	FOOTING
FND	FOUNTATION
GA	GAUGE
GALV	GALVANIZED
GL	GLASS OR GLAZING
GYP BD	GYPSUM BOARD
HDR	HEADER
HVAC	HEATING/VENTILATION/ AIR CONDITIONING
HT	HEIGHT
HORIZ	HORIZONTAL
HB	HOSE BIB
INT	INTERIOR
JT	JOINT
LB	LAG BOLT
LAV	LAVATORY
LT	LIGHT
MAX	MAXIMUM
MECH	MECHANICAL
MTL	METAL
MIN	MINIMUM
NIC	NOT IN CONTRACT
NTS	NOT TO SCALE
OBS	OBSCURE
OC	ON CENTER
OFCI	OWNER FURNISHED CONTRACTOR INSTALLED
OFOI	OWNER FURNISHED OWNER INSTALLED
OR	OPERATION ROOM
OH	OVER HEAD
PVMT	PAVEMENT
PL	PLATE
PLN	PLAN
PLWD	PLYWOOD
RAD	RADIUS
RD	ROOF DRAIN
RM	ROOM
RR	RESTROOM
SCH	SCHEDULE
SHT	SHEET
SIM	SIMILAR
SPEC	SPECIFICATION
SQ	SQUARE
STD	STANDARD
STOR	STORAGE
SAT	SUSPENDED ACOUSTICAL TILE
SYS	SYSTEM
TEL	TELEPHONE
THK	THICK
T&G	TONGUE & GROOVE
T.O.P.	TOP OF PLATE (ELEV.)
TYP	TYPICAL
UON	UNLESS OTHERWISE NOTED
VCT	VINYL COMPOSITIONAL TILE
VB	VINYL BASE
V.I.F.	VARIFY IN FIELD
WC	WATER CLOSET
WP	WEATHER OR WATER PROOF
WD	WOOD

SHEET INDEX

GENERAL NOTES

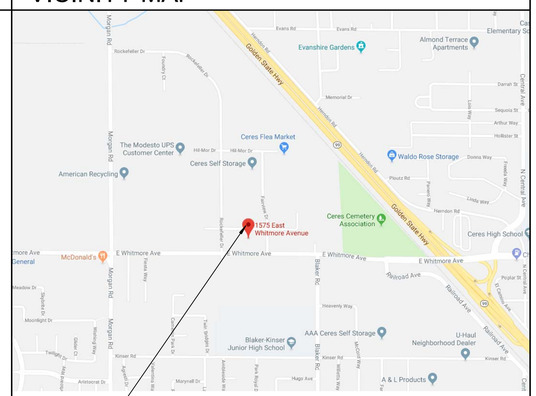
1. CODES: ALL WORK SHALL CONFORM TO THE FOLLOWING CODES. CONTRACTOR AND THEIR SUBCONTRACTORS SHALL HAVE WORKING KNOWLEDGE OF ALL CODES, REGULATIONS AND/OR STANDARDS APPLICABLE TO THEIR WORK. CONTRACTOR SHALL MAKE AVAILABLE LISTED CODES AT JOB SITE AT ALL TIMES.

   2016 CALIFORNIA ENERGY CODE (2016 BUILDING ENERGY EFFICIENCY STANDARDS)

   2016 CALIFORNIA GREEN BUILDING STANDARDS CODE (CALGreen Code)

   2016 CALIFORNIA ADMINISTRATIVE CODE (CAC)
   PART 1, TITLE 24, CALIFORNIA CODE OF REGULATIONS (CCR)
   2016 CALIFORNIA BUILDING CODE (CBC)
   PART 2, TITLE 24, CCR
   BASED ON THE 2015 INTERNATIONAL BUILDING CODE (IBC)
   2016 CALIFORNIA ELECTRICAL CODE (CEC)
   PART 3, TITLE 24, CCR
   BASED ON THE 2014 NATIONAL ELECTRICAL CODE (NEC)
   2016 CALIFORNIA MECHANICAL CODE (CMC)
   PART 4, TITLE 24, CCR
   BASED ON THE 2015 UNIFORM MECHANICAL CODE (UMC)
   2016 CALIFORNIA PLUMBING CODE (CPC)
   PART 5, TITLE 24, CCR
   BASED ON THE 2015 UNIFORM PLUMBINB CODE (UPC)
   2016 CALIFORNIA FIRE CODE (CFC)
   PART 9, TITLE 24, CCR
   BASED ON THE 2015 INTERNATIONAL FIRE CODE (IFC)
2. EXISTING CONDITIONS: ALL EXISTING CONDITIONS NOT SHOWN OR INDICATED ON THESE PLANS ARE TO REMAIN UNCHANGED. FIELD VERIFY EXISTING CONDITIONS AND ALL DIMENSIONS. ANY DISCREPANCY BETWEEN DRAWINGS AND ACTUAL WORK SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT FOR CORRECTION PRIOR TO COMMENCING WITH THE WORK.
3. INSULATION: ALL INSULATION MATERIALS, INCLUDING FACINGS, SUCH AS VAPOR BARRIERS OR BREATHER PAPERS INSTALLED WITHIN FLOOR-CEILING ASSEMBLIES, ROOF-CEILING ASSEMBLIES, WALLS, CRAWL SPACES OR ATTICS, SHALL HAVE A FLAME SPREAD RATING NOT TO EXCEED 25 AND A SMOKE DENSITY NOT TO EXCEED 450 WHEN TESTED IN ACCORDANCE WITH SECTION 803 IN THE 2013 CBC.
4. WORK: ALL WORK SHALL BE DONE IN A NEAT AND WORKMAN LIKE MANNER ACCORDING TO THE BEST TRADE PRACTICE BY THOSE SKILLED IN THE PARTICULAR TRADE, EQUIPMENT, FIXTURES, PIPING, ETC., SHALL BE PLUMB, LEVEL, SQUARE OR CENTERED ETC., EQUIPMENT TO BE INSTALLED IN STRICT COMPLIANCE WITH MANUFACTURERS' RECOMMENDATIONS.
5. ANCHORS: WHEN INSTALLING DRILLED-IN ANCHORS AND/OR POWDER DRIVEN PINS IN EXISTING NON-PRESTRESSED REINFORCED CONCRETE, USE CARE AND CAUTION TO AVOID CUTTING OR DAMAGING THE EXISTING REINFORCING BARS. WHEN INSTALLING THEM INTO EXISTING PRE STRESSED TENDONS, USE A NONDESTRUCTIVE METHOD PRIOR TO INSTALLATION. EXERCISE EXTREME CARE AND CAUTION TO AVOID CUTTING OR DAMAGING THE TENDONS.
6. PLANS: GENERAL CONTRACTOR SHALL MAKE AVAILABLE COMPLETE SETS OF APPROVED CONSTRUCTION DOCUMENTS TO HIS OR HER SUBCONTRACTORS FOR REVIEW. EACH SUBCONTRACTOR SHALL BE RESPONSIBLE FOR REVIEWING THE COMPLETE SET AND COORDINATING ITEMS WHICH PERTAIN TO HIS OR HER WORK WITH OTHER TRADES PRIOR TO COMMENCING WITH THE WORK. MAKE SURE THE DRAWINGS YOU USE ARE APPROVED AND UP TO DATE.
7. ACCESS: ALL VALVES, DETECTORS, FIRE AND SMOKE DAMPERS SHALL BE ACCESSIBLE. WHETHER OR NOT SHOWN ON PLANS AT EACH LOCATION.
8. HAZMAT: PER HAZARD MANAGEMENT SERVICES, INC. REPORT DATED NOVEMBER 24, 2014, (THAT IS, ASBESTOS, LEAD PAINT, ETC.) SHOULD THE CONTRACTOR ENCOUNTER SUCH MATERIALS, CONTACT THE OWNER IMMEDIATELY FOR REMOVAL AND DISPOSAL.
9. SCOPE OF WORK: IT IS NOT INTENDED THAT THE CONTRACT DOCUMENTS INCLUDE EACH AND EVERY SUBSYSTEM AND SUBCOMPONENT NECESSARY TO FULLY AND PROPERLY COMPLETE THE WORK. SUBSYSTEMS, SUBCOMPONENTS OR DETAILS REQUIRED OR NORMALLY INCLUDED AS TRADE PRACTICE MAY NOT BE SPECIFICALLY MENTIONED OR SHOWN. NEVERTHELESS, CONTRACTOR SHALL BE RESPONSIBLE FOR EACH ELEMENT OF THE WORK.
10. FIRE EXTINGUISHERS: NECESSARY 2A:10BC OR BETTER PORTABLE FIRE EXTINGUISHERS ARE PER SECTION 906, PART 9 (CFC), TITLE 24, CAC AND TITLE 19, CCR. AT REMODELS, PROTECT AND PROVIDE ADEQUATE CLEARANCES AROUND EXISTING EXTINGUISHERS CONSTRUCTION AS NECESSARY. ADDITIONAL FIRE EXTINGUISHERS, BY CONTRACTOR, MAY BE NEEDED CONSTRUCTION. PERMANENT FACILITIES REQUIRE A MINIMUM OF ONE PORTABLE FIRE EXTINGUISHER IN APPLICABLE BUILDINGS. LIMIT TRAVEL DISTANCE TO 75 FEET. VERIFY LOCATION(S) WITH OWNER & FLSO IF NOT ALREADY SHOWN ON PLANS. EXTINGUISHERS ARE REQUIRED IN ELEVATOR EQUIPMENT ROOMS. ACCESSIBLE PORTIONS SHALL NOT EXCEED 48" AFF. 20BC OR BETTER
11. SPECIAL TESTING AND INSPECTION FOR EXPANSION ANCHORS, CONCRETE CEILING WIRES ETC. TO BE COORDINATED BY CONTRACTOR, TESTING LAB CONTRACTED BY OWNER. COST OF REINSPECTION TO BE PAID BY CONTRACTOR.

VICINITY MAP



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CONSULTING ENGINEER

AUTHORITY HAVING JURISDICTION

PROJECT#

TUSCANY VILLAGE
1578 E. WHITMORE AVE.
CERES CA. 95307

UNIT A

PROJECT DETAILS

PROJECT NO: 17029
SUBMITTAL DATE:

PROJECT REVISIONS

MARK	DATE	DESCRIPTION
1	05-29-18	PLANCHECK #1

SHEET DETAILS

DRAWN BY: Author
CHECKED BY: Checker

SHEET TITLE

COVER SHEET

SHEET NUMBER

G0.0

IF THIS SHEET IS NOT 24"x36", IT HAS BEEN RESIZED - SCALE ACCORDINGLY
0 1/4" 1/2" 1" 2"

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2016 CALIFORNIA GREEN BUILDING STANDARDS CODE
RESIDENTIAL MANDATORY MEASURES, SHEET 1 (INCLUDING JANUARY 1, 2017 ERRATA)

AIA|CC CALIFORNIA COUNCIL

INSPECTOR SIGNOFF

CHAPTER 3
GREEN BUILDING
SECTION 301 GENERAL

301.1 SCOPE. Buildings shall be designed to include the green building measures specified as mandatory in the application checklists contained in this code. Voluntary green building measures are also included in the application checklists and may be included in the design and construction of structures covered by this code, but are not required unless adopted by a city, county, or city and county as specified in Section 101.7.

301.1.1 Additions and alterations. [HCD] The mandatory provisions of Chapter 4 shall be applied to additions or alterations of existing residential buildings where the addition or alteration increases the building's conditioned area, volume, or size. The requirements shall apply only to and/or within the specific area of the addition or alteration.

Note: On and after January 1, 2014, residential buildings undergoing permitted alterations, additions, or improvements shall replace noncompliant plumbing fixtures with water-conserving plumbing fixtures. Plumbing fixture replacement is required prior to issuance of a certificate of final completion, certificate of occupancy or final permit approval by the local building department. See Civil Code Section 1101.1, et seq., for the definition of a noncompliant plumbing fixture, types of residential buildings affected and other important enactment dates.

301.2 LOW-RISE AND HIGH-RISE RESIDENTIAL BUILDINGS. [HCD] The provisions of individual sections of CALGreen may apply to either low-rise residential buildings high-rise residential buildings, or both. Individual sections will be designated by banners to indicate where the section applies specifically to low-rise only (LR) or high-rise only (HR). When the section applies to both low-rise and high-rise buildings, no banner will be used.

SECTION 302 MIXED OCCUPANCY BUILDINGS

302.1 MIXED OCCUPANCY BUILDINGS. In mixed occupancy buildings, each portion of a building shall comply with the specific green building measures applicable to each specific occupancy.

ABBREVIATION DEFINITIONS:

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

CHAPTER 4
RESIDENTIAL MANDATORY MEASURES
DIVISION 4.1 PLANNING AND DESIGN
SECTION 4.102 DEFINITIONS

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

FRENCH DRAIN. A trench, hole or other depressed area loosely filled with rock, gravel, fragments of brick or similar pervious material used to collect or channel drainage or runoff water.

WATTLES. Wattles are used to reduce sediment in runoff. Wattles are often constructed of natural plant materials such as hay, straw or similar material shaped in the form of tubes and placed on a downflow slope. Wattles are also used for perimeter and inlet controls.

4.106 SITE DEVELOPMENT

4.106.1 GENERAL. Preservation and use of available natural resources shall be accomplished through evaluation and careful planning to minimize negative effects on the site and adjacent areas. Preservation of slopes, management of storm water drainage and erosion controls shall comply with this section.

4.106.2 STORM WATER DRAINAGE AND RETENTION DURING CONSTRUCTION. Projects which disturb less than one acre of soil and are not part of a larger common plan of development which in total disturbs one acre or more, shall manage storm water drainage during construction. In order to manage storm water drainage during construction, one or more of the following measures shall be implemented to prevent flooding of adjacent property, prevent erosion and retain soil runoff on the site.

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

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

1. Swales
2. Water collection and disposal systems
3. French drains
4. Water retention gardens
5. Other water measures which keep surface water away from buildings and aid in groundwater recharge.

Exception: Additions and alterations not altering the drainage path.

4.106.4 Electric vehicle (EV) charging for new construction. New construction shall comply with Sections 4.106.4.1 and 4.106.4.2 to facilitate future installation and use of EV chargers. Electric vehicle supply equipment (EVSE) shall be installed in accordance with the *California Electrical Code,* Article 625.

Exceptions: On a case-by-case basis, where the local enforcing agency has determined EV charging and infrastructure are not feasible based upon one or more of the following conditions:

1. Where there is no commercial power supply.
2. Where there is evidence substantiating that meeting the requirements will alter the local utility infrastructure design requirements on the utility side of the meter so as to increase the utility side cost to the homeowner or developer by more than $400.00 per unit.

4.106.4.1 New one- and two-family dwellings and townhouses with attached private garages. For each dwelling unit, install a listed raceway to accommodate a dedicated 208/240-volt branch circuit. The raceway shall not be less than trade size 1 (nominal 1-inch inside diameter). The raceway shall originate at the main service or subpanel and shall terminate into a listed cabinet, box or other enclosure in close proximity to the proposed location of an EV charger. Raceways are required to be continuous at enclosed, inaccessible or concealed areas and spaces. The service panel and/or subpanel shall provide capacity to install a 40-ampere minimum dedicated branch circuit and space(s) reserved to permit installation of a branch circuit overcurrent protective device.

4.106.4.1.1 Identification. The service panel or subpanel circuit directory shall identify the overcurrent protective device space(s) reserved for future EV charging as "EV CAPABLE". The raceway termination location shall be permanently and visibly marked as "EV CAPABLE".

4.106.4.2 New multifamily dwellings. Where 17 or more multifamily dwelling units are constructed on a building site, 3 percent of the total number of parking spaces provided for all types of parking facilities, but in no case less than one, shall be electric vehicle charging stations (EV spaces) capable of supporting future EVSE. Calculations for the number of EV spaces shall be rounded up to the nearest whole number.

Note: Construction documents are intended to demonstrate the project's capability and capacity for facilitating future EV charging. There is no requirement for EV spaces to be constructed or available until EV chargers are installed for use.

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

When EV chargers are installed, EV spaces required by Section 4.106.2.2, Item 3, shall comply with at least one of the following options:

1. The EV space shall be located adjacent to an accessible parking space meeting the requirements of the *California Building Code,* Chapter 11A, to allow use of the EV charger from the accessible parking space.
2. The EV space shall be located on an accessible route, as defined in the *California Building Code,* Chapter 2, to the building.

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4.106.4.2.2 Electric vehicle charging space (EV space) dimensions. The EV space shall be designed to comply with the following:

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

4.106.4.2.3 Single EV space required. Install a listed raceway capable of accommodating a 208/240-volt dedicated branch circuit. The raceway shall not be less than trade size 1 (nominal 1-inch inside diameter). The raceway shall originate at the main service or subpanel and shall terminate into a listed cabinet, box or enclosure in close proximity to the proposed location of the EV spaces. Construction documents shall identify the raceway termination point. The service panel and/or subpanel shall provide capacity to install a 40-ampere minimum dedicated branch circuit and space(s) reserved to permit installation of a branch circuit overcurrent protective device.

4.106.4.2.4 Multiple EV spaces required. Construction documents shall indicate the raceway termination point and proposed location of future EV spaces and EV chargers. Construction documents shall also provide information on amperage of future EVSE, raceway method(s), wiring schematics and electrical load calculations to verify that the electrical panel service capacity and electrical system, including any on-site distribution transformer(s), have sufficient capacity to simultaneously charge all EVs at all required EV spaces at the full rated amperage of the EVSE. Plan design shall be based upon a 40-ampere minimum branch circuit. Raceways and related components that are planned to be installed underground, enclosed, inaccessible or in concealed areas and spaces shall be installed at the time of original construction.

4.106.4.2.5 Indentification. The service panel or subpanel circuit directory shall identify the overcurrent protective device space(s) reserved for future EV charging purposes as "EV CAPABLE" in accordance with the *California Electrical Code.*

Notes:

1. The California Department of Transportation adopts and publishes the "California Manual on Uniform Traffic Control Devices (California MUTCD)" to provide uniform standards and specifications for all official traffic control devices in California. Zero Emission Vehicle Signs and Pavement Markings can be found in the New Policies & Directives Number 13-01. Website: www.dot.ca.gov/trafficops/policy/13-01.pdf

2. See Vehicle Code Section 22511 for EV charging space signage in off-street parking facilities and for use of EV charging spaces.

3. The Governor's Office of Planning and Research (OPR) published a "Zero-Emission Vehicle Community Readiness Guidebook" which provides helpful information for local governments, residents and businesses.
   Website: http://opr.ca.gov/docs/ZEV_Guidebook.pdf.

DIVISION 4.2 ENERGY EFFICIENCY
4.201 GENERAL

4.201.1 SCOPE. For the purposes of mandatory energy efficiency standards in this code, the California Energy Commission will continue to adopt mandatory standards.

DIVISION 4.3 WATER EFFICIENCY AND CONSERVATION
4.303 INDOOR WATER USE

4.303.1 WATER CONSERVING PLUMBING FIXTURES AND FITTINGS. Plumbing fixtures (water closets and urinals) and fittings (faucets and showerheads) shall comply with the following:

4.303.1.1 Water Closets. The effective flush volume of all water closets shall not exceed 1.28 gallons per flush. Tank-type water closets shall be certified to the performance criteria of the U.S. EPA WaterSense Specification for Tank-type Toilets.

Note: The effective flush volume of dual flush toilets is defined as the composite, average flush volume of two reduced flushes and one full flush.

4.303.1.2 Urinals. The effective flush volume of wall mounted urinals shall not exceed 0.125 gallons per flush. The effective flush volume of all other urinals shall not exceed 0.5 gallons per flush.

4.303.1.3 Showerheads.

4.303.1.3.1 Single Showerhead. Showerheads shall have a maximum flow rate of not more than 2.0 gallons per minute at 80 psi. Showerheads shall be certified to the performance criteria of the U.S. EPA WaterSense Specification for Showerheads.

4.303.1.3.2 Multiple showerheads serving one shower. When a shower is served by more than one showerhead, the combined flow rate of all the showerheads and/or other shower outlets controlled by a single valve shall not exceed 2.0 gallons per minute at 80 psi, or the shower shall be designed to only allow one shower outlet to be in operation at a time.

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

4.303.1.4 Faucets.

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

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

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

4.303.1.4.4 Kitchen Faucets. The maximum flow rate of kitchen faucets shall not exceed 1.8 gallons per minute at 60 psi. Kitchen faucets may temporarily increase the flow above the maximum rate, but not to exceed 2.2 gallons per minute at 60 psi, and must default to a maximum flow rate of 1.8 gallons per minute at 60 psi.

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

4.303.2 STANDARDS FOR PLUMBING FIXTURES AND FITTINGS. Plumbing fixtures and fittings shall be installed in accordance with the California Plumbing Code, and shall meet the applicable standards referenced in Table 1701.1 of the California Plumbing Code.

NOTE:
THIS TABLE COMPILES THE DATA IN SECTION 4.303.1, AND IS INCLUDED AS A CONVENIENCE FOR THE USER.

TABLE - MAXIMUM FIXTURE WATER USE

FIXTURE TYPE	FLOW RATE
SHOWER HEADS (RESIDENTIAL)	2.0 GMP @ 80 PSI
LAVATORY FAUCETS (RESIDENTIAL)	MAX. 1.2 GPM @ 60 PSI MIN. 0.8 GPM @ 20 PSI
LAVATORY FAUCETS IN COMMON & PUBLIC USE AREAS	0.5 GPM @ 60 PSI
KITCHEN FAUCETS	1.8 GPM @ 60 PSI
METERING FAUCETS	0.25 GAL/CYCLE
WATER CLOSET	1.28 GAL/FLUSH
URINALS	0.125 GAL/FLUSH

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4.304 OUTDOOR WATER USE

4.304.1 IRRIGATION CONTROLLERS. Automatic irrigation system controllers for landscaping provided by the builder and installed at the time of final inspection shall comply with the following:

1. Controllers shall be weather- or soil moisture-based controllers that automatically adjust irrigation in response to changes in plants' needs as weather conditions change.

2. Weather-based controllers without integral rain sensors or communication systems that account for local rainfall shall have a separate wired or wireless rain sensor which connects or communicates with the controller(s). Soil moisture-based controllers are not required to have rain sensor input.

Note: More information regarding irrigation controller function and specifications is available from the Irrigation Association.

DIVISION 4.4 MATERIAL CONSERVATION AND RESOURCE EFFICIENCY
4.406 ENHANCED DURABILITY AND REDUCED MAINTENANCE

4.406.1 RODENT PROOFING. Annular spaces around pipes, electric cables, conduits or other openings in sole/bottom plates at exterior walls shall be protected against the passage of rodents by closing such openings with cement mortar, concrete masonry or a similar method acceptable to the enforcing agency.

4.408 CONSTRUCTION WASTE REDUCTION, DISPOSAL AND RECYCLING

4.408.1 CONSTRUCTION WASTE MANAGEMENT. Recycle and/or salvage for reuse a minimum of 65 percent of the non-hazardous construction and demolition waste in accordance with either Section 4.408.2, 4.408.3 or 4.408.4, or meet a more stringent local construction and demolition waste management ordinance.

Exceptions:

1. Excavated soil and land-clearing debris.
2. Alternate waste reduction methods developed by working with local agencies if diversion or recycle facilities capable of compliance with this item do not exist or are not located reasonably close to the jobsite.
3. The enforcing agency may make exceptions to the requirements of this section when isolated jobsite are located in areas beyond the haul boundaries of the diversion facility.

4.408.2 CONSTRUCTION WASTE MANAGEMENT PLAN. Submit a construction waste management plan in conformance with Items 1 through 5. The construction waste management plan shall be updated as necessary and shall be available during construction for examination by the enforcing agency.

1. Identify the construction and demolition waste materials to be diverted from disposal by recycling, reuse on the project or salvage for future use or sale.
2. Specify if construction and demolition waste materials will be sorted on-site (source separated) or bulk mixed (single stream).
3. Identify diversion facilities where the construction and demolition waste material collected will be taken.
4. Identify construction methods employed to reduce the amount of construction and demolition waste generated.
5. Specify that the amount of construction and demolition waste materials diverted shall be calculated by weight or volume, but not by both.

4.408.3 WASTE MANAGEMENT COMPANY. Utilize a waste management company, approved by the enforcing agency, which can provide verifiable documentation that the percentage of construction and demolition waste material diverted from the landfill complies with Section 4.408.1.

Note: The owner or contractor may make the determination if the construction and demolition waste materials will be diverted by a waste management company.

4.408.4 WASTE STREAM REDUCTION ALTERNATIVE [LR]. Projects that generate a total combined weight of construction and demolition waste disposed of in landfills, which do not exceed 3.4 lbs./sq.ft. of the building area shall meet the minimum 65% construction waste reduction requirement in Section 4.408.1

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

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

Notes:

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

4.410 BUILDING MAINTENANCE AND OPERATION

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

1. Directions to the owner or occupant that the manual shall remain with the building throughout the life cycle of the structure.
2. Operation and maintenance instructions for the following:
   a. Equipment and appliances, including water-saving devices and systems, HVAC systems, photovoltaic systems, electric vehicle chargers, water-heating systems and other major appliances and equipment.
   b. Roof and yard drainage, including gutters and downspouts.
   c. Space conditioning systems, including condensers and air filters.
   d. Landscape irrigation systems.
   e. Water reuse systems.
3. Information from local utility, water and waste recovery providers on methods to further reduce resource consumption, including recycle programs and locations.
4. Public transportation and/or carpool options available in the area.
5. Educational material on the positive impacts of an interior relative humidity between 30-60 percent and what methods an occupant may use to maintain the relative humidity level in that range.
6. Information about water-conserving landscape and irrigation design and controllers which conserve water.
7. Instructions for maintaining gutters and downspouts and the importance of diverting water at least 5 feet away from the foundation.
8. Information on required routine maintenance measures, including, but not limited to, caulking, painting, grading around the building, etc.
9. Information about state solar energy and incentive programs available.
10. A copy of all special inspections verifications required by the enforcing agency or this [*California Green Building Standards*] code.

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

DIVISION 4.5 ENVIRONMENTAL QUALITY
SECTION 4.501 GENERAL

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

SECTION 4.502 DEFINITIONS

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

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

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

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

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MAXIMUM INCREMENTAL REACTIVITY (MIR). The maximum change in weight of ozone formed by adding a compound to the "Base Reactive Organic Gas (ROG) Mixture" per weight of compound added, expressed to hundredths of a gram (g O³/g ROC).
Note: MIR values for individual compounds and hydrocarbon solvents are specified in CCR, Title 17, Sections 94700 and 94701.

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

PRODUCT-WEIGHTED MIR (PWMIR). The sum of all weighted-MIR for all ingredients in a product subject to this article. The PWMIR is the total product reactivity expressed to hundredths of a gram of ozone formed per gram of product (excluding container and packaging).
Note: PWMIR is calculated according to equations found in CCR, Title 17, Section 94521 (a).

REACTIVE ORGANIC COMPOUND (ROC). Any compound that has the potential, once emitted, to contribute to ozone formation in the troposphere.

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

4.503 FIREPLACES

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

4.504 POLLUTANT CONTROL

4.504.1 COVERING OF DUCT OPENINGS & PROTECTION OF MECHANICAL EQUIPMENT DURING CONSTRUCTION. At the time of rough installation, during storage on the construction site and until final startup of the heating, cooling and ventilating equipment, all duct and other related air distribution component openings shall be covered with tape, plastic, sheet metal or other methods acceptable to the enforcing agency to reduce the amount of water, dust or debris which may enter the system.

4.504.2 FINISH MATERIAL POLLUTANT CONTROL. Finish materials shall comply with this section.

4.504.2.1 Adhesives, Sealants and Caulks. Adhesives, sealant and caulks used on the project shall meet the requirements of the following standards unless more stringent local or regional air pollution or air quality management district rules apply:

1. Adhesives, adhesive bonding primers, adhesive primers, sealants, sealant primers and caulks shall comply with local or regional air pollution control or air quality management district rules where applicable or SCAQMD Rule 1168 VOC limits, as shown in Table 4.504.1 or 4.504.2, as applicable. Such products also shall comply with the Rule 1168 prohibition on the use of certain toxic compounds (chloroform, ethylene dichloride, methylene chloride, perchloroethylene and trichloroethylene), except for aerosol products, as specified in Subsection 2 below.

2. Aerosol adhesives, and smaller unit sizes of adhesives, and sealant or caulking compounds (in units of product, less packaging, which do not weigh more than 1 pound and do not consist of more than 16 fluid ounces) shall comply with statewide VOC standards and other requirements, including prohibitions on use of certain toxic compounds, of *California Code of Regulations,* Title 17, commencing with section 94507.

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

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

4.504.2.4 Verification. Verification of compliance with this section shall be provided at the request of the enforcing agency. Documentation may include, but is not limited to, the following:

1. Manufacturer's product specification.
2. Field verification of on-site product containers.

TABLE 4.504.1 - ADHESIVE VOC LIMIT[1,2]
(Less Water and Less Exempt Compounds in Grams per Liter)

ARCHITECTURAL APPLICATIONS	CURRENT VOC LIMIT
INDOOR CARPET ADHESIVES	50
CARPET PAD ADHESIVES	50
OUTDOOR CARPET ADHESIVES	150
WOOD FLOORING ADHESIVES	100
RUBBER FLOOR ADHESIVES	60
SUBFLOOR ADHESIVES	50
CERAMIC TILE ADHESIVES	65
VCT & ASPHALT TILE ADHESIVES	50
DRYWALL & PANEL ADHESIVES	50
COVE BASE ADHESIVES	50
MULTIPURPOSE CONSTRUCTION ADHESIVE	70
STRUCTURAL GLAZING ADHESIVES	100
SINGLE-PLY ROOF MEMBRANE ADHESIVES	250
OTHER ADHESIVES NOT LISTED	50
SPECIALTY APPLICATIONS	
PVC WELDING	510
CPVC WELDING	490
ABS WELDING	325
PLASTIC CEMENT WELDING	250
ADHESIVE PRIMER FOR PLASTIC	550
CONTACT ADHESIVE	80
SPECIAL PURPOSE CONTACT ADHESIVE	250
STRUCTURAL WOOD MEMBER ADHESIVE	140
TOP & TRIM ADHESIVE	250
SUBSTRATE SPECIFIC APPLICATIONS	
METAL TO METAL	30
PLASTIC FOAMS	50
POROUS MATERIAL (EXCEPT WOOD)	50
WOOD	30
FIBERGLASS	80

1. IF AN ADHESIVE IS USED TO BOND DISSIMILAR SUBSTRATES TOGETHER, THE ADHESIVE WITH THE HIGHEST VOC CONTENT SHALL BE ALLOWED.

2. FOR ADDITIONAL INFORMATION REGARDING METHODS TO MEASURE THE VOC CONTENT SPECIFIED IN THIS TABLE, SEE SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT RULE 1168.

DISCLAIMER: *THIS DOCUMENT IS PROVIDED AND INTENDED TO BE USED AS A MEANS TO INDICATE AREAS OF COMPLIANCE WITH THE 2016 CALIFORNIA GREEN BUILDING STANDARDS (CALGREEN) CODE. DUE TO THE VARIABLES BETWEEN BUILDING DEPARTMENT JURISDICTIONS, THIS CHECKLIST IS TO BE USED ON AN INDIVIDUAL PROJECT BASIS AND MAY BE MODIFIED BY THE END USER TO MEET THOSE INDIVIDUAL NEEDS. THE END USER ASSUMES ALL RESPONSIBILITY ASSOCIATED WITH THE USE OF THIS DOCUMENT, INCLUDING VERIFICATION WITH THE FULL CODE.*

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PROJECT DETAILS
PROJECT NO: 17029
SUBMITTAL DATE:

PROJECT REVISIONS

MARK	DATE	DESCRIPTION

SHEET DETAILS
DRAWN BY: Author
CHECKED BY: Checker

SHEET TITLE
CAL GREEN REQUIREMENTS

SHEET NUMBER
G1.1

2016 CALIFORNIA GREEN BUILDING STANDARDS CODE
RESIDENTIAL MANDATORY MEASURES, SHEET 2 (INCLUDING JANUARY 1, 2017 ERRATA)

INSPECTOR SIGNOFF

TABLE 4.504.2 - SEALANT VOC LIMIT	
(Less Water and Less Exempt Compounds in Grams per Liter)	
SEALANTS	**CURRENT VOC LIMIT**
ARCHITECTURAL	250
MARINE DECK	760
NONMEMBRANE ROOF	300
ROADWAY	250
SINGLE-PLY ROOF MEMBRANE	450
OTHER	420
SEALANT PRIMERS	
ARCHITECTURAL	
NON-POROUS	250
POROUS	775
MODIFIED BITUMINOUS	500
MARINE DECK	760
OTHER	750

TABLE 4.504.3 - VOC CONTENT LIMITS FOR ARCHITECTURAL COATINGS[2,3]	
GRAMS OF VOC PER LITER OF COATING, LESS WATER & LESS EXEMPT COMPOUNDS	
COATING CATEGORY	CURRENT VOC LIMIT
FLAT COATINGS	50
NON-FLAT COATINGS	100
NONFLAT-HIGH GLOSS COATINGS	150
SPECIALTY COATINGS	
ALUMINUM ROOF COATINGS	400
BASEMENT SPECIALTY COATINGS	400
BITUMINOUS ROOF COATINGS	50
BITUMINOUS ROOF PRIMERS	350
BOND BREAKERS	350
CONCRETE CURING COMPOUNDS	350
CONCRETE/MASONRY SEALERS	100
DRIVEWAY SEALERS	50
DRY FOG COATINGS	150
FAUX FINISHING COATINGS	350
FIRE RESISTIVE COATINGS	350
FLOOR COATINGS	100
FORM-RELEASE COMPOUNDS	250
GRAPHIC ARTS COATINGS (SIGN PAINTS)	500
HIGH TEMPERATURE COATINGS	420
INDUSTRIAL MAINTENANCE COATINGS	250
LOW SOLIDS COATINGS[1]	120
MAGNESITE CEMENT COATINGS	450
MASTIC TEXTURE COATINGS	100
METALLIC PIGMENTED COATINGS	500
MULTICOLOR COATINGS	250
PRETREATMENT WASH PRIMERS	420
PRIMERS, SEALERS, & UNDERCOATERS	100
REACTIVE PENETRATING SEALERS	350
RECYCLED COATINGS	250
ROOF COATINGS	50
RUST PREVENTATIVE COATINGS	250
SHELLACS	
CLEAR	730
OPAQUE	550
SPECIALTY PRIMERS, SEALERS & UNDERCOATERS	100
STAINS	250
STONE CONSOLIDANTS	450
SWIMMING POOL COATINGS	340
TRAFFIC MARKING COATINGS	100
TUB & TILE REFINISH COATINGS	420
WATERPROOFING MEMBRANES	250
WOOD COATINGS	275
WOOD PRESERVATIVES	350
ZINC-RICH PRIMERS	340

1. GRAMS OF VOC PER LITER OF COATING, INCLUDING WATER & EXEMPT COMPOUNDS

2. THE SPECIFIED LIMITS REMAIN IN EFFECT UNLESS REVISED LIMITS ARE LISTED IN SUBSEQUENT COLUMNS IN THE TABLE.

3. VALUES IN THIS TABLE ARE DERIVED FROM THOSE SPECIFIED BY THE CALIFORNIA AIR RESOURCES BOARD, ARCHITECTURAL COATINGS SUGGESTED CONTROL MEASURE, FEB. 1, 2008. MORE INFORMATION IS AVAILABLE FROM THE AIR RESOURCES BOARD.

INSPECTOR SIGNOFF

TABLE 4.504.5 - FORMALDEHYDE LIMITS[1]	
MAXIMUM FORMALDEHYDE EMISSIONS IN PARTS PER MILLION	
PRODUCT	**CURRENT LIMIT**
HARDWOOD PLYWOOD VENEER CORE	0.05
HARDWOOD PLYWOOD COMPOSITE CORE	0.05
PARTICLE BOARD	0.09
MEDIUM DENSITY FIBERBOARD	0.11
THIN MEDIUM DENSITY FIBERBOARD[2]	0.13

1. VALUES IN THIS TABLE ARE DERIVED FROM THOSE SPECIFIED BY THE CALIF. AIR RESOURCES BOARD, AIR TOXICS CONTROL MEASURE FOR COMPOSITE WOOD AS TESTED IN ACCORDANCE WITH ASTM E 1333. FOR ADDITIONAL INFORMATION, SEE CALIF. CODE OF REGULATIONS, TITLE 17, SECTIONS 93120 THROUGH 93120.12.

2. THIN MEDIUM DENSITY FIBERBOARD HAS A MAXIMUM THICKNESS OF 5/16" (8 MM).

DIVISION 4.5 ENVIRONMENTAL QUALITY (continued)

4.504.3 CARPET SYSTEMS. All carpet installed in the building interior shall meet the testing and product requirements of at least one of the following:

1. Carpet and Rug Institute's Green Label Plus Program.
2. California Department of Public Health, "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers" Version 1.1, February 2010 (also known as Specification 01350).
3. NSF/ANSI 140 at the Gold level.
4. Scientific Certifications Systems Indoor Advantage™ Gold.

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

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

4.504.4 RESILIENT FLOORING SYSTEMS. Where resilient flooring is installed , at least 80% of floor area receiving resilient flooring shall comply with one or more of the following:

1. Products compliant with the California Department of Public Health, "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers," Version 1.1, February 2010 (also known as Specification 01350), certified as a CHPS Low-Emitting Material in the Collaborative for High Performance Schools (CHPS) High Performance Products Database.
2. Products certified under UL GREENGUARD Gold (formerly the Greenguard Children & Schools program).
3. Certification under the Resilient Floor Covering Institute (RFCI) FloorScore program.
4. Meet the California Department of Public Health, "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers", Version 1.1, February 2010 (also known as Specification 01350).

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

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

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

4.505 INTERIOR MOISTURE CONTROL

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

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

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

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

4.505.3 MOISTURE CONTENT OF BUILDING MATERIALS. Building materials with visible signs of water damage shall not be installed. Wall and floor framing shall not be enclosed when the framing members exceed 19 percent moisture content. Moisture content shall be verified in compliance with the following:

1. Moisture content shall be determined with either a probe-type or contact-type moisture meter.Equivalent moisture verification methods may be approved by the enforcing agency and shall satisfy requirements found in Section 101.8 of this code.
2. Moisture readings shall be taken at a point 2 feet (610 mm) to 4 feet (1219 mm) from the grade stamped end of each piece verified.
3. At least three random moisture readings shall be performed on wall and floor framing with documentation acceptable to the enforcing agency provided at the time of approval to enclose the wall and floor framing.

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

4.506 INDOOR AIR QUALITY AND EXHAUST

4.506.1 Bathroom exhaust fans. Each bathroom shall be mechanically ventilated and shall comply with the following:

1. Fans shall be ENERGY STAR compliant and be ducted to terminate outside the building.
2. Unless functioning as a component of a whole house ventilation system, fans must be controlled by a humidity control.
   a. Humidity controls shall be capable of adjustment between a relative humidity range less than or equal to 50% to a maximum of 80%. A humidity control may utilize manual or automatic means of adjustment.
   b. A humidity control may be a separate component to the exhaust fan and is not required to be integral (i.e., built-in)

Notes:

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

4.507 ENVIRONMENTAL COMFORT

4.507.2 HEATING AND AIR-CONDITIONING SYSTEM DESIGN. Heating and air conditioning systems shall be sized, designed and have their equipment selected using the following methods:

1. The heat loss and heat gain is established according to ANSI/ACCA 2 Manual J - 2011 (Residential Load Calculation), ASHRAE handbooks or other equivalent design software or methods.
2. Duct systems are sized according to ANSI/ACCA 1 Manual D - 2014 (Residential Duct Systems), ASHRAE handbooks or other equivalent design software or methods.
3. Select heating and cooling equipment according to ANSI/ACCA 3 Manual S - 2014 (Residential Equipment Selection), or other equivalent design software or methods.

Exception: Use of alternate design temperatures necessary to ensure the system functions are edacceptable.

INSPECTOR SIGNOFF

CHAPTER 7
INSTALLER & SPECIAL INSPECTOR QUALIFICATIONS

702 QUALIFICATIONS

702.1 INSTALLER TRAINING. HVAC system installers shall be trained and certified in the proper installation of HVAC systems including ducts and equipment by a nationally or regionally recognized training or certification program. Uncertified persons may perform HVAC installations when under the direct supervision and responsibility of a person trained and certified to install HVAC systems or contractor licensed to install HVAC systems. Examples of acceptable HVAC training and certification programs include but are not limited to the following:

1. State certified apprenticeship programs.
2. Public utility training programs.
3. Training programs sponsored by trade, labor or statewide energy consulting or verification organizations.
4. Programs sponsored by manufacturing organizations.
5. Other programs acceptable to the enforcing agency.

702.2 SPECIAL INSPECTION [HCD]. When required by the enforcing agency, the owner or the responsible entity acting as the owner's agent shall employ one or more special inspectors to provide inspection or other duties necessary to substantiate compliance with this code. Special inspectors shall demonstrate competence to the satisfaction of the enforcing agency for the particular type of inspection or task to be performed. In addition to other certifications or qualifications acceptable to the enforcing agency, the following certifications or education may be considered by the enforcing agency when evaluating the qualifications of a special inspector:

1. Certification by a national or regional green building program or standard publisher.
2. Certification by a statewide energy consulting or verification organization, such as HERS raters, building performance contractors, and home energy auditors.
3. Successful completion of a third party apprentice training program in the appropriate trade.
4. Other programs acceptable to the enforcing agency.

Notes:

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

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

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

703 VERIFICATIONS

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

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PROJECT DETAILS
PROJECT NO: 17029
SUBMITTAL DATE:

PROJECT REVISIONS

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SHEET DETAILS
DRAWN BY: Author
CHECKED BY: Checker

SHEET TITLE
CAL GREEN REQUIREMENTS

SHEET NUMBER
G1.2

2016 Low-Rise Residential Mandatory Measures Summary

*NOTE: Low-rise residential buildings subject to the Energy Standards must comply with all applicable mandatory measures, regardless of the compliance approach used. Review the respective section for more information. *Exceptions may apply.*
(Revised 04/2017)

Building Envelope Measures:	
§ 110.6(a)1:	**Air Leakage.** Manufactured fenestration, exterior doors, and exterior pet doors must limit air leakage to 0.3 cfm/ft² or less when tested per NFRC-400 or ASTM E283 or AAMA/WDMA/CSA 101/I.S.2/A440-2011.'
§ 110.6(a)5:	**Labeling.** Fenestration products 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 110.6-A and 110.6-B for compliance and must be caulked and/or weatherstripped.'
§ 110.7:	**Air Leakage.** All joints, penetrations, and other openings in the building envelope that are potential sources of air leakage must be caulked, gasketed, or weather stripped.
§ 110.8(a):	**Insulation Certification by Manufacturers.** Insulation specified or installed must meet Standards for Insulating Material.
§ 110.8(g):	**Insulation Requirements for Heated Slab Floors.** Heated slab floors must be insulated per the requirements of § 110.8(g).
§ 110.8(i):	**Roofing Products Solar Reflectance and Thermal Emittance.** The thermal emittance and aged solar reflectance values of the roofing material must meet the requirements of § 110.8(i) when the installation of a cool roof is specified on the CF1R.
§ 110.8(j):	**Radiant Barrier.** A radiant barrier must have an emittance of 0.05 or less and be certified to the Department of Consumer Affairs.
§ 150.0(a):	**Ceiling and Rafter Roof Insulation.** Minimum R-22 insulation in wood-frame ceiling; or the weighted average U-factor must not exceed 0.043. Minimum R-19 or weighted average U-factor of 0.054 or less in a rafter roof alteration. 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 continuous 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):	**Above Grade Wall Insulation.** Minimum R-13 insulation in 2x4 inch wood framing wall or have a U-factor of 0.102 or less (R-19 in 2x6 or U-factor of 0.074 or less). Opaque non-framed assemblies must have an overall assembly U-factor not exceeding 0.102, equivalent to an installed value of R-13 in a wood framed assembly.'
§ 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 facings, no greater than 0.3%; have a water vapor permeance no greater than 2.0 perm/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 1-16, the earth floor of unvented crawl space must be covered with a Class I or Class II vapor retarder. This requirement also applies to controlled ventilation crawl space for buildings complying with the exception to § 150.0(d).
§ 150.0(g)2:	**Vapor Retarder.** In Climate Zones 14 and 15, a Class I or Class II vapor retarder must be installed on the conditioned space side of all insulation in all exterior walls, vented attics, and unvented attics with air-permeable insulation.
§ 150.0(q):	**Fenestration Products.** Fenestration, including skylights, separating conditioned space from unconditioned space or outdoors must have a maximum U-factor of 0.58; or the weighted average U-factor of all fenestration must not exceed 0.58.'
Fireplaces, Decorative Gas Appliances, and Gas Log Measures:	
§ 150.0(e)1A:	**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)1B:	**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)1C:	**Flue Damper.** Masonry or factory-built fireplaces must have a flue damper with a readily accessible control.'
§ 150.0(e)2:	**Pilot Light.** Continuous burning pilot lights and the use of indoor air for cooling a firebox jacket, when that indoor air is vented to the outside of the building, are prohibited.
Space Conditioning, Water Heating, and Plumbing System Measures:	
§ 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 Energy Commission.'
§ 110.2(a):	**HVAC Efficiency.** Equipment must meet the applicable efficiency requirements in TABLE 110.2-A through TABLE 110.2-K.'
§ 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 in which the cut-on temperature for compression heating is higher than the cut-on temperature for supplementary heating, and the cut-off temperature for compression heating is higher than the cut-off temperature for supplementary heating.'
§ 110.2(c):	**Thermostats.** All unitary heating or cooling systems not controlled by a central energy management control system (EMCS) must have a setback thermostat.'
§ 110.3(c)5:	**Water Heating Recirculation Loops Serving Multiple Dwelling Units.** Water heating recirculation loops serving multiple dwelling units must meet the air release valve, backflow prevention, pump priming, pump isolation valve, and recirculation loop connection requirements of § 110.3(c)5.
§ 110.3(c)7:	**Isolation Valves.** Instantaneous water heaters with an input rating greater than 6.8 kBTU/hr (2 kW) must have isolation valves with hose bibbs or other fittings on both cold water and hot water lines of water heating systems to allow for water tank flushing when the valves are closed.
§ 110.5:	**Pilot Lights.** Continuously burning pilot lights are prohibited for natural gas: fan-type central furnaces; household cooking appliances (appliances without an electrical supply voltage connection with pilot lights that consume less than 150 Btu/hr are exempt); and pool and spa heaters.'
§ 150.0(h)1:	**Building Cooling and Heating Loads.** Heating and/or cooling loads are calculated in accordance with ASHRAE Handbook, Equipment Volume, Applications Volume, and Fundamentals Volume; SMACNA Residential Comfort System Installation Standards Manual; or ACCA Manual J using design conditions specified in § 150.0(h)2.

2016 Low-Rise Residential Mandatory Measures Summary

§ 150.0(h)3A:	**Clearances.** Installed air conditioner and heat pump outdoor condensing units must have a clearance of at least 5 feet from the outlet of any dryer vent.
§ 150.0(h)3B:	**Liquid Line Drier.** Installed air conditioner and heat pump systems must be equipped with liquid line filter driers if required, as specified by manufacturer's instructions.
§ 150.0(j)1:	**Storage Tank Insulation.** Unfired hot water tanks, such as storage tanks and backup storage tanks for solar water-heating systems, must have R-12 external insulation or R-16 internal insulation where the internal insulation R-value is indicated on the exterior of the tank.
§ 150.0(j)2A:	**Water piping and cooling system line insulation.** For domestic hot water system piping, whether buried or unburied, all of the following must be installed according to the requirements of TABLE 120.3-A: the first 5 feet of hot and cold water pipes from the storage tank; all piping with a nominal diameter of 3/4 inch or larger; all piping associated with a domestic hot water recirculation system regardless of the pipe diameter; piping from the heating source to storage tank or between tanks; piping buried below grade; and all hot water pipes from the heating source to kitchen fixtures.'
§ 150.0(j)2B:	**Water piping and cooling system line insulation.** All domestic hot water pipes that are buried below grade must be installed in a water proof and non-crushable casing or sleeve.'
§ 150.0(j)2C:	**Water piping and cooling system line insulation.** Pipe for cooling system lines must be insulated as specified in § 150.0(j)2A. Distribution piping for steam and hydronic heating systems or hot water systems must meet the requirements in TABLE 120.3-A.'
§ 150.0(j)3:	**Insulation Protection.** Insulation must be protected from damage, including that due to sunlight, moisture, equipment maintenance, and wind.
§ 150.0(j)3A:	**Insulation Protection.** Insulation exposed to weather must be installed with a cover suitable for outdoor service. For example, protected by aluminum, sheet metal, painted canvas, or plastic cover. The cover must be water retardant and provide shielding from solar radiation that can cause degradation of the material.
§ 150.0(j)3B:	**Insulation Protection.** Insulation covering chilled water piping and refrigerant suction piping located outside the conditioned space must have a Class I or Class II vapor retarder.
§ 150.0(n)1:	**Gas or Propane Systems.** Systems using gas or propane water heaters to serve individual dwelling units must include all of the following: a 120V electrical receptacle within 3 feet of the water heater; a Category III or IV vent, or a Type B vent with straight pipe between the outside termination and the space where the water heater is installed; a condensate drain that is no more than 2 inches higher than the base of the water heater, and allows natural draining without pump assistance; and a gas supply line with a capacity of at least 200,000 Btu/hr.
§ 150.0(n)2:	**Recirculating Loops.** Recirculating loops serving multiple dwelling units must meet the requirements of § 110.3(c)5.
§ 150.0(n)3:	**Solar Water-heating Systems.** Solar water-heating systems and collectors must be certified and rated by the Solar Rating and Certification Corporation (SRCC) or by a listing agency that is approved by the Executive Director.
Ducts and Fans Measures:	
§ 110.8(d)3:	**Ducts.** Insulation installed on an existing space-conditioning duct must comply with § 604.0 of the California Mechanical Code (CMC). If a contractor installs the insulation, the contractor must certify to the customer, in writing, that the insulation meets this requirement.
§ 150.0(m)1:	**CMC Compliance.** All air-distribution system ducts and plenums must be installed, sealed, and insulated to meet the requirements of CMC §§ 601.0, 602.0, 603.0, 604.0, 605.0 and ANSI/SMACNA-006-2006 HVAC Duct Construction Standards Metal and Flexible 3rd Edition. Portions of supply-air and return-air ducts and plenums must be insulated to a minimum installed level of R-6.0 (or higher if required by CMC § 605.0) or a minimum installed level of R-4.2 when entirely in conditioned space as confirmed through field verification and diagnostic testing (RA3.1.4.3.8). 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 requirements of UL 181, UL 181A, or UL 181B or aerosol sealant that meets the requirements of UL 723. If mastic or tape is used to seal openings greater than ¼ inch, the combination of mastic and either mesh or tape must be used. Building cavities, support platforms for air handlers, and plenums designed or constructed with materials other than sealed sheet metal, duct board or flexible duct must not be used for conveying conditioned air. Building cavities and support platforms may not contain ducts. Ducts installed in cavities and support platforms must not be compressed to cause reductions in the cross-sectional area of the ducts.'
§ 150.0(m)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 cloth back rubber adhesive duct tapes unless such tape is used in combination with mastic and draw bands.
§ 150.0(m)3:	**Field-Fabricated Duct Systems.** Field-fabricated duct systems must comply with applicable requirements for: pressure-sensitive tapes, mastics, sealants, and other requirements specified for duct construction.
§ 150.0(m)7:	**Backdraft Dampers.** All fan systems that exchange air between the conditioned space and the outside of the building 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, including that due to sunlight, moisture, equipment maintenance, and wind. Insulation exposed to weather must be suitable for outdoor service. For example, protected by aluminum, sheet metal, painted canvas, or plastic cover. Cellular foam insulation must be protected as above or painted with a coating that is water retardant and provides shielding from solar radiation.
§ 150.0(m)10:	**Porous Inner Core Flex Duct.** Porous inner core flex duct must have a non-porous layer 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 § 150.0(m)11and Reference Residential Appendix RA3.
§ 150.0(m)12:	**Air Filtration.** Mechanical systems that supply air to an occupiable space through ductwork exceeding 10 feet in length and through a thermal conditioning component, except evaporative coolers, must be provided with air filter devices that meet the design, installation, efficiency, pressure drop, and labeling requirements of § 150.0(m)12.

2016 Low-Rise Residential Mandatory Measures Summary

§ 150.0(m)13:	**Duct System Sizing and Air Filter Grille Sizing.** Space conditioning systems that use forced air ducts to supply cooling to an occupiable space must have a hole for the placement of a static pressure probe (HSPP), or a permanently installed static pressure probe (PSPP) in the supply plenum. The space conditioning system must also demonstrate airflow ≥ 350 CFM per ton of nominal cooling capacity through the return grilles, and an air-handling unit fan efficacy ≤ 0.58 W/CFM as confirmed by field verification and diagnostic testing, in accordance with Reference Residential Appendix RA3.3. This applies to both single zone central forced air systems and every zone for zonally controlled central forced air systems.'
§150.0(o):	**Ventilation for Indoor Air Quality.** All dwelling units must meet the requirements of ASHRAE Standard 62.2. Neither window operation nor continuous operation of central forced air system air handlers used in central fan integrated ventilation systems are permissible methods of providing whole-building ventilation.
§ 150.0(o)1A:	**Field Verification and Diagnostic Testing.** Whole-building ventilation airflow must be confirmed through field verification and diagnostic testing, in accordance with Reference Residential Appendix RA3.7.
Pool and Spa Systems and Equipment Measures:	
§ 110.4(a):	**Certification by Manufacturers.** Any pool or spa heating system or equipment must be certified to have all of the following: a thermal efficiency that complies with the Appliance Efficiency Regulations; 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 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 Measures:	
§ 110.9:	**Lighting Controls and Components.** All lighting control devices and systems, ballasts, and luminaires must meet the applicable requirements of § 110.9.'
§ 110.9(e):	**JA8 High Efficacy Light Sources.** To qualify as a JA8 high efficacy light source for compliance with § 150.0(k), a residential light source must be certified to the Energy Commission according to Reference Joint Appendix JA8.
§ 150.0(k)1A:	**Luminaire Efficacy.** All installed luminaires must be high efficacy in accordance with TABLE 150.0-A.
§ 150.0(k)1B:	**Blank Electrical Boxes.** The number of electrical boxes that are more than 5 feet above the finished floor and do not contain a luminaire or other device must be no greater than the number of bedrooms. These electrical boxes must be served by a dimmer, vacancy sensor control, or fan speed control.
§ 150.0(k)1C:	**Recessed Downlight Luminaires in Ceilings.** Luminaires recessed into ceilings must meet all of the requirements for: insulation contact (IC) labeling; air leakage; sealing; maintenance; and socket and light source as described in § 150.0(k)1C. A JA8-2016-E light source rated for elevated temperature must be installed by final inspection in all recessed downlight luminaires in ceilings.
§ 150.0(k)1D:	**Electronic Ballasts.** Ballasts for fluorescent lamps rated 13 watts or greater must be electronic and must have an output frequency no less than 20 kHz.
§ 150.0(k)1E:	**Night Lights.** Permanently installed night lights and night lights integral to installed luminaires or exhaust fans must be rated to consume no more than 5 watts of power per luminaire or exhaust fan as determined in accordance with § 130.0(c). Night lights do not need to be controlled by vacancy sensors.
§ 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).'
§ 150.0(k)1G:	**Screw based luminaires.** Screw based luminaires must not be recessed downlight luminaires in ceilings and must contain lamps that comply with Reference Joint Appendix JA8. Installed lamps must be marked with "JA8-2016" or "JA8-2016-E" as specified in Reference Joint Appendix JA8.'
§ 150.0(k)1H:	**Enclosed Luminaires.** Light sources installed in enclosed luminaires must be JA8 compliant and must be marked with "JA8-2016-E."
§ 150.0(k)2A:	**Interior Switches and Controls.** All forward phase cut dimmers used with LED light sources must comply with NEMA SSL 7A.
§ 150.0(k)2B:	**Interior Switches and Controls.** Exhaust fans must be switched separately from lighting systems.'
§ 150.0(k)2C:	**Interior Switches and Controls.** Luminaires must be switched with readily accessible controls that permit the luminaires to be manually switched ON and OFF.
§ 150.0(k)2D:	**Interior Switches and Controls.** Controls and equipment must be installed in accordance with manufacturer's instructions.
§ 150.0(k)2E:	**Interior Switches and Controls.** No control must bypass a dimmer or vacancy sensor function if the control is installed to comply with § 150.0(k).
§ 150.0(k)2F:	**Interior Switches and Controls.** Lighting controls must comply with the applicable requirements of § 110.9.
§ 150.0(k)2G:	**Interior Switches and Controls.** An energy management control system (EMCS) may be used to comply with dimmer requirements if it: functions as a dimmer according to § 110.9; meets the Installation Certificate requirements of § 130.4; meets the EMCS requirements of § 130.5(f); and meets all other requirements in § 150.0(k)2.
§ 150.0(k)2H:	**Interior Switches and Controls.** An EMCS may be used to comply with vacancy sensor requirements in § 150.0(k) if it meets all of the following: it functions as a vacancy sensor according to § 110.9; the Installation Certificate requirements of § 130.4; the EMCS requirements of § 130.5(f); and all other requirements in § 150.0(k)2.
§ 150.0(k)2I:	**Interior Switches and Controls.** A multiscene programmable controller may be used to comply with dimmer requirements in § 150.0(k) if it provides the functionality of a dimmer according to § 110.9, and complies with all other applicable requirements in § 150.0(k)2.

2016 Low-Rise Residential Mandatory Measures Summary

§ 150.0(k)2J:	**Interior Switches and Controls.** In bathrooms, garages, laundry rooms, and utility rooms, at least one luminaire in each of these spaces must be controlled by a vacancy sensor.
§ 150.0(k)2K:	**Interior Switches and Controls.** Dimmers or vacancy sensors must control all luminaires required to have light sources compliant with Reference Joint Appendix JA8, except luminaires in closets less than 70 square feet and luminaires in hallways.'
§ 150.0(k)2L:	**Interior Switches and Controls.** Undercabinet lighting must be switched separately from other lighting systems.
§ 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 meet the requirement in item § 150.0(k)3Ai (ON and OFF switch) and the requirements in either item § 150.0(k)3Aii (photocell and motion sensor) or item § 150.0(k)3Aiii (photo control and automatic time switch control, astronomical time clock, or EMCS).
§ 150.0(k)3B:	**Residential Outdoor Lighting.** For low-rise multifamily residential buildings, outdoor lighting for private patios, entrances, balconies, and porches; and outdoor lighting for residential parking lots and residential carports with less than eight vehicles per site must comply with either § 150.0(k)3A or with the applicable requirements in §§ 110.9, 130.0, 130.2, 130.4, 140.7 and 141.0.
§ 150.0(k)3C:	**Residential Outdoor Lighting.** For low-rise residential buildings with four or more dwelling units, outdoor lighting not regulated by § 150.0(k)3B or § 150.0(k)3D must comply with the applicable requirements in §§ 110.9, 130.0, 130.2, 130.4, 140.7 and 141.0.
§ 150.0(k)3D:	**Residential Outdoor Lighting.** Outdoor lighting for residential parking lots and residential carports with a total of eight or more vehicles per site must comply with the applicable requirements in §§ 110.9, 130.0, 130.2, 130.4, 140.7, and 141.0.
§ 150.0(k)4:	**Internally illuminated address signs.** Internally illuminated address signs must comply with § 140.8; or must consume no more than 5 watts of power as determined according to § 130.0(c).
§ 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.
§ 150.0(k)6A:	**Interior Common Areas of Low-rise Multi-Family Residential Buildings.** In a low-rise multifamily residential building where the total interior common area in a single building equals 20 percent or less of the floor area, permanently installed lighting for the interior common areas in that building must be high efficacy luminaires and controlled by an occupant sensor.
§ 150.0(k)6B:	**Interior Common Areas of Low-rise Multi-Family Residential Buildings.** In a low-rise multifamily residential building where the total interior common area in a single building equals more than 20 percent of the floor area, permanently installed lighting in that building must: i. Comply with the applicable requirements in §§ 110.9, 130.0, 130.1, 140.6 and 141.0; and ii. Lighting installed in corridors and stairwells must be controlled by occupant sensors that reduce the lighting power in each space by at least 50 percent. The occupant sensors must be capable of turning the light fully on and off from all designed paths of ingress and egress.
Solar Ready Buildings:	
§ 110.10(a)1:	**Single Family Residences.** Single family residences located in subdivisions with ten or more single family residences and where the application for a tentative subdivision map for the residences has been deemed complete by the enforcement agency must comply with the requirements of § 110.10(b) through § 110.10(e).
§ 110.10(a)2:	**Low-rise Multi-family Buildings.** Low-rise multi-family buildings must comply with the requirements of § 110.10(b) through § 110.10(d).
§ 110.10(b)1:	**Minimum Area.** The solar zone must have a minimum total area as described below. The solar zone must comply with access, pathway, smoke ventilation, and spacing requirements as specified in Title 24, Part 9 or other Parts of Title 24 or in any requirements adopted by a local jurisdiction. The solar zone total area must be comprised of areas that have no dimension less than 5 feet and are no less than 80 square feet each for buildings with roof areas less than or equal to 10,000 square feet or no less than 160 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 overhang of the building and have a total area no less than 250 square feet. For low-rise multi-family buildings the solar zone must be located on the roof or overhang of the building, or on the roof or overhang of another structure located within 250 feet of the building, or on covered parking installed with the building project, and have a total area no less than 15 percent of the total roof area of the building excluding any skylight area.'
§ 110.10(b)2:	**Orientation.** All sections of the solar zone located on steep-sloped roofs must be oriented between 110 degrees and 270 degrees 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 distance, measured in the horizontal plane, of the height difference between the highest point of the obstruction and the horizontal projection of the nearest point of the solar zone, measured in the vertical plane.'
§ 110.10(b)4:	**Structural Design Loads on Construction Documents.** For areas of the roof designated as 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 for inverters and metering equipment and a pathway for routing of conduit from the solar zone to the point of interconnection with the electrical service (for single family residences the point of interconnection will be the main service panel); and a pathway for routing of 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) through § 110.10(c) must be provided to the occupant.
§ 110.10(e)1:	**Main Electrical Service Panel.** The main electrical service panel must have a minimum busbar rating of 200 amps.
§ 110.10(e)2:	**Main Electrical Service Panel.** The main electrical service panel must have a reserved space to allow for the installation of a double pole circuit breaker for a future solar electric installation. The reserved space must be: positioned at the opposite (load) end from the input feeder location or main circuit location; and permanently marked as "For Future Solar Electric".

IF THIS SHEET IS NOT 24"x36", IT HAS BEEN RESIZED - SCALE ACCORDINGLY 0 1/4" 1/2" 1" 2"

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PROJECT#

TUSCANY VILLAGE

1578 E. WHITMORE AVE.
CERES CA. 95307

UNIT A

PROJECT DETAILS
PROJECT NO: 17029
SUBMITTAL DATE:

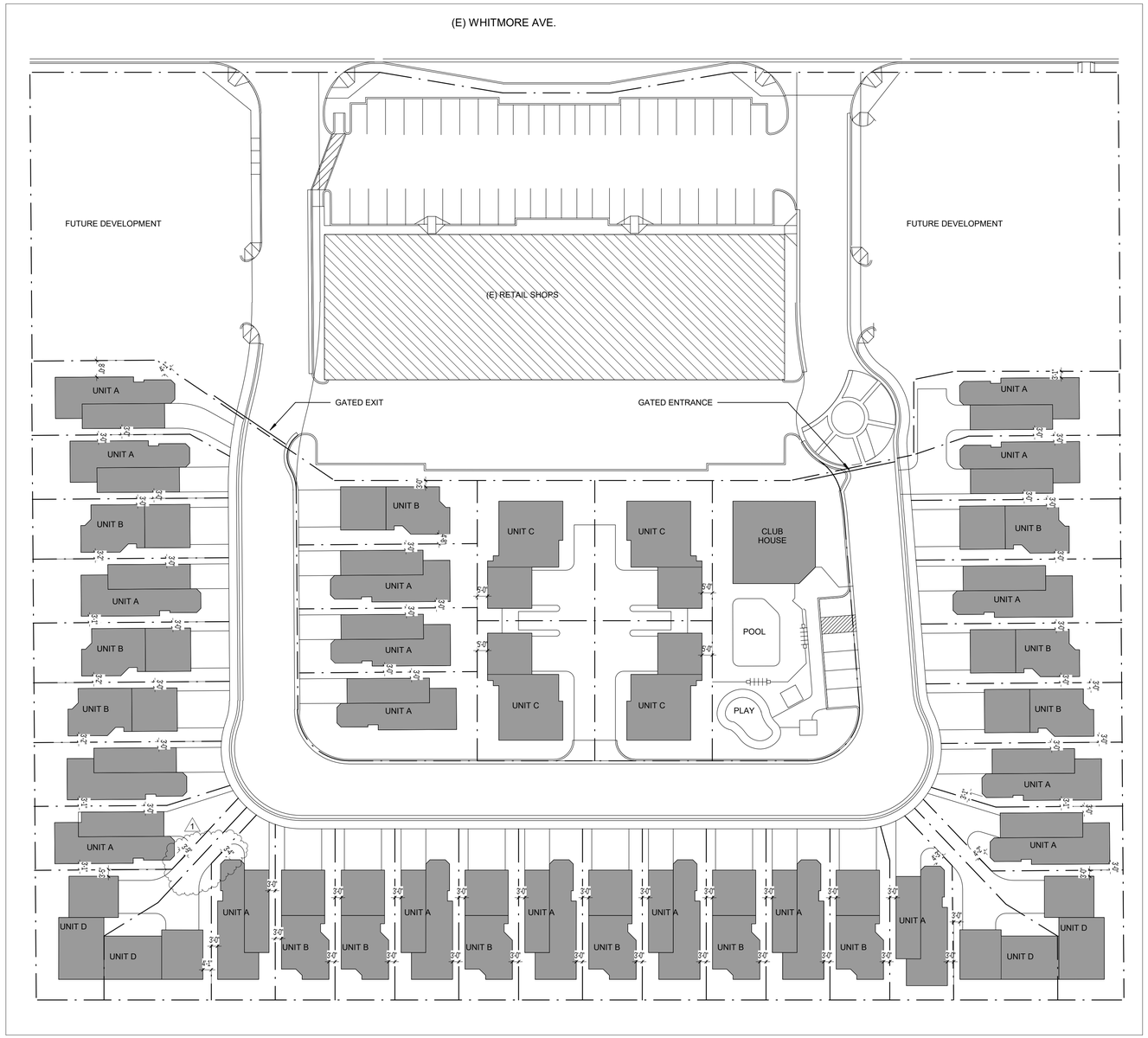
PROJECT REVISIONS

MARK	DATE	DESCRIPTION
1	05-29-18	PLANCHECK #1

SHEET DETAILS
DRAWN BY: Author
CHECKED BY: Checker

SHEET TITLE
ENERGY CODE RESIDENTIAL MANDATORY REQUIREMENTS

SHEET NUMBER
G1.3



1 SITE PLAN
1" = 30'-0"

SITE PLAN NOTES

PROVIDE A LISTED NON-REMOVABLE BACK FLOW PREVENTION DEVICE AT ALL HOSE BIBBS OR A LISTED ATMOSPHERIC VACUUM BREAKER PER APPLICABLE BUILDING CODE.

ALL EXTERIOR WALLS NOT ATTACHED TO THE PRIMARY STRUCTURE SHALL REQUIRE A SEPARATE BUILDING PERMIT.

SIDEWALKS, DRIVEWAYS AND OTHER FLAT WORK SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE SOILS REPORT IF APPLICABLE.

STRUCTURES SHALL BE LOCATED BY A QUALIFIED SURVEYOR ONLY AND SHALL FURNISH PAD CERTIFICATION REPORT TO DESIGNER PRIOR TO PLACING OF FOUNDATION.

PROPERTY LINE DIMENSIONS ARE PREPARED WITH INFORMATION FURNISHED BY THE OWNER AND SHALL NOT BE CONSTRUED TO BE A SURVEY OF THE PROPERTY. FINAL STRUCTURE PLACEMENTS IN RELATION TO THE PROPERTY LINES SHALL BE AS DESIGNATED ON THE DRAWINGS AND SHALL CONFORM TO ALL LOCAL ZONING & BUILDING CODES, AMENDMENTS AND/OR APPROVED VARIANCES. BUILDER SHALL LOCATE ALL STRUCTURES AND CERTIFY COMPLIANCE WITH SETBACKS PRIOR TO ANY WORK.

GRADE SHALL FALL MINIMUM 6-INCH WITHIN 10-FOOT OF FOUNDATION FOR DRAINAGE PURPOSES (C.R.C. R401.3). DRAINAGE WATER SHALL ENTER INTO LANDSCAPING AREAS

DURING CONSTRUCTION WHERE STORM WATER IS CONVEYED TO A PUBLIC DRAINAGE SYSTEM, COLLECTION POINT, GUTTER OR SIMILAR DISPOSAL METHOD, WATER SHALL BE FILTERED BY USE OF A BARRIER SYSTEM, WATTLE OR OTHER METHOD APPROVED BY THE ENFORCING AGENCY

N

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CONSULTING ENGINEER

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PROJECT#

TUSCANY VILLAGE

1578 E. WHITMORE AVE.
CERES CA. 95307

UNIT A

PROJECT DETAILS

PROJECT NO: 17029
SUBMITTAL DATE:

PROJECT REVISIONS

MARK	DATE	DESCRIPTION
1	05-29-18	PLANCHECK #1

SHEET DETAILS

DRAWN BY: JG
CHECKED BY: JS

SHEET TITLE

SITE PLAN

SHEET NUMBER

A0.0

IF THIS SHEET IS NOT 24"x36", IT HAS BEEN RESIZED - SCALE ACCORDINGLY 0 1/4" 1/2" 1" 2"

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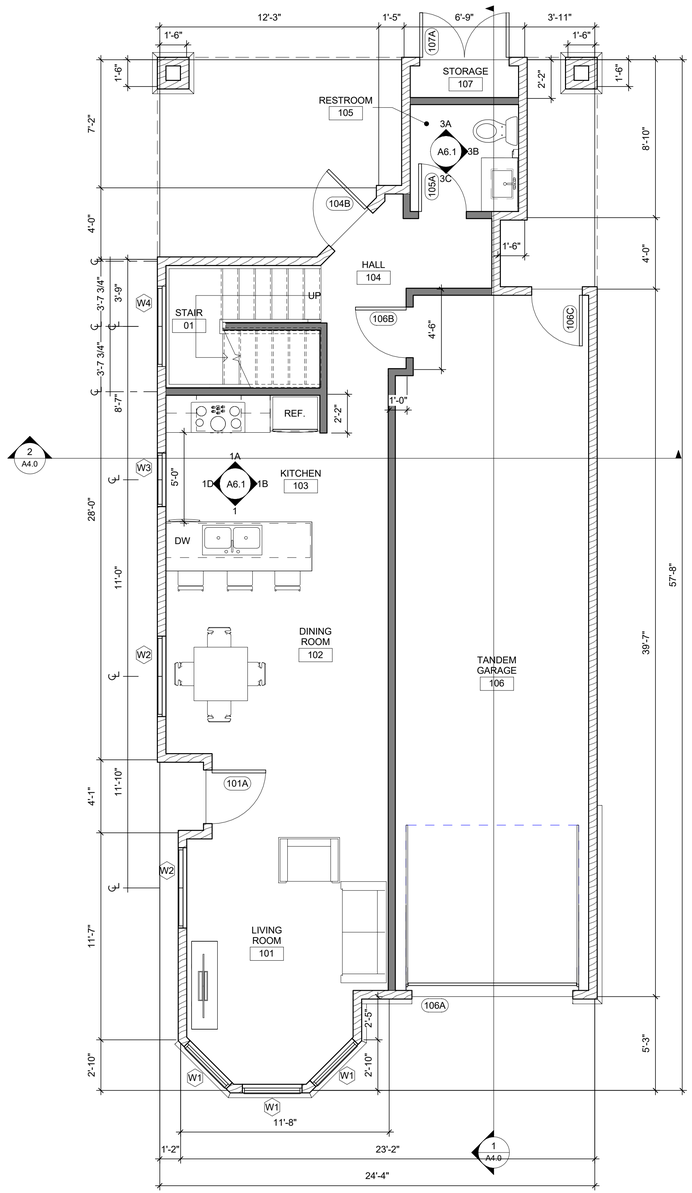
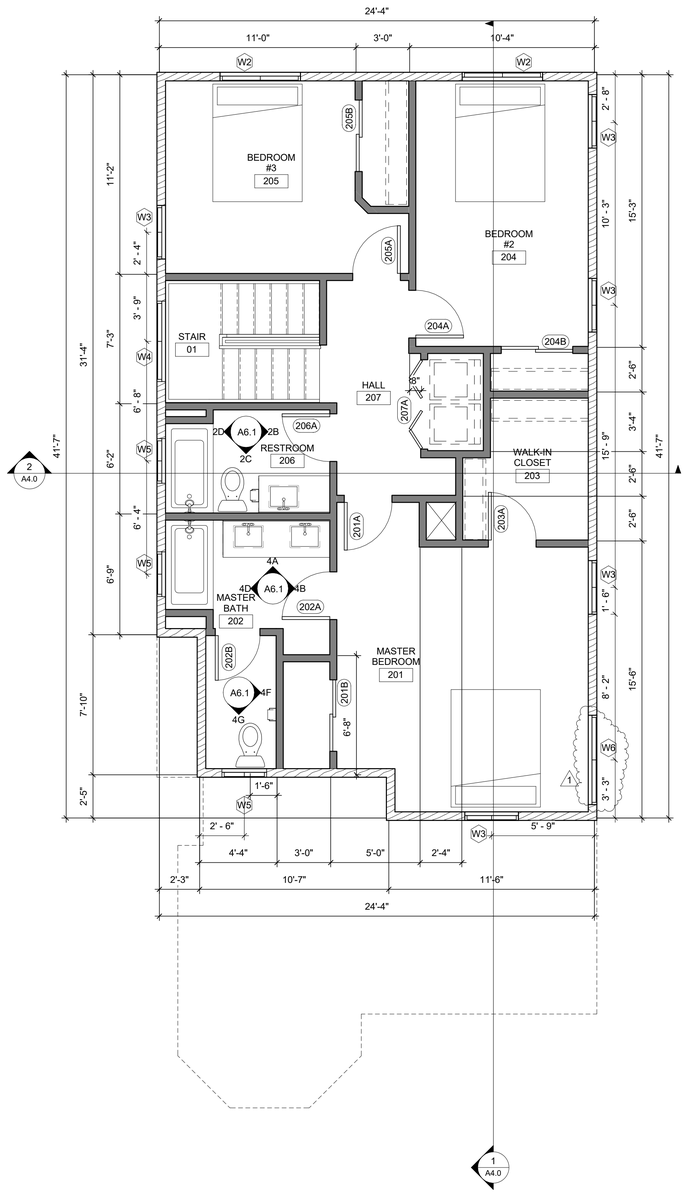


1 1ST FLOOR PLAN

1/4" = 1'-0"



2 2ND FLOOR PLAN

1/4" = 1'-0"

WALL LEGEND

EXTERIOR 2X6 WOOD STUD WALL W/ 7/8" CEMENT PLASTER SYSTEM O/ 2 LAYERS BLDG PAPER AT EXTERIOR & 5/8" GYP. BD. AT INTERIOR
- FILL CAVITY W/ R-19 INSULATION, - ADD R-5 INSULATION TO EXTERIOR

INTERIOR 2X4 WOOD STUD WALL W 5/8" GYP. BD. EA. SIDE
- FILL CAVITY W/ R-13 INSULATION

FLOOR PLAN NOTES

ALL GAS OR WOOD-BURNING FIREPLACES WITHIN A DWELLING UNIT SHALL COMPLY WITH THE INTERNATIONAL RESIDENTIAL CODE (IRC) AND LOCAL AMENDMENTS INCLUDING:

A. THE FIREPLACE OPENING SHALL BE PROVIDED WITH SOLID DOORS SUCH AS GLASS, SOLID STEEL OR CAST IRON.
B. IF THE FIREPLACE IS LOCATED IN A SLEEPING ROOM OR ADJACENT BATHROOM, THE PERMANENT, UNOBSTRUCTED FRESH AIR SUPPLY SHALL BE PROVIDED DIRECTLY FROM THE EXTERIOR OF THE STRUCTURE TO THE FIREBOX.
C. WHEN GAS IS PIPED TO THE FIREPLACE, A CAUTION SIGN SHALL BE INSTALLED THAT STATES:
"CAUTION: DAMPER MUST BE PERMANENTLY BLOCKED OPEN IF GAS IS SUPPLIED TO THIS FIREPLACE'. THE LETTERS ON THE SIGN SHALL BE A MIN. 3/8" IN HEIGHT.
D. VENT SHALL EXTEND UBOVE ROOF A MIN OF 2'-0" ABOVE ANY POINT 10'-0" UNLESS MANUFACTURERS INSTRUCTIONS DICTATE ALTERNATE METHOD.
E. FACTORY BUILT FIREPLACES SHALL BE LISTED & LABELED AD INSTALLED IN ACCORDANCE WITH THE CONDITIONS OF THE LISTING. CRC R1004.1. CONTRACTOR TO SUBMIT THE LISTING & INSTALLATION INSTRUCTIONS TO THE FIELD INSPECTOR BEFORE INSTALLING

SMOKE DETECTORS SHALL BE INSTALLED AT LOCATIONS REQUIRED BY THE IRC AND SHALL RECEIVE THEIR PRIMARY POWER FROM BUILDING WIRING AND SHALL BE EQUIPPED WITH A BATTERY BACK UP.

FOAM PLASTIC INSULATION MAY NOT BE EXPOSED IN AN ATTIC SPACE

THE INTERIOR OF A BUILDING SHALL BE SEPARATED FROM FOAM PLASTIC INSULATION BY AN APPROVED THERMAL BARRIER.

UNDER NO CIRCUMSTANCES IS THE USE OF WATER RESISTANT GYP. BD. "GREEN BOARD' AS BACKING FOR TILE OR WALL PANELS IN ANY POTENTIALLY WET AREA TO BE USED.
USE ONLY .FIBEROCK BRAND AQUA- TOUGH INTERIOR PANELS RATED FOR MOISTURE &MOLD RESISTANCE. SHOWER STALLS SHALL BE FINISHED WITH A HARD, NON ABSORBENT MATERIAL TO A HEIGHT OF 70ft ABOVE THE DRAIN INLET.

EVERY SLEEPING ROOM SHALL HAVE AT LEAST 1 OPERABLE EGRESS WINDOW OF NOT LESS THAN 5. 7' SQ.FT. AND SHALL BE LOCATED WITH THE BOTTOM OF THE CLEAR OPENING NOT MORE THAN 44" ABOVE THE FLOOR.

PROVIDE A MINIMUM 30' X 22" ATTIC ACCESS OPENING WITH A MINIMUM HEADROOM CLEARANCE OF 30' WHEN MECHANICAL EQUIPMENT IS INSTALLED IN THE ATTIC SPACE. THE OPENING SHALL BE IN LOCATED IN A HALLWAY, CORRIDOR OR OTHER READILY ACCESSIBLE LOCATION.

WATER HEATERS SHALL BE ANCHORED OR STRAPPED TO RESIST HORIZONTAL DISPLACEMENT DUE TO EARTHQUAKE MOTION. STRAPPING SHALL BE A POINTS WITHIN THE UPPER 1/3 AND LOWER 1/3 OF IT'S VERTICAL DIMENSIONS. AT THE LOWER POINT, MAINTAIN A MIN OF 4' CLEARANCE ABOVE THE WATERHEATER CONTROLS.

GAS WATER HEATERS AND FURNACES SHALL BE LOCATED ON A RIGID RAISED PLATFORM MIN. OF 18' HIGH.

APPLIANCES AND WATER HEATERS INSTALLED IN GARAGES, WAREHOUSES OR OTHER AREAS WHERE THEY MAY BE SUBJECTED TO MECHANICAL DAMAGE SHALL BE SUITABLY GUARDED AGAINST SUCH DAMAGE BY BEING INSTALLED BEHIND PROTECTIVE BARRIERS OR BY BEING LOCATED OUT OF THE NORMAL PATH OF VEHICLES.

GYP BOARD AT GARAGE CEILINGS SHALL BE 518' TYPE X (FIRE TAPED) AND FASTENED WITH 1 7/8" 8d NAILS OR SCREWS AT 8' ON CENTER.

GYP BOARD AT CEILING APPLICATION WITH FRAMING AT 24" ON CENTER SHALL BE 5/8" THICK OR 1/2" SAG-RESISTANT GYP BOARD.

GLAZING NOTES

1 ALL WINDOWS TO BE DUAL PANE, VINYL FRAME, LOW E, INSULATED GLASS. U-VALUES SHALL BE AS FOLLOWS:
GREATER THAN:
U FACTOR: = . 32
SHGC = .25

SAFETY GLAZING SHALL BE PROVIDED AT THE FOLLOWING AREAS:
A. SLIDING OR SWINGING DOORS
B. TUB and/or SHOWER ENCLOSURES AND GLAZING IN WALLS LESS THAN 60" ABOVE THE STANDING SURFACE OF TUBS or SHOWERS.
C. GLAZING WITHIN 24" OF THE SWING ARC OF A DOOR.
D. GLAZING IN WALLS ENCLOSING STAIRWAY LANDINGS OR WITHIN 5' OF THE BOTTOM AND TOP OF STAIRWAYS WHERE THE BOTTOM EDGE OF GLASS IS LESS THAN 60ft ABOVE THE WALKING SURFACE.
E. GLAZING WITHIN 18" OF THE FLOOR.
F. ANY INDIVIDUAL PANE GREATER THAN 9 SQ. FT.

LIGHTING & VENT. CALCULATIONS

LIGHTING & VENTILATION CALC - MASTER BEDROOM #1 ROOM 201
ROOM SQ. FT. = 212 S.F.
WINDOW 'W3' SQ. FT. = 12 S.F. (X2) = 24 S.F.
WINDOW 'W6' SQ. FT. = 20 S.F. 1

8% OF 212 = 16.96 S.F.
48 S.F.>16.96 S.F. THEREFORE LIGHTING OK
4% OF 212 = 8.48 S.F.
24>8.48 S.F. THEREFORE VENTILATION OK

LIGHTING & VENTILATION CALC - BEDROOM #2 ROOM 204
ROOM SQ. FT. = 143 S.F.
WINDOW 'W2' SQ. FT. = 18 S.F. (X1) = 18 S.F.
WINDOW 'W3' SQ. FT. = 14 S.F. (X2) = 28 S.F.

8% OF 143 = 11.44 S.F.
46 S.F.>11.44 S.F. THEREFORE LIGHTING OK
4% OF 143 = 5.72 S.F.
23>5.72 S.F. THEREFORE VENTILATION OK

LIGHTING & VENTILATION CALC - BEDROOM #3 ROOM 205
ROOM SQ. FT. = 125 S.F.
WINDOW 'W2' SQ. FT. = 18 S.F. (X1) = 18 S.F.
WINDOW 'W3' SQ. FT. = 14 S.F. (X1) = 14 S.F.

8% OF 125 = 10 S.F.
32 S.F.>10 S.F. THEREFORE LIGHTING OK
4% OF 125 = 5 S.F.
16>5 S.F. THEREFORE VENTILATION OK

N

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PROJECT#

TUSCANY VILLAGE

1578 E. WHITMORE AVE.
CERES CA. 95307

UNIT A

PROJECT DETAILS
PROJECT NO: 17029
SUBMITTAL DATE:

PROJECT REVISIONS

MARK	DATE	DESCRIPTION
1	05-29-18	PLANCHECK #1

SHEET DETAILS
DRAWN BY: Author
CHECKED BY: Checker

SHEET TITLE

FLOOR PLANS

SHEET NUMBER

A1.1

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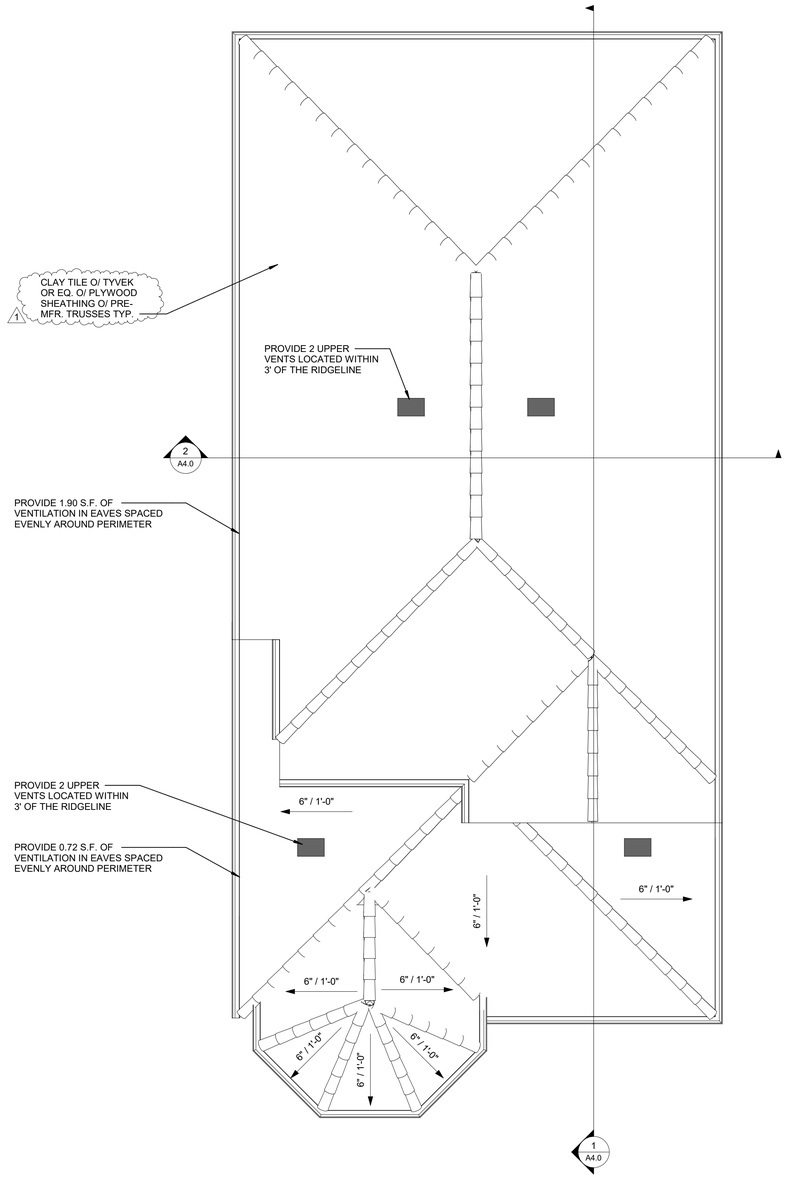
IF THIS SHEET IS NOT 24"x36", IT HAS BEEN RESIZED - SCALE ACCORDINGLY 0 1/4" 1/2" 1" 2"



1 ROOF PLAN

1/4" = 1'-0"

N

DRAFT AND FIRE STOPS

DRAFT & FIRE STOP NOTES

WHEN THERE IS USABLE SPACE BOTH ABOVE AND BELOW THE CONCEALED SPACE OF A FLOOR/CEILING ASSEMBLY, DRAFTSTOPS SHALL BE INSTALLED SO THAT THE AREA OF THE CONCEALED SPACE DOES NOT EXCEED 1 ,000 SQ. FT.

DRAFTSTOPS SHALL DIVIDE THE SPACES INTO APPROXIMATELY EQUAL AREAS.

WHERE THE ASSEMBLY IS ENCLOSED BY A FLOOR MEMBRANE ABOVE AND A CEILING MEMBRANE BELOW DRAFTSTOPPING SHALL BE PROVIDED FLOOR/CEILING ASSEMBLIES UNDER THE FOLLOWING
CIRCUMSTANCES:

1. CEILING IS SUSPENDED UNDER THE FLOOR FRAMING
2. FLOOR FRAMING IS CONSTRUCTED OF TRUSS- TYPE OPEN WEB OR PERFORATED MEMBERS.

DRAFTSTOPS SHALL BE MIN. 1/2" GYPSUM BOARD. OTHER MATERIALS ALTHOUGH ACCEPTABLE UNDER BUILDING CODE ARE NOT ACCEPTABLE TO THIS DESIGNER AND WILL BE REJECTED. DRAFTSTOPS SHALL BE INSTALLED PARALLEL TO THE FLOOR FRAMING MEMBERS UNLESS OTHERWISE APPROVED BY THE BUILDING OFFICIAL.

EACH ATTIC OR ROOF SPACE SEPERATED BY DRAFTSTOPS SHALL BE INDEPENDENTLY VENTED. VERIFY LOCATION OF VENTING WITH DRAFTSTOPS.

DRAFTSTOPS SHALL BE PROVIDED AT THE GARAGE TO DWELLING CONNECTION UNLESS A FIRE RATED WALL IS PROVIDED FROM SLAB TO UNDERSIDE OF ROOF.

FIREBLOCKING SHALL BE PROVIDED TO CUT OFF ALL CONCEALED DRAFT OPENINGS (BOTH HORIZONTAL AND VERTICAL) AND TO FORM AN EFFECTIVE FIRE BARRIER BETWEEN STORIES, AND BETWEEN A TOP STORY AND THE ROOF SPACE. FIREBLOCKING SHALL BE PROVIDED AT THE FOLLOWING MIN. LOCATIONS:

1. IN CONCEALED SPACES OF STUD WALLS AND PARTITIONS, INCLUDING FURRED SPACES, AT THE CEILING AND FLOOR LEVEL AND AT 10 FOOT INTERVALS BOTH VERTICAL AND HORIZONTAL. BATTS OR
BLANKETS OF MINERAL OR GLASS FIBER OR OTHER APPROVED NONRIGID MATERIALS SHALL BE ALLOWED AS FIREBLOCKING IN WALLS CONSTRUCTED USING PARALLEL ROWS OF STUDS OR STAGGERED STUDS.

2. AT ALL INTERCONNECTIONS BETWEEN CONCEALED VERTICAL AND HORIZONTAL SPACES SUCH AS
OCCUR AT SOFFITS, DROP CEILINGS AND COVE CEILINGS.

3. IN CONCEALED SPACES BETWEEN STAIR STRINGERS AT THE TOP AND BOTTOM OF THE RUN AND IN LINE WITH THE RUN OF THE STAIRS IF THE WALLS UNDER THE STAIRS ARE UNFINISHED.

4. AT OPENINGS AROUND VENTS, PIPES, AND DUCTS AT CEILING AND FLOOR LEVEL, WITH AN APPROVED MATERIAL TO RESIST THE FREE PASSAGE OF FLAME AND PRODUCTS OF COMBUSTION.

5. AT CHIMNEYS AND FIREPLACES. ALL SPACES BETWEEN CHIMNEYS AND FLOORS AND CEILINGS THROUGH
WHICH CHIMNEYS PASS SHALL BE FIREBLOCKED WITH NONCOMBUSTIBLE MATERIAL SECURELY FASTENED IN PLACE.
THE FIREBLOCKING OF SPACES BETWEEN CHIMNEYS AND WOOD JOISTS, BEAMS OR HEADERS SHALL BE TO A DEPTH OF 1 INCH AND SHALL ONLY BE PLACED ON STRIPS OF METAL OR METAL LATH LAID ACROSS THE SPACES BETWEEN COMBUSTIBLE MATERIAL AND THE CHIMNEY.

6. FIREBLOCKING OF CORNICES OF A TWO-FAMILY DWELLING IS REQUIRED AT THE LINE OF DWELLNG UNIT SEPARATION.

FIREBLOCKING MATERIAL SHALL CONSIST OF 2 INCH NOMINAL LUMBER, OR TWO THICKNESSES OF 1 INCH NOMINAL LUMBER WITH BROKEN LAP JOINTS. BATTS OR BLANKETS OF MINERAL WOOL OR GLASS FIBER MATERIALS INSTALLED IN SUCH A MANNER AS TO BE SECURELY RETAINED IN PLACE SHALL BE PERMITTED. LOOSE FILL INSULATION SHALL NOT BE USED.

UNFACED FIBERGLASS BATT INSULATION USED AS FIREBLOCKING SHALL FILL THE ENTIRE CROSS SECTION OF THE WALL CAVITY TO A MIN. HEIGHT OF 16 INCHES MEASURED VERTICALLY. WHEN PIPING, CONDUIT OR SIMILAR OBSTRUCTIONS ARE ENCOUNTERED, THE INSULATION SHALL BE PACKED TIGHTLY AROUND THE OBSTRUCTION.

ATTIC VENTING

ATTIC VENTING NOTES

ENCLOSED ATTICS AND RAFTER SPACES SHALL HAVE CROSS VENTILATION FOR EACH SEPARATE SPACE AND THE OPENINGS SHALL BE PROTECTED AGAINST THE ENTRANCE OF RAIN OR SNOW.

VENTILATION OPENINGS SHALL BE PROVIDED WITH CORROSION WIRE MESH, WITH 1/8" MINIMUM TO 1/4"
MAXIMUM OPENINGS.

THE TOTAL NET FREE VENTILATING AREA SHALL NOT BE LESS THAN 1 TO 150 OF THE AREA OF THE SPACE VENTILATED EXCEPT THAT THE TOTAL AREA IS PERMITTED TO BE REDUCED TO 1 TO 300, PROVIDED AT LEAST 40% AND NOT MORE THAN 50% OF THE REQUIRED VENTILATING AREA IS PROVIDED
BY VENTILATORS LOCATED IN THE UPPER PORTION OF THE SPACE TO BE VENTILATED NO MORE THAN 3 FEET BELOW THE RIDGE OR HIGHEST POINT OF THE SPACE WITH THE BALANCE OF THE REQUIRED VENTILATION PROVIDED BY EAVE OR CORNICE VENTS.

AS AN ALTERNATIVE, THE NET FREE CROSS-VENTILATION AREA MAY BE REDUCED TO 1 TO 300 WHEN A VAPOR BARRIER HAVING A TRANSMISSION RATE NOT EXCEEDING 1 PERM IS INSTALLED ON THE WARM SIDE OF THE CEILING.

AT EAVE OR CORNICE VENTS, INSULATION SHALL NOT BLOCK THE FREE FLOW OF AIR. A MINIMUM OF
1-INCH SPACE SHALL BE PROVIDED BETWEEN THE INSULATION AND THE ROOF SHEATHING AT THE LOCATION OF THE VENT.

VENTING CALCULATION

MAIN BLDG ATTIC - 1118 SF/300 = 3.73 SF VENTILATION REQD.

UPPER ROOF BLDG ATTIC
UPPER VENTS WITHIN 3' OF RIDGE = 1.83 SF (49% OF REQD. VENTILATION)
LOWER EAVE VENTS = 1.90 SF (51% OF REQD. VENTILATION

GUEST HOUSE BLDG ATTIC - 426 SF/300 = 1.42 SF VENTILATION REQD.

LOWER ROOF BLDG ATTIC
UPPER VENTS WITHIN 3' OF RIDGE = 0.70 SF (49% OF REQD. VENTILATION)
LOWER EAVE VENTS = .72 SF (51% OF REQD. VENTILATION

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UNIT A

PROJECT DETAILS

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MARK	DATE	DESCRIPTION
1	05-29-18	PLANCHECK #1

SHEET DETAILS

DRAWN BY: Author
CHECKED BY: Checker

SHEET TITLE

ROOF PLAN

SHEET NUMBER

A3.1

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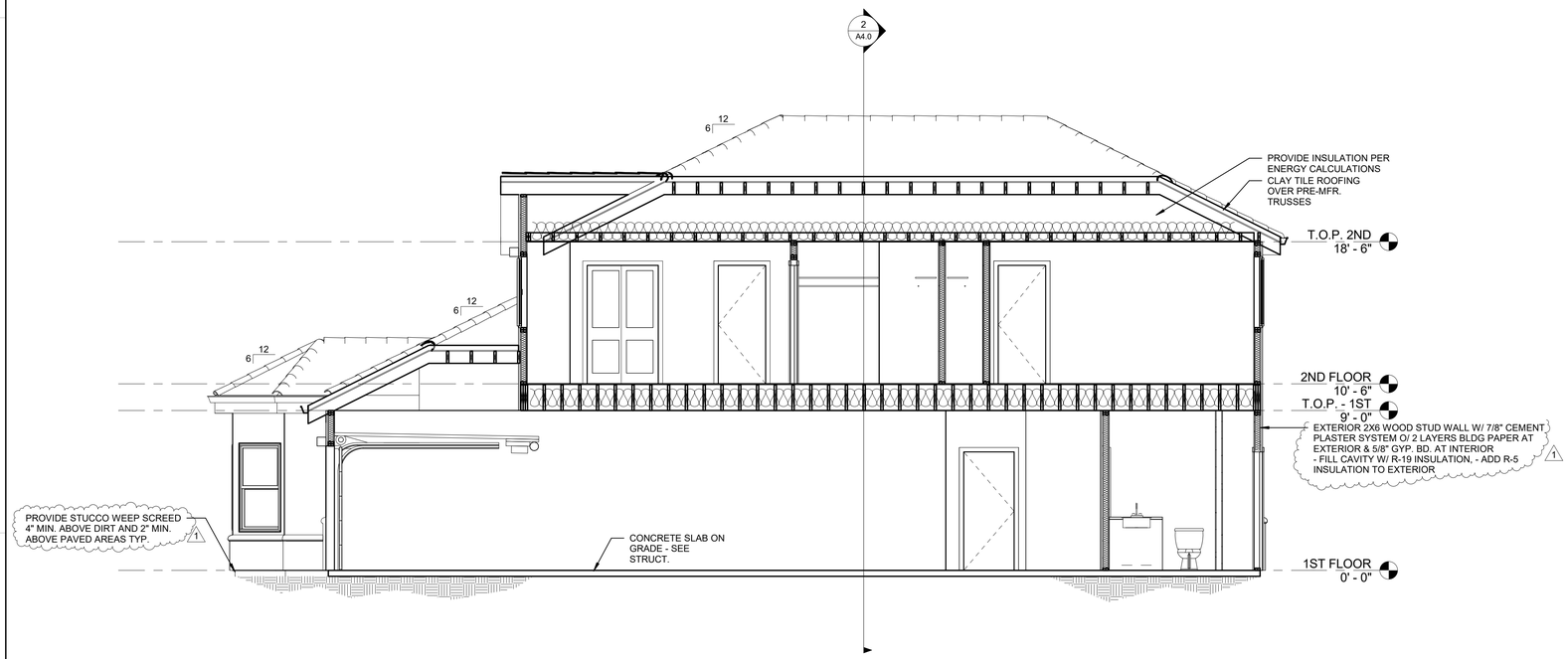
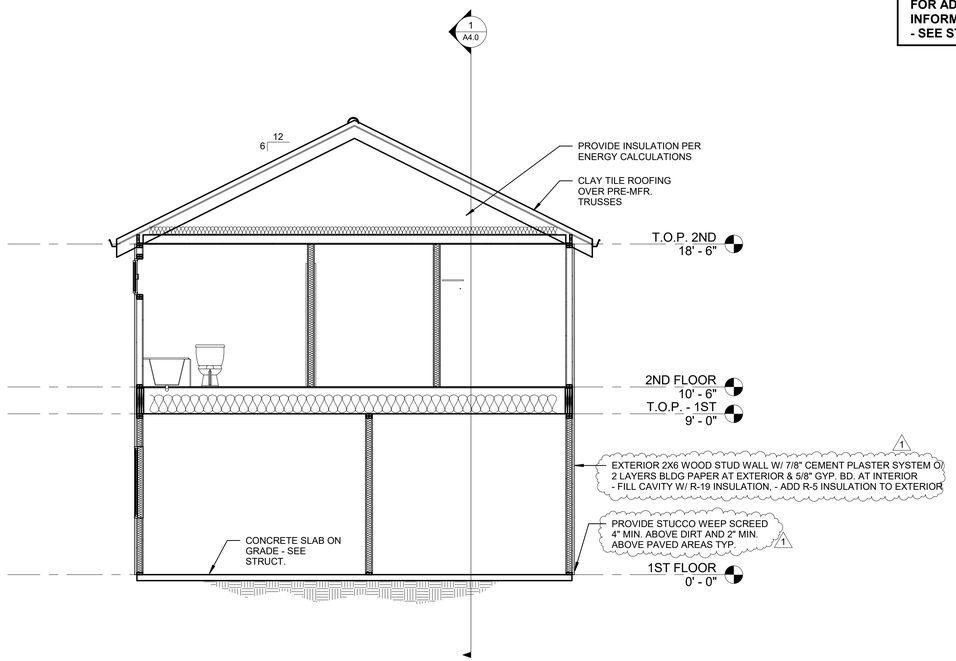


1 BUILDING SECTION A

1/4" = 1'-0"

NOTE:
FOR ADDITIONAL INFORMATION
- SEE STRUCTURAL



2 BUILDING SECTION B

1/4" = 1'-0"

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SHEET TITLE

SECTIONS

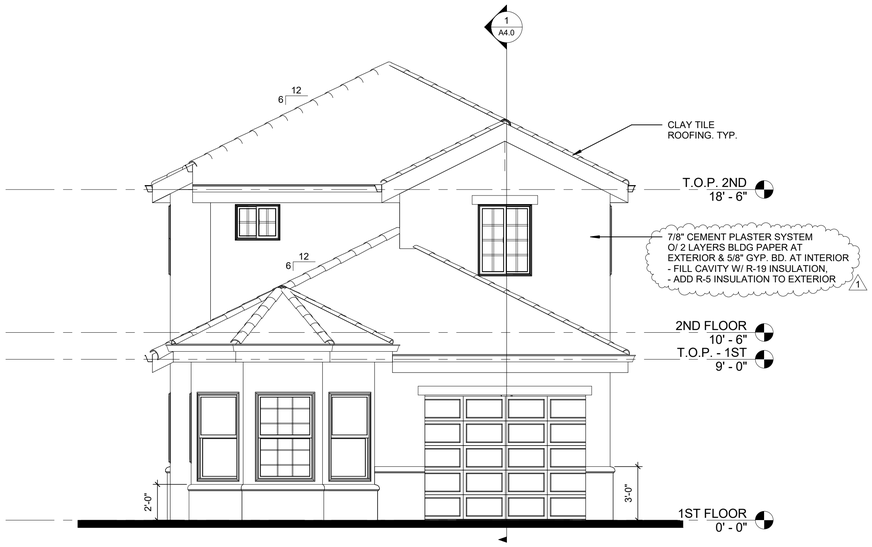
SHEET NUMBER

A4.0

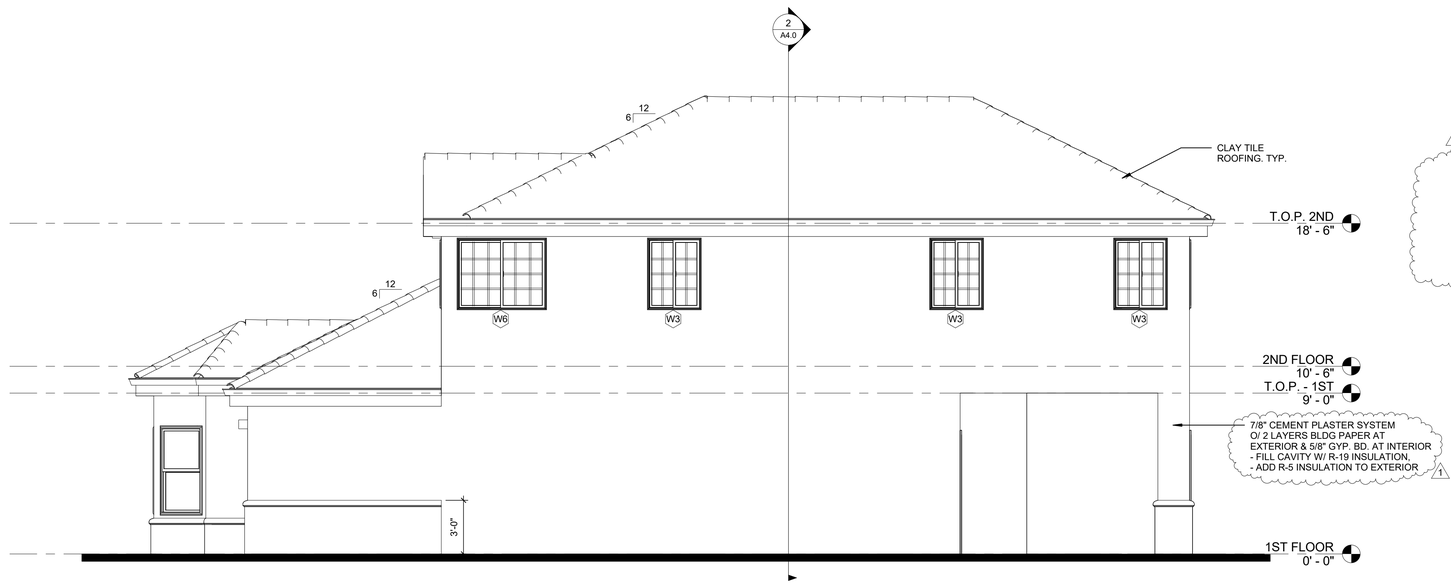
BUILDING COLOR SCHEMES:

COLOR SCHEME A - ASHTON GREY, BLACKBERRY FROST, CLAY POT
COLOR SCHEME B - GRAND CANYON, CITYSCAPE, WALL STREET, MOORISH GREEN
COLOR SCHEME C - WHITE SAPLING, GREY HILLS, SMOKEY GLASS, BICENTENNIAL, REDWARE

WHEN BUILDING PERMITS ARE PULLED FOR EACH LOT TO BE BUILT UPON, THE COLOR SCHEME OF SUCH LOT SHALL BE INDICATED ON THE SITE PLAN



1 EXTERIOR ELEVATION - SOUTH
1/4" = 1'-0"



2 EXTERIOR ELEVATION - EAST
1/4" = 1'-0"

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DRAWN BY: Author
CHECKED BY: Checker

SHEET TITLE

EXTERIOR ELEVATIONS

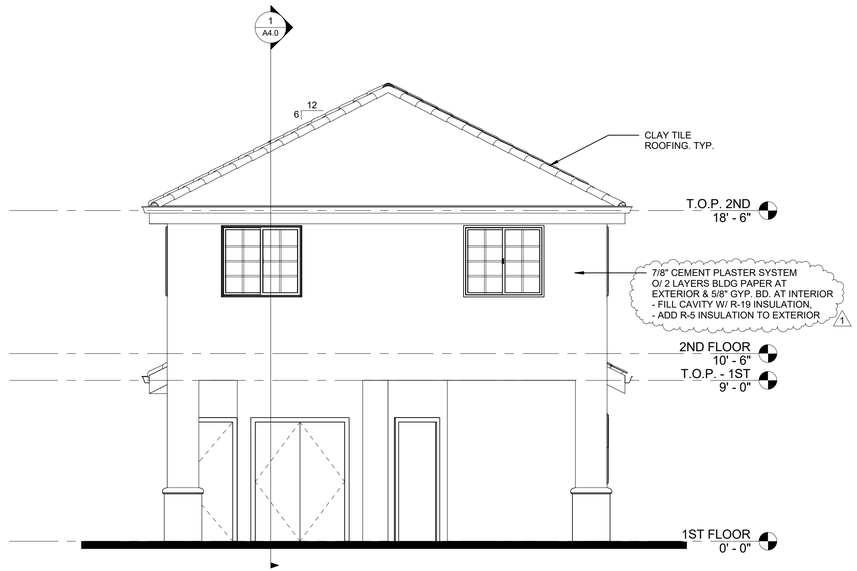
SHEET NUMBER

A5.1

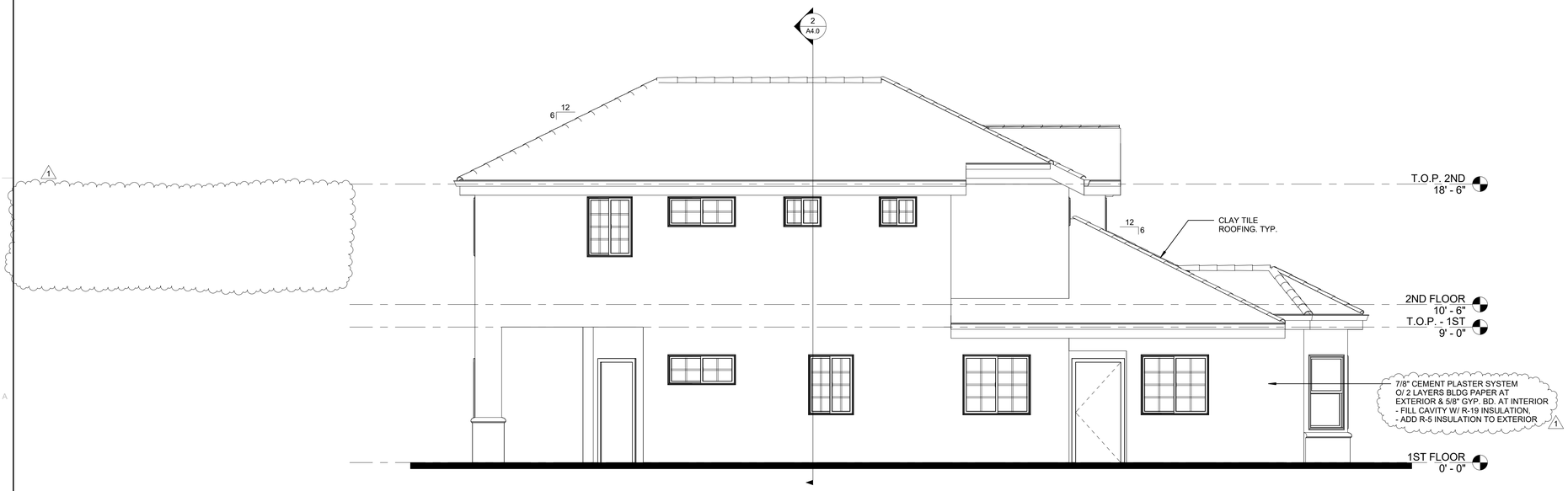
BUILDING COLOR SCHEMES:

COLOR SCHEME 1 - ASHTON GREY, BLACKBERRY FROST, CLAY POT
COLOR SCHEME 2 - GRAND CANYON, CITYSCAPE, WALL STREET, MOORISH GREEN
COLOR SCHEME 3 - WHITE SAPLING, GREY HILLS, SMOKEY GLASS, BICENTENNIAL, REDWARE

WHEN BUILDING PERMITS ARE PULLED FOR EACH LOT TO BE BUILT UPON, THE COLOR SCHEME OF SUCH LOT SHALL BE INDICATED ON THE SITE PLAN



1 EXTERIOR ELEVATION - NORTH
1/4" = 1'-0"



2 EXTERIOR ELEVATION - WEST
1/4" = 1'-0"

IF THIS SHEET IS NOT 24"x36", IT HAS BEEN RESIZED - SCALE ACCORDINGLY 0 1/4" 1/2" 1" 2"

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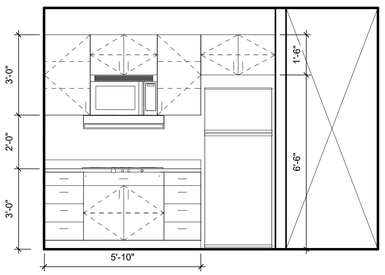
SHEET TITLE

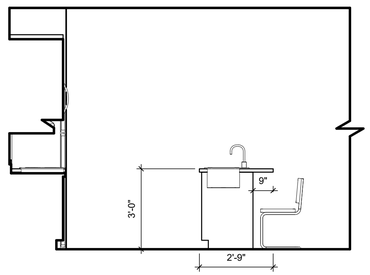
EXTERIOR ELEVATIONS

SHEET NUMBER

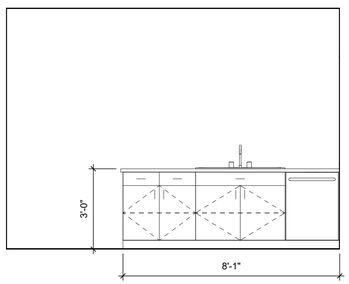
A5.2



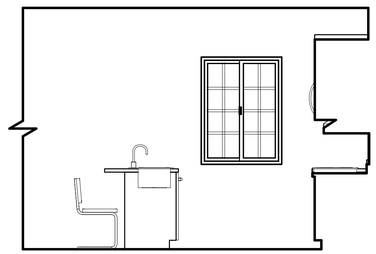
1A 103 - KITCHEN - A



1B 103 - KITCHEN - B



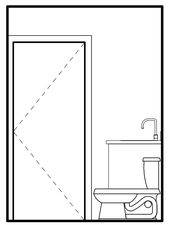
1 103 - KITCHEN - C



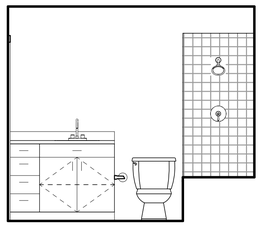
1D 103 - KITCHEN - D

1 103 - KITCHEN - INTERIOR ELEVATIONS

3/8" = 1'-0"
SCALE



2B 206 - RESTROOM - B



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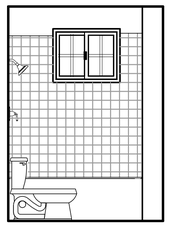
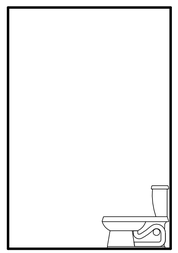


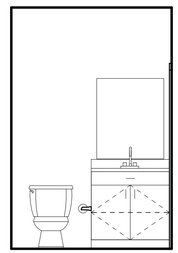
2D 206 - RESTROOM - D

2 206 - RESTROOM - INTERIOR ELEVATIONS

3/8" = 1'-0"
SCALE



3A 105 - RESTROOM - A



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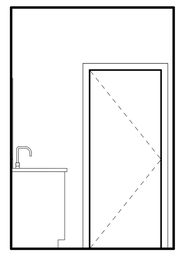
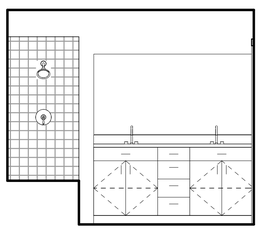


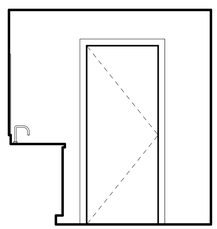
3C 105 - RESTROOM - C

3 105 - RESTROOM - INTERIOR ELEVATIONS

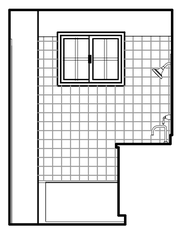
3/8" = 1'-0"
SCALE



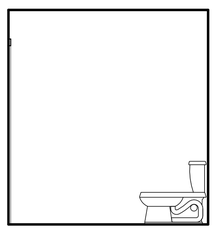
4A 202 - MASTER BATH - A



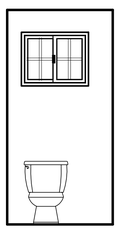
4B 202 - MASTER BATH - B



4D 202 - MASTER BATH - D



4F 202 - MASTER BATH - F



4G 202 - MASTER BATH - G

4 202 - MASTER BATH - INTERIOR ELEVATIONS

3/8" = 1'-0"
SCALE

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SHEET DETAILS

DRAWN BY: Author
CHECKED BY: Checker

SHEET TITLE

INTERIOR ELEVATIONS

SHEET NUMBER

A6.1

ROOM FINISH SCHEDULE

FLOOR	ROOM NO.	ROOM NAME	FLOOR	BASE	WALLS, COLUMNS & WAISCOTS				CEILING		COMMENTS
					NORTH	EAST	SOUTH	WEST			
			FIN	FIN	FIN	FIN	FIN	FIN	MAT	FIN	
	01	STAIR	-	WB-1	P-1	P-1	P-1	P-1	GYP.	CL-1	
1ST FLOOR	101	LIVING ROOM	CPT-1	WB-1	P-1	P-1	P-1	P-1	GYP.	CL-1	
1ST FLOOR	102	DINING ROOM	SV-1	WB-1	P-1	P-1	P-1	P-1	GYP.	CL-1	
1ST FLOOR	103	KITCHEN	SV-1	WB-1	P-1	P-1	P-1	P-1	GYP.	CL-1	
1ST FLOOR	104	HALL	SV-1	WB-1	P-1	P-1	P-1	P-1	GYP.	CL-1	
1ST FLOOR	105	RESTROOM	SV-1	WB-1	P-1	P-1	P-1	P-1	GYP.	CL-1	
1ST FLOOR	106	TANDEM GARAGE	-	-	-	-	-	-	GYP.	CL-1	
2ND FLOOR	201	MASTER BEDROOM	CPT-1	WB-1	P-1	P-1	P-1	P-1	GYP.	CL-1	
2ND FLOOR	202	MASTER BATH	SV-1	WB-1	P-1	P-1	P-1	P-1	GYP.	CL-1	
2ND FLOOR	203	WALK-IN CLOSET	CPT-1	WB-1	P-1	P-1	P-1	P-1	GYP.	CL-1	
2ND FLOOR	204	BEDROOM #2	CPT-1	WB-1	P-1	P-1	P-1	P-1	GYP.	CL-1	
2ND FLOOR	205	BEDROOM #3	CPT-1	WB-1	P-1	P-1	P-1	P-1	GYP.	CL-1	
2ND FLOOR	206	RESTROOM	SV-1	WB-1	P-1	P-1	P-1	P-1	GYP.	CL-1	
2ND FLOOR	207	HALL	CPT-1	WB-1	P-1	P-1	P-1	P-1	GYP.	CL-1	

FINISH LEGEND

FLOORS

NO.	MATERIAL	MANUFACTURER	PRODUCT NAME & #	COLOR NAME & #	COMMENTS
CPT-1	CARPET	--	--	OWNER SELECTED	-
SV-1	SHEET VINYL	--	--	OWNER SELECTED	-

BASE

NO.	MATERIAL	MANUFACTURER	PRODUCT NAME & #	COLOR NAME & #	COMMENTS
WB-1	WOOD BASE	JOHNSONITE	4" STANDARD COVE	OWNER SELECTED	-
-	-	-	-	-	-

WALLS

NO.	MATERIAL	MANUFACTURER	PRODUCT NAME & #	COLOR NAME & #	COMMENTS
P1	PAINT	KELLY MOORE	EGGSHELL	OWNER SELECTED	GENERAL PAINT U.N.O. (SEE GENERAL FINISH NOTES)
P2	PAINT	KELLY MOORE	EGGSHELL WALLS / SEMI-GLOSS DOORS & TRIM	OWNER SELECTED	DOOR FRAMES AND ARCHITECTURAL METALS
P3	PAINT	KELLY MOORE	EGGSHELL	OWNER SELECTED	ACCENT PAINT

OTHER (SPECIALTY)

NO.	MATERIAL	MANUFACTURER	PRODUCT NAME & #	COLOR NAME & #	COMMENTS
S-1	-	--	--	-	-

CEILINGS

NO.	MATERIAL	MANUFACTURER	PRODUCT NAME & #	COLOR NAME & #	COMMENTS
CL-1	GYPSUM BOARD CEILING	-	5/8" GYPSUM BOARD	PAINT: #LL-19 NAVAJO WHITE	LEVEL 5 FINISH, TAPE, PRIME SMOOTH TEXTURE & PAINT

NOTES:

1. VERIFY ALL SELECTIONS WITH OWNER. SUBMIT SAMPLES FOR ARCHITECT / OWNER APPROVAL

GENERAL FINISH NOTES

1. ALL INTERIOR FINISHES SHALL COMPLY WITH CBC SECTION 1224.4.11 (INTERIOR FINISHES)
2. CEILING FINISHES SHALL BE IN COMPLIANCE WITH TABLE 1224.1.
3. ALL WALLS TO BE PAINTED AN EGGSHELL FINISH AND DOOR FRAMES TO BE LATEX PAINT WITH A SEMIGLOSS FINISH, UON.
4. ALL PAINT IN RESTROOMS TO BE A SEMI-GLOSS FINISH, UON.
5. WALL & CEILING MATERIALS SHALL NOT EXCEED THE ALLOWABLE FLAME SPREAD CLASSIFICATIONS IN APPLICABLE CODE, CLASS A.
6. ALL CASEWORK SHALL MEET CASEWORK "WI" CUSTOM STANDARDS.

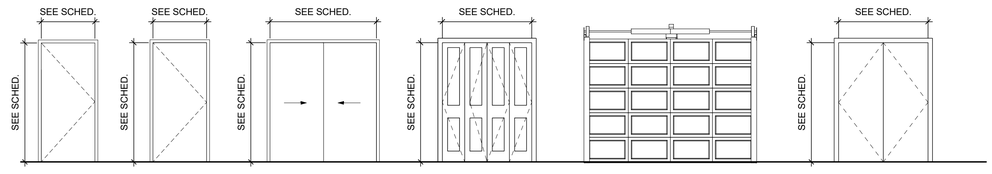
DOOR GENERAL NOTES

1. INTERIOR DOORS TO BE 1 3/4" THICK, SOLID CORE, FLUSH PANEL WOOD W/P.LAM FINISH. (U.O.N.)
   SEE SCHEDULE FOR FINISH. CORE MATERIAL SHALL BE WOOD OR MINERAL IN ACCORDANCE W/ SCHEDULED RATING.
2. HOLLOW METAL DOOR FRAMES TO BE 16GA. W/ WELDED CORNERS & FACTORY PRIMED. FINISH & COLOR TO BE SELECTED BY OWNER.
3. VERIFY WALL THICKNESS FOR EACH OPENING.
4. THE FLOOR OR LANDING SHALL NOT BE MORE THAN 1/2" LOWER THAN THE THRESHOLD OF THE DOOR WAY. CHANGE IN LEVEL BETWEEN 1/4" & 1/2" SHALL BE BEVELED W/ A SLOPE NO GREATER THAN ONE UNIT VERTICAL IN TWO UNITS HORIZONTAL (CBC 11B-303)
5. ALL FIRE RATED DOOR ASSEMBLIES MUST HAVE FIRE RATED HARDWARE, FRAMES & DOORS. DOOR ASSEMBLIES SHALL HAVE TIGHT FITTING SMOKE & DRAFT CONTROL ASSEMBLIES PER NFPA 80. DOOR FRAMES MUST BEAR AN 'S' LABEL. DOOR SHALL HAVE A SELF CLOSER. ALL CLOSERS SHALL BE "NORTON" 8501 SERIES.
6. ALL EXIT DOORS SHALL BE OPERABLE IN DIRECTION OF EXIT TRAVEL AT ALL TIMES W/O SPECIAL KNOWLEDGE OR EFFORT AND W/O LOCKING DEVICES.
7. FIRE RATED ASSEMBLIES SHALL BE COMPLETE AND, AS DEFINED IN CBC 716.5, INCLUDE REQUIRED HARDWARE, ANCHORAGE, FRAMES AND SILLS.
8. FIRE RATED DOORS AND FRAMES SHALL BE INSTALLED PER MANUFACTURER'S WRITTEN INSTRUCTION WHICH SHALL BE PROVIDED TO THE INSPECTION AUTHORITY.
9. DOOR HARDWARE FINISH SHALL MATCH EXISTING. MAXIMUM EFFORT TO OPERATE DOORS SHALL NOT EXCEED 5LBS FOR EXTERIOR AND INTERIOR DOORS AND 15 LBS FOR FIRE-RATED DOORS (CBC 11B-309.4)
10. ALL LATCHES AND LOCKSETS SHALL BE SCHLAGE D SERIES RHODES ACCESSIBLE DESIGN, INDEPENDENT OPERATION, SPRING-CAGE SUPPORTED, MINIMUM 2" CLEARANCE FROM LEVER MID-POINT TO DOOR FACE. (LEVER STYLE TO MATCH EXISTING ADA LEVERS - VERIFY)
11. ALL SAFETY GLAZING MATERIALS FOR USE IN AREAS SUBJECT TO HUMAN IMPACT SHALL BE LABELED INDICATING THE CATEGORY OF GLASS REQUIRED BY CBC 2406

DOOR SCHEDULE

DOOR NUMBER	DOOR TYPE	DOOR				FIRE RATING	FRAME		COMMENTS
		WIDTH	HEIGHT	MATERIAL	FINISH		MATERIAL	FINISH	
101A	D1	3' - 0"	6' - 8"	WD/GLASS	PAINT	NONE	WOOD	PAINT	
104B	D1	3' - 0"	6' - 8"	WOOD	PAINT	NONE	WOOD	PAINT	
105A	D2	2' - 8"	6' - 8"	WOOD	PAINT	NONE	WOOD	PAINT	
106A	D5	9' - 0"	7' - 0"	ALUM.	PAINT	NONE	ALUM.	PAINT	
106B	D2	2' - 10"	6' - 8"	WOOD	PAINT	NONE	WOOD	PAINT	
106C	D2	2' - 10"	6' - 8"	WOOD	PAINT	NONE	WOOD	PAINT	
107A	D6	5' - 0"	6' - 8"	WOOD	PAINT	NONE	WOOD	PAINT	
201A	D2	2' - 8"	6' - 8"	WOOD	PAINT	NONE	WOOD	PAINT	
201B	D3	4' - 0"	6' - 8"	WOOD	PAINT	NONE	WOOD	PAINT	
202A	D2	2' - 8"	6' - 8"	WOOD	PAINT	NONE	WOOD	PAINT	
202B	D2	2' - 6"	6' - 8"	WOOD	PAINT	NONE	WOOD	PAINT	
203A	D2	2' - 8"	6' - 8"	WOOD	PAINT	NONE	WOOD	PAINT	
204A	D2	2' - 8"	6' - 8"	WOOD	PAINT	NONE	WOOD	PAINT	
204B	D3	4' - 0"	6' - 8"	WOOD	PAINT	NONE	WOOD	PAINT	
205A	D2	2' - 8"	6' - 8"	WOOD	PAINT	NONE	WOOD	PAINT	
205B	D3	4' - 0"	6' - 8"	WOOD	PAINT	NONE	WOOD	PAINT	
206A	D2	2' - 8"	6' - 8"	WOOD	PAINT	NONE	WOOD	PAINT	
207A	D4	5' - 0"	6' - 8"	WOOD	PAINT	NONE	WOOD	PAINT	

DOOR TYPES



D1 SINGLE DOOR SOLID WOOD EXTERIOR

D2 SINGLE DOOR SOLID WOOD

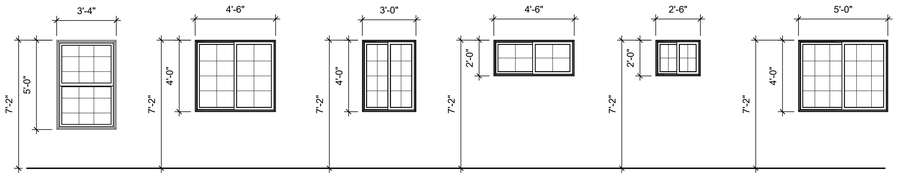
D3 SLIDING DOOR SOLID WOOD

D4 BIFOLD 4-PANEL DOOR SOLID WOOD

D5 GARAGE ROLL UP DOOR

D6 DOUBLE DOOR SOLID WOOD EXT ERIOR

WINDOW TYPES



W1 DOUBLE HUNG

W2 SLIDING

W3 SLIDING

W4 SLIDING

W5 SLIDING

W6 SLIDING

1

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CONSULTING ENGINEER

AUTHORITY HAVING JURISDICTION

PROJECT#

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CERES CA. 95307

UNIT A

PROJECT DETAILS

PROJECT NO: 17029
SUBMITTAL DATE:

PROJECT REVISIONS

MARK	DATE	DESCRIPTION

SHEET DETAILS

DRAWN BY: Author
CHECKED BY: Checker

SHEET TITLE

LEGENDS & SCHEDULES

SHEET NUMBER

A7.0

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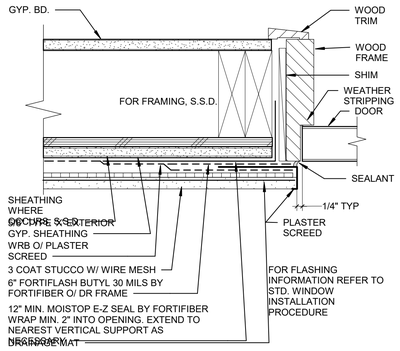
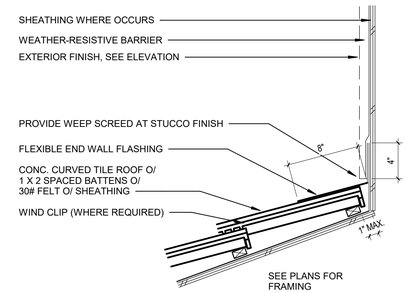
IF THIS SHEET IS NOT 24"x36", IT HAS BEEN RESIZED - SCALE ACCORDINGLY 0 1/4" 1/2" 1" 2"



12 PATIO DOOR JAMB @ STUCCO WALL

3" = 1'-0"



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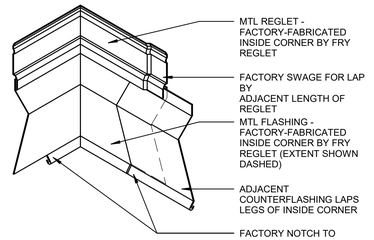
9 WALL PERPENDICULAR TO ROOF

1 1/2" = 1'-0"



NOTE:
1. SEE PLANS FOR EXACT REGLET TYPE. TYPE SURFACE-MOUNT (SM) SHOWN FOR CLARITY
2. REGLETS BY FRY REGLET (U.O.N.)

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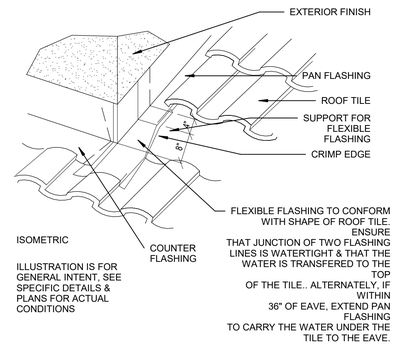
6 REGLET-INSIDE CORNER

3" = 1'-0"



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3 PARALLEL WALL AT CORNER

1 1/2" = 1'-0"

FLASHING OF EXTERIOR WALL OPENINGS

INDIVIDUALLY FLASH ALL EXTERIOR OPENINGS FOR FIXTURES SUCH AS WINDOWS, DOORS, AND VENTS TO MAKE THEM WATER TIGHT. PENETRATION FLASHING MATERIAL SHALL BE BARRIER COATED REINFORCED AND SHALL PROVIDE 4 HOUR MIN. PROTECTION FROM WATER PENETRATION WHEN TESTED IN ACCORDANCE WITH ASTM D-779. SEALANT SHALL COMPLY TO FF TT-S-1657. IN HIGH WIND AREAS A WATERPROOF SHEET MEMBRANE SHALL BE USED OVER SOLID BACKING.

FOR NAIL-ON-FLANGE TYPE FIXTURES A STRIP OF APPROVED FLASHING MATERIAL SHOULD BE AT LEAST 9" WIDE. FLASHING SHALL BE APPLIED IN A WEATHERBOARD FASHION AROUND THE FULL PERIMETER OF THE OPENING.

APPLY THE FIRST STRIP HORIZONTALLY IMMEDIATELY BELOW THE SILL, CUT IT SUFFICIENTLY LONG TO EXTEND PAST EACH SIDE OF THE WINDOW, SO THAT IT PROJECTS BEYOND THE VERTICAL FLASHING TO BE APPLIED LATER. FASTEN THE TOP EDGE OF THE SILL FLASHING TO THE FRAMING, BUT DO NOT FASTEN THE LOWER EDGE, SO THE WEATHER-RESISTIVE BARRIER APPLIED LATER MAY BE SLIPPED UP AND UNDERNEATH THE FLASHING IN WEATHERBOARD FASHION. (SEE FIGURE A)

NEXT, FASTEN STRIPS OF FLASHING AT EACH VERTICAL EDGE (JAMB) OF THE OPENING. RUN THIS FLASHING BEYOND THE SILL FLASHING AND ABOVE WHERE THE HEAD FLASHING WILL INTERSECT. (SEE FIGURE B)

APPLY A CONTINUOUS SEAL TO THE BACKSIDE (INTERIOR) OF THE MOUNTING FLANGE NEAR THE OUTER EDGE OR A CONTINUOUS SEAL TO THE PERIMETER OF THE OPENING AT A POINT TO ASSURE CONTACT WITH THE BACKSIDE (INTERIOR) OF THE MOUNTING FLANGE. (SEE FIGURE C)

FOR FIXTURES WITH OUT A NAIL-ON-FLANGE THE FLASHING SHALL BE 12" MIN. WIDE AND EXTEND INTO THE ROUGH FRAME AT THE SILL AND JAMB IN A WEATHERBOARD FASHION.

THE FIXTURE SHALL THEN BE INSTALLED.

NEXT, APPLY A CONTINUOUS SEAL AT THE TOP (HEAD) MOUNTING FLANGE OR G.S.M. HEAD FLASHING AND EMBED THE BOTTOM OF THE HEAD FLASHING OVER THE SEALANT AND THE MOUNTING FLANGE OR G.S.M. FLASHING. CUT THIS FLASHING SUFFICIENTLY LONG SO THAT IT WILL EXTEND BEYOND EACH JAMB FLASHING. FASTEN IN PLACE. (SEE FIGURE D)

APPLY REMAINING WEATHER-RESISTIVE BARRIER IN A WEATHERBOARD FASHION WITH THE SILL FLASHING LAPPING OVER THE TOP, AND THE HEAD AND JAMB FLASHING BELOW.

BASED UPON INDUSTRY STANDARDS APPROVED BY THE CALIFORNIA ASSOCIATION OF WINDOW MANUFACTURERS, (CAWM).

10 FLASHING AT EXTERIOR WALL OPENINGS

3" = 1'-0"

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8 VALLEY

1 1/2" = 1'-0"

NOTE:
1. SEE PLANS FOR ACTUAL REGLET TYPE. TYPE SURFACE-MOUNT (SM) SHOWN FOR CLARITY
2. REGLETS SHALL BE BY FRY REGLET, U.O.N.

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5 REGLET - OUTSIDE CORNER

3" = 1'-0"

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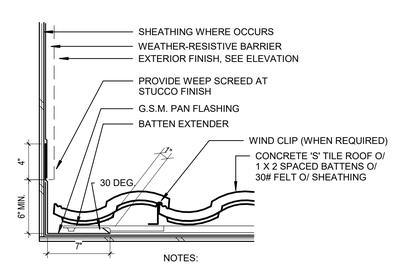
2 PAN FLASHING AT EAVE

1 1/2" = 1'-0"



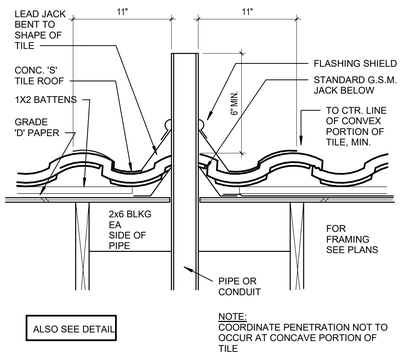
NOTES:
NO NAILS SHALL PENETRATE PAN FLASHING FOR FRAMING S.S.D.

FOR PARALLEL WALL AT CORNER SEE 3/ A9.0

FOR PAN FLASHING AT EAVE SEE 2/ A9.0

7 ROOF PARALLEL TO WALL

1 1/2" = 1'-0"



NOTE:
COORDINATE PENETRATION NOT TO OCCUR AT CONCAVE PORTION OF TILE

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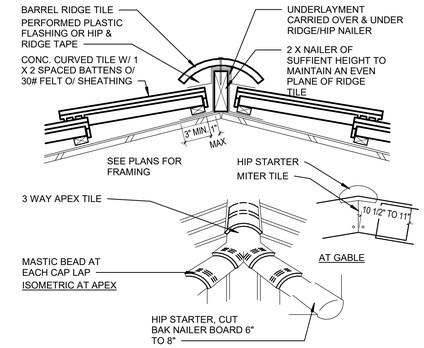
4 PIPE PENETRATION

1 1/2" = 1'-0"



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1 HIP/RIDGE

1 1/2" = 1'-0"

IF THIS SHEET IS NOT 24"x36", IT HAS BEEN RESIZED - SCALE ACCORDINGLY 0 1/4" 1/2" 1" 2"

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CONSULTING ENGINEER

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PROJECT#

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UNIT A

PROJECT DETAILS

PROJECT NO: 17029
SUBMITTAL DATE:

PROJECT REVISIONS

MARK	DATE	DESCRIPTION
1	05-29-18	PLANCHECK #1

SHEET DETAILS

DRAWN BY: Author
CHECKED BY: Checker

SHEET TITLE

DETAILS

SHEET NUMBER

A9.0

GENERAL

1. DETAILS AND DIMENSIONS OF CONSTRUCTION SHALL BE VERIFIED AT THE SITE BY THE CONTRACTOR AND ANY DISCREPANCY WITHIN THE PLANS, SECTIONS OR DETAILS SHALL BE PROMPTLY REPORTED TO THE STRUCTURAL ENGINEER OF RECORD. DO NOT SCALE DRAWINGS.

2. PORTIONS OF THESE CONSTRUCTION DOCUMENTS ARE DIAGRAMMATIC ONLY. ITEMS INCLUDING, BUT NOT LIMITED TO, LOCATIONS, SIZES, QUANTITIES, ACCESSORIES AND CONNECTIONS ARE INDICATED IN A REPRESENTATIONAL MANNER AND MAY NOT BE COMPLETELY SHOWN. PROVIDE ALL WORK AND MATERIALS NECESSARY TO COMPLETE THE PROJECT AS REPRESENTED IN THE CONSTRUCTION DOCUMENTS.

3. THESE DOCUMENTS ARE NOT TO BE USED, IN WHOLE OR IN PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF AXIOM STRUCTURAL DESIGN, INC.

4. ALL WORK SHALL COMPLY WITH THE REQUIREMENTS OF LOCAL, COUNTY, STATE, OR FEDERAL AGENCIES HAVING JURISDICTION. AXIOM STRUCTURAL DESIGN, INC ASSUMES NO RESPONSIBILITY FOR SUPERVISION OF CONSTRUCTION OR PROPER EXECUTION OF THE WORK SHOWN ON THESE DRAWINGS. SAFETY METHODS AND TECHNIQUES ARE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.

5. ANY DEVIATIONS OR UNAUTHORIZED CHANGES TO THESE DRAWINGS ARE NOT THE RESPONSIBILITY OF AXIOM STRUCTURAL DESIGN, INC. DEVIATIONS FROM THE ORIGINAL DRAWINGS MUST BE APPROVED IN WRITING PRIOR TO CONSTRUCTION. IT IS THE CONTRACTOR'S RESPONSIBILITY TO NOTIFY THE STRUCTURAL ENGINEER OF RECORD OF THE PROGRESS OF THE PROJECT TO FACILITATE SITE VISITS, TO ANSWER QUESTIONS AND VIEW THE PROGRESS OF THE WORK.

6. THE CONTRACTOR SHALL NOTIFY THE STRUCTURAL ENGINEER OF RECORD 48 HOURS PRIOR TO THE FOLLOWING PHASES OF CONSTRUCTION:

   A) FOUNDATION POURS
   B) AFTER ERECTION OF THE SUPERSTRUCTURE
   C) PRIOR TO CLOSING IN OF ANY PHASE

7. ALL STRUCTURAL MEMBERS SHOWN ON THE PLANS ARE DESIGNED AS IN THEIR FINAL LOCATION. AXIOM STRUCTURAL DESIGN, INC DOES NOT PERFORM CONSTRUCTION ENGINEERING OR ENGINEERING NECESSARY TO PLACE ANY STRUCTURAL MEMBERS IN THEIR FINAL LOCATION.

8. FEATURES OF CONSTRUCTION INDICATED ARE TYPICAL. WHERE FEATURES ARE NOT FULLY OR SPECIFICALLY INDICATED BY THE CONSTRUCTION DOCUMENTS, THEIR CONSTRUCTION SHALL BE AS INDICATED FOR IDENTICAL OR SIMILAR FEATURES ELSEWHERE IN THE CONSTRUCTION DOCUMENTS. IF ANY CONDITIONS REQUIRE CONSTRUCTION DIFFERENT THAN THAT INDICATED ON THE CONSTRUCTION DOCUMENTS, NOTIFY THE STRUCTURAL ENGINEER OF RECORD.

9. STRUCTURAL ELEMENTS SHALL NOT BE REMOVED OR MODIFIED UNLESS INDICATED IN THE STRUCTURAL CONSTRUCTION DOCUMENTS. IF STRUCTURAL ELEMENTS INTERFERE WITH THE WORK INDICATED IN ANY OTHER CONSTRUCTION DOCUMENTS, NOTIFY THE STRUCTURAL ENGINEER OF RECORD.

10. THE CONSTRUCTION DOCUMENTS ARE NOT COMPLETE AND READY FOR CONSTRUCTION UNTIL THEY ARE APPROVED BY THE ENFORCEMENT AGENCY AND SIGNED BY THE STRUCTURAL ENGINEER OF RECORD.

DESIGN CRITERIA

1. THIS BUILDING HAS BEEN DESIGNED TO SUSTAIN, WITHIN THE LIMITATIONS SPECIFIED IN THE 2016 CALIFORNIA BUILDING CODE (CBC), ALL LOADS SET FORTH IN CHAPTER 16 AND ELSEWHERE IN THE CBC.

GRAVITY LOADS				SEISMIC MASS
ROOF		FLOOR		ROOF
DEAD	LIVE	DEAD	LIVE	PARTITION
24 PSF	20 PSF	20 PSF	40 PSF	5 PSF

SEISMIC DESIGN CRITERIA									
SITE CLASS	RISK CATEORY	SEISMIC DESIGN CATEGORY	IMPORTANCE FACTOR, I_e	S_s	S_1	S_{MS}	S_{M1}	S_{DS}	S_{D1}
D	II	D	1.0	0.926	0.338	1.046	0.583	0.698	0.389

WIND DESIGN CRITERIA						
EXPOSURE	RISK CATEGORY	ULTIMATE DESIGN WIND SPEED, V_{ULT}	NOMINAL DESIGN WIND SPEED, V_{ASD}	VELOCITY PRESSURE COEFFICIENT, K_{ZT}	TOPOGRAPHIC FACTOR, K_{ZT}	DIRECTIONALITY FACTOR, K_d
C	II	110 MPH	85 MPH	0.90	1.0	0.85

LATERAL FORCE RESISTING SYSTEM						
DIRECTION	LFRS	R	Ω_0	C_s	ρ	SEISMIC BASE SHEAR, V (SIMPLIFIED PROCEDURE)
N/S	LIGHT FRAMED WOOD SHEAR WALLS	6.5	2.5	0.12	1.0	13.4K
E/W	LIGHT FRAMED WOOD SHEAR WALLS	6.5	2.5	0.12	1.0	13.4K

SOIL DESIGN CRITERIA			
INFORMATION BASED ON:	ALLOWABLE BEARING PRESSURE	ALLOWABLE LATERAL BEARING	LATERAL SLIDING RESISTANCE
CBC MINIMUM	D + L = 1500 PSF	100 LBS/PSF (PER FT OF DEPTH)	130 PSF

SHOP DRAWINGS

1. SHOP DRAWINGS ARE REQUIRED FOR THE FOLLOWING ITEMS. SUBMIT ONE (1) SET OF PRINTS FOR REVIEW PRIOR TO FABRICATION.

   A) CONCRETE MIX DESIGNS
   B) CONCRETE REINFORCING BARS
   C) ROOF TRUSSES
   D) PRE-MANUFACTURED LUMBER

2. ALLOW TEN (10) WORKING DAYS FOR SHOP DRAWING REVIEW COMMENCING THE NEXT WORKING DAY AFTER RECEIPT. PLAN YOUR SCHEDULE ACCORDINGLY.

3. NO PART OF THE CONTRACT DOCUMENTS ARE TO BE REPRODUCED AS PART OF THE SHOP DRAWINGS. SHOP DRAWINGS CONTAINING DETAILS, SECTIONS OR PLANS PHOTO COPIED FROM THE CONTRACT DOCUMENTS WILL BE REJECTED.

SPECIAL INSPECTIONS

1. THE OWNER SHALL EMPLOY ONE OR MORE SPECIAL INSPECTORS WHO SHALL PROVIDE INSPECTIONS DURING CONSTRUCTION ON THE FOLLOWING TYPE OF WORK:

   A. CONCRETE: DURING THE TAKING OF TEST SPECIMENS AND PLACING OF REINFORCED CONCRETE IN ACCORDANCE WITH CBC CHAPTER 17 AND 19.

   B. BOLTS INSTALLED IN CONCRETE: PRIOR TO AND DURING THE PLACEMENT OF CONCRETE AROUND BOLTS IN ACCORDANCE WITH CBC CHAPTER 17.

   C. FABRICATION OF METAL PLATE CONNECTED WOOD TRUSSES AS REQUIRED BY CBC CHAPTER 17.

   D. EXPANSION ANCHORS: DURING INSTALLATION AND PROOF TESTING OF ANCHORS AS REQUIRED BY CBC CHAPTER 17.

   E. EPOXY ADHESIVE ANCHOR: DURING INSTALLATION AND PROOF TESTING OF ANCHORS PER CBC CHAPTER 17.

   F. STRUCTURAL WOOD IN ACCORDANCE WITH CBC CHAPTER 17.

   THE SPECIAL INSPECTOR SHALL BE A QUALIFIED PERSON WHO SHALL DEMONSTRATE COMPETENCE, TO THE SATISFACTION OF THE CHIEF BUILDING OFFICIAL AND THE STRUCTURAL ENGINEER OF RECORD FOR INSPECTION OF THE PARTICULAR TYPE OF CONSTRUCTION OR OPERATION REQUIRING SPECIAL INSPECTION, IN ACCORDANCE WITH TITLE 24, PART I.

2. DUTIES AND RESPONSIBILITIES OF THE SPECIAL INSPECTOR:

   A) THE SPECIAL INSPECTOR SHALL OBSERVE THE WORK ASSIGNED FOR CONFORMANCE WITH THE APPROVED DESIGN DRAWINGS AND SPECIFICATIONS.

   B) THE SPECIAL INSPECTOR SHALL FURNISH INSPECTION REPORTS TO THE CHIEF BUILDING OFFICIAL, THE STRUCTURAL ENGINEER OF RECORD, AND OTHER DESIGNATED PERSONS, AS REQUIRED BY THE TITLE 24, PART I. ALL DISCREPANCIES SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE CONTRACTOR FOR CORRECTION IN ACCORDANCE WITH TITLE 24, PART I. THEN, IF UNCORRECTED, TO THE PROPER DESIGN AUTHORITY AND TO THE THE BUILDING OFFICIAL.

   C) THE SPECIAL INSPECTOR SHALL SUBMIT A FINAL SIGNED REPORT STATING WHETHER THE WORK REQUIRING SPECIAL INSPECTION WAS, TO THE BEST OF THE INSPECTOR'S KNOWLEDGE, IN CONFORMANCE WITH THE APPROVED PLANS AND SPECIFICATIONS AND THE APPLICABLE WORKMANSHIP PROVISIONS OF THE CBC.

EXCAVATIONS AND FOUNDATIONS

1. SLOPES FOR PERMANENT FILLS SHALL NOT BE STEEPER THAN 2 HORIZONTAL TO 1 VERTICAL. CUT SLOPES FOR PERMANENT EXCAVATIONS SHALL NOT BE STEEPER THAN 2 HORIZONTAL TO 1 VERTICAL UNLESS SUBSTANTIATING DATA JUSTIFYING STEEPER CUT SLOPES IS SUBMITTED.

2. EXPANSIVE SOIL UNDER THE BUILDING SLAB SHALL BE SCARIFIED AND RE-COMPACTED TO 90% RELATIVE DENSITY, TO A DEPTH OF 8 INCHES BELOW ROUGH GRADE. THE CONTRACTOR SHALL PROVIDE DIKES AND LONG TERM SPRINKLING TO OBTAIN A MOISTURE CONTENT OF 3% PERCENT ABOVE OPTIMUM PRIOR TO COMPACTION. CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING A MOISTURE TEST BY AN APPROVED TESTING LABORATORY PRIOR TO COMPACTION. ALL SUB-GRADE SHALL BE NATIVE OR ENGINEERED FILL.

3. FILLS USED TO SUPPORT THE FOUNDATIONS OF ANY BUILDING OR STRUCTURE SHALL BE PLACED IN ACCORDANCE WITH ACCEPTED ENGINEERING PRACTICE AND COMPACTED TO 90% RELATIVE DENSITY. A SOIL INVESTIGATION REPORT AND A REPORT OF SATISFACTORY PLACEMENT OF FILL, BOTH ACCEPTABLE TO THE BUILDING OFFICIAL AND THE STRUCTURAL ENGINEER OF RECORD, SHALL BE SUBMITTED.

4. ALL FOOTINGS SHALL BEAR ON UNDISTURBED SOIL 12 INCHES BELOW NATURAL OR FINISHED GRADE, WHICHEVER IS LOWER.

5. FOUNDATIONS FOR ALL BUILDINGS WHERE THE SURFACE OF THE GROUND SLOPES MORE THAN 1 FOOT IN 10 FEET SHALL BE LEVEL OR SHALL BE STEPPED SO THAT BOTH TOP AND BOTTOM OF SUCH FOUNDATIONS ARE LEVEL.

6. FOUNDATIONS SUPPORTING WOOD SHALL EXTEND AT LEAST 8 INCHES ABOVE THE ADJACENT EXPOSED FINISH GRADE PER CBC CHAPTER 23.

REINFORCED CONCRETE:

1. CONCRETE MATERIALS, QUALITY CONTROL AND CONSTRUCTION SHALL BE IN ACCORDANCE WITH ACI 318.

2. CEMENT SHALL CONFORM TO ASTM C150, PORTLAND CEMENT, TYPE I OR TYPE II.

3. AGGREGATES SHALL CONFORM TO ASTM C33, CONCRETE AGGREGATES WITH THE FOLLOWING MAXIMUM AGGREGATE SIZES:

   A. FOUNDATIONS: 1½ INCH
   B. SLAB-ON-GRADE: 1 INCH
   C. CONCRETE CURB: 1 INCH

4. WATER USED IN MIXING CONCRETE SHALL BE CLEAN AND FREE FROM INJURIOUS AMOUNTS OF OILS, ACIDS, ALKALIS, SALTS, ORGANIC MATERIALS OR OTHER SUBSTANCES DELETERIOUS TO CONCRETE OR REINFORCEMENT. NONPOTABLE WATER SHALL NOT BE USED IN CONCRETE.

5. CONCRETE SHALL BE PROPORTIONED TO PROVIDE AN AVERAGE COMPRESSIVE STRENGTH OF 3000 PSI AND W/C = 0.50

   UNLESS OTHERWISE SPECIFIED, f'c SHALL BE BASED ON 28-DAY TESTS. MAXIMUM CONCRETE SLUMP = 4".

6. CONCRETE SHALL BE NORMAL WEIGHT (150 PCF) UNLESS OTHERWISE NOTED.

7. ADDITIVES AND ADMIXTURES TO CONCRETE SHALL NOT BE USED UNLESS APPROVED IN WRITING BY THE STRUCTURAL ENGINEER OF RECORD.

8. SPECIFICATIONS FOR TESTING OF MATERIALS SHALL CONFORM WITH CBC CHAPTER 19.

9. THE CONCRETE MIX DESIGNS SHALL BE SUBMITTED FOR REVIEW WITH APPROPRIATE BACK-UP DATA ACCORDING TO CBC CHAPTER 19.

10. THE EVALUATION AND ACCEPTANCE OF THE CONCRETE SHALL BE BASED ON ACI 318.

11. THE MIXING OF CONCRETE SHALL BE DONE IN ACCORDANCE WITH ACI 318.

12. CONCRETE SHALL BE DEPOSITED AS NEARLY AS PRACTICABLE IN ITS FINAL POSITION TO AVOID SEGREGATION DUE TO REHANDLING OR FLOWING. CONCRETE PLACEMENT SHALL BE CARRIED ON AT SUCH A RATE THAT CONCRETE IS AT ALL TIMES PLASTIC AND FLOWS READILY INTO SPACES BETWEEN REINFORCEMENT. CONCRETE THAT HAS PARTIALLY HARDENED OR BEEN CONTAMINATED BY FOREIGN MATERIALS SHALL NOT BE DEPOSITED IN THE STRUCTURE.

13. CONCRETE (OTHER THAN HIGH-EARLY-STRENGTH) SHALL BE MAINTAINED ABOVE 50°F AND IN A MOIST CONDITION FOR AT LEAST THE FIRST SEVEN DAYS AFTER PLACEMENT.

14. CONDUITS, PIPES AND SLEEVES OF ANY MATERIAL NOT HARMFUL TO CONCRETE AND WITHIN LIMITATIONS OF ACI 318 MAY BE EMBEDDED IN CONCRETE WITH APPROVAL OF THE STRUCTURAL ENGINEER OF RECORD, PROVIDED THEY ARE NOT CONSIDERED TO REPLACE STRUCTURALLY THE DISPLACED CONCRETE. REINFORCEMENTS, ANCHOR BOLTS, PIPE SLEEVES, AND OTHER INSERTS SHALL BE POSITIVELY SECURED IN PLACE PRIOR TO PLACING CONCRETE.

15. CONDUITS AND PIPES OF ALUMINUM SHALL NOT BE EMBEDDED IN STRUCTURAL CONCRETE UNLESS EFFECTIVELY COATED OR COVERED TO PREVENT ALUMINUM-CONCRETE REACTION OR ELECTROLYTIC ACTION BETWEEN ALUMINUM AND STEEL.

16. PROVIDE CONTROL OR CONSTRUCTION JOINTS AT 15'-0" ON CENTER EACH WAY, UNLESS OTHERWISE NOTED ON THE PLANS. SUBMIT A LAYOUT TO THE STRUCTURAL ENGINEER OF RECORD FOR REVIEW.

17. THE SURFACE OF CONCRETE CONSTRUCTION JOINTS SHALL BE CLEANED, FREE OF LAITANCE, AND ROUGHENED TO A ¼" MINIMUM AMPLITUDE. IMMEDIATELY BEFORE NEW CONCRETE IS PLACED, ALL CONSTRUCTION JOINTS SHALL BE WETTED AND STANDING WATER REMOVED. CONSTRUCTION JOINTS SHALL BE SO MADE AND LOCATED AS NOT TO IMPAIR THE STRENGTH OF THE STRUCTURE. PROVISION SHALL BE MADE FOR TRANSFER OF SHEAR AND OTHER FORCES THROUGH CONSTRUCTION JOINTS.

18. NON-SHRINK GROUT (OR DRY-PACK) UNDER COLUMN BASES SHALL CONFORM TO ASTM C 1107 AND HAVE A MINIMUM COMPRESSIVE OF 4000 PSI.

19. FORM ¾" CHAMFER AT ALL EXPOSED WALL AND COLUMN EDGES AND CORNERS, UON.

REINFORCING NOTES:

1. REINFORCEMENT SHALL BE DEFORMED REINFORCEMENT AND CONFORM TO ASTM A706 OR ASTM A615, GRADE 60, REINFORCING BARS FOR CONCRETE.

2. REINFORCING BARS SHALL HAVE A SPECIFIED YIELD STRENGTH OF 60,000 PSI (GRADE 60).

3. REINFORCING BARS SHALL BE TESTED IN ACCORDANCE WITH CBC CHAPTER 19.

4. DIMENSIONS LOCATING REINFORCING STEEL ARE TO THE FACE OF REINFORCING STEEL AND DENOTE CLEAR COVERAGE. MINIMUM CONCRETE COVER SHALL BE AS FOLLOWS, UON:

   A. CONCRETE CAST AGAINST EARTH (EXCEPT SLAB ON GRADE) - 3"
      - SLAB ON GRADE - CENTER REINFORCEMENT IN SLAB

   B. CONCRETE FORMED & EXPOSED TO EARTH OR WEATHER:
      - #6 THRU #18 BARS - 2"
      - #5 BAR & SMALLER - 1½"

5. WELDED SMOOTH WIRE FABRIC FOR CONCRETE REINFORCEMENT SHALL CONFORM TO ASTM 185.

6. ALL WELDED REBAR SHALL BE ASTM A706, GRADE 60. WELD FILLER METAL FOR REINFORCING STEEL SHALL COMPLY WITH AWS D1.4, fu=80 KSI. WELDING SHALL CONFORM WITH AWS D1.4

7. SPLICES IN CONTINUOUS REINFORCING SHALL BE LAPPED AS SHOWN IN THE TYPICAL DETAIL, UON. SPLICES IN ADJACENT BARS SHALL BE STAGGERED SO THERE IS NO OVERLAP.

8. UNLESS DETAILED OTHERWISE: REINFORCING IN CONTINUOUS SOIL-BEARING GRADE BEAMS OR FOOTINGS SHALL HAVE THE TOP BARS SPLICED AT CENTERLINE OF COLUMN SUPPORTS AND THE BOTTOM BARS SPLICED AT BEAM MID-SPAN. AT DISCONTINUOUS ENDS, THE BARS SHALL BE TERMINATED WITH A STANDARD HOOK OR 12" MIN EXTENDED TO THE FAR FACE OF THE BEAM.

9. HOOKS SHALL BE STANDARD HOOKS, UON.

WOOD

1. LUMBER SHALL BE GRADED IN ACCORDANCE WITH CBC CHAPTER 23, CLASSIFICATION, DEFINITION, METHODS OF GRADING AND DEVELOPMENT OF DESIGN VALUES FOR ALL SPECIES OF LUMBER. SOLID SAWN LUMBER SHALL BE GRADE MARKED DOUGLAS FIR NO. 2 OR BETTER (NINETEEN PERCENT, 19%, MOISTURE CONTENT, MAXIMUM, AT THE TIME OF INSTALLATION)

2. PLYWOOD SHALL CONFORM TO CBC CHAPTER 23, CONSTRUCTION AND INDUSTRIAL PLYWOOD (5 PLY MINIMUM). PLYWOOD SHALL BE MANUFACTURED USING EXTERIOR GLUE. PLYWOOD DIAPHRAGMS AND SHEAR WALLS SHALL BE CONSTRUCTED WITH PLYWOOD SHEETS NOT LESS THAN 4 FEET BY 8 FEET, EXCEPT AT BOUNDARIES AND CHANGES IN FRAMING WHERE MINIMUM SHEET DIMENSION SHALL BE 24 INCHES UNLESS ALL EDGES OF THE UNDERSIZED SHEETS ARE SUPPORTED BY FRAMING MEMBERS OR BLOCKING. FRAMING MEMBERS OR BLOCKING SHALL BE PROVIDED AT THE EDGES OF ALL SHEETS IN SHEAR WALLS. DIAPHRAGM SHEATHING NAILS OR OTHER APPROVED SHEATHING CONNECTORS SHALL BE DRIVEN FLUSH BUT SHALL NOT FRACTURE THE SURFACE OF THE SHEATHING.

3. LUMBER SHALL NOT BE CUT OR NOTCHED UNLESS DETAILED ON THE STRUCTURAL DRAWINGS OR APPROVED IN WRITING, BY THE STRUCTURAL ENGINEER OF RECORD.

4. ALL FOUNDATION PLATES OR SILLS AND SLEEPERS ON A CONCRETE SLAB, AND SILLS WHICH REST ON CONCRETE OR MASONRY FOUNDATIONS, SHALL BE PRESSURE TREATED WOOD.

5. FOUNDATION PLATES OR SILLS SHALL BE BOLTED TO THE FOUNDATION OR FOUNDATION WALL WITH NOT LESS THAN ⅝ INCH NOMINAL DIAMETER ANCHOR BOLTS EMBEDDED AT LEAST 7 INCHES INTO THE CONCRETE OR MASONRY AND SPACED NOT MORE THAN 4 FEET APART. THERE SHALL BE A MINIMUM OF TWO BOLTS PER PIECE WITH ONE BOLT LOCATED WITHIN 9 INCHES OF EACH END OF EACH PIECE. A PROPERLY SIZED NUT AND STEEL PLATE WASHER UNDER EACH NUT NOT LESS THAN 0.229"x3" SQUARE (SEE SIMPSON BPS PLATES) SHALL BE TIGHTENED ON EACH BOLT TO THE PLATE. THE HOLE IN THE PLATE WASHER SHALL BE PERMITTED TO BE DIAGONALLY SLOTTED WITH A WIDTH OF UP TO ⅛" LARGER THAN THE BOLT DIAMETER AND A SLOT LENGTH NOT TO EXCEED 1¾" PROVIDED A STANDARD CUT WASHER IS PLACED BETWEEN THE PLATE WASHER AND NUT. THE PLATE SHALL EXTEND TO WITHIN ½" OF THE EDGE OF THE BOTTOM PLATE ON THE SIDE WITH SHEATHING.

6. THE NUMBER AND SIZE OF NAILS CONNECTING WOOD MEMBERS SHALL NOT BE LESS THAN THAT SET FORTH IN CBC CHAPTER 23.

7. ALL MACHINE BOLTS CONNECTING WOOD MEMBERS ON THE PLANS SHALL CONFORM TO ASTM A307, GRADE A. PLACE MALLEABLE IRON OR STEEL PLATE WASHERS UNDER THE HEADS AND/OR NUTS OF ALL BOLTS WHEN BEARING DIRECTLY ON WOOD. ALL BOLTS SHALL BE RETIGHTENED IMMEDIATELY PRIOR TO COVERING OR CLOSING IN.

8. PRE-MANUFACTURED WOOD CONNECTORS SHALL BE MANUFACTURED FROM THE SIMPSON STRONG-TIE COMPANY, INC. NO SUBSTITUTIONS. ALL 4x4 AND LARGER POSTS SHALL HAVE SIMPSON CCQ OR ECCQ TYPE COLUMN CAPS UNLESS OTHERWISE NOTED ON THE PLANS.

9. FASTENERS AND CONNECTORS IN CONTACT WITH PRESSURE TREATED OR FIRE RETARDANT TREATED WOOD INCLUDING NUTS AND WASHERS SHALL BE HOT-DIPPED ZINC-COATED GALVANIZED STEEL, STAINLESS STEEL, SILICON BRONZE OR COPPER. FOR ADDITIONAL REQUIREMENTS SEE CBC CHAPTER 23.

10. FASTENERS AND CONNECTORS USED IN WET OR DAMP LOCATIONS INCLUDING NUTS AND WASHERS SHALL BE HOT-DIPPED ZINC-COATED GALVANIZED STEEL, STAINLESS STELL, SILICON BRONZE OR COPPER. FOR ADDITIONAL REQUIREMENTS SEE CBC CHAPTER 23.

PARALLAM PSL PRODUCTS SHALL BE GRADE 2.0E WITH THE FOLLOWING PROPERTIES:					
G PSI	E PSI	Fb PSI	Fc PERP. PSI	Fc PARALLEL PSI	Fv PSI
125,000	2,000,000	2,900	750	2,900	290

PRE-MANUFACTURED TRUSSES

1. ROOF TRUSSES SHALL BE CUSTOM DESIGNED TO FIT THE DIMENSIONS AND LOADS AS FOLLOWS:

LOAD TYPE	ROOF TRUSSES	FLOOR TRUSSES
DEAD LOAD	24 PSF	20 PSF
LIVE LOAD	20 PSF (REDUCIBLE)	40 PSF (REDUCIBLE)

   A) SPRINKLER LOADS:

      EACH COMPONENT OF THE TRUSSES, BOTH MEMBERS AND CONNECTIONS, SHALL BE DESIGNED AND ENGINEERED TO RESIST A 250# SPRINKLER POINT LOAD, LOCATED TO CAUSE THE MOST CRITICAL STRESS, EITHER SHEAR OR FLEXURAL. THIS SPRINKLER POINT LOAD SHALL ACT SIMULTANEOUSLY WITH THE OTHER LISTED TRUSS LOADS.

   B) SOFFIT LOADS: WHERE SOFFITS OCCUR PROVIDE FOR 100 PLF POINT LOAD ON TRUSS

2. THE DESIGN OF THE TRUSSES ARE TO BE UNDER THE SUPERVISION OF A CALIFORNIA REGISTERED PROFESSIONAL ENGINEER. A WET STAMP AND SIGNATURE ARE REQUIRED ON THE CALCULATIONS.

3. FABRICATION, ERECTION AND INSTALLATION SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS. ALL BRIDGING AND BRACING SHALL MEET THE WOOD TRUSS COUNCIL RECOMMENDATIONS. REFER TO THE MECHANICAL DRAWINGS FOR ALL ROOF MOUNTED EQUIPMENT.

4. GANG NAIL TRUSSES:

   A) ALL TOP CHORD LUMBER SHALL BE DOUGLAS FIR-LARCH. IF LUMBER OTHER THAN DOUGLAS FIR-LARCH IS USED IN TOP CHORDS, ANALYSIS AND RE-ENGINEERING OF DIAPHRAGMS SHALL BE AT CONTRACTOR'S EXPENSE.

TYPICAL NAILING SCHEDULE		
CONNECTION	FASTENING[a]	LOCATION
JOIST TO SILL OR GIRDER	(3) 8d COMMON (2½"x0.131")	TOE NAIL
BRIDGING TO JOIST	(2) 8d COMMON (2½"x0.131")	TOE NAIL EACH END
SOLE PLATE TO JOIST OR BLOCKING	16d (3½"x0.135") @ 16" OC	TYPICAL FACE NAIL
SOLE PLATE TO JOIST OR BLKG @ BRACED WALL	(3) 16d (3½"x0.135") @ 16" OC	BRACED WALL PANELS
TOP PLATE TO STUD	(2) 16d COMMON (3½"x0.162")	END NAIL
STUD TO SOLE PLATE	(4) 8d COMMON (2½"x0.131")	TOE NAIL
	(2) 16d COMMON (3½"x0.162")	END NAIL
DOUBLE STUDS	16d (3½"x0.135") @ 24" OC	FACE NAIL
DOUBLE TOP PLATES	16d (3½"x0.135") @ 16" OC	TYPICAL FACE NAIL
	(8) 16d COMMON (3½"x0.162")	LAP SPLICE
BLKG BETWEEN JOISTS OR RAFTERS TO TOP PLATE	(3) 8d COMMON (2½"x0.131")	TOE NAIL
TOP PLATES, LAPS & INTERSECTIONS	(2) 16d COMMON (3½"x0.162")	FACE NAIL
CONTINUOUS HEADER, TWO PIECES	16d COMMON (3½"x0.162")	@ 16" OC @ EDGE
CEILING JOISTS TO PLATE	(3) 8d COMMON (2½"x0.131")	TOE NAIL
CONTINUOUS HEADER TO STUD	(4) 8d COMMON (2½"x0.131")	TOE NAIL
CEILING JOISTS, LAPS OVER PARTITIONS (SEE CBC CHAPTER 23)	(3) 16d COMMON (3½"x0.162")	FACE NAIL
CEILING JOISTS TO PARALLEL RAFTERS (SEE CBC CHAPTER 23)	(3) 16d COMMON (3½"x0.162")	FACE NAIL
RAFTER TO PLATE (SEE CBC CHAPTER 23)	(3) 8d COMMON (2½"x0.131")	TOE NAIL
1" DIAGONAL BRACE TO EACH STUD & PLATE	(2) 8d COMMON (2½"x0.131")	FACE NAIL
BUILT-UP CORNER STUDS	16d COMMON (3½"x0.162")	@ 24" OC
2" PLANKS	16d COMMON (3½"x0.162")	@ EACH BEARING
COLLAR TIE TO RAFTER	(3) 10d COMMON (3"x0.148")	FACE NAIL
JACK RAFTER TO HIP	(3) 10d COMMON (3"x0.148")	TOE NAIL
	(2) 16d COMMON (3½"x1.62")	FACE NAIL
ROOF RAFTERS TO 2-BY RIDGE BEAM	(2) 16d COMMON (3½"x0.162")	TOENAIL
	(2) 16d COMMON (3½"x0.162")	FACE NAIL
JOIST TO BAND JOIST	(3) 16d COMMON (3½"x0.162")	FACE NAIL
LEDGER STRIP	(3) 16d COMMON (3½"x0.162")	FACE NAIL
WOOD STRUCTURAL PANELS & PARTICLEBOARD[b] SUBFLOOR, ROOF & WALL SHEATHING (TO FRAMING)	⅜" AND LESS 6d[c] ⅜" TO ½" 8d[c] OR 6d[f] ⅝ 8d[c] ¾" TO 1" 10d[c] OR 8d[c] 1¼" TO 1¾"	EDGE NAIL
	⅜" AND LESS 6d[c] ½" TO 1" 8d[c] 1¼" TO 1¾" 10d[c] OR 8d[c]	
	¾" AND LESS 6d[c] ⅞" TO 1" 8d[c]	
PANEL SIDING (TO FRAMING)	½" OR LESS 6d[c] ⅝" 8d[c]	EDGE NAIL
FIBERBOARD SHEATHING[d]	½" 6d COMMON (2"x0.113") 25/32" 8d COMMON (2½"x0.131")	EDGE NAIL
INTERIOR PANELING	¼" 4d[e] ⅜" 6d	EDGE NAIL

a. COMMON OR BOX NAILS ARE PERMITTED TO BE USED EXCEPT WHERE OTHERWISE STATED.
b. NAILS SPACED AT 6 INCHES ON CENTER AT EDGES, 12 INCHES AT INTERMEDIATE SUPPORTS EXCEPT 6 INCHES AT SUPPORTS WHERE SPANS ARE 48 INCHES OR MORE. FOR NAILING OF WOOD STRUCTURAL PANEL AND PARTICLE BOARD DIAPHRAGMS AND SHEAR WALLS, REFER TO CBC CHAPTER 23. NAILS FOR WALL SHEATHING ARE PERMITTED TO BE COMMON, BOX OR CASING.
c. COMMON OR DEFORMED SHANK (6d-2"x0.113"; 8d-2½"x0.131"; 10d-3"x0.148").
d. COMMON (6d-2"x0.113"; 8d-2½"x0.131"; 10d-3"x0.148").
e. DEFORMED SHANK (6d-2"x0.113"; 8d-2½"x0.131"; 10d-3"x0.148").
f. CORROSION-RESISTANT SIDING (6d-1¼"x0.106"; 8d-2¼"x0.128") OR CASING (6d-2"x0.099"; 8d-2½"x0.113") NAIL.
g. FASTENERS SPACED 3 INCHES ON CENTER AT EXTERIOR EDGES AND 6 INCHES ON CENTER AT INTERMEDIATE SUPPORTS, WHEN USED AS STRUCTURAL SHEATHING. SPACING SHALL BE 6 INCHES ON CENTER ON THE EDGES AND 12 INCHES ON CENTER AT INTERMEDIATE SUPPORTS FOR NONSTRUCTURAL APPLICATIONS.
h. CASING (16"x0.080") OR FINISH (16"x0.072") NAILS SPACED 6 INCHES ON PANEL EDGES, 12 INCHES AT INTERMEDIATE SUPPORTS.
i. PANEL SUPPORTS AT 24 INCHES. CASING OR FINISH NAILS SPACED 6 INCHES ON PANEL EDGES, 12 INCHES AT INTERMEDIATE SUPPORTS.
j. FOR ROOF SHEATHING APPLICATIONS, 8d NAILS (2½"x0.113") ARE THE MINIMUM REQUIRED FOR WOOD STRUCTURAL PANELS.

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AUTHORITY HAVING JURISDICTION

PROJECT#

TUSCANY VILLAGE
(Enter address here)

UNIT A

PROJECT DETAILS
PROJECT NO: 17029
SUBMITTAL DATE: -

PROJECT REVISIONS

MARK	DATE	DESCRIPTION

SHEET DETAILS
DRAWN BY: NGM
CHECKED BY: AMG

SHEET TITLE

STRUCTURAL NOTES

SHEET NUMBER

S0.1

IF THIS SHEET IS NOT 24"x36", IT HAS BEEN RESIZED - SCALE ACCORDINGLY 0 1/4" 1/2" 1" 2"

NOT USED

10 | - | SCALE -

NOT USED

7 | - | SCALE -

NOT USED

11 | - | SCALE -

NOT USED

8 | - | SCALE -

NOT USED

12 | - | SCALE -

NOT USED

9 | - | SCALE -

POST INSTALLED ANCHORS NOTES:

1. THESE NOTES SHALL APPLY TO THE INSTALLATION, INSPECTION, AND TESTING OF ALL EXPANSION AND CHEMICAL ANCHORS.
2. INSTALL PER REQUIREMENTS OF THE ICC-ES EVALUATION REPORT FOR THE SPECIFIC ANCHOR OR AS REQUIRED BY THE MANUFACTURER. ALL ANCHORS SHALL MEET THE MINIMUM EMBEDMENT, EDGE DISTANCE, SPACING, AND SLAB THICKNESS CRITERIA ESTABLISHED BY THE RELEVANT ICC-ES EVALUATION REPORT.
3. WHEN INSTALLING DRILLED-IN ANCHORS AND/OR POWDER DRIVEN PINS IN EXISTING NON-PRESTRESSED REINFORCED CONCRETE, USE CARE AND CAUTION TO AVOID CUTTING OR DAMAGING THE EXISTING REINFORCING BARS. WHEN INSTALLING THEM INTO EXISTING PRE-STRESSED CONCRETE (PRE- OR POST-TENSIONED) LOCATE THE PRE-STRESSED TENDONS BY USING A NON-DESTRUCTIVE METHOD PRIOR TO INSTALLATION. EXERCISE EXTREME CARE AND CAUTION TO AVOID CUTTING OR DAMAGING THE TENDONS DURING INSTALLATION. MAINTAIN A MINIMUM CLEARANCE OF ONE INCH BETWEEN THE REINFORCEMENT AND THE DRILLED-IN ANCHOR AND/OR PIN.
4. POST INSTALLED ANCHORS INSTALL IN EXTERIOR & INTERIOR AREAS SUBJECT TO CORROSIVE AND WET CONDITIONS ARE TO BE STAINLESS STEEL ANCHORS, UNO.

POST INSTALLED ANCHORS TESTING NOTES:

TEST LOADS AND FREQUENCY SHALL BE IN ACCORDANCE WITH CBC CHAPTER 19.

5. IF ANY ANCHOR(S) FAIL TESTING, ALL ANCHORS OF THE SAME TYPE SHALL BE TESTED, WHICH ARE INSTALLED BY THE SAME TRADE, NOT PREVIOUSLY TESTED UNTIL TWENTY (20) CONSECUTIVE ANCHORS PASS, THEN RESUME THE INITIAL TEST FREQUENCY.
6. WHEN POST INSTALLED ANCHORS ARE USED FOR;
   - A. SILL PLATE BOLTING APPLICATIONS, 10 PERCENT OF THE ANCHORS SHALL BE TESTED.
   - B. OTHER STRUCTURAL APPLICATIONS, ALL SUCH ANCHORS SHALL BE TESTED.
   - C. NONSTRUCTURAL APPLICATIONS SUCH AS EQUIPMENT ANCHORAGE, 50 PERCENT OR ALTERNATE BOLTS IN A GROUP, INCLUDING AT LEAST ONE-HALF THE ANCHORS IN EACH GROUP, SHALL BE TESTED.
7. THE TESTING OF THE POST INSTALLED ANCHORS SHALL BE DONE IN THE PRESENCE OF THE SPECIAL INSPECTOR AND A REPORT OF THE TEST RESULTS SHALL BE SUBMITTED TO THE ENFORCEMENT AGENCY.

EXCEPTIONS:

- A. WHERE THE FACTORED DESIGN TENSION ON ANCHORS IS LESS THAN 100# AND THOSE ANCHORS ARE CLEARLY NOTED ON THE APPROVED CONSTRUCTION DOCUMENTS, ONLY 10 PERCENT OF THOSE ANCHORS NEED BE TESTED.
- B. WHERE ADHESIVE ANCHOR SYSTEMS ARE USED TO INSTALL REINFORCING DOWEL BARS IN HARDENED CONCRETE, ONLY 25% OF THE DOWELS SHALL BE TESTED IF ALL THE FOLLOWING CONDITIONS ARE MET:
  - a. THE DOWELS ARE USED EXCLUSIVELY TO TRANSMIT SHEAR FORCES ACROSS JOINTS BETWEEN EXISTING AND NEW CONCRETE.
  - b. THE NUMBER OF DOWELS IN ANY ONE MEMBER EQUALS OR EXCEEDS TWELVE (12)
  - c. THE DOWELS ARE UNIFORMLY DISTRIBUTED ACROSS SEISMIC FORCE RESISTING MEMBERS (SUCH AS SHEAR WALLS, COLLECTORS AND DIAPHRAGMS).
  - d. ANCHORS TO BE TESTED SHALL BE SELECTED AT RANDOM BY THE SPECIAL INSPECTOR.
- D. TESTING OF SHEAR DOWELS ACROSS COLD JOINTS IN SLABS ON GRADE, WHERE THE SLAB IS NOT PART OF THE LATERAL FORCE-RESISTING SYSTEM SHALL NOT BE REQUIRED.
- E. TESTING IS NOT REQUIRED OF POWER ACTUATED FASTENERS USED TO ATTACH TRACKS OF INTERIOR NON-SHEAR WALL PARTITIONS FOR SHEAR ONLY, WHERE THERE ARE AT LEAST THREE (3) FASTENERS PER SEGMENT OF TRACK.

5. ACCEPTANCE CRITERIA FOR POST-INSTALLED ANCHORS SHALL BE BASED ON ICC-ESR OR MANUFACTURERS WRITTEN INSTRUCTION, ACCEPTABLE TO THE ENFORCEMENT AGENCY. FIELD TEST SHALL SATISFY THE FOLLOWING MINIMUM REQUIREMENTS.
   - A. HYDRAULIC RAM METHOD: ANCHORS TESTED WITH A HYDRAULIC JACK OR SPRING LOADED DEVICES SHALL MAINTAIN THE TEST LOAD FOR A MINIMUM OF 15 SECONDS AND SHALL EXHIBIT NO DISCERNABLE MOVEMENT DURING THE TENSION TEST, E.G., AS EVIDENCED BY LOOSENING OF THE WASHER UNDER THE NUT

     FOR ADHESIVE ANCHORS, WHERE OTHER THAN BOND IS BEING TESTED, THE TESTING DEVICE SHALL NOT RESTRICT THE CONCRETE SHEAR CONE TYPE FAILURE MECHANISM FROM OCCURRING.
   - B. TORQUE WRENCH METHOD: ANCHORS TESTED WITH A CALIBRATED TORQUE WRENCH MUST ATTAIN THE SPECIFIED TORQUE WITHIN ½ TURN OF THE NUT.

     EXCEPTIONS:
     - a. WEDGE OR SLEEVE TYPE: ONE-QUARTER (¼) TURN OF THE NUT FOR A ¾"Ø SLEEVE ANCHOR ONLY.
     - b. THREADED TYPE: ONE-QUARTER (¼) TURN OF THE SCREW AFTER INITIAL SEATING OF THE SCREW HEAD.

CARBON AND STAINLESS STEEL ANCHORS
NORMAL OR LIGHT WEIGHT CONCRETE (f'c = 3000 PSI)

	GENERAL CONCRETE				
ANCHOR DIAMETER	⅜"	½"		⅝"	
NOMINAL BIT DIAMETER	⅜"	½"		⅝"	
EFFECTIVE EMBEDMENT	2"	2¼"	3¼"	3¼"	4"
MINIMUM CONCRETE THICKNESS, UNO	4½"	4½"	6"	6"	7¼"
MIN ANCHOR SPACING (3 x EMBED)	6¼"	6¼"	9¼"	9¼"	12"
MIN EDGE DISTANCE	6"	7"	7½"	6½"	8¼"
	REQUIRED INSTALLATION AND TEST TORQUE (FT-LBS)				
HILTI KWIK BOLT TZ ICC-ES ESR-1917	25	40		60	
SIMPSON STRONG-BOLT 2 ICC-ES ESR-3037	30	60		90 (80 FOR STAINLESS)	

SIMPSON STRONG-TIE SET-XP EPOXY ADHESIVE ANCHORS* (ATR OR REBAR) ICC-ES ESR-2508
HILTI HIT-RE 500-SD ADHESIVE ANCHORS* (ATR OR REBAR) ICC-ES ESR-2322
INTO CRACKED NORMAL WEIGHT CONCRETE (MIN f'c = 3000 PSI)

		⅜" OR #3	½" OR #4	⅝" OR #5	¾" OR #6	⅞" OR #7	1" OR #8	1¼" OR #10
NOMINAL DIAMETER	d_o	⅜"	½"	⅝"	¾"	⅞"	1"	1¼"
MAXIMUM TIGHTENING TORQUE (FT-LBS)	T_{inst}	10	20	30	45	60	80	125
DRILL BIT DIAMETER	d_{hole}	½"	⅝"	¾"	¾"	1"	1⅛"	1⅜"
PERMITTED EMBEDMENT DEPTH RANGE	h_{ef}	2¼"	2¾"	3¼"	3½"	3¾"	4"	5"
		7½"	10"	12½"	15"	17½"	20"	25"
SIMPSON MINIMUM CONCRETE THICKNESS	h_{min}	h_{ef} + 5 x d_o						
HILTI MINIMUM CONCRETE THICKNESS	h_{min}	h_{ef} + 1¼		h_{ef} + 2 x d_o				

TITEN HD SCREW ANCHOR AND TITEN HD ROD HANGER
NORMAL OR LIGHT WEIGHT CONCRETE (f'c = 3000 PSI)
ICC-ES ESR-2713

	GENERAL CONCRETE									
ANCHOR DIAMETER	¼"		⅜"		½"		⅝"		¾"	
DRILL BIT DIAMTER	¼"		⅜"		½"		⅝"		¾"	
MINIMUM HOLE DEPTH	1⅝"	2¼"	2¼"	3½"	3¾"	4½"	4½"	6"	6"	6¼"
NOMINAL EMBEDMENT DEPTH	1⅝"	2½"	2½"	3¼"	3¼"	4"	4"	5½"	5½"	6¼"
CRITICAL EDGE DISTANCE	3"	6"	2⅞"	3¼"	3⅜"	4½"	4½"	6¼"	6¼"	7⅛"
MINIMUM EDGE DISTANCE	1¼"	1½"	1¼"							
MIMIMUM SPACING	1⅝"	1½"	3"							
MINIMUM CONCRETE THICKNESS	3¼"	3½"	4"	5"	5"	6¼"	6"	8½"	8¼"	10"
MAXIMUM INSTALLATION TORQUE (FT-LBS)	24		50		65		100		150	
MAXIMUM IMPACT WRENCH TORQUE RATING (FT-LBS)	125		150		340		340		385	

POWDER ACTUATED FASTENERS (LOW VELOCITY)

1. INSTALL PER REQUIREMENTS OF THE ICC-ES EVALUATION REPORT FOR THE SPECIFIC FASTENER OR AS REQUIRED BY THE MANUFACTURER. ALL FASTENERS SHALL MEET THE MINIMUM EMBEDMENT, EDGE DISTANCE, SPACING, AND SLAB THICKNESS CRITERIA ESTABLISHED BY THE RELEVANT ICC-ES EVALUATION REPORT.

A.	HILTI X-U	HILTI	ICC-ES ESR-2269
B.	PDP	SIMPSON STRONG TIE	ICC-ES ESR-2138

2. SHOT PINS TO CONCRETE SHALL BE 0.157" Ø WITH 1¼" EMBEDMENT MIN INTO CONCRETE, TYP UNO.
3. SHOT PINS MAY BE USED FOR SHEAR OR TENSION LOADS FOR ANCHORING ITEMS SUCH AS ACOUSTICAL CEILINGS, MECH. DUCTS, CONDUITS, ETC., UNLESS SPECIFICALLY DETAILED OTHERWISE. SHOT PINS SHALL NOT BE USED FOR CEILING DIAGONAL BRACING WIRES. ANY SHOT ANCHORS MUST HAVE AN ICC APPROVAL FOR THE TYPE OF CONCRETE USED ON THE JOB.
4. SHOT PINS SHALL NOT BE USED IN CONCRETE CURBS.
5. THE ALLOWABLE LOADS SHALL BE 80% OF ICC APPROVED VALUES.
6. TESTING: THE OPERATOR, TOOL, & FASTENER SHALL BE PRE-QUALIFIED BY THE PROJECT INSPECTOR. HE SHALL OBSERVE THE TESTING OF THE FIRST 10 FASTENER INSTALLATIONS. A TEST "PULL-OUT" LOAD OF NOT LESS THAN TWICE THE DESIGN LOAD SHALL BE APPLIED TO THE PIN IN SUCH A MANNER AS NOT TO RESIST THE SPAWLING TENDENCY OF THE CONCRETE SURROUNDING THE PIN. THEREAFTER, RANDOM TEST UNDER THE PROJECT INSPECTOR'S SUPERVISION SHALL BE MADE TO APPROXIMATELY 1 IN 10 PINS. IF ANY PIN FAILS, TEST ALL PINS OF THE SAME CATEGORY NOT PREVIOUSLY TESTED UNTIL 20 CONSECUTIVE PASS, THEN RESUME THE INITIAL TESTING FREQUENCY.

6 | STRUCTURAL NOTES | SCALE -

IF THIS SHEET IS NOT 24"x36", IT HAS BEEN RESIZED - SCALE ACCORDINGLY 0 1/4" 1/2" 1" 2"

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AUTHORITY HAVING JURISDICTION

PROJECT#

TUSCANY VILLAGE
(Enter address here)

UNIT A

PROJECT DETAILS
PROJECT NO: 17029
SUBMITTAL DATE: -

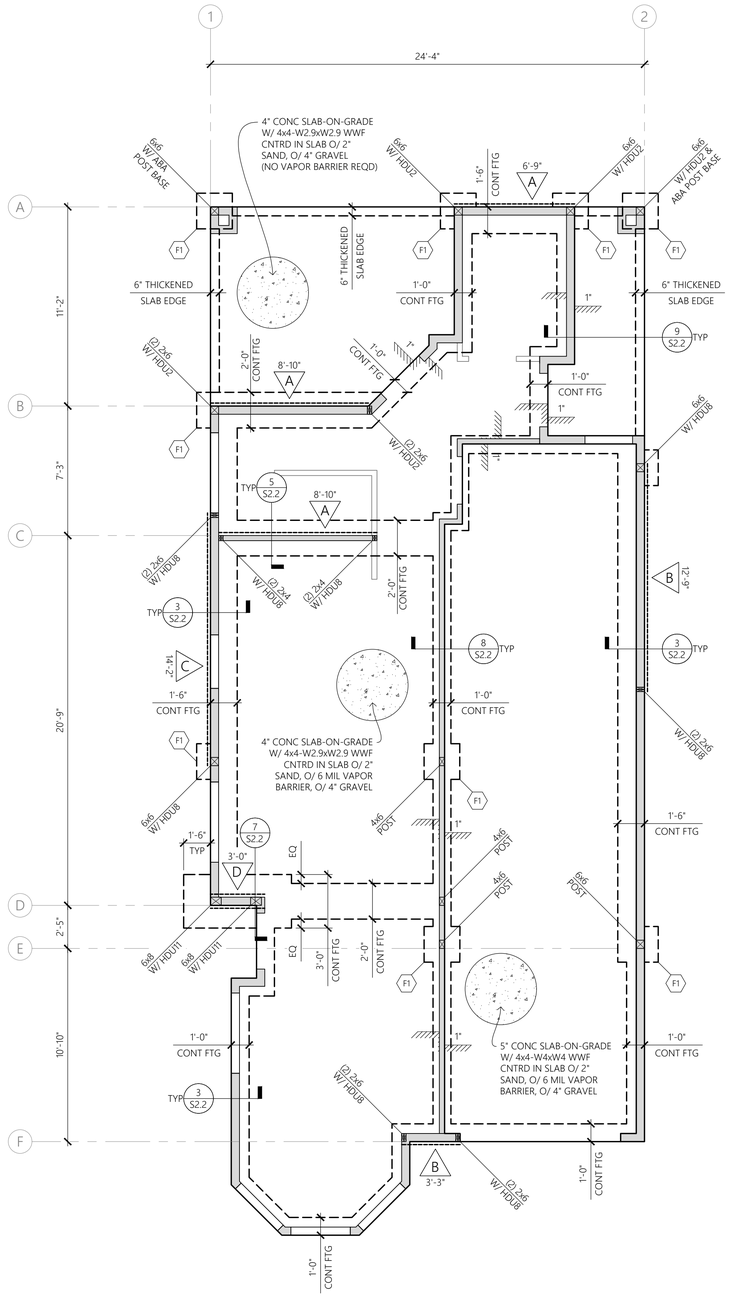
PROJECT REVISIONS

MARK	DATE	DESCRIPTION

SHEET DETAILS
DRAWN BY: NGM
CHECKED BY: AMG

SHEET TITLE
STRUCTURAL NOTES

SHEET NUMBER
S0.2



SPREAD FOOTING SCHEDULE			
TYPE	SIZE	DEPTH	REINFORCEMENT
F1	24" SQ	12"	(3) #4 EA WAY @ BOT

CONTINUOUS FOOTING SCHEDULE			
WIDTH	DEPTH	REINFORCEMENT	NOTE
12"	12"	#5 CONT T&B	TYP @ 1-STORY WALLS, UON
18"	12"	#5 CONT T&B	TYP @ 2-STORY WALLS, UON
24"	12"	(2) #5 CONT T&B	TYP @ GRIDS "B","C" AND "D", UON
36"	12"	(3) #5 CONT T&B	TYP @ SHEAR WALL TYPE "F"

12 FOUNDATION PLAN — SCALE 1/4" = 1'-0"

IF THIS SHEET IS NOT 24"x36", IT HAS BEEN RESIZED - SCALE ACCORDINGLY 0 1/4" 1/2" 1" 2"

WALL LEGEND

- INDICATES 2x6 FRAMED STRUCTURAL WALL
- INDICATES 2x4 FRAMED STRUCTURAL WALL
- INDICATES WHERE SHEATHING OCCURS
- INDICATES NON-STRUCTURAL WALL, SEE ARCH
- INDICATES WINDOW OPENING
- INDICATES DOOR OPENING

1 WALL LEGEND — SCALE -

FOUNDATION NOTES

1. SEE SHEET S0.1 AND S0.2 FOR STRUCTURAL NOTES.
2. SEE DETAIL 8/S2.3 FOR TYPICAL SHEAR WALL ELEVATION.
3. SEE DETAIL 9/S2.3 FOR TYPICAL HOLD-DOWN DETAIL.
4. A / X'-X" INDICATES SHEAR WALL AND SHEAR WALL LENGTH.
5. SEE SHEET S2.1 AND S2.2 FOR CONCRETE DETAILS NOT SPECIFICALLY REFERENCED ON THIS SHEET.
6. SEE SHEET S2.3 FOR FRAMING DETAILS NOT SPECIFICALLY REFERENCED ON THIS SHEET.
7. SEE ARCHITECTURAL FOR EXACT LOCATION OF ALL INTERIOR NON-STRUCTURAL PARTITION WALLS.
8. SEE ARCHITECTURAL FOR EXACT LOCATION OF ALL DOOR AND WINDOW OPENINGS.
9. SEE ARCHITECTURAL FOR DIMENSIONS OF SLAB DEPRESSIONS & SLOPED SLABS.
10. EXTERIOR CONCRETE FLATWORK IS NOT SHOWN, SEE ARCHITECTURAL.
11. SEE ARCHITECTURAL AND MEP DRAWINGS FOR UTILITIES THAT WILL AFFECT FOOTINGS. COMPLY WITH TYPICAL DETAILS.
12. FULL SHEETS ARE TO BE USED FOR SHEAR WALL SHEATHING. PARTIAL SHEETS MAY ONLY BE USED AT ENDS, UNO.

2 FOUNDATION PLAN NOTES — SCALE -

SHEARWALL SCHEDULE				
MARK	SHEATHING	NAILING	SILL PLATE ANCHORAGE	SILL, STUD AND BLKG EDGES
A	⅜" STRUCTURAL PANEL SHEATHING	8d @ 6:12	48" OC	2x
B	⅜" STRUCTURAL PANEL SHEATHING	8d @ 4:4:12	24" OC	2x
C	⅜" STRUCTURAL PANEL SHEATHING	8d @ 3:3:12	16" OC	2x
D	7/16" STRUCTURAL PANEL SHEATHING	10d @ 4:4:12	8" OC	3x

NOTES:
1. SHEAR WALL NAILING OCCURS AT EVERY PANEL EDGE. INTERMEDIATE NAILING - 8d OR 10d @ 12" OC.
2. ALL SHEATHING NAILS SHALL BE COMMON WIRE TYPE, SET WITHOUT CRUSHING FACE PLIES.
3. ALL SHEATHING SHALL HAVE (5) PLIES AND A PANEL SPAN INDEX = 32/16.
4. BLOCK ALL PANEL EDGES WITH FULL STUD BLOCKING, 3x WHERE NOTED.
5. WHERE 3x PANEL EDGES OCCUR, ALL NAILS AT PANEL EDGES SHALL BE STAGGERED AND WHEN PANELS ARE APPLIED TO BOTH FACES OF A WALL, PANEL JOINTS SHALL BE OFFSET TO FALL ON DIFFERENT FRAMING MEMBERS.
6. PRE-DRILL SILL NAILING WITH A BIT NO GREATER THAN 75% OF NAIL DIAMETER TO PREVENT SPLITTING. NO SPLIT SILLS PERMITTED.
7. CONTRACTOR TO NOTIFY ENGINEER PRIOR TO CUTTING ANY HOLE IN ANY SHEAR WALL.
8. SHEATHING TOP PLATE AND SILL PLATE NAILING SHALL BE STAGGERED IN ALL CASES.
9. ALL ANCHOR BOLTS ARE TO BE ⅝"ø WITH 7" EMBED INTO FOOTING AND SPACED AT A MINIMUM OF 48" OC.
10. ANCHOR BOLTS MAY BE SPACED CLOSER THAN SPECIFIED FOR EASE OF CONSTRUCTION.
11. PROVIDE PL¼"x3"x3" PLATE WASHERS AT ALL ANCHOR BOLTS.

3 SHEAR WALL SCHEDULE — SCALE -

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AUTHORITY HAVING JURISDICTION

PROJECT#

TUSCANY VILLAGE

(Enter address here)

UNIT A

PROJECT DETAILS

PROJECT NO:	17029
SUBMITTAL DATE:	-

PROJECT REVISIONS

MARK	DATE	DESCRIPTION

SHEET DETAILS

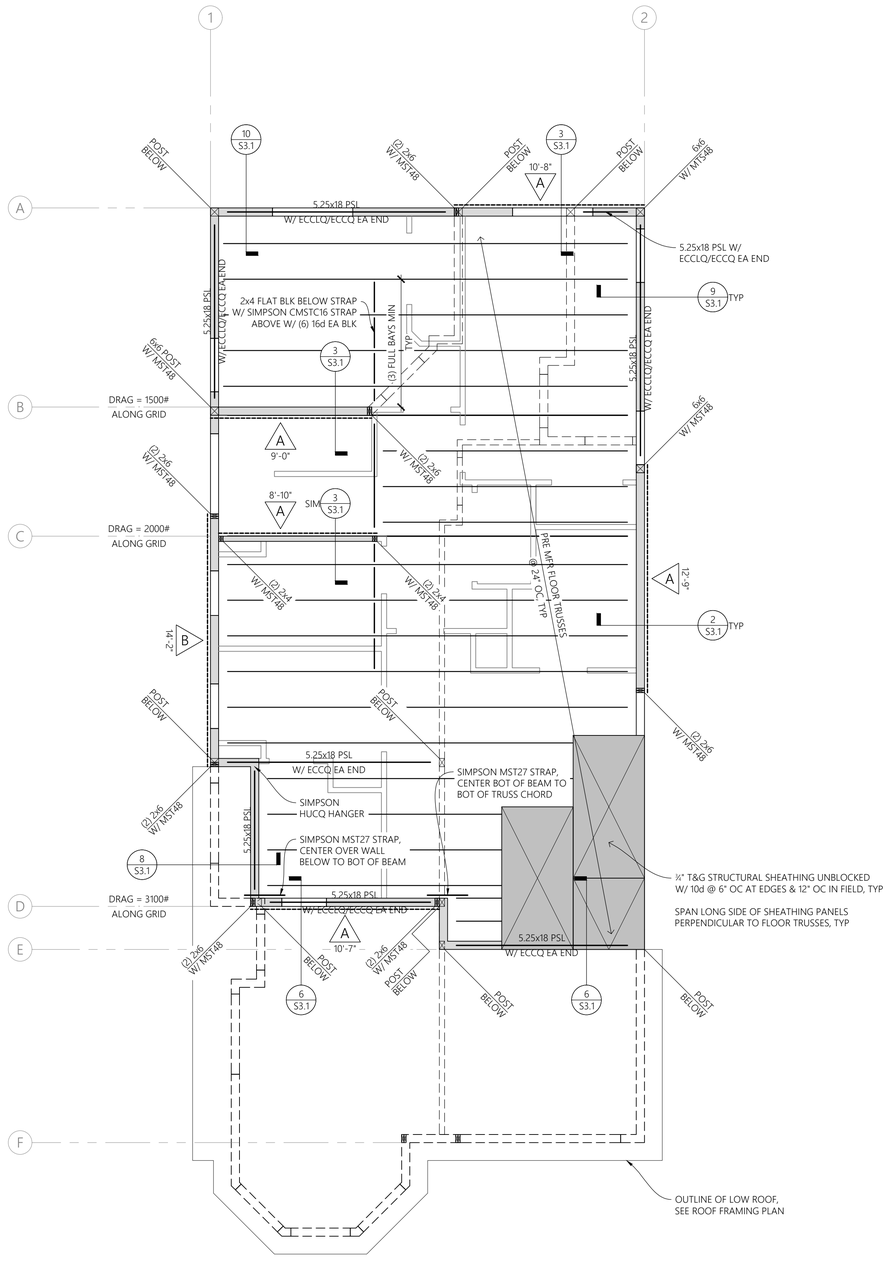
DRAWN BY:	NGM
CHECKED BY:	AMG

SHEET TITLE

FOUNDATION PLAN

SHEET NUMBER

S1.1



12	SECOND FLOOR FRAMING PLAN	SCALE 1/4" = 1'-0"

IF THIS SHEET IS NOT 24"x36", IT HAS BEEN RESIZED - SCALE ACCORDINGLY 0 1/4" 1/2" 1" 2"

WALL LEGEND

- INDICATES 2x6 FRAMED STRUCTURAL WALL
- INDICATES 2x4 FRAMED STRUCTURAL WALL
- INDICATES 2x FRAMED STRUCTURAL WALL BELOW
- INDICATES WHERE SHEATHING OCCURS
- INDICATES NON-STRUCTURAL WALL, SEE ARCH
- INDICATES WINDOW OPENING

1	WALL LEGEND	SCALE -

FRAMING NOTES

1. SEE SHEET S0.1 AND S0.2 FOR STRUCTURAL NOTES.
2. SEE DETAIL 12/S0.1 FOR TYPICAL NAILING SCHEDULE.
3. SEE DETAIL 6/S2.3 FOR TYPICAL TOP PLATE SPLICE DETAIL.
4. SEE DETAIL 8/S2.3 FOR TYPICAL SHEAR WALL ELEVATION.
5. SEE DETAIL 10/S2.3, 11/S2.3 & 12/S2.3 FOR TYPICAL HOLD-DOWN DETAIL.
6. MAY USE HDU2 PER DETAIL 11/S2.3 & 12/S2.3 IN LIEU OF STRAP SHOWN ON PLAN.
7. A / X'-X" INDICATES SHEAR WALL AND SHEAR WALL LENGTH.
8. SEE SHEET S2.3 FOR WOOD FRAMED DETAILS NOT SPECIFICALLY REFERENCED ON THIS SHEET.
9. SEE ARCHITECTURAL FOR EXACT LOCATION OF ALL INTERIOR NON-STRUCTURAL PARTITION WALLS.
10. SEE ARCHITECTURAL FOR EXACT LOCATION OF ALL DOOR AND WINDOW OPENINGS.
11. SEE ARCHITECTURAL AND MEP DRAWINGS FOR FLOOR PENETRATIONS NOT SHOWN. PROVIDE FRAMING AROUND OPENINGS PER TYPICAL DETAILS.
12. SEE SHEET S0.1 FOR MANUFACTURED FLOOR TRUSS DESIGN CRITERIA. TRUSS LAYOUT IS SCHEMATIC ONLY. TRUSS MANUFACTURER TO SUBMIT TRUSS FRAMING PLAN FOR REVIEW AS PART OF TRUSS SHOP DRAWING SUBMITTAL.
13. SEE 'M' SHEETS FOR MECHANICAL DUCT OPENING SIZES, LOCATIONS AND ADDITIONAL INFORMATION.
14. SEE ARCHITECTURAL FOR DIMENSIONS OF ROOF OVERHANGS, UNO.
15. FOR BALANCE OF TRUSS INFORMATION SEE TRUSS SUBMITTAL.
16. PROVIDE STRUCTURAL PANEL EDGE NAILING, FULL LENGTH TO MANUFACTURED TRUSSES AND BLOCKING AT SHEAR WALLS. SEE PLANS FOR LOCATIONS WHERE DOUBLE ROWS OF EDGE NAILING OCCUR.
17. FULL SHEETS ARE TO BE USED FOR SHEAR WALL AND FLOOR SHEATHING. PARTIAL SHEETS MAY ONLY BE USED AT ENDS, UNO.

2	FLOOR FRAMING PLAN NOTES	SCALE -

SHEARWALL SCHEDULE				
MARK	SHEATHING	NAILING	SILL PLATE ANCHORAGE	SILL, STUD AND BLKG EDGES
A	⅜" STRUCTURAL PANEL SHEATHING	8d @ 6:6:12	24" OC	2x
B	½" STRUCTURAL PANEL SHEATHING	8d @ 4:4:12	24" OC	2x

NOTES:
1. SHEAR WALL NAILING OCCURS AT EVERY PANEL EDGE. INTERMEDIATE NAILING - 8d OR 10d @ 12" OC.
2. ALL SHEATHING NAILS SHALL BE COMMON WIRE TYPE, SET WITHOUT CRUSHING FACE PLIES.
3. ALL SHEATHING SHALL HAVE (5) PLIES AND A PANEL SPAN INDEX = 32/16.
4. BLOCK ALL PANEL EDGES WITH FULL STUD BLOCKING, 3x WHERE NOTED.
5. WHERE 3x PANEL EDGES OCCUR, ALL NAILS AT PANEL EDGES SHALL BE STAGGERED AND WHEN PANELS ARE APPLIED TO BOTH FACES OF A WALL, PANEL JOINTS SHALL BE OFFSET TO FALL ON DIFFERENT FRAMING MEMBERS.
6. PRE-DRILL SILL NAILING WITH A BIT NO GREATER THAN 75% OF NAIL DIAMETER TO PREVENT SPLITTING. NO SPLIT SILLS PERMITTED.
7. CONTRACTOR TO NOTIFY ENGINEER PRIOR TO CUTTING ANY HOLE IN ANY SHEAR WALL..
8. SHEATHING TOP PLATE AND SILL PLATE NAILING SHALL BE STAGGERED IN ALL CASES.
9. SDS WOOD SCREWS SHALL BE MANUFACTURED BY SIMPSON STRONG TIE, "SIMPSON STRONG-DRIVE SDS WOOD SCREWS" PER ICC-ES ESR-2236.

3	SHEAR WALL SCHEDULE	SCALE -

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AUTHORITY HAVING JURISDICTION

PROJECT#

TUSCANY VILLAGE

(Enter address here)

UNIT A

PROJECT DETAILS

PROJECT NO:	17029
SUBMITTAL DATE:	-

PROJECT REVISIONS

MARK	DATE	DESCRIPTION

SHEET DETAILS

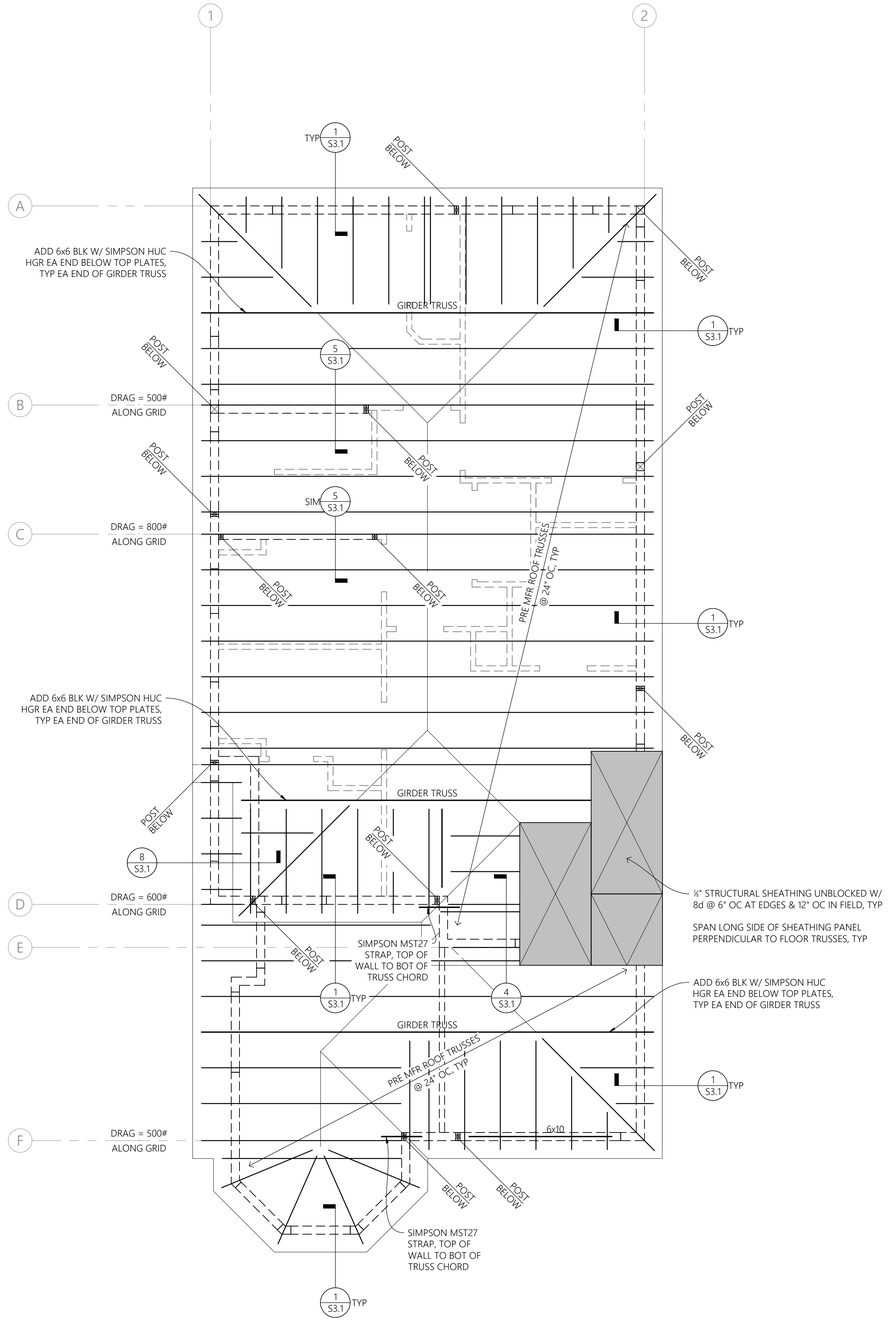
DRAWN BY:	NGM
CHECKED BY:	AMG

SHEET TITLE

SECOND FLOOR FRAMING PLAN

SHEET NUMBER

S1.2



12	ROOF FRAMING PLAN	SCALE 1/4" = 1'-0"

IF THIS SHEET IS NOT 24"x36", IT HAS BEEN RESIZED - SCALE ACCORDINGLY 0 1/4" 1/2" 1" 2"

WALL LEGEND

- INDICATES 2x FRAMED STRUCTURAL WALL BELOW
- INDICATES 2x FRAMED NON-STRUCTURAL WALL BELOW
- INDICATES WINDOW BELOW

1	WALL LEGEND	SCALE -

FRAMING NOTES

1. SEE SHEET S0.1 AND S0.2 FOR STRUCTURAL NOTES.
2. SEE DETAIL 12/S0.1 FOR TYPICAL NAILING SCHEDULE.
3. SEE DETAIL 6/S2.3 FOR TYPICAL TOP PLATE SPLICE DETAIL.
4. SEE SHEET S2.3 FOR WOOD FRAMED DETAILS NOT SPECIFICALLY REFERENCED ON THIS SHEET.
5. SEE ARCHITECTURAL AND MEP DRAWINGS FOR ROOF PENETRATIONS NOT SHOWN. PROVIDE FRAMING AROUND OPENINGS PER TYPICAL DETAILS.
6. SEE SHEET S0.1 FOR MANUFACTURED ROOF TRUSS DESIGN CRITERIA. TRUSS LAYOUT IS SCHEMATIC ONLY. TRUSS MANUFACTURER TO SUBMIT TRUSS FRAMING PLAN FOR REVIEW AS PART OF TRUSS SHOP DRAWING SUBMITTAL.
7. SEE 'M' SHEETS FOR MECHANICAL DUCT OPENING SIZES, LOCATIONS AND ADDITIONAL INFORMATION.
8. SEE ARCHITECTURAL FOR DIMENSIONS OF ROOF OVERHANGS, UNO.
9. FOR BALANCE OF TRUSS INFORMATION SEE TRUSS SUBMITTAL.
10. PROVIDE STRUCTURAL PANEL EDGE NAILING, FULL LENGTH TO MANUFACTURED TRUSSES AND BLOCKING AT SHEAR WALLS. SEE PLANS FOR LOCATIONS WHERE DOUBLE ROWS OF EDGE NAILING OCCUR.
11. FULL SHEETS ARE TO BE USED FOR SHEAR WALL AND FLOOR SHEATHING. PARTIAL SHEETS MAY ONLY BE USED AT ENDS, UNO.

2	ROOF FRAMING PLAN NOTES	SCALE -

NOT USED

3	-	SCALE -

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AUTHORITY HAVING JURISDICTION

PROJECT#

TUSCANY VILLAGE

(Enter address here)

UNIT A

PROJECT DETAILS

PROJECT NO:	17029
SUBMITTAL DATE:	-

PROJECT REVISIONS

MARK	DATE	DESCRIPTION

SHEET DETAILS

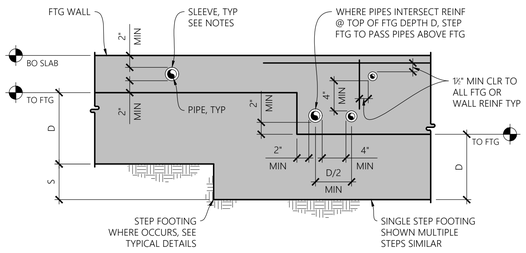
DRAWN BY:	NGM
CHECKED BY:	AMG

SHEET TITLE

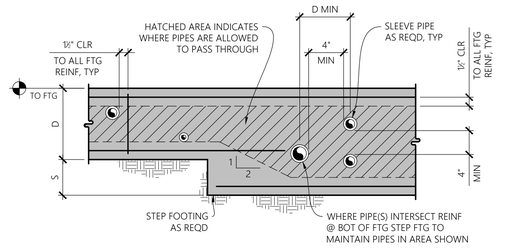
ROOF FRAMING PLAN

SHEET NUMBER

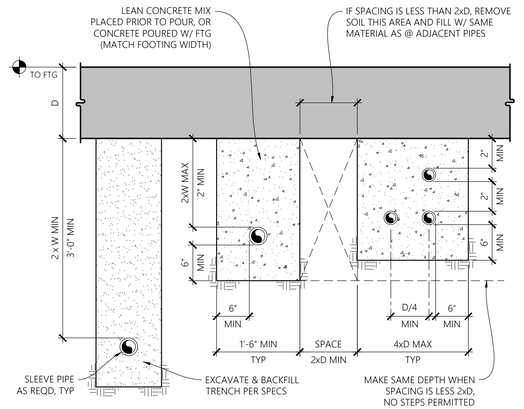
S1.3



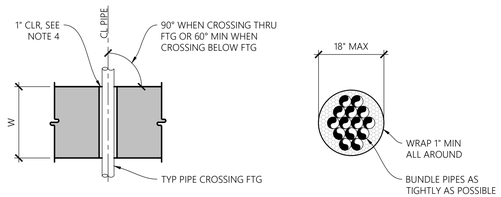
ABOVE FOOTING



THROUGH FOOTING



BELOW FOOTING

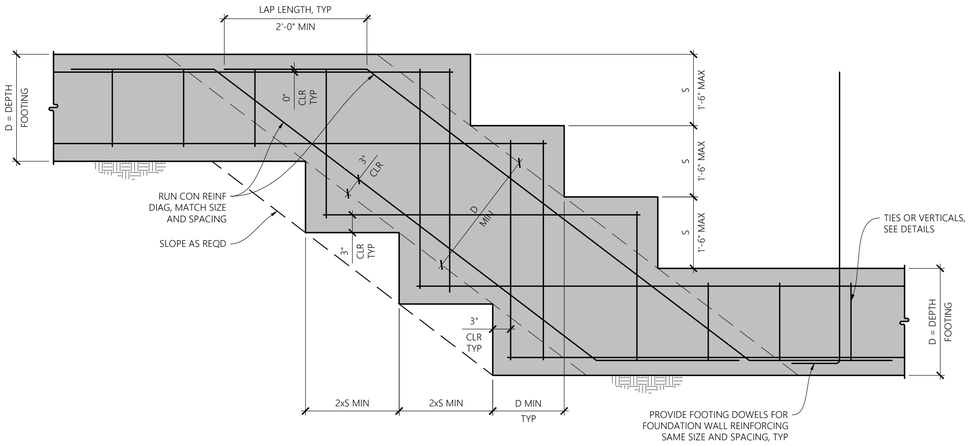


PLAN VIEW BUNDLED PIPE GROUPS

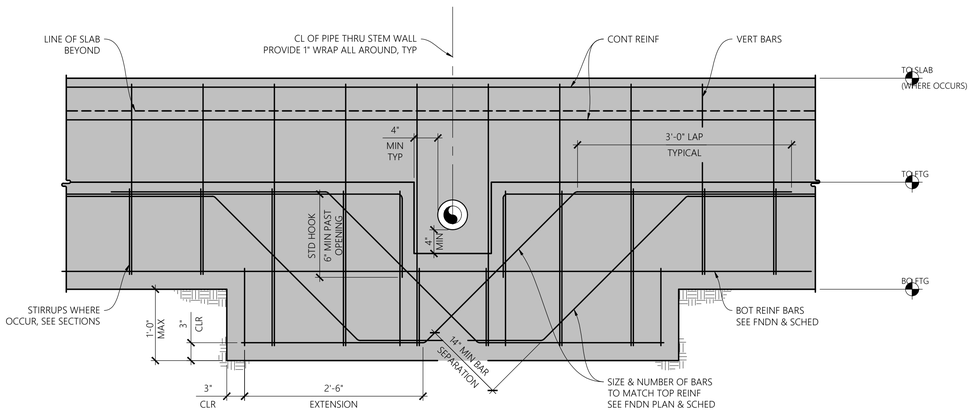
NOTES

1. "D" = FOOTING DEPTH, "W" = FOOTING WIDTH, "S" = FOOTING STEP
2. PIPE AS NOTED SHALL REFER TO: PIPES, DUCTS, CONDUITS, ETC.
3. ELECTRICAL CONDUITS 1"Ø OR LESS NEED NOT BE SLEEVED/WRAPPED
4. THIS DETAIL SHALL APPLY IN ALL CASES WHERE A PIPE MUST CROSS A FOOTING. COORDINATE ELEVATIONS AND LOCATIONS OF ALL PIPES & FOOTINGS ACCORDINGLY. CONTACT STRUCTURAL ENGINEER OF RECORD FOR CONDITIONS NOT COVERED.
5. ALL PIPES SHALL BE SLEEVED OR WRAPPED AS SHOWN. SLEEVE INSIDE DIAMETERS SHALL BE MIN 2" LARGER THAN PIPE OUTSIDE DIAMETER. CENTER PIPES WITHIN SLEEVE. PIPES IN PLACE PRIOR TO PLACING CONCRETE MAY BE WRAPPED W/ 1" THICK FLEXIBLE INSULATION INSTEAD OF SLEEVE
6. SLEEVE/WRAP SHALL EXTEND THE FULL WIDTH OF FOOTING. SEAL ENDS OF SLEEVE/WRAP AS REQUIRED TO PREVENT WATER PENETRATION.
7. MULTIPLE PIPES SHALL COMPLY WITH THE HORIZONTAL AND VERTICAL SPACING SHOWN OR BE GROUPED INTO ONE LARGE BUNDLE WITHIN THE LIMITATIONS SHOWN. MULTIPLE BUNDLED PIPE GROUPS SHALL BE SPACED 4xD MINIMUM ON CENTER.
8. PIPES AND SLEEVE/WRAP SHALL BE ADEQUATELY SUPPORTED AND SECURED AGAINST DISPLACEMENT BEFORE AND DURING CONCRETE PLACEMENT.
9. COORDINATE PIPE LOCATIONS SO THAT FOOTING REINFORCING IS NOT DISPLACED. MOVE PIPES TO MAINTAIN ½" CLEAR FROM ALL REINFORCING TO SLEEVE/WRAP.
10. PIPES NEXT TO BUT NOT CROSSING FOOTINGS SHALL COMPLY WITH TYPICAL DETAIL FOR PIPE ADJACENT TO FOOTINGS.
11. FLEXIBLE INSULATION AS NOTED SHALL REFER TO LOW DENSITY POLYETHYLENE FOAM WITH A DENSITY OF 1.5-3 PCF (PER ASTM D1622) LAYERED TO MEET THICKNESS REQUIREMENTS.

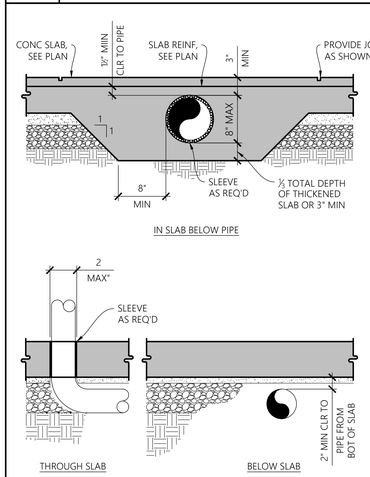
12 PIPE CROSSING FOOTING — SCALE -



7 STEPPED FOOTING — SCALE -



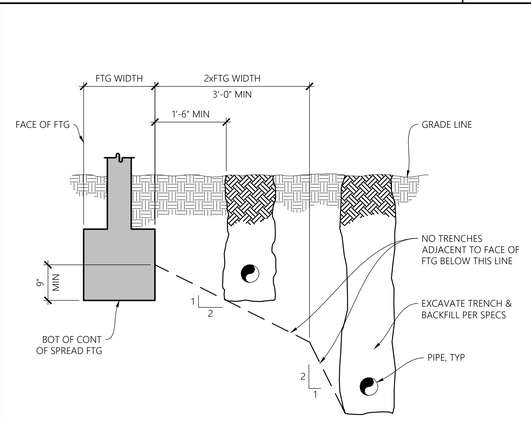
8 PIPE AT STEMWALL — SCALE -



NOTES:

1. PIPE AS NOTED SHALL REFER TO: PIPES, DUCTS, CONDUITS, ETC.
2. ELECTRICAL CONDUITS 1" DIA OR LESS NEED NOT BE SLEEVED.
3. PIPES SHALL BE INSTALLED SUCH THAT CUTTING, BENDING OR DISPLACEMENT OF REINFORCEMENT FROM ITS PROPER LOCATION WILL NOT BE REQUIRED.
4. PIPES EMBED IN SLABS & WALLS SHALL BE 2" MAX DIA & MIN SCH 40.
5. FLEXIBLE INSULATION AS NOTED SHALL REFER TO LOW DENSITY POLYEYLENE FOAM WITH A DENSITY OF 1.5-3 PCF (PER ASTM D1622) LAYERED TO MEET THICKNESS REQUIREMENTS.

9 PIPE THROUGH SLAB — SCALE -



NOTES:

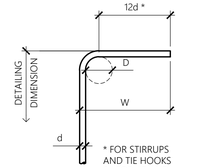
1. TRENCHING LIMITATIONS ARE SAME FOR BOTH FACES OF FOOTING.
2. MAINTAIN LIMITS SHOWN FOR WIDER OR SHALLOWER FOOTINGS BEYOND, WHERE OCCURS

6 PIPE ADJACENT TO FOOTING — SCALE -

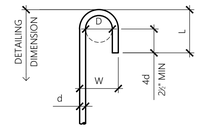
STANDARD HOOK - BENDS AND HOOKS				
REBAR SIZE	D	180 DEG HOOK		90 DEG HOOK
		W	L	W
#3	2¼"	3"	4"	6"
#4	3"	4"	4½"	8"
#5	3¾"	5"	5"	10"
#6	4½"	6"	6"	12"
#7	5¼"	7"	7"	14"
#8	6"	8"	8"	16"
#9	9½"	11¾"	10½"	19¼"
#10	10¾"	13¼"	11½"	22"
#11	12"	14¾"	12¾"	24"

STIRRUP AND TIE HOOK - BENDS AND HOOKS					
REBAR SIZE	D	180 DEG HOOK		90 DEG HOOK	135 DEG HOOK
		W	L	W	W
#3	½"	3"	4"	3⅜"	5⅛"
#4	2"	4"	4½"	4½"	5⅝"
#5	2½"	5"	5"	5⅝"	5⅞"
#6	4½"	6"	6"	12"	7½"
#7	5¼"	7"	7"	14"	8¼"
#8	6"	8"	8"	16"	10"

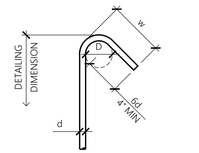
ALL GRADES OF STEEL
D = MINIMUM FINISHED INSIDE BEND DIA
d = NOMINAL REBAR DIAMETER
TOL = TOLERANCE (PER ACI 117)



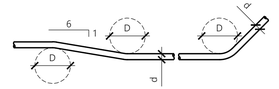
90° HOOK



180° HOOK



135° HOOK



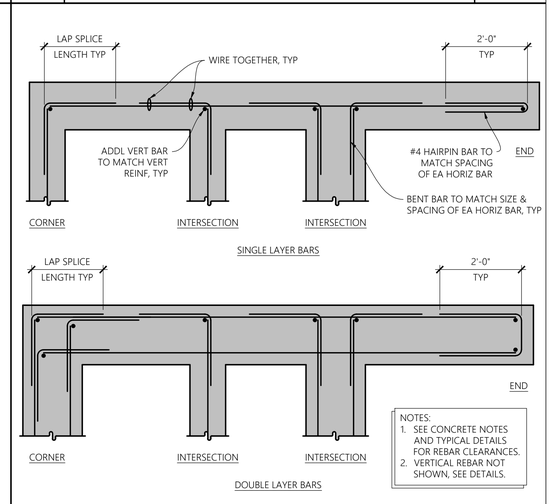
OFFSET BEND

TYP CONCRETE REBAR LAP SPLICE LENGTHS (IN)										
f'c (PSI)	BAR LOCATION	BAR SIZE								
		#3	#4	#5	#6	#7	#8	#9	#10	#11
3000	TOP	22	29	36	43	62	71	80	91	101
	BOTTOM	17	22	28	33	48	55	62	70	78
4000	TOP	19	25	31	37	54	62	70	79	87
	BOTOM	15	19	24	29	42	48	54	61	67

NOTES:

1. REINFORCING BEING LAP SPLICED MUST MEET ONE OF THE FOLLOWING CONDITIONS:
   A. CASE 1: THE CLEAR SPACING OF THE BARS BEING SPLICED IS NOT LESS THAN ONE BAR DIAMETER, CLEAR COVER IS NOT LESS THAN ONE BAR DIAMETER, AND STIRRUPS OR TIES THROUGHOUT THE SPLICE LENGTH.
   B. CASE 2: THE CLEAR SPACING OF THE BARS BEING SPLICED IS NOT LESS THAN TWO BAR DIAMETERS AND THE CLEAR COVER IS NOT LESS THAN ONE BAR DIAMETER.
   C. FOR ALL OTHER CASES, MULTIPLY THE SPLICES SHOWN BY 1.5.
2. THE ABOVE VALUES ARE FOR: UNCOATED REINFORCEMENT, GRADE 60 REBAR, CLASS B, NORMAL WEIGHT CONCRETE.
3. TOP BARS ARE HORIZONTAL REINFORCEMENT WITH MORE THAN 12" OF NEW CONCRETE PLACED BELOW THE BAR. BOTTOM BARS ARE ALL OTHER HORIZONTAL OR VERTICAL REINFORCEMENT.

2 REBAR BENDS, HOOKS AND SPLICES — SCALE -



3 HOOKS AND CORNER BARS — SCALE -

IF THIS SHEET IS NOT 24"x36", IT HAS BEEN RESIZED - SCALE ACCORDINGLY 0 1/4" 1/2" 1" 2"

JKS DESIGN

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AUTHORITY HAVING JURISDICTION

PROJECT#

TUSCANY VILLAGE

(Enter address here)

UNIT A

PROJECT DETAILS
PROJECT NO: 17029
SUBMITTAL DATE: -

PROJECT REVISIONS

MARK	DATE	DESCRIPTION

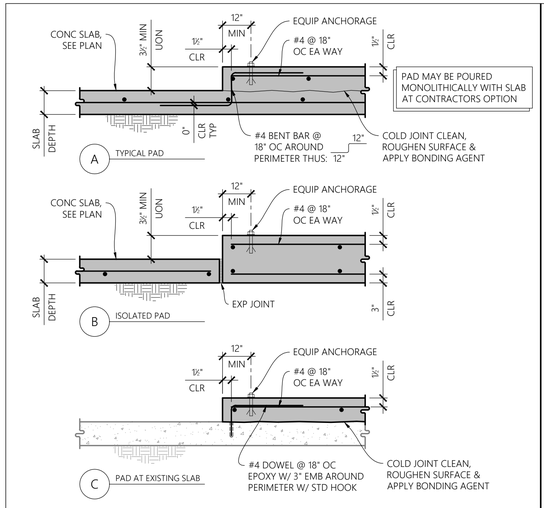
SHEET DETAILS
DRAWN BY: NGM
CHECKED BY: AMG

SHEET TITLE

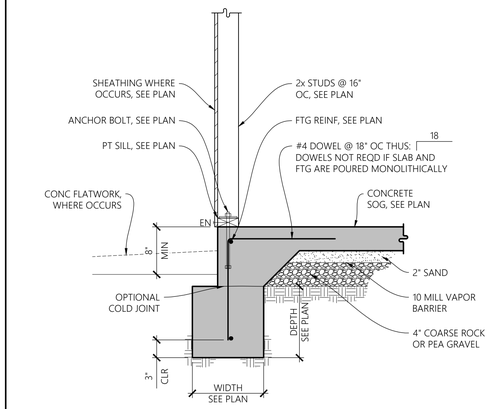
TYPICAL CONCRETE DETAILS

SHEET NUMBER

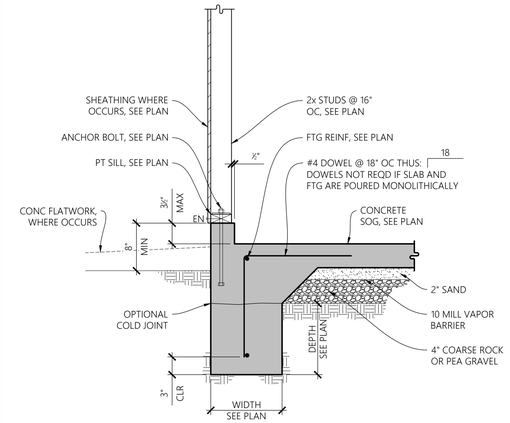
S2.1



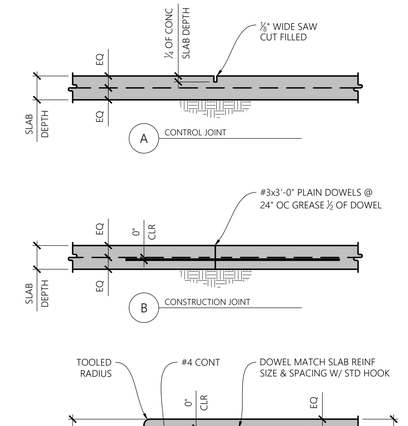
10 CONCRETE PAD DETAILS — SCALE -



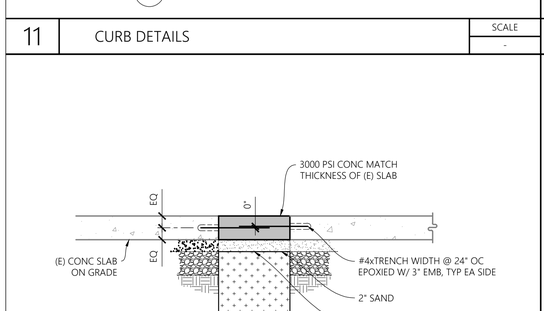
7 EXTERIOR FOOTING - CENTERED — SCALE -



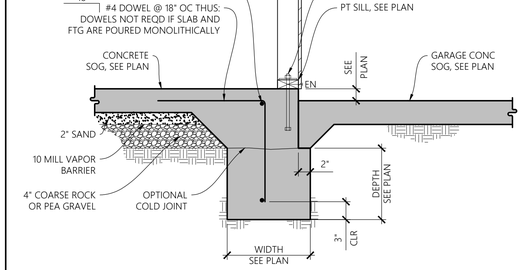
4 GARAGE FOOTING — SCALE -



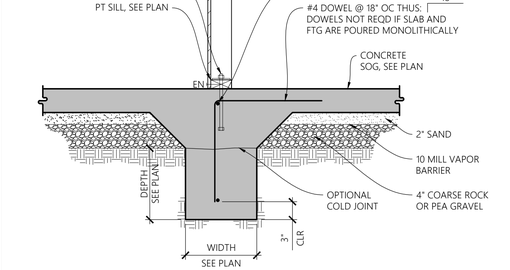
2 CONCRETE SLAB DETAILS — SCALE -



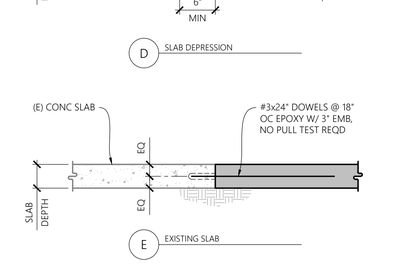
11 CURB DETAILS — SCALE -



8 FOOTING DETAIL BETWEEN GARAGE & HOUSE — SCALE -

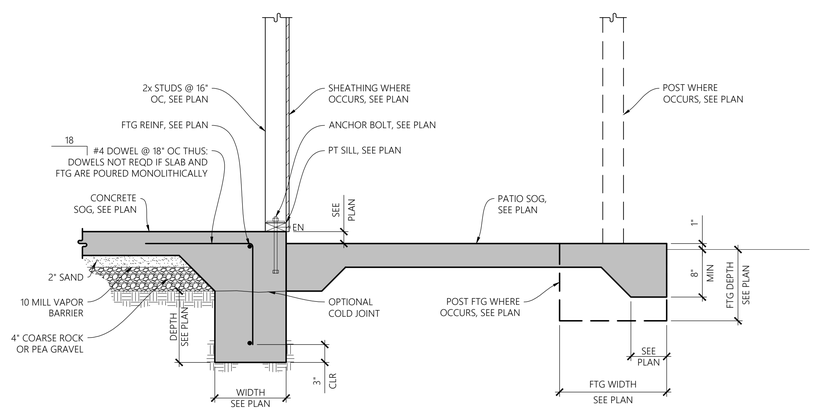


5 INTERIOR FOOTING — SCALE -

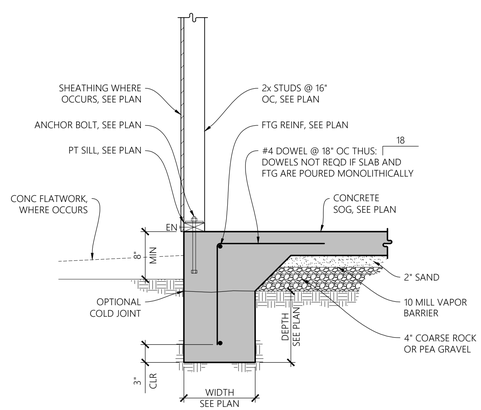


3 EXTERIOR FOOTING — SCALE -

12 TRENCH REPAIR — SCALE -



9 PATIO FOOTING AND POST CONNECTION DETAIL — SCALE -



3 EXTERIOR FOOTING — SCALE -

IF THIS SHEET IS NOT 24"x36", IT HAS BEEN RESIZED - SCALE ACCORDINGLY 0 1/4" 1/2" 1" 2"

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AUTHORITY HAVING JURISDICTION

PROJECT#

TUSCANY VILLAGE

(Enter address here)

UNIT A

PROJECT DETAILS

PROJECT NO:	17029
SUBMITTAL DATE:	-

PROJECT REVISIONS

MARK	DATE	DESCRIPTION

SHEET DETAILS

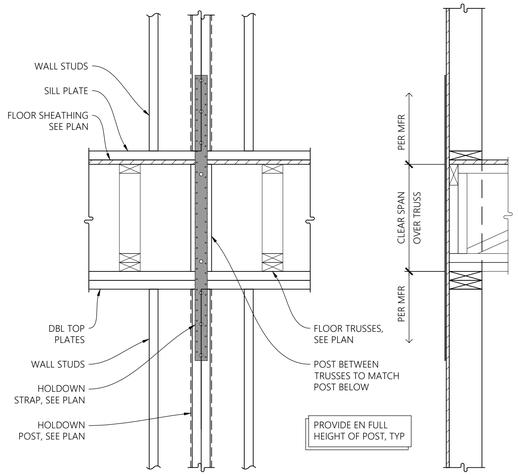
DRAWN BY:	NGM
CHECKED BY:	AMG

SHEET TITLE

TYPICAL CONCRETE DETAILS

SHEET NUMBER

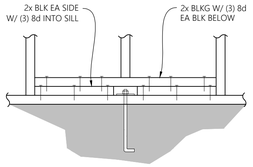
S2.2



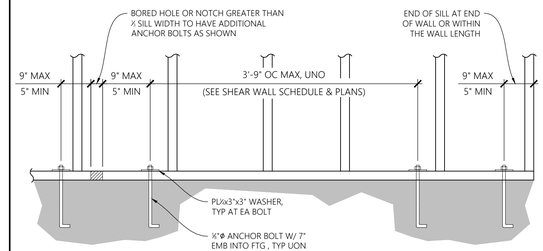
10 STRAP FOR HOLDOWN BETWEEN FLOORS - CASE 1 SCALE -

NOTES:

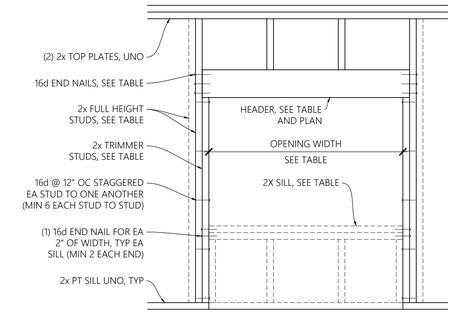
1. A MINIMUM OF TWO ANCHOR BOLTS SHALL BE PLACED WITHIN ANY ONE PIECE OF SILL LENGTH.
2. A TREATED SILL THAT HAS BEEN CUT, DRILLED OR NOTCHED SHALL BE TREATED W/ A PRESERVATIVE LISTED IN AWPA C16-91 ON ALL EXPOSED SURFACES FROM WHICH THE PRESERVATIVE TREATMENT HAS BEEN REMOVED.
3. BOLTS SHALL BE A307 W/ STANDARD BOLT HEADS.
4. REFER TO SHEAR WALL SCHEDULE AND SECTIONS FOR REQUIRED SILL PLATE THICKNESS.



A CONDITION WHERE BOLT OCCURS AT STUD

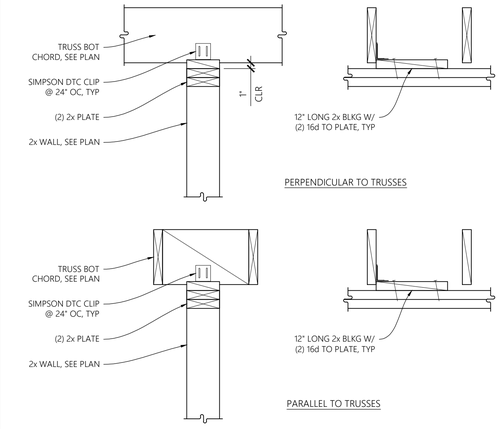


7 STRUCTURAL WALL SILL PLATE ANCHORAGE SCALE -



SPAN	NOMINAL HEADER DEPTH		QUANITITY OF MEMBERS			END NAIL TO HEADER
	BEARING	NON-BEARING	FULL HEIGHT	TRIMMER	SILL	
≤ 4'-0"	6"	6"	1	1	1	4
≤ 6'-0"	8"	6"	2	1	2	4
≤ 8'-0"	10"	8"	2	2	2	6

4 FRAMING AT INTERIOR OPENING SCALE -



1 NON-STRUCTURAL WALLS TOP ANCHORAGE SCALE -

11 HOLDOWN BETWEEN FLOORS - CASE 1 SCALE -

8 SHEAR WALL ELEVATION SCALE -

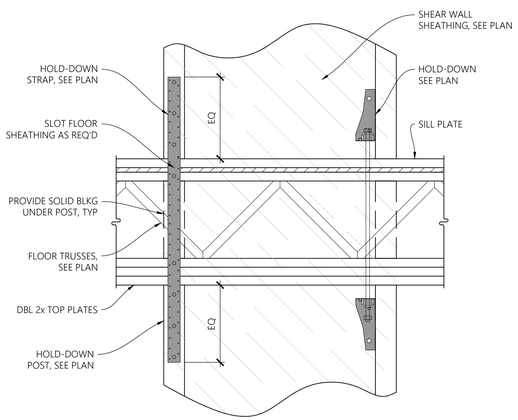
SPAN	NOMINAL HEADER DEPTH	QUANITITY OF MEMBERS			END NAILS TO HEADER
		FULL HEIGHT	TRIMMER	SILL	
≤ 4'-0"	6"	1	1	1	4
≤ 6'-0"	8"	2	1	2	6
≤ 8'-0"	10"	3	2	3	8

5 FRAMING AT EXTERIOR OPENING SCALE -

NOTES:

1. PLATES BORED, CUT OR NOTCHED MORE THAN ⅓ OF WIDTH SHALL HAVE ADDITIONAL CONNECTORS (PAF OR BOLT, AS NOTED) EACH SIDE OF BORE, CUT OR NOTCH (AS FOR SPLICES)
2. TWO CONNECTIONS MINIMUM FOR EACH PIECE OF SILL

2 INTERIOR NON-STRUCTURAL WALL BASE ANCHORAGE SCALE -



12 HOLDDOWN / STRAP BETWEEN FLOORS - CASE 2 SCALE -

HDU - HOLDOWN SCHEDULE						
TYPE	MINIMUM POST	CL	SCREWS	SIMPSON ANCHOR	EMBED	EDGE DISTANCE
HDU2	(2) 2x4	1¾"	(6) SDS25212	SB¼"x24	18"	1¾"
HDU8	(2) 2x4	1¾"	(20) SDS25212	SB¼"x24	18"	1¾"
HDU11	6x8	1¾"	(20) SDS25212	SB¼"x24	18"	1¾"

NOTE: ANCHOR BOLT NUT SHOULD BE FINGER TIGHT PLUS ⅓ TO ½ TURN WITH A HAND WRENCH, WITH CONSIDERATION GIVEN TO POSSIBLE FUTURE WOOD SHRINKAGE. CARE SHOULD BE TAKEN NOT TO OVER-TIGHTEN THE NUT.

9 HOLD DOWN ANCHORAGE SCALE -

6 TOP PLATE SPLICE - NAILED SCALE -

3 WALL FRAMING SCALE -

IF THIS SHEET IS NOT 24"x36", IT HAS BEEN RESIZED - SCALE ACCORDINGLY 0 1/4" 1/2" 1" 2"

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AUTHORITY HAVING JURISDICTION

PROJECT#

TUSCANY VILLAGE

(Enter address here)

UNIT A

PROJECT DETAILS

PROJECT NO: 17029
SUBMITTAL DATE: -

PROJECT REVISIONS

MARK	DATE	DESCRIPTION

SHEET DETAILS

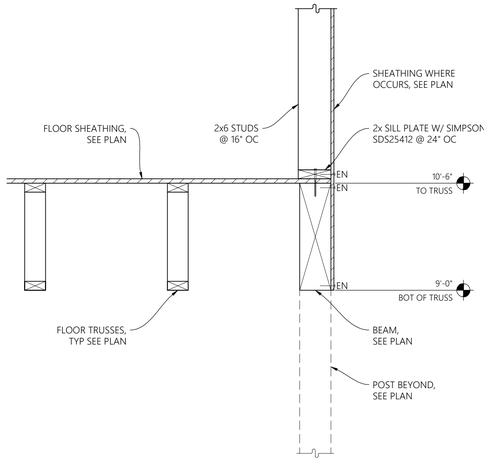
DRAWN BY: NGM
CHECKED BY: AMG

SHEET TITLE

TYPICAL FRAMING DETAILS

SHEET NUMBER

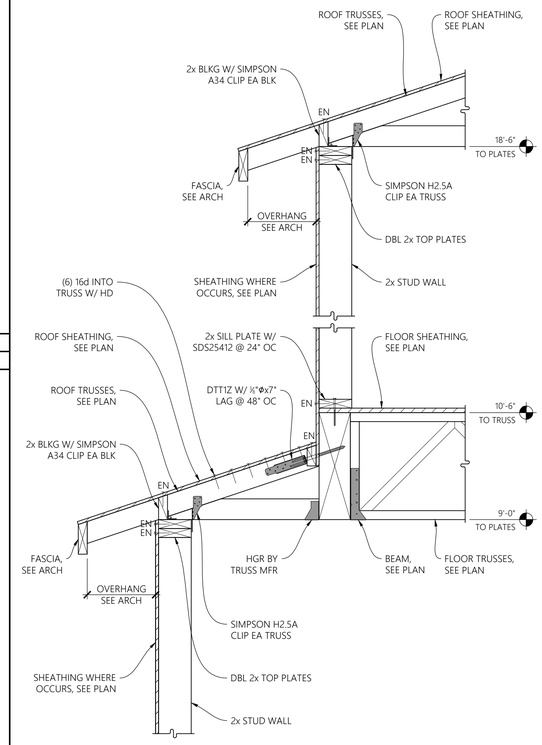
S2.3



10 | FLOOR TRUSSES AT BACK PATIO OVERHANG | SCALE 1" = 1'=0"

NOT USED

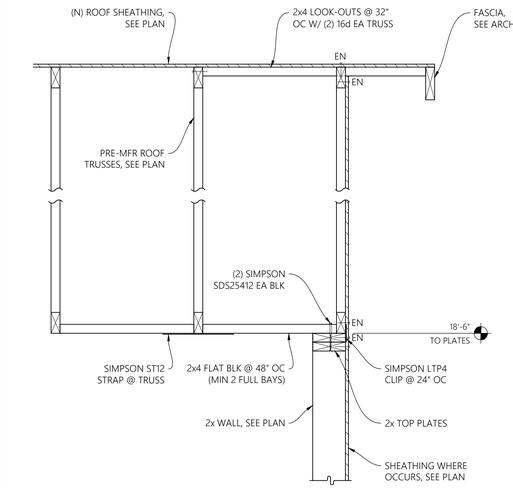
11 | - | SCALE -



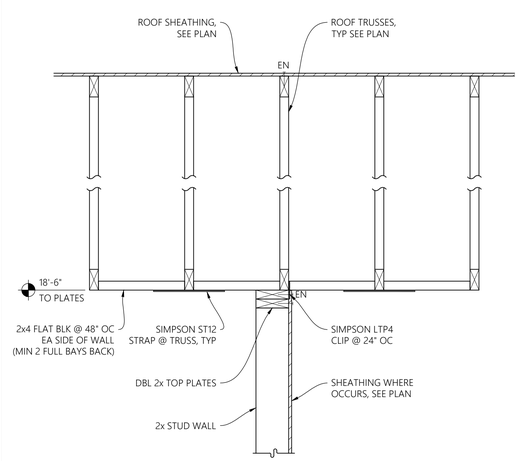
8 | ROOF/FLOOR TRUSSES AT INSET SECOND FLOOR WALL | SCALE 1" = 1'=0"

NOT USED

12 | - | SCALE -

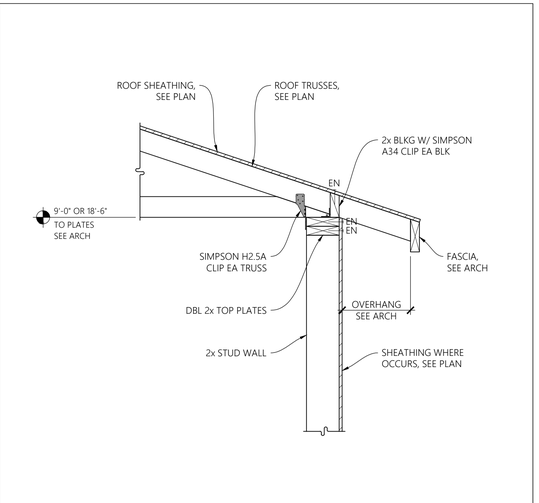


4 | ROOF TRUSSES PARALLEL TO EXTERIOR WALL | SCALE 1" = 1'=0"

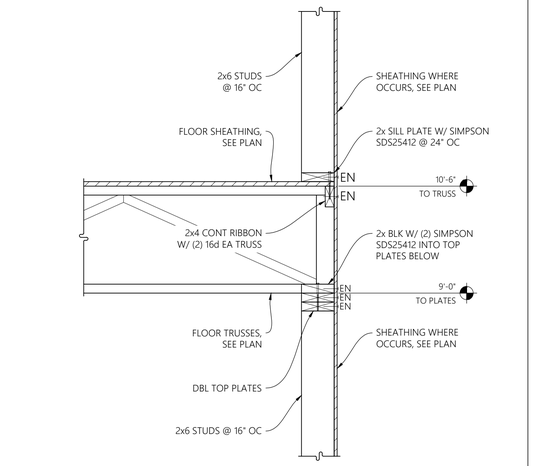


5 | ROOF TRUSSES PARALLEL TO INTERIOR WALL | SCALE 1" = 1'=0"

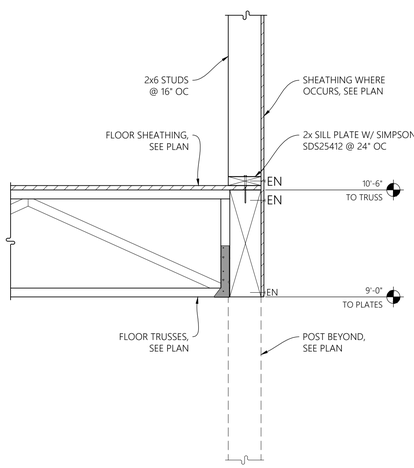
6 | FLOOR TRUSSES AT BEAM (OVER DINING) | SCALE 1" = 1'=0"



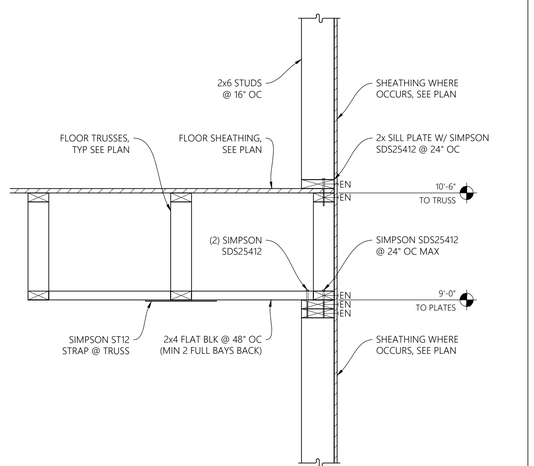
1 | ROOF TRUSSES PERPENDICULAR TO EXTERIOR WALL | SCALE 1" = 1'=0"



2 | FLOOR TRUSSES PERPENDICULAR TO EXTERIOR WALL | SCALE 1" = 1'=0"



9 | FLOOR TRUSSES AT BEAM (BACK PATIO) | SCALE 1" = 1'=0"



3 | FLOOR TRUSSES PARALLEL TO EXTERIOR/STAIR WALL | SCALE 1" = 1'=0"

IF THIS SHEET IS NOT 24"x36", IT HAS BEEN RESIZED - SCALE ACCORDINGLY 0 1/4" 1/2" 1" 2"

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AUTHORITY HAVING JURISDICTION

PROJECT#

TUSCANY VILLAGE
(Enter address here)

UNIT A

PROJECT DETAILS
PROJECT NO: 17029
SUBMITTAL DATE: -

PROJECT REVISIONS

MARK	DATE	DESCRIPTION

SHEET DETAILS
DRAWN BY: NGM
CHECKED BY: AMG

SHEET TITLE

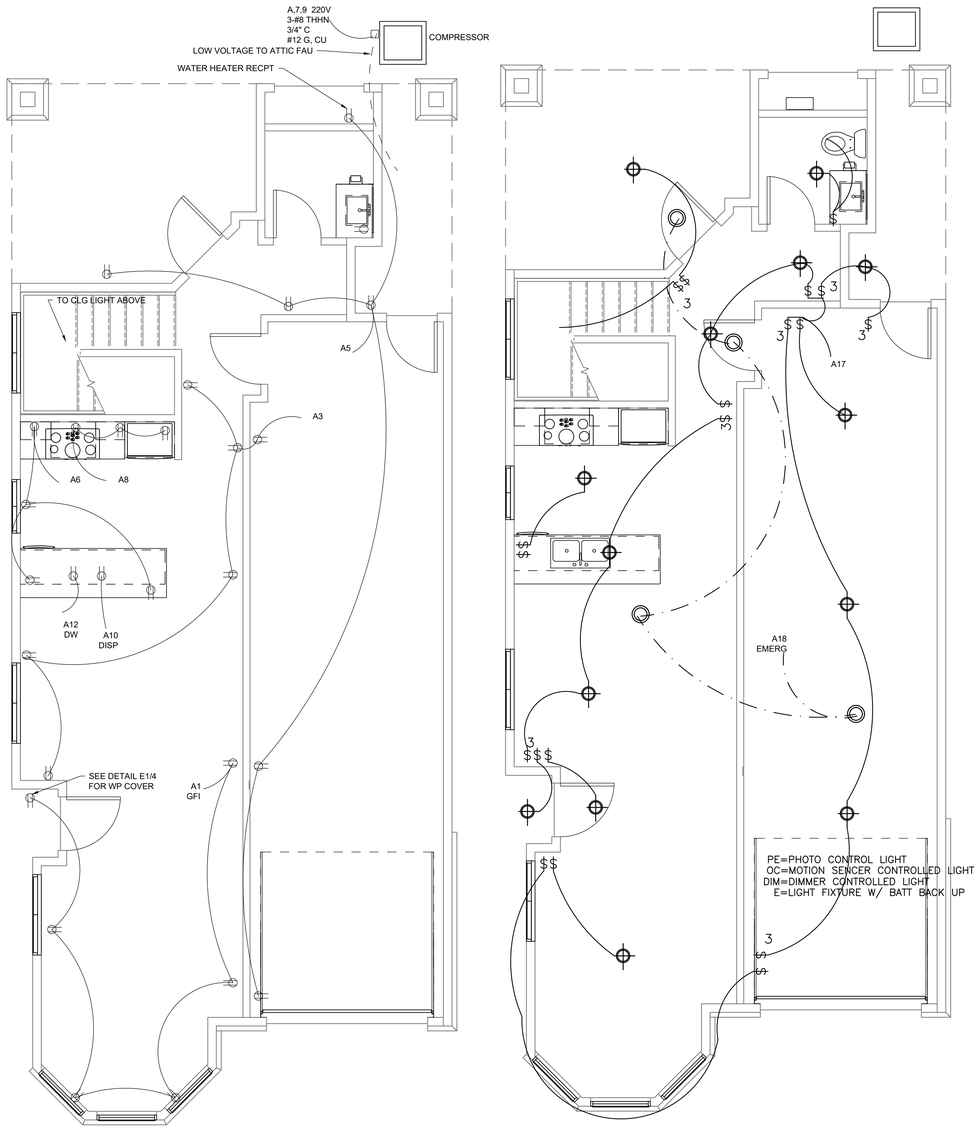
SECTIONS & DETAILS

SHEET NUMBER

S3.1

LIGHT FIXTURE SCHEDULE

SYMBOL	MARK	DESCRIPTION	MANUF.	FIXTURE	COLOR	VOLTAGE	WATTSBULBS	REMARKS
⌖	A	RECESSED LED, 4"	TBD	TBD	WHITE	120	28W, 3000K COLOR	IC AIRTIGHT, IC HOUSING
O02 OSD	SD/O2	SMOKE AND 02 DETECTOR	FIRST ALERT	1036469	WHITE			W/ SEALED BATTERY, 10 YR MIN, HARD WIRED
♀		EXTERIOR LIGHTING	TBD	LED		120		SELECTED BY OWNER, LED, WP

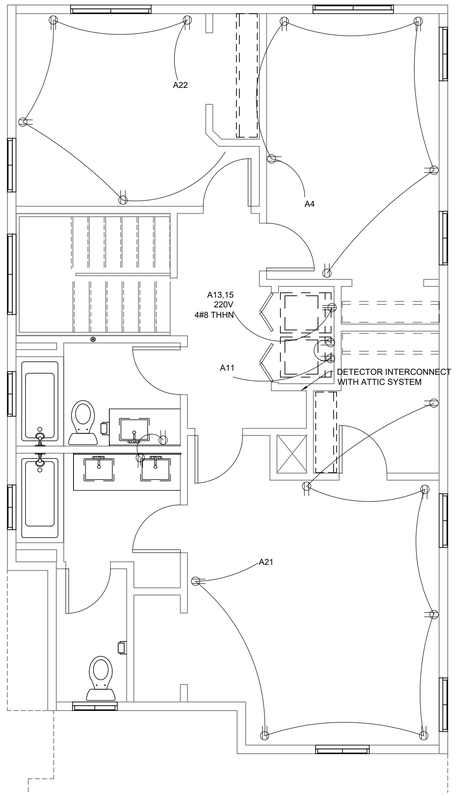


17 POWER PLAN

1/4"=1'

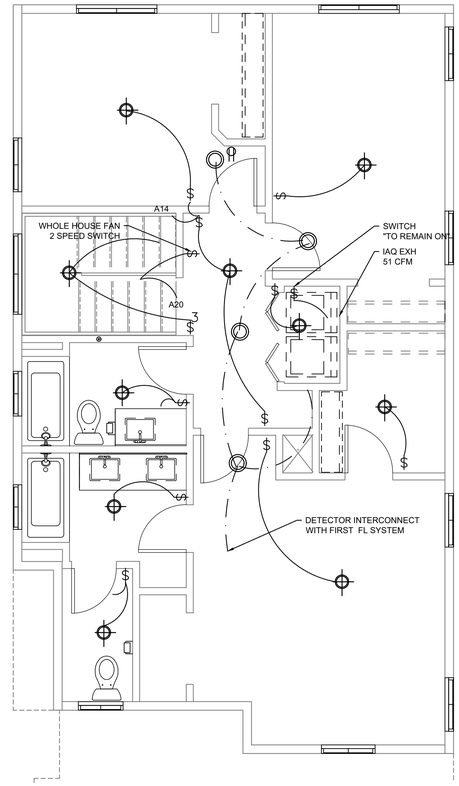
13 LIGHTING PLAN

1/4"=1'



9 POWER SECOND FLOOR PLAN

1/4"=1'



2 LIGHTING SECOND FLOOR PLAN

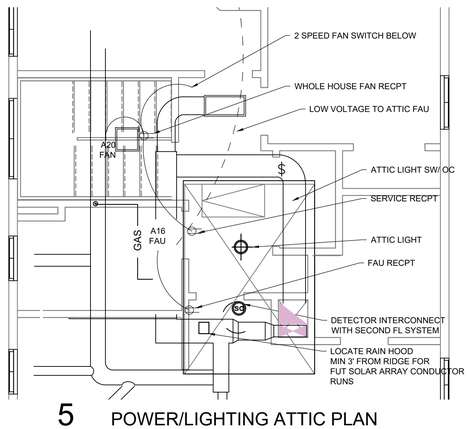
1/4"=1'

PANEL	unit a panel	# CONDUITS	1
# CIRCUITS	36	C-SIZE	2 IN
FED FROM	MSWBD	C-TYPE	GENERAL
HI VOLTAGE	208	# WIRES	3
LOW VOLTAGE	110	WIRE SIZE	#3/0
PHASE	1	GND SIZE	#6
HERTZ	60	WIRE TYPE	XHHW
NEUT BUS Y/N	Y	WIRE CU/AL	CU
GND BUS Y/N	Y	WIRE AMPS	200
GND WIRE Y/N	Y		
WIRE TYPE	XHHW		
WIRE CU/AL	CU		
WIRE TEMP C	75		
WIRE LENGTH	65		
CONDUIT TYPE	GENERAL	whitmore rd housing unit a	
MINIMUM AMPS	200		
% FACTOR	20		
MAIN BKR Y/N	Y	PREPARED BY - KEN KAESTNER	
MAIN BKR AMPS	100		

#	BKR	CIRCUIT DESCRIPTION	I	VA		VA	I	CIRCUIT DESCRIPTION	BKR	#
1	20A-1P	RECPT	M	1,440	L1	500	G	BATH, GFI	20A-1P	2
3	20A-1P	RECPT	M	1,440	L2	1,080	G	BED RM, ARC FAULT GFI,	20A-1P	4
5	20A-1P	RECPT	C	1,440	L1	1,000	G	KITCHEN 1	20A-1P	6
7	40A-2P	CONDENSER	M	2,400	L2	1,200	G	KITCHEN 1	20A-1P	8
9			M	2,400	L1	650	D	DISPOSAL	20A-1P	10
11	20A-1P	WASHER	G	650	L2	1,000	D	DISH WASHER	20A-1P	12
13	30A-2P	DRYER	G	2,100	L1	1,300	C	LIGHTS	20A-1P	14
15			D	2,100	L2	650	G	FAU	20A-1P	16
17	20A-1P	LIGHTS	C	650	L1	500	D	EMERG DETECTORS	15A-1P	18
19			C		L2	1,000	C	RECPT	20A-1P	20
21	20A-1P	BED RM, ARC FAULT GFI	G	1,080	L1	1,080	G	BED RM, ARC FAULT GFI,	20A-1P	22
23			D		L2		C			24
25			D		L1		C			26
27			C		L2		C			28
29			G		L1		G			30
31			G		L2		G			32
33			G		L1		G			34
35			G		L2		G			36

10 PANEL A FRONT KITCHEN AREA

NTS

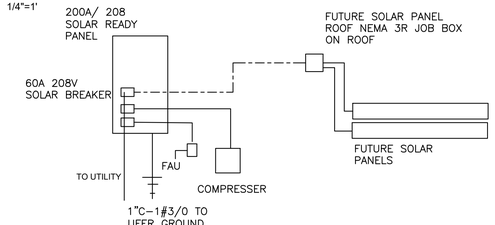


5 POWER/LIGHTING ATTIC PLAN

1/4"=1'

GENERAL ELECTRICAL NOTES

1. Electrical Installations shall comply with the 2016 California Electrical Code (CEC) and local amendments.
2. All work, components, and installtions shall be made in a responsible and workmanlike manner.
3. Electrical Contractor shall be responsible for verifying power and phone services and coordinating with applicable utilities.
4. Electrical drawings are diagramtic in nature and the Electrical Contractor shall verify the size and locations of all equipment and components prior to purchase.
5. Typical conductors to be copper type ROMEX (#12 typical UON). All ground wires shall be insulated.
6. All luminaries and ballasts, and related components, shall be listed by the California Energy Commission.
7. Flash and counter flash all items penetrating the roof or exterior walls.
8. Mutli-branch circuits shall have an insulated neutral.
9. No back-to-back penetrations in rated construction. Membrane and through penetrations shall be a UL listed assembly, and in accordance with CBC ch. 7.
10. Interior circuits to be installed in ROMEX
11. Exterior circuits shall be in approved steel conduit. Flex-liquid-tight can be used for less than 36" outdoor connections.
13. Underground conduit may be electrical PVC.
14. All electrical components, panels, cables, conduits, etc., shall be UL listed and installed in strict accordance with their manufacturers written installtion instructions.
15. Outdoor fixtures to be listed for outdoor use.
16. Disaggragateans separately meter HVAC loads from lighting loads from miscellaneous loads.
17. No more than (8) general use receptacel outlets per #12 AWG CU circuit.
18. Available short circuit current shall be tested and clearly labeled on all panels.



20 ONE LINE DIAGRAM

NTS

15 EXTRA DUTY RECPT BOX HOOD

NTS

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CERES HOUSING
WHITMORE AVE.
, CERES CA

PROPOSED DRAWINGS FOR:

REVISIONS

ENV HEALTH REVIEW	1- 08/25/2017
PERMIT SUBMITTAL	2-09/11/2017
PLN CHK 1	3-08/20/2018

POWER AND LIGHTING PLAN

ISSUE DATE:	09.11.2017
PROJECT #:	BOBS

E1

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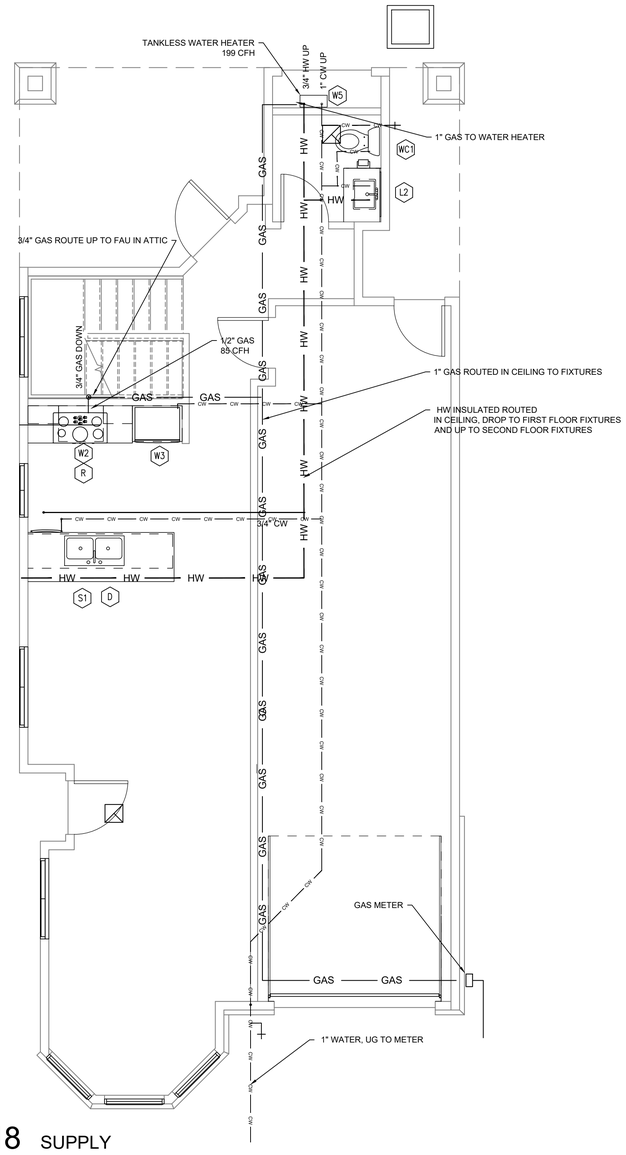
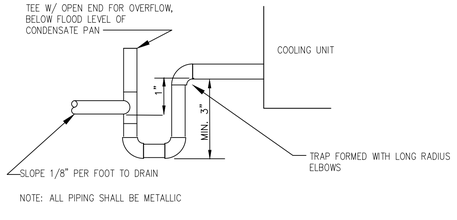


18 SUPPLY

1/8" = 1'-0"

NOTES:

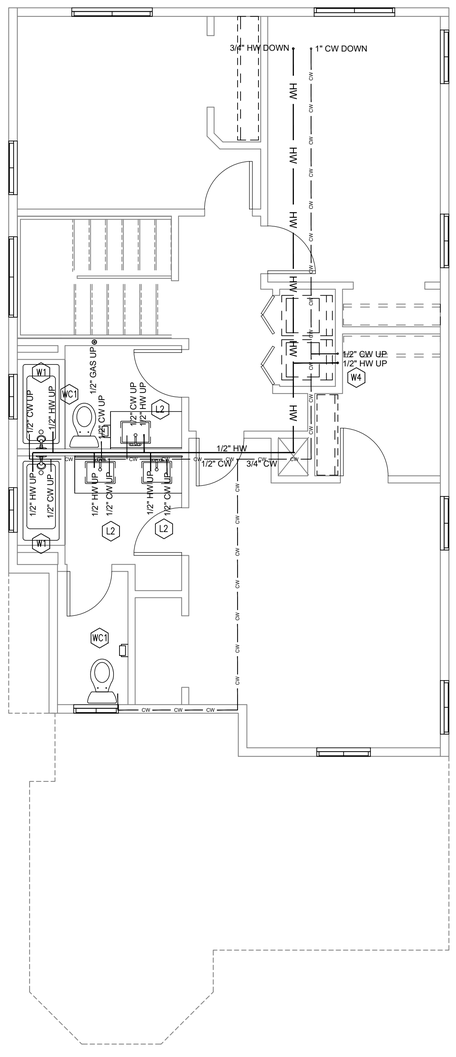
1. HOT WATER DELIVERED FROM PUBLIC USE LAVATORIES SHALL BE LIMITED TO A MAXIMUM TEMPERATURE OF 100 DEGREES F.2016 CPC SECTION 421.2 CALIFORNIA ENERGY CODE SECTION 113 (c) 3: TEMPERATURE CONTROLS FOR PUBLIC LAVATORIES SHALL BE LIMITED THE OUTLET TEMPERATURE TO 110 DEGREES F. BY A DEVICE THAT CONFORMS TO ASSE 1070 STANDARD FOR WATER TEMPERATURE LIMITING DEVICES, OR CSA B125.3 STANDARD FOR PLUMBING FITTINGS.
2. WATER CLOSET CONTROLS TO BE WITHIN 44" OF FLOOR. CONTROLS TO BE OPERABLE WITH NO GREATER FORCE THAN 5 POUNDS AND SHALL BE ACTIVATED WITH ONE HAND AND SHALL NOT REQUIRE TIGHT GRASPING, PINCHING, OR TWISTING OF THE WRIST. CONTROL TO BE LOCATED ON THE WIDE SIDE OF THE COMPARTMENT PER CPC 1502.
3. SHOWER AND TUB-SHOWER COMBINATIONS SHALL BE PROVIDED WITH INDIVIDUAL CONTROL VALVES OF THE PRESSURE BALANCE OR THE THERMOSTATIC MIXING TYPE.



NOTE: ALL PIPING SHALL BE METALLIC

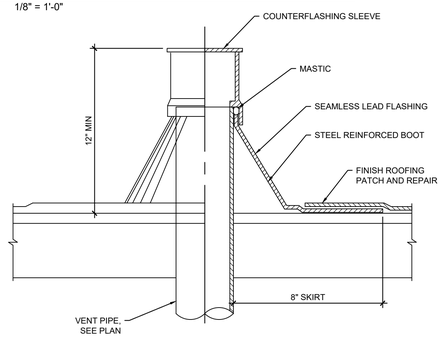
20 CONDENSATE

NTS



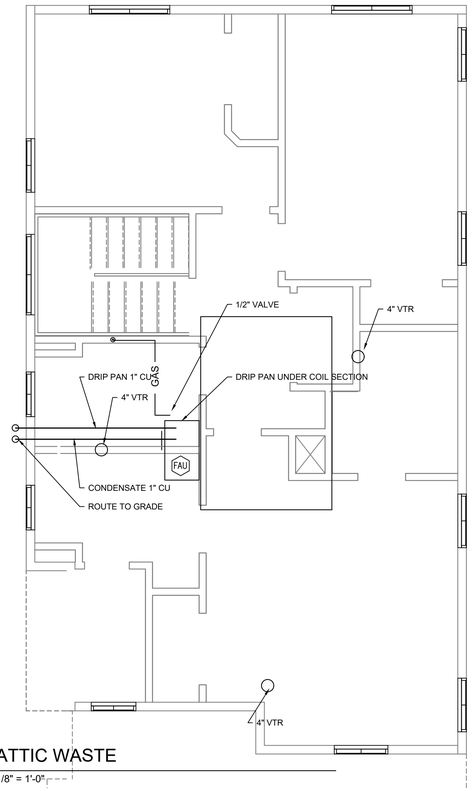
14 SUPPLY

1/8" = 1'-0"



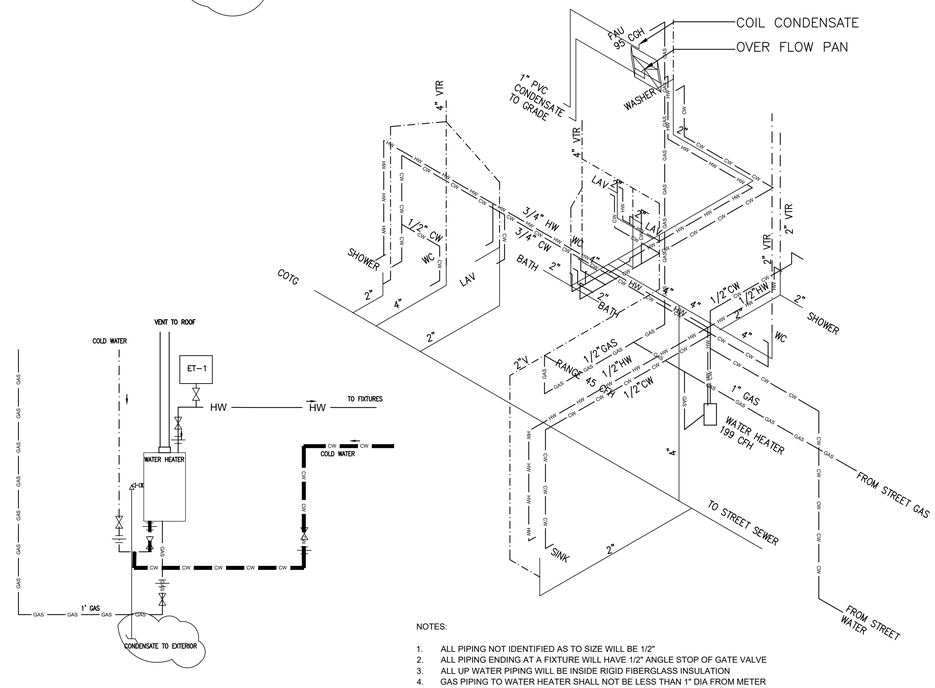
16 ROOF VENT

NTS



11 ATTIC WASTE

1/8" = 1'-0"



12 HOT WATER

NTS

NOTES:

1. ALL PIPING NOT IDENTIFIED AS TO SIZE WILL BE 1/2"
2. ALL PIPING ENDING AT A FIXTURE WILL HAVE 1/2" ANGLE STOP OF GATE VALVE
3. ALL UP WATER PIPING WILL BE INSIDE RIGID FIBERGLASS INSULATION
4. GAS PIPING TO WATER HEATER SHALL NOT BE LESS THAN 1" DIA FROM METER
5. VENTING NOT LABELED WILL BE MIN 2" DIA, ALL TOILET WASTE AND VENT SHALL BE 4"

5 PLUMBING ISOMETRIC

NTS

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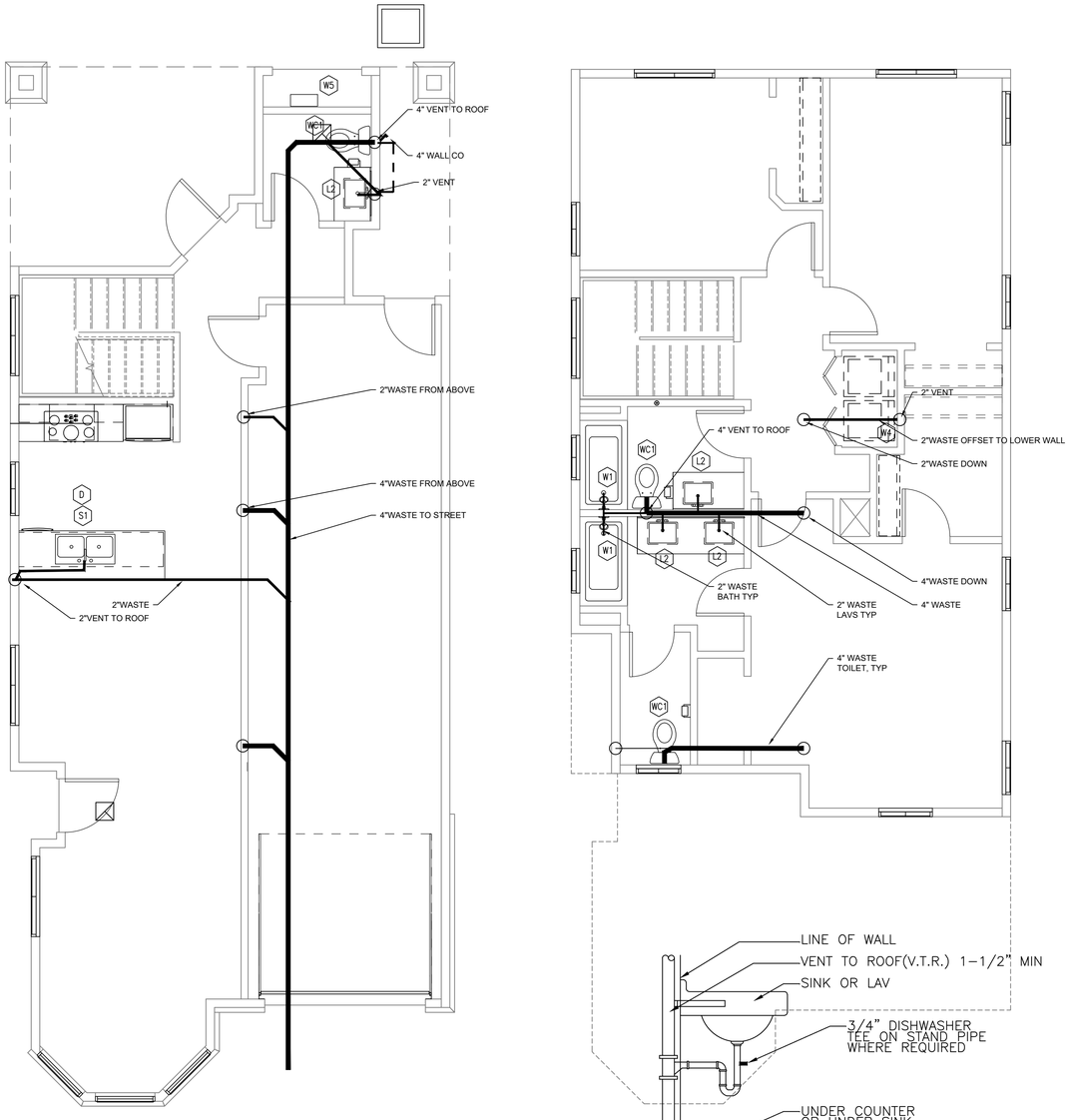
DETAILS
SUPPLY
PLUMBING
PLANS

ISSUE DATE: 09.11.2017
PROJECT #: BOBS

P2

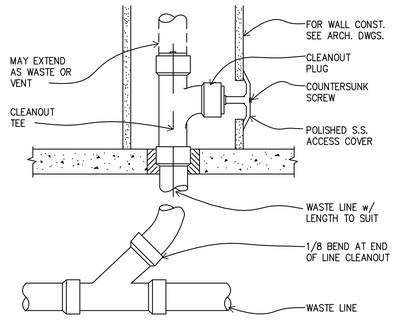
File: C:_Date Drive\2018 projects\ceres housing 2018\unit a project file\18 04 Plumbing Plans.dwg Date: 5/25/2015



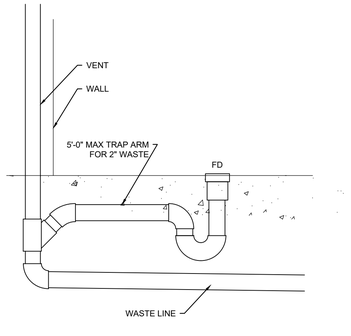
19 WASTE

1/8" = 1'-0"

4 CLEANOUT AT LAV OR SINK

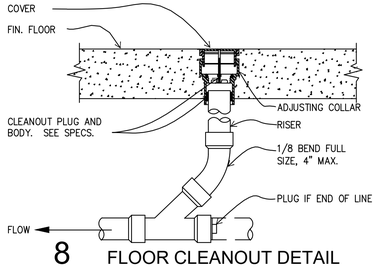


7 WALL CLEANOUT DETAIL



12 HORIZONTAL VENT AT FLOOR DRAINS

NTS



8 FLOOR CLEANOUT DETAIL

PLUMBING NOTES:

1. SEE SHEET P1 FOR PLUMBING LEGEND AND NOTES
2. ALL WATER AND GAS ROUGH IN's SHALL BE TERMINATED WITH SHUT-OFF VALVES BEFORE CONNECTION TO EQUIPMENT OR FIXTURE.
2. GENERAL CONTRACTOR TO PROVIDE BACK FLOW DEVICE ON WATER MAIN AND ON ALL HOSE BIBBS AND AS REQUIRED BY LOCAL HEALTH AND BUILDING OFFICIALS.
3. GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR ALL GAS SIZING TO NEW EQUIPMENT
4. PROVIDE HOT AND COLD WATER TO ALL SINKS MINIMUM OF 120 DEGREES F REQUIRED WITH MIXING FAUCET.
5. ALL PIPING SHALL BE CONCEALED IN WALLS
6. GENERAL CONTRACTOR SHALL VERIFY ALL FLOOR FINISHES PRIOR TO THE SETTING OF ANY/ALL FLOOR ACCESSORIES AND FIXTURES.
7. GENERAL CONTRACTOR SHALL VERIFY ALL EQUIPMENT ROUGH-IN REQUIREMENTS WITH EQUIPMENT MFG. PRIOR TO INSTALLATION.
8. PIPING ARRANGEMENT SHOWN IS DIAGRAMMATIC. INDICATING SIZES AND NECESSARY CONNECTIONS.
9. NO JOINTS IN COPPER PIPING BELOW GRADE.
10. INSTALL INSULATED COUPLINGS ON COPPER LINES WHERE THEY PENETRATE FLOOR.
11. 1" FIBERGLASS RIGID INSULATION ON ALL BELOW FLOOR SLAB COPPER PIPING SUPPLY LINES.
12. INSULATE OR CONCEAL ALL HOT WATER LINES AND DRAIN PIPES.

LEGEND

COLD WATER ——— CW ———

HOT WATER ——— HW ———

CONDENSATE ----------

GAS ——— GAS ———

WATER SUPPLY FIXTURE UNITS AND MINIMUM FIXTURE BRANCH PIPE SIZES CBC TABLE 610.3

FIXTURE TYPE	MINIMUM FIXTURE BRANCH PIPE SIZE INCHES	NO. OF FIXTURES	FIXTURE UNITS	MAX FLOW	TOTAL
HOSE BIBB	1/2	2	2.5		5.0
LAVATORY	1/2	4	1.0	1.28 GPM	4.0
SERVICE SINK OR MOP BASIN	1/2	2	3.0		6.0
WATER CLOSET 1.28 GPF	1/2	2	2.5	1.28 GPF	5.0
	0	0	TOTAL F.U.		20

FIXTURE UNIT TABLE FOR DETERMINING WATER PIPE AND METER SIZES CBC TABLE 610.4

METER AND STREET SERVICE INCHES	BUILDING SUPPLY AND BRANCHES INCHES	MAXIMUM ALLOWABLE LENGTH FEET, @ 30 TO 45 PSI TABULATED LENGTH 60'							
		40	60	80	100	150	200	250	300
1	1	36	31	27	25	20	17	15	13

CHART A-3, 18 FU= 18 GPM
CHART A-1 METER LOSSES, 18 GPM= 7 PSI LOSS FOR A 3/4" METER
CHART A, -4, FRICTION LOSS IN PIPE, GPM=18, 1" PIPE, VELOCITY 6 FPS, 6 PSI LOSS/100

TABULATED LENGTH:

		PIPE LENGTH	PSI LOSS
STRAIGHT RUNS:		40'	
90 DEGREE ELBOWS	3@8' EA	18'	
90 DEGREE STREET ELBOWS LENGTH FROM STREET TO CEILING AND BACK TO FIXTURE:		8'	
METER LOSS			6.0
BFP LOSS			12.0
TOTAL TABULATED LENGTH		64'	6.0
		TOTAL PSI DROP	24.0
STATIC PRESSURE PER TABLE 6-6, 30 TO 45 PSI			5.3 TO 20.1 PSI AT MOST REMOTE FIXTURE

GAS SUPPLY CALCULATION CHART CPC TABLE 1216.2(1)

NATURAL GAS LESS THAN 2 PSI PRESSURE DROP .3" WC	LONGEST LENGTH	MAXIMUM ALLOWABLE LENGTH FEET units CUBIC FEET PER HOUR							
		1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
443 CFH	80	42	89	167	343	514	1580	2790	5680

PLUMBING NOTES:

1. VERIFY EXACT LOCATIONS, ELEVATIONS AND CHARACTERISTICS OF UTILITIES AND PIPING BEFORE COMMENCEMENT OF WORK, AND IMMEDIATELY NOTIFY THE ARCHITECT OF ANY DISCREPANCIES.
2. OBTAIN EXACT LOCATIONS AND MOUNTING HEIGHTS OF PLUMBING FIXTURES AND KITCHEN EQUIPMENT FROM ARCHITECTURAL AND KITCHEN EQUIPMENT DRAWINGS
3. CONTRACTOR SHALL MAKE ALL ARRANGEMENTS WITH UTILITY COMPANIES FOR SERVICE AND CONNECTIONS AND SHALL PAY FOR ALL PERMITS. OWNER WILL PAY ALL FEES, CHARGES AND METERS.
4. TERMINATE ALL VENT AND FLUE OUTLETS AT 10'-0" MIN. FROM ANY FRESH AIR INTAKES.
5. INSTALL ALL PLUMBING TO AVOID INTERFERENCE WITH ELECTRICAL AND MECHANICAL EQUIPMENT AND STRUCTURAL FRAMING. NO WATER OR DRAIN LINES PERMITTED OVER OR UNDER ELECTRICAL PANELS.
6. PROVIDE FAUCETS UNLESS OTHERWISE NOTED, TRAPS, STOPS, GATE VALVES, GAS COCKS, WATER HAMMER ARRESTERS, WALL CLEANOUTS, CLEAN OUT COVERS, FLEX CONNECTIONS, SHUT-OFF VALVES AND INDIRECT WASTE TO AN APPROVED RECEPTOR AND ALL NECESSARY TRIM FOR A COMPLETELY INSTALLED & CONNECTED PLUMBING SYSTEM.
7. RECORD ON AS-BUILT DRAWINGS, ALL SIZES, LOCATIONS. INVERTS AND MATERIALS OF EXISTING PIPES THAT ARE ENCOUNTERED AND NEW PIPES INSTALLED DURING THE COURSE OF THE PROJECT DELIVER AS-BUILTS TO OWNER'S CONSTRUCTION MANAGER AT THE END OF THE PROJECT
8. ALL WORK SHALL BE DONE IN ACCORDANCE WITH ALL LOCAL AND FEDERAL CODES, RULES AND REGULATIONS GOVERNING THIS PROJECT.
9. UPON COMPLETION OF JOB, INSPECT ALL EXPOSED PORTIONS OF THE PLUMBING INSTALLATIONS AND COMPLETELY REMOVE ALL EXPOSED LABELS, SOIL, MARKINGS, AND FOREIGN MATERIAL EXCEPT PRODUCT LABELS AND THOSE REQUIRED BY LAW.
10. PROVIDE FLEXIBLE GAS CONNECTIONS TO WATER HEATER, COOKING EQUIPMENT & AIR HANDLERS . PROVIDE RIGID GAS CONNECTIONS TO ALL OTHER EQUIPMENT AND APPLIANCES AND WHERE LOCAL JURISDICTION PROHIBITS THE USE OF FLEXIBLE CONNECTIONS.
11. VERIFY ALL EQUIPMENT AND APPLIANCE CONNECTION SIZES PRIOR TO MAKING FINAL CONNECTION. REDUCE BRANCH PIPE SIZING JUST PRIOR TO CONNECTION TO UNIT.
12. WASTE AND VENT PIPING BELOW GRADE SHALL BE ABS AND ABOVE ABS
13. PROVIDE VACUM BREAK AT ALL HOSE BIBBS, AND SERVICE SINK

WATER SUPPLY AND DISTRIBUTION

1. COPPER TUBING
   a. TYPE L MINIMUM WEIGHT
   b. TYPE M MAY BE USED WITH IN AND ON A BUILDING AND UNDERGROUND OUTSIDE THE BUILDING
   c. COLOR CODE ON TUBING ARE AS FOLLOWS: TYPE K, GREEN; TYPE L, BLUE TYPE M, RED
2. VALVES UP TO AND INCLUDING 2" SHALL BE OF BRASS; LARGER THAN 2" CAN BE OF BRASS OR CAST-IRON THE WORKING PARTS TO BE OF NON-CORROSIVE MATERIAL
3. JOINTS AND CONNECTIONS, SOLDER SHALL NOT HAVE A CONTENT OF LEAD THAT EXCEEDS 0.2 OF 1%, SELECT SOLDER THAT IS SPECIFIC FOR POTABLE WATER USE

SANITARY DRAINAGE

1. PIPING SHALL BE SCHEDULE 40 ABS DWV
2. FITTINGS AND JOINTS SHALL BE OF ABS AND THE SOLVENT CEMENT SHALL BE LISTED FOR THE SPECIFIC USE; PIPE AND FITTING SHALL BE CLEAN PRIOR TO APPLYING SOLVENT CEMENT
3. MINIMUM 2% SLOPE FOR HORIZONTAL DRAINAGE PIPING.
4. WASTE VENT SHALL RISE MINIMUM 6" ABOVE THE FLOOD LEVEL RIM OF THE FIXTURE SERVED BEFORE OFF-SETTING.

HORIZONTAL LENGTHS OF TRAP ARMS (EXCEPT FOR WATER CLOSETS AND SIMILAR FIXTURES)*

TRAP ARM PIPE DIAMETER	DISTANCE TRAP TO VENT MINIMUM	LENGTH MAXIMUM
MAINTAIN ONE-FOURTH (¼) INCH PER FOOT SLOPE (20.8 MM/M)		
*THE DEVELOPED LENGTH BETWEEN THE TRAP OF A WATER CLOSET OR SIMILAR FIXTURE (MEASURED FROM THE TOP OF THE CLOSET, FLANGE TO THE INNER EDGE OF THE VENT) AND VENT SHALL NOT EXCEED SIX (6) FEET (1,829 MM)		
1 ¼"	2 ½"	30"
1 ½"	3"	42"
2"	4"	60"
3"	6"	72"
4"	8"	120"
EXCEEDING 4"	2X DIAMETER	120"

FIXTURE CONNECTION SIZE

FIXTURE	SYM	WASTE BRANCH	WASTE OUTLET	TRAP	VENT	COLD WATER BRANCH	COLD WATER OUTLET	HOT WATER BRANCH	HOT WATER OUTLET
WATER CLOSET (TANK)	WC	4"	4"	-	2"	1/2"	1/2"	-	-
WATER CLOSET (F.V.)	WC	4"	4"	-	2"	2"	1 1/2	-	-
URINAL	UR	3"	2"	-	2"	1-1/4"	3/4"	-	-
LAVATORY	LAV	2"	1-1/2"	1-1/2"	1-1/2"	1/2"	3/8"	1/2"	3/8"
SINK (KITCHEN)	S	2"	1-1/2"	1-1/2"	1-1/2"	3/4"	1/2"	3/4"	1/2"
SERVICE SINK	SS	3"	2"	2"	2"	3/4"	3/4"	3/4"	3/4"
DRINKING FOUNTAIN	DF	2"	1-1/2"	1-1/2"	1-1/2"	1/2"	1/2"	-	-
FLOOR DRAIN 2" & 3"	FD	2",4"	2",3"	2",3"	2"	-	-	-	-
FLOOR SINK	FS	2"	2"	2"	1-1/2"	-	-	-	-
HOSE BIBB	HB	-	-	-	-	3/4"	3/4"	-	-
TRAP PRIMER	TP	-	-	-	-	1/2"	1/2"	-	-
SHOWER	SH	2"	2"	2"	2"	3/4"	1/2"	3/4"	1/2"

FIXTURE SCHEDULE see plan sheets for notations

DESIG.		DESCRIPTION	QTY.	REMARKS
S1	FIXTURE: SINK FAUCET	KOHLER, K-3820-4 TOP MOUNT 18 GA SS KITCHEN SINK FAUCET, TBD	1	KITCHEN SINK CO-ORDINATE PLUMBING FOR GARBAGE DISPOSAL FAUCET, 1.8 GPM
WC1	FIXTURE: TOILET	KOHLER, WELLWORTH, K-3998	1	1.28 GPF
D	FIXTURE: DISPOSAL	INSINKERATOR, BADGER 5, 1/2 HP	1	
R	FIXTURE: GAS RANGE	FRIGIDIRE SLIDE IN RANGE, FFGS3025P S/W/B 63000 BTU, 120V/60HZ/15A	1	63,000 BTU
L2	FIXTURE: LAVATORY FAUCET	KOHLER, BROOKLINE, K-2202, COUNTERTOP BATHROOM SINK TBD	1	FAUCET 1.2 GPM
W1	FIXTURE: BATH TUB FAUCET	KOHLER, K-716, 3 WALL ALCOVE, CAST IRON MOEN, EVA, 6410,	1	SHOWER HEAD, 1.8 GPM
W2	FIXTURE: GAS OULET BOX	GAS RANGE, TBD SIOUS CHIEF 696 SERIES OX BOX, 696R1020GF	1	
W3	FIXTURE: ICE WATER OULET BOX	REFRIG, TBD SIOUS CHIEF 696 SERIES OX BOX, 696RG1010MF	1	
W4	FIXTURE: WATER OULET BOX	WASHER, TBD SIOUS CHIEF 696 SERIES OX BOX, 696-2323MF	1	
W5	FIXTURE:	WATER HEATER, RHEEM, PRESTIGE RTGH-90	1	UNIT REQUIRES 180 CFH APPROX FLOW AT 55° RISE, 7 GPM
FAU	FIXTURE: FORCED AIR UNIT, HEATER	FAU HORIZ FLOW	1	INPUT 75000 BTUH, 75 CFH

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WASTE
PLUMBING
PLANS

ISSUE DATE: 09.11.2017
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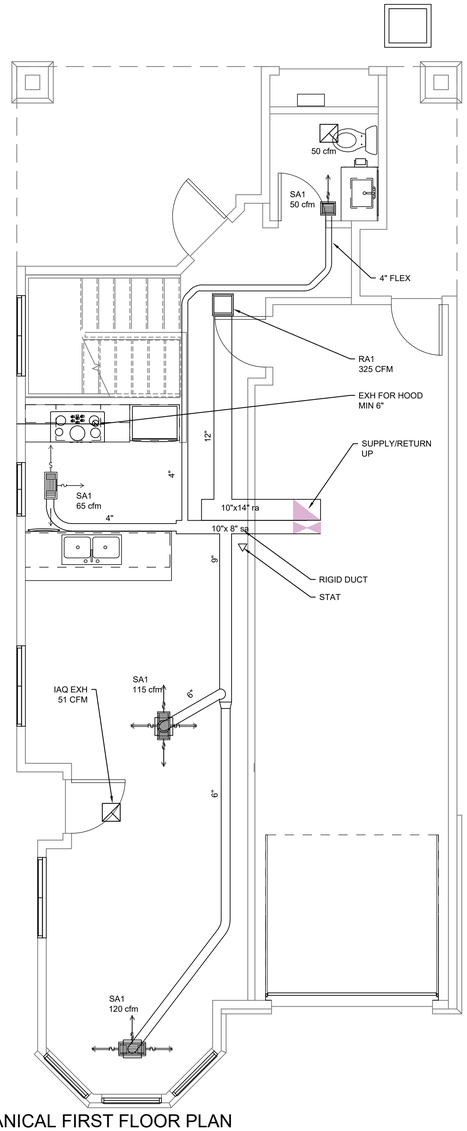
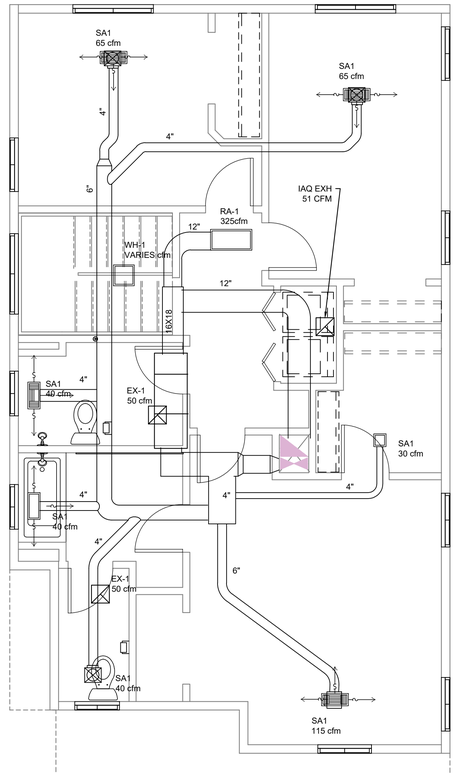
P1

File: C:_Date Drive\2018 projects\ceres housing 2018\unit a project file\18 04 Plumbing Plans.dwg Date: 5/25/2015



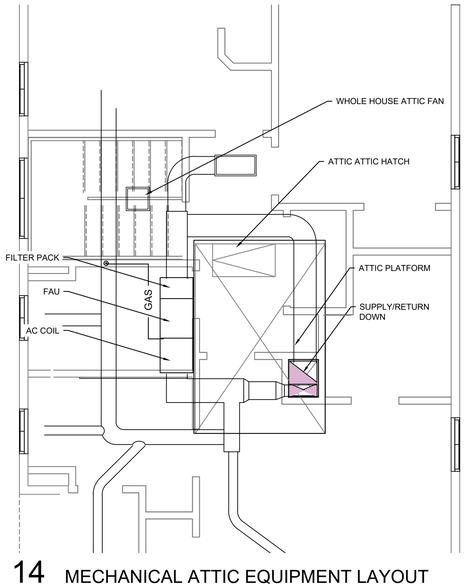
19 MECHANICAL FIRST FLOOR PLAN

1/4"=1'



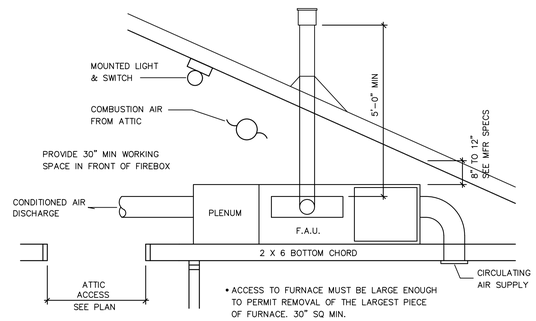
14 MECHANICAL ATTIC PLAN

1/4"=1'



14 MECHANICAL ATTIC EQUIPMENT LAYOUT

1/4"=1'



F.A.U. ATTIC INSTALLATION DETAIL

- ACCESS TO FURNACE MUST BE LARGE ENOUGH TO PERMIT REMOVAL OF THE LARGEST PIECE OF FURNACE. 30" SQ MIN.
- SOLID FLOORED WALKWAY NOT LESS THAN 24" IN WIDTH TO EXTEND FROM SCUTTLE TO F.A.U. AT F.A.U. PROVIDE 30" X 30" PLATFORM.
- MAX. DISTANCE OF F.A.U. TO SCUTTLE IS 20'-0"
- FURNACE MUST BE APPROVED FOR ATTIC INSTALLATION BY AN APPROVED TESTING LABORATORY.

EXHAUST FAN SCHEDULE

MARK	MFR	MODEL	LOCATION	DRIVE TYPE	CFM	SP IN. WG.	ELECTRICAL DATA			HERTZ SONES
							HP	VOLT	PHASE	
EF-1	BROAN	XB110	R/R	DIRECT	50	.2	1/8	120	1	4.5
IAQ	PANASONIC			DIRECT	51.001234	0.123	1/8	120	1	1
WHOLE HOUSE FAN	TAMARACK INDUST	HV3400 2 SPEED	TOP OF STAIRS	DIRECT	3400CFM 1900 CFM			120	1	

GRILLS, REGISTER AND DIFFUSER SCHEDULE

SYMBOL	TYPE	NECK SIZE	CFM	MFG	MODEL	QTY	NOTES
SA1	LOUVERED CEILING DIFFUSER	12x12	SEE PLAN	HART& COOLEY	ARS 12x12	SEE PLAN	
RA-1	PERFORATED FACE RETURN AIR GRILLE	24x24	SEE PLAN	HART & COOLEY	PFG 24x24	SEE PLAN	

FAU

MARK	MFR	MODEL	LOCATION	TONS		HEAT INPUT	AFUE	TOTAL POWER	INDOOR FAN			ELECTRICAL DATA					SEER	EER	WT LBS	MIN OSA (CFM)	NOTES
									CFM	ESP	MTR	VOLT	PHASE	HERTZ	MCA	MFS					
FAU	CARRIER WEATHER MAKER	TBD	ATTIC	3		95,000 BTU	95%	3.2 KW	700	-	-	208	1	60	30	45	14	12.2	800	450	ECONOMIZER, VAF FUNCTION, WITH DUCT SMOKE DETECTORS

1. SCOPE:
PROVIDE NEW COMPLETE HVAC SYSTEM, INCLUDING MECHANICAL EQUIPMENT & DUCTWORK AS GENERALLY DELINEATED ON THE DRAWINGS. EQUIPMENT SHALL COMPLY WITH TITLE 24 CALIFORNIA CODE OF REGULATIONS.

2. CODES:
ALL WORK MATERIAL AND EQUIPMENT SHALL BE FURNISHED AND INSTALLED IN COMPLIANCE WITH THE FOLLOWING CODES AS ADOPTED AND AMENDED BY THE INSPECTING AUTHORITY HAVING JURISDICTION. NOTHING IN THESE PLANS SHALL BE CONSTRUED TO PERMIT THE INSTALLATION OF WORK, MATERIAL OR EQUIPMENT NOT CONFORMING TO THESE OR OTHER CODES APPLICABLE TO THIS PROJECT:

A. 2016 CALIFORNIA ADMINISTRATIVE CODE (CAC) PART 1, TITLE T24, CCR
B. 2016 CALIFORNIA BUILDING CODE (CBC) PART 2, TITLE T24, CCR
C. 2016 CALIFORNIA ELECTRICAL CODE (CEC) PART 3, TITLE T24, CCR
D. 2016 CALIFORNIA MECHANICAL CODE (CMC) PART 4, TITLE T24, CCR
E. 2016 CALIFORNIA PLUMBING CODE (CPC) PART 5, TITLE T24, CCR
F. 2016 CALIFORNIA FIRE CODE (CMC) PART 9, TITLE T24, CCR
G. 2016 CALIFORNIA GREEN BUILDING STANDARDS (CGBSC) PART 11, TITLE T24, CCR

3. WORKMANSHIP:
ALL WORKMANSHIP SHALL BE DONE IN A NEAT AND ORDERLY MANNER ACCORDING TO THE BEST TRADE PRACTICE BY THOSE SKILLED IN THE PARTICULAR TRADE. EQUIPMENT, DUCTS GRILLES, ETC., SHALL BE PLUMB, LEVEL, SQUARE OR CENTERED ETC., TO GIVE A NEAT AND PLEASING APPEARANCE. ALL EQUIPMENT SHALL BE INSTALLED IN STRICT COMPLIANCE WITH MANUFACTURER'S RECOMMENDATIONS.

4. AVAILABLE POWER:
AIR CONDITIONING CONTRACTOR SHALL CONFIRM ALL SYSTEMS VOLTAGES BEFORE BIDDING OR ORDERING EQUIPMENT AND ALLOW FOR BUCK & BOOST TRANSFORMERS IF REQUIRED.

5. AIR BALANCE:
THE AIR DISTRIBUTION SYSTEM SHALL BE BALANCED TO DELIVER SPECIFIED AIR QUANTITIES FOLLOWING THE PROCEDURES OF THE LATEST EDITION OF THE SMACNA PUBLICATION PROCEDURAL STANDARDS FOR TESTING ADJUSTING & BALANCING OF ENVIRONMENTAL SYSTEMS. CONTRACTOR SHALL PROVIDE ACCESSIBLE & ADJUSTABLE VOLUME DAMPERS AS REQUIRED TO BALANCE THE SYSTEMS AND MAINTAIN A NOISE CRITERIA LEVEL NOT TO EXCEED 30.

6. PERMITS AND UTILITY SERVICE FEES:
CONTRACTOR TO ARRANGE AND PAY FOR ALL PERMITS, INSPECTIONS AND SERVICE CHARGES REQUIRED IN THE INSTALLATION OF THE WORK.

7. EXISTING INFORMATION: NONE
LOCATION, SIZE, MATERIAL, ETC. OF EXISTING SYSTEMS, ETC., IS PROVIDED FROM SOURCES DEEMED TO BE RELIABLE BUT IS NOT GUARANTEED. CONTRACTOR TO FIELD VERIFY ALL DATA BEFORE PROCEEDING WITH ANY WORK. NO EXTRA COST WILL BE ALLOWED FOR CONDITIONS NOT AS SHOWN.

8. ACCURACY:
PLANS ARE DIAGRAMMATIC. CONTRACTOR SHALL CONFIRM ALL DIMENSIONS AND LOCATIONS OF AC UNITS, EXHAUST FANS, WALLS, PARTITIONS ETC., AGAINST ARCHITECTURAL AND STRUCTURAL DESIGN PLANS FOR LOCATION CONSISTENCY & ACCURACY PRIOR TO COMMENCING WITH ANY WORK.

9. PAINTING:
PAINT ALL VISIBLE INTERIOR PORTIONS OF TERMINAL DEVICES & CANS WITH FLAT BLACK ENAMEL PAINT.

10. SIZES:
DUCTWORK SIZES ON PLANS ARE INSIDE NET FREE AREA.

11. MECHANICAL EQUIPMENT:
ALL EQUIPMENT SHALL BE LISTED BY AN APPROVED TESTING AGENCY AND INSTALLED IN ACCORDANCE WITH ITS INSTALLATION INSTRUCTIONS AND LISTING.

12. TOILET EXHAUST FANS TO MAINTAIN SAME CFM, SWITCH WITH LIGHTS, AND REMAIN ON 10 MIN ONCE UNOCCUPIED
13. SUPPLY AND RETURN AIR DUCTS SHALL BE INSULATED AT A MINIMUM OF R-8
14. DOMESTIC RANGE VENTS TO BE SMOOTH METALLIC INTERIOR SURFACE
15. ENVIRONMENTAL AIR VENT SHALL TERMINATE MIN 3' FROM PROPERTY LINE OR OPENINGS INTO THE BUILDING,AND 10' FROM FORCED AIR INLET
16. CLOTHES DRYER VENT SHALL NOT EXCEED 14' IN OVERALL LENGTH WITH A MAXIMUM OF 2 90 DEGREE ELBOWS
17. AIR QUALITY VENTING FANS SHALL EXHAUST SHALL RUN CONTINUOUSLY AND NOT BE TIED TO A HUMIDITY CONTROL SENSOR, SEPERATE SWITCH CONTROL AND MARKED "FAN" NOT TO BE TURNED OFF

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LICENSED ARCHITECT
KENNETH K. KAESTNER JR.
C-13523
Expires
31 JAN. 2019
STATE OF CALIFORNIA

CERES HOUSING
WHITMORE AVE.
, CERES CA

PROPOSED DRAWINGS FOR:

REVISIONS

ENV HEALTH REVIEW	1- 08/25/2017
PERMIT SUBMITTAL	2-09/11/2017
PLN CHK 1	3-08/20/2018

MECHANICAL PLAN

ISSUE DATE: 09.11.2017

PROJECT #: BOBS

M1

File: C:_Date Drive\2018 projects\ceres housing 2018\unit a project file\18 03 Mechanical Plans unit a.dwg Date: 5/25/2015

GENERAL INFORMATION					
01	Project Name	Tuscany Village-Unit A			
02	Calculation Description	Title 24 Analysis			
03	Project Location	1578 E. Whitmore Ave.			
04	City	Ceres	05	Standards Version	Compliance 2017
06	Zip Code	95307	07	Compliance Manager Version	BEMCmpMgr 2016.3.1 (1149)
08	Climate Zone	CZ12	09	Software Version	EnergyPro 7.2
10	Building Type	Single Family	11	Front Orientation (deg/Cardinal)	Cardinal
12	Project Scope	Newly Constructed	13	Number of Dwelling Units	1
14	Total Cond. Floor Area (ft^2)	1644	15	Number of Zones	2
16	Slab Area (ft^2)	663	17	Number of Stories	2
18	Addition Cond. Floor Area(ft^2)	n/a	19	Natural Gas Available	Yes
20	Addition Slab Area (ft^2)	n/a	21	Glazing Percentage (%)	15.0%

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 SUMMARY

Energy Use (kTDV/ft^2-yr)	Standard Design	Proposed Design	Compliance Margin	Percent Improvement
Space Heating	25.79	22.05	3.74	14.5%
Space Cooling	20.65	25.78	-5.13	-24.8%
IAQ Ventilation	1.36	1.36	0.00	0.0%
Water Heating	10.70	9.23	1.47	13.7%
PV Credit	----	0.00	0.00	----
North Facing Compliance Total	**58.50**	**58.42**	**0.08**	**0.1%**
Space Heating	25.79	22.66	3.13	12.1%
Space Cooling	20.65	20.73	-0.08	-0.4%
IAQ Ventilation	1.36	1.36	0.00	0.0%
Water Heating	10.70	9.23	1.47	13.7%
PV Credit	----	0.00	0.00	----
East Facing Compliance Total	**58.50**	**53.98**	**4.52**	**7.7%**
Space Heating	25.79	22.48	3.31	12.8%
Space Cooling	20.65	24.15	-3.50	-16.9%
IAQ Ventilation	1.36	1.36	0.00	0.0%
Water Heating	10.70	9.23	1.47	13.7%
PV Credit	----	0.00	0.00	----
South Facing Compliance Total	**58.50**	**57.22**	**1.28**	**2.2%**
Space Heating	25.79	21.45	4.34	16.8%
Space Cooling	20.65	21.51	-0.86	-4.2%
IAQ Ventilation	1.36	1.36	0.00	0.0%
Water Heating	10.70	9.23	1.47	13.7%
PV Credit	----	0.00	0.00	----
West Facing Compliance Total	**58.50**	**53.55**	**4.95**	**8.5%**

ENERGY DESIGN RATING

Energy Design Rating (EDR) is an alternate way to express the energy performance of a building using a scoring system where 100 represents the energy performance of the Residential Energy Services (RESNET) reference home characterization of the 2006 International Energy Conservation Code (IECC) with California modeling assumptions. A score of zero represents the energy performance of a building that combines high levels of energy efficiency with renewable generation to"zero out" its TDV energy. Because EDR includes consideration of components not regulated by Title 24, Part 6 (such as domestic appliances and consumer electronics), it is not used to show compliance with Part 6 but may instead be used by local jurisdictions pursuing local ordinances under Title 24, Part 11 (CALGreen).
As a Standard Design building under the 2016 Building Energy Efficiency Standards is significantly more efficient than the baseline EDR building, the EDR of the Standard Design building is provided for Information. Similarly, the EDR score of the Proposed Design is provided separately from the EDR value of installed PV so that the effects of efficiency and renewable energy can both be seen

	EDR of Standard Efficiency	EDR of Proposed Efficiency	EDR Value of Proposed PV + Battery	Final Proposed EDR
North	49.1	49.0	0.0	49.0
East	49.1	47.0	0.0	47.0
South	49.1	48.5	0.0	48.5
West	49.1	46.8	0.0	46.8

☐	Design meets Tier 1 requirement of 15% or greater code compliance margin (CALGreen A4.203.1.2.1) and QII verification prerequisite.
☐	Design meets Tier 2 requirement of 30% or greater code compliance margin (CALGreen A4.203.1.2.2) and QII verification prerequisite.
☐	Design meets Zero Net Energy (ZNE) Design Designation requirement for Single Family in climate zone CZ12 (Sacramento) (CALGreen A4.203.1.2.3) including on-site photovoltaic (PV) renewable energy generation sufficient to achieve a Final Energy Design Rating (EDR) of zero or less. The PV System must be verified.

Notes:
- **Excess PV Generation EDR Credit: Bypassing PV size limit may violate Net Energy Metering (NEM) rules**

REQUIRED SPECIAL FEATURES

The following are features that must be installed as condition for meeting the modeled energy performance for this computer analysis.
- **Whole house fan**
- **Window overhangs and/or fins**

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 components tables below.

Building-level Verifications:
- **IAQ mechanical ventilation**

Cooling System Verifications:
- **Minimum Airflow**
- **Verified EER**
- **Fan Efficacy Watts/CFM**

HVAC Distribution System Verifications:
- **Duct Sealing**

Domestic Hot Water System Verifications:
- **-- None --**

BUILDING - FEATURES INFORMATION

01	02	03	04	05	06	07
Project Name	Conditioned Floor Area (ft^2)	Number of Dwelling Units	Number of Bedrooms	Number of Zones	Number of Ventilation Cooling Systems	Number of Water Heating Systems
Tuscany Village-Unit A	1644	1	3	2	1	1

ZONE INFORMATION

01	02	03	04	05	06	07
Zone Name	Zone Type	HVAC System Name	Zone Floor Area (ft^2)	Avg. Ceiling Height	Water Heating System 1	Water Heating System 2
1st Floor	Conditioned	Res HVAC1	663	9	DHW Sys 1	n/a
2nd Floor	Conditioned	Res HVAC1	981	8	DHW Sys 1	n/a

OPAQUE SURFACES

01	02	03	04	05	06	07	08
Name	Zone	Construction	Azimuth	Orientation	Gross Area (ft^2)	Window & Door Area (ft^2)	Tilt (deg)
Front Wall-315	1st Floor	R-19 Wall + R-5	135	- specify -	37	16.6999	90
Front Wall	1st Floor	R-19 Wall + R-5	180	Back	90	16.6999	90
Front Wall-45	1st Floor	R-19 Wall + R-5	225	- specify -	37	16.6999	90
Left Wall	1st Floor	R-19 Wall + R-5	270	Right	465	77	90
Back Wall-135	1st Floor	R-19 Wall + R-5	0	Front	42	20	90
Back Wall	1st Floor	R-19 Wall + R-5	0	Front	170	0	90
Right Wall	1st Floor	R-19 Wall + R-5	90	Left	103	20	90
Wall to Garage	1st Floor>>__Garage__	R-19 Wall	n/a	n/a	452	17.8	n/a
R-38 Roof	1st Floor	R-38 HP Attic Option B	n/a	n/a	214	n/a	n/a
Front Wall 2	2nd Floor	R-19 Wall + R-5	180	Back	197	17	90
Left Wall 2	2nd Floor	R-19 Wall + R-5	270	Right	335	31	90
BackWall	2nd Floor	R-19 Wall + R-5	0	Front	197	36	90
Right Wall 2	2nd Floor	R-19 Wall + R-5	90	Left	335	55.995	90
R-38 Roof 2	2nd Floor	R-38 HP Attic Option B	n/a	n/a	981	n/a	n/a
Raised Floor	2nd Floor	R-19 Floor No Crawlspace	n/a	n/a	530	n/a	n/a
Interior Floor	2nd Floor>>1st Floor	R-13 Floor No Crawlspace	n/a	n/a	981	n/a	n/a
GarageWallFront	__Garage__	Garage Ext Wall	180	Back	94	63	90
GarageWalBack	__Garage__	Garage Ext Wall	0	Front	43	0	90
GarageWallRight	__Garage__	Garage Ext Wall	90	Left	315	0	90
GarageRoof	__Garage__	R-0 Roof Attic	n/a	n/a	130	n/a	n/a

ATTIC

01	02	03	04	05	06	07	08
Name	Construction	Type	Roof Rise	Roof Reflectance	Roof Emittance	Radiant Barrier	Cool Roof
Attic 1st Floor	Attic Roof1st Floor	Ventilated	6	0.1	0.85	No	No
Attic 2nd Floor	Attic Roof2nd Floor	Ventilated	6	0.1	0.85	No	No
Attic __Garage__	Attic Garage Roof Cons	Ventilated	6	0.1	0.85	No	No

FENESTRATION / GLAZING

01	02	03	04	05	06	07	08	09	10
Name	Type	Surface (Orientation-Azimuth)	Width (ft)	Height (ft)	Multiplier	Area (ft^2)	U-factor	SHGC	Exterior Shading
W1	Window	Front Wall-315 (- specify --135)	5.0	3.3	1.003	16.7	0.30	0.25	Insect Screen (default)
W1 2	Window	Front Wall (Back-180)	5.0	3.3	1.003	16.7	0.30	0.25	Insect Screen (default)
W1 3	Window	Front Wall-45 (- specify --225)	5.0	3.3	1.003	16.7	0.30	0.25	Insect Screen (default)
W2	Window	Left Wall (Right-270)	4.0	4.5	1	18.0	0.30	0.25	Insect Screen (default)
W2 2	Window	Left Wall (Right-270)	4.0	4.5	1	18.0	0.30	0.25	Insect Screen (default)
W3	Window	Left Wall (Right-270)	----	----	1	12.0	0.30	0.25	Insect Screen (default)
W4	Window	Left Wall (Right-270)	----	----	1	9.0	0.30	0.25	Insect Screen (default)
W3 2	Window	Front Wall 2 (Back-180)	----	----	1	12.0	0.30	0.25	Insect Screen (default)
W5	Window	Front Wall 2 (Back-180)	2.0	2.5	1	5.0	0.30	0.25	Insect Screen (default)
W5 2	Window	Left Wall 2 (Right-270)	2.0	2.5	1	5.0	0.30	0.25	Insect Screen (default)
W5 3	Window	Left Wall 2 (Right-270)	2.0	2.5	1	5.0	0.30	0.25	Insect Screen (default)
W4 2	Window	Left Wall 2 (Right-270)	2.0	4.5	1	9.0	0.30	0.25	Insect Screen (default)
W3 3	Window	Left Wall 2 (Right-270)	4.0	3.0	1	12.0	0.30	0.25	Insect Screen (default)
W2 3	Window	BackWall (Front-0)	4.0	4.5	1	18.0	0.30	0.25	Insect Screen (default)
W2 4	Window	BackWall (Front-0)	4.0	4.5	1	18.0	0.30	0.25	Insect Screen (default)
W3 4	Window	Right Wall 2 (Left-90)	4.0	3.0	1	12.0	0.30	0.25	Insect Screen (default)
W3 5	Window	Right Wall 2 (Left-90)	4.0	3.0	1	12.0	0.30	0.25	Insect Screen (default)
W3 6	Window	Right Wall 2 (Left-90)	4.0	3.0	1	12.0	0.30	0.25	Insect Screen (default)
W6	Window	Right Wall 2 (Left-90)	5.0	3.0	1.333	20.0	0.30	0.25	Insect Screen (default)

OPAQUE DOORS

01	02	03	04
Name	Side of Building	Area (ft^2)	U-factor
104A	Left Wall	20.0	0.50
104B	Back Wall-135	20.0	0.50
104A 2	Right Wall	20.0	0.50
106B	Wall to Garage	17.8	0.50
106A	GarageWallFront	63.0	1.00

OVERHANGS AND FINS

01	02	03	04	05	06	07	08	09	10	11	12	13	14
	Overhang					Left Fin				Right Fin			
Window	Depth	Dist Up	Left Extent	Right Extent	Flap Ht.	Depth	Top Up	Dist L	Bot Up	Depth	Top Up	Dist R	Bot Up
W1	1	2	0	0	0	0	0	0	0	0	0	0	0
W1 2	1	2	0	0	0	0	0	0	0	0	0	0	0
W1 3	1	2	0	0	0	0	0	0	0	0	0	0	0
W2	1	0.1	3.75	4	0	0	0	0	0	0	0	0	0
W2 2	1	0.1	1	3.75	0	0	0	0	0	0	0	0	0
W5	1	0.1	4	3.5	0	0	0	0	0	0	0	0	0
W5 2	1	0.1	2	4	0	0	0	0	0	0	0	0	0
W5 3	1	0.1	1.5	2	0	0	0	0	0	0	0	0	0
W4 2	1	0.1	1	1.5	0	0	0	0	0	0	0	0	0
W3 3	1	0.1	4	1	0	0	0	0	0	0	0	0	0
W2 3	1	0.1	4	4	0	0	0	0	0	0	0	0	0
W2 4	1	0.1	4	4	0	0	0	0	0	0	0	0	0
W3 4	1	0.1	3.5	2	0	0	0	0	0	0	0	0	0
W3 5	1	0.1	4	3.5	0	0	0	0	0	0	0	0	0
W3 6	1	0.1	3	4	0	0	0	0	0	0	0	0	0
W6	1	0.1	2	4	0	0	0	0	0	0	0	0	0

OPAQUE SURFACE CONSTRUCTIONS

01	02	03	04	05	06	07
Construction Name	Surface Type	Construction Type	Framing	Total Cavity R-value	Winter Design U-factor	Assembly Layers
Garage Ext Wall	Exterior Walls	Wood Framed Wall	2x4 @ 16 in. O.C.	none	0.361	• *Inside Finish: Gypsum Board* • *Cavity / Frame: no insul. / 2x4* • *Exterior Finish: 3 Coat Stucco*
R-0 Roof Attic	Ceilings (below attic)	Wood Framed Ceiling	2x4 @ 24 in. O.C.	none	0.481	• *Inside Finish: Gypsum Board* • *Cavity / Frame: no insul. / 2x4*
Attic Garage Roof Cons	Attic Roofs	Wood Framed Ceiling	2x4 Top Chord of Roof Truss @ 24 in. O.C.	none	0.644	• *Cavity / Frame: no insul. / 2x4 Top Chrd* • *Roof Deck: Wood Siding/sheathing/decking* • *Roofing: Light Roof (Asphalt Shingle)*
Attic Roof1st Floor	Attic Roofs	Wood Framed Ceiling	2x4 Top Chord of Roof Truss @ 24 in. O.C.	R 13	0.077	• *Around Roof Joists: R-0.0 insul.* • *Cavity / Frame: R-13.0 / 2x4 Top Chrd* • *Roof Deck: Wood Siding/sheathing/decking* • *Roofing: 15 PSF (Heavy Ballast or Pavers)*
R-19 Wall + R-5	Exterior Walls	Wood Framed Wall	2x6 @ 16 in. O.C.	R 19 in 5-1/2 in. cavity (R-18)	0.051	• *Inside Finish: Gypsum Board* • *Cavity / Frame: R-19 in 5-1/2 in. (R-18) / 2x6* • *Sheathing / Insulation: R5 Sheathing* • *Exterior Finish: Synthetic Stucco*
R-19 Wall	Interior Walls	Wood Framed Wall	2x6 @ 16 in. O.C.	R 19 in 5-1/2 in. cavity (R-18)	0.069	• *Inside Finish: Gypsum Board* • *Cavity / Frame: R-19 in 5-1/2 in. (R-18) / 2x6* • *Other Side Finish: Gypsum Board*
R-38 HP Attic Option B	Ceilings (below attic)	Wood Framed Ceiling	2x4 @ 24 in. O.C.	R 38	0.025	• *Inside Finish: Gypsum Board* • *Cavity / Frame: R-9.1 / 2x4* • *Over Ceiling Joists: R-28.9 insul.*
Attic Roof2nd Floor	Attic Roofs	Wood Framed Ceiling	2x4 Top Chord of Roof Truss @ 24 in. O.C.	R 13	0.077	• *Around Roof Joists: R-0.0 insul.* • *Cavity / Frame: R-13.0 / 2x4 Top Chrd* • *Roof Deck: Wood Siding/sheathing/decking* • *Roofing: 15 PSF (Heavy Ballast or Pavers)*
R-13 Floor No Crawlspace	Interior Floors	Wood Framed Floor	2x6 @ 16 in. O.C.	R 13	0.060	• *Floor Surface: Carpeted* • *Floor Deck: Wood Siding/sheathing/decking* • *Cavity / Frame: R-13 / 2x6* • *Ceiling Below Finish: Gypsum Board*
R-19 Floor No Crawlspace	Exterior Floors	Wood Framed Floor	2x12 @ 16 in. O.C.	R 19	0.046	• *Floor Surface: Carpeted* • *Floor Deck: Wood Siding/sheathing/decking* • *Cavity / Frame: R-19 / 2x12*

SLAB FLOORS

01	02	03	04	05	06	07
Name	Zone	Area (ft^2)	Perimeter (ft)	Edge Insul. R-value & Depth	Carpeted Fraction	Heated
Covered Slab	1st Floor	663	106	None	0.8	No
GarageSlab	__Garage__	461	57	None	0	No

BUILDING ENVELOPE - HERS VERIFICATION

01	02	03	04
Quality Insulation Installation (QII)	Quality Installation of Spray Foam Insulation	Building Envelope Air Leakage	CFM50
Not Required	Not Required	Not Required	n/a

WATER HEATING SYSTEMS

01	02	03	04	05	06
Name	System Type	Distribution Type	Water Heater	Number of Heaters	Solar Fraction (%)
DHW Sys 1	DHW	Standard	DHW Heater 1 (1)	1	.0%

WATER HEATERS

01	02	03	04	05	06	07	08	09	10	11	12
Name	Heater Element Type	Tank Type	Number of Units	Tank Volume (gal)	Uniform Energy Factor / Energy Factor / Efficiency	Input Rating / Pilot / Thermal Efficiency	Tank Insulation R-value (Int/Ext)	Standby Loss / Recovery Eff	First Hour Rating / Flow Rate	NEEA Heat Pump Brand / Model / Other	Tank Location or Ambient Condition
DHW Heater 1	Gas	Small Instantaneous	1	0	0.95 EF	<= 200 kBtu/hr	R-0/R-0	0	n/a	n/a	n/a

SPACE CONDITIONING SYSTEMS

01	02	03	04	05	06
SC Sys Name	System Type	Heating Unit Name	Cooling Unit Name	Fan Name	Distribution Name
Res HVAC1	Other Heating and Cooling System	Heating Component 1	Cooling Component 1	HVAC Fan 1	Air Distribution System 1

HVAC - HEATING UNIT TYPES

01	02	03	04
Name	System Type	Number of Units	Efficiency
Heating Component 1	CntrlFurnace	1	95 AFUE

HVAC - COOLING UNIT TYPES

01	02	03	04	05	06	07	08
			Efficiency				
Name	System Type	Number of Units	EER	SEER	Zonally Controlled	Compressor Type	HERS Verification
Cooling Component 1	SplitAirCond	1	12.2	14	Not Zonal	Single Speed	Cooling Component 1-hers-cool

HVAC COOLING - HERS VERIFICATION

01	02	03	04	05	06
Name	Verified Airflow	Airflow Target	Verified EER	Verified SEER	Verified Refrigerant Charge
Cooling Component 1-hers-cool	Required	350	Required	Not Required	Not Required

HVAC - DISTRIBUTION SYSTEMS

01	02	03	04	05	06	07
Name	Type	Duct Leakage	Insulation R-value	Duct Location	Bypass Duct	HERS Verification
Air Distribution System 1	DuctsAttic	Sealed and tested	8	Attic	None	Air Distribution System 1-hers-dist

HVAC DISTRIBUTION - HERS VERIFICATION

01	02	03	04	05	06	07	08
Name	Duct Leakage Verification	Duct Leakage Target (%)	Verified Duct Location	Verified Duct Design	Buried Ducts	Deeply Buried Ducts	Low-leakage Air Handler
Air Distribution System 1-hers-dist	Required	5.0	Not Required	Not Required	Not Required	Not Required	n/a

HVAC - FAN SYSTEMS

01	02	03	04
Name	Type	Fan Power (Watts/CFM)	HERS Verification
HVAC Fan 1	Single Speed PSC Furnace Fan	0.58	HVAC Fan 1-hers-fan

HVAC FAN SYSTEMS - HERS VERIFICATION

01	02	03
Name	Verified Fan Watt Draw	Required Fan Efficiency (Watts/CFM)
HVAC Fan 1-hers-fan	Required	0.58

IAQ (Indoor Air Quality) FANS

01	02	03	04	05	06
Dwelling Unit	IAQ CFM	IAQ Watts/CFM	IAQ Fan Type	IAQ Recovery Effectiveness(%)	HERS Verification
SFam IAQVentRpt	46	0.25	Default	0	Required

COOLING VENTILATION

01	02	03	04	05	06
Name	Airflow Rate (CFM/ft2)	Cooling Vent CFM	Cooling Vent Watts/CFM	Total Watts	Number of Fans
WH Fan 1	1.5	2466	0.00405515	10	1

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT

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

Documentation Author Name: Matt Billy	Documentation Author Signature: *Matt Billy*
Company: Matt Billy T-24 Energy Calcs	Signature Date: 2018-09-11 12:22:51
Address: 1412 Seneca Place	CEA/HERS Certification Identification (If applicable): NA
City/State/Zip: Modesto, CA 95358	Phone: 209-524-1623

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: Justin Smith	Responsible Designer Signature: *Justin Smith*
Company: JKS Design	Date Signed: 2018-09-11 14:01:50
Address: 628 codington way	License: NA
City/State/Zip: modesto, CA 95357	Phone: 209-614-3725

Digitally signed by CalCERTS. This digital signature is provided in order to secure the content of this registered document, and in no way implies Registration Provider responsibility for the accuracy of the information.

Easy to Verify at CalCERTS.com

MB T-24
Matt Billy T-24 Energy Calcs
1412 Seneca Place
Modesto, Ca 95358
(209) 524-1623
matt@mbillyt24.com

JKS Design
Justin Smith
628 Codington Way
Modesto, CA 95357
(209) 614-3725
www.jksdesign14@gmail.com

Tuscany Village-Unit A
1578 E. Whitmore Ave
Ceres, CA 95307

REVISIONS

no.	date	remarks
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AUTHOR:	MB
DATE:	3/6/18
JOB NO:	180205

SHEET TITLE

ENERGY CALCULATIONS

SHEET

EN-1

17188 CHATSWORTH

A 69-unit Affordable Multifamily Development in Granada Hills, CA

KH EQUITIES

bmi developments inc

Priority CAPITAL ADVISORY

17188
CHATSWORTH

Project Summary

Project Name	17188 Chatsworth
Address	17188 Chatsworth St, Granada Hills, CA 91344
Parcel Number	2695-003-001, 002
Project Type	Ground-Up Affordable Multifamily Development
Construction Type	Ground level: Type 1A; Levels 2-6: Type 3A
Unit Count	69
Stories	6
Gross Building SF	44,249 SF
Net Rentable SF	34,607 SF
Land Area	0.30 Acres | 12,913 SF
General Contractor	BMI Developments
Construction Start	September 2024
Construction End	March 2026

Investment Highlights

- 17188 Chatsworth is a 69-unit, 100% affordable multifamily development in Granada Hills, California. The 6-story Property will feature 5 levels of apartments over 1 level of parking at grade and will comprise 34,600 rentable square feet. Granada Hills is a suburban neighborhood located 30 minutes outside of Los Angeles that possesses attractive multifamily fundamentals, a strong employment base, and a vibrant community atmosphere.
- The Sponsor acquired the land for $1.35 million in May 2023. Since acquisition, the Sponsor has completed the necessary entitlement processes for the 69-unit multifamily development and will receive Ready to Issue ("RTI") permits in September 2024.
- The Property will feature a unit mix catering to a wide demographic, including 24 studios (416 SF), 15 1-bedroom units (563 SF), and 30 2-bedroom units (539 SF). Units will feature balconies, contemporary finishes, and stainless-steel appliances. Property amenities will include a rooftop deck, open-air courtyard, fitness room, mail room, on-site laundry, EV charging, and 51 bike parking spaces.
- Located in the San Fernando Valley, the Property will benefit from the area's diverse employment base anchored by the entertainment, aerospace, healthcare, and education industries. Most notably, major entertainment companies, including Disney, Warner Bros., Universal Studios, and DreamWorks Animation are all headquartered just 20 minutes from the Property. Additionally, the Property is proximate to multiple major hospitals, including the Providence Holy Cross Medical Center (8 minutes), Northridge Medical Center (10 minutes), and the Valley Presbyterian Center (12 minutes).
- KH Equities is a privately held company focused on investing and operating housing communities throughout the US. KH Equities brings its expertise in development, operations, and finance to deliver affordable housing through creativity, innovation, and public-private partnerships. The firm boasts a current portfolio of 860 units, with a total capitalization of $182 million and an estimated market value of $214 million.
- BMI Developments is a development and commercial construction firm based in Los Angeles. Their executive team has more than 60 years of experience combined and offers a range of products in both the private and public sectors. BMI Developments prides itself on delivering projects on time and on budget through innovative ideas and detailed planning. BMI Developments has an extensive background in all types of construction projects and meets their clients' needs and requirements through overall planning, coordination, and control of the project from inception to completion.

Market Overview

- Granada Hills is home to over 55,000 residents and offers a central location in the San Fernando Valley with proximity to the best amenities the area has to offer. The neighborhood provides residents with a high quality of life and is home to Los Angeles's second-largest public park, O'Melveny Park, which is located just 6 minutes from the Property and contains 675 acres of open space with numerous bike trails, hiking routes, and dog parks.

- San Fernando Valley is home to over 1.8 million residents and features multiple employment hubs. Most notably, Burbank and Studio City are the epicenters of the entertainment industry, boasting over 1,000 media and entertainment companies. This concentration of entertainment giants significantly boosts the local economy, generating billions of dollars in revenue annually and creating more than 200,000 direct and indirect jobs. Additionally, the area is home to multiple iconic theme parks, including Universal Studios Hollywood and the Warner Bros. Studio Tour, which attract millions of visitors annually.

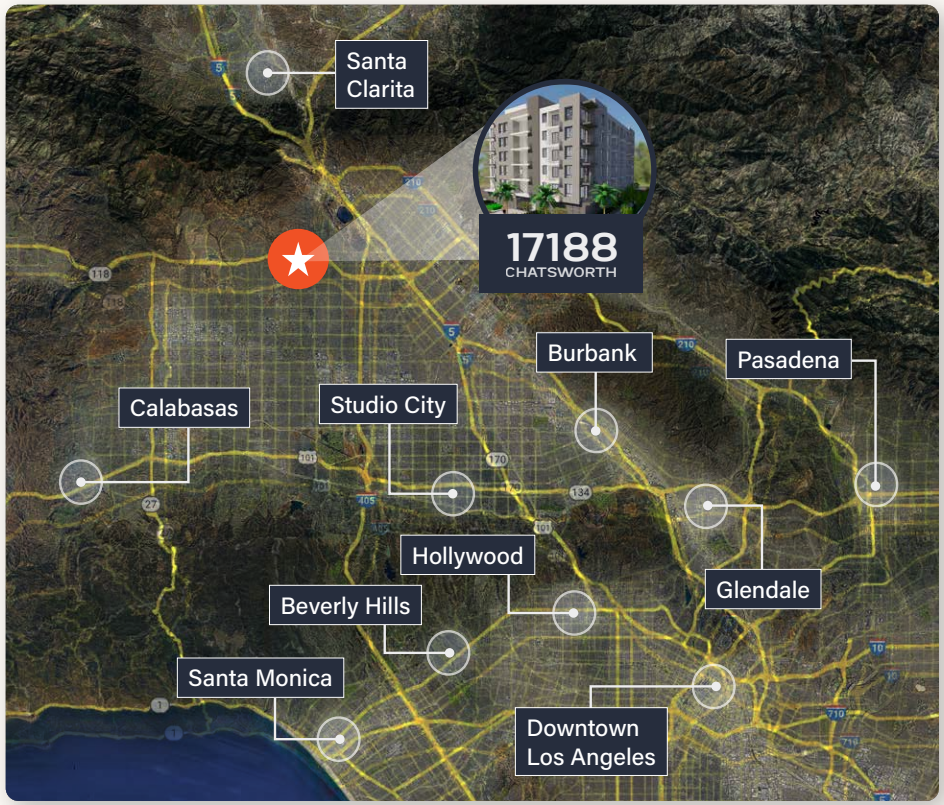
- California State University, Northridge (CSUN) is a public university located just 6 minutes from the Property. CSUN boasts an enrollment of approximately 38,000 students, making it one of the largest campuses in the California State University system. The university offers a wide range of undergraduate and graduate programs across various fields and contributes significantly to the local economy, with an estimated annual economic impact of over $1.9 billion. The institution also supports nearly 11,700 jobs, solidifying itself as a major economic driver in the San Fernando Valley.

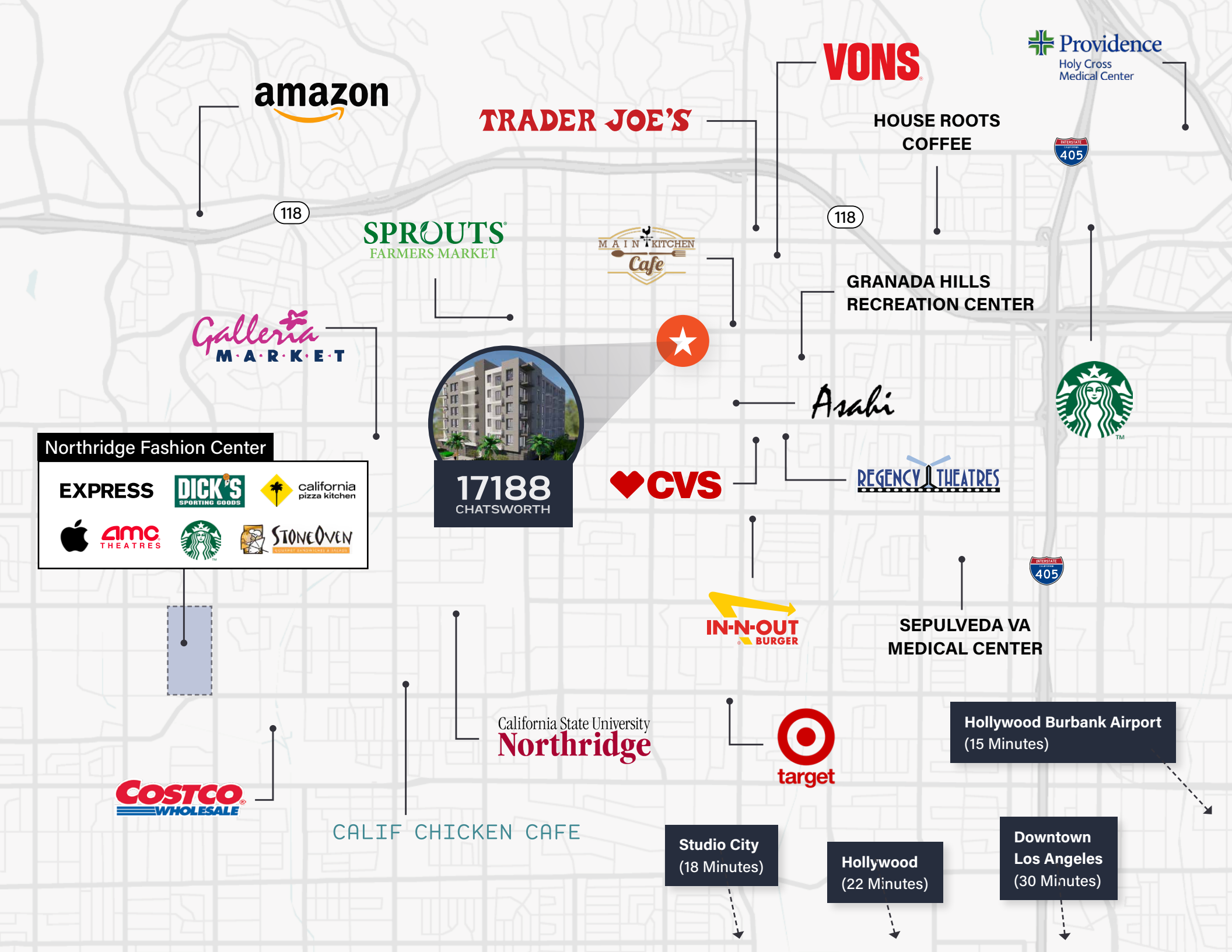
- The submarket boasts strong multifamily fundamentals, including a 4.2% vacancy rate (1.0% lower than the greater metro), a 1.2% YOY rent growth (0.6% higher than the greater metro), and a median household income of $101,000. Additionally, the submarket is in strong need of new multifamily construction, as there have been just 54 units delivered in the past 2 years and the current supply predominantly consists of vintage properties.

Nearby Major Employers

Providence Holy Cross Medical Center

California State University Northridge




amazon
TRADER JOE'S
VONS
Providence
Holy Cross
Medical Center
HOUSE ROOTS
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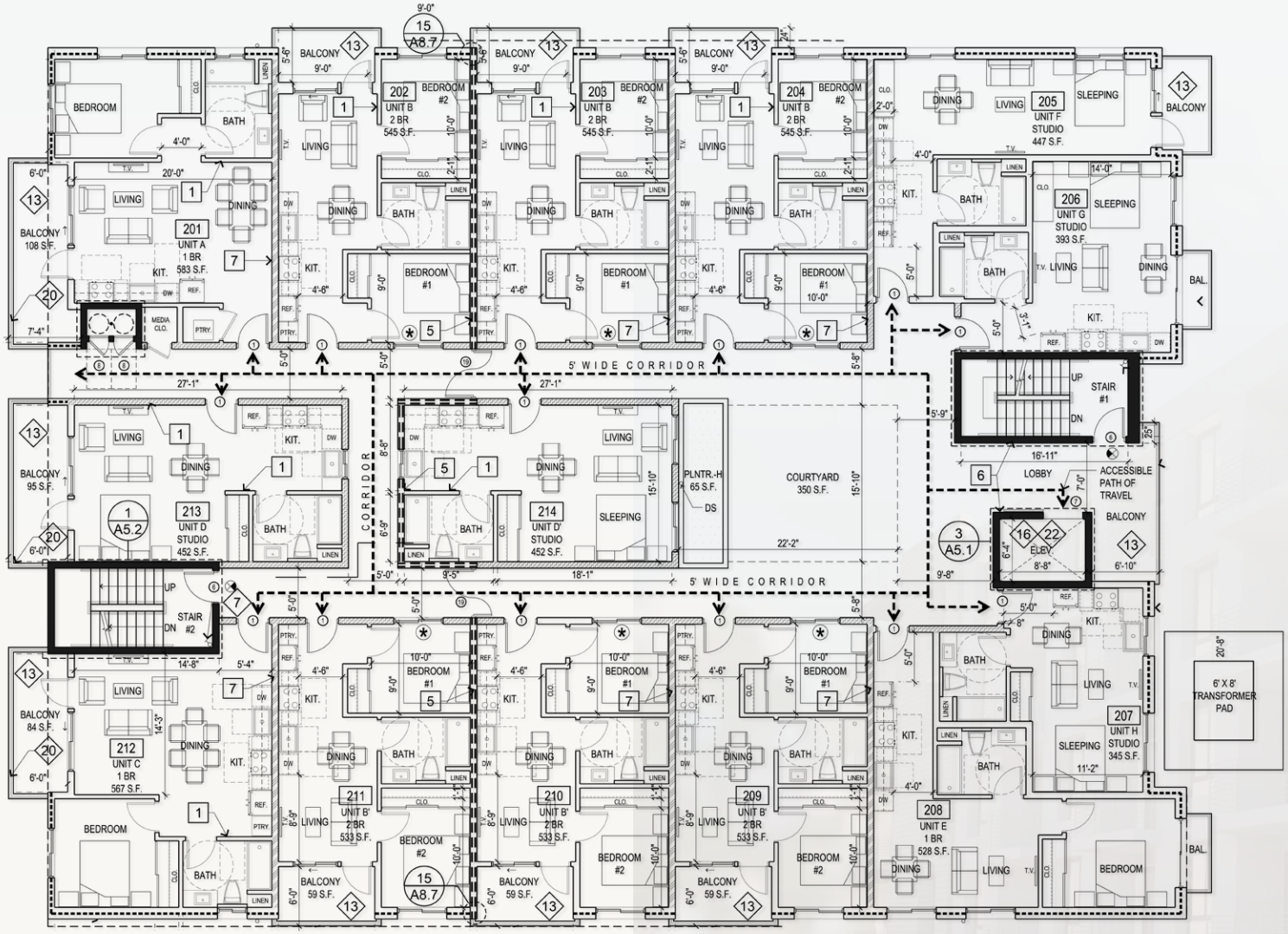
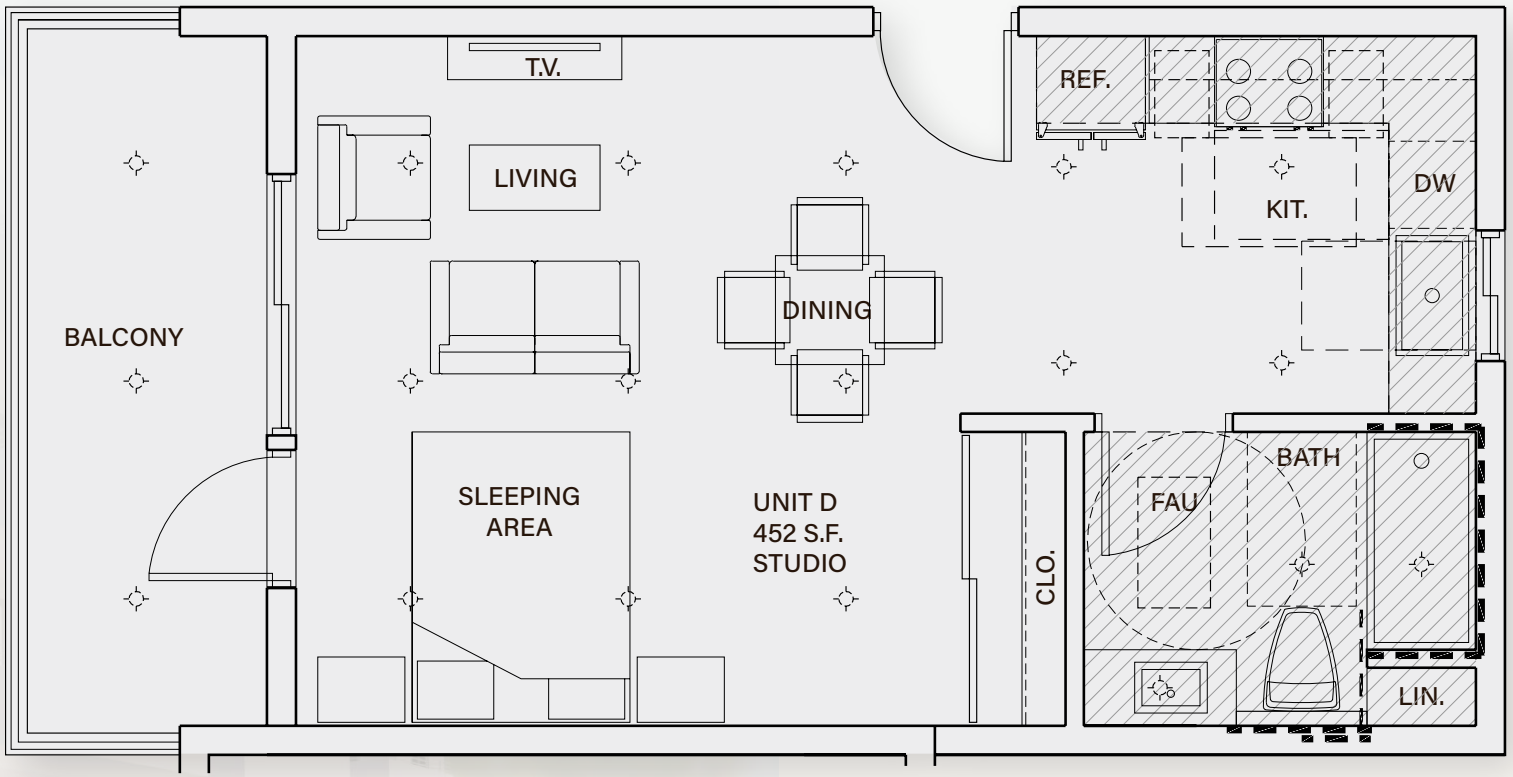
405
118
118
SPROUTS
FARMERS MARKET
MAIN KITCHEN
Cafe
GRANADA HILLS
RECREATION CENTER
Galleria
MARKET
17188
CHATSWORTH
Asahi
Northridge Fashion Center
EXPRESS
DICK'S
SPORTING GOODS
california
pizza kitchen
amc
THEATRES
StoneOven
CVS
REGENCY THEATRES
IN-N-OUT
BURGER
405
SEPULVEDA VA
MEDICAL CENTER
California State University
Northridge
target
COSTCO
WHOLESALE
CALIF CHICKEN CAFE
Hollywood Burbank Airport
(15 Minutes)
Studio City
(18 Minutes)
Hollywood
(22 Minutes)
Downtown
Los Angeles
(30 Minutes)

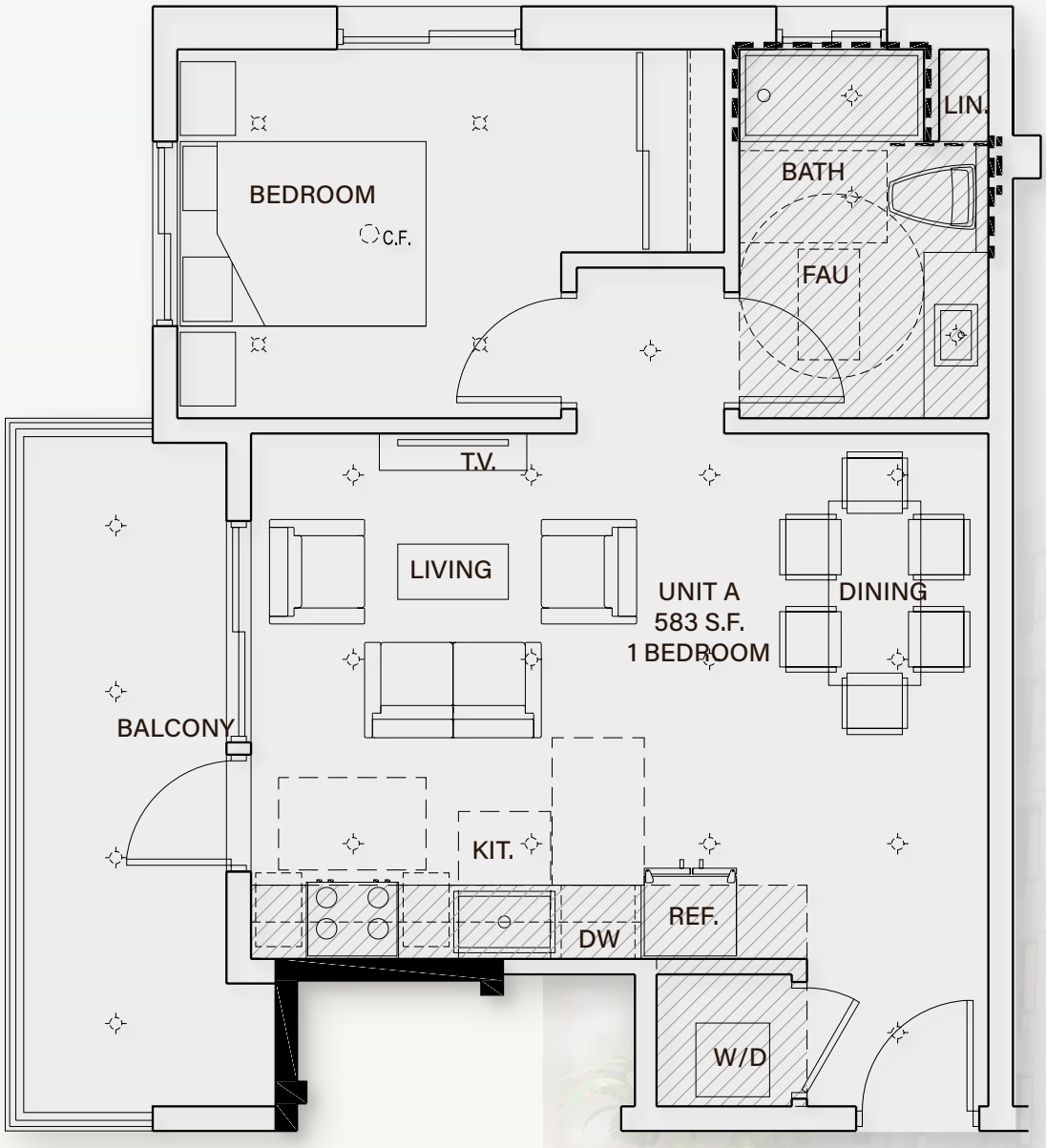
Floors 2-6


201 UNIT A 1 BR 583 S.F.
202 UNIT B 2 BR 545 S.F.
203 UNIT B 2 BR 545 S.F.
204 UNIT B 2 BR 545 S.F.
205 UNIT F STUDIO 447 S.F.
206 UNIT G STUDIO 393 S.F.
207 UNIT H STUDIO 345 S.F.
208 UNIT E 1 BR 528 S.F.
209 UNIT B' 2 BR 533 S.F.
210 UNIT B' 2 BR 533 S.F.
211 UNIT B' 2 BR 533 S.F.
212 UNIT C 1 BR 567 S.F.
213 UNIT D STUDIO 452 S.F.
214 UNIT D' STUDIO 452 S.F.
5' WIDE CORRIDOR
CORRIDOR
COURTYARD 350 S.F.
PLNTR.-H 65 S.F.
LOBBY
ACCESSIBLE PATH OF TRAVEL
STAIR #1
STAIR #2
ELEV.
6' X 8' TRANSFORMER PAD

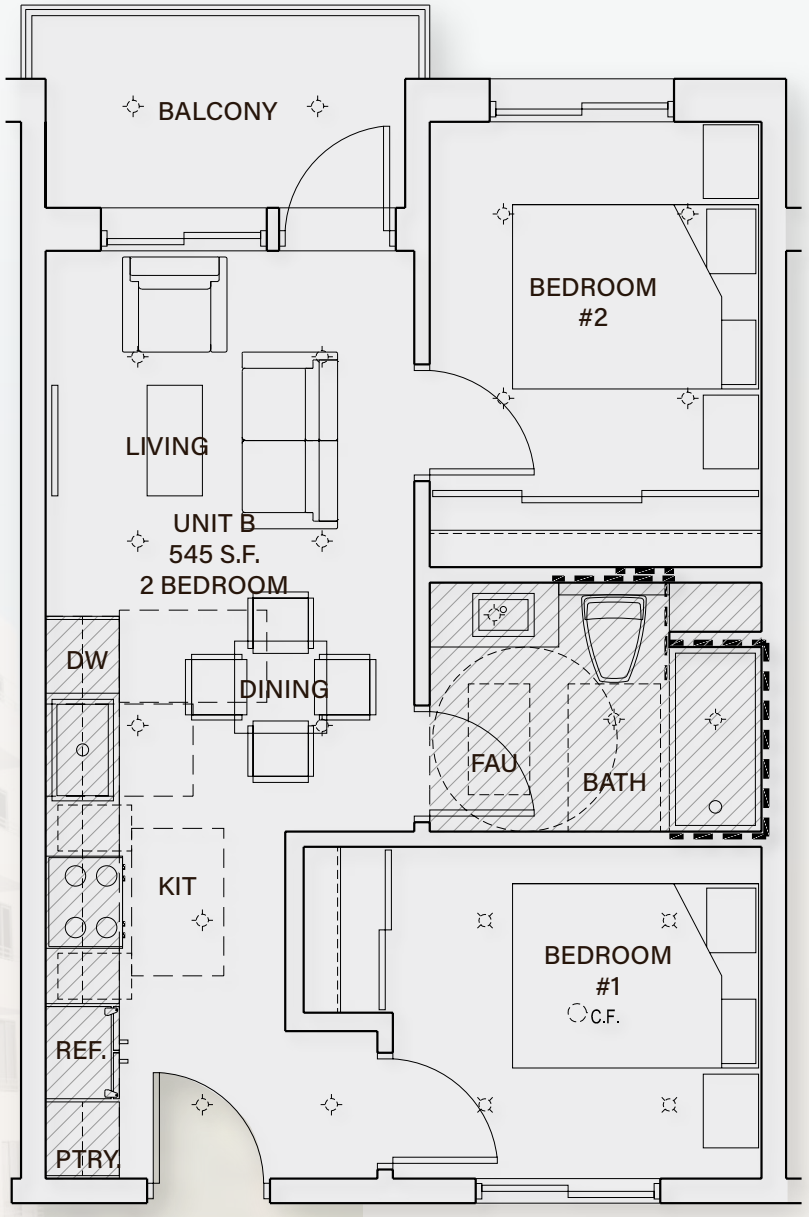
Sample Studio Floorplan



Sample 1-Bedroom Floorplan



Sample 2-Bedroom Floorplan



Financial Overview

Debt Request

Type	Construction Financing
Amount	**$15,703,776**
Term	3+1+1
Amortization	Interest Only
Prepayment	Negotiable
Recourse	Standard Carveouts

Debt Metrics

Loan Amount	$15,703,776
Loan Amount / Unit	$227,591
Loan Amount / RSF	$454
Stabilized Net Cashflow	$1,539,124
Stabilized Debt Yield	9.8%
Stabilized Value - 6.00% Cap Rate	**$25,652,074**
Loan / Stabilized Value	61.2%
Stabilized Value / Unit	$371,769

Sources	$	Per RSF	Per Unit	%
Senior Debt	15,703,776	$454	227,591	79.0%
Equity	4,174,422	$121	60,499	21.0%
Total Sources	**$19,878,198**	**$575**	**$288,090**	**100.0%**

Uses	$	Per RSF	Per Unit	%
Land Costs	1,350,000	$39	19,565	6.8%
Hard Costs	14,654,688	$424	212,387	73.7%
Soft Costs	1,350,000	$39	19,565	6.8%
Other Costs	809,925	$23	11,738	4.1%
Financing Costs	1,713,585	$50	24,835	8.6%
Total Uses	**$19,878,198**	**$575**	**$288,090**	**100.0%**

Proforma			Stabilized		
Operating Year	Year 1	Year 2	Year 3	Year 4	Year 5
Occupancy	80%	95%	95%	95%	95%
Multifamily Revenue	$1,611,378	$2,072,772	$2,134,955	$2,199,004	$2,264,974
Rent Concessions	(167,700)	–	–	–	–
Other Income	16,575	21,321	21,961	22,619	23,298
Potential Gross Income	$1,460,253	$2,094,093	$2,156,916	$2,221,623	$2,288,272
(-) Vacancy Factor 5.00%	(58,205)	(104,705)	(107,846)	(111,081)	(114,414)
Effective Gross Income	$1,402,048	$1,989,388	$2,049,070	$2,110,542	$2,173,858
General & Administrative	24,302	30,957	31,576	32,208	32,852
Repairs & Maintenance	33,150	42,228	43,073	43,934	44,813
Utilities	53,040	67,565	68,916	70,294	71,700
Contract Services	26,616	33,905	34,583	35,275	35,980
Advertising	23,061	29,376	29,964	30,563	31,174
Payroll	74,588	95,013	96,913	98,852	100,829
Turnover	13,813	17,595	17,947	18,306	18,672
Controllable Operating Expenses	*$248,569*	*$316,639*	*$322,971*	*$329,431*	*$336,019*
Management Fee	42,061	59,682	61,472	63,316	65,216
Property Taxes	37,829	38,585	39,357	40,144	40,947
Insurance	69,000	70,380	71,788	73,223	74,688
Uncontrollable Operating Expenses	*$148,890*	*$168,647*	*$172,617*	*$176,684*	*$180,851*
Total Operating Expenses	**$397,459**	**$485,286**	**$495,588**	**$506,115**	**$516,870**
Net Operating Income - Multifamily	**$1,004,589**	**$1,504,103**	**$1,553,482**	**$1,604,428**	**$1,656,988**
Replacement Reserves	11,050	14,076	14,358	14,645	14,938
Net Cashflow - Multifamily	**$993,539**	**$1,490,027**	**$1,539,124**	**$1,589,783**	**$1,642,051**

Sponsorship Overview

KH EQUITIES

KH Equities ("KHE") is a privately held company focused on investing and operating housing communities throughout the US. KHE brings its expertise in development, operations, and finance to deliver affordable

housing through creativity, innovation, and public-private partnerships. KHE also builds and operates crisis shelters, transitional/bridge housing sites, and permanent supportive housing (PSH) units in partnership with local, state, and federal agencies. KHE completed the buildout of the largest bridge housing site in Downtown LA in partnership with the Department of Health Services, Housing for Health, and Brilliant Corners.

KH Equities boasts a current portfolio of 860 units, with a total capitalization of $182 million and an estimated market value of $214 million.

Leadership

Daniel Mense
FOUNDER & PRESIDENT

Daniel Mense is the Founder and President of KH Equities. He oversees all aspects of acquisition, disposition, and asset management.

Over the past 10+ years, Daniel has acquired and developed/rehabbed over 1,800 workforce and affordable housing units. From 2012-2018, Daniel raised and managed a closed-end fund, with $85M in AUM, which focused on acquiring opportunistic real estate assets. Prior to managing the fund, he worked at KPMG Israel for 3 years within their corporate finance department.

Daniel first started his career at Blatteis & Schnur, a boutique real estate investment firm focused on high-end retail properties. He was responsible for underwriting potential acquisitions and overseeing asset and property management of select sites. Daniel graduated with Distinction from the Ross School of Business at University of Michigan with a Concentration in Finance and Corporate Strategy. He also received a Minor in Piano Performance and Composition from the School of Music.

Project Spotlights

KH EQUITIES

PACIFICA VILLAGES | PACIFICA, CA

212 Units (Originally 170) | Multifamily
Acquired 2021

EXECUTION:

- Converted the property from market rate into 100% affordable
  - Abated 60% of property taxes in 2021; 87% in 2022; and 97% in 2023
- Entitled and developed additional 42 units on the site - $10M
- Awarded local and state rebates to upgrade utilities at the Property - $1.3M
- Improved exterior façade and common areas as well as the existing units - $1.7M

MARRINGTON VILLAGE | CHARLESTON, SC

412 units | Multifamily
Acquired 2022

EXECUTION:

- Converted the property from market rate site into 100% affordable by income restricting the property
  - Eliminated 100% of property tax bill (~$900k/year)
- Upgrading unit interiors, exterior façade, and common areas - $4.5M

Sponsorship Overview

BMI Developments is a Los Angeles based development and commercial construction firm. Their executive team has combined experience of more than 60 years and offers a range of products in both the private and public sectors. BMI Developments pride themselves in delivering projects on time and on budget through innovative ideas and detailed planning.

BMI Developments' approach to every project is to provide unparalleled quality control for their clients. The approach begins by directly contacting the architect or engineer so that they can be an integrated part of the team. Their initial focus is to introduce BMI Developments as a new set of eyes for the project: analyzing the constructability of the documents, looking for Value Engineering opportunities, and strategizing about logistics, staging, and coordination between disciplines. BMI then reviews and coordinates specifications and drawings, reviews code requirements for compliance, and assesses all documentation for duplicate or misleading information.

BMI provides a comprehensive review of the completed design and bid documents from an estimating, budgetary, and constructability point of view. Their experienced team works directly with their clients and their consultants to ensure that the highest quality control standards are maintained. BMI's overall objective is to help deliver the best possible finished project.

Leadership

Eric Ara Baljian

FOUNDER/CEO

Ara possesses over 30 years of entrepreneurial leadership in the tech and construction and development industries. As a thoughtful, strategic thinker, Ara thrives during high intensity project development. His love of large-scale commercial projects makes him an excellent leader from conception to final build out.

Project Spotlights

639 FAIRFAX | LOS ANGELES, CA

66-Units | Ground-Up Multi
Sold as RTI Ready

CARLTON APARTMENTS | LOS ANGELES, CA

36 Units | Multifamily
Renovation

THE LOTUS | LOS ANGELES, CA

18,000 SF | Bridge Housing
Warehouse Conversion

MELROSE HOMES | LOS ANGELES, CA

10 Units | Townhome
Sold as RTI Ready