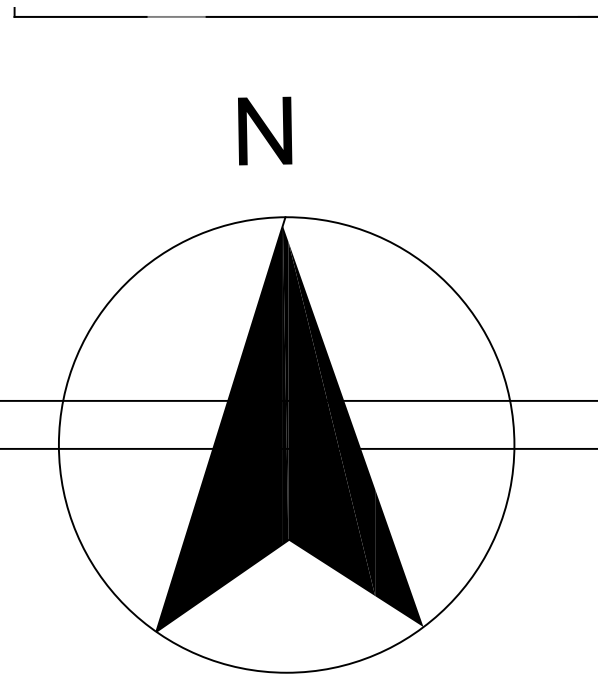
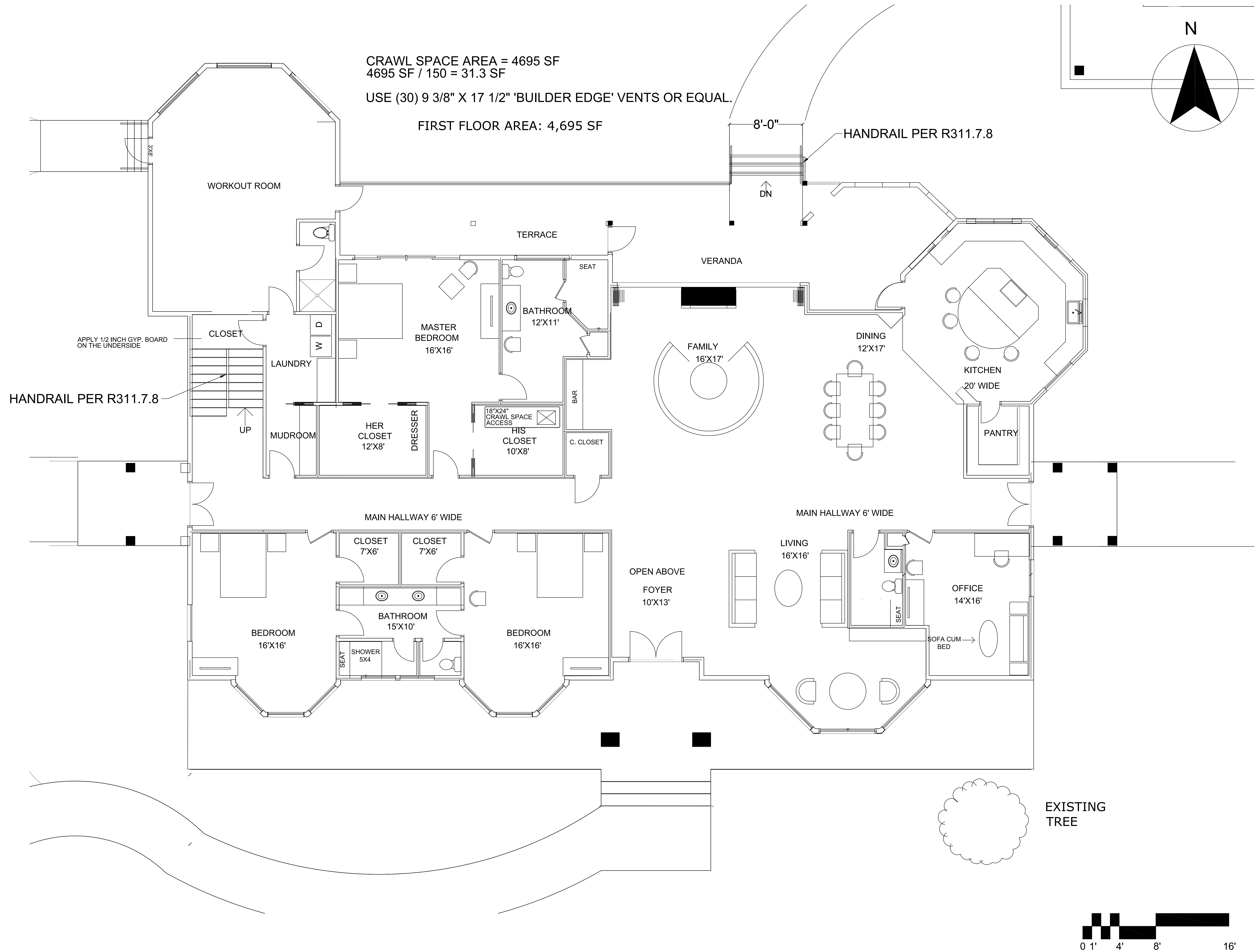
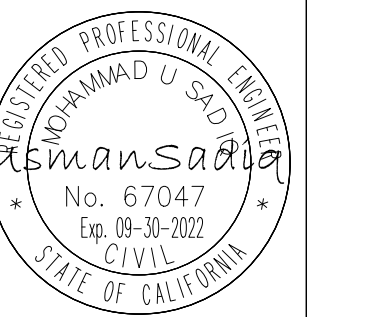


GENERAL REVISIONS

1	12/21/2021
2	01/27/2022
3	02/02/2022
4	03/02/2022
5	04/01/2022



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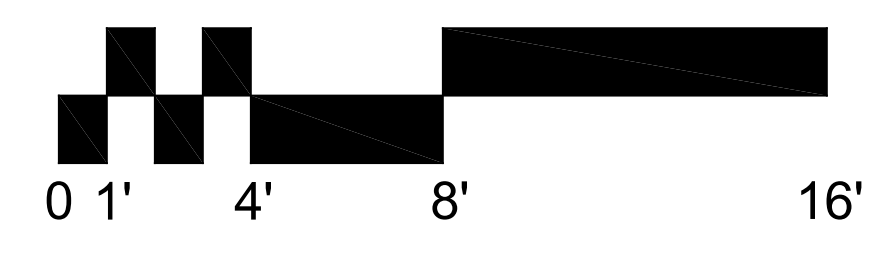


FIRST FLOOR PLAN
 1/4" = 1'-0"

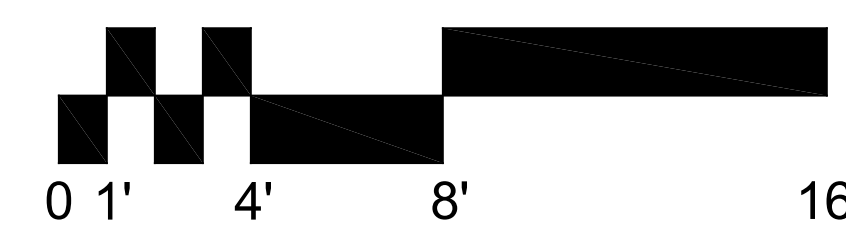
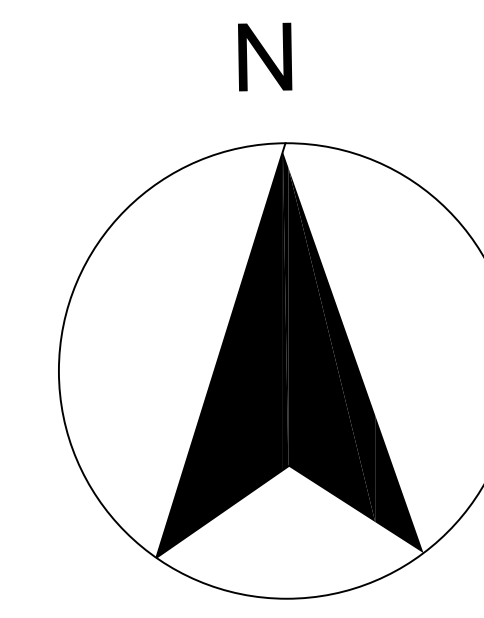
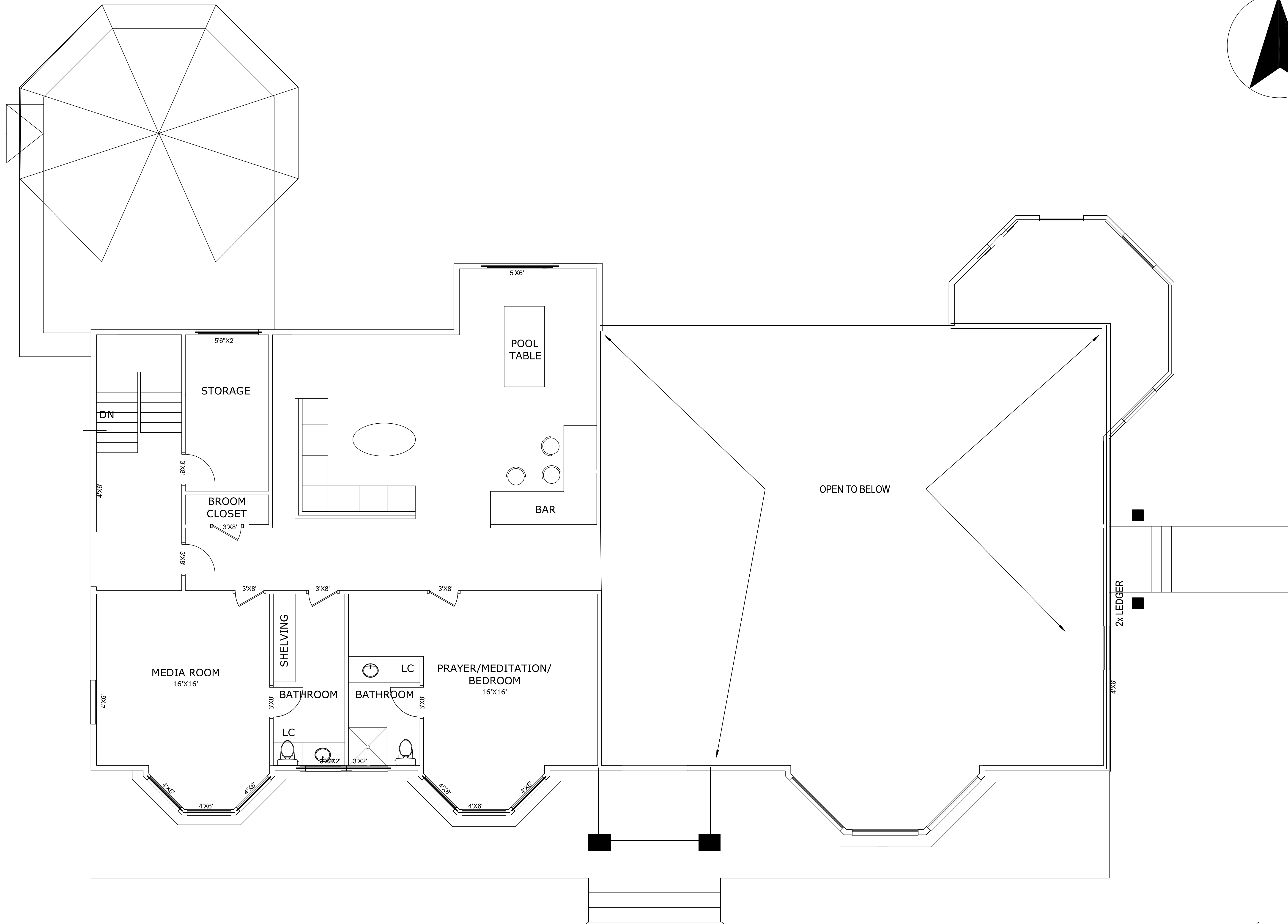
MAUJAAN FARMS
 3718 MAY SCHOOL ROAD
 LIVERMORE CALIFORNIA 94551

DATE 12/29/22
 DRAWN BY MB
 SHEET NO.

A1.1



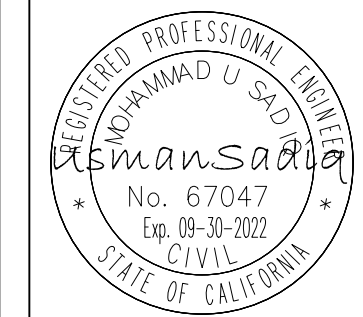
EXISTING TREE



GENERAL REVISIONS

1	12/21/2021
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4	03/02/2022
5	04/01/2022

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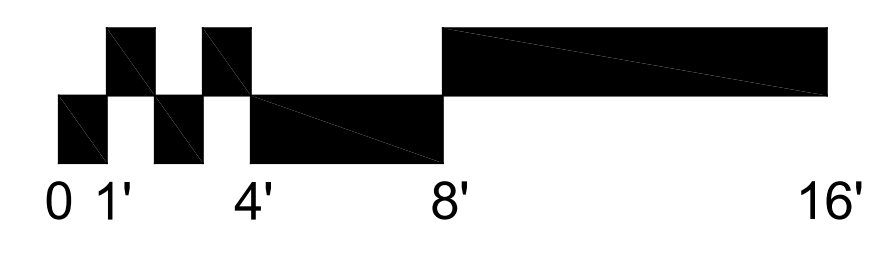
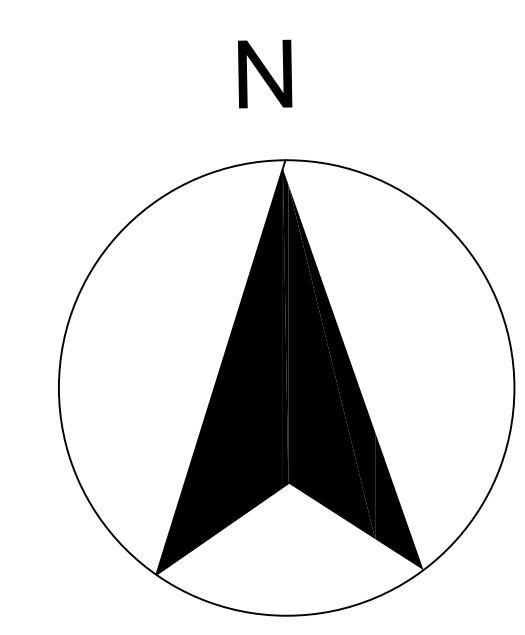
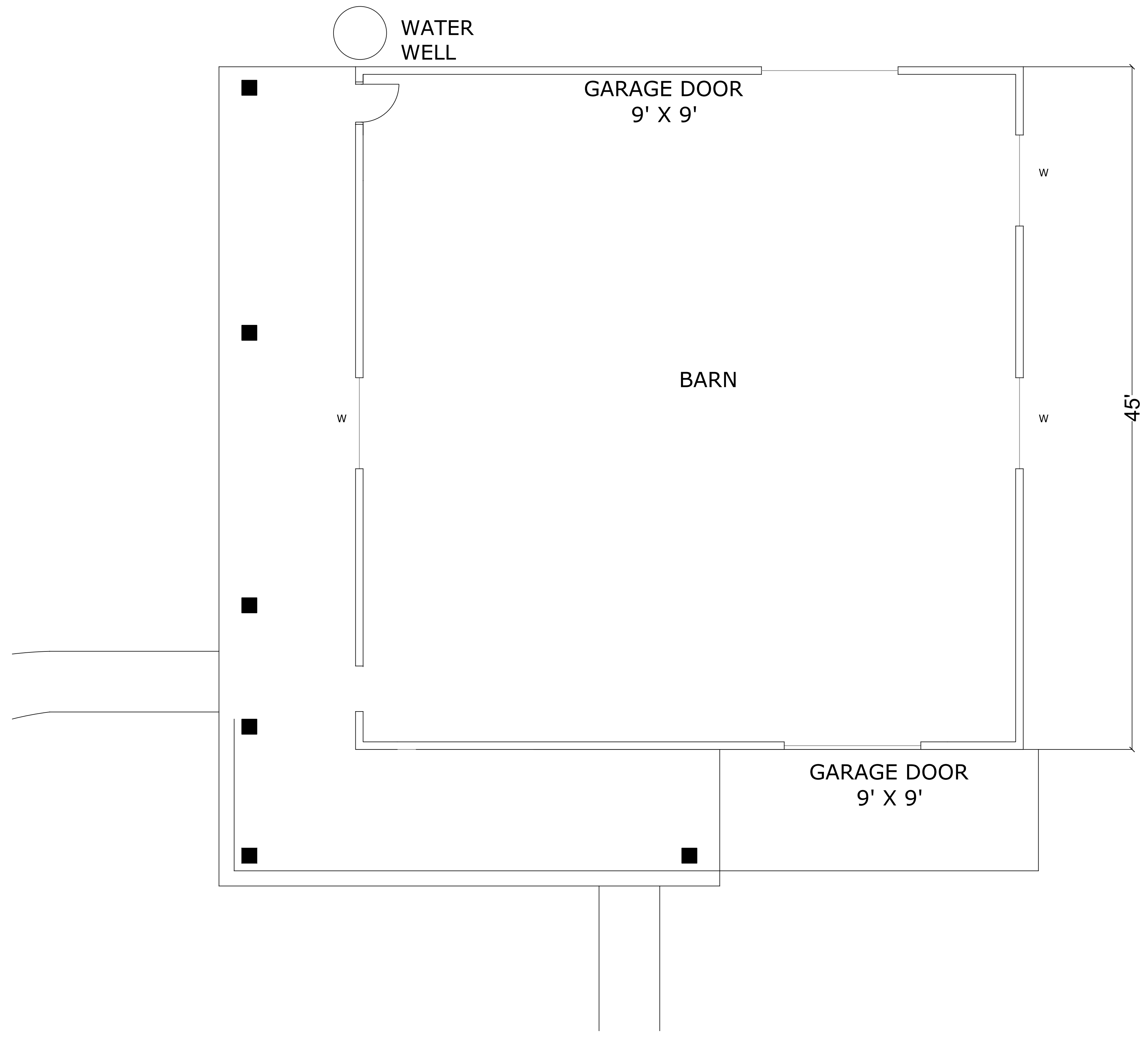
SECOND FLOOR PLAN
 1/4" = 1'-0"

MAUJAAN FARMS
 3718 MAY SCHOOL ROAD
 LIVERMORE CALIFORNIA 94551

DATE 12/29/22
 DRAWN BY MB
 SHEET NO.

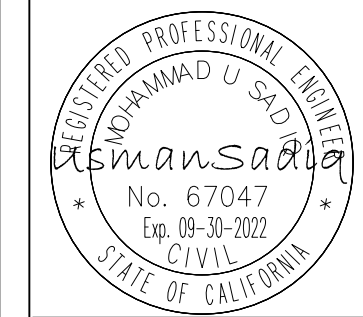
A1.2

NOTE: BARN IS A SINGLE STORY STRUCTURE AND IS INTENDED TO STORE FARMING EQUIPMENT AND SUPPLIES. EQUIPMENT SUCH AS POWER LAWN MOWERS, SMALL HAND HELD TOOLS AND VARIOUS ATTACHMENTS.



GENERAL REVISIONS	
1	04/01/2022
2	08/18/2022

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BARN
 1/4" = 1'-0"

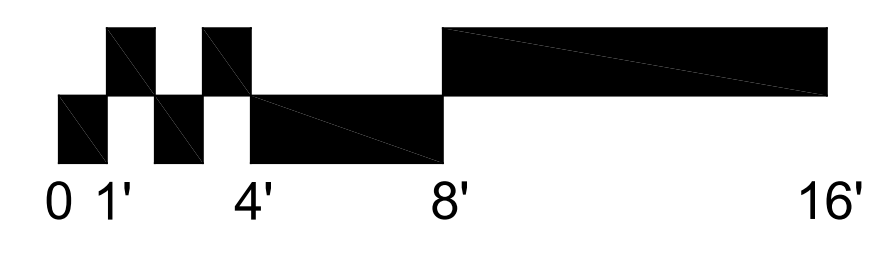
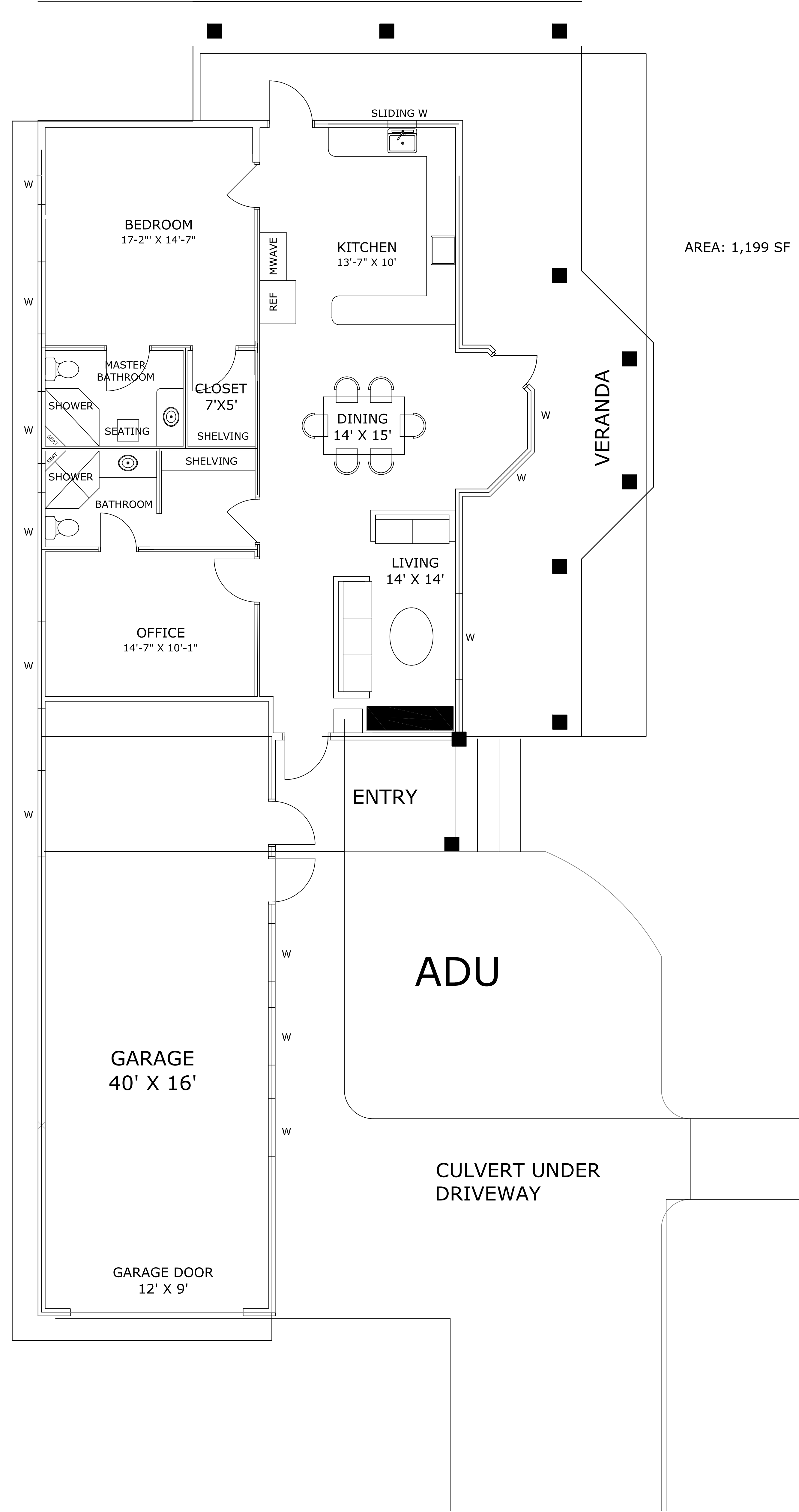
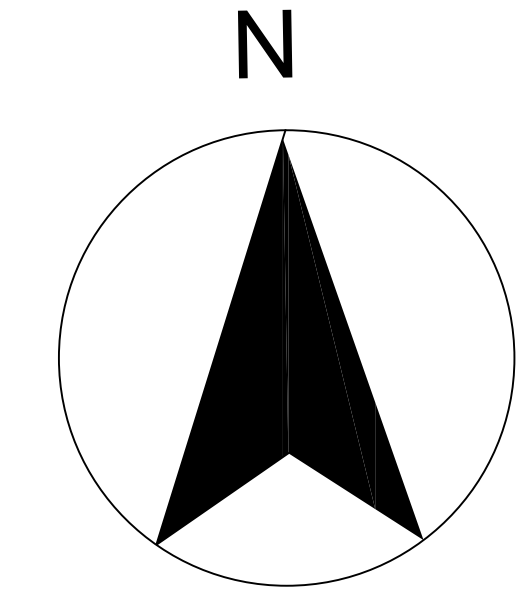
MAUJAAN FARMS
 3718 MAY SCHOOL ROAD
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DATE 12/29/22
 DRAWN BY MB
 SHEET NO.

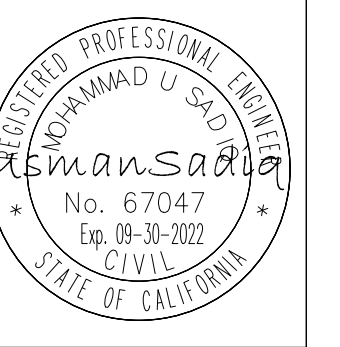
A1.3

GENERAL REVISIONS

1	04/01/2022
2	08/18/2022



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ADU FLOOR PLAN
 1/4" = 1'-0"

MAUJAAN FARMS
 3718 MAY SCHOOL ROAD
 LIVERMORE CALIFORNIA 94551

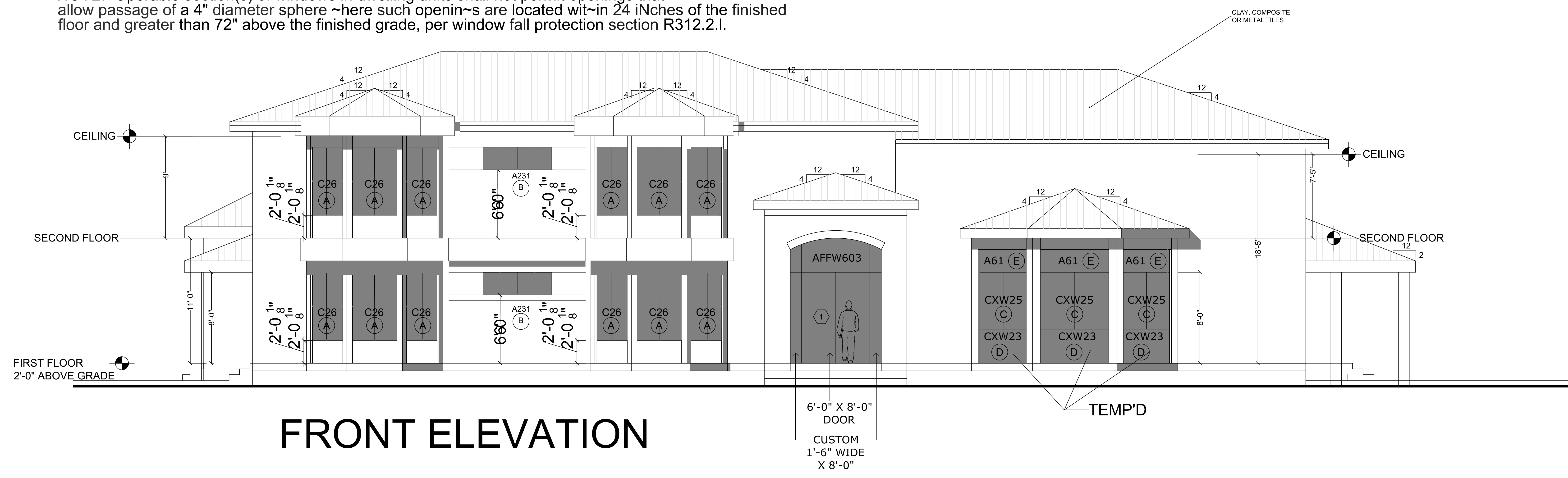
DATE 12/29/22
 DRAWN BY MB
 SHEET NO.

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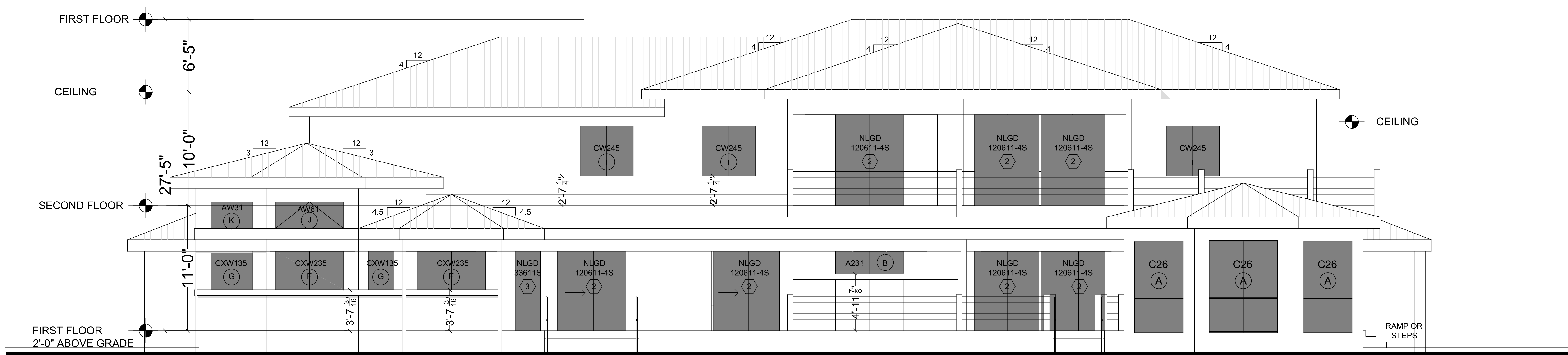
GENERAL REVISIONS

1	12/21/2021
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4	03/02/2022
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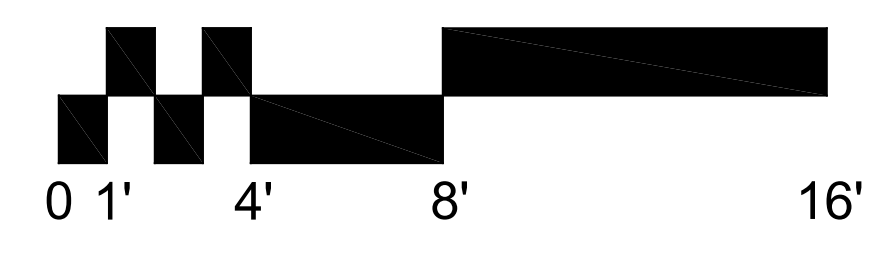
NOTE: Operable section(s) of windows in dwelling units shall not permit openings that allow passage of a 4" diameter sphere ~here such openin~s are located wit~in 24 inches of the finished floor and greater than 72" above the finished grade, per window fall protection section R312.2.1.



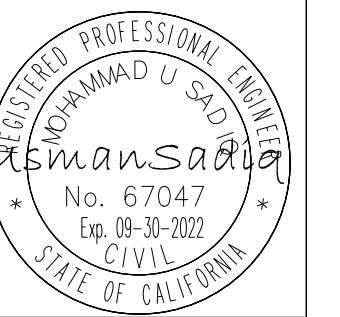
FRONT ELEVATION



REAR ELEVATION



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MAIN BUILDING ELEVATIONS
1/4" = 1'-0"

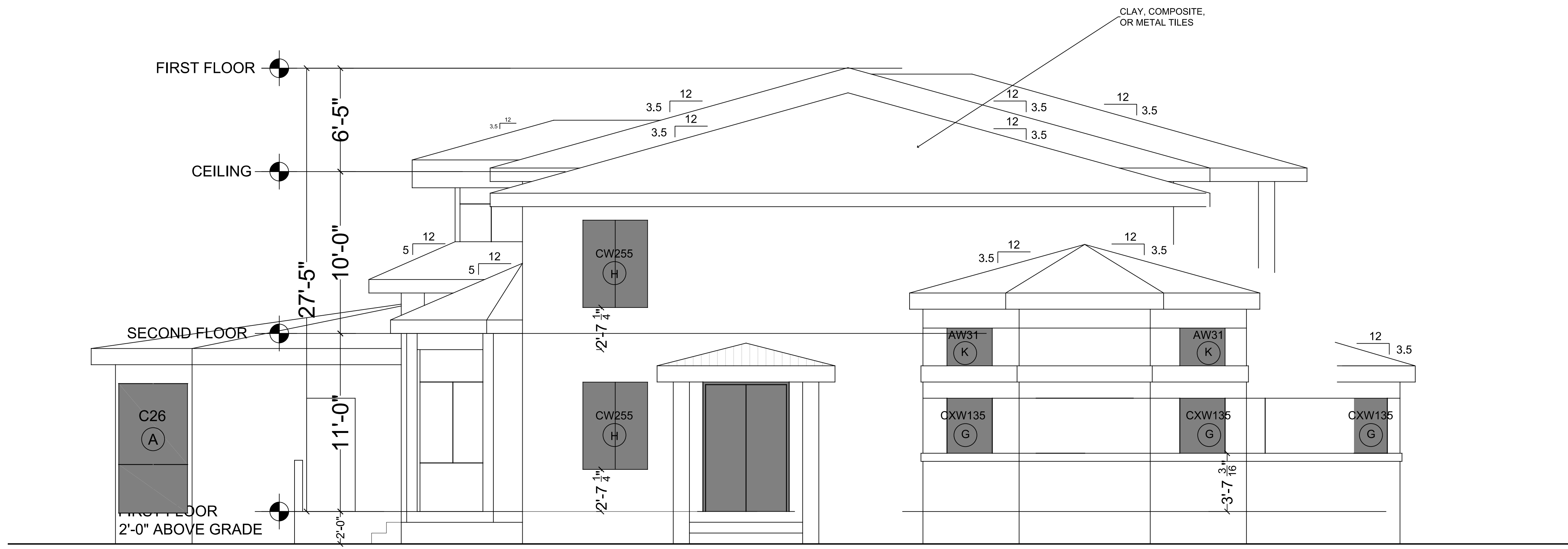
MAUJAAN FARMS
3718 MAY SCHOOL ROAD
LIVERMORE CALIFORNIA 94551

DATE 12/29/22
DRAWN BY MB
SHEET NO.

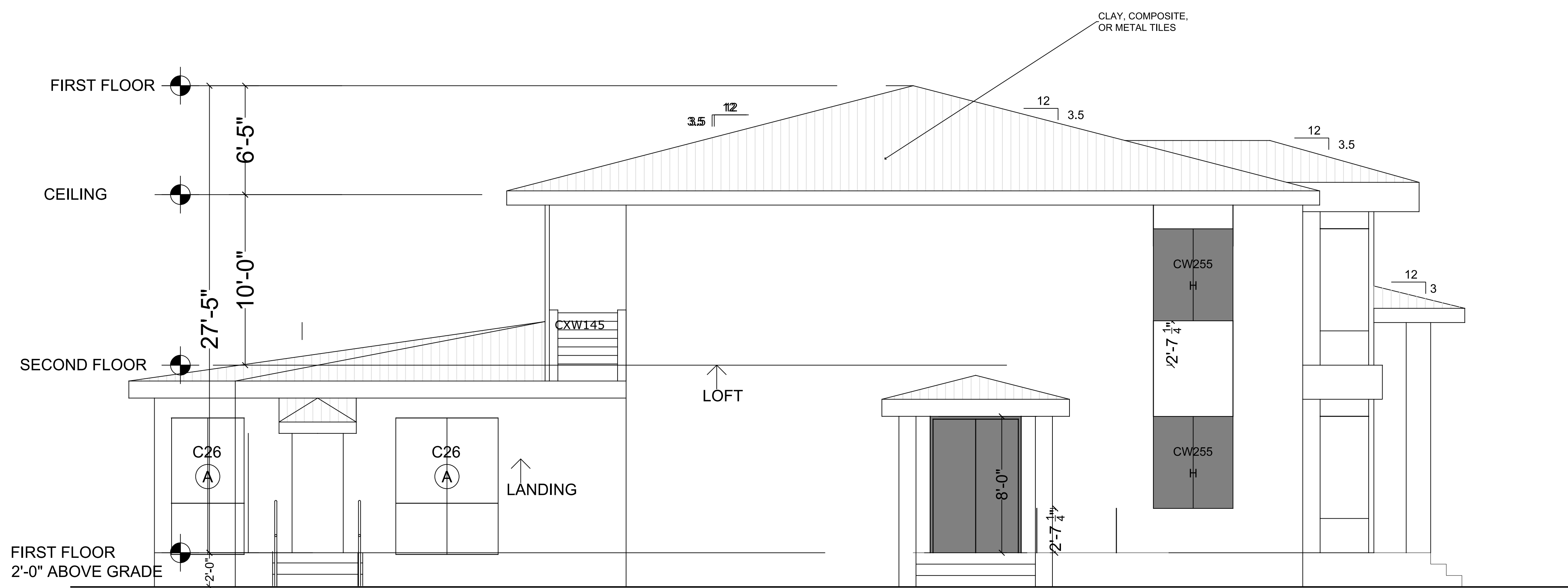
A2.1

GENERAL REVISIONS

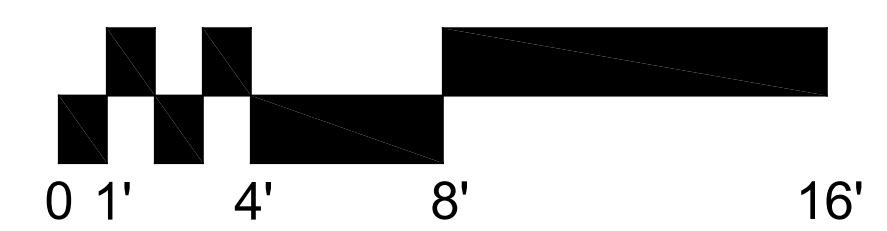
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2	01/27/2022
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RIGHT ELEVATION



LEFT ELEVATION



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MAIN BUILDING ELEVATIONS
1/4" = 1'-0"

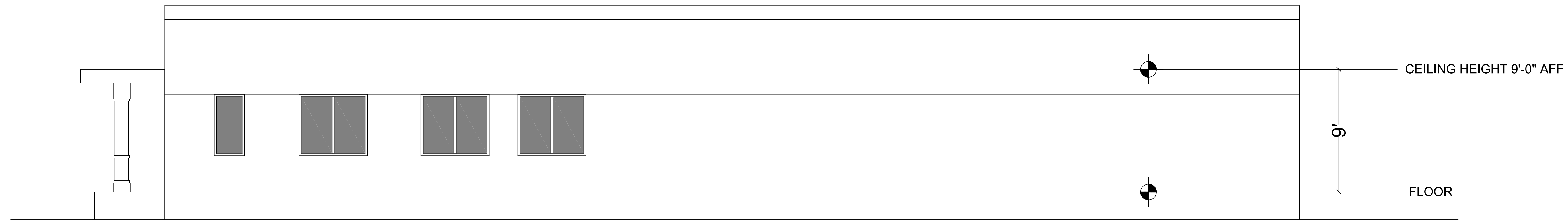
MAUJAAN FARMS
3718 MAY SCHOOL ROAD
LIVERMORE CALIFORNIA 94551

DATE 12/29/22
DRAWN BY MC
SHEET NO.

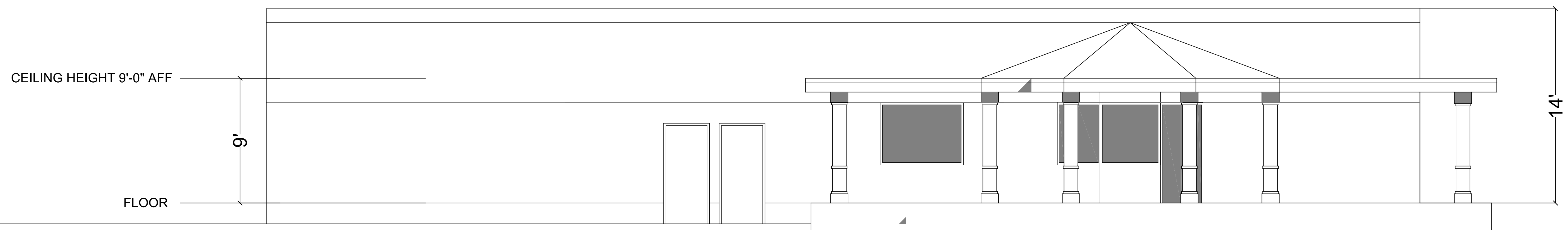
A2.2

GENERAL REVISIONS

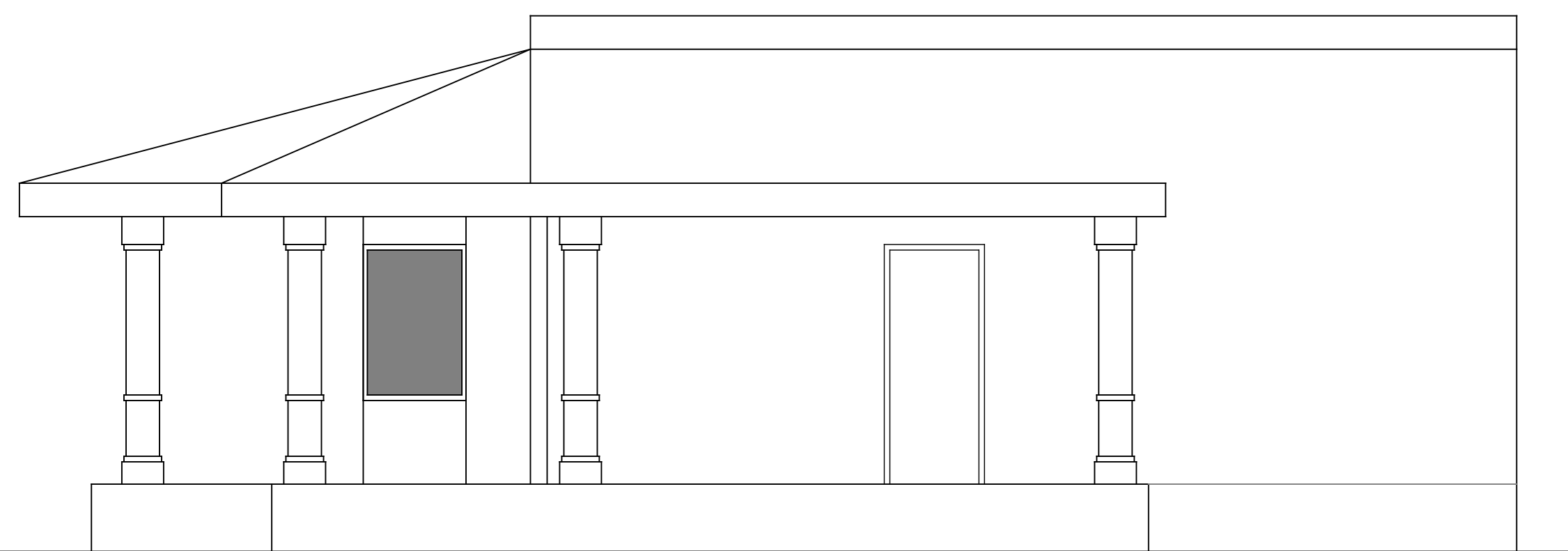
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2	01/27/2022
3	02/02/2022
4	03/02/2022
5	04/01/2022



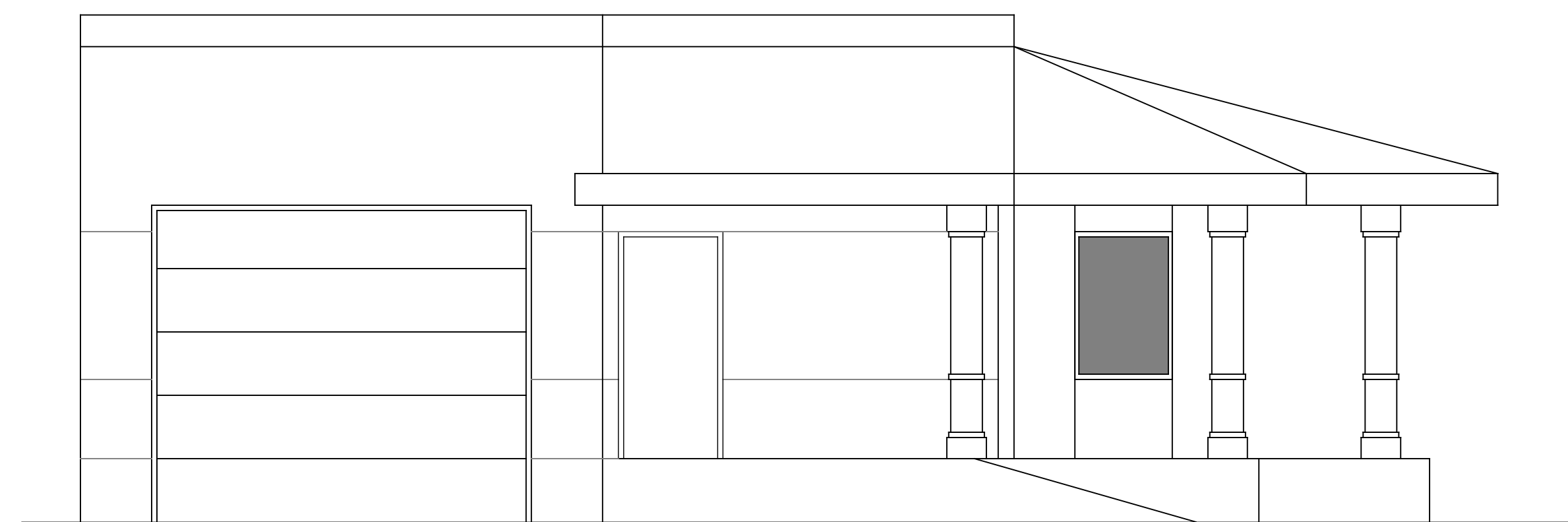
LEFT ELEVATION



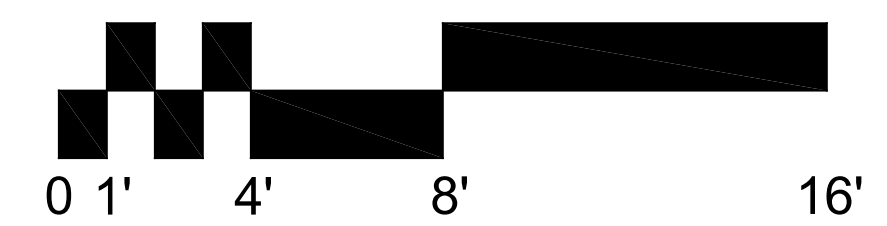
RIGHT ELEVATION



REAR ELEVATION



FRONT ELEVATION



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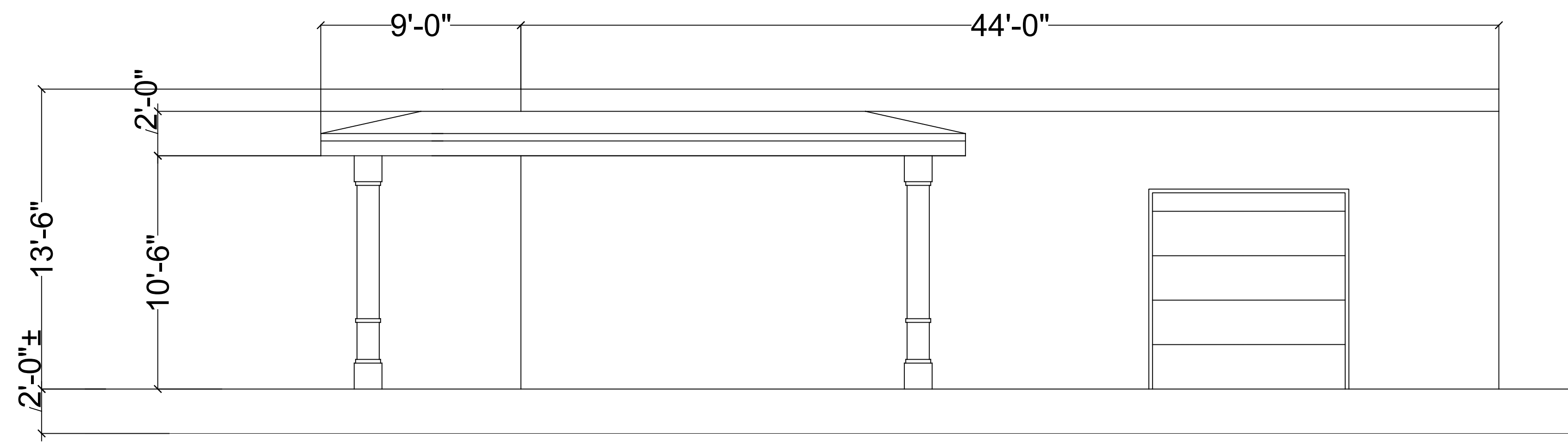


ACCESSORY DWELLING UNIT
 ELEVATIONS
 1/4" = 1'-0"

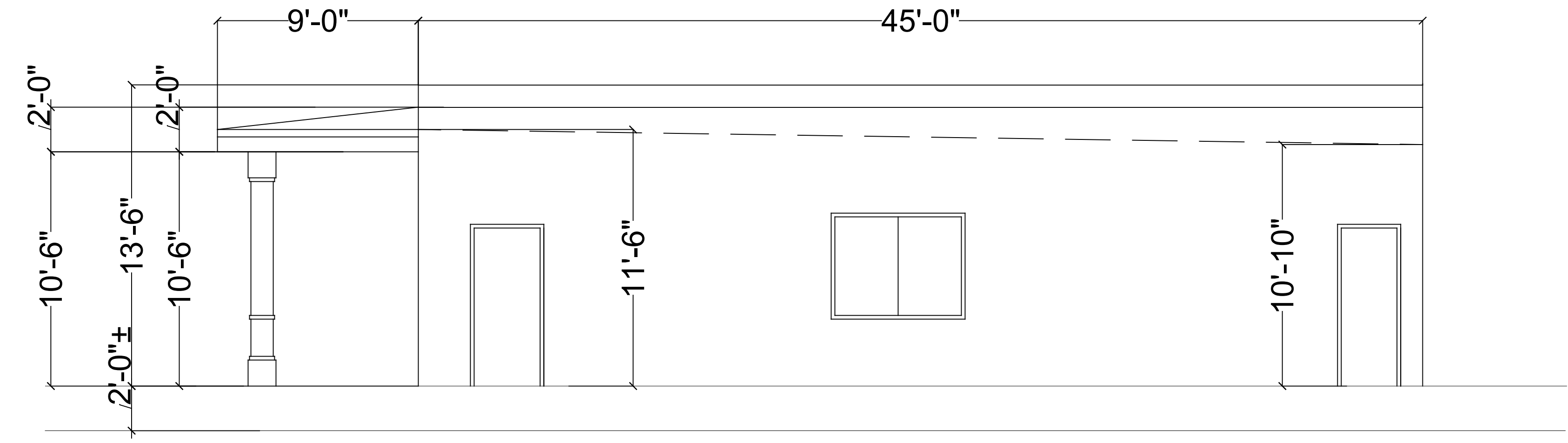
MAUJAAN FARMS
 3718 MAY SCHOOL ROAD
 LIVERMORE CALIFORNIA 94551

DATE 12/29/22
 DRAWN BY MB
 SHEET NO.

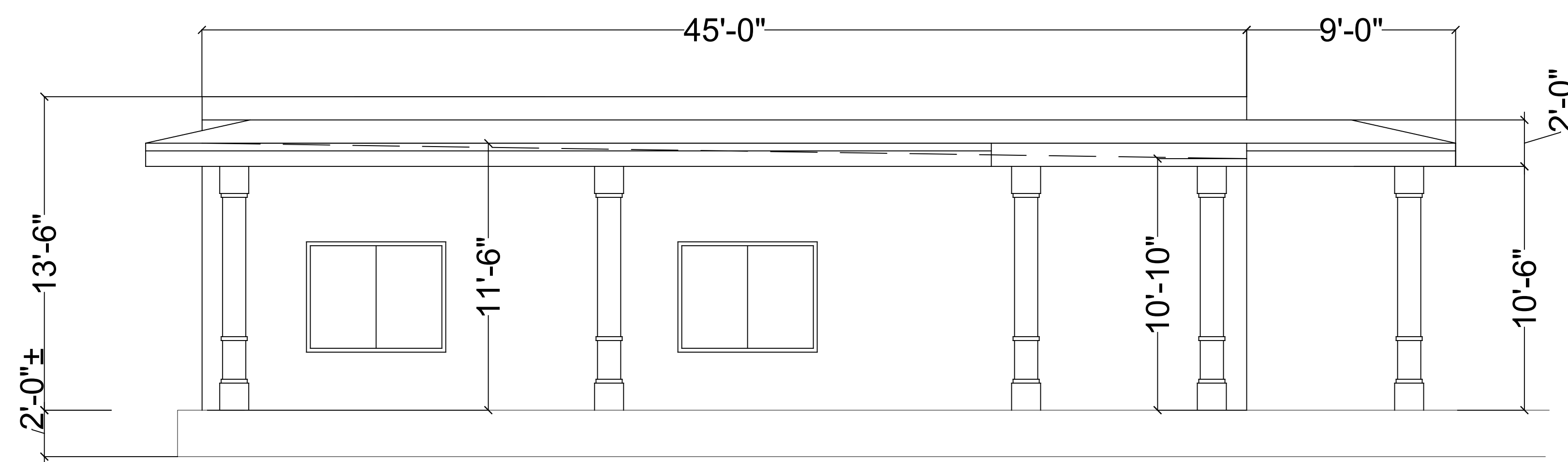
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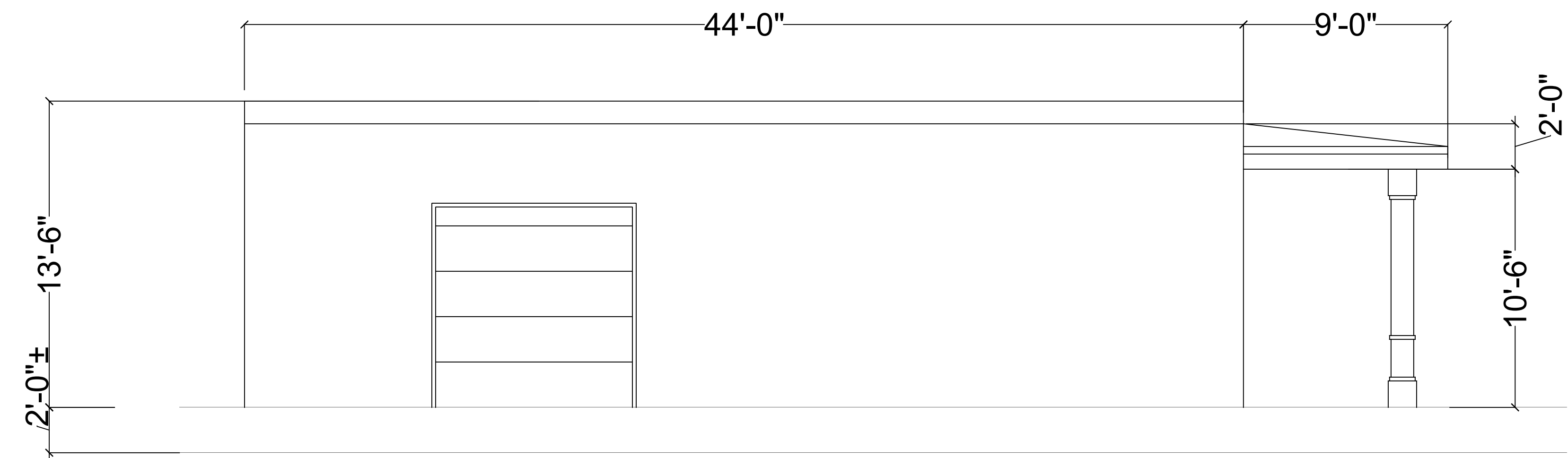
FRONT ELEVATION



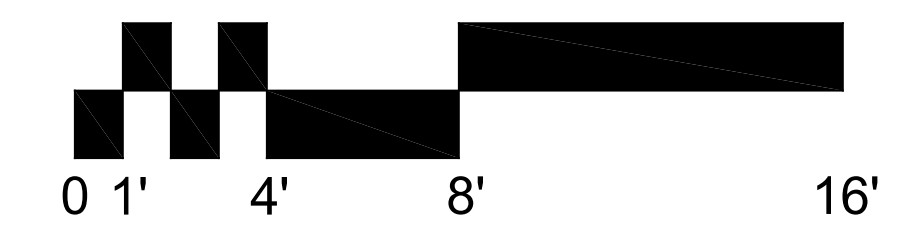
LEFT ELEVATION



RIGHT ELEVATION

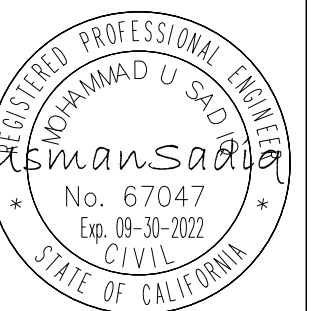


REAR ELEVATION



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5	04/01/2022

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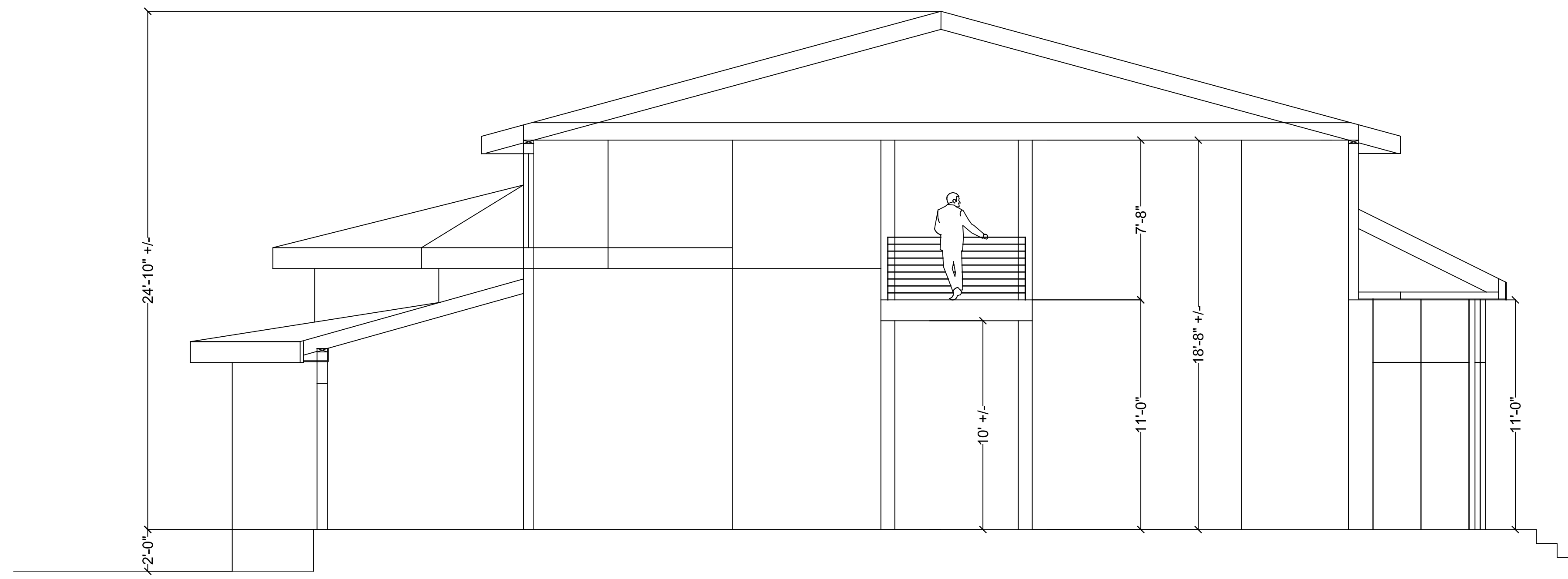


BARN ELEVATIONS
 1/4" = 1'-0"

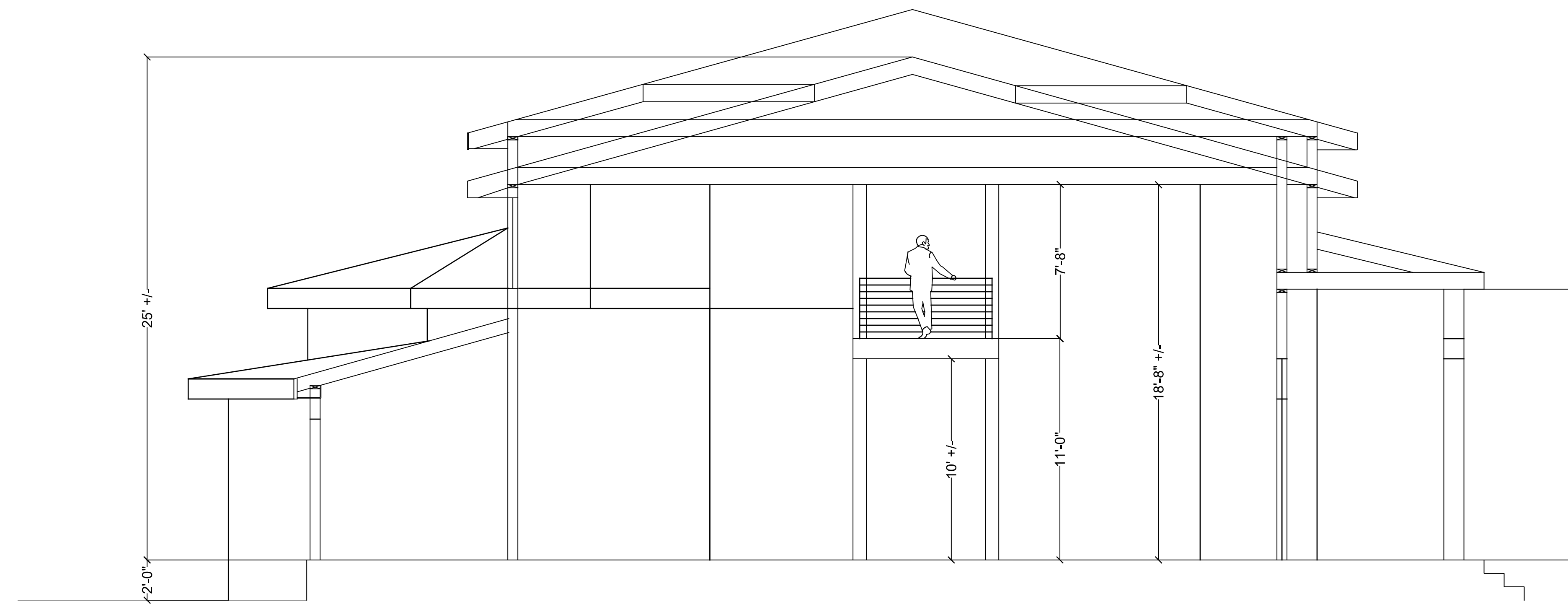
MAUJAAN FARMS
 3718 MAY SCHOOL ROAD
 LIVERMORE CALIFORNIA 94551

DATE 12/29/22
 DRAWN BY MB
 SHEET NO.

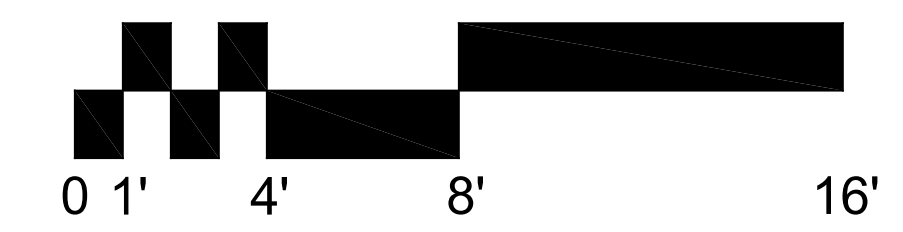
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SECTION - S1



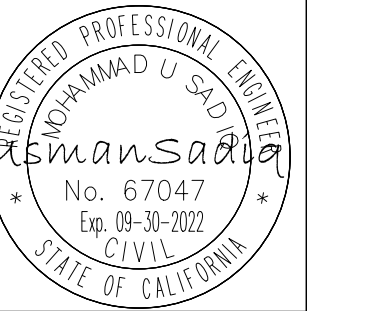
SECTION - S2



GENERAL REVISIONS

1	12/21/2021
2	01/27/2022
3	02/02/2022
4	03/02/2022
5	04/01/2022

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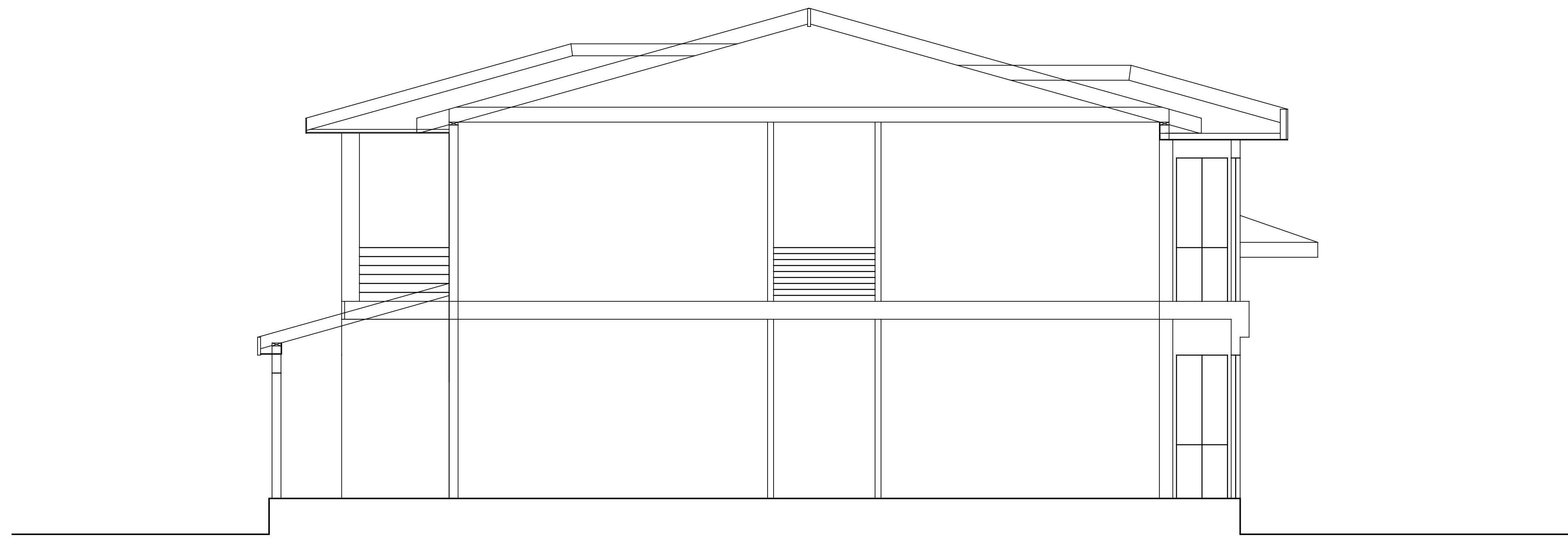


MAIN BUILDING SECTIONS
 1/4" = 1'-0"

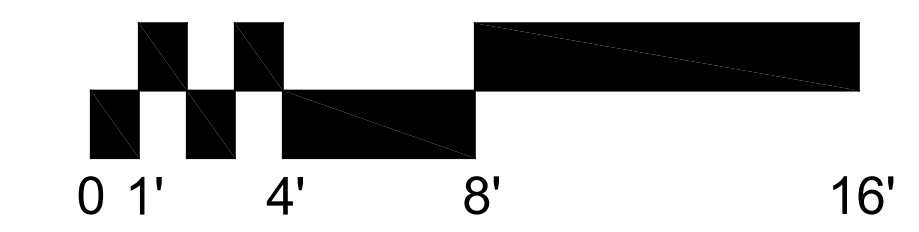
MAUJAAN FARMS
 3718 MAY SCHOOL ROAD
 LIVERMORE CALIFORNIA 94551

DATE 12/29/22
 DRAWN BY MB
 SHEET NO.

A3.1



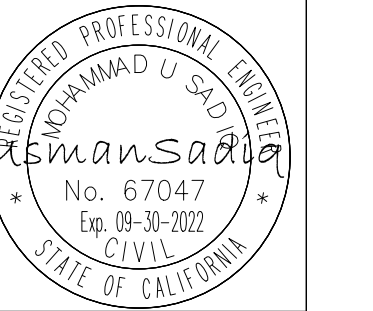
SECTION - S3



GENERAL REVISIONS

1	12/21/2021
2	01/27/2022
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4	03/02/2022
5	04/01/2022

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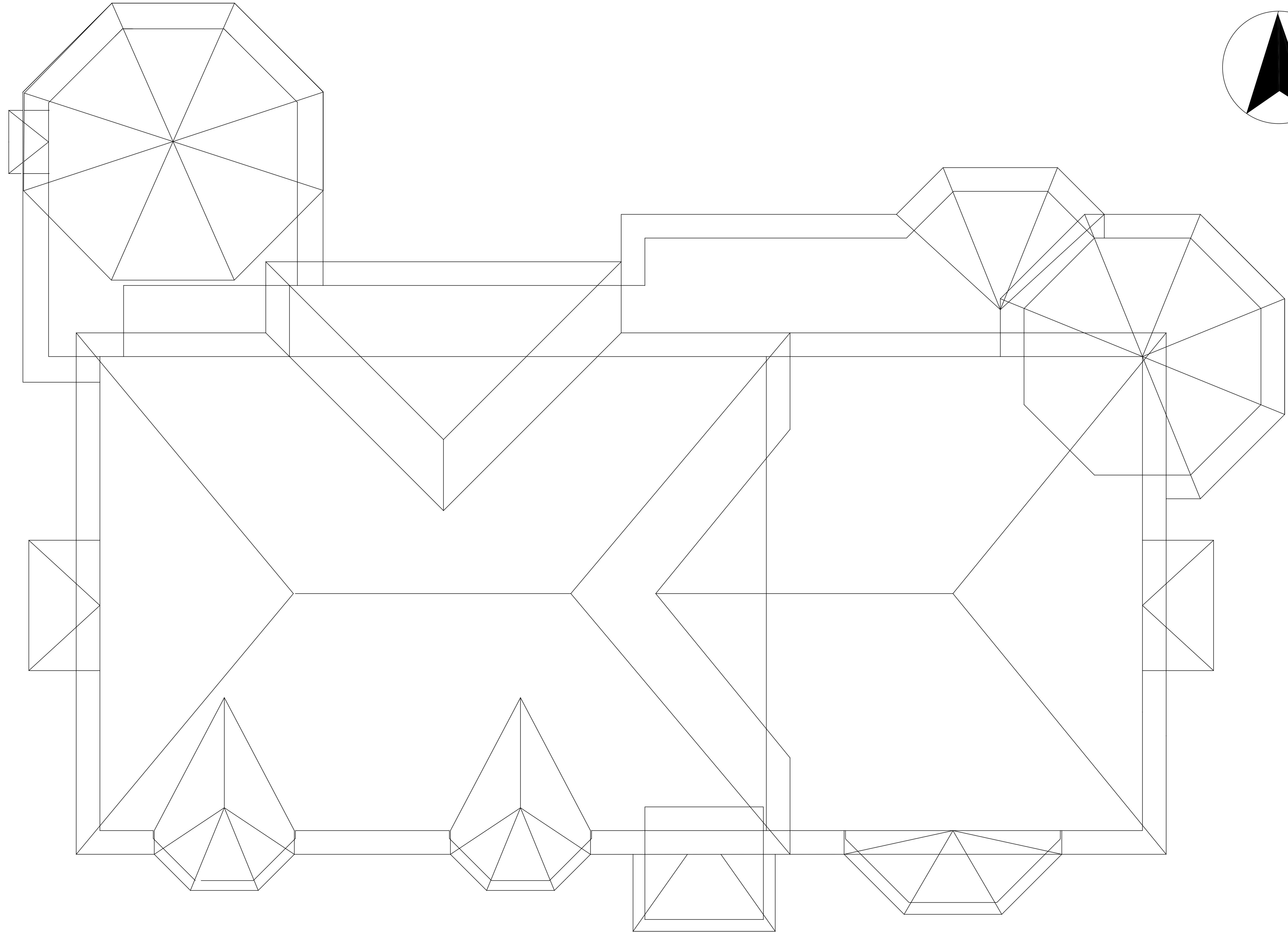


MAIN BUILDING SECTIONS
 1/4" = 1'-0"

MAUJAAN FARMS
 3718 MAY SCHOOL ROAD
 LIVERMORE CALIFORNIA 94551

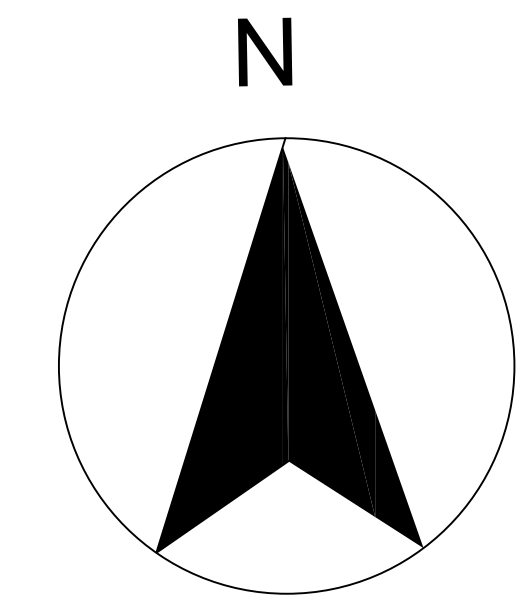
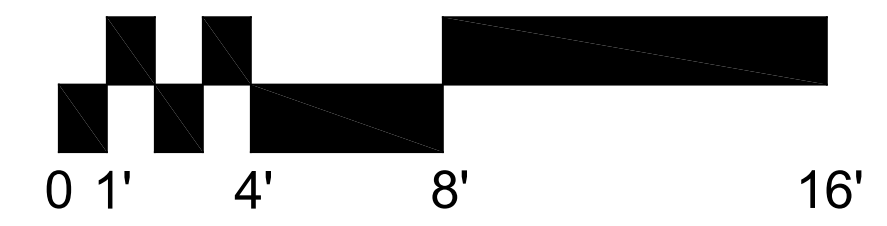
DATE 12/29/22
 DRAWN BY MB
 SHEET NO.

A3.2



SHEET NOTES:

1. ROOF UNDERLAYMENT SHALL BE 30# ROOFING FELT FOR ROOF SLOPES OF 4:12, PER CRC R905.2.2.
2. ROOF UNDERPAYMENT SHALL BE TWO LAYERS OF 15# ROOFING FELT FOR ROOF SLOPES LES THAN 4:12 PER CRC R905.2.2.
3. ROOFING SHALL BE LIGHT WEIGHT CONCRETE CLASS A ROOF ASSEMBLE AS MANUFACTURED BY EAGLE ROOFING OR EQUIVALENT. ROOFING MATERIAL SHALL BE APPROVED BY STRUCTURAL ENGINEER.



GENERAL REVISIONS

1	12/21/2021
2	01/27/2022
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5	04/01/2022

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MAIN HOUSE ROOF PLAN
 1/4" = 1'-0"

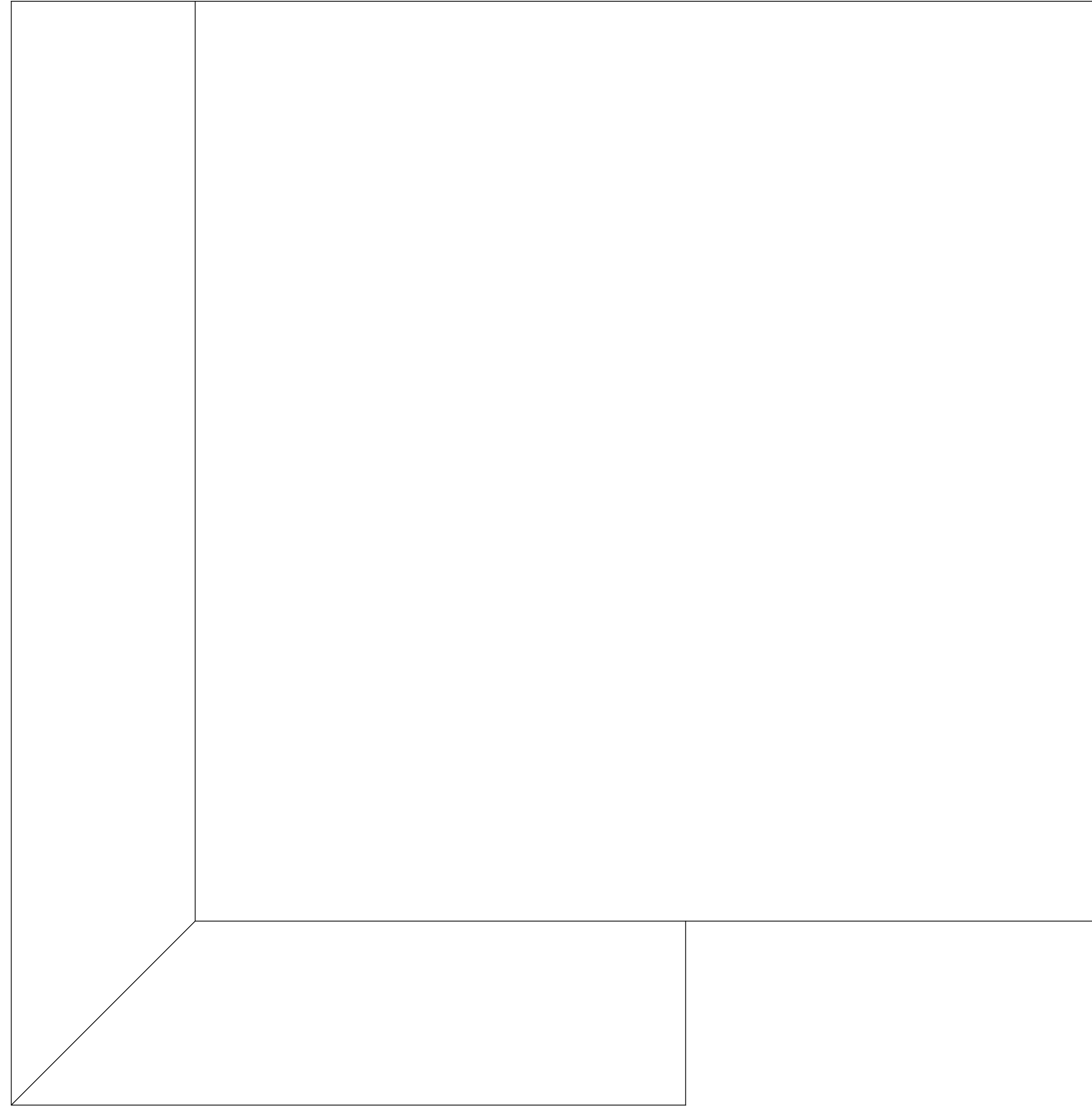
MAUJAAN FARMS
 3718 MAY SCHOOL ROAD
 LIVERMORE CALIFORNIA 94551

DATE 12/29/22

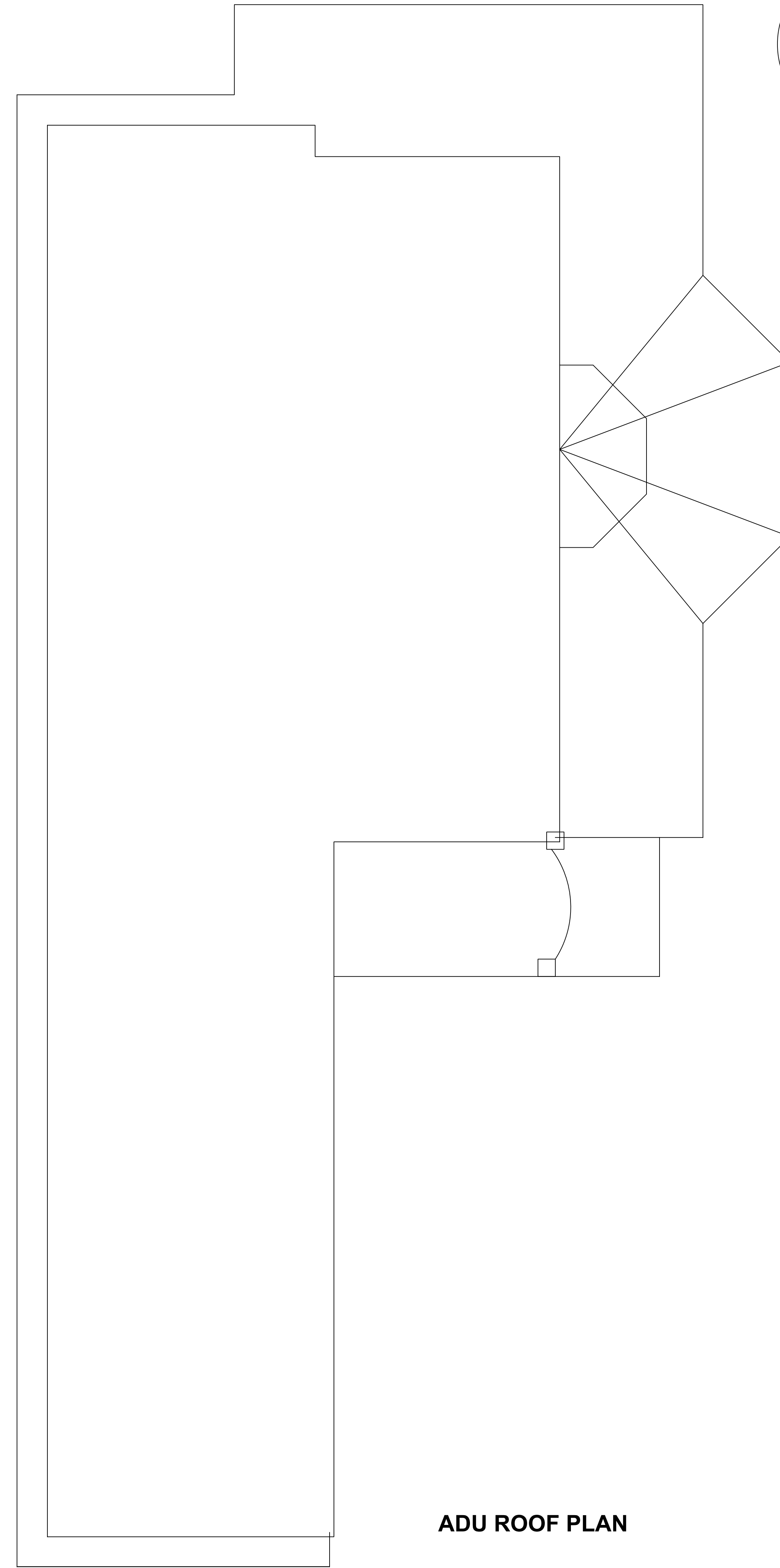
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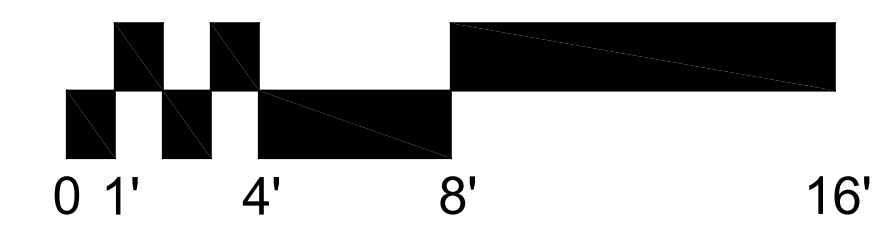
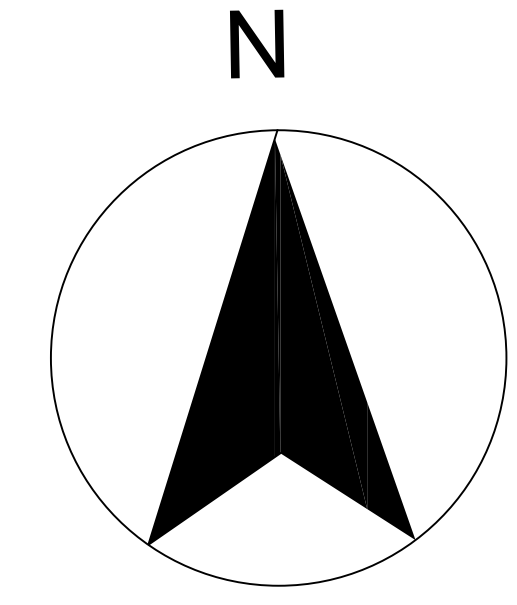
A4.1



BARN ROOF PLAN



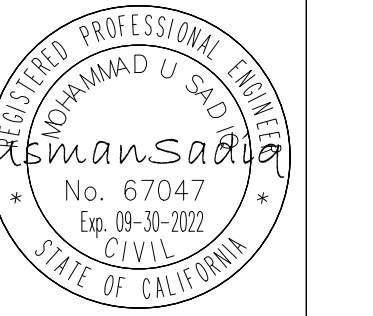
ADU ROOF PLAN



GENERAL REVISIONS

1	12/21/2021
2	01/27/2022
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5	04/01/2022

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BARN AND ADU ROOF PLANS
 1/4" = 1'-0"

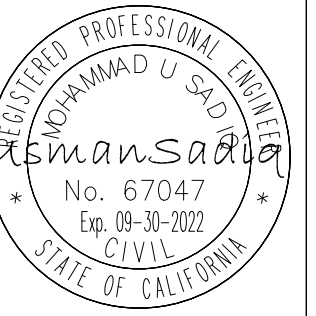
MAUJAAN FARMS
 3718 MAY SCHOOL ROAD
 LIVERMORE CALIFORNIA 94551

DATE 12/29/22
 DRAWN BY MB
 SHEET NO.

A4.2

Table with 2 columns: Revision Number, Description

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TITLE 24 MAIN HOUSE ANALYSIS

MAUJAN FARMS

3718 MAY SCHOOL ROAD
LIVERMORE CALIFORNIA 94551

DATE 12/29/22
DRAWN BY MB
SHEET NO.

A6.1

BUILDING ENERGY ANALYSIS REPORT

PROJECT:

New Main House
3718 May School Road
Livermore, CA 94551

Project Designer:

Mohammad Sadiq, PE
1000 Bourn Drive
Woodland, CA 95776

Report Prepared by:

Robert Mao, PE, CEA
The Energy Consulting Company
6367 Swainland Road
Oakland, CA 94611
510 387-2756

Job Number:

220327

Date:

3/24/2022

The EnergyScape computer program has been used to perform the calculations summarized in this compliance report. This program has approval and is authorized by the California Energy Commission for use with both the Residential and Nonresidential 2019 Building Energy Efficiency Standards.

This program developed by EnergyScape - www.energyscape.com.

TABLE OF CONTENTS

Cover Page 1
Table of Contents 2
Form RMS-1 Residential Measures Summary 3
Form MF-1R Mandatory Measures Summary 4
HVAC System Heating and Cooling Loads Summary 8

RESIDENTIAL MEASURES SUMMARY

Table with columns: Project Name, Building Type, Building Energy Climate Zone, Total Cond. Floor Area, Addition, # of Units. Includes INSULATION Construction Type, Area, Cavity, Special Features, Status.

FENESTRATION

Table with columns: Orientation, Area, Total Area, U-Fac, SHGC, Overhang, Sidelights, Exterior Shades, Status. Includes Front (S), Front (SW), Left (W), Left (NW), Rear (W), Rear (SW), Right (E), Right (SE).

HVAC SYSTEMS

Table with columns: Qty, Heating, Min. Eff, Cooling, Min. Eff, Thermostat, Status. Includes 2 Split Heat Pump, 9.00 HSPF, Split Heat Pump, 15.0 SEER, Setback, New.

HVAC DISTRIBUTION

Table with columns: Location, Heating, Cooling, Duct Location, Duct R-Value, Status. Includes HVAC, Ducted, Ducted, Attic, 8.0, New.

WATER HEATING

Table with columns: Qty, Type, Gallons, Min. Eff, Distribution, Status. Includes 2 CECDHWType_LHP, 80, 3.20, Standard, New.

EnergyPro 8.3.0 EnergyScape User Number: 1385 ID: 220327 Page 3 of 8

2019 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.

Table with columns: Measure ID, Measure Description, Status. Includes Building Envelope Measures, Fenestration, HVAC Systems, HVAC Distribution, Water Heating, Fireplaces, Decorative Gas Appliances, and Gas Log Measures.

2019 Low-Rise Residential Mandatory Measures Summary

Table with columns: Measure ID, Measure Description, Status. Includes Clearances, Liquid Line Drain, Storage Tank Insulation, Water Piping, Solar Water Heating System, Insulation Protection, Gas or Propane Water Heating Systems, Recirculating Loops, Solar Water Heating Systems, Ducts and Fans Measures, Factory-Fabricated Duct Systems, Field-Fabricated Duct Systems, Backdraft Damper, Gravity Ventilation Dampers, Protection of Insulation, Pseudo-Inner Core-Flow Duct, Duct System Sealing and Leakage Test, Air Filtration, Space Conditioning System Airflow Rate and Fan Efficiency, Space Conditioning System Airflow Rate and Fan Efficiency.

2019 Low-Rise Residential Mandatory Measures Summary

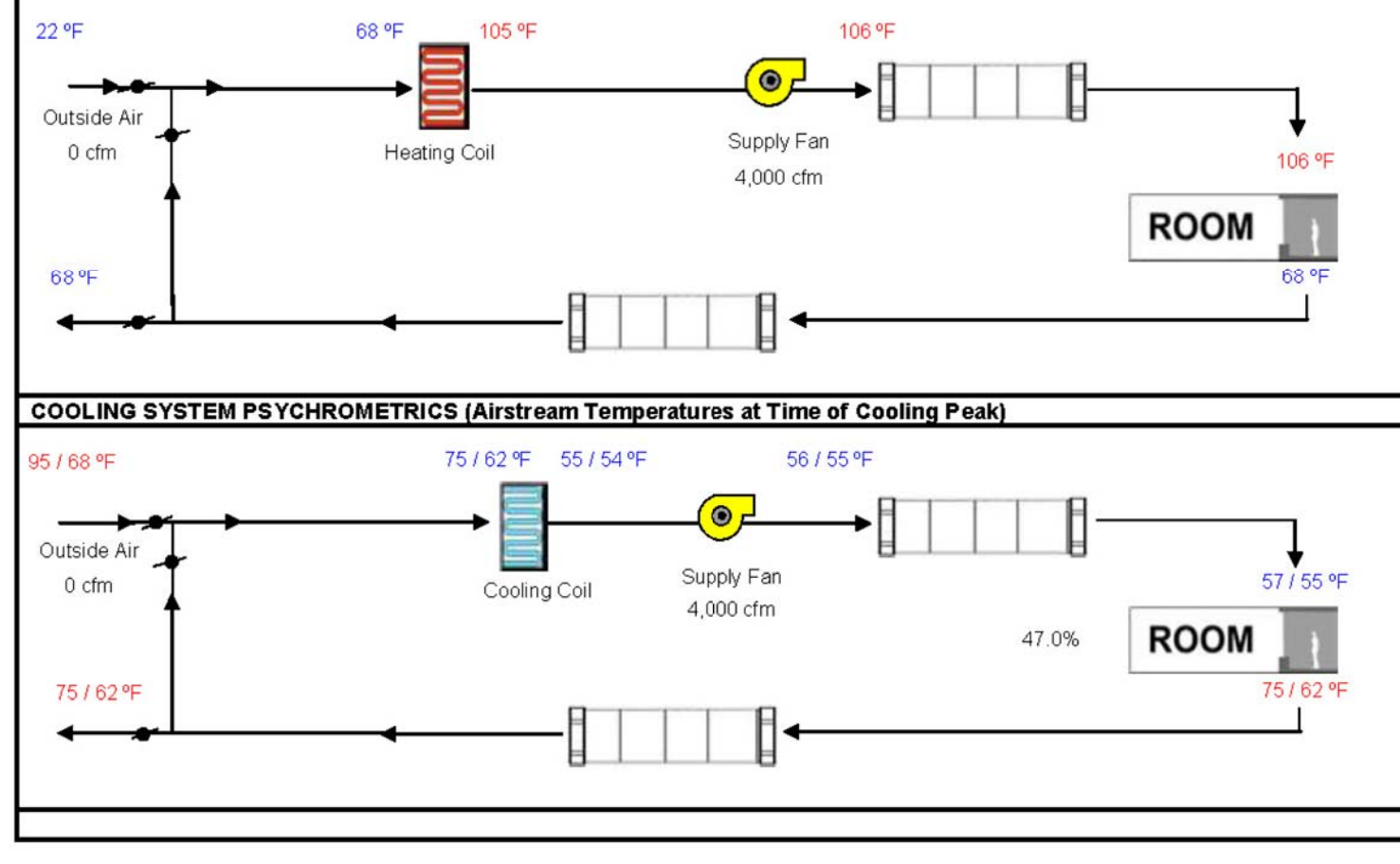
Table with columns: Measure ID, Measure Description, Status. Includes Requirements for Ventilation and Indoor Air Quality, Single Family Detached Dwelling Units, Multifamily Attached Dwelling Units, Multifamily Building Central Ventilation Systems, Kitchen Range Hoods, Field Verification and Diagnostic Testing, Pool and Spa Systems and Equipment Measures, Lighting Measures, Recirculating Loops, Solar Water Heating Systems, Ducts and Fans Measures, Factory-Fabricated Duct Systems, Field-Fabricated Duct Systems, Backdraft Damper, Gravity Ventilation Dampers, Protection of Insulation, Pseudo-Inner Core-Flow Duct, Duct System Sealing and Leakage Test, Air Filtration, Space Conditioning System Airflow Rate and Fan Efficiency, Space Conditioning System Airflow Rate and Fan Efficiency.

2019 Low-Rise Residential Mandatory Measures Summary

Table with columns: Measure ID, Measure Description, Status. Includes Interior Switches and Controls, Residential Exterior Lighting, Residential Outdoor Lighting, Internally Illuminated Address Signs, Residential Garage for Eight or More Vehicles, Interior Common Areas of Low-Rise Multifamily Residential Buildings, Interior Common Areas of Low-Rise Multifamily Residential Buildings, Solar Ready Buildings, Single Family Residences, Low-Rise Multifamily Buildings, Minimum Solar Zone Area, Shading, Azimuth, Light Sources in Enclosed or Recirculated Luminares, Light Sources in Drawers, Cabinets, and Linen Closets, Interior Switches and Controls, Interior Switches and Controls, Interior Switches and Controls, Interior Switches and Controls, Main Electrical Service Panel.

HVAC SYSTEM HEATING AND COOLING LOADS SUMMARY

Table with columns: ENGINEERING CHECKS, SYSTEM LOAD, HVAC EQUIPMENT SELECTION, HEATING SYSTEM PSYCHROMETRICS, COOLING SYSTEM PSYCHROMETRICS. Includes Heating System, Cooling System, Air System, Heating System Psychrometrics, Cooling System Psychrometrics.



CERTIFICATE OF COMPLIANCE
Project Name: New Main House
Calculation Date/Time: 2022-03-22T18:11:19-07:00
Calculation Description: Title 24 Analysis

Table with 12 columns: 01-12. Includes Project Name, Run Title, Project Location, City, Zip code, Climate Zone, Building Type, Project Scope, Addition Cond. Floor Area (ft²), Existing Cond. Floor Area (ft²), Total Cond. Floor Area (ft²), ADU Bedroom Count, and Is Natural Gas Available?

Table with 3 columns: 01-03. 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.

Registration Number: 222-P01056123A-000-000-000000-0000
Registration Date/Time: 2022-03-24 07:53:37
HERS Provider: CalCERTS, Inc.
CA Building Energy Efficiency Standards - 2019 Residential Compliance
Report Version: 2019.2.000
Schema Version: rev 20200901
Report Generated: 2022-03-22 18:11:50

CERTIFICATE OF COMPLIANCE
Project Name: New Main House
Calculation Date/Time: 2022-03-22T18:11:19-07:00
Calculation Description: Title 24 Analysis

Table with 8 columns: 01-08. Includes Zone Name, Zone Type, HVAC System Name, Zone Floor Area (ft²), Avg. Ceiling Height, Water Heating System 1, Water Heating System 2, Name, Zone, Construction, Azimuth, Orientation, Gross Area (ft²), Window and Door Area (ft²), and Tilt (deg).

Table with 8 columns: 01-08. Includes Name, Construction, Type, Roof Rise (x in 12), Roof Reflectance, Roof Emittance, Radiant Barrier, and Cool Roof.

Registration Number: 222-P01056123A-000-000-000000-0000
Registration Date/Time: 2022-03-24 07:53:37
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CA Building Energy Efficiency Standards - 2019 Residential Compliance
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CERTIFICATE OF COMPLIANCE
Project Name: New Main House
Calculation Date/Time: 2022-03-22T18:11:19-07:00
Calculation Description: Title 24 Analysis

Table with 12 columns: 01-12. Includes Name, Heating Element Type, Tank Type, # of Units, Tank Vol. (gal), Energy Factor or Efficiency, Input Rating or Pilot, Tank Insulation R-value (incl. Fac), Standby Loss or Recovery Eff, 1st Hr. Rating or Flow Rate, NEBA Heat Pump Brand or Model, and Tank Location or Ambient Condition.

Table with 8 columns: 01-08. Includes Name, Pipe Insulation, Parallel Piping, Compact Distribution, Compact Distribution Type, Recirculation Control, Central DHW Distribution, and Shower Drain Water Heat Recovery.

Table with 11 columns: 01-11. Includes Name, System Type, Heating Unit Name, Cooling Unit Name, Fan Name, Distribution Name, Required Thermostat Type, Status, Verified Existing Condition, Heating Equipment Count, and Cooling Equipment Count.

Table with 10 columns: 01-10. Includes Name, System Type, Number of Units, Heating HSPF/COP, Cap 47, Cap 17, Cooling SEER, EER/CEER, Zonally Controlled, Compressor Type, and HERS Verification.

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HERS Provider: CalCERTS, Inc.
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CERTIFICATE OF COMPLIANCE
Project Name: New Main House
Calculation Date/Time: 2022-03-22T18:11:19-07:00
Calculation Description: Title 24 Analysis

Table with 4 columns: Energy Design Ratings (Efficiency (EDR), Total EDR), Compliance Margins (Efficiency (EDR), Total EDR), and RESULT: COMPLIES.

Table with 5 columns: Energy Use (kWh/ft²-yr), Standard Design, Proposed Design, Compliance Margin, and Percent Improvement. Includes Space Heating, Space Cooling, IAQ Ventilation, Water Heating, Self Utilization/Flexibility Credit, and Compliance Energy Total.

Table with 12 columns: 01-12. Includes DC System Size (kWdc), Exception, Module Type, Array Type, Power Electronics, CR, Azimuth (deg), Tilt Input, Array Angle (deg), Tilt: (x in 12), Inverter Eff. (%), and Annual Solar Access (%).

Registration Number: 222-P01056123A-000-000-000000-0000
Registration Date/Time: 2022-03-24 07:53:37
HERS Provider: CalCERTS, Inc.
CA Building Energy Efficiency Standards - 2019 Residential Compliance
Report Version: 2019.2.000
Schema Version: rev 20200901
Report Generated: 2022-03-22 18:11:50

CERTIFICATE OF COMPLIANCE
Project Name: New Main House
Calculation Date/Time: 2022-03-22T18:11:19-07:00
Calculation Description: Title 24 Analysis

Table with 14 columns: 01-14. Includes Name, Type, Surface, Orientation, Azimuth, Width (ft), Height (ft), Mult., Area (ft²), U-factor, U-factor Source, SHGC, SHGC Source, and Exterior Shading.

Table with 4 columns: 01-04. Includes Name, Side of Building, Area (ft²), and U-factor.

Table with 8 columns: 01-08. Includes Construction Name, Surface Type, Construction Type, Framing, Total Cavity R-value, Interior / Exterior Continuous R-value, U-factor, and Assembly Layers.

Registration Number: 222-P01056123A-000-000-000000-0000
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CERTIFICATE OF COMPLIANCE
Project Name: New Main House
Calculation Date/Time: 2022-03-22T18:11:19-07:00
Calculation Description: Title 24 Analysis

Table with 1 column: REQUIRED SPECIAL FEATURES. Lists features like Indoor air quality, balanced fan, IAQ Ventilation Systems, IAQ Ventilation System Heat Recovery, IAQ Ventilation System supply outside air inlet, filter, and H/ERV cores, IAQ Ventilation System fault indicator display, and Northwest Energy Efficiency Alliance (NEEA) rated heat pump water heater.

Table with 1 column: HERS FEATURE SUMMARY. Lists features like Quality insulation installation (QII), Indoor air quality ventilation, Verified SEER, Fan Efficacy Watts/CFM, Verified HERSF, Verified heat pump rated heating capacity, and H/ERV Distribution System Verifications.

Table with 7 columns: 01-07. Includes Project Name, Conditioned Floor Area (ft²), Number of Dwelling Units, Number of Bedrooms, Number of Zones, Number of Ventilation Cooling Systems, and Number of Water Heating Systems.

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CERTIFICATE OF COMPLIANCE
Project Name: New Main House
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Calculation Description: Title 24 Analysis

Table with 8 columns: 01-08. Includes Construction Name, Surface Type, Construction Type, Framing, Total Cavity R-value, Interior / Exterior Continuous R-value, U-factor, and Assembly Layers.

Table with 4 columns: 01-04. Includes Quality Insulation Installation (QII), High R-value Spray Foam Insulation, Building Envelope Air Leakage, and CFM50.

Table with 7 columns: 01-07. Includes Name, System Type, Distribution Type, Water Heater Name (F), Solar Heating System, Compact Distribution, and HERS Verification.

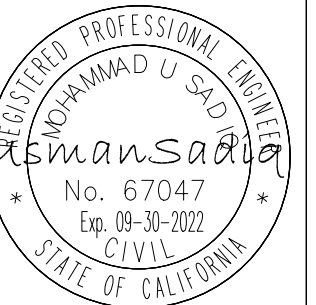
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Calculation Date/Time: 2022-03-22T18:11:19-07:00
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Table with 12 columns: 01-12. Includes Name, Heating Element Type, Tank Type, # of Units, Tank Vol. (gal), Energy Factor or Efficiency, Input Rating or Pilot, Tank Insulation R-value (incl. Fac), Standby Loss or Recovery Eff, 1st Hr. Rating or Flow Rate, NEBA Heat Pump Brand or Model, and Tank Location or Ambient Condition.

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WOODLAND, CA 95776
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E-MAIL mohammad.sadiq@calcerts.com



TITLE 24 MAIN HOUSE MEASURES

MAUJAN FARMS
3718 MAY SCHOOL ROAD
LIVERMORE CALIFORNIA 94551

DATE: 12/29/22
DRAWN BY: MB
SHEET NO.

CERTIFICATE OF COMPLIANCE

Project Name: New Main House
 Calculation Description: Title 24 Analysis

Calculation Date/Time: 2022-03-22T18:11:19-07:00
 Input File Name: sadiq_3718 may school rd main.rbd19x

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

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

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

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

Registration Number: 222-P01056123A-000-000-0000000-0000
 CA Building Energy Efficiency Standards - 2019 Residential Compliance
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CERTIFICATE OF COMPLIANCE

Project Name: New Main House
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 Input File Name: sadiq_3718 may school rd main.rbd19x

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

IAQ (INDOOR AIR QUALITY) FANS						
01	02	03	04	05	06	07
Dwelling Unit	IAQ CFM	IAQ Watts/CFM	IAQ Fan Type	IAQ Recovery Effectiveness - SRE	IAQ Recovery Effectiveness - ASRE	HERS Verification
Sfam IAQVentRpt 1-1	240	0.575	Balanced	66	66	Yes

Registration Number: 222-P01056123A-000-000-0000000-0000
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 Input File Name: sadiq_3718 may school rd main.rbd19x

CF18-PRF-01E

(Page 10 of 10)

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT	
I, I certify that this Certificate of Compliance documentation is accurate and complete.	
Documentation Author Name: Robert Mao, PE, CEA	Documentation Author Signature:
Company: TECC	Signature Date: 2022-03-24 07:53:37
Address: 6367 Swainland Road Oakland, CA 94611	CEA/HERS Certification Identification (if applicable): c70157
City/State/Zip: Oakland, CA 94611	Phone: 510-387-2756
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: Robert Mao, PE, CEA	Responsible Designer Signature:
Company: TECC	Date Signed: 2022-03-24 07:53:37
Address: 6367 Swainland Road Oakland, CA 94611	License: c70157
City/State/Zip: Oakland, CA 94611	Phone: 510-387-2756

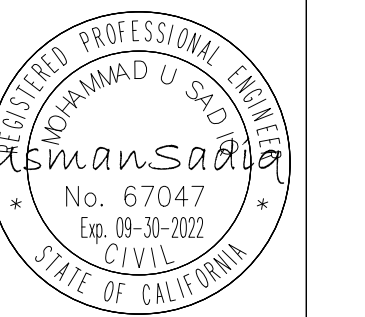
Digitally signed by CalCERTS. This digital signature is provided in order to secure the content of this registered document, and in no way implies Registration Provider responsibility for the accuracy of the information.



Registration Number: 222-P01056123A-000-000-0000000-0000
 CA Building Energy Efficiency Standards - 2019 Residential Compliance
 Registration Date/Time: 2022-03-24 07:53:37
 Report Version: 2019.2.000
 Schema Version: rev 20200901
 HERS Provider: CalCERTS, Inc.
 Report Generated: 2022-03-22 18:11:50

GENERAL REVISIONS

MOHAMMAD U SADIQ
 1000 BOURN DRIVE
 WOODLAND, CA 95776
 CELL PHONE (530) 315-4907
 E-MAIL mohammad.sadiq@calcerts.net



TITLE 24 MAIN HOUSE MEASURES

MAUJAAN FARMS
 3718 MAY SCHOOL ROAD
 LIVERMORE CALIFORNIA 94551

DATE 12/29/22
 DRAWN BY MB
 SHEET NO.

A6.3

BUILDING ENERGY ANALYSIS REPORT

PROJECT:

New ADU
3718 May School Road
Livermore, CA 94551

Project Designer:

Mohammad Sadiq, PE
1000 Barn Drive
Woodland, CA 95776

Report Prepared by:

Robert Mao, PE, CEA
The Energy Consulting Company
6367 Swainland Road
Oakland, CA 94611
510 387-2756

Job Number:

220327

Date:

3/24/2022

The EnergyScape computer program has been used to perform the calculations summarized in this compliance report. This program has approval and is authorized by the California Energy Commission for use with both the Residential and Nonresidential 2019 Building Energy Efficiency Standards.

This program developed by EnergyScape - www.energyscape.com

TABLE OF CONTENTS

Cover Page 1
Table of Contents 2
Form RMS-1 Residential Measures Summary 3
Form MF-1R Mandatory Measures Summary 4
HVAC System Heating and Cooling Loads Summary 8

RESIDENTIAL MEASURES SUMMARY

Table with columns: Project Name, Building Type, Area, Construction Type, Cavity, Special Features, Status. Includes sections for INSULATION, FENESTRATION, and HVAC SYSTEMS.

FENESTRATION

Table with columns: Orientation, Area, Total Area, U-Fac, SHGC, Overhang, Sidelights, Exterior Shades, Status. Rows for Left, Rear, Right (North, East, South, West).

HVAC SYSTEMS

Table with columns: Qty, Heating, Cooling, Thermostat, Status. Row for 1 Split Heat Pump.

HVAC DISTRIBUTION

Table with columns: Location, Heating, Cooling, Duct Location, R-Value, Status. Row for HVAC.

WATER HEATING

Table with columns: Qty, Type, Gallons, Min. Eff, Distribution, Status. Row for 1 CECDHWType_LHP.

2019 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.

Table of mandatory measures including Building Envelope Measures, Fenestration, HVAC Systems, HVAC Distribution, Water Heating, and Space Conditioning, Water Heating, and Plumbing System Measures.

2019 Low-Rise Residential Mandatory Measures Summary

Table of specific mandatory measures with codes (e.g., § 150.0j(3), § 150.0j(3B)) and descriptions.

2019 Low-Rise Residential Mandatory Measures Summary

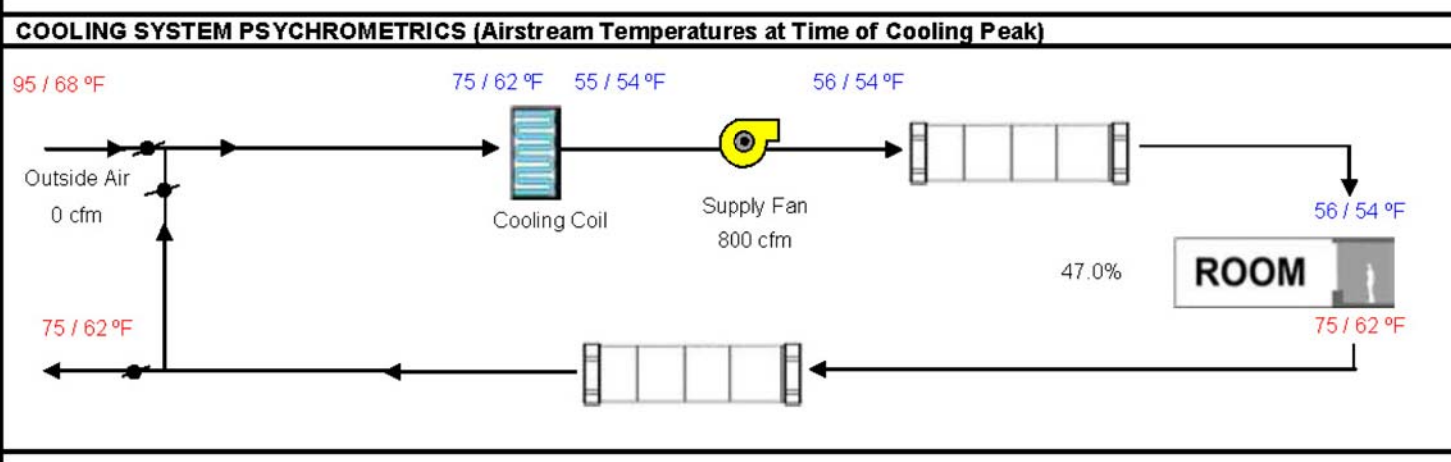
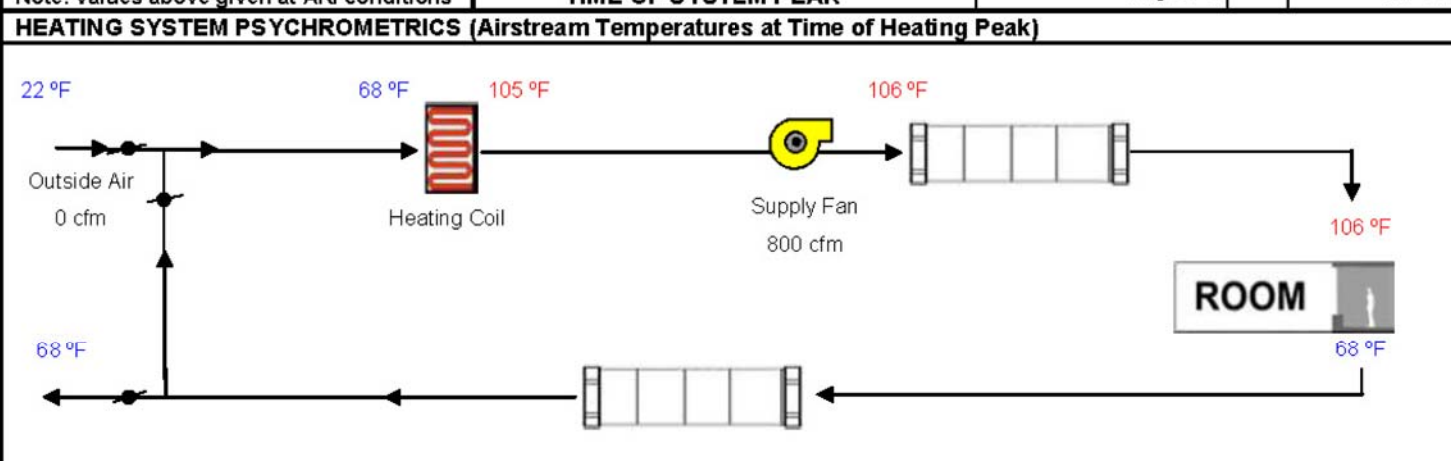
Table of specific mandatory measures with codes (e.g., § 150.0j(1), § 150.0j(1C)) and descriptions.

2019 Low-Rise Residential Mandatory Measures Summary

Table of specific mandatory measures with codes (e.g., § 150.0j(2)(3), § 150.0j(2)(4)) and descriptions.

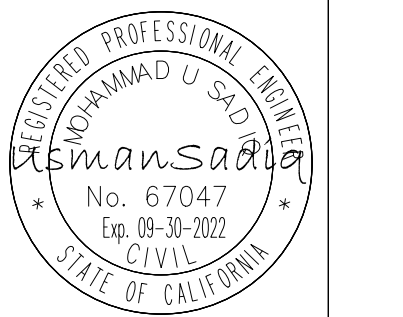
HVAC SYSTEM HEATING AND COOLING LOADS SUMMARY

Summary table for HVAC system heating and cooling loads, including engineering checks, system load, and equipment selection.



GENERAL REVISIONS

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WOODLAND, CA 95776
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E-MAIL mohammad.sadiq@ecscb.com



TITLE 24 ADU ANALYSIS

MAUJAN FARMS

3718 MAY SCHOOL ROAD
LIVERMORE CALIFORNIA 94551

DATE 12/29/22
DRAWN BY MB
SHEET NO.

A6.4

CERTIFICATE OF COMPLIANCE

Project Name: New ADU
Calculation Date/Time: 2022-03-24T07:49:52:07.00
Calculation Description: Title 24 Analysis

Input File Name: sadiq_3718 may school rd adu.rbd19x

CF19-PRF-01E

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Table with 22 columns: 01-22. Includes Project Name, Run Title, Project Location, City, Zip code, Climate Zone, Building Type, Project Scope, Addition Cond. Floor Area (ft²), Existing Cond. Floor Area (ft²), Total Cond. Floor Area (ft²), ADU Bedroom Count, and Is Natural Gas Available?

Table with 3 columns: 01-03. 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.

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Registration Date/Time: 2022-03-24 07:56:05
CA Building Energy Efficiency Standards - 2019 Residential Compliance

Report Version: 2019.2.000
Schema Version: rev 20200901

HERS Provider: CalCERTS, Inc.
Report Generated: 2022-03-24 07:50:18

CERTIFICATE OF COMPLIANCE

Project Name: New ADU
Calculation Date/Time: 2022-03-24T07:49:52:07.00
Calculation Description: Title 24 Analysis

Input File Name: sadiq_3718 may school rd adu.rbd19x

CF19-PRF-01E

(Page 4 of 9)

Table with 7 columns: 01-07. Zone Information: 01 Zone Name, 02 Zone Type, 03 HVAC System Name, 04 Zone Floor Area (ft²), 05 Avg. Ceiling Height, 06 Water Heating System 1, 07 Water Heating System 2.

Table with 8 columns: 01-08. Opaque Surfaces: 01 Name, 02 Zone, 03 Construction, 04 Azimuth, 05 Orientation, 06 Gross Area (ft²), 07 Window and Door Area (ft²), 08 Tilt (deg).

Table with 8 columns: 01-08. Attic: 01 Name, 02 Construction, 03 Type, 04 Roof Rise (in 12), 05 Roof Reflectance, 06 Roof Emittance, 07 Radiant Barrier, 08 Cool Roof.

Table with 14 columns: 01-14. Penetration / Glazing: 01 Name, 02 Type, 03 Surface, 04 Orientation, 05 Azimuth, 06 Width (ft), 07 Height (ft), 08 Mult., 09 Area (ft²), 10 U-factor, 11 U-factor Source, 12 SHGC, 13 SHGC Source, 14 Exterior Shading.

Registration Number: 222-P010561254-000-000-000000-0000
Registration Date/Time: 2022-03-24 07:56:05
CA Building Energy Efficiency Standards - 2019 Residential Compliance

Report Version: 2019.2.000
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CERTIFICATE OF COMPLIANCE

Project Name: New ADU
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Calculation Description: Title 24 Analysis

Input File Name: sadiq_3718 may school rd adu.rbd19x

CF19-PRF-01E

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Table with 8 columns: 01-08. Water Heating - HERS Verification: 01 Name, 02 Pipe Insulation, 03 Parallel Piping, 04 Compact Distribution, 05 Compact Distribution Type, 06 Recirculation Control, 07 Central DHW Distribution, 08 Shower Drain Water Heat Recovery.

Table with 11 columns: 01-11. Space Conditioning Systems: 01 Name, 02 System Type, 03 Heating Unit Name, 04 Cooling Unit Name, 05 Fan Name, 06 Distribution Name, 07 Required Thermostat Type, 08 Status, 09 Verified Existing Condition, 10 Heating Equipment Count, 11 Cooling Equipment Count.

Table with 11 columns: 01-11. HVAC - Heat Pumps: 01 Name, 02 System Type, 03 Number of Units, 04 Heating HSPF/COP, 05 Cooling SEER, 06 Cap 17, 07 Cap 13, 08 SEER/CEER, 09 Zonally Controlled, 10 Compressor Type, 11 HERS Verification.

Table with 9 columns: 01-09. HVAC Heat Pumps - HERS Verification: 01 Name, 02 Verified Airflow, 03 Airflow Target, 04 Verified EER, 05 Verified SEER, 06 Verified Refrigerant Charge, 07 Verified HSPF, 08 Verified Heating Cap 47, 09 Verified Heating Cap 17.

Registration Number: 222-P010561254-000-000-000000-0000
Registration Date/Time: 2022-03-24 07:56:05
CA Building Energy Efficiency Standards - 2019 Residential Compliance

Report Version: 2019.2.000
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CERTIFICATE OF COMPLIANCE

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Calculation Description: Title 24 Analysis

Input File Name: sadiq_3718 may school rd adu.rbd19x

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Table with 5 columns: Energy Design Ratings. Columns: Energy Design Ratings, Compliance Margins. Rows: Standard Design, Proposed Design.

RESULT: COMPLIES
1: Efficiency EDR includes improvements to the building envelope and more efficient equipment
2: Total EDR includes efficiency and demand response measures such as photovoltaic (PV) systems and batteries
3: Building complies when efficiency and total compliance margins are greater than or equal to zero

Table with 5 columns: Energy Use Summary. Columns: Energy Use (kWh/ft²-yr), Standard Design, Proposed Design, Compliance Margin, Percent Improvement. Rows: Space Heating, Space Cooling, IAQ Ventilation, Water Heating, Self Utilization/Flexibility Credit, Compliance Energy Total.

Table with 12 columns: 01-12. Required PV Systems - Simplified: 01 DC System Size (kWdc), 02 Exception, 03 Module Type, 04 Array Type, 05 Power Electronics, 06 CR, 07 Azimuth (deg), 08 Tilt Input, 09 Array Angle (deg), 10 Tilt: (in 12), 11 Inverter Eff (%), 12 Annual Solar Access (%).

Registration Number: 222-P010561254-000-000-000000-0000
Registration Date/Time: 2022-03-24 07:56:05
CA Building Energy Efficiency Standards - 2019 Residential Compliance

Report Version: 2019.2.000
Schema Version: rev 20200901

HERS Provider: CalCERTS, Inc.
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CERTIFICATE OF COMPLIANCE

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CF19-PRF-01E

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Table with 14 columns: 01-14. Penetration / Glazing: 01 Name, 02 Type, 03 Surface, 04 Orientation, 05 Azimuth, 06 Width (ft), 07 Height (ft), 08 Mult., 09 Area (ft²), 10 U-factor, 11 U-factor Source, 12 SHGC, 13 SHGC Source, 14 Exterior Shading.

Table with 4 columns: 01-04. Opaque Doors: 01 Name, 02 Side of Building, 03 Area (ft²), 04 U-factor.

Table with 8 columns: 01-08. Opaque Surface Constructions: 01 Construction Name, 02 Surface Type, 03 Construction Type, 04 Framing, 05 Total Cavity R-value, 06 Interior / Exterior Continuous R-value, 07 U-factor, 08 Assembly Layers.

Registration Number: 222-P010561254-000-000-000000-0000
Registration Date/Time: 2022-03-24 07:56:05
CA Building Energy Efficiency Standards - 2019 Residential Compliance

Report Version: 2019.2.000
Schema Version: rev 20200901

HERS Provider: CalCERTS, Inc.
Report Generated: 2022-03-24 07:50:18

CERTIFICATE OF COMPLIANCE

Project Name: New ADU
Calculation Date/Time: 2022-03-24T07:49:52:07.00
Calculation Description: Title 24 Analysis

Input File Name: sadiq_3718 may school rd adu.rbd19x

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Table with 10 columns: 01-10. Variable Capacity Heat Pump Compliance Option - HERS Verification: 01 Name, 02 Certified Low-Static VCHP System, 03 Airflow to Habitable Rooms, 04 Dustless Units in Conditioned Space, 05 Wall Mount Thermostat, 06 Air Filter Sizing & Pressure Drop Rating, 07 Low Leakage Ducts in Conditioned Space, 08 Minimum Airflow per RA3.3 and SC3.3.4.1, 09 Certified non-condensable Pan, 10 Indoor Fan not Running Continuously.

Table with 7 columns: 01-07. IAQ (Indoor Air Quality) Fans: 01 Dwelling Unit, 02 IAQ CFM, 03 IAQ Watts/CFM, 04 IAQ Fan Type, 05 IAQ Recovery Effectiveness - SRE, 06 IAQ Recovery Effectiveness - ASRE, 07 HERS Verification.

Registration Number: 222-P010561254-000-000-000000-0000
Registration Date/Time: 2022-03-24 07:56:05
CA Building Energy Efficiency Standards - 2019 Residential Compliance

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HERS Provider: CalCERTS, Inc.
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Project Name: New ADU
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Calculation Description: Title 24 Analysis

Input File Name: sadiq_3718 may school rd adu.rbd19x

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Table with 1 column: 01. Required Special Features. The following are features that must be installed as condition for meeting the modeled energy performance for this computer analysis.

Table with 1 column: 01. 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.

Table with 7 columns: 01-07. Building - Features Information: 01 Project Name, 02 Conditioned Floor Area (ft²), 03 Number of Dwelling Units, 04 Number of Bedrooms, 05 Number of Zones, 06 Number of Ventilation Cooling Systems, 07 Number of Water Heating Systems.

Registration Number: 222-P010561254-000-000-000000-0000
Registration Date/Time: 2022-03-24 07:56:05
CA Building Energy Efficiency Standards - 2019 Residential Compliance

Report Version: 2019.2.000
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Project Name: New ADU
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Input File Name: sadiq_3718 may school rd adu.rbd19x

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Table with 8 columns: 01-08. Opaque Surface Constructions: 01 Construction Name, 02 Surface Type, 03 Construction Type, 04 Framing, 05 Total Cavity R-value, 06 Interior / Exterior Continuous R-value, 07 U-factor, 08 Assembly Layers.

Table with 4 columns: 01-04. Building Envelope - HERS Verification: 01 Quality Insulation Installation (QII), 02 High R-value Spray Foam Insulation, 03 Building Envelope Air Leakage, 04 CFM50.

Table with 7 columns: 01-07. Water Heating Systems: 01 Name, 02 System Type, 03 Distribution Type, 04 Water Heater Name (ft), 05 Solar Heating System, 06 Compact Distribution, 07 HERS Verification.

Table with 12 columns: 01-12. Water Heaters: 01 Name, 02 Heating Element Type, 03 Tank Type, 04 # of Units, 05 Tank Vol (gal), 06 Energy Factor or Efficiency, 07 Input Rating or Pilot, 08 Tank Insulation R-value (in/ft), 09 Standby Loss or Recovery Eff, 10 1st H. Rating or Flow Rate, 11 NEEA Heat Pump Brand or Model, 12 Tank Location or Ambient Condition.

Registration Number: 222-P010561254-000-000-000000-0000
Registration Date/Time: 2022-03-24 07:56:05
CA Building Energy Efficiency Standards - 2019 Residential Compliance

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Input File Name: sadiq_3718 may school rd adu.rbd19x

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Table with 1 column: 01. Documentation Author's Declaration Statement. I certify that this Certificate of Compliance documentation is accurate and complete.

Table with 2 columns: 01-02. Responsible Person's Declaration Statement. 01 I certify the following under penalty of perjury under the laws of the State of California... 02 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.

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.



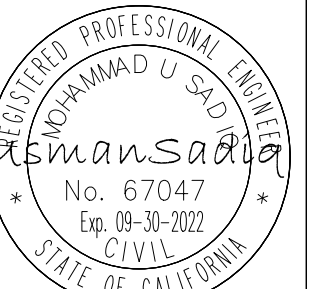
Registration Number: 222-P010561254-000-000-000000-0000
Registration Date/Time: 2022-03-24 07:56:05
CA Building Energy Efficiency Standards - 2019 Residential Compliance

Report Version: 2019.2.000
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HERS Provider: CalCERTS, Inc.
Report Generated: 2022-03-24 07:50:18

GENERAL REVISIONS

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TITLE 24 ADU MEASURES

MAUJAAN FARMS
3718 MAY SCHOOL ROAD
LIVERMORE CALIFORNIA 94551

DATE 12/29/22
DRAWN BY MB
SHEET NO.

A6.5



2019 CALIFORNIA GREEN BUILDING STANDARDS CODE

RESIDENTIAL MANDATORY MEASURES, SHEET 1 (January 2020, Includes August 2019 Supplement)

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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

APPROXIMATION OF DEFINITIONS. In mixed occupancy buildings, each portion of a building shall comply with the applicable measures applicable to each specific occupancy.

DSAS 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 porous 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.

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

Note: Refer to the State Water Resources Control Board for projects which disturb one acre or more of soil, or are part of a larger common plan of development which in total disturbs one acre or more of soil.
(Website: https://www.waterboards.ca.gov/water_issues/programs/stormwater/construction.html)

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

- Swales
- Water collection and disposal systems
- French drains
- Water retention gardens
- 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, 4.106.4.2, or 4.106.4.3 to facilitate future installation and use of EV chargers. Electric vehicle supply equipment (EVSE) shall be installed in accordance with the California Electrical Code, Article 625.

Exceptions:

- On a case-by-case basis, where the local enforcing agency has determined EV charging and infrastructure are not feasible based upon one or more of the following conditions:
 - Where there is no commercial power supply.
 - Where there is evidence substantiating that meeting the requirements will alter the local utility infrastructure design requirements on the utility side of the meter so as to increase the utility side cost to the homeowner or the developer by more than \$400.00 per dwelling unit.
- Accessory Dwelling Units (ADU) and Junior Accessory Dwelling Units (JADU) without additional parking facilities.

4.106.4.1 New one- and two-family dwellings and townhouses with attached private garages. For each dwelling unit, install a listed raceway to accommodate a dedicated 208/240-volt branch circuit. The raceway shall not be less than trade size 1 (nominal 1-inch inside diameter). The raceway shall originate at the main service or subpanel and shall terminate into a listed cabinet, box or other enclosure in close proximity to the proposed location of an EV charger. Raceways are required to be continuous at enclosed, inaccessible or concealed areas and spaces. The service panel and/or subpanel shall provide capacity to install a 40-ampere 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. If residential parking is available, ten (10) percent of the total number of parking spaces on a building site, provided for all types of parking facilities, shall be electric vehicle charging spaces (EV spaces) capable of supporting future EVSE. Calculations for the required number of EV spaces shall be rounded up to the nearest whole number.

Notes:

- 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. Where common use parking is provided at least one EV space shall be located in the common use parking area and shall be available for use by all residents.

4.106.4.2.1.1 Electric Vehicle Charging Stations (EVCS) When EV chargers are installed, EV spaces required by Section 4.106.4.2, Item 3, shall comply with at least one of the following options:

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

Exception: Electric vehicle charging stations designed and constructed in compliance with the California Building Code, Chapter 11B, are not required to comply with Section 4.106.4.2.1.1 and Section 4.106.4.2.2, Item 3.

Note: Electric vehicle charging stations serving public housing are required to comply with the California Building Code, Chapter 11B.

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

- The minimum length of each EV space shall be 18 feet (5486 mm).
- The minimum width of each EV space shall be 9 feet (2743 mm).
- 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 space. Construction documents shall identify the raceway termination point. The service panel and/or subpanel shall provide capacity to install a 40-ampere minimum dedicated branch circuit and space(s) reserved to permit installation of a branch circuit overcurrent protective device.

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

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

4.106.4.3 New hotels and motels. All newly constructed hotels and motels shall provide EV spaces capable of supporting future installation of EVSE. The construction documents shall identify the location of the EV spaces.

Notes:

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

4.106.4.3.1 Number of required EV spaces. The number of required EV spaces shall be based on the total number of parking spaces provided for all types of parking facilities in accordance with Table 4.106.4.3.1. Calculations for the required number of EV spaces shall be rounded up to the nearest whole number.

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

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

- The minimum length of each EV space shall be 18 feet (5486mm).
- The minimum width of each EV space shall be 9 feet (2743mm).

4.106.4.3.3 Single EV space required. When a single EV space is required, the EV space shall be designed in accordance with Section 4.106.4.2.3.

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

4.106.4.3.5 Identification. The service panels or sub-panels shall be identified in accordance with Section 4.106.4.2.5.

4.106.4.3.6 Accessible EV spaces. In addition to the requirements in Section 4.106.4.3, EV spaces for hotels/motels and all EVSE, when installed, shall comply with the accessibility provisions for the EV charging stations in the California Building Code, Chapter 11B.

DIVISION 4.2 ENERGY EFFICIENCY

4.201 GENERAL

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

DIVISION 4.3 WATER EFFICIENCY AND CONSERVATION

4.303 INDOOR WATER USE

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

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

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

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

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

4.303.1.3 Showerheads.

4.303.1.3.1 Single Showerhead. Showerheads shall have a maximum flow rate of not more than 1.8 gallons per minute at 80 psi. Showerheads shall be certified to the performance criteria of the U.S. EPA WaterSense Specification for Showerheads.

4.303.1.3.2 Multiple showerheads serving one shower. When a shower is served by more than one showerhead, the combined flow rate of all the showerheads and/or other shower outlets controlled by a single valve shall not exceed 1.8 gallons per minute at 80 psi, or the shower shall be designed to only allow one shower outlet to be in operation at a time.

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

4.303.1.4 Faucets.

4.303.1.4.1 Residential Lavatory Faucets. The maximum flow rate of residential lavatory faucets shall not exceed 1.2 gallons per minute at 60 psi. The minimum flow rate of residential lavatory faucets shall not be less than 0.5 gallons per minute at 20 psi.

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

4.303.1.4.3 Metering Faucets. Metering faucets when installed in residential buildings shall not deliver more than 0.2 gallons per cycle.

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

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

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

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

TABLE - MAXIMUM FIXTURE WATER USE	
FIXTURE TYPE	FLOW RATE
SHOWER HEADS (RESIDENTIAL)	1.8 GMP @ 80 PSI
LAVATORY 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	0.2 GAL/CYCLE
WATER CLOSET	1.28 GAL/FLUSH
URINALS	0.125 GAL/FLUSH

4.304 OUTDOOR WATER USE

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

NOTES:

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

DIVISION 4.4 MATERIAL CONSERVATION AND RESOURCE EFFICIENCY

4.406 ENHANCED DURABILITY AND REDUCED MAINTENANCE

4.406.1 RODENT PROOFING. Annual 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:

- Excavated soil and land-clearing debris.
- 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.
- The enforcing agency may make exceptions to the requirements of this section when isolated jobsites are located in areas beyond the haul boundaries of the diversion facility.

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

- 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.
- Specify if construction and demolition waste materials will be sorted on-site (source separated) or bulk mixed (single stream).
- Identify diversion facilities where the construction and demolition waste material collected will be taken.
- Identify construction methods employed to reduce the amount of construction and demolition waste generated.
- Specify that the amount of construction and demolition waste materials diverted shall be calculated by weight or volume, but not by both.

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

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

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

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

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

Notes:

- 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.
- 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:

- Directions to the owner or occupant that the manual shall remain with the building throughout the life cycle of the structure.
- Operation and maintenance instructions for the following:
 - Equipment and appliances, including water-saving devices and systems, HVAC systems, photovoltaic systems, electric vehicle chargers, water-heating systems and other major appliances and equipment.
 - Roof and yard drainage, including gutters and downspouts.
 - Space conditioning systems, including condensers and air filters.
 - Landscape irrigation systems.
 - Water reuse systems.
- Information from local utility, water and waste recovery providers on methods to further reduce resource consumption, including recycle programs and locations.
- Public transportation and/or carpool options available in the area.
- 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.
- Information about water-conserving landscape and irrigation design and controllers which conserve water.
- Instructions for maintaining gutters and downspouts and the importance of diverting water at least 5 feet away from the foundation.
- Information on required routine maintenance measures, including, but not limited to, caulking, painting, grading around the building, etc.
- Information about state solar energy and incentive programs available.
- Information about all special inspections/verifications required by the enforcing agency or this code.
- A copy of all special inspections/verifications required by the enforcing agency or this 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 are identified for the depositing, storage and collection of non-hazardous materials for recycling, including (at a minimum) paper, corrugated cardboard, glass, plastics, organic waste, and metals, or meet a lawfully enacted local recycling ordinance, if more restrictive.

Exception: Rural jurisdictions that meet and apply for the exemption in Public Resources Code Section 42649.82 (a)(2)(A) et seq. are not required to comply with the organic waste portion of this section.

DIVISION 4.5 ENVIRONMENTAL QUALITY

SECTION 4.501 GENERAL

4.501.1 Scope
The provisions of this chapter shall outline means of reducing the 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.

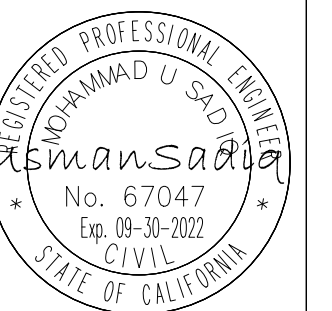
COMPOSITE WOOD PRODUCTS. Composite wood products include hardwood plywood, particleboard and medium density fiberboard. "Composite wood products" does not include hardboard, structural plywood structural panels, structural composite lumber, oriented strand board, glued laminated timber, prefabricated wood I-posts 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.

DISCLAIMER: THIS DOCUMENT IS PROVIDED AND INTENDED TO BE USED AS A MEANS TO INDICATE AREAS OF COMPLIANCE WITH THE 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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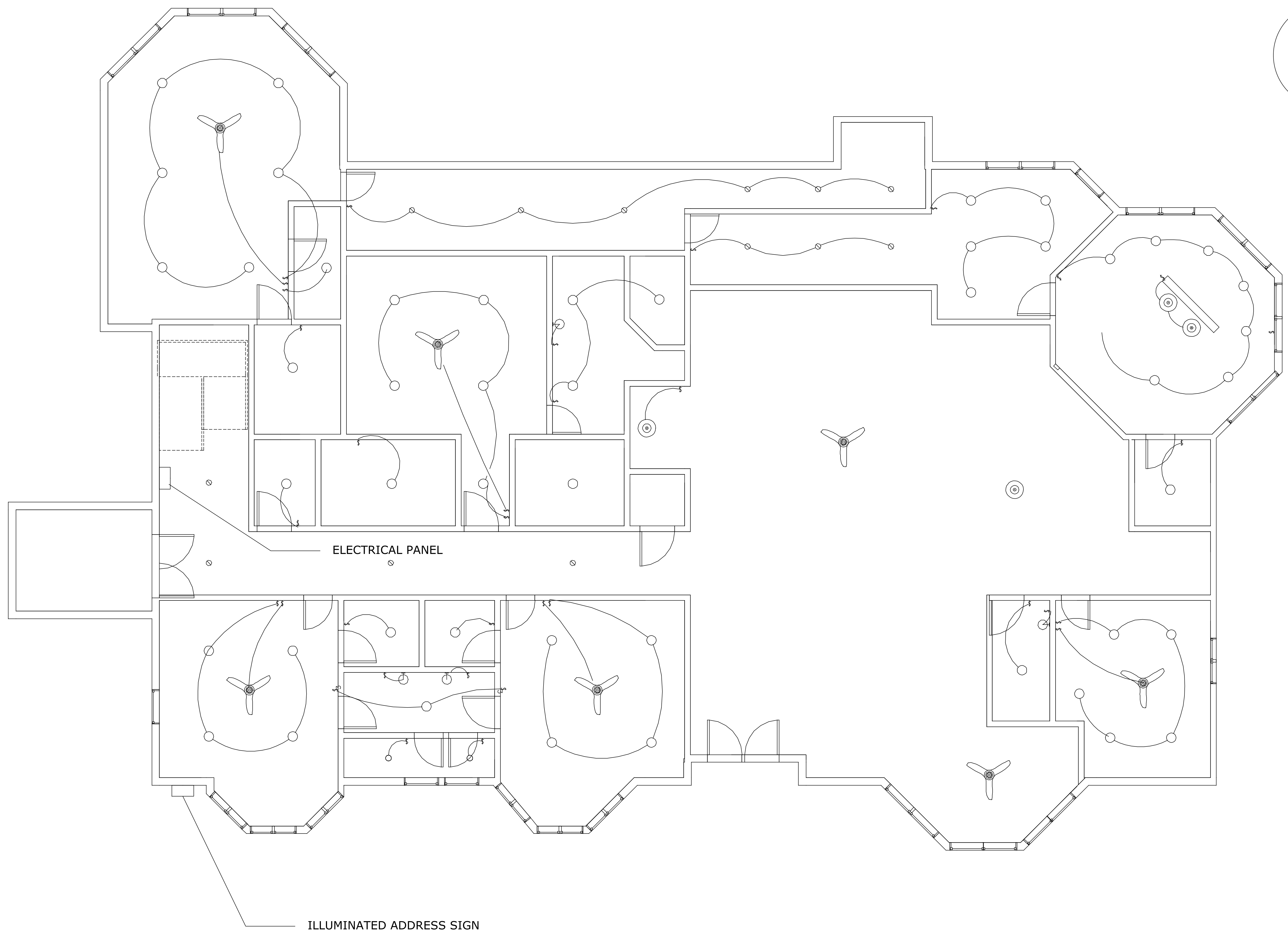


2019 CALIFORNIA GREEN BUILDING STANDARDS CODE

MAUJAN FARMS
3718 MAY SCHOOL ROAD
LIVERMORE CALIFORNIA 94551

DATE 12/29/22
DRAWN BY MB
SHEET NO.

A6.6

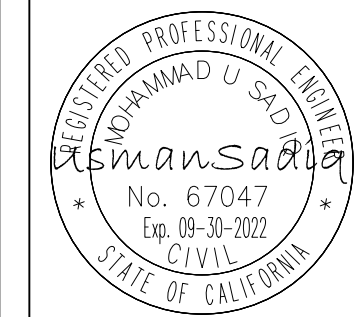


SHEET NOTES:

1. CONTRACTOR SHALL INSTALL A LABEL OR SIGN AT CONTROLLER OF SWITCH TO INFORM OCCUPANTS THAT FRESH AIR VENTILATOR IS AN INDOOR AIR QUALITY FAN THAT SHOULD OPERATE WHEN BUILDING IS OCCUPIED.

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MAIN HOUSE FIRST FLOOR
 ELECTRICAL PLAN
 1/4" = 1'-0"

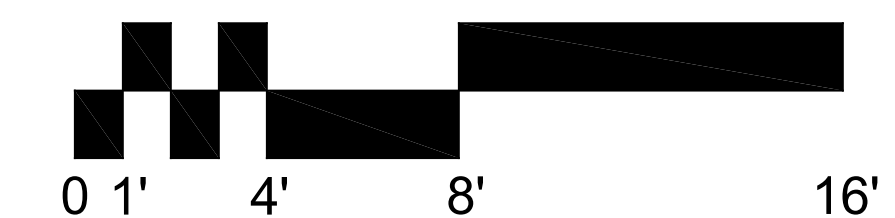
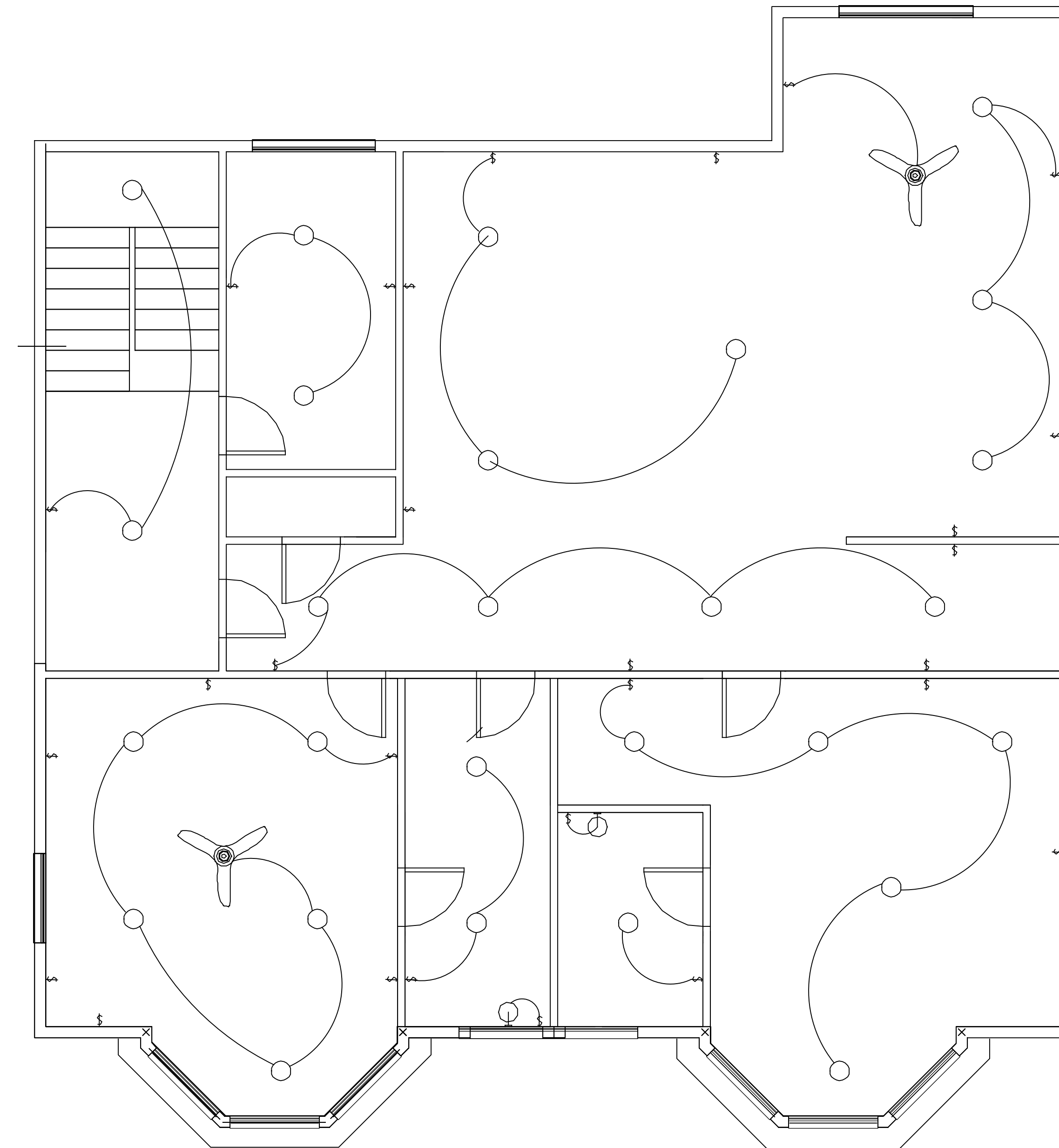
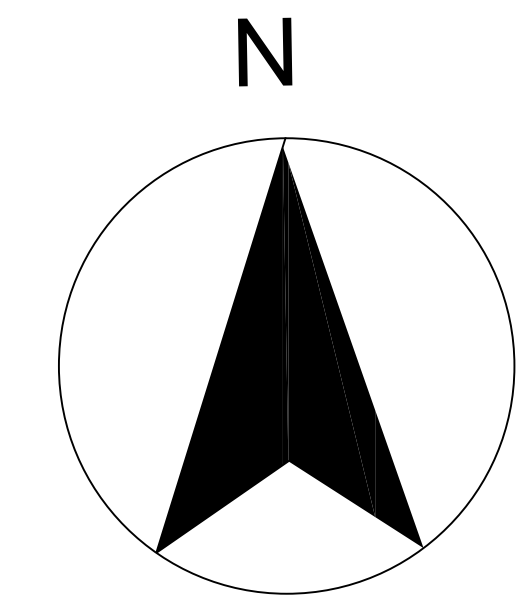
MAUJAAN FARMS
 3718 MAY SCHOOL ROAD
 LIVERMORE CALIFORNIA 94551

DATE 12/29/22
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ELECTRICAL NOTES

ELECTRICAL PLANS ARE DIAGRAMMATIC ONLY. CONTRACTOR SHALL PROVIDE ALL ELECTRICAL SYSTEMS TO MEET THE REQUIREMENTS OF THE OWNER AND SHALL COMPLY WITH ALL CODES INCLUDING PROJECT TITLE 24 REQUIREMENTS. FOLLOWING ARE SOME GENERAL NOTES FOR CONFORMANCE.

1. No electrical panels in closets or bathrooms. Maintain a clearance of 36" inches in front of panels, 30" wide or width of equipment and 6'-6" high for headroom. (CEC 110.26)
2. Provide a minimum 3 lug intersystem bonding bus bar at the main electrical service. (CEC 250.94)
3. All automatic garage door openers that are installed in a residence shall have a battery backup function that is designed to operate when activated because of an electrical outage. (SB-969)
4. A concrete-encased electrode (ufer) consisting of 20' of rebar or #4 copper wire placed in the bottom of a footing is required for all new construction. (CEC 250.52(A))
- (3) Bond all metal gas and water pipes to ground. All ground clamps shall be accessible and of an approved type. (CEC 250.104)
5. All 15/20 ampere receptacles installed per CEC 210.52 shall be listed tamper-resistant receptacles. (CEC 406.12)
6. All branch circuits supplying 15/20 ampere outlets in family rooms, dining rooms, living rooms, parlors, libraries, dens, bedrooms, sunrooms, recreation rooms, closets, hallways, kitchens, laundry room or similar rooms/areas shall be protected by a listed combination type arc-fault circuit interrupter. (CEC 210.12)
7. Provide a minimum of one 20A circuit to be used for the laundry receptacle. (CEC 210.11(C)(2)) Provide a minimum of one 20A circuit for bathroom receptacle outlets. (CEC 210.11(C)(3))
8. Provide at least 1 outlet in basements, garages, laundry rooms, decks, balconies, porches and within 3' of the outside of each bathroom basin. (CEC 210.52 (D), (F) & (G))
9. Furnaces installed in attics and crawl spaces shall have an access platform (catwalk in attics), light switch and receptacle in the space. Provide a service receptacle for the furnace. (CEC 210.63)
10. All dwellings must have one exterior outlet at the front and the back of the dwelling. (CEC 210.52(E))
11. Garage receptacles shall not serve outlets outside the garage. Exception: Garage circuit may serve readily accessible outdoor receptacle outlets. ((CEC 210.11 (C)(4)) A minimum of 1 receptacle shall be provided for each car space. (210.52(G) (1))
12. At least one wall switched lighting outlet or fixture shall be installed in every habitable room, bathroom, hallways, stairways, attached garages and detached garages with electrical power, equipment spaces (attics, basements, etc.). (CEC 210.70)
13. Kitchens, dining rooms, pantries, breakfast nooks, and similar areas must have a minimum of two 20A circuits. Kitchen, pantry, breakfast nooks, dining rooms, work surfaces and similar areas counter outlets must be installed in every counter space 12" inches or wider, not greater than 4' o.c., within 24" inches of the end of any counter space and not higher than 20" above counter. (CEC 210.52 (C)) Island counter spaces shall have at least 1 receptacle outlet unless a range top or sink is installed than 2 receptacles may be required. 1 receptacle is required for peninsular counter spaces. Receptacles shall be located behind kitchen sinks if the counter area depth behind the sink is more than 12" for straight counters and 18" for corner installations. (CEC Figure 210.52(C)(1))
14. The main service disconnect shall have a rating of not less than 100 amps. C.E.C. Article 230.79(C).
15. Receptacles shall be installed at 12' o.c. maximum in walls starting at 6' maximum from the wall end. Walls longer than two feet shall have a receptacle. Hallway walls longer than 10 ft. shall have a receptacle in hallways. (CEC 210.52(A))
16. Receptacles shall not be installed within or directly over a bathtub or shower stall. (CEC 406.9(C)) Light pendants, ceiling fans, lighting tracks, etc. shall not be located within 3ft horizontally and 8ft vertically above a shower and/or bathtub threshold. (CEC 410.10(D))
17. All lighting/fan fixtures located in wet or damp locations shall be rated for the application. (CEC 410.10)
18. GFCI outlets are required: for all kitchen receptacles that are designed to serve countertop surfaces, dishwashers, bathrooms, in under-floor spaces or below grade level, in unfinished basements, crawl space lighting outlets, in exterior outlets, within 6' of a laundry/utility/wet bar sinks, laundry areas, and in all garage outlets including outlets dedicated to a single device or garage door opener. (CEC 210.8)
19. Carbon-monoxide alarms shall be installed in dwelling units with fuel-burning appliances or with attached garages (CRC R315): ☉ Outside of each separate sleeping area in the immediate vicinity of bedrooms ☉ On every level of a dwelling unit including basements
20. Smoke alarms shall be installed (CRC (R314): ☉ In each room used for sleeping purposes. ☉ Outside of each separate sleeping area in the immediate vicinity of bedrooms. ☉ In each story, including basements. ☉ At the top of stairways between habitable floors where an intervening door or obstruction prevents smoke from reaching the smoke detector. ☉ Shall not be installed within 20ft horizontally of cooking appliances and no closer than 3ft to mechanical registers, ceiling fans and bathroom doors with a bathtub or shower unless this would prevent placement of a smoke detector (314.3(4)). ☉ All smoke and carbon-monoxide alarms shall be hardwired with a battery backup (smoke alarms shall have a 10-year sealed battery). (CRC R314.4 & R315.1.2) ☉ Smoke detectors within 10 feet to 20 feet of the stove shall be ionization type with alarm silencing switch. CRC R314.3.3.
21. All 15/20 ampere receptacles in wet locations shall have in-use (bubble) covers installed. All receptacles in wet locations shall also be listed weather-resistant type. (CEC 406.9(B)(1))



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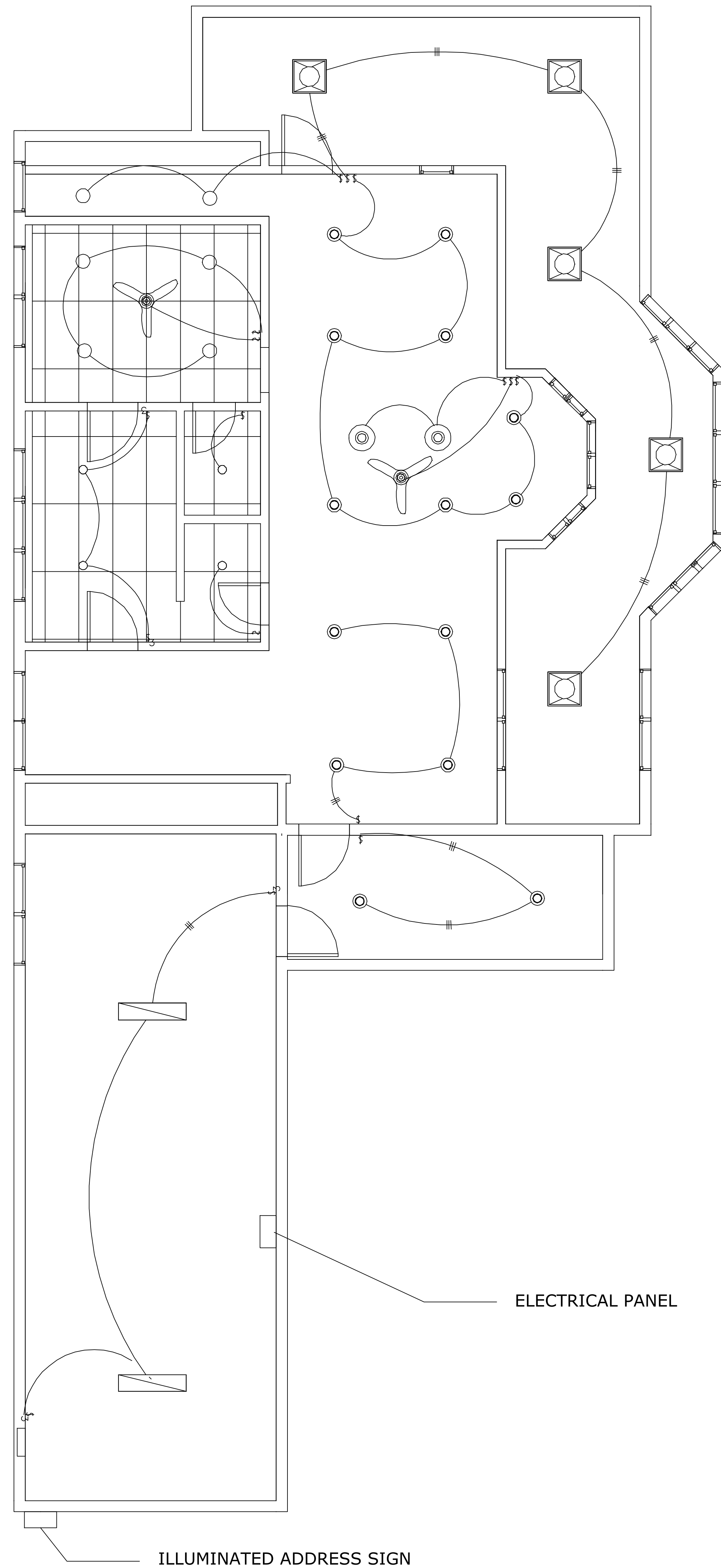


MAIN HOUSE SECOND FLOOR
ELECTRICAL PLAN
1/4" = 1'-0"

MAUJAAN FARMS
3718 MAY SCHOOL ROAD
LIVERMORE CALIFORNIA 94551

DATE 12/29/22
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SHEET NO.

A7.2

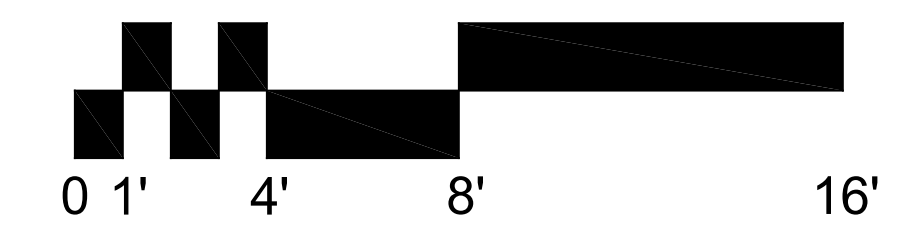
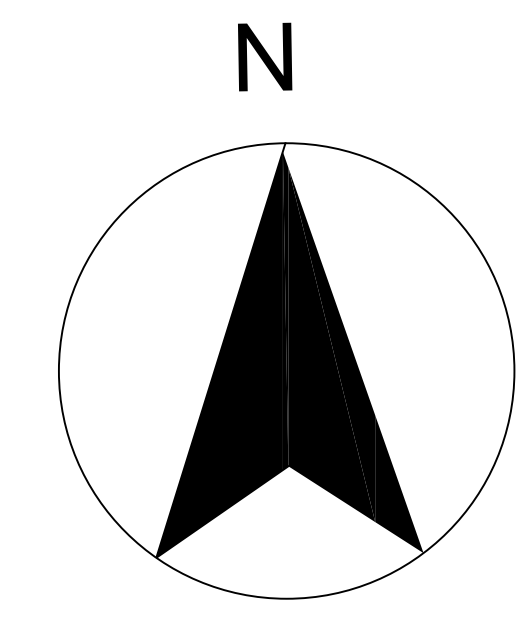


ELECTRICAL PANEL

ILLUMINATED ADDRESS SIGN

SHEET NOTES:

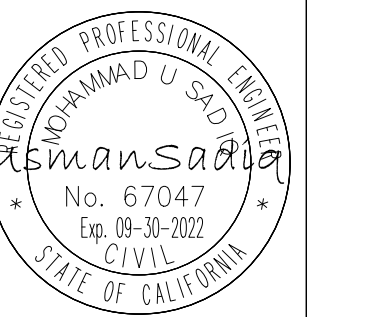
1. CONTRACTOR SHALL INSTALL A LABEL OR SIGN AT CONTROLLER OF SWITCH TO INFORM OCCUPANTS THAT FRESH AIR VENTILATOR IS AN INDOOR AIR QUALITY FAN THAT SHOULD OPERATE WHEN BUILDING IS OCCUPIED.
2. ELECTRICAL PANEL FOR ADU SHALL BE 100 AMP RATED.
3. ALL GARAGE DOOR OPENERS MUST HAVE BATTERY BACKUP, PER CA SB-969 AND R309.4.



GENERAL REVISIONS

1	05/26/2022	
2	06/05/2022	

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ADU ELECTRICAL PLAN
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DATE 06/05/22
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A7.3