

RACEWAY CONDUIT IN GULLING CAVITY, SLAB, OR WALL.  
 RACEWAY HORIZEN TO PANEL, ONE ARMORWAVE PER CIRCUIT.  
 RACEWAY WITH 3 PHASE 2 WIRE IN CONDUIT AND 2 WIRE GROUNDING  
 CONDUCTOR. 100% OF THESE WIRING HATCHES INDICATED NUMBER OF  
 WIRE CONDUCTORS SHOWN. CABLES W/ + PHASE CONDUCTOR, LONG  
 GROUNDING NEUTRAL, GROUNDING, 20% IDENTICAL GROUNDING  
 CONDUCTOR AND SHALL MATCHES ATTERED 2 WIRE GROUNDING  
 CONDUCTOR. 100% OF THESE WIRING HATCHES INDICATED 2 WIRE  
 AND 2 WIRE GROUNDING CONDUCTOR.  
 SHALL SINGLE POLE. SINGLE THIRK, MOUNT 40" AP.  
 WALL SWITCH 3-WAY, SINGLE POLE DOUBLE THIRK, MOUNT 40" AP.  
 WALL VACUANTY BEND, SINGLE POLE, MOUNT 40" AP.  
 DISCONNECT SWITCH (BUTTERFLY) 250 AMP, 250 AMP, 250 AMP, 250 AMP  
 OR, 250 AMP, 250 AMP, 250 AMP, 250 AMP, 250 AMP, 250 AMP, 250 AMP  
 100% INDICATED NON-FUSED TYPE (BUTTERFLY)  
 DUPLEX RECEPTACLE  
 DUPLEX RECEPTACLE - BOTTOM HALL SWITCHED  
 DUPLEX RECEPTACLE - FLOOR MOUNTED  
 RECEPTACLE - 220V  
 DUPLEX RECEPTACLE - GROUND FAULT INTERRUPT  
 DUPLEX RECEPTACLE - HEATER PROOF AND GROUND FAULT INTERRUPT  
 SMOKE DETECTOR - IN SERIES  
 CARBON MONOXIDE DETECTOR  
 COMBINATION SMOKE AND CARBON MONOXIDE DETECTOR  
 EXHAUST FAN MOTOR  
 EXHAUST FAN MOTOR WITH LIGHT

[illegible]

A. INSTALL LIGHTING FIXTURES AS SHOWN ON THE ELECTRICAL DRAWINGS. VERIFY EXACT LOCATIONS OF FIXTURES WITH ARCHITECTURAL REFLECTED CEILING PLANS. COORDINATE FIXTURE HOUSINGS AND TRIMS WITH CEILING TYPE. PRICE REQUIREMENTS FOR CEILING TYPES.

B. ALL RECESSED LIGHTING FIXTURES SHALL BE LED.

C. ALL BULBS ARE DIMMABLE LED.

D. NUMBER OF BULBS DETERMINED BY FIXTURE CHOSEN BY CUSTOMER.

E. K-RATED RECESSED LIGHT FIXTURES SHALL BE SEALED AT HOUSING/INTERIOR FINISH AND LABELED TO INDICATE.

F. 2.0 CFM LEAKAGE AT 75% PA. (2018 VA ENERGY CODE) 75% LAMPS IN PERMANENT FIXTURES OR 75% PERMANENT FIXTURES SHALL BE USED HIGH EFFIC LAMPS. (2018 VA ENERGY CODE)

A. ALL PANELBOARDS SHALL BE ENCLOSED TYPE, FLUSH OR SURFACE MOUNTED AS REQUIRED. IN STEEL, GANTRY, CAGE, GROUND, WITH STEEL TRIM CONCEALED HINGED DOORS AND FLUSH TYPE LOCKS. MANUFACTURER SHALL BE APPROVED BY THE AUTHORITY HAVING JURISDICTION.

B. ALL BUSBARS, INCLUDING NEUTRAL, AND GROUND BUS, SHALL BE MINIMUM 60% CONDUCTIVITY, HARD DRAWN ALUMINUM OR ALUMINUM-CLAD STEEL. CONDUCTORS SHALL BE VACUUM CAST OR WELDED TO THE BUSBARS. HIGH CROSS-SECTIONAL AREA, BUSBARS SHALL BE ARRANGED FOR SEQUENCING PURPOSES. EXCEPTION: ALUMINUM BUSHING IS PERMITTED FOR RESIDENTIAL, LOW VOLTAGE PANELBOARDS.

C. ALL PANELBOARDS SHALL BE PROVIDED WITH THE FOLLOWING: MINIMUM 10% BREAKERS OF THE TYPE, NUMBER OF POLES, TRIP SIZE, AS SHOWN IN DRAWINGS AND INTERRUPTING CAPACITY AS PER BUILDING REQUIREMENTS. MINIMUM 10% OF THE TYPE, NUMBER OF POLES, TRIP SIZE, AS SHOWN IN DRAWINGS AND INTERRUPTING CAPACITY AS PER BUILDING REQUIREMENTS. POLES AND LACE ALL CONDUCTORS WITHIN PANEL ENCLOSURE DO NOT SPICE TOGETHER WITHIN THE PANEL ENCLOSURE.

D. EXISTING PANEL, KNOCKOUTS NOT TO BE USED.

E. ALL SWITCHES SHALL BE SQUARE-D, CLASS 30 TYPE USED OR NON-USED OR APPROVED EQUIVALENT.

DUPLEX RECEPTACLES FOR HALL AND FLOOR CONVENIENCE OUTLETS SHALL BE 2 POLE, 3 WIRE, GROUNDING, 15 AMPERE, NEMA CONFIGURATION 5-20R, COLOR BY ARCHITECT.  
ALL RECEPTACLES SHALL BE TAMPER RESISTANT.  
DUPLEX 60V RECEPTACLE SHALL BE 2 POLE, 3 WIRE, GROUNDING, 30 AMPERE, NEMA CONFIGURATION 5-20R, COLOR BY ARCHITECT.  
SINGLE POLE SWITCHES AND 3-WAY SWITCHES SHALL BE SPECIFICATION GRADE. COLOR BY ARCHITECT. DEVICE SHALL BE MOUNTED UNDER COMMON COVERPLATE WHERE MULTIPLE DEVICES ARE INDICATED.  
AG-CD SMOKE AND CARBON MONOXIDE DETECTOR SHOULD BE INSTALLED ACCORDING TO NFPA 72.  
NOTES: THESE SHOULD COMPLY WITH NFPA 72, SECTION 20.6. ALARMS HAVE TO POWER SUPPLIES 120- VOLT AC FOR THE PRIMARY SOURCE OF POWER AND BATTERY BACKUP FOR THE SECONDARY SOURCE.

A. ALL BRANCH CIRCUIT CONDUCTORS SHALL BE COPPER UNLESS OTHERWISE NOTED. ALL #0 AND WIRE AND LARGER SHALL BE STRANDED.

B. ALL #0 AND WIRE AND SMALLER SHALL BE SOLID.

C. VOLTAGE RATING OF INSULATION SHALL BE 600 VOLTS.

D. FACTORY COLOR CODING FOR WIRE AND CABLE SHALL BE AS FOLLOWS: 120/208V - BLACK, RED, BLUE AND WHITE; FOR PHASES A, B AND C AND NEUTRAL RESPECTIVELY. GREEN SHALL BE GREEN.

E. LEAD WIRE SUFFICIENTLY LONG TO PERMIT MAKING FIRM CONNECTIONS.

F. LIGHTING AND POWER WIRING FOR CIRCUITS LESS THAN 100 FEET SHALL BE #12 AWG, UNLESS NOTED. WIRE SIZES SHALL BE #10 FOR CIRCUITS GREATER THAN 100 FEET.

A. TYPE NM CABLE SHALL BE PERMITTED PER NFPA-70 ARTICLE 334.10. ALL OTHER LOCATIONS SHALL USE TYPE MC AS A SUBSTITUTE FOR CONDUIT.

A. ALL OUTLET BOXES SHALL BE PLASTIC RATED FOR RESIDENTIAL USE.  
B. ALL OUTLET BOXES SHALL BE LOCATED IN A MINIMUM OF 4" SQUARE, BY 1/2" MINIMUM DEPTH AND SHALL BE FITTED WITH DEVICE COVERS AND DEPTH EQUAL TO THE DRY WALL THICKNESS.  
C. SECTIONAL BOXES ARE NOT ACCEPTABLE.  
D. ALL SQUARE AND TRUE WITH BUILDING FINISH. ERECT WALL AND SWITCH OUTLETS IN ADVANCE OF FURRING AND FIREPROOFING.  
E. LOCATIONS INDICATED FOR LOCAL WALL SWITCHES ARE SUBJECT TO MODIFICATIONS, AT OR NEAR DOORS INSTALL SWITCH LOCATIONS INDICATED FOR LOCAL WALL SWITCHES. VERIFICATION OF SWITCH LOCATIONS SHALL BE MADE BY THE CONTRACTOR.  
F. LOCATION INDICATED FOR LOCAL WALL SWITCHES CONTROLLING EMERGENCY PUSH BUTTONS, RECEIPTABLE, ETC. ARE SUBJECT TO MODIFICATIONS.  
G. ALL OUTLET FROM FINISHED FLOOR TO CENTERLINE OF OUTLETS, AS PER ELECTRICAL DRAWINGS. EXCEPTIONS: AT JUNCTION OF DIFFERENT WALL MATERIALS, HOLDING OR BREAK IN WALL SURFACE IN VIOLATION OF CODE REQUIREMENTS.

A. GROUND ALL CONDUITS, CABINETS, MOTORS, PANELS, AND OTHER EXPOSED NON-CURRENT CARRYING METAL PARTS OF ELECTRICAL EQUIPMENT IN ACCORDANCE WITH ALL PROVISIONS OF THE NATIONAL ELECTRICAL CODE, OR LOCAL CODES THAT MAY APPLY.

A. ALL PENETRATIONS THROUGH FIRE RATED WALLS, FLOORS OR PARTITIONS SHALL BE SEALED TO PREVENT THE SPREAD OF SMOKE AND FIRE THROUGH THEM. THE FIRE RATINGS OF THE PENETRATION SEAL SHALL BE AT LEAST THAT OF THE FLOOR OR WALL INTO WHICH IT IS INSTALLED BY ARTICLE 1300-2 OF THE NATIONAL ELECTRICAL CODE.

B. THE FOAM SEALANT SHALL MEET ALL OF THE FIBRE TEST AND HOUSE STREAM TEST REQUIREMENTS OF ASTM E-119-13 AND SHALL BE UL CLASSIFIED AS A WALL OPENING PROTECTIVE DEVICE, AS MANUFACTURED BY CHASE TECHNOLOGY CORPORATION, OR APPROVED EQUIVALENT.

B. ELECTRICAL CONTRACTOR SHALL FURNISH AND INSTALL ONLY POWER WIRING WITH DISCONNECTS, AS SHOWN IN ELECTRICAL DRAWINGS.

A. UPON COMPLETION OF ALL ELECTRICAL WORK, CONTRACTOR SHALL TEST FOR GROUNDS AND SHORTS, TO ENSURE PROPER OPERATION OF ELECTRICAL EQUIPMENT.  
B. GUARANTEE FOR TWO YEARS AFTER FINAL ACCEPTANCE BY OWNER OF ALL WORKMANSHIP AND MATERIALS FURNISHED.  
C. SMOKE DETECTOR TEST SHOULD BE DONE IN ACCORDANCE WITH NFPA-72.

LIGHTING FIXTURE SCHEDULE								
SYMBOL	FIXTURE DESCRIPTION	MOUNTING	VOLTS	AMPS (WATT)	MANUFACTURER	PANEL #	ITEM #	REMARKS
	DAY LIT DOWNLIGHT, WHITE PAINTED FLANGE, 9" W/50 DOWNING, 65 DD BEAM SPREAD	RECESSED CEILING	120	12.8	PROGRESS LIGHTING FIXTURES ALLOWANCE	---	PM0007-01-30-00	OR EQUIVALENT APPROVED BY OWNER
	RE-FLUORESCENT DOWNLIGHT EXPOSED LED BULB	SURFACE CEILING	120	17	SPECIFIED BY OWNER FIXTURES ALLOWANCE	---	---	OR EQUIVALENT APPROVED BY OWNER
	EXTERIOR HALL MOUNT LED BULB	SURFACE CEILING	120	17	PROGRESS LIGHTING FIXTURES	L0-036203	PM01-18	OR EQUIVALENT APPROVED BY OWNER
	DOOR TO CEILING BOYE, GLASS LED LAMPS	SURFACE CEILING	120	80	PROGRESS LIGHTING FIXTURES	L0-138114	PM0008-001	OR EQUIVALENT APPROVED BY OWNER
	PENDANT FIXTURE, LED LAMP	SURFACE CEILING	120	100	PROGRESS LIGHTING FIXTURES	L-141265	PM0027-01	OR EQUIVALENT APPROVED BY OWNER
	LIGHT FIXTURE - MOORE GARDEN LED LIGHT	SURFACE CEILING	120	7	PROGRESS LIGHTING FIXTURES	L0084584	PM0003-028-000	OR EQUIVALENT APPROVED BY OWNER

1. ALL LIGHT DIMMABLE LED LUMINAIRES SHALL BE SUPPORTED IN ACCORDANCE WITH ARTICLE 410.40.

2. SPECIFIED LIGHT FIXTURES SHALL BE USED AS A BASIS OF DESIGN. ARCHITECT/OWNER SHALL PROVIDE EXACT LIGHTING FIXTURE PACKAGE PRIOR TO BID SUBMITTAL.

3. EXISTING FIXTURES SHALL BE IDENTIFIED BY THE RATED VOLTAGE AND WATTAGE. THE RATED WATTAGE OR PROVIDED WITH FIRE RATED TEXTILE ASSEMBLY, MOORE BY DESIGN.

4. ALL NEW LED LUMINAIRES SHALL BE EQUIPPED WITH DESIGNED "SAVING" DRIVERS.

AIG	AMPERES INTERRUPTING CURRENT
AF/AR/F	ABOVE FINISHED FLOOR/ ABOVE RAISED FLOOR
ARCH	ARCHITECT/ARCHITECTURAL
AT	AMPERE TRIP
AF	AMPERE FRAME
C	CONDUIT
GB	CIRCUIT BREAKER
CCT	CIRCUIT
EC	EMPTY CONDUIT
EMT	ELECTRICAL METALLIC TUBING
EX	EXISTING
F	FUSED
FFL	FINISHED FLOOR
FUR	FLOOR

ELECTRICAL DRAWING LIST	
DRAWING	TITLE
E000	ELECTRICAL GENERAL NOTES, SYMBOLS, & ABBREVIATIONS
E100	ELECTRICAL BASEMENT FLOOR PLAN
E101	ELECTRICAL FIRST FLOOR PLAN
E102	ELECTRICAL SECOND FLOOR PLAN
E300	ELECTRICAL GROUNDING DETAILS
E600	ELECTRICAL PANEL SCHEDULE



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Ethel Ave. Custom  
Home

## Electrical General Note

Project Number	174
Date	Issue Date
Drawn By	Author
Checked By	Checker

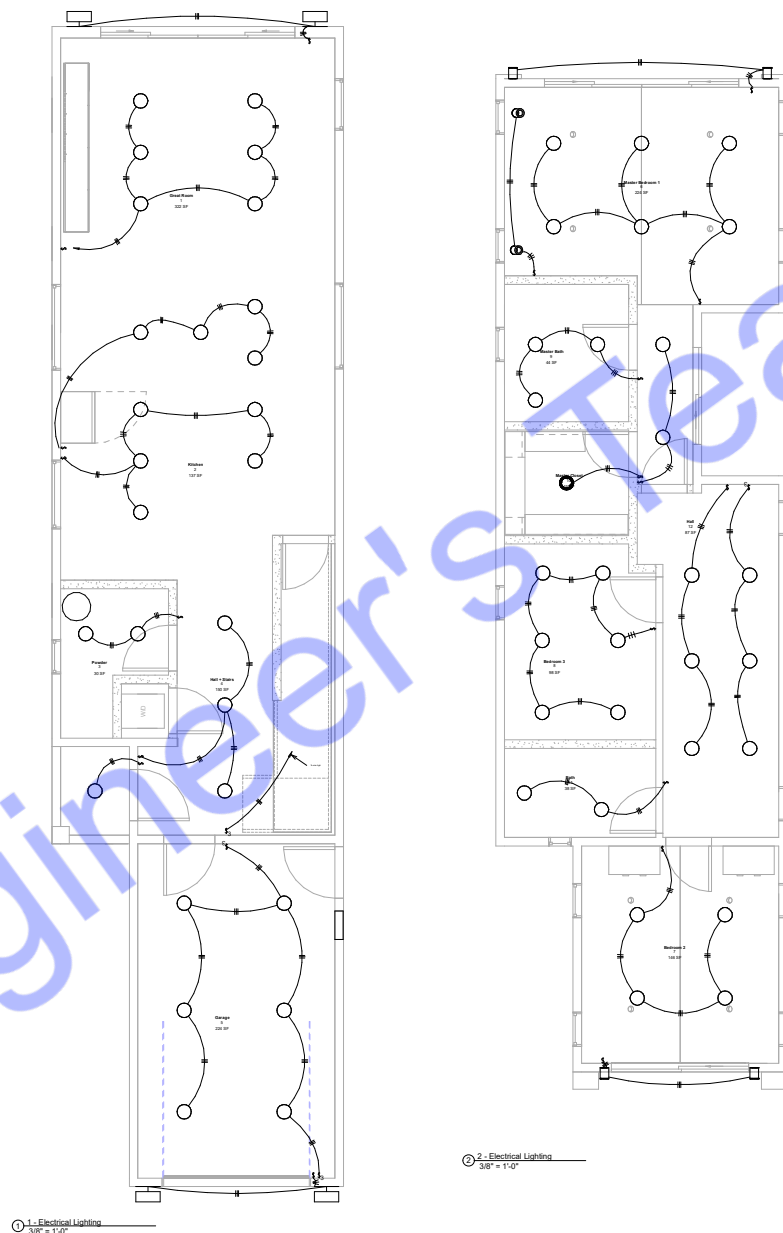
E0001

















Scale	1 1/2" = 1'-0"
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This Electrical Lighting Plan has been developed in strict adherence to all applicable and current codes, standards, and regulations enforced by the City of Los Angeles and the State of California as of January 1, 2023. The following codes and regulations have been thoroughly reviewed and applied to ensure full compliance:

- All lighting fixtures, controls, wiring methods, and related components specified in this plan are selected and designed to meet or exceed the requirements set forth in the aforementioned codes. This includes compliance with energy efficiency standards, safety protocols, and sustainability measures.

This Electrical Lighting Plan is intended to ensure a safe, efficient, and code-compliant electrical system for the property located at 4708 Ethel Avenue, Sherman Oaks, CA 91423.



ELECTRICAL LEGEND	
	20W CEILING MOUNT LED LIGHT
	20W HANGING LED LIGHT
	SMOKE DETECTOR
	20W LED TUBE LIGHT 1W
	40W LED LIGHT 23W
	ONE WAY SWITCH 220V
	TWO WAY SWITCH 220V
	MALFUNCTION OUTLET 220V
	GPO OUTLET 220V
	10W WALL MOUNTED LED LIGHT
	80W CEILING FAN 220V
	SUB DISTRIBUTION BOARD
	MAIN DISTRIBUTION BOARD
	40W BATHROOM EXHAUST FAN
	CALLING BELL
	ELECTRIC WIRE

Electrical Legend  
1/8" = 1'-0"



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Ethel Ave. Custom  
Home

## Electrical Lighting Plan

Project Number	174
Date	Issue Date
Drawn By	Author
Checked By	Checker
E0002	
Scale	As indicated

1. Code Compliance:  
This Electrical Power Plan has been developed in full compliance with the following codes and standards:

2023 Los Angeles County Electrical Code – Title 27,  
incorporating local amendments to the 2022 CEC, effective  
January 1, 2023.

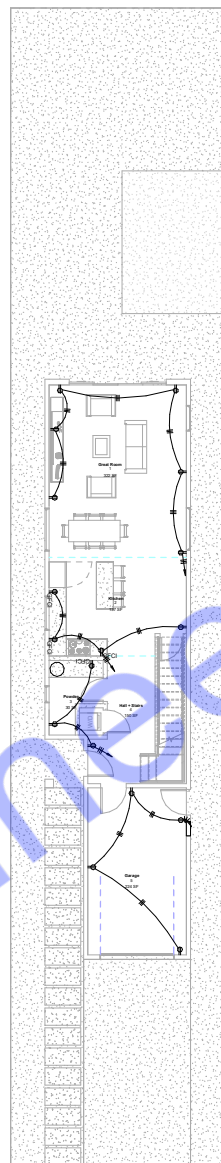
**Local Amendments:**  
The plan adheres to specific Los Angeles County amendments, including:

Continuous Inspection of Aluminum Wiring (Article 310.121): Aluminum conductors No. 6 or smaller used for branch circuits require continuous inspection by an independent testing agency approved by the Building Official.

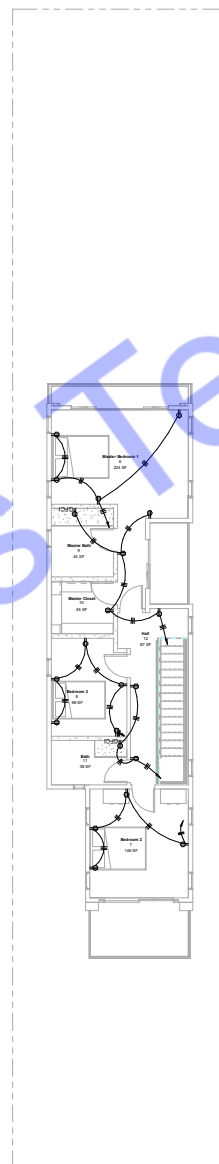
The design complies with the 2022 California Energy Code (Title 24, Part 6), including requirements for multilevel lighting controls in applicable areas.

All electrical components and systems specified in this plan are approved under the California, USA Product Approval Codes, ensuring compliance with state and local regulations.















While the 2025 California Electrical Code is scheduled for publication on July 1, 2025, with an effective date of January 1, 2026, this plan is based on codes currently in effect as of June 2025. Should any updates become applicable prior to project completion, necessary adjustments will be made to maintain compliance.



① 1 - Electrical Power  
3/16" = 1'-0"



② 2 - Electrical Power  
3/16" = 1'-0"

ELECTRICAL LEGEND	
	200# CEILING MOUNT LED LIGHT
	200# HANGING LED LIGHT
	SMOKE DETECTOR
	200# LED TUBE LIGHT 1x4
	40W LED LIGHT 2x4
	ONE WAY SWITCH 220V
	TWO WAY SWITCH 220V
	MULTI SOCKET OUTLET 220V
	GFC OUTLET 220V
	100 WALL MOUNTED LED LIGHT
	80W CEILING FAN 220V
	SUB DISTRIBUTION BOARD
	MAIN DISTRIBUTION BOARD
	40W BATHROOM EXHAUST FAN
	CILING BELL
	ELECTRIC WIRE

Electrical Legend  
1/8" = 1'-0"



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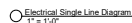
Ethel Ave. Custom  
Home

## Electrical Power Plan

Checked By	Author
	Checker

E0003

Scale	As indicated
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Owner	
Ethel Ave. Custom Home	
Electrical Load Schedule Plan	
Project Number	174
Date	Issue Date
Drawn By	Author
Checked By	Checker
E0004	
Scale	1" = 1'-0"

1. A LISTED INTERSYSTEM BONDING TERMINATION PROVIDING THE REQUIRED NUMBER OF TERMINALS (MINIMUM OF THREE) FOR CONNECTING OTHER BUILDING SYSTEMS TO THE GROUNDING SYSTEM OF THE ELECTRICAL POWER SUPPLY (NEC230.94).

1. A LISTED INTERSYSTEM BONDING TERMINATION PROVIDING THE REQUIRED NUMBER OF TERMINALS (MINIMUM OF THREE) FOR CONNECTING OTHER BUILDING SYSTEMS TO THE GROUNDING SYSTEM OF THE ELECTRICAL POWER SUPPLY (NEC230.94).

1. ALL METAL STRUCTS ENCLOSED ANY SERVICE SHALL BE FITTED WITH A "BONDING BUSINGS".
2. ALL METAL STRUCTS ENCLOSED ANY GROUNDING ELECTRODE CONDUCTOR SHALL BE FITTED WITH A "BONDING BUSINGS" AT EACH END.
3. PROVIDE GROUNDING ELECTRODE PER NEC. GROUNDING SHALL BE IN THE FORM OF A 20'-0" x 1/2" COPPER CLAD GROUND ROD LAID AT LEAST 2' OFF THE BOTTOM OF A CONCRETE FOOTING. SECURE THE GROUND ROD TO THE REBAR WITH STEEL TIE WRAPS. IF THE REBAR BEING USED IN THE FOOTING IS SMALLER THAN 1/2" (M4), USE 30'S OF BARE

1. ALL METAL STRUCTS ENCLOSED ANY SERVICE SHALL BE FITTED WITH A "BONDING BUSINGS".
2. ALL METAL STRUCTS ENCLOSED ANY GROUNDING ELECTRODE CONDUCTOR SHALL BE FITTED WITH A "BONDING BUSINGS" AT EACH END.
3. PROVIDE GROUNDING ELECTRODE PER NEC. GROUNDING SHALL BE IN THE FORM OF A 20'-0" x 1/2" COPPER CLAD GROUND ROD LAID AT LEAST 2' OFF THE BOTTOM OF A CONCRETE FOOTING. SECURE THE GROUND ROD TO THE REBAR WITH STEEL TIE WRAPS. IF THE REBAR BEING USED IN THE FOOTING IS SMALLER THAN 1/2" (M4), USE 30' OF BARE

SOLID #4 COPPER WIRE IN PLACE OF THE  
GROUND ROD. IN REMODEL PROJECTS  
THAT WILL NOT HAVE NEW FOOTINGS  
INSTALLED, THIS SUPPLEMENTAL  
ELECTRODE SHALL BE PER NOTE #4  
BELOW OR OTHER ELECTRODE PER NEG  
250.52.

4. FOR CONNECTION TO COLD WATER MAIN,  
CONNECT WITHIN 5 FT. OF CONTACT OF  
EARTH.

5. IF STRUCTURAL STEEL MEMBER OR  
REBARs ARE AVAILABLE, BOND IT TO  
THE SERVICE USING A U. LISTED  
IRREVERSIBLE CLAMP OR WELDING LUG.  
6. PROVIDE A INTERSYSTEM BONDING  
TERMINATION PER NEG 250.44.

INTERSYSTEM BONDING TERMINATION SHALL:

- 6.1. BE ACCESSIBLE FOR CONNECTION AND INSPECTION.
- 6.2. CONSIST OF A SET OF TERMINALS (LISTED AS GROUNDINGS AND BONDING EQUIPMENT) WITH THE CAPACITY OF NOT LESS THAN THREE INTERSYSTEM BONDING CONDUCTORS.
- 6.3. BE SECURELY MOUNTED AND ELECTRICALLY CONNECTED TO SERVICE EQUIPMENT, METER ENCLOSURE, OR EXPOSED NON METALLIC SERVICE RACEWAY, OR BE MOUNTED ON ONE OF THESE ENCLOSURES AND BE CONNECTED TO THE ENCLOSURE OR GROUNDING

ELECTRODE CONDUCTOR WITH A MINIMUM  
NO CU CONDUCTOR.

6.4. BE SECURELY MOUNTED TO THE BUILDING'S DISCONNECTING MEANS, OR BE MOUNTED AT THE DISCONNECTING MEANS AND BE CONNECTED TO THE METALLIC ENCLOSURE OR GROUNDING ELECTRODE CONDUCTOR WITH A MINIMUM NO CU CONDUCTOR.

7. ALL BRANCH CIRCUIT AND FEEDER CONDUITS ARE TO HAVE AN INSULATED EQUIPMENT GROUNDING CONDUCTOR REGARDLESS OF THE CONDUIT MATERIAL.

8. WHEN THE SERVICE CONSISTS OF MULTIPLE DISCONNECTING MEANS IN SEPARATE ENCLOSURES, CONNECT A TAP

CONDUCTOR FROM THE MAIN GROUNDING ELECTRODE CONDUCTOR TO EACH DISCONNECTING MEANS, SIZE THIS TAP BASED ON THE LARGEST SERVICE CONDUCTOR IN THAT SERVICE DISCONNECT ENCLOSURE.

9. #6 COPPER GROUNDING ELECTRODE CONDUCTOR.

10. INSTALL #6 CU TO TWO 3/8" X 1/4" MIN. GROUND RODS AS SHOWN.

11. #4 COPPER GROUNDING ELECTRODE CONDUCTOR.

12. COPPER GROUNDING ELECTRODE CONDUCTOR, PROVIDE #6 COPPER.



○ Electrical Installation  
1 1/2" = 1'-0"



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[illegible]

Owner

Ethel Ave. Custom  
Home

## Electrical Installation Details

Project Number	174
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Date	Issue Date
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Drawn By	Author
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Checked By	Author
	Checker

E0005

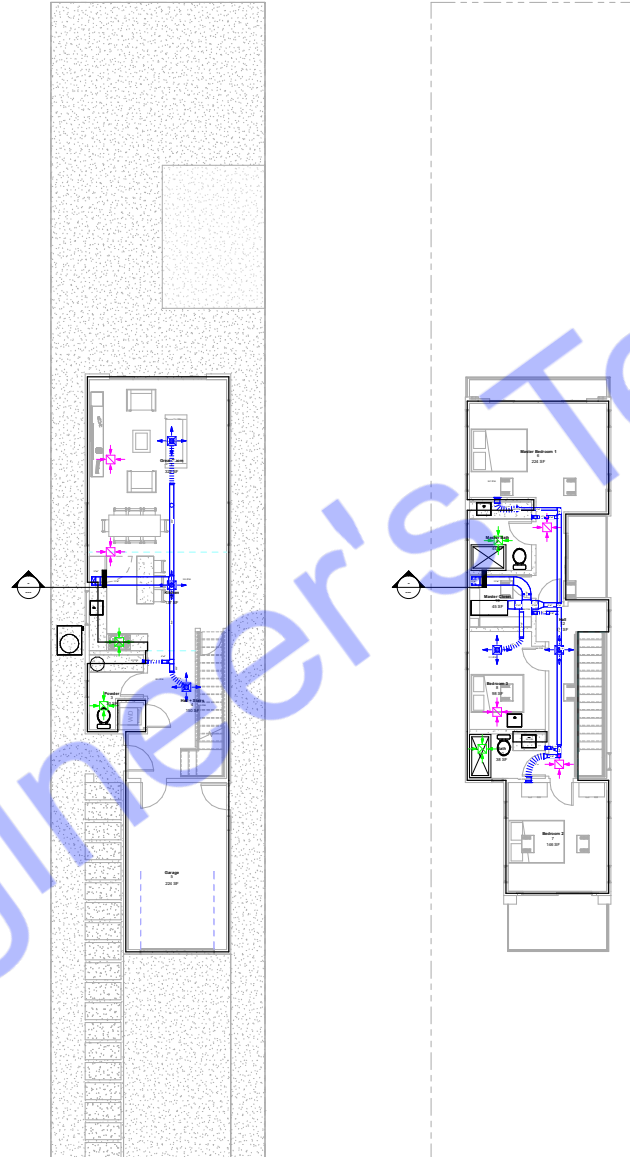
Scale  $1\frac{1}{2}'' = 1'-0''$



This HVAC Layout Plan has been developed in strict adherence to the latest applicable codes, regulations, and standards governing mechanical systems in California, USA, specifically for the project located at 4708 Ethel Avenue, Sherman Oaks, CA 91423. The design ensures compliance with the following:

- All HVAC equipment and components specified in this plan are approved for use in California, USA, and meet or exceed the performance and safety standards set forth by the aforementioned codes and regulations.

○ Exhaust Fan Schedule  
1/4" = 1'-0"



① 1 - Mech  
3/16" = 1'-0"

②  $\frac{2 - \text{Mech}}{3/16" = 1'-0"$

 HVAC Legend  
1/4" = 1'-0"



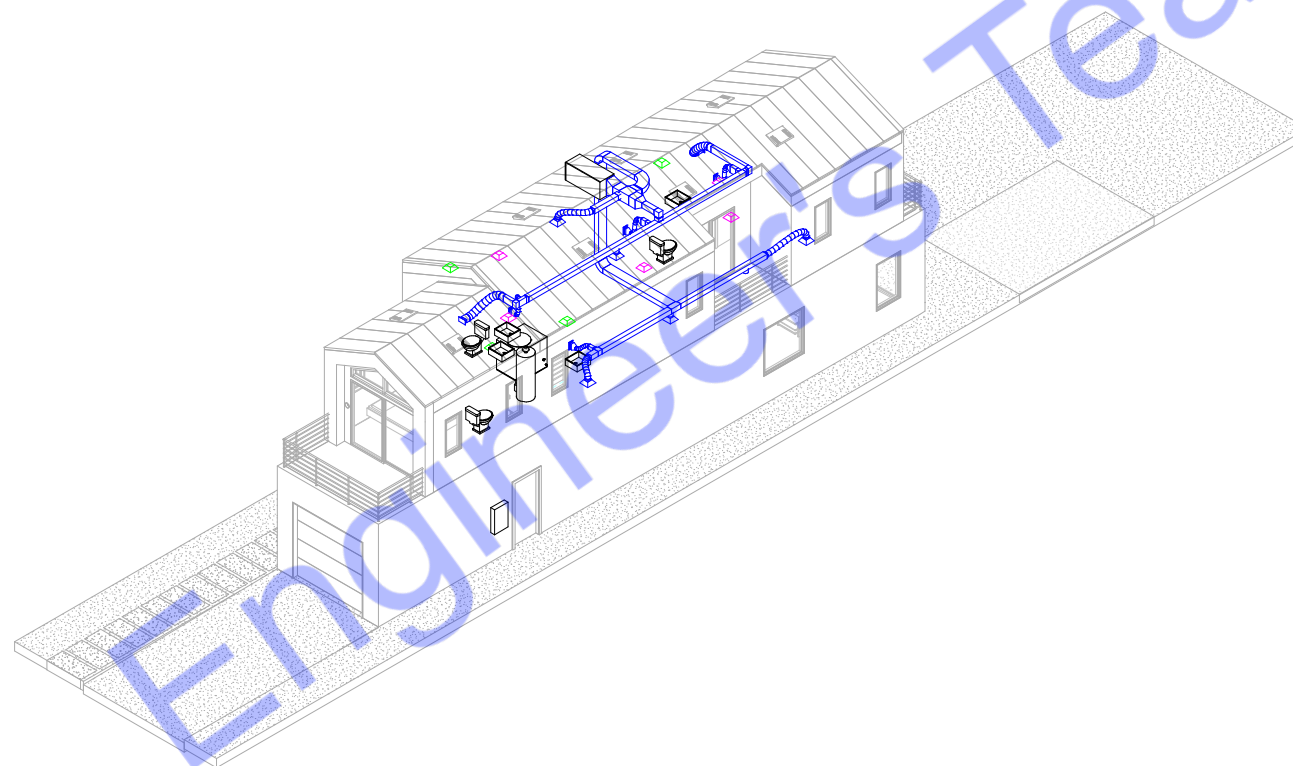
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Scale	As indicated
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### ① 3D HVAC

[illegible]

Owner

Ethel Ave. Custom  
Home

## Isometric HVAC PLan

Project Number	174
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Date	Issue Date
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Drawn By	Author
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Drawn By	Author
Checked By	Checker

H0003

Scale

**TRANSITIONS**

30/12 12/12  
DIFFUSER TRANSITION  
DIFFUSER TRANSITION  
GAS SAFETY

**MAIN BRANCH TAKE-OFFS**

SPLITTER DAMPER  
30/12 18/12 20/12  
30/12 16/12 20/12

**RISERS**

R = RISE  
D = DROP  
24/36 ON  
36/24 R R 36/24

**SIDEWALL REGISTERS**

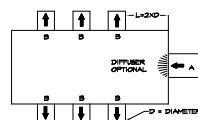
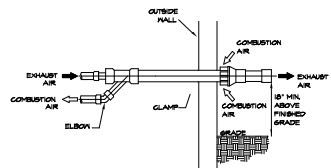
AIR EXTRACTOR  
36/12 24/12  
SIDEWALL GRILLE SIDEWALL GRILLE

**DUCT CROSSOVERS**

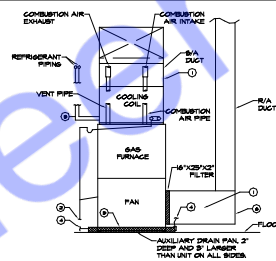
THIS DUCT RUNS UNDERNEATH  
ELBOW WITH TURNING VANES  
THIS DUCT RUNS UNDERNEATH

**SUB-BRANCH TAP AND TEE**

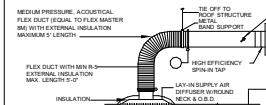
30/12 18/12 12/8 12/8  
18/12 12/8  
SUB-BRANCH TAP (1000 CFM MAX.)  
SUB-BRANCH TAP (1000 CFM MAX.)



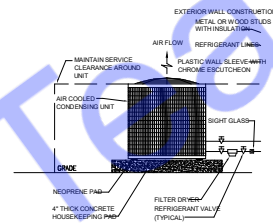
- NOTES:**
1. ENTRANCE (A) HAS A DIFFUSER FITTING THAT RECOVERS VELOCITY PRESSURES AND PREVENTS SWIRLS (OPTIONAL)
  2. STRAIGHT APPROACH (A) AND STRAIGHT EXITS (B)
  3. 3" SLOPE OPENING ON SIDE (NO TOP OR BOTTOM EXITS)
  4. EXIT OPENING AT LEAST TWO DIAMETERS FROM ENTRANCE (C)
  5. MAKE BOX AS SMALL AS POSSIBLE BY COMPLYING WITH:  
 $L = 2 \times D$



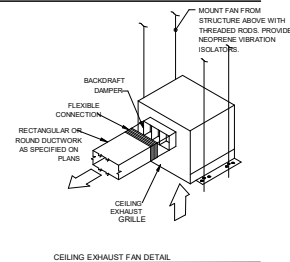
- ① INTERNALLY LINER SUPPLY AND RETURN STEEL METAL PLUMBS THAT EXTENDS TO FEET ON EITHER SIDE OF AA1, FULL SIZE OF UNIT GROUND.
- ② 8/4" COORDINATE DRAIN LINE, ROUTE BEHIND RA, DUCT AND DOWN TO FLOOR DRAIN TRAP FOR CONDENSATE IF UNIT HAS NO INTERNAL TRAP.
- ③ INSTALL REFRIGERANT PIPING FOR MANUFACTURER'S RECOMMENDATIONS AND CODE REQUIREMENTS.
- ④ PROVIDE EMERGENCY DRAIN PAN WITH FLAT SLOPE BELOW THE AAU TO DISCHARGE AAU PRIOR TO O-BLOCKING OF THE PAN. PROVIDE SECONDARY 8/4" CPVC COORDINATE DRAIN LINE FOR THE EMERGENCY DRAIN PAN THAT DRAIGHTS INTO ADJACENT HV DRAIN.
- ⑤ EMERGENCY DRAIN PAN, A MINIMUM DEPTH OF 1" AND FOOTPRINT NOT LESS THAN 18" LARGER THAN THE AAU. THE EMERGENCY DRAIN PAN SHALL BE MADE OF CORROSION-RESISTANT MATERIAL, NOT MINIMUM THICKNESS AS DEFINED BY CODE REQUIREMENTS.
- ⑥ RETURN PLUMBING TO MATCH THE SIZE OF UNIT'S RETURN OPENING.



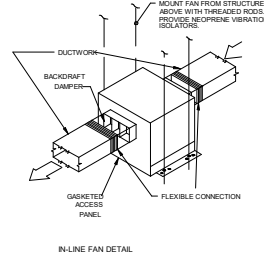
SUPPLY AIR DIFFUSER CONNECTION



## OUTSIDE AIR CONDITIONER



### CEILING EXHAUST FAN DETAIL



IN-LINE FAN DETAIL



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[illegible]

Owner

Ethel Ave. Custom  
Home

HVAC Installation Details
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Project Number	174
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Date	Issue Date
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Drawn By	Author
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Checked By	Checker
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H0004

Scale  $1\frac{1}{2}'' = 1'-0''$

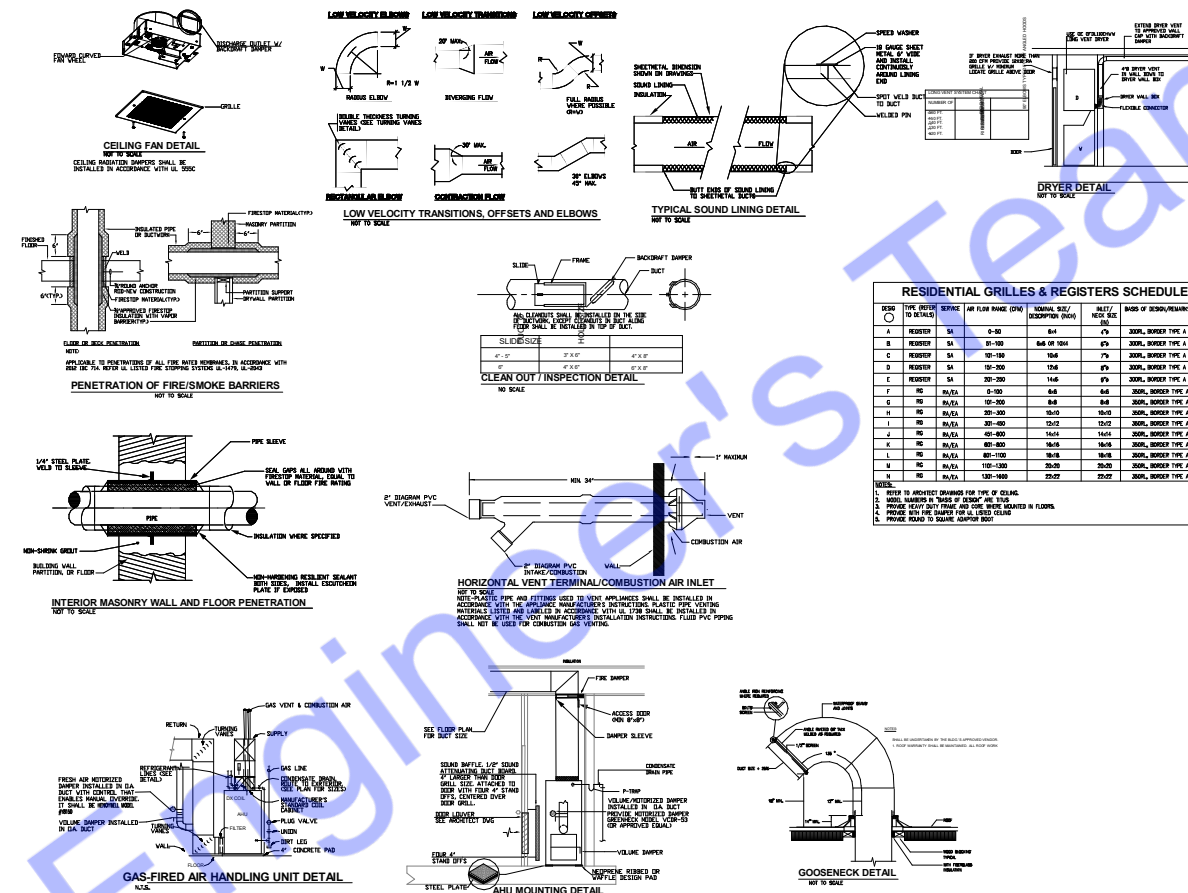
○ HVAC Installation  
1 1/2" = 1'-0"

11/6/2025 1:30:40 AM



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1/4" = 1'-0"

Owner  
Ethel Ave. Custom Home  
HVAC Installation Details

Project Number 174  
Date Issue Date  
Drawn By Author  
Checked By Checker

H0005

Scale 1/4" = 1'-0"

04/02/2023 1:30:02 PM

## PLUMBING SPECIFICATIONS

### 1. BASIC MATERIALS & METHODS

- ALL WORK SHALL CONFORM TO 2018 VIRGINIA PLUMBING CODE, 2018 VIRGINIA RESIDENTIAL CODE, 2018 VIRGINIA P.E.C. & GAS CODE, PROVIDE COMPLETE PLUMBING WITH LEFT IN PROPER WORKING ORDER. PROVIDE REPAIRS MEANS INSTALLED COMPLETELY, INCLUDING LABOR AND MATERIALS. CONTRACTOR RESPONSIBLE FOR ALL COST FOR REPAIRS, REINFORCEMENTS, ETC. CAUSED OR CREATED BY THE CONTRACTOR. SECURE AND PAY FOR ALL PERMITS, LICENSES, FEES AND INSPECTIONS. COORDINATE AND VERIFY ALL DETAILS OF THE UTILITIES, MEET AND COMPLY WITH ALL FEDERAL, STATE, COUNTY, AND CITY CODES AND REGULATIONS.
- THE INSTALLING CONTRACTOR PROVIDING FOR THIS WORK SHALL BE A FIRM LICENSED FOR THIS TYPE OF WORK AND SHALL PROVIDE COPIES OF LICENSES, BONDING, LICENSES, BONDING, LIMITS, AND INSURANCE COVERAGE. THE CONTRACTORS FIELD PERSONNEL SHALL BE UNDER THE DIRECT SUPERVISION OF A LICENSED PLUMBER(S).
- PROVISIONS INCLUDE LABOR, SUPPLIES AND MATERIALS, TOOLS, EQUIPMENT, ETC. PROVIDE COMPLETE INSTALLS AND SHOP DRAWINGS ON ALL TYPES. PRIOR APPROVAL IS REQUIRED FOR ANY SUBSTITUTIONS. PROVIDE FINAL CONNECTIONS TO ALL ITEMS COORDINATE WITH OTHER TRADES PRIOR TO ROUGH IN AND PROVIDE ANY NECESSARY ADJUSTMENTS. CONTRACTOR IS RESPONSIBLE FOR MATERIAL SUPPLY, DELIVERY, RECEIVING, STORAGE & PROTECTION, EXCAVATION, BACKFILLING, CUTTING, PATINGING AND CLEANING. ALL WORK AND MATERIALS SHALL BE GUARANTEED FOR TWO YEARS PLUS ANY EXTENDED MANUFACTURERS WARRANTIES. PROVIDE COMPLETE PARTS, MAINTENANCE AND SERVICE MANUALS ALONG WITH THE NECESSARY TRAINING OF OWNERS PERSONNEL.
- ALL MATERIALS SHALL BE NEW AND CURRENTLY MANUFACTURED. ALL MATERIALS SHALL BE FULLY LABELED AND MEET ALL INDUSTRY STANDARDS. PROVIDE PIPE LABELING FOR ALL POTABLE WATER AND OTHER LINES.

### 2. GENERAL PIPING REQUIREMENTS

- DRAWINGS ARE DETERMINATIVE TO INDICATE THE REQUIRED PLUMBING SYSTEM. EVERY FITTING AND DETAIL IS NOT NECESSARILY NOTED. THE CONTRACTOR SHALL PROVIDE AND INSTALL A COMPLETE AND PROPERLY FUNCTIONING SYSTEM IN A PROFESSIONAL MANNER. ALL WORK SHALL BE INSTALLED SO THAT VALVES AND OTHER WORKING COMPONENTS ARE ACCESSIBLE FOR SERVICE.
- CONTRACTOR SHALL CHECK AND VERIFY THE UTILITY SOURCE WATER PRESSURE. IF THE PRESSURE EXCEEDS 80 PSI THE CONTRACTOR SHALL PROVIDE A LINE SIZE PRESSURE REDUCING VALVE, PATTS MODEL 22858 TYPE OR OTHER AS APPROVED BY BUILDING.
- ALL VENT, WATER AND WASTE PIPING SHALL BE CONCEALED IN WALLS OR ABOVE CEILING, UNLESS NOTED OTHERWISE. ANY PIPING ROUTED THROUGH CEILING WORK SHALL BE LOCATED OUT-OF-THE-WAY TO THE REAR OF THE COUNTER AND WELL SECURED. COORDINATE CAREFULLY WITH THE COUNTER MANUFACTURER AND ARCHITECT FOR ROUTING OF ANY PIPING.
- THE CONTRACTOR SHALL PROVIDE FINAL FIELD COORDINATION AND VERIFICATION OF THE EXACT LOCATION OF STUB-UP AND STUB-OUT LOCATION PRIOR TO ROUGH IN FLOOR SLAB PENETRATIONS SHALL FIRST BE CALLED AND VERIFIED WITH STRUCTURAL PLANS TO AVOID STRUCTURAL DAMAGE. WHERE REQUIRED BY CODE, PENETRATIONS SHALL BE REINFORCED AND SEALED.
- ROOF FLOOR TO DRAIN PER ARCHITECTURAL REQUIREMENTS. ANY ROOF PENETRATIONS SHALL BE MADE AS DIRECTED BY OWNERS ROOFING INSTALLERS TO MAINTAIN ROOF INTEGRITY. PROVIDE ALL NECESSARY ROOF FLASHINGS, ETC.
- PIPING SUPPORT - PROVIDE PIPE HANGERS & SUPPORTS WITH NICE BRACKETS THAT SUPPORT BOTH THE INSULATION AND PIPING WITHOUT OBSTRUCTING THE INSULATION. SPACE HANGERS TO PROVIDE NO MOVEMENT OR BANGING BETWEEN SUPPORTS. ALL PIPING PENETRATING WALLS, CEILING AND OTHER FINISHED SURFACES SHALL HAVE GROOVE-PLATED BRACKETS. ALL PIPING PENETRATING EXTERIOR WALLS, ROOFS, ETC. SHALL BE FLASHED AND SEALED IN AN APPROVED MANNER. THE SANITARY WASTE AND VENT SYSTEM DESIGN IS BASED ON 1/4" HIGH SLOPE PER FOOT.

- PERFORM SYSTEM TESTS PRIOR TO COVERING UP ANY PIPING IN ACCORDANCE WITH THE CODE. ALL TESTING SHALL BE PERFORMED IN THE PRESENCE OF THE OWNERS REPRESENTATIVE. ANY DEFECTIVE MATERIALS SHALL BE REPLACED WITH NEW MATERIALS AND THE SYSTEM RETESTED. ONCE ALL WORK IS COMPLETED THEN EACH SYSTEM SHALL BE SANITIZED IN ACCORDANCE WITH THE CODE AND THEN FLUSHED CLEAN WITH POTABLE WATER.
- WATER PIPING SYSTEM MATERIALS**  
WATER SERVICE UNDERGROUND - COPPER, ALTERNATIVE - SHALL BE EMPLOYED PE-100 HIGH DENSITY POLYETHYLENE WATER SERVICE TUBING.
- WATER PIPING IN GRADE - COPPER, ALTERNATIVE - SHALL BE EMPLOYED PE-100 HIGH DENSITY POLYETHYLENE WATER SERVICE TUBING.
- WATER PIPING ABOVE GRADE - CPVC OR PEX TUBE SOLDER JOINT FITTINGS AND CONNECTIONS. COPPER TO CPVC OR PEX CONNECTIONS SHALL UTILIZE INSULATING UNIONS. CAPTOL, MANUFACTURING OR EQUAL, APPROVED BY BUILDING.
- GATE VALVES - PROVIDE LINE SIZE BRASS OR BRONZE BODY, RATED FOR 125 PSI BRASS WATER PRESSURE, CRANE NEGG, PATTS OR HANMOR, TAG OR LABEL EACH VALVE.
- HOSE BIBBS - PROVIDE BRASS OR BRONZE CASING WITH BRONZE INTERIOR PARTS, NON-ADJUSTABLE SEAT AND SEAT WANDER. HOSE BIBBS SHALL HAVE VACUUM BREAKER FEATURE.
- HANDWRABERS SHALL BE PROVIDED AND INSTALLED AS PER FDI STANDARDS. UTILIZE 1/2" BIRTH HYDROLYD. WATER HANGERS, ARRESTORS, OR OTHER AS APPROVED BY BUILDING.
- TESTING - ALL PIPING SYSTEMS SHALL BE PRESSURE TESTED, BEFORE INSULATED & CONCEALED AT 125 PSI AND HOLD THIS PRESSURE WITH NO LEAK FOR 24 HOURS.
- DISINFECTION - THE COMPLETE PIPING SYSTEMS SHALL BE DISINFECTED IN ACCORDANCE WITH THE CODE. THEN FLUSHED CLEAN. ALL FIXTURES SHALL BE CLEANED PRIOR TO DISINFECTION.

### 4. SOIL, WASTE & VENT PIPING SYSTEM MATERIALS

- SOIL, WASTE & VENT PIPING - SHALL BE PVC SCHEDULE 40, F40M
- WASTE - PROVIDE ALL FIXTURES WITH P-TRAP SIZED IN ACCORDANCE WITH CODE.
- CLEANOUTS SHALL BE PROVIDED PER CODE. WALL CLEANOUTS SHALL BE PVC.

### GENERAL PLUMBING NOTES:

- REFER TO ARCHITECTURAL DRAWINGS FOR EXACT LOCATION OF ALL PLUMBING APPLIANCES. REFER TO ROOF DIAGRAMS FOR PIPE SIZES, FITTINGS, ACCESSORIES NOT SHOWN ON PLANS.
- CONTRACTOR SHALL COORDINATE LOCATION OF PIPING PENETRATION THROUGH SLAB AND ROUTING OF SANITARY PIPING BELOW FLOOR WITH DUCTWORK AND PIPING LOCATED IN CEILING SPACE OF FLOOR BELOW.

PLUMBING SYMBOLS	
SYMBOL	DESCRIPTION
GA	DOMESTIC COLD WATER
HN	DOMESTIC HOT WATER
BAN	SANITARY, SOIL OR WASTE PIPE
V	VENT PIPE
GAS	GAS
RM	RAIN WATER/STORM WATER
CE	CONNECT TO EXISTING
PT	P-TRAP
FP	BACK FLOW PREVENTER
BA	SHOCK ARRESTOR
VR	VACUUM RELIEF
CG	PIPE CAP OR PLUG
PC	PIPE CONTINUES
SV	STOP VALVE
UN	UNION
ED	ELBOW DOWN
EU	ELBOW UP
IR	INDIRECT DRAIN
FD	FLOOR DRAIN
HD	HUB DRAIN
HS	HOSE BIBBS
SH	SHOWHEAD
PR	WATER PRESSURE REDUCING VALVE
BAV	BACKFLOW VALVE
GR	GAS PRESSURE REGULATOR

### PLUMBING DRAWING LIST

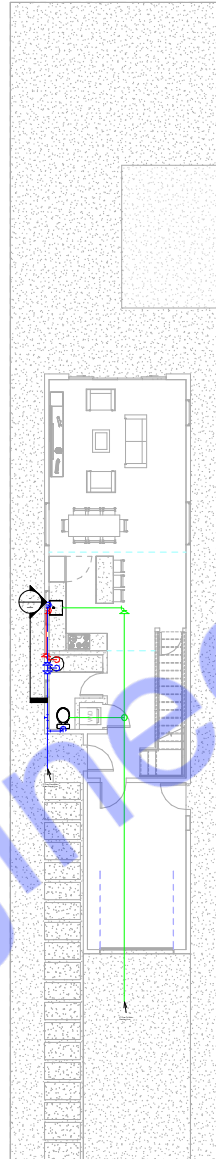
DRAWING	TITLE
P000	PLUMBING GENERAL NOTES, SYMBOLS & ABBREVIATIONS
P001	SANITARY, WASTE & VENT PLUMBING PLAN
P002	FIRST FLOOR SANITARY, WASTE & VENT PLUMBING PLAN
P003	SECOND FLOOR SANITARY, WASTE & VENT PLUMBING PLAN
P004	ROOF SANITARY, WASTE & VENT PLUMBING PLAN
P005	SANITARY, WASTE & VENT PLUMBING PLAN
P006	FIRST FLOOR DOMESTIC WATER & NATURAL GAS PLUMBING PLAN
P007	SECOND FLOOR DOMESTIC WATER & NATURAL GAS PLUMBING PLAN
P008	SANITARY, WASTE & VENT ROOF DIAGRAM
P009	DOMESTIC WATER ROOF DIAGRAM
P010	NATURAL GAS ROOF DIAGRAM
P011	PLUMBING SCHEDULES
P012	PLUMBING DETAILS

### ABBREVIATIONS

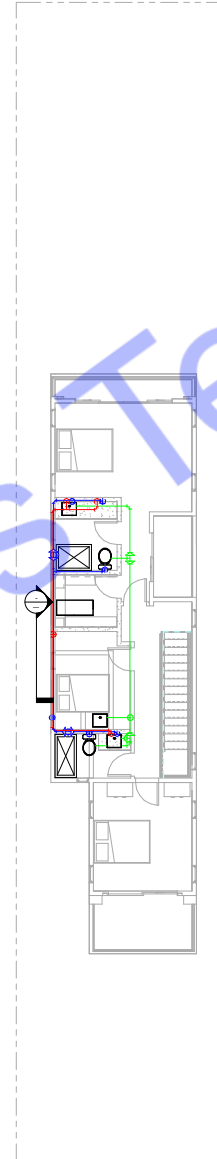
AGC	ABOVE CEILING
AFD	ABOVE FINISHED FLOOR
AFH	ABOVE FINISHED GRADE
AFI	ABOVE FINISHED VALVE
AFJ	ABOVE FINISHED WET
AFK	ABOVE FINISHED WET
AFL	ABOVE FINISHED WET
AFM	ABOVE FINISHED WET
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This plumbing layout plan has been meticulously developed in strict adherence to all applicable codes, standards, and regulations governing plumbing systems within the jurisdiction of Sherman Oaks, Los Angeles, California. The design ensures full compliance with the following:

- This plan is prepared to facilitate a safe, efficient, and code-compliant plumbing system for the specified property, aligning with all current regulatory requirements as of the date of this document.






① 1 - Plumbing  
3/16" = 1'-0"



② 2 - Plumbing  
3/16" = 1'-0"

PLUMBING LEGEND	
	BALL VALVE (BV)
	GATE VALVE (GV)
	MIXING VALVE (MV)
	FLOOR CLEAN OUT (FCO)
	FLOOR DRAIN (FD)
	HUB DRAIN (HD)
	FLOOR SINK (FS)
	PIPE TURNING UP
	PIPE TURNING DOWN
	EXISTING PIPE
	NEW PIPE

LINES TYPE LEGEND	
	COLD WATER LINE (CW)
	HOT WATER LINE (HW)
	SEWER LINE (S)
	GAS LINE (G)

**PLUMBING LEGEND**  
1/4" = 1'-0"



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Email	support@engrteam.com
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[illegible]

Ethel Ave. Custom  
Home

## Plumbing Plan

Project Number	174
----------------	-----

Date	Issue Date
------	------------

Drawn By	Author
----------	--------

Checked By	Checker
------------	---------

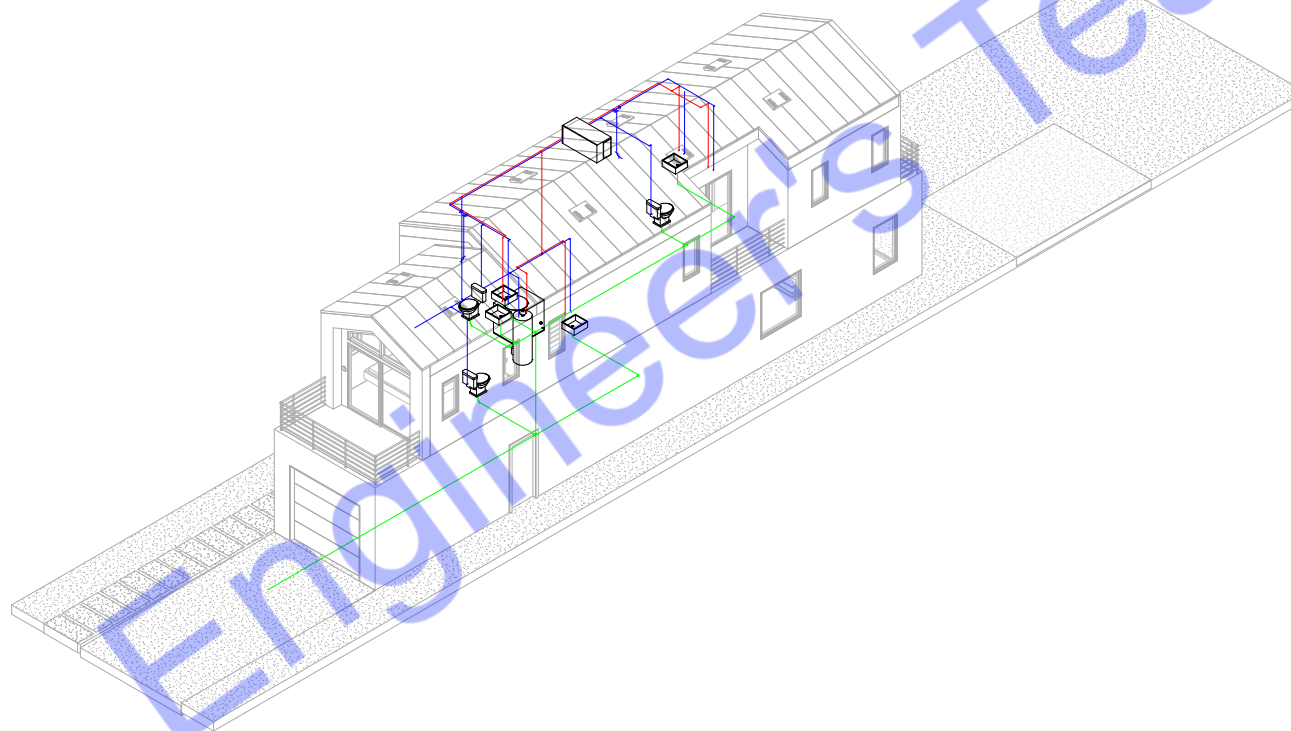
P0002

Scale	As indicated
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5/6/2025 1:30:59 AM



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### 3D Plumbing

[illegible]

Owner

Ethel Ave. Custom  
Home

## Isometric Plumbing Plan

Project Number	174
----------------	-----

Date	Issue Date
------	------------

Drawn By	Issue Date
Author	

Drawn By	Author
Checked By	Checker

P0003

Scale



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[illegible]

Owner

Ethel Ave. Custom  
Home

## Plumbing Installation Details

Project Number	174
----------------	-----

Date	Issue Date
------	------------

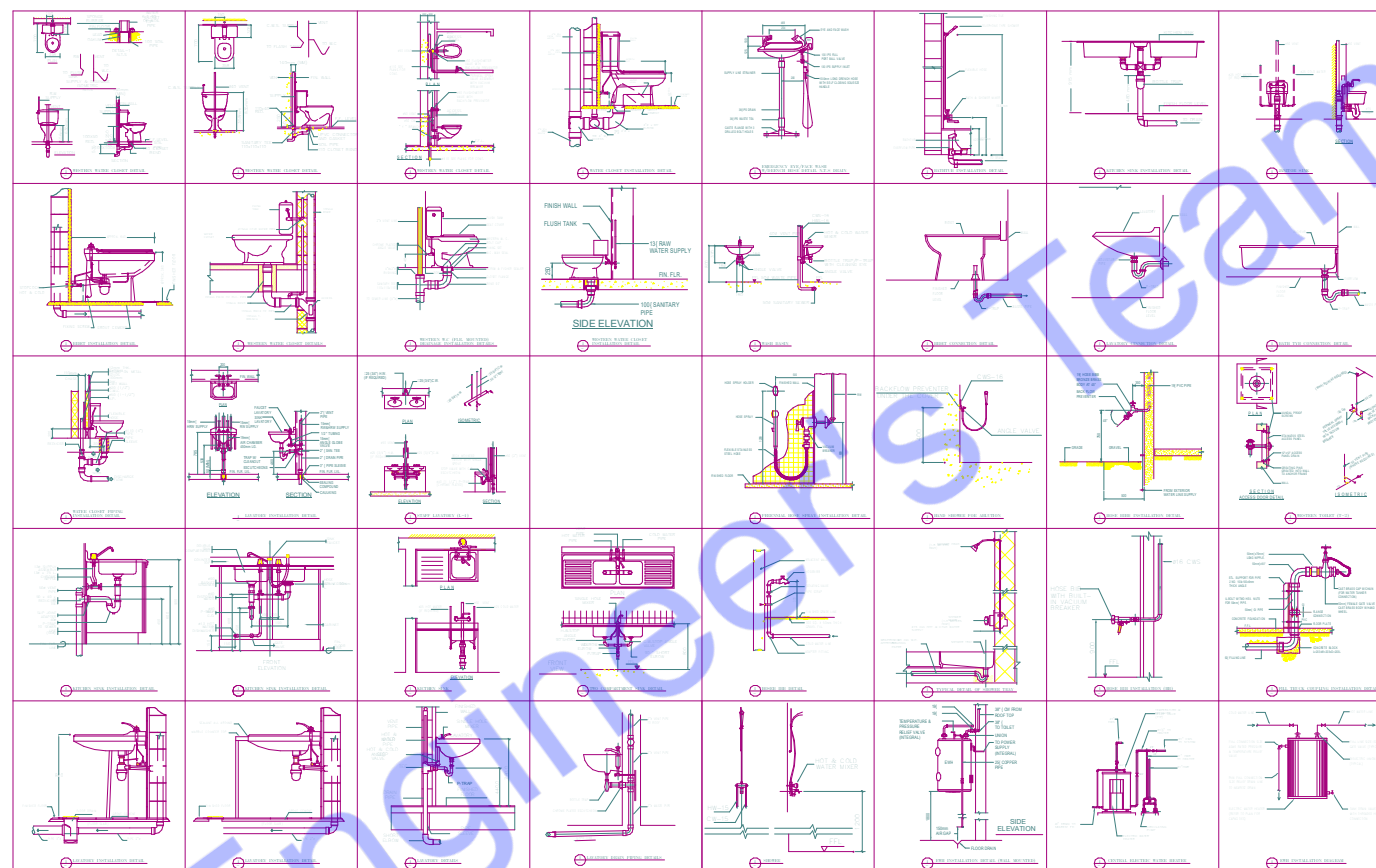
Drawn By	Issue Date
Author	

Drawn By	Author
Checked By	Checker

P0004

Scale  $1/8" = 1'-0"$

-		
.		

Plumbing Installation Details  
1/8" = 1'-0"



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[illegible]

Owner

Ethel Ave. Custom  
Home

## Plumbing Installation Details

Project Number	174
----------------	-----

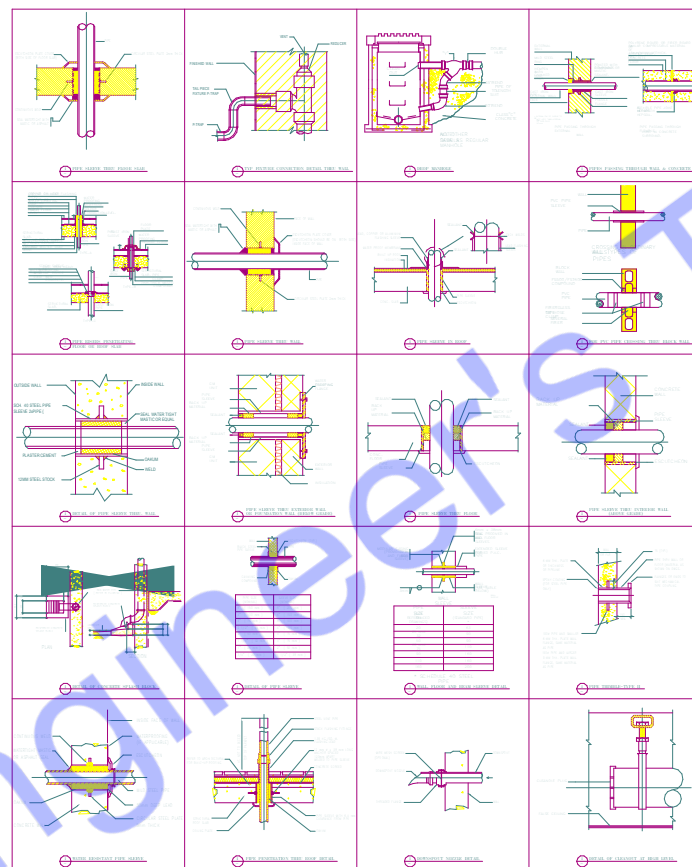
Date	Issue Date
------	------------

Drawn By	Author
----------	--------

Drawn By	Author
Checked By	Checker

P0005

Scale  $1/8" = 1'-0"$

[illegible]

○ Plumbing Installation Details-2  
1/8" = 1'-0"