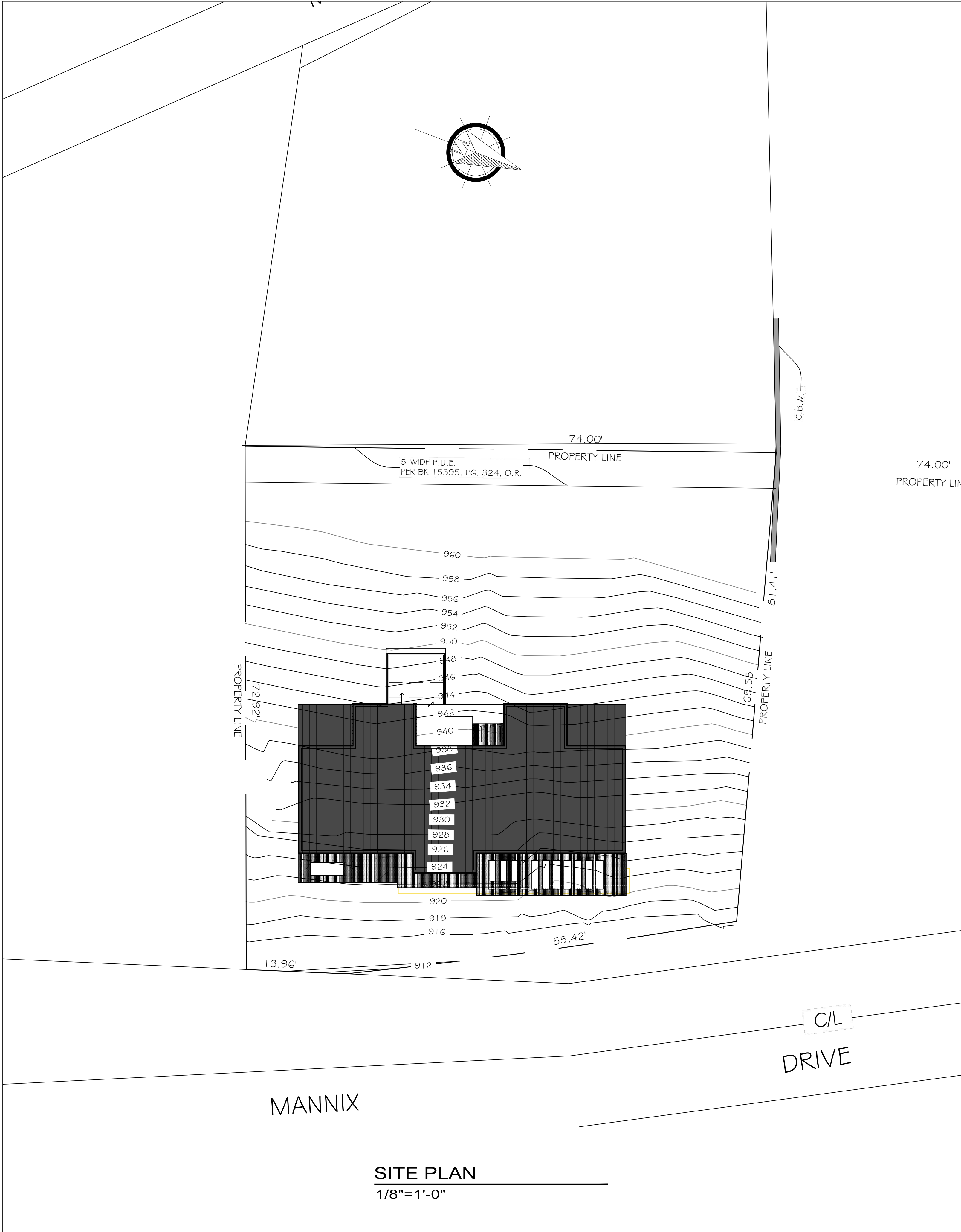




PROJECT DESCRIPTION:
NEW 2-STORY SINGLE FAMILY DWELLING

PROJECT ADDRESS:
8220 MANNIX DRIVE
LOS ANGELES CA. 90046

TITLE:
SITE PLAN

SCALE:
AS NOTED

DATE:
9/19/22

DRAWN BY:
JC/ABF

DESIGNED BY:
JC/ABF

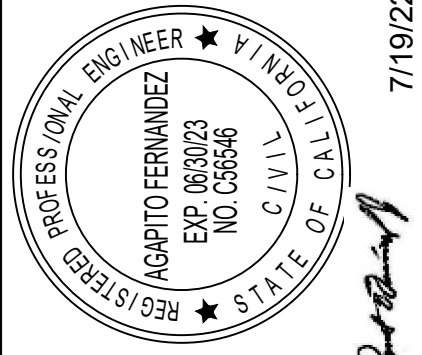
DRAWING SHEET: A-2

SHEET 2 OF 13

PLAN CHECK DATES:	

CONSULTANT:
AGAPITO B. FERNANDEZ, P.E.
CIVIL ENGINEERS

7400 E. SLAUSON AVENUE SUITE 100
COMMERCE, CA 90040
(818) 626-2088 cell
email: abfcivil1@gmail.com



REVISIONS:	

SIGNATURE
Agapito B. Fernandez

DATE:
7/19/22

FLOOR PLAN NOTES

EGRESS FROM SLEEPING ROOMS. SHOW DETAILS ON PLANS.
24" CLEAR HT, 20" CLEAR WIDTH, 5.7 SQFT MIN AREA (5.0 SQFT AT GRADE LEVEL)
MAX TO SILL (R310.1)

AUST FANS

FANS SHALL BE ENERGY STAR COMPLIANT AND BE DUCTED TO TERMINATE TO THE SIDE OF THE BUILDING.

FANS, NOT FUNCTIONING AS A COMPONENT OF A WHOLE HOUSE VENTILATION TEM, MUST BE CONTROLLED BY A HUMIDITY CONTROL.

(6.1)

FLOW RATES FOR ALL NEW PLUMBING FIXTURES SHALL COMPLY WITH THE MINIMUM FLOW RATES SPECIFIED IN SECTION 4.303.1

SHOWERS AND TUB-SHOWERS SHALL HAVE A PRESSURE BALANCE, THERMOSTATIC MIXING VALVE, OR A COMBINATION PRESSURE BALANCE/THERMOSTATIC MIXING TYPE VALVE. (PC418)

ALL ROOM FLOORS SHALL HAVE A SMOOTH, HARD NON —ABSORBENT SURFACE SUCH AS PORTLAND CEMENT, CERAMIC TILE OR OTHER APPROVED MATERIAL THAT EXTENDS UPWARD ONTO THE WALLS AT LEAST 4" (1210.1)

WIDE ULTRA LOW FLUSH WATER CLOSETS FOR ALL NEW CONSTRUCTION.
 TING SHOWER HEADS AND TOILETS MUST BE ADAPTED FOR LOW WATER
 SUMPTION.

OWER COMPARTMENTS AND WALLS ABOVE BATHTUBS WITH INSTALLED
 WER HEADS SHALL BE FINISHED WITH A SMOOTH, NONABSORBENT SURFACE TO
 HT NOT LESS THAN 72 INCHES ABOVE THE DRAIN INLET. SECTION 1210.3 USE OF
 ER RESISTANTGYPSUM BACKING BOARD SHALL BE AS STATED IN SECTION 2509.3
 TER HEATERS MUST BE STRAPPED TO A WALL (SEC. 507.3,UPC)

TER SHALL BE CAPABLE OF MAINTAINING A MINIMUM ROOM TEMPERATURE OF
AT A POINT 3 FEET ABOVE THE FLOOR AND 2 FEET FROM EXTERIOR WALLS IN
HABITABLE ROOMS AT THE DESIGN TEMPERATURE. (R303.9)

- | | |
|---|---|
| 8 | 1/2 INCH GYPSUM BOARD FROM FOUNDATION TO ROOF SHEATHING ON THE GARAGE SIDE OF THE WALL. |
| 9 | SHOWER AND TUB/SHOWER WALLS ARE A SMOOTH, HARD, NONABSORBENT SURFACE (E.G., CERAMIC TILE OR FIBERGLASS) OVER A MOISTURE RESISTANT UNDERLAYMENT (E.G., CEMENT, FIBER CEMENT, OR GLASS MAT GYPSUM BACKER) TO A HEIGHT OF 72 INCHES ABOVE THE DRAIN INLET. |
| 0 | EXHAUST FAN 50 CFM INTERMITTENT
OR 25 CFM CONTINUOUS ENERGY STAR |
| 1 | LANDINGS SHALL BE NOT MORE THAN 7-3/4 INCHES LOWER THAN THRESHOLD FOR IN-SWINGING DOORS AND NOT MORE THAN 1-1/2 INCHES LOWER THAN THRESHOLD FOR OUT-SWINGING DOORS. |
| 2 | 1" CONDUIT TO OUTDOOR-RATED WEATHERPROOF EVSE
208 / 240 V 40 AMP GROUNDED AC OUTLET INSIDE OF UL LISTED ENCLOSURE |
| 3 | MAIN ELECTRICAL PANEL 200 AMPS. |

MEP NOTES

MECHANICAL NOTES:

1. EXHAUST DUCT TERMINATION IS AS FOLLOWS PER CMc 502.2:
(a) 10 FEET FROM A FORCED AIR INLET, AND
(b) 3 FEET FROM OPENINGS INTO THE BUILDING.

2. UNLESS OTHERWISE PERMITTED OR REQUIRED BY THE DRYER MANUFACTURER, EXHAUST DUCT TERMINATION SHALL BE APPROVED BY THE CITY. DOMESTIC DRYER MOISTURE EXHAUST DUCTS SHALL NOT EXCEED A TOTAL COMBINED HORIZONTAL AND VERTICAL LENGTH OF FOURTEEN FEET, INCLUDING TWO 90-DEGREE ELBOWS. TWO FEET SHALL BE DEDUCTED FOR EACH 90-DEGREE ELBOW IN TURNERS UP TO TWO. CMc 504.2.

3. TERMINATION OF ALL ENVIRONMENTAL AIR DUCTS SHALL BE A MINIMUM OF 3 FEET FROM ANY OPENINGS INTO THE BUILDING (I.E. DRYERS, BATH AND UTILITY FANS, ETC.) MUST BE 3 FEET AWAY FROM ROOFS, WINDOWS, OPENING SKYLIGHTS, OR ATTIC VENTS.

CMc 502.2

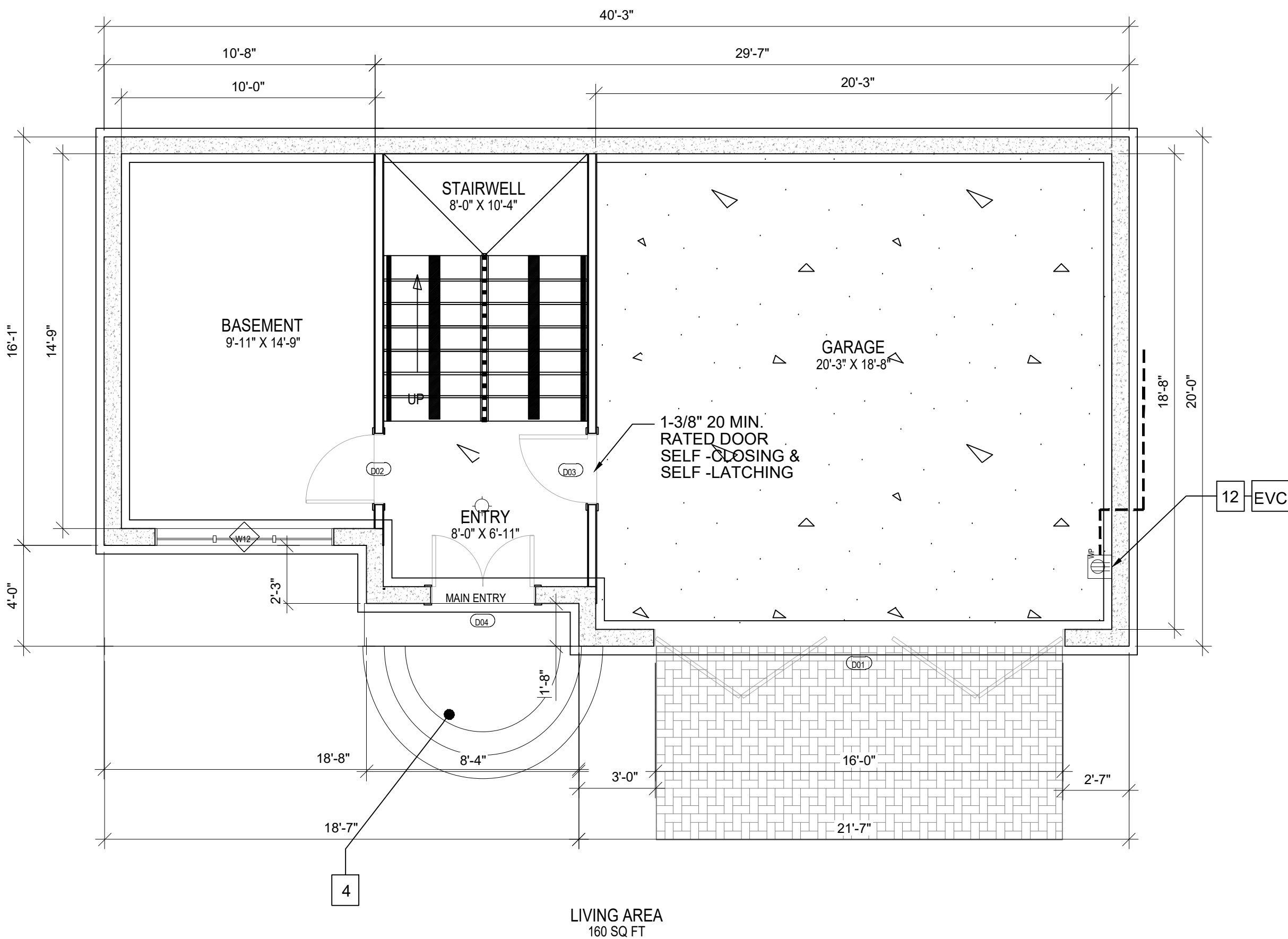
ELECTRICAL NOTES:

1. SPECIFY TWO SMALL APPLIANCE BRANCH CIRCUITS FOR THE KITCHEN THAT ARE LIMITED TO SUPPLYING WALL AND COUNTER SPACE HEATING, REFRIGERATION, AND SMALL APPLIANCE AREAS. NOTE: THESE CIRCUITS CANNOT SERVE OUTSIDE PLUGS, RANGE HODS, DISPOSALS, DISHWASHERS, OR MICROWAVES. WET LOCATIONS ARE LIMITED TO SINKS, CUPBOARD AND COUNTER OUTLETS AND THE REFRIGERATOR. CEC 210.11(C)(1) AND 210.52(B)(1)
2. SPECIFY ONE DEDICATED 20-AMPERE BRANCH CIRCUIT FOR THE LAUNDRY RECEPTACLE OUTLETS. CEC 210.11(C)(2) AND 210.52(F).
3. SPECIFY ONE DEDICATED 20-AMPERE BRANCH CIRCUIT FOR BATHROOM RECEPTACLE OUTLETS. THIS CIRCUIT CANNOT SUPPLY ANY OTHER RECEPTABLES, LIGHTS, FANS, ETC. (EXCEPTION: WET LOCATIONS). THIS CIRCUIT SHALL NOT BE USED FOR OTHER EQUIPMENT WITHIN THE SAME BATHROOM SHALL BE ALLOWED.) CEC 210.11(C)(3)
4. SPECIFY ON PLAN ONE DEDICATED BRANCH CIRCUIT FOR RECEPTABLES IN THE GARAGE. CEC 210.11(C)(4) AND 406.12.
5. ALL 125-VOLT, 15- AND 20-AMPERE RECEPTACLE OUTLETS SHALL BE LISTED TAMPER-RESISTANT RECEPTABLES PER CEC 406.12.
6. ALL 120-VOLT, SINGLE PHASE, 15- AND 20-AMPERE BRANCH CIRCUITS SHALL BE INSTALLED TO SERVE THE FOLLOWING: KITCHEN, FAMILY ROOMS, DINING ROOMS, LIVING ROOMS, BEDROOMS, CLOSETS, HALLWAYS, OR SIMILAR ROOMS OR AREAS SHALL BE PROVIDED WITH AT LEAST ONE 120-VOLT, 15-AMPERE, INTERLOCK COMBINATION-TYPE, INSTALLED TO PROVIDE PROTECTION FROM OVERCURRENT. CEC 210.12
7. LIGHTS SHALL BE PROVIDED OUTSIDE OF THE BUILDING ARE "SUITABLE FOR WET LOCATIONS" (W.P.) PER CEC 410.10.
8. SPECIFY THAT LIGHT FIXTURES LOCATED IN TUB OR SHOWER AREAS ARE LABELED "SUITABLE FOR WET LOCATIONS." CEC 410.10 (A)

PROVIDE THE FOLLOWING WATER-CONSERVING PLUMBING FIXTURES FLOW RATES:

- A) WATER CLOSET TO BE 1.28 GALLONS PER FLUSH MAXIMUM OR DUAL FLUSH PER CPC 411.2
- B) KITCHEN FAUCET TO BE 1.8 GALLONS PER MINUTE, MAXIMUM, PER CPC 420.2.2
- C) RESIDENTIAL LAVATORY FAUCET TO BE 1.2 GALLONS PER MINUTE, MAXIMUM, CPC 407.2.2
- D) SHOWERHEADS TO BE 1.8 GALLONS PER MINUTE, MAXIMUM, PER CPC 408.2

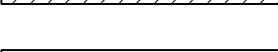
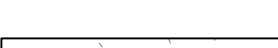
1. SHOWER AND TUB-SHOWER COMBINATIONS SHALL HAVE INDIVIDUAL CONTROL VALVES OF THE PRESSURE BALANCE OR THE THERMOSTATIC MIXING VALVE TYPE. CPC 408.3
2. SHOWER DOOR SHALL MAINTAIN NOT LESS THAN A 22-INCH UNOBSTRUCTED OPENING FOR EGRESS. CPC 408.5
3. PLUMBING FIXTURES SHALL BE PROVIDED WITH A BACKFLOW PREVENTION DEVICE IN ACCORDANCE WITH CPC 602.3, AND SHALL COMPLY WITH TABLE 603.2
4. DOMESTIC HOT WATER PIPING SHALL BE INSULATED IN ACCORDANCE WITH CPC 609.11



$1/4" = 1'-0"$

ELECTRIC LEGEND

- | | |
|----|--------------------------|
| P | ELECTRIC PANEL |
| VC | ELECTRIC VEHICLE CHARGER |
| D | SMOG DETECTOR |
| M | CARBON MONOXIDE DETECTOR |
| B | BATHROOM EXHAUST FAN |
| EV | ELECTRIC VEHICLE CHARGER |

GARAGE LEVEL FLOOR PLAN	AREA	SQ.FT.
	LIVING (ENTRY)	51
	STAIRWELL	85
	BASEMENT	146
	GARAGE	377
TOTAL		659

WALL LEGEND

- 8" CMU WALL
- 2x STUDS WALL

PLANCHECK DATES:

CONSULTANT:
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CIVIL ENGINEERS
7400 E. SLAUSON AVENUE SUITE 100
COMMERCIAL, CA 90040
(818) 626-2088 cell
email: abfcivil1@gmail.com



DATE:

REVISIONS:

PROJECT DESCRIPTION:
NEW 2-STORY SINGLE FAMILY DWELLING

PROJECT ADDRESS:
8220 MANNIX DRIVE
LOS ANGELES CA. 90046

TITLE:

PROPOSED FIRST FLOOR

PROJECT ADDRESS:
8220 MANNIX DRIVE
LOS ANGELES CA. 90047

TITLE:

PROPOSED

SCALE:	DATE:
AS NOTED	9/19/22

DRAWN BY:
JC/ABF

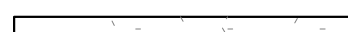
DESIGNED BY:
JC/ABF

DRAWING SHEET: A-3

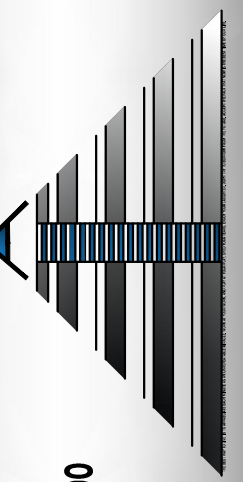
SHEET 3 OF 13

9		SHOWER AND TUB/SHOWER WALLS ARE A SMOOTH, HARD, NONABSORBENT SURFACE (E.G., CERAMIC TILE OR FIBERGLASS) OVER A MOISTURE RESISTANT UNDERLAYMENT (E.G., CEMENT, FIBER CEMENT, OR GLASS MAT GYPSUM BACKER) TO A HEIGHT OF 72 INCHES ABOVE THE DRAIN INLET.
10		EXHAUST FAN 50 CFM INTERMITTENT OR 25 CFM CONTINUOUS ENERGY STAR
14	SD	120V HARD-WIRED SMOKE ALARMS WITH BATTERY BACK-UP IN EACH BEDROOM, HALLWAYS LEADING TO BEDROOMS, TOP OF STAIRS, BOTTOM OF STAIRS, AND ROOMS ADJACENT TO HALLWAYS WHERE THE CEILING HEIGHT IS GREATER THAN 24" ABOVE HALLWAY CEILING (NEW CONSTRUCTION)
15	CM	CARBON MONOXIDE ALARMS SHALL BE INSTALLED ON THE CEILING OR WALL (ABOVE THE DOOR HEADER) IN EACH AREA/HALLWAY ADJACENT TO SLEEPING ROOMS, EACH STORY OF THE BUILDING, AND ANY BASEMENT. CARBON MONOXIDE ALARMS ARE NOT REQUIRED IF THERE IS NO FUEL-BURNING APPLIANCES AND WHERE THE GARAGE IS DETACHED FROM THE HOUSE. (CRC R315)

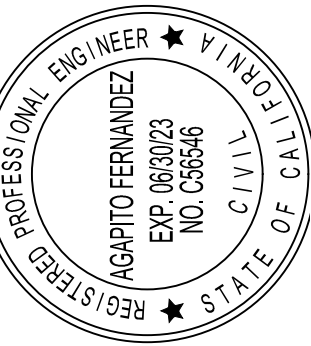


3RD. FLOOR LEGEND	AREA	SQ.FT.
	LIVING AREA	822
	STAIRWELL	85
	PATIO	69
	OVERHANG	118
	TOTAL	1094

PLANCHICK DATES:



CONSULTANT:
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CIVIL ENGINEERS
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COMMERCER, CA 90040
(818) 626-2088 cell
email: abfcivil@gmail.com



	7/19/22
SIGNATURE	DATE

[illegible]

PROJECT DESCRIPTION:
NEW 2-STORY SINGLE FAMILY DWELLING

PROJECT ADDRESS:
88220 MANNIX DRIVE
LOS ANGELES CA. 90046

TITLE: PROPOSED THIRD FLOOR PLAN

SCALE:	DATE:
AS NOTED	9/19/22

DRAWN BY:
JC/ABF

DESIGNED BY:
JC/ABF

DRAWING SHEET: A-4.1

SHEET 4 OF 13

DOOR / WINDOW SCHEDULES

DOOR SCHEDULE							
FLOOR	NUMBER	QTY	SIZE	WIDTH	HEIGHT	DESCRIPTION	SHGC
1	D01	1	16080 L/R EX	402"	80"	EXT. 4 DR. BIFOLD DOOR SL04	0.3
1	D02	1	2868 L IN	32"	80"	HINGED DOOR PM	0.3
1	D03	1	2868 R EX	32"	80"	EXT. HINGED DOOR P11	0.3
1	D04	1	4068 L/R EX	48"	80"	EXT. DOUBLE HINGED DOOR SL04	0.3
2	D05	1	2668 L	30"	80"	2 DR. BIFOLD OLIVERED	0.3
2	D06	2	2668 L IN	32"	80"	HINGED DOOR PM	0.3
2	D07	1	2668 R IN	32"	80"	HINGED DOOR PM	0.3
2	D08	1	4068 R	36"	80"	2 DR. BIFOLD OLIVERED	0.3
2	D09	1	4068 R IN	48"	80"	SLIDER DOOR PM	0.3
3	D10	1	2668 L EX	30"	80"	EXT. HINGED DOOR P11	0.3
3	D12	1	2668 R EX	30"	80"	EXT. HINGED DOOR P11	0.3
3	D13	1	2668 L IN	32"	80"	HINGED DOOR PM	0.3
3	D14	1	2668 R IN	32"	80"	HINGED DOOR PM	0.3
3	D15	1	2668 R EX	32"	80"	EXT. HINGED DOOR P11	0.3
3	D18	2	2668 L IN	30"	80"	HINGED DOOR PM	0.3
3	D19	1	2668 R IN	30"	80"	HINGED DOOR PM	0.3
3	D20	2	6068 L/R	72"	80"	4 DR. BIFOLD OLIVERED	0.3

WINDOW SCHEDULE							
FLOOR	NUMBER	QTY	SIZE	WIDTH	HEIGHT	DESCRIPTION	U-FACTOR
2	W01	2	2060 EX	24"	72"	FIXED GLASS	0.3
2	W03	3	5050 TS	60"	60"	TRIPL E SLIDING	0.3
2	W04	2	6160 EX	72"	60"	FIXED GLASS	0.3
2	W05	1	7080 EX	84"	96"	FIXED GLASS	0.3
3	W06	2	1434 DH	16"	39 7/8"	DOUBLE HUNG	0.3
3	W07	3	2060 EX	24"	72"	FIXED GLASS	0.3
3	W08	3	1630 EX	18"	36"	FIXED GLASS	0.3
3	W09	1	5050 TS	60"	60"	TRIPL E SLIDING	0.3
3	W10	1	7080 EX	84"	96"	FIXED GLASS	0.3
3	W11	2	9130 TS	108"	36"	TRIPL E SLIDING	0.3
3	W12	1	7020 TC	84"	24"	TRIPL E CASEMENT-LH/RHR	0.3

FLOOR PLAN NOTES

- 9 SHOWER AND TUB/SHOWER WALLS ARE A SMOOTH, HARD, NONABSORBENT SURFACE (E.G., CERAMIC TILE OR FIBERGLASS) OVER A MOISTURE RESISTANT UNDERLAYMENT (E.G., CEMENT, FIBER CEMENT, OR GLASS MAT GYPSUM BACKER) TO A HEIGHT OF 72 INCHES ABOVE THE DRAIN INLET.
- 10 EXHAUST FAN 50 CFM INTERMITTENT OR 25 CFM CONTINUOUS ENERGY STAR
- SD 120V HARD-WIRED SMOKE ALARMS WITH BATTERY BACK-UP IN EACH BEDROOM, HALLWAYS LEADING TO BEDROOMS, TOP OF STAIRS, BOTTOM OF STAIRS, AND ROOMS ADJACENTS TO HALLWAYS WHERE THE CEILING HEIGHT IS GREATER THEN 24" ABOVE HALLWAY CEILING (NEW CONSTRUCTION)
- CM CARBON MONOXIDE ALARMS SHALL BE INSTALLED ON THE CEILING OR WALL (ABOVE THE DOOR HEADER) IN EACH AREA/HALLWAY ADJACENT TO SLEEPING ROOMS, EACH STORY OF THE BUILDING, AND ANY BASEMENT. CARBON MONOXIDE ALARMS ARE NOT REQUIRED IF THERE IS NO FUEL-BURNING APPLIANCES AND WHERE THE GARAGE IS DETACHED FROM THE HOUSE. (CRC R315)



BATHROOM EXHAUST FAN

NOTE A:

- BATHROOM EXHAUST FAN SHALL BE ENERGY STAR COMPLIANT AND CONTROLLED BY HUMIDISTAT 4.506.1
- i. Fans shall be ENERGY STAR compliant and be ducted to terminate to the outside of the building.
- ii. Fans, not functioning as a component of a whole house ventilation system, must be controlled by a humidity control. (4.506.1)

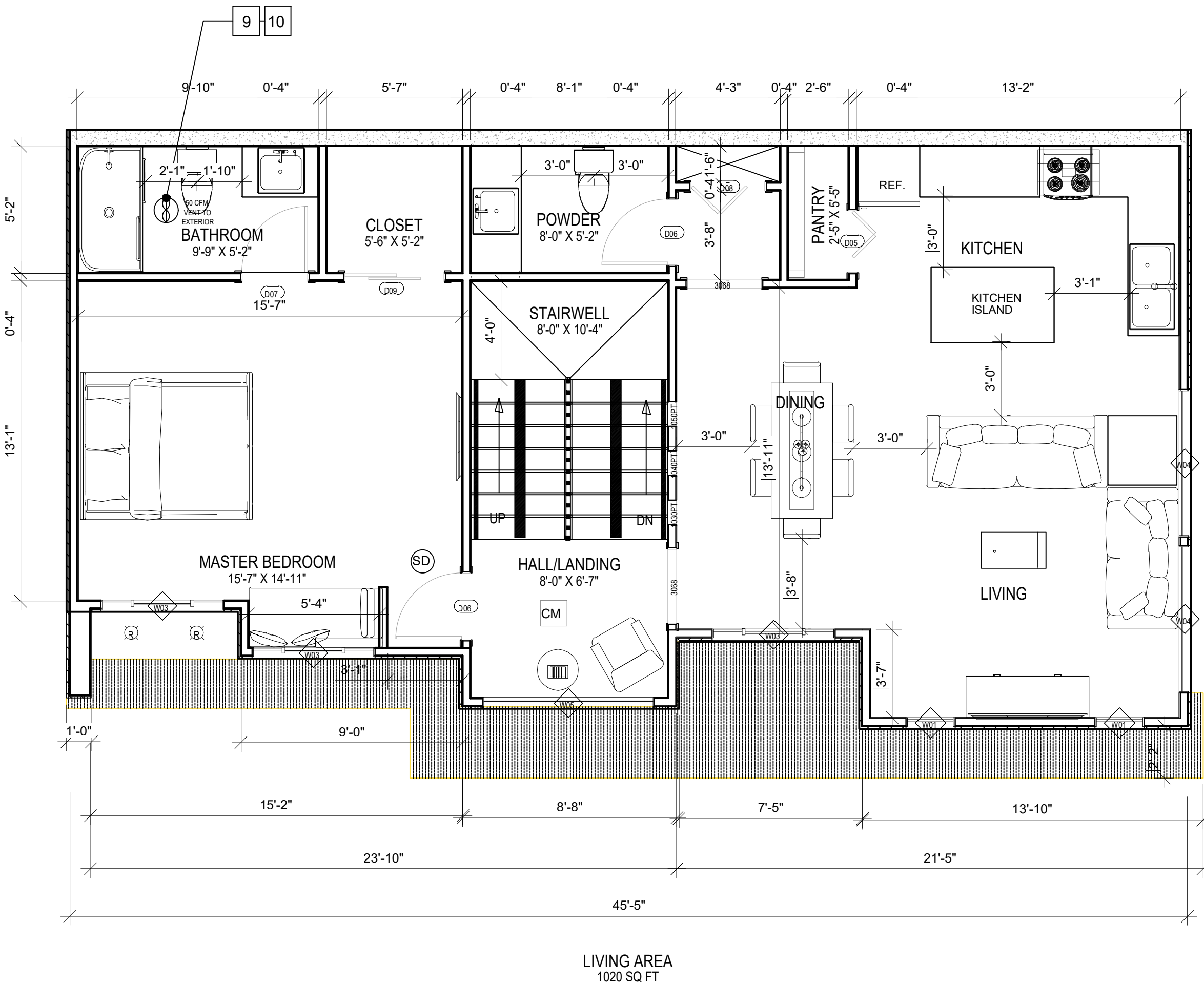
2ND. LEVEL FLOOR PLAN	AREA	SQ.FT.
	LIVING	1020
	STAIRWELL	85
	OVERHANG	143
TOTAL		1248

WALL LEGEND

- PROPOSED RETAINING WALL
- PROPOSED WOOD STUD WALL

ELECTRIC LEGEND

- EP ELECTRIC PANEL
- EVC ELECTRIC VEHICLE CHARGER
- SD SMOG DETECTOR
- CM CARBON MONOXIDE DETECTOR
- BATHROOM EXHAUST FAN
- ELECTRIC VEHICLE CHARGER



2ND. LEVEL FLOOR PLAN

1/4"=1'-0"

PLAN/CHECK DATES:

CONSULTANT:
AGAPITO B. FERNANDEZ, P.E.
CIVIL ENGINEERS
7400 E. SLAUSON AVENUE SUITE 100
COMMERCIAL, CA 90040
(818) 626-2088 cell
email: abf@abfllt@gmail.com



SIGNATURE DATE: 7/19/22

DATE:

REVISIONS:

PROJECT DESCRIPTION:
NEW 2-STORY SINGLE FAMILY DWELLING

PROJECT ADDRESS:
8220 MANNIX DRIVE
LOS ANGELES CA. 90046

TITLE:
PROPOSED SECOND FLOOR PLAN

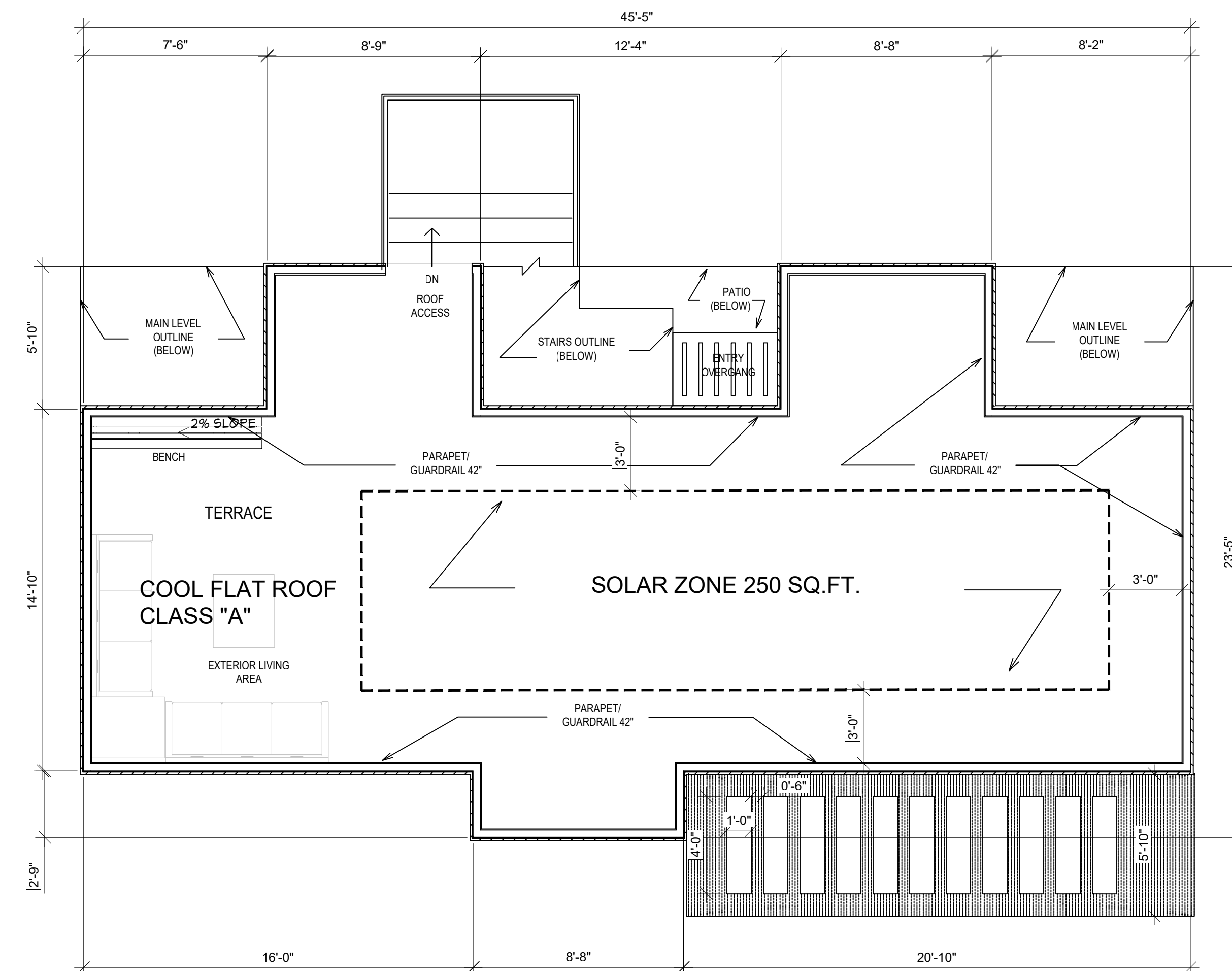
SCALE: AS NOTED DATE: 9/19/22

DRAWN BY:
JC/ABF

DESIGNED BY:
JC/ABF

DRAWING SHEET: A-4

SHEET 4 OF 13

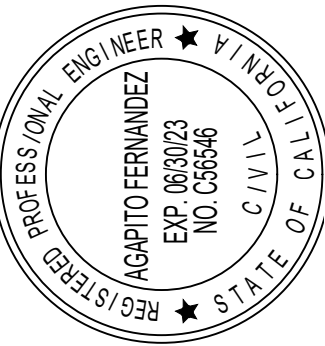


ROOF-TERRACE PLAN

1/4"=1'-0"

PLANCHECK DATES:

CONSULTANT:
AGAPITO B. FERNANDEZ, P.E.
CIVIL ENGINEERS
7400 E. SLAUSON AVENUE SUITE 100
COMMERCE, CA 90040
(818) 626-2088 cell
email: abfeiv11@gmail.com



	7/19/22
SIGNATURE	DATE

DATE: _____

REVISIONS:

PROJECT DESCRIPTION: NEW 2-STORY SINGLE FAMILY DWELLING

PROJECT ADDRESS: 8220 MANNIX DRIVE
LOS ANGELES CA. 90046

TITLE:

SCALE:	DATE:
AS NOTED	9/19/22

DRAWN BY:
IC/ABF

DESIGNED BY:
IC/ABF

DRAWING SHEET: A-5

SHEET 5 OF 13

ELEVATION LEGEND

- 1
- FLAT ROOF

2

WOOD VENNER FINISH

3

STUCCO FINISH. ¼ REVEAL

4

SMOOTH STUCCO FINISH

5

WOOD TRELLIES

6

STONE VENNER FINISH SELECTED BY OWNER

7

GLASS GUARDRAIL 42" MIN. HEIGHT

8

WOOD SIDING FINISH SELECTED BY OWNER

9

RETAINING WALL

10

TEMPERED GLASS.
ALL EXTERIOR GLAZING SHALL BE TEMPERED (VHFHSZ)

BUILDING ENVELOPE NOTES:

Glazing in enclosures for or walls facing hot tubs, whirlpools, saunas, steam rooms, bathtubs and showers where the bottom edge of the glazing is less than 60 inches measured vertically above any standing or walking surface.

8. Buildings shall have approved address numbers, building numbers or approved building identification placed in a position that is plainly legible and visible from the street or road fronting the property. (R319.1)

9. Protection of wood and wood based products from decay shall be provided in the locations specified per Section R317.1 by the use of naturally durable wood or wood that is preservative-treated in accordance with AWPA U1 for the species, product, preservative and end use. Preservatives shall be listed in Section 4 of AWPA U1.

10. Provide anti-Graffiti finish within the first 9 feet, measured from grade, at exterior walls and doors. Exception: Maintenance of building affidavit is recorded by the owner to covenant and agree with the City of Los Angeles to remove any graffiti within 7-days of the graffiti being applied. (6306



PROJECT DESCRIPTION:
NEW 2-STORY SINGLE FAMILY DWELLING

PROJECT ADDRESS:
8220 MANNIX DRIVE
LOS ANGELES CA. 90046

TITLE:

PROPOSED EAST ELEVATION

SCALE:
AS NOTED

DATE:
9/19/22

DRAWN BY:
JC/ABF

DESIGNED BY:
JC/ABF

DRAWING SHEET: A-6

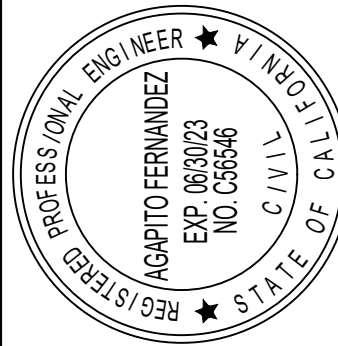
SHEET 6 OF 13

PLAN/CHECK DATES:

CONSULTANT:
AGAPITO B. FERNANDEZ, P.E.

CIVIL ENGINEERS

7400 E. SLAUSON AVENUE SUITE 100
COMMERCE, CA 90040
(818) 626-2088 cell
email: abfcivil@gmail.com



DATE:
7/19/22

SIGNATURE:
Agapito Fernandez

DATE:

REVISIONS:

ELEVATION LEGEND

- 1

FLAT ROOF
- 2

WOOD VENNER FINISH
- 3

STUCCO FINISH, 1/4" REVEAL
- 4

SMOOTH STUCCO FINISH
- 5

WOOD TRELLIES
- 6

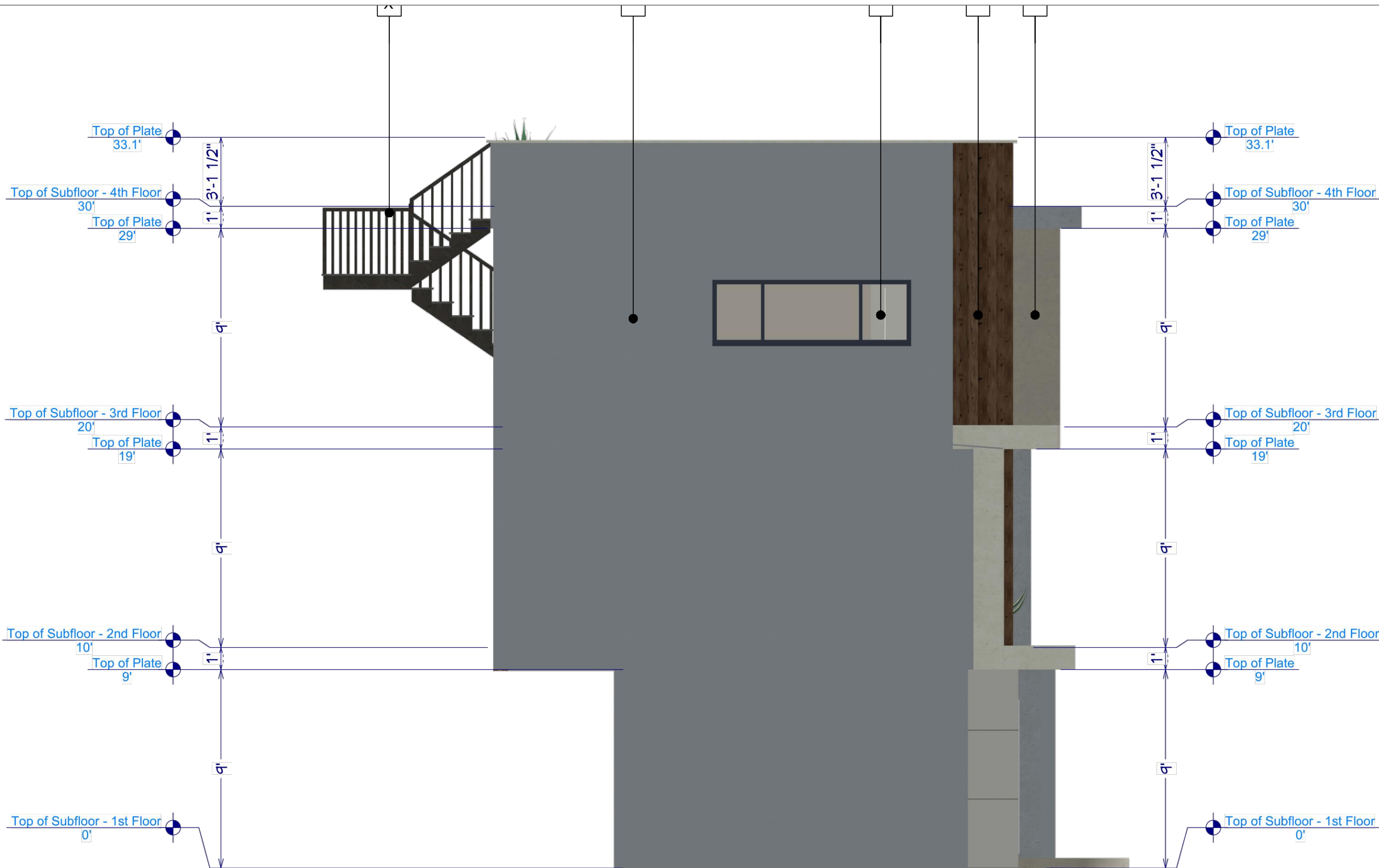
STONE VENNER FINISH SELECTED BY OWNER
- 7

GLASS GUARDRAIL 42" MIN. HEIGHT
- 8

WOOD SIDING FINISH SELECTED BY OWNER
- 9

RETAINING WALL
- 10

TEMPERED GLASS.
ALL EXTERIOR GLAZING SHALL BE TEMPERED (VHFHSZ)



SOUTH ELEVATION

1/4"=1'-0"

PROJECT DESCRIPTION:
NEW 2-STORY SINGLE FAMILY DWELLING

PROJECT ADDRESS:
8220 MANNIX DRIVE
LOS ANGELES CA. 90046

TITLE:

PROPOSED SOUTH ELEVATION

SCALE:
AS NOTED

DATE:
9/19/22

DRAWN BY:
JC/ABF

DESIGNED BY:
JC/ABF

DRAWING SHEET: A-7

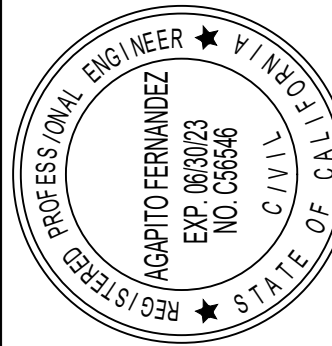
SHEET 7 OF 13

PLAN/CHECK DATES:

CONSULTANT:
AGAPITO B. FERNANDEZ, P.E.

CIVIL ENGINEERS

7400 E. SLAUSON AVENUE SUITE 100
COMMERCE, CA 90040
(818) 626-2088 cell
email: abfcivil@gmail.com



SIGNATURE
DATE: 7/19/22



WEST ELEVATION

1/4"=1'-0"

ELEVATION LEGEND

- 1 FLAT ROOF
- 2 WOOD VENNER FINISH
- 3 SMOOTH STUCCO FINISH. $\frac{1}{4}$ REVEAL
- 4 SMOOTH STUCCO FINISH
- 5 METAL TRELLIES
- 6 STONE VENNER FINISH SELECTED BY OWNER
- 7 GLASS GUARDRAIL 42" MIN. HEIGHT
- 8 WOOD SIDING FINISH SELECTED BY OWNER
- 9 RETAINING WALL
- 10 TEMPERED GLASS.
ALL EXTERIOR GLAZING SHALL BE TEMPERED (VHFHSZ)

PROJECT DESCRIPTION:
NEW 2-STORY SINGLE FAMILY DWELLING

PROJECT ADDRESS:
8220 MANNIX DRIVE
LOS ANGELES CA. 90046

TITLE:

PROPOSED WEST ELEVATION

SCALE:
AS NOTED

DATE:
9/19/22

DRAWN BY:
JC/ABF

DESIGNED BY:
JC/ABF

DRAWING SHEET: **A-8**

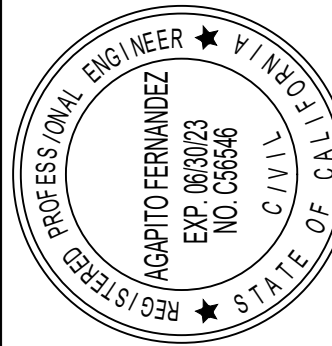
SHEET **8** OF **13**

PLAN/CHECK DATES:

CONSULTANT:
AGAPITO B. FERNANDEZ, P.E.

CIVIL ENGINEERS

7400 E. SLAUSON AVENUE SUITE 100
COMMERCE, CA 90040
(818) 626-2088 cell
email: abfcivil@gmail.com



7/19/22
DATE

SIGNATURE

DATE:

REVISIONS:



WEST ELEVATION

PROJECT DESCRIPTION:
NEW 2-STORY SINGLE FAMILY DWELLING
PROJECT ADDRESS:
8220 MANNIX DRIVE
LOS ANGELES CA. 90046
TITLE:

SCALE:
AS NOTED
DATE:
9/19/22

DRAWN BY:
JC/ABF

DESIGNED BY:
JC/ABF

DRAWING SHEET: A-9

SHEET 9 OF 13

CROSS SECTION ELEVATION - A

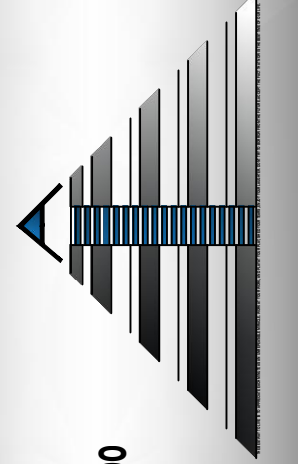
REVISIONS:

DATE:

SIGNATURE
7/19/22
DATE



CONSULTANT:
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PLAN/CHECK DATES:

B

DOOR TYPICAL FLASHING DETAILS

MECHANICALLY FASTEN AS NECESSARY IN CORNERS USING CONSTRUCTION TAPE

FLEXIBLE FLASHING

FLEXIBLE FLASHING

WEEP SCREED

APPLY A CONTINUOUS BEAD OF SEALANT

CONCRETE LANDING

PAN FLASHING

EXTERIOR SHEATHING

FOLD UP WEATHER RESISTIVE BARRIER & TEMPORARILY SECURE

WEATHER RESISTIVE BARRIER

FLASHING CORNER PATCH (NON-FORMABLE SELF-ADHERED MEMBRANE REQUIRES CORNER PATCHES)

TIE-IN WITH WEATHER RESISTIVE BARRIER:

2. FLASHING CORNER PATCH
3. FLEXIBLE PAN FLASHING
4. INSTALL VERTICAL FLASHING PLUS HEAD FLASHING UNDER WEATHER RESISTIVE BARRIER; MECHANICALLY FASTEN AS NECESSARY
5. FOLD WEATHER RESISTIVE BARRIER BACK OVER HEAD FLASHING AND SEAL WITH WEATHER RESISTIVE BARRIER TAPE

SLDING/FRENCH DOOR TYPICAL FLASHING DETAILS

MECHANICALLY FASTEN AS NECESSARY IN CORNERS USING CONSTRUCTION TAPE

FLEXIBLE FLASHING

WEEP SCREED

APPLY A CONT. BEAD OF SEALANT

CONCRETE LANDING

PAN FLASHING

EXTERIOR SHEATHING

FOLD UP WEATHER RESISTIVE BARRIER & TEMPORARILY SECURE

WEATHER RESISTIVE BARRIER

FLASHING CORNER PATCH (NON-FORMABLE SELF-ADHERED MEMBRANE REQUIRES CORNER PATCHES)

TIE-IN WITH WEATHER RESISTIVE BARRIER:

- FLASHING CORNER PATCH
- FLEXIBLE PAN FLASHING
- INSTALL VERTICAL FLASHING PLUS HEAD FLASHING UNDER WEATHER RESISTIVE BARRIER; MECHANICALLY FASTEN AS NECESSARY
- FOLD WEATHER RESISTIVE BARRIER BACK OVER HEAD FLASHING AND SEAL WITH WEATHER RESISTIVE BARRIER TAPE

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D

DOOR TO DECK FLASHING DETAILS

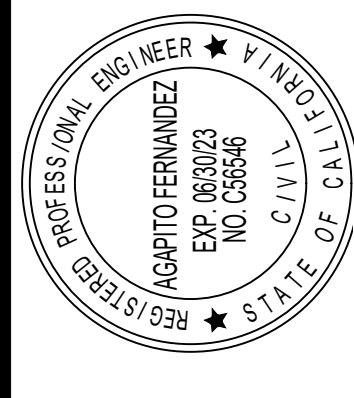
Diagram illustrating the flashing details for a door to a deck. The components shown include:

- EXTERIOR SHEATHING
- SEALED JAMB / SILL FLASHING
- WALL
- DOOR THRESHOLD
- STAMPED CONCRETE FINISH
- 1/4 IN. PER FOOT SLOPE
- ROOF MEMEBRANE
- DECK FLASHING

$$1/4'' = 1' - 0''$$

PLANCHECK DATES:

CONSULTANT:
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<i>[Signature]</i>	7/19/22
SIGNATURE	DATE

DATE:

REVISIONS:

PROJECT DESCRIPTION:
NEW 2-STORY SINGLE FAMILY DWELLING

PROJECT ADDRESS:
88220 MANNIX DRIVE
LOS ANGELES CA. 90046

TITLE:

CROSS SECTION ELEVATION - B

SCALE:
AS NOTED

DATE:
9/19/22

DRAWN BY:
JC/ABFDESIGNED BY:
JC/ABF

DRAWING SHEET: A10

SHEET 10 OF 13



STORM WATER POLLUTION CONTROL
(2020 Los Angeles Green Building Code)

FORM
GRN 1

Storm Water Pollution Control Requirements for Construction Activities
Minimum Water Quality Protection Requirements for All Construction Projects

The following notes shall be incorporated in the approved set of construction/grading plans and represents the minimum standards of good housekeeping which must be implemented on all construction projects.

Construction means constructing, clearing, grading or excavation that result in soil disturbance. Construction includes structure teardown (demolition). It does not include routine maintenance to maintain original line and grade, hydraulic capacity, or original purpose of facility; emergency construction activities required to immediately protect public health and safety; interior remodeling with no outside exposure of construction material or construction waste to storm water; mechanical permit work; or sign permit work. (Order No. 01-182, NPDES Permit No. CAS004001 – Part 5: Definitions)

1. Eroded sediments and pollutants shall be retained on site and shall not be transported from the site via sheet flow, swales, area drains, natural drainage or wind.
2. Stockpiles of earth and other construction-related materials shall be covered and/or protected from being transported from the site by wind or water.
3. Fuels, oils, solvents and other toxic materials must be stored in accordance with their listing and shall not contaminate the soil nor the surface waters. All approved toxic storage containers are to be protected from the weather. Spills must be cleaned up immediately and disposed of properly and shall not be washed into the drainage system.
4. Non-storm water runoff from equipment and vehicle washing and any other activity shall be contained on the project site.
5. Excess or waste concrete may not be washed into the public way or any drainage system. Provisions shall be made to retain concrete waste on-site until it can be appropriately disposed of or recycled.
6. Trash and construction –related solid wastes must be deposited into a covered receptacle to prevent contamination of storm water and dispersal by wind.
7. Sediments and other materials shall not be tracked from the site by vehicle traffic. The construction entrance roadways must be stabilized so as to inhibit sediments from being deposited into the street/public ways. Accidental depositions must be swept up immediately and may not be washed down by rain or by any other means.
8. Retention basins of sufficient size shall be provided to retain storm water runoff on-site and shall be properly located to collect all tributary site runoff.
9. Where retention of storm water runoff on-site is not feasible due to site constraints, runoff may be conveyed to the street and the storm drain system provided that an approved filtering system is installed and maintained on-site during the construction duration.

As a covered entity under Title II of the Americans with Disabilities Act, the City of Los Angeles does not discriminate on the basis of disability and, upon request, will provide reasonable accommodation to ensure equal access to its programs, services and activities.

(Rev. 01/01/20)

Page 1 of 1

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PLUMBING FIXTURE FLOW RATES
Residential Occupancies
2020 Los Angeles Green Building Code
(Incorporate this form into the plans)

FORM
GRN 16

SECTION 4.303.1
WATER REDUCTION FIXTURE FLOW RATES

FIXTURE TYPE	MAXIMUM ALLOWABLE FLOW RATE
Showerheads	1.8 gpm @ 80 psi
Lavatory faucets, residential	1.2 gpm @ 60 psi ^{1,3}
Lavatory faucets, nonresidential	0.4 gpm @ 60 psi ^{1,3}
Kitchen faucets	1.5 gpm @ 60 psi ^{2,4}
Metering Faucets	0.2 gallons/cycle
Gravity tank type water closets	1.28 gallons/flush ⁵
Flushometer tank water closets	1.28 gallons/flush ⁵
Flushometer valve water closets	1.28 gallons/flush ⁵
Urinals	0.125 gallons/flush
Clothes Washers	ENERGY-STAR certified
Dishwashers	ENERGY-STAR certified

¹ Lavatory Faucets shall not have a flow rate less than 0.8 gpm at 20 psi.
² Kitchen faucets may temporarily increase flow above the maximum rate, but not above 2.2gpm @ 60psi and must default to a maximum flow rate of 1.8 gpm @ 60psi.
³ Where complying faucets are unavailable, aerators or other means may be used to achieve reduction.
⁴ Kitchen faucets with a maximum 1.8 gpm flow rate may be installed in buildings that have water closets with a maximum flush rate of 1.06 gallons/flush installed throughout.
⁵ Includes single and dual flush water closets with an effective flush of 1.28 gallons or less.
Single Flush Toilets - The effective flush volume shall not exceed 1.28 gallons (4.8 liters). The effective flush volume is the average flush volume when tested in accordance with ASME A112.19.233.2.
Dual Flush Toilets - The effective flush volume shall not exceed 1.28 gallons (4.8 liters). The effective flush volume is defined as the composite, average flush volume of two reduced flushes and one full flush. Flush volumes will be tested in accordance with ASME A112.19.2 and ASME A112.19.14.

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2020 Los Angeles Green Building Code

WATER CONSERVATION ORDINANCE NOTES
NON-RESIDENTIAL BUILDINGS

FORM
GRN 18N

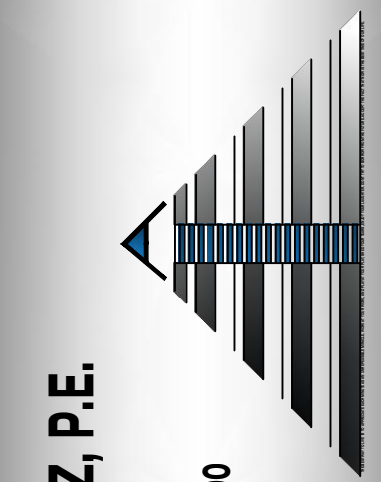
1. For new buildings or additions exceeding 50,000 ft², install a separate water meter or sub-meter for the following areas:
 - A. For each individual leased, rented, or other tenant space within the building projected to consume more than 100 gpd (380 L/day).
 - B. Where potable water is used for industrial/process uses, for water supplied to the following subsystems:
 - a. Makeup water for cooling towers where flow through is greater than 500 gpm (30 L/s).
 - b. Makeup water for evaporative coolers greater than 6 gpm (0.04 L/s).
 - c. Steam and hot-water boilers with energy input more than 500,000 Btu/h (147 kW).
 - C. For each building that uses more than 100 gpd on a parcel containing multiple buildings.(5.303.1.1)
2. Provide a 20% reduction in the overall potable water use for each building. The reduction shall be based on the maximum allowable water use per plumbing fixture and fittings as required by the Los Angeles Plumbing Code. New projects having a water supply of 2" or less and additions and alterations projects may use the prescriptive method outlined in this section. (5.303.2)
3. A water budget for landscape irrigation use that conforms to the California Department of Water Resources' Model Water Efficient Landscape Ordinance (MWELO) is required for new landscape areas of 500 sqft or more. The following methods to reduce potable water use in landscape areas include, but are not limited to, use of captured rainwater, recycled water, graywater, or water treated for irrigation purposes and conveyed by a water district or public entity. (5.304.1, 5.304.2)
4. New buildings on a site with 1,000 square feet or more of cumulative landscape area shall have separate meters or submeters for outdoor water use. (5.304.4)
5. Additions and alterations on a site with 1,000 square feet of cumulative landscape area which require water service upgrade shall have separate meters or submeters for outdoor water use. (5.304.4)
6. Locks shall be installed on all publicly accessible exterior faucets and hose bibs. (5.304.5)
7. Except as provided in this section, for sites with over 500 square feet of landscape area, alternate waste piping shall be installed to permit discharge from the clothes washer, bathtub, showers, and bathroom/restrooms wash basins to be used for a future graywater irrigation system (5.305.1)
8. Except as provided in this section, where City-recycled water is available within 200 feet of the property line, water closets, urinals, floor drains, and process cooling and heating in the building shall be supplied from recycled water and shall be installed in accordance with the Los Angeles Plumbing Code. (5.305.2)
9. Cooling towers shall comply with one of the following:
 - A. Shall have a minimum of 6 cycles of concentration (blowdown)
 - B. A minimum of 50% of the makeup water supply to the cooling towers shall come from non-potable water sources, including treated backwash. (5.305.3)
10. Develop and construct a system for onsite reuse of the groundwater where groundwater is being extracted and discharged. Alternatively, the groundwater may be discharged to the sewer. (5.305.4)
11. Provide a hot water system complying with one of the following:
 - A. The hot water system shall not allow more than 0.6 gallons of water to be delivered to any fixture before hot water arrives.
 - B. Where a hot water recirculation or electric resistance heat trace wire system is installed, the branch from the recirculating loop or electric resistance heat trace wire to the fixture shall contain a maximum of 0.6 gallons. (Los Angeles Plumbing Code Section 610.4.1)

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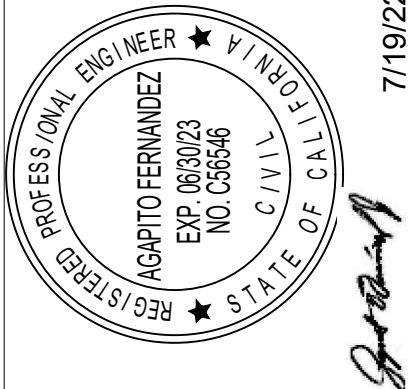
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Sheet: 1

PLAN/CHECK DATES:



CONSULTANT:
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CIVIL ENGINEERS
7400 E. SLAUSON AVENUE SUITE 100
COMMERCIAL, CA 90040
(818) 626-2088 cell
email: abf@vll1@gmail.com



SIGNATURE
DATE: 7/19/22

DATE:

REVISIONS:

PROJECT DESCRIPTION:
NEW 2-STORY SINGLE FAMILY DWELLING

PROJECT ADDRESS:
8220 MANNIX DRIVE
LOS ANGELES CA. 90046

TITLE:
PROPOSED ROOF PLAN

SCALE:
AS NOTED

DATE:
9/19/22

DRAWN BY:
JC/ABF

DESIGNED BY:
JC/ABF

DRAWING SHEET: **A11**

SHEET 11 OF 13



2020 Los Angeles Green Building Code

FORM
GRN 4

MANDATORY REQUIREMENTS CHECKLIST
NEWLY CONSTRUCTED RESIDENTIAL BUILDINGS
(COMPLETE AND INCORPORATE THIS FORM INTO THE PLANS)

Permit # - - Date: 7-21-22

ITEM #	CODE SECTION	REQUIREMENTS	REFERENCE SHEET (Sheet # or N/A)	COMMENTS (e.g. note #, detail # or reason for N/A)
PLANNING AND DESIGN				
1	4.106.2	Storm water drainage and retention during construction	G1	GRN1
2	4.106.3	Grading and paving	A2	SITE PLAN
3	4.106.4	Electric vehicle (EV) charging	A3	FLOOR PLAN
4	4.106.5	Cool roof for reduction of heat island effect	A11	ROOF PLAN & SPECS.
5	4.106.7	Reduction of heat island effect for non-roof areas	A2	SITE PLAN
ENERGY EFFICIENCY				
6	4.211.4	Solar ready buildings	A11	ROOF PLAN
WATER EFFICIENCY & CONSERVATION				
7	4.303.1	Water conserving plumbing fixtures and fittings	G1	GRN14 NOTE 5 GRN16
8	4.303.1.3.2	Multiple showerheads serving one shower	G1	GRN14 NOTE 6
9	4.303.3	Water submeters	N/A	Single Family Dwelling
10	4.303.4	Water use reduction	G1	GRN18 NOTE 2
11	4.304.1	Outdoor water use in landscape areas		LANDSCAPE PLANS
12	4.304.2	Irrigation controllers		LANDSCAPE PLANS
13	4.304.3	Metering outdoor water use		LANDSCAPE PLANS
14	4.304.4	Exterior faucets	N/A	Single Family Dwelling
15	4.304.5	Swimming pool covers	N/A	No Swimming Pool
16	4.305.1	Graywater ready	G1	GRN18 NOTE 7
17	4.305.2	Recycled water supply to fixtures	G1	GRN18 NOTE 8
18	4.305.3.1	Cooling towers (buildings ≤ 25 stories)	G1	GRN18 NOTE 9
19	4.305.3.2	Cooling towers (buildings > 25 stories)	N/A	1-STORY BLDG.
20	4.305.4	Groundwater discharge	G1	GRN18 NOTE 11
MATERIAL CONSERVATION & RESOURCE EFFICIENCY				
21	4.406.1	Rodent proofing	G1	GRN14 NOTE 9
22	4.407.3	Flashing details	A12	SEE DETAILS

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(Rev. 02/12/2020)

Page 1 of 2

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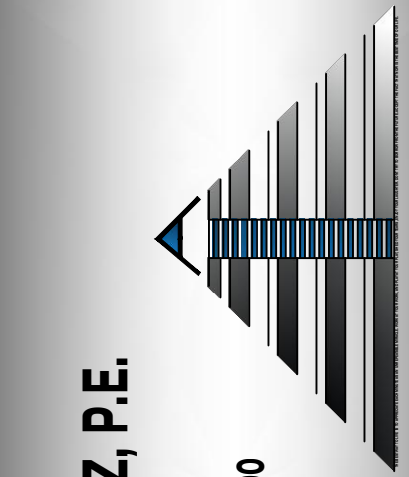


2020 Los Angeles Green Building Code

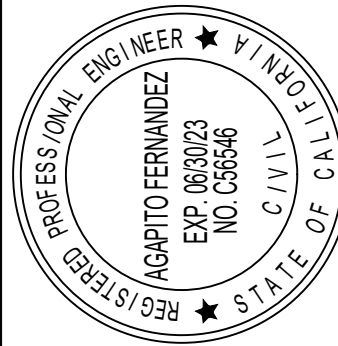
FORM
GRN 4

ITEM #	CODE SECTION	REQUIREMENTS	REFERENCE SHEET (Sheet # or N/A)	COMMENTS (e.g. note #, detail # or reason for N/A)
23	4.407.4	Material protection	G1	GRN14 NOTE 10
24	4.408.1	Construction waste reduction	G1	GRN14 NOTE 11
25	4.410.1	Operation and maintenance manual	G1	GRN14 NOTE 12
ENVIRONMENTAL QUALITY				
26	4.503.1	Fireplaces and woodstoves	A4	GAS DIRECT VENT
27	4.504.1	Covering of duct openings and protection of mechanical equipment during construction	G1	GRN14 NOTE 14
28	4.504.2	Finish material pollutant control	G1	GRN14 NOTE 15
29	4.504.2.1	– Adhesives, sealants, caulks	G1	GRN14 NOTE 15
30	4.504.2.2	– Paints and coatings		
31	4.504.2.3	– Aerosol paints and coatings		
32	4.504.2.4	– Verification		
33	4.504.3	Carpet systems	G1	GRN14 NOTE 17
34	4.504.3.1	Carpet cushion	G1	GRN14 NOTE 17
35	4.504.4	Resilient flooring systems	G1	GRN14 NOTE 18
36	4.504.5	Composite wood products	G1	GRN14 NOTE 19
37	4.504.6	Filters	G1	GRN14 NOTE 21
38	4.505.2.1	Capillary break	D1	DETAIL ?/D1
39	4.505.3	Moisture content of building materials	G1	GRN14 NOTE 23
40	4.506.1	Bathroom exhaust fans	A3,A4	FLOOR PLAN
41	4.507.2	Heating and air-conditioning system design	G1	GRN14 NOTE 26

PLAN/CHECK DATES:



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email: abf@vll11@gmail.com



DATE: 7/19/22

SIGNATURE

DATE:

REVISIONS:

PROJECT DESCRIPTION:
NEW 2-STORY SINGLE FAMILY DWELLING

PROJECT ADDRESS:
8220 MANNIX DRIVE
LOS ANGELES CA. 90046

TITLE:
FLASHING DETAILS

SCALE:
AS NOTED

DATE:
9/19/22

DRAWN BY:
JC/ABF

DESIGNED BY:
JC/ABF

DRAWING SHEET: A-12

SHEET 12 OF 13

A. General

Applicable codes. All projects shall comply with the 2019 California Building Code (CBC) and/or California Residential Code (CRC), 2019 California Green Building Standards Code (CalGreen), 2019 California Electrical Code (CEC), 2019 California Mechanical Code (CMC), 2019 California Plumbing Code (CPC), 2019 California Fire Code (CFC), 2019 California Building Energy Efficiency Standards (CBEES), and all County/City amendments.

A. Electrical, Plumbing, and Mechanical

- Exterior lighting. All projects shall comply with the City/County of Los Angeles lighting ordinance.
- GFCI outlets. Ground Fault Circuit Interrupter (GFCI) outlets are required in bathrooms, at kitchen countertops, at laundry and wet bar sinks, in garages, in crawlspaces, in unfinished basements, and outdoors. (CEC 210.8)
- AFCI outlets. Electrical circuits in bedrooms, living rooms, dining rooms, dens, closets, hallways, or similar rooms must be protected by Arc Fault Circuit Interrupters (AFCI). (CEC 210.12)
- Luminaire requirements. Installed luminaires shall meet the efficacy and fixture requirements of CBEES 150.0(k).

- Smoke detectors in building remodels. Smoke detectors are required in each existing sleeping room, outside each separate sleeping area in the immediate vicinity of sleeping rooms, and on each story of a dwelling including basements. Battery-operated detectors are acceptable in existing areas with no construction taking place and in alterations not resulting in removal of interior wall or ceiling finishes and without access via an attic, crawl space, or basement. (CRC R314.3)

- Carbon monoxide detectors in building remodels. Carbon monoxide detectors are required outside each separate sleeping area in the immediate vicinity of sleeping rooms and on each story of a dwelling including basements. Battery-operated detectors are acceptable in existing areas with no construction taking place and in alterations not resulting in removal of interior wall or ceiling finishes and without access via an attic, crawl space, or basement. (CRC R315.3)

- Water heater seismic strapping. Minimum two 3/4-inch-by-24-gauge straps required around water heaters, with 1/4-inch-by-3-inch lag bolts attached directly to framing. Straps shall be at points within upper third and lower third of water heater vertical dimension. Lower connection shall occur minimum 4 inches above controls. (CPC 507.2)
- Gas appliances in garages. Water heaters and heating/cooling equipment capable of igniting flammable vapors shall be placed on minimum 18-inch-high platform unless listing report number provided showing ignition-resistant appliance. (CPC 507.13 and CMC 305.1)

- Impact protection of appliances. Water heaters and heating/cooling equipment subject to vehicular impact shall be protected by bollards or an equivalent measure. (CPC 507.13.1 and CMC 305.1.1)

- Water closet clearance. Minimum 30-inch-wide by 24-inch-deep clearance required at front of water closets. (CRC 402.5)

- Shower size. Shower compartments shall have minimum area of 1024 square inches and be able to encompass a 30-inch-diameter circle. Shower doors shall have a minimum 22-inch unobstructed width. (CRC 408.5 and CPC 408.6)

- Fireplace appliances. Fireplaces with gas appliances are required to have the flue damper permanently fixed in the open position and fireplaces with LPG appliances are to have no "off" or "sump" configurations. (CMC 303.7.1)

- Chimney clearance. Minimum 2-foot chimney clearance required above building within 10-foot horizontally of chimney. The chimney shall extend minimum 3 feet above highest point where chimney passes through roof. (CRC R1003.9)

C. Mechanical Ventilation and Indoor Air Quality (ASHRAE 62.2-2010)

- Transfer air. Ventilation air shall be provided directly from the outdoors and not as transfer air from adjacent dwelling units or other spaces, such as garages, unconditioned crawlspaces, or unconditioned attics. (CBEES 150.0(o))
- Instructions and labeling. Ventilation system controls shall be labeled and the home owner shall be provided with instructions on how to operate the system. (CBEES 150.0(o))

- Combustion and solid-fuel burning appliances. Combustion appliances shall be properly vented and air systems shall be designed to prevent back drafting. (CBEES 150.0(o))

- Garages. The wall and openings between occupiable spaces and the garage shall be sealed. HVAC systems that include air handlers or return ducts located in garages shall have total air leakage of no more than 6% of total fan flow when measured at 0.1 in. w.c. using California Title 24 or equivalents. (CBEES 150.0(o))

- Minimum filtration. Mechanical systems supplying air to occupiable space through ductwork shall be provided with a filter having a minimum efficiency of MERV 6 or better. (CBEES 150.0(o))

- Air inlets. Air inlets (not exhaust) shall be located away from known contaminants. (CBEES 150.0(o))

- Air moving equipment. Air moving equipment used to meet either the whole-building ventilation requirement or the local ventilation exhaust requirement shall be rated in terms of airflow and sound. (CBEES 150.0(o))

- a. All continuously operating fans shall be rated at a maximum of 1.0 sone.
- Intermittently operated whole-building ventilation fans shall be rated at a maximum of 1.0 sone.
- Intermittently operated local exhaust fans shall be rated at maximum of 3.0 sone.

- d. Remotely located air-moving equipment (mounted outside of habitable spaces) need not meet sound requirements if at least 4 feet of ductwork between fan and intake grill.

D. Foundation and Underfloor

- Foundation reinforcement. Continuous footings and stem walls shall be provided with a minimum two longitudinal No. 4 bars, one at the top and one at the bottom of the footing. (CRC R403.1.3.3)

- Shear wall foundation support. Shear walls shall be supported by continuous foundations. (CRC 403.1.2)

- Concrete slabs-on-grade. Slabs-on-grade shall be minimum 3-1/2-inches thick. (CRC R506.1)

- Vapor retarder. A 6-mil polyethylene or approved vapor retarder with joints lapped minimum 6 inches shall be placed between a concrete slab-on-grade and the base course or subgrade. (CRC 506.2.3)

- Anchor bolts and sills. Foundation plates or sills shall be bolted or anchored to the foundation or foundation wall per the following (CRC R403.1.6 and CRC R602.11.1):

- a. Minimum 1/2-inch-diameter steel bolts
- Bolts embedded at least 7 inches into concrete or masonry
- Bolts spaced maximum 6 feet on center

- d. Minimum two bolts per plate/sill piece with one bolt located maximum 12 inches and minimum 7 bolt diameters from each end of each sill plate/piece

- e. Minimum 3-inch by 3-inch by 0.299-inch steel plate washer between sill and nut on each bolt

6. Hold-downs. All hold-downs must be tied in place prior to foundation inspection.

7. Protection of wood against decay. Naturally durable or preservative-treated wood shall be provided in the following locations (CRC R317.1):

- a. All wood in contact with ground, embedded in concrete in direct contact with ground, or embedded in concrete exposed to weather

- b. Wood joists within 18 inches and wood girders within 12 inches of the exposed ground in crawl spaces shall be of naturally durable or preservative-treated wood

- c. Wood framing members that rest on concrete or masonry exterior foundation walls and are less than 8 inches from exposed earth shall be of naturally durable or preservative-treated wood

- d. Wood framing, sheathing, and siding on the exterior of the building and having clearance less than 6 inches from the exposed ground or less than 2 inches vertically from concrete steps, porch slabs, patio slabs, and similar horizontal surface exposed to weather

- e. Sills and sleepers on concrete or masonry slab in direct contact with ground unless separated from such slab by impervious moisture barrier

D. Foundation and Underfloor (Continued)

- f. Ends of wood girders entering masonry or concrete walls with clearances less than 1/2 inch at least sides, and ends of

- g. Wood structural members supporting moisture-permeable floors or roofs exposed to weather, such as concrete or masonry slabs, unless separated from such floors or roofs by an impervious moisture barrier

- h. Wood furring strips or other wood framing members attached directly to interior of exterior concrete or masonry walls below grade except where vapor retarder applied between wall and furring strips or framing members

8. Underfloor ventilation. Underfloor areas shall have ventilation openings through foundation walls or exterior walls, with minimum net area of ventilation openings of 1 square foot for each 150 square feet of underfloor area. On such ventilating opening shall be within 3 feet of each corner of the building. (CRC R408.1)

9. Underfloor access. Underfloor areas shall be provided with a minimum 18-inch by 24-inch access opening. (CRC R408.4)

E. Wood Framing

1. Fastener requirements. The number, size, and spacing of fasteners connecting wood members/elements shall not be less than that set forth in CRC Table R602.3(1). (CRC R502.9, CRC R602.3, and CRC R602.9)

2. Stud size, height, and spacing. The size, height, and spacing of studs shall be in accordance with CRC Table R602.3(5). (CRC R602.3.1)

3. Sill plate. Studs shall have full bearing on nominal 2-inch thick or larger sill plate with width at least equal to stud width. (CRC R602.3.4)

4. Bearing studs. Where joists, trusses, or rafters are spaced more than 16 inches on center and the bearing studs below are spaced 24 inches on center, such members shall bear within 5 inches of the studs beneath. (CRC R602.3.3)

5. Drilling and notching of studs. Any stud in an exterior wall or bearing partition may be cut or notched to a depth not exceeding 25% of its width. Studs in nonbearing partitions may be notched to a depth not to exceed 40% of a single stud width. Any stud may be bored or drilled, provided the diameter of the resulting hole is no more than 60% of the stud width, the edge of the hole is no more than 5/8 inch to the edge of the stud, and the hole is not located in the same section as a cut or notch. Studs located in exterior wall or bearing partitions drilled over 40% and up to 60% shall also be doubled with no more than two successive studs bored. (CRC R602.9)

6. Top plate. Wood stud walls shall be capped with a double top plate installed to provide overlapping at corners and at intersections with other partitions. End joints in double top plates shall be offset at least 24 inches. Joints in plates need not occur over studs. Plates shall be minimum nominal 2 inches thick and have width at least equal to width of studs. (CRC R602.3.2)

7. Top plate splices. Top plate lap splices shall be face-nailed with minimum 8 16d nails on each side of splice. (CRC R602.10.8.1)

8. Drilling and notching of top plate. When piping or ductwork is placed in or partly in an exterior wall or interior load-bearing wall, necessitating cutting, drilling, or notching of the top plate by more than 50% of its width, a galvanized metal tie not less than 0.054-inch thick and 1-1/2-inches wide shall be fastened across and to the plate at each side of the opening with not less than 8 10d nails having a minimum length of 1-1/2 inches at each side or equivalent. The metal tie must extend minimum 6 inches past the opening. (CRC R602.6.1)

9. Cripple walls. Foundation cripple walls shall be framed of studs not less in size than the studs above. Cripple walls more than 4 feet in height shall have studs sized as required for an additional story. Cripple walls with stud height less than 14 inches shall be sheathed on at least one side with a wood structural panel fastened to both the top and bottom plates in accordance with Table R602.3(1), or the cripple walls shall be constructed of solid blocking. Cripple walls shall be supported on continuous foundations. (CRC R602.9)

10. Wall bracing. Buildings shall be braced in accordance with the methods allowed per CRC R602.10.2, CRC R602.10.4, and/or CRC R602.10.5.

11. Braced wall line spacing. Spacing between braced wall lines shall not exceed 20 feet or alternate provisions of CRC R602.10.1.3.

12. Shear wall cumulative length. The cumulative length of shear walls within each braced wall line shall meet the provisions of CRC Table R602.10.1(1) for wind loads and CRC Table R602.10.3(2) for seismic loads. (CRC R602.10.1.1)

13. Shear wall spacing. Shear walls shall be located not more than 25 feet on center. (CRC R602.10.2.2)

14. Shear wall offset. Shear walls may be offset out-of-plan not more than 4 feet from the designated braced wall line and not more than 8 feet from any other offset wall considered part of the same braced wall line. (CRC R602.10.1.2)

15. Shear wall location. Shear walls shall be located at the ends of each braced wall line or meet the alternate provisions of CRC R602.10.2.2.

16. Individual shear wall length. Shear walls shall meet minimum length requirements of CRC R602.10.6.5.1.

17. Cripple wall bracing. Cripple walls shall be braced per CRC R602.10.1.1.

18. Shear wall and diaphragm nailing. All shear walls, roof diaphragms, and roof diaphragms shall be nailed to supporting construction per CRC Table R602.3(1). (CRC R604.3)

19. Shear wall joints. All vertical joints in shear wall sheathing shall occur over, and be fastened to, common studs. Horizontal joints in shear walls shall occur over, and be fastened to, minimum 1-1/2-inch-thick blocking. (CRC R602.10.10)

20. Framing over openings. Headers, double joists, or trusses of adequate size to transfer loads to vertical members shall be provided over window and door openings in load-bearing walls and partitions. (CBC 2304.3.2)

21. Joists under bearing partitions. Joists under parallel bearing partitions shall be of adequate size to support the load. Double joists, sized to adequately support the load, that are separated to permit the installation of piping or vents shall be full-depth solid-blocked with minimum 2-inch nominal lumber spaced at maximum 4 feet on center. Bearing partitions perpendicular to joists shall not be offset from supporting girders, walls, or partitions more than the joist depth unless such joists are of sufficient size to carry the additional load. (CRC R502.4)

22. Joists above or below shear walls. Where joists are perpendicular to a shear wall above or below, a rim joist, band joist, or blocking shall be provided along the entire length of the shear wall. Where joists are parallel to a shear wall above or below, a rim joist, end joist, or other parallel framing shall be provided directly above and/or below the shear wall. Where a parallel framing member cannot be located directly above and/or below the shear wall, full-depth blocking at 16-inch spacing shall be provided between the parallel framing members to each side of the shear wall. (CRC R602.10.8)

23. Floor member bracing. The ends of each floor joist, beam, or girder shall have minimum 1-1/2 inches of bearing on wood or metal and minimum 3 inches of bearing on masonry or concrete except where supported on a 1-inch-by-4-inch ribbon strip and nailed to the adjoining stud or by the use of approved joist hangers. (CRC R502.6)

24. Floor joist lap. Floor joists framing opposite sides over a bearing support shall lap minimum 3 inches and shall be nailed together within minimum 3 10d face nails. A wood or metal splice with strength equal to or greater than that provided by the lap is permitted. (CRC R502.8.1)

25. Floor joist-to-girder support. Floor joists framing into the side of a wood girder shall be supported by approved framing anchors or on ledger strips minimum nominal 2 inches by 2 inches. (CRC R502.6.2)

26. Floor joist lateral restraint. Floor joists shall be supported laterally at ends and each intermediate support by minimum 2-inch full-depth blocking, by attachment to full-depth header, band joist, or rim joist, to an adjoining stud, or shall be otherwise provided with lateral support to prevent rotation. (CRC R502.7)

27. Floor joist bridging. Floor joists exceeding nominal 2 inches by 12 inches shall be supported laterally by solid blocking, diagonal bridging (wood or metal), or a continuous 1-inch-by-3-inch strip nailed across the bottom of joists perpendicular to joists at maximum 8-foot intervals. (CRC R502.7.1)

28. Framing of floor openings. Openings in floor framing shall be framed with a header and trimmer joists. When the header joist span does not exceed 4 feet, the header joist may be a single member the same size as the floor joist. Single trimmer joists may be used to carry a single header joist located within 3 feet of the trimmer joist bearing. When the header joist span exceeds 4 feet, the trimmer joists and header joist shall be doubled and of sufficient cross section to support the floor joists framing into the header. Approved hangers shall be used for the header-joist-to-trimmer-joist connections when the header joist span exceeds 6 feet. Tail joists over 12 feet long shall be supported at the header by framing anchors or on ledger strips minimum 2 inches by 2 inches. (CRC R502.10)

E. Wood Framing (Continued)

29. Girders. Girders for single-story construction or girders supporting loads from a single floor shall not be less than 4 inches by 6 inches for spans 6 feet or less, provided that girders are spaced not more than 8 feet on center. Other girders shall be designed to support the loads specified in the CBC. Girder end joints shall occur over supports. When a girder is spliced over a support, an adequate tie shall be provided. The ends of beams or girders supported on masonry or concrete shall not have less than 3 inches of bearing. (CBC 2308.7)

30. Ridges, hips, and valleys. Rafterers shall be framed to a ridge board or to each other with a gusset plate as a tie. Ridge boards shall be minimum 1-inch nominal thickness and not less in depth than the cut end of the rafter. At all valley and hips, there shall be a valley or hip rafter not less than 2-inch nominal thickness and not less in depth than the cut end of the rafter. Hip and valley rafters shall be supported at the ridge by a brace to a bearing partition or be designed to carry and distribute the specific load at that point. Where the roof pitch is less than 3:12 slope (25% gradient), structural members that support rafters and ceilings joists, such as ridges, hips, and valleys, shall be designed as beams. (CRC R602.3)

31. Ceiling joist and rafter connections. Ceiling joists and rafters shall be nailed to each other per CRC Table R602.5.1(9), and the rafter shall be nailed to the wall top plate per CRC Table R602.3(1). Ceiling joists shall be continuous or securely joined per CRC Table R602.5.1(9) where they meet over interior partitions and are nailed to adjacent rafters to provide a continuous tie across the building when such joists are parallel to rafters. Where ceiling joists are not connected to the rafters at the wall top plate, joists shall be connected higher in the attic shall be installed as rafter ties, or rafter ties shall be installed to provide a continuous tie. Where ceiling joists are not parallel to rafters, rafter ties shall be installed. Rafter ties shall be minimum 2 inches by 4 inches nominal, installed per CRC Table R602.5.1(9), or connections of equivalent capacities shall be provided.

- Where ceiling joists rafter ties are not provided, ridge members shall be installed as rafter ties shall be supported by a wall or engineer-designed girder. (CRC R602.3.1)

32. Ceiling joists lapped. Ends of ceiling joists shall be lapped minimum 3 inches or butted over bearing partitions or beams and toenailed to the bearing element. Where ceiling joists provide resistance to rafter thrust, lapped joists shall be nailed together per CRC Table R602.3(1) and butted joists shall be tied together in a manner to resist such thrust. (CRC R602.3.2)

33. Collar ties. Collar ties or ridge straps to resist wind uplift shall be connected in the upper third of the attic space. Collar ties shall be a minimum 1 inch by 4 inches nominal and spaced at maximum 4 feet on center. (CRC R602.3.1)

34. Purlins. Purlins installed to reduce the span of rafters shall be sized not less than the required size of the rafters they support. Purlins shall be continuous and shall be supported by 2-inch-by-4-inch nominal braces installed to bearing walls at a minimum 45-degree slope from horizontal. The braces shall be spaced maximum 4 feet on center with a maximum 8-foot unbraced length. (CRC R602.5.1)

35. Roof/ceiling member bearing. The ends of each rafter or ceiling joist shall have not less than 1-1/2 inches of bearing on wood or metal and not less than 3 inches of bearing on masonry or concrete. (CRC R602.6)

36. Roof/ceiling member lateral support. Roof framing members and ceiling joists with a nominal depth-to-thickness ratio exceeding 5:1 shall be provided with lateral support at points of bearing to prevent rotation. (CRC R602.6)

37. Roof/ceiling bridging. Rafters and ceiling joists with a nominal depth-to-thickness ratio exceeding 6:1 shall be supported laterally by solid blocking, diagonal bridging (wood or metal), or a continuous 1-inch-by-3-inch wood strip nailed across the rafters or ceiling joists at maximum 8-foot intervals. (CRC R602.6.1)

38. Framing of roof/ceiling openings. Openings in roof and ceiling framing shall be framed with a header and trimmer joists. When the header joist span does not exceed 4 feet, the header joist may be a single member the same size as the ceiling joist or rafter. Single trimmer joists may be used to carry a single header joist located within 3 feet of the trimmer joist bearing. When the header joist span exceeds 4 feet, the trimmer joists and header joist shall be doubled and of sufficient cross section to support the ceiling joists or rafters framing into the header. Approved hangers shall be used for the header-joist-to-trimmer-joist connections when the header joist span exceeds 6 feet. Tail joists over 12 feet long shall be supported at the header by framing anchors or on ledger strips minimum 2 inches by 2 inches. (CRC R502.10)

39. Roof framing above shear walls. Rafters or roof trusses shall be connected to top plates of shear walls with blocking between the rafters or trusses. (CRC R602.10.8)

40. Roof diaphragm under fill framing. Roof plywood shall be continuous under California fill framing.

41. Roof diaphragm at ridges. Minimum 2-inch nominal blocking required for roof diaphragm nailing at ridges.

42. Blocking of roof trusses. Minimum 2-inch nominal blocking required between trusses at ridge lines and at points of bearing at exterior walls.

43. Truss clearance. Minimum 1/2-inch clearance required between top plates of interior non-bearing partitions and bottom chords of trusses.

44. Drilling, cutting, and notching of roof/rafter framing. Notches in solid lumber joists, rafters, blocking, and beams shall not exceed one-sixth the member depth, shall be not longer than one-third the member depth, and shall not be located in the middle one-third of the span. Notches at member ends shall not exceed one-fourth the member depth. The tension side of members 4 inches or greater in nominal thickness shall not be notched except at member ends. The diameter of holes bored or cut into members shall not exceed one-third the member depth. Holes shall not be closer than 2 inches to the top or bottom of the member or to any other hole located in the member. Where the member is also notched, the hole shall not be closer than 2 inches to the notch. (CRC R502.8.1)

45. Exterior landings, decks, balconies, and stairs. Such elements shall be positively anchored to the primary structure to resist both vertical and lateral forces or shall be designed to be self-supporting. Attachment must not be accomplished by use of toenails or nails subject to withdrawal. (CRC R311.3)

46. Fireblocking. Fireblocking shall be provided in the following locations (CRC R302.11 and CRC R1003.19):

- a. In concealed spaces of stud walls and partitions, including furred spaces, and parallel rows of studs or staggered studs, as follows:

- i. Vertically at the ceiling and floor levels
- ii. Horizontally at intervals not exceeding 10 feet
- b. At all intersections between concealed vertical and horizontal spaces such as occur at soffits, drop ceilings, and cove ceilings

- c. In concealed spaces between stair stringers at the top and bottom of the run
- d. At openings around vents, pipes, ducts, cables and wires at ceiling and floor level, with an approved material to resist the free passage of flame and products of combustion

- e. At chimneys and fireplaces per item E.49
- f. Cornices of a two-family dwelling at the line of dwelling-unit separation

47. Fireblocking materials. Except as otherwise specified in items E.48 and E.49, fireblocking shall consist of the following materials with the integrity maintained (CRC R302.11.1):

- a. Two-inch nominal lumber
- b. Two thicknesses of one-inch nominal lumber with broken lap joints
- c. One thickness of 23/32-inch wood structural panel with joints backed by 23/32-inch wood structural panel

- d. One thickness of 3/4-inch particleboard with joints backed by 3/4-inch particleboard
- e. 1/2-inch gypsum board
- f. 1/4-inch cement-based millboard

- g. Batts or blankets of mineral or glass fiber of other approved materials installed in such a manner as to be securely retained in place. Batts or blankets of mineral or glass fiber or other approved non-combustible materials shall be permitted.

- h. 10-foot horizontal fireblocking in walls constructed using parallel rows of studs or staggered studs. Unfaced fiberglass batt insulation used as fireblocking shall fill the entire cross-section of the wall cavity to a minimum height of 16 inches measured vertically. When piping, conduit, or similar obstructions are encountered, the insulation shall be packed tightly around the obstruction. Loose-fill insulation material shall not be used as a fireblock unless specifically tested in the form and manner intended for use to demonstrate its ability to remain in place and to retard the spread of fire and hot gases.

48. Fireblocking at openings around vents, pipes, ducts, cables, and wires at ceiling and floor level. Such openings shall be fireblocked with an approved material to resist the free passage of flame and products of combustion. (CRC R302.11)

E. Wood Framing (Continued)

49. Fireblocking of chimneys and fireplaces. All spaces between chimneys and floors and ceilings through which chimneys pass shall be fireblocked with noncombustible material securely fastened in place. The fireblocking of spaces between chimneys and wood joists, beams, or headers shall be self-supporting or be placed on strips of metal or metal lath laid across the spaces between combustible material and the chimney. (CRC R1003.19)

50. Draftstopping. In combustible construction where there is usable space both above and below the concealed space of a floor/ceiling assembly, draftstopping shall be installed so that the area of the concealed space does not exceed 1000 square feet. Draftstopping shall divide the concealed space into approximately equal areas. Where the assembly is enclosed by a floor membrane above and a ceiling membrane below, draftstopping shall be provided in floor/ceiling assemblies under the following circumstances (CRC R302.12):

- a. Ceiling is suspended under the floor framing
- b. Floor framing is constructed of truss-type open-web or perforated members

51. Draftstopping materials. Draftstopping shall not be less than 1/2-inch gypsum board, 3/8-inch wood structural panels, or other approved materials adequately supported. Draftstopping shall be installed parallel to the floor framing members unless otherwise approved by the building official. The integrity of draftstopping shall be maintained. (CRC R302.12.1)

52. Combustible insulation clearance. Combustible insulation shall be separated minimum 3 inches from recessed luminaires, fan motors, and other heat-producing devices. (CRC R302.14)

F. General Material Specifications

1. Lumber. All joists, rafters, beams, and posts 2-inches to 4-inches thick shall be No. 2 grade Douglas Fir-Larch or better. All posts and beams 6 inches and thicker shall be No. 1 grade Douglas Fir-Larch or better. Studs not more than 8 feet long shall be stud-grade Douglas Fir-Larch or better when supporting not more than one floor, roof, and ceiling. Studs longer than 8 feet shall be No. 2 grade Douglas Fir-Larch or better.

2. Concrete. Concrete shall have a minimum compressive strength of 2,500 psi at 28 days and shall consist of 1 part cement, 3 parts sand, 4 parts 1-inch maximum size rock, and not more than 7-1/2 gallons of water per sack of cement. (CRC R402.2)

3. Mortar. Mortar used in construction of masonry walls, foundation walls, and retaining walls shall conform to ASTM C 270 and shall consist of 1 part portland cement, 2-1/4 to 3 parts sand, and 1/4 to 1/2 part hydrated lime. (CBC 2103.2)

4. Grout. Grout shall conform to ASTM C 478 and shall consist of 1 part portland cement, 1/10 part hydrated lime, 2-1/4 to 3 parts sand, and 1 to 2 parts gravel. Grout shall attain a minimum compressive strength of 2,000 psi at 28 days. (CRC 2103.3)

5. Masonry. Masonry units shall comply with ASTM C 90 for load-bearing concrete masonry units. (CRC 2103.1)

6. Reinforcing steel. Reinforcing steel used in construction of reinforced masonry or concrete structures shall be deformed and comply with ASTM A 615. (CRC 2103.4)

7. Structural steel. Steel used as structural shapes such as wide-flange sections, channels, plates, and angles shall comply with ASTM A36. Pipe columns shall comply with ASTM A53. Structural tubes shall comply with ASTM A500, Grade B.

8. Fasteners for preservative-treated wood. Fasteners for preservative-treated and fire-retardant-treated wood - including nuts and washers - shall be of hot dipped zinc-coated galvanized steel, stainless steel, silicon bronze, or copper. (CRC R317.3.1)

- Exception: 1/2-inch diameter or greater steel bolts

- Exception: Fasteners other than nails and timber rivets may be of mechanically deposited zinc-coated steel with coating weights in accordance with ASTM B 695, Class 55 minimum

- Exception: Plain carbon steel fasteners acceptable in SBX/DOT and zinc borate preservative-treated wood in an interior, dry environment

9. Fasteners for fire-retardant-treated wood. Fasteners for fire-retardant-treated wood used in exterior applications or wet or damp locations shall be of hot dipped zinc-coated galvanized steel, stainless steel, silicon bronze, or copper. (CRC R317.3.3)

G. Roofing and Weatherproofing

1. Roof covering. All roof covering shall be installed per applicable requirements of CBC 1507. Roof coverings shall be at least Class A rated in accordance with ASTM E 108 or UL 790, which shall include coverings of slate, clay or concrete roof tile, exposed concrete roof deck, ferrous or copper shingles or sheets. (County Building Code 92.1.1505.1)

2. Roof flashing. Flashing shall be installed at wall and roof intersections, at gutters, wherever there is a change in roof slope or