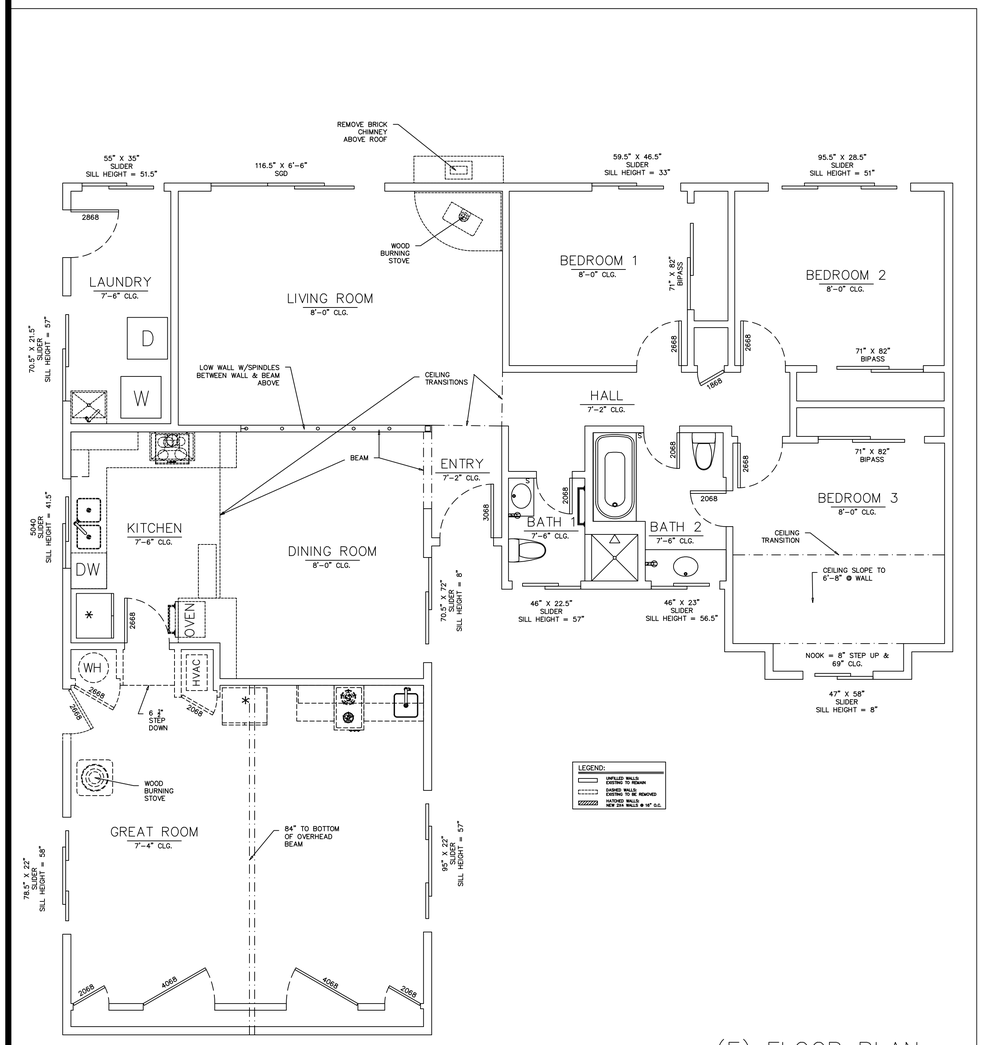
3213 ESTATES AVE
REMODEL & ALTERATION

ALL CONSTRUCTION SHALL BE IN STRICT ACCORDANCE WITH THE FOLLOWING CODES AND STANDARDS:
CALIFORNIA BUILDING CODE, 2019 EDITION
CALIFORNIA RESIDENTIAL CODE, 2019 EDITION
CALIFORNIA PLUMBING CODE, 2019 EDITION
CALIFORNIA MECHANICAL CODE, 2019 EDITION
CALIFORNIA ELECTRICAL CODE, 2019 EDITION
2019 CALIFORNIA REFERENCED STANDARDS CODE
2019 CALIFORNIA ENERGY CODE
2019 CALIFORNIA GREEN BUILDING STANDARDS CODE
CITY OF PINOLE MUNICIPAL CODE
COUNTY OF CONTRA COSTA CODES AND ORDINANCES

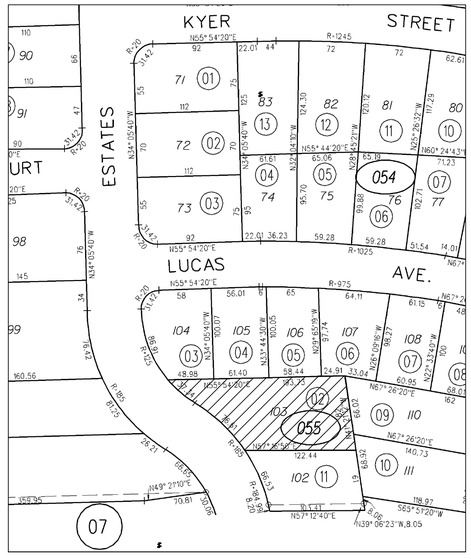
ALL TRADES MUST FOLLOW MANDATORY CAL GREEN REQUIREMENTS AS DETAILED IN THE INCLUDED "G" SHEETS – NO EXCEPTIONS OR EXCLUSIONS ACCEPTED

DESCRIPTION OF WORK:
CONSTRUCT NEW BATHROOM IN (E) GREAT ROOM. INSTALL NEW KITCHENETTE IN GREAT ROOM. RELOCATE WATER HEATER AND FURNACE. REMOVE DROPPED CEILING IN KITCHEN. REPLACE KITCHEN CABINETS, SINK, SINK FIXTURE, RANGE HOOD & COUNTERTOPS. REMODEL (E) BATHROOMS. REMOVE (E) WOOD–BURNING STOVES & ABANDONED FIREPLACE. RELOCATE APPLIANCES IN LAUNDRY ROOM. INSTALL NEW ROOF

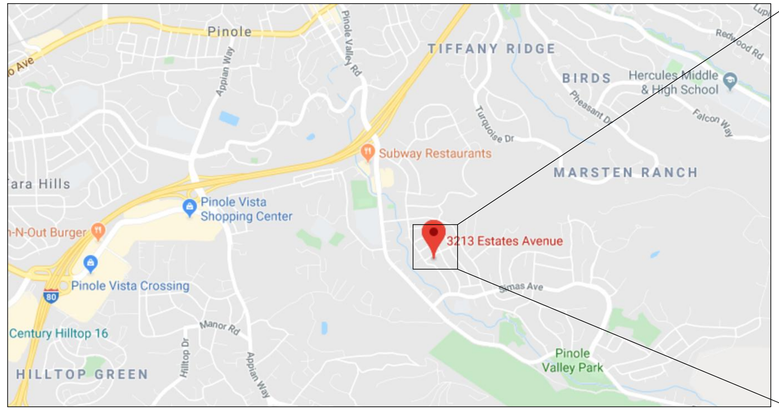
CONTRACTOR MUST RECYCLE AND/OR SALVAGE FOR REUSE A MINIMUM OF 65 PERCENT OF THE NON–HAZARDOUS CONSTRUCTION AND DEMOLITION WASTE IN ACCORDANCE WITH SECTION 4.408.1, ON SHEET G1.0, ALTERNATELY, THE CONTRACTOR MAY ELECT TO USE THE CITY OF PINOLE'S WASTE MANAGEMENT PLAN (WMP) FOR CONSTRUCTION DEMOLITION (C&D) RECYCLING AND REUSE WHICH CAN BE FOUND AT THE FOLLOWING LINK:
HTTPS: //WWW.CI.PINOLE.CA.US/USERFILES/SERVERS/SERVER_10946972/FILE/C&D%20WASTE%20MANAGEMENT%20FORMS%20(AUTOSAVED).PDF



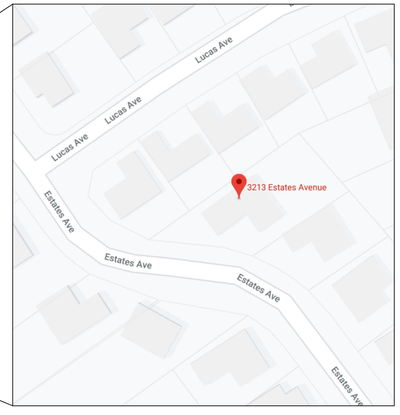
(E) FLOOR PLAN
SCALE: 1/4"=1'-0"



ASSESSORS PARCEL MAP



VICINTY MAP



LOCAL MAP

PROJECT DATA:

COUNTY: CONTRA COSTA
APN#: 360–055–002–8
YEAR BUILT: 1958
ZONING: R–1
OCCUPANCY: R–3
CLIMATE ZONE: 3
TYPE OF CONSTRUCTION: V–B
SEISMIC CATEGORY "D"
SPRINKLERS: NO
STORIES: 1
BEDROOMS: (E) 3 (N) 4
BATHROOMS: (E) 2 (N) 3

(E) RESIDENCE:	1,650	SQ FT
RESIDENCE ADDITION:	0	SQ FT
(N) LIVING AREA:	1,650	SQ FT
(E) CARPORT	400	SQ FT
CARPORT ADDITION:	0	SQ FT
(N) CARPORT AREA	400	SQ FT
(E) BUILDING TOTAL S.F.:	1,650	SQ FT
(N) BUILDING TOTAL S.F.:	1,650	SQ FT
LOT SF:	12,000	SQ FT

SHEET INDEX:

Revision History	
	AS-BUILT
	PRELIMINARY DESIGN
	DESIGN
	PERMIT SET
1	PLAN REVIEW COMMENTS
2	PLAN REVIEW COMMENTS

REMODEL & ADDITION

OWNER:

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SITE DATA
SHEET INDEX

A0.1

ABBREVIATIONS

&	AND
?	ANGLE
@	AT
?	CENTERLINE
?	DIAMETER
(E)	EXISTING
(N)	NEW
⊥	PERPENDICULAR
#	POUND
ABV.	ABOVE
AB	ANCHOR BOLT
ACOUS.	ACOUSTICAL
A.D.	AREA DRAIN
ADJ.	ADJUSTABLE
AFF	ABOVE FINISH FLOOR
AGGR	AGGREGATE
AL./ALUM.	ALUMINUM
APPROX.	APPROXIMATE
ARCH.	ARCHITECT
ARCH'L	ARCHITECTURAL
ASPH.	ASPHALT
AWG.	AWNING
BM.	BEAM
BITUM.	BITUMINOUS
BLK.	BLOCK
BLKG.	BLOCKING
BD.	BOARD
BLT.	BOLT
BOT.	BOTTOM
BLDG.	BUILDING
CAB.	CABINET
C.O.	CASED OPENING
C.B.	CATCH BASIN
CPT	CARPET
CAS	CASEMENT
CHLK.	CHAIN LINK
C.I.	CAST IRON
CLKG.	CAULKING
C.J.	CEILING JOISTS
CLG.	CEILING
CEM.	CEMENT
CTR.	CENTER
CER.	CERAMIC
C.T.	CERAMIC TILE
CLR.	CLEAR
CLO.	CLOSET
CMU	CONCRETE MASONRY UNIT
COL.	COLUMN
CVT.	COMPOSITION VINYL TILE
CONC/C.	CONCRETE
CONN.	CONNECTION
CONST.	CONSTRUCTION
CONT.	CONTINUOUS
CORR.	CORRIDOR
CG	CORNER GAURD
CTSK	COUNTERSINK
DEPT.	DEPARTMENT
DET.	DETAIL
D.F.	DOUGLAS FIR
D/F	DRINKING FOUNTAIN
DIA.	DIAMETER
DIM.	DIMENSION
DISP.	DISPENSER
DR.	DOOR
D.O.	DOOR OPENING
DBL.	DOUBLE
DH.	DOUBLE HUNG
DN.	DOWN
DS.	DOWN SPOUT
D.S.P.	DRY STAND PIPE
DWR.	DRAWER
DWG'S	DRAWINGS
E.	EAST
EA.	EACH
E.I.F.S.	EXTERIOR INSULATED FINISH SYSTEM
E.J.	EXPANSION JOINT
ELEC.	ELECTRICAL
EP.	ELECTRICAL PANELBOARD
EL./ELEV	ELEVATION
ELEV	ELEVATOR
EMER.	EMERGENCY
ENCL.	ENCLOSURE
EQ.	EQUAL
EQUPT.	EQUIPMENT
E.W.C.	ELECTRICAL WATER COOLER
EXST.	EXISTING
EXP.	EXPANSION
EXPO.	EXPOSED
EXT.	EXTERIOR
F.C.	FACE OF CONCRETE
F.B.	FACE OF CONCRETE BLOCK
F.O.M.	FACE OF MULLION
F.D.	FLOOR DRAIN
F.O.F.	FACE OF FINISH
F.O.S.	FACE OF STUDS
F.F.	FALSE FRONT/FINISH FLOOR
FIN.	FINISH
FG	FINISH GRADE
F.A.	FIRE ALARM
F.E.	FIRE EXTINGUISHER
F.E.C.	FIRE EXTINGUISHER CAB.
F.H.C.	FIRE HOSE CABINET
FPRF.	FIREPROOF
FIX.	FIXED
FLASH.	FLASHING
F.B.	FLAT BAR
F.H.W.S.	FLAT HEAD WOOD SCREW
FL.	FLOOR
F.D.	FLOOR DRAIN
F.J.	FLOOR JOISTS
FLUOR.	FLUORESCENT
FT.	FOOT OR FEET
FTG.	FOOTING
F.A.U.	FORCED AIR UNIT
FDN.	FOUNDATION
FRAM'G	FRAMING
FLS./FS	FULL SIZE
FURR.	FURRING
FUT.	FUTURE
GALV.	GALVANIZED
G.I.	GALVANIZED IRON
G.S.M.	GALVANIZED SHEET METAL
GA.	GAUGE
GL.	GLASS
G.B.	GRAB BAR
GR.	GRADE
GND.	GROUND
GFI.	GROUND FAULT INTERRUPTER
GYP.	GYPSUM
GYP.BD.	GYPSUM BOARD
H/C	HANDICAP
H.D.C.P.	HANDICAP/HANDICAPPED
HDWE.	HARDWARE
HDWD.	HARDWOOD
HGT./HT.	HEIGHT
H.C.	HOLLOW CORE
H.M.	HOLLOW METAL
HORIZ.	HORIZONTAL
H.B.	HOSE BIB
H.P.	HIGH POINT
HR.	HOUR
H.V.A.C.	HEATING, VENTING & AIR CONDITIONING
I.D.	INSIDE DIAMETER
INSUL.	INSULATION
INT.	INTERIOR
I.C.B.O.	INTERNATIONAL CONFERENCE OF BUILDING OFFICIALS
JAN.	JANITOR
JT.	JOINT
K.D.	KILN DRIED
KIT.	KITCHEN
LAB	LABORATORY
LAM	LAMINATE
LAV.	LAVATORY
LT.	LIGHT
LKR.	LOCKER
MB	MACHINE BOLT
MFR.	MANUFACTURER
MFG	MANUFACTURING
MAX.	MAXIMUM
MECH.	MECHANICAL
M.C.	MEDICINE CABINET
MEMB.	MEMBRANE
MET.	METAL
MH.	MAN HOLE
MIN.	MINIMUM
MIR.	MIRROR
MISC.	MISCELLANEOUS
M.O.	MASONRY OPENING
MTD.	MOUNTED
MUL.	MULLION
N.	NORTH
NOM.	NOMINAL
N.I.C.	NOT IN CONTRACT
N.T.S.	NOT TO SCALE
NO or #	NUMBER
OBS.	OBSCURE
O.F.E.	OWNER FURNISHED EQUIPMENT
OFF.	OFFICE
O.C.	ON CENTER
OPNG.	OPENING
OPP.	OPPOSITE
O.H.	OPPOSITE HAND
O.D.	OUTSIDE DIAMETER (Dia)
O/	OVER
O.A.	OVERALL
OH.	OVER HANG/OVERHEAD
PR	PAIR
PTD	PAINTED
PNL	PANEL
P.T.D.	PAPER TOWEL DISPENSER
P.T.D/R	PAPER TOWEL DISPENSER AND RECEPTACLE COMBO
PTR.	PAPER TOWEL RECEPTACLE
PTN.	PARTITION
P.D.	PLANTER DRAIN
PLAS.	PLASTER
P.LAM.	PLASTIC LAMINATE
PL.	PLATE
PLUMB	PLUMBING
PLYWD/PLY	PLYWOOD
PT.	POINT/PRESSURE TREATED
P.I.P.	POURED IN PLACE
PREFAB	PREFABRICATED
P/L	PROPERTY LINE
PRCST.	PRE-CAST
QT	QUARRY TILE
R.W.L.	RAIN WATER LEADER
RWD.	REDWOOD
RGTR	REGISTER
REINF	REINFORCE
REF	REFERENCE
REFG.	REFRIGERATOR
REQ.	REQUIRED
RESIL.	RESILIENT
RDWD.	REDWOOD
REV	REVERSE
R.	RISER/ RADIUS
RM.	ROOM
R.O.	ROUGH OPENING
S.N.D.	SANITARY NAPKIN DISPENSER
S.N.R.	SANITARY NAPKIN RECEPTACLE
SCHED.	SCHEDULE
S.C.D.	SEAT COVER DISPENSER
SECT.	SECTION
S.C.E.D.	SEE CIVIL ENGINEER DRAWINGS
S.E.D.	SEE ELECTRICAL DRAWINGS
S.L.D.	SEE LANDSCAPE DRAWINGS
S.M.D.	SEE MECHANICAL DRAWINGS
S.P.D.	SEE PLUMBING DRAWINGS
S.S.D.	SEE STRUCTURAL DRAWINGS
S.S.X.	SERVICE SINK
SW.	SHEAR WALL
SHT.	SHEET
SHR.	SHOWER
SIM.	SIMILAR
SH	SINGLE HUNG/SHELF
S.	SINK
SKYLT	SKYLIGHT
SL.	SLIDING/ SLOPE
SD.	SMOKE DETECTOR
S.D.	SOAP DISPENSER
S.C.	SOLID CORE
S.	SOUTH
SP	SPACE
SPEC.	SPECIFICATION
SQ.	SQUARE
SQ.FT.	SQUARE FOOT
SQ.IN.	SQUARE INCH
SST	STAINLESS STEEL
STD.	STANDARD
STA.	STATION
STL.	STEEL
STOR.	STORAGE
STRL.	STRUCTURAL
STRUCT	STRUCTURE
SUSP.	SUSPENDED
SYM.	SYMMETRICAL
TEL.	TELEPHONE
T.V.	TELEVISION
TEMP.	TEMPERED/TEMPORARY
TERR.	TERRAZZO
THK./TK	THICK
TL	TILE
T.P.D.	TOILET PAPER DISPENSER
T.G.	TONGUE AND GROOVE
T.O.C.	TOP OF CURB
T.O.P.	TOP OF PAVEMENT
T.O.S.	TOP OF SUBFLOOR/SLAB
T.O.SHTG.	TOP OF SHEATHING
T.O.P.	TOP OF PLATE
T.O.W.	TOP OF WALL/WINDOW
T.B.	TOWEL BAR
TRD. /T.	TREAD
TYP.	TYPICAL
U.L.	UNDERWRITERS LABORATORY
UNF.	UNFINISHED
UBC	UNIFORM BUILDING CODE W/ CALIFORNIA AMENDMENTS
U.O.N.	UNLESS OTHERWISE NOTED
UR.	URINAL
V.I.F.	VERIFY IN FIELD
VERT.	VERTICAL
V.G.	VERTICAL GRAIN
VEST.	VESTIBULE
VNL./V	VINYL
VCT	VINYL COMPOSITION TILE
W.	WEST/WAX
WSCT	WAINSCOT
W.C.	WATER CLOSET
WH.	WATER HEATER
WP	WATERPROOF
WT.	WEIGHT
W/	WITH
W./O.	WITHOUT
WD.	WOOD

GENERAL NOTES:

1. THESE PLANS ARE FOR GENERAL CONSTRUCTION PURPOSES ONLY. THEY ARE NOT EXHAUSTIVELY DETAILED NOR FULLY SPECIFIED. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY DIMENSIONS, CONDITIONS, MATERIALS, EQUIPMENT, SELECTIONS, AND TITLE 24 COMPLIANCE.
2. THE CONTRACTOR SHALL VERIFY ALL SITE GRADES, EXISTING IMPROVEMENTS, PROPERTY LINES, EASEMENTS, SETBACKS, AND UTILITIES, AND REPORT WHERE DISCREPANCIES OCCUR.
3. DO NOT SCALE THE DRAWINGS. DIMENSIONS ARE TO FACE OF FINISH AND ACTUAL DOOR OPENING WIDTH UNLESS OTHERWISE NOTED (U.O.N.). ALL DIMENSIONS NOTED "CLEAR" OR "CLR" ARE FOR EQUIPMENT CLEARANCES AND MUST BE STRICTLY MAINTAINED. ALL DIMENSIONS NOTED "VERIFY" OR V. I. F. ARE TO BE CHECKED BY CONTRACTOR PRIOR TO AND DURING CONSTRUCTION. DIMENSIONS TAKE PRECEDENCE OVER SCALE OF THE DRAWING; DO NOT SCALE DRAWINGS.
4. MANUFACTURER'S MATERIALS, EQUIPMENT, ETC., SHALL BE INSTALLED PER MANUFACTURER'S RECOMMENDATIONS AND INSTRUCTIONS (U.O.N.). THE CONTRACTOR ACKNOWLEDGES THAT THE DRAFTER SHALL NOT SUPERVISE, DIRECT, OR HAVE CONTROL OVER THE WORK NOR SHALL THE DRAFTER HAVE ANY RESPONSIBILITY FOR THE CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, OR PROCEDURES SELECTED BY THE CONTRACTOR NOR THE CONTRACTOR'S SAFETY PRECAUTIONS OR PROGRAMS IN CONNECTION WITH THE WORK. THESE RIGHTS AND RESPONSIBILITIES ARE SOLELY THOSE OF THE CONTRACTOR IN ACCORDANCE WITH THESE CONTRACT DOCUMENTS.
5. INSTALLATION INSTRUCTIONS FOR ALL LISTED EQUIPMENT SHALL BE PROVIDED TO THE FIELD INSPECTOR AT TIME OF INSPECTION.
6. EXTERIOR WINDOWS AND DOORS SHALL MEET THE DESIGN PRESSURE RATING REQUIREMENTS OF CBC §1714.5.
7. DOORS AND WINDOWS TO THE EXTERIOR SHALL BE FULLY WEATHER STRIPPED.
8. LANDINGS SHALL NOT BE MORE THAN 7-3/4" LOWER THAN THRESHOLD AND MAINTAIN ¼" INCH PER FOOT SLOPE AWAY FROM BUILDING FOR DRAINAGE.
9. SLOPE ALL GRADES AWAY FROM NEW CONSTRUCTION AT 6" FOR EVERY 5'.
10. ALL NEW CONSTRUCTION TO BLEND/MATCH EXISTING.
11. ALL WOOD TO BE DOUGLAS FIR #2 OR BETTER, U.O.N.
12. ALL CONCRETE TO BE 2,500 P.S.I. @ 28 DAYS U.O.N.
13. PROVIDE FIRE DEPARTMENT ACCESS AT ALL TIMES DURING CONSTRUCTION.
14. CONTRACTOR IS TO PROVIDE AND INSTALL ALL WORK SHOWN ON DRAWINGS, SUBJECT TO THE LIMITATIONS OF SCOPE OF THE BASE BID, LISTED ABOVE. THE CONTRACTOR SHALL PROVIDE MISCELLANEOUS FASTENERS, BLOCKING AND SEALANTS INCIDENTAL TO COMPLETE THE CONTRACTED WORK. THIS SHALL INCLUDE SUPPLYING AND INSTALLING NECESSARY BACKING INSIDE WALLS FOR THE INSTALLATION OF WALL HANGING ACCESSORIES WHERE INDICATED. ALL WORK SHALL BE INSTALLED AS SHOWN ON DRAWINGS, PLUMB, AND LEVEL, TRUE TO LINE AND SECURELY FASTENED OR ANCHORED.
15. CONTRACTOR SHALL REVIEW ALL PLANS AND SPECIFICATIONS TO COORDINATE WITH EXISTING BUILDING CONDITIONS. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO BRING ANY FIELD OBSERVED CODE VIOLATIONS, OR INCORRECT EXISTING CONSTRUCTION INCLUDING APPARENT CONFLICTS BETWEEN THE EXISTING CONSTRUCTION AND THE CONTRACT DRAWINGS TO THE IMMEDIATE ATTENTION OF THE DESIGNER. DO NOT SCALE DRAWINGS, CONTACT DESIGNER FOR CLARIFICATION OF DIMENSIONS.
16. CONTRACTOR SHALL MAKE EVERY REASONABLE EFFORT TO PROTECT THE POSSESSIONS OF THE OWNER THAT REMAIN IN OR ADJACENT TO THE WORK FROM LOSS OR DAMAGE. ANY PORTION OF THE PROPERTY DAMAGED BY THE CONTRACTOR OR SUBCONTRACTOR DURING THE COURSE OF THE WORK MUST BE REPAIRED AT NO ADDITIONAL COST TO THE OWNER. THE TERM "DAMAGES" SHALL INCLUDE, BUT NOT BE LIMITED TO ANY DAMAGE CAUSED BY CONTRACT OPERATION OR WORKERS DURING CONSTRUCTION TO THE OWNER'S RESIDENCE, FURNISHINGS, CLOTHING, FENCES, ADJOINING PROPERTIES OR TO PUBLIC SPACES.

PLUMBING NOTES:

1. SHOWER HEADS SHALL HAVE A MAXIMUM FLOW RATE OF 1.8 GPM MEASURED AT 80 PSI AND MUST COMPLY WITH DIVISION 4.3 OF THE CALIFORNIA GREEN BUILDING STANDARDS CODE (CALGREEN) PER CPC SECTION 408.2.
2. SHOWER TO BE PROVIDED WITH PRESSURE BALANCE OR THERMOSTATIC MIXING VALVE CONTROLS
3. THE SIZE OF WATER CLOSETS TO BE MAXIMUM 1.28 GALLONS PER FLUSH.
4. FAUCETS AT LAVATORIES SHALL HAVE A MAXIMUM WATER SUPPLY FLOW RATE OF 1.2 GPM.
5. KITCHEN SINK FAUCETS SHALL HAVE A MAXIMUM FLOW RATE OF 1.8 GPM.
6. PROVIDE 1-1/2" DRAIN LINE MINIMUM FROM KITCHEN. CPC 420.3
7. PROVIDE A LISTED AIR GAP FOR DISHWASHER. CPC 414.3
8. PROVIDE A DEDICATED GAS LINE FROM THE METER TO THE APPLIANCE.
9. PROVIDE NON-REMOVABLE BACKFLOW PREVENTION DEVICE ON ALL EXTERIOR HOSE BIBS.
10. MINIMUM OF ¼" PER FOOT (2%) SLOPE FOR ALL HORIZONTAL DRAINAGE PIPING.
11. SEISMIC STRAPPING FOR HOT WATER HEATER REQUIRED PER CPC SECTION 508.2.
12. THE HOT WATER HEATER TEMPERATURE/PRESSURE RELIEF VALVE SHALL HAVE ATTACHED TO IT A PIPE WHICH WILL RUN OUTSIDE THE BUILDING WITH THE END OF THE PIPE BETWEEN 6 & 24 INCHES ABOVE GRADE & POINTED DOWN
13. ALL NEW GAS PIPING SHALL BE SIZED TO SUPPLY SUFFICIENT GAS TO THE APPLIANCES. THE GAS PIPING SHALL BE TESTED WITH 10 LBS. OF PRESSURE FOR A MINIMUM OF 15 MINUTES.
14. HOT WATER PIPING ¾" AND GREATER SERVING A KITCHEN SHALL BE INSULATED WITH MINIMUM 1" WALL THICKNESS INSULATION.
15. ALL OVEN AND STOVE GAS VALVES SHALL BE READILY ACCESSIBLE AND BE WITHIN 3'-0" OF THE APPLIANCE. CONNECTORS MAY NOT BE CONCEALED OR PASS THROUGH ANY FLOOR, WALL PARTITION, CEILING, OR APPLIANCE HOUSING CABINET.
16. A 2" ACCESSIBLE PLUMBING CLEANOUT UNDER THE SINK SHALL BE REQUIRED.
17. AN AIR GAP ABOVE THE SINK RIM SHALL BE INSTALLED BETWEEN THE DISHWASHER DRAINPIPE AND THE GARBAGE DISPOSAL INLET.

MECHANICAL NOTES:

1. PER CMC, SECTION 502.2.1, POINT OF EXHAUST VENT MUST BE A MINIMUM OF 3'-0" FROM A PROPERTY LINE OR OPENINGS INTO THE BUILDINGS SUCH AS DOORS, WINDOWS, OPENING SKYLIGHTS, ATTIC VENTS & 10-FEET FROM A FORCED AIR INLET.
2. PER CMC, SECTION 504.1.1, BACK DRAFT DAMPER ARE REQUIRED ON VENTILATION SYSTEMS EXHAUSTING TO THE EXTERIOR.
3. PROVIDE EXHAUST HOOD OVER RANGE/ COOKTOP, 100 CFM MINIMUM AND IT SHALL TERMINATE OUTSIDE.
4. A VERTICAL MINIMUM CLEARANCE OF 30" IS REQUIRED ABOVE A RANGE TO COMBUSTIBLES MATERIALS, AND A MINIMUM VERTICAL CLEARANCE OF 24" ABOVE THE RANGE TO THE BUILT-IN MICROWAVE OVENS IS REQUIRED. NOTE: LARGER UNITS REQUIRE GREATER CLEARANCES, REFER TO MANUFACTURER REQUIREMENTS.

ELECTRICAL NOTES:

1. ARC FAULT CIRCUIT INTERRUPTER (AFCI) REQUIRED FOR ALL NEW 120-VOLT, SINGLE-PHASE, 15 AND 20 AMPERE BRANCH CIRCUITS SUPPLYING OUTLETS INSTALLED IN KITCHENS, BATHROOMS, FAMILY ROOMS, DINING ROOMS, LIVING ROOMS, PARLORS, LIBRARIES, DENS, BEDROOMS, SUNROOMS, RECREATION ROOMS, CLOSETS, LAUNDRY ROOMS, GARAGE, HALLWAYS, OR SIMILAR ROOMS OR AREAS.
2. PER CEC 406.12, PROVIDE TAMPER-RESISTANT RECEPTACLES IN AREAS SPECIFIED IN CEC 210.52, SPECIFICALLY ALL 125-VOLT, 15- AND 20-AMPERE RECEPTACLES IN AREAS SUCH AS KITCHENS, BATHROOMS, FAMILY ROOMS, DINING ROOMS, LIVING ROOMS, PARLORS, LIBRARIES, DENS, SUNROOMS, BEDROOMS, RECREATION ROOMS, LAUNDRY ROOMS, GARAGE, OR SIMILAR ROOMS OR AREAS OF A DWELLING UNIT.
3. RECEPTACLES SHALL BE INSTALLED SUCH THAT NO POINT MEASURED HORIZONTALLY ALONG THE FLOOR LINE OF ANY WALL SPACE IS MORE THAN 6 FEET FROM A RECEPTACLE OUTLET. THIS ALLOWS FOR A MAXIMUM OF 12 FEET BETWEEN RECEPTACLES ON THE SAME WALL.
4. SMOKE ALARM. WHEN A PERMIT IS REQUIRED FOR ALTERATIONS, REPAIRS OR ADDITIONS EXCEEDING $1,000, EXISTING DWELLINGS THAT HAVE ATTACHED GARAGES OR FUEL BURNING APPLIANCES, SMOKE DETECTORS SHALL BE INSTALLED: (A) IN EACH SLEEPING ROOM, (B) OUTSIDE EACH SEPARATE SLEEPING AREA IN THE IMMEDIATE VICINITY OF THE BEDROOMS, (C) ON EACH STORY OF THE DWELLING, INCLUDING BASEMENTS AND HABITABLE ATTICS BUT NOT INCLUDING CRAWL SPACES AND UNINHABITABLE ATTICS. NEW SMOKE ALARMS TO BE INTERCONNECTED. SMOKE ALARMS SHALL RECEIVE THEIR PRIMARY POWER FROM THE BUILDING WIRING PROVIDED THAT SUCH WIRING IS SERVED FROM A COMMERCIAL SOURCE AND SHALL BE EQUIPPED WITH A BATTERY BACKUP. SMOKE ALARMS WITH INTEGRAL STROBES THAT ARE NOT EQUIPPED WITH BATTERY BACKUP SHALL BE CONNECTED TO AN EMERGENCY ELECTRICAL SYSTEM. SMOKE ALARMS SHALL EMIT A SIGNAL WHEN THE BATTERIES ARE LOW. WIRING SHALL BE PERMANENT AND WITHOUT A DISCONNECTING SWITCH OTHER THAN AS REQUIRED FOR OVERCURRENT PROTECTION.
5. CARBON MONOXIDE ALARM. WHEN A PERMIT IS REQUIRED FOR ALTERATIONS, REPAIRS OR ADDITIONS EXCEEDING $1,000, EXISTING DWELLINGS THAT HAVE ATTACHED GARAGES OR FUEL BURNING APPLIANCES SHALL BE PROVIDED WITH A CARBON MONOXIDE ALARM IN THE FOLLOWING LOCATIONS: (A) OUTSIDE OF THE DWELLING UNIT SLEEPING AREA IN THE IMMEDIATE VICINITY OF THE BEDROOM(S); (B) ON EVERY LEVEL OF A DWELLING UNIT INCLUDING BASEMENTS. CARBON MONOXIDE ALARMS SHALL RECEIVE THEIR PRIMARY POWER FROM THE BUILDING WIRING WHERE SUCH WIRING IS SERVED FROM A COMMERCIAL SOURCE AND, WHERE PRIMARY POWER IS INTERRUPTED, SHALL RECEIVE POWER FROM A BATTERY. WIRING SHALL BE PERMANENT AND WITHOUT A DISCONNECTING SWITCH OTHER THAN THOSE REQUIRED FOR OVERCURRENT PROTECTION. COMBINATION CARBON MONOXIDE AND SMOKE ALARMS SHALL BE PERMITTED TO BE USED IN LIEU OF CARBON MONOXIDE ALARMS.
6. ANY SMOKE ALARM WITHIN 20 FEET OF A PERMANENTLY INSTALLED COOKING APPLIANCE SHALL BE THE IONIZATION OR PHOTOELECTRIC ALARM TYPE AND HAVE A MINIMUM SPACING OF 10 FEET AWAY.
7. THE MINIMUM DISCONNECTION MEANS FOR A SINGLE FAMILY DWELLING IS 100 AMPERES, 3-WIRE.
8. PROVIDE ADEQUATE GROUND TO ELECTRICAL SERVICE ENTRY PANEL. VERIFY OR PROVIDE BOND TO METAL GAS AND WATER PIPES.
9. ELECTRICAL SUB PANELS SHALL NOT BE LOCATED IN THE VICINITY OF EASILY IGNITABLE MATERIALS SUCH AS CLOTHES CLOSETS.
10. STAGGER NEW ELECTRICAL OUTLETS BY AT LEAST 24-INCHES ON THE OPPOSITE SIDE OF THE FIRE-WALL (GARAGE/ HOUSE WALL) PER BUILDING CODE SECTION 712.3.2.
11. PROVIDE AND INSTALL RECEPTACLE OUTLETS AT HOUSE EXTERIOR WALLS THAT ARE GFCI PROTECTED, GASKETED-COVER TYPE FOR USE IN WET LOCATIONS.
12. PROVIDE AT LEAST ONE GFCI OUTLET WITHIN 3 FEET OF EACH SINK IN THE BATHROOMS.
13. AT LEAST ONE NEW LUMINAIRE IN EACH BATHROOM SHALL BE CONTROLLED BY A VACANCY SENOR.
14. PER CEC, AT LEAST ONE 20-AMP BRANCH CIRCUIT SHALL BE PROVIDED TO SUPPLY THE BATHROOM RECEPTACLE OUTLETS. THIS CIRCUIT SHALL HAVE NO OTHER OUTLETS.
15. BATHROOM LIGHTING CANNOT BE ON AN OUTLET CIRCUIT.
16. UNDER CABINET LUMINAIRES SHALL BE SEPERATELY SWITCHED
17. A MINIMUM OF (2) 20 AMP GFCI PROTECTED CIRCUITS SHALL SUPPLY ALL KITCHEN COUNTER TOP RECEPTACLES, CEC 210.11 (C)(2), & (C) (3).
18. PROVIDE 20 AMP DEDICATED CIRCUITS FOR THE DISHWASHER, GARBAGE DISPOSAL, REFRIGERATOR, MICROWAVE AND RANGE
19. RECEPTACLE OUTLETS SHALL BE LOCATED NO MORE THAN 20" ABOVE COUNTER TOP AND NO MORE THAN 12" BELOW IF COUNTER DOES NOT EXTEND MORE THAN 6" FROM BASE. PENINSULA COUNTERTOP SPACES 24" LONG OR GREATER AND SHORT DIMENSION 12" OR GREATER SHALL HAVE AT LEAST ONE RECEPTACLE.
20. ALL KITCHEN RECEPTACLES SHALL BE GFCI PROTECTED. CEC 210(A) 5 & 6.
21. THE KITCHEN COUNTERTOP WALLS SHALL BE NO MORE THAN 24" FROM A GFCI OUTLET. THIS DOES NOT APPLY TO ANY COUNTERTOP WALLS BEHIND SINKS, RANGES OR MOUNTED COOKTOPS.
22. THE UNDERCOUNTER ELECTRICAL OUTLET SERVING THE DISHWASHER SHALL BE GFCI PROTECTED. MULTI-WIRE DUPLEX RECEPTACLES FOR GARBAGE DISPOSALS & DISHWASHERS REQUIRE A COMMON TRIP BREAKER IN THE SERVICE PANELS.
23. THE MAXIMUM LENGTH FOR A GARBAGE DISPOSAL CORD IS 36" AND A DISHWASHER IS 48". ATTACHMENT PLUG AND RECEPTACLE SHALL BE ACCESSIBLE AND LABELED.
24. ISLANDS OR PENINSULAS REQUIRE AT LEAST 1 RECEPTACLE. RECEPTACLES MAY NOT BE MORE THAN 12" BELOW THE COUNTER SURFACE OR BE BELOW A COUNTER THAT EXTENDS MORE THAN 6" BEYOND A CABINETS END.
17. A MINIMUM OF 3'-0" CLEARANCE IS REQUIRED BETWEEN THE COUNTER FRONTS AND APPLIANCES, OR COUNTER FRONTS AND WALLS.
18. DIMMERS OR VACANCY SENSORS ARE REQUIRED TO CONTROL ALL HIGH-EFFICACY LUMINAIRES, EXCEPT CLOSETS LESS THAN 70 SQ FT & HALLWAYS
19. ALL NEW RECESSED LIGHTING SHALL COMPLY WITH THE REFERENCE JOINT APPENDIX JA8 AND SHALL NOT CONTAIN SCREW BASE SOCKET. CA ENERGY SECTIONS 150.0 (K) 1 C.
20. RECESSED LIGHTING FIXTURES TO BE LISTED FOR ZERO CLEARANCE INSULATION CONTACT (IC) IN ACCORDANCE W/ CEC 150(K)(L)(A).
21. ALL PROPOSED LIGHTING TO BE HIGH EFFICACY IN ACCORDANCE WITH CEC 150, O (K)(L)(A)
37. ALL NEW OUTDOOR LIGHTING, IF ANY, IS TO BE HIGH-EFFICACY, TO BE CONTROLLED BY AN ON/OFF SWITCH AND INCLUDE ONE OF THE FOLLOWING PER CA ENERGY CODE SECTION 150.0 (K) 3A.:

a. PHOTOCELL AND MOTION SENSOR
b. PHOTOCONTROL AND AUTOMATIC TIME SWITCH CONTROL
c. ASTRONOMICAL TIME CLOCK CONTROLD.
d. ENERGY MANAGEMENT CONTROL SYSTEM

Revision History	
	AS-BUILT
	PRELIMINARY DESIGN
	DESIGN
	PERMIT SET
1	PLAN REVIEW COMMENTS
2	PLAN REVIEW COMMENTS

REMODEL & ADDITION

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CODE & CONSTRUCTION NOTES

A0.2

2019 CALIFORNIA GREEN BUILDING STANDARDS CODE
RESIDENTIAL MANDATORY MEASURES, SHEET 1 (January 2020, Includes August 2019 Supplement)

Y = YES
N/A = NOT APPLICABLE
RESPON. PARTY = RESPONSIBLE PARTY (ie: ARCHITECT, ENGINEER, OWNER, CONTRACTOR, INSPECTOR ETC.)

CHAPTER 3
GREEN BUILDING
SECTION 301 GENERAL

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

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

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

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

SECTION 302 MIXED OCCUPANCY BUILDINGS

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

ABBREVIATION DEFINITIONS:

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

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

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

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

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

4.106 SITE DEVELOPMENT

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

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

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

Note: Refer to the State Water Resources Control Board for projects which disturb one acre or more of soil, or are part of a larger common plan of development which in total disturbs one acre or more of soil.

(Website: https://www.waterboards.ca.gov/water_issues/programs/stormwater/construction.html)

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

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

Exception: Additions and alterations not altering the drainage path.

4.106.4 Electric vehicle (EV) charging for new construction. New construction shall comply with Sections 4.106.4.1, 4.106.4.2, or 4.106.4.3 to facilitate future installation and use of EV chargers. Electric vehicle supply equipment (EVSE) shall be installed in accordance with the *California Electrical Code*, Article 625.

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

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

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

4.106.4.2 New multifamily dwellings. If residential parking is available, ten (10) percent of the total number of parking spaces on a building site, provided for all types of parking facilities, shall be electric vehicle charging spaces (EV spaces) capable of supporting future EVSE. Calculations for the required number of EV spaces shall be rounded up to the nearest whole number.

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

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

4.106.4.2.1.1 Electric Vehicle Charging Stations (EVCS) When EV chargers are installed, EV spaces required by Section 4.106.2.2, Item 3, shall comply with at least one of the following options:

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

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

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

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

1. The minimum length of each EV space shall be 18 feet (5486 mm).
2. The minimum width of each EV space shall be 9 feet (2743 mm).
3. One in every 25 EV spaces, but not less than one EV space, shall have an 8-foot (2438 mm) wide minimum aisle. A 5-foot (1524 mm) wide minimum aisle shall be permitted provided the minimum width of the EV space is 12 feet (3658 mm).

   a. Surface slope for this EV space and the aisle shall not exceed 1 unit vertical in 48 units horizontal (2.083 percent slope) in any direction.

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

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

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

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

Notes:

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

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

TABLE 4.106.4.3.1

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

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

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

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

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

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

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

DIVISION 4.2 ENERGY EFFICIENCY

4.201 GENERAL

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

DIVISION 4.3 WATER EFFICIENCY AND CONSERVATION

4.303 INDOOR WATER USE

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

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

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

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

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

4.303.1.3 Showerheads.

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

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

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

4.303.1.4 Faucets.

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

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

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

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

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

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

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

TABLE - MAXIMUM FIXTURE WATER USE

FIXTURE TYPE	FLOW RATE
SHOWER HEADS (RESIDENTIAL)	1.8 GMP @ 80 PSI
LAVATORY FAUCETS (RESIDENTIAL)	MAX. 1.2 GPM @ 60 PSI MIN. 0.8 GPM @ 20 PSI
LAVATORY FAUCETS IN COMMON & PUBLIC USE AREAS	0.5 GPM @ 60 PSI
KITCHEN FAUCETS	1.8 GPM @ 60 PSI
METERING FAUCETS	0.2 GAL/CYCLE
WATER CLOSET	1.28 GAL/FLUSH
URINALS	0.125 GAL/FLUSH

4.304 OUTDOOR WATER USE

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

NOTES:

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

DIVISION 4.4 MATERIAL CONSERVATION AND RESOURCE EFFICIENCY

4.406 ENHANCED DURABILITY AND REDUCED MAINTENANCE

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

4.408 CONSTRUCTION WASTE REDUCTION, DISPOSAL AND RECYCLING

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

Exceptions:

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

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

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

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

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

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

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

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

Notes:

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

4.410 BUILDING MAINTENANCE AND OPERATION

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

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

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

Exception: Rural jurisdictions that meet and apply for the exemption in Public Resources Code Section 42649.82 (a)(2)(A) et seq. are note required to comply with the organic waste portion of this section.

DIVISION 4.5 ENVIRONMENTAL QUALITY

SECTION 4.501 GENERAL

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

SECTION 4.502 DEFINITIONS

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

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

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

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

Revision History

	AS-BUILT
	PRELIMINARY DESIGN
	DESIGN
	PERMIT SET
1	PLAN REVIEW COMMENTS
2	PLAN REVIEW COMMENTS

REMODEL & ADDITION

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CAL GREEN REQUIREMENTS PAGE 1

G1.0

2019 CALIFORNIA GREEN BUILDING STANDARDS CODE
RESIDENTIAL MANDATORY MEASURES, SHEET 2 (January 2020, Includes August 2019 Supplement)

Y = YES
N/A = NOT APPLICABLE
RESPON. PARTY = RESPONSIBLE PARTY (ie; ARCHITECT, ENGINEER, OWNER, CONTRACTOR, INSPECTOR ETC.)

MAXIMUM INCREMENTAL REACTIVITY (MIR). The maximum change in weight of ozone formed by adding a compound to the "Base Reactive Organic Gas (ROG) Mixture" per weight of compound added, expressed to hundredths of a gram (g O^3/g ROC).
Note: MIR values for individual compounds and hydrocarbon solvents are specified in CCR, Title 17, Sections 94700 and 94701.

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

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

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

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

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

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

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

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

1. Adhesives, adhesive bonding primers, adhesive primers, sealants, sealant primers and caulks shall comply with local or regional air pollution control or air quality management district rules where applicable or SCAQMD Rule 1168 VOC limits, as shown in Table 4.504.1 or 4.504.2, as applicable. Such products also shall comply with the Rule 1168 prohibition on the use of certain toxic compounds (chloroform, ethylene dichloride, methylene chloride, perchloroethylene and trichloroethylene), except for aerosol products, as specified in Subsection 2 below.
2. Aerosol adhesives, and smaller unit sizes of adhesives, and sealant or caulking compounds (in units of product, less packaging, which do not weigh more than 1 pound and do not consist of more than 16 fluid ounces) shall comply with statewide VOC standards and other requirements, including prohibitions on use of certain toxic compounds, of *California Code of Regulations*, Title 17, commencing with section 94507.

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

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

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

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

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

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

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

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

TABLE 4.504.2 - SEALANT VOC LIMIT
(Less Water and Less Exempt Compounds in Grams per Liter)

SEALANTS	VOC LIMIT
ARCHITECTURAL	250
MARINE DECK	760
NONMEMBRANE ROOF	300
ROADWAY	250
SINGLE-PLY ROOF MEMBRANE	450
OTHER	420
SEALANT PRIMERS	
ARCHITECTURAL	
NON-POROUS	250
POROUS	775
MODIFIED BITUMINOUS	500
MARINE DECK	760
OTHER	750

TABLE 4.504.3 - VOC CONTENT LIMITS FOR ARCHITECTURAL COATINGS[1,2,3]
GRAMS OF VOC PER LITER OF COATING, LESS WATER & LESS EXEMPT COMPOUNDS

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

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

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

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

TABLE 4.504.5 - FORMALDEHYDE LIMITS[1]
MAXIMUM FORMALDEHYDE EMISSIONS IN PARTS PER MILLION

PRODUCT	CURRENT LIMIT
HARDWOOD PLYWOOD VENEER CORE	0.05
HARDWOOD PLYWOOD COMPOSITE CORE	0.05
PARTICLE BOARD	0.09
MEDIUM DENSITY FIBERBOARD	0.11
THIN MEDIUM DENSITY FIBERBOARD[2]	0.13

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

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

DIVISION 4.5 ENVIRONMENTAL QUALITY (continued)
4.504.3 CARPET SYSTEMS. All carpet installed in the building interior shall meet the testing and product requirements of at least one of the following:

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

4.506 INDOOR AIR QUALITY AND EXHAUST
4.506.1 Bathroom exhaust fans. Each bathroom shall be mechanically ventilated and shall comply with the following:

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

Notes:

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

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

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

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

CHAPTER 7
INSTALLER & SPECIAL INSPECTOR QUALIFICATIONS
702 QUALIFICATIONS
702.1 INSTALLER TRAINING. HVAC system installers shall be trained and certified in the proper installation of HVAC systems including ducts and equipment by a nationally or regionally recognized training or certification program. Uncertified persons may perform HVAC installations when under the direct supervision and responsibility of a person trained and certified to install HVAC systems or contractor licensed to install HVAC systems. Examples of acceptable HVAC training and certification programs include but are not limited to the following:

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

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

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

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

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

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

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

Revision History

	AS-BUILT
	PRELIMINARY DESIGN
	DESIGN
	PERMIT SET
1	PLAN REVIEW COMMENTS
2	PLAN REVIEW COMMENTS

REMODEL & ADDITION

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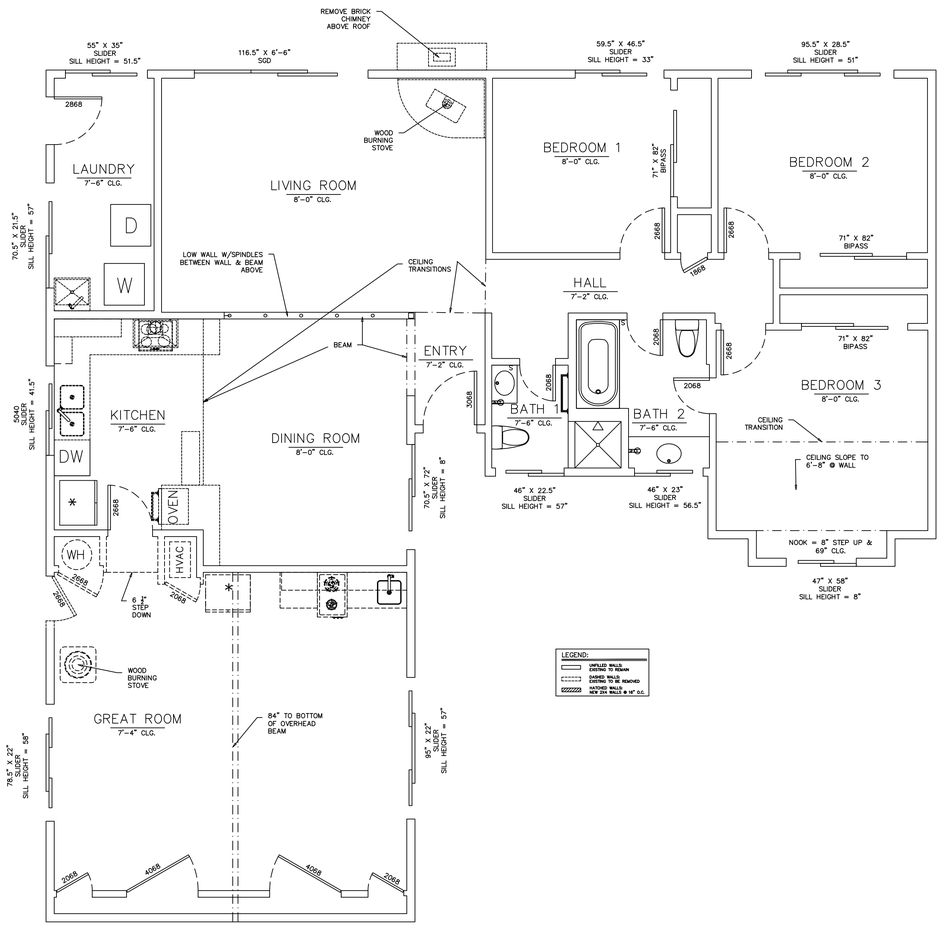
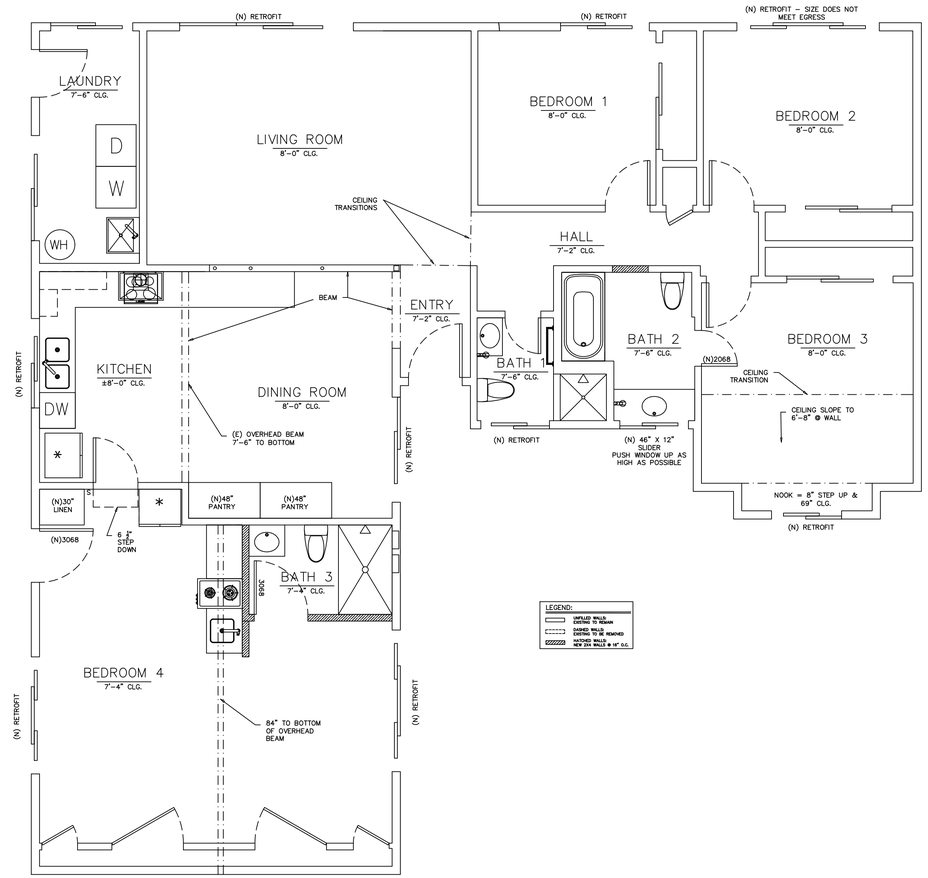
CAL GREEN REQUIREMENTS PAGE 2

G1.1



(E) FLOOR PLAN & DEMO PLAN

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



(N) FLOOR PLAN

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

Revision History	
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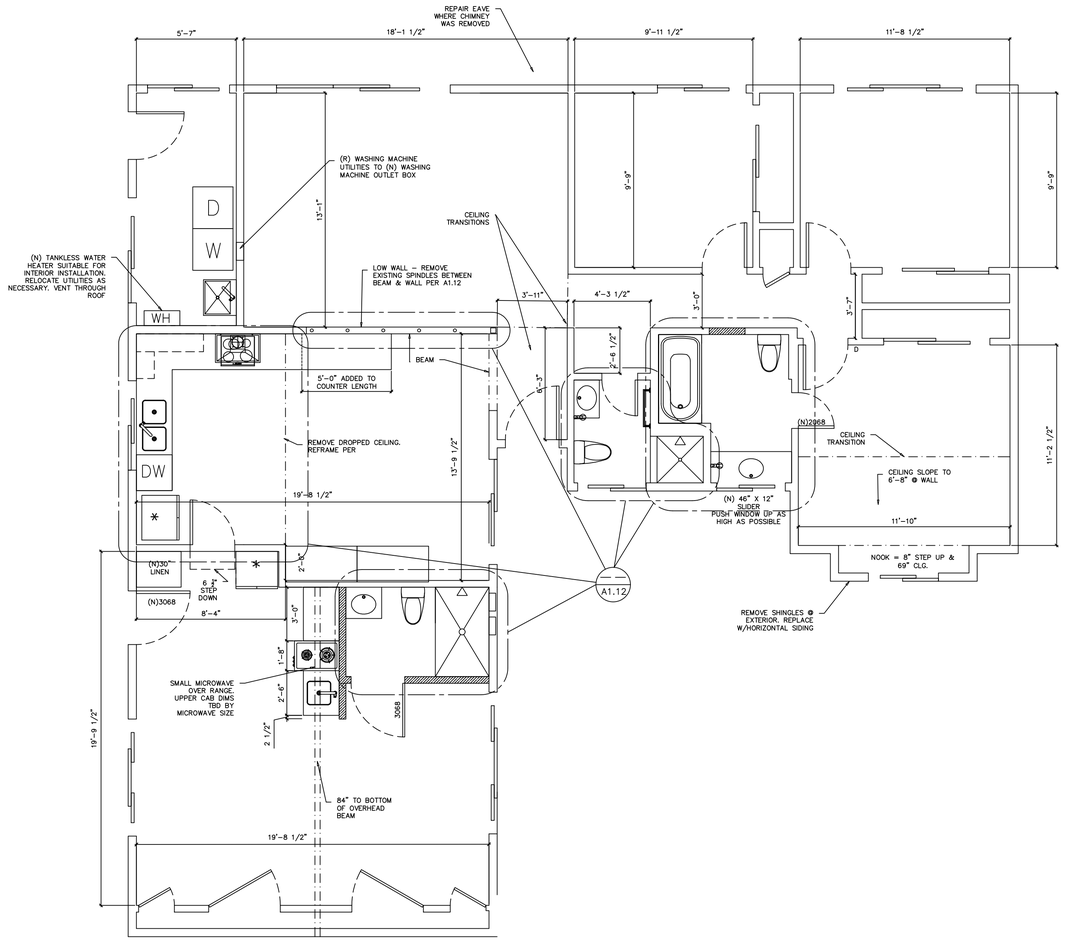
FLOOR PLANS & DEMOLITION PLAN

A1.10



CONSTRUCTION NOTES:
- SEE SHEETS A0.2, G1.0 & G1.1 FOR MANDATORY GENERAL CONSTRUCTION, ELECTRICAL, MECHANICAL, & PLUMBING REQUIREMENTS
- ANNULAR SPACES AROUND PIPES, ELECTRIC CABLES, CONDUITS OR OTHER OPENINGS IN SOLE/BOTTOM PLATES AT EXTERIOR WALLS SHALL BE PROTECTED AGAINST THE PASSAGE OF RODENTS BY CLOSING SUCH OPENINGS WITH CEMENT MORTAR, CONCRETE MASONRY OR A SIMILAR METHOD ACCEPTABLE TO THE ENFORCING AGENCY.
- CONTRACTORS SHALL PROVIDE OWNER WITH ALL END USER INFORMATION & MAINTENANCE MANUALS FOR INSTALLED ITEMS & ALL OTHER REQUIRED INFORMATION DESCRIBED IN SECTION 4.410 ON SHEET G1.0 PRIOR TO BUILDING FINAL
- ALL FINISH MATERIALS SHALL BE COMPLIANT WITH VOC AND OTHER TOXIC COMPOUND LIMITS AS OUTLINED IN SECTION 4.504 ON SHEETS G1.0 & G1.1. INCLUDING (BUT NOT LIMITED TO) ADHESIVES, SEALANTS, CAULKS, PAINTS, STAINS, COATINGS, CARPET & CARPET SYSTEMS, RESILIENT FLOORING, PARTICLEBOARD, MEDIUM DENSITY FIBERBOARD, PLYWOOD. DOCUMENTATION IS REQUIRED AS SPECIFIED IN SECTION 4.504.2.4 ON SHEET G1.0
- MOISTURE CONTENT OF BUILDING MATERIALS SHALL BE VERIFIED AND DOCUMENTATION PROVIDED TO THE ENFORCING AGENCY AS OUTLINED IN SECTION 4.505.3 ON SHEET G1.1. DO NOT CLOSE ANY CONSTRUCTION PRIOR TO VERIFICATION

PLUMBING NOTES:
- SEE SHEETS A0.2, G1.0 & G1.1 FOR MANDATORY PLUMBING REQUIREMENTS AND FIXTURE SPECIFICATIONS
- PER CAL GREEN REQUIREMENTS; ALL NEW & EXISTING PLUMBING FIXTURES MUST MEET WATER CONSERVING FLOW RATES MANDATED ON SHEET G1.0. ALL EXISTING NON-COMPLIANT FIXTURES THAT ARE NOT REMOVED MUST BE REPLACED.

MECHANICAL NOTES:
- SEE SHEETS A0.2, G1.0 & G1.1 FOR MANDATORY MECHANICAL REQUIREMENTS AND SPECIFICATIONS
- (N) EXHAUST FANS SHALL BE ENERGY STAR COMPLIANT AND BE DUCTED TO TERMINATE OUTSIDE THE BUILDING. FAN MUST BE CONTROLLED BY A HUMIDITY CONTROL. HUMIDITY CONTROL SHALL BE CAPABLE OF ADJUSTMENT BETWEEN A RELATIVE HUMIDITY RANGE LESS THAN OR EQUAL TO 50% TO A MAXIMUM OF 80%. HUMIDITY CONTROL MAY UTILIZE MANUAL OR AUTOMATIC MEANS OF ADJUSTMENT. HUMIDITY CONTROL MAY BE A SEPARATE COMPONENT TO THE EXHAUST FAN AND IS NOT REQUIRED TO BE INTEGRAL (I.E., BUILT-IN)
- (N) CLOTHES DRYER VENT CMC 504.4 & 502.2.1: A CLOTHES DRYER EXHAUST DUCT SHALL NOT BE CONNECTED TO A VENT CONNECTOR, GAS VENT, CHIMNEY, AND SHALL NOT TERMINATE INTO A CRAWL SPACE, ATTIC, OR OTHER CONCEALED SPACE. EXHAUST DUCTS SHALL NOT BE ASSEMBLED WITH SCREWS OR OTHER FASTENING MEANS THAT EXTEND INTO THE DUCT AND THAT ARE CAPABLE OF CATCHING LINT, AND THAT REDUCE THE EFFICIENCY OF THE EXHAUST SYSTEM. EXHAUST DUCTS SHALL BE CONSTRUCTED OF RIGID METALLIC MATERIAL. TRANSITION DUCTS USED TO CONNECT THE DRYER TO THE EXHAUST DUCT SHALL BE LISTED FOR THAT APPLICATION OR INSTALLED IN ACCORDANCE WITH THE CLOTHES DRYER MANUFACTURER'S INSTALLATION INSTRUCTIONS. CLOTHES DRYER EXHAUST DUCTS SHALL TERMINATE TO THE OUTSIDE OF THE BUILDING NOT LESS THAN 3 FEET FROM A PROPERTY LINE, 10 FEET FROM A FORCED AIR INLET, AND 3 FEET FROM OPENINGS INTO THE BUILDING. AND SHALL BE EQUIPPED WITH A BACKDRAFT DAMPER. SCREENS SHALL NOT BE INSTALLED AT THE DUCT TERMINATION. DEVICES, SUCH AS FIRE OR SMOKE DAMPERS, THAT WILL OBSTRUCT THE FLOW OF THE EXHAUST SHALL NOT BE USED. WHERE JOINING OF DUCTS, THE MALE END SHALL BE INSERTED IN THE DIRECTION OF AIRFLOW. ENVIRONMENTAL EXHAUST DUCTS SHALL NOT DISCHARGE ONTO A PUBLIC WALKWAY.
- DURING CONSTRUCTION, ALL NEW OR EXISTING DUCT AND OTHER RELATED AIR DISTRIBUTION COMPONENT OPENINGS SHALL BE COVERED WITH TAPE, PLASTIC, SHEET METAL OR OTHER METHODS ACCEPTABLE TO THE ENFORCING AGENCY TO REDUCE THE AMOUNT OF WATER, DUST OR DEBRIS WHICH MAY ENTER THE SYSTEM.

GREATROOM NOTES:
- REMOVE (E) DOOR TO EXTERIOR & REPLACE WITH (N)3068 DOOR
- STRIP PANELING. PATCH DRYWALL AS NEEDED.
- INSTALL NEW RECEPTACLES TO CODE
- RELOCATE FURNACE TO ATTIC
- RELOCATE WATER HEATER TO LAUNDRY ROOM
- INSTALL MINI-SPLIT
- INSTALL SWITCHES 46" TO CENTER FROM FINISHED FLOOR
- INSTALL FLOORING
- INSTALL BASEBOARDS.
- PAINT

KITCHEN NOTES:
- REMOVE EXISTING COUNTER TOPS & CABINETS
- INSTALL NEW CABINETS - LIKE-FOR-LIKE CHANGE-OUT WITH THE EXCEPTION OF THE 5' COUNTER & CABINET ADDITION & 2 NEW 48" PANTRIES
- INSTALL NEW COUNTER TOPS W/4" SPLASH TO MATCH TOP
- INSTALL NEW SINK AND FAUCET - SEE CAL GREEN SHEET G1.0, SECTION 4.303.2 FOR FIXTURE REQUIREMENTS
- REMOVE DROPPED CEILING. RE-FRAME AND FINISH W/DRYWALL
- PREP & PAINT (E) CABINETS. INSTALL NEW PULLS & HANDLES
- INSTALL NEW HOOD OVER RANGE
- INSTALL FLOORING
- INSTALL BASEBOARDS.
- PAINT

GENERAL NOTES:
- NEW VINYL PLANK FLOORING THROUGHOUT LESS BATHROOMS WHICH ARE TO BE TILE
- NEW PAINT THROUGHOUT
- REMOVE EXISTING MULTI-LAYERED ROOFING. INSTALL NEW 50-YEAR ROOFING. REPLACE EAVE BOARDS AS NEEDED
- REPLACE GUTTERS
- INSTALL NEW INSULATION
- REPLACE ALL WINDOWS WITH RETROFIT WINDOWS
- REBUILD BEDROOM CLOSET SHELVING AND INSTALL NEW HANGER BARS
- ADD NEW RECEPTACLES IN BEDROOMS AT LOCATIONS SPECIFIED BY OWNER (2+ PER BEDROOM)
- ADD 4 RECESSED LIGHTS PER BEDROOM.

REPLACE EXISTING SWITCH W/DIMMER
- RELOCATE WATER HEATER TO LAUNDRY ROOM
- RELOCATE FURNACE TO ATTIC SPACE
- REMOVE WHOLE HOUSE VACUUM ASSEMBLY FROM LAUNDRY ROOM
- REPLACE UTILITY SINK IN LAUNDRY ROOM
- REPLACE ENTRY DOOR TO LAUNDRY ROOM
- CHECK ENTIRE FOUNDATION FOR DAMAGE
- REMOVE BRICK CHIMNEY ABOVE ROOF. REPAIR EAVE AND INSTALL NEW ROOFING WHERE CHIMNEY WAS REMOVED. (E) FIREPLACE HAS BEEN ABANDONED AND IS CURRENTLY WALLED OVER.

LAUNDRY ROOM NOTES:
- INSTALL NEW SINK AT INDICATED LOCATION
- RELOCATE WASHING MACHINE UTILITIES TO (N) WASHING MACHINE OUTLET BOX
- INSTALL NEW TANKLESS WATER HEATER. RELOCATE UTILITIES AS NEEDED
- VERIFY 100 SQ IN (MIN) MAKE-UP AIR VENTING THROUGH EXISTING ROOM VENTS. IF INADEQUATE, PROVIDE 100 SQ IN MIN THROUGH WALL OR DOOR VENTS

LEGEND:
- UNFILLED WALLS: EXISTING TO REMAIN
- DASHED WALLS: EXISTING TO BE REMOVED
- HATCHED WALLS: NEW 2X4 WALLS @ 16" O.C.

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

Revision History	
	AS-BUILT
	PRELIMINARY DESIGN
	DESIGN
	PERMIT SET
	1 PLAN REVIEW COMMENTS
	2 PLAN REVIEW COMMENTS

REMODEL & ADDITION

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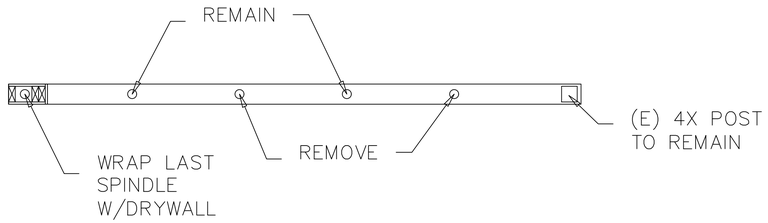
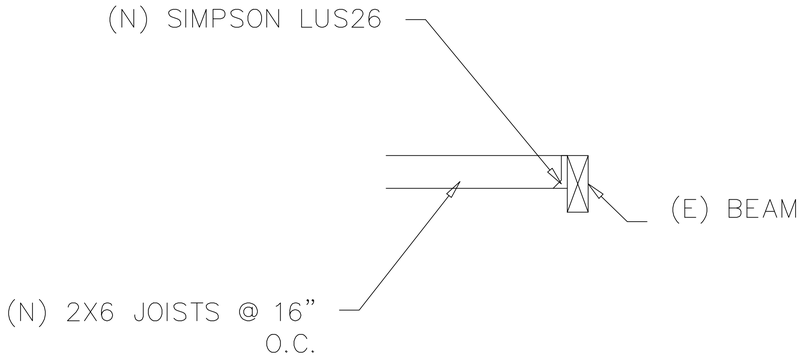
CONSTRUCTION PLAN

A1.11



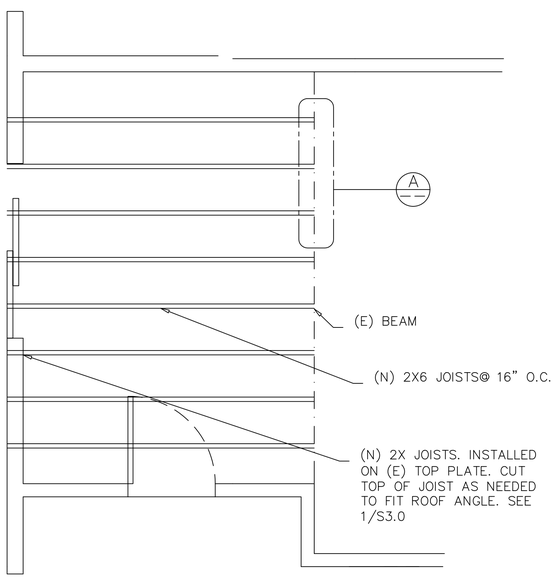
SPINDLE REMOVAL

SCALE: 3/4"=1'-0"

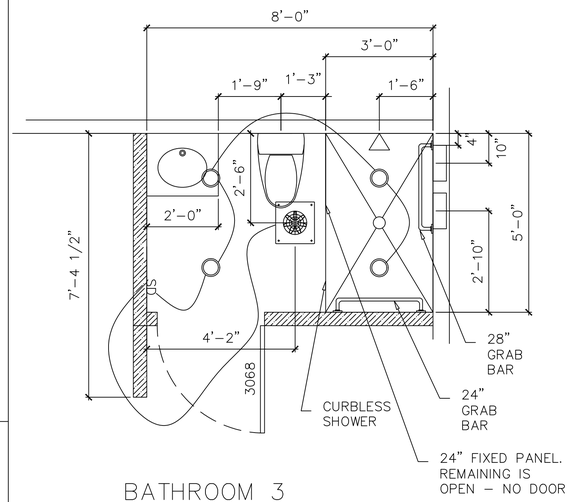


A (N) JOIST CONNECTION @ BEAM

SCALE: 1"=1'-0"



KITCHEN CEILING



BATHROOM 3

BATHROOM 3 NOTES:
- INSTALL NEW PLUMBING AS NEEDED FOR NEW VANITY SINK, TOILET, & SHOWER
- INSTALL NEW VANITY, VANITY TOP, SINK, & FIXTURE
- INSTALL NEW TOILET.
- INSTALL NEW CURBLESS SHOWER PAN PER PLAN.
- INSTALL 12"X12" SHAMPOO NICHES @ 40" FROM FINISHED FLOOR TO BOTTOM OF NICHE AND PER DIMENSIONS SHOWN
- INSTALL 28" GRAB BAR AT DIMENSION INDICATED. INSTALL 24" GRAB BAR CENTERED IN SHOWER. INSTALL BOTH @ 34" TO CENTER. INSTALL BLOCKING AS NEEDED
- INSTALL SHOWER HEAD @ 7' FROM FINISHED FLOOR AND PER DIMENSION SHOWN
- INSTALL MIXING VALVE @ 48" FROM FINISHED FLOOR AND DIRECTLY BELOW SHOWER HEAD
- INSTALL HANDHELD SHOWER @ LOCATION SPECIFIED BY OWNER
- CENTER MIXING VALVE AND SHOWER HEAD IN SHOWER
- INSTALL RECESSED LIGHT FIXTURES.
- INSTALL FAN
- INSTALL SWITCHES 46" TO CENTER FROM FINISHED FLOOR
- INSTALL TILE TO SHOWER PAN, SHOWER SURROUND, & FLOOR
- INSTALL BASEBOARDS.
- TILE @ SHOWER SURROUND TO CEILING
- PAINT

FLOOR TILE -
SHOWER PAN: 15 SQ FT - INCLUDES 10% OVERAGE

SHOWER SURROUND: 90 SQ FT - INCLUDES 10% OVERAGE (TILE TO CEILING)

FLOOR: 27.5 SQ FT - INCLUDES 10% OVERAGE (INCLUDES TILE UNDER VANITY)

BASEBOARD: 13 LF - INCLUDES 10% OVERAGE

WALL PAINT:

CEILING PAINT:

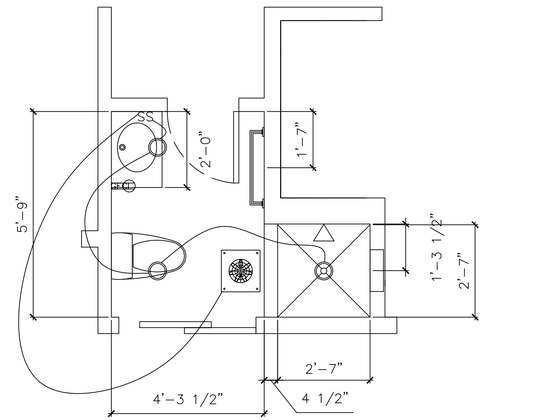
6" LED RECESSED LIGHT

SHOWER HEAD

(E) = EXISTING

(N) = NEW

FAN



BATHROOM 1

BATHROOM 1 NOTES:
- REMOVE TIMER DIAL ADJACENT TO SWITCH
- INSTALL NEW PLUMBING AS NEEDED FOR NEW VANITY SINK, TOILET, & SHOWER
- INSTALL NEW VANITY, VANITY TOP, SINK, & FIXTURE
- INSTALL NEW TOWEL BAR @ 48" FROM FINISHED FLOOR AND PER DIMENSION SHOWN
- REPLACE EXISTING MEDICINE CABINET WITH NEW
- ADD NEW SWITCH TO EXISTING FOR FAN
- INSTALL NEW TOILET.
- INSTALL NEW SHOWER.
- INSTALL 14"X14" SHAMPOO NICHE @ 40" FROM FINISHED FLOOR TO BOTTOM OF NICHE AND PER DIMENSIONS SHOWN
- INSTALL SHOWER HEAD @ 7' FROM FINISHED FLOOR AND PER DIMENSION SHOWN
- INSTALL MIXING VALVE @ 48" FROM FINISHED FLOOR AND DIRECTLY BELOW SHOWER HEAD
- CENTER MIXING VALVE AND SHOWER HEAD IN SHOWER
- INSTALL RECESSED LIGHT FIXTURES.
- INSTALL FAN
- INSTALL TILE TO SHOWER PAN, SHOWER SURROUND, & FLOOR
- INSTALL BASEBOARDS.
- TILE @ SHOWER SURROUND TO CEILING
- PAINT

FLOOR TILE -
SHOWER PAN: 8.5 SQ FT - INCLUDES 10% OVERAGE

SHOWER SURROUND: 74 SQ FT - INCLUDES 10% OVERAGE (TILE TO CEILING)

FLOOR: 27 SQ FT - INCLUDES 10% OVERAGE (INCLUDES TILE UNDER VANITY)

BASEBOARD: 18 LF - INCLUDES 10% OVERAGE

WALL PAINT:

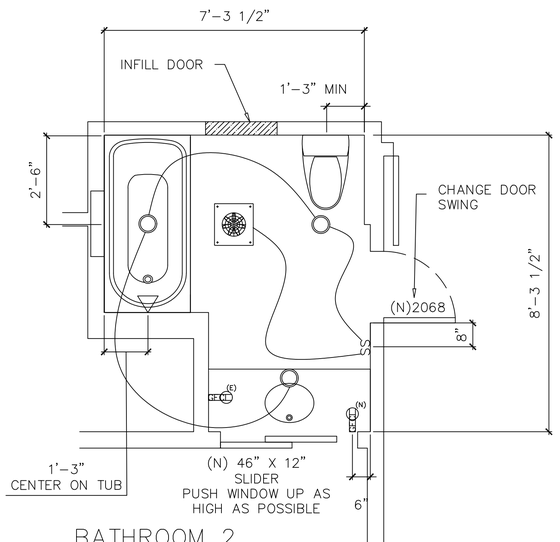
CEILING PAINT:

LEGEND:

UNFILLED WALLS: EXISTING TO REMAIN

DASHED WALLS: EXISTING TO BE REMOVED

HATCHED WALLS: NEW 2X4 WALLS @ 16" O.C.



BATHROOM 2

BATHROOM 2 NOTES:
- RELOCATE TOILET ROUGH-IN AS NEEDED TO PROVIDE CODE REQUIRED CLEARANCE
- INSTALL NEW PLUMBING AS NEEDED FOR NEW VANITY SINK, TOILET, & SHOWER
- INSTALL NEW VANITY, VANITY TOP, SINK, & FIXTURE
- INSTALL NEW DOOR. CHANGE SWING AS INDICATED
- INFILL DOOR AS INDICATED
- INSTALL NEW TOILET.
- INSTALL NEW SHOWER.
- INSTALL 22"X14" SHAMPOO NICHE @ 40" FROM FINISHED FLOOR TO BOTTOM OF NICHE AND PER DIMENSIONS SHOWN
- INSTALL SHOWER HEAD @ 7' FROM FINISHED FLOOR AND PER DIMENSION SHOWN
- INSTALL MIXING VALVE @ 48" FROM FINISHED FLOOR AND DIRECTLY BELOW SHOWER HEAD
- CENTER MIXING VALVE AND SHOWER HEAD IN SHOWER
- RELOCATE SWITCHES. INSTALL SWITCHES 46" TO CENTER FROM FINISHED FLOOR AND PER DIMENSION SHOWN
- INSTALL NEW GFCI RECEPTACLE PER DIMENSION SHOWN. MATCH ELEVATION TO EXISTING
- INSTALL RECESSED LIGHT FIXTURES.
- INSTALL FAN
- INSTALL TILE TO SHOWER PAN, SHOWER SURROUND, & FLOOR
- INSTALL BASEBOARDS.
- TILE @ SHOWER SURROUND TO CEILING
- PAINT

FLOOR TILE -

SHOWER SURROUND: 65 SQ FT - INCLUDES 10% OVERAGE (TILE TO CEILING)

FLOOR: 43.5 SQ FT - INCLUDES 10% OVERAGE (INCLUDES TILE UNDER VANITY)

BASEBOARD: 22 LF - INCLUDES 10% OVERAGE

WALL PAINT:

CEILING PAINT:

ENLARGED CONSTRUCTION PLANS

SCALE: 1/2"=1'-0"

Revision History	
	AS-BUILT
	PRELIMINARY DESIGN
	DESIGN
	PERMIT SET
1	PLAN REVIEW COMMENTS
2	PLAN REVIEW COMMENTS

REMODEL & ADDITION

OWNER:

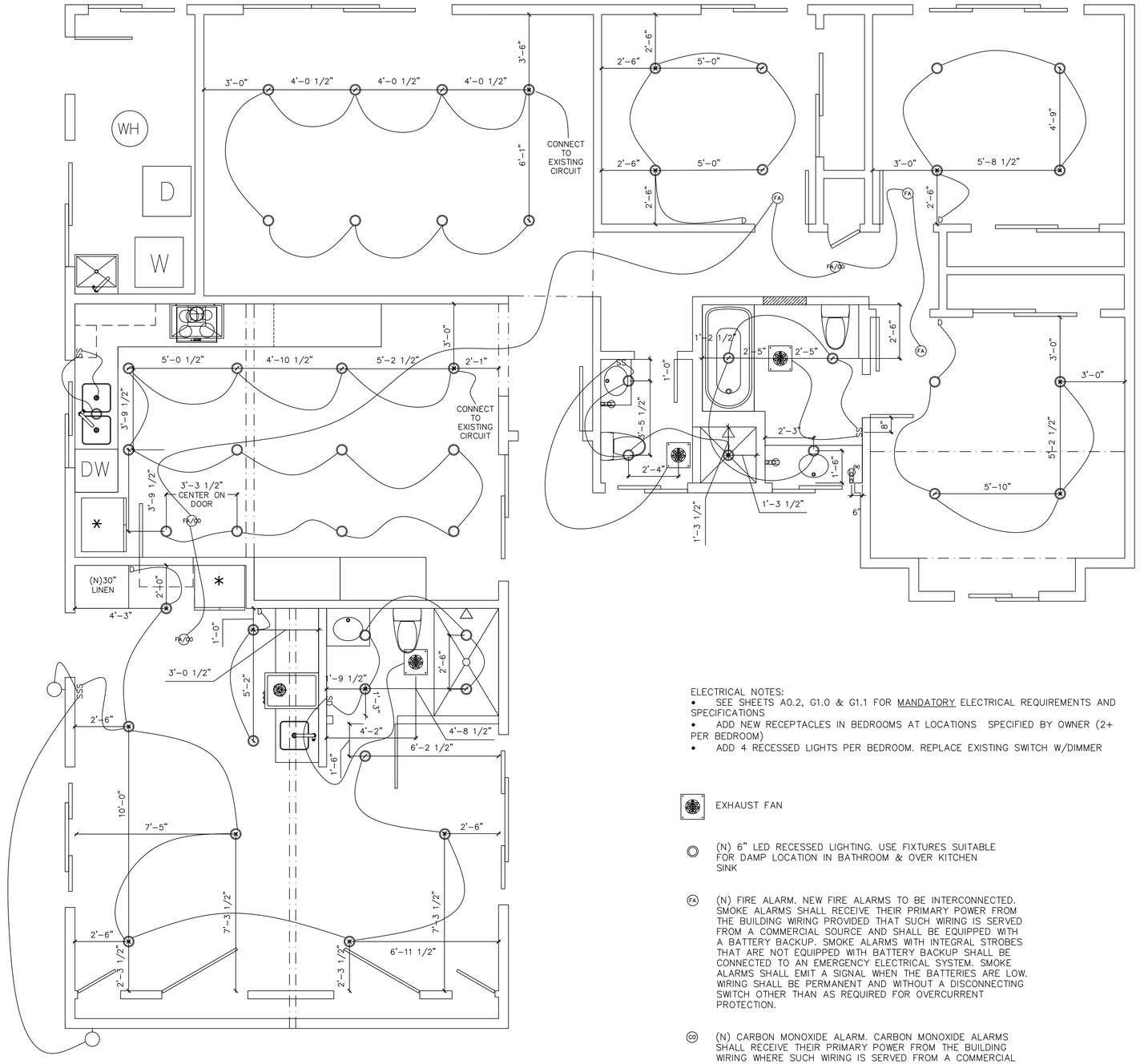
Drawing By:
Chris Klimen
klimen@att.net
PH: 510.928.1359

Peter Christopher Klimen

DIGITALLY SIGNED BY PETER CHRISTOPHER KLIMEN
EMAIL=KLIMEN@ATT.NET DATE: 00/00/00

ENLARGED CONSTRUCTION PLANS

A1.12



ELECTRICAL NOTES:
- SEE SHEETS A0.2, G1.0 & G1.1 FOR MANDATORY ELECTRICAL REQUIREMENTS AND SPECIFICATIONS
- ADD NEW RECEPTACLES IN BEDROOMS AT LOCATIONS SPECIFIED BY OWNER (2+ PER BEDROOM)
- ADD 4 RECESSED LIGHTS PER BEDROOM. REPLACE EXISTING SWITCH W/DIMMER

EXHAUST FAN

(N) 6" LED RECESSED LIGHTING. USE FIXTURES SUITABLE FOR DAMP LOCATION IN BATHROOM & OVER KITCHEN SINK

(FA) (N) FIRE ALARM. NEW FIRE ALARMS TO BE INTERCONNECTED. SMOKE ALARMS SHALL RECEIVE THEIR PRIMARY POWER FROM THE BUILDING WIRING PROVIDED THAT SUCH WIRING IS SERVED FROM A COMMERCIAL SOURCE AND SHALL BE EQUIPPED WITH A BATTERY BACKUP. SMOKE ALARMS WITH INTEGRAL STROBES THAT ARE NOT EQUIPPED WITH BATTERY BACKUP SHALL BE CONNECTED TO AN EMERGENCY ELECTRICAL SYSTEM. SMOKE ALARMS SHALL EMIT A SIGNAL WHEN THE BATTERIES ARE LOW. WIRING SHALL BE PERMANENT AND WITHOUT A DISCONNECTING SWITCH OTHER THAN AS REQUIRED FOR OVERCURRENT PROTECTION.

(CO) (N) CARBON MONOXIDE ALARM. CARBON MONOXIDE ALARMS SHALL RECEIVE THEIR PRIMARY POWER FROM THE BUILDING WIRING WHERE SUCH WIRING IS SERVED FROM A COMMERCIAL SOURCE AND, WHERE PRIMARY POWER IS INTERRUPTED, SHALL RECEIVE POWER FROM A BATTERY. WIRING SHALL BE PERMANENT AND WITHOUT A DISCONNECTING SWITCH OTHER THAN THOSE REQUIRED FOR OVERCURRENT PROTECTION. COMBINATION CARBON MONOXIDE AND SMOKE ALARMS SHALL BE PERMITTED TO BE USED IN LIEU OF CARBON MONOXIDE ALARMS.

ELECTRICAL PLAN
SCALE: 3/8"=1'-0"

Revision History	
	AS-BUILT
	PRELIMINARY DESIGN
	DESIGN
	PERMIT SET
	1 PLAN REVIEW COMMENTS
	2 PLAN REVIEW COMMENTS

REMODEL & ADDITION

OWNER:

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ELECTRICAL PLAN

E1.10