NOTICE TO CONTRACTORS

• All work shall comply with the California Residentail Code, 2016 Edition; California Plumbing Code, 2016 Edition; California Mechanical Code, 2016 Edition; California Fire Code, 2016 Edition; California Energy Code 2016 Edition; California Green Building Standards Code, 2016 Edition; and all amendments as adopted in Santa Barbara City Ordinance 5780.
• All notes, recommendations, and requirements contained within structural engineering calculations, foundation exploration and soils analysis reports, energy compliance forms, and similar documents submitted to the Building Department are hereby included as a part of these plans.
• All written dimensions shall take precedence over scaled dimensions.
• Dimensions are to face of framing, unless otherwise noted. Where exists, face of shear panel shall be considered face of framing.
• Check mechanical, electrical, floor, and reflected ceiling plans and interior elevations for fixture and equipment locations and coordinate with subtrades for special framing requirements.
• No changes shall be made in the project which deviate from the plans and specifications without the written consent of the Owner.
• No structural changes shall be made without the written consent of the Engineer.
• The Designer and/or Engineer shall be notified of any unusual or unforeseen conditions or situations which may affect the structural integrity or safety of the project, as well as any discrepancies within the plans.
• Subcontractors must visit the building site and must verify existing conditions and dimensions.
• Each subcontractor shall perform, supply, and install any and all work, labor, and materials which are necessary, implied, or required to produce the intended result of a complete job.
• The intent of these drawings and specifications is to provide a building complete in every detail and ready for occupancy. Any discrepancies in these drawings and specifications which would appear to call for less than a complete job should be brought to the attention of the Designer for clarification before submitting bids. Failure to clarify deficiencies and discrepancies does not relieve the contractor from providing a complete product.
• Where there is a discrepancy within the drawings or between the drawings and specifications or notes, the more restrictive condition, or the higher grade of material or workmanship, shall be assumed unless directed otherwise by the Designer or Engineer.

BEST MANAGEMENT PRACTICES

○ Eroded sediments and other pollutants must be retained on site and may not be transported from the sheet flow, swales, area drains, natural drainage courses or wind.

○ Stockpiles of earth and other construction related materials must be protected from being transported from the site by forces of wind or water.

○ Fuels, oils, solvents other toxic materials must be stored in accordance with their listing and are not to contaminate the soil and surface waters. All approved storage containers are to be protected from the weather. Spills may not be washed into the drainage system.

○ Excess or waste concentrate may not be washed into the public way or any other drainage system. Provisions must be made to retain concrete wastes on site until they can be disposed of as a solid waste.

○ Trash and construction related solid wastes must be deposited into a covered receptacle to prevent contamination of rainwater and dispersal by wind.

○ Sediments and other material may not be traced from the site by vehicle traffic. The construction entrance roadways must be stabilized so as to inhibit sediments from being deposited into the public way. Accidental depositions must be swept up immediately and may not be washed down by rain or other means.

○ Any slopes with distributed soils or demanded of vegetation must be stabilized so as to inhibit erosion wind and water.

○ Other : ALL SOIL TO BE EXPORTED OFF SITE

SPECIAL INSPECTION

- SPECIAL INSPECTIONS SHALL CONFORM TO SECTION 1701, 1704 & 1707 OF THE CALIFORNIA BUILDING CODE. REQUIRED FOR THE INSTALLATION OF ALL "DRILLED AND EPOXIED" THREADED ROD ANCHOR BOLTS, RE-INFORCING STEEL DOWELS, INCLUDING EMBEDDED HOLDDOWN ANCHOR RODS (STTB) AND MUDSILL ANCHOR BOLTS, TITEN HD AND EXPANSION BOLTS. PERIODIC INSPECTIONS BY SOILS ENGINEER FOR FOOTING COMPACTION & DEPTH. SHEAR PANEL NAILING LESS THAN 6" O.C. SEE STRUCTURAL SHEET SHEET S-1 FOR DETAILS

RESIDENTIAL SPRINKLER SYSTEM REQUIREMENTS

Sprinkler systems are required if an addition or remodel exceeds 75% of the existing floor area of the structure.

(E) STRUCTURE 963 gross sq.ft /.75 = 722.25 sq.ft.

886 gross sq. ft. addition = 886 gross sq.ft > 792 sq.ft.

RESIDENTIAL SPRINKLER SYSTEM - REQUIRED

GENERAL NOTES

The Engineer and Designer do not warrant or guarantee the accuracy and completeness of the work contained in these drawings and the engineering calculations beyond a reasonable diligence.
• If any omissions, mistakes, or discrepancies are found to exist within the work product, the Engineer and Designer shall be promptly notified so that they may have the opportunity to take whatever steps necessary to resolve them. Failure to promptly notify the Engineer and Designer of such conditions shall absolve them of any responsibility for the consequences of such failure.
• The Contractor shall be required to perform and install any and all work, labor, and materials which are necessary, implied, or required to produce the intended results.
• All Contractors shall be licensed and insured, otherwise the Engineer and Designer do not assume any responsibility for the Engineer's and Designer's work product.
• Contractors shall verify all dimensions, elevations, and existing conditions prior to starting any work. The Contractor shall promptly and before such conditions are disturbed, notify the Designer and the Engineer in writing of subsurface or latent physical conditions at the site differing materially from those indicated in the documents, or unknown physical conditions at the site of an unusual nature differing materially from those ordinarily encountered and generally recognized as inherent in work of the character provided for in the work product.
• All work shall conform to local and state codes, and the work herein is deemed to be in compliance with the 2016 California Residential Building Code.
• Engineer always recommends that a soils report be provided by the Owner. If one is not provided, the Engineer shall design footings per the latest addition of the California Building Code adopted by the Building Department. Payment for all inspections and tests performed by a soils lab is the responsibility of the owner.
• Special inspections required by the 2016 California Residential Building Code shall be performed by an inspector of the owner's choice approved by the Building Official, and fees for such services shall be paid by the owner.
• The plans and engineering calculations do not cover latent defects in existing structures; the evaluation of geologic conditions; exterior drainage except as noted on the plans; or damage resulting from insect infestation or rot.
• No assurance is given that existing structures and systems are built or maintained in accordance with current building codes.
• The contractor shall supervise and direct the work using his best skill and attention. He shall be solely responsible for all construction means, methods, techniques, sequences and procedures and for coordinating all portions of the work.
• The work shall be in strict accordance with the best standard specifications of materials and applications. All finish material shall be approved by the owner prior to installation.
• The contractor is responsible for installing and maintaining all necessary temporary bracing and shoring to ensure the safety of the work until it is completed. He shall ensure that all applicable safety laws are strictly enforced.
• The contractor shall ensure that all work and materials are protected from damage from natural forces and other trades.
• Should any dispute arise regarding this work, all parties agree that the sole remedy for any such dispute shall be decided by the procedures provided by the American Arbitration Association and this arbitration shall be binding upon all parties. If the Engineer and/or Designer is found to have performed his work per contract or agreement, the Engineer and/or the Designer shall be reimbursed for reasonable attorneys' fees. In addition, if it is found that a 'bad-faith' claim was filed or owner cardinal changes made, punitive or treble damages shall be recovered from the claimant and said claimant shall be responsible for consequential or direct impact and loss of efficiency damages to the Engineer and/or the Designer. Under no circumstances shall engineer or designer pay claimant attorney fees or other costs associated with this project.
• Use of the plans and specifications constitutes acceptance by owner and contractor of these terms and conditions.

PLUMBING NOTE

PER SB 407 (2009) CA CIVIL CODE 1101-1-1101.8 THE PROPOSED WORK UNDERGOING ALTERATIONS OR IMPROVEMENTS REQURIES NON-COMPLIANT PLUMBING FIXTURES TO BE REPLACED BY WATER CONSERVING PLUMBING FIXTURES.

ALL EXISING PLUMBING FIXTURES SHALL MEET THE LOW FLOW REQUIREMENTS. ALL COMPLYING FIXTURES WILL HAVE AN EMBLEM ON THEM AND WATER CLOSETS, EITHER FLUSH TANK, FLUSHOMETER TANK, OR FLUSHOMETER VALVE OPERATED SHALL HAVE AN AVERAGE CONSUMPTION OF NOT MORE THAN 1.28 GALLONS OF WATER PER FLUSH.
LAVORATORY FAUCETS SHALL HAVE A MAXIMUM FLOW RATE OF 1.2 GPM @ 60 PSI, MINIMUM FLOW RATE OF 0.8 GPM @ 20 PSI.
KITCHEN FAUCETS: MAX. 1.8 GPM @ 60 PSI.
SHOWERHEADS: MAX. 1.8 GPM @ 80 PSI AND MULTIPLE SHOWER HEADS SERVING ONE SHOWER SHALL HAVE A COMBINED FLOW RATE OF ALL SHOWERHEADS OF 1.8 GPM @ 80 PSI.
2016 GREEN BUILDING CODE SECTION 4.303
NOTE: CONTROL VALVE FOR SHOWER OR TUB-SHOWER SHALL BE OF THE PRESSURE BALANCE OR THERMOSTATIC MIXING VALVE TYPE PER C.P.C. 420.0

PROJECT DATA

ASSESSOR'S PARCEL NUMBER	039-202-004
ZONE	RM SBMC TITLE 30
PROPERTY OWNER -	CORY & ALEXA CAMERON
LOT AREA	7,500 S.F.
SLOPE	1%
PROPERTY OWNER ADDRESS	519 W. ANAPAMU STREET SANTA BARBARA, CA 93101
PHONE	805-708-9792
PROJECT ADDRESS -	519 W. ANAPAMU STREET

SCOPE OF WORK SCOPE OF WORK SCOPE OF WORK
PROPOSAL FOR A NEW DETACHED 229 NET SQUARE FOOT ONE-CAR GARAGE & AN ATTACHED 349 NET S.F. ACCESSORY/WORKSHOP (NON-HABITABLE) ON THE GROUND FLOOR WITH A 1/2 BATH.
NEW 645 NET S.F. ACCESSORY DWELLING UNIT (ADU) PURSUANT TO GOV. CODE 65852.2 ABOVE A GARAGE AND ACCESSORY/WORKSHOP.
TOTAL NET SQUARE FOOTAGE OF DETACHED BUILDING IS 1,223 S.F. OF 1,300 S.F. ALLOWED.

NEW ACCESSORY DWELLING UNIT; 100A MAIN PANEL, ON DEMAND WATER HEATER & ATTIC FAU/AIR PURIFIER.
APRILAIRE AIR PURIFIER MODEL 2210 W/ A 213 HHEALTHY HOME AIR FILTER IS RATED MERV 13.
NEW 100A PANEL FOR THE GARAGE & ACCESSORY/WORKSHOP, ALL PER MSR#2709802
NEW CONCRETE DRIVEWAY TO NEW GARAGE W/ BACK-OUT AREA PER CODE.
NEW FENCING PER PLAN, NEW AIR PURIFICATION SYSTEM.
THE ORIGINAL ONE CAR GARAGE AND ACCESSORY STORAGE WAS DEMOED UNDER CONCURRENT PERMIT FOR THE PRIMARY DWELLINGS ADDITION PER BLD2019-07176.

NEW CURB CUT & APRON PER PUBLIC WORKS STANDARD DETAILS
NEW WATER SUB METER ON PRIVATE PROPERTY.
(N) RINNAI TANKLESS W/H = 49 dBA. 49 dBA IS LESS THAN 53 CNEL.
(N) 8' WOOD FENCE ALONG EAST PL, WITH NEW OLEANDER HEDGE MAINTAIN AT 8'0" FOR ER7 DESIGN FEATURES.
REPLACE SEWER LINE IN PROW & WYE @ MAIN PER PUBLIC WORKS PERMIT.

OCCUPANCY	R-3/U-1
CONSTUCTION TYPE	TYPE V - NR, VB
HIGH FIRE AREA	NO
FLOOD ZONE	NO

	NET	GROSS
(E) DWELLING	1,617 S.F.	1,674 S.F.
(E) TOTAL SITE	1,617 S.F.	1,674 S.F.
NEW ONE-CAR GARAGE	229 S.F.	239 S.F.
NEW ACCESSORY/WORKSHOP 1ST FLOOR	349 S.F.	359 S.F.
TOTAL 1ST FLR GARAGE & ACCESSORY/WKSHP	578 S.F.	693 S.F.
1ST FLR ACC. DWELLING UNIT STAIRS	85 S.F.	95 S.F.
TOTAL 1ST FLR GAR, ACC & STAIRS	663 S.F.	693 S.F.
(N) ACCESSORY DWELLING UNIT W/ STAIRS	645 S.F.	693 S.F.
(N) ACCESSORY DWELLING UNIT NO STAIRS	560 S.F.	693 S.F.
TOTAL NEW BUILDING	1,223 S.F.	1,386 S.F.
TOTAL SITE	2,840 S.F.	3,060 S.F.

PARKING
(E) PRIMARY RES. UNIT- 1- COVERED - GARAGE -<DEMOED UNDER CONCURRENT PERMIT
REQUIRED PRIMARY RES. UNIT- 2-COVERED
PROPOSED PRIMARY RES. UNIT - 1- COVERED DETACHED GARAGE - NONCONFORMING
NO PARKING PROVIDED FOR THE PROPOSED ACCESSORY DWELLING UNIT PER
1

GRADING	N/A
# OF STORIES	TWO

2ND FLOOR ADU IS NOT BEING REVIEWED

MARBORG INDUSTRIES IS THE APPROVED WASTE MANAGEMENT COMPANY

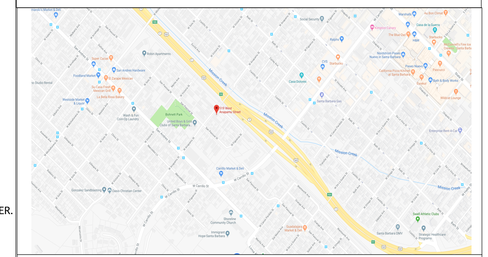
R324.1 Construction waste management. Recycle and/or salvage for reuse a minimum of 65 percent of the nonhazardous construction and demolition waste in accordance with the California Green Building Standards Code, Chapter 4, Division 4.4.

SECTION R330
POLLUTANT CONTROL
R330.J Finish material pollutant control. Finish material including adhesive, sealants, caulks, paint and coating , aerosol paint and coatings, carpet sy tern , carpet cushion, carpet adhesive, resilient flooring system and composite wood products shall meet the volatile organic compound (VOC) emission limits in accordance with the California Green Building Standards Code, Chapter 4, Division 4.5.

HERS TESTING

HERS Testing: See Title 24 Sheet A-5 for Required Project HERS Features that require field verification by a Certified HERS Rater per 2016 California Title 24 Part 6. 1) Duct Sealing. 2) Verified low-leakage ducts located entirely in conditioned space.

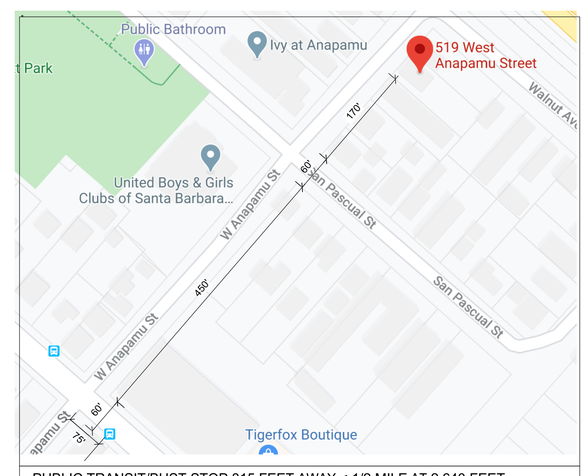
VICINITY MAP



SHEET INDEX

A-1 STATISTICS, VICINITY, GENERAL NOTES, NOV SHEET INDEX, PLUMBING & WASTE NOTES
A-2 (E) & (P) SITE PLANS, ROOF PLAN
A-3 (E) & (P) FLOOR PLANS, W & D SCHEDULE & FLASHING
A-4 ELEVATIONS, SECTIONS & ARCHITECTURAL DETAILS
A-5 ELECTRICAL & MECHANICAL PLANS
A-6 TITLE 24
A-7 SOILS REPORT RECOMMENDATIONS & LETTER
G-1 2016 CA GREEN BUILDING CODE SHEET 1
G-2 2016 CA GREEN BUILDING CODE SHEET 2
E0.0 ELECTRICAL PANEL DIRECTORIES LOAD CALCS & DIAGRAMS
E0.1 ELECTRICAL PANEL DIRECTORIES LOAD CALCS & DIAGRAMS
C-1 DRAINAGE PLAN
E-1 ERSOION CONTROL PLAN
L1.0 LANDSCAPE PLAN
S1.1 STRUCTURAL GENERAL NOTES, SPECIFICATIONS & TYP. DETAILS
S1.2 STRUCTURAL GENERAL NOTES, SPECIFICATIONS & TYP. DETAILS
S1.3 STRUCTURAL GENERAL NOTES, SPECIFICATIONS & TYP. DETAILS
S-2 STRUCTURAL 2ND FLOOR FRAMING & ROOF FRAMING PLANS
S-3 STRUCTURAL FOUNDATION DETAILS
S-4 SIMPSOM STRONG WALL ANCHOR DETAILS
S-5 SIMPSOM STRONG WALL FRAMING DETAILS

A SEPARATE PUBLIC WORKS PERMIT IS REQUIRED FOR ALL PROPOSED WORK IN THE PUBLIC RIGHT-OF-WAY (PROW)



PUBLIC TRANSIT/BUST STOP 815 FEET AWAY < 1/2 MILE AT 2,640 FEET

MORANDO DESIGN
Mark Morando
MARK MORANDO
168 SHERWOOD DR.
SANTA BARBARA, CA 93110
PHONE 805.680.2703
MMORANDO@MAC.COM

CAMERON RESIDENCE

519 W. Anapamu Street

ACCESSORY DWELLING UNIT

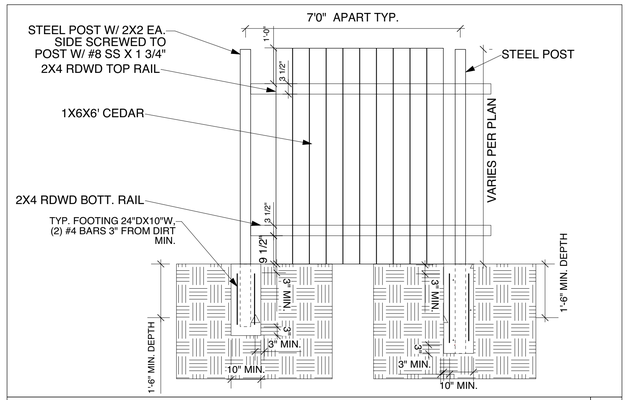
DATE 05/03/20

SHEET

A1

1 OF 19 SHEETS

2ND FLOOR ADU IS NOT BEING REVIEWED



WOOD FENCE DETAIL — SCALE 3/4"=1'0" — 1

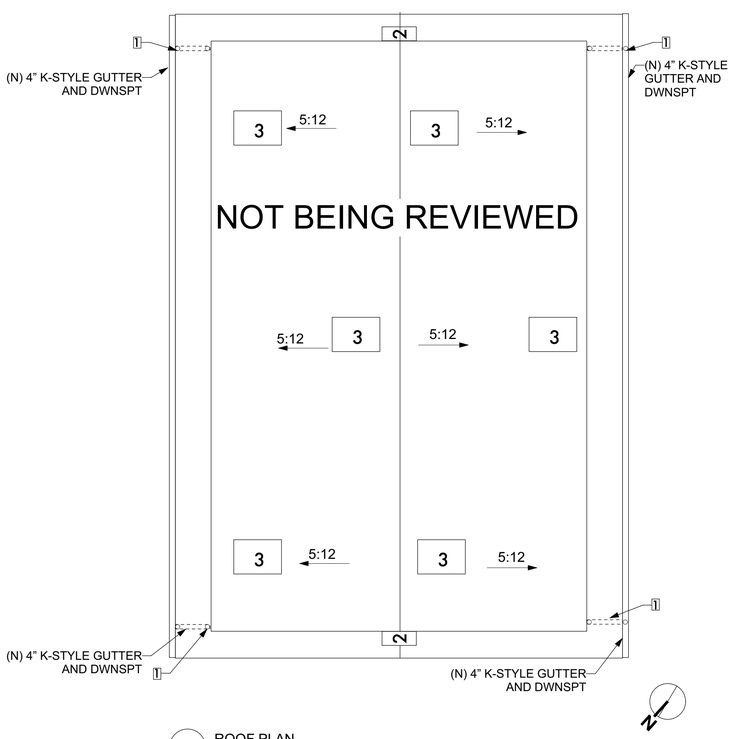
ROOF VENT CALCULATION

TOTAL ROOF AREA 693 SQ.FT.
(1) VENT/150 S.F 693 / 150 = 4.62 SQ. FT. REQ'D
GALV, STEEL HALF ROUND DORMER VENTS SHALL BE PROVIDED W/ 1/8" MAX GALVANIZED WIRE MESH.
NFVA = 100 SQ.IN. / 144 SQ. IN. = 0.694 SQ. FT.
(2) 12X18 GABLE END VENT = 0.55 S.F. EA.
4.62 S.F. REQ'D MINUS - 1.10= 3.52 S.F. NEEDED
3.52 S.F. / 0.694 = 5.07 DORMER VENTING
(6) DORMER VENTS = 4.164 S.F. PROVIDED
TOTAL: 2.0 GABLE VENTS PROVIDED, (6) DORMER VENTS: 1.10 S.F. + 4.16 S.F. =
5.26 S.F. PROVIDED > 4.62 REQUIRED.

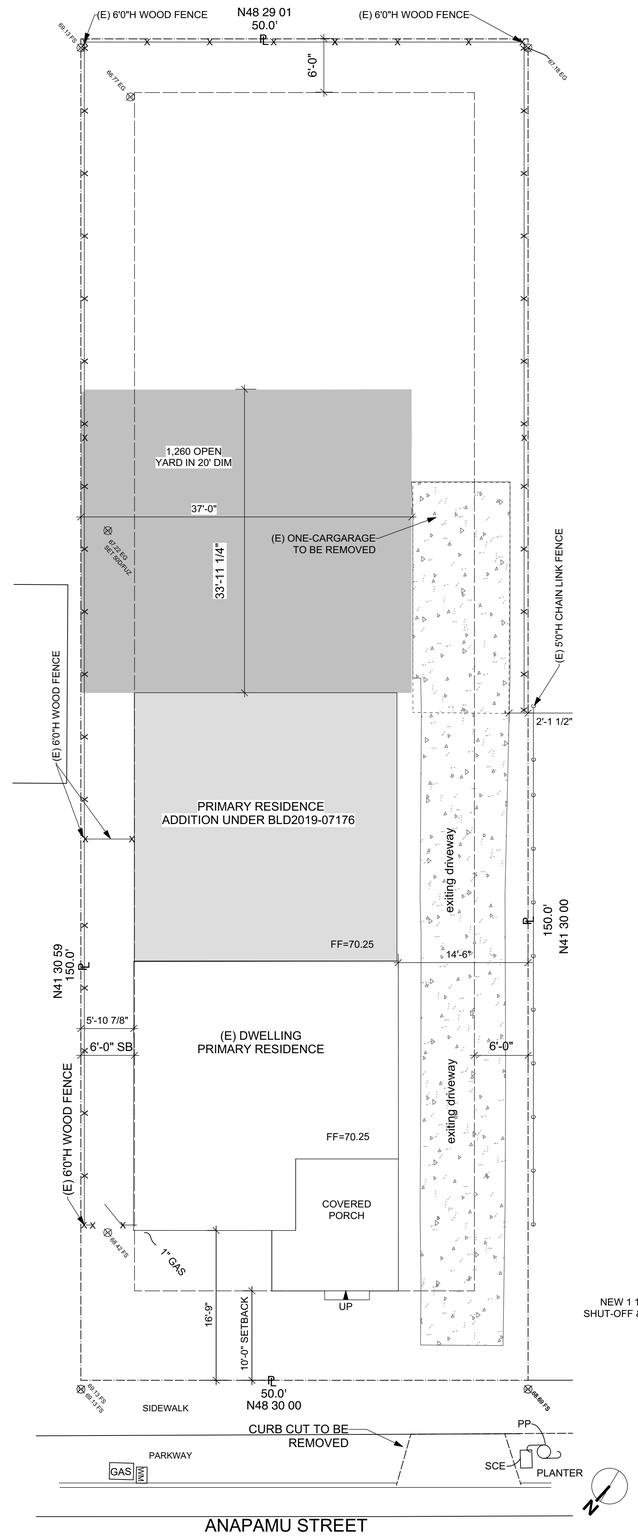
ROOF GENERAL NOTES

PROVIDE (N) MIN. 26 GA. G.I. FLASHING AND COUNTER FLASHING PER C.R.C. 905.2.8. MIN . 28 GA. G.I. VALLEY FLASHING AND UNDERLAYMENT C.R.C. 905.2.3-7 & COVERING CRC 905.1-905.2.5. ALL EXPOSED METAL TO BE PAINTED TO MATCH ROOF.
(N) ROOF MATERIAL CERTAINTEED PRESIDENTIAL TL OR DESINGER SHINGLES
(CLASS "A") 30 YEAR LIMITED WARRANTY, COLOR PER PLAN.
(N) R-30 BATT INSULATION TYPICAL

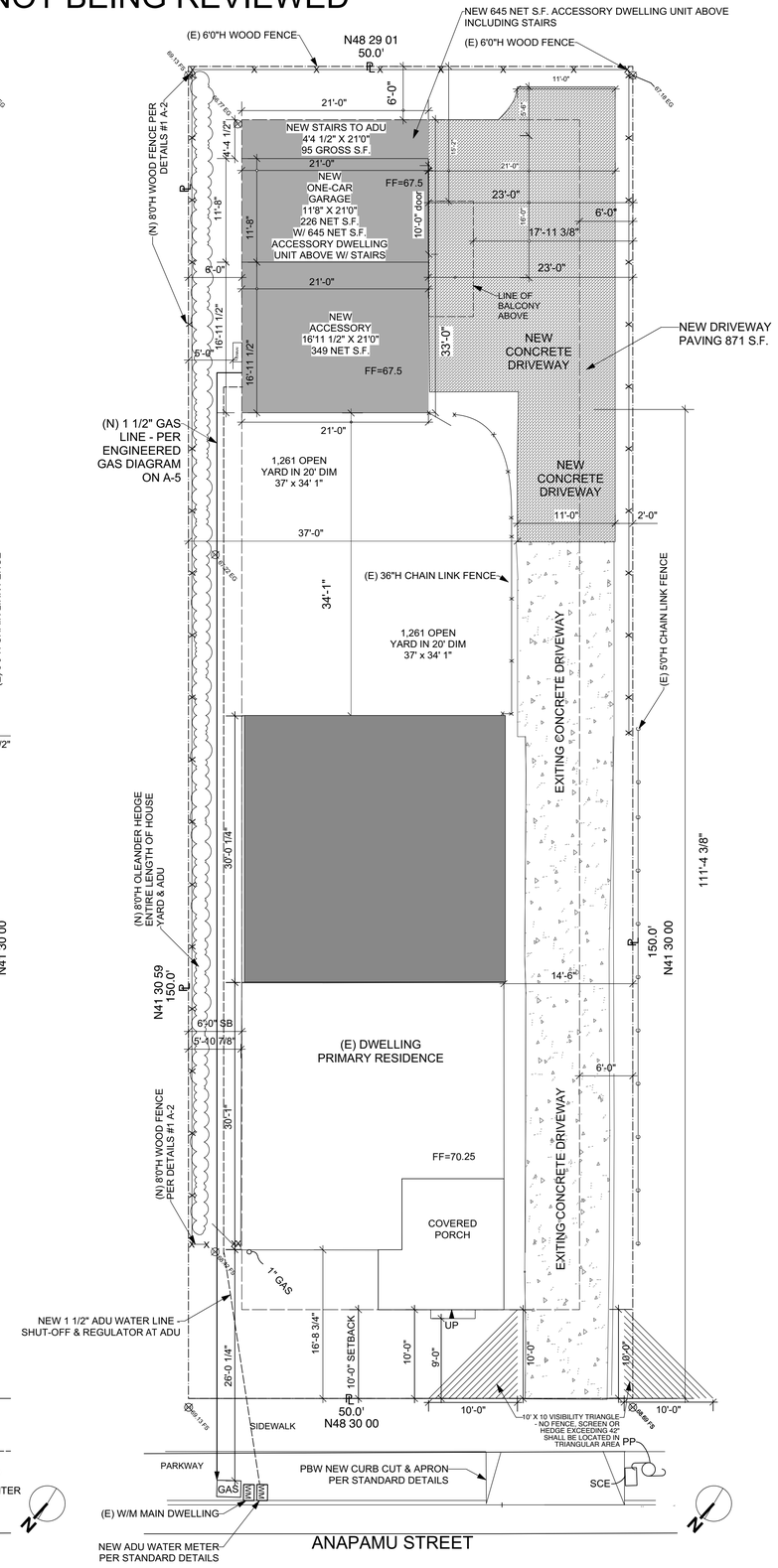
1	(N) ALUMINUM GUTTERS W/ 4" DOWNSPOUTS
2	12" X 18" GABLE END VENT
3	GALV DORMER VENT



ROOF PLAN
Scale: 1/4" = 1'-0"



EXISTING & DEMO SITE PLAN
Scale: 1/8" = 1'-0"



PROPOSED SITE PLAN
Scale: 1/8" = 1'-0"

MORANDO DESIGN
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CAMERON RESIDENCE

519 W. Anapamu Street

ACCESSORY DWELLING UNIT

(E) & (P) SITE PLANS, ROOF PLAN

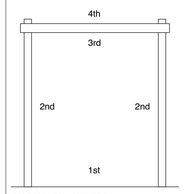
DATE 05/03/20

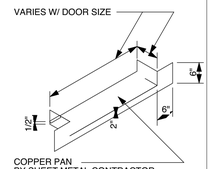
SHEET

A2

2 OF 19 SHEETS

TYPICAL DOOR INSTALLATION & FLASHING NOTES:





INSTALLATION NOTES:

1ST: INSTALL G.I. PAN ALONG THE BOTTOM OF THE OPENING. SEE ILLUSTRATION FOR DIMENSIONS.

2ND: ATTACH 12" MOISTOP ALONG THE VERTICAL SIDES OF THE OPENING FLUSH WITH THE EDGE, MAKING SURE THAT IT IS OVER THE BOTTOM HORIZONTAL STRIP, LENGTH OF THE FLASHING MUST BE LONG ENOUGH TO FALL A MINIMUM OF 12" BEYOND THE OPENING ON TOP AND BOTTOM SO THAT IT IS BEYOND THE TOP HORIZONTAL PIECE THAT IS ATTACHED IN STEP 4 AFTER THE DOOR IS PLACED IN THE OPENING.

3RD: CAULK FACE OF OPENING 1/2" FROM THE INSIDE EDGE. POSITION DOOR IN THE OPENING. PLUMB & SQUARE AND NAIL FLANGE TO STUDS. CAULKING SHOULD EXTRUDE FROM EDGE OF FLANGE

4TH: ATTACH THE FOURTH STRIP OF FLASHING ALONG THE HORIZONTAL EDGE OF THE DOOR MAKING SURE THAT THE FLASHING IS POSITIONED OVER THE DOOR FLANGE AND OVER THE VERTICAL PIECES. THS STRIP MUST FALL A MINIMUM OF 12" BEYOND THE OPENING SO THAT IT IS BEYOND THE VERTICAL PIECES ON EACH SIDE.

5TH: NAIL FRAME 4" FROM EACH END AND 16" O.C. TO STUDS

NOTE: STAPLE PERIMETER OF MOISTOP TO FRAMING MEMBERS 1" FROM OUTSIDE EDGE TO PREVENT WIND DAMAGE.

MATERIALS SPECIFIED:

'MOISTOP' FLASHING PAPER

FEDERAL SPEC. UU-B-790a
STYLE 4, GRADE A, B, AND C.

MANUFACTURED BY
FORTIFIBER CORPORATION
PORTLAND, OREGON

'SUPER JUMBO TEX' 60 MINUTE PAPER

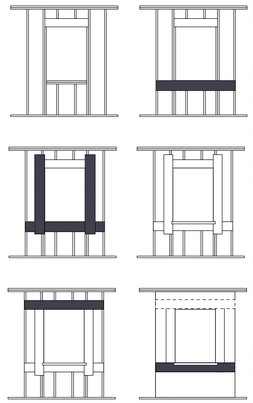
ASPHALT SATURATED PAPER
56 LB. PER 1000 SQ. FT.
FEDERAL SPEC. UU-B-790a
STYLE 2, GRADE D.

MANUFACTURED BY
FORTIFIBER CORPORATION
PORTLAND, OREGON

'BITUTHENE' ICE & WATER SHEILD

RUBBERIZED ASPHALT
SHEET MEMBRANE

MANUFACTURED BY
W.R. GRACE & COMPANY
CAMBRIDGE, MASS.



ALL WINDOW FLASHING TO BE FORTIFLASH 25 SELF-ADHERED FLASHING, 9" WIDE

INSTALL ALL FLASHING PER MFR. WARRANTY. SEE DETAILS METHOD "B"
PROVIDE INDEPENDENT JAMB SIDE FLASHING AT MULLED WINDOWS PER ASTM & AAMA STANDARDS
ALL BLD'G PAPER TO BE SUPER JUMBO-TEX BY FORTIFIBER

1. **FRAMING** - WHERE THE OPENING OCCURS IN A WALL WITHOUT EXTERIOR PLYWOOD SHEATHING, THE BLOCKING MEMBERS (A) SHOULD BE INSTALLED AS NECESSARY TO SUPPORT THE OUTSIDE MEMBERS OF SIDE FLASHING. INSTALL APPROX. 16" O.C. BLOCKING MAY BE OMMITTED WHEN A STUD IS INSTALLED TO SUPORT THE OUTSIDE EDGE OF SIDE FLASHING
2. **SILL FLASHING** - APPLY THE FIRST STRIP OF FLASHING HORIZONTAL , TIGHT TO THE BOTTOM OF THE WINDOW OPENING. EXTEND FLASHING GREATER THAN 9" PAST THE SIDES OF THE OPENING AND ATTACH TO SOLID STUD OR BLOCKING. FASTEN ONLY THE TOP EDGE SO THAT THE SUBSEQUENT LAYERS OF BUILDING PAPER MAY BE LAPPED UNDER.
3. INSTALL THE TWO **JAMB FLASHING** STRIPS VERTICAL, TIGHT TO THE SIDES OF THE WINDOW OPENING. EXTEND FLASHING ABOVE THE TOP AND BELOW THE BOTTOM OF THE OPENING FOR A DISTANCE EQUAL TO THE WIDTH OF THE FLASHING STRIPS. THE BOTTOMS OF THE VERTICAL SIDE STRIPS SHOULD LAP OVER THE BOTTOM HORIZONTAL STRIP AND SHOULD NOT BE NAILED SO THAT THE SUBSEQUENT LAYERS OF BLDG PAPER MAY BE LAPPED UNDER.
4. **INSTALL THE WINDOW** BY FIRMLY PRESSING THE NAIL FLANGE ONTO A CONTINUOUS , FULL CONTACT BEAD OF COMPATIBLE SEALANT EXTENDING AROUND THE BOTTOM AND SIDES OF THE OPENING, BUT NOT AT THE TOP. THE WINDOW CAN THEN BE TRUED AND NAILED INTO PLACE PER MFR. INSTRUCTIONS.
5. INSTALL **THE HEAD FLASHING** STRIP HORIZONTAL, OVER THE TOP NAILING FLANGE . PRESS THE BOTTOM EDGE OF THE FLASHING STRIP INTO A CONTINUOUS, FULL CONTACT BED OF SEALANT ON THE FULL HEIGHT OF THE OUTSIDE FACE OF THE NAILING FLANGE FOR A WATER TIGHT INSTALLATION. EXTEND THE ENDS OF THE TOP FLASHING STRIP SO THAT IT OVERLAPS THE OUTER EDGES OF THE SIDE FLASHING BY 2".
6. STARTING AT THE BOTTOM OF THE WALL, INSTALL THE WATERPROOF BLDG. PAPER IN SHINGLE FASHION UP THE WALL. THE LAYER WHICH FALLS AT THE BOTTOM OF THE WINDOW OPENING SHOULD BE LAPPED UNDER THE BOTTOM FLASHING. SUCCESSIVE LAYERS OF BLDG PAPER SHOULD OVERLAP THE SIDE NAILING FLANGES.

Door and Window General Notes:
SAFETY GLAZING SHALL BE PROVIDED IN THE FOLOWING NEW OR RELOCATED LOCATIONS PER C.R.B.C. SECTION R308.4

1. Glazing in Showers and shower doors to be a minimum of 1/4" thick tempered glass
2. Glazing within 24" arc of doorway must be Tempered glass
3. Glazing within 18" of the floor and must be tempered.
4. Panels in sliding or swinging doors.
5. Glazed openings within 2'-0" of an exterior doors vertical edge and within 5'-0" of standing surface.
6. All shower / tub enclosure glazing within 5'-0" of standing surface, including windows.

Emergency Escape and Rescue Openings per 2016 CRC R310:
Provide each bedroom, habitable attic & basement with an emergency escape opening. minimum net clear opening area shall be 5.7 s.f. (or 5.0 s.f. for grade floor openings.) Opening height shall be 24" minimum clear and opening width shall be 20" minimum clear. Maximum opening sill height shall be 44" to actual window opening.

THE NFRC THERMAL PERFORMANCE LABELS SHALL REMAIN ON THE WINDOWS UNTIL FINAL INSPECTION.

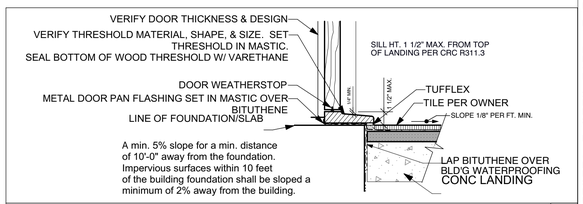
ALL NEW WINDOWS TO BE MILGARD QUIET LINE SERIES, DUAL PANE WITH U-FACTOR PER SCHEDULE OFF BID

Door Schedule

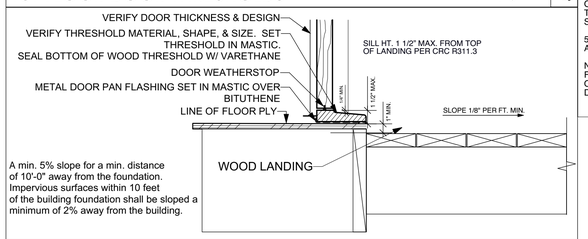
Mark	Nominal Size Width	Height	Thickness	Door Operation	
D- 01	3'6"	6'8"	1 3/4"	Swing Simple	U-FACTOR 0.30 SHGC - 0.16
D- 02	10'0"	6'8"	1 3/4"	Overhead	
D- 03	6'0"	6'8"	1 3/4"	Swing Bi-part	U-FACTOR 0.30 SHGC - 0.16
D- 04	6'0"	6'8"	1 3/4"	Swing Bi-part	U-FACTOR 0.30 SHGC - 0.16
D- 05	2'6"	6'8"	1 3/8"	Swing Simple	
D- 06	3'0"	6'8"	1 3/8"	Swing Simple	TEMPERED
D- 07	3'0"	6'8"	1 3/4"	Swing Simple	
D- 08	5'0"	6'8"	1 3/4"	Swing Bi-part	U-FACTOR 0.30 SHGC - 0.16
D- 09	2'0"	6'8"	1 3/4"	Swing Simple	
D- 10	2'6"	6'8"	1 3/4"	Pocket Simple	
D- 11	2'6"	6'8"	1 3/8"	Swing Simple	
D- 12	2'8"	6'8"	1 3/4"	Swing Simple	
D- 13	2'2"	6'8"	1 3/4"	Swing Simple	

Window Schedule

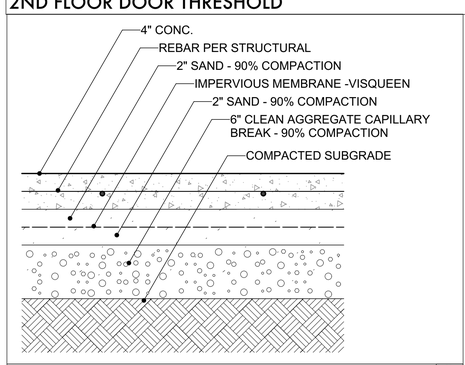
	Mark	O.A. Width	O.A. Height	Configuration	Egress	Comments	
W-	01	4'0"	4'0"	Horizontal Slider	FALSE	U-FACTOR 0.21 SHGC - 0.24	
W-	02	2'6"	3'0"	Casement	FALSE	U-FACTOR 0.24 SHGC - 0.35	
W-	03	4'0"	2'0"	Horizontal Slider	FALSE	U-FACTOR 0.20 SHGC - 0.18	
W-	04	5'0"	2'0"	Horizontal Slider	FALSE	U-FACTOR 0.20 SHGC - 0.18	SAFETY GLASS
W-	05	3'0"	3'0"	Horizontal Slider	FALSE	U-FACTOR 0.21 SHGC - 0.24	SAFETY GLASS
W-	06	3'0"	3'0"	Horizontal Slider	FALSE	U-FACTOR 0.21 SHGC - 0.24	SAFETY GLASS
W-	07	3'0"	3'0"	Horizontal Slider	FALSE	U-FACTOR 0.21 SHGC - 0.24	
W-	08	6'0"	3'0"	Horizontal Slider	YES	U-FACTOR 0.21 SHGC - 0.24	
W-	09	5'0"	2'0"	Horizontal Slider	FALSE	U-FACTOR 0.21 SHGC - 0.24	
W-	10	2'6"	3'0"	Casement	FALSE	U-FACTOR 0.24 SHGC - 0.35	
W-	11	3'0"	3'0"	Horizontal Slider	FALSE	U-FACTOR 0.21 SHGC - 0.24	



1ST FLOOR DOOR THRESHOLDS 1"= 1'-0" 4



2ND FLOOR DOOR THRESHOLD 1"= 1'-0" 3

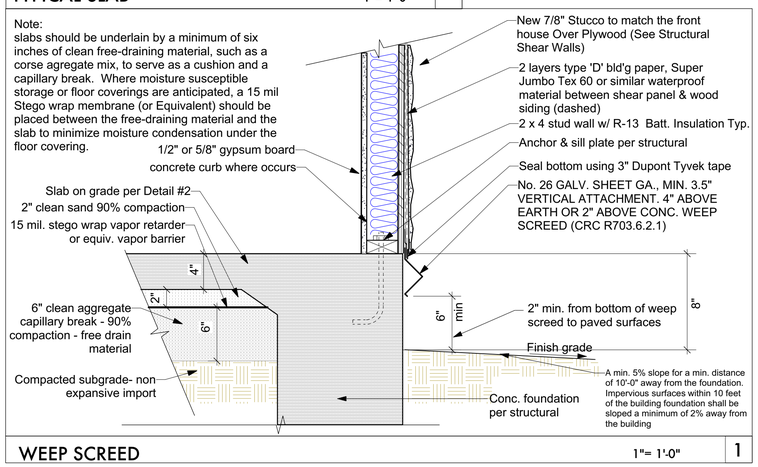


TYPICAL SLAB 1"= 1'-0" 2

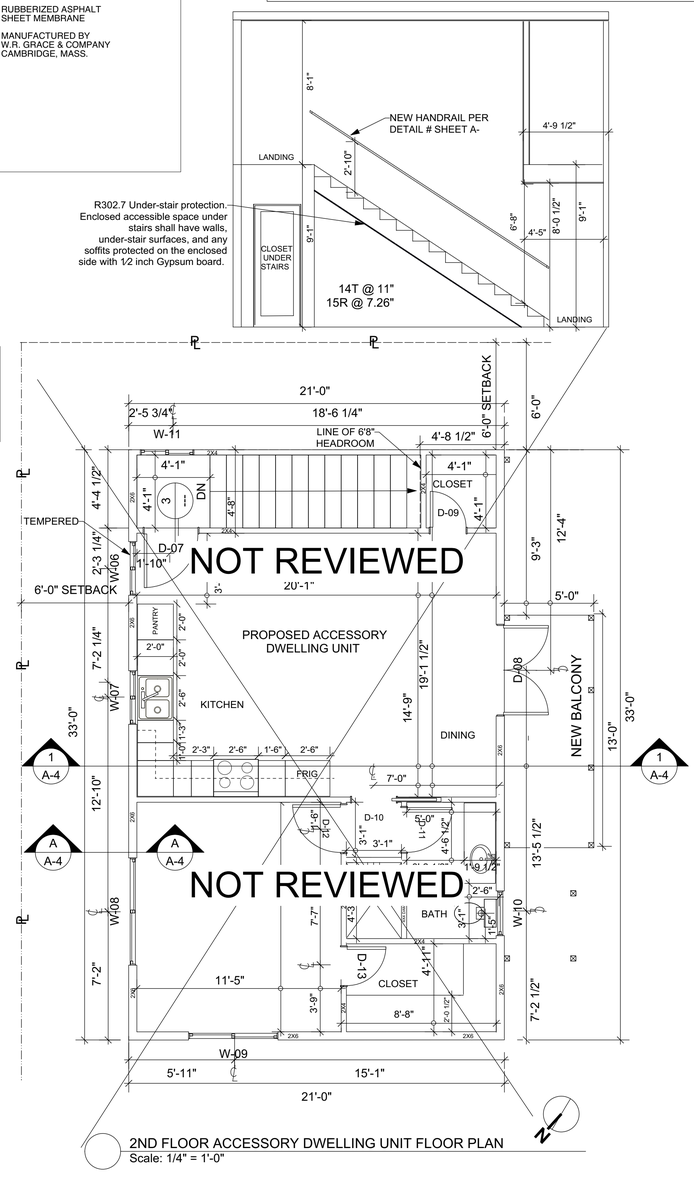
LEGEND

- Existing wall to remain
- Wall to be demolished
- New 2 x 4 stud wall

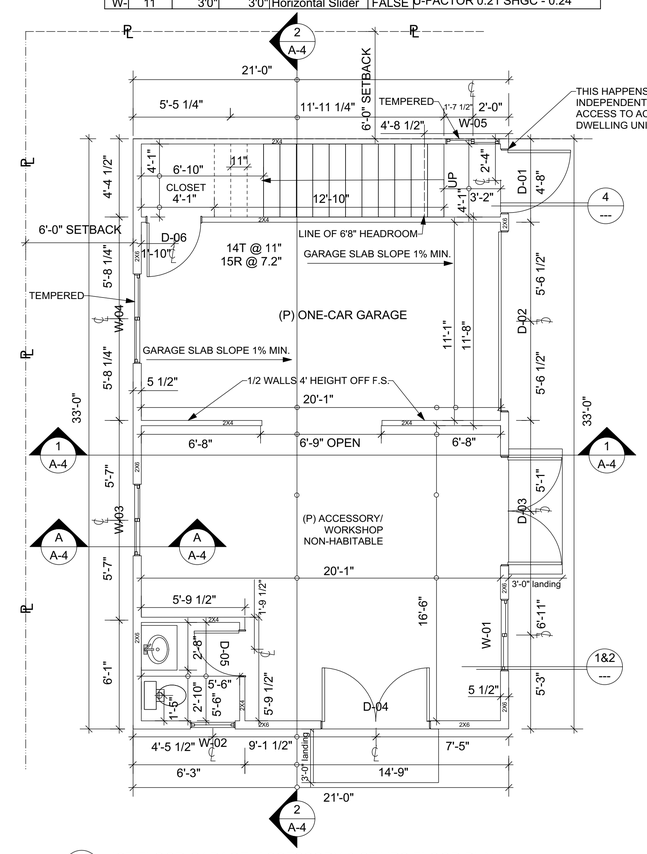
Note:
slabs should be underlain by a minimum of six inches of clean free-draining material, such as a corse agregate mix, to serve as a cushion and a capillary break. Where moisture susceptible storage or floor coverings are anticipated, a 15 mil Stego wrap membrane (or Equivalent) should be placed between the free-draining material and the slab to minimize moisture condensation under the floor covering.



WEEP SCREED 1"= 1'-0" 1



2ND FLOOR ACCESSORY DWELLING UNIT FLOOR PLAN
Scale: 1/4" = 1'-0"



1ST FLOOR GARAGE, ACCESSORY & STAIRS FLOOR PLAN
Scale: 1/4" = 1'-0"

MORANDO DESIGN
MARK MORANDO
168 SHERWOOD DR.
SANTA BARBARA, CA 93110
PHONE 805.680.2703
MMORANDO@MAC.COM

CAMERON RESIDENCE

519 W. Anapamu Street

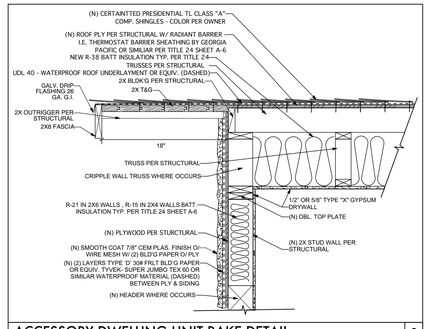
ACCESSORY DWELLING UNIT

EXISTING & PROPOSED FLOOR PLANS W/ ELECTRICAL

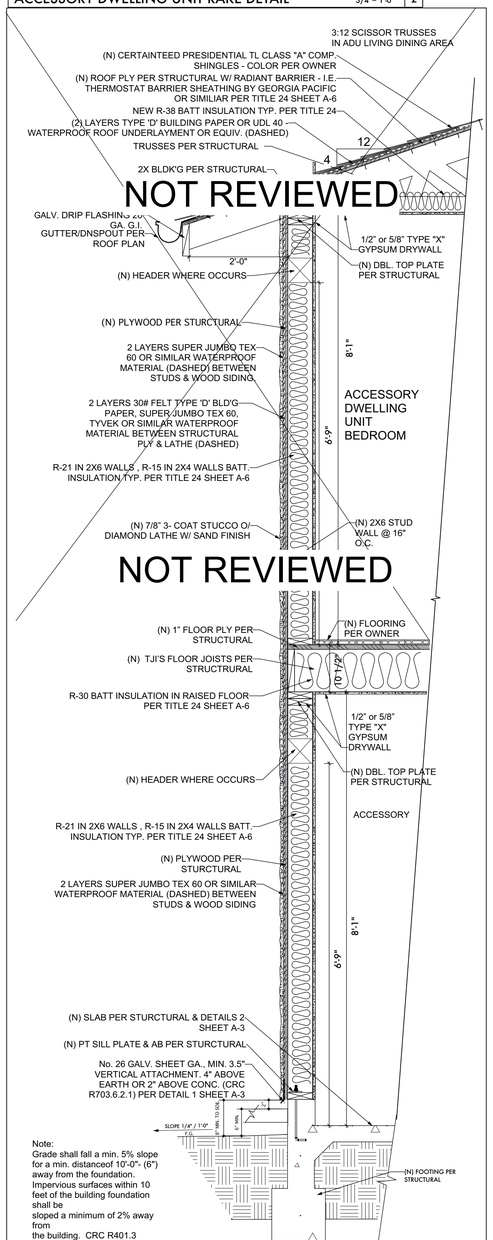
DATE 05/03/20

SHEET
A3

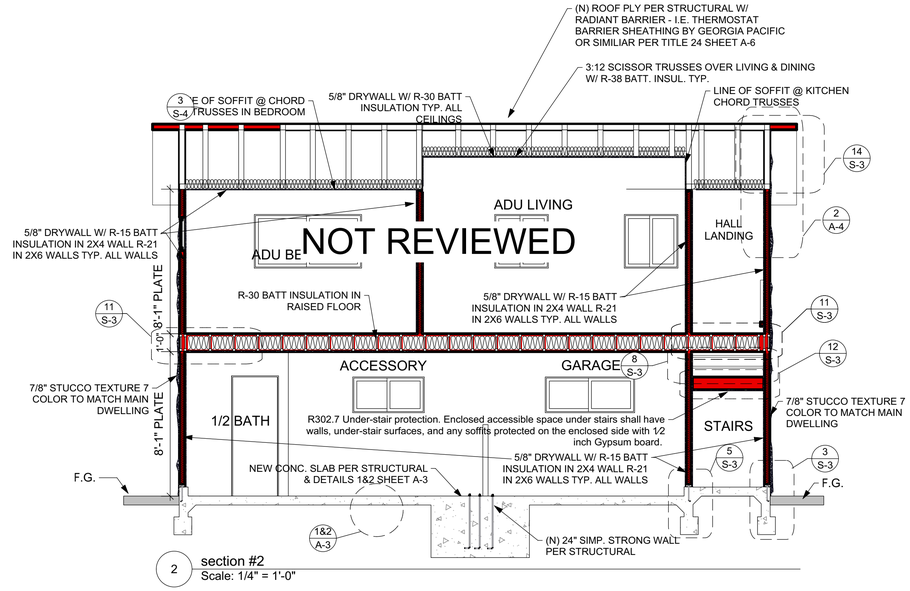
3 OF 19 SHEETS



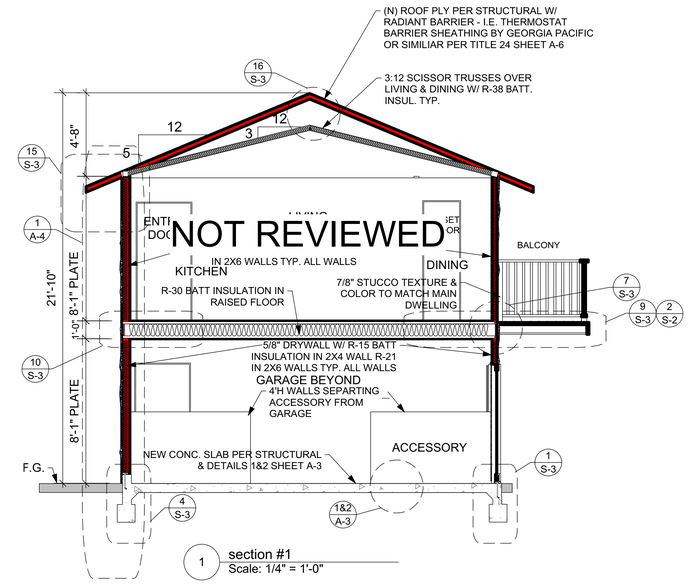
ACCESSORY DWELLING UNIT RAKE DETAIL 3/4"= 1'-0" | 2



GARAGE ACCESSORY DWELLING UNIT EAVE SECTION EAVE 3/4"= 1'-0" | A



2 section #2
Scale: 1/4" = 1'-0"



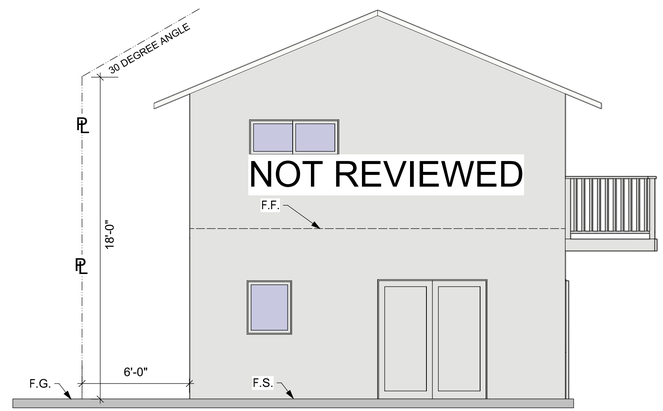
1 section #1
Scale: 1/4" = 1'-0"

Monterey White
HC-27

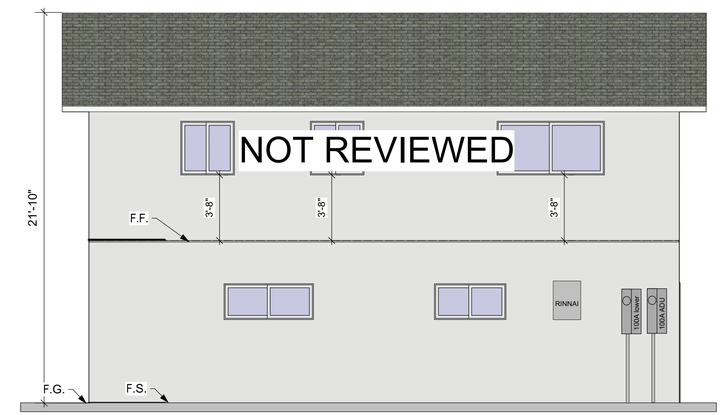
TRIM & EAVE COLOR

Stormy Gray BXC-58

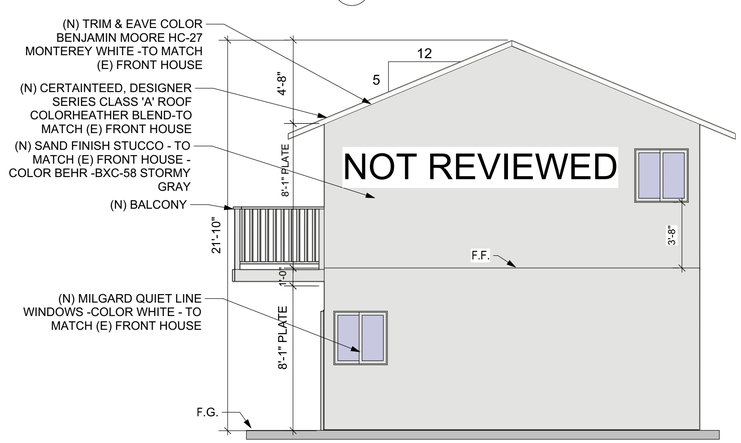
MAIN BODY/STUCCO COLOR



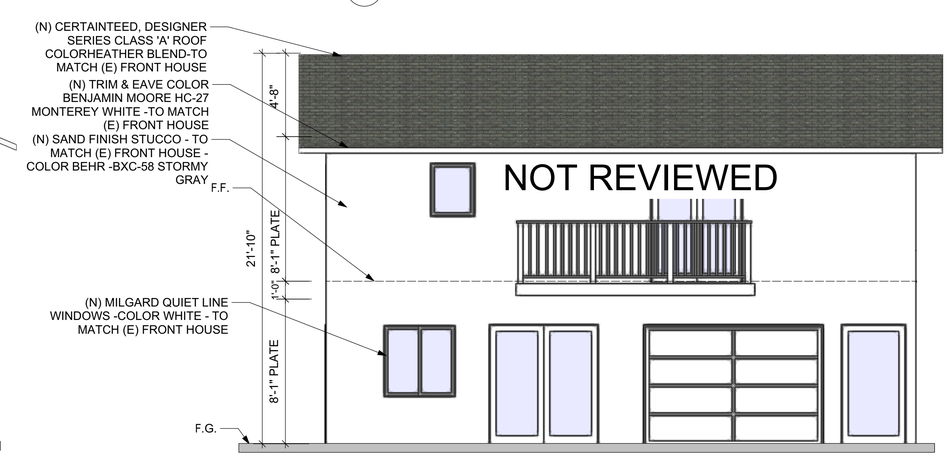
NORTH ELEVATION
Scale: 1/4" = 1'-0"



EAST ELEVATION
Scale: 1/4" = 1'-0"



SOUTH ELEVATION
Scale: 1/4" = 1'-0"



WEST (DRIVEWAY ELEVATION
Scale: 1/4" = 1'-0"

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CAMERON RESIDENCE

519 W. Anapamu Street

ACCESSORY DWELLING UNIT

ELEVATIONS

DATE 05/03/20

SHEET

A4

FAU NOTES

Electrical R**equirements An approved,** independent means of disconnect for the electrical supply to each piece of equipment shall be provided in sight of the equipment served when the supply voltage exceeds 50 volts. [CMC310, CEC 422.31(B), CEC 422.33(A)] A dedicated circuit shall be provided for the furnace. (CEC 422.12) A 120-volt service receptacle shall be located within 25 feet of, and on the same level as, the equipment for maintenance. The service receptacle shall not be connected on the load side of the required means of disconnect. (CMC 310.1) A permanent switch controlled lighting fixture shall be installed for maintenance of equipment is required and shall be accessible. Such fixture shall provide sufficient illumination to safely approach the equipment and perform the tasks for which access is provided. Control of the lighting shall be provided at the access entrance. (CEC 210.70)

Duct Air Leakage T**est [CEES 150.2(b)(1)(E)**].

An air leakage test, performed by a HERS rater, is required for existing ducts whenever the existing furnace is replaced, a new one is installed or an existing system is expanded. A completed CF1R form registered with CalCerts is required at the time of permit application. At the final inspection, the CF3R form completed by a HERS rater is required to be provided to the building inspector. A listing of certified HERS raters maybe found at: http://www.energy.ca.gov/HERS/providers.html

Furnace Equipment Eff**iciency [CEES 110.2(a)]**

Warm-air furnaces and unit heaters rated at less than 225,000 Btu/h shall have a minimum efficiency rating of 78% AFUE (Annual Fuel Utilization Efficiency).

The clear space and distance to combustible materials around the furnace unit shall comply with the manufacturer's installation instructions.

Anchorage of Equipment (**CMC 303.5)**

The furnace shall be properly anchored and supported to sustain vertical and horizontal loads within the stress limitations specified in the California Building Code.

Plastic Vent Piping (CMC 8**02.4.2)**

Plastic pipe and fittings used to vent appliances shall be installed in accordance with the appliance manufacturer's installation instructions. When primer is required, it shall be of a contrasting color.

FAU Located in a Garage (CMC **308.1)**

Furnaces located in a garage must be elevated so the pilot light and controls are at least 18" above the garage floor surface (unless the unit is listed as flammable vapor ignition resistant). If subject to vehicular damage, adequate barriers must be installed (e.g. 4" diameter steel pipe filled with concrete installed in a footing measuring 12" in diameter and 3' deep and a minimum of 2'-9" above the finished floor).

FAU Located in an Attic

Attic **access, service space (C**.M.C 904, CRC R807) & ventilation:

a) 30x22x30 inch high minimum unobstructed access, but not less than the largest equipment size.

b) 30x30 inch minimum unobstructed passage to remove equipment, but not less than the largest equipment & maximum 20' distance from access to unit.

c) 30x30 inch deep level service space located at the equipment service side.

d) Provide additional combustion air in attic space where FAU is located as required per C.M.C. Chapter 7 or note special combustion air venting per manufactures design (verify availability from manufacture).

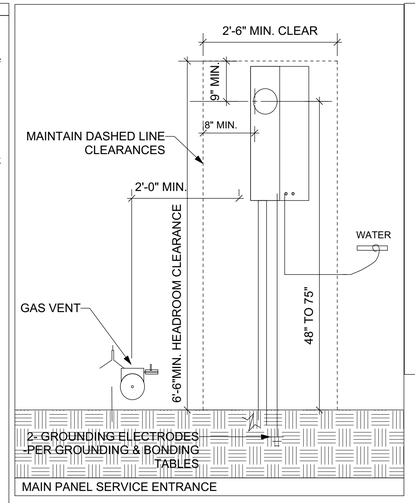
e) FAU access flooring shall provide a minimum 24 wide solid surface to & a level 30"x30" surface in front of service side.

f) Mechanical equipment area shall have required switching & lighting.

g) Furnaces located in an attic area shall comply with the diagram at the bottom of this page. Additionally, if the attic and roof is conventionally framed, ceiling joist under the location of the FAU unit shall be doubled with minimum 2X6 joists. If the attic and roof framing is a prefabricated engineered truss system, an engineering report (wet stamped and signed by a licensed engineer) shall be submitted for review and approval prior to the issuance of the building permit.

	RUR160e
Minimum Gas Consumption Btu/h	160,000
Maximum Gas Consumption Btu/h	0.26 - 8.0 GPM
Flow Rate[1] (Min - Max)	(1.0 - 30 L/min)
Max Flow Rate with Parameter Adjustment	9 GPM (34 L/min)
Maximum Temp Setting	(°C))
Minimum Temperature Setting	71 lb (32 kg)
Weight	52 dB
Sound level	49 W

RINNAI ON DEMAND WATER HEATER SPECIFICATIONS



Grounding

Grounding shall consist of a continuous grounding electrode conductor run from the panel to a ground rod (grounding electrode) and to the cold water pipe. Grounding of the electrical service at the main water line must be within the first 5' of water piping into the building. The underground water service shall not be used as the grounding electrode without supplemental electrode. [CEC 250.52 (A)(1) and 250.53 (I), 250.68(c)]

For new structures and additions to existing structures, a concrete encased ground electrode shall be installed. This shall consist of 20' of ½" bare or zinc-coated rebar or bare copper wire in the portion of the footing in contact with earth. (CEC 250.50)

For existing structures, the grounding electrode shall be nonferrous (copper), listed, and not be less than ½" in diameter. The electrode shall be installed such that at least 8' of length is in contract with the soil. The upper end of the electrode shall be flush with or below ground level unless the above-ground end and the grounding electrode conductor attachment is protected against physical damage. [CEC 250.52 (A)(5) and 250.53 (D)]

The required grounding electrode conductor (from electrode to panel) size is listed in the following table:

GROUNDING ELECTRODE CONDUCTOR SIZING (Table 250.66)

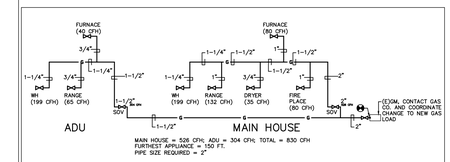
Size of Main Panel	Copper Conductors	Aluminum or Copper-Clad Aluminum
100 Amps	#8 AWG	#6 AWG
125 Amps	#8 AWG	#6 AWG
150 Amps	#6 AWG	#4 AWG
200 Amps	#4 AWG	#2 AWG

Bonding

Bonding shall consist of a continuous bond jumper installed at the water heater between the hot, cold, and gas lines. The bonding jumper shall be sized based on the following table:

BONDING JUMPER SIZING (Table 250.122)

Size of Main Panel	Copper Conductors	Aluminum or Copper-Clad Aluminum
100 Amps	#8 AWG	#6 AWG
125 Amps	#6 AWG	#4 AWG
150 Amps	#6 AWG	#4 AWG
200 Amps	#6 AWG	#4 AWG



GAS PIPING RISER DIAGRAM

NO SCALE

GENERAL CONSTRUCTION NOTES:

1) ANNULAR SPACES AROUND PIPES, ELECTRIC CABLES, CONDUITS, OR OTHER OPENINGS IN PLATES AT EXTERIOR WALLS SHALL BE PROTECTED AGAINST THE PASSAGE OF RODENTS BY CLOSING SUCH OPENINGS WITH CEMENT MORTAR, CONCRETE MASONRY, OR SIMILAR METHOD ACCEPTABLE TO THE ENFORCING AGENCY.
2) DUCT OPENINGS AND OTHER REALTED AIR DISTRIBUTION COMPONENT OPENINGS SHALL BE COVERED DURING CONSTRUCTION.
3) ADHESIVES, SEALANTS, AND CAULKS SHALL BE COMPLIANT WITH VOC AND OTHER TOXIC COMPOUND LIMITS.
4) PAINTS, STAINS, AND OTHER COATINGS SHALL BE COMPLIANT WITH VOC LIMITS.
5) AEROSOL PAINTS AND OTHER COATINGS SHALL BE COMPLIANT WITH PRODUCT WEIGHTED MIR LIMITS FOR ROC AND OTHER TOXIC COMPOUNDS.
6) DOCUMENTATION SHALL BE PROVIDED TO VERIFY THAT COMPLIANT VOC LIMIT FINISH MATERIALS HAVE BEEN USED.
7) ALL FLOORING INSTALLED IN THE BUILDING INTERIOR SHALL MEET THE REQUIREMENTS LISTED IN THE CALIF. GREEN BUILDING STANDARDS CODE SECTIONS 4.504.3, 4.504.4, AND 4.504.5
8) CHECK MOISTURE CONTENT OF BUILDING MATERIALS USED IN WALL AND FLOOR FRAMING BEFORE ENCLOSURE PER CGC 4.505.3
9) CONSTRUCTION WASTE REQUIREMENTS OF CRC R324.1 WILL BE MET RECYCLE AND / OR SALVAGE FOR REUSE A MINIMUM OF 50% OF THE HAZARDOUS CONSTRUCTION AND DEMOLITION WASTE IN ACCORDANCE WITH CGBC CHPT 4, DIVISION 4
10) CRC R330 FINISH MATERIALS INCLUDING ADHESIVES, SEALANTS, CAULKS, PAINT AND COATINGS SHALL MEET THE VOLATILE ORGANIC COMPOUND (VOC) EMISSION LIMITS IN ACCORDANCE WITH CGBC CHPT 4 DIV. 4.5

1		INSULATION
		ROOF = R-38 BATT INSULATION W/ RADIANT BARRIER
		INTERIOR WALLS = R-13 BATT INSULATION
		EXTERIOR WALLS =2x4= R-15 BATT INSULATION, 2x6= R-21 BATT INSULATION
		ADU FLLOR = R-30
2		PROVIDE PRESSURE BALANCE OR THERMO MIXING VALVE TYP. CONTROL VALVES FOR ALL SHOWER AND TUB COMBOS.
3		GLAZING - ALL WINDOWS AND EXTERIOR DOORS TO BE DUAL GLAZED.
4		MAINTAIN OCCUPANCY SEPARATION BETWEEN GARAGE AND LIVABLE AREA, WHERE PENETRATION OF FLOOR SHEATHING OCCURS (I.E.AT PLUMBING FIXTURES) SEAL AROUND PENETRATION WITH "SEAMCO PR-855" CAULKING OR BETTER
5		ALL BEDROOM WINDOWS SHALL HAVE A MINIMUM NET CLEAR OPENING OF 5.7 SQ.FT. W/ A MIN. NET HEIGHT DIMENSION OF 24" AND A NET WIDTH DIMENSION OF 20". CLEAR OPENING HEIGHT SHALL NOT EXCEED 44" ABOVE FINISH FLOOR. - SEE WINDOW SCHEDULE FOR SIZES, HEADER & SILL
6		PROVIDE A CONTINUOUS 3'-0" WIDE MIN. PATH OF EGRESS FROM ALL BEDROOM WINDOWS TO A PUBLIC WAY.
7		ALL INTERIOR WALL DIMENSIONS TO BE 3 1/2" U.N.O.
8		PROVIDE 1/2" GYP BD FIRESTOP/ DRAFTSTOP AT FLOOR / CEILING ASSEMBLY EVERY 1000 SQ.FT.
9		—
10		PROVIDE FIRE BLOCKING IN THE FOLLOWING LOCATIONS
	A	IN CONCEALED SPACES OF STUD WALLS AND PARTITIONS INCLUDING FURRED SPACES, AT THE CEILING AND FLOOR LEVELS AND AT 10' INTERVALS BOTH VERTICAL AND HORIZONTAL.
	B	AT ALL INTERCONNECTIONS BETWEEN CONCEALED VERTICAL AND HORIZ. SPACES WHICH OCCUR AT SOFFITS, DROP CEILINGS AND COVE CEILINGS.
	C	IN CONCEALED SPACES BETWEEN STAIR STRINGERS AT THE TOP AND BOTTOM OF THE RUN AND BETWEEN STUDS ALONG AND IN LINE WITH THE RUN OF THE STAIRS , IF THE WALLS OF THE STAIRS ARE UNFINISHED.
	D	IN OPENINGS AROUND VENTS, PIPES DUCTS, CHIMNEYS, FIREPLACES AND SIMILAR OPENINGS WHICH AFFORD A PASSAGE FOR FIRE AT CEILING AND FLOOR LEVELS WITH NON-COMBUSTIBLE MATERIAL.
	E	AT OPENING BETWEEN ATTIC SPACES AND CHIMNEY CHASES FOR FACTORY BUILT FIREPLACES.
	F	WALLS HAVING PARALLEL OR STAGGERED STUDS FOR SOUND CONTROL, SHALL HAVE FIRE LOCKS OF MINERAL FIBER OR GLASS FIBER OR OTHER APPROVED NON-RIGID MATERIAL.
	G	THE INTEGRITY OF ALL FIREBLOCKING AND DRAFT STOPS SHALL BE MAINTAINED.
	H	SOUND WALL TO BE CONSTRUCTED WITH 2 x STUDS WITH FULL BATT INSULATION AND 1 1/2" SOUND BOARD.
11		**ALL FIRST FLOOR PLATE HEIGHTS SHOWN ARE MEASURED FROM TOP OF SLAB.**
12		—
13		2X6 CEILING JOIST AT 16" O.C. FOR FURRED CEILINGS, 2X4 CEILING JOISTS AT 16" O.C. FOR SHORTER SPANS.
14		5/8" GYP. BRD TYP. WALLS AND CL'G

ELECTRICAL SYMBOL LEGEND

- DUPLEX OUTLET - ARC FAULT & TAMPER RESISTANT
- 1/2 HOT - ARC FAULT & TAMPER RESISTANT
- GFI-PROTECTED DUPLEX OUTLET
- FLOOR DUPLEX OUTLET - ARC FAULT & TAMPER RESISTANT
- WATERPROOF-GFCI DUPLEX OUTLET
- DOOR ACTIVATED SWITCH
- SWITCH
- STACK SWITCH
- DIMMER SWITCH
- 3-WAY SWITCH
- 3-WAY DIMMER SWITCH
- 4-WAY SWITCH
- 4-WAY DIMMER SWITCH
- FLOURESCENT PENDANT LIGHT
- MANUAL ON/AUTOMATIC OFF VACANCY SENSOR
- CARBON MONOXIDE SENSOR
- RECESSED LED DOWN LIGHT 4" WL=WET LISTED & WATER PROOF TRIM
- WALL MOUNTED HIGH EFFICACY w/ motion sensor & photo cell
- WALL MOUNTED FLOURESCENT
- CEILING MOUNTED FLOURESCENT
- FLUORESCENT UNDERCABINET FIXTURE
- FLUORESCENT SURFACE MOUNT FIXTURE
- FAN & LIGHT
- SUPPLY GRILLE
- RETURN GRILLE
- THERMOSTAT
- SMOKE DETECTOR HARD WIRED
- CHANDELIER
- RECESSED FLUORESCENT DOWN LIGHT 6" WP=WATER PROOF
- ELECTRICAL DISTRIBUTION PANEL
- ELECTRICAL DISTRIBUTION PANEL W/ METER
- FAN - BATHROOM

CEC 210.52 (E) - EXTERIOR RECEPTACLE OUTLETS: AT LEAST ONE RECEPTACLE OUTLET SHALL BE INSTALLED ON THE EXTERIOR AT THE FRONT AND BACK OF THE DWELLING. NOT MORE THAN 24" ABOVE GRADE..

CEC 210.12.(B). ARC- FAULT CIRCUIT INTERRUPTER PROTECTION: (A) DWELLING UNITS. ALL 120-VOLT, SINGLE PHASE, 15-AND 20- AMPERE BRANCH CIRCUITS SUPPLYING OUTLETS INSTALLED IN DWELLING UNIT FAMILY ROOMS, kitchens, laurry's PARLORS, LIBRARIES, DENS, BEDROOMS, SUNROOMS, RECREATION ROOMS, CLOSETS, HALLWAYS, OR SIMILAR ROOMS OR AREAS SHALL BE PROTECTED BY A LISTED ARC-FAULT CIRCUIT INTERRUPTER(S)...

SMOKE DETECTORS TO BE HARD WIRED PER C.R.B.C. R314

CARBON MONOXIDE DETECTORS TO BE HARD WIRED PER C.R.B.C. R315

MIN. BATHROOM VENTILATION SHALL BE 50 CF/MIN., MAXIMUM SONE OF 3 PER CENC. 150 (O), MUST BE CONTROLLED BY A HUMIDISTAT AND MUST BE VENTILATED EXHAUSTED DIRECTLY TO THE OUTSIDE W/ BACK-DRAFT DAMPERS (CMC 504.1) AND SHALL TERMINATE A MINIMUM OF 3 FEET FROM PL. VENTS FANS SHALL BE SWITCHED SEPARATELY FROM LIGHTING CEC 1540(k) 2B

CEC 406.12 & 13 - TAMPER RESISTANT OUTLETS. IN ALL AREAS SPECIFIED IN 210.52, ALL NON-LOCKING TYPE 125-VOLT, 15- AND 20-AMPERE RECEPTACLES SHALL BE LISTED TAMPER RESISTANT RECEPTACLES.

OUTDOOR LIGHTING PERMANENTLY MOUNTED TO A SINGLE FAMILY DWELLING OR OTHER BUILDING S IN THE SAME LOT SHALL BE HIGH EFFICACY AND MUST BE CONTROLLED BY A ON/OFF SWITCH THAT DOES NOT OVERRIDE TO 'ON' AS LISTED BELOW. ALSO THE LIGHTING MUST BE ONE OF THE FOLLOWING METHODS:
i) Controlled by a photocell and mothion sensor. controls that override to on shall not be allowed unless the override automatically reactivates the motion sensor within 6 hours, or
ii) Controlled by the following:
1) Photocell and automatic time switch control. Controls that override to ON shall not be allowed unless the override automatically return the photocontrol and automatic time switch control to it's normal operation within 6 hours, or
2) Astromonical time clock. Controls that override to ON shall not be allowed unless the override automatically return the astronomical clock to it's normal operation within 6 hours and which is programmed to automatically turn the outdoor light to 'OFF' during daylight hours, or
3) Energy management control system which meets all of the following requirements: At a minimum provides the functionality of an astronomical time clock in accordance with Section 110.9 of the standards: meets the installation Certification requirement in section 130.4 of the standards: meets the requirements for an EMCS in section 130.5 of the standards: does not have an override or bypass switch which allows the luminarie to always be 'ON': and, is progammed to automatically turn the outdoor lighting 'OFF' during daylight hours.

MANUAL ON/AUTOMATIC OFF VACANCY SENSOR PER CEC SEC. 150 (K) 2 (J)

MEP SHEET NOTES

E-1	(N) 400A MAIN PANEL @ EXTERIOR W/ NEW 200A PANEL W/ 200A SHUT-OFF
M-1	(N) RINNAI ON DEMAND WATER HEATER W/ RECIRCULATION PUMP
P-1	PROVIDE CLEANOUT AS REQ'D BY CPC
P-2	PROVIDE PLUMBING VENTING AS REQ'D BY CPC; FLASH PER ROOF MFR.
P-3	(N) PLUMBING FIXTURES PER OWNER
P-4	MAX. FLOW RATE OF RESIDENTIAL LAVATORY FAUCETS SHALL NOT EXCEED 1.2 GPM @ 60 PSI. THE MIN. FLOW RATE OF RESIDENTIAL LAVATORY FAUCETS SHALL NOT BE LESS THAN 0.8 GPM @ 20 PSI. - (FIXTURE SELECTION BY OWNER IN COMPLIANCE WITH ASME A 112.18.1/ CSA B125
P-5	FLUSH TANK, FLUSHOMETER TANK, OR FLUSHOMETER VALVE OEPRATED, SHALL HAVE AN AVERAGE CONSUMPTION OF NOT MORE THAN 1.28 GALLONS PER FLUSH. [SEC. 4303.1.1] (FIXTURE SELECTION BY OWNER) COMPLIANCE WITH US EPA WATERSENSE TANK-TYPE HIGH EFFICIENCY TOILET SPEC)
P-6	SINGLE SHOWER HEADS SHALL HAVE A MAXIMUM FLOW RATE OF NOT MORE THAN 1.8 GPM @ 80 PSI. [SEC. 4303.1.3.1] & A COMBINED FLOW RATE OF ALL SHOWERHEADS OF 1.8 GPM @ 80 PS FIXTURE SELECTION BY OWNER)
P-8	KITCHEN FAUCETS: MAX 1.8 GPM @ 60 PSI. KITCHEN FAUCETS MAY TEMPORARILY INCREASE FLOW RATE TO A MAXIMUM OF 2.2 GALLONS AT 60 PSI, BUT MUST DEFAULT BACK TO 1.8 GALLONS PER MINUTE [SEC.4.303.1.4.4]

1. LANDSCAPE AND BUILDING LIGHTING SHOULD BE CAREFULLY SHIELDED TO AVOID VIEW OF THE SOURCE AND AIMED TO AVOID SPILL LIGHT ONTO ADJACENT PROPOERTIES OR INTO THE NIGHT SKY.
2. OUTDOOR LIGHTING PER NOTE "G" BELOW.

A BATHTUB & SHOWER FLOORS & WALLS WITH INSTALLED SHOWER HEADS SHALL BE FINISHED WITH A NONABSORBANT SURFACE TO A HEIGHT NOT LESS THAN 6 FEET ABOVE THE FLOOR. SHOWER GLASS SHALL MEET THE INTENDED USE PER CRC SEC. 308

KITCHEN HOOD VENTILATION:

KITCHEN HOOD SHALL BE PROVIDED WITH AN EXHAUST FAN WITH A RATE OF 100 CF/MIN. FOR INTERMITTENT EXHAUST OR 5 AIR CHANGES PER HOUR IF CONTINIOUS & SHALL HAVE A SONE RATING OF 3 SONES OR LESS AT THE REQUIRED FLOW RATE,1 SONE PER FOR CONTINUOUS VENTILATION.

VENTILATION AIR FROM THE SPACE SHALL BE EXHAUSTED DIRECTLY TO THE OUTSIDE W/ BACK-DRAFT DAMPERS (CMC 504.1) AND SHALL TERMINATE A MINIMUM OF 3 FEET FROM PL. CEVC SEC. 150 (o). ALL VENTILATION SHALL MEET ASHRAE 62.2

LIGHTING REQUIREMENTS

A) ALL INSTALLED LIGHTING MSUT BE HIGH EFFICACY PER TABLE 150.0-A. 2016 CEC TABLE 150.0
B) LIGHTING IN BATHROOMS: ALL LIGHTING SHALL BE HIGH EFFICACY AND AT LEAST ONE FIXTURE IN EACH BATHROOM SHALL BE CONTROLLED BY A VACANCY SENSOR. CEC 150(k) 5.

C) LIGHTING IN GARAGES, CLOSETS, LAUNDRY ROOMS & UTILITY ROOMS: ALL LIGHTING SHALL BE HIGH EFFICACY AND AT LEAST ONE FIXTURE INSTALLED IN GARAGES, CLOSETS, LAUNDRY ROOMS & UTILITY ROOMS SHALL BE CONTROLLED BY A VACANCY SENSOR. CEC 150(k) 2.J.

D) LIGHTING IN ROOMS OTHER THAN BATHROOMS, GARAGES, LAUNDRY ROOMS & UTILITY ROOMS: BPEMANENTLY INSTALLED LIGHTS IN ROOMS OTHER THAN RESTROOMS, GARAGES, LAUNDRY ROOMS AND UTILITY ROOMS SHALL BE HIGH EFFICACY LUMINARIES. CEC150(k) 7.

E) RECESSED DOWNLIGHTING IS TO CONTAIN LIGHT SOURCES THAT ARE JA8 CERTIFIED, SHALL NOT CONTAIN SCREW BASE LAMPS AND SHALL NOT CONTAIN LIGHT SOURCES THAT ARE LABELED " NOT FOR USED IN RECESSED FIXTURES" THEY SHALL BE LISTED,FOR ZERO CLEARANCE HAVE A LABEL THAT CERTIFIES THE LUMINARIES AS AIRTIGHT WHEN TESTED IN ACCORDANCE ASTM E283 (WITH EXCEPTION OF EXHAUST FAN HOUSINGS) AND BE READYILY ACCESSIBLE FOR BALLAST OR DRIVER MAINTENANCE AND REPLACEMENT.

F) SCREW BASED SOCKETS: LUMINAIRES WITH SCREW BASED SOCKETS SHALL MEET THE FOLLOWING REQUIREMENTS:
1. THE LUMINAIRE SHALL NOT BE A RECESSED DOWN-LIGHT IN A CEILING; AND
2. THE LUMINAIRE SHALL CONTAIN LAMPS THAT COMPLY WITH REFERENCE JOINT APPENDIX JA8; AND
3. THE INSTALLED LAMPS SHALL BE MARKED WITH "JA8-2016" OR "JA8-2016-E" AS SPECIFIED IN REFERENCE JOINT APPENDIX JA8.

G) DIMMERS OR VACANCY SENSORS SHALL CONTROL ALL LUMINAIRES REQUIRED TO HAVE LIGHT SOURCES COMPLIANT WITH REFERENCE JOINT APPENDIX JA8.

H) OUTDOOR LIGHTING: PERMANENTLY INSTALLED OUTDOOR LIGHTS ON BUILDINGS ON THE SAME LOT SHALL BE HIGH EFFICACY AND THEY SHALL BE CONTROLLED BY A MOTION SENSOR WITH INTEGRAL PHOTOCONTROL CERTIFIED TO COMPLY WITH THE 2016 CALIFORNIA ENERGY CODE. CALIFORNIA ENERGY CODE 150(k) 9 A.

I) VENT FANS MUST BE SWITCHED SEPARATELY FROM LIGHTING. 2016 CALIFORNIA ENERGY CODE 150(K)2B

J) ALL INTERIOR LIGHTING IS TO BE HIGH EFFICACY. LUMINARIES WITH INTEGRAL SOURCES (e.g. LED LUMINARIES) AND CHANGEABLE LAMPS MUST BE CEC CERTIFIED AS MEETING THE REQUIREMENTS OF JA8.

K) LIGHTING NOT AUTOMATICALLY CLASSIFIED AS HIGH EFFICACY BY THE CA ENERGY COMMISSION (e.g. PIN BASED FLOURESCENT LUMINARIES, PULSE-START HALIDE LUMINAREIES, HIGH PRESSURE SODIUM) IS TO HAVE A LIGHT SOURCE OR LAMP IN THEM AT THE TIME OF INSPECTION THAT MEETS THE REQUIREMENTS OF JOINT APPENDIX JA8

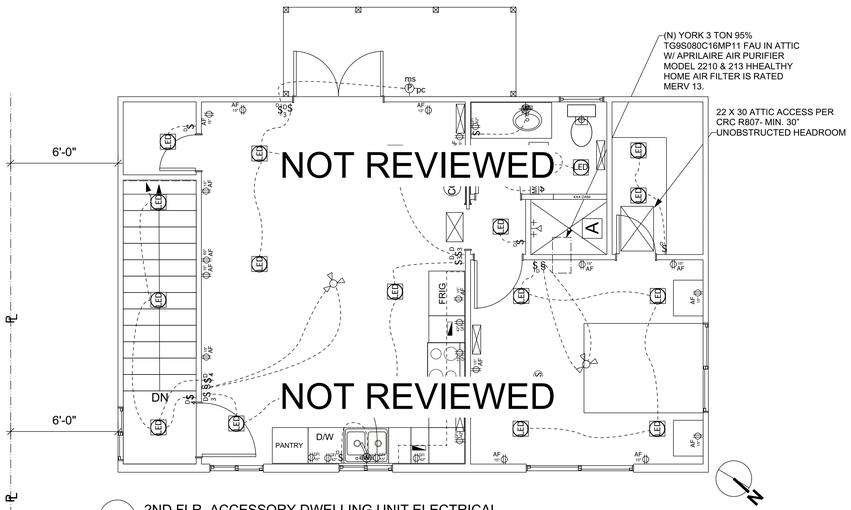
GENERAL ELECTRICAL NOTES:
1. ALL OUTLETS TO BE LOCATED @ 12" FROM TOP OF F.F.- UNLESS OTHERWISE NOTED
2. ALL SWITCHES TO BE LOCATED @ 42" FROM TOP OF F.F. UNLESS OTHERWISE NOTED.

A) BATHROOM RECEPTACLES : OUTLETS BE SUPPLIED BY AT LEAST ONE 20-AMP BRANCH CIRCUIT - SUCH CIRCUITS SHALL HAVE NO OTHER OUTLETS

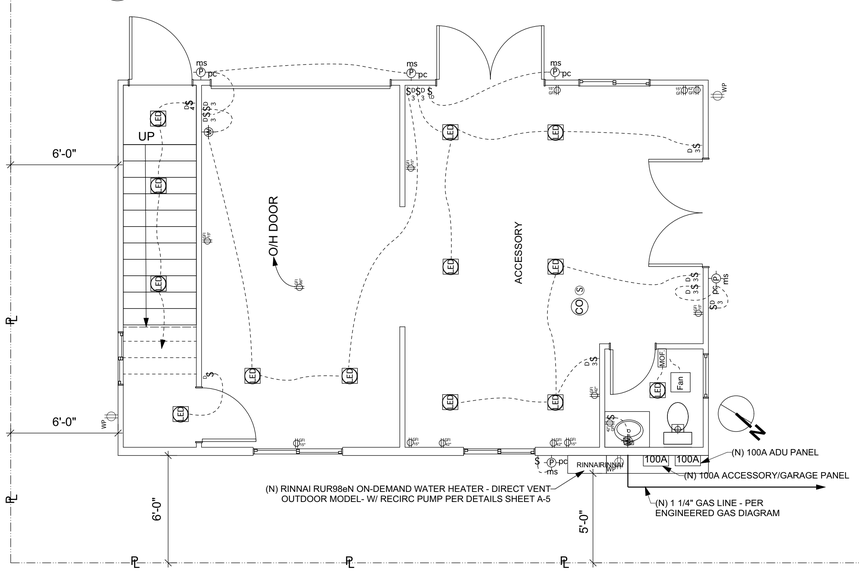
B) LAUNDRY BRANCH CIRCUITS: PROVIDE A MINIMUM OF ONE 20- AMPERE BRANCH CIRCUIT FOR LAUNDRY RECEPTACLES.

C) SMALL APPLIANCE BRANCH CIRCUITS: PROVIDE TWO OR MORE 20- AMPERE SMALL APPLIANCE BRANCH CIRCUIT IN KITCHEN PER CEC 210.52(B)

D) WHERE BRANCH-CIRCUIT WIRING IS MODIFIED, REPLACED OR EXTENDED IN AREAS SPECIFIED CEC 210.12(A), THE BRANCH-CIRCUIT SHALL BE PROTECTED BY EITHER A LISTED COMBINATION-TYPE AFCI AT THE ORIGIN OF THE BRANCH CIRCUIT OR A LISTED OUTLET BRANCH-CIRCUIT TYPE AFCI LOCATED AT THE FIRST RECEPTACLE OF THE EXISTING BRANCH-CIRCUIT [CEC 210.12(B)]



2ND FLR. ACCESSORY DWELLING UNIT ELECTRICAL
Scale: 1/4" = 1'-0"



1ST FLR. ACCESSORY & GARAGE ELECTRICAL
Scale: 1/4" = 1'-0"

MORANDO DESIGN
Mark Morando
MARK MORANDO
148 SHERWOOD DR.
SANTA BARBARA, CA 93110
PHONE 805.680.2703
MMORANDO@MAC.COM

CAMERON RESIDENCE

519 W. Anapamu Street

ACCESSORY DWELLING UNIT

ELECTRICAL/MECHANICAL PLAN

DATE 05/03/20

SHEET

A5

5 OF 19 SHEETS

CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD

CF1R-PRF-01

Project Name: Cameron Residence
Calculation Description: Title 24 Analysis
Calculation Date/Time: 10:46, Thu, Sep 05, 2019
Input File Name: 19331 Cameron.ribd16x

GENERAL INFORMATION

01	Project Name	Cameron Residence			
02	Calculation Description	Title 24 Analysis			
03	Project Location	519 W. Anapamu St.			
04	City	Santa Barbara	05	Standards Version	Compliance 2017
06	Zip Code	93101	07	Compliance Manager Version	BEMCmpMgr 2016.3.1 (Internal)
08	Climate Zone	CZ6	09	Software Version	EnergyPro 7.2
10	Building Type	Single Family	11	Front Orientation (deg/Cardinal)	230
12	Project Scope	Newly Constructed	13	Number of Dwelling Units	1
14	Total Cond. Floor Area (ft^2)	693	15	Number of Zones	1
16	Slab Area (ft^2)	92	17	Number of Stories	2
18	Addition Cond. Floor Area(ft^2)	n/a	19	Natural Gas Available	Yes
20	Addition Slab Area (ft^2)	n/a	21	Glazing Percentage (%)	18.5%

COMPLIANCE RESULTS

01	Building Complies with Computer Performance
02	This building incorporates features that require field testing and/or verification by a certified HERS rater under the supervision of a CEC-approved HERS provider.
03	This building incorporates one or more Special Features shown below

ENERGY USE SUMMARY

04	05	06	07	08
Energy Use (kTDV/ft²-yr)	Standard Design	Proposed Design	Compliance Margin	Percent Improvement
Space Heating	7.32	8.06	-0.74	-10.11%
Space Cooling	11.95	13.99	-2.00	-16.76%
IAQ Ventilation	1.47	1.47	0.00	0.0%
Water Heating	17.72	14.62	3.10	17.5%
Photovoltaic Offset	----	0.00	0.00	----
Compliance Energy Total	36.46	36.10	0.36	0.9%

CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD

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ENERGY DESIGN RATING

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

EDR of Standard Efficiency	EDR of Proposed Efficiency	EDR Value of Proposed PV + Battery	Final Proposed EDR
54.0	53.8	0.0	53.8

- ☐ Design meets Tier 1 requirement of 15% or greater code compliance margin (CALGreen A4.203.1.2.1) and QII verification prerequisite.
- ☐ Design meets Tier 2 requirement of 30% or greater code compliance margin (CALGreen A4.203.1.2.2) and QII verification prerequisite.
- ☐ Design meets Zero Net Energy (ZNE) Design Designation requirement for Single Family in climate zone CZ6 (CALGreen A4.203.1.2.3) including on-site photovoltaic (PV) renewable energy generation sufficient to achieve a Final Energy Design Rating (EDR) of zero or less. The PV System and QII must be verified.

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

REQUIRED SPECIAL FEATURES

The following are features that must be installed as condition for meeting the modeled energy performance for this computer analysis.

- **Ceiling has high level of insulation**
- **Window overhangs and/or fins**

HERS FEATURE SUMMARY

The following is a summary of the features that must be field-verified by a certified HERS Rater as a condition for meeting the modeled energy performance for this computer analysis. Additional detail is provided in the building components tables below.

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

Cooling System Verifications:
- -- None --

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

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

BUILDING - FEATURES INFORMATION

01	02	03	04	05	06	07
Project Name	Conditioned Floor Area (ft^2)	Number of Dwelling Units	Number of Bedrooms	Number of Zones	Number of Ventilation Cooling Systems	Number of Water Heating Systems
Cameron Residence	693	1	1	1	0	1

CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD

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ZONE INFORMATION

01	02	03	04	05	06	07
Zone Name	Zone Type	HVAC System Name	Zone Floor Area (ft^2)	Avg. Ceiling Height	Water Heating System 1	Water Heating System 2
ADU	Conditioned	hvac1	693	9	DHW Sys 1	n/a

OPAQUE SURFACES

01	02	03	04	05	06	07	08
Name	Zone	Construction	Azimuth	Orientation	Gross Area (ft^2)	Window & Door Area (ft^2)	Tilt (deg)
Front Wall	ADU	R-15 Wall	230	Front	306	64.25	90
Left Wall	ADU	R-15 Wall	320	Left	168	10	90
Back Wall	ADU	R-21 Wall	50	Back	306	36	90
Right Wall	ADU	R-15 Wall	140	Right	357	18	90
Wall to Garage/Acc	ADU>>__Garage__	R-15 Wall1	n/a	n/a	189	20	n/a
Wall to attic	ADU>>Attic ADU	R-15 Wall1	n/a	n/a	54	0	n/a
Roof	ADU	R-38 Roof Attic	n/a	n/a	693	n/a	n/a
Floor to Garage/Acc	ADU>>__Garage__	R-30 Floor No Crawlspace	n/a	n/a	601	n/a	n/a
Garage/Acc front wall	__Garage__	R-0 Wall	230	Front	254	107	90
Garage/Acc left wall	__Garage__	R-0 Wall	320	Left	189	40	90
Garage/Acc back wall	__Garage__	R-0 Wall	50	Back	254	0	90

ATTIC

01	02	03	04	05	06	07	08
Name	Construction	Type	Roof Rise	Roof Reflectance	Roof Emittance	Radiant Barrier	Cool Roof
Attic ADU	Attic RoofADU	Ventilated	5	0.1	0.85	Yes	No

CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD

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FENESTRATION / GLAZING

01	02	03	04	05	06	07	08	09	10
Name	Type	Surface (Orientation-Azimuth)	Width (ft)	Height (ft)	Multiplier	Area (ft^2)	U-factor	SHGC	Exterior Shading
Door D-01	Window	Front Wall (Front-230)	----	----	1	23.4	0.32	0.25	Insect Screen (default)
Door D-08	Window	Front Wall (Front-230)	5.0	6.7	1	33.4	0.32	0.25	Insect Screen (default)
Window W-10	Window	Front Wall (Front-230)	2.5	3.0	1	7.5	0.32	0.25	Insect Screen (default)
Window W-09	Window	Left Wall (Left-320)	----	----	1	10.0	0.32	0.25	Insect Screen (default)
Window W-08	Window	Back Wall (Back-50)	6.0	3.0	1	18.0	0.32	0.25	Insect Screen (default)
Window W-07	Window	Back Wall (Back-50)	3.0	3.0	1	9.0	0.32	0.25	Insect Screen (default)
Window W-06	Window	Back Wall (Back-50)	3.0	3.0	1	9.0	0.32	0.25	Insect Screen (default)
Window W-05	Window	Right Wall (Right-140)	----	----	1	9.0	0.32	0.25	Insect Screen (default)
Window W-11	Window	Right Wall (Right-140)	----	----	1	9.0	0.32	0.25	Insect Screen (default)

OPAQUE DOORS

01	02	03	04
Name	Side of Building	Area (ft^2)	U-factor
Door D-06	Wall to Garage/Acc	20.0	0.50
Door D-02	Garage/Acc front wall	67.0	1.00
Door D-03	Garage/Acc front wall	40.0	0.50
Door D-04	Garage/Acc left wall	40.0	0.50

OVERHANGS AND FINS

01	02	03	04	05	06	07	08	09	10	11	12	13	14
		Overhang				Left Fin				Right Fin			
Window	Depth	Dist Up	Left Extent	Right Extent	Flap Ht.	Depth	Top Up	Dist L	Bot Up	Depth	Top Up	Dist R	Bot Up
Door D-08	2	0.4	4	4	0	0	0	0	0	0	0	0	0
Window W-10	2	0.4	4	4	0	0	0	0	0	0	0	0	0
Window W-08	2	0.4	4	4	0	0	0	0	0	0	0	0	0
Window W-07	2	0.4	4	4	0	0	0	0	0	0	0	0	0
Window W-06	2	0.4	4	4	0	0	0	0	0	0	0	0	0

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OPAQUE SURFACE CONSTRUCTIONS

01	02	03	04	05	06	07
Construction Name	Surface Type	Construction Type	Framing	Total Cavity R-value	Winter Design U-factor	Assembly Layers
R-0 Wall	Exterior Walls	Wood Framed Wall	2x4 @ 16 in. O.C.	none	0.361	• Inside Finish: Gypsum Board • Cavity / Frame: no insul. / 2x4 • Exterior Finish: 3 Coat Stucco
Attic RoofADU	Attic Roofs	Wood Framed Ceiling	2x4 Top Chord of Roof Truss @ 24 in. O.C.	none	0.644	• Cavity / Frame: no insul. / 2x4 Top Chord • Roof Deck: Wood Sidings/sheathing/decking • Roofing: Light Roof (Asphalt Shingle)
R-15 Wall	Exterior Walls	Wood Framed Wall	2x4 @ 16 in. O.C.	R-15	0.095	• Inside Finish: Gypsum Board • Cavity / Frame: R-15 / 2x4 • Exterior Finish: 3 Coat Stucco
R-21 Wall	Exterior Walls	Wood Framed Wall	2x6 @ 16 in. O.C.	R-21	0.069	• Inside Finish: Gypsum Board • Cavity / Frame: R-21 / 2x6 • Exterior Finish: 3 Coat Stucco
R-15 Wall1	Interior Walls	Wood Framed Wall	2x4 @ 16 in. O.C.	R-15	0.086	• Inside Finish: Gypsum Board • Cavity / Frame: R-15 / 2x4 • Other Side Finish: Gypsum Board
R-30 Floor No Crawlspace	Interior Floors	Wood Framed Floor	2x10 @ 16 in. O.C.	R-30	0.033	• Floor Surface: Carpeted • Floor Deck: Wood Sidings/sheathing/decking • Cavity / Frame: R-30 / 2x10 • Ceiling Below Finish: Gypsum Board
R-38 Roof Attic	Ceilings (below attic)	Wood Framed Ceiling	2x4 @ 24 in. O.C.	R-38	0.025	• Inside Finish: Gypsum Board • Cavity / Frame: R-8 / 1 / 2x4 • Over Ceiling Joists: R-28 9 insul.

SLAB FLOORS

01	02	03	04	05	06	07
Name	Zone	Area (ft^2)	Perimeter (ft)	Edge Insul. R-value & Depth	Carpet	Heated
Slab-on-Grade	ADU	92	30.34	None	0.8	No
Garage/Acc Slab	__Garage__	601	78	None	0	No

BUILDING ENVELOPE - HERS VERIFICATION

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

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WATER HEATING SYSTEMS

01	02	03	04	05	06
Name	System Type	Distribution Type	Water Heater	Number of Heaters	Solar Fraction (%)
DHW Sys 1	DHW	Standard	DHW Heater 1	1	2%

WATER HEATERS

01	02	03	04	05	06	07	08	09	10	11	12
Name	Heater Element Type	Tank Type	Number of Units	Tank Volume (gal)	Uniform Energy Factor / Energy Factor / Efficiency	Input Rating / Pilot / Efficiency	Tank Insulation R-value (int/ext)	Standby Loss / Recovery Eff	First Hour Rating / Flow Rate	NEEA Heat Pump Brand / Model / Other	Tank Location or Ambient Condition
DHW Heater 1	Gas	Consumer Instantaneous (UEF)	1	0	0.96 UEF	<= 200 kBtu/hr	R-0/R-0	0	5 GPM	n/a	n/a

SPACE CONDITIONING SYSTEMS

01	02	03	04	05	06
SC Sys Name	System Type	Heating Unit Name	Cooling Unit Name	Fan Name	Distribution Name
hvac1	Other Heating and Cooling Systems	Heating Component 1	Cooling Component 1	Fan Component 1	Air Distribution System 1

HVAC - HEATING UNIT TYPES

01	02	03	04
Name	System Type	Number of Units	Efficiency
Heating Component 1	Furnace	1	95.5 AFUE

HVAC - DISTRIBUTION SYSTEMS

01	02	03	04	05	06	07	08
Name	Type	Duct Leakage	Insulation R-value	Duct Location	Bypass Duct	HERS Verification
Air Distribution System 1	DuctsAdc	Sealed and tested	0	Attic	None	Air Distribution System 1-hers-dist

HVAC DISTRIBUTION - HERS VERIFICATION

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

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HVAC - FAN SYSTEMS

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

IAQ (Indoor Air Quality) FANS

01	02	03	04	05	06
Dwelling Unit	IAQ CFM	IAQ Watts/CFM	IAQ Fan Type	IAQ Recovery Effectiveness(%)	HERS Verification
SFam IAQVentfpt	22	0.25	Default	0	Required

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DOCUMENTATION AUTHOR'S DECLARATION STATEMENT

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

Documentation Author Name: Douglas Williams	Documentation Author Signature: Douglas Williams
Company: WillCalc	Signature Date: 2019-09-05 10:52:53
Address: 2085 James Gaynor Street	CEA/HERS Certification Identification (if applicable): CEA R16-07-20020
City/State/Zip: Fallbrook, CA 92028	Phone: 760-846-6480

CABEC CERTIFIED ENERGY ANALYST

RESPONSIBLE PERSON'S DECLARATION STATEMENT

I certify the following under penalty of perjury, under the laws of the State of California:
1. I am eligible under Division 3 of the Business and Professions Code to accept responsibility for the building design identified on this Certificate of Compliance.
2. The building design features or system design features identified on this Certificate of Compliance conform to the requirements of Title 24, Part 1 and Part 6 of the California Code of Regulations.
3. The building design features or system design features identified on this Certificate of Compliance are consistent with the information provided on other applicable compliance documents, worksheets, calculations, plans and specifications submitted to the enforcement agency for approval with this building permit application.

Responsible Designer Name: Mark Morando	Responsible Designer Signature: Mark Morando
Company: Morando Planning & Design	Date Signed: 2019-09-05 11:02:28
Address: 168 Sherwood Dr	License: n/a
City/State/Zip: Santa Barbara, CA 93110	Phone: 805-680-2703

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2016 Low-Rise Residential Mandatory Measures Summary

*NOTE: Low-rise residential buildings subject to the Energy Standards must comply with all applicable mandatory measures, regardless of the compliance approach used. Review the respective section for more information. *Exceptions may apply.*
Revised 04/20/17

Building Envelope Measures:

§ 110.6(a)1:	**Air Leakage**. Manufactured fenestration, exterior doors, and exterior roll doors must limit air leakage to 0.3 cfm/ft² or less when tested per NFRC-400 or ASTM E283 or AAMA/WDMA/CSA 101/I.S.2/A440-2011.
§ 110.6(a)5:	**Labeling.** Fenestration products must have a label meeting the requirements of § 10-111(a).
§ 110.6(b):	**Field fabricated exterior doors and fenestration** products must use U-factors and solar heat gain coefficient (SHGC) values from TABLES 110.6-A and 110.6-B for compliance and must be caulked and/or weatherstripped.
§ 110.7:	**Air Leakage.** All joints, penetrations, and other openings in the building envelope that are potential sources of air leakage must be caulked, gasketed, or weather stripped.
§ 110.8(a):	**Insulation Certification by Manufacturers.** Insulation specified or installed must meet Standards for Insulating Material.
§ 110.8(g):	**Insulation Requirements for Heated Slab Floors.** Heated slab floors must be insulated per the requirements of § 110.8(g).
§ 110.8(i):	**Roofing Products Solar Reflectance and Thermal Emittance.** The thermal emittance and aged solar reflectance values of the roofing material must meet the requirements of § 110.8(i) when the installation of a cool roof is specified on the CF1R.
§ 110.8(j):	**Radiant Barrier.** A radiant barrier must have an emittance of 0.05 or less and be certified to the Department of Consumer Affairs.
§ 110.8(a):	**Ceiling and Rafter Roof Insulation.** Minimum R-22 insulation in wood-frame ceiling, or the weighted average U-factor must not exceed 0.043. Minimum R-19 or weighted average U-factor of 0.054 or less in a rafter roof alteration. Attic access doors must have permanently attached insulation using adhesive or mechanical fasteners. The attic access must be gasketed to prevent air leakage. Insulation must be installed in direct contact with a continuous roof or ceiling which is sealed to limit infiltration and exfiltration as specified in § 110.7, including but not limited to placing insulation either below the roof deck or on top of drywall ceiling.
§ 110.8(b):	**Loose-fill Insulation.** Loose fill insulation must meet the manufacturer's required density for the labeled R-value.
§ 110.8(c):	**Above Grade Wall Insulation.** Minimum R-13 insulation in 2x4 inch wood framing wall or have a U-factor of 0.102 or less (R-19 in 2x6 or U-factor of 0.074 or less). Opaque non-framed assemblies must have an overall assembly U-factor not exceeding 0.102, equivalent to an installed value of R-13 in a wood framed assembly.
§ 110.8(d):	**Raised-floor Insulation.** Minimum R-19 insulation in raised wood framed floor or 0.037 maximum U-factor.
§ 110.8(f):	**Slab Edge Insulation.** Slab edge insulation must meet all of the following: have water absorption rate, for the insulation material alone without facings, no greater than 0.3%; have a water vapor permeance no greater than 2.0 perm/inch; be protected from physical damage and UV light deterioration; and, when installed as part of a heated slab floor, meet the requirements of § 110.8(g).
§ 110.8(g)1:	**Vapor Retarder.** In Climate Zones 1-16, the earth floor of conditioned space must be covered with a Class I or Class II vapor retarder. This requirement also applies to controlled ventilation crawl space for buildings complying with the exception to § 150.0(d).
§ 110.8(g)2:	**Vapor Retarder.** In Climate Zones 14 and 16, a Class I or Class II vapor retarder must be installed on the conditioned space side of all insulation in all exterior walls, vented attics, and unvented attics with air-permeable insulation.
§ 110.8(g)3:	**Penetration Products.** Fenestration, including skylights, separating conditioned space from unconditioned space or outdoors must have a maximum U-factor of 0.58, or the weighted average U-factor of all fenestration must not exceed 0.58.*

Fireplaces, Decorative Gas Appliances, and Gas Logs Measures:

§ 150.0(e)1A:	**Closable Doors.** Masonry or factory-built fireplaces must have a closable metal or glass door covering the entire opening of the firebox.
§ 150.0(e)1B:	**Combustion Intake.** Masonry or factory-built fireplaces must have a combustion outside air intake, which is at least six square inches in area and is equipped with a readily accessible, operable, and tight-fitting damper or combustion air control device.
§ 150.0(e)1C:	**Flue Damper.** Masonry or factory-built fireplaces must have a flue damper with a readily accessible control.*
§ 150.0(e)2:	**Pilot Light.** Continuous burning pilot lights and the use of indoor air for cooling a firebox jacket, when that indoor air is vented to the outside of the building, are prohibited.

Space Conditioning, Water Heating, and Plumbing System Measures:

§ 110.0-§ 110.3:	**Certification.** Heating, ventilation and air conditioning (HVAC) equipment, water heaters, showerheads, faucets, and all other regulated appliances must be certified by the manufacturer to the Energy Commission.*
§ 110.2(a):	**HVAC Efficiency.** Equipment must meet the applicable efficiency requirements in TABLE 110.2-A through TABLE 110.2-K.*
§ 110.2(b):	**Controls for Heat Pumps with Supplementary Electric Resistance Heaters.** Heat pumps with supplementary electric resistance heaters must have controls that prevent supplementary heater operation when the heat pump can meet the load on its own and that lock out the heat pump stage, and in which the cut-on temperature for compression heating is higher than the cut-on temperature for supplementary heating, and the cut-off temperature for compression heating is higher than the cut-off temperature for supplementary heating.
§ 110.2(c):	**Thermostats.** All unitary heating or cooling systems not controlled by a central energy management control system (EMCS) must have a setback thermostat.
§ 110.3(c)5:	**Water Heating Recirculation Loops Serving Multiple Dwelling Units.** Water heating recirculation loops serving multiple dwelling units must meet the air release valve, leak prevention, pump operation, pump isolation valve, and recirculation loop connection requirements of § 110.3(c)5.
§ 110.3(c)7:	**Isolation Valves.** Instantaneous water heaters with an input rating greater than 6.8 kBTU/hr (2 kW) must have isolation valves with hose bibbs or other fittings on both cold water and hot water lines of water heating systems to allow for water tank flushing when the valves are closed.
§ 110.5:	**Pilot Lights.** Continuously burning pilot lights are prohibited for natural gas: fan-type central furnaces; household cooking appliances (appliances without an electrical supply voltage connection with pilot lights that consume less than 150 Btu/hr are exempt); and pool and spa heaters.
§ 110.0/§ 110.1:	**Building Cooling and Heating Loads.** Heating and cooling loads must be calculated in accordance with ASHRAE Handbook, Equipment Volume, Applications Volume, and Fundamentals Volume; SMACNA Residential Comfort System Installation Standards Manual; or ACCA Manual J using design conditions specified in § 150.0(h)2.

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§ 150.0(h)3A:	**Clearances.** Installed air conditioner and heat pump condensing units must have a clearance of at least 5 feet from the outlet of any dryer vent.
§ 150.0(h)3B:	**Liquid Line Drier.** Installed air conditioner and heat pump systems must be equipped with liquid line filter driers if required, as specified by manufacturer's instructions.
§ 150.0(j)1:	**Storage Tank Insulation.** Unfired hot water tanks, such as storage tanks and backup storage tanks for solar water-heating systems, must have R-12 external insulation or R-16 internal insulation where the internal insulation R-value is indicated on the exterior of the tank.
§ 150.0(j)2A:	**Water piping and cooling system line insulation.** For domestic hot water system piping, whether buried or unburied, all of the following must be insulated according to the requirements of TABLE 120.3-A: the first 5 feet of hot and cold water pipes from the storage tank; all piping with a nominal diameter of 3/4 inch or larger; all piping associated with a domestic hot water recirculation system regardless of pipe diameter; piping from the heating source to storage tank or between tanks; piping buried below grade; and all hot water pipes from the heating source to kitchen fixtures.
§ 150.0(j)2B:	**Water piping and cooling system line insulation.** All domestic hot water pipes that are buried below grade must be installed in a water proof and non-crushable casing or sleeve.
§ 150.0(j)2C:	**Water piping and cooling system line insulation.** Pipe for cooling system lines must be insulated as specified in § 150.0(j)2A. Distribution piping for steam and hydronic heating systems or hot water systems must meet the requirements in TABLE 120.3-A.
§ 150.0(j)3:	**Insulation Protection.** Insulation must be protected from damage, including that due to sunlight, moisture, equipment maintenance, and wind.
§ 150.0(j)3A:	**Insulation Protection.** Insulation exposed to weather must be installed with a cover suitable for outdoor weather. For example, protected by aluminum, sheet metal, painted canvas, or plastic cover. The cover must be water retardant and provide shedding from solar radiation that can cause degradation of the material.
§ 150.0(j)3B:	**Insulation Protection.** Insulation covering chilled water piping and refrigerant suction piping located outside the conditioned space must have a Class I or Class II vapor retarder.
§ 150.0(n)1:	**Gas or Propane Systems.** Systems using gas or propane water heaters to serve individual dwelling units must include all of the following: a 120V electrical receptacle within 3 feet of the water heater; a Type B vent; and a Type B vent with straight pipe between the outside termination and the space where the water heater is installed; a condensate drain that is no more than 2 inches higher than the base of the water heater; and allows natural draining without pump assistance; and a gas supply line with a capacity of at least 200,000 Btu/hr.
§ 150.0(n)2:	**Recirculating Loops.** Recirculating loops serving multiple dwelling units must meet the requirements of § 110.3(c)5.
§ 150.0(n)3:	**Solar Water-heating Systems.** Solar water-heating systems and collectors must be certified and rated by the Solar Rating and Certification Corporation (SRCC) or by a listing agency that is approved by the Executive Director.

Ducts and Fans Measures:

§ 110.8(d)3:	**Ducts.** Insulation installed on an existing space-conditioning duct must comply with § 604.3 of the California Mechanical Code (CMC). If a contractor installs the insulation, the contractor must certify to the customer, in writing, that the insulation meets this requirement.
§ 150.0(m)1:	**CMC Compliance.** All air-distribution system ducts and plenums must be installed, sealed, and insulated to meet the requirements of CMC §§ 601.0, 602.0, 603.0, 604.0, 605.0 and ANSI/SMACNA-006-2006 HVAC Duct Construction Standards Metal and Flexible 3rd Edition. Portions of supply-air and return-air ducts and plenums must be insulated to a minimum installed level of R-6.0 (or higher if required by CMC § 605.0) or a minimum installed level of R-4.2 when entirely in conditioned space as confirmed through field verification and diagnostic testing. (RA3.1.4.3.8). Connections of metal ducts and inner core of flexible ducts must be mechanically fastened. Openings must be sealed with mastic, tape, or other duct-closure system that meets the applicable requirements of UL 181, UL 181A, or UL 181B or aerosol sealant that meets the requirements of UL 723. If mastic or tape is used to seal openings greater than ¼ inch, the combination of mastic and either mesh or tape must be used. Building cavities, support platforms for air handlers, and plenums designed or constructed with materials other than sealed sheet metal, duct board or flexible duct must not be used for conveying conditioned air. Building cavities and support platforms may contain ducts. Ducts installed in cavities and support platforms must not be compressed to cause reductions in the cross-sectional area of the ducts.
§ 150.0(m)2:	**Factory-Fabricated Duct Systems.** Factory-fabricated duct systems must comply with applicable requirements for duct construction, materials, assembly, sealing, and insulation. Duct components and components that are not intended to contain or convey air, such as some types of plenums, such tape is used in combination with mastic and other fasteners.
§ 150.0(m)3:	**Field-Fabricated Duct Systems.** Field-fabricated duct systems must comply with applicable requirements for: pressure-sensitive tapes, mastics, sealants, and other requirements specified for duct construction.
§ 150.0(m)7:	**Attic Ducts and Dampers.** All fan systems that exchange air between the conditioned space and the outside of the building must have backdraft or automatic dampers.
§ 150.0(m)8:	**Gravity Ventilation Dampers.** Gravity ventilating systems serving conditioned space must have either automatic or readily accessible, manually operated dampers in all openings to the outside, except combustion inlet and outlet air openings and elevator shaft vents.
§ 150.0(m)9:	**Protection of Insulation.** Insulation must be protected from damage, including that due to sunlight, moisture, equipment maintenance, and wind. Insulation exposed to weather must be suitable for outdoor service. For example, protected by aluminum, sheet metal, painted canvas, or plastic cover. Cellular

4.3 Lateral Spreading

Due to the near level terrain, the potential for lateral spreading displacements at the property would be low.

4.4 Slope Stability

The property is located in near level terrain with gradients of less than 10 percent. There was no visual evidence of overall instability at the site, although, erosion of the near surface silty sands could happen, if over-saturated conditions were to occur. However, the potential for movement to influence the proposed construction would be low.

4.5 Faulting

There are no active or potentially active faults in the direct vicinity of the property. The nearest known fault (Mesa Fault) is located just to the south of the site. The property is not within a State of California Fault Hazards Zone (Alquist-Priolo). It is our opinion that there is a low potential for fault rupture to impact the proposed construction based on review of the published maps.

5.0 CONCLUSIONS AND RECOMMENDATIONS

1. Based on our preliminary investigation of the subsurface soil conditions, the site is suitable for the proposed addition and garage/ADU provided the recommendations presented in this report are incorporated into the project plans and specifications. It is important that the owner understand the potential for liquefaction induced settlements in a seismic event and the related damage to the proposed building. With this understanding, the primary goal of seismic design is to protect life and not to avoid structural damage, since such a design may be economically prohibitive.

2. For the purposes of this report it is assumed that no new loads will be added to the existing footings of the residence. It should also be expected that some differential movements (+/- 1") could occur between the addition and the existing

structure. These potential movements should be considered by the structural engineer when designing the method of connection between the existing residence and the additions. Recommendations for underpinning of the existing footings can be provided if new loads are applied or if the differential movements cannot be accommodated structurally. A floor level (marometer study) may also be required to determine if the existing residence has experienced prior soil movements.

3. Based on our understanding of the subsurface soils, differential settlements from soil liquefaction could be on the order of 1-1/2 inches over a distance of 20 feet. The foundation recommendations provided herein assume that the structural engineer can accommodate these differential settlements into a stiffened foundation design

4. All grading and foundation plans should be reviewed by Pacific Coast Testing Inc., hereinafter described as the Geotechnical Engineer, prior to contract bidding. This review should be performed to determine whether the recommendations contained within this report are incorporated into the project plans and specifications.

5. The Geotechnical Engineer should be notified at least two (2) working days before site clearing or grading operations commence and should be present to observe the stripping of deleterious material and provide consultation to the Grading Contractor in the field.

6. Field observation and testing during the grading operations should be provided by the Geotechnical Engineer so that a decision can be formed regarding the adequacy of the site preparation, the acceptability of fill materials, and the extent to which the earthwork construction and the degree of compaction comply with the project geotechnical specifications. Any work related to grading performed without the full knowledge of, and under direct observation of the Geotechnical Engineer, may render the recommendations of this report invalid.

5.1 Clearing and Stripping

1. All surface and subsurface deleterious materials should be removed from the proposed building and driveway areas and disposed of off-site. This includes but is not limited to any trees and related rootballs, buried utility lines, loose fills, septic systems, debris, building materials, and any other surface and subsurface structures within proposed building areas. Voids left from site clearing, should be cleaned and backfilled as recommended for structural fill.

2. Once the site has been cleared, the exposed ground surface should be stripped to remove surface vegetation and organic soil. The surface may be disced, rather than stripped, if the organic content of the soil is not more than three percent by weight. If stripping is required, depths should be determined by a member of our staff in the field at the time of stripping. Strippings may be either disposed of off-site or stockpiled for future use in landscape areas if approved by the landscape architect.

5.2 Site Preparation

1. Deepened footings extending to a minimum depth of 36 inches below existing grade or pad grade, should be used to support the addition and garage/ADU. The footing bottoms should be observed by the geotechnical engineer. The footing bottoms should then be moisture-conditioned and compacted to 90 percent (ASTM D1557-02). Slab areas should be excavated to a depth of 18 inches below finish pad grade or lowest existing grade, whichever is deeper. The exposed surface should then be scarified, wetted to slightly above optimum moisture and compacted to at least ninety (90) percent of maximum dry density. The removed materials can then be replaced and similarly compacted; however, the upper 12 inches of the pad areas should consist of compacted (90%) non-expansive import material such as decomposed granite or Class II/III base. The lateral limits of excavation, scarification and fill placement should be at least 3 feet beyond the perimeter building and footing lines except for areas of new construction adjacent to the existing residence. Excavation adjacent to the existing residence should be performed in small sections (maximum 5 feet wide)

and with care so as not to undermine or damage the existing footings. Fill and cut slopes should be constructed at a maximum slope of 3:1 (horizontal to vertical).

2. If independent concrete flatwork areas (decks, patio slabs) are planned, the native soils should be removed to a depth of eighteen (18) inches below existing grade or finish pad grade, the exposed surface should then be prepared as discussed above. The removed materials can then be replaced and similarly compacted. The upper 12 inches should consist of compacted (90%) non-expansive import material such as decomposed granite or Class II/III base.

3. Cal-OSHA provides short-term (temporary) maximum allowable slopes and allowable configurations for sloping and benching. Based on our exploratory borings, the native materials to a depth of 6 feet would generally be classified as a Type C soil with maximum short-term allowable slopes of 1-1/2:1 (h:v). This classification should be verified by the geotechnical engineer during site excavation.

4. In order to help minimize potential settlement problems associated with structures supported on a non-uniform materials, the soils engineer should be consulted for specific site recommendations during site excavation and grading. In general, all proposed construction should be supported on a uniform thickness of compacted soil.

5. The above grading is based on the strength characteristics of the materials under conditions of normal moisture that would result from rain water and do not take into consideration the additional activating forces applied by seepage from springs or subsurface water. Areas of observed seepage should be provided with subsurface drains to release the hydrostatic pressures.

6. The near-surface soils may become partially or completely saturated during the rainy season. Grading operations during this time period may be difficult since

the saturated materials may not be compactable, and they may not support construction equipment. Consideration should be given to the seasonal limit of the grading operations on the site.

7. All final grades should be provided with a positive drainage gradient away from foundations. Final grades should provide for rapid removal of surface water runoff. Ponding of water should not be allowed on building pads or adjacent to foundations.

5.3 Preparation of Paved Areas

1. After clearing and grubbing, the existing soils should be removed to a depth of at least 2 feet below the existing ground surface or 1 foot below the proposed structural section, whichever is deeper. The bottom of the excavation should then be scarified, moisture-conditioned and compacted to at least 90 percent relative compaction (ASTM D1557-02). Native fill materials can then be placed and similarly compacted.

2. The upper 12 inches of subgrade beneath all paved areas should be compacted to at least 95 percent relative compaction. Subgrade soils should not be allowed to dry out or have excessive construction traffic between the time of water conditioning and compaction, and the time of placement of the pavement structural section.

5.4 Structural Fill

1. On-site soils free of organic and deleterious material may be used as fill below the non-expansive cap. These fills should not contain rocks larger than 3 inches in greatest dimension and should have no more than 15 percent larger than 1.5 inches in greatest dimension.

2. Select import (decomposed granite or Class II/III Base) should be free of organic and other deleterious material and should be non-expansive with a plasticity index of 10 or less and a sand equivalent of at least 30. Before delivery to the

site, a sample of the proposed import should be tested in our laboratory to determine its suitability for use as structural fill.

3. Structural fill using on-site inorganic soil or approved import should be placed in layers, each not exceeding eight inches in thickness before compaction. On-site inorganic or imported soil should be conditioned with water, or allowed to dry, to produce a soil water content at approximately optimum value and should be compacted to at least 90 percent relative compaction based on ASTM D1557-02.

5.5 Foundations

1. Conventional stiffened footings and spread footings may be used for support of the proposed addition and garage/ADU.

2. Footings should extend to a minimum depth of 36 inches below pad grade or below adjacent finished grade, whichever is lower. An allowable dead plus live bearing pressure of 1500 psf can be used. Continuous footings and grade beams should be a minimum of 15 inches wide. Isolated spread footings should extend to a similar depth and be at least 18 inches square and tied to the perimeter footings with grade beams (min 12" wide by 36" deep). Reinforcement would be designed by the structural engineer; however, a minimum of six (6) No. 5 bars should be provided, two (2) on the top, two (2) in the middle and two (2) on the bottom for continuous footings and grade beams with dowels (#5 at 18 inches on-center) to tie the footings and grade beams to the slab. Total structural settlements on the order of 1-inch are anticipated for the new footings, with differential settlement being ¾-inch over 30 feet.

3. The above allowable pressures are for support of dead plus live loads and may be increased by one-third for short-term wind and seismic loads.

4. Lateral forces on structures may be resisted by passive pressure acting against the sides of shallow footings and/or friction between the soil and the bottom of the footing. For resistance to lateral loads, a friction factor of 0.30 may be

utilized for sliding resistance at the base of the spread footings in undisturbed native materials or engineered fill. A passive resistance of 250 pcf equivalent fluid weight may be used against the side of shallow footings. If friction and passive pressures are combined, the lesser value should be reduced by 33 percent.

5.6 Slab-On-Grade Construction

1. Concrete slabs-on-grade should not be placed directly on unprepared loose fill materials. Preparation of subgrade to receive concrete slabs-on-grade and flatwork should be processed as discussed in the preceding sections of this report.

2. To minimize floor dampness a section of capillary break material at least 4 inches thick and covered with a 15-mil Stego-Type vapor barrier should be provided between floor slabs and compacted soil subgrade. All seams through the vapor barrier should be overlapped and sealed. Where pipes extend through the vapor barrier, the barrier should be sealed to the pipes. The capillary break should be a clean free-draining material such as clean gravel or permeable aggregate complying with Caltrans Standard Specifications 68, Class I, Type A or Type B, to service as a cushion and a capillary break. It is suggested that a 2-inch thick sand layer be placed on top of the membrane to assist in the curing of the concrete. The sand should be lightly moistened prior to placing concrete.

3. Concrete slabs-on-grade should be a minimum of 6 inches thick and should be reinforced with at least No. 5 reinforcing bars placed at 18 inches on-center both ways at or slightly above the center of the structural section. Reinforcing bars should have a minimum clear cover of 1.5 inches, and hot bars should be cooled prior to placing concrete. The aforementioned reinforcement may be used for anticipated uniform floor loads not exceeding 100 psf. If floor loads greater than 100 psf are anticipated, the slab should be evaluated by a structural engineer.

4. All slabs should be poured at a maximum slump of less than 5 inches. Excessive water content is the major cause of concrete cracking. For design of concrete floors, a modulus of subgrade reaction of k = 50 psi per inch would be applicable to on-site engineered fill soils.

5.7 Retaining Walls

1. Retaining walls should be designed to resist lateral pressures from adjacent soils and surcharge loads applied behind the walls.

Lateral Pressure and Condition (Compacted Fill)		Equivalent Fluid Pressure, pcf	
		Unrestrained Wall	Rigidly Supported Wall
Active Case, Drained	Level-native soils	45	--
	Level-granular backfill	30	--
At-Rest Case, Drained	Level-native soils	--	65
	Level-granular backfill		50
Passive Case, Drained	Level 2:1 Sloping Down	300 150	--
For sloping backfill add 1 pcf for every 2 deg. (Active case) and 1.5 pcf for every 2 deg. (At-rest case)			

2. Isolated retaining walls foundations should extend a minimum depth of 36 inches below lowest adjacent grade. An allowable toe pressure of 1,600 psf is recommended for footings supported in compacted (90%) native materials. A coefficient of friction of 0.30 may be used between subgrade soil and concrete footings.

3. For retaining walls greater than 6 feet, as measured from the top of the foundation, a seismic horizontal surcharge of $10H^2$ (pounds per linear foot of wall) may be assumed to act on retaining walls. The surcharge will act at a height of 0.33H above the wall base (where H is the height of the wall in feet). This surcharge force shall be added to an active design equivalent fluid pressure of 45 pounds per square foot of depth for the seismic condition.

4. In addition to the lateral soil pressure given above, retaining walls should be designed to support any design live load, such as from vehicle and construction surcharges, etc., to be supported by the wall backfill. If construction vehicles are required to operate within 10 feet of a wall, supplemental pressures will be induced and should be taken into account through design.

5. The above-recommended pressures are based on the assumption that sufficient subsurface drainage will be provided behind the walls to prevent the build-up of hydrostatic pressure. To achieve this, we recommend that a filter material be placed behind all proposed walls. The blanket of filter material should be a minimum of 12 inches thick and should extend from the bottom of the wall to within 12 inches of the ground surface. The top 12 inches should consist of water conditioned, compacted native soil. A 4-inch diameter drain pipe should be installed near the bottom of the filter blanket with perforations facing down. The drain pipe should be underlain by at least 4 inches of filter type material. Adequate gradients should be provided to discharge water that collects behind the retaining wall to an adequately controlled discharge system with suitably projected outlets. The filter material should conform to Class I, Type B permeable material as specified in Section 68 of the California Department of Transportation Standard Specifications, current edition. A typical 1" x #4 concrete coarse aggregate mix approximates this specification.

6. For hydrostatic loading conditions (i.e. no free drainage behind walls), an additional loading of 60 pcf equivalent fluid weight should be added to the above soil pressures. If it is necessary to design retaining structures for submerged conditions, allowed bearing and passive pressures should be reduced by 50 percent. In addition, soil friction beneath the base of the foundations should be neglected.

7. The use of water-stops and impermeable barriers (Paraseal or equivalent) should be provided for basement construction, and for building walls which retain earth.

8. Precautions should be taken to ensure that heavy compaction equipment is not used immediately adjacent to walls, so as to prevent undue pressure against, and movement of, the walls.

5.8 Pavement Design

1. The following table provides recommended pavement sections based on an R-Value of 20 for the near surface sandy silt soils encountered at the site.

2. R-value samples should be obtained and tested at the completion of rough grading and the pavement sections confirmed or revised. All asphaltic concrete pavement sections and all sections should be crowned for good drainage

RECOMMENDED MINIMUM ASPHALT CONCRETE PAVEMENT SECTIONS DESIGN THICKNESS		
T.I.	A.C.-in.	A.B.-in.
4.5	2.5	7.0
5.0	2.5	8.5
5.5	3.0	9.5
6.0	3.0	11.0
T.I. = A.C. = A.B. =	Traffic Index Asphaltic Concrete - must meet specifications for Caltrans Type A Asphalt Concrete Aggregate Base - must meet specifications for Caltrans Class II Aggregate Base (R-Value = minimum 78)	

3. All asphalt pavement construction and materials used should conform with Sections 26 and 39 of the latest edition of the Standard Specifications, State of California, Department of Transportation. Aggregate bases and sub-bases should also be compacted to a minimum relative compaction of 95 percent based on ASTM D1557-02.

5.9 Underground Facilities Construction

1. The attention of contractors, particularly the underground contractors, should be drawn to the State of California Construction Safety Orders for "Excavations,

Trenches, Earthwork". Trenches or excavations greater than 5 feet in depth should be shored or sloped back in accordance with OSHA Regulations prior to entry.

2. For purposes of this section of the report, bedding is defined as material placed in a trench up to 1 foot above a utility pipe and backfill is all material placed in the trench above the bedding. Unless concrete bedding is required around utility pipes, free-draining sand should be used as bedding. Sand proposed for use as bedding should be tested in our laboratory to verify its suitability and to measure its compaction characteristics. Sand bedding should be compacted by mechanical means to achieve at least 90 percent relative compaction based on ASTM Test D1557-02.

3. On-site inorganic soil, or approved import, may be used as utility trench backfill. Proper compaction of trench backfill will be necessary under and adjacent to structural fill, building foundations, concrete slabs and vehicle pavements. In these areas, backfill should be conditioned with water (or allowed to dry), to produce a soil water content of about 2 to 3 percent above the optimum value and placed in horizontal layers each not exceeding 8 inches in thickness before compaction. Each layer should be compacted to at least 90 percent relative compaction based on ASTM Test D1557-02. The top lift of trench backfill under vehicle pavements should be compacted to the requirements given in report section 5.3 for vehicle pavement subgrades. Trench walls must be kept moist prior to and during backfill placement.

5.10 Surface and Subsurface Drainage

1. Concentrated surface water runoff within or immediately adjacent to the site should be conveyed in pipes or in lined channels to discharge areas that are relatively level or that are adequately protected against erosion.

2. Water from roof downspouts should be conveyed in pipes that discharge in areas a safe distance away from structures. Surface drainage gradients should be

2. Special inspection of grading should be provided in accordance with California Building Code (CBC) Section 1705.6 and Table 1705.6. The special inspector should be under the direction of the engineer.

CBC TABLE 1705.6 REQUIRED VERIFICATION AND INSPECTION OF SOILS		
VERIFICATION AND INSPECTION TASK	CONTINUOUS DURING TASK LISTED	PERIODIC DURING TASK LISTED
1. Verify materials below shallow foundations are adequate to achieve the design bearing capacity.		X
2. Verify excavations are extended to proper depth and have reached proper material		X
3. Perform classification and testing of compacted fill.		X
4. Verify use of proper materials, densities and lift thicknesses during placement and compaction of compacted fill	X	
5. Prior to placement of compacted fill, observe subgrade and verify that site has been prepared properly.		X

3. The validity of the recommendations contained in this report are also dependent upon a prescribed testing and observation program. Our firm assumes no responsibility for construction compliance with these design concepts and recommendations unless we have been retained to perform on-site testing and review during all phases of site preparation, grading, and foundation/slab construction. The Geotechnical Engineer should be notified at least two (2) working days before site clearing or grading operations commence to develop a program of quality control.

4. For cast-in-pace drilled piers special inspections and tests should be performed during installation as specified in Table 1705.8 of the CBC.

6.0 LIMITATIONS AND UNIFORMITY OF CONDITIONS

1. It should be noted that it is the responsibility of the owner or his/her representative to notify Pacific Coast Testing Inc. a minimum of 48 hours before any stripping, grading, or foundation excavations can commence at this site.

planned to prevent ponding and promote drainage of surface water away from building foundations, edges of pavements and sidewalks. For soil areas we recommend that a minimum of five (5) percent gradient be maintained.

3. Maintenance of slopes is important to their long-term performance. It is recommended that (where disturbed) slope surfaces be planted with appropriate drought-resistant vegetation as recommended by a landscape architect, and not over-irrigating, a primary source of surficial failures. In addition, an erosion control blanket (Greenfix CF072RR or equivalent) should be placed over the slopes to protect the vegetation while it becomes established. In addition, water should not be allowed to run over the sides of the slopes

4. Careful attention should be paid to erosion protection of soil surfaces adjacent to the edges of roads, curbs and sidewalks, and in other areas where "hard" edges of structures may cause concentrated flow of surface water runoff. Erosion resistant matting such as Miramat, or other similar products, may be considered for lining drainage channels.

5. Subdrains should be placed in established drainage courses and potential seepage areas. The location of subdrains should be determined during grading. The subdrain outlet should extend into a suitable protected area or could be connected to the proposed storm drain system. The outlet pipe should consist of an unperforated pipe the same diameter as the perforated pipe.

5.11 Geotechnical Observation and Testing

1. Field exploration and site reconnaissance provides only a limited view of the geotechnical conditions of the site. Substantially more information will be revealed during the excavation and grading phases of the construction. Stripping & clearing of vegetation, overexcavation, scarification, fill and backfill placement and compaction should be reviewed by the geotechnical professional during construction to evaluate if the materials encountered during construction are consistent with those assumed for this report.

MORANDO DESIGN
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CAMERON RESIDENCE

519 W. Anapamu Street

ACCESSORY DWELLING UNIT

SOILS REPORT RECOMMENDATIONS & LETTER

DATE 05/03/20

SHEET

A7

Instructions:

This checklist is to be used on an individual project basis and may be modified by the applicant to meet the needs of their specific project. The applicant shall strike out those sections that are not applicable to their project and indicate the location of where this information is located. The applicant and property owner assume all responsibility associated with the use of this document.

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

Mark Morando

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.

(REFER TO <SHEET><DETAIL><SPECIFICATION>_____)

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.

(REFER TO <SHEET><DETAIL><SPECIFICATION>_____)

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

N**otes:**

1. The California Department of Transportation adopts and publishes the "California Manual on Uniform Traffic Control Devices (California MUTCD)" to provide uniform standards and specifications for all official traffic control devices in California. Zero Emission Vehicle Signs and Pavement Markings can be found in the New Policies & Directives Number 13-01. Website: www.dot.ca.gov/trafficops/policy/13-01.pdf
2. See Vehicle Code Section 22511 for EV charging space signage in off-street parking facilities and for use of EV charging spaces.
3. The Governor's Office of Planning and Research (OPR) published a "Zero-Emission Vehicle Community Readiness Guidebook" which provides helpful information for local governments, residents and businesses. Website: http://opr.ca.gov/docs/ZEV_Guidebook.pdf.

(REFER TO <SHEET><DETAIL><SPECIFICATION>_____)

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.

(REFER TO <SHEET><DETAIL><SPECIFICATION>_____)

DIVISION 4.3 WATER EFFICIENCY AND CONSERVATION
4.303 INDOOR WATER USE
4.303.1 WATER CONSERVING PLUMBING FIXTURES AND FITTINGS. Plumbing fixtures (water closets and urinals) and fittings (faucets and showerheads) shall comply with the following:

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

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

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

4.303.1.3 Showerheads.

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

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

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

4.303.1.4 Faucets.

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

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

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

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

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

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

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

TABLE - MAXIMUM FIXTURE WATER USE

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

(REFER TO <SHEET><DETAIL><SPECIFICATION>_____)

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

1. Controllers shall be weather- or soil moisture-based controllers that automatically adjust irrigation in response to changes in plants' needs as weather conditions change.
2. Weather-based controllers without integral rain sensors or communication systems that account for local rainfall shall have a separate wired or wireless rain sensor which connects or communicates with the controller(s). Soil moisture-based controllers are not required to have rain sensor input.

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

(REFER TO <SHEET><DETAIL><SPECIFICATION>_____)

DIVISION 4.4 MATERIAL CONSERVATION AND RESOURCE EFFICIENCY
4.406 ENHANCED DURABILITY AND REDUCED MAINTENANCE
4.406.1 RODENT PROOFING. Annular spaces around pipes, electric cables, conduits or other openings in sole/bottom plates at exterior walls shall be protected against the passage of rodents by closing such openings with cement mortar, concrete masonry or a similar method acceptable to the enforcing agency.

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

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

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

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

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

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

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

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

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

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

(REFER TO <SHEET><DETAIL><SPECIFICATION>_____)

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

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

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

(REFER TO <SHEET><DETAIL><SPECIFICATION>_____)

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.

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 indication they are certified to meet the emission limits. Wood stoves, pellet stoves and fireplaces shall also comply with applicable local ordinances.

(REFER TO <SHEET><DETAIL><SPECIFICATION>_____)

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.

(REFER TO <SHEET><DETAIL><SPECIFICATION>_____)

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

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

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

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

Instructions:

This checklist is to be used on an individual project basis and may be modified by the applicant to meet the needs of their specific project. The applicant shall strike out those sections that are not applicable to their project and indicate the location of where this information is located. The applicant and property owner assume all responsibility associated with the use of this document.

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

Mark Morando

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

TABLE 4.504.3 - VOC CONTENT LIMITS FOR ARCHITECTURAL COATINGS 2,3	
GRAMS OF VOC PER LITER OF COATING, LESS WATER & LESS EXEMPT COMPOUNDS	
COATING CATEGORY	CURRENT VOC LIMIT
FLAT COATINGS	50
NON-FLAT COATINGS	100
NONFLAT-HIGH GLOSS COATINGS	150
SPECIALTY COATINGS	
ALUMINUM ROOF COATINGS	400
BASEMENT SPECIALTY COATINGS	400
BITUMINOUS ROOF COATINGS	50
BITUMINOUS ROOF PRIMERS	350
BOND BREAKERS	350
CONCRETE CURING COMPOUNDS	350
CONCRETE/MASONRY SEALERS	100
DRIVEWAY SEALERS	50
DRY FOG COATINGS	150
FAUX FINISHING COATINGS	350
FIRE RESISTIVE COATINGS	350
FLOOR COATINGS	100
FORM-RELEASE COMPOUNDS	250
GRAPHIC ARTS COATINGS (SIGN PAINTS)	500
HIGH TEMPERATURE COATINGS	420
INDUSTRIAL MAINTENANCE COATINGS	250
LOW SOLIDS COATINGS 1	120
MAGNESITE CEMENT COATINGS	450
MASTIC TEXTURE COATINGS	100
METALLIC PIGMENTED COATINGS	500
MULTICOLOR COATINGS	250
PRETREATMENT WASH PRIMERS	420
PRIMERS, SEALERS, & UNDERCOATERS	100
REACTIVE PENETRATING SEALERS	350
RECYCLED COATINGS	250
ROOF COATINGS	50
RUST PREVENTATIVE COATINGS	250
SHELLACS	
CLEAR	730
OPAQUE	550
SPECIALTY PRIMERS, SEALERS & UNDERCOATERS	100
STAINS	250
STONE CONSOLIDANTS	450
SWIMMING POOL COATINGS	340
TRAFFIC MARKING COATINGS	100
TUB & TILE REFINISH COATINGS	420
WATERPROOFING MEMBRANES	250
WOOD COATINGS	275
WOOD PRESERVATIVES	350
ZINC-RICH PRIMERS	340
1. GRAMS OF VOC PER LITER OF COATING, INCLUDING WATER & EXEMPT COMPOUNDS	
2. THE SPECIFIED LIMITS REMAIN IN EFFECT UNLESS REVISED LIMITS ARE LISTED IN SUBSEQUENT COLUMNS IN THE TABLE.	
3. VALUES IN THIS TABLE ARE DERIVED FROM THOSE SPECIFIED BY THE CALIFORNIA AIR RESOURCES BOARD, ARCHITECTURAL COATINGS SUGGESTED CONTROL MEASURE, FEB. 1, 2008. MORE INFORMATION IS AVAILABLE FROM THE AIR RESOURCES BOARD.	

(REFER TO <SHEET><DETAIL><SPECIFICATION>_____)

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).	

(REFER TO <SHEET><DETAIL><SPECIFICATION>_____)

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.

(REFER TO <SHEET><DETAIL><SPECIFICATION>_____)

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.

(REFER TO <SHEET><DETAIL><SPECIFICATION>_____)

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.

(REFER TO <SHEET><DETAIL><SPECIFICATION>_____)

4.507 ENVIRONMENTAL COMFORT

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

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

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

(REFER TO <SHEET><DETAIL><SPECIFICATION>_____)

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.

(REFER TO <SHEET><DETAIL><SPECIFICATION>_____)

ELECTRICAL SPECIFICATION NOTES

PROVIDE ALL ELECTRICAL SYSTEM WORK AND MATERIALS AS SHOWN ON THE DRAWINGS, AS CALLED FOR HEREIN, AND AS IS NECESSARY TO FURNISH A COMPLETE INSTALLATION.

THE INSTALLATION SHALL CONFORM TO ALL THE REQUIREMENTS OF THE CURRENTLY ADOPTED CALIFORNIA ELECTRICAL CODE, STATE OF CALIFORNIA TITLE 24, ALL OTHER APPLICABLE CODES AND ORDINANCES, AND THE REQUIREMENTS OF THE FIRE MARSHALL. ALL EQUIPMENT AND WIRING SHALL BEAR THE APPROVAL STAMP OF UNDERWRITERS' LABORATORY (UL) OR AN APPROVED TESTING LABORATORY. PAYMENT FOR ALL INSPECTION FEES AND PERMITS ARE PART OF THIS CONTRACT.

THIS CONTRACT SHALL BE RESPONSIBLE FOR THE SAFETY AND GOOD CONDITION OF ALL MATERIALS AND EQUIPMENT FOR THE ENTIRE INSTALLATION, AND UNIT COMPLETION OF WORK. ERECT AND MAINTAIN APPROVED AND SUITABLE BARRIERS, PROTECTIVE DEVICES, AND WARINNG SIGNS. BE FULLY RESPONSIBLE FOR ANY LOSS OR INJURY TO PERSONS OR PROPERTY RESULTING FROM NEGLIGENT MAINTENANCE AND/OR ENFORCEMENT OF ALL SAFETY PRECAUTIONS AND WARNINGS.

COORDINATE THE ELECTRICAL INSTALLATION WITH ALL OTHER TRADES.

ALL SAWCUTTING, TRENCHING, BACKFILLING, AND PATCHING SHALL BE PART OF THIS CONTRACT. ALL BACKFILLING, COMPACTION, AND RESURFACING METHODS SHALL BE APPROVED BY THE ARCHITECT.

FINALIZE ALL ELECTRICAL SERVICE ARRANGEMENTS, INCLUDING VERIFICATION OF LOCATIONS, DETAILS, COORDINATION OF THE INSTALLATION, AND PAYMENT OF ACCRUED CHARGES WITH LOCAL POWER COMPANY. VERIFY LOCATION OF FACILITIES AND DETAILS WITH POWER UTILITY. IN ADDITION TO THE REQUIREMENTS SHOWN IN THE CONTRACT DOCUMENTS, WORK SHALL COMPLY WITH CONSTRUCTION STANDARDS AND SERVICE REQUIREMENTS OF THE RESPECTIVE UTILITIES, INCLUDING ANY SUPPLEMENTAL DRAWINGS ISSUED, AND SHALL BE SUBJECT TO APPROVAL OF THESE UTILITIES.

UTILITY COORDINATION HAS NOT BEEN COMPLETED. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING ALL SERVICE REQUIREMENTS WITH THE RESPECTIVE UTILITIES, THE ARCHITECT, AND THE EXISTING SITE CONDITIONS.

RACEWAYS FOR ALL CONDUCTORS IN EXPOSED AREAS LESS THAN 5'-0" ABOVE GRADE SHALL BE GALVANIZED STEEL CONDUIT OR PVC SCHEDULE 80, AS PERMITTED BY BUILDING CONSTRUCTION TYPE. UNDERGROUND CONDUITS SHALL BE BURIED A MINIMUM OF 24" BELOW GRADE, AND MAY BE PVC SCHEDULE 40. ALL CONDUIT RISERS FROM UNDERGROUND RUNS SHALL BE PVC SCHEDULE 80 OR RIGID GALVANIZED STEEL. RACEWAYS IN ALL CONCEALED AREAS MAY BE TYPE EMT. FLEXIBLE STEEL CONDUIT MAY BE USED IN CONCEALED AREAS, UP TO A MAXIMUM LENGTH OF 12'-0", IF A SUITABLE BONDING WIRE IS INSTALLED. THIS BONDING CONDUCTOR SHALL BE IN ADDITION TO THE REQUIRED EQUIPMENT GROUNDING CONDUCTOR. CONCEALED RACEWAYS FOR LOW VOLTAGE SYSTEMS WITHIN BUILDING CONSTRUCTION MAY BE EQUAL TO CARLON TYPE "EFT". ALL EMPTY CONDUITS SHALL HAVE A SUITABLE PULLLCORD INSTALLED. A SUITABLE GROUNDING CONDUCTOR SHALL BE INSTALLED IN ALL LINE VOLTAGE CONDUIT RUNS. NOTE THAT THIS CONDUCTOR IS NOT NECESSARILY SHOWN ON THE DRAWINGS. NO MORE THAN THREE NINETY DEGREE BENDS SHALL BE ALLOWED IN ANY CONDUIT RUN, BETWEEN PULL POINTS.

PROVIDE A DEDUCTIVE ALTERNATE, FOR ARCHITECT AND OWNER APPROVAL, TO USE TYPE NM CABLE IN LIEU OF CONDUIT, WITHIN BUILDING CONSTRUCTION. NM CABLE SHALL BE ALLOWED FOR CONCEALED 15A AND 20A RUNS WITHIN THE BUILDING ONLY. ALL BELOW GRADE, EXPOSED, OR EXTERIOR CIRCUITS SHALL BE WIRE IN CONDUIT.

PROVIDE ALL CABLE TV CABLING. CABLE SHALL BE TYPE RG-6/U WITH A 90% BRAID, OR AS SPECIFIED BY LOCAL CABLE COMPANY. CABLES SHALL BE RUN INDIVIDUALLY BACK TO TERMINAL CABINET, AND NOT DAISY CHAINED TOGETHER.

PROVIDE ALL TELEPHONE AND COMPUTER/DATA WIRING. WIRE SHALL BE CATEGORY 5E, AS DIRECTED. PULL ALL DATA CABLES TO A LOCATION SPECIFIED BY OWNER, ONE CABLE FROM EACH OUTLET. PROVIDE TWO (2) TELEPHONE LINES, IN ADDITION TO THE DATA LINE, TO EACH OUTLET, FROM THE TELEPHONE DEMARCATION POINT. COORDINATE ALL REQUIRED WORK WITH THE OWNER.

TELEPHONE AND DATA JACKS SHALL BE COMBINED INTO A SINGLE OUTLET. A SEPARATE CABLE SHALL BE PROVIDED FOR EACH DATA JACK.

OUTLET AND JUNCTION BOXES SHALL BE GALVANIZED STEEL, 4" SQUARE BY 1-1/2" DEEP, OR LARGER. THEY SHALL BE FLUSH MOUNTED IN ALL FINISHED AREAS, AND SHALL INCLUDE A PLASTER RING SUITABLE FOR THE DEVICE MOUNTED IN THE BOX. TELEPHONE AND COMMUNICATIONS OUTLETS MAY CONSIST OF THE PLASTER RING, BUT NO BOX, WHERE STUD BAYS ARE SUCH TO ALLOW FOR EASY CABLE FISHING FROM THE ACCESSIBLE CEILING ABOVE, AND WHERE NOISE TRANSMISSION FROM ONE ROOM TO THE NEXT IS NOT AN ISSUE. NOTE THAT PLASTIC BOXES MAY BE USED WHERE TYPE NM CABLE IS USED TO PULL TO THESE BOXES. ALL BOXES SHALL BE LISTED FOR THEIR USE, INCLUDING ANY FIRE RATING. ADDITIONALLY, REGARDLESS OF OUTLET LOCATIONS SHOWN ON THESE PLANS, BOXES SHALL BE LOCATED AS REQUIRED TO COMPLY WITH NOISE AND FIRE SEPARATION REQUIREMENTS.

PROVIDE ALL CONDUIT, WIRING, OUTLETS, DISCONNECT OR MANUAL MOTOR STARTER SWITCHES, AND EQUIPMENT NECESSARY TO CONNECT MECHANICAL SYSTEMS AND EQUIPMENT. INSTALL OUTLETS AND CONTROL WIRING FOR LOW VOLTAGE CONTROL EQUIPMENT, IF REQUIRED. PROVIDE ALL REQUIRED CONDUIT FOR LOW VOLTAGE SYSTEMS.

FURNISH AND INSTALL ALL LIGHT FIXTURES, COMPLETE WITH REQUIRED LAMPS, BALLASTS, MOUNTING TRIMS, AND DEVICES. FIXTURES SHALL BE SUPPORTED FROM THE BUILDING STRUCTURE IN AN APPROVED MANNER.

ALL FIXTURE AND OUTLET HEIGHTS AND LOCATIONS SHALL BE INDIVIDUALLY COORDINATED WITH THE ARCHITECT.

LIGHT SWITCH AND RECEPTACLE SPECIFICATIONS SHALL BE CHOSEN BY THE OWNER. ALL DEVICE COVERPLATES IN FINISHED AREAS SHALL BE SMOOTH PLASTIC, OR BRUSHED ALUMINUM, AS SPECIFIED BY THE ARCHITECT. ALL DEVICE COVERPLATES IN UNFINISHED AREAS MAY BE SMOOTH PLASTIC OR PRESSED STEEL, AS SPECIFIED BY ARCHITECT. ALL COVERPLATES IN EXTERIOR LOCATIONS SHALL BE WEATHERPROOF. DEVICE AND COVERPLATE COLORS SHALL BE AS SPECIFIED BY THE ARCHITECT. WHERE MULTIPLE DEVICES EXIST, THEY SHALL BE GROUPED TOGETHER, AND GROUPED DEVICES SHALL BE UNDER A SINGLE COVER PLATE.

IF DESIRED BY OWNER, PROVIDE MARKINGS ON WALL OUTLETS AND LIGHT SWITCHES TO DIFFERENTIATE DEVICES ON BACK-UP POWER FROM THOSE ON NORMAL POWER ONLY. THIS CAN BE ACCOMPLISHED THROUGH DIFFERENT COLOR PLATES, DEVICES, OR SOME FORM OF LABELLING. COORDINATE WITH OWNER.

PANELBOARDS SHALL BE EQUAL TO SQUARE D TYPE "QO". PROVIDE TYPEWRITTEN CIRCUIT DIRECTORIES PER PANEL SCHEDULES. PANEL DIRECTORIES SHALL INCLUDE THE PANEL OR SWITCHBOARD FROM WHICH THE PANEL IS FED. (1) 3/4" STUB INTO ACCESSIBLE CEILING SPACE IS REQUIRED FOR EVERY (3) SPARES OR SPACES IN RECESSED PANELBOARDS.

SWITCHGEAR AND DISTRIBUTION EQUIPMENT SHALL BE SPECIFICATION GRADE, AS MANUFACTURED BY SQUARE D, SIEMENS, OR APPROVED EQUAL. ALL CONNECTIONS, TERMINATIONS, GROUNDING, AND HARDWARE ASSEMBLIES SHALL BE CHECKED BY AN EXPERIENCED SWITCHBOARD INSTALLER PRIOR TO ENERGIZATION. EACH CONNECTION POINT OR FASTENER SHALL BE ALIGNED AND TORQUED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS. ANCHOR EACH SECTION TO THE FLOOR AND WALL. STRUCTURAL ANCHORAGE SHALL BE PER MANUFACTURER'S SPECIFICATIONS, AND SHALL BE APPROVED BY THE AHJ.

ALL WIRING SHALL BE COPPER. INSULATION FOR BRANCH CIRCUIT CONDUCTORS SHALL BE TYPE "THWN". CONDUCTORS LARGER THAN #6 AWG MAY BE TYPE "THWN" OR "THW".

PROVIDE BRANCH CIRCUIT WIRING, OUTLETS, DEVICES, AND CONNECTIONS TO ALL EQUIPMENT AND APPLIANCES, AS SHOWN, AND AS REQUIRED BY ARCHITECT. ELECTRICAL EQUIPMENT AND MATERIAL SHALL BE LISTED, LABELED, AND INSTALLED PER A RECOGNIZED ELECTRICAL TESTING LABORATORY.

STEEL, LIQUID-TIGHT, FLEXIBLE CONDUITS ARE REQUIRED FOR MOTOR CONNECTIONS, CONNECTIONS TO LIQUID-HANDLING EQUIPMENT, AND CONNECTIONS IN WET OR EXTERIOR LOCATIONS.

PROVIDE CONDUIT SEALS FOR ALL CONDUITS PENETRATING WEATHERPROOFING OR WEATHERPROOF ENCLOSURE ENVELOPE. MASTIC SEAL ALL CONDUIT OPENING PENETRATIONS COMPLETELY WATERTIGHT.

UNLESS SHOWN OTHERWISE, FUSED DISCONNECT SWITCHES SHALL BE PROVIDED WITH LOW-PEAK, DUAL ELEMENT FUSES SIZED TO EQUIPMENT NAMEPLATE FUSE CURRENT RATING. MANUAL MOTOR STARTERS SHALL BE PROVIDED WITH SIMILARLY SIZED FUSIBLE ELEMENTS. SWITCHES EXPOSED TO THE WEATHER SHALL BE TYPE NEMA 3R.

PANELBOARDS, TERMINAL CABINETS, SWITCHGEAR, DISCONNECTS, DISTRIBUTION BREAKERS, AND MISCELLANEOUS ELECTRICAL EQUIPMENT, SHALL HAVE LAMINATED, WHITE LETTERS ON BLACK BACKGROUND, PHENOLIC NAMEPLATES PROPERLY IDENTIFYING EACH ITEM.

PROVIDE ALL MATERIALS AND WORK REQUIRED TO LOCATE, AND CONNECT TO, EXISTING DISTRIBUTION EQUIPMENT. UPDATE EXISTING PANELBOARDS WITH NEW TYPEWRITTEN CIRCUIT DIRECTORIES, AND FURNISH NEW CIRCUIT BREAKERS AS REQUIRED. EXISTING CIRCUIT DESCRIPTIONS IN EXISTING PANEL DIRECTORIES SHALL BE USED FOR EXISTING CIRCUITS TO REMAIN IF THEY ARE MORE DETAILED THAN THE PANEL SCHEDULES SHOWN IN THESE PLANS. RECONNECT ANY BRANCH CIRCUITS INTERRUPTED DURING DEMOLITION THAT ARE TO REMAIN. PANELBOARD CIRCUIT DIRECTORIES SHALL INCLUDE WHERE THE PANEL IS FED FROM.

(5) COPIES OF SUBMITTAL DRAWINGS ARE REQUIRED FOR DISTRIBUTION EQUIPMENT, LIGHT FIXTURES, DEVICES, AND COVERPLATES. THE ENGINEER MAY APPROVE SUBSTITUTIONS IF THE SUBMITTAL SHOWS A REASONABLE BENEFIT TO THE OWNER. NO PRIOR APPROVAL FOR SUBSTITUTIONS SHALL BE GIVEN BEFORE SUBMITTALS. AS SUCH, BID COMPARISONS MUST BE MADE BASED ON SPECIFIED EQUIPMENT. THE ENGINEER RESERVES THE RIGHT TO REJECT SUBMITTALS BASED ON INCOMPLETENESS OF THE SUBMITTAL, AS WELL AS NOT MEETING THE REQUIREMENTS OF THE PLANS AND SPECIFICATIONS. SUBMITTALS MUST BE PROVIDED FOR SPECIFIED EQUIPMENT, AS WELL AS ANY SUBSTITUTIONS.

THE ELECTRICAL DRAWINGS SHALL BE TREATED AS DIAGRAMATIC IN NATURE. THEY SHALL NOT BE USED TO DETERMINE EXACT DIMENSIONS OR LOCATIONS FOR ANY DEVICE. CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR COORDINATING WITH ARCHITECTURAL ELEMENTS AND PLANS, OTHER DISCIPLINES, THE ARCHITECT, AND OWNER, FOR ALL LOCATIONS, BEFORE COMPLETING ANY WORK. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL COSTS IN RELOCATING ANY DEVICE OR CONNECTION INSTALLED IN THE WRONG LOCATION. THE CONTRACTOR SHALL ALLOW SUFFICIENT TIME FOR COORDINATION.

CONTRACTOR SHALL BE RESPONSIBLE FOR ALL REQUIRED LIGHTING CONTROL PROGRAMMING, TO ACHIEVE A WORKING SYSTEM TO THE SATISFACTION OF THE PLANS, ENGINEER, AND OWNER. REQUIRED PROGRAMMING INFORMATION MAY NOT BE FULLY SHOWN IN THE CONTRACT DOCUMENTS. THAT DOES NOT RELEASE THE CONTRACTOR FROM ADJUSTING/PROGRAMMING THE CONTROLS TO THE SATISFACTION OF THE OWNER. THE CONTRACTOR SHALL ALLOW SUFFICIENT TIME FOR COORDINATION.

GENERAL RESIDENTIAL T24 NOTES

RESIDENTIAL LUMINAIRE REQUIREMENTS

ALL NEW, PERMANENTLY INSTALLED LIGHT FIXTURES SHALL BE HIGH EFFICIENCY AND LISTED BY THE CEnC.

LUMINAIRES THAT ARE RECESSED INTO CEILINGS SHALL HAVE AIRTIGHT HOUSINGS TO PREVENT CONDITIONED AIR ESCAPING INTO THE CEILING CAVITY OR ATTIC, OR UNCONDITIONED AIR INFILTRATING FROM THE CEILING OR ATTIC INTO THE CONDITIONED SPACE.

LUMINAIRES THAT ARE RECESSED INTO INSULATED CEILINGS ARE REQUIRED TO BE RATED FOR INSULATION CONTACT ("IC-RATED") SO THAT INSULATION CAN BE PLACED OVER THEM.

SUMMARY OF REQUIREMENTS BY SPACE TYPE

- BATHROOMS
  ALL OTHER LUMINAIRES IN A BATHROOM MUST BE CONTROLLED BY VACANCY SENSORS.
- GARAGES, LAUNDRY ROOMS, AND UTILITY ROOMS
  ALL LUMINAIRES MUST BE CONTROLLED BY A VACANCY SENSOR.
- OTHER ROOMS
  THIS CLASSIFICATION APPLIES ONLY TO ROOMS THAT ARE NOT KITCHENS, BATHROOMS, GARAGES, LAUNDRY ROOMS, CLOSETS, OR UTILITY ROOMS. ALL INSTALLED LUMINAIRES SHALL BE CONTROLLED BY A VACANCY SENSOR OR DIMMER. CLOSETS THAT ARE LESS THAN 70 SQFT ARE EXEMPT FROM THIS REQUIREMENT.
- OUTDOOR LIGHTING
  ALL LUMINAIRES MOUNTED TO THE BUILDING SHALL BE HIGH EFFICACY LUMINAIRES, OR SHALL BE CONTROLLED BY A MOTION SENSOR AND ALSO BY A PHOTOCONTROL, ASTRONOMICAL TIME CLOCK, OR ENERGY MANAGEMENT CONTROL SYSTEM (EMCS).

GENERAL RESIDENTIAL ELECTRICAL NOTES

EACH RESIDENCE SHALL BE INSTALLED WITH APPROVED SMOKE & CO DETECTOR SYSTEMS. A SMOKE DETECTOR SHALL BE PLACED IN EACH BEDROOM, IN EVERY CORRIDOR OUTSIDE OF EACH BEDROOM, WITH A MINIMUM OF ONE DETECTOR PER FLOOR LEVEL. NOTE THAT WHERE CEILING HEIGHT OF AN ADJACENT ROOM, OPEN TO A HALLWAY SERVING BEDROOM(S), EXCEEDS THAT OF THE HALLWAY BY 24" OR MORE, A DETECTOR SHALL BE PLACED IN THIS ADJACENT ROOM AND WITHIN 12" OF HIGHEST POINT OF THE CEILING. ALL DETECTORS SHALL BE 120V AND HARD-WIRED INTO THE HOUSE POWER SYSTEM. ALL DETECTORS SHALL HAVE BATTERY BACKUP, AND BE INTERCONNECTED SO THAT ONE DETECTOR IN A UNIT GOING INTO ALARM WILL CAUSE ALL OTHER DETECTORS IN THE UNIT TO GO INTO ALARM. USE COMBINATION SMOKE/CO SENSORS FOR UNITS OUTSIDE OF SLEEPING AREAS, WITH A MINIMUM OF ONE DETECTOR PER FLOOR LEVEL.

ALL BATHROOM RECEPTACLES SHALL BE GROUPED TOGETHER ONTO 20A CIRCUITS, WHICH SERVE NO OTHER LOADS BESIDES THE BATHROOM RECEPTACLES, PER NEC 210.11(C)(3). EACH CIRCUIT SHALL SERVE A MAXIMUM OF FIVE SINGLE-PERSON SINK LOCATIONS. WHERE A BATHROOM COUNTER RECEPTACLE SERVES TWO SINKS, IT SHALL BE COUNTED AS TWO TOWARDS THE MAXIMUM OF FIVE.

CIRCUIT SERVING WHIRLPOOL TUBS SHALL USE A GFI TYPE BREAKER AND CIRCUIT SHALL BE BONDED TO WATER PIPING VIA #8CU MINIMUM.

PROVIDE COMBINATION ARC-FAULT INTERRUPTER PROTECTION FOR ALL OUTLETS INSTALLED IN DWELLING UNITS. THIS REQUIREMENT DOES NOT APPLY TO OUTLETS IN GARAGE, OR SPECIFIC APPLIANCE CIRCUITS IN THE KITCHEN OR LAUNDRY.

ALL RECEPTACLES IN DWELLING UNITS, EXCEPT FOR DEDICATED OUTLETS FOR NON-PORTABLE EQUIPMENT, SHALL BE SUPPLIED AS TAMPER PROOF. THIS SHALL INCLUDE GENERAL USE OUTLETS IN COMMON AREAS, SUCH AS EXTERIOR OUTLETS OR COMMON LAUNDRY/CLUBHOUSE FACILITIES WHERE RESIDENTS HAVE ACCESS.

THE SMALL APPLIANCE KITCHEN BRANCH CIRCUITS SHALL SERVE NO OTHER LOADS BESIDES THOSE ALLOWED BY NEC 210.52(B)(1), AND SHALL BE DEDICATED FOR PLUG-IN APPLIANCES. 2-CIRCUITS FOR THESE RECEPTACLES IS THE MINIMUM ALLOWED. MORE CIRCUITS MAY BE USED, IF THE DESIGN CALLS FOR A LARGE NUMBER OF OUTLETS.

ALL CIRCUITS SHALL BE A MINIMUM OF 20A. 15A CIRCUITS SHALL ONLY BE USED WHERE SPECIFICALLY ALLOWED BY THE NEC. NOTE THAT A NUMBER OF AREAS IN RESIDENTIAL CONSTRUCTION ARE NOW REQUIRED TO BE FED WITH 20A CIRCUITS. THESE INCLUDE, BUT MAY NOT BE LIMITED TO, KITCHEN AND LAUNDRY APPLIANCE CIRCUITS, DINING AND BATHROOM RECEPTACLE CIRCUITS, AND ALL 20A DEDICATED RECEPTACLES (SUCH AS FOR MICROWAVE).

WHERE ELECTRIC VEHICLE CHARGING EQUIPMENT EXISTS IN AN ENCLOSED SPACE, THE ELECTRICAL SUPPLY CIRCUIT TO MECHANICAL EXHAUST VENTILATION EQUIPMENT SHALL BE INTERLOCKED WITH THE RECHARGING EQUIPMENT USED TO SUPPLY THE VEHICLE(S) BEING CHARGED. NOTE THE CIRCUIT MUST REMAIN ENERGIZED DURING THE ENTIRE CHARGING CYCLE, IN ACCORDANCE WITH CRC R328 AND THE CEC.

ALL MULTIWIRE BRANCH CIRCUITS SHALL BE PROVIDED WITH A MEANS THAT WILL SIMULTANEOUSLY DISCONNECT ALL UNGROUNDED CONDUCTORS AT THE POINT WHERE THE BRANCH CIRCUIT ORIGINATES, IN ACCORDANCE WITH CEC 210.4(b). USE MULTI-POLE BREAKERS WHERE NEUTRALS ARE SHARED.

ADU/GARAGE LOAD CALC (645ft²)

GENERAL POWER & LIGHTING @ 3w/ft²	=	1933VA
(2) KITCHEN APPLIANCE CIRCUITS @ 1500W each	=	3000VA
(1) REFRIGERATOR @ 1500W	=	1500VA
(1) MICROWAVE @ 1500W	=	1500VA
(1) GARBAGE DISPOSAL @ 1500W	=	1500VA
(1) DISHWASHER @ 1200W	=	1200VA
(1) HOOD/FAN/LIGHTS/CONTROLS @ 500W	=	500VA
(1) BATHROOM APPLIANCE CIRCUIT @ 1500W	=	1500VA
(1) GARAGE DOOR OPENER @ 1200W	=	1200VA
(1) GARAGE APPLIANCE CIRCUIT @ 1500W	=	1500VA
(3) WORKSHOP APPLIANCE CIRCUITS	=	4500VA
HVAC @ 10.51kW total	=	*10510VA
TOTAL HVAC LOAD (and other 100% loads) (*)	=	*10510VA
TOTAL GENERAL USE LOAD	=	19833VA

HVAC & other 100% loads: 10510 + 1st 10kVA: 10000 + Remainder @ 40%: (0.4)(9833) = 24443VA

24.44kVA @ 240V, 1ø = 102A

NOTES:

THE ASTERISK (*) DENOTES LOADS WHICH ARE NOT SUBJECT TO THE 40% DEMAND FACTOR PER CEC 220.82.

SOME LOADS WERE ESTIMATED OR ASSUMED BASED ON INFORMATION RECEIVED DURING THE DESIGN PROCESS. THE ACTUAL EQUIPMENT LOADS SHALL BE VERIFIED IN THE FIELD AND BREAKERS AND FEEDERS SHALL BE SIZED ACCORDINGLY.

SERVICE LOAD CALC

MAIN HOUSE HVAC LOAD	=	*14020VA
MAIN HOUSE GENERAL USE LOAD	=	20051VA
ADU/GARAGE HVAC LOAD	=	*10510VA
ADU/GARAGE GENERAL USE LOAD	=	19833VA
TOTAL HVAC LOAD (and other 100% loads) (*)	=	*24530VA
TOTAL GENERAL USE LOAD	=	39884VA

HVAC & other 100% loads: 24530 + 1st 10kVA: 10000 + Remainder @ 40%: (0.4)(29884) = 46484VA

46.48kVA @ 240V, 1ø = 193A

NOTES:

THE ASTERISK (*) DENOTES LOADS WHICH ARE NOT SUBJECT TO THE 40% DEMAND FACTOR PER CEC 220.82.

SOME LOADS WERE ESTIMATED OR ASSUMED BASED ON INFORMATION RECEIVED DURING THE DESIGN PROCESS. THE ACTUAL EQUIPMENT LOADS SHALL BE VERIFIED IN THE FIELD AND BREAKERS AND FEEDERS SHALL BE SIZED ACCORDINGLY.

MAIN HOUSE LOAD CALC (1617ft²)

GENERAL POWER & LIGHTING @ 3w/ft²	=	4851VA
(2) KITCHEN APPLIANCE CIRCUITS @ 1500W each	=	3000VA
(1) REFRIGERATOR @ 1500W	=	1500VA
(1) MICROWAVE @ 1500W	=	1500VA
(1) GARBAGE DISPOSAL @ 1500W	=	1500VA
(1) DISHWASHER @ 1200W	=	1200VA
(1) HOOD/FAN/LIGHTS/CONTROLS @ 500W	=	500VA
(1) BATHROOM APPLIANCE CIRCUIT @ 1500W	=	1500VA
(1) LAUNDRY/WASHER CIRCUIT @ 1500W	=	1500VA
(1) LANDSCAPE LIGHTING CIRCUIT @ 1500W	=	1500VA
(1) MISCELLANEOUS SITE POWER CIRCUIT @ 1500W	=	1500VA
(1) FAU @ 14.02kW	=	*14020VA
TOTAL HVAC LOAD (and other 100% loads) (*)	=	*14020VA
TOTAL GENERAL USE LOAD	=	20051VA

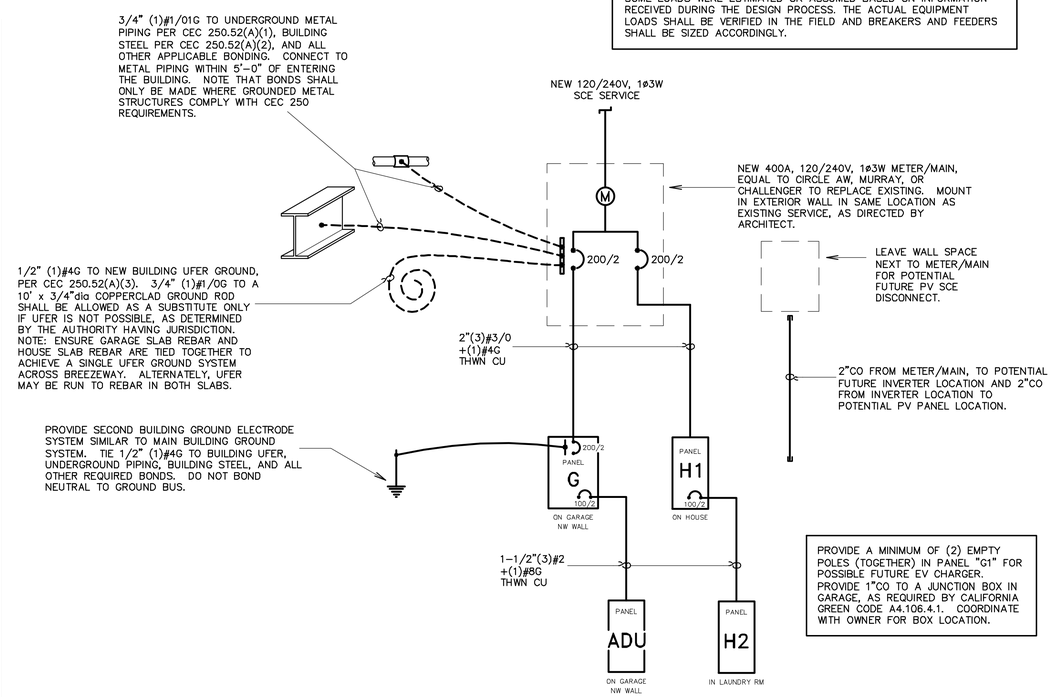
HVAC & other 100% loads: 14020 + 1st 10kVA: 10000 + Remainder @ 40%: (0.4)(10051) = 28040VA

28.04kVA @ 240V, 1ø = 117A

NOTES:

THE ASTERISK (*) DENOTES LOADS WHICH ARE NOT SUBJECT TO THE 40% DEMAND FACTOR PER CEC 220.82.

SOME LOADS WERE ESTIMATED OR ASSUMED BASED ON INFORMATION RECEIVED DURING THE DESIGN PROCESS. THE ACTUAL EQUIPMENT LOADS SHALL BE VERIFIED IN THE FIELD AND BREAKERS AND FEEDERS SHALL BE SIZED ACCORDINGLY.



ONE LINE DIAGRAM

ANE
Alan Noelle Engineering
1616 Anacapa Street
Santa Barbara, CA 93101
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Electrical Engineering Lighting Design

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Approvals/Consultants:

Project:

519 W. ANAPAMU

Santa Barbara, CA 93101

Sheet Title:

ELECTRICAL CALCULATIONS

Revisions:

Job No:	A19122	Sheet:
Date:	2.5.20	**E0.0**
Drawn:	TCN	
Checked:	AJN	

200A MLO, 200A BUSSING
120/240V, 1Ø3W
SQUARE D TYPE QO

PANEL "G"

MOUNTING: SURFACE

DESCRIPTION/LOCATION	øA	øB	CIRCUIT BREAKER	CIRCUIT NUMBER		CIRCUIT BREAKER	øA	øB	DESCRIPTION/LOCATION
GARAGE DOOR OPENER	1200		20/1	1	2	20/1	1500		GARAGE APPLIANCE
WORKSHOP APPLIANCE		1500		3	4			--	SPARE
	1500			5	6		--		
		1500		7	8			--	
SPACE	--		---	9	10	---	--		SPACE
		--		11	12			--	
	--			13	14		--		
		--		15	16			--	
	--			17	18		--		
		--		19	20	---		--	
	--			21	22	100/2	--	10905	PANEL "ADU"
		--	---	23	24		9755	--	
						CONNECTED LOAD	13.96	13.91	27.87 kVA CONN.
									24.44 kVA DEMAND ¤
									102 AMPS DEMAND

◊ CONFIRM BREAKER AND FEEDER SIZE REQUIRED WITH ACTUAL UNIT INSTALLED IN THE FIELD.
Δ PROVIDE CIRCUIT BREAKER LOCK-ON DEVICE AND RED HANDLED BREAKER
o PROVIDE AFI TYPE BREAKER
¤ SEE RESIDENTIAL LOAD CALCULATION ON THIS SHEET

200A MLO, 200A BUSSING
120/240V, 1Ø3W
SQUARE D TYPE QO

PANEL "H1"

MOUNTING: SURFACE

DESCRIPTION/LOCATION	øA	øB	CIRCUIT BREAKER	CIRCUIT NUMBER		CIRCUIT BREAKER	øA	øB	DESCRIPTION/LOCATION
LIGHTS/RECEPTS	605		o20/1	1	2	20/1o	1500		MICROWAVE
		605	o	3	4	o		1500	GARBAGE DISPOSAL
	605		o	5	6	o	1200		DISHWASHER
		605	o	7	8	o		1500	REFRIGERATOR
KITCHEN APPLIANCE RECEPTS	1500		o	9	10		1500		LAUNDRY/WASHER
		1500	o	11	12			1500	SITE POWER
HOOD/FAN/LIGHTS/CONTROLS	500			13	14		1500		SITE LIGHTING
BATHROOM RECEPTS		1500		15	16			--	SPARE
SMOKE DETECTORS	500		ΔΔ	17	18		--		
SPACE		--	---	19	20			--	
	--			21	22	---	--		SPACE
		--		23	24			--	
	--			25	26		--		
		--		27	28			--	
	--			29	30		--		
		--		31	32			--	
	--			33	34	---	--		
		--		35	36	40/2◊		7010	FAU
	--			37	38	◊	7010		
		--		39	40	100/2		1210	PANEL "H2"
	--		---	41	42		2710		
						CONNECTED LOAD	19.13	16.93	36.06 kVA CONN.
									28.04 kVA DEMAND ¤
									117 AMPS DEMAND

◊ CONFIRM BREAKER AND FEEDER SIZE REQUIRED WITH ACTUAL UNIT INSTALLED IN THE FIELD.
Δ PROVIDE CIRCUIT BREAKER LOCK-ON DEVICE AND RED HANDLED BREAKER
o PROVIDE AFI TYPE BREAKER
¤ SEE RESIDENTIAL LOAD CALCULATION ON THIS SHEET

100A MLO, 200A BUSSING
120/240V, 1Ø3W
SQUARE D TYPE QO

PANEL "ADU"

MOUNTING: SURFACE

DESCRIPTION/LOCATION	øA	øB	CIRCUIT BREAKER	CIRCUIT NUMBER		CIRCUIT BREAKER	øA	øB	DESCRIPTION/LOCATION
LIGHTS /RECEPTS	650		o20/1	1	2	20/1o	1500		MICROWAVE
		650	o	3	4	o		1500	GARBAGE DISPOSAL
	650		o	5	6	o	1200		DISHWASHER
BATHROOM RECEPTS		1500		7	8	o		1500	REFRIGERATOR
SMOKE DETECTORS	500		ΔΔ	9	10		--		SPARE
HOOD/FAN/LIGHTS/CONTROLS		500		11	12			--	
SPACE	--		---	13	14		--		
		--		15	16			--	
	--			17	18	---	--		SPACE
		--		19	20	---		--	
	--			21	22	40/2◊	5255		HVAC
		--	---	23	24	◊		5255	
						CONNECTED LOAD	9.76	10.91	20.67 kVA CONN.
									20.67 TOTAL kVA
									86 TOTAL AMPS

◊ CONFIRM BREAKER AND FEEDER SIZE REQUIRED WITH ACTUAL UNIT INSTALLED IN THE FIELD.
Δ PROVIDE CIRCUIT BREAKER LOCK-ON DEVICE AND RED HANDLED BREAKER
o PROVIDE AFI TYPE BREAKER
¤ SEE RESIDENTIAL LOAD CALCULATION ON THIS SHEET

100A MLO, 200A BUSSING
120/240V, 1Ø3W
SQUARE D TYPE QO

PANEL "H2"

MOUNTING: SURFACE

DESCRIPTION/LOCATION	øA	øB	CIRCUIT BREAKER	CIRCUIT NUMBER		CIRCUIT BREAKER	øA	øB	DESCRIPTION/LOCATION
LIGHTS/RECEPTS	605		o20/1	1	2	20/1	1500		LAUNDRY/WASHER
		605	o	3	4	---		--	SPACE
	605		o	5	6		--		
		605	o	7	8	---		--	
						CONNECTED LOAD	2.71	1.21	3.92 kVA CONN.
									3.92 TOTAL kVA
									16 TOTAL AMPS

◊ CONFIRM BREAKER AND FEEDER SIZE REQUIRED WITH ACTUAL UNIT INSTALLED IN THE FIELD.
Δ PROVIDE CIRCUIT BREAKER LOCK-ON DEVICE AND RED HANDLED BREAKER
o PROVIDE AFI TYPE BREAKER
¤ SEE RESIDENTIAL LOAD CALCULATION ON THIS SHEET

NOTE, PANEL SCHEDULES SHOWN FOR REFERENCE ONLY. ACTUALLY PANELS, SCHEDULES, AND LOADS SHALL BE DETERMINED IN THE FIELD.

ANE
Alan Noelle Engineering
1616 Anacapa Street
Santa Barbara, CA 93101

phone: 805.563.5444
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Electrical Engineering Lighting Design

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Approvals/Consultants:

Project:

519 W. ANAPAMU

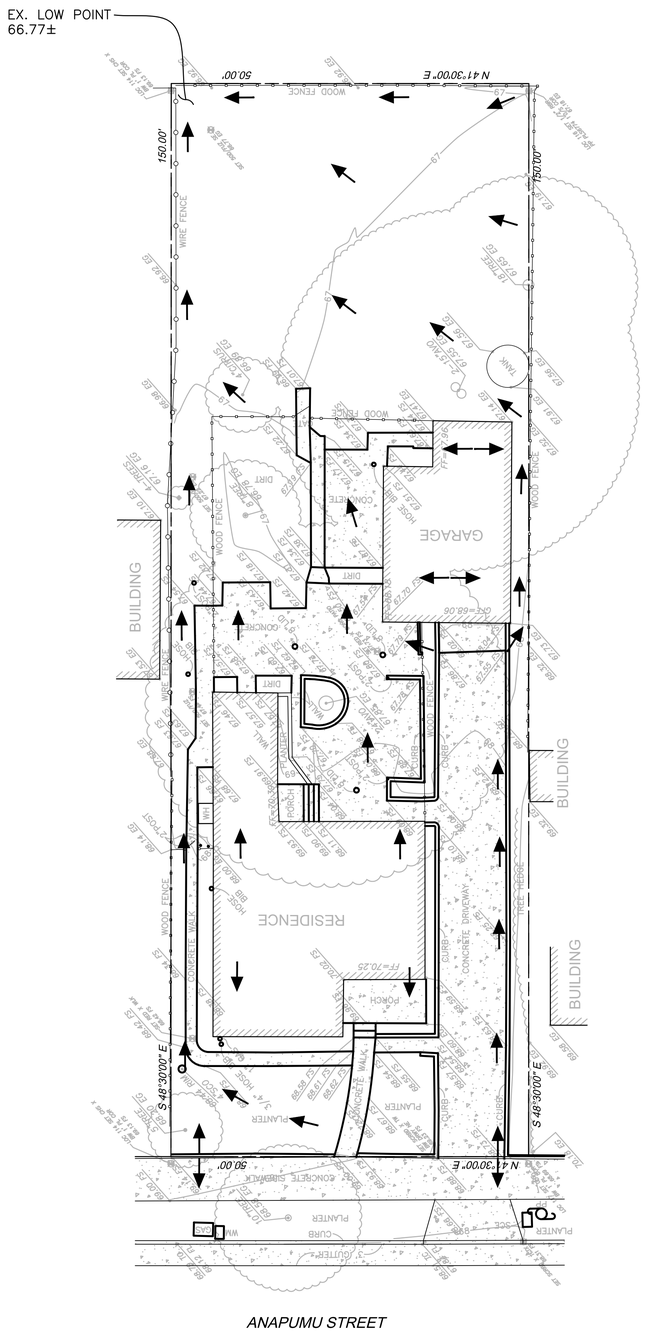
Santa Barbara, CA 93101

Sheet Title:

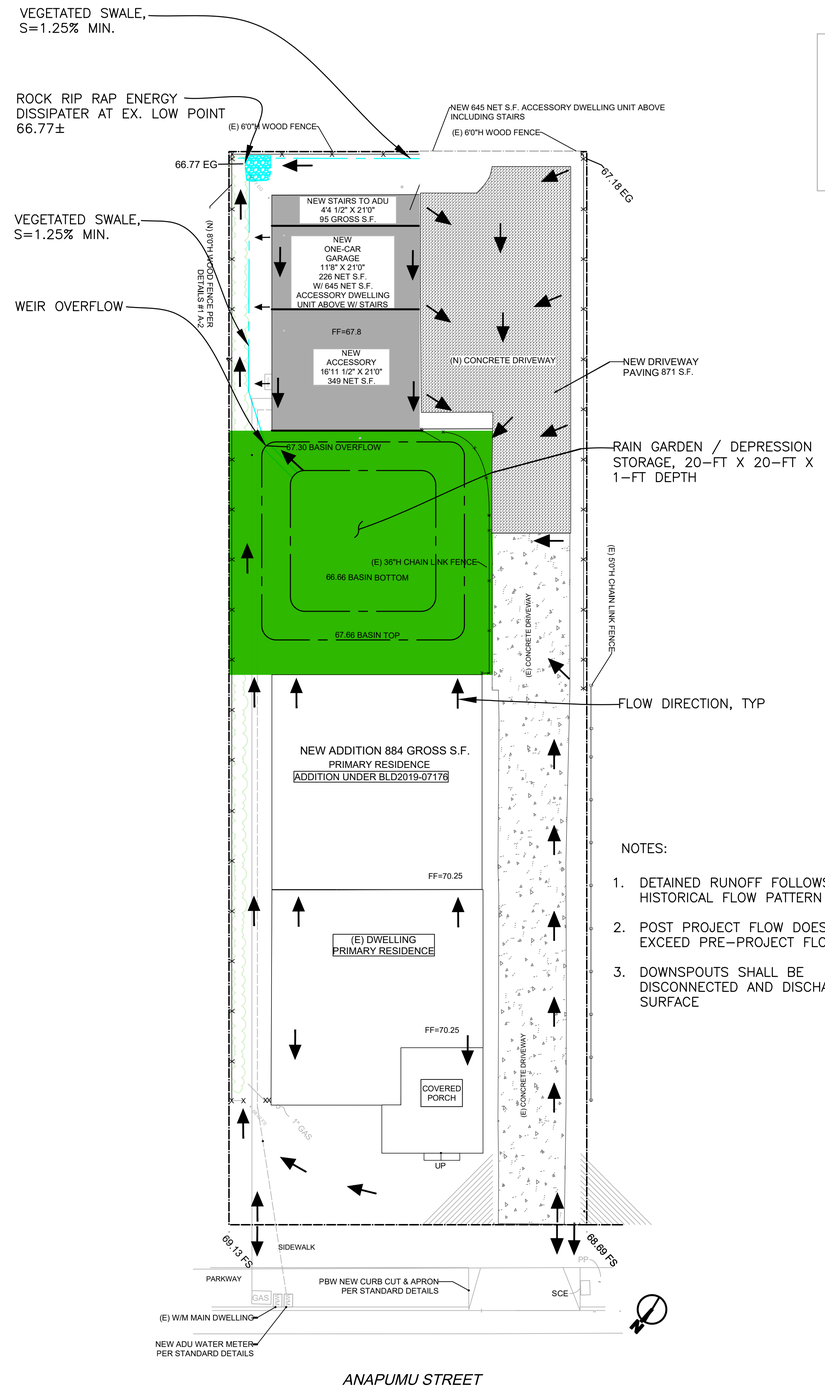
ELECTRICAL CALCULATIONS

Revisions:

Job No:	A19122	Sheet:
Date:	12.19.19	**E0.1**
Drawn:	TCN	
Checked:	AJN	



EXISTING PROJECT SITE

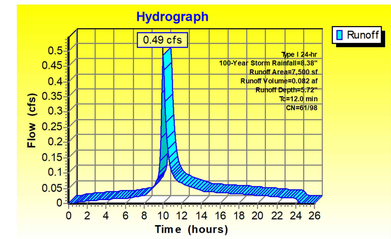


PROPOSED PROJECT SITE

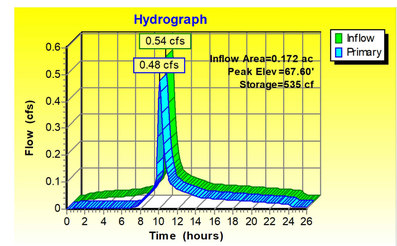
HYDROLOGY CALCULATIONS (CFS):

	2-YR	5-YR	10-YR	25-YR	100-YR
PRE-PROJECT:	0.12	0.21	0.27	0.36	0.49
POST PROJECT:	0.16	0.25	0.32	0.41	0.54
BASIN DISCHARGE:	0.07	0.20	0.27	0.36	0.48

Q-100 PRE-PROJECT HYDROGRAPH



Q-100 POST PROJECT AND BASIN OUTFLOW HYDROGRAPH



NOTES:

1. DETAINED RUNOFF FOLLOWS HISTORICAL FLOW PATTERN
2. POST PROJECT FLOW DOES NOT EXCEED PRE-PROJECT FLOW
3. DOWNSPOUTS SHALL BE DISCONNECTED AND DISCHARGE TO SURFACE

IMPORTANT NOTICE

ALL UTILITY LOCATIONS ARE APPROXIMATE CONTRACTOR IS TO NOTIFY UNDERGROUND SERVICE ALERT TWO WORKING DAYS PRIOR TO STARTING ANY EXCAVATION OR RESURFACING.

CALL TOLL FREE 1-800-422-4133

SCALE: 1"=10'
GRAPHIC SCALE
0 10 20 30

TIER 2 STORMWATER MANAGEMENT EXHIBIT

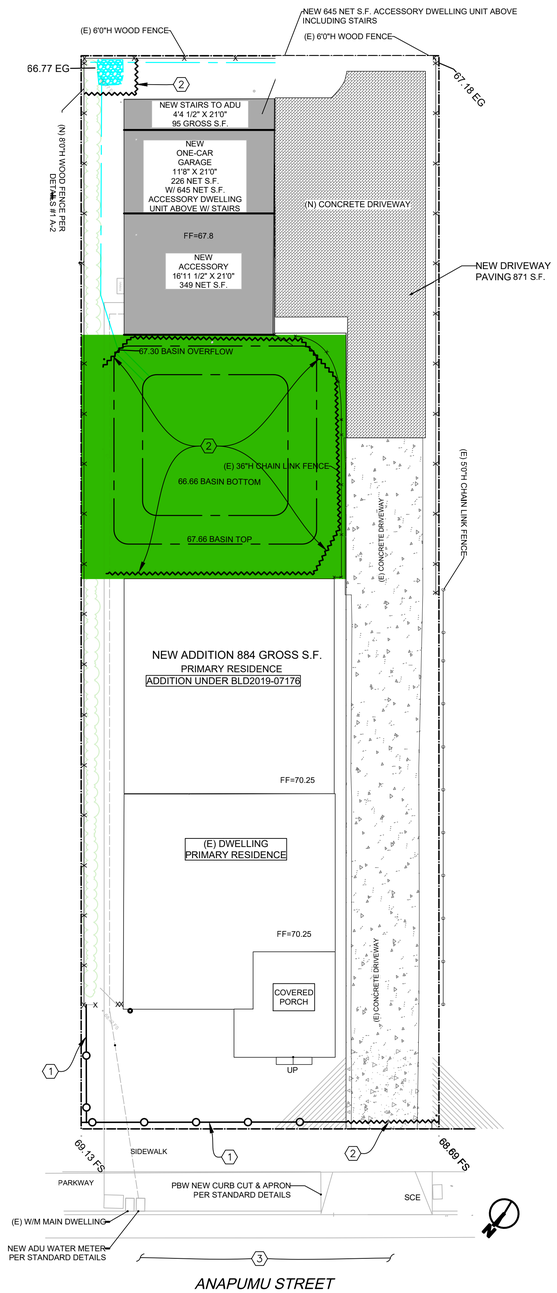
519 E. ANAPAMU ST.

CITY OF SANTA BARBARA, CALIFORNIA

C-1

FLOWERS & ASSOCIATES, INC.
201 N. Calle Cesar Chavez, Suite 100
Santa Barbara, CA 93103
Telephone (805) 966-2224
CIVIL ENGINEERING • PLANNING
CONSTRUCTION ENGINEERING
REGISTERED PROFESSIONAL ENGINEER ROBERT A. SCHMIDT No. 71335 CIVIL STATE OF CALIFORNIA

BY: _____ DATE: _____



PROPOSED PROJECT SITE

SCALE: 1"=10'
GRAPHIC SCALE
0 10 20 30

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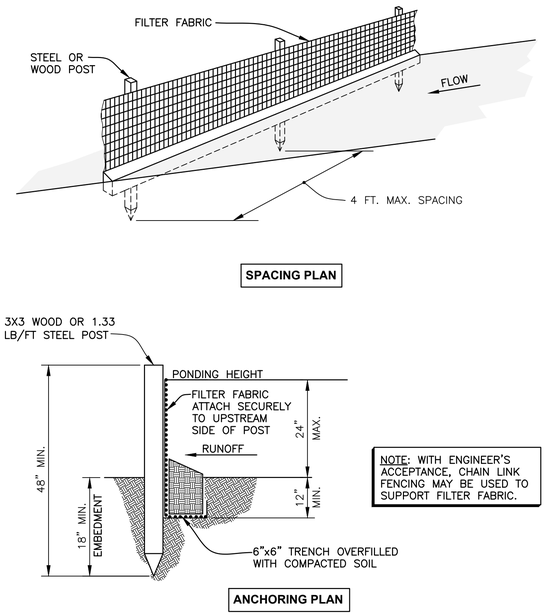
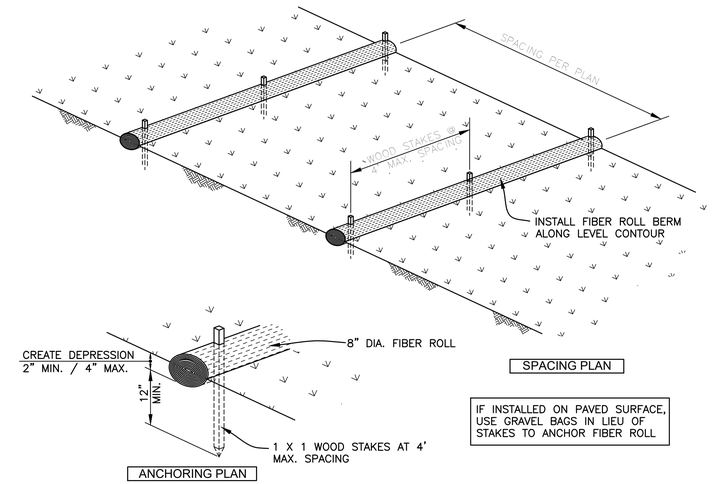
CALL TOLL FREE 1-800-422-4133



NOTE: WITH ENGINEER'S ACCEPTANCE, CHAIN LINK FENCING MAY BE USED TO SUPPORT FILTER FABRIC.

1 **SILT FENCE DETAIL**
NOT TO SCALE



IF INSTALLED ON PAVED SURFACE, USE GRAVEL BAGS IN LIEU OF STAKES TO ANCHOR FIBER ROLL

2 **FIBER ROLL BERM DETAIL**
NOT TO SCALE

CONTRACTOR SHALL NOT INSTALL BMP'S IN A MANNER THAT CAUSES PONDING OR DIVERSION OF WATER FROM DRAINAGE INLETS RESULTING IN DAMAGE TO PROPERTY.

CONTRACTOR SHALL PROPERLY MAINTAIN BMP'S TO PREVENT PONDING OR DIVERSION OF WATER FROM DRAINAGE INLETS RESULTING IN DAMAGE TO PROPERTY.

STORM WATER POLLUTION PREVENTION CONSTRUCTION NOTES THIS SHEET:
(NUMBERED ITEM BELOW CORRESPONDS TO NUMBER WITHIN HEXAGON ON DRAWING)

1 INSTALL SILT FENCE PER DETAIL 1, THIS SHEET .

2 INSTALL AND MAINTAIN TEMPORARY FIBER ROLL BERM (STRAW WATTLE) PER DETAIL 2, THIS SHEET, OR FILTREXX SILTSOXX PER MANUFACTURER INSTALLATION INSTRUCTIONS.

3 SWEEP EXISTING ACCESS ROAD (PAVEMENT EDGE TO PAVEMENT EDGE) TO AT LEAST 100' EACH WAY FROM FROM CONSTRUCTION ENTRANCE AT LEAST ONCE EACH WEEK AND FOLLOWING EACH STORM EVENT.

EROSION CONTROL EXHIBIT

519 E. ANAPAMU ST.
CITY OF SANTA BARBARA, CALIFORNIA

E-1

FLOWERS & ASSOCIATES, INC.
201 N. Calle Cesar Chavez, Suite 100
Santa Barbara, CA 93103
Telephone (805) 966-2224
CIVIL ENGINEERING • PLANNING
CONSTRUCTION ENGINEERING

BY: _____ DATE: _____

REGISTERED PROFESSIONAL ENGINEER ROBERT A. SCHMID No. 71335 CIVIL STATE OF CALIFORNIA

X:\2020\2026\2026\DRAINAGE\2026_SWMP EXBT1_20200311.dwg, 3/31/2020 9:17:18 AM, WBarber

Landscape Compliance Requirements

Landscape Design for Water Conservation
Compliance Statement

Mandatory Measures: *(Show calculations of required areas on referenced sheets)*	**Sheet#**
No turf in parkways, medians or other areas with any dimension of < 8 feet	L1.0
No turf on >20% slope	L1.0
Residential, mixed-use & institutional projects have ≥80% of site's total landscaped area in water wise plants (including existing and to-remain landscaping in calculation); Commercial projects have 100% of landscaped area planted with water wise plants	L1.0
Three inches of mulch specified as required	L1.0
Areas of sprinkler coverage avoids overspray and runoff, including optimum distribution uniformity, head-to-head spacing and setbacks from walkways and pavement	L1.0 ALL DRIP
Sprinklers have matched precipitation rates within each valve and circuit	L1.0 ALL DRIP
Valves separated for individual hydrozones based on plant water needs and sun/shade requirements	L1.0
Weather based irrigation controller with a rain shutoff sensor for the entire irrigation system if including an automatic irrigation system	L1.0
Areas less than 8' wide irrigated only with bubblers, rotating nozzles on pop-up bodies, sub-surface, or drip irrigation	L1.0
Drip/low volume irrigation system on >25% of landscaped area	L1.0
Check valves (inline or integrated) located to prevent unwanted draining of irrigation lines	L1.0
Pressure regulator(s) scheduled for mainline(s) and/or inline regulators scheduled at each valve	L1.0
Grading encourages water retention and infiltration by preserving open space and creating depressed areas/swales	NO GRADING
Grading mimics natural, pre-development hydrologic flow paths and maintains and/or increases the width of flow paths in order to decrease flow rates	NO GRADING

I state that I am familiar with the Landscape Design Standards for Water Conservation as most recently adopted by the Santa Barbara City Council and that the landscape design for this project complies with those standards.

It is my understanding that verification of compliance will be necessary upon final building inspection. I shall inspect the completed installation and I will submit in writing that the installation substantially conforms to the approved plans.

ROBERT RICHARDS — Signature
ROBERT RICHARDS — Name

CA 5980 — License #
4/30/21 — Exp. Date

\\Comdevsvr\comdev\Group Folders\PLAN\Handouts\Official Handouts\Design Review\Landscape Compliance Requirements.docx — Original: Revised 3/26/2015 4:20:00 PM

City of Santa Barbara Planning Counter / 630 Garden St. / (805) 564-5578 **Page 2 of 2**

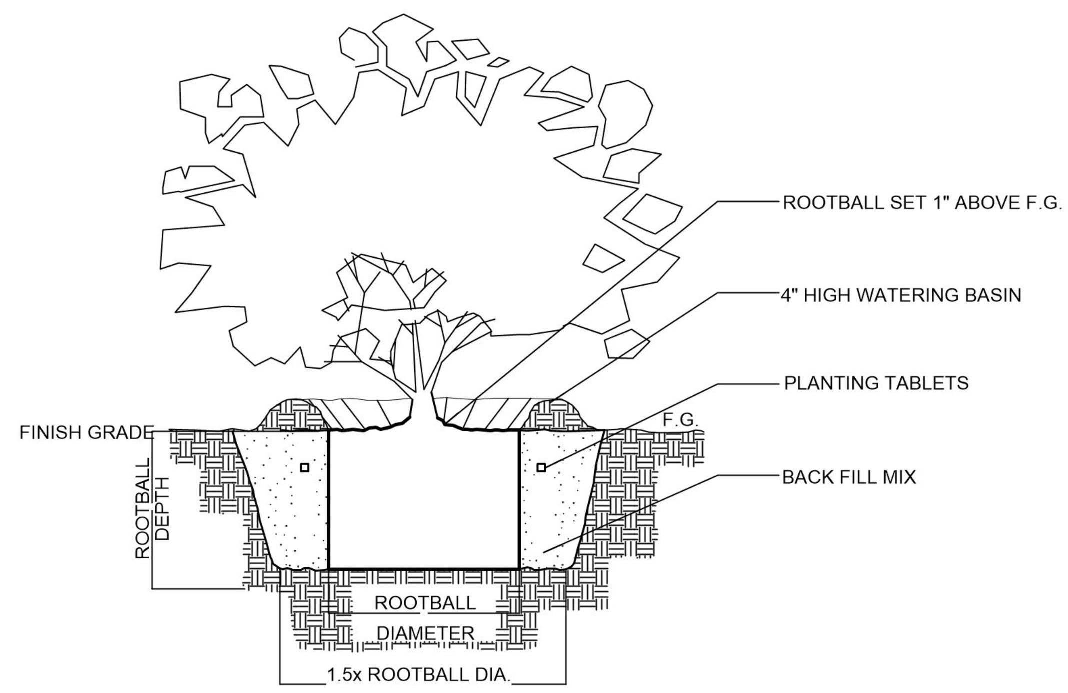
PLANT LIST

SIZE	QTY	ID	BOTANICAL NAME	COMMON NAME
5 GAL	8	AGA ATT	AGAVE ATTENUATA	FOXTAIL AGAVE
1 GAL	10	CAR TUM	CAREX TUMULICOLA	FOOTHILL SEDGE
5 GAL	38	LIG TEX	LIGUSTRUM TEXANUM	PRIVET
5 GAL	5	LOM LON	LOMANDRA LONGIFOLIA 'BREEZE'	DWARF MAT RUSH
TRAN	3	PER AME	PERSEA AMERICANA	AVOCADO
5 GAL	6	PHO YEL	PHORMIUM TEN. 'YELLOW WAVE'	NEW ZEALAND FLAX

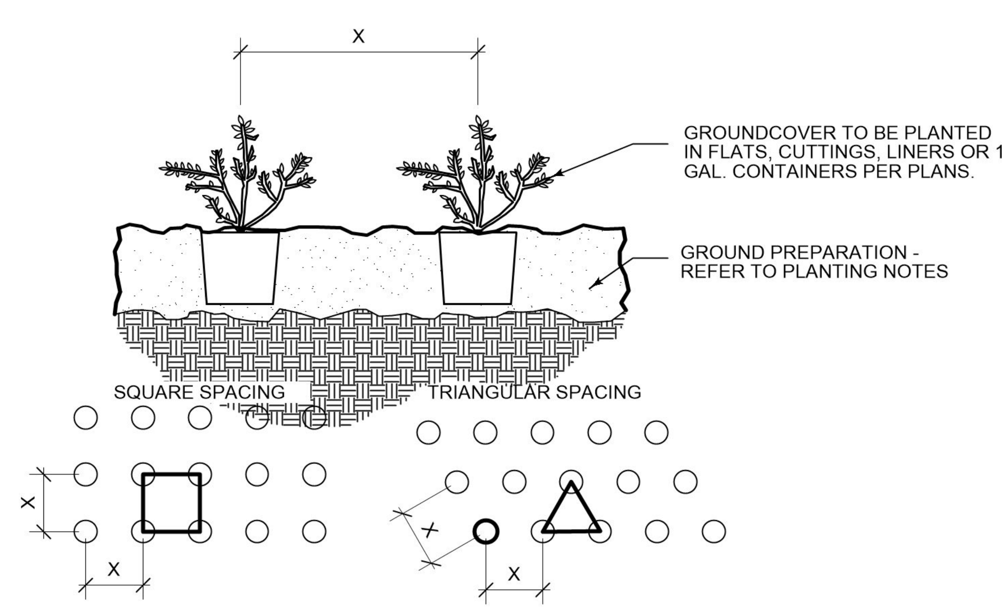
WATER USE INFORMATION:
ALL LANDSCAPE PLANTING IS
LOW WATER USE

IRRIGATION NOTE:

OPTIONAL IRRIGATION AT DISCRETION OF OWNER:
PROVIDE NEW DRIP IRRIGATION CONTROLLER, HUNTER NODE WITH ONE STATION CONNECTED TO NEW DRIP SYSTEM TO IRRIGATE NEW LANDCAPE PLANTING
ALL LANDSCAPE IRRIGATION TO BE ON BACKFLOW PREVENTER AND FOLLOW ALL STANDARDS REQUIRED BY THE CITY OF SANTA BARBARA.



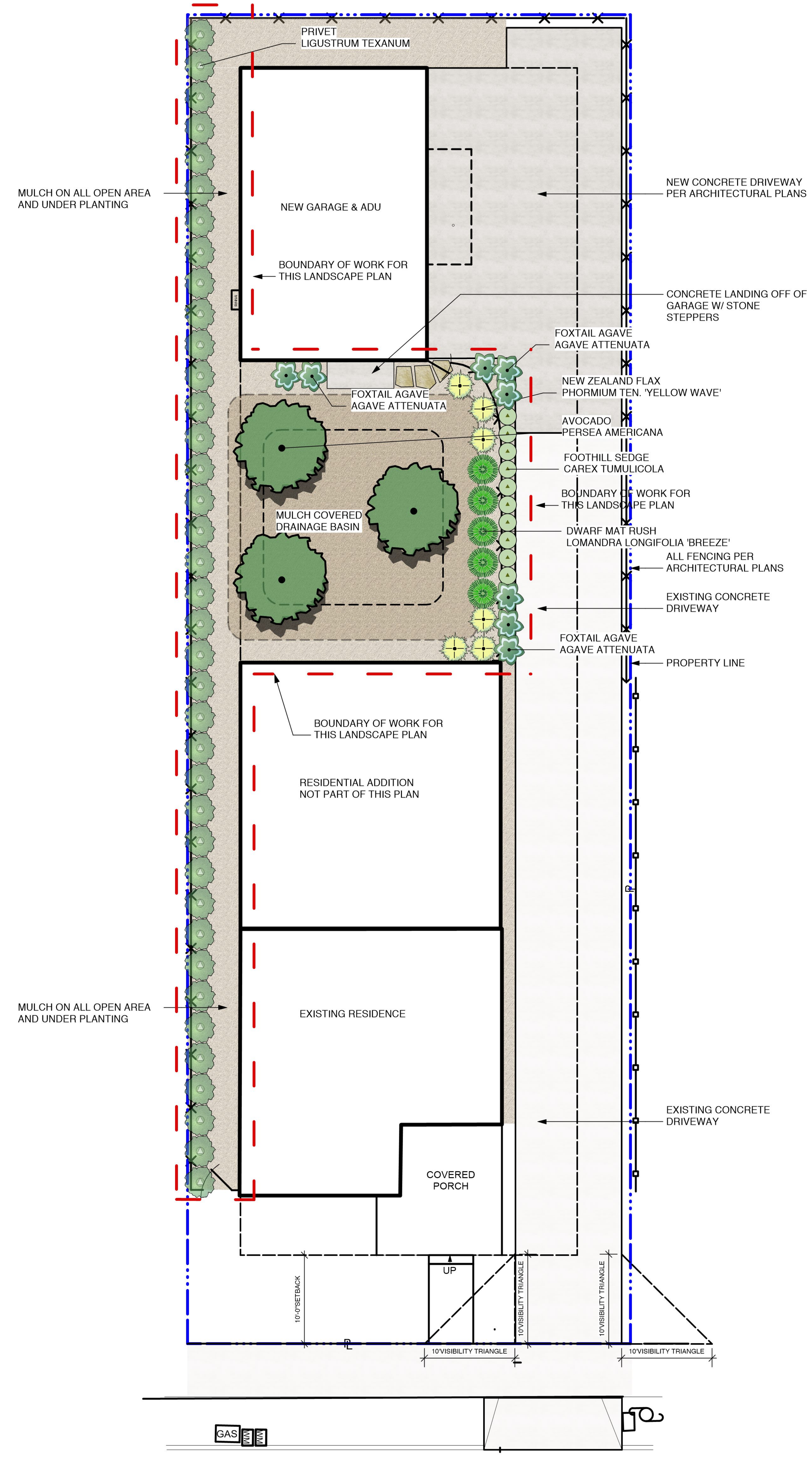
SHRUB PLANTING



GROUNDCOVER PLANTING

PLANTING & CONSTRUCTION NOTES:

1. NO TURF SHALL BE LOCATED IN AREAS LESS THAN 8 FEET WIDE.
2. ALL PLANTING AREAS SHALL BE COVERED WITH ORGANIC MULCH OF 3" DEPTH, UNLESS OTHERWISE INDICATED ON THESE PLANS. CONTRACTOR SHALL PROVIDE AND INSTALL LANDSCAPE MULCH OVER ALL AREAS INDICATED ON THE PLAN, AND BELOW SHRUBS AND VINES. MULCH SHALL BE SCREENED WOOD CHIP WHENEVER AVAILABLE. CONTRACTOR TO PROVIDE LANDSCAPE ARCHITECT WITH SAMPLES OF MULCH FOR APPROVAL PRIOR TO INSTALLATION.
3. GRADING SHALL BE PRESERVED TO PROVIDE FOR ADEQUATE DRAINAGE WITHOUT RUNOFF.
4.CONTRACTOR SHALL CLEAR AND GRUB ALL PLANTING AREAS, REMOVING ALL INVASIVE WEED SPECIES PRIOR TO INSTALLATION OF PLANT MATERIALS.
5.ALL PLANTS ARE IDENTIFIED BY TYPICAL SYMBOLS. PLANT QUANTITIES INDICATED ON THIS SHEET ARE APPROXIMATE AND ARE PROVIDED FOR THE CONVENIENCE OF THE CONTRACTOR. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO CONFIRM ALL PLANT QUANTITIES PRIOR TO BIDDING. IN THE EVENT OF DISCREPANCIES IN PLANT COUNT, QUANTITIES INDICATED BY PLANT SYMBOLS SHALL PREVAIL. CONTRACTOR SHALL NOTIFY THE LANDSCAPE ARCHITECT OF SITE CONDITIONS WHICH PREVENT INSTALLATION PER PLANS AND SPECIFICATIONS.
6. ALL PLANT MATERIALS SHALL BE SET OUT AS SHOWN ON PLAN. FINAL LOCATIONS SHALL BE APPROVED BY THE LANDSCAPE ARCHITECT PRIOR TO PLANTING. THE LANDSCAPE ARCHITECT SHALL BE GIVEN 48 HOURS NOTICE BEFORE HAVING TO APPROVE PLANT LOCATIONS. CONTRACTOR TO PROPERLY MAINTAIN PLANT MATERIAL PRIOR TO PLANTING.
7. WHERE HATCHES OR FILL PATTERNS INDICATE PLANTING OF GROUNDCOVER OR OTHER PLANT MATERIAL CONTRACTOR SHALL PROVIDE SUFFICIENT PLANT QUANTITIES TO FILL ENTIRE AREA AT THE RECOMMENDED PLANT SPACING ON THE PLANTING LIST.
8. CONTRACTOR SHALL BE LIABLE FOR REMOVING AND REINSTALLING IRRIGATION EQUIPMENT AND REPLANTING AREAS WHICH ARE NOT INSTALLED PER PLAN AND SPECIFICATIONS.CONTRACTOR IS RESPONSIBLE FOR ALL REPAIRS AND REPLACEMENT OF ANY DAMAGED BUILDING AND/OR LANDSCAPE AREA BEYOND THE LIMIT OF WORK, THAT IS A DIRECT RESULT OF THE LANDSCAPE CONSTRUCTION AND/OR HIS SUB-CONTRACTOR(S). REPLACEMENT ITEMS SHALL BE EXACT DUPLICATES OF ORIGINAL WORK
9. CLEAN UP SHALL TAKE PLACE ON A DAILY BASIS UNLESS OTHERWISE APPROVED BY THE OWNER'S REPRESENTATIVE.
10. IRRIGATION SYSTEM SHALL BE INSTALLED AND APPROVED PRIOR TO PLANT MATERIALS
11. TREES AND SHRUBS SHALL BE PLANTED AFTER HARDSCAPE CONSTRUCTION, BUT NOT BEFORE IRRIGATION COVERAGE TEST & APPROVAL.
12. KEEP IRRIGATION HEADS AWAY FROM TREE TRUNKS AS MUCH AS POSSIBLE.
13. TURF SHALL NOT BE INSTALLED ON AREAS GREATER THAN 20% SLOPE.
14. 9 MONTH SLOW-RELEASE ORGANIC FERTILIZER TABLETS SHALL BE USED AS LISTED BELOW, UNLESS ALTERNATIVE IS APPROVED BY LANDSCAPE ARCHITECT. PLACE FERTILIZER TABS IN PLANT CONTAINER PRIOR TO PLANTING FOR OBSERVATION PURPOSES. ALL CONTAINERIZED PLANTS SHALL BE LAID OUT IN THEIR CONTAINERS AT THE LOCATIONS INDICATED BY THE DRAWINGS BEFORE ANY PLANT PITS ARE DUG. ALL SUCH LOCATIONS SHALL BE APPROVED BY THE LANDSCAPE ARCHITECT. IF ANY UNDERGROUND CONSTRUCTION OR UTILITY LINE IS ENCOUNTERED IN THE EXCAVATION OF PLANTING AREAS, ALTERNATE LOCATIONS FOR PLANTING WILL BE SELECTED BY THE LANDSCAPE ARCHITECT.
   1 GALLON - 1 TABLET   15 GALLON - 3 TABLETS   36" BOX - 5 TABLETS
   5 GALLON - 2 TABLETS   24" BOX - 4 TABLETS
15. ALL PLANTING HOLES SHALL BE BACKFILLED WITH: (PER CUBIC YARD OF MIX)
   (1) 3 PARTS BY VOLUME ON-SITE SOIL.
   (2) 2 PARTS BY VOLUME MATURE COMPOST, SHALL BE ALL AROUND COMPOST (AVAILABLE FROM ALL AROUND IRRIGATION, 4760 CARPINTERIA AVENUE, CARPINTERIA CA (805) 684.3115) OR APPROVED EQUAL
16. WHENEVER POSSIBLE DURING EXCAVATION, CONTRACTOR SHALL SAVE AND REUSE TOPSOIL. STOCKPILE ON-SITE DURING CONSTRUCTION AS NECESSARY.
17. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE THE LOCATION AND DEPTH OF ALL UNDERGROUND FACILITIES INCLUDING SERVICE CONNECTIONS WHICH MAY AFFECT OR BE AFFECTED BY HIS OPERATIONS. UNDERGROUND UTILITIES AND SUBSTRUCTURES AS SHOWN HEREON WERE OBTAINED FROM AVAILABLE SOURCES, THE ACCURACY OF WHICH HAS NOT BEEN DETERMINED. CONTRACTOR SHALL VERIFY DEPTH AND LOCATION OF ALL EXISTING UTILITIES AND SUBSTRUCTURES PRIOR TO CONSTRUCTION, AND SHALL BE RESPONSIBLE FOR ANY DAMAGE TO EXISTING UTILITIES DURING CONSTRUCTION.
20. UPON LEARNING OF THE EXISTENCE AND LOCATION OF ANY UNDERGROUND FACILITIES NOT SHOWN OR SHOWN INACCURATELY ON THESE PLANS OR NOT PROPERLY MARKED BY THE UTILITY OWNER, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE UTILITY OWNER AND THE LANDSCAPE ARCHITECT BY TELEPHONE AND IN WRITING.
21. THE CONTRACTOR SHALL NOTIFY UNDERGROUND SERVICE ALERT TWO (2) FULL DAYS IN ADVANCE OF ANY DEMOLITION OR EXCAVATION.
22. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE REQUIREMENTS OF THE STATE OF CALIFORNIA DIVISION OF INDUSTRIAL SAFETY.
23. ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION (GREEN BOOK), LATEST EDITION (PUBLISHED BY BUILDING NEWS, INC., LOS ANGELES) AS MODIFIED BY THE NOTES HEREON.
24. CONTRACTOR SHALL MAINTAIN A COMPLETE AND ACCURATE RECORD OF ALL CHANGES OF CONSTRUCTION FROM THAT SHOWN IN THESE PLANS AND SPECIFICATIONS FOR THE PURPOSE OF PROVIDING A BASIS FOR RECORD DRAWINGS. NO CHANGES SHALL BE MADE WITHOUT PRIOR WRITTEN APPROVAL FROM THE LANDSCAPE ARCHITECT AND/OR THE OWNER.
25. THE CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLING ADEQUATE TEMPORARY DRAINAGE FACILITIES AND EROSION CONTROL DEVICES DURING CONSTRUCTION IN ORDER TO CONTROL STORM WATER RUNOFF AND PROTECT THE WORK, PROPERTY AND ADJACENT PROPERTIES FROM DAMAGE.
26. IF THERE IS EVIDENCE OF GOPHER ACTIVITY ON SITE, ALL PLANTING TO BE INSTALLED IN GOPHER BASKETS OR WIRE UNLESS THE PLANT IS KNOWN TO BE GOPHER RESISTANT. ALL PLANTING IN RAISED PLANTERS TO BE PROTECTED BY GOPHER BARRIER AT 24" MIN DEPTH.



1 LANDSCAPE PLANTING
Scale: 1/8" = 1'-0"

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0 8 12 16 20 24 FT

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LICENSED LANDSCAPE ARCHITECT
ROBERT RICHARDS
#5980
Signature
Date
4-30-21
Renewal Date
STATE OF CALIFORNIA

LANDSCAPE PLANTING PLAN

519 W. ANAPUMU ST
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REVISIONS:

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DATE: 4-30-2020

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