

## GENERAL NOTES

- PRIOR TO SUBMITTING COST PROPOSAL, THE CONTRACTOR/OWNER SHALL VERIFY EXISTING CONDITIONS ON SITE & REVIEW MODIFICATIONS AND DIMENSIONS REQUIRED TO SUIT THE CONTRACT DOCUMENTS.
- CONTRACT DOCUMENTS ARE COMPLEMENTARY. WHAT IS CALLED FOR ON ANY DOCUMENT WILL BE BINDING AS IF CALLED FOR ON ALL DOCUMENTS. ALL WORK SHOWN OR REFERENCED ON ANY CONSTRUCTION DOCUMENT SHALL BE PROVIDED AS THOUGH SHOWN ON ALL RELATED DOCUMENTS.
- SHOULD CONFLICT OCCUR IN OR BETWEEN DRAWINGS AND SPECIFICATION OR WHERE DETAIL REFERENCES ON CONTRACT DRAWINGS HAVE BEEN OMITTED, CONTRACTOR/OWNER IS DEEMED TO HAVE ESTIMATED THE MOST EXPENSIVE MATERIALS AND CONTRACTOR INVOLVED .
- ALL WORK SHALL MEET FEDERAL, STATE AND LOCAL BUILDING CODES AND ORDINANCES IN EFFECT AT THE TIME OF CONSTRUCTION.
- THE CONTRACTOR SHALL REMOVE ALL RUBBISH AND WASTE MATERIALS ON A REGULAR BASIS, AND SHALL EXERCISE STRICT CONTROL OVER JOB CLEANING TO PREVENT ANY DIRT, DEBRIS OR DUST FROM AFFECTING FINISHED AREAS IN OR OUTSIDE OF THE JOB SITE. THE BUILDING REFUSE FACILITIES SHALL NOT BE USED FOR THIS PURPOSE WITHOUT PERMISSION FROM BUILDING OWNER.
- THE CONTRACTOR SHALL CONFINE OPERATIONS AT THE SITE TO AREAS PERMITTED BY LAW, ORDINANCES, PERMITS AND CONTRACT DOCUMENTS, AND SHALL NOT UNREASONABLY ENCUMBER THE SITE WITH ANY MATERIALS OR EQUIPMENT.
- THE CONTRACTOR SHALL LEAVE THE PREMISES AND ALL AREAS CLEAN AND IN AN ORDERLY MANNER READY FOR OCCUPANCY AT THE END OF THE PROJECT.
- THE CONTRACTOR/OWNER SHALL SUBMIT TO THE OWNER FOR APPROVAL, A DETAILED CONSTRUCTION SCHEDULE SHOWING PHASING AND TIME ALLOTMENT OF WORK.
- THE CONTRACTOR/OWNER, OR SUBCONTRACTORS, SHALL SECURE AND PAY FOR ALL PERMITS, GOVERNMENTAL FEES AND LICENSES REQUIRED FOR PROPER COMPLETION OF THE WORK. THE CONTRACTOR SHALL REQUEST ALL INSPECTIONS REQUIRED BY LOCAL GOVERNMENTAL AGENCIES AND COORDINATE THE WORK ACCORDINGLY.
- CONSTRUCTION LIABILITY: CONSTRUCTION CONTRACTOR AND HIS SUBCONTRACTORS AGREE THAT IN ACCORDANCE WITH GENERALLY ACCEPTED CONSTRUCTION PRACTICES, CONSTRUCTION CONTRACTOR AND HIS SUBCONTRACTORS WILL BE REQUIRED TO ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR JOB SITE CONDITIONS DURING THE COURSE OF CONSTRUCTION OF THE PROJECT, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY, THAT THIS REQUIREMENT SHALL BE MADE TO APPLY CONTINUOUSLY AND NOT LIMITED TO NORMAL WORKING HOURS, AND CONSTRUCTION CONTRACTOR AND HIS SUBCONTRACTORS FURTHER AGREE TO DEFEND, INDEMNIFY AND HOLD DESIGN PROFESSIONAL HARMLESS FROM AND ALL LIABILITY, REAL OR ALLEGED, IN CONNECTION WITH THE PERFORMANCE OF WORK ON THIS PROJECT, EXCEPT LIABILITY ARISING FROM THE SOLE NEGLIGENCE OF DESIGN PROFESSIONAL
- CONTRACTOR/OWNER SHALL BE RESPONSIBLE FOR ACCURATE LOCATION OF PLOT LINES, BOUNDARIES, AND FOR MAINTAINING PROPER RELATIONSHIPS TO SUCH AS INDICATED ON CIVIL DRAWINGS IF APPLICABLE.
- THE CONTRACTOR/OWNER SHALL PROVIDE POSITIVE DRAINAGE OF SURFACE WATER WITHOUT PONDING OF WATER ADJACENT TO BUILDING OR ON PAVEMENTS. DRAINAGE OF PAVED AREAS TO BE AS SHOWN ON CIVIL ENGINEER'S DRAWINGS.
- ALL PATCHING, REPAIRING AND REPLACING OF MATERIALS AND SURFACES CUT OR DAMAGED IN EXECUTION OF WORK SHALL BE DONE WITH APPLICABLE MATERIALS SO THAT SURFACES REPLACED WILL, UPON COMPLETION, MATCH SURROUNDING SIMILAR SURFACES.
- ALL VENTS THROUGH ROOF SHALL BE KEPT AT A MINIMUM HEIGHT CONSISTENT WITH APPLICABLE CODES.
- ALL OPEN JOINTS, PENETRATIONS AND OTHER OPENINGS IN THE BUILDING ENVELOPE SHALL BE SEALED, CAULKED, GASKETED OR WEATHERSTRIPPED TO LIMIT AIR LEAKAGE.
- ELECTRICAL, MECHANICAL, AND PLUMBING SYSTEMS ARE "DESIGN/BUILD." PERFORMANCE SPECIFICATIONS AS WELL AS EQUIPMENT SIZES ARE TO BE REVIEWED BY THE DESIGNER AND OWNER PRIOR TO THE COMMENCEMENT OF ANY WORK.
- ALL MECHANICAL, ELECTRICAL AND PLUMBING LOCATIONS SHOWN ON DESIGNERS PLANS ARE FOR DESIGN INTENT ONLY. ALL ELECTRICAL, MECHANICAL AND PLUMBING WORK ARE TO BE PROVIDED AS PART OF THIS PACKAGE PER THE LOCAL JURISDICTION.
- PLUMBING AND EQUIPMENT VENTING: WHERE FEASIBLE, VENT ALL PLUMBING FIXTURES, EXHAUST VENTS, FURNACE, AND WATER HEATER TO ROOF. VERIFY ALL LOCATIONS OF VENTS WITH DESIGNER AND OWNER PRIOR TO INSTALLATION.
- PROVIDE WATER-RESISTANT GYPSUM BOARD AT ALL BATH, TOILET, AND LAUNDRY ROOM WALLS THAT WILL BE PAINTED.
- CONTRACTOR/OWNER TO COORDINATE WITH OWNER FOR OWNER-PROVIDED MATERIALS AND PRODUCTS.
- ANY AND ALL MATERIALS SUPPLIED BY OWNER SHALL BE INSTALLED BY CONTRACTOR/OWNER (I.B.C.), UNLESS OTHERWISE NOTED. CONTRACTOR/OWNER SHALL COORDINATE WITH OWNER FOR REQUIRED SCHEDULING AND ORDERING INFORMATION. CONTRACTOR/OWNER SHALL ASSIST IN DETERMINING QUANTITIES WHEN REQUIRED.
- ADEQUATE PREPARATION OF THE SUBSTRATE IS IMPERATIVE TO PROPER BONDING OF THE PAINT. PREP EACH SUBSTRATE AS RECOMMENDED BY MANUFACTURER. THOROUGHLY CLEAN ALL SURFACES. REMOVE ANY PAINT WHERE BONDING FAILURE IS EVIDENT AND ROUGHEN SURFACES AS REQUIRED FOR ADHESION OF NEW PAINT.
- ALL WOOD SHALL BE PAINTED AS FOLLOWS: EXTERIOR - THREE COAT (STAIN AND SEAL WHERE INDICATED), INTERIOR: TWO COAT (STAIN AND SEAL WHERE INDICATED)
- COLORS WILL BE PROVIDED AND SELECTED BY OWNER. FINAL ACCEPTANCE OF COLORS WILL BE FROM JOB-APPLIED SAMPLES. PROVIDE FULL-COAT FINISH SAMPLES ON SURFACE WITH A MINIMUM SIZE OF 25 S.F. FOR APPROVAL BY OWNER.
- INSTALLATION INSTRUCTIONS FOR ALL LISTED EQUIPMENT SHALL BE PROVIDED TO THE FIELD INSPECTOR AT TIME OF INSPECTION. CMC 303.1.
- ROOFING ASSEMBLIES
  - ROOFING ASSEMBLIES SHALL BE DESIGNED TO PREVENT THE INTRUSION OF FLAMES AND EMBERS BETWEEN THE ROOF COVERING AND THE ROOF DECKING.
  - ROOF VALLEY FLASHING SHALL BE MADE OF NOT LESS THAN 26-GAUGE GALVANIZED SHEET METAL INSTALLED OVER A MINIMUM 36" WIDE UNDER-LAYMENT OF ONE LAYER OF 72" CAP SHEET RUNNING THE FULL LENGTH OF THE VALLEY.

## BUILDING INFORMATION

### APPLICABLE CODES

RESIDENTIAL CODE	CRC, 2016
BUILDING CODE	CBC, 2016
MECHANICAL CODE	CMC, 2016
PLUMBING CODE	CPC, 2016
ELECTRICAL CODE	NEC, 2016
FIRE CODE	UFC, 2016
STATE AMENDMENTS	CBC 2016
LIFE SAFETY CODE	2016
ACCESSIBILITY CODE	2016
ENERGY CODE	CEC 2016

### BUILDING PLANNING

ZONE	R1-S-17
OCCUPANCY	R ( RESIDENTIAL) / U ( GARAGE)
REQ'D FIRE SEPARATION	NONE
CONSTRUCTION TYPE	V, B
SPRINKLERED	YES
FRONT SETBACK	20'-0"
REAR SETBACK	20'-0"
SIDE SETBACK	8'-0"
SIDE SETBACK	7'-0"

### BUILDING INFORMATION

PROJECT NAME	NEW RESIDENCE
PROJECT ADDRESS	APN #047282150
APN NUMBER	047282150
PROPOSED USE	PRIVATE RESIDENCE

## SHEET INDEX

### ARCHITECTURAL

A0.0	GENERAL NOTES / SHEET INDEX / SYMBOL LEGEND / CONTACT INFO
A1.0	SITE PLAN
A1.1	LANDSCAPE PLAN
A2.0	FIRST & SECOND FLOOR PLAN
A2.1	FIRST & SECOND FLOOR REFLECTED CEILING PLAN
A2.2	FIRST & SECOND FLOOR ELECTRICAL PLAN
A3.0	ROOF PLAN
A3.1	WINDOW AND DOOR SCHEDULE
A5.0	EXTERIOR ELEVATIONS
A5.1	EXTERIOR ELEVATIONS
A5.2	BUILDING SECTIONS
A6.0	MISC. DETAILS
A6.1	RENDERING AND MATERIALS

### TOPOGRAPHIC SITE SURVEY

TS-1	TOPOGRAPHIC SITE SURVEY
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### BEST MANAGEMENT PRACTICES

BMP-1	BEST MANAGEMENT PRACTICES
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### CIVIL ENGINEER

C1	GRADING AND DRAINAGE
C2	EROSION CONTROL PLAN

### STRUCTURAL

S1	FOUNDATION & FIRST FLOOR FRAMING
S2	2ND FLOOR FRAMING
S3	FIRST FRAMING PLAN
SD1	STRUCTURAL DETAILS
SD2	STRUCTURAL DETAILS

WSW1  
WSW2  
WSW4

SIMPSON  
WALLS

### TITLE 24

T24-1	TITLE 24 ENERGY CALCULATIONS
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## CALGREEN REQUIREMENTS

- SECTION 4.406.1 - PROTECT ANNULAR SPACES AROUND PIPES, ELECTRIC CABLES, CONDUITS AT EXTERIOR WALLS AGAINST THE PASSAGE OF RODENTS.
- SECTION 4.504.2.1 - ADHESIVES, SEALANTS AND CAULKS SHALL BE COMPLIANT WITH VOC AND OTHER TOXIC COMPOUND LIMITS
- SECTION 4.504.2.2 - PAINTS, STAINS AND OTHER COATINGS SHALL BE COMPLIANT WITH VOC LIMITS
- SECTION 4.504.5 - PARTICLEBOARD, MEDIUM DENSITY FIBERBOARD (MDF) AND HARDWOOD PLYWOOD USED IN INTERIOR FINISH SYSTEMS SHALL COMPLY WITH LOW FORMALDEHYDE EMISSION STANDARDS.
- SECTION 4.505.3 - CHECK MOISTURE CONTENT OF BUILDING MATERIALS USED IN WALL AND FLOOR FRAMING BEFORE ENCLOSURE

## CONTACT LIST

OWNER	JOHN STEADMAN EL GRANADA, CA 94019 [CONTACT] JOHN STEADMAN 650.743.2275
DESIGNER DESIGN EVEREST STRUCTURAL DESIGN	425 1ST ST #4904 SAN FRANCISCO, CA, 94105 [T] 650.793.4151 [CONTACT] JOSH KRUMM
STRUCTURAL ENGINEER VELLEND ENGINEERING	425 1ST ST #4904 SAN FRANCISCO, CA, 94105 [T] 650.793.4151 [CONTACT] JOSH KRUMM
CIVIL ENGINEER SIGMA PRIME GEOSCIENCES	332 PRINCETON AVENUE HALF MOON BAY, CA, 94019 [T] 650.728.3590 [CONTACT] INFO@SIGMAPRIME.NET
TITLE 24 BAY AREA ENERGY COMPLIANCE	7408 POTRERO AVE. EL CERRITO, CA, 94530 [T] 510.932.5858 [CONTACT] FRNK.CUTHBERT [E] TITLE24ANDGREENPOINT@GMAIL.COM

## SYMBOL LEGEND

KEY NOTE	
ELEVATION TAG	
SECTION TAG	
RENDERING/PHOTO TAGS	
DETAIL TAG	
DOOR TAG	
WINDOW TAG	

## PROJECT DESCRIPTION

- NEW 2-STORY CUSTOM HOME TOTAL 2,558 SQFT.

## VICINITY MAP



# DESIGN EVEREST

CONSULTING ENGINEERS

365 FLOWER LANE  
MOUNTAIN VIEW, CA 94043  
PHONE: (888) 311-3015 FAX: (650) 695-1801



COVER SHEET, INDEX, GENERAL NOTES

NEW RESIDENCE

APN # 047282150  
EL GRANADA, CA 94019

DESCRIPTION

DATE

REV

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SIGN DATE: 12-02-2019

DATE: AS NOTED

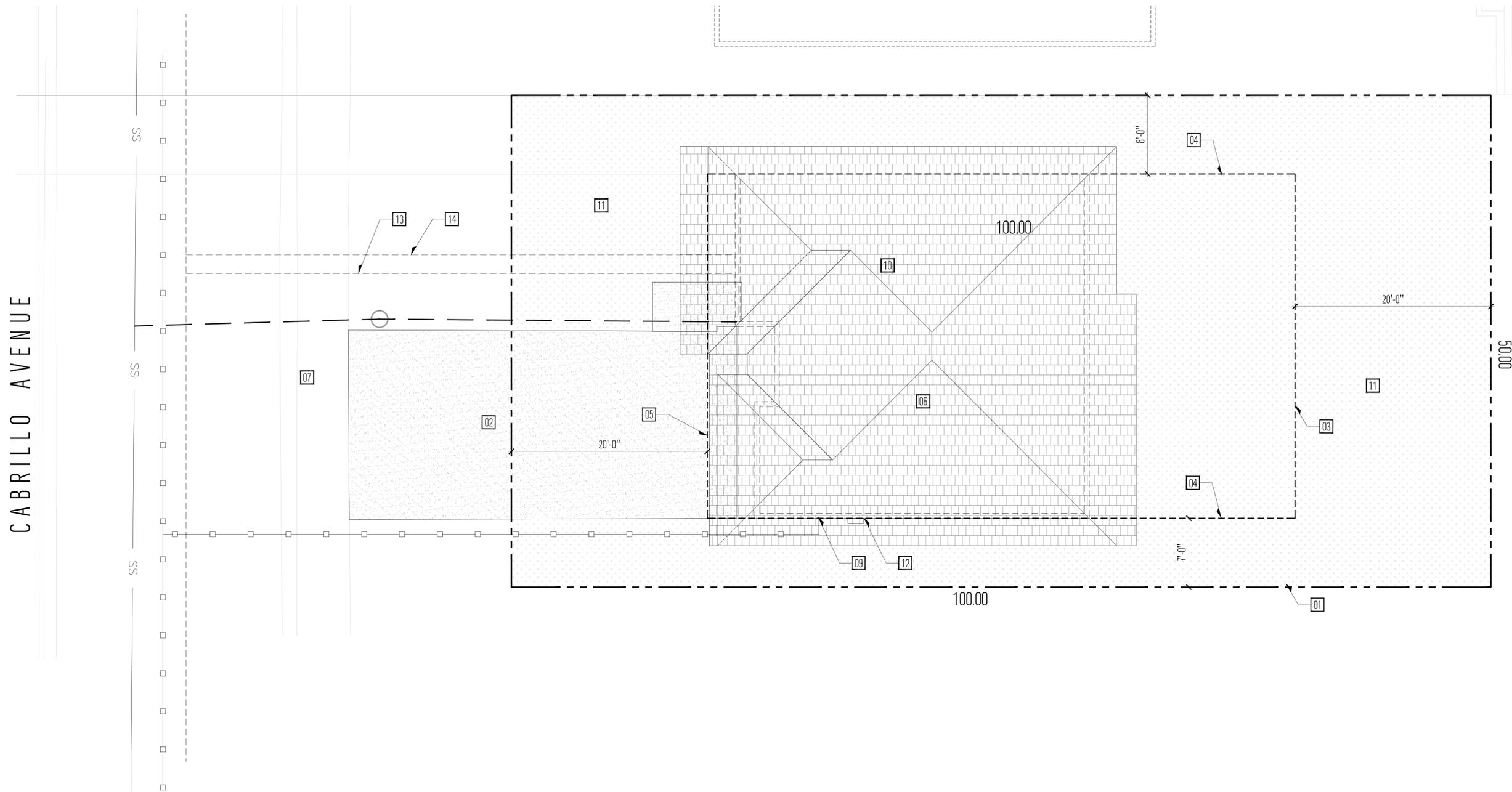
SCALE: AS NOTED

DRAWN BY: JM

CKD BY: AP

PROJECT #: 201908085

A.O.O



SITE INFORMATION / CALCULATIONS

FIRST FLOOR LIVING (INCLUDING STAIRS)	881 SQ. FT.
SECOND FLOOR LIVING	1,211 SQ. FT.
GARAGE	430 SQ. FT.
PORCH	36 SQ. FT.
TOTAL LIVING	2,092 SQ. FT.
TOTAL (INCLUDING GARAGE & PORCH)	2,558 SQ. FT.
MAXIMUM FLOOR AREA RATIO	$5,000 \times .53 = 2,650 \text{ SQFT} = 53\%$
PROPOSED FLOOR AREA RATIO	$2,558 / 5,000 = 51\%$
MAXIMUM LOT COVERAGE	$5,000 \times .35 = 1,750 \text{ SQFT} = 35\%$
PROPOSED LOT COVERAGE	$1,381 / 5,000 = 26\%$
SIDE SETBACK CALCULATION	
SIDE SETBACK	8'-0"
SIDE SETBACK	7'-0"
SIDE SETBACK DETERMINATION TOTAL	15'-0" TOTAL

SYMBOL LEGEND

PROPERTY LINE	100.00
NEW CONCRETE PAVING	[Pattern]
NEW LANDSCAPING	[Pattern]
SETBACK LINE	---
NEW GAS LINE	—□—□—
NEW SANITARY SEWER LINE	---

SITE PLAN GENERAL NOTES

- ANY CONSTRUCTION WITHIN THE CITY'S PUBLIC ROAD RIGHT-OF-WAY SHALL HAVE AN APPROVED PERMIT FOR CONSTRUCTION IN THE PUBLIC STREET PRIOR TO COMMENCEMENT OF THIS WORK. THE PERFORMANCE OF THIS WORK IS NOT AUTHORIZED BY THE BUILDING PERMIT ISSUANCE BUT SHOWN ON THE BUILDING PERMIT FOR INFORMATION ONLY.
- CONTRACTOR SHALL NOT STAGE, STORE, OR STOCKPILE ANY MATERIAL OR EQUIPMENT WITHIN THE PUBLIC ROAD RIGHT-OF-WAY. CONSTRUCTION PHASING SHALL BE COORDINATE TO KEEP MATERIALS AND EQUIPMENT ONSITE.
- THE CONTRACTOR MAY BE REQUIRED TO SUBMIT A LOGISTICS PLAN TO THE PUBLIC WORKS DEPARTMENT PRIOR TO COMMENCING WORK THAT ADDRESSES ALL IMPACTS TO THE CITY'S RIGHT-OF-WAY, INCLUDING, BUT NOT LIMITED TO: PEDESTRIAN CONTROL, TRAFFIC CONTROL, TRUCK ROUTES, MATERIAL DELIVERIES, CONTRACTOR'S PARKING, CONCRETE POURS, CRANE LIFTS, WORK HOURS, NOISE CONTROL, DUST CONTROL, STORM WATER POLLUTION PREVENTION, CONTRACTOR'S CONTACT, NOTICING OF AFFECTED SURROUNDING PROPERTIES, AND SCHEDULE OF WORK. THE REQUIREMENT TO SUBMIT A LOGISTICS PLAN WILL BE DEPENDENT ON THE NUMBER OF APPLICATIONS PUBLIC WORKS ENGINEERING RECEIVES WITHIN CLOSE PROXIMITY TO HELP MITIGATE AND CONTROL THE IMPACT TO THE PUBLIC-RIGHT-OF-WAY. IF NECESSARY, PUBLIC WORKS MAY REQUIRE A LOGISTICS PLAN DURING CONSTRUCTION.

SITE PLAN KEYNOTES

01	PROPERTY LINE	11	NEW LANDSCAPE AREAS
02	NEW CONCRETE DRIVEWAY	12	NEW 200AMP ELEC. PANEL
03	REAR SETBACK	13	NEW 1" WATER LINE TO FIRE SPRINKLERS
04	SIDE SETBACK	14	NEW 1" WATER LINE TO EXISTING WATER METER
05	FRONT SETBACK		
06	NEW ROOF AREA		
07	EXISTING SIDEWALK		
08	NEW 6'-0" FENCE & GATE		
09	NEW GAS METER LOCATION		
10	NEW CONCRETE PATIO & WALKWAY		

DESCRIPTION

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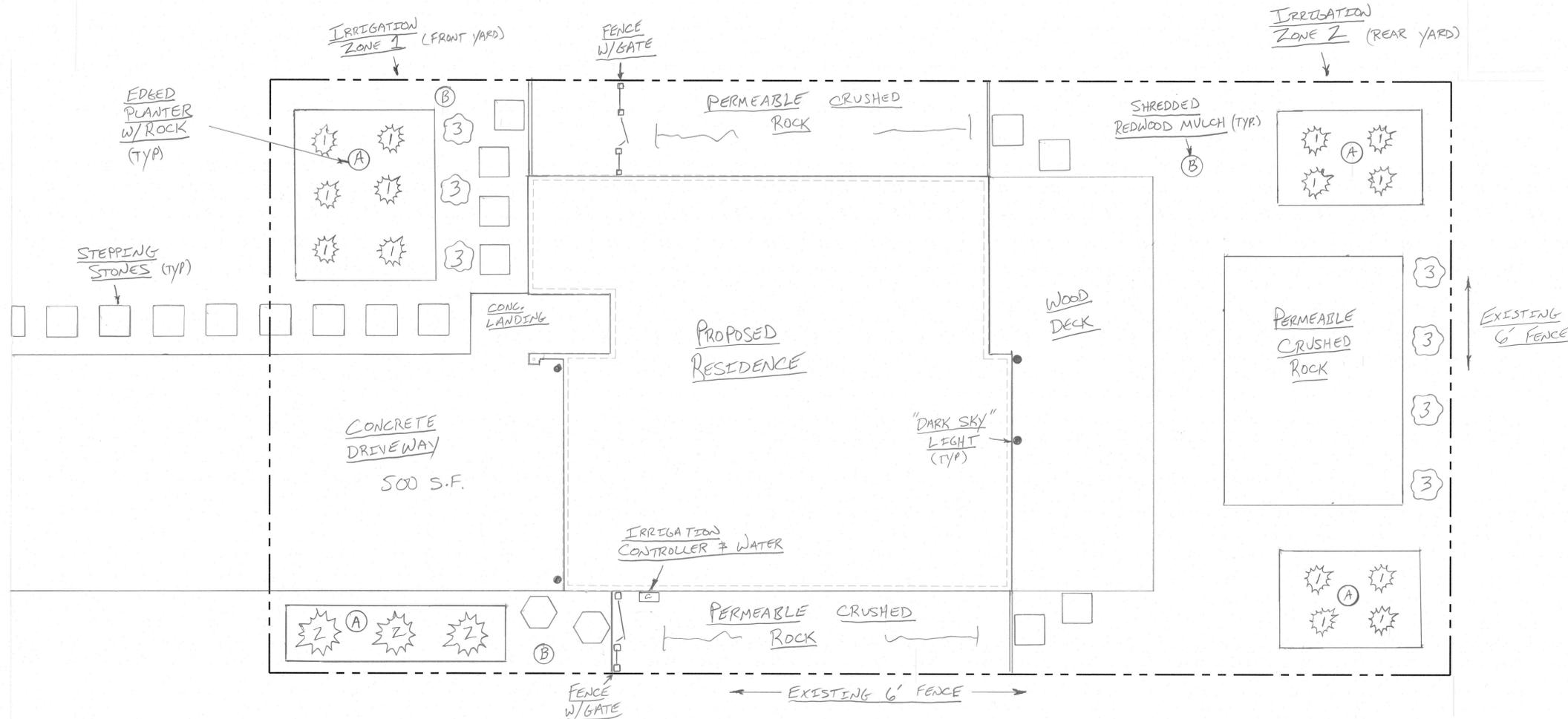
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CKD BY: AP  
PROJECT #: 201908085



**Project Data**

Parcel Size: 5000 SF  
 Non-Landscape Area: 4359 SF  
 Total Irrigated  
 Landscape Area: 641 SF

CABRILLO AVENUE



**Irrigation Notes**

- Water main supply to be 3/4" tee off domestic supply (location noted on plan)
- Separate shutoff to be provided
- Programmable electronic controller to be installed (location noted on plan)
- Each zone will have a back flow preventer and be supplied by a 1/2" lateral supply line
- All plants will be irrigated with drip systems. No sprinklers to be installed.

**Plant Legend & WUCOLS Calculation**

#	Plant Name	Common Name	WUCOLS Factor	Quantity	Total
1	<i>Stipa tenuissima</i> ( <i>Nassella tenuissima</i> )	Mexican feather grass	Low	0.2	14 Total
2	<i>Pennisetum orientale</i>	Chinese fountain grass	Moderate/Medium	0.5	3 Total
3	<i>Euonymus japonicus</i>	evergreen euonymus	Low	0.2	7 Total
<b>Average WUCOLS Factor</b>				<b>0.238</b>	

**Plan Notes**

- An average WUCOLS plant factor 0.3 3-inch layer of mulch shall be applied on all exposed soil surfaces of planting areas except turf areas, creeping or rooting groundcovers, or direct seeding applications where mulch is contraindicated
- Automatic weather-based or soil-moisture based irrigation controllers shall be installed on the irrigation system
- Pressure regulators shall be installed on the irrigation system to ensure dynamic pressure of the system is within the manufacturer's recommended pressure range
- Manual-shut-off valves shall be installed as close as possible to the point of connection of the water supply
- Areas less than 10-feet in width in any direction shall be irrigated with subsurface irrigation or other means that produces no runoff or overspray
- At the time of final inspection, the permit applicant must provide the owner of the property with a certificate of completion, certificate of installation, irrigation schedule of landscape and irrigation maintenance
- Unless contradicted by a soils test, compost at a rate of a minimum of four cubic yards per 1,000 sq. ft. of permeable area shall be incorporated to a depth of six inches into the soil

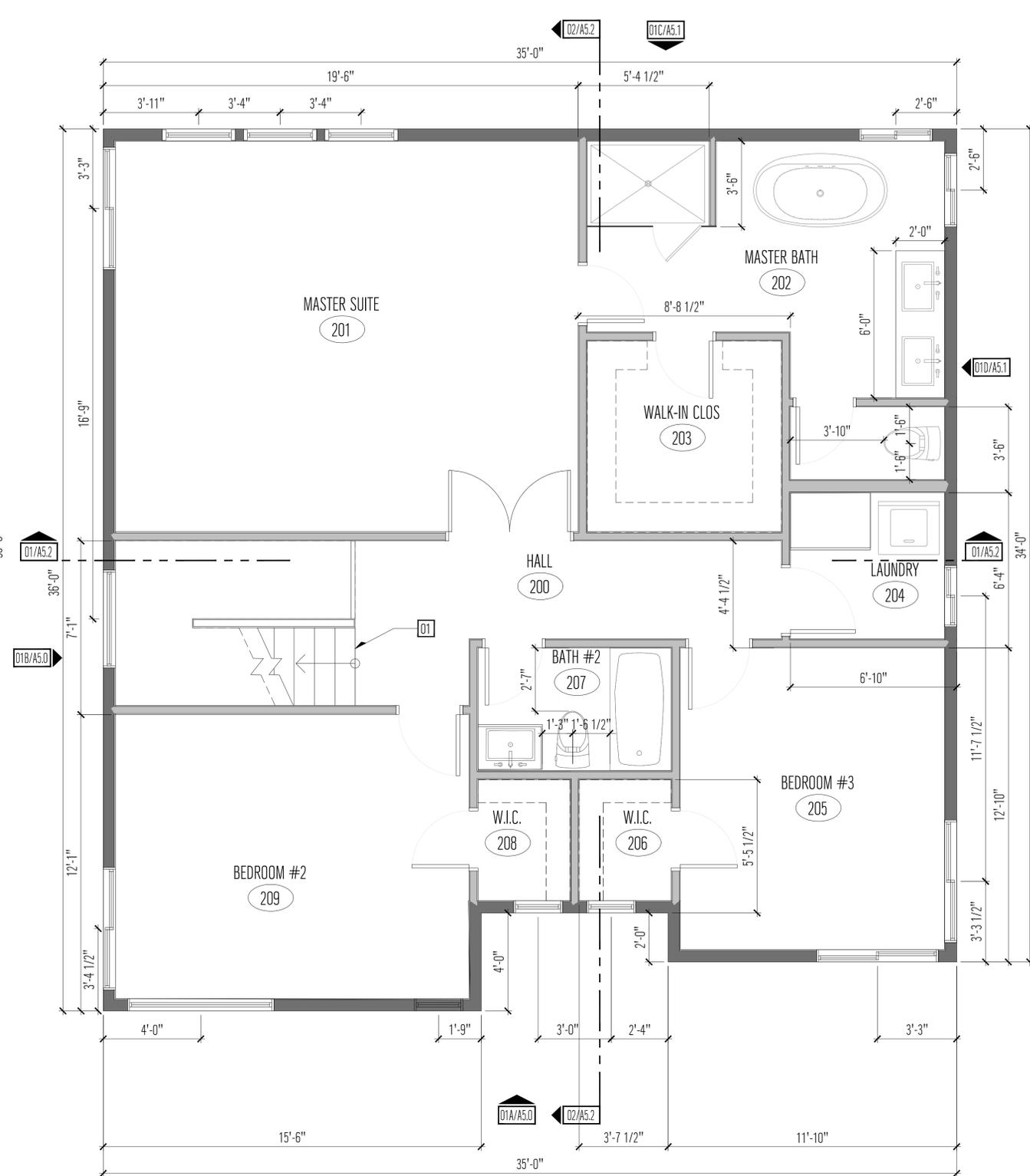
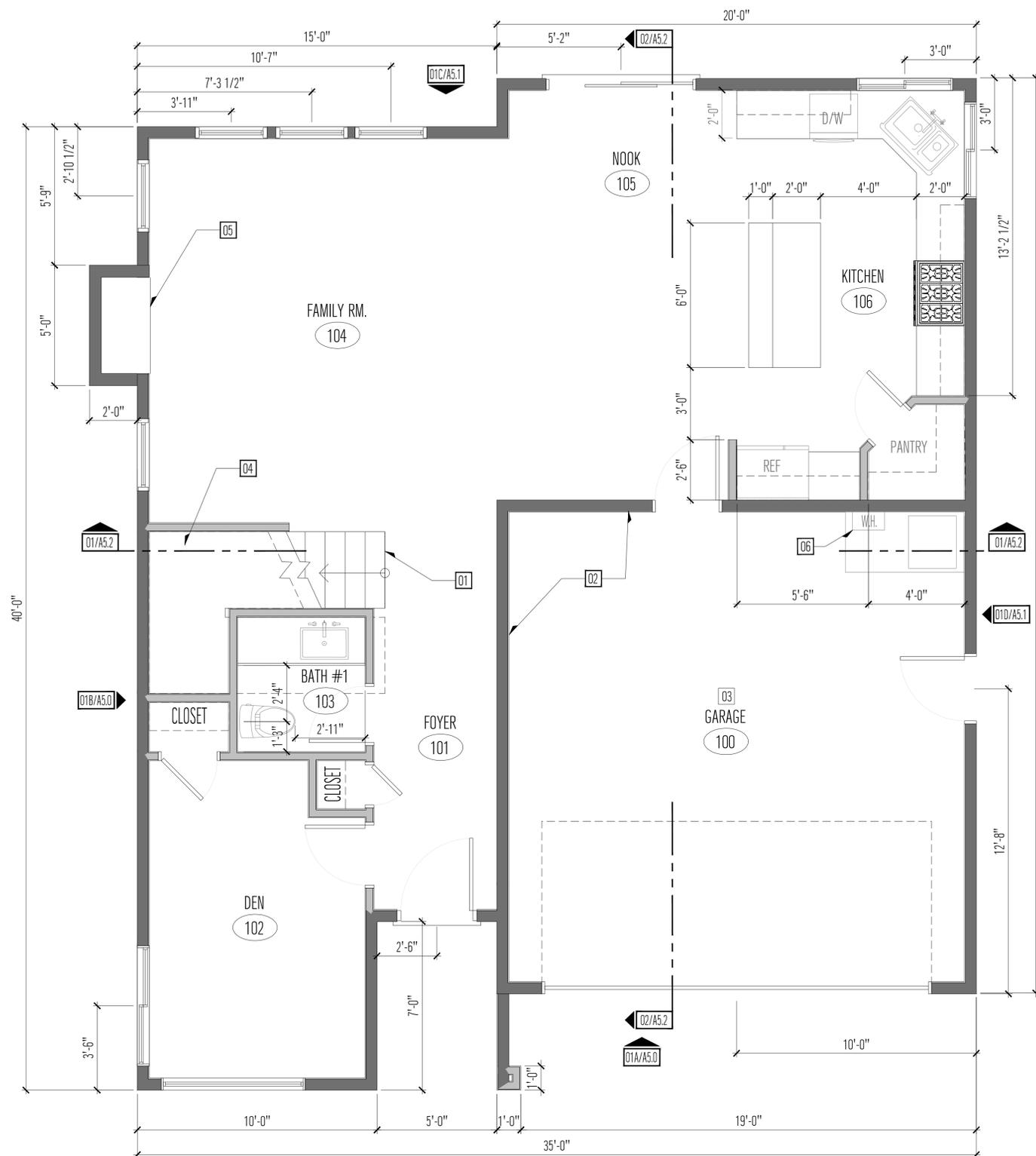
**Preparer**

John Steadman  
 P.O. Box 2033  
 El Granada, CA 94018  
 650-743-2275

REV	DATE	DESCRIPTION
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 CKD BY: AP  
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WATER CONSERVATION REQUIREMENTS CBGSC 2016

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.  
 4.303.1.3 SHOWERHEADS. SINGLE SHOWERHEADS SHALL HAVE A MAXIMUM FLOW RATE OF NOT MORE THAN 1.8 GPM AT 80 PSI. SHOWERHEADS SHALL BE CERTIFIED TO THE PERFORMANCE CRITERIA OF THE U.S. EPA WATERSENSE SPECIFICATION FOR SHOWERHEADS.  
 4.303.1.4 FAUCETS. RESIDENTIAL LAVATORY FAUCETS. THE MAXIMUM FLOW RATE OF RESIDENTIAL LAVATORY FAUCETS SHALL NOT EXCEED 1.2 GALLONS PER MINUTE AT 60 PSI. THE MAXIMUM FLOW RATE OF RESIDENTIAL LAVATORY FAUCETS SHALL NOT BE LESS THAN 0.8 GALLONS PER MINUTE AT 20 PSI.  
 4.303.1.4.4 KITCHEN FAUCETS LESS THAN OR EQUAL TO 1.8 GPM @60 PSI; TEMPORARY INCREASE TO 2.2 GPM ALLOWED BUT SHALL DEFAULT TO 1.8 GPM.  
 \* ALL EXISTING AND NEW FIXTURES TO COMPLY WITH THE REQUIRED FLOW RATES PER THE CALIFORNIA GREEN BUILDING STANDARDS CODE 2016.

FLOOR PLAN GENERAL NOTES

- ALL DIMENSIONS ARE GIVEN TO FACE OF STUD. U.O.N
- ALL WORK SHALL BE ERECTED AND INSTALLED PLUMB, LEVEL, SQUARE, TRUE AND IN PROPER ALIGNMENT
- SEE SHEET A2.2 FOR LIGHTING 7 SWITCH LOCATIONS AND INFORMATION
- ALL DOORS TO MAINTAIN A 4" JAMB CLOSES TO THE HINGE SIDE U.O.N
- FOR ALL DOOR AND WINDOW INFORMATION SEE DOOR AND WINDOW SCHEDULE ON SHEET A2.3
- ALL DIMENSIONS FOR WINDOWS AND DOORS ARE TO THE CENTERLINE
- TANKLESS WATER HEATER TO BE GAS TYPE CONDENSING TANKLESS WATER HEATER INSTALLED AND VENTED PER MANUFACTURER'S SPECIFICATIONS. T&P VALVE DRAIN LINE FOR WATER HEATER TO DISCHARGE TO THE EXTERIOR PER CPC 608.5

FLOOR PLAN KEYNOTES

- 01 NEW STAIR, RISER (7.75" MAXIMUM), RUN (10" MINIMUM) AND WIDTH PER CRC R 311.7.4
- 02 APPLY 5/8" GYP. BD. TO THE INTERIOR SIDE OF GARAGE WALL THE GYPSUM BOARD ON THE GARAGE SIDE ADJACENT TO THE LIVING SPACE SHALL EXTEND UP TO ROOF SHEATHING PER CRC R302.6. SEE DETAIL 10/A6.0
- 03 SLOPE GARAGE FLOOR MAX 2% TOWARDS GARAGE DOOR OPENING PER CRC R309.1
- 04 PROVIDE MINIMUM 36" DEEP LANDING AT ALL EXTERIOR DOORS PER CRC R311.3. LANDING TO BE NOT MORE THAN 7.75" LOWER THAN DOOR THRESHOLD PER CRC R311.3.1. SEE DETAIL 07/A6.0
- 05 2-SIDED GAS FIRE PLACE, DIRECTLY VENTED TO THE EXTERIOR
- 06 TANKLESS WATER HEATER. REFER TO T24 DRAWINGS. SEE FLOOR PLAN GENERAL NOTE #7

FLOOR PLAN LEGEND

SYMBOL	DESCRIPTION
	NOTES NEW WALL

**DESIGN EVEREST**  
CONSULTING ENGINEERS  
365 FLOWER LANE  
MOUNTAIN VIEW, CA 94043  
PHONE: (888) 311-3015 FAX: (650) 695-1801

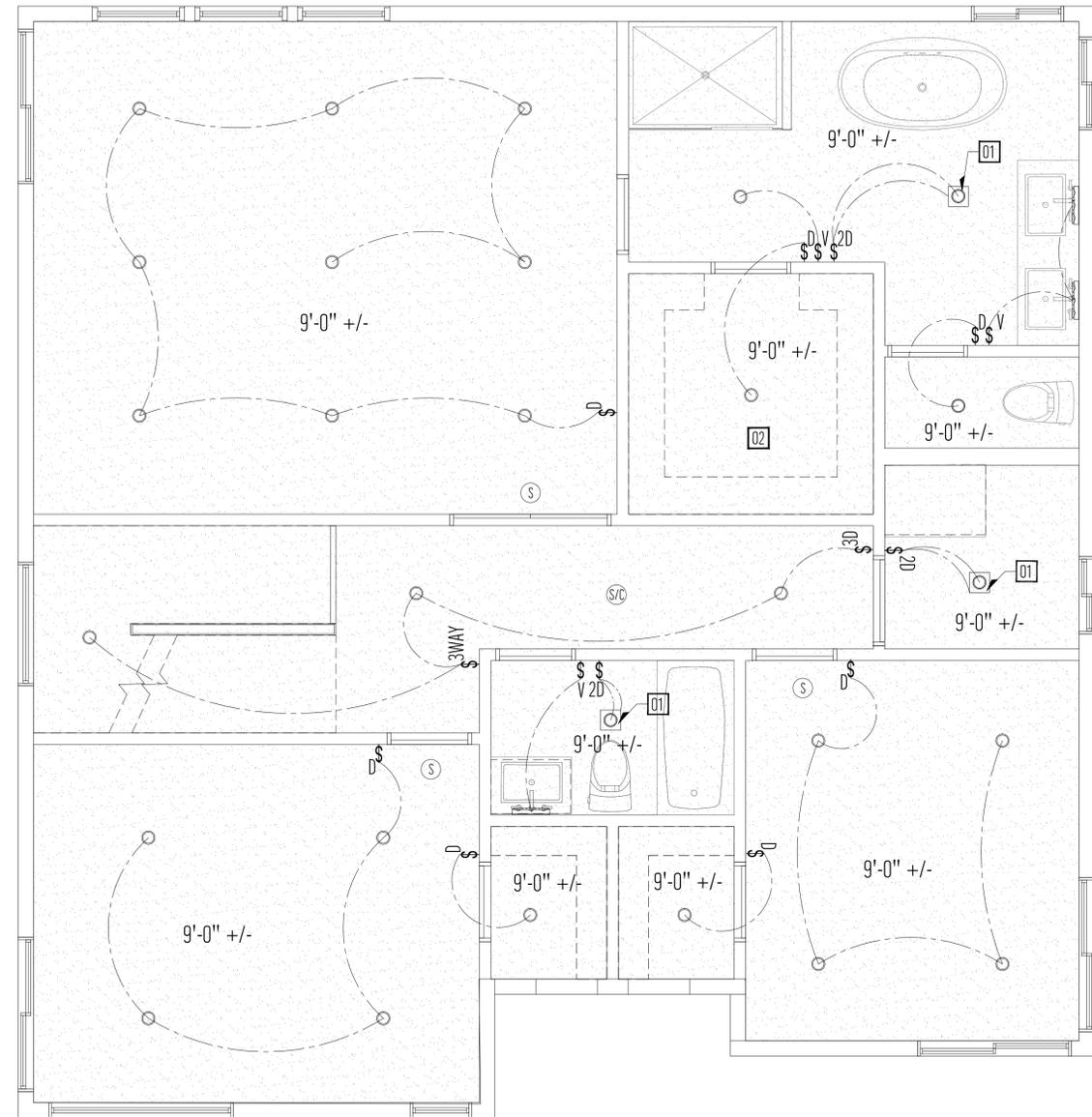
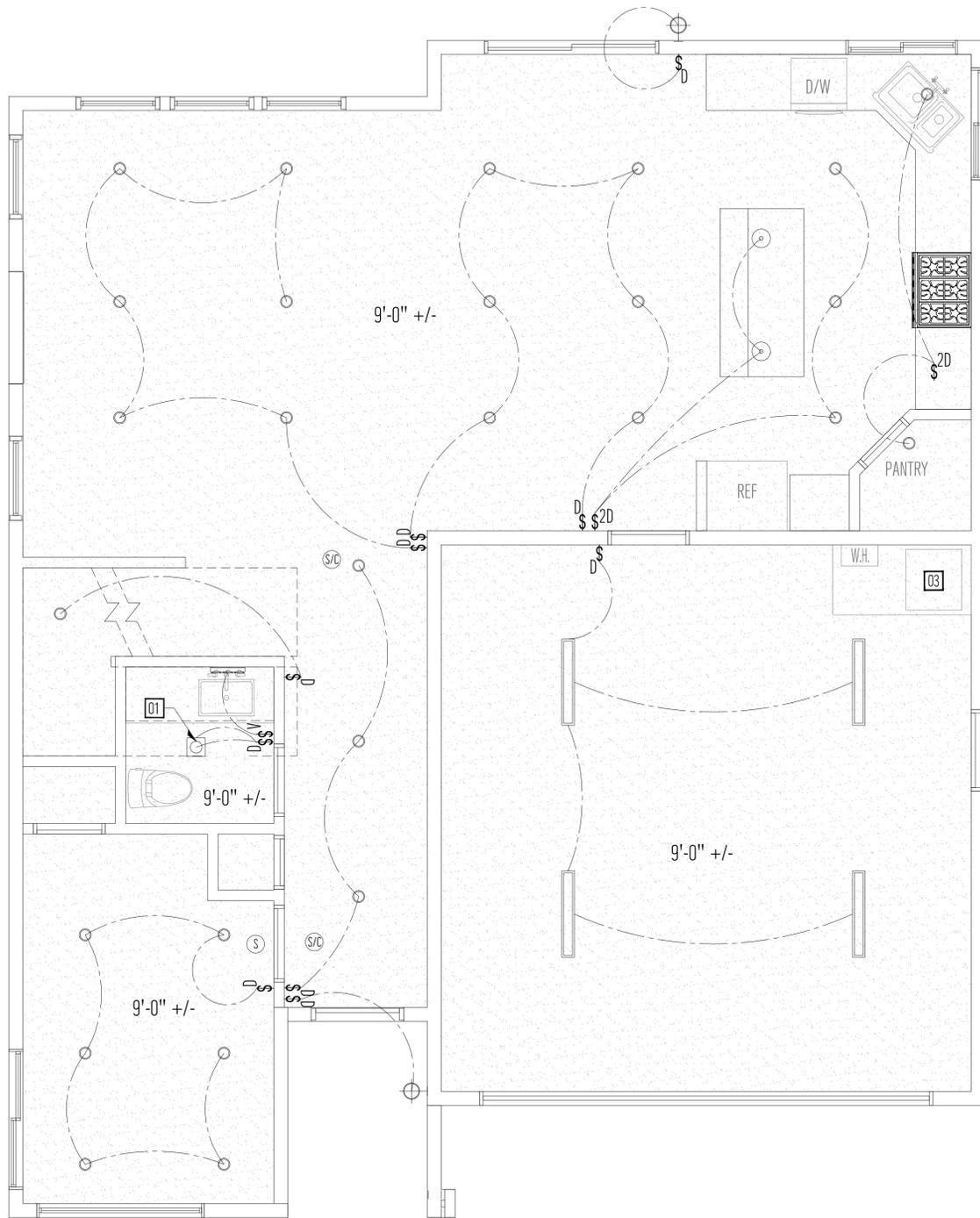
FIRST & SECOND FLOOR PLAN

NEW RESIDENCE  
APN # 047282150  
EL GRANADA, CA 94019

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**A2.0**



SYMBOL LEGEND

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	DENOTES NEW GYP. BD CEILING		DENOTES NEW DEDICATED G.F.I. DUPLEX OUTLET 18" A.F.F. PROVIDE WHEN OUTLET IS LOCATED WITHIN 3'-0" OF WATER SOURCE. TYP. ALL 120V RECEPTACLES TO BE LISTED TAMPER-RESISTANT
	DENOTES NEW 6" DIA. RECESSED CAN LIGHT		SMOKE ALARM
X'-X" +/-	DENOTES CEILING HEIGHT		CARBON MONOXIDE ALARM
	SWITCH (D) - DIMMER SWITCH (X) - MULTI-WAY SWITCH		DENOTES SWITCHING
	DENOTES EXHAUST FAN / LIGHT WP = WATER PROOF		SMOKE & CARBON MONOXIDE ALARM
	DENOTES WALL MOUNTED LIGHT FIXTURE		EXTERIOR LED LIGHT FIXTURE WITH MOTION & PHOTO SENSOR

REFLECTED CEILING & LIGHTING PLAN GENERAL NOTES

- WALL SWITCHES SHALL BE AT 48". RECEPTACLES SHALL BE AT 12" (WALL) AND 42" (COUNTER) UNLESS OTHERWISE NOTED.
- BATHROOM LIGHTING SHALL BE HIGH EFFICACY LUMINARIES (40 LUMENS PER WATT) OR CONTROLLED BY VACANCY (OCCUPANCY)
- SENSOR CERTIFIED TO COMPLY WITH SEC. 119(D) CEES. THIS IS A MANUAL ON, AUTO OFF DEVICE. AUTOMATIC ON OR DEVICES WITH AN OVERRIDE SWITCH POSITION ARE NOT APPROVED. AT LEAST ONE HIGH EFFICACY LIGHTING SHALL BE INSTALLED IN EACH BATHROOM. CENC SECTION 150.0(K)5A
- LED LIGHTING ASSEMBLIES SHALL BE LISTED AND CEC APPROVED. LED LIGHT COMPONENTS ARE NOT ALLOWED TO BE USED WITH HALO OR OTHER HOUSING/CANS.
- ALL NEW HALLWAY AND BATHROOM LIGHTS TO BE INSTALLED SHALL BE HIGH EFFICIENCY.
- HIGH EFFICACY MUST BE SWITCHED SEPARATELY FROM LOW EFFICACY LIGHTING.
- RECESSED LUMINARIES IN INSULATED CEILINGS SHALL BE RATED FOR ZERO CLEARANCE INSULATION COVER (IC), AND SHALL INCLUDE A LABEL CERTIFYING AIR TIGHT (AT) DESIGNATION.
- OUTDOOR LIGHTING SHALL BE HIGH-EFFICACY OR CONTROLLED BY A MOTION SENSOR AND PHOTO-CONTROL CERTIFIED.
- NO LIGHTING SHALL BE ON THE REQUIRED 20 AMP SMALL APPLIANCE BRANCH CIRCUITS.
- ALL RECEPTACLES AND SWITCHES TO BE GROUNDED AND OR THE GROUNDING TYPE.
- DUAL SENSOR PHOTOELECTRIC/IONIZATION SMOKE ALARMS ARE REQUIRED IN ALL AREAS/ROOMS USED FOR SLEEPING. IN THE IMMEDIATE VICINITY OUTSIDE THESE AREAS/ROOMS AND AT BOTH THE TOP AND BOTTOM LANDING OF THE INTERIOR STAIRCASE. SMOKE ALARMS INSTALLED WITHIN 20 FT. OF A KITCHEN, BATHROOM, OR ROOM CONTAINING A FIREPLACE OR WOOD BURNING STOVE SHALL BE OF THE PHOTOELECTRIC TYPE.
- DUAL SENSOR PHOTOELECTRIC/IONIZATION SMOKE ALARMS SHALL BE INSTALLED ON CEILING OR WALL AT EACH FLOOR LEVEL. IN EACH SLEEPING ROOM AND OUTSIDE EACH SLEEPING AREA IN THE IMMEDIATE VICINITY OF THE BEDROOMS. SMOKE ALARMS SHALL BE TESTED AND MAINTAINED IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS. SMOKE ALARMS THAT NO LONGER FUNCTION SHALL BE REPLACED. SMOKE ALARMS INSTALLED IN ONE-AND TWO-FAMILY DWELLINGS SHALL BE REPLACED AFTER 10 YEARS FROM THE DATE OF MANUFACTURE MARKED ON THE UNIT, OR IF THE DATE OF MANUFACTURE CANNOT BE DETERMINED.

- AN APPROVED CARBON MONOXIDE ALARM SHALL BE INSTALLED IN DWELLING UNITS AND IN SLEEPING UNITS WITHIN WHICH FUEL-BURNING APPLIANCES ARE INSTALLED AND IN DWELLING UNITS THAT HAVE ATTACHED GARAGES.
- POWER SUPPLY FOR SMOKE ALARMS/DETECTORS AND CARBON MONOXIDE ALARMS SHALL BE HARDWIRED AND AC-DC INTERCONNECTED.
- ALL LIGHT FIXTURES TO BE HIGH EFFICACY LED
- ALL EXTERIOR LIGHT FIXTURES TO BE EQUIPPED WITH A MOTION SENSOR & PHOTO SENSORS.
- WALL SWITCHES SHALL BE AT 48". RECEPTACLES SHALL BE AT 12" (WALL) AND 42" (COUNTER) U.O.M.
- BATHROOM LIGHTING SHALL BE HIGH EFFICACY LUMINARIES (40 LUMENS PER WATT) OR CONTROLLED BY VACANCY (OCCUPANCY) SENSOR CERTIFIED TO COMPLY WITH SEC. 119(D) CEES. THIS IS A MANUAL ON, AUTO OFF DEVICE. AUTOMATIC ON OR DEVICES WITH AN OVERRIDE SWITCH POSITION ARE NOT APPROVED. AT LEAST ONE HIGH EFFICACY LIGHTING SHALL BE INSTALLED IN EACH BATHROOM. CENC SECTION 150.0(K)5A
- LED LIGHTING ASSEMBLIES SHALL BE LISTED AND CEC APPROVED. LED LIGHT COMPONENTS ARE NOT ALLOWED TO BE USED WITH HALO OR OTHER HOUSING/CANS.
- ALL NEW HALLWAY AND BATHROOM LIGHTS TO BE INSTALLED SHALL BE HIGH EFFICIENCY.
- HIGH EFFICACY MUST BE SWITCHED SEPARATELY FROM LOW EFFICACY LIGHTING.
- RECESSED LUMINARIES IN INSULATED CEILINGS SHALL BE RATED FOR ZERO CLEARANCE INSULATION COVER (IC), AND SHALL INCLUDE A LABEL CERTIFYING AIR TIGHT (AT) DESIGNATION.
- OUTDOOR LIGHTING SHALL BE HIGH-EFFICACY OR CONTROLLED BY A MOTION SENSOR AND PHOTO-CONTROL CERTIFIED.
- NO LIGHTING SHALL BE ON THE REQUIRED 20 AMP SMALL APPLIANCE BRANCH CIRCUITS.
- ALL RECEPTACLES AND SWITCHES TO BE GROUNDED AND OR THE GROUNDING TYPE.

REFLECTED CEILING PLAN KEYNOTES

- 01** FAN/LIGHT FLUSH MOUNTED FIXTURE. CENTER IN SPACE.
- 02** ATTIC ACCESS HATCH 22"x30" CLEAR OPENING PER CRC R807.
- 03** NEW HVAC LOCATE IN GARAGE. SEE TITLE 24 CALCS FOR MORE INFORMATION

RESIDENTIAL INDOOR AIR QUALITY AND MECH. VENT.

TOTAL SQUAREFOOTAGE/100+7.5 CFM x (NO. OF BEDROOMS +1) =	
2,092 / 100	+7.5 CFM x (4+1)
21	+38
	= 59 CFM

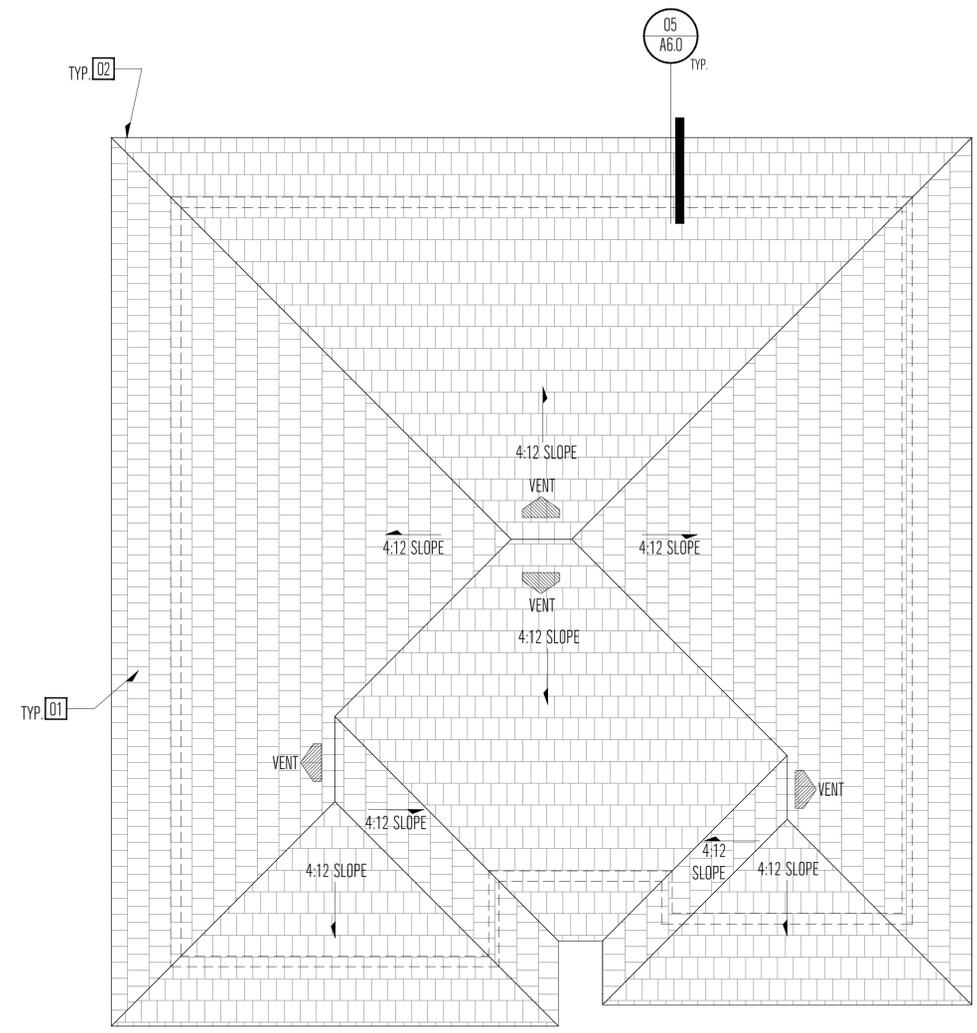
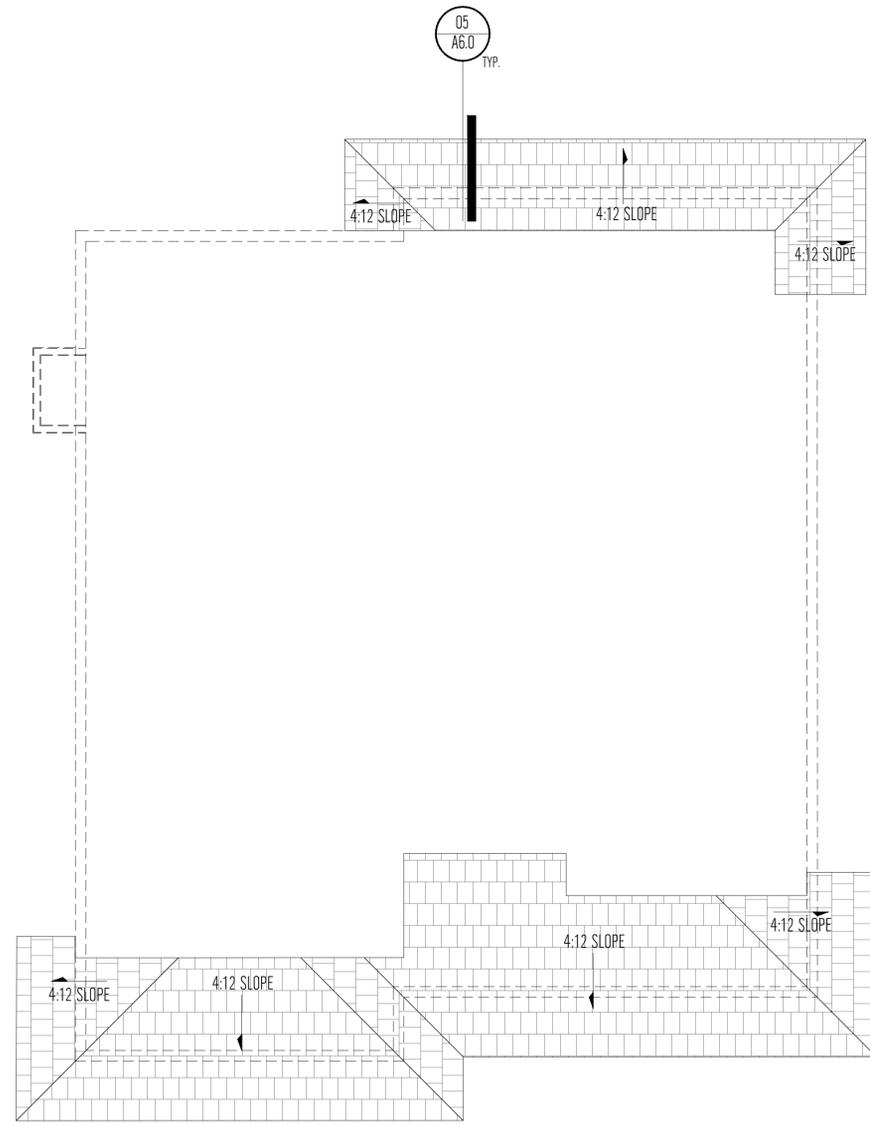
- DOWNSTAIRS BATHROOM - PANASONIC WHISPER GREEN - FV-0BVK3. 80 CFM
- UPSTAIRS MASTER BATH - PANASONIC WHISPER GREEN - FV-0BVK3. 80 CFM
- UPSTAIRS LAUNDRY RM. - PANASONIC WHISPER GREEN - FV-0BVK3. 80 CFM
- BATHROOM FANS ALLOW FAN TO RUN CONTINUOUSLY AT A PRE-SET DOWER LEVEL 30-70 CFM

SIGN DATE: 12-02-2019  
DATE: AS NOTED  
SCALE: AS NOTED  
DRAWN BY: JM  
CKD BY: AP  
PROJECT #: 201908085

NEW RESIDENCE  
APN # 047282150  
EL GRANADA, CA 94019

A2.1





**ATTIC VENTILATION CALCULATION**

TOTAL SQ. FT.	1,211 SQ. FT.
AREA OF ATTIC SPACE	1,211 / 300 = 4.03 SQ. FT.
LOWER PORTION	EAVE VENTS - 2-2 9/16" DIA. DRILLED HOLES PER BLOCK = 2 X 5.14 = 10.29 SF USE MIN. 29 VENT BLOCKS = .07x29 = 2.03 SF
UPPER PORTION	LOW PROFILE VENTS: O'HAGIN MOD. NO 517000823 = 0.5 SF EA. USE MIN. 4 VENTS = 4 x 0.5 = 2.0 SF

**ROOF PLAN KEYNOTES**

- 01 EYEBROW VENT, MAKE AND MODEL TBD, FOR REQ. VENTING SEE CALCULATION BELOW; ( 4@72" TOTAL ).
- 02 NEW 3" DIA. PAINTED MTL. DOWNSPOUT LOCATION

**ROOF PLAN GENERAL NOTES**

1. PROVIDE WEATHERPROOFING FOR ALL ROOF VENTS PER MANUFACTURERS SPECIFICATIONS
2. FOR ALL FOUNDATION & SLAB DETAILS REFER TO STRUCTURAL DRAWINGS
3. COORDINATE ALL PLUMBING VENTS ACCORDING TO NEW LAYOUT SEE SHEET A2.0
4. ROOFING TO BE LAMINATED FIBERGLASS WITH ASPHALT COATED SHINGLES, MINIMUM FIRE RATING F CLASS 'B', PER SAN MATEO COUNTY ORDINANCE SEC. 9113.1a
5. PROVIDE ATTIC VENTILATION FOR ENCLOSED ATTIC SPACE PER CBC 1203.2. NET FREE VENTILATING AREA TO BE NOT LESS THAN 1/300 OF THE AREA OF THE SPACE VENTILATED WITH 50% OF THE REQUIRED VENTILATING AREA PROVIDED BY VENTILATORS LOCATED IN THE UPPER PORTION OF THE SPACE TO BE VENTILATED. SEE CALCULATION

**ROOF PLAN LEGEND**

SYMBOL	DESCRIPTION
	DENOTES NEW ROOF
	DENOTES ROOF SLOPE
	DENOTES NEW EYEBROW VENTS

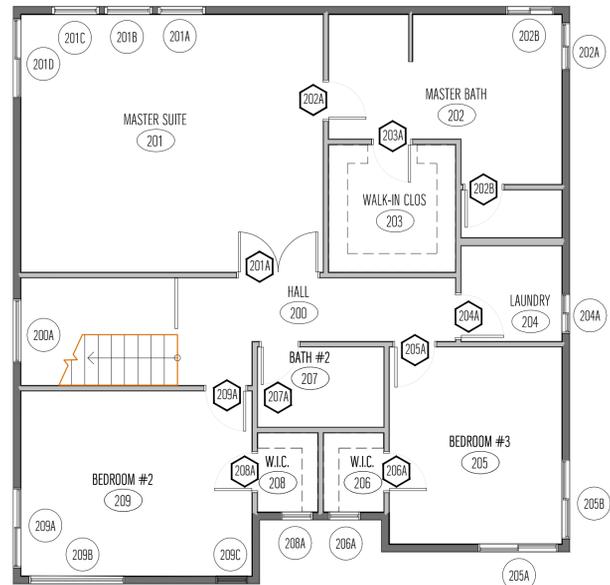
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SIGN DATE: 12-02-2019  
DATE: AS NOTED  
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DRAWN BY: JM  
CKD BY: AP  
PROJECT #: 201908085

SECOND FLOOR WINDOW /DOOR TAG PLAN

3/16"=1'-0" 01



WINDOW TAG PLAN GENERAL NOTES

- WINDOW SIZE IS FOR SCHEMATIC PURPOSES. CONTRACTOR/OWNER SHALL COORDINATE APPLICABLE SIZES AVAILABLE BY MANUFACTURER OF CHOICE WITH OWNER PRIOR TO PURCHASE, WHILE MAINTAINING ALL REQUIRED CLEARANCES AND CODES.
- ALL GLAZING MEETING ALL OF THE FOLLOWING CONDITIONS SHALL BE TEMPERED:
- A. EXPOSED AREA OF AN INDIVIDUAL PANE IS GREATER THAN 9 SQUARE FEET
- B. EXPOSED BOTTOM EDGE IS LESS THAN 18" ABOVE THE FLOOR
- C. EXPOSED TOP EDGE IS GREATER THAN 36" ABOVE THE FLOOR
- ALL GLAZING MEETING ANY OF THE FOLLOWING CONDITIONS SHALL BE TEMPERED T:
- A. GLAZING IN INGRESS AND EGRESS DOORS EXCEPT JALOUSIES
- B. GLAZING IN DOORS AND ENCLOSURES FOR BATHTUBS, WHIRLPOOLS, SHOWERS, ETC.
- VERIFY HARDWARE REQUIREMENTS AND FINISHES WITH OWNER AND WINDOW MANUFACTURER PRIOR TO PURCHASE AND INSTALLATION.

\* NEXT TO WINDOW SYMBOL ON PLANS AND ELEVATIONS DENOTES WINDOW TO MEET EGRESS REQUIREMENTS PER CBC SECTION 310.4. WINDOW DIMENSIONS (LISTED IN ELEVATION) SHALL HAVE A MINIMUM NET CLEAR AREA OF 5.7 SQUARE FEET. SILL HEIGHT SHALL NOT BE MORE THAN 44 INCHES ABOVE FINISH FLOOR. WHEN WINDOW IS IN OPEN POSITION, THE NET CLEAR WIDTH SHALL NOT BE LESS THAN 20", AND THE NET CLEAR HEIGHT SHALL NOT BE LESS THAN 24".

WINDOW/DOOR TAG PLAN LEGEND

SYMBOL	DESCRIPTION
	DENOTES NEW WALL

DOOR TAG PLAN KEYNOTES

01	NONE
----	------

DOOR NOTES

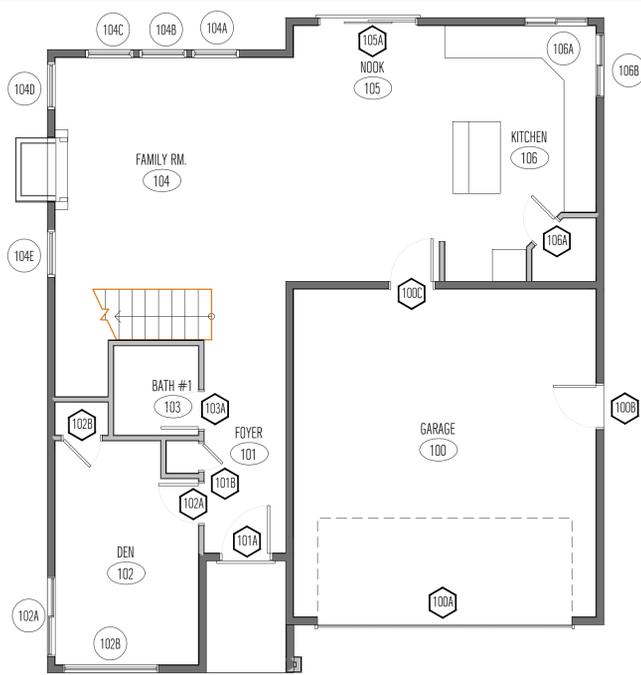
- DOOR MATERIALS:  
SC = SOLID CORE WOOD
- FRAME MATERIALS:  
WD = WOOD WITH PAINT FINISH
- ALL DOOR HARDWARE FINISHES TO BE VERIFIED WITH JM3DESIGN PRIOR TO PURCHASE
- THRESHOLDS SHALL NOT HAVE A RISE GREATER THAN 1/2 INCH (SECTION 1004.9, 2016 CBC).
- ALL DOORS SHALL BE EQUIPPED WITH HARDWARE CENTERED BETWEEN 30" AND 44" AFF.
- PROVIDE A MINIMUM 36-INCH DEEP LANDING OUTSIDE ALL EXTERIOR DOORS (NOT MORE THAN 8 INCHES LOWER THAN THRESHOLD FOR IN-SWINGING DOORS, AND CONFIRM AND SPECIFY NOT MORE THAN 1 INCH LOWER THAN THRESHOLD FOR OUT-SWINGING DOORS) 2016 CBC 1003.3.1.7
- SHOWER ENCLOSURES TO HAVE SAFETY GLAZING PER CBC 2016
- EXTERIOR DOORS TO BE FULLY WEATHERSTRIPPED. INTERIOR DOORS AS SPECIFIED BY OWNER.
- GLAZING IN SLIDING PATIO DOORS TO BE STANDARD TEMPERED SAFETY DOUBLE GLAZING. FINISH, SCREEN AND OPTIONS AS SPECIFIED BY OWNER.
- OUTSIDE LANDING TO BE MINIMUM 36" DEEP BY WIDTH OF DOOR PER CBC SEC. R311.3. FLOOR LEVEL AT DOORS TO BE MAX. 7 1/2" STEP DOWN.
- DOOR HARDWARE AS SPECIFIED BY OWNER

WINDOW SCHEDULE & NOTES

WINDOW #	SIZE	ELEV	TYPE	FINISH	U-FACT.	SHGC	NOTES
102A	5'-0" x 4'-0"	W11	SLIDER	PRE-FINISHED	0.32	0.25	
102B	6'-0" x 8'-0"	W10	FIXED	PRE-FINISHED	0.32	0.25	
104A	3'-0" x 5'-0"	W2	DOUBLE HUNG	PRE-FINISHED	0.32	0.25	
104B	3'-0" x 5'-0"	W2	DOUBLE HUNG	PRE-FINISHED	0.32	0.25	
104C	3'-0" x 2'-0"	W13	DOUBLE HUNG	PRE-FINISHED	0.32	0.25	
104D	3'-0" x 2'-0"	W13	DOUBLE HUNG	PRE-FINISHED	0.32	0.25	
104E	3'-0" x 2'-0"	W13	DOUBLE HUNG	PRE-FINISHED	0.32	0.25	
106A	4'-0" x 3'-6"	W3	SLIDER	PRE-FINISHED	0.32	0.25	
106B	4'-0" x 3'-6"	W3	SLIDER	PRE-FINISHED	0.32	0.25	
200A	4'-0" x 4'-0"	W12	FIXED	PRE-FINISHED	0.32	0.25	
201A	3'-0" x 5'-0"	W2	DOUBLE HUNG	PRE-FINISHED	0.32	0.25	
201B	3'-0" x 5'-0"	W2	DOUBLE HUNG	PRE-FINISHED	0.32	0.25	
201C	3'-0" x 5'-0"	W2	DOUBLE HUNG	PRE-FINISHED	0.32	0.25	
201D	5'-0" x 5'-0"	W4	SLIDER	PRE-FINISHED	0.32	0.25	
202A	3'-0" x 4'-0"	W1	SLIDER	PRE-FINISHED	0.32	0.25	
202B	3'-0" x 4'-0"	W1	SLIDER	PRE-FINISHED	0.32	0.25	
204A	2'-6" x 2'-0"	W5	SLIDER	PRE-FINISHED	0.32	0.25	
205A	5'-0" x 5'-0"	W9	FIXED	PRE-FINISHED	0.32	0.25	
205B	5'-0" x 4'-0"	W11	SLIDER	PRE-FINISHED	0.32	0.25	
206A	2'-0" x 1'-0"	W8	FIXED	PRE-FINISHED	0.32	0.25	
208A	2'-0" x 1'-0"	W8	FIXED	PRE-FINISHED	0.32	0.25	
209A	5'-0" x 4'-0"	W11	SLIDER	PRE-FINISHED	0.32	0.25	
209B	6'-0" x 5'-0"	W6	FIXED	PRE-FINISHED	0.32	0.25	
209C	4'-0" x 2'-0"	W7	FIXED	PRE-FINISHED	0.32	0.25	

SECOND FLOOR WINDOW /DOOR TAG PLAN

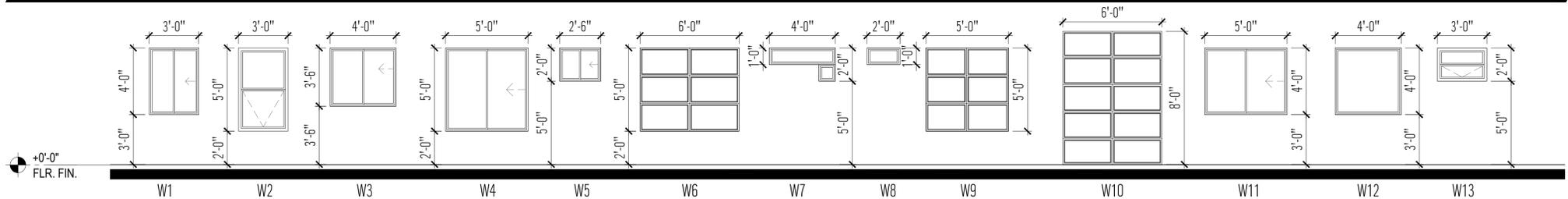
3/16"=1'-0" 02



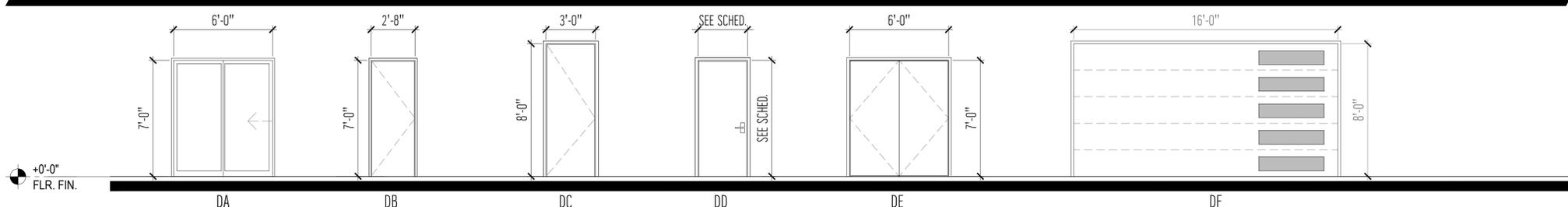
DOOR SCHEDULE & NOTES

DOOR #	SIZE	ELEV	TYPE	FINISH	NOTES
100A	16'-0" x 8'-0"	DF	OVERHEAD	PAINT	CARRIAGE STYLE WD ROLL-UP DOOR
100B	2'-8" x 7'-0"	DB	SINGLE	PAINT	SOLID WOOD MIN. 2"
100C	2'-8" x 7'-0"	DD	SINGLE	PAINT	SOLID WOOD MIN. 1 1/2" / SELF CLOSING
101A	3'-0" x 8'-0"	DC	SINGLE	PAINT	SOLID WOOD MIN. 2"
101B	1'-8" x 7'-0"	DD	SINGLE	PAINT	SOLID WOOD MIN. 1 1/2"
102A	2'-6" x 7'-0"	DD	SINGLE	PAINT	SOLID WOOD MIN. 1 1/2"
102B	2'-4" x 7'-0"	DD	SINGLE	PAINT	SOLID WOOD MIN. 1 1/2"
103A	2'-4" x 7'-0"	DD	SINGLE	PAINT	SOLID WOOD MIN. 1 1/2"
105A	6'-0" x 7'-0"	DA	DOUBLE/GLAZING	PRE-FIN.	COMPOSITION FRAME/ DOUBLE PANE
106A	2'-0" x 7'-0"	DD	SINGLE	PAINT	SOLID WOOD MIN. 1 1/2"
201A	5'-0" x 7'-0"	DE	DOUBLE	PAINT	SOLID WOOD MIN. 1 1/2"
202A	2'-6" x 7'-0"	DD	SINGLE	PAINT	SOLID WOOD MIN. 1 1/2"
202B	2'-4" x 7'-0"	DD	SINGLE	PAINT	SOLID WOOD MIN. 1 1/2"
203A	2'-4" x 7'-0"	DD	SINGLE	PAINT	SOLID WOOD MIN. 1 1/2"
204A	2'-8" x 7'-0"	DD	SINGLE	PAINT	SOLID WOOD MIN. 1 1/2"
205A	2'-6" x 7'-0"	DD	SINGLE	PAINT	SOLID WOOD MIN. 1 1/2"
206A	2'-4" x 7'-0"	DD	SINGLE	PAINT	SOLID WOOD MIN. 1 1/2"
207A	2'-4" x 7'-0"	DD	SINGLE	PAINT	SOLID WOOD MIN. 1 1/2"
209A	2'-6" x 7'-0"	DD	SINGLE	PAINT	SOLID WOOD MIN. 1 1/2"

WINDOW ELEVATIONS



DOOR ELEVATIONS



**DESIGN EVEREST**  
CONSULTING ENGINEERS

365 FLOWER LANE  
MOUNTAIN VIEW, CA 94043  
PHONE: (888) 311-3015 FAX: (650) 695-1801

WINDOW / DOOR SCHEDULE & ELEVATIONS

NEW RESIDENCE  
APN # 047282150  
EL GRANADA, CA 94019

REV	DATE	DESCRIPTION
1		
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SIGN DATE: 12-02-2019  
DATE: AS NOTED  
SCALE: AS NOTED  
DRAWN BY: JM  
CKD BY: AP  
PROJECT #: 201908085

A3.1



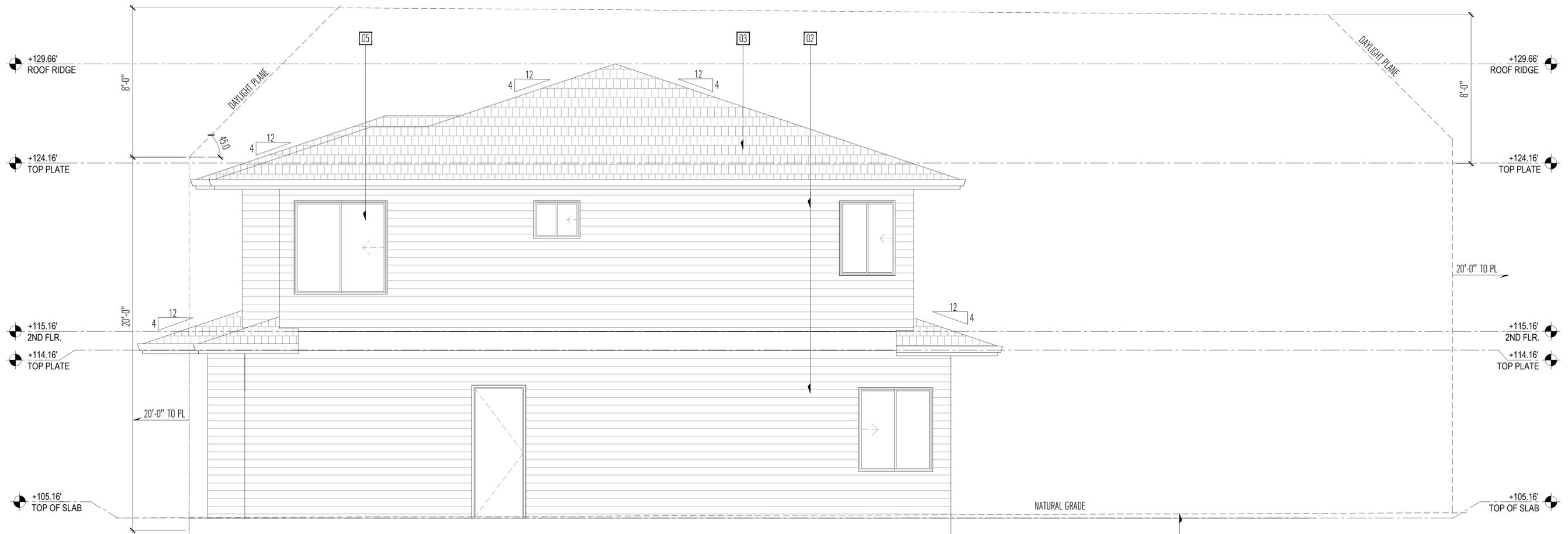
A SOUTH ELEVATION

EXTERIOR ELEVATION KEYNOTES

- 01 NEW GREY SMOOTH TROWELLED STUCCO 3-COAT FINISH
- 02 NEW HORIZONTAL CLR. FINISH WOOD SIDING
- 03 NEW DARK COMPOSITION ROOFING
- 04 NEW VERTICAL CLR. FINISH WOOD SIDING
- 05 NEW WINDOW. SEE WINDOW SCHEDULE ON SHEET A3.1
- 06 NATURAL GRADE LEVEL

BUILDING SECTION GENERAL NOTES

1. DATUM POINT BENCHMARK +111.30'. TOP OF F/H AS SHOWN ON SURVEY



B EAST ELEVATION



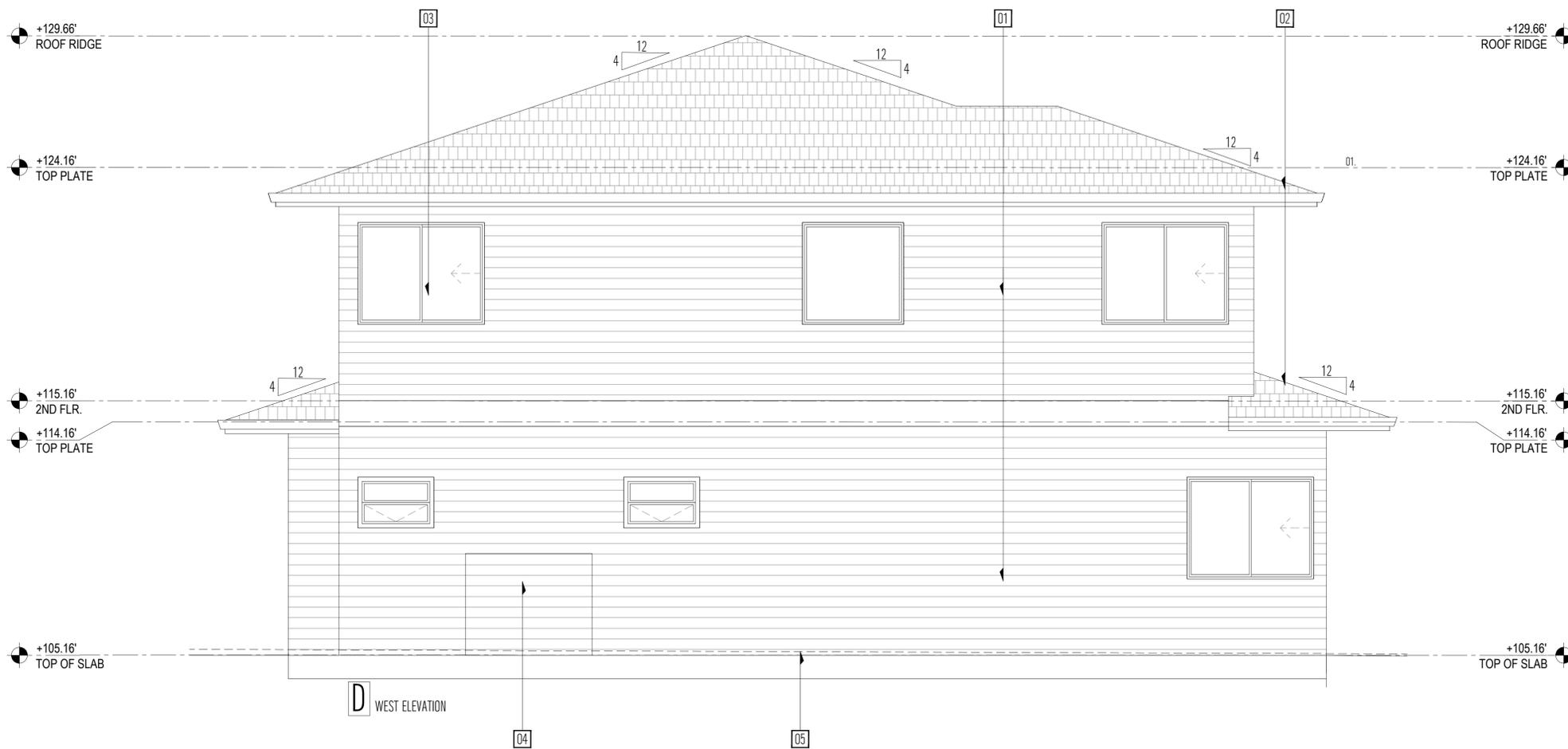
EXTERIOR ELEVATIONS  
NEW RESIDENCE  
APN # 047282150  
EL GRANADA, CA 94019

REV	DATE	DESCRIPTION
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SIGN DATE: 12-02-2019  
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CKD BY: AP  
PROJECT #: 201908085

A5.0



**EXTERIOR ELEVATION KEYNOTES**

- 01 NEW HORIZONTAL CLR. FINISH WOOD SIDING
- 02 NEW COMPOSITION ROOF
- 03 NEW WINDOW. SEE WINDOW SCHEDULE ON SHEET A3.1
- 04 NEW TWO-SIDED GAS FIREPLACE
- 05 NATURAL GRADE LEVEL

**BUILDING SECTION GENERAL NOTES**

1. DATUM POINT BENCHMARK +111.30'. TOP OF F/H AS SHOWN ON SURVEY

**EXTERIOR LIGHT CUTSHEET**

**Cylinder 3000K LED 12" Wall Light Textured Architectural Bronze**  
11251AZT30 (Textured Architectural Bronze)

**Certifications/Qualifications**

Class 2	Yes
Location Rating	Wet
Type	Yes
Title 24 Compliant	Yes

**Dimensions**

Base Backplate	5.00 X 5.00
Extension	6.50"
Weight	4.30 LBS
Height from center of wall opening (Spec Sheet)	6.33"
Height	12.00"
Width	5.00"

**Electrical**

Input Voltage	Dual 120/140V
---------------	---------------

**Mounting/Installation**

Interior/Exterior	Exterior
Mounting Style	Wall Mount

**Photometrics**

Color Rendering Index	90
Color Temperature Range	3000
Delivered Efficacy	37
(Lumens/Watt)	
Delivered Lumens	350
Kelvin Temperature	3000K

**Primary Lamping**

Expected Life Span	40000
Lamp Included	Integrated
Light Source	LED
Max or Nominal Watt	50W
# of Bulbs/LED Modules	1

**Product/Ordering Information**

SKU	11251AZT30
Finish	Bronze
Style	Contemporary
LPC	183827433097

**Specifications**

Material	ALUMINUM
----------	----------

**Additional Finishes**

- Textured Architectural Bronze
- Textured Black

Kichler 7711 East Pleasant Valley Road Cleveland, Ohio 44131-8010 Tel: (888) 555-5100 or kichler.com

Notes: \*Information provided is subject to change without notice. \*\*Always use proper electrical wiring practices and/or consult a licensed electrician. †Independent Equivalents: The independent equivalent is expressed as an approximate number and is for reference only.

KICHLER.

**DESIGN EVEREST**  
CONSULTING ENGINEERS  
365 FLOWER LANE  
MOUNTAIN VIEW, CA 94043  
PHONE: (888) 311-3015 FAX: (650) 695-1801



EXTERIOR ELEVATIONS

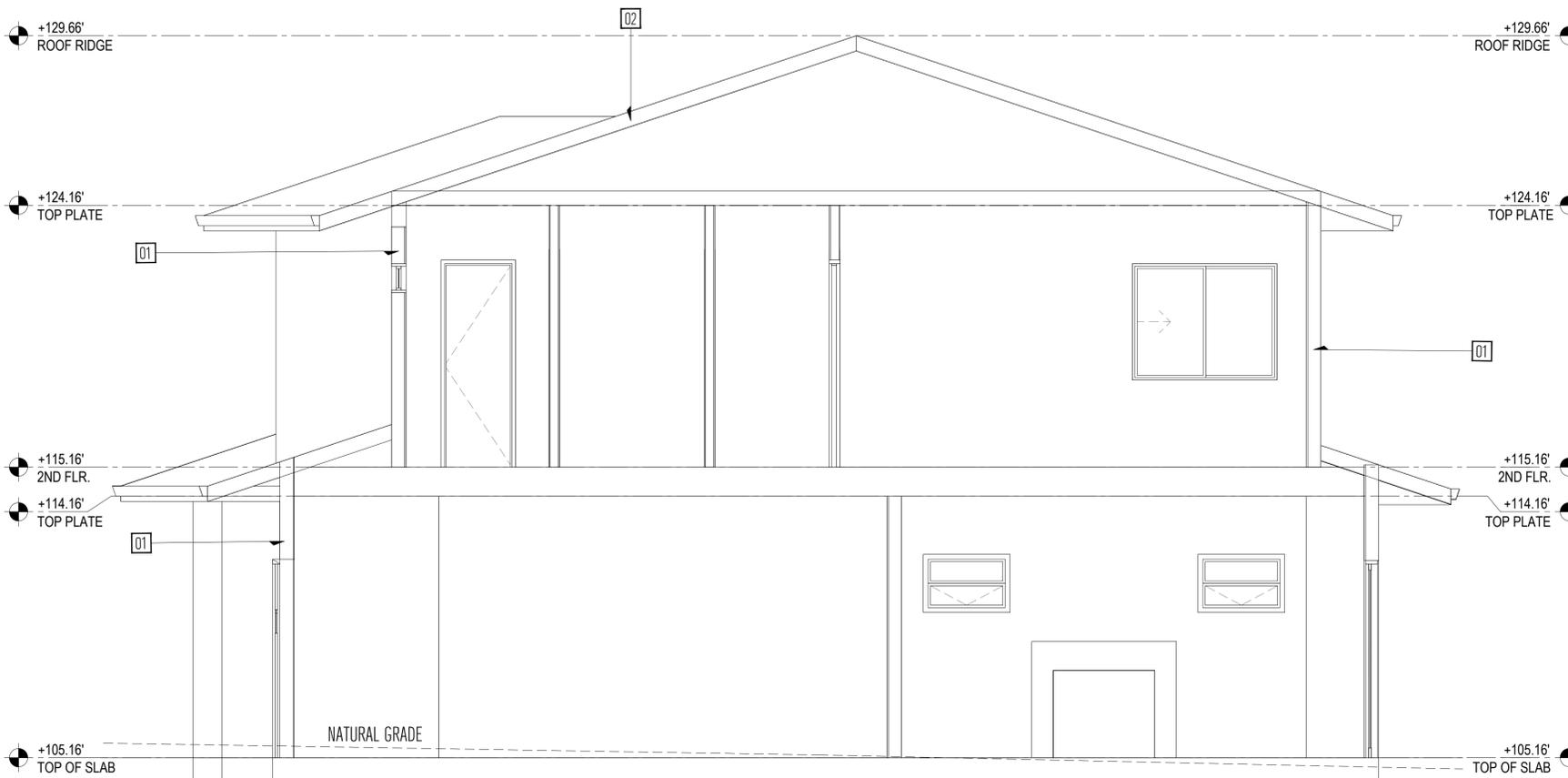
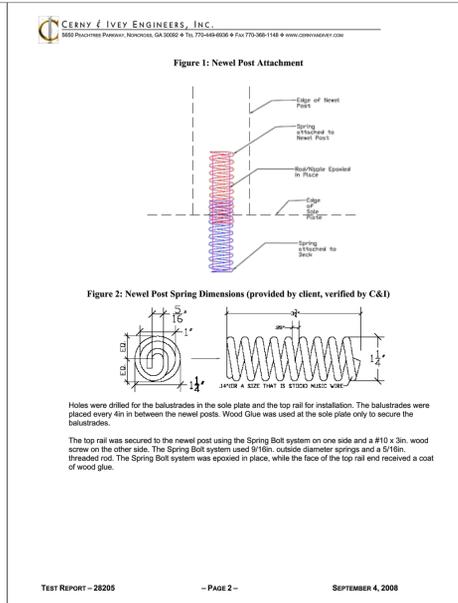
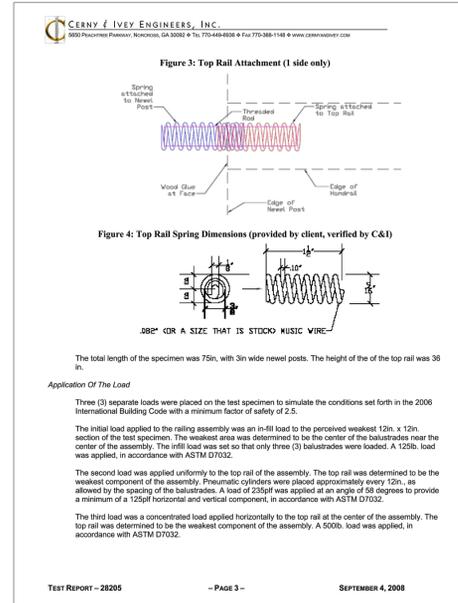
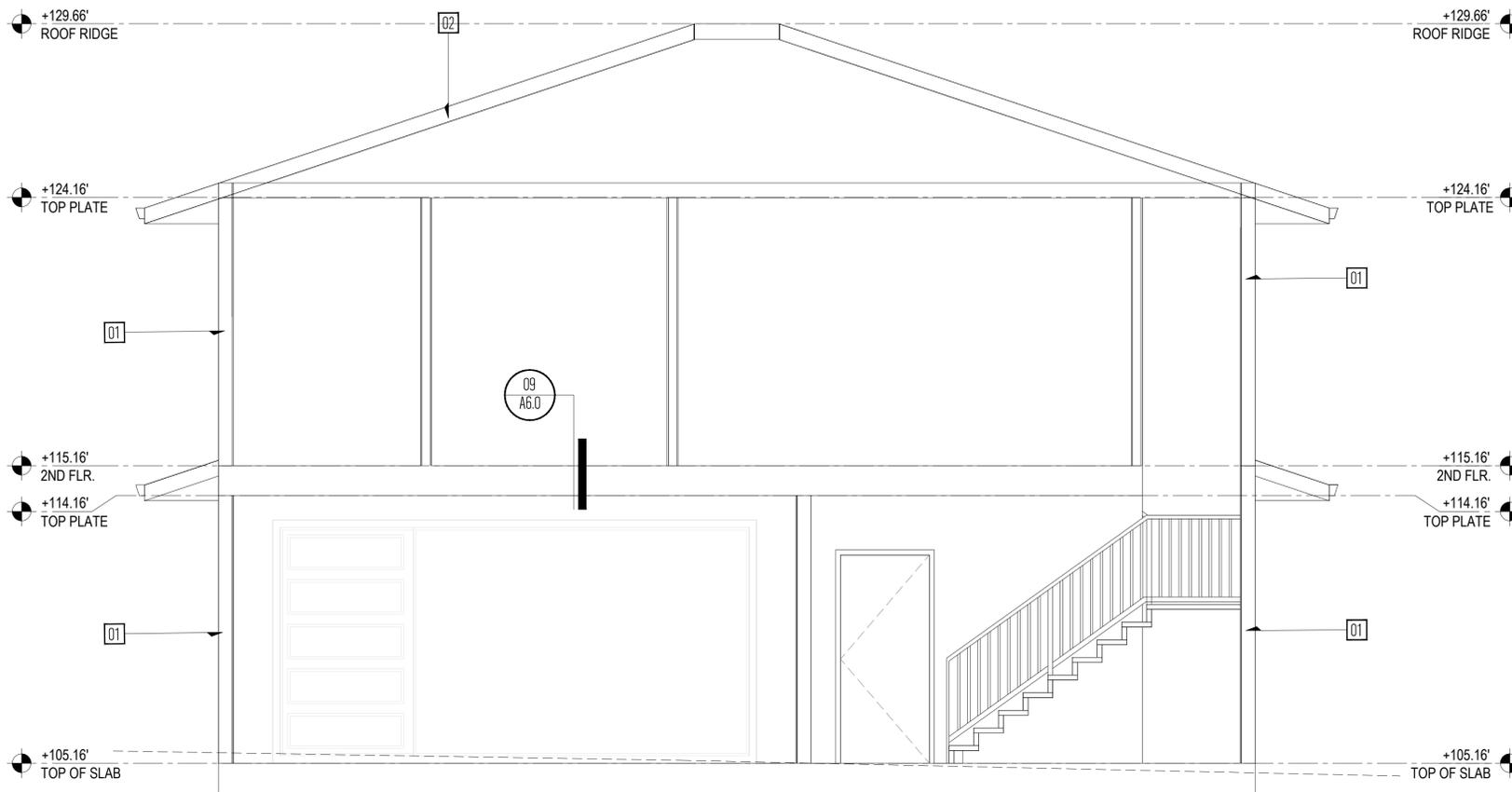
NEW RESIDENCE

APN # 047282150  
EL GRANADA, CA 94019

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SIGN DATE: 12-02-2019  
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DRAWN BY: JM  
CKD BY: AP  
PROJECT #: 201908085

A5.1



**BUILDING SECTION GENERAL NOTES**

01. DATUM POINT BENCHMARK +111.30'. TOP OF F/H AS SHOWN ON SURVEY

**BUILDING SECTION KEYNOTES**

- 01 R-19 WALL INSULATION. REFER TO TITLE 24 ENERGY CALCULATIONS SHEETS FOR MORE INFORMATION
- 02 R-38 ROOF INSULATION. REFER TO TITLE 24 ENERGY CALCULATIONS SHEETS FOR MORE INFORMATION

**CERNY & IVEY ENGINEERS, INC.**  
 8600 Peachtree Parkway, Norcross, GA 30062 • Tel: 770-449-6000 • Fax: 770-365-1148 • www.cernyandivey.com

**TEST REPORT - 28205 - PAGE 2 - SEPTEMBER 4, 2008**

All loads were applied in the same general direction, which is outward from where the deck would exist. All handrail testing was done in accordance with ASTM D7032.

All pressures were measured using pressure gauge CI-PG-05. Pressures were converted to force using the appropriate conversion table for the pneumatic cylinder.

**RESULTS**  
 Handrails passed all standardized loading tests without any visible signs of failure.

Rock Lock Handrail with Spring Bolt Connections (Tested 8/29/2008)	2006 IBC		ASTM D7032	
	Passed (Y/N)	Failed (F, S, 2, 3)	Passed (Y/N)	Failed (F, S, 2, 3)
In-Fill Load	50 psf	Y	125 psf	Y
Uniform Load	50 psf	Y	125 psf	Y
Concentrated Load	200lbs	Y	500lbs	Y

**CONCLUSIONS**  
 The complete handrail assemblies are in accordance with the strength requirements of the 2006 International Building Code and ASTM D7032, when installed as detailed above.

If you have any questions please don't hesitate to contact us.

Respectfully submitted,

Charles G. Lester IV, Laboratory Manager  
 Christopher B. Shiver, PE, Vice President - Principal Engineer

**TEST REPORT - 28205 - PAGE 4 - SEPTEMBER 4, 2008**

**Specialty Engineering Services & Solutions, LLC**  
 18540 120th Terrace North, Jupiter, FL 33478  
 Tel: 561-412-9297  
 Jeffrey.Friant@specialtyengineeringservices.com  
 www.sesinc.com  
 Certificate of Authorization #2231

August 14, 2019

For: Roger Rock, Owner  
 Rock Lock Fastening Systems, Inc.

Regarding: Test Report 28205-01 (copy not signed)  
 Cerny & Ivey Engineers, Inc.  
 Railing - Spring Bolt Connection System

To whom this may concern,

This office has compared the load test requirements of the IBC 2006 codes that were used in the test report #28205-1 prepared and certified by Cerny & Ivey Engineers, Inc. to the load test requirements in the 2017 IBC (6th Ed.). This office has found that the testing performed and reported as passed still meets the current code requirements as specified in the 2017 IBC (6th Ed.) and ASCE section 4.5.1 which are referenced below.

In Fill Load = 50 psf  
 Uniform Load = 50 psf  
 Concentrated Load = 200 lbs

These specified values have not been changed since the commissioning of the load tests and are still required as defined previously under the current code.

Respectfully,

Digitally signed by Jeffrey C. Friant, P.E.  
 Date: 2019.08.14 08:31:20 -0400

Except as explicitly expressed within this document, no other affirmations or certifications are intended.

**DESIGN EVEREST**  
 CONSULTING ENGINEERS

365 FLOWER LANE  
 MOUNTAIN VIEW, CA 94043  
 PHONE: (888) 311-3015 FAX: (650) 695-1801

BUILDING SECTIONS  
 NEW RESIDENCE  
 APN # 047282150  
 EL GRANADA, CA 94019

REV	DATE	DESCRIPTION
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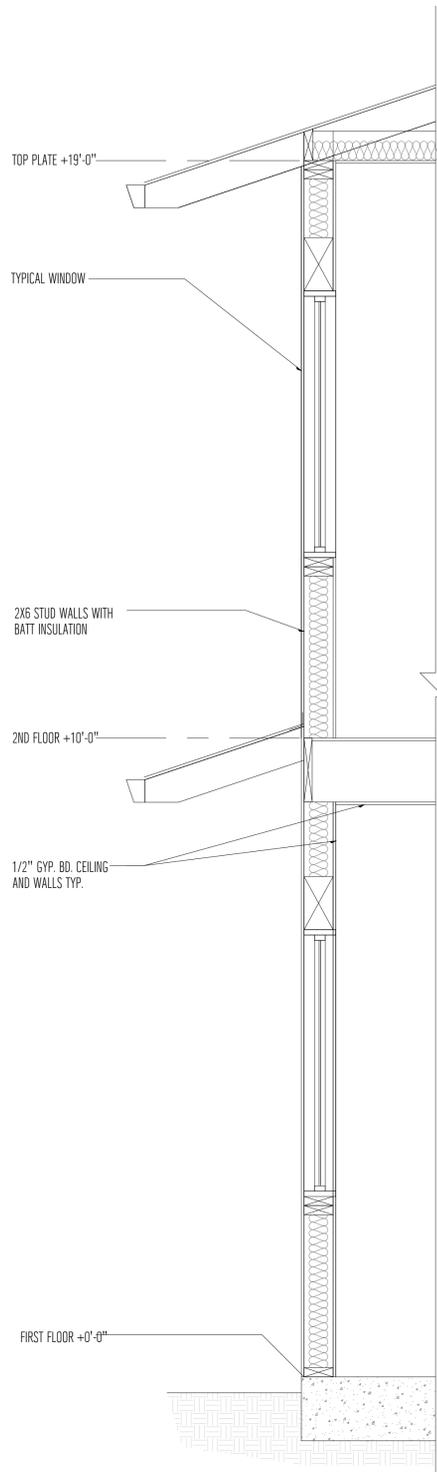
SIGN DATE: 12-02-2019  
 DATE: AS NOTED  
 SCALE: AS NOTED  
 DRAWN BY: JM  
 CKD BY: AP  
 PROJECT #: 201908085

A5.2

TYPICAL WALL SECTION

3/4"=1'-0"

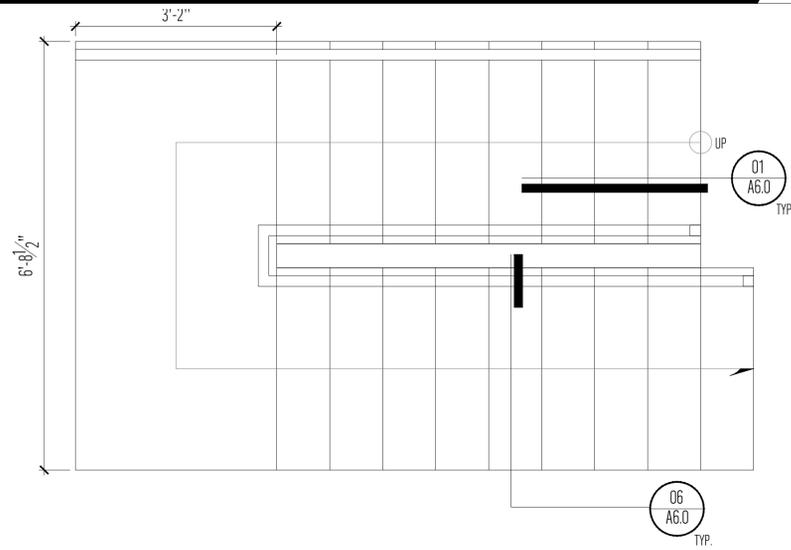
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TYP. STAIR TREAD & RISER DETAIL

3/4"=1'-0"

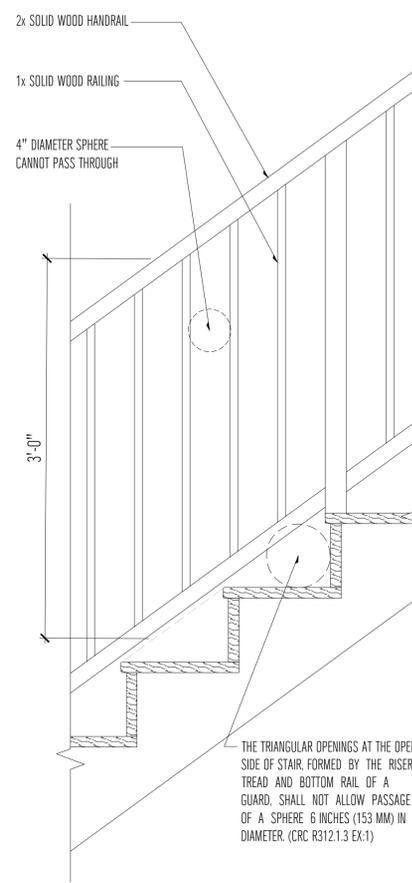
07



TYP. STAIR TREAD & RISER DETAIL

1 1/2"=1'-0"

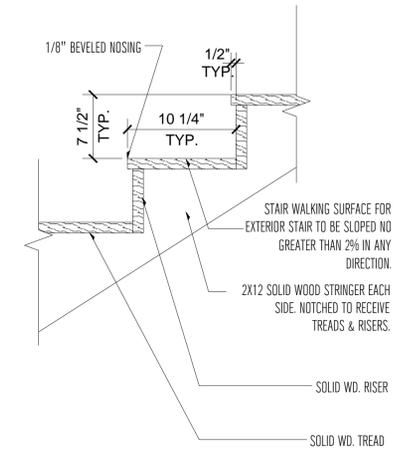
04



TYP. STAIR TREAD & RISER DETAIL

1 1/2"=1'-0"

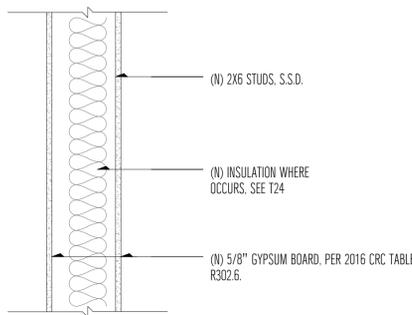
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WALL @ GARAGE DTL.

1 1/2"=1'-0"

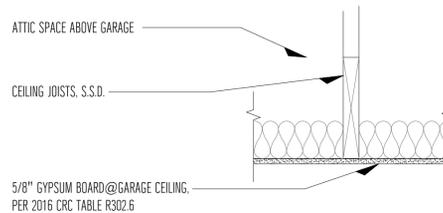
10



FLOOR ABOVE GARAGE DTL.

1 1/2"=1'-0"

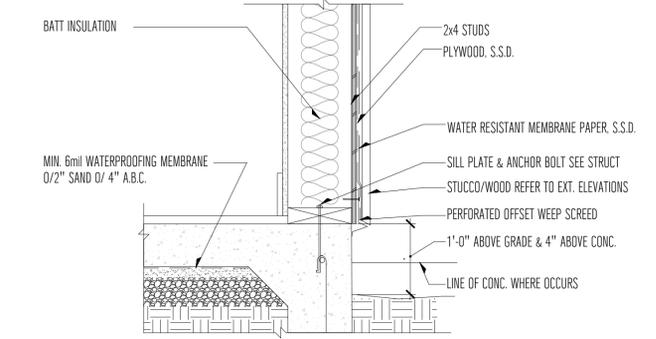
09



NEW WALL @ PERIMETER FOOTING & TYP. SLAB

1 1/2"=1'-0"

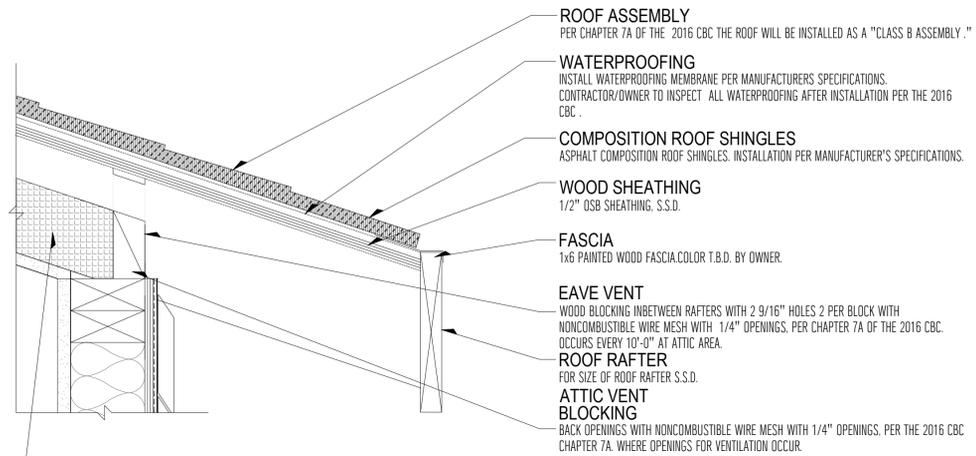
02



TYPICAL ROOF EAVE DETAIL

3"=1'-0"

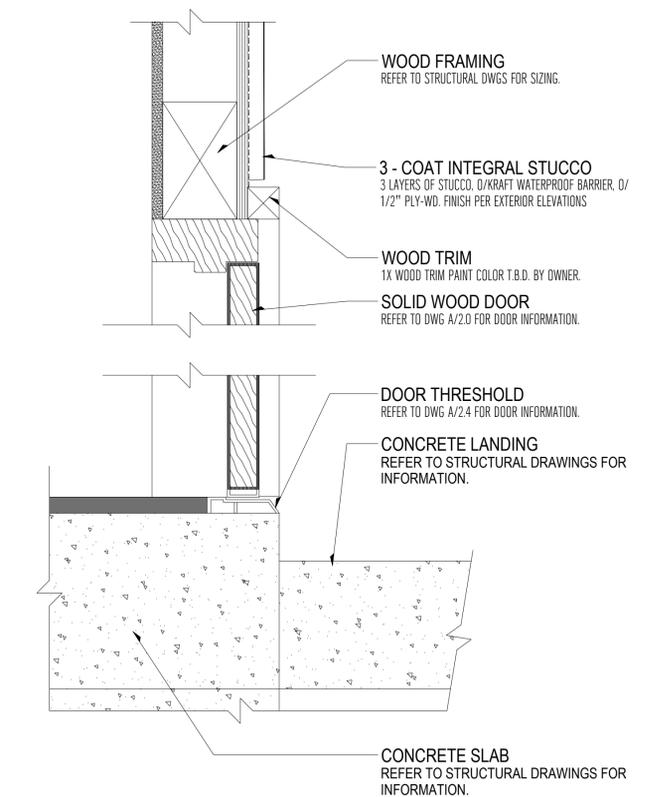
05



DR. THRESHOLD @ NEW EXTERIOR LANDING, TYP.

3"=1'-0"

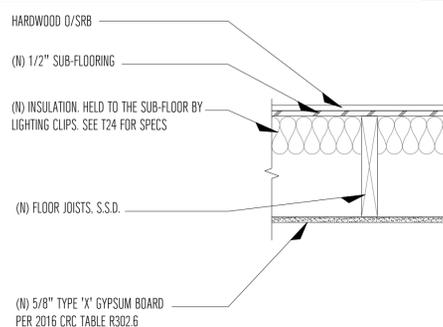
03



FLOOR ABOVE GARAGE DTL.

1 1/2"=1'-0"

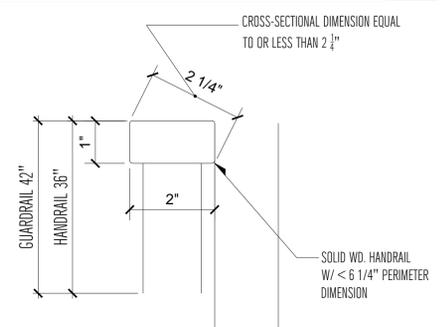
08



HANDRIAL DETAIL

6"=1'-0"

06



REV	DATE	DESCRIPTION
1		
2		
3		
4		
5		

SIGN DATE: 12-02-2019  
DATE: AS NOTED  
SCALE: AS NOTED  
DRAWN BY: JM  
CKD BY: AP  
PROJECT #: 201908085

A6.0

REVISIONS	BY

VELLENO ENGINEERING  
 1690 WOODSIDE ROAD, #219  
 REDWOOD CITY, CA 94061  
 PHN: (650) 556-1137  
 FAX: (650) 506-9075



**NEW RESIDENCE**  
 STEADMAN PROPERTY  
 APN #047282150  
 EL GRANADA, CALIFORNIA

Date	12-19-19
Scale	1/4" = 1'-0"
Drawn	HAV
Job	
Sheet	

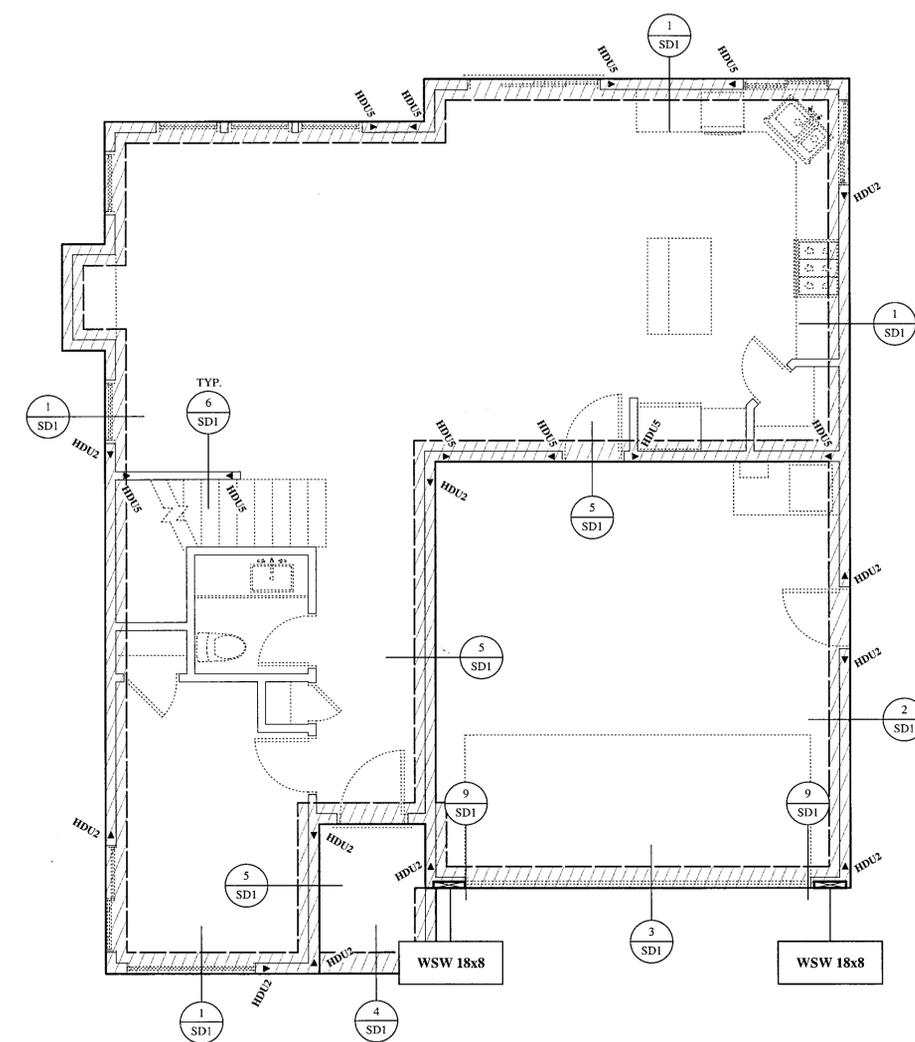
**S-1**

**FOUNDATION NOTES**

- CONTRACTOR SHALL VERIFY ALL CONDITIONS IN FIELD AND NOTIFY THIS OFFICE OF ANY DISCREPANCIES FOR CLARIFICATION AND/OR RESOLUTION PRIOR TO COMMENCEMENT OF RELATED WORK.
- ALL DIMENSIONS AS SHOWN ARE FACE OF CONCRETE FOOTING. ALL DIMENSIONS SHALL BE ADJUSTED AS NECESSARY TO RECEIVE SUB-SHEATHING IF REQUIRED. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO CHECK AND VERIFY ALL DIMENSIONS AND CONDITIONS INDICATED ON THE DRAWINGS.
- ALL SITE AND FOUNDATION WORK SHALL CONFORM TO C.B.C. CHAPTER 18 OR PER SOILS REPORT IF APPLICABLE.
- DETAILS NOT SPECIFICALLY INDICATED SHALL BE SIMILAR TO THOSE SHOWN.
- ALL CONCRETE UNLESS OTHERWISE NOTED SHALL BE REGULAR WEIGHT HARD ROCK AND HAVE A MINIMUM 28-DAY COMPRESSIVE STRENGTH OF 2500 PSI. MAXIMUM SLUMP SHALL BE 4 IN. USE TYPE II CEMENT AS PER ASTM C150. CONCRETE SURFACES TO BE KEPT WET FOR 3 DAYS AFTER POUR.
- STAGGERED REINFORCING BAR CONTACT SPLICES SHALL LAP 48 DIAMETERS.
- MINIMUM ANCHOR BOLTS SHALL BE 5/8" DIA. X 12" AT 48" O.C., TYP. SEE SHEARWALL NAILING SCHEDULE ON SHEET SD2 FOR MAX. SPACING AT SHEARWALLS. PROVIDE A MIN. OF (2) BOLTS PER MUDSILL SEGMENT. BOLTS TO BE LOCATED NOT MORE THAN 12" AND NOT LESS THAN 5" FROM SEGMENT ENDS.
- PROVIDE MIN. 3"x3"x 1/4" STEEL PLATE WASHERS @ ALL ANCHOR BOLTS.
- ALL HOLDDOWNS TO BE INSTALLED AS PER MANUFACTURER'S SPECIFICATIONS. ALIGN ALL HOLDDOWNS WITH WALL ENDS ABOVE, DO NOT SCALE FROM THIS PLAN.
- USE 3x SILL PLATES FOR ALL WALLS WITH SHEATHING ON BOTH SIDES, TYP. USE AN MSTA36 STRAP AT PLATE BREAKS, TYP.
- ALL NAILS INTO PRESSURE-TREATED WOOD TO BE HOT-DIPPED ZINC GALVANIZED.
- PRE-SWELL SOIL BELOW SLABS ON GRADE.
- CONTRACTOR TO VERIFY WITH BUILDING AUTHORITY IF PROJECT ENGINEER IS REQ'D TO INSPECT STEEL REINFORCING IN PLACE PRIOR TO CONCRETE POUR(S). NOTIFY ENGINEER AT LEAST 48 HOURS IN ADVANCE.
- DURING THE PLACING OF CONCRETE, MUSHROOMED CONCRETE SPILLAGE AT THE SIDES OF GRADEBEAM & AT THE TOP OF PIERS SHALL BE TRIMMED TO THE DESIGN SIZE OF THE GRADEBEAM & PIERS RESPECTIVELY.
- FOUNDATION DESIGN CRITERIA BASED ON SOILS REPORT BY: SIGMA PRIME GEOSCIENCES, INC. A LETTER SHALL BE PROVIDED BY THE SOILS ENGINEER, RETAINED BY THE OWNER STATING THAT THE RECOMMENDATIONS IN THIS REPORT HAVE BEEN SATISFACTORILY INCORPORATED INTO THE FOUNDATION PLAN, DETAILS & CALCULATIONS. THIS ENGINEER SHALL ALSO BE RETAINED TO OBSERVE FOUNDATION EXCAVATIONS & GRADING OPERATIONS.
- THE SOILS ENGINEER SHALL BE RETAINED TO PROVIDE OBSERVATION & TESTING SERVICES DURING THE GRADING & FOUNDATION PHASES OF CONSTRUCTION PER SOILS REPORT RECOMMENDATIONS. SUBMIT INSPECTION & TESTING REPORTS (PRIOR TO FINAL) TO BUILDING DEPT.

**SYMBOL LEGEND**

- STRONGWALL PANEL, SIZE AS NOTED. INSTALL AS PER MANUFACTURER'S SPECS. SEE ATTACHED DETAIL SHEETS.
- POST BELOW BEAM  
 PROVIDE 4x4 (MIN) @ 4x (& 3-1/2" PSL) MEMBERS  
 PROVIDE 4x6 (MIN) @ 6x (& 5-1/4" PSL) MEMBERS  
 PROVIDE 4x8 (MIN) @ 8x (& 7" PSL) MEMBERS
- POST (OR LOAD BEARING DBL. STUD) ABOVE. SEE FRAMING ABOVE.
- SIMPSON HOLDOWN, SIZE AS NOTED. INSTALL AS PER MFR. SPECS. SEE DETAILS I&2/SD2 FOR STANDARD & RETROFIT INSTALLATION SPECS.



**FOUNDATION PLAN**



**RESIDENTIAL VOLUNTARY MEASURES**

**SECTION A4.602  
RESIDENTIAL OCCUPANCIES APPLICATION CHECKLIST—continued**

FEATURE OR MEASURE	LEVELS APPLICANT TO SELECT ELECTIVE MEASURES			VERIFICATIONS ENFORCING AGENCY TO SPECIFY VERIFICATION METHOD		
	Mandatory	Prerequisites and electives <sup>1</sup>		Enforcing Agency <input type="checkbox"/> All	Installer or Designer <input type="checkbox"/> All	Third party <input type="checkbox"/> All
		Tier 1	Tier 2			
<b>WATER EFFICIENCY AND CONSERVATION</b>						
<b>Indoor Water Use</b>						
4.303.1 Plumbing fixtures (water closets and urinals) and fittings (faucets and showerheads) installed in residential buildings shall comply with the prescriptive requirements of Sections 4.303.1.1 through 4.303.1.4.4.	<input checked="" type="checkbox"/>			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4.303.2 Plumbing fixtures and fittings required in Section 4.303.1 shall be installed in accordance with the <i>California Plumbing Code</i> , and shall meet the applicable referenced standards.	<input checked="" type="checkbox"/>			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4.4.303.1 Kitchen faucets. The maximum flow rate of kitchen faucets shall not exceed 1.5 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 1.5 gallons per minute at 60 psi. <i>Note:</i> Where complying faucets are available, aerators or other means may be used to achieve reduction.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4.4.303.2 Alternate water source for nonpotable applications. Alternate nonpotable water sources are used for indoor potable water reduction. Alternate nonpotable water sources shall be installed in accordance with the <i>California Plumbing Code</i> .		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4.4.303.3 Install at least one qualified ENERGY STAR dishwasher or clothes washer.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4.4.303.4 Nonwater supplied urinals or waterless toilets are installed.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4.4.303.5 Hot water recirculation systems. One- and two-family dwellings shall be equipped with a demand hot water recirculation system, as defined in Chapter 2. The demand hot water recirculation system shall be installed in accordance with the <i>California Plumbing Code</i> , <i>California Energy Code</i> , and the manufacturer's installation instructions.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Outdoor Water Use</b>						
4.304.1 After December 1, 2015, new residential developments with an aggregate landscape area equal to or greater than 500 square feet shall comply with one of the following options: 1. A local water efficient landscape ordinance or the current California Department of Water Resources' Model Water Efficient Landscape Ordinance (MWELO), whichever is more stringent; or 2. Projects with aggregate landscape areas less than 2,500 square feet may comply with the MWELO's Appendix D Prescriptive Compliance Option.	<input checked="" type="checkbox"/>			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4.4.304.1 Rainwater catchment systems. An approved rainwater catchment system is designed and installed to use rainwater generated by at least 65 percent of the available roof area. Rainwater catchment systems shall be designed and installed in accordance with the <i>California Plumbing Code</i> .		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4.4.304.2 Potable water elimination. When landscaping is provided and as allowed by local ordinance, a water efficient landscape irrigation design that eliminates the use of potable water beyond the initial requirements for plant installation and establishment should be provided. Methods used to accomplish the requirements of this section must be designed to the requirements of the <i>California Building Standards Code</i> and shall include, but not be limited to, the following: 1. Use of captured rainwater. 2. Use of recycled water. 3. Water treated for irrigation purposes and conveyed by a water district or public entity. 4. Use of graywater.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4.4.304.3 For new water service connections, landscaped irrigated areas less than 5,000 square feet shall be provided with separate submeters or metering devices for outdoor potable water use.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

*continued*

2016 CALIFORNIA GREEN BUILDING STANDARDS CODE 87

**RESIDENTIAL VOLUNTARY MEASURES**

**SECTION A4.602  
RESIDENTIAL OCCUPANCIES APPLICATION CHECKLIST—continued**

FEATURE OR MEASURE	LEVELS APPLICANT TO SELECT ELECTIVE MEASURES			VERIFICATIONS ENFORCING AGENCY TO SPECIFY VERIFICATION METHOD		
	Mandatory	Prerequisites and electives <sup>1</sup>		Enforcing Agency <input type="checkbox"/> All	Installer or Designer <input type="checkbox"/> All	Third party <input type="checkbox"/> All
		Tier 1	Tier 2			
<b>WATER REUSE SYSTEMS</b>						
4.4.305.1 Piping is installed to permit future use of a graywater irrigation system served by the clothes washer or other fixtures.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4.4.305.2 Recycled water piping is installed.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4.4.305.3 Recycled water is used for landscape irrigation.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Innovative Concepts and Local Environmental Conditions</b>						
4.4.306.1 Items in this section are necessary to address innovative concepts or local environmental conditions.						
Item 1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Item 2	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Item 3	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>MATERIAL CONSERVATION AND RESOURCE EFFICIENCY</b>						
<b>Foundation Systems</b>						
4.4.403.1 A Frost-protected Shallow Foundation (FPSF) is designed and constructed.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4.4.403.2 Cement use in foundation mix design is reduced. Tier 1. Not less than a 20 percent reduction in cement use. Tier 2. Not less than a 25 percent reduction in cement use.		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Efficient Framing Techniques</b>						
4.4.404.1 Beams and headers and trimmers are the minimum size to adequately support the load.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4.4.404.2 Building dimensions and layouts are designed to minimize waste.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4.4.404.3 Use premanufactured building systems to eliminate solid saw lumber whenever possible.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4.4.404.4 Material lists are included in the plans which specify material quantity and provide direction for on-site cuts.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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2016 CALIFORNIA GREEN BUILDING STANDARDS CODE 88

**RESIDENTIAL VOLUNTARY MEASURES**

**SECTION A4.602  
RESIDENTIAL OCCUPANCIES APPLICATION CHECKLIST—continued**

FEATURE OR MEASURE	LEVELS APPLICANT TO SELECT ELECTIVE MEASURES			VERIFICATIONS ENFORCING AGENCY TO SPECIFY VERIFICATION METHOD		
	Mandatory	Prerequisites and electives <sup>1</sup>		Enforcing Agency <input type="checkbox"/> All	Installer or Designer <input type="checkbox"/> All	Third party <input type="checkbox"/> All
		Tier 1	Tier 2			
4.4.106.6 Install a vegetated roof for at least 50 percent of the roof area. Vegetated roofs shall comply with requirements for roof gardens and landscaped roofs in the <i>California Building Code</i> , Chapters 15 and 16.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4.4.106.7 Reduce nonroof heat islands for 50 percent of sidewalks, patios, driveways or other paved areas by using one or more of the methods listed.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4.4.106.8.1 Tier 1 and Tier 2 for one- and two-family dwellings and townhouses with attached private garages. Install a dedicated 200/240-volt branch circuit, including an overcurrent protective device rated at 40 amperes minimum per dwelling unit.		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4.4.106.8.2 Tier 1 and Tier 2 for multifamily dwellings. Provide capability for future electric vehicle charging in 5 percent of total parking spaces, as specified.		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4.106.9 Provide bicycle parking facilities as noted below or meet a local ordinance, whichever is more stringent. Number of bicycle parking spaces may be reduced, as approved by the enforcing agency, due to building site characteristics, including but not limited to, isolation from other development. 1. Provide short-term bicycle parking, per Section A4.106.9.1. 2. Provide long-term bicycle parking for multifamily buildings, per Section A4.106.9.2. 3. Provide long-term bicycle parking for hotel and motel buildings, per Section A4.106.9.3.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4.4.106.10 [IR] Outdoor lighting systems shall be designed and installed to comply with: 1. The minimum requirements in the <i>California Energy Code</i> for Lighting Zones 1-4; and 2. Backlight, Uplight and Glare (BUG) ratings as defined in IES TM-15-11; and 3. Allowable BUG ratings not exceeding those shown in Table A4.106.10; or Comply with a lawfully enacted local ordinance, whichever is more stringent.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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2016 CALIFORNIA GREEN BUILDING STANDARDS CODE 85

**RESIDENTIAL VOLUNTARY MEASURES**

**SECTION A4.602  
RESIDENTIAL OCCUPANCIES APPLICATION CHECKLIST—continued**

FEATURE OR MEASURE	LEVELS APPLICANT TO SELECT ELECTIVE MEASURES			VERIFICATIONS ENFORCING AGENCY TO SPECIFY VERIFICATION METHOD		
	Mandatory	Prerequisites and electives <sup>1</sup>		Enforcing Agency <input type="checkbox"/> All	Installer or Designer <input type="checkbox"/> All	Third party <input type="checkbox"/> All
		Tier 1	Tier 2			
<b>Innovative Concepts and Local Environmental Conditions</b>						
4.4.108.1 Items in this section are necessary to address innovative concepts or local environmental conditions.						
Item 1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Item 2	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Item 3	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>ENERGY EFFICIENCY</b>						
<b>General</b>						
4.201.1 Building meets or exceeds the requirements of the <i>California Building Energy Efficiency Standards</i> .	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Performance Approach for Newly Constructed Buildings</b>						
4.4.203.1.1.1 An Energy Design Rating for the Proposed Design Building is included in the Certificate of Compliance documentation.		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4.4.203.1.1.2 QPI procedures specified in the Building Energy Efficiency Standards Reference Residential Appendix RA3.5 are completed.		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4.4.203.1.2.1 Tier 1: Buildings complying with the first level of advanced energy efficiency shall have either an Energy Budget that is no greater than 85 percent of the Title 24, Part 6 Energy Budget for the Standard Design Building, or an Energy Design Rating showing a 15% or greater reduction in its Energy Budget component compared to the Standard Design Building, as calculated by Title 24, Part 6 Compliance Software approved by the Energy Commission.		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4.4.203.1.2.2 Tier 2: Buildings complying with the second level of advanced energy efficiency shall have either an Energy Budget that is no greater than 70 percent of the Title 24, Part 6 Energy Budget for the Standard Design Building, or an Energy Design Rating showing a 30% or greater reduction in its Energy Budget component compared to the Standard Design Building, as calculated by Title 24, Part 6 Compliance Software approved by the Energy Commission.		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4.4.203.1.2.3 Zero Net Energy Design (elective): Shall comply with all of the following: 1. Section A4.203.1.1 (Prerequisite) and 2. Section A4.203.1.2.1 • for single-family buildings in Climate Zones 6 and 7, and low-rise multifamily buildings in Climate Zones 3, 5, 6, and 7 or Section A4.203.1.2.2 • for single-family buildings in Climate Zones 1-5 and 8-16, and low-rise multifamily buildings in Climate Zones 1, 2, 4, and 8-16 3. Energy Design Rating of zero (0) or less		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Performance Approach for Additions</b>						
4.4.204.1.1 Tier 1. If only one mechanical system is added or modified, the Energy Budget is no greater than 95 percent of the Title 24, Part 6, Energy Budget for the Standard Design Building. If two or more mechanical systems are added or modified, the Energy Budget is no greater than 90 percent of the Title 24, Part 6, Energy Budget for the Standard Design Building.		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4.4.204.1.2 Tier 2. If only one mechanical system is added or modified, the Energy Budget is no greater than 90 percent of the Title 24, Part 6, Energy Budget for the Standard Design Building. If two or more mechanical systems are added or modified, the Energy Budget is no greater than 85 percent of the Title 24, Part 6, Energy Budget for the Standard Design Building.		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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**DIVISION A4.6 – TIER 1 AND TIER 2—continued**

**SECTION A4.602  
RESIDENTIAL OCCUPANCIES APPLICATION CHECKLIST  
Effective July 1, 2015**

FEATURE OR MEASURE	LEVELS APPLICANT TO SELECT ELECTIVE MEASURES			VERIFICATIONS ENFORCING AGENCY TO SPECIFY VERIFICATION METHOD		
	Mandatory	Prerequisites and electives <sup>1</sup>		Enforcing Agency <input type="checkbox"/> All	Installer or Designer <input type="checkbox"/> All	Third party <input type="checkbox"/> All
		Tier 1	Tier 2			
<b>PLANNING AND DESIGN</b>						
<b>Site Selection</b>						
4.4.103.1 A site which complies with at least one of the following characteristics is selected: 1. An infill site is selected. 2. A greyfield site is selected. 3. An EPA-recognized Brownfield site is selected.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4.4.103.2 Facilitate community connectivity by one of the following methods: 1. Locate project within a 1/2-mile true walking distance of at least 4 basic services. 2. Locate project within 1/2-mile true walking distance of at least 7 basic services. 3. Other methods increasing access to additional resources.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Site Preservation</b>						
4.4.104.1 An individual with oversight responsibility for the project has participated in an educational program promoting environmentally friendly design or development and has provided training or instruction to appropriate entities.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Deconstruction and Reuse of Existing Materials</b>						
4.4.105.2 Existing buildings are disassembled for reuse or recycling of building materials. The proposed structure utilizes at least one of the following materials which can be easily reused: 1. Light fixtures 2. Plumbing fixtures 3. Doors and trim 4. Masonry 5. Electrical devices 6. Appliances 7. Foundations or portions of foundations		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Site Development</b>						
4.106.2 A plan is developed and implemented to manage storm water drainage construction.	<input checked="" type="checkbox"/>					
4.106.3 Construction plans shall indicate how site grading or a drainage system will manage all surface water flows to keep water from entering buildings.	<input checked="" type="checkbox"/>					
4.106.4 Provide capability for electric vehicle charging in one- and two-family dwellings and in townhouses with attached private garages; and 3 percent of total parking spaces, as specified, for multifamily dwellings.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4.4.106.1 Reserved		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

*continued*

2016 CALIFORNIA GREEN BUILDING STANDARDS CODE 83

**RESIDENTIAL VOLUNTARY MEASURES**

**SECTION A4.602  
RESIDENTIAL OCCUPANCIES APPLICATION CHECKLIST—continued**

FEATURE OR MEASURE	LEVELS APPLICANT TO SELECT ELECTIVE MEASURES			VERIFICATIONS ENFORCING AGENCY TO SPECIFY VERIFICATION METHOD		
	Mandatory	Prerequisites and electives <sup>1</sup>		Enforcing Agency <input type="checkbox"/> All	Installer or Designer <input type="checkbox"/> All	Third party <input type="checkbox"/> All
		Tier 1	Tier 2			
4.4.106.2.1 Soil analysis is performed by a licensed design professional and the findings utilized in the structural design of the building.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4.4.106.2.2 Soil disturbance and erosion are minimized by at least one of the following: 1. Natural drainage patterns are evaluated and erosion controls are implemented to minimize erosion during construction and after occupancy. 2. Site access is accomplished by minimizing the amount of cut and fill needed to install access roads and driveways. 3. Underground construction activities are coordinated to utilize the same trench, minimize the amount of time the disturbed soil is exposed and the soil is replaced using accepted compaction methods.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4.4.106.2.3 Topsoil shall be protected or saved for reuse as specified in this section. Tier 1. Displaced topsoil shall be stockpiled for reuse in a designated area and covered or protected from erosion. Tier 2. The construction area shall be identified and delineated by fencing or flagging to limit construction activity to the construction area.		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4.4.106.3 Postconstruction landscape designs accomplish one or more of the following: 1. Areas disrupted during construction are restored to be consistent with native vegetation species and patterns. 2. Utilize at least 75 percent native California or drought tolerant plant and tree species appropriate for the climate zone region.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4.4.106.4 Permeable paving is utilized for the parking, walking or patio surfaces in compliance with the following: Tier 1. Not less than 20 percent of the total parking, walking or patio surfaces shall be permeable. Tier 2. Not less than 30 percent of the total parking, walking or patio surfaces shall be permeable.		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4.4.106.5 Roofing materials shall have a minimum 3-year aged solar reflectance and thermal emittance or a minimum Solar Reflectance Index (SRI) equal to or greater than the values specified in Tables A4.106.5.1(1) and A4.106.5.1(2) for low-rise residential buildings and Tables A4.106.5.1(3) and A4.106.5.1(4) for high rise residential buildings. <b>Low-rise Residential</b> Tier 1 roof covering shall meet or exceed the values contained in Table A4.106.5.1(1). Tier 2 roof covering shall meet or exceed the values contained in Table A4.106.5.1(2). <b>High-rise Residential, Hotels and Motels</b> Tier 1 roof covering shall meet or exceed the values contained in Table A4.106.5.1(3). Tier 2 roof covering shall meet or exceed the values contained in Table A4.106.5.1(4).		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

*continued*

2016 CALIFORNIA GREEN BUILDING STANDARDS CODE 84

REVISIONS

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BAY AREA ENERGY COMPLIANCE  
7408 POTRERO AVE. EL CERRITO, CA. 94530  
510/932-5858  
title24andgreenpoint@gmail.com

CALGREEN CHECKLIST

NEW RESIDENCE  
APN - 047282150  
EL GRANADA

DATE: 12/17/19  
DRAWN BY:  
SHEET NO.

CG-1

CALGREEN NOTES:

Site Development

4.106.2 A plan is developed and implemented to manage storm water drainage during construction.

4.106.3 Construction plans shall indicate how site grading or a drainage system will manage all surface water flows to keep water from entering buildings.

ENERGY EFFICIENCY

General

4.201.1 Building meets or exceeds the requirements of the California Building Energy Efficiency Standards3.

WATER EFFICIENCY AND CONSERVATION

Indoor Water Use

4.303.1 Plumbing fixtures (water closets and urinals) and fittings (faucets and showerheads) installed in residential buildings shall comply with the prescriptive requirements of Sections 4.303.1.1 through 4.303.1.4.4.

4.303.2 Plumbing fixtures and fittings required in Section 4.303.1 shall be installed in accordance with the California Plumbing Code, and shall meet the applicable referenced standards.

Outdoor Water Use

4.304.1 After December 1, 2015, new residential developments with an aggregate landscape area equal to or greater than 500 square feet shall comply with one of the following options:

1. A local water efficient landscape ordinance or the Current California Department of Water Resources' Model Water Efficient Landscape Ordinance (MWELO), whichever is more stringent; or
2. Projects with aggregate landscape areas less than 2,500 Square feet may comply with the MWELO's Appendix D Prescriptive Compliance Option.

Enhanced Durability and Reduced Maintenance

4.406.1 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.

Construction Waste Reduction, Disposal and Recycling

4.408.1 Recycle and/or salvage for reuse a minimum of 65 percent of the nonhazardous construction and demolition waste in accordance with one of the following:

1. Comply with a more stringent local construction and Demolition waste management ordinance; or
2. A construction waste management plan, per Section 4.408.2; or
3. A waste management company, per Section 4.408.3; or The waste stream reduction alternative, per Section 4.408.4
4. The waste stream reduction alternative, per Section 4.408.4

Building Maintenance and Operation

4.410.1 An operation and maintenance manual shall be provided to the building occupant or owner.

ENVIRONMENTAL QUALITY

Fireplaces

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

VOC & FORMALDEHYDE LIMITS REFERENCE TABLES

2016 CALIFORNIA GREEN BUILDING STANDARDS CODE (GC)

(Tables 4.504.3, 5.504.4.3; 4.504.1, 5.504.4.1; 4.504.2, 5.504.4.2; 4.504.5, 5.504.4.5)

VOC CONTENT LIMITS FOR ARCHITECTURAL COATINGS 23 (Grams of VOC per Liter of Coating, Less Water and Less Exempt Compounds)

COATING CATEGORY	VOC LIMIT
Flat coatings	50
Nonflat 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 <sup>1</sup>	120
Magnesite cement coatings	450
Mastic texture coatings	100
Metallic pigmented coatings	500
Multicolor coatings	250
Pretreatment wash primers	420
Primers, sealers, and undercoaters	100
Reactive penetrating sealers	350
Recycled coatings	250
Roof coatings	50
Rust preventative coatings	250
Shellacs	
Clear	730
Opaque	550
Specialty primers, sealers and undercoaters	100
Stains	250
Stone consolidants	450
Swimming pool coatings	340
Traffic marking coatings	100
Tile and tile refinish coatings	420
Waterproofing membranes	250
Wood coatings	275
Wood preservatives	350
Zinc-rich primers	340

ADHESIVE VOC LIMIT 12 (Less Water and Less Exempt Compounds in Grams per Liter)

ARCHITECTURAL APPLICATIONS	VOC LIMIT
Indoor carpet adhesives	50
Carpet pad adhesives	50
Outdoor carpet adhesives	150
Wood flooring adhesive	100
Rubber floor adhesives	60
Subfloor adhesives	50
Ceramic tile adhesives	65
VCT and asphalt tile adhesives	50
Drywall and panel adhesives	50
Cove base adhesives	50
Multipurpose construction adhesives	70
Structural glazing adhesives	100
Single-ply roof membrane adhesives	250
Other adhesives not specifically listed	50
SPECIALTY APPLICATIONS	
PVC welding	510
CPVC welding	490
ABS welding	325
Structural cement welding	250
Adhesive primer for plastic	550
Contact adhesive	80
Special purpose contact adhesive	250
Structural wood member adhesive	140
Top and trim adhesive	250
SUBSTRATE SPECIFIC APPLICATIONS	
Metal to metal	30
Plastic foams	50
Porous material (except wood)	80
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

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

SEALANTS	VOC LIMIT
Architectural	250
Marine deck	760
Nonmembrane roof	300
Roadway	250
Single-ply roof membrane	450
Other	420
SEALANT PRIMERS	
Architectural	250
Nonporous	775
Porous	500
Modified bituminous	760
Marine deck	760
Other	750

FORMALDEHYDE LIMITS (Maximum formaldehyde Emissions in Parts per Million)

PRODUCT	LIMIT
Hardwood plywood veneer core	0.05
Hardwood plywood composite core	0.05
Particleboard	0.09
Medium density fiberboard	0.11
Thin medium density fiberboard <sup>2</sup>	0.13

1. Values in this table are derived from those specified by the California Air Resources Board, Air Toxics Control Measure for Composite Wood as tested in accordance with ASTM E 1333-96(2002). For additional information, see California Code of Regulations, Title 17, Sections 93120 through 93120.12
2. Thin medium density fiberboard has a maximum thickness of 5/16 inch (8mm)

RESIDENTIAL VOLUNTARY MEASURES

SECTION A4.602

RESIDENTIAL OCCUPANCIES APPLICATION CHECKLIST—continued

FEATURE OR MEASURE	LEVELS APPLICANT TO SELECT ELECTIVE MEASURES				VERIFICATIONS ENFORCING AGENCY TO SPECIFY VERIFICATION METHOD		
	Mandatory	Prerequisites and electives <sup>1</sup>		Enforcing Agency	Installer or Designer	Third party	
		Tier 1	Tier 2				All
4.504.3 Carpet and carpet systems shall be compliant with VOC limits.	<input checked="" type="checkbox"/>			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.504.4 80 percent of floor area receiving resilient flooring shall comply with specified VOC criteria.	<input checked="" type="checkbox"/>			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.504.5 Particleboard, medium density fiberboard (MDF) and hardwood plywood used in interior finish systems shall comply with low formaldehyde emission standards.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.504.1 Use composite wood products made with either California Air Resources Board approved no-added formaldehyde (NAF) resins or ultra-low emitting formaldehyde (ULEF) resins.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.504.2 Install VOC compliant resilient flooring systems.		<input checked="" type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Tier 1. At least 90 percent of the resilient flooring installed shall comply.			<input checked="" type="checkbox"/>				
Tier 2. At least 100 percent of the resilient flooring installed shall comply.							
4.504.3 Thermal insulation installed in the building shall meet the following requirements:		<input checked="" type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Tier 1. Install thermal insulation in compliance with VOC limits.			<input checked="" type="checkbox"/>				
Tier 2. Install insulation which contains No-Added Formaldehyde (NAF) and is in compliance with Tier 1.				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Indoor Moisture Control							
4.505.2 Vapor retarder and capillary break is installed at slab-on-grade foundations.	<input checked="" type="checkbox"/>			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.505.3 Moisture content of building materials used in wall and floor framing is checked before enclosure.	<input checked="" type="checkbox"/>			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Indoor Air Quality and Exhaust							
4.506.1 Return air filters with a value greater than MERV 6 shall be installed on HVAC systems. Pressure drop across the filter shall not exceed 0.1 inches water column.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.506.2 [HR] Provide filters on return air openings rated MERV 6 or higher during construction when it is necessary to use HVAC equipment.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.506.3 Direct-vent appliances shall be used when equipment is located in conditioned space; or the equipment must be installed in an isolated mechanical room.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

SEE SHT. CG-2

N/A

SEE SHT. CG-2

continued

RESIDENTIAL VOLUNTARY MEASURES

SECTION A4.602

RESIDENTIAL OCCUPANCIES APPLICATION CHECKLIST—continued

FEATURE OR MEASURE	LEVELS APPLICANT TO SELECT ELECTIVE MEASURES				VERIFICATIONS ENFORCING AGENCY TO SPECIFY VERIFICATION METHOD		
	Mandatory	Prerequisites and electives <sup>1</sup>		Enforcing Agency	Installer or Designer	Third party	
		Tier 1	Tier 2				All
Material Sources							
4.405.1 One or more of the following building materials, that do not require additional resources for finishing are used:		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1. Exterior trim not requiring paint or stain							
2. Windows not requiring paint or stain							
3. Siding or exterior wall coverings which do not require paint or stain							
4.405.2 Floors that do not require additional coverings are used including but not limited to stained, natural or stamped concrete floors.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.405.3 Postconsumer or preconsumer recycled content value (RCV) materials are used on the project.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Tier 1. Not less than a 10-percent recycled content value.		<input checked="" type="checkbox"/>					
Tier 2. Not less than a 15-percent recycled content value.			<input checked="" type="checkbox"/>				
4.405.4 Renewable source building products are used.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Enhanced Durability and Reduced Maintenance							
4.406.1 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.	<input checked="" type="checkbox"/>			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Water Resistance and Moisture Management							
4.407.1 Install foundation and landscape drains.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.407.2 Install gutter and downspout systems to route water at least 5 feet away from the foundation or connect to landscape drains which discharge to a dry well, sump, bioswale, rainwater capture system or other approved on-site location.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.407.3 Provide flashing details on the building plans and comply with accepted industry standards or manufacturer's instructions.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.407.4 Protect building materials delivered to the construction site from rain and other sources of moisture.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.407.5 In Climate Zone 16 an ice/water barrier is installed at roof valleys, eaves and wall to roof intersections.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.407.6 Exterior doors to the dwelling are protected to prevent water intrusion.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.407.7 A permanent overhang or awning at least 2 feet in depth is provided.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

SEE SHT. CG-2

continued

RESIDENTIAL VOLUNTARY MEASURES

SECTION A4.602

RESIDENTIAL OCCUPANCIES APPLICATION CHECKLIST—continued

FEATURE OR MEASURE	LEVELS APPLICANT TO SELECT ELECTIVE MEASURES				VERIFICATIONS ENFORCING AGENCY TO SPECIFY VERIFICATION METHOD		
	Mandatory	Prerequisites and electives <sup>1</sup>		Enforcing Agency	Installer or Designer	Third party	
		Tier 1	Tier 2				All
Environmental Comfort							
4.507.2 Duct systems are sized, designed, and equipment is selected using the following methods:		<input checked="" type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1. Establish heat loss and heat gain values according to ANSI/ACCA 2 Manual J-2011 or equivalent.				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2. Size duct systems according to ANSI/ACCA 1 Manual D-2014 or equivalent.				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3. Select heating and cooling equipment according to ANSI/ACCA 3 Manual S-2014 or equivalent.				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Outdoor Air Quality Reserved							
Innovative Concepts and Local Environmental Conditions							
4.509.1 Items in this section are necessary to address innovative concepts or local environmental conditions.							
Item 1		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Item 2		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Item 3		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Installer and Special Inspector Qualifications							
Qualifications							
702.1 HVAC system installers are trained and certified in the proper installation of HVAC systems.	<input checked="" type="checkbox"/>			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
702.2 Special inspectors employed by the enforcing agency must be qualified and able to demonstrate competence in the discipline they are inspecting.	<input checked="" type="checkbox"/>			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Verifications							
703.1 Verification of compliance with this code may include construction documents, plans, specifications builder or installer certification, inspection reports, or other methods acceptable to the enforcing agency which show substantial conformance.	<input checked="" type="checkbox"/>			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

SEE SHT. CG-2

SEE SHT. CG-2

SEE SHT. CG-2

RESIDENTIAL VOLUNTARY MEASURES

SECTION A4.602

RESIDENTIAL OCCUPANCIES APPLICATION CHECKLIST—continued

FEATURE OR MEASURE	LEVELS APPLICANT TO SELECT ELECTIVE MEASURES				VERIFICATIONS ENFORCING AGENCY TO SPECIFY VERIFICATION METHOD		
	Mandatory	Prerequisites and electives <sup>1</sup>		Enforcing Agency	Installer or Designer	Third party	
		Tier 1	Tier 2				All
Construction Waste Reduction, Disposal and Recycling							
4.408.1 Recycle and/or salvage for reuse a minimum of 65 percent of the nonhazardous construction and demolition waste in accordance with one of the following:	<input checked="" type="checkbox"/>			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1. Comply with a more stringent local construction and demolition waste management ordinance; or							
2. A construction waste management plan, per Section 4.408.2; or							
3. A waste management company, per Section 4.408.3; or							
4. The waste stream reduction alternative, per Section 4.408.4.							
4.408.1 Construction waste generated at the site is diverted to recycle or salvage in compliance with one of the following:		<input checked="" type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1. Tier 1 at least a 65 percent reduction. Any mixed recyclables that are sent to mixed-waste recycling facilities shall include a qualified third party verified facility average diversion rate. Verification of diversion rates shall meet minimum certification eligibility guidelines, acceptable to the local enforcing agency.							
2. Tier 2 at least a 75 percent reduction with a third-party verification.			<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Exception: Equivalent waste reduction methods are developed by working with local agencies.							
Building Maintenance and Operation							
4.410.1 An operation and maintenance manual shall be provided to the building occupant or owner.	<input checked="" type="checkbox"/>			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.410.2 Where 5 or more multifamily dwelling units are constructed on a building site, provide readily accessible areas that serve all buildings on the site and is identified for the depositing, storage and collection of non-hazardous materials for recycling, including (at a minimum) paper, corrugated cardboard, glass, plastics, organic waste, and metals or meet a lawfully enacted local recycling ordinance, if more restrictive. See exception for rural jurisdictions.	<input checked="" type="checkbox"/>			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Innovative Concepts and Local Environmental Conditions							
4.411.1 Items in this section are necessary to address innovative concepts or local environmental conditions.					</		

01	02	03	04	05	06
Dwelling Unit	IAQ CFM	IAQ Waits/CFM	IAQ Fan Type	IAQ Recovery Effectiveness(%)	HERS Verification
SFan IAQVentPnt	51	0.25	Default	0	Required



01	02	03	04	05	06	07	08
Name	Construction	Type	Roof Rise	Roof Reflectance	Roof Emittance	Radiant Barrier	Cool Roof
Attic First Floor	Attic Roof/First Floor	Ventilated	4	0.1	0.85	No	No
Attic Second Floor	Attic Roof/Second Floor	Ventilated	4	0.1	0.85	No	No
Attic Garage	Attic Garage Roof Cons	Ventilated	4	0.1	0.85	No	No

01	02	03	04	05	06	07	08	09	10
Name	Type	Surface (Orientation-Azimuth)	Width (ft)	Height (ft)	Multiplier	Area (ft²)	U-factor	SHGC	Exterior Shading
Window	Window	Front (Front-345)	---	---	1	48.0	0.40	0.40	Insect Screen (default)
Window 2	Window	Left (Left-75)	---	---	1	32.0	0.40	0.40	Insect Screen (default)
Window 3	Window	Rear (Back-165)	---	---	1	101.0	0.40	0.40	Insect Screen (default)
Window 4	Window	Right (Right-255)	---	---	1	14.0	0.40	0.40	Insect Screen (default)
Window 5	Window	Front 2 (Front-345)	---	---	1	67.0	0.40	0.40	Insect Screen (default)
Window 6	Window	Left 2 (Left-75)	---	---	1	61.0	0.40	0.40	Insect Screen (default)
Window 7	Window	Rear 2 (Back-165)	---	---	1	57.0	0.40	0.40	Insect Screen (default)
Window 8	Window	Right 2 (Right-255)	---	---	1	37.0	0.40	0.40	Insect Screen (default)

01	02	03	04
Name	Side of Building	Area (ft²)	U-factor
Wood Door	Front	24.0	0.50

01	02	03	04	05	06	07	08
Project Name	City	Climate Zone	Building Type	Project Scope	Total Cond. Floor Area (ft²)	Slab Area (ft²)	Addition Cond. Floor Area (ft²)
NEW RESIDENCE	El Granada	C23	Single Family	Newly Constructed	2092	881	n/a
Standards Version	Compliance 2017	Compliance Manager Version	BEM/CompMgr 2016.3.1 (1149)	Software Version	EnergyPro 7.2	Front Orientation (deg/Cardinal)	345
Number of Dwelling Units	1	Number of Zones	2	Number of Stories	2	Natural Gas Available	Yes
Glazing Percentage (%)	19.9%						

01	02
Building Complies with Computer Performance	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.

04	05	06	07	08
Energy Use (kTDV/ft²-yr)	Standard Design	Proposed Design	Compliance Margin	Percent Improvement
Space Heating	12.39	13.78	-1.39	-11.2%
Space Cooling	1.63	1.26	0.37	22.7%
IAQ Ventilation	1.17	1.17	0.00	0.0%
Water Heating	9.20	7.94	1.26	13.7%
Photovoltaic Offset	---	0.00	0.00	---
Compliance Energy Total	24.39	24.15	0.24	1.0%

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT	
Documentation Author Name: Frank Cuthbert	Documentation Author Signature: <i>Frank Cuthbert</i>
Signature Date: 2019-12-17 11:05:34	CEA/HERS Certification Identification (if applicable): N/A
Address: 7408 Potrero Ave. City/State/Zip: El Cerrito, CA 94530	Phone: 510-932-5858

RESPONSIBLE PERSON'S DECLARATION STATEMENT	
I certify the following under penalty of perjury, under the laws of the State of California: 1. I am eligible under Division 3 of the Business and Professions Code to accept responsibility for the building design identified on this Certificate of Compliance. 2. I certify that the energy features and performance specifications identified on this Certificate of Compliance conform to the requirements of Title 24, Part 1 and Part 6 of the California Code of Regulations. 3. The building design features or system design features identified on this Certificate of Compliance are consistent with the information provided on other applicable compliance documents, worksheets, calculations, plans and specifications submitted to the enforcement agency for approval with this building permit application.	
Responsible Designer Name: Amarendra Prasad	Responsible Designer Signature: <i>Amarendra Prasad</i>
Date Signed: 2019-12-17 13:54:23	License: C68517
Address: 365 Flower Lane City/State/Zip: Mountain View, CA 94043	Phone: 650-793-4151

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



01	02	03	04	05	06	07
Construction Name	Surface Type	Construction Type	Framing	Total Cavity R-value	Winter Design U-factor	Assembly Layers
Garage Ext 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
R-0 Roof Attic	Ceilings (below attic)	Wood Framed Ceiling	2x4 @ 24 in. O.C.	none	0.481	• Inside Finish: Gypsum Board • Cavity / Frame: no insul. / 2x4
Attic Garage Roof Cons	Attic Roofs	Wood Framed Ceiling	2x4 Top Chord of Roof Truss @ 24 in. O.C.	none	0.644	• Cavity / Frame: no insul. / 2x4 Top Chrd • Roof Deck: Wood Siding/sheathing/decking • Roofing: Light Roof (Asphalt Shingle)
Attic Roof/First Floor	Attic Roofs	Wood Framed Ceiling	2x4 Top Chord of Roof Truss @ 24 in. O.C.	none	0.644	• Cavity / Frame: no insul. / 2x4 Top Chrd • Roof Deck: Wood Siding/sheathing/decking • Roofing: Light Roof (Asphalt Shingle)
R-19 Wall	Exterior Walls	Wood Framed Wall	2x6 @ 16 in. O.C.	R 19 in 5-1/2 in. cavity (R-18)	0.074	• Inside Finish: Gypsum Board • Cavity / Frame: R-19 in 5-1/2 in. (R-18) / 2x6 • Exterior Finish: 3 Coat Stucco
R-30 Roof Attic	Ceilings (below attic)	Wood Framed Ceiling	2x6 @ 16 in. O.C.	R 30	0.032	• Inside Finish: Gypsum Board • Cavity / Frame: R-14.3 / 2x6 • Over Ceiling Joists: R-15.7 insul.
R-15 Wall	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
Attic Roof/Second Floor	Attic Roofs	Wood Framed Ceiling	2x4 Top Chord of Roof Truss @ 24 in. O.C.	none	0.644	• Cavity / Frame: no insul. / 2x4 Top Chrd • Roof Deck: Wood Siding/sheathing/decking • Roofing: Light Roof (Asphalt Shingle)
R-19 Floor No Crawlspace	Interior Floors	Wood Framed Floor	2x12 @ 16 in. O.C.	R 19	0.044	• Floor Surface: Carpeted • Floor Deck: Wood Siding/sheathing/decking • Cavity / Frame: R-19 / 2x12 • Ceiling Below Finish: Gypsum Board
R-0 Floor No Crawlspace	Interior Floors	Wood Framed Floor	2x12 @ 16 in. O.C.	none	0.196	• Floor Surface: Carpeted • Floor Deck: Wood Siding/sheathing/decking • Cavity / Frame: no insul. / 2x12 • Ceiling Below Finish: Gypsum Board
R-19 Floor No Crawlspace1	Exterior Floors	Wood Framed Floor	2x12 @ 16 in. O.C.	R 19	0.046	• Floor Surface: Carpeted • Floor Deck: Wood Siding/sheathing/decking • Cavity / Frame: R-19 / 2x12

ENERGY DESIGN RATING			
EDR of Standard Efficiency	EDR of Proposed Efficiency	EDR Value of Proposed PV + Battery	Final Proposed EDR
49.3	49.1	0.0	49.1
<input type="checkbox"/> Design meets Tier 1 requirement of 15% or greater code compliance margin (CALGreen A4.203.1.2.1) and Oil verification prerequisite. <input type="checkbox"/> Design meets Tier 2 requirement of 30% or greater code compliance margin (CALGreen A4.203.1.2.2) and Oil verification prerequisite. <input type="checkbox"/> Design meets Zero Net Energy (ZNE) Design Designation requirement for Single Family in climate zone C23 (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 Oil must be verified.			

REQUIRE SPECIAL FEATURES			
The following are features that must be installed as condition for meeting the modeled energy performance for this computer analysis.			
NO SPECIAL FEATURES REQUIRED			

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

01	02	03	04	05	06	07
Project Name	Conditioned Floor Area (ft²)	Number of Dwelling Units	Number of Bedrooms	Number of Zones	Number of Ventilation Cooling Systems	Number of Water Heating Systems
NEW RESIDENCE	2092	1	3	2	0	1

01	02	03	04	05	06	07
Name	Zone	Area (ft²)	Perimeter (ft)	Edge Insul. R-value & Depth	Carpeted Fraction	Heated
Slab-on-Grade	First Floor	881	114	None	0.8	No
Garage/Slab	Garage	430	46	None	0	No

BUILDING ENVELOPE - HERS VERIFICATION			
Quality Insulation Installation (QI)	Quality Installation of Spray Foam Insulation	Building Envelope Air Leakage	CFM50
Not Required	Not Required	Not Required	n/a

WATER HEATING SYSTEMS					
Name	System Type	Distribution Type	Water Heater	Number of Heaters	Solar Fraction (%)
DHW Sys 1	Combined Hydronic	Standard	DHW Heater 1 (1)	1	0%

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 / Thermal Efficiency (Int/Ext)	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	Small Instantaneous	1	0	0.95 EF	<= 200 kBtu/hr	R-QR-0	0	n/a	n/a	n/a

SPACE CONDITIONING SYSTEMS					
SC Sys Name	System Type	Heating Unit Name	Cooling Unit Name	Fan Name	Distribution Name
Radiant Floor Heat1	Other Heating and Cooling System	Heating Component 1	Cooling Component 1	HVAC Fan 1	- none -

HVAC - HEATING UNIT TYPES			
Name	System Type	Number of Units	Efficiency
Heating Component 1	CombHydro	1	95 AFUE

01	02	03	04	05	06	07
Zone Name	Zone Type	HVAC System Name	Zone Floor Area (ft²)	Avg. Ceiling Height	Water Heating System 1	Water Heating System 2
First Floor	Conditioned	Radiant Floor Heat1	881	9	DHW Sys 1	n/a
Second Floor	Conditioned	Radiant Floor Heat1	1211	9	DHW Sys 1	n/a

01	02	03	04	05	06	07	08
Name	Zone	Construction	Azimuth	Orientation	Gross Area (ft²)	Window & Door Area (ft²)	Tilt (deg)
Front	First Floor	R-19 Wall	345	Front	135	72	90
Left	First Floor	R-19 Wall	75	Left	369	32	90
Rear	First Floor	R-19 Wall	165	Back	315	101	90
Right	First Floor	R-19 Wall	255	Right	207	14	90
Wall to garage	First Floor-->Garage	R-15 Wall	n/a	n/a	333	0	n/a
Attic Roof	First Floor	R-30 Roof Attic	n/a	n/a	16	n/a	n/a
Front 2	Second Floor	R-19 Wall	345	Front	315	67	90
Left 2	Second Floor	R-19 Wall	75	Left	342	61	90
Rear 2	Second Floor	R-19 Wall	165	Back	315	57	90
Right 2	Second Floor	R-19 Wall	255	Right	342	37	90
Attic Roof 2	Second Floor	R-30 Roof Attic	n/a	n/a	1211	n/a	n/a
Raised Floor No Crawl	Second Floor	R-19 Floor No Crawlspace1	n/a	n/a	55	n/a	n/a
Floor over garage	Second Floor-->Garage	R-19 Floor No Crawlspace	n/a	n/a	264	n/a	n/a
Floor over first floor	Second Floor-->First Floor	R-0 Floor No Crawlspace	n/a	n/a	881	n/a	n/a
GarageWallFront	Garage	Garage Ext Wall	345	Front	100	0	90
GarageWallFront2	Garage	Garage Ext Wall	345	Front	80	0	90
GarageWallLeft	Garage	Garage Ext Wall	75	Left	36	0	90
GarageWallRight	Garage	Garage Ext Wall	255	Right	198	0	90
GarageRoof	Garage	R-0 Roof Attic	n/a	n/a	166	n/a	n/a

REVISIONS

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TITLE-24 ENERGY COMPLIANCE

NEW RESIDENCE



### 2016 Low-Rise Residential Mandatory Measures Summary

§ 150.0(m)13:	<b>Duct System Sizing and Air Filter Grille Sizing.</b> Space conditioning systems that use forced air ducts to supply cooling to an occupiable space must have a hole for the placement of a static pressure probe (HSP), or a permanently installed static pressure probe (PSP) in the supply plenum. The space conditioning system must also demonstrate airflow $\geq 350$ CFM per ton of nominal cooling capacity through the return grilles, and an air-handling unit fan efficiency $\geq 0.58$ W/CFM as confirmed by field verification and diagnostic testing, in accordance with Reference Residential Appendix RA3.3. This applies to both single zone central forced air systems and every zone for zonally controlled central forced air systems.
§150.0(o):	<b>Ventilation for Indoor Air Quality.</b> All dwelling units must meet the requirements of ASHRAE Standard 62.2. Neither window operation nor continuous operation of central forced air system air handlers used in central fan integrated ventilation systems are permissible methods of providing whole-building ventilation.
§ 150.0(q)1A:	<b>Field Verification and Diagnostic Testing.</b> Whole-building ventilation airflow must be confirmed through field verification and diagnostic testing, in accordance with Reference Residential Appendix RA3.7.
<b>Pool and Spa Systems and Equipment Measures:</b>	
§ 110.4(a):	<b>Certification by Manufacturers.</b> Any pool or spa heating system or equipment must be certified to have all of the following: a thermal efficiency that complies with the Appliance Efficiency Regulations; an on-off switch mounted outside of the heater that allows shutting off the heater without adjusting the thermostat setting; a permanent weatherproof plate or card with operating instructions; and must not use electric resistance heating.
§ 110.4(b)1:	<b>Piping.</b> Any pool or spa heating equipment must be installed with at least 3/8 inches of pipe between the filter and the heater, or dedicated suction and return lines, or built-in or built-up connections to allow for future solar heating.
§ 110.4(b)2:	<b>Covers.</b> Outdoor pools or spas that have a heat pump or gas heater must have a cover.
§ 110.4(b)3:	<b>Directional inlets and time switches for pools.</b> Pools must have directional inlets that adequately mix the pool water, and a time switch that will allow all pumps to be set or programmed to run only during off-peak electric demand periods.
§ 110.5:	<b>Pilot Light.</b> Natural gas pool and spa heaters must not have a continuously burning pilot light.
§ 150.0(p):	<b>Pool Systems and Equipment Installation.</b> Residential pool systems or equipment must meet the specified requirements for pump sizing, flow rate, piping, filters, and valves.
<b>Lighting Measures:</b>	
§ 110.9:	<b>Lighting Controls and Components.</b> All lighting control devices and equipment, ballasts, and luminaires must meet the applicable requirements of § 110.9.
§ 110.9(e):	<b>JAB High Efficacy Light Sources.</b> To qualify as a JAB high efficacy light source for compliance with § 150.0(k), a residential light source must be certified to the Energy Commission according to Reference Joint Appendix JAB.
§ 150.0(q)1A:	<b>Luminaire Efficacy.</b> All installed luminaires must be high efficacy in accordance with TABLE 150.0-A.
§ 150.0(q)1B:	<b>Blank Electrical Boxes.</b> The number of electrical boxes that are more than 5 feet above the finished floor and do not contain a luminaire or other device must be no greater than the number of bedrooms. These electrical boxes must be served by a dimmer, vacancy sensor control, or fan speed control.
§ 150.0(q)1C:	<b>Recessed Downlight Luminaires in Ceilings.</b> Luminaires recessed into ceilings must meet all of the requirements for: insulation contact (IC) labeling; air leakage; sealing; maintenance; and socket and light source as described in § 150.0(q)1C. A JAB-2016-E light source rated for elevated temperature must be installed by final inspection in all recessed downlight luminaires in ceilings.
§ 150.0(q)1D:	<b>Electronic Ballasts.</b> Ballasts for fluorescent lamps rated 13 watts or greater must be electronic and must have an output frequency no less than 20 Hz.
§ 150.0(q)1E:	<b>Night Lights.</b> Permanently installed night lights and night lights integral to installed luminaires or exhaust fans must be rated to consume no more than 5 watts of power per luminaire or exhaust fan as determined in accordance with § 130.0(c). Night lights do not need to be controlled by vacancy sensors.
§ 150.0(q)1F:	<b>Lighting Integral to Exhaust Fans.</b> Lighting integral to exhaust fans (except when installed by the manufacturer in kitchen exhaust hoods) must meet the applicable requirements of § 150.0(k).
§ 150.0(q)1G:	<b>Screw based luminaires.</b> Screw based luminaires must not be recessed downlight luminaires in ceilings and must contain lamps that comply with Reference Joint Appendix JAB. Installed lamps must be marked with "JAB-2016" or "JAB-2016-E" as specified in Reference Joint Appendix JAB.
§ 150.0(q)1H:	<b>Enclosed Luminaires.</b> Light sources installed in enclosed luminaires must be JAB compliant and must be marked with "JAB-2016-E."
§ 150.0(q)2A:	<b>Interior Switches and Controls.</b> All forward phase cut dimmers used with LED light sources must comply with NEMA SSL 7A.
§ 150.0(q)2B:	<b>Interior Switches and Controls.</b> Exhaust fans must be switched separately from lighting systems."
§ 150.0(q)2C:	<b>Interior Switches and Controls.</b> Luminaires must be switched with readily accessible controls that permit the luminaires to be manually switched ON and OFF.
§ 150.0(q)2D:	<b>Interior Switches and Controls.</b> Controls and equipment must be installed in accordance with manufacturer's instructions.
§ 150.0(q)2E:	<b>Interior Switches and Controls.</b> No control must bypass a dimmer or vacancy sensor function if the control is installed to comply with § 150.0(k).
§ 150.0(q)2F:	<b>Interior Switches and Controls.</b> Lighting controls must comply with the applicable requirements of § 110.9.
§ 150.0(q)2G:	<b>Interior Switches and Controls.</b> An energy management control system (EMCS) may be used to comply with dimmer requirements if it: functions as a dimmer according to § 110.9; meets the Installation Certificate requirements of § 130.4; meets the EMCS requirements of § 130.5(f); and meets all other requirements in § 150.0(k).
§ 150.0(q)2H:	<b>Interior Switches and Controls.</b> An EMCS may be used to comply with vacancy sensor requirements in § 150.0(k) if it meets all of the following: it functions as a vacancy sensor according to § 110.9; the Installation Certificate requirements of § 130.4; the EMCS requirements of § 130.5(f); and all other requirements in § 150.0(k).
§ 150.0(q)2I:	<b>Interior Switches and Controls.</b> A multiscene programmable controller may be used to comply with dimmer requirements in § 150.0(k) if it provides the functionality of a dimmer according to § 110.9, and complies with all other applicable requirements in § 150.0(k).



### 2016 Low-Rise Residential Mandatory Measures Summary

§ 150.0(k)2:	<b>Interior Switches and Controls.</b> In bathrooms, garages, laundry rooms, and utility rooms, at least one luminaire in each of these spaces must be controlled by a vacancy sensor.
§ 150.0(k)2K:	<b>Interior Switches and Controls.</b> Dimmers or vacancy sensors must control all luminaires required to have light sources compliant with Reference Joint Appendix JAB, except luminaires in closets less than 70 square feet and luminaires in hallways."
§ 150.0(k)2L:	<b>Interior Switches and Controls.</b> Undercabinet lighting must be switched separately from other lighting systems."
§ 150.0(k)3A:	<b>Residential Outdoor Lighting.</b> For single-family residential buildings, outdoor lighting permanently mounted to a residential building, or to other buildings on the same lot, must meet the requirement in Item § 150.0(k)3A(i) (ON and OFF switch) and the requirements in either item § 150.0(k)3A(ii) (photocell and motion sensor) or item § 150.0(k)3A(iii) (photo control and automatic time switch control, astronomical time clock, or EMCS).
§ 150.0(k)3B:	<b>Residential Outdoor Lighting.</b> For low-rise multifamily residential buildings, outdoor lighting for private patios, entrances, balconies, and porches; and outdoor lighting for residential parking lots and residential carports with less than eight vehicles per site must comply with either § 150.0(k)3A or with the applicable requirements in §§ 110.9, 130.0, 130.2, 130.4, 140.7 and 141.0.
§ 150.0(k)3C:	<b>Residential Outdoor Lighting.</b> For low-rise residential buildings with four or more dwelling units, outdoor lighting not regulated by § 150.0(k)3B or § 150.0(k)3D must comply with the applicable requirements in §§ 110.9, 130.0, 130.2, 130.4, 140.7 and 141.0.
§ 150.0(k)3D:	<b>Residential Outdoor Lighting.</b> Outdoor lighting for residential parking lots and residential carports with a total of eight or more vehicles per site must comply with the applicable requirements in §§ 110.9, 130.0, 130.2, 130.4, 140.7, and 141.0.
§ 150.0(k)4:	<b>Internally illuminated address signs.</b> Internally illuminated address signs must comply with § 140.8; or must consume no more than 5 watts of power as determined according to § 130.0(c).
§ 150.0(k)5:	<b>Residential Garages for Eight or More Vehicles.</b> Lighting for residential parking garages for eight or more vehicles must comply with the applicable requirements for nonresidential garages in §§ 110.9, 130.0, 130.1, 130.4, 140.6, and 141.0.
§ 150.0(k)6A:	<b>Interior Common Areas of Low-rise Multi-Family Residential Buildings.</b> In a low-rise multifamily residential building where the total interior common area in a single building equals 20 percent or less of the floor area, permanently installed lighting for the interior common areas in that building must be high efficacy luminaires and controlled by an occupant sensor.
§ 150.0(k)6B:	<b>Interior Common Areas of Low-rise Multi-Family Residential Buildings.</b> In a low-rise multifamily residential building where the total interior common area in a single building equals more than 20 percent of the floor area, permanently installed lighting in that building must: i. Comply with the applicable requirements in §§ 110.9, 130.0, 130.1, 140.6 and 141.0; and ii. Lighting installed in corridors and stairwells must be controlled by occupant sensors that reduce the lighting power in each space by at least 50 percent. The occupant sensors must be capable of turning the light fully on and off from all designed paths of ingress and egress.
<b>Solar Ready Buildings:</b>	
§ 110.10(a)1:	<b>Single Family Residences.</b> Single family residences located in subdivisions with ten or more single family residences and where the application for a tentative subdivision map for the residences has been deemed complete by the enforcement agency must comply with the requirements of § 110.10(b) through § 110.10(e).
§ 110.10(a)2:	<b>Low-rise Multi-Family Buildings.</b> Low-rise multi-family buildings must comply with the requirements of § 110.10(b) through § 110.10(d).
§ 110.10(b)1:	<b>Minimum Area.</b> The solar zone must have a minimum total area as described below. The solar zone must comply with access, pathway, smoke ventilation, and spacing requirements as specified in Title 24, Part 9 or other Parts of Title 24 or in any requirements adopted by a local jurisdiction. The solar zone total area must be comprised of areas that have no dimension greater than 5 feet and are no less than 80 square feet each for buildings with roof areas less than or equal to 10,000 square feet or no less than 160 square feet each for buildings with roof areas greater than 10,000 square feet. For single family residences the solar zone must be located on the roof or overhang of the building and have a total area no less than 250 square feet. For low-rise multi-family buildings the solar zone must be located on the roof or overhang of the building, or on the roof or overhang of another structure located within 250 feet of the building, or on covered parking installed with the building project, and have a total area no less than 15 percent of the total area of the building excluding any skylight area.
§ 110.10(b)2:	<b>Orientation.</b> All sections of the solar zone located on steep-sloped roofs must be oriented between 110 degrees and 270 degrees of true north.
§ 110.10(b)3A:	<b>Shading.</b> The solar zone must not contain any obstructions, including but not limited to: vents, chimneys, architectural features, and roof mounted equipment.
§ 110.10(b)3B:	<b>Shading.</b> Any obstruction located on the roof or any other part of the building that projects above a solar zone must be located at least twice the distance, measured in the horizontal plane, of the height difference between the highest point of the obstruction and the horizontal projection of the nearest point of the solar zone, measured in the vertical plane."
§ 110.10(b)4:	<b>Structural Design Loads on Construction Documents.</b> For areas of the roof designated as solar zone, the structural design loads for roof dead load and roof live load must be clearly indicated on the construction documents.
§ 110.10(b)5:	<b>Interconnection Pathways.</b> The construction documents must indicate: a location for inverters and metering equipment and a pathway for routing of conduit from the solar zone to the point of interconnection with the electrical service (for single family residences the point of interconnection will be the main service panel); and a pathway for routing of plumbing from the solar zone to the water-heating system.
§ 110.10(d):	<b>Documentation.</b> A copy of the construction documents or a comparable document indicating the information from § 110.10(b) through § 110.10(c) must be provided to the occupant.
§ 110.10(e)1:	<b>Main Electrical Service Panel.</b> The main electrical service panel must have a minimum busbar rating of 200 amps.
§ 110.10(e)2:	<b>Main Electrical Service Panel.</b> The main electrical service panel must have a reserved space to allow for the installation of a double pole circuit breaker for a future solar electric installation. The reserved space must be positioned at the opposite (dead) end from the input feeder location or main circuit location; and permanently marked as "For Future Solar Electric."



### 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 04/2017)*

<b>Building Envelope Measures:</b>	
§ 110.6(a)1:	<b>Air Leakage.</b> Manufactured fenestration, exterior doors, and exterior pet doors must limit air leakage to 0.3 cm <sup>3</sup> /h or less when tested per NFRC-400 or ASTM E283 or ANNA/WDMA/CSA 1011.5.2/A440-2011.
§ 110.6(a)5:	<b>Labeling.</b> Fenestration products must have a label meeting the requirements of § 110-11(a).
§ 110.6(b):	<b>Field fabricated exterior doors and fenestration products</b> 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:	<b>Air Leakage.</b> 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):	<b>Insulation Certification by Manufacturers.</b> Insulation specified or installed must meet Standards for Insulating Material.
§ 110.8(b):	<b>Insulation Requirements for Heated Slab Floors.</b> Heated slab floors must be insulated per the requirements of § 110.8(g).
§ 110.8(i):	<b>Roofing Products Solar Reflectance and Thermal Emittance.</b> The thermal emittance and aged solar reflectance values of the roofing material must meet the requirements of § 110.8(j) when the installation of a cool roof is specified on the CFIR.
§ 110.8(j):	<b>Radiant Barrier.</b> A radiant barrier must have an emittance of 0.05 or less and be certified to the Department of Consumer Affairs.
§ 150.0(a):	<b>Ceiling and Rafter Roof Insulation.</b> 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 above or below the roof deck or on top of a drywall ceiling.
§ 150.0(b):	<b>Loose-fill Insulation.</b> Loose fill insulation must meet the manufacturer's required density for the labeled R-value.
§ 150.0(c):	<b>Above Grade Wall Insulation.</b> 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."
§ 150.0(d):	<b>Raised-floor Insulation.</b> Minimum R-19 insulation in raised wood framed floor or 0.037 maximum U-factor."
§ 150.0(f):	<b>Slab Edge Insulation.</b> Slab edge insulation must meet all of the following: have a 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).
§ 150.0(g)1:	<b>Vapor Retarder.</b> In Climate Zones 1-16, the sixth floor of unvented crawl 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(h).
§ 150.0(g)2:	<b>Vapor Retarder.</b> 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.
§ 150.0(h):	<b>Fenestration Products.</b> 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."
<b>Fireplaces, Decorative Gas Appliances, and Gas Log Measures:</b>	
§ 150.0(e)1A:	<b>Closable Doors.</b> Masonry or factory-built fireplaces must have a closable metal or glass door covering the entire opening of the firebox.
§ 150.0(e)1B:	<b>Combustion Intake.</b> 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 light-tighting damper or combustion-air control device."
§ 150.0(e)1C:	<b>Flue Damper.</b> Masonry or factory-built fireplaces must have a flue damper with a readily accessible control."
§ 150.0(e)2:	<b>Pilot Light.</b> 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.
<b>Space Conditioning, Water Heating, and Plumbing System Measures:</b>	
§ 110.0-§ 110.3:	<b>Certification.</b> 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):	<b>HVAC Efficiency.</b> Equipment must meet the applicable efficiency requirements in TABLES 110.2-A through TABLE 110.2-K."
§ 110.2(b):	<b>Controls for Heat Pumps with Supplementary Electric Resistance Heaters.</b> Heat pumps with supplementary electric resistance heaters must have controls that prevent supplementary heater operation when the heating load can be met by the heat pump alone; 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):	<b>Thermostats.</b> 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:	<b>Water Heating Recirculation Loops Serving Multiple Dwelling Units.</b> Water heating recirculation loops serving multiple dwelling units must meet the air release valve, backflow prevention, pump priming, pump isolation valve, and recirculation loop connection requirements of § 110.3(c)5.
§ 110.3(c)7:	<b>Isolation Valves.</b> 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:	<b>Pilot Lights.</b> 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."
§ 150.0(h)1:	<b>Building Cooling and Heating Loads.</b> Heating and/or cooling loads are 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.



### 2016 Low-Rise Residential Mandatory Measures Summary

§ 150.0(h)3A:	<b>Clearances.</b> Installed air conditioner and heat pump outdoor condensing units must have a clearance of at least 5 feet from the outlet of any dryer vent.
§ 150.0(h)3B:	<b>Liquid Line Drier.</b> 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(i):	<b>Storage Tank Insulation.</b> Unfired hot water tanks, such as storage tanks and backup storage tanks for solar water-heating systems, must have R-12 external insulation on R-16 internal insulation. R-value is indicated on the exterior of the tank.
§ 150.0(i)2A:	<b>Water piping and cooling system line insulation.</b> 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 the 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(i)2B:	<b>Water piping and cooling system line insulation.</b> All domestic hot water pipes that are buried below grade must be installed in a water proof and non-combustible casing or sleeve."
§ 150.0(i)2C:	<b>Water piping and cooling system line insulation.</b> Pipe for cooling system lines must be insulated as specified in § 150.0(i)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:	<b>Insulation Protection.</b> Insulation must be protected from damage, including that due to sunlight, moisture, equipment maintenance, and wind.
§ 150.0(j)3A:	<b>Insulation Protection.</b> Insulation exposed to weather must be installed with a cover suitable for outdoor service. For example, protected by aluminum, sheet metal, painted canvas, or plastic cover. The cover must be water retardant and provide shielding from solar radiation that can cause degradation of the material.
§ 150.0(j)3B:	<b>Insulation Protection.</b> Insulation covering chilled water piping and refrigerant piping located outside the conditioned space must have a Class I or Class II vapor retarder.
§ 150.0(j)1:	<b>Gas or Propane Systems.</b> 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 Category III or IV vent, or 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(j)2:	<b>Recirculating Loops.</b> Recirculating loops serving multiple dwelling units must meet the requirements of § 110.3(c)5.
§ 150.0(j)3:	<b>Solar Water-heating Systems.</b> 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.
<b>Ducts and Fans Measures:</b>	
§ 110.8(d)3:	<b>Ducts.</b> Insulation installed on an existing space-conditioning duct must comply with § 604.0 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:	<b>CMC Compliance.</b> 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 ANS/SMACNA-006-2006 HVAC Duct Construction Standards Metal and Insulated. 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) 14.2.8. Connections of metal ducts and inner core of flexible ducts must be mechanically fastened. Connections 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 1/4 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:	<b>Factory-Fabricated Duct Systems.</b> Factory-fabricated duct systems must comply with applicable requirements for duct construction, connections, and closures; joints and seams of duct systems and their components must not be sealed with cloth back rubber adhesive duct tapes unless such tape is used in combination with mastic and draw bands.
§ 150.0(m)3:	<b>Field-Fabricated Duct Systems.</b> 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:	<b>Backdraft Dampers.</b> 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:	<b>Gravity Ventilation Dampers.</b> 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:	<b>Protection of Insulation.</b> 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 foam insulation must be protected as above or painted with a coating that is water retardant and provides shielding from solar radiation.
§ 150.0(m)10:	<b>Porous Inner Core Flex Duct.</b> Porous inner core flex duct must have a non-porous liner between the inner core and outer vapor barrier.
§ 150.0(m)11:	<b>Duct System Sealing and Leakage Test.</b> When space conditioning systems use forced air duct systems to supply conditioned air to an occupiable space, the ducts must be sealed and duct leakage tested, as confirmed through field verification and diagnostic testing, in accordance with § 150.0(m)11 and Reference Residential Appendix RA3.
§ 150.0(m)12:	<b>Air Filtration.</b> Mechanical systems that supply air to an occupiable space through ductwork exceeding 10 feet in length and through a thermal conditioning component, except evaporative coolers, must be provided with air filter devices that meet the design, installation, efficiency, pressure drop, and labeling requirements of § 150.0(m)12.

#### REVISIONS

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**TITLE-24 ENERGY COMPLIANCE**

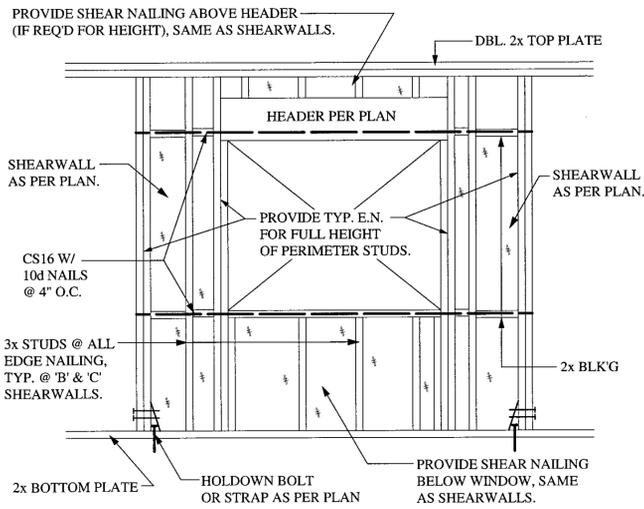
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APN - 047282150  
EL GRANADA

**DATE:** 12/17/19

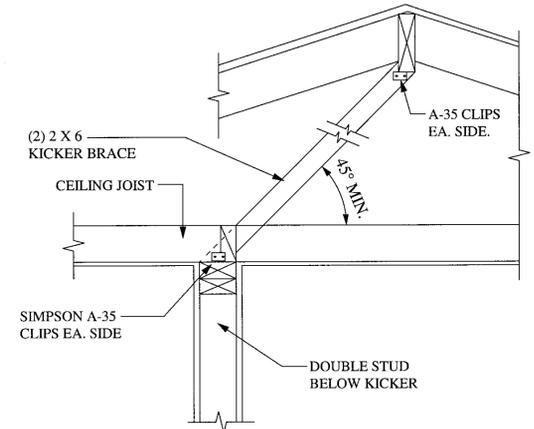
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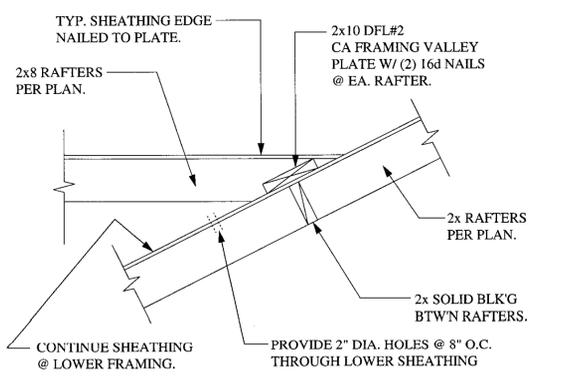
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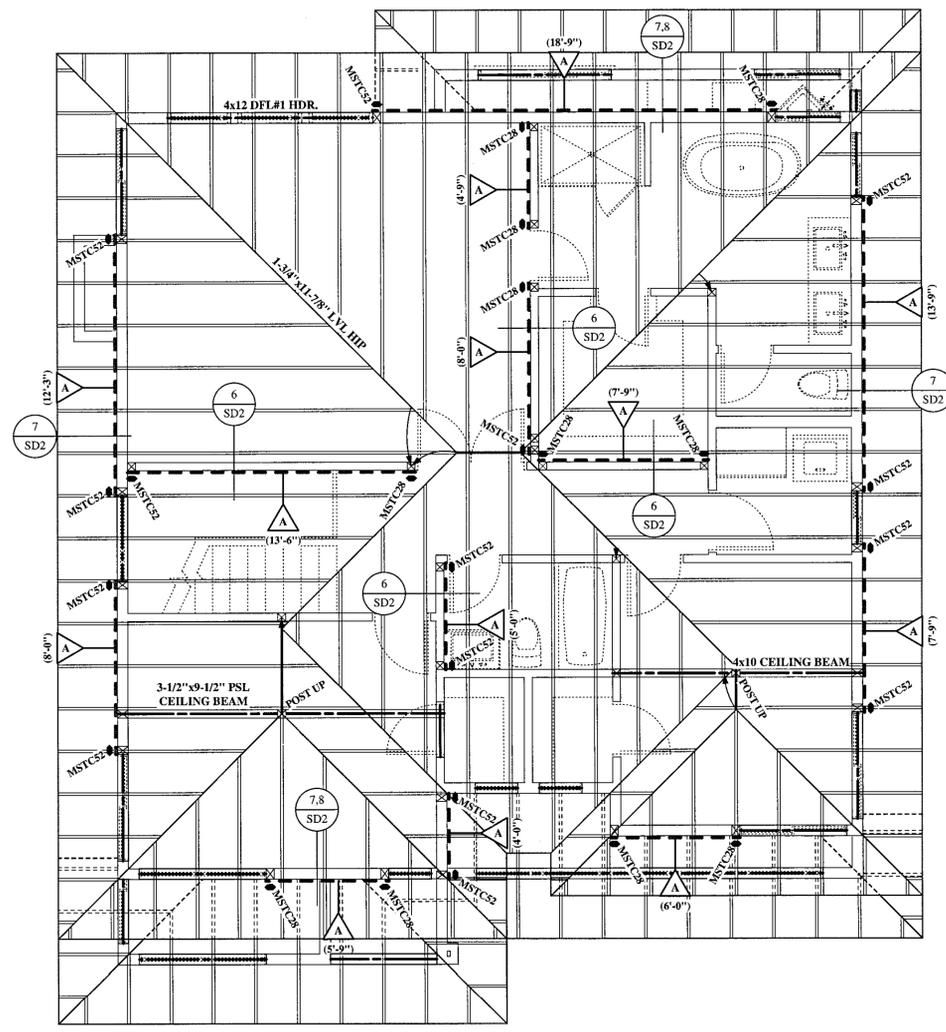
1 PERFORATED SHEARWALL  
N.T.S.



2 TYP. KICKER  
N.T.S.



3 CALIFORNIA FRAMING  
N.T.S.



ROOF FRAMING PLAN

- ROOF FRAMING NOTES**
- CONTRACTOR SHALL VERIFY ALL CONDITIONS IN FIELD AND NOTIFY THIS OFFICE OF ANY DISCREPANCIES FOR CLARIFICATION AND/OR RESOLUTION PRIOR TO COMMENCEMENT OF RELATED WORK.
  - USE 1/2" 5-PLY APA RATED PLYWOOD SHEATHING, 240, EXPOSURE 1, UNBLOCKED AND NAILED W/ 8d COMMON NAILS AT 6" O.C. EDGE AND 12" O.C. FIELD, TYP. OSB SHEATHING OF EQ. THICKNESS & SPAN RATING MAY BE SUBSTITUTED. PROVIDE FRAMING MEMBERS OR BLK'G AT ALL EDGES OF PLYWOOD SHEETS THAT ARE LESS THAN 24" WIDELONG.
  - ONLY LOAD BEARING BEAMS AND HEADERS ARE SHOWN ON THE PLAN.
  - PROVIDE (2) 2x STUDS UNDER EACH END OF ALL 4x & 6x ROOF BEAMS TYP. U.N.O.
  - AT ALL POSTS SUPPORTING A BEAM OR HEADER, WITHOUT AN ADJACENT KING STUD, PROVIDE SIMPSON 'PC' POST CAP @ TOP OF POST, TYP. U.N.O.
  - AT ALL POSTS NOT WITHIN A WALL, PROVIDE SIMPSON TYPE 'BC' POST BASE UNDER POST - U.N.O.
  - AT GABLE END WALLS, PROVIDE PERPENDICULAR 2x BLK'G @ 4'-0" O.C. FROM WALL TO THE FIRST RAFTER. BALLOON FRAME ALL GABLE END WALLS @ VAULTED CEILING.
  - USE SIMPSON TYPE 'LRU' RAFTER HANGERS OR 'U' JOIST HANGERS AS REQD - U.N.O.
  - CONTRACTOR SHALL INSTALL ALL G.S.M. FLASHING AS REQUIRED TO COMPLETE ASSEMBLY FOR WATER-TIGHT CONSTRUCTION. 26GA., TYP.
  - ALL ROOF PENETRATIONS AS MAY OCCUR SHALL BE FLASHED AND CAPPED AS REQD.
  - PROVIDE G.S.M. STEPPED FLASHING 9" MIN. UP SIDE WALL TYP. AT ALL WALL PENETRATIONS @ ROOF. PROVIDE SOLDERED G.S.M. SADDLE/CRICKET AT ALL FIREPLACE CHIMNEY PENETRATIONS AT SLOPED ROOF.
  - PROVIDE ATTIC VENTILATION THROUGH SCREENED EAIE VENT, RIDGE VENTS AND/OR GABLE VENTS EQUAL TO 1 SQUARE FOOT OF VENT FOR EVERY 150 SQUARE FEET OF ATTIC AREA, AS PER C.B.C. SECT. 1203.2.
  - MIN. ATTIC SPACE ACCESS TO BE 22"x30" @ ATTIC AREAS GREATER THAN 30" IN HEIGHT AS PER C.B.C. SECT. 1209.2.
  - FRAMING PLANS ARE FOR SCHEMATIC PURPOSES ONLY - DO NOT SCALE. SEE ARCH. PLANS FOR DIMENSIONS.

- SHEARWALL NOTES**
- SEE PLAN FOR LOCATIONS OF VERTICAL HOLD-DOWNS TO BE INSTALLED AT FOUNDATION IF SHOWN BELOW FLOOR FRAMING, OR BETWEEN FIRST & SECOND FLOOR IF SHOWN UNDER ROOF FRAMING. SEE DETAILS 1 THROUGH 4 ON SHEET SD2 FOR SIZE & INSTALLATION SPECS.
  - SEE SHEET SD2 FOR SHEARWALL PLYWOOD AND NAILING SCHEDULE. NOTE: ALL NEW EXTERIOR WALLS SHALL HAVE TYPE 'A' SHEARWALL, TYP. U.N.O.
  - ALL SHEARWALL NAILING TO BE 10d COMMON NAILS UNLESS APPROVED BY THE ENGINEER.
  - USE 3" NOMINAL OR THICKER MEMBERS FOR ALL INTERMEDIATE STUDS WHICH RECEIVE E.N. IN TYPE 'B', TYPE 'C', & TYPE 'E' SHEARWALLS, TYP. EDGE NAILING SHALL BE STAGGERED. FOR WALLS W/ TYPE 'A' NAILING ON BOTH SIDES, STUDS RECEIVING EDGE NAILING SHALL BE 3" NOMINAL OR 2" NOMINAL & STAGGERED. SEE DETAILS 1 & 4 ON SHEET SD2 FOR END POST SIZES AT HOLD-DOWNS.
  - USE 3" NOMINAL OR THICKER MEMBERS FOR TOP & BOTTOM WALL PLATES AT ALL WALLS WHICH HAVE SHEATHING ON BOTH SIDES, TYP. EDGE NAILING SHALL BE STAGGERED.
  - USE 3x SILL PLATES FOR ALL WALLS W/ TYPE 'E' SHEATHING OR SHEATHING ON BOTH SIDES, TYP.
  - PROVIDE AN MSTA36 STRAP @ ALL PLATE BREAKS DUE TO TRANSITIONS BTWN 2x & 3x MEMBERS.
  - SEE FOUNDATION NOTES 7 & 8 FOR ANCHOR BOLTS.
  - SEE DETAIL 11/SD2 FOR SHEAR TRANSFER AT FOUNDATION, TYP. SEE DETAILS 9 & 10 ON SHEET SD2 FOR SHEAR TRANSFER AT FLOORS, TYP. SEE DETAIL 7/SD2 FOR SHEAR TRANSFER AT ROOF EAVES, TYP. SEE DETAIL 8/SD2 FOR SHEAR TRANSFER AT LOWER ROOFS, TYP. SEE DETAILS 5 & 6 ON SHEET SD2 FOR SHEAR TRANSFER AT ROOF, TYP.
  - EXTEND SHEARWALLS TO ROOF SHEATHING AT ALL INTERIOR SHEARWALLS.
  - RUN SHEARWALL PLY. CONTINUOUSLY AT WALL 'T' INTERSECTIONS.
  - PROVIDE STUD OR BLK'G @ ALL EDGES OF PLYWOOD SHEETS THAT ARE LESS THAN 24" WIDE.
  - SEE PLAN FOR LOCATIONS OF HORIZONTAL MST STRAPS. SIZE AS NOTED ON PLAN. INSTALL W/ NAILS AS PER MFR. SPECIFICATIONS. STRAP MAY BE PLACED ON TOP OF THE SHEATHING OR AS PER DETAIL 14/SD2. USE SOLID OR 2x4 PLAT BLOCKING BETWEEN FRAMING MEMBERS.
  - PROVIDE A COLLECTOR STRAP AT THE ENDS OF ALL TYPICAL SHEARWALLS WHERE THE TOP PLATE IS NOT CONTINUOUS. REFER TO DETAIL 14/SD2, TYP.
  - PROVIDE A TIE-DOWN AT EACH END OF BEAMS TO WHICH HOLD-DOWN STRAPS FROM ABOVE ARE ATTACHED. NOT NECESSARY AT FLUSH HANGERS. ALSO PROVIDE TIE-DOWNS AT BOTH ENDS OF HEADERS WHICH SUPPORT THESE BEAMS. SEE 10/SD2 FOR TIE-DOWN ALTERNATIVES.

**ROOF FRAMING**

- RAFTERS: 2x8 DFL#2 @ 24" O.C. U.N.O.  
@ SPANS > THAN 14': DBL. RFR'S OR SPACE @ 16" O.C.
- HIPS, VALLEYS & RIDGES: (1) 2x10 DFL#2 U.N.O.
- DN. HEADERS: 4x8 DFL#2 to 5'-0", U.N.O.  
4x12 DFL#1 @ LARGER, U.N.O.

**CEILING FRAMING**

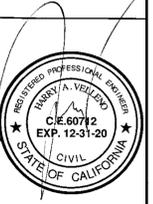
- CEILING JOISTS: 2x6 DFL#2 @ 24" O.C. to 11'-6", UNO  
2x8 DFL#2 @ 24" O.C. to 15'-6", UNO  
2x10 DFL#2 @ 24" O.C. to 19'-6", UNO

**SYMBOL LEGEND**

- DENOTES SHEARWALL TYPE. SEE SHEET SD2 FOR NAILING SCHEDULE. DIMENSIONS SHOWN ARE THOSE USED FOR DESIGN, REFER TO ARCHITECTURAL PLANS FOR ACTUAL DIMENSIONS.
- POST TO BEAM OR WALL BELOW  
PROVIDE DBL. STUD (MIN) @ 2x & DBL. 2x MEMBERS  
PROVIDE 4x4 (MIN) @ 4x (& 3-1/2" PSL) MEMBERS  
PROVIDE 4x6 (MIN) @ 6x (& 5-1/4" PSL) MEMBERS
- VERTICAL HOLD-DOWN STRAP TO WALL/FRAMING BELOW.  
MSTC28, MSTC66B -> TO BEAM/HDR. BELOW PER DETAIL 4/SD2 U.N.O.  
MSTC52, MSTC66 -> TO POST BELOW PER DETAIL 3/SD2 U.N.O.
- SIMPSON HOLD-DOWN, SIZE AS NOTED. INSTALL AS PER MFR. SPECS.
- HORIZONTAL MST STRAP, SIZE AS NOTED.
- SIMPSON TYPE 'U' JOIST HANGER OR EQUIV.
- (2) 2x6 KICKER BRACE, SEE DETAIL 2/5-3.

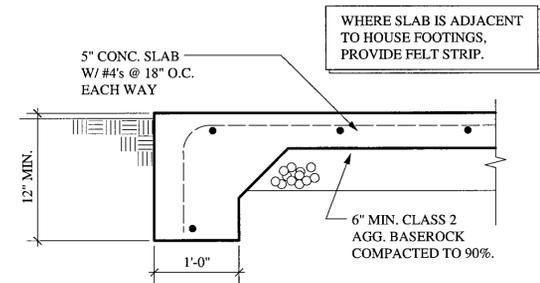
REVISIONS	BY

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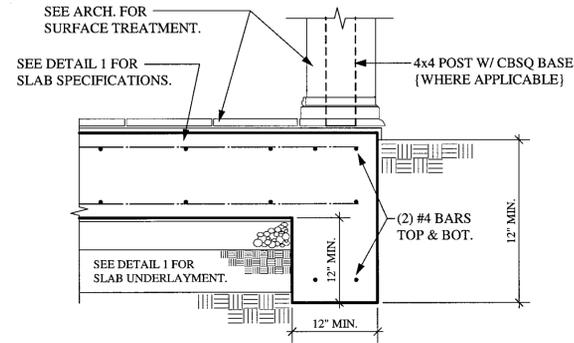


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STEADMAN PROPERTY  
APN #047282150  
EL GRANADA, CALIFORNIA

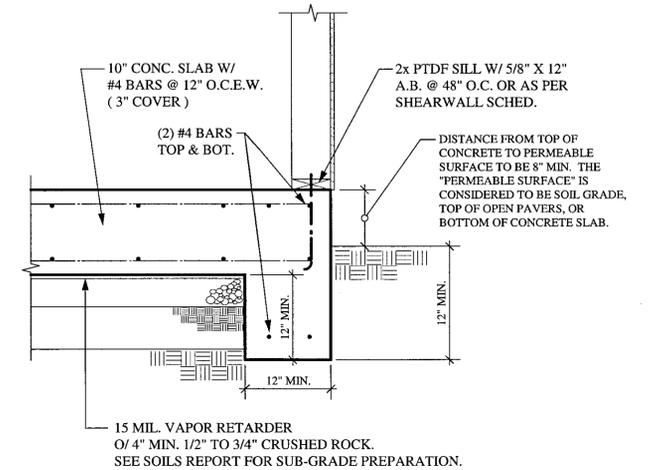
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Drawn	HAV
Job	
Sheet	



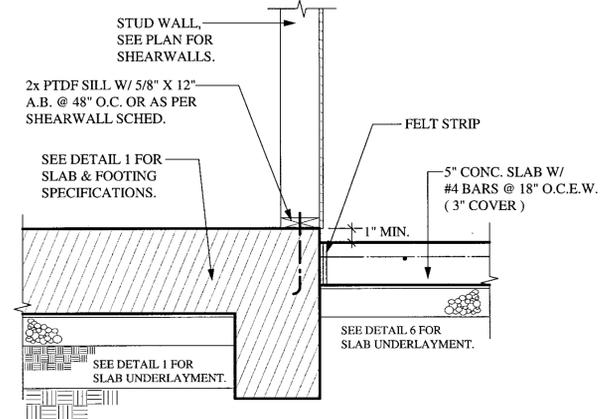
7 TYP. LANDING SLAB  
N.T.S.



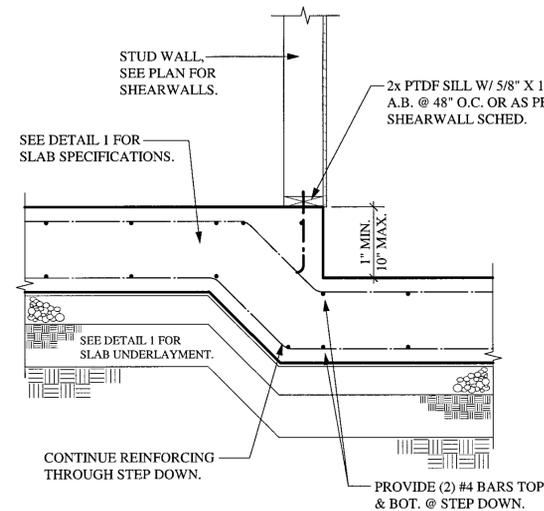
4 PATIO SLAB EDGE  
N.T.S.



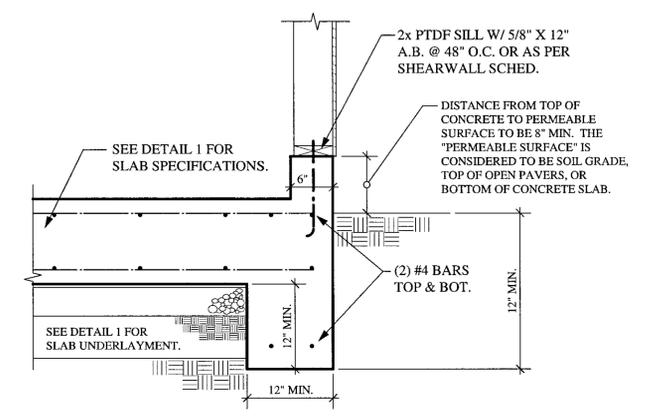
1 TYP. SLAB @ EXTERIOR  
N.T.S.



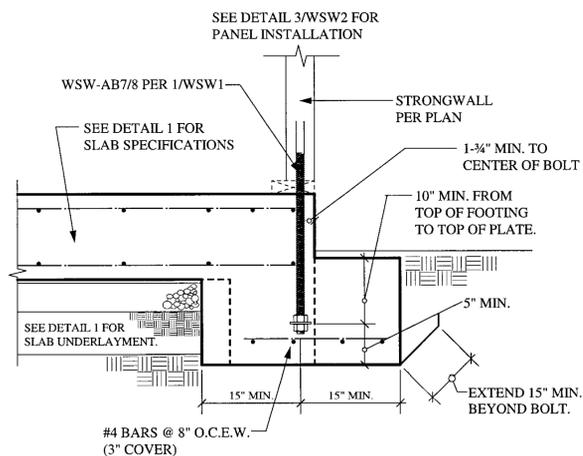
8 LANDING SLAB TRANSITION  
N.T.S.



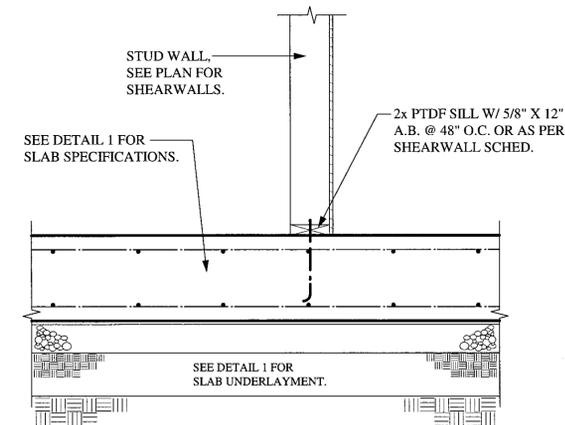
5 STEP DOWN IN INTERIOR SLAB  
N.T.S.



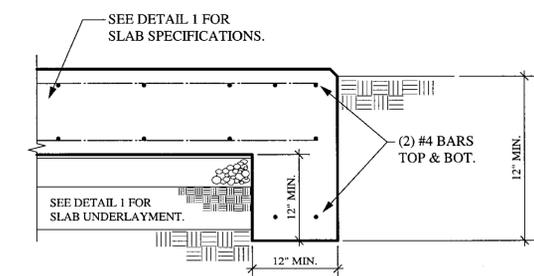
2 SLAB @ EXTERIOR W/ CURB  
N.T.S.



9 SLAB @ STRONGWALL  
N.T.S.



6 SLAB @ INTERIOR WALL  
N.T.S.



3 GARAGE DOOR OPENING  
N.T.S.

REVISIONS BY

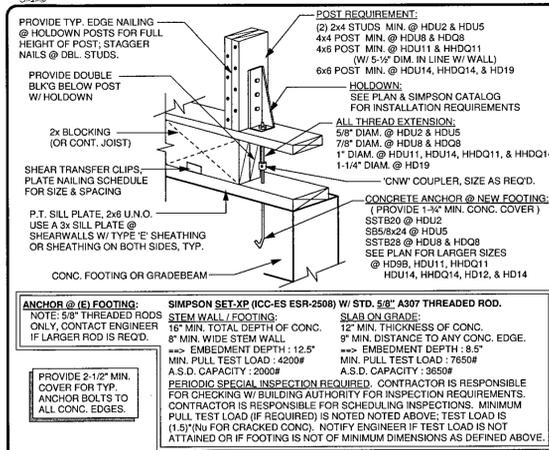
VELLENO ENGINEERING  
1690 WOODSIDE ROAD #219  
REDWOOD CITY, CA 94061  
PHN: (650) 556-1137  
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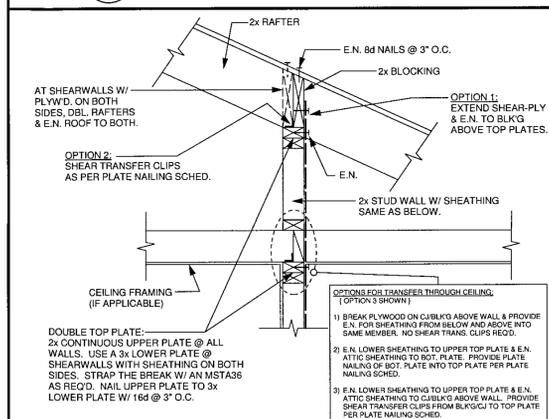
NEW RESIDENCE  
STEADMAN PROPERTY  
APN #047282150  
EL GRANADA, CALIFORNIA

Date 12-19-19  
Scale N.T.S.  
Drawn HAV  
Job  
Sheet

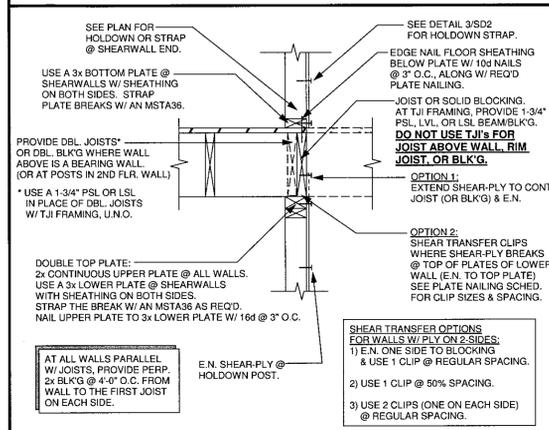
SD1



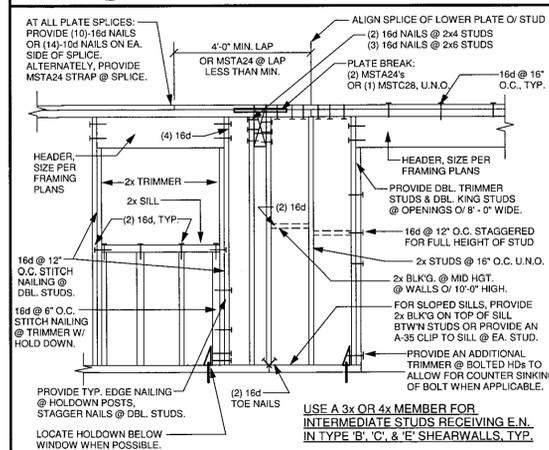
**1 HOLDOWN**  
RAISED FLOOR - EXISTING OR NEW FOUNDATION



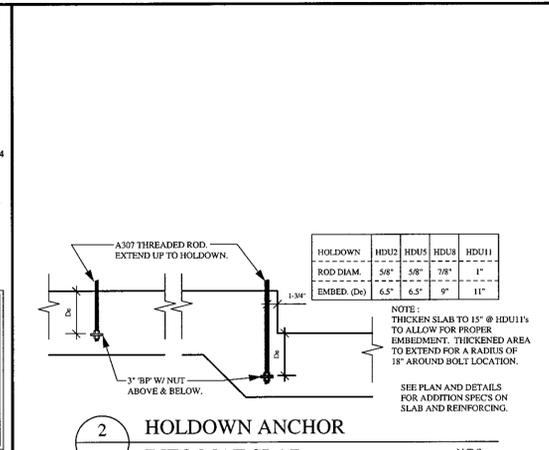
**5 SHEAR TRANSFER - ROOF**  
SHEARWALL PERPENDICULAR TO ROOF RAFTERS



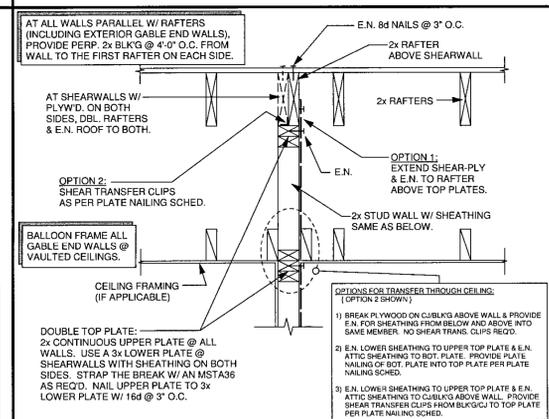
**9 SHEAR TRANSFER THROUGH FLOOR**  
(STACKING WALLS)



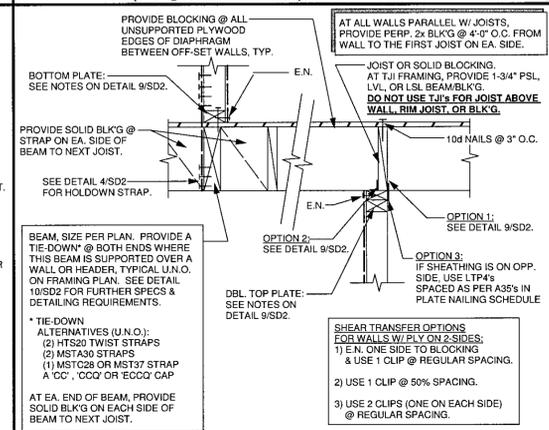
**13 TYPICAL 2x STUD WALL DETAIL**  
(INCLUDING SHEARWALLS)



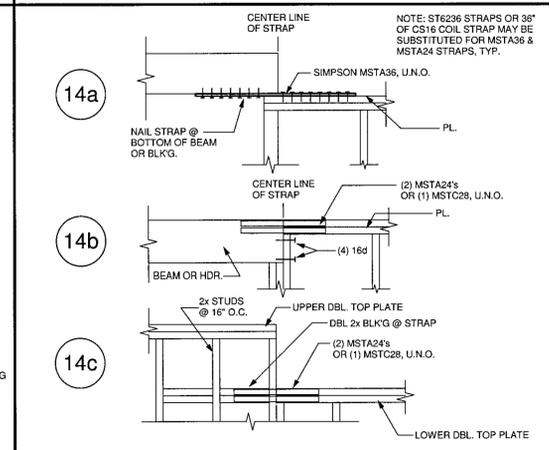
**2 HOLDOWN ANCHOR**  
INTO MAT SLAB



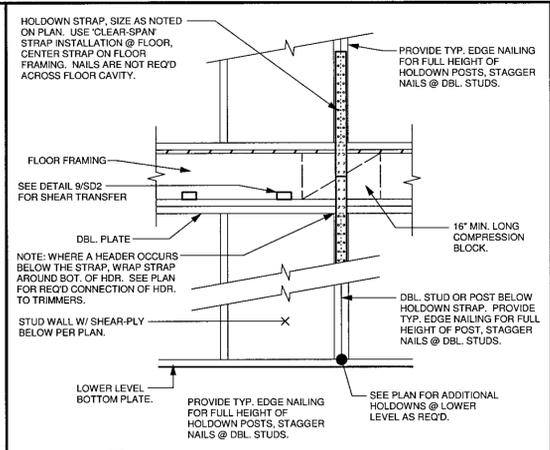
**6 SHEAR TRANSFER - ROOF**  
SHEARWALL PARALLEL TO ROOF RAFTERS  
(SIM. @ GABLE END WALLS)



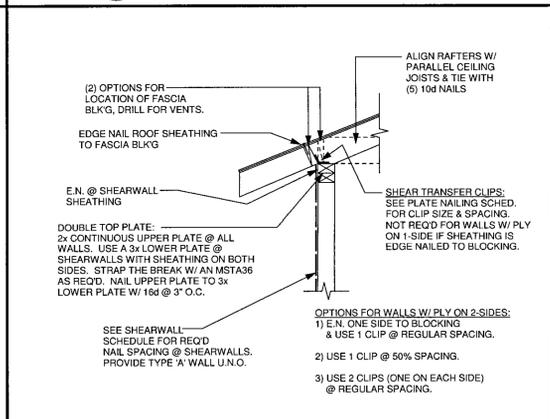
**10 SHEAR TRANSFER THROUGH FLOOR**  
(OFF-SET WALLS)



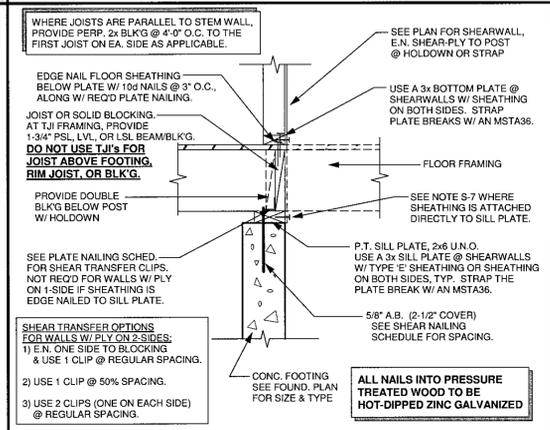
**14 DRAG STRAP DETAIL**  
BEAM, HEADER & TOP PLATES



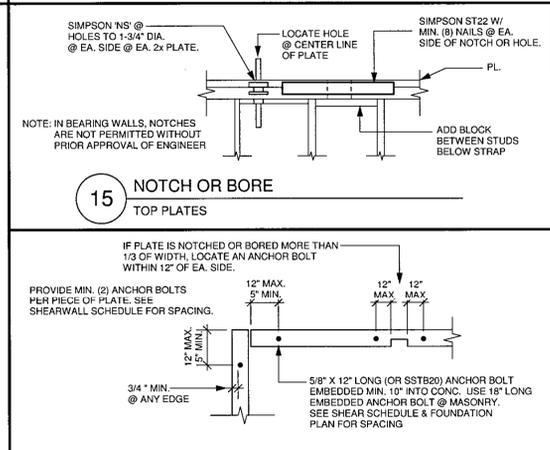
**3 HOLDOWN STRAP**  
UPPER STORY OVER WALL



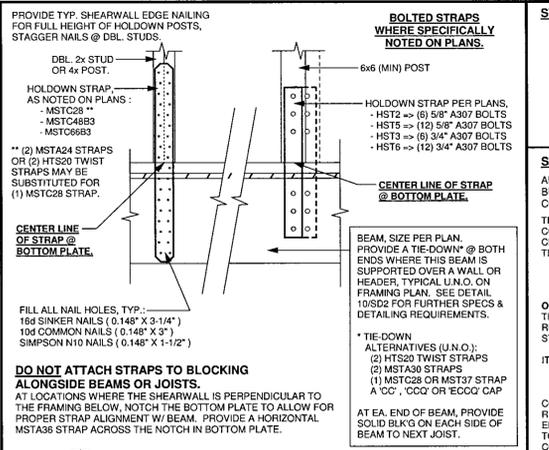
**7 SHEAR TRANSFER - ROOF**  
ROOF EAVE DETAIL



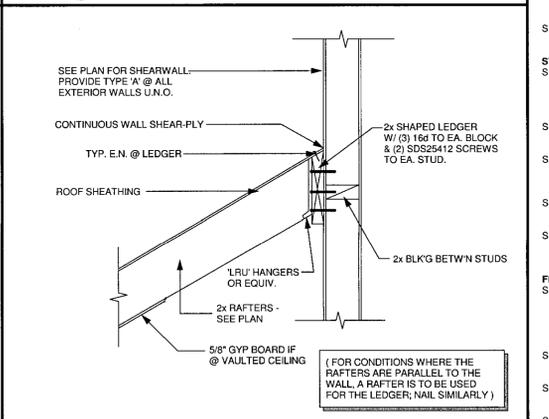
**11 SHEAR TRANSFER AT FOUNDATION**



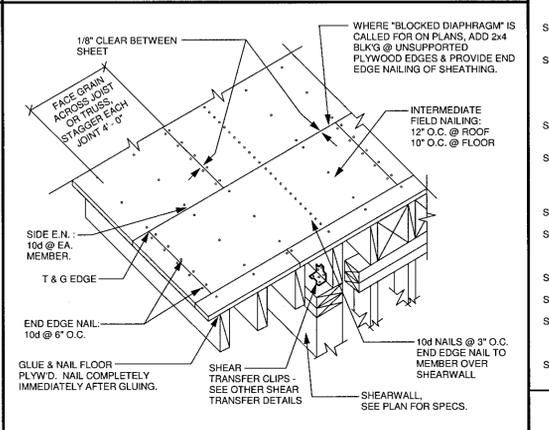
**15 NOTCH OR BORE**  
TOP PLATES



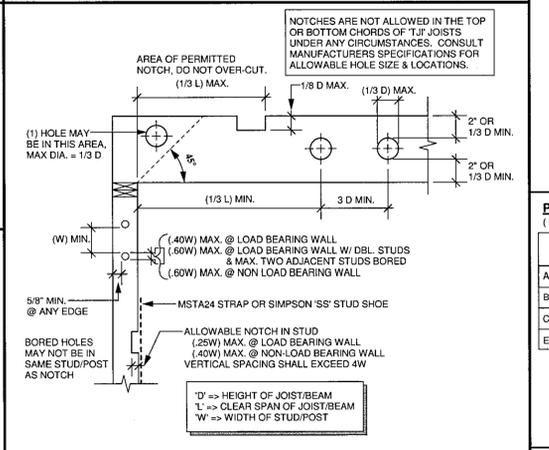
**4 HOLDOWN STRAP**  
UPPER STORY OVER BEAM



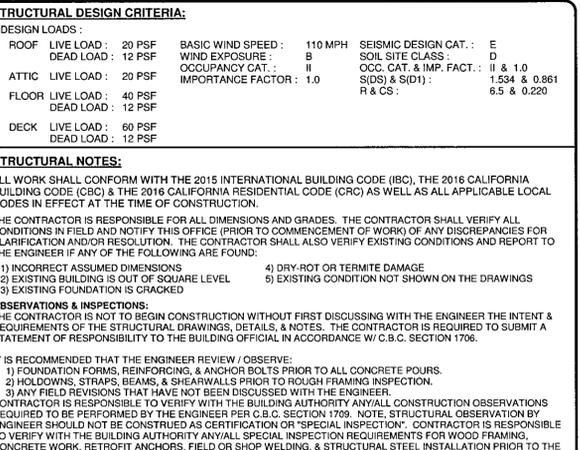
**8 SHEAR TRANSFER - ROOF**  
LOWER ROOF



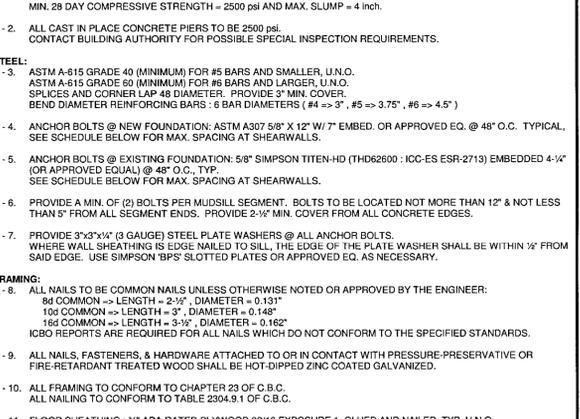
**12 TYP. ROOF/FLOOR NAILING DETAIL**



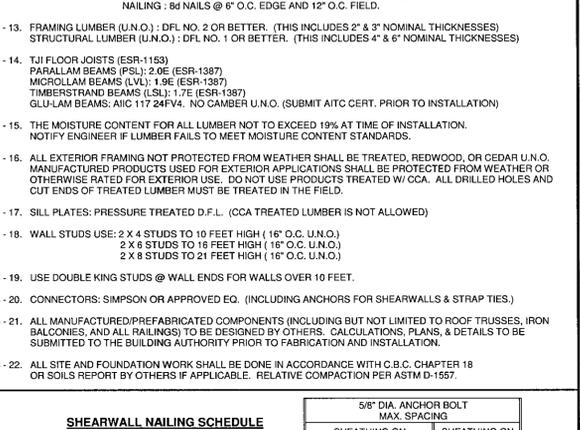
**17 NOTCH & BORE LIMITS**  
STUDS, JOISTS, & BEAMS



**16 NOTCH OR BORE**  
SILL PLATE



**14a, 14b, 14c DRAG STRAP DETAIL**  
BEAM, HEADER & TOP PLATES



**14a, 14b, 14c DRAG STRAP DETAIL**  
BEAM, HEADER & TOP PLATES

**SHEARWALL NAILING SCHEDULE**

TYPE	NAILING	5/8" DIA. ANCHOR BOLT MAX. SPACING		
		2x SILL	3x SILL	3x SILL
A	1/2 (1532) INCH CDX OR OSB W/ 10d @ 6" O.C. EDGES, 12" O.C. FIELD. CAPACITY = 310 LBF	48"	48"	36"
B	1/2 (1532) INCH CDX OR OSB W/ 10d @ 4" O.C. EDGES, 12" O.C. FIELD. (SEE S.W. NOTES FOR 3x MEMBERS) CAPACITY = 460 LBF	36"	48"	24"
C	1/2 (1532) INCH CDX OR OSB W/ 10d @ 3" O.C. EDGES, 12" O.C. FIELD. (SEE S.W. NOTES FOR 3x MEMBERS) CAPACITY = 670 LBF	30"	36"	18"
E	12 INCH STRUCTURAL-1 PLYWOOD W/ 10d @ 2" O.C. EDGES, 12" O.C. FIELD. (SEE S.W. NOTES FOR 3x MEMBERS) CAPACITY = 870 LBF	N.A.	24"	12"

**PLATE NAILING SCHEDULE (BOTTOM PLATE TO FRAMING OR BLOCKING BELOW)**

TYPE	PLYWOOD ON 1-SIDE ONLY (2x BOTTOM PLATE, U.N.O.)	PLYWOOD 1-SIDE ONLY (ALT. TO WALLS)	PLYWOOD ON BOTH SIDES (3x BOTTOM PLATE REQ'D)	
			2x SILL	3x SILL
A	6" O.C. (16d NAILS STAG.)	SDS25412 @ 12" O.C.	SDS25600 @ 6" O.C.	A35 @ 24" O.C.
B	4" O.C. (16d NAILS STAG.)	SDS25412 @ 8" O.C.	SDS25600 @ 4" O.C.	A35 @ 16" O.C.
C	3" O.C. (16d NAILS STAG.)	SDS25412 @ 6" O.C.	SDS25600 @ 3" O.C.	A35 @ 12" O.C.
E	SDS SCREWS REQ'D	SDS25600 @ 4" O.C.	SDS25600 @ 2" O.C.	A35 @ 8" O.C.

**REVISIONS**

NO.	DESCRIPTION	DATE

**VELENO ENGINEERING**  
1600 WOODSIDE ROAD, #219  
REDWOOD CITY, CA 94061  
PHN: (650) 556-1137  
FAX: (650) 306-0975

**REGISTERED PROFESSIONAL ENGINEER**  
HARRY A. VELENO  
EX-1231-20  
CIVIL  
STATE OF CALIFORNIA

**NEW RESIDENCE**  
STEADMAN PROPERTY  
APN #047282150  
EL GRANADA, CALIFORNIA

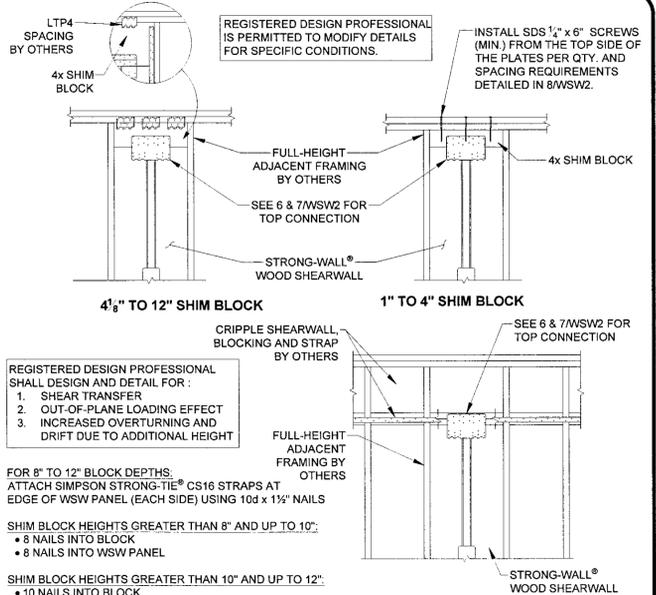
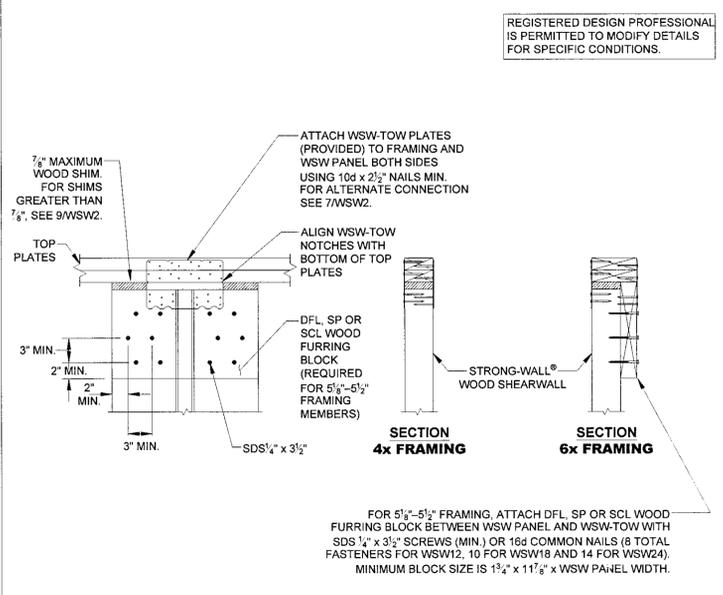
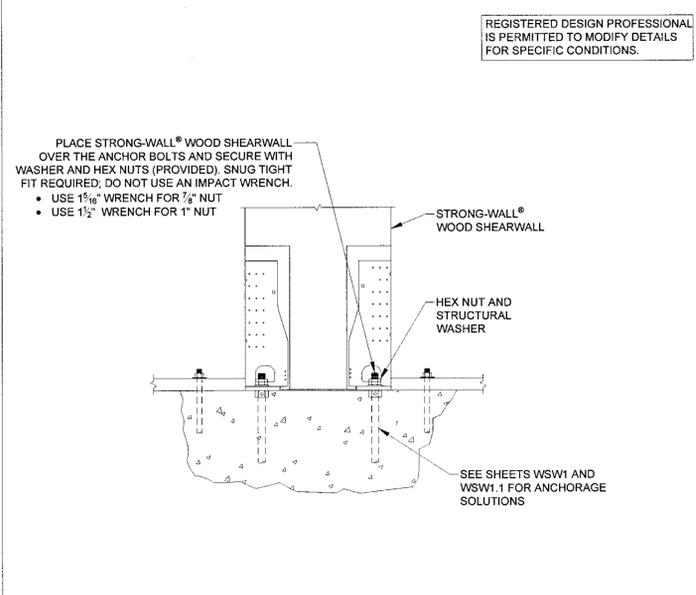
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Scale: N.T.S.  
Drawn: HAV  
Job: SD2  
Sheet: SD2



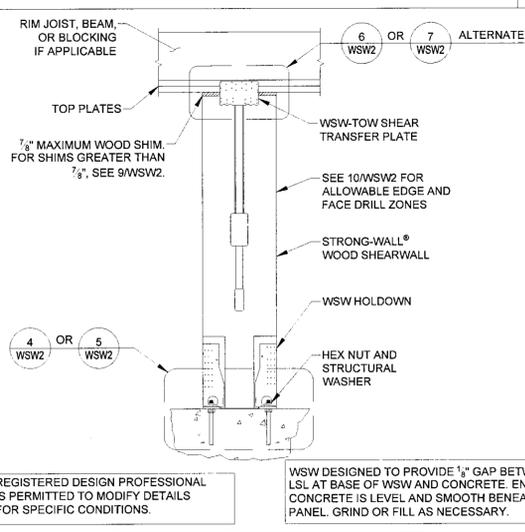
**STRONG-WALL® WOOD SHEARWALL MODELS**

MODEL NO.	W (in.)	H (in.)	ANCHOR BOLTS		TOTAL WALL WEIGHT (lb.)
			QUANTITY	DIA. (in.)	
WSW12x7	12	78	2	7/8	100
WSW18x7	18	78	2	7/8	145
WSW12x7.5	12	85 1/2	2	7/8	110
WSW18x7.5	18	85 1/2	2	7/8	155
WSW12x8	12	93 1/4	2	7/8	115
WSW18x8	18	93 1/4	2	7/8	165
WSW24x8	24	93 1/4	2	1	225
WSW12x9	12	105 1/4	2	7/8	130
WSW18x9	18	105 1/4	2	7/8	185
WSW24x9	24	105 1/4	2	1	245
WSW12x10	12	117 1/4	2	7/8	140
WSW18x10	18	117 1/4	2	7/8	205
WSW24x10	24	117 1/4	2	1	270
WSW12x11	12	129 1/4	2	7/8	150
WSW18x11	18	129 1/4	2	7/8	220
WSW24x11	24	129 1/4	2	1	285
WSW12x12	12	141 1/4	2	7/8	165
WSW18x12	18	141 1/4	2	7/8	240
WSW24x12	24	141 1/4	2	1	320
WSW18x13	18	153 1/4	2	7/8	255
WSW24x13	24	153 1/4	2	1	345
WSW24x14	24	168	2	1	375
WSW24x16	24	192	2	1	425
WSW18x20	18	240	2	7/8	385
WSW24x20	24	240	2	1	520

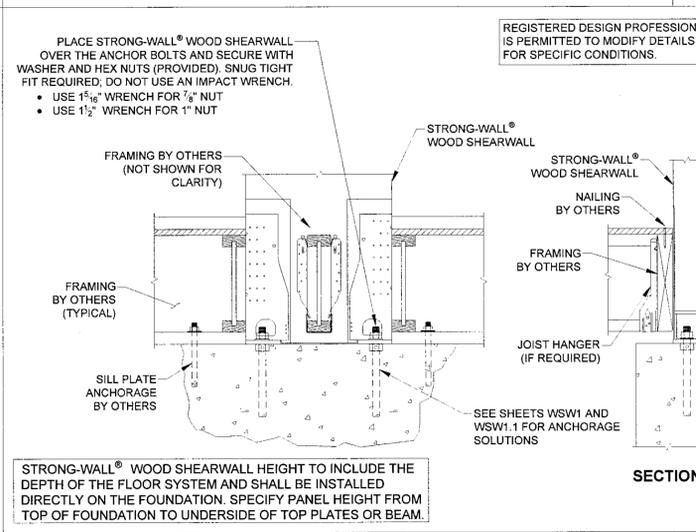
NOTES:  
 1. FOR HEIGHTS NOT LISTED, ORDER THE NEXT TALLEST PANEL AND TRIM TO FIT. MINIMUM TRIMMED HEIGHT FOR ALL PANELS IS 74 1/2".  
 2. ALL PANELS COME WITH TWO PRE-ATTACHED HOLD-DOWNS, TWO STANDARD HEX NUTS, TWO STRUCTURAL WASHERS, TWO WSW-TOW PLATES AND INSTALLATION INSTRUCTIONS.  
 3. ALL PANELS ARE 3/4" THICK.



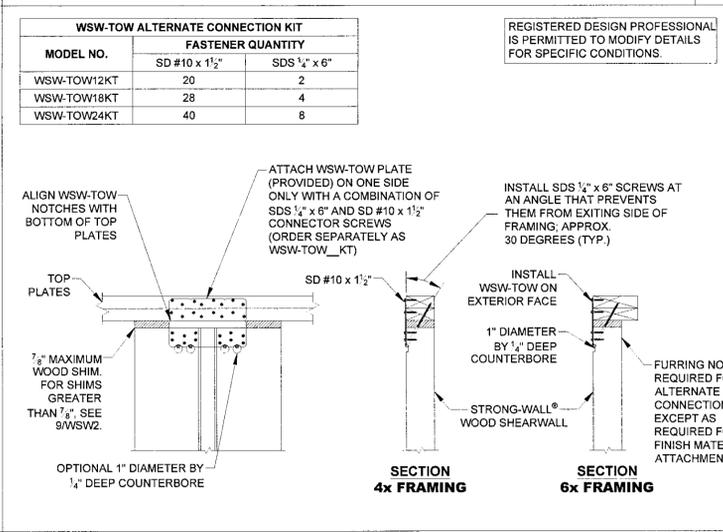
**STRONG-WALL® WSW MODELS**



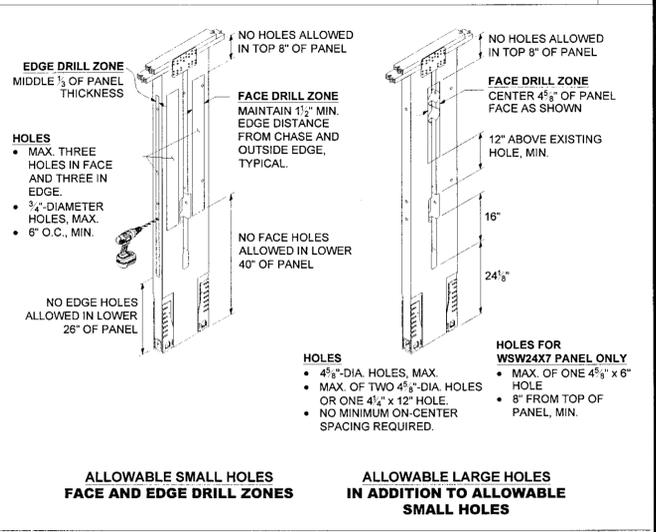
**1 STANDARD INSTALLATION BASE CONNECTION**



**4 STANDARD TOP CONNECTION**

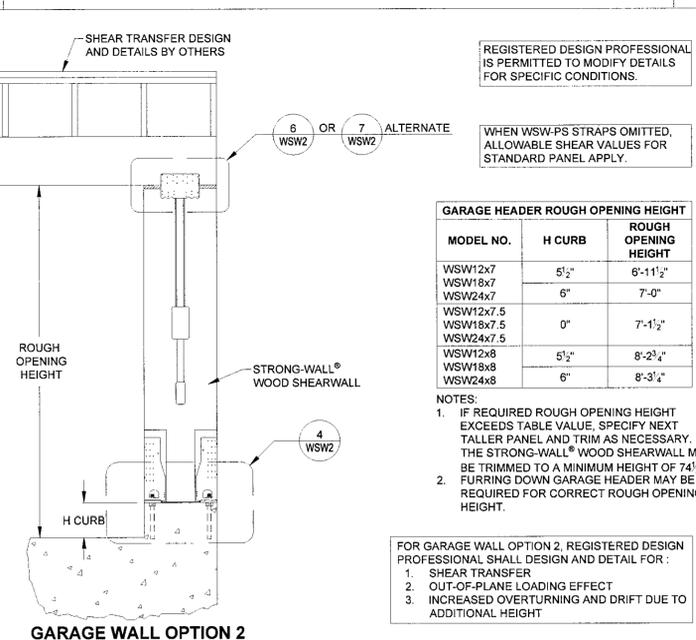


**6 TOP OF WALL HEIGHT ADJUSTMENTS**

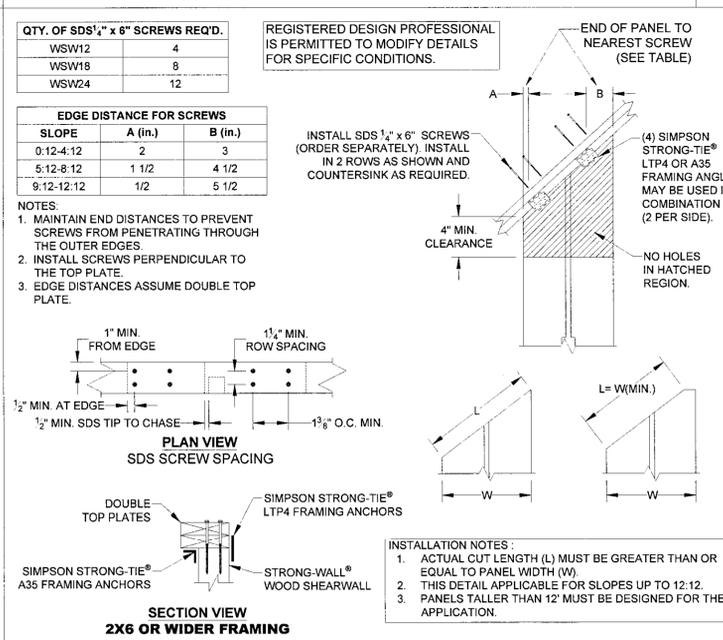


**2 SINGLE STORY WSW ON CONCRETE**

**5 WOOD FLOOR SYSTEM BASE CONNECTION**



**7 ALTERNATE TOP CONNECTION**



**10 TRIM ZONE AND ALLOWABLE HOLES**

1. STRONG-WALL WOOD SHEARWALL IS MANUFACTURED AND TRADEMARKED BY "SIMPSON STRONG-TIE COMPANY INC." HOME OFFICE: 5956 W. LAS POSITAS BLVD., PLEASANTON, CA 94588 TEL: (800) 999-5099, FAX: (925) 847-1597. "SIMPSON STRONG-TIE COMPANY INC." IS AN ISO 9001-2008 REGISTERED COMPANY.  
 2. USE OF THIS PRODUCT IS SUBJECT TO THE APPROVAL OF THE LOCAL BUILDING DEPARTMENT.  
 3. THIS PRODUCT IS PART OF THE OVERALL LATERAL FORCE RESISTING SYSTEM OF THE STRUCTURE. DESIGN OF THE BUILDING'S LATERAL FORCE RESISTING SYSTEM, INCLUDING THE LOAD PATH TO TRANSFER LATERAL FORCES FROM THE STRUCTURE TO THE GROUND, IS THE RESPONSIBILITY OF THE DESIGNER.  
 4. ENGINEER OF RECORD IS PERMITTED TO MODIFY DETAILS FOR SPECIFIC CONDITIONS.  
 5. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS, CONDITIONS, ELEVATIONS, ETC. PRIOR TO INSTALLATION OF ANY COMPONENTS FOR THE STRONG-WALL SB SYSTEM. IF ANY DISCREPANCIES ARE FOUND, THEY SHALL BE BROUGHT TO THE ATTENTION OF THE DESIGNER FOR CLARIFICATION PRIOR TO CONSTRUCTION.  
 6. INSTALLATION OF PRODUCT SHALL BE DONE IN CONFORMANCE TO THESE DRAWINGS. THE PERFORMANCE OF MODIFIED PRODUCTS OR ALTERED INSTALLATION PROCEDURES ARE THE SOLE RESPONSIBILITY OF THE DESIGNER.  
 7. SIMPSON STRONG-TIE COMPANY INC. RESERVES THE RIGHT TO CHANGE SPECIFICATIONS, DESIGNS, AND MODELS WITHOUT NOTICE OR LIABILITY FOR SUCH CHANGES.  
 8. ALL HARDWARE CALLED OUT IS SIMPSON STRONG-TIE.  
 9. SEE ICC-ES ESR-2652 OR CITY OF LOS ANGELES RR25730 AS APPLICABLE FOR ADDITIONAL INFORMATION.

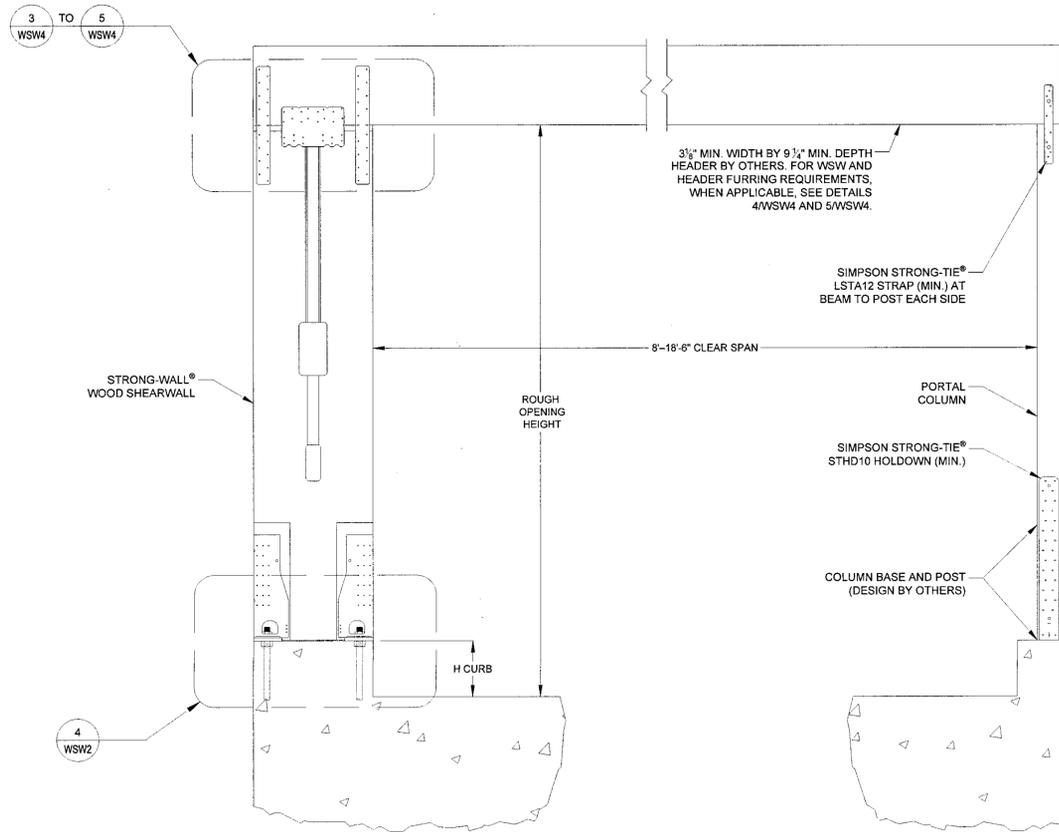
**3 ALTERNATE WSW GARAGE FRONT OPTIONS**

**4 RAKE WALL**

**8 NOTES**

**11**

REVISIONS  
 DATE 07/01/2016  
 FIRST RELEASE 2015 BC  
 SIMPSON STRONG-TIE COMPANY, INC.  
 HOME OFFICE: 5956 W. LAS POSITAS BLVD., PLEASANTON, CA 94588  
 TEL: (800) 999-5099  
 THERE IS NO EQUAL  
**STRONG-WALL WSW**  
 FRAMING DETAILS  
 ENGINEERED DESIGNS  
 NAME \_\_\_\_\_  
 DATE 07-01-2016  
 SCALE N.T.S.  
 CHECKED \_\_\_\_\_  
 SHEET **WSW2**  
 OF SHEETS  
 JOB NO. \_\_\_\_\_



MODEL NO.	H CURB	ROUGH OPENING HEIGHT
WSW12x7	5 1/2"	6'-11 1/2"
WSW18x7	6"	7'-0"
WSW24x7	0"	7'-1 1/2"
WSW12x8	5 1/2"	8'-2 3/4"
WSW18x8	6"	8'-3 1/4"

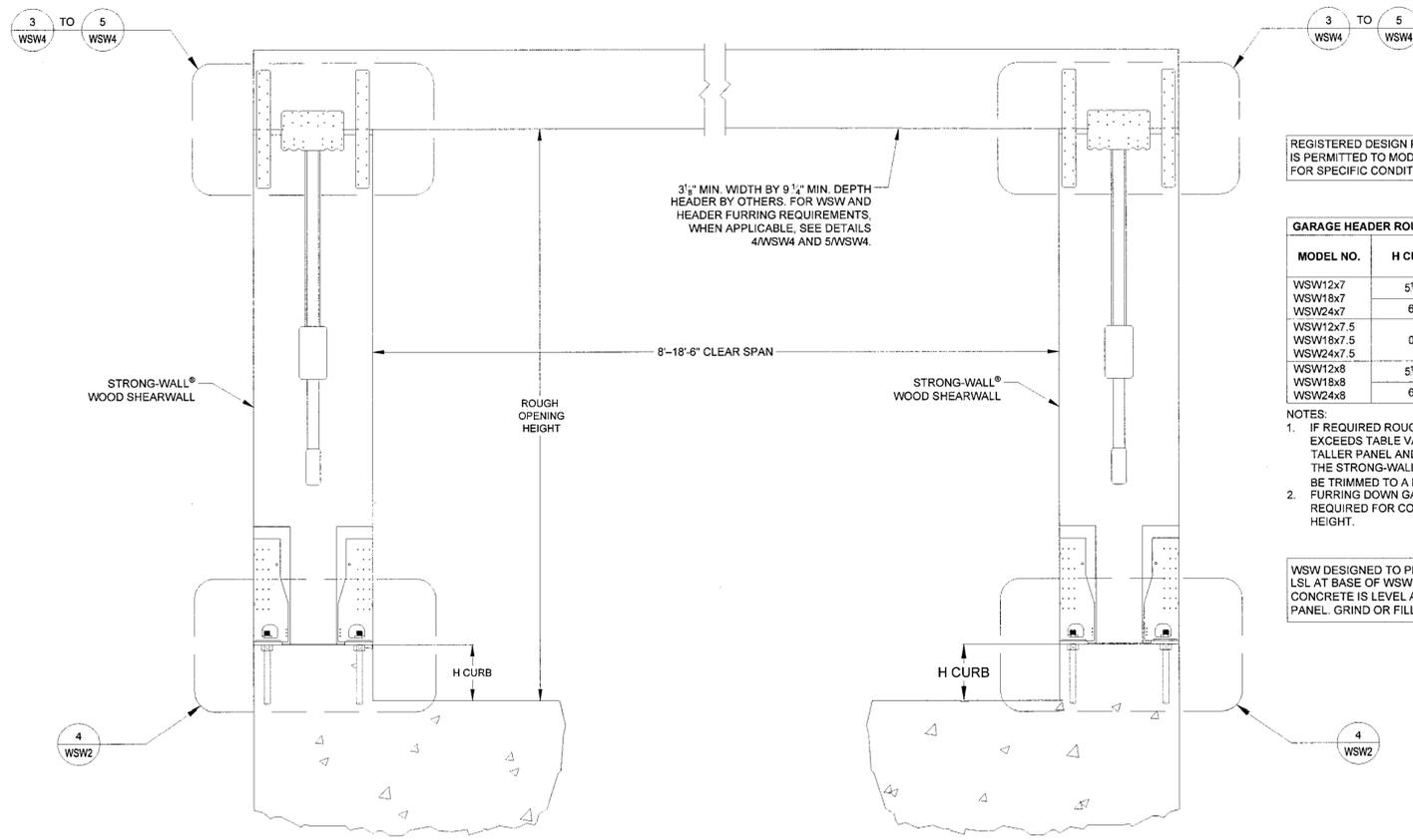
- NOTES:
- IF REQUIRED ROUGH OPENING HEIGHT EXCEEDS TABLE VALUE, SPECIFY NEXT TALLER PANEL AND TRIM AS NECESSARY. THE STRONG-WALL® WOOD SHEARWALL MAY BE TRIMMED TO A MINIMUM HEIGHT OF 74 1/2".
  - FURRING DOWN GARAGE HEADER MAY BE REQUIRED FOR CORRECT ROUGH OPENING HEIGHT.

REGISTERED DESIGN PROFESSIONAL IS PERMITTED TO MODIFY DETAILS FOR SPECIFIC CONDITIONS.

WSW DESIGNED TO PROVIDE 1/8" GAP BETWEEN LSL AT BASE OF WSW AND CONCRETE. ENSURE CONCRETE IS LEVEL AND SMOOTH BENEATH PANEL. GRIND OR FILL AS NECESSARY.

**STRONG-WALL WOOD SHEARWALL SINGLE PORTAL ASSEMBLY**

**1 FURRING FOR 5 1/8" TO 5 1/2" HEADER**



MODEL NO.	H CURB	ROUGH OPENING HEIGHT
WSW12x7	5 1/2"	6'-11 1/2"
WSW18x7	6"	7'-0"
WSW24x7	0"	7'-1 1/2"
WSW12x8	5 1/2"	8'-2 3/4"
WSW18x8	6"	8'-3 1/4"

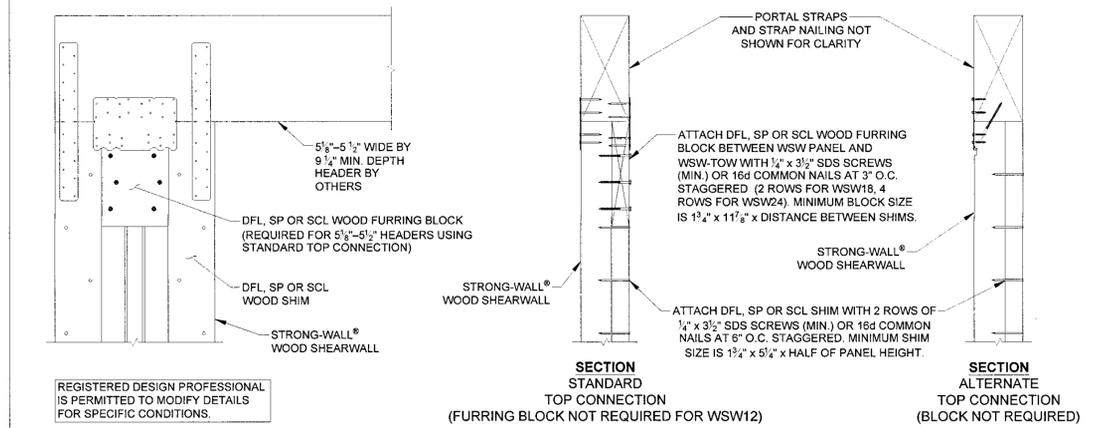
- NOTES:
- IF REQUIRED ROUGH OPENING HEIGHT EXCEEDS TABLE VALUE, SPECIFY NEXT TALLER PANEL AND TRIM AS NECESSARY. THE STRONG-WALL® WOOD SHEARWALL MAY BE TRIMMED TO A MINIMUM HEIGHT OF 74 1/2".
  - FURRING DOWN GARAGE HEADER MAY BE REQUIRED FOR CORRECT ROUGH OPENING HEIGHT.

WSW DESIGNED TO PROVIDE 1/8" GAP BETWEEN LSL AT BASE OF WSW AND CONCRETE. ENSURE CONCRETE IS LEVEL AND SMOOTH BENEATH PANEL. GRIND OR FILL AS NECESSARY.

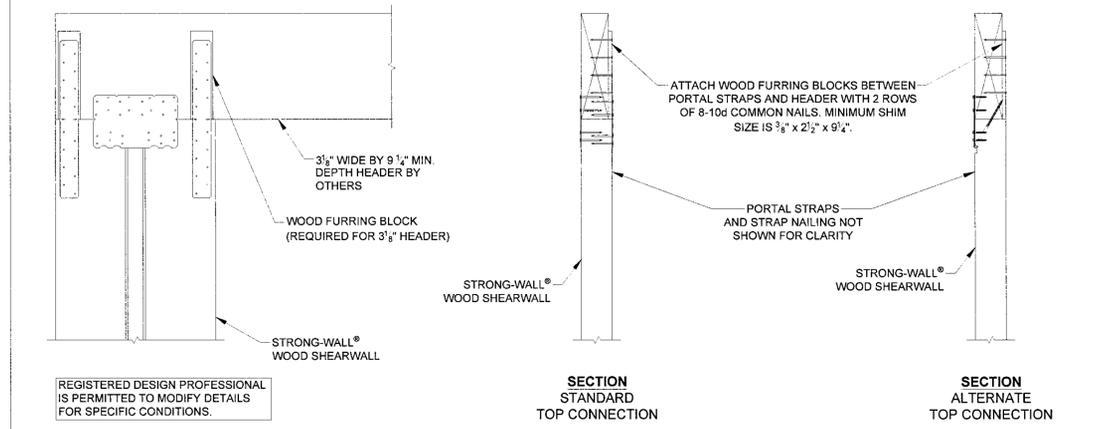
**STRONG-WALL WOOD SHEARWALL DOUBLE PORTAL ASSEMBLY**

**2 NOTES**

**PORTAL TOP CONNECTION**



**3 FURRING FOR 3 1/8" HEADER**



**4 FURRING FOR 3 1/8" HEADER**

- STRONG-WALL WOOD SHEARWALL IS MANUFACTURED AND TRADEMARKED BY "SIMPSON STRONG-TIE COMPANY INC." HOME OFFICE: 5956 W. LAS POSITAS BLVD., PLEASANTON, CA 94588 TEL: (800) 999-5099, FAX: (925) 847-1597. "SIMPSON STRONG-TIE COMPANY INC." IS AN ISO 9001-2008 REGISTERED COMPANY.
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- ALL HARDWARE CALLED OUT IS SIMPSON STRONG-TIE.
- SEE ICC-ES ESR-2852 OR CITY OF LOS ANGELES RR25730 AS APPLICABLE FOR ADDITIONAL INFORMATION.

REVISIONS

DATE 07/01/2016

FIRST RELEASE-2016 BC

REGISTERED PROFESSIONAL ENGINEER

TRACY A. VELDNER

C.E. 60112

EXP. 12-31-20

CIVIL

STATE OF CALIFORNIA

SIMPSON STRONG-TIE COMPANY, INC.

HOME OFFICE: 5956 W. LAS POSITAS BLVD. PLEASANTON, CA 94588 TEL: (800) 999-5099

THIS IS NO EQUAL

**STRONG-WALL® WSW**

PORTAL SYSTEM

FRAMING DETAILS

ENGINEERED DESIGNS

THIS IS NO EQUAL

NAME

DATE 07-01-2016

SCALE N.T.S.

CHECKED

SHEET

**WSW4**

OF SHEETS

JOB NO.



RENDERING & MATERIALS

NEW RESIDENCE  
APN # 047282150  
EL GRANADA, CA 94019

REV	DATE	DESCRIPTION
1	.	.
2	.	.
3	.	.
4	.	.
5	.	.

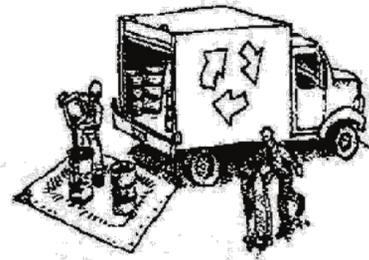
*[Signature]*

SIGN DATE: 12-02-2019  
DATE: AS NOTED  
SCALE: AS NOTED  
DRAWN BY: JM  
CKD BY: AP  
PROJECT #: 201908085

# Construction Best Management Practices (BMPs)

Construction projects are required to implement the stormwater best management practices (BMP) on this page, as they apply to your project, all year long.

## Materials & Waste Management



### Non-Hazardous Materials

- Berm and cover stockpiles of sand, dirt or other construction material with tarps when rain is forecast or if not actively being used within 14 days.
- Use (but don't overuse) reclaimed water for dust control.

### Hazardous Materials

- Label all hazardous materials and hazardous wastes (such as pesticides, paints, thinners, solvents, fuel, oil, and antifreeze) in accordance with city, county, state and federal regulations.
- Store hazardous materials and wastes in water tight containers, store in appropriate secondary containment, and cover them at the end of every work day or during wet weather or when rain is forecast.
- Follow manufacturer's application instructions for hazardous materials and be careful not to use more than necessary. Do not apply chemicals outdoors when rain is forecast within 24 hours.
- Arrange for appropriate disposal of all hazardous wastes.

### Waste Management

- Cover waste disposal containers securely with tarps at the end of every work day and during wet weather.
- Check waste disposal containers frequently for leaks and to make sure they are not overfilled. Never hose down a dumpster on the construction site.
- Clean or replace portable toilets, and inspect them frequently for leaks and spills.
- Dispose of all wastes and debris properly. Recycle materials and wastes that can be recycled (such as asphalt, concrete, aggregate base materials, wood, gyp board, pipe, etc.)
- Dispose of liquid residues from paints, thinners, solvents, glues, and cleaning fluids as hazardous waste.

### Construction Entrances and Perimeter

- Establish and maintain effective perimeter controls and stabilize all construction entrances and exits to sufficiently control erosion and sediment discharges from site and tracking off site.
- Sweep or vacuum any street tracking immediately and secure sediment source to prevent further tracking. Never hose down streets to clean up tracking.

## Equipment Management & Spill Control



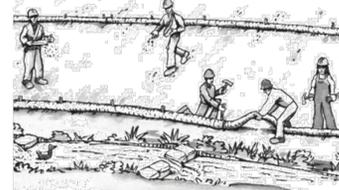
### Maintenance and Parking

- Designate an area, fitted with appropriate BMPs, for vehicle and equipment parking and storage.
- Perform major maintenance, repair jobs, and vehicle and equipment washing off site.
- If refueling or vehicle maintenance must be done onsite, work in a bermed area away from storm drains and over a drip pan or drop cloths big enough to collect fluids. Recycle or dispose of fluids as hazardous waste.
- If vehicle or equipment cleaning must be done onsite, clean with water only in a bermed area that will not allow rinse water to run into gutters, streets, storm drains, or surface waters.
- Do not clean vehicle or equipment onsite using soaps, solvents, degreasers, or steam cleaning equipment.

### Spill Prevention and Control

- Keep spill cleanup materials (e.g., rags, absorbents and cat litter) available at the construction site at all times.
- Inspect vehicles and equipment frequently for and repair leaks promptly. Use drip pans to catch leaks until repairs are made.
- Clean up spills or leaks immediately and dispose of cleanup materials properly.
- Do not hose down surfaces where fluids have spilled. Use dry cleanup methods (absorbent materials, cat litter, and/or rags).
- Sweep up spilled dry materials immediately. Do not try to wash them away with water, or bury them.
- Clean up spills on dirt areas by digging up and properly disposing of contaminated soil.
- Report significant spills immediately. You are required by law to report all significant releases of hazardous materials, including oil. To report a spill: 1) Dial 911 or your local emergency response number, 2) Call the Governor's Office of Emergency Services Warning Center, (800) 852-7550 (24 hours).

## Earthmoving



- Schedule grading and excavation work during dry weather.
- Stabilize all denuded areas, install and maintain temporary erosion controls (such as erosion control fabric or bonded fiber matrix) until vegetation is established.
- Remove existing vegetation only when absolutely necessary, and seed or plant vegetation for erosion control on slopes or where construction is not immediately planned.
- Prevent sediment from migrating offsite and protect storm drain inlets, gutters, ditches, and drainage courses by installing and maintaining appropriate BMPs, such as fiber rolls, silt fences, sediment basins, gravel bags, berms, etc.
- Keep excavated soil on site and transfer it to dump trucks on site, not in the streets.

### Contaminated Soils

- If any of the following conditions are observed, test for contamination and contact the Regional Water Quality Control Board:
  - Unusual soil conditions, discoloration, or odor.
  - Abandoned underground tanks.
  - Abandoned wells
  - Buried barrels, debris, or trash.

## Paving/Asphalt Work



- Avoid paving and seal coating in wet weather or when rain is forecast, to prevent materials that have not cured from contacting stormwater runoff.
- Cover storm drain inlets and manholes when applying seal coat, tack coat, slurry seal, fog seal, etc.
- Collect and recycle or appropriately dispose of excess abrasive gravel or sand. Do NOT sweep or wash it into gutters.
- Do not use water to wash down fresh asphalt concrete pavement.

### Sawcutting & Asphalt/Concrete Removal

- Protect nearby storm drain inlets when saw cutting. Use filter fabric, catch basin inlet filters, or gravel bags to keep slurry out of the storm drain system.
- Shovel, absorb, or vacuum saw-cut slurry and dispose of all waste as soon as you are finished in one location or at the end of each work day (whichever is sooner!).
- If sawcut slurry enters a catch basin, clean it up immediately.

## Concrete, Grout & Mortar Application



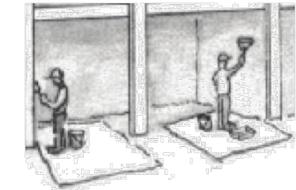
- Store concrete, grout, and mortar away from storm drains or waterways, and on pallets under cover to protect them from rain, runoff, and wind.
- Wash out concrete equipment/trucks offsite or in a designated washout area, where the water will flow into a temporary waste pit, and in a manner that will prevent leaching into the underlying soil or onto surrounding areas. Let concrete harden and dispose of as garbage.
- When washing exposed aggregate, prevent washwater from entering storm drains. Block any inlets and vacuum gutters, hose washwater onto dirt areas, or drain onto a bermed surface to be pumped and disposed of properly.

## Landscaping



- Protect stockpiled landscaping materials from wind and rain by storing them under tarps all year-round.
- Stack bagged material on pallets and under cover.
- Discontinue application of any erodible landscape material within 2 days before a forecast rain event or during wet weather.

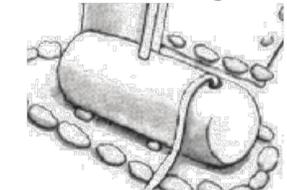
## Painting & Paint Removal



### Painting Cleanup and Removal

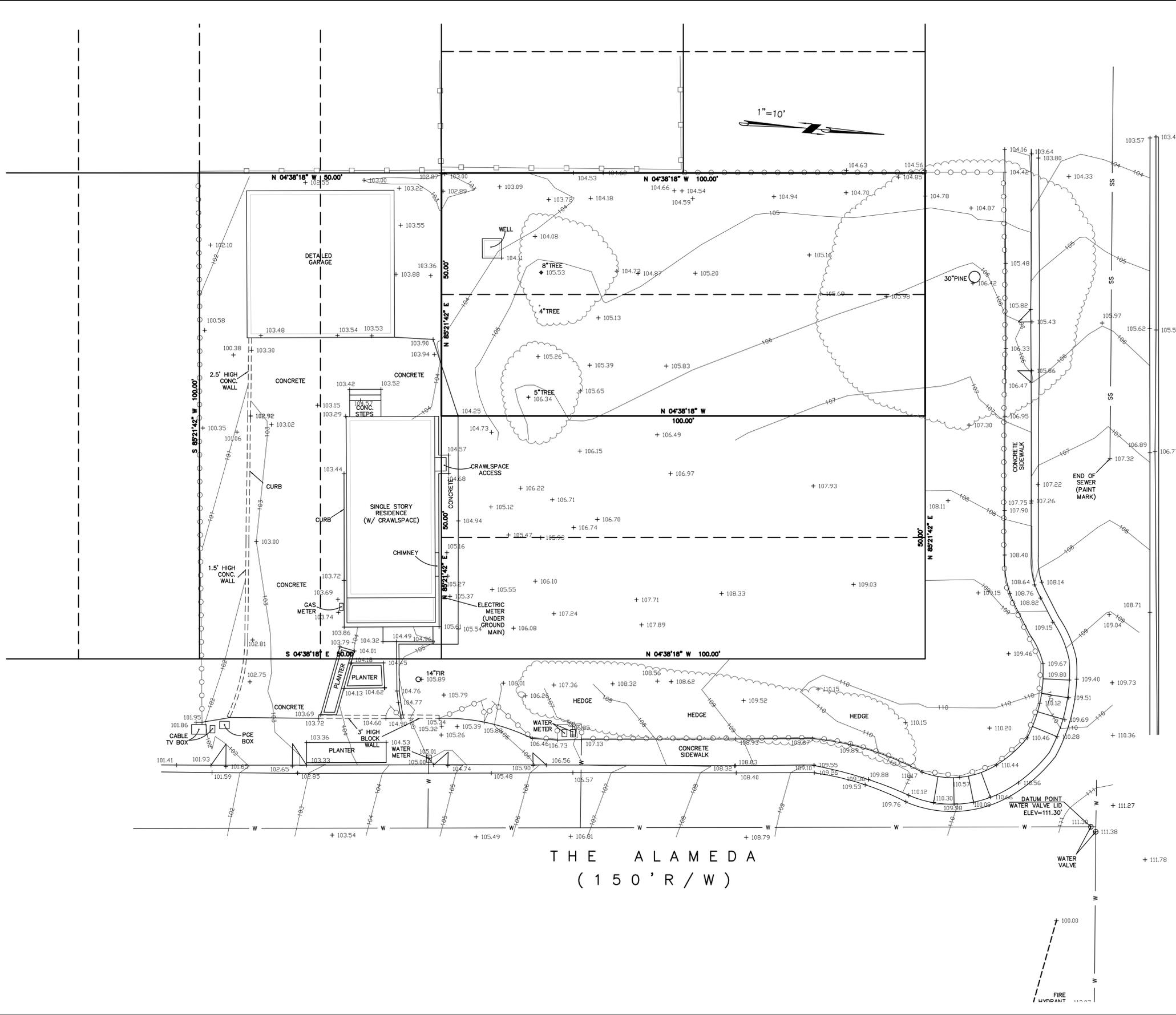
- Never clean brushes or rinse paint containers into a street, gutter, storm drain, or stream.
- For water-based paints, paint out brushes to the extent possible, and rinse into a drain that goes to the sanitary sewer. Never pour paint down a storm drain.
- For oil-based paints, paint out brushes to the extent possible and clean with thinner or solvent in a proper container. Filter and reuse thinners and solvents. Dispose of excess liquids as hazardous waste.
- Paint chips and dust from non-hazardous dry stripping and sand blasting may be swept up or collected in plastic drop cloths and disposed of as trash.
- Chemical paint stripping residue and chips and dust from marine paints or paints containing lead, mercury, or tributyltin must be disposed of as hazardous waste. Lead based paint removal requires a state-certified contractor.

## Dewatering



- Discharges of groundwater or captured runoff from dewatering operations must be properly managed and disposed. When possible send dewatering discharge to landscaped area or sanitary sewer. If discharging to the sanitary sewer call your local wastewater treatment plant.
- Divert run-on water from offsite away from all disturbed areas.
- When dewatering, notify and obtain approval from the local municipality before discharging water to a street gutter or storm drain. Filtration or diversion through a basin, tank, or sediment trap may be required.
- In areas of known or suspected contamination, call your local agency to determine whether the ground water must be tested. Pumped groundwater may need to be collected and hauled off-site for treatment and proper disposal.

**Storm drain polluters may be liable for fines of up to \$10,000 per day!**



**THE ALAMEDA  
(150' R/W)**

**AVENUE CABRILLO  
(200' R/W)**

**BENCHMARK STATEMENT:**  
THE DATUM POINT FOR THIS SURVEY IS A WATER VALVE LID. ELEVATION = 111.30 FEET (NOTE: THE ELEVATIONS SHOWN ARE ON AN ASSUMED DATUM).

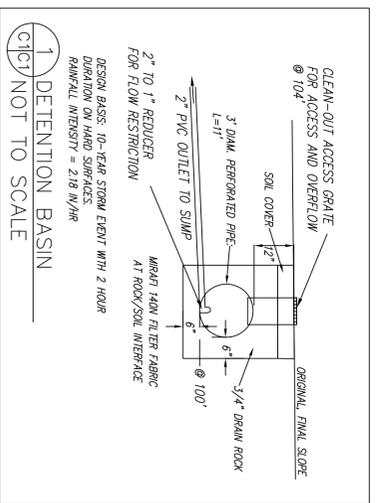
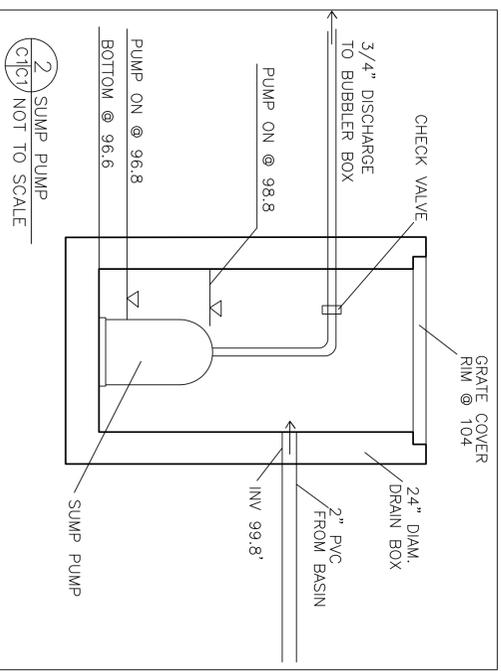
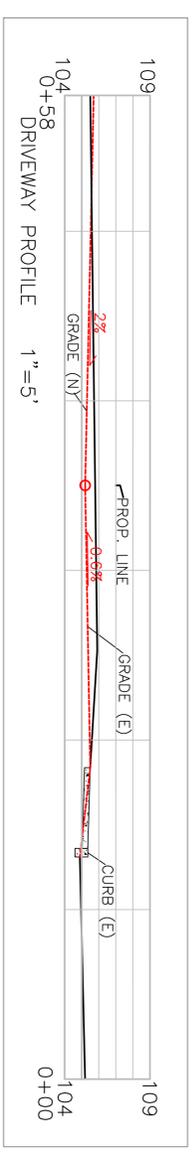
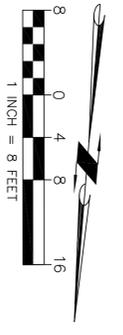
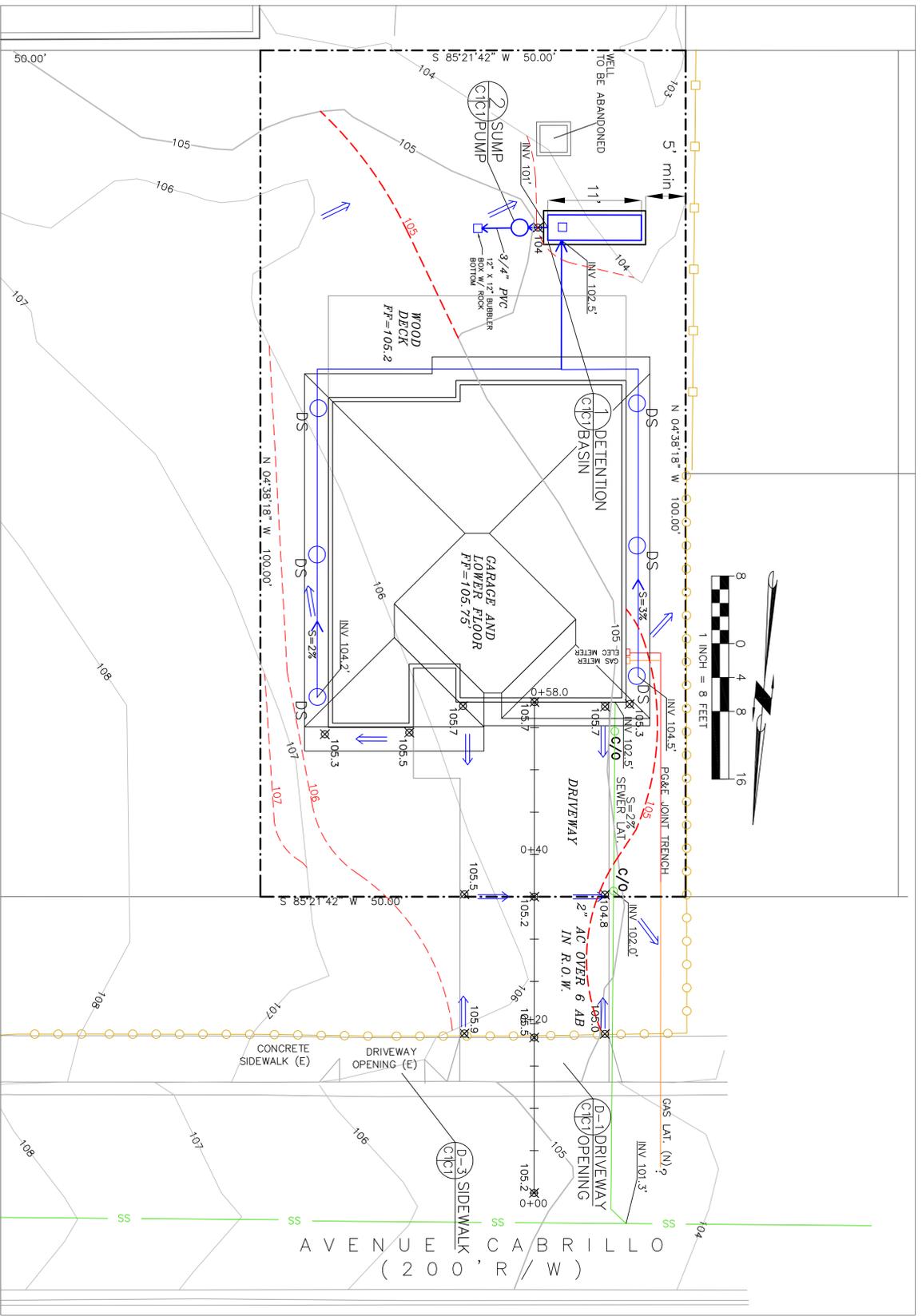
**SURVEYOR'S STATEMENT:**  
THIS TOPOGRAPHIC SURVEY WAS MADE BY ME OR UNDER MY DIRECTION ON THE GROUND AND REPRESENTS MEASUREMENTS MADE JUNE 2018. THE BOUNDARY SHOWN IS A RECORD BOUNDARY ONLY. A TITLE REPORT WAS NOT PROVIDED TO THE SURVEYOR BY THE CLIENT. NO PROPERTY CORNERS WERE FOUND ON THE SUBJECT PROPERTY AND NO WARRANTY IS MADE ABOUT THE BOUNDARY SHOWN. NO EASEMENTS ARE SHOWN. EASEMENTS MAY EXIST AND BE LISTED IN A TITLE REPORT.

  
 SAVOR P. MICALLEF  
 LAND SURVEYOR, LS 8289  
 (805) 709-2423

05/10/19  
DATE

TOPOGRAPHIC SURVEY OF THE ALAMEDA & AVENUE CABRILLO, EL GRANADA, CA (APN 047-282-150)		CALIFORNIA
SAN MATEO COUNTY		
Date	05-18-18	Revisions
Scale	1"=10'	No.
Design	SPM	Date
Drawn	SPM	Title
Approved	SPM	Drawing Number
Job No.	TS-1	Sheet
	1	OF 1

SAVIOR P. MICALLEF LAND SURVEYING  
 521 WOODBINE DRIVE  
 SAN FRANCISCO, CA 94080  
 805/709-2423



**LEGEND**

- EXISTING CONTOURS
- PROPOSED CONTOURS
- PROPOSED SPOT ELEVATION
- DOWNPOUT
- #100 DRAINPIPE

**GENERAL NOTES**

1. PLANS PREPARED AT THE REQUEST OF: JOHN STEPHAN SWINER, LER, SURVEYED MAY, 2018.
2. THIS SHEET IS A SUPPLEMENTARY SHEET.
3. ELEVATION IN FEET AND DECIMALS THEREOF.
4. THE GEOTECHNICAL REPORT: GEOTECHNICAL STUDY: STEADMAN PROPERTY AVENUE CABRILLO, EL GRANADA, APN 047-282-140. DATE: 5-16-19 BY SIGMA PRIME GEOSCIENCES, PROJECT NO. 19-132. SHALL BE RETAINED ON THE CONSTRUCTION SITE. NOTIFY THE GEOTECHNICAL ENGINEER OF RECORD AT LEAST 48 HOURS BEFORE CONSTRUCTION OF GEOTECHNICAL RELATED WORK. THE GEOTECHNICAL PART OF CONSTRUCTION WORK, INCLUDING BUT NOT LIMITED TO, ALL THE EARTHWORK AND FOUNDATION CONSTRUCTIONS, MUST BE APPROVED BY THE GEOTECHNICAL ENGINEER OF RECORD. SCHEDULED FOR APPLICATION DRAINAGE INSPECTIONS, WHICH INCLUDE SITE CLEARANCE AND EROSION CONTROL MEASURES. INSTALLATION AS WELL AS INSPECTION OF MAJOR DRAINAGE CONTAINMENT TREATMENT AND CONVEYANCE DEVICES BEFORE BEING BURIED (INCLUDING REQUIRED MATERIAL LABELS, E.G. PIPES, SUB-GRADE MATERIALS, ETC.). PLEASE FOLLOW THE INSPECTION CARD INSTRUCTIONS AND PHONE NUMBER (650-306-8406 EXT 181) TO SCHEDULE COUNTY DRAINAGE INSPECTIONS ACCORDINGLY. THERE SHALL BE THREE INSPECTIONS: ONE FOR EROSION CONTROL, INSTALLATION, ONE BEFORE DRAINAGE FACILITIES ARE BURIED, AND ONE FOR FINAL WALK AROUND.

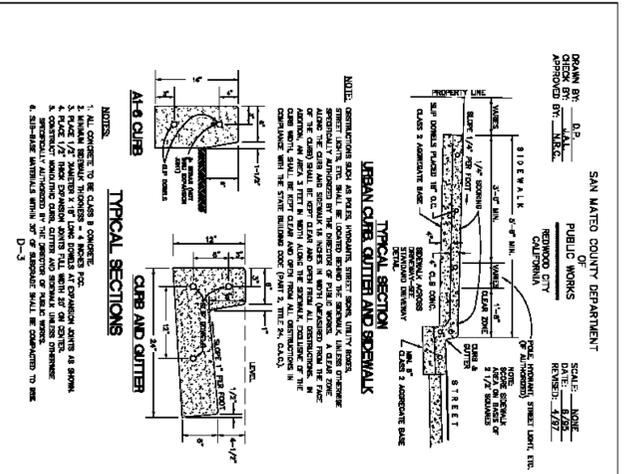
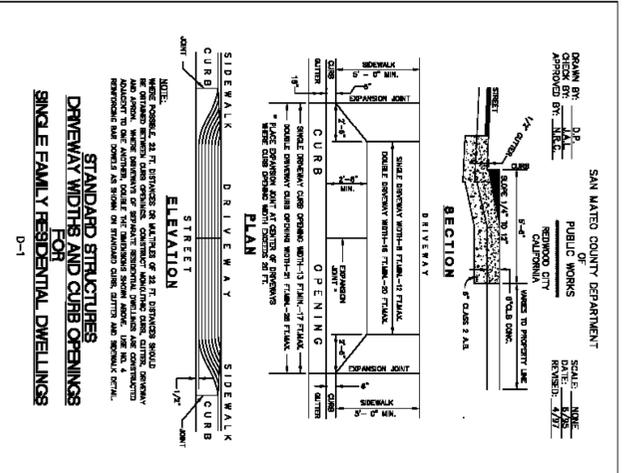
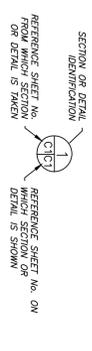
**DRAINAGE NOTES**

1. DRAINAGE INTENT: IT IS THE INTENT OF THE DRAINAGE SYSTEM TO CONVEY ROOF RUNOFF TO A SAFE LOCATION, AND TO MINIMIZE EXCESSIVE MOISTURE AROUND FOUNDATIONS. DIRECT SLOPES SUCH THAT STORMWATER WILL NOT BE DIVERTED ONTO ADJACENT PROPERTIES.
2. ALL DOWNPOUT DRAIN LINES SHALL LEAD TO DETENTION BASIN, AS SHOWN.
3. ALL ROOF DRAINAGE PIPES SHALL BE 4" DIAMETER MINIMUM SOLID PIPE, SLOPED AT 1% MINIMUM.
4. IT IS THE PROPERTY OWNER'S RESPONSIBILITY TO CHECK ON ALL STORMWATER FACILITIES SUCH AS ROOF GUTTERS, DOWNPOUT LINES, AND THE DETENTION BASIN ENERGY DISSIPATOR TO BE SURE THAT THEY ARE CLEAR OF EXCESSIVE DEBRIS AND OPERATING EFFICIENTLY. THE FACILITIES SHALL BE CHECKED EVERY FALL AND PERIODICALLY DURING THE RAINY SEASON.

**GRADING NOTES**

- CUT VOLUME: 30 CY (FOR FOUNDATION)
- FILL VOLUME: 0 CY
- VOLUMES ABOVE ARE APPROXIMATE.
- THE SUBGRADE BELOW ALL PAVED AREAS SHALL BE BASEROCK COMPACTED TO 95%.
- ALL GRADING SHALL CONFORM TO LOCAL CODES AND ORDINANCES.
- ALL TRENCHES UNDER PROPOSED PAVED AREAS OR CONCRETE SHALL BE BACKFILLED TO SUBGRADE ELEVATION WITH COMPACTED APPROVED GRANULAR MATERIALS. IF TRENCHES ARE IN PROPOSED LANDSCAPE AREAS, THEY SHALL BE BACKFILLED WITH COMPACTED APPROVED GRANULAR MATERIAL TO WITHIN ONE FOOT OF FINISHED GRADE, AND THEN FILLED WITH HAND TAMPED SOILS.

**SECTION AND DETAIL CONVENTION**



DATE: 12-19-19	<p>Sigma Prime Geosciences, Inc.</p> <p>SIGMA PRIME GEOSCIENCES, INC. 332 PRINCETON AVENUE HALF MOON BAY, CA 94019 (650) 728-3590 FAX 728-3593</p>
DRAWN BY: CMK	
CHECKED BY: AZG	
REV. DATE:	
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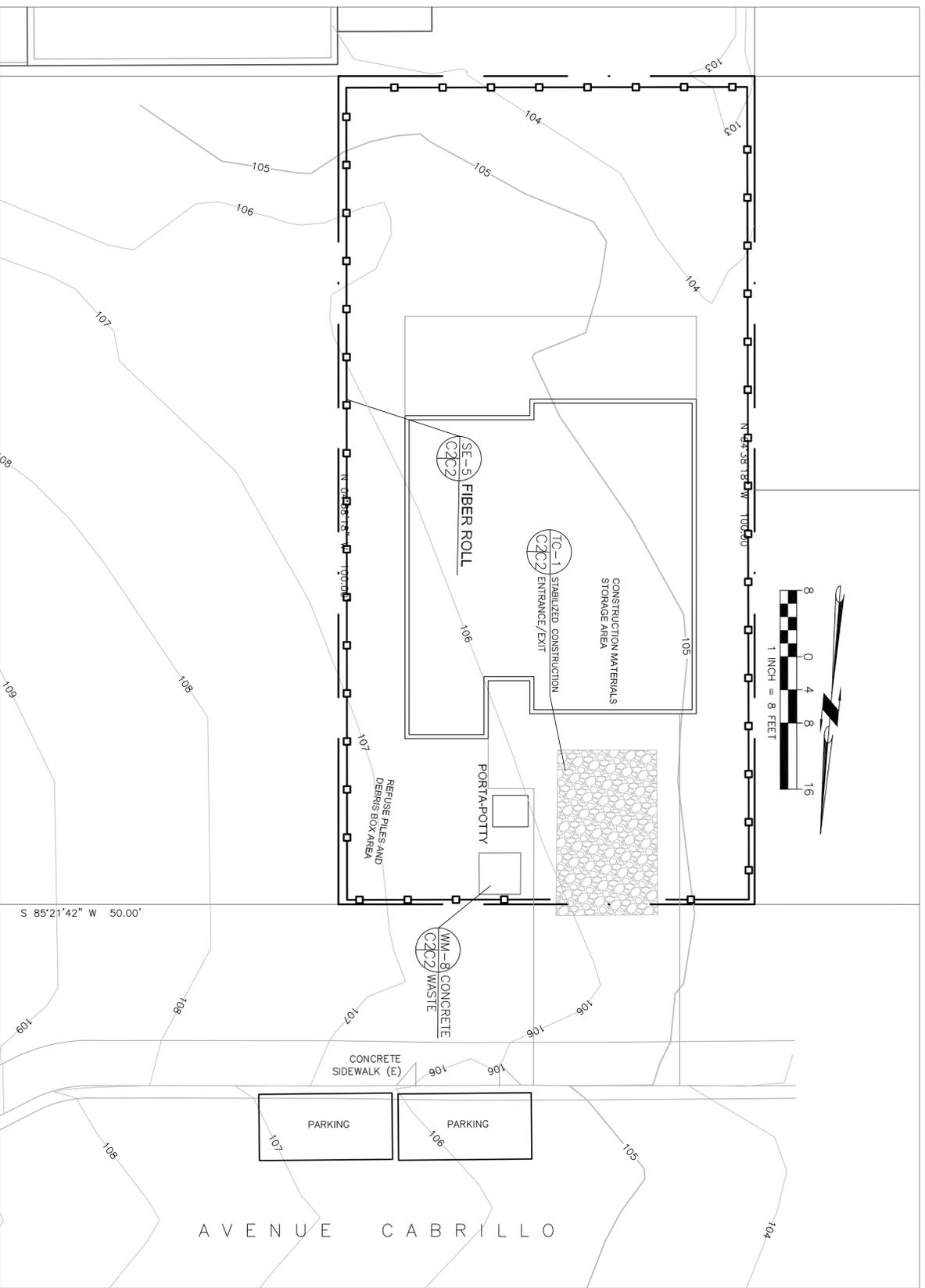
**GRADING AND DRAINAGE PLAN**

STEADMAN PROPERTY  
AVENUE CABRILLO  
EL GRANADA  
APN 047-282-150

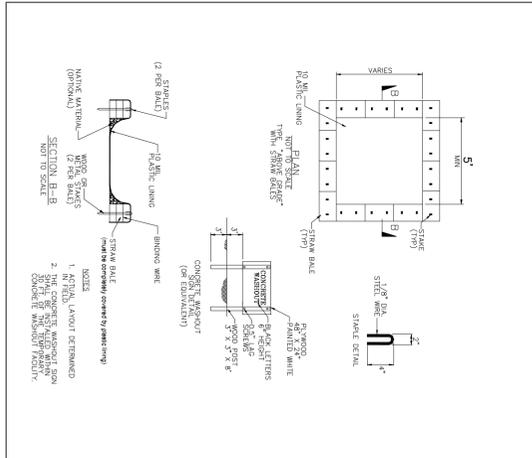
GENERAL EROSION AND SEDIMENT CONTROL NOTES

FIBER ROLL  
INSTALL AT LOCATIONS SHOWN.  
AFX AS SHOWN IN DETAIL SE-5

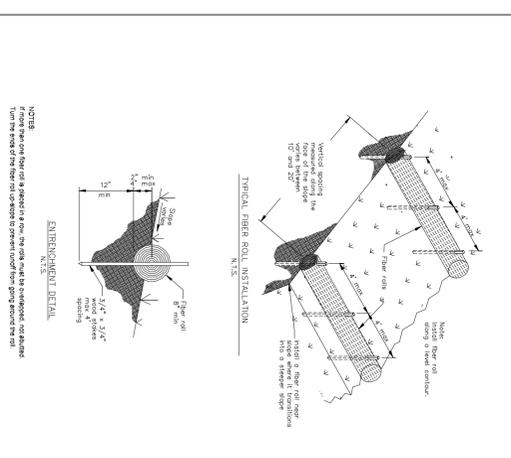
- There will be no stockpiling of soil. All excavated soil will be hauled off-site as it is excavated.
- Perform clearing and earth-moving activities only during dry weather. Measures to ensure adequate erosion and sediment control shall be installed prior to earth-moving activities and construction.
- Erosion control materials to be on-site during off-season.
- Measures to ensure adequate erosion and sediment control are required year-round. Stabilize all denuded areas and maintain erosion control measures continuously between October 1 and April 30.
- Store, handle, and dispose of construction materials and wastes properly, so as to prevent their contact with stormwater.
- Control and prevent the discharge of all potential pollutants, including pavement cutting wastes, paints, concrete, petroleum products, chemicals, wash water or sediments, and non-stormwater discharges to storm drains and watercourses.
- Avoid cleaning, fueling, or maintaining vehicles on-site, except in a designated area where wash water is contained and treated.
- Limit and time applications of pesticides and fertilizers to prevent polluted runoff.
- Limit construction access routes to stabilized, designated access points
- Avoid tracking dirt or other materials off-site; clean off-site paved areas and sidewalks using dry sweeping methods.
- Train and provide instruction to all employees and subcontractors regarding the Watershed Protection Maintenance Standards and construction Best Management Practices.
- Placement of erosion materials is required on weekends and during rain events.
- The areas delineated on the plans for parking, grubbing, storage etc., shall not be enlarged or "run over."
- Dust control is required year-round.
- Erosion control materials shall be stored on-site.
- There are no trees or driplines on the site.



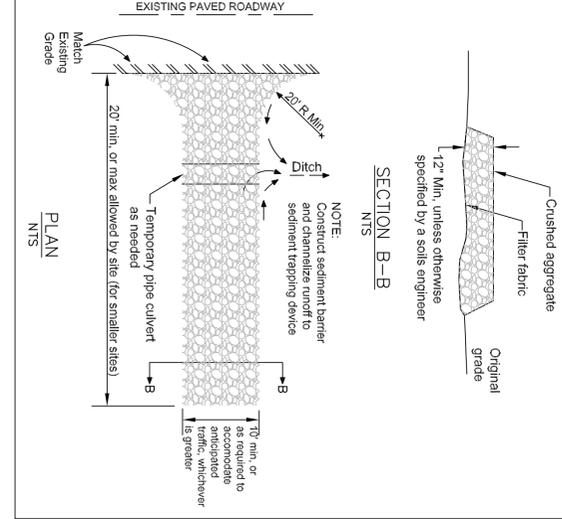
CONCRETE WASTE MANAGEMENT WM-8



FIBER ROLLS SE-5



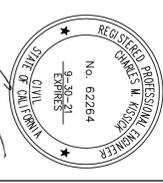
STABILIZED CONSTRUCTION ENTRANCE/EXIT TIC-1



**EROSION CONTROL POINT OF CONTACT**  
THIS PERSON WILL BE RESPONSIBLE FOR EROSION CONTROL AT THE SITE AND WILL BE THE COUNTY'S MAIN POINT OF CONTACT IF CORRECTIONS ARE REQUIRED.

NAME: JOHN STEADMAN  
TITLE/OCCUPATION: OWNER  
PHONE: 650-743-2275  
PHONE: 650-743-2275  
PHONE: 650-743-2275  
EMAIL: KSDEVELOPMENTS@GMAIL.COM

**Sigma Prime Geosciences, Inc.**  
SIGMA PRIME GEOSCIENCES, INC.  
332 PRINCETON AVENUE  
HALF MOON BAY, CA 94019  
(650) 728-3590  
FAX 728-3593



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**EROSION AND SEDIMENT CONTROL PLAN**  
**STEADMAN PROPERTY**  
**AVENUE CABRILLO**  
**EL GRANADA**  
**APN 047-282-150**