2019 CalGreen Notes (CGBC)
REV 3-17-21

1. SITE SURFACE AND STORMWATER DRAINAGE; (SEC 4.106)
-4.106.2 Storm water pollution prevention plan. For projects of one acre or less, develop a Storm Water Pollution Prevention Plan (SWPPP) that has been designed, specific to its site, conforming to the State Storm water NPDES Construction Permit or local ordinance, whichever is stricter, as is required for projects over one acre. The plan should cover prevention of soil loss by storm water run-off and/or wind erosion, of sedimentation and/or of dust/particulate matter air pollution.
-A5.106.2 Storm water design. Design storm water runoff rate and quantity in conformance with Section A5.106.3.1 and storm water runoff quality by Section A5.106.3.2 or by local requirements, whichever are stricter.
-A5.106.2.I Storm water runoff rate and quantity. Implement a storm water management plan resulting in no net increase in rate and quantity of storm water runoff from existing to developed conditions.
Exception: If the site is already greater than 50 percent impervious, implement a storm water management plan resulting in a 25 percent decrease in rate and quantity.
-A5.106.2.2 Storm water runoff quality.Use post construction treatment control best management practices (BMPs) to mitigate (infiltrate, filter or treat) storm water runoff from the 85th percentile 24-hour runoff event (for volume-based BMPs) or the runoff produced by a rain event equal to two times the 85th percentile hourly intensity (for flow-based BMPs).
-A5.106.3 Low impact development (LID). Reduce peak runoff in compliance with Section 5.106.3.1. Employ at least two of the following methods or other best management practices to allow rainwater to soak into the ground, evaporate into the air or collect in storage receptacles for irrigation or other beneficial uses.

2. WATER CONSERVATION REQUIREMENTS;(SEC 4.303, TABLE 4.303.1)
Perscriptive minimum indoor plumbing requirements:
-Single Showerheads @ 1.8 GPM or less @ 80 PSI (INC multi-head designs)
-Multiple Showerheads @ 1.8 GPM or less @ 80 PSI (INC multi-head designs)
-Lav Faucets @ 1.2 GPM or less @ 60 PSI
-Kitchen Faucets @ 1.8 GPM or less @ 60 PSI
-Water Closets @ 1.28 GAL/FLUSH
-Urnals @ 0.125 GAL/FLUSH
- Appliances. Install at least one qualified ENERGY STAR dishwasher or clothes washer. (A4.303.3)
- 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 California Plumbing Code, California Energy Code, and the manufacturer's installation instructions. (CGBC A4.303.5 for Hot water recirculation systems)

3. IRRIGATION CONTROLLERS;(SEC 4.304.1)
Controllers shall be weather-or soil moisture-based controllers that automatically adjust irrigation in response to changes in plants' needs as weather conditions change.

4. CONSTRUCTION WASTE; (SEC 4.408)
Waste Reduction Plan and documentation to be provided by Contractor.
See http://www.hcd.ca.gov/building-standards/calgreen/docs/CW-1.pdf

5. FIREPLACES (SEC 4.503.1)
-Gas units must be direct-vent sealed combustion type.
-Wood/Pellet burning units shall comply with EPA phase-2 emission limits.

6. POLLUTANT CONTROL (SEC 4.504)
-Duct Covering (sec 4.504.1) Covering of duct openings and protection of mechanical equipment during construction. At the time of rough installation or during storage on the construction site and until final startup of the heating and cooling equipment, all duct and other related air distribution component openings shall be covered with tape, plastic, sheetmetal or other methods acceptable to the enforcing agency to reduce the amount of dust or debris which may collect in the system.
-VOC limits (Per Tables 4.504.2, 4.504.3, 4.504.4, 4.504.5) .
All Finish materials shall comply with the values shown in the tables listed for indoor air quality.

7. INDOOR AIR QUALITY (MOISTURE ISSUES) (Sec 4.505)
- A 4-inch (101.6 mm) thick base of ½ inch (12.7 mm) or larger clean aggregate shall be provided with a vapor barrier in direct contact with concrete and a concrete mix design, which will address bleeding, shrinkage, and curling, shall be used. For additional information, see American Concrete Institute, ACI 302.2R-06. (SEC 4.505.2.1)
-Moisture content of building materials. Building materials with visible signs of water damage shall not be installed. Wall and floor framing shall not be enclosed when the framing members exceed 19 percent moisture content. Moisture content shall be verified (SEC 4.505.3)
-Bathroom exhaust fans which exhaust directly from bathrooms shall be ENERGY STAR compliant and be ducted to terminate outside the building. Unless functioning as a component of a whole house ventilation system, fans must be controlled by a humidistat which shall be readily accessible(SEC 4.506.1)

8. INDOOR AIR QUALITY (ENVIRONMENTAL COMFORT) (Sec 4.507)
-Whole house exhaust fans shall have insulated louvers or covers which close when the fan is off. Covers or louvers shall have a minimum insulation value of R-4.2.(SEC 4.507.1)
-Heating and Air Conditioning systems shall be sized, designed, and equipment is selected using the following methods:
1 - The heat loss and heat gain is established according to ACCA Manual J, ASHRAE handbooks or other equivalent design software or methods.
2 - Duct systems are sized according to ACCA 29-D Manual D, ASHRAE handbooks or other equivalent design software or methods.
3 - Select heating and cooling equipment according to ACCA 36-S Manual S or other equivalent design software or methods.

9. ELECTRIC VEHICLE CHARGING REQ. (Sec 4.106.4)
-The builder shall install a nominal one (1) inch inside diameter, listed raceway to accommodate a dedicated a 208/240 volt branch circuit. The raceway shall originate in the main or sub panel, and will terminate into a listed box at the purposed site of the EV charger. This and all additional specifications of California Green Building Standards section 4.106.4 shall be meet."
-Elect service or subpanel circuit directory shall identify the overcurrent protection device space(s) as reserved for future EV charging as "EV CAPABLE. The raceway termination location shall be permanently and visibly marked as "EV CAPABLE"

City of Folsom Notes:
REV 4-9-20

1. Inspection Requests: It shall be the duty of the permit holder or their agent to notify the City of Folsom Building Official that such work is ready for inspection. It shall be the duty of the person requesting any inspections required by this code to provide access to and means for inspection of such work. (CRC R109.3)
2. Inspections: Construction or work for which a permit is required shall be subject to inspection by the City of Folsom Building Official (or his/her representatives), and such construction or work shall remain accessible and exposed for inspection purposes until approved. Approval as a result of an inspection shall not be constructed to be an approval of a violation of the provisions of this code or other regulations of the Department of Housing and Community Development (CRC R109)
3. Complete the City form "Determination of Applicability to the Model Water Efficiency Landscape Ordinance (AB 1881)". available on the Citie's website and submit to the City Arborist for review. If it is determined that the landscape and irrigation plans are required, plans, calculations and a certification statement shall be submitted as a deferred submittal. Before issuance of a certificate of occupancy, the landscape and irrigation work shall be complete, inspections of the plants and irrigation installation by the City and a third party water audit must be preformed and submitted to the City Arborist.
4. Grading Plan, Driveway/Site Profiles and site retaining walls are to be under a seperate permit. All documantation to be submitted and approved before any construction to begin
5. Tree Requirements:
   A. Each tree or group of trees to be preserved shall be enclosed with 4' high-visibility fencing on 5' T-stakes set a maximum of 10' apart. Inspection by the City Arborist is required prior to any grading, grubbing, trenching, movement of heavy equipment, or other construction activity.
   B. Weatherproof signs 11"x 17" spaced a maximum of 50' apart shall be posted on all sides of fences surrounding each tree or trees stating that enclosed trees are to be preserved.
   C. Parking of vehicles, equipment, or storage of material within the protected zone of trees is prohibited at all times.
   D. TPZ fencing shall remain upright and intact until authorization from the City Arborist is given at the final inspection.

SPECIAL INSPECTIONS REQ
REV 9-30-20

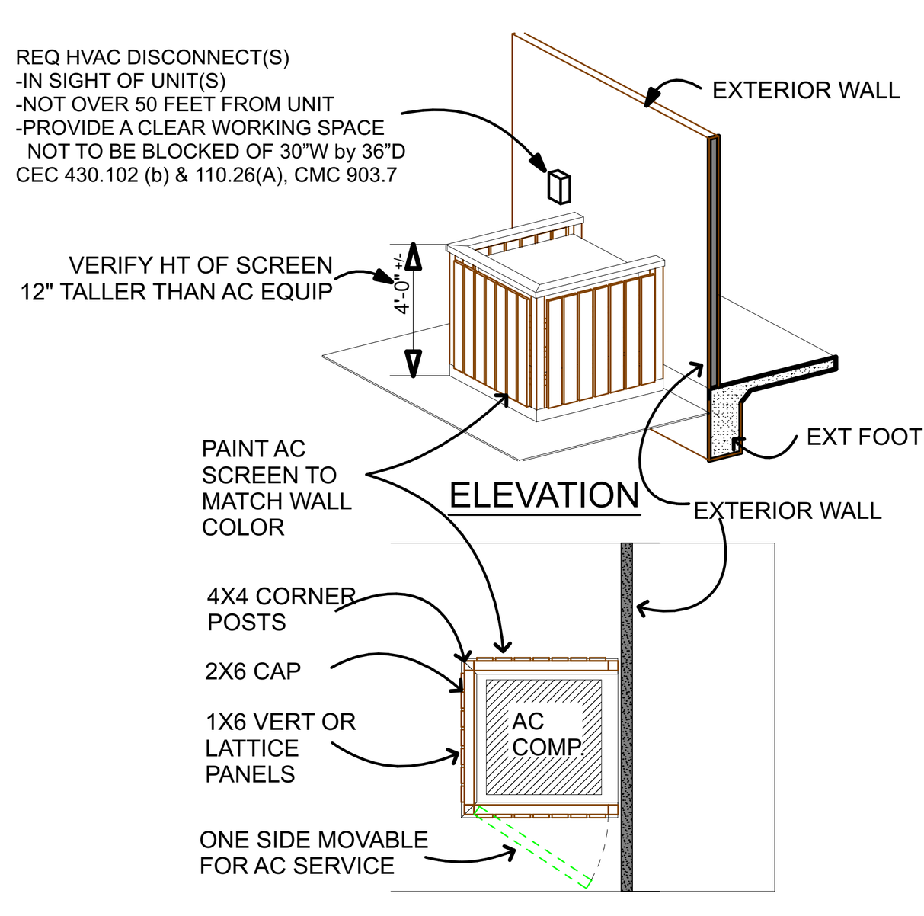
1. Per CBC section 1704. The owner or the design professional in responsible charge acting as the owner's agent shall employ one or more approved agencies to perform inspections during construction on the types of work listed under Section 1705. Coordinate with the Structural Engineer and list all required inspections. Reference CBC Section 1704.2.

2. HERS verification for Quality insulation installation is required per the energy compliance documentation provided. CRC R106

3. GEOTECHNICAL REPORT:
Youngdahl Consulting Group, Inc
1234 Glenhaven Ct
El Dorado Hills CA 95762
office (916) 933-0633
email john.y@youngdahl.net
Project # E92115.43 (dated November 2021)

4. COMPACTION REPORTS;
-Prior to foundation inspection a certification letter from the soil testing agency is to be prepared for the building inspector. The letter shall be dated after the issuance of the permit and certify that the pad and footings are ready to receive improvements.
-Compaction reports to be provided for all cut or fill areas to the field inspector per CBC Chapter 18 requirements ((all inspections per CBC 1804.5))

5. ON-SITE INSPECTIONS:
-Observation of subgrade preparation, foundation construction, & wall construction operations by the Geotechnical Engineer. CBC 1705.6
This is required in the Geotechnical Report noted above.
-When required, Geotechnical Engineer shall approve all footings BEFORE steel is placed in those footings or excavations



AC SCREEN DETAIL (3)
VERIFY UNIT SIZE BEFORE PAD IS POURED FOR AC COMPRESSORS
REV 10-12-16

Chapter R337-Wildfire Exposure:
REV 9-30-20

Notes below based upon 2019 CRC Chapter R337,
"Materials and Construction for Exterior Wildfire Exposure"

1. This project to meet the requirements of NFPA 13D & CRC Chapter 337.
2. Roofing: shall meet the requirements of Sections R337.5.1 and R902.
   -Shall be rated fire retardant type A .
   -Any Skylights or tube skylights (Sola-Tube) to have a class A fire rating
   -Where the roof profile allows a space between the roof covering and roof decking, the spaces shall be constructed to prevent the intrusion of flames and embers, be firestopped with approved materials or have one layer of minimum 72 pound (32.4 kg) mineral-surfaced nonperforated cap sheet complying with ASTM D 3909 installed over the combustible decking.
   -Valley flashing shall not be less than 26 gage GI installed over not less than one layer of minimum 72-pound (32.4 kg) mineral-surfaced nonperforated cap sheet complying with ASTM D 3909, at least 36-inch-wide running the full length of the valley. (R337.5.3)
3. Roof Eaves: shall meet the requirements of R337.6
   -Eaves shall be enclosed or be constructed of non-combustible / "Heavy Timber" (R337.2 & R337.7.4) designed to resist building ignition from the intrusion of burning embers and flame through the ventilation opening (337.6.2)
   -Eave Venting only allowed per R337.6.2. Dimensions of the vent openings shall be a minimum of 1/16 inch (1.6 mm) and shall not exceed 1/8 inch. The materials used shall be noncombustible and corrosion resistant.
4. Gutters and downspouts shall be non-combustible and shall have a means to prevent the accumulation of leaves and debris. (R337.5.4)
5. Exterior Porch Ceilings & Floor Projections: per R337.6 & R337.7
   Wall covering shall be non-combustible (ie Stucco or similar) or be installed over 5/8" type "X" gypsum
6. Exterior wall: R337.7 Wall covering shall be non-combustible (ie Stucco or similar) or be installed over 5/8" type "X" gypsum
7. Gable end & Underfloor Venting: R337.6.2
   Dimensions of the vent openings shall be a minimum of 1/16 inch (1.6 mm) and shall not exceed 1/8 inch (3.2 mm). The materials used shall be noncombustible and corrosion resistant.
8. Exterior Windows & Doors: R337.8
   -Glazing shall have the exterior sheet of dual glazed windows/doors tempered. (R337.8.2.1)
   -Exterior Door assemblies shall meet the R337.8.3 req.
9. Exterior Decking and Stair surfaces: R337.9
   -Any deck or walking surface within 10 feet of the building must have a class B flame spread, or be constructed of Noncombustible material, or be igniton-resistant material to meet requirement of R337.9.3
10. Landscaping / Site Requirements:
   -Readly combustible vegetation within 30 feet of the structure to be removed and maintained.
   -Landscaping plants within 30 feet of the structure shall be fire resistant.

Site Notes:
REV 5-10-16

Grading Notes:

1. Surveyor to verify house corners and grade elevations before foundation is poured.
2. Contractor is responsible to control drainage during construction. No irrigation runoff may leave this lot. Disperse storm water in it's natural drainage course. (Per Cal-Green Section 4.106)
3. No grade changes, trenching, or equipment operation under the dripline of the existing oak trees outside of the building envelope
4. All grading 24"min from property line and all new hard surface (Drive & Auto Court) 36" min. from property lines.
5. Rock lined swales required if slope exceeds 1:10. Sheet flow to begin a minimum of 10 feet from property line.
6. Maximum finished slopes to be 3:1 or flatter.
7. No grading allowed within 2 feet of property lines
8. Grade immediately adjacent to the foundation shall slope away from foundation 5% min in the first 10 feet. measured perpendicular from the structure. impervious surfaces within 10 feet of the building shall be sloped at a min. of 2% away from the building. CRC 401.3
9. Gravity Retaining Wall Note: (from Property Line)
   - 3' MIN to outside face of walls under 5 feet tall
   - 5' MIN to outside face of walls over 5 feet tall
   - Outside of Building Envelope No exposed face over 6 feet tall.
10. Compaction report to be provided for all cut-fill to field inspector. (per CBC Chapter 18 req)
11. Provide certification letter from soils testing agency at time of foundation inspection. Letter shall be dated after issuance of building permit and certify that the pad and footing excavations are ready to receive improvements. (all inspections per CBC 1804.5)

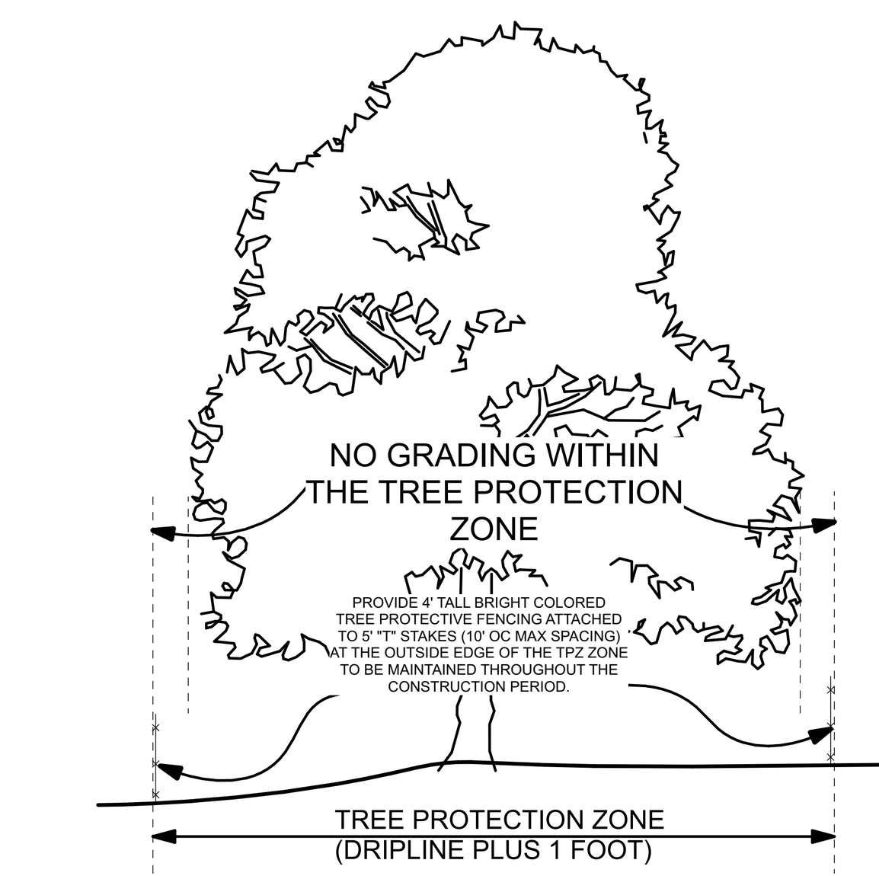
Landscaping Notes:

Hardscape - Concrete Flatwork
-Landscape plan to be "Approved" before any concrete, driveway, walkway or other flatwork is installed.
-2% min slope req away from foundation (CRC R311.3)
-See approved plan for final approved layout
Verify Final Hardscape requirements with the final Landscape and Pool plans (if pool to be installed)

Fencing
ALL FENCING TO MEET MONTSERRAT STANDARDS.
-Fences that face the street or open space should be installed with the top rail horizontal and stepped for grade changes.
-Interior fences may be sloped if long continuous slope only (ie not slope changes).
-Fence details to be provided with Landscape plans.

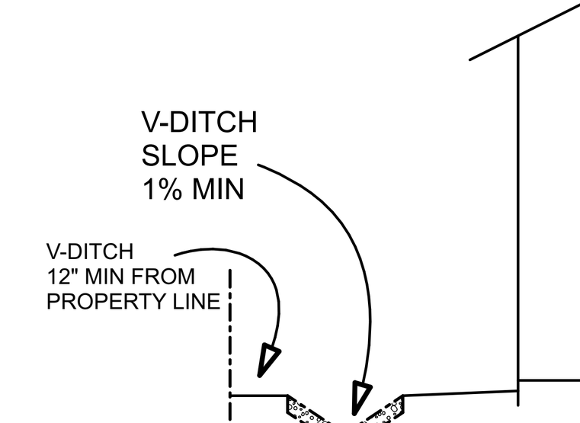
Screening
-Screen req all A/C units, Pool Equiptment, Gas Meter, Trash Storage Areas and Electrical Meter/Panel.
-Minimum screening for AC Unit & Pool Equip. is Lattice walls on all sides extending 12" above units, painted to match adjacent wall color.
-Evergreen shrubs may be used as specified on this and/or the Landscape plan to screen Gas/Elect Meter.
-All conduits and disconnect boxes to be painted the same color as the walls.

Trees
1. Protective fencing required around dripline of all oak trees to remain throughout construction. Call for fence inspection before grading. Maintain fence throughout construction.
2. Keep all equiptment, vehicles, and materials on this lot only and outside dripline of trees.



TREE PROTECTION ZONE (TPZ) IS A CIRCLE MEASURED FROM THE CENTER POINT OF THE TREE TO THE FURTHEREST POINT OF THE DRIPLINE, PLUS ONE FOOT (1'), SHALL BE USED AS THE RADIUS OF A CIRCLE AROUND THE PROTECTED TREE.

TREE PROTECTION DETAIL (2)
PLASTIC FENCE DETAIL
REV 9-17-15



NOTE:
3" TO 6" COBBLES
REQUIRES AT V-DITCH
WHERE SLOPE EXCEEDS 10%

'V' DITCH DETAIL (1)

TREE SUMMARY

175 Elvies Lane, Folsom Amended Report — REPORT DATE March 8, 2022

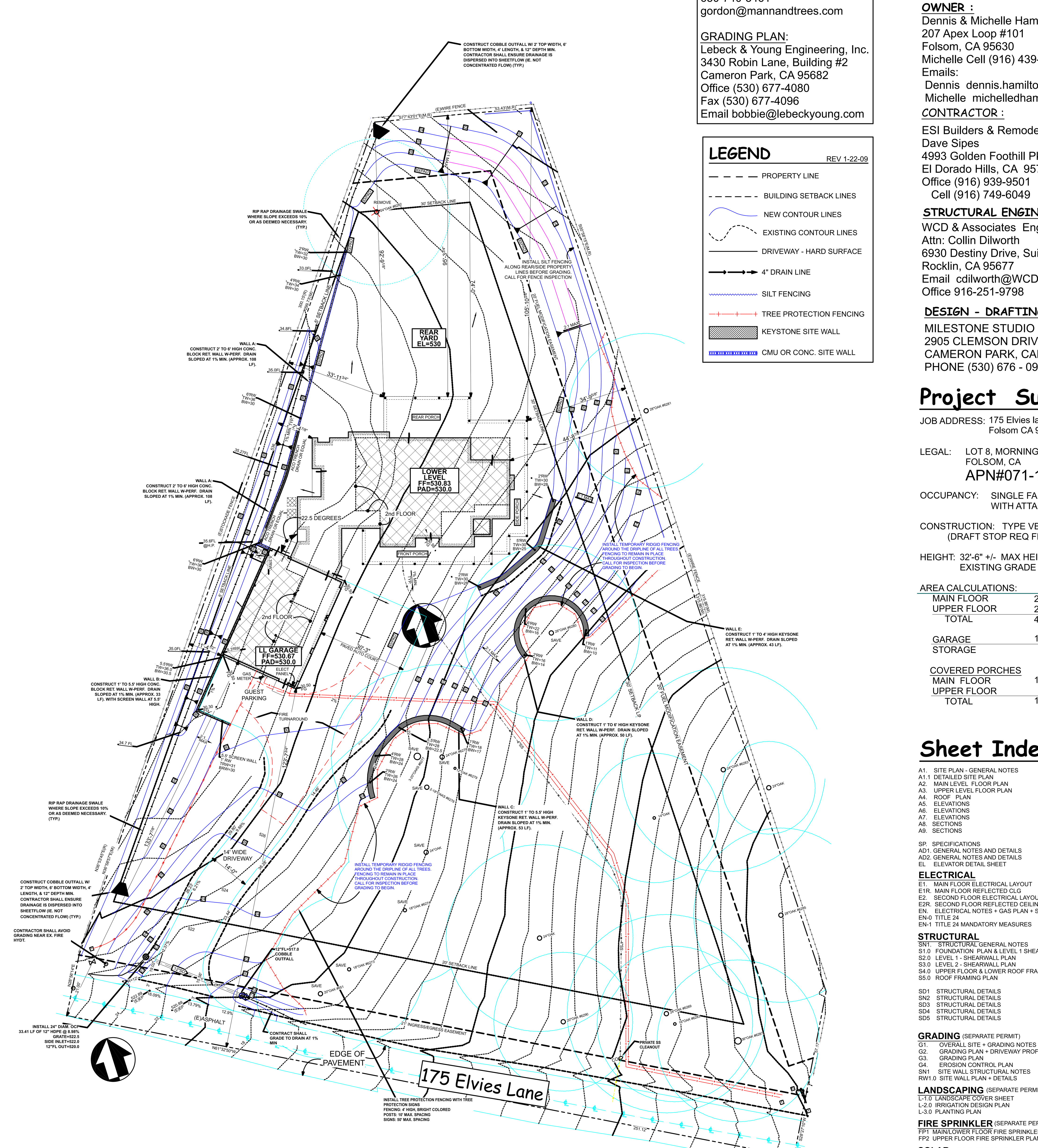
175 Elvies Ln Folsom
Tree List

Tree #	Old Tag #	Common Name ies	DBH (in)	Ht Dia Meas At (in)	Canopy Radius (ft)	Condition Rating	Comments	Project Status
6272	651	Blue Oak Quercus douglasii	19	54	24	3 Fair - Minor Problems	mistletoe	Retain and protect, clear of work
6273	650	Blue Oak Quercus douglasii	17	54	27	3 Fair - Minor Problems	cavity at base	Retain and protect, clear of work
6274	649	Blue Oak Quercus douglasii	16.7	54	28	3 Fair - Minor Problems	normal flare, crown mostly S, dead branches to 3"	Retain and protect, clear of work
6275	648	Blue Oak Quercus douglasii	23.1	54	30	3 Fair - Minor Problems	normal flare, crown mostly S, dead branches to 4"	Retain and protect, clear of work
6276	647	Blue Oak Quercus douglasii	31.3	6	27	2 Poor - Major Structure or Health Problems	co dom at 18", 12' & 14', included bark at 2', basal wound W,	Retain with retaining wall to keep fill clear of root zone
6277	644	Blue Oak Quercus douglasii	30	6	28	2 Poor - Major Structure or Health Problems	Uneven canopy, strong lean West branch is almost to ground, suppressed, dead branches to 4", 2 leaders at 2', 12' &20'	Retain with retaining wall to keep fill clear of root zone
6278	645	Blue Oak Quercus douglasii	19.9	54	31	1 Very Poor - Extreme Structure or Health Problems	sprial crack N above basal decay cavity > 80% of diameter, 1-sided crown N, low branches	Retain with retaining wall to keep fill clear of root zone
6279	646	Blue Oak Quercus douglasii	11.2	54	14	1 Very Poor - Extreme Structure or Health Problems	suppressed E at 15', minor trunk wound on E base,	Retain with retaining wall to keep fill clear of root zone
6280	642	Blue Oak Quercus douglasii	26	54	28	3 Fair - Minor Problems	symmetric, normal flare, dead branches to 4",	Retain with retaining wall to keep fill clear of root zone
6281		Blue Oak Quercus douglasii	24	54	28	3 Fair - Minor Problems	offsite	retain and protect, offsite, clear of work

Tree #	Old Tag #	Common Name ies	DBH (in)	Ht Dia Meas At (in)	Canopy Radius (ft)	Condition Rating	Comments	Project Status
6282	643	Blue Oak Quercus douglasii	23	54	20	3 Fair - Minor Problems	Remove tree at north end of property	Remove and Mitigate in buildable area
6283	638	Blue Oak Quercus douglasii	25	54	28	3 Fair - Minor Problems	away from work	R+I13:I21etain and protect
6284	639	Blue Oak Quercus douglasii	21	54	25	3 Fair - Minor Problems	offsite away from work	Retain and protect, clear of work
6285	640	Blue Oak Quercus douglasii	16	54	32	3 Fair - Minor Problems	away from work	Retain and protect, clear of work
6286	637	Blue Oak Quercus douglasii	26	54	28	3 Fair - Minor Problems	away from work	Retain and protect, clear of work
6287	634	Blue Oak Quercus douglasii	30	54	23	3 Fair - Minor Problems	mistletoe, going dormant	Retain and protect, clear of work
6288	635	Blue Oak Quercus douglasii	17	54	21	3 Fair - Minor Problems	away from work	Retain and protect, clear of work
6289	636	Blue Oak Quercus douglasii	23	54	26	3 Fair - Minor Problems	Going dormant, away from work	Retain and protect, clear of work
6290	652	Blue Oak Quercus douglasii	21	54	22	3 Fair - Minor Problems	Small cavity at base, away from work	Retain and protect, clear of work
6291	653	Blue Oak Quercus douglasii	26	54	24	3 Fair - Minor Problems	80% dormant; away from work	Retain and protect, clear of work
6292	654	Blue Oak Quercus douglasii	0	54	0	0 Dead	dead, fallen on ground	Dead, remove

21 trees in the inspection; 1 dead, 2 poor, 2 very poor, 16 fair condition; 1 removal with mitigation, 23 inches; 6 trees experiencing encroachment; 4 in condition to mitigate

GordonMann, ConsultingArborist



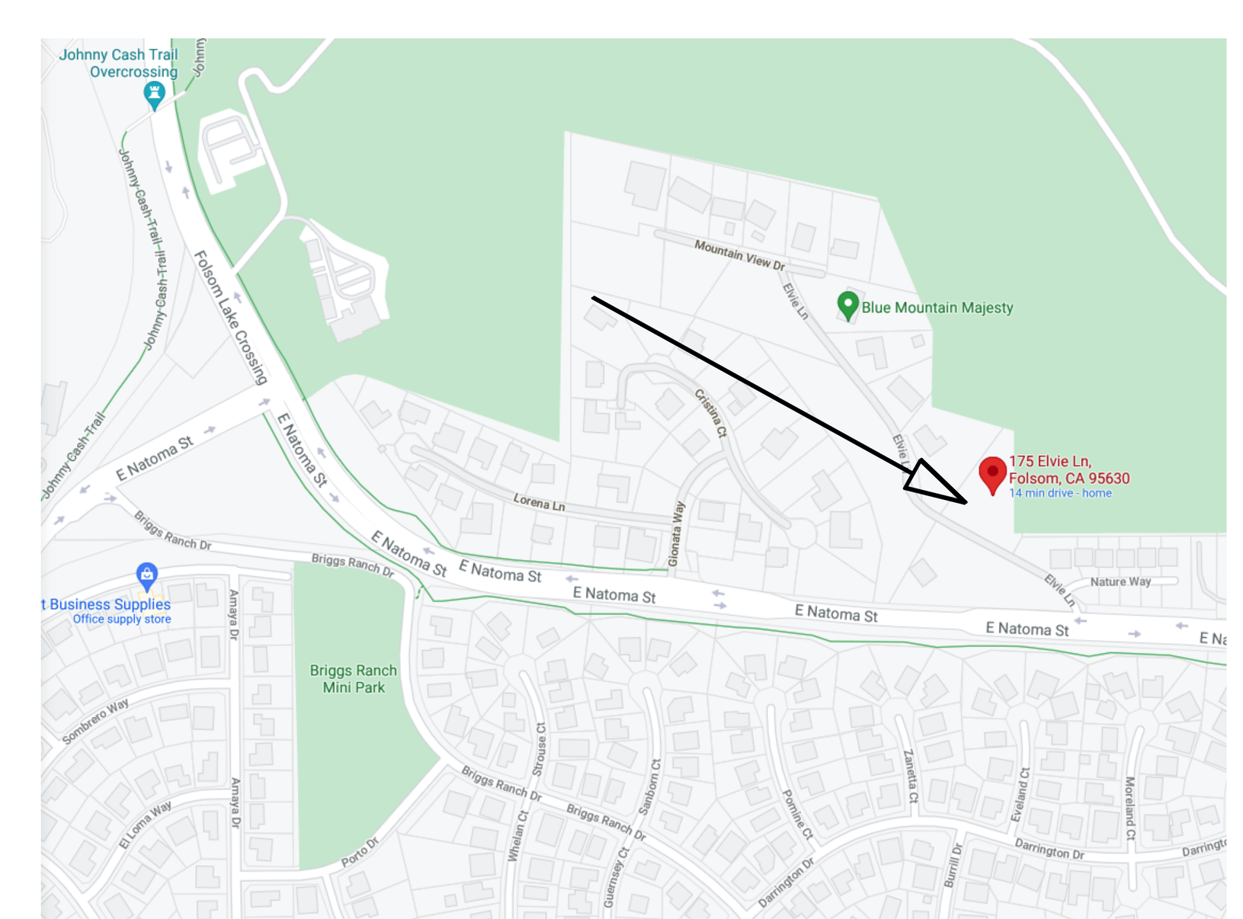
Overall Site Plan
1/A1

SCALE: 1" = 20'

SEE GRADING PLAN FOR ALL SITE GRADING INFORMATION

HARDSCAPE TO BE PROVIDED ON LANDSCAPE PLAN

GRADING PLAN, PROFILES AND SITE RETAINING WALLS ARE UNDER A SEPERATE PERMIT. REVIEW AND APPROVAL OF ALL SITE GRADING INFORMATION REQUIRED BEFORE ANY CONSTRUCTION TO BEGIN



VICINITY MAP — 175 Elvies lane, Folsom CA 95630 (1)

TOPO/TREE/CONTOUR INFO:
Alan Divers

ARBORIST REPORT:
Mann Made Resources
Gordon Mann, Consulting Arborist
Auburn, CA
650-740-3461
gordon@mannandtrees.com

GRADING PLAN:
Lebeck & Young Engineering, Inc.
3430 Robin Lane, Building #2
Cameron Park, CA 95682
Office (530) 677-4080
Fax (530) 677-4096
Email bobbie@lebeckyoung.com

LEGEND
REV 1-22-09

- PROPERTY LINE
- BUILDING SETBACK LINES
- NEW CONTOUR LINES
- EXISTING CONTOUR LINES
- DRIVEWAY - HARD SURFACE
- 4" DRAIN LINE
- SILT FENCING
- TREE PROTECTION FENCING
- KEYSTONE SITE WALL
- CMU OR CONC. SITE WALL

Hamilton Residence
175 Elvies Way

Project Legend

OWNER :
Dennis & Michelle Hamilton
207 Apex Loop #101
Folsom, CA 95630
Michelle Cell (916) 439-8821
Emails:
Dennis dennis.hamilton@rocketmail.com
Michelle michelledhamilton@yahoo.com

CONTRACTOR :
ESI Builders & Remodelers
Dave Sipes
4993 Golden Foothill Pkwy, Suite 9
El Dorado Hills, CA 95762
Office (916) 939-9501
Cell (916) 749-6049

STRUCTURAL ENGINEER :
WCD & Associates Engineering
Attn: Collin Dilworth
6930 Destiny Drive, Suite #300,
Rocklin, CA 95677
Email cdilworth@WCDAssociates.com
Office 916-251-9798

DESIGN - DRAFTING :
MILESTONE STUDIO
2905 CLEMSON DRIVE
CAMERON PARK, CALIF. 95682
PHONE (530) 676 - 0900

Project Summary

JOB ADDRESS: 175 Elvies lane
Folsom CA 95630

LEGAL: LOT 8, MORNING WALK
FOLSOM, CA
APN#071-1940-008

OCCUPANCY: SINGLE FAMILY (R-3)
WITH ATTACHED GARAGE (U)

CONSTRUCTION: TYPE VB (SPRINLKERS REQ)
(DRAFT STOP REQ FROM GARAGE)

HEIGHT: 32'-6" +/- MAX HEIGHT FROM RIDGE TO EXISTING GRADE (GRADE VARIES)

AREA CALCULATIONS:

MAIN FLOOR	2,392 SF
UPPER FLOOR	2,002 SF
TOTAL	4,394 SF
GARAGE	1,109 SF
STORAGE	664 SF
COVERED PORCHES	
MAIN FLOOR	1,284 SF
UPPER FLOOR	413 SF
TOTAL	1,697 SF

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PV D1 SPECIFICATIONS
PV D2 SPECIFICATIONS
PV D3 SPECIFICATIONS

SITE ADDRESS REQUIREMENT
REV 8-19-17

PROVIDE SITE ADDRESS (HOUSE NUMBER) WITH LIGHTED ADDRESS NUMBERS REQUIRED PER CITY OF FOLSOM FIRE DEPARTMENT AND PER PER CRC R319.1
Approved numbers of addresses shall be placed on all new, remodeled and altered buildings, in such a position as to be plainly visible and legible from the street or road fronting the property. Whenever the numbers on the building will not be clearly visible from the access street or road fronting the property, the numbers will be placed at the street or access road in a manner which is clearly visible from both directions of travel on the road/street. Said numbers shall be a minimum 4 inch letter height, 1/2-inch stroke, reflectorized, and contrast with their background, or may be a minimum 5 inches high and contrast with their background.

DEFERRED SUBMITTALS:
REV 3-4-20

1. Documents for deferred submittal items shall be reviewed by the registered design professional in responsible charge prior to forwarding them to the building official. The registered design professional in responsible charge should note on the document indicating that the deferred submittal documents have been reviewed and found to be in general conformance to the design of the building. The deferred submittal items should not be installed until the deferred submittal documents have been approved by the building official." Reference 2016 CBC Section 107.3.4.1.
2. Roof installed Solar Panels require a separate permit and shall be approved per note #1 before installation.
3. Fire Sprinkler system to be submitted separately and have its own review and permit. Any plans or designs attached are for informational use only. System will be design-build and to be installed per applicable code.

General Notes
REV 3-11-22

1. All construction shall conform to the following codes;
-2019 California Administrative Code (CAC)
-2019 California Building Code (CBC) Based on the 2019 ICC
-2019 California Residential Code (CRC) Based on the 2019 ICC
-2019 California Mechanical Code (CMC) Based on the 2015 IAPMO.
-2019 California Plumbing Code (CPC) Based on the 2015 IAPMO
-2019 California Electrical Code (CEC) Based on the 2014 NFPA
-2019 California Energy Code (CEC), Title 24 Part 6
-2019 California Fire Code (CFC) Based on the 2015 ICC
-2019 California Green Building Standards Code (CGBC)
-2019 California Referenced Standards Code, Title 24, Part 12
-2019 Accessibility Standards, Chapter 11A of the CA. Bldg. Code.
-ANY OTHER APPLICABLE STATE, COUNTY OR LOCAL REGULATIONS.

2. Amended Construction Documents: Work shall be installed in accordance with the approved construction documents, and any changes made during construction that are not in compliance with the approved construction documents shall be resubmitted for approval as an amended set of construction documents.

3. THE CONTRACTOR IS RESPONSIBLE TO CHECK THE PLANS AND IS TO NOTIFY THE DESIGNER OF ANY ERRORS OR OMISSIONS PRIOR TO THE START OF CONSTRUCTION.

4. WRITTEN DIMENSIONS HAVE PRECEDENCE OVER SCALED DIMENSIONS. DO NOT SCALE DRAWINGS !!

5. INSULATION: (SEE TITLE 24 CF-1R FORM PER EFFS SECTION 150.1)
RADIANT BARRIER ROOF PLY REQ AT VENTED ATTIC CONDITIONS

ROOF (VAULTED)	CONDITIONED ATTIC AT ALL LIVING AREA W/ R-30 TOTAL @UNDERSIDE OF ROOF PLY AND AT GABLE ENDS TYPICAL [8.5" SPF FOAM COVERING ALL TRUSS MEMBERS] (SEE T-24) NO INSULATION REQ @ CEILING NOTE: ALL EXPOSE FOAM AT ATTIC AREA TO BE APENDIX 'X' COMPLIANT (DEMILEC APX 1.2 OR EQUAL, ESR-3470)
WALLS (EXTERIOR)	R-19 2X6 EXT WALLS W/ SIDING OVER
FLOOR	R-30 (OVER UNHEATED SPACE)
BASEMENT WALLS	R-13
SOLAR TUBES	MILGARD OR EQUAL (U=.35 SHGC=.28)
FAU	14.0 seer / 11.7 eer / 95% afue
I. A. Q.	BROAN HRV-200 (or equal) RATED @ 197 cfm@ .7sp, ASRE .72. & 99 watts
FURNACE DUCTS	R-8 (AT UNHEATED SPACE) W/MIN 2" MERV 13 R/A & HRV FILTERS
TANKLESS WH	.96 UEF (UNIFORM ENERGY FACTOR)
HOT WATER LINES	R-7.7 PIPE INSULATION
WINDOWS	VINYL DBL PANE, LOW-E3, ARGON (U=.25 SHGC=.21)
DOORS	DBL PANE ,LOW-E3, ARGON (U=.25 SHGC=.21) MAX 0.3 cfm/ft AIR LEAKAGE ALLOWED
WHOLE HOUSE FAN	REQUIRED W/MIN 5070 cfm rated at 537 watts (10 cfm p/watt min)
SOLAR	REQUIRED Minimum 3.6kWdc / 180 Azimuth / 22deg Array / 4.8 Tilt / 96% Inverter Eff.
HERS VERIFICATION	* HERS Indoor Air Quality Balanced HRV (197cfm) Verification * HERS Duct Leakage Test w/Low Leakage Air Handler (<5%) * HERS Air Flow & Fan Watt Draw test (350cfm p/ton, .45w p/cfm) * HERS Refrigerant Charge Test * HERS Kitchen Exhaust Hood Verification (>100cfm, <3.0 Sones)

6. THE ABOVE VALUES ARE A DEFAULT MINIMUM VALUES AND MAY BE INCREASED, VERIFY WITH TITLE 24 REQ & CONTRACTOR.

7. EXPOSED INSULATION FLAME SPREAD RATING REQ:
A. BATT OR BLOWN- FLAME SPREAD INDEX LESS THAN 25 AND A SMOKE DEVELOPED INDEX OF LESS THAN 450
B FOAM- FLAME SPREAD INDEX LESS THAN 75 AND A SMOKE DEVELOPED INDEX OF LESS THAN 450 (ASTM E 84 or UL 723)

8. Req Venting for Attic and Exterior Balconies
a. ONLY APPROVED EAVE VENTING IS ALLOWED ON NEW CONSTRUCTION IN "EXTREME" FIRE DANGER AREA UNLESS SPECIFICALLY APPROVED VENTING PER STATE FIRE MARSHALL IS USED PER CRC CHAPTER R337 .
b. Ventilation Required Beneath Balcony or Elevated Walking Surfaces. Enclosed framing in exterior balconies and elevated walking surfaces that are exposed to rain, snow or drainage from irrigation shall be provided with openings that provide a net-free cross-ventilation area not less than 1/150 of the area of each separate space. (R317.1.6)

9. EACH SLEEPING ROOM SHALL HAVE A WINDOW OR EXTERIOR DOOR FOR EMERGENCY ESCAPE. SILL HEIGHT / CLEAR OPENING SHALL NOT EXCEED 44 INCHES ABOVE FINISH FLOOR. THE WINDOW MUST HAVE A MINIMUM NET OPENABLE AREA OF 5.7 SQ. FT. WITH A MINIMUM WIDTH OF 20 INCHES AND A NET OPENABLE HEIGHT OF 24 INCHES. (CRC 310 & R612.2)

10. GLAZING REQUIREMENTS: (Dual Glazing req all windows)
A. Exterior windows and sliding doors shall be tested by an approved independent laboratory, bear a label identifying manufacturer, performance characteristics and approved inspection agency to indicate compliance with AAMA/WDMA/CSA 101/I.S.2/A440
B. ALL FENESTRATION PRODUCTS VT SHALL BE RATED IN ACCORDANCE WITH ASTM NFRC 200 OR ASTM.E 972. FOR TUBLAR SKYLIGHTS VT SHALL BE RATED USING NFRC 203 PER CEC 110.6.4
C. TEMPERED WINDOW GLAZING REQUIRED; (CRC 308.4)
-WITHIN 18 IN. OF THE FLOOR (OR MULLION @24" TO 30" AFF)
-WITHIN 24 IN. OF ANY DOOR ARE TO BE.
- GLAZING ADJACENT TO STAIRWAYS, LANDINGS OR RAMPS WITHIN 36" OF WALKING SURFACE OR WHEN LESS THAN 60" ABOVE WALKING SURFACE (CRC 308.4 #7)
-ALL DOOR GLAZING TO BE TEMPERED. Manufacturer's designating the type of glass and the safety glazing standard with which it complies, which is visible in the final installation. (CRC R308.4 #1)
D. WINDOW FALL PROTECTION: (ASTM F 2090 & R312.2.2)
-Operable window with window sill of 72" above finished grade or surface below, and with less than 24" above interior floor surface shall be provided with window fall protection per R312.2.2. Operable sections of windows shall not permit openings that allow passage of a 4-inch-diameter sphere.

11. EXTERIOR DOOR REQUIREMENTS:
A. Exterior side-hinged doors shall be tested and labeled as conforming to AAMA/WDMA/CSA 101/I.S.2/A440 or comply with R612.5 per CRC R612.3.
B. DOORS ARE TO BE SOLID CORE WITH WEATHERSTRIPPING.
C. PROVIDE 1/2 IN DEAD BOLT LOCKS ON ALL EXTERIOR DOORS AND LOCKING DEVICES ON ALL DOORS AND WINDOWS WITHIN 10 FT. (VERTICAL) OF GRADE.
D. AIR LEAKAGE MAX ALLOWED 0.3 cfm/ft (INCLUDING PET DOORS)
E. ALL egress doors shall be openable from inside the unit without the use of a key, special knowledge or effort. CRC R312.2.

12. CARBON MONOXIDE-SMOKE ALARMS:(CRC 315.1)
a. THE SMOKE ALARMS SHALL BE INSTALLED ALONG THE FOLLOWING LOCATIONS PER CRC 314.3:
1) IN EACH SLEEPING ROOM
2) OUTSIDE EACH SEPERATE SLEEPING AREA IN THE IMMEDIATE VICINITY OF THE BEDROOMS.
3) ON EACH ADDITIONAL STORY OF THE DWELLING.
b. ALL SMOKE ALARMS SHALL BE LISTED IN ACCORDANCE WITH UL 217 AND INSTALLED WITH THE PROVISIONS OF THIS CODE AND THE FIRE HOUSEHOLD WARNING EQUIPMENT PROVISIONS OF NFPA 72. SYSTEMS AND COMPONENTS SHALL BE CALIF. STATE FIRE MARSHAL LISTED AND APPROVED IN ACCORDANCE WITH CALIFORNIA CODE OF REGULATIONS, TITLE 19, DIV 1 FOR WHICH THEY WERE INSTALLED.
c. ALL SMOKE ALARMS SHALL BE HARDWIRED WITH BATTERY BACK-UP AND INTER-CONNECTED, SO THAT, WHEN ANY ONE IS TRIPPED, THEY WILL ALL SOUND. (R314.4, R314.5, R315.1, R315.1.2 & R315.1.3) (Physical interconnection of alarms shall not be required where listed wireless alarms are installed and all alarms sound upon activation of one alarm. (R315.5)
d. All alarms within this dwelling unit shall be "listed" as complying with UL 2034 and UL 2075 per CRC R315.

13. PROVIDE COMBUSTION AIR VENTS (W/SCREEN AND BACKDRAFT DAMPER) WITH AN OPEN FLAME.

14. INTERIOR VENTING REQUIREMENTS: (per CES 1501 & Cal-Green)
NEW CONSTRUCTION;
-KITCHEN TO HAVE A MIN. OF 100 cfm EXAUST FAN
Fan must have a sound rating of 3 sone maximum, unless it exceeds 400 CFM. Per CBEES 150.0(o), ASHRAE 62.2
-BATHROOM, LAUNDRY & WET ROOMS TO HAVE A MIN OF 50 cfm EXAUST FAN
-WHOLE HOUSE VENTILATION (PER ANSI-ASHRAE 62.2)
VENT RATE (cfm) = (CFA/100) + [7.5 x (NUMBER OF BEDROOMS +1)]
VENTING TO BE PROVIDED BY EITHER EXAUST VENT, SUPPLY VENT OR A COMBINATION OF THE TWO. SEE SECTION 4.6 OF THE RESIDENCE COMPLIANCE MANUAL.

15. ELECTRICAL RECEPTACLES IN BATHROOMS, KITCHENS AND GARAGES SHALL BE G.F.I. OR G.F.I.C. (CEC 210.8)

16.EGREES STAIRWAY CONSTRUCTION TO MEET 2019 CRC STANDARD (SEC R311.7)
-MAX 7.75" RISE AND MIN 10" RUN
-MIN STAIRWAY HEADROOM 6'-8"
-MIN STAIRWAY WIDTH OF 36"
-MIN TREAD WIDTH AT WINDERS IS 6" (MEASURE 12" FROM INSIDE OF CURVE)
SEE R311.7.5.2.1 FOR "CURVED STAIRWAY" REQ

17. IN ALL ONE AND TWO FAMILY DWELLINGS, AN AUTOMATIC RESIDENTIAL FIRE SPRINKLER SYSTEM SHALL BE DESIGNED AND INSTALLED IN ACCORDANCE WITH SECTION R313 OR NFPA 13D.

SITE PLAN
Hamilton Residence
175 Elvies Way Folsom CA 95630

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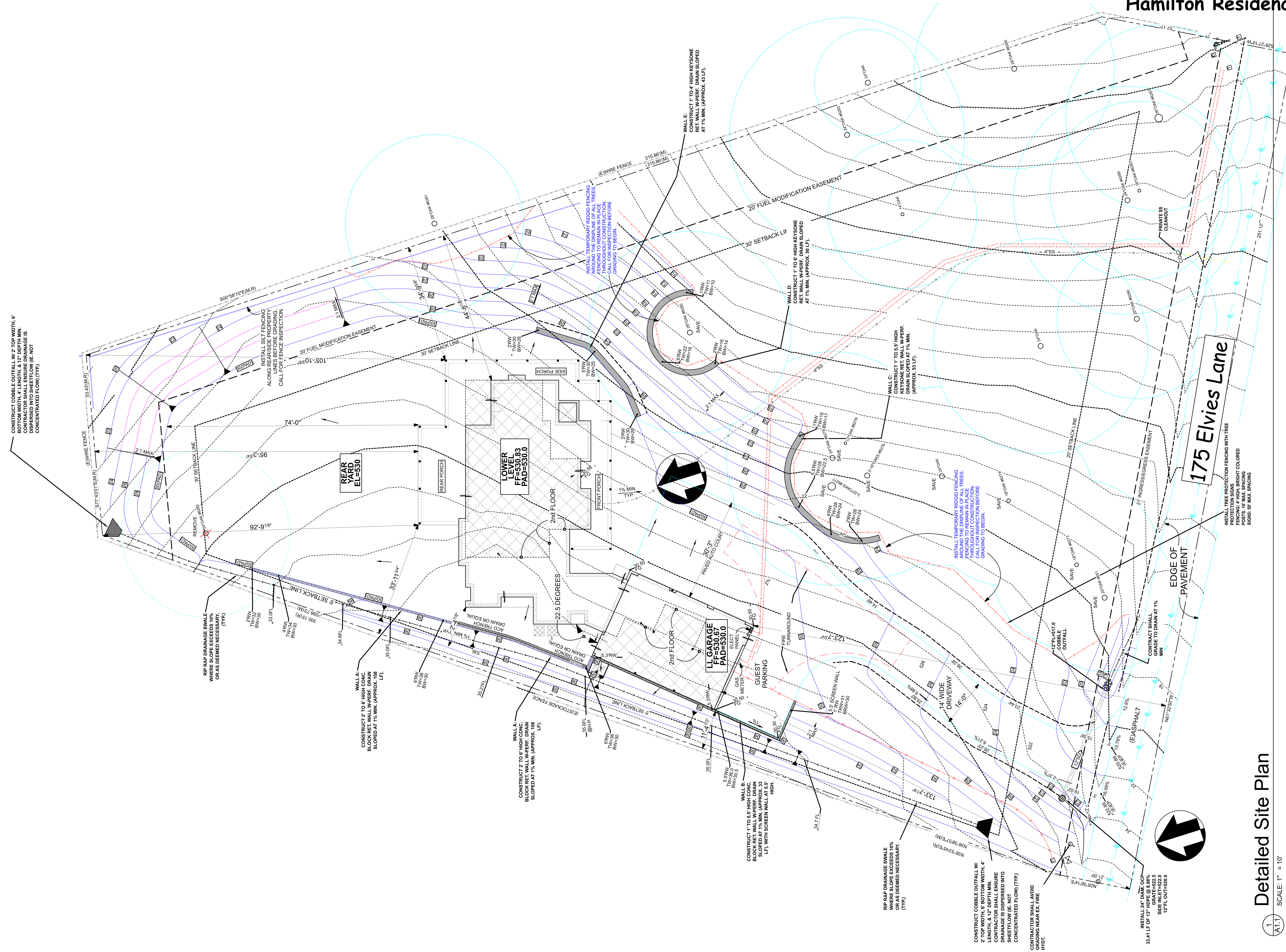
info@milestonestudio.com

JOB #	#21.05.3
SCALE	AS NOTED

10-8-21 REV ENG SET
3-14-22 PC SET

SHEET A1

Hamilton Residence



Detailed Site Plan

SCALE: 1" = 10'

1 / A1.1

JOB #	#21.05.3
SCALE	N/A

DATE
5-28-21 3d Model Set
7-7-21 Bank Set
7-16-21 ENG SET
3-14-22 PC SET

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Hamilton Residence
175 Elvies Way Folsom CA 95630
DETAILED PLAN

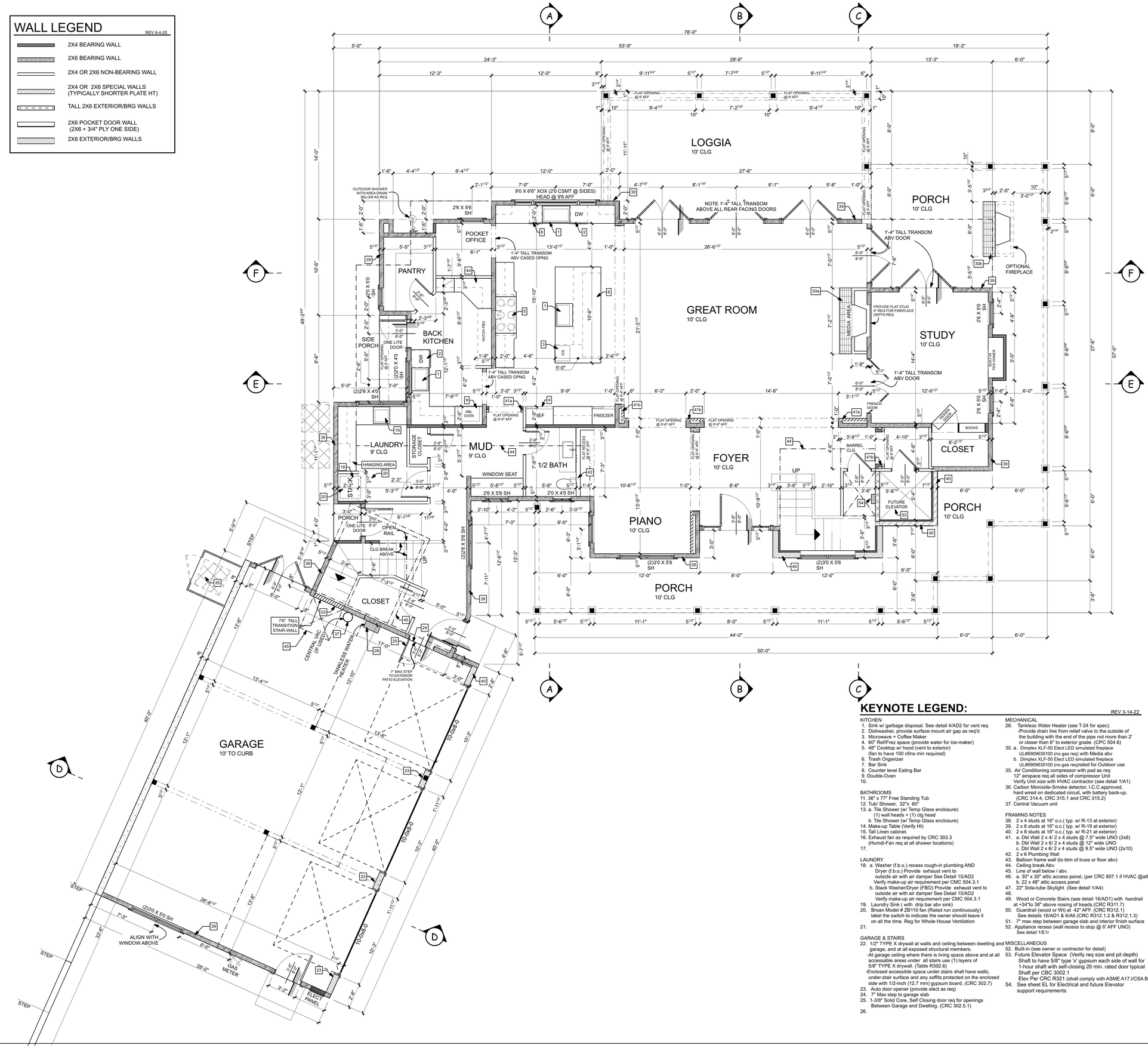
SHEET
A1.1

Hamilton Residence

WALL LEGEND

REV 6-4-20

- 2X4 BEARING WALL
- 2X6 BEARING WALL
- 2X4 OR 2X6 NON-BEARING WALL
- 2X4 OR 2X6 SPECIAL WALLS (TYPICALLY SHORTER PLATE HT)
- TALL 2X6 EXTERIOR/BRG WALLS
- 2X6 POCKET DOOR WALL (2X6 + 3/4" PLY ONE SIDE)
- 2X8 EXTERIOR/BRG WALLS



KEYNOTE LEGEND:

REV 3-14-22

KITCHEN
1. Sink w/ garbage disposal. See detail 4/AD2 for vent req
2. Dishwasher, provide surface mount air gap as req'd.
3. Microwave + Coffee Maker
4. 60" Refr/Frez space (provide water for ice-maker)
5. 48" Cooktop w/ hood (vent to exterior) (fan to have 100 cfms min required)
6. Trash Organizer
7. Bar Sink
8. Counter level Eating Bar
9. Double-Oven
10.

BATHROOMS
11. 36" x 77" Free Standing Tub
12. Tub/ Shower, 32"x 60"
13. a. Tile Shower (w/ Temp Glass enclosure) (1) wall heads + (1) clg head
    b. Tile Shower (w/ Temp Glass enclosure)
14. Make-up Table (Verify Ht)
15. Tall Linen cabinet.
16. Exhaust fan as required by CRC 303.3 (Humdi-Fan req at all shower locations)
17.

LAUNDRY
18. a. Washer (f.b.o.) recess rough-in plumbing AND Dryer (f.b.o.) Provide exhaust vent to outside air with air damper See Detail 15/AD2 Verify make-up air requirement per CMC 504.3.1
    b. Stack Washer/Dryer (FBO) Provide exhaust vent to outside air with air damper See Detail 15/AD2 Verify make-up air requirement per CMC 504.3.1
19. Laundry Sink (with drip bar abv sink)
20. Broan Model # ZB110 fan (Rated run continuously) label the switch to indicate the owner should leave it on all the time. Reg for Whole House Ventilation
21.

GARAGE & STAIRS
22. 1/2" TYPE X drywall at walls and ceiling between dwelling and garage, and at all exposed structural members.
    -At garage ceiling where there is living space above and at all accessable areas under all stairs use (1) layers of 5/8" TYPE X drywall. (Table R302.6)
    -Enclosed accessible space under stairs shall have walls, under-stair surface and any soffits protected on the enclosed side with 1/2-inch (12.7 mm) gypsum board. (CRC 302.7)
23. Auto door opener (provide elect as req)
24. 7" Max step to garage slab
25. 1-3/8" Solid Core, Self Closing door req for openings Between Garage and Dwelling. (CRC 302.5.1)
26.

MECHANICAL
28. Tankless Water Heater (see T-24 for spec).
    -Provide drain line from relief valve to the outside of the building with the end of the pipe not more than 2' or closer than 6" to exterior grade. (CPC 504.6)
30. a. Dimplex XLF-50 Elect LED simulated fireplace UL#6909630100 (no gas req) with Media abv
    b. Dimplex XLF-50 Elect LED simulated fireplace UL#6909630100 (no gas req)rated for Outdoor use
35. Air Conditioning compressor with pad as req 12" airspace req all sides of compressor Unit Verify Unit size with HVAC contractor (see detail 1/A1)
36. Carbon Monixide-Smoke detector, I.C.C.approved, hard wired on dedicated circuit, with battery back-up. (CRC 314.4, CRC 315.1 and CRC 315.2)
37. Central Vacuum unit

FRAMING NOTES
38. 2 x 4 studs at 16" o.c.(typ. w/ R-13 at exterior)
39. 2 x 6 studs at 16" o.c.(typ. w/ R-19 at exterior)
40. 2 x 8 studs at 16" o.c.(typ. w/ R-21 at exterior)
41. a. Dbl Wall 2 x 4/ 2 x 4 studs @ 7.5" wide UNO (2x8)
    b. Dbl Wall 2 x 6/ 2 x 4 studs @ 12" wide UNO
    c. Dbl Wall 2 x 6/ 2 x 4 studs @ 9.5" wide UNO (2x10)
42. 2 x 6 Plumbing Wall
43. Balloon frame wall (to btm of truss or floor abv)
44. Ceiling break Abv.
45. Line of wall below / abv.
46. a. 30" x 30" attic access panel. (per CRC 807.1 if HVAC @attic)
    b. 22 x 48" attic access panel
47. 22" Sola-tube Skylight (See detail 1/A4)
48.
49. Wood or Concrete Stairs (see detail 16/AD1) with handrail at +34"to 38" above nosing of treads.(CRC R311.7)
50. Guardrail (wood or WI) at 42" AFF. (CRC R312.1) See details 16/AD1 & 6/A6 (CRC R312.1.2 & R312.1.3)
51. 7" max step between garage slab and interior finish surface
52. Appliance recess (wall recess to stop @ 6' AFF UNO) See detail 1/E1r

MISCELLANEOUS
52. Built-in (see owner or contractor for detail)
53. Future Elevator Space (Verify req size and pit depth) Shaft to have 5/8" type 'X' gypsum each side of wall for 1-hour shaft with self-closing 20 min. rated door typical Shaft per CBC 3002.1 Elev Per CRC R321 (shall comply with ASME A17.1/CSA B44)
54. See sheet EL for Electrical and future Elevator support requirements

GENERAL PLAN REQ:

REV 3-4-20

1. See sheet SP for specifications and sheets AD1 & AD2 for General Notes and Architectural Details
2. Garage to house seperation requirements
   -1/2" type 'X' gypsum is required at all separation walls, and ceilings, at the garage, installed on garage side of wall. CRC R302.6 , Openings per Section CRC 302.5.1.
   -Where there is living space above garage area use 5/8" Type "X" gypsum wallboard installed on garage side of wall (at all garage walls, ceiling and at all supporting structural elements) CRC 302.6.
   -Enclosed accessible space under stairs shall have walls, under-stair surface and any soffits protected on the enclosed side with 1/2-inch (12.7 mm) gypsum board. (CRC 302.7)
   -Attach Gypsum per CRC Table R702.3.5 as referenced in CRC R302.6.
   - All penetrations or openings around ducts, vents, pipes, cable, wires, etc. shall be sealed with an approved fireblocking material to resist passage of flames and products of combustion. CRC R302.11, Item 4.
   - All penetrations (such as vacuum cleaner) through the firewall will be of metal from the machine through the firewall and sealed around the pipe penetration. CRC 302.5.2
3. All interior bathrooms and laundry rooms to have exaust fans vented to the outside with a fan capable of 50 CFM intermittent or 25 CFM continious. (CRC R303.3 and CMC 403.7)
4. Carbon Monixide-Smoke detectors are required at all sleeping room, stairwells and hallways (CRC 314.4, CRC 315.1 and CRC 315.2) (See additional req on sheet A1 note #12)
5. All shower and tub-shower combinations shall be provided with individual control valves of the pressure balance or the thermostatic mixing valve type. The water temperature maximum is a setting of 120 deg. F (or 49 deg. C) per CPC 418
6. Shower thresholds shall be of sufficient width to accommodate a minimum 22" wide door and shall open so as to maintain a 22" unobstructed opening for egress.
7. Gas fireplace appliances shall be a direct-vent sealed-combustion type. (CG 4.503.1) Factory-built fireplaces shall be listed and labeled and shall be installed in accordance with the conditions of the listing. Factory-built fireplaces shall be tested in accordance with UL 127. (CRC 1004.1)
   -Decorative shrouds shall not be installed at the termination of factory-built chimneys except where such shrouds are listed and labeled for use with the specific factory-built chimney system and are installed in accordance with manufacturer's installation instructions. (CRC R1005.2, CBC 2113.9)
   - Provide spark arresters for wood burning units at chimney termination per mfg req. (CRC 1003.9.2)
   -Listing and installation manual shall be available for review by the Field Inspector upon request per CRC R1005.1.
8. At Water Heater and Washer locations above the first floor provide overflow pan with a drain to the exterior. CMC310.2 Provide bracing per CPC 507.4. (see detail 2 sheet AD2)
9. Water resistant gypsum backing board shall not be used where there will be direct exposure to water, or in areas subject to continuous high humidity. CRC Section R702.3.8.1 Bathtub and shower floors and walls above bathtubs with installed shower heads and in shower compartments shall be finished with a nonabsorbent surface. Such wall surfaces shall extend to a height of not less than 6 feet (1829 mm) above the floor. (CRC R307.2)
10. Exterior landing at the exterior door shall be a maximum 7-3/4" below the top of the threshold, provided the door does not swing over the landing or floor per CRC R311.3.1. All exterior door landings to be 36" min deep x door width, 2% max slope
11. Handrails and guards. Handrails and guards shall be designed to resist a load of 50 plf in accordance with Section 4.5.1of ASCE 7-. (R1607.8.1) All handrail and guard rail system shall be designed to resist a single concentrated load of 200 lbs applied in any direction at any point on the handrail or top rail to produce the maximum load effect on the element being considered and to transfer this load through the supports to the structure. (ASCE 7-10, Section 4.5.1)

REV 12-22-20

WINDOW NOTES:
9' STUDS HEAD @ 7'-0"
10' STUDS HEAD @ 8'-0"
12' STUDS HEAD @ 10'-6"

DOOR NOTES:
10' STUDS HEAD @ 8'-0"
FRAME EXTERIOR DOORS 2" HIGHER TYPICAL (USE 4X HDR ABV WHEN TRANSOM USED UNO)

HEADER INSULATION REQUIRED AT ALL EXTERIOR LOCATIONS (R-5 TYPICAL)
SEE DETAIL 1/AD1
TYPICAL FLASHING SEE 17/AD2

1st FLOOR	2,392.23 sq ft
GARAGE	1,108.67 sq ft
PORCH AREA:	
WRAP+LOGGIA	1,243.36 sq ft
BACK KIT.	28.50 sq ft
MUD RM.	12.00 sq ft

N

MAIN FLOOR PLAN

10 5 3 2 1

JOB #	#21.05.3
SCALE	1/4"= 1'-0"

DATE
10-8-21 REV ENG SET
3-14-22 PC SET

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Office (916) 939-9501
Cell (916) 749-6049

Hamilton Residence
175 Elvies Way Folsom CA 95630
MAIN FLOOR PLAN

SHEET
A2

Hamilton Residence

WALL LEGEND

REV 6-4-20

- 2X4 BEARING WALL
- 2X6 BEARING WALL
- 2X4 OR 2X6 NON-BEARING WALL
- 2X4 OR 2X6 SPECIAL WALLS (TYPICALLY SHORTER PLATE HT)
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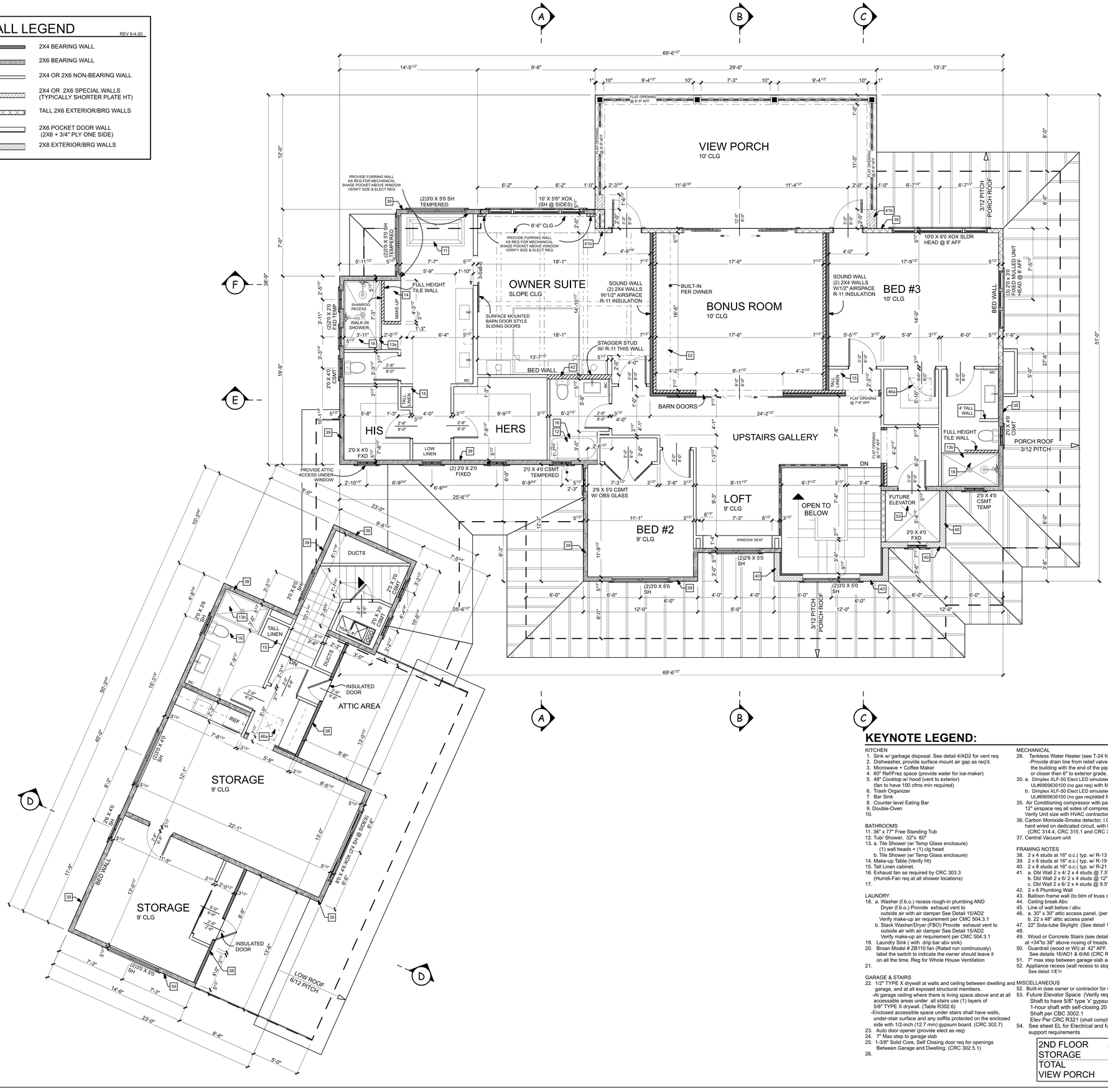

GENERAL PLAN REQ:

REV 3-4-20

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   - -Decorative shrouds shall not be installed at the termination of factory-built chimneys except where such shrouds are listed and labeled for use with the specific factory-built chimney system and are installed in accordance with manufacturer's installation instructions. (CRC R1005.2, CBC 2113.9)
   - - Provide spark arresters for wood burning units at chimney termination per mfg req. (CRC 1003.9.2)
   - -Listing and installation manual shall be available for review by the Field Inspector upon request per CRC R1005.1.
8. At Water Heater and Washer locations above the first floor provide overflow pan with a drain to the exterior. CMC310.2 Provide bracing per CPC 507.4. (see detail 2 sheet AD2)
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REV 12-22-20

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10' STUDS HEAD @ 8'-0"
12' STUDS HEAD @ 10'-6"

DOOR NOTES:
10' STUDS HEAD @ 8'-0"
FRAME EXTERIOR DOORS 2" HIGHER TYPICAL (USE 4X HDR ABV WHEN TRANSOM USED UNO)

HEADER INSULATION REQUIRED AT ALL EXTERIOR LOCATIONS (R-5 TYPICAL)
SEE DETAIL 1/AD1
TYPICAL FLASHING SEE 17/AD2

KEYNOTE LEGEND:

REV 3-14-22

KITCHEN
1. Sink w/ garbage disposal. See detail 4/AD2 for vent req
2. Dishwasher, provide surface mount air gap as req'd.
3. Microwave + Coffee Maker
4. 60" Ref/Frez space (provide water for ice-maker)
5. 48" Cooktop w/ hood (vent to exterior) (fan to have 100 cfms min required)
6. Trash Organizer
7. Bar Sink
8. Counter level Eating Bar
9. Double-Oven
10.

BATHROOMS
11. 36" x 77" Free Standing Tub
12. Tub/ Shower, 32"x 60"
13. a. Tile Shower (w/ Temp Glass enclosure) (1) wall heads + (1) clg head
    b. Tile Shower (w/ Temp Glass enclosure)
14. Make-up Table (Verify Ht)
15. Tall Linen cabinet.
16. Exhaust fan as required by CRC 303.3 (Humdi-Fan req at all shower locations)
17.

LAUNDRY
18. a. Washer (f.b.o.) recess rough-in plumbing AND Dryer (f.b.o.) Provide exhaust vent to outside air with air damper See Detail 15/AD2 Verify make-up air requirement per CMC 504.3.1
    b. Stack Washer/Dryer (FBO) Provide exhaust vent to outside air with air damper See Detail 15/AD2 Verify make-up air requirement per CMC 504.3.1
19. Laundry Sink (with drip bar abv sink)
20. Broan Model # ZB110 fan (Rated run continuously) label the switch to indicate the owner should leave it on all the time. Reg for Whole House Ventilation
21.

GARAGE & STAIRS
22. 1/2" TYPE X drywall at walls and ceiling between dwelling and garage, and at all exposed structural members.
    -At garage ceiling where there is living space above and at all accessable areas under all stairs use (1) layers of 5/8" TYPE X drywall. (Table R302.6)
    -Enclosed accessible space under stairs shall have walls, under-stair surface and any soffits protected on the enclosed side with 1/2-inch (12.7 mm) gypsum board. (CRC 302.7)
23. Auto door opener (provide elect as req)
24. 7" Max step to garage slab
25. 1-3/8" Solid Core, Self Closing door req for openings Between Garage and Dwelling. (CRC 302.5.1)
26.

MECHANICAL
28. Tankless Water Heater (see T-24 for spec).
    -Provide drain line from relief valve to the outside of the building with the end of the pipe not more than 2' or closer than 6" to exterior grade. (CPC 504.6)
30. a. Dimplex XLF-50 Elect LED simulated fireplace UL#6909630100 (no gas req) with Media abv
    b. Dimplex XLF-50 Elect LED simulated fireplace UL#6909630100 (no gas req)rated for Outdoor use
35. Air Conditioning compressor with pad as req 12" airspace req all sides of compressor Unit Verify Unit size with HVAC contractor (see detail 1/A1)
36. Carbon Monixide-Smoke detector, I.C.C.approved, hard wired on dedicated circuit, with battery back-up. (CRC 314.4, CRC 315.1 and CRC 315.2)
37. Central Vacuum unit

FRAMING NOTES
38. 2 x 4 studs at 16" o.c.(typ. w/ R-13 at exterior)
39. 2 x 6 studs at 16" o.c.(typ. w/ R-19 at exterior)
40. 2 x 8 studs at 16" o.c.(typ. w/ R-21 at exterior)
41. a. Dbl Wall 2 x 4/ 2 x 4 studs @ 7.5" wide UNO (2x8)
    b. Dbl Wall 2 x 6/ 2 x 4 studs @ 12" wide UNO
    c. Dbl Wall 2 x 6/ 2 x 4 studs @ 9.5" wide UNO (2x10)
42. 2 x 6 Plumbing Wall
43. Balloon frame wall (to btm of truss or floor abv)
44. Ceiling break Abv.
45. Line of wall below / abv.
46. a. 30" x 30" attic access panel, (per CRC 807.1 if HVAC @attic)
    b. 22 x 48" attic access panel
47. 22" Sola-tube Skylight (See detail 1/A4)
48.
49. Wood or Concrete Stairs (see detail 16/AD1) with handrail at +34"to 38" above nosing of treads.(CRC R311.7)
50. Guardrail (wood or Wi) at 42" AFF. (CRC R312.1) See details 16/AD1 & 6/A6 (CRC R312.1.2 & R312.1.3)
51. 7" max step between garage slab and interior finish surface
52. Appliance recess (wall recess to stop @ 6' AFF UNO) See detail 1/E1r

MISCELLANEOUS
52. Built-in (see owner or contractor for detail)
53. Future Elevator Space (Verify req size and pit depth) Shaft to have 5/8" type 'X' gypsum each side of wall for 1-hour shaft with self-closing 20 min. rated door typical Shaft per CBC 3002.1 Elev Per CRC R321 (shall comply with ASME A17.1/CSA B44)
54. See sheet EL for Electrical and future Elevator support requirements

2ND FLOOR	2,001.98 sq ft
STORAGE	664.16 sq ft
TOTAL	2113.27 sq ft
VIEW PORCH	413.13 sq ft

N

UPPER FLOOR PLAN

10 5 3 2 1

JOB #	#21.05.3
SCALE	1/4"= 1'-0"

DATE
10-8-21 REV ENG SET
3-14-22 PC SET

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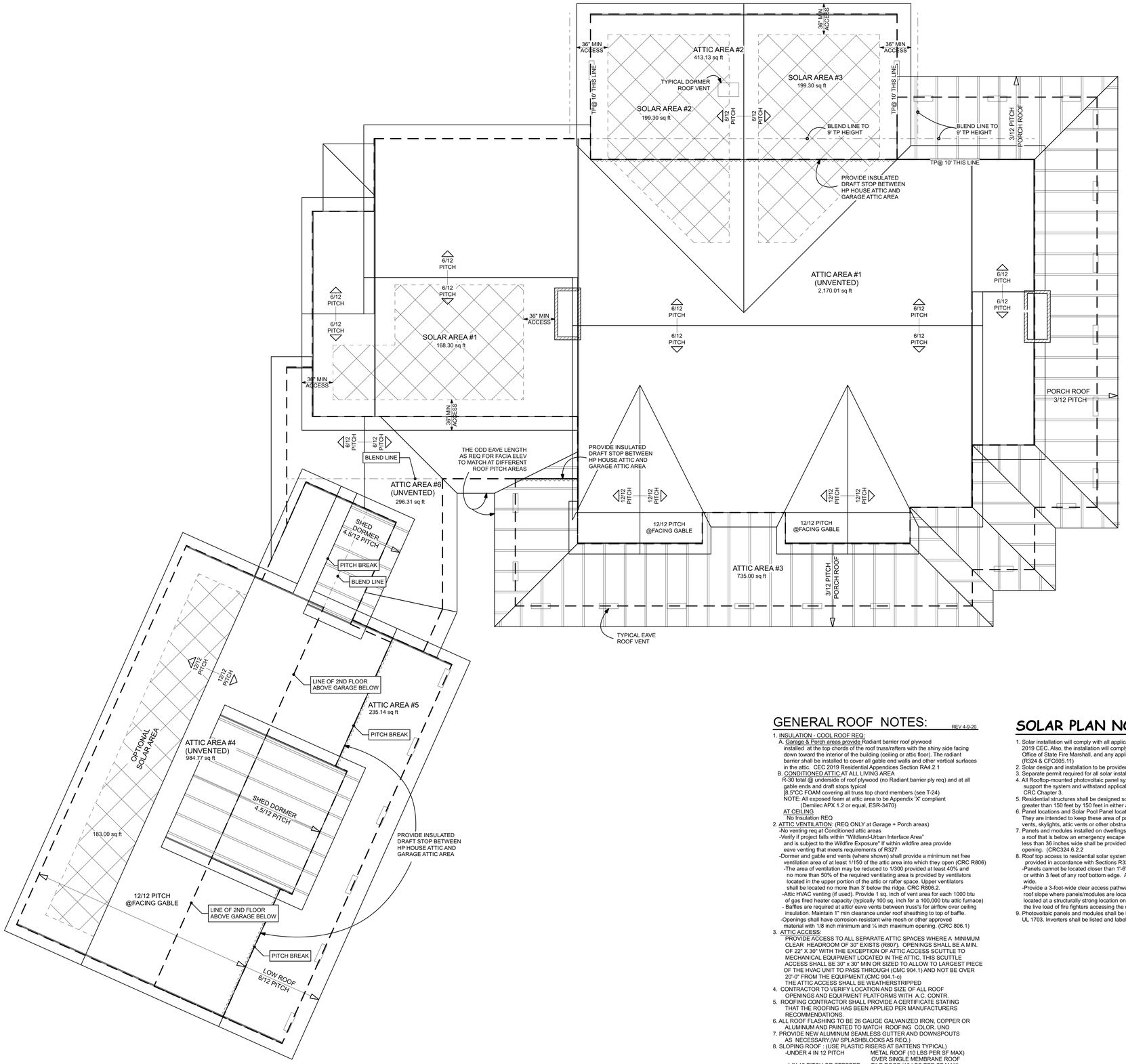
UPPER FLOOR PLAN

SHEET
A3

Hamilton Residence

ROOF NOTES:
-12/12 AT FACING GABLES
-6/12 AT MAIN ROOF
-3/12 AT LOWER SHED AREAS
-4.5/12 AT UPPER SHED AREAS
-FLAT TILE TYPICAL



SOLAR AREA REQ
REV 3-11-22

REQ Minimum 3.6kWdc
180 Azimuth / 22deg Array /
4.8 Tilt / 96% Inverter Eff.

ATTIC VENTING REQ
REV 3-11-22

AREA #1 MAIN ROOF UPPER ATTIC AREA
2170 sf Conditioned Attic (no venting req)

AREA #2 REAR PORCH ATTIC AREA
200 sf
1/300 = 0.7 sf req
0.35 sf REQ LOW + 0.35 sf HIGH
(ie ½ as dormer vents high and ½ as eave vents)
PROVIDE:
(1) 24" DORMER VENTS @ 7 SF EACH = 2.1 SF
(2) 6" X 22" UNDEREAVE VENTS @ 0.3 SF =0.6 SF

AREA #3 LOWER PORCH ATTIC AREA
735 sf
1/150 = 4.9 sf req
ALL VENTING LOW
PROVIDE:
(17) 6" X 22" UNDEREAVE VENTS @ 0.3 SF =5.1 SF

AREA #4 GARAGE UPPER ATTIC AREA
984 sf Conditioned Attic (no venting req)

AREA #5 GARAGE LOWER ATTIC AREA
235 sf
1/150 = 1.55 sf req
ALL VENTING LOW
PROVIDE:
(6) 6" X 22" UNDEREAVE VENTS @ 0.3 SF =1.8 SF

AREA #6 MUD ROOM ATTIC AREA
296 sf Conditioned Attic (no venting req)

NOTE ADD ADDITIONAL VENTING AS REQ FOR HVAC EQIPTMENT INSTALLED IN ATTIC (1SQ-INCH PER 1000 BTU)

ATTIC INSULATION REQ
REV 8-6-20

CONDITIONED ATTIC AT ALL LIVING AREA
W/ R-22 TOTAL @UNDERSIDE OF ROOF PLY
AND AT GABLE ENDS & DRAFT STOPS TYPICAL
[8.5"CC FOAM COVERING ALL TRUSS MEMBERS] (SEE T-24)
NO INSULATION REQ @ CEILING
NOTE: ALL EXPOSE FOAM AT ATTIC AREA TO BE APENDIX "X" COMPLIANT (DEMILEC APX 1.2 OR EQUAL, ESR-3470)

GARAGE + PORCH ATTIC AREA
PROVIDE VENTING AND RADIANT BARRIER PLY

ATTIC INSULATION REQ
REV 5-17-19

HIGH PERFORMANCE ATTIC
AT ROOF DECK:
-INSTALL R-19 BATT INSULATION AT UNDERSIDE OF ROOF PLY AND AT ALL GABLE ENDS
AT CEILING ABOVE LIVING:
-INSTALL R-38 BATT OR BLOWN-IN

GENERAL ROOF NOTES:
REV 4-9-20

1. INSULATION - COOL ROOF REQ:
   A. Garage & Porch areas provide Radiant barrier roof plywood installed at the top chords of the roof truss/rafters with the shiny side facing down toward the interior of the building (ceiling or attic floor). The radiant barrier shall be installed to cover all gable end walls and other vertical surfaces in the attic. CEC 2019 Residential Appendices Section RA4.2.1
   B. CONDITIONED ATTIC AT ALL LIVING AREA
   R-30 total @ underside of roof plywood (no Radiant barrier ply req) and at all gable ends and draft stops typical
   [8.5"CC FOAM covering all truss top chord members (see T-24)
   NOTE: All exposed foam at attic area to be Appendix 'X' compliant (Demilec APX 1.2 or equal, ESR-3470)
   AT CEILING
   No Insulation REQ
2. ATTIC VENTILATION: (REQ ONLY at Garage + Porch areas)
   -No venting req at Conditioned attic areas
   -Verify if project falls within "Wildland-Urban Interface Area" and is subject to the Wildfire Exposure" If within wildfire area provide eave venting that meets requirements of R327
   -Dormer and gable end vents (where shown) shall provide a minimum net free ventilation area of at least 1/150 of the attic area into which they open (CRC R806)
   -The area of ventilation may be reduced to 1/300 provided at least 40% and no more than 50% of the required ventilating area is provided by ventilators located in the upper portion of the attic or rafter space. Upper ventilators shall be located no more than 3' below the ridge. CRC R806.2.
   -Attic HVAC venting (if used). Provide 1 sq. inch of vent area for each 1000 btu of gas fired heater capacity (typically 100 sq. inch for a 100,000 btu attic furnace)
   - Baffles are required at attic/ eave vents between truss's for airflow over ceiling insulation. Maintain 1" min clearance under roof sheathing to top of baffle.
   -Openings shall have corrosion-resistant wire mesh or other approved material with 1/8 inch minimum and ¼ inch maximum opening. (CRC 806.1)
3. ATTIC ACCESS:
   PROVIDE ACCESS TO ALL SEPARATE ATTIC SPACES WHERE A MINIMUM CLEAR HEADROOM OF 30" EXISTS (R807). OPENINGS SHALL BE A MIN. OF 22" X 30" WITH THE EXCEPTION OF ATTIC ACCESS SCUTTLE TO MECHANICAL EQUIPMENT LOCATED IN THE ATTIC. THIS SCUTTLE ACCESS SHALL BE 30" x 30" MIN OR SIZED TO ALLOW TO LARGEST PIECE OF THE HVAC UNIT TO PASS THROUGH (CMC 904.1) AND NOT BE OVER 20'-0" FROM THE EQUIPMENT.(CMC 904.1-c)
   THE ATTIC ACCESS SHALL BE WEATHERSTRIPPED
4. CONTRACTOR TO VERIFY LOCATION AND SIZE OF ALL ROOF OPENINGS AND EQUIPMENT PLATFORMS WITH A.C. CONTR.
5. ROOFING CONTRACTOR SHALL PROVIDE A CERTIFICATE STATING THAT THE ROOFING HAS BEEN APPLIED PER MANUFACTURERS RECOMMENDATIONS.
6. ALL ROOF FLASHING TO BE 26 GAUGE GALVANIZED IRON, COPPER OR ALUMINUM AND PAINTED TO MATCH ROOFING COLOR. UNO
7. PROVIDE NEW ALUMINUM SEAMLESS GUTTER AND DOWNSPOUTS AS NECESSARY.(W/ SPLASHBLOCKS AS REQ.)
8. SLOPING ROOF (USE PLASTIC RISERS AT BATTENS TYPICAL)
   -UNDER 4 IN 12 PITCH — METAL ROOF (10 LBS PER SF MAX) OVER SINGLE MEMBRANE ROOF
   -4 IN 12 PITCH OR STEEPER — TILE ROOF (10 LBS PER SF MAX) OVER (2) LAYERS #30 FELT

SOLAR PLAN NOTES
REV 4-9-20

1. Solar installation will comply with all applicable sections of the 2019 CRC and 2019 CEC. Also, the installation will comply with the regulations set forth by the Office of State Fire Marshall, and any applicable local codes/ordinances. (R324 & CFC605.11)
2. Solar design and installation to be provided by others.
3. Separate permit required for all solar installation
4. All Rooftop-mounted photovoltaic panel systems shall be designed to structurally support the system and withstand applicable gravity loads in accordance with CRC Chapter 3.
5. Residential structures shall be designed so that each photovoltaic array is no greater than 150 feet by 150 feet in either axis. (CFC 605.11.3)
6. Panel locations and Solar Pool Panel locations are shownfor reference only. They are intended to keep these area of potential solar locations to be free of vents, skylights, attic vents or other obstructions. (R326.6.1 & CFC 605.11.3)
7. Panels and modules installed on dwellings shall not be placed on the portion of a roof that is below an emergency escape and rescue opening. A pathway not less than 36 inches wide shall be provided to the emergency escape and rescue opening. (CRC324.6.2.2
8. Roof top access to residential solar systems for residential dwellings shall be provided in accordance with Sections R326.1.1 and CFC 605.11.3
   -Panels cannot be located closer than 1'-6" to any Hip , Valley or Ridge locations or within 3 feet of any roof bottom edge. All access pathways to be a min of 36" wide.
   -Provide a 3-foot-wide clear access pathway from the eave to the ridge on each roof slope where panels/modules are located. The access pathway shall be located at a structurally strong location on the building capable of supporting the live load of fire fighters accessing the roof. (R324.6.1 & CFC 605.11.3.2.1)
9. Photovoltaic panels and modules shall be listed and labeled in accordance with UL 1703. Inverters shall be listed and labeled in accordance with UL 1741.

Chapter R337-Wildfire Exposure:
REV 9-30-20

Notes below based upon 2019 CRC Chapter R337, "Materials and Construction for Exterior Wildfire Exposure"

1. This project to meet the requirements of NFPA 13D & CRC Chapter 337.
2. Roofing: shall meet the requirements of Sections R337.5.1 and R902.
   -Shall be rated fire retardant type A.
   -Any Skylights or tube skylights (Sola-Tube) to have a class A fire rating
   -Where the roof profile allows a space between the roof covering and roof decking, the spaces shall be constructed to prevent the intrusion of flames and embers, be firestopped with approved materials or have one layer of minimum 72 pound (32.4 kg) mineral-surfaced nonperforated cap sheet complying with ASTM D 3909 installed over the combustible decking.
   -Valley flashing shall not be less than 26 gage GI installed over not less than one layer of minimum 72-pound (32.4 kg) mineral-surfaced nonperforated cap sheet complying with ASTM D 3909, at least 36-inch-wide running the full length of the valley. (R337.5.3)
3. Roof Eaves: shall meet the requirements of R337.6
   -Eaves shall be enclosed or be constructed of non-combustible / "Heavy Timber" (R337.2 & R337.7.4) designed to resist building ignition from the intrusion of burning embers and flame through the ventilation opening (337.6.2)
   -Eave Venting only allowed per R337.6.2. Dimensions of the vent openings shall be a minimum of 1/16 inch (1.6 mm) and shall not exceed 1/8 inch. The materials used shall be noncombustible and corrosion resistant.
4. Gutters and downspouts shall be non-combustible and shall have a means to prevent the accumulation of leaves and debris. (R337.5.4)
5. Exterior Porch Ceilings & Floor Projections: per R337.6 & R337.7 Wall covering shall be non-combustible (ie Stucco or similar) or be installed over 5/8" type "X" gypsum
6. Exterior wall: R337.7 Wall covering shall be non-combustible (ie Stucco or similar) or be installed over 5/8" type "X" gypsum
7. Gable end & Underfloor Venting: R337.6.2 Dimensions of the vent openings shall be a minimum of 1/16 inch (1.6 mm) and shall not exceed 1/8 inch (3.2 mm). The materials used shall be noncombustible and corrosion resistant.
8. Exterior Windows & Doors: R337.8
   -Glazing shall have the exterior sheet of dual glazed windows/doors tempered. (R337.8.2.1)
   -Exterior Door assemblies shall meet the R337.8.3 req.
9. Exterior Decking and Stair surfaces: R337.9
   -Any deck or walking surface within 10 feet of the building must have a class B flame spread, or be constructed of Noncombustible material, or be igniton-resistant material to meet requirement of R337.9.3
10. Landscaping / Site Requirements:
    -Readly combustible vegetation within 30 feet of the structure to be removed and maintained.
    -Landscaping plants within 30 feet of the structure shall be fire resistant.

N

ROOF PLAN

10 5 3 2 1

JOB #	#21.05.3
SCALE	1/4"= 1'-0"

DATE
10-8-21 REV ENG SET
3-14-22 PC SET

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ROOF PLAN

SHEET
A4

Hamilton Residence

JOB #	#21.05.3
SCALE	1/4"= 1'-0"

DATE
5-28-21 3d Model Set
7-7-21 BANK SET
7-16-21 ENG SET
10-8-21 REV ENG SET
3-14-22 PC SET

Elevation Materials

REV 12-13-21

SEE SHEET AD1 AND AD2 FOR TYPICAL EXTERIOR DETAILS AND SHEET SP FOR SPECIFICATIONS

A. ROOF : (USE CONCEALED RIDGE VENT WITH COLOR TO MATCH ROOF)

-15 YEAR DIMENSIONAL COMP TILE (10 lbs/SF MAX) over 30# felt (VENT COLOR TO MATCH ROOF)

-STANDING SEAM METAL ROOF
VERSA-SPAN BY TAYLOR METAL
15" WIDE (10 lbs/SF MAX) WITH CONT RIDGE VENT
@ 3/12 PITCH OR ABOVE USE 30# felt
@ 3/12 PITCH OR BELOW USE SINGLE PLY MEMBRANE

EXTERIOR FLAT SOFFITS: STUCCO

B. EXTERIOR WALL:
WALLS: 2 X 6 STUDS @ 16" OC (R-21 MIN.)
(ADD R-11 AT INT BEDROOM WALLS)

WINDOWS: VINYL (SEE TITLE 24 CF-1R FOR SPEC)
(SEE ELEVATIONS FOR DIVIDERS)
SEE DETAIL 5/A5 FOR TYPICAL TRIM SIZES

DOORS: STEEL OR FIBERGLASS
(ALL GLASS PANELS TO BE TEMPERED)
SEE DETAIL 5/A5 FOR TYPICAL TRIM SIZES
-NOTE: ALL DOORS 8' TALL UNO

GARAGE
DOOR: INSULATED SECTIONAL
(SEE OWNER FOR SPEC)

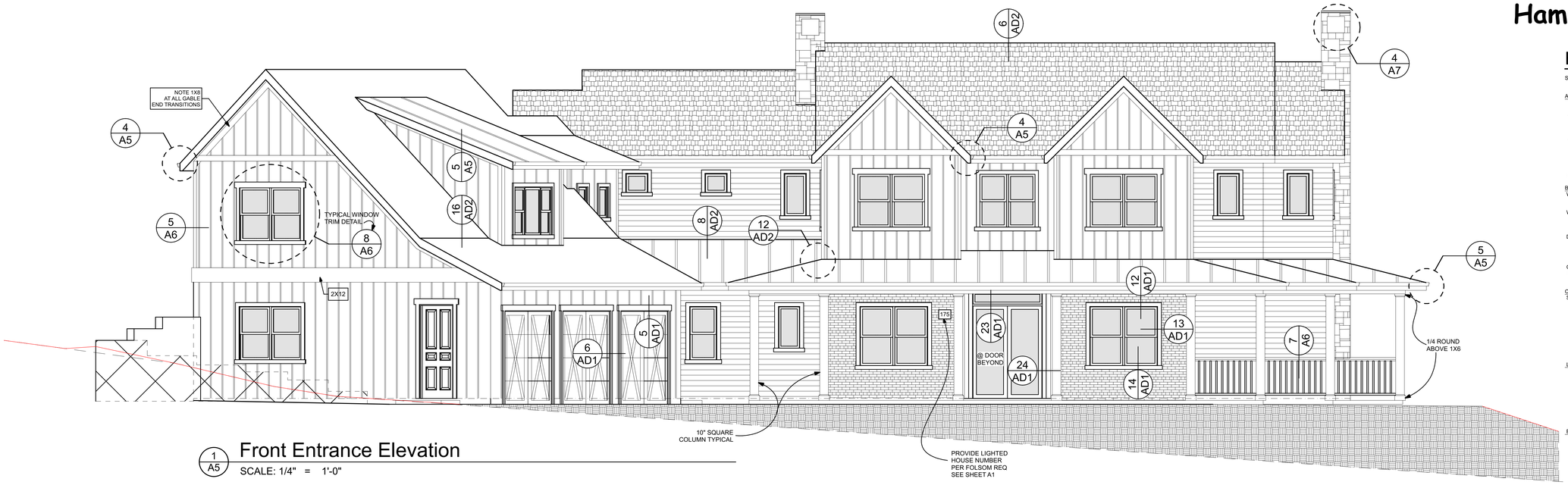
C. TRIM PACKAGE:
STUCCO : (SEE SHT SP FOR SPEC)
DISTRESSED STEEL TROWEL FINISH
OMEGA DIAMOND WALL SYSTEM (ICC#ESR-1194)
DISTRESSED STEEL TROWEL FINISH
(2) COAT STUCCO (1/2" THICK) (CRC 703.9)
1" FOAM WITH WIRE MESH OVER
TYVEK (OR 2 LAYERS GRADE 'D' PAPER)
26 ga. GI WEEP SCREED AT FDN PLATE LINE
(R703.6.2.1 & R703.12.2)
(6" MIN TO FINISHED GRADE OR 2" AT SLAB AREA)

LAP SIDING :
"Hardie Plank" FIBER CEMENT LAP SIDING (Smooth)
(ICC#ESR-2290, DSA PA-019) W/ Z-BAR AS REQ
SEE MFG SPEC FOR ADDITIONAL INFO
https://www.jameshardie.com/Products/HardiePlank-Lap-Siding
VERIFY COLOR WITH OWNER
OVER #30 FELT OR EQUAL
SEE INSTALLATION MANUAL
http://www.hardieinstallation.com
CORNER TRIM 1/2" X 3"/ 1/2" X 3" Hardi TRIM TYPICAL

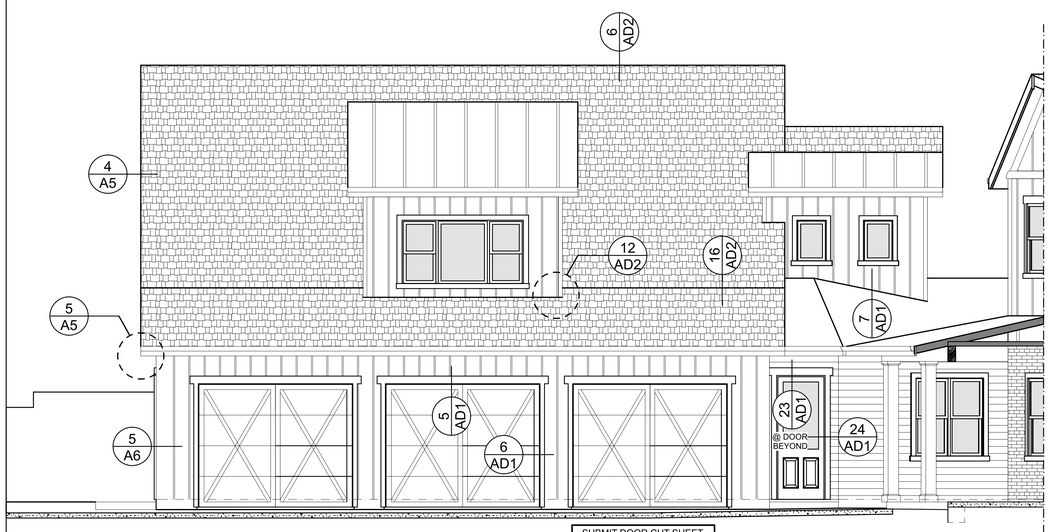
BOARD & BATT SIDING :
"Hardie Panel" FIBER CEMENT PANEL SIDING (Cedarmill)
(ICC#ESR-1844) 4X10 SHEETS W/ Z-BAR AS REQ
SEE MFG SPEC FOR ADDITIONAL INFO
http://www.jameshardiepros.com/Products/HardiePanel-Vertical-Siding
VERIFY COLOR WITH OWNER
OVER #30 FELT OR EQUAL
SEE INSTALLATION MANUAL
http://www.jameshardiepros.com/getattachment/662104c-50f-4003-a3ca-f03ac07bd464/hardiepanel-single-family-hz5-us-en.pdf
BATTS 1/2" X 2" HARDIE TRIM @ 12" OC (SEE DETAIL 7/A5)
(NOTE:ALL BATTS FULL LENGTH WITH NO HORZ SEAMS)
CORNER TRIM 1/2" X 3"/ 1/2" X 3" HARDIE TRIM TYPICAL

STONE VENEER :
EL DORADO STONE (1" thick typical)
ATTACHMENT PER MFG SPEC (ASTM C482)

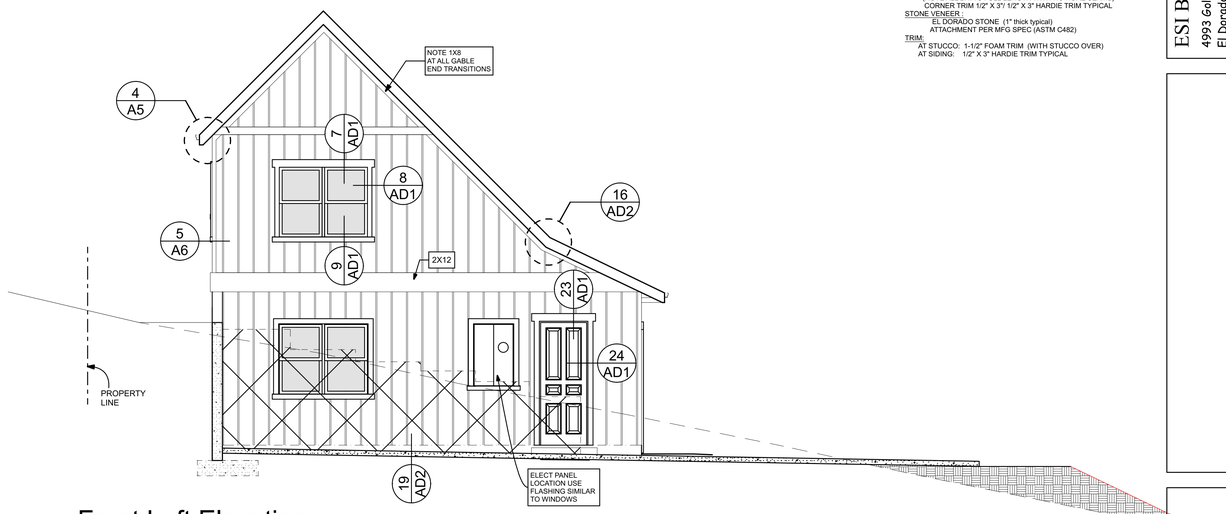
TRIM:
AT STUCCO: 1-1/2" FOAM TRIM (WITH STUCCO OVER)
AT SIDING: 1/2" X 3" HARDIE TRIM TYPICAL



1 A5 **Front Entrance Elevation**
SCALE: 1/4" = 1'-0"



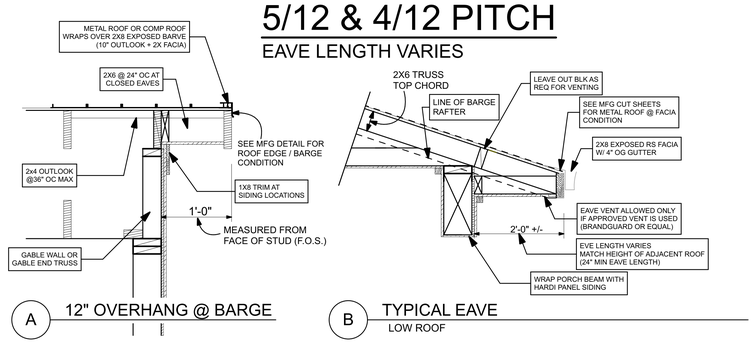
2 A5 **Garage Front Elevation**
SCALE: 1/4" = 1'-0"



3 A5 **Front Left Elevation**
SCALE: 1/4" = 1'-0"

5/12 & 4/12 PITCH

EAVE LENGTH VARIES



A 12" OVERHANG @ BARGE

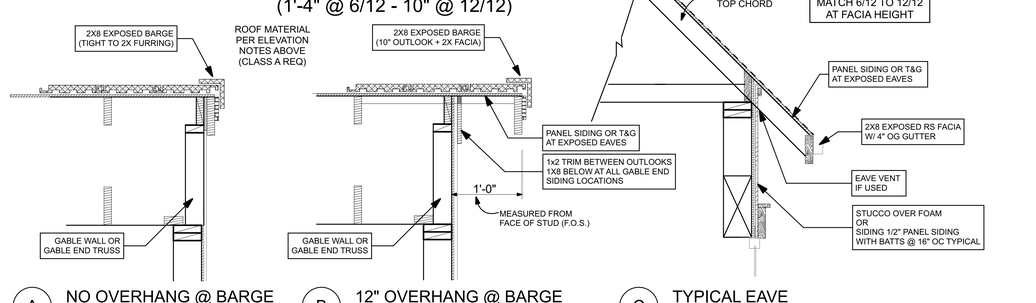
B TYPICAL EAVE
LOW ROOF

EAVE DETAIL (AT BOTH TAILS AND BARGE)

1"= 1'-0"
REV 3-25-17
5 A5

12/12 & 6/12 PITCH

(1'-4" @ 6/12 - 10" @ 12/12)



A NO OVERHANG @ BARGE

B 12" OVERHANG @ BARGE

C TYPICAL EAVE

TILE ROOF EAVE DETAIL

1"= 1'-0"
REV 10-19-20
4 A5

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ELEVATIONS

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ELEVATIONS
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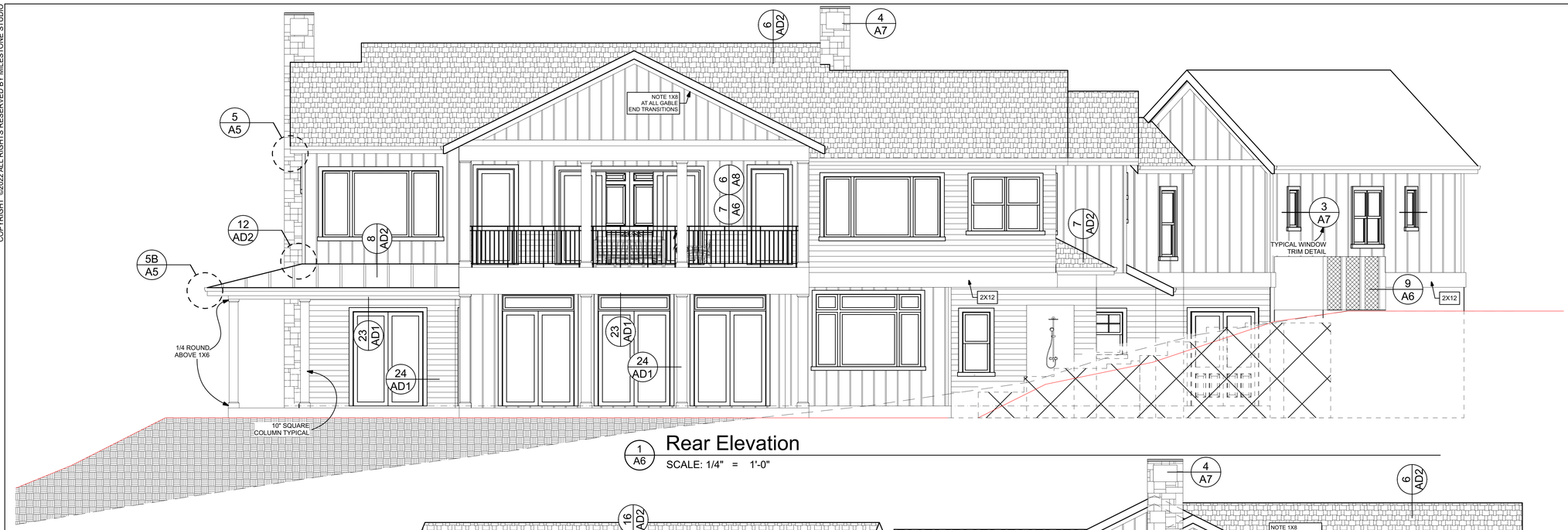
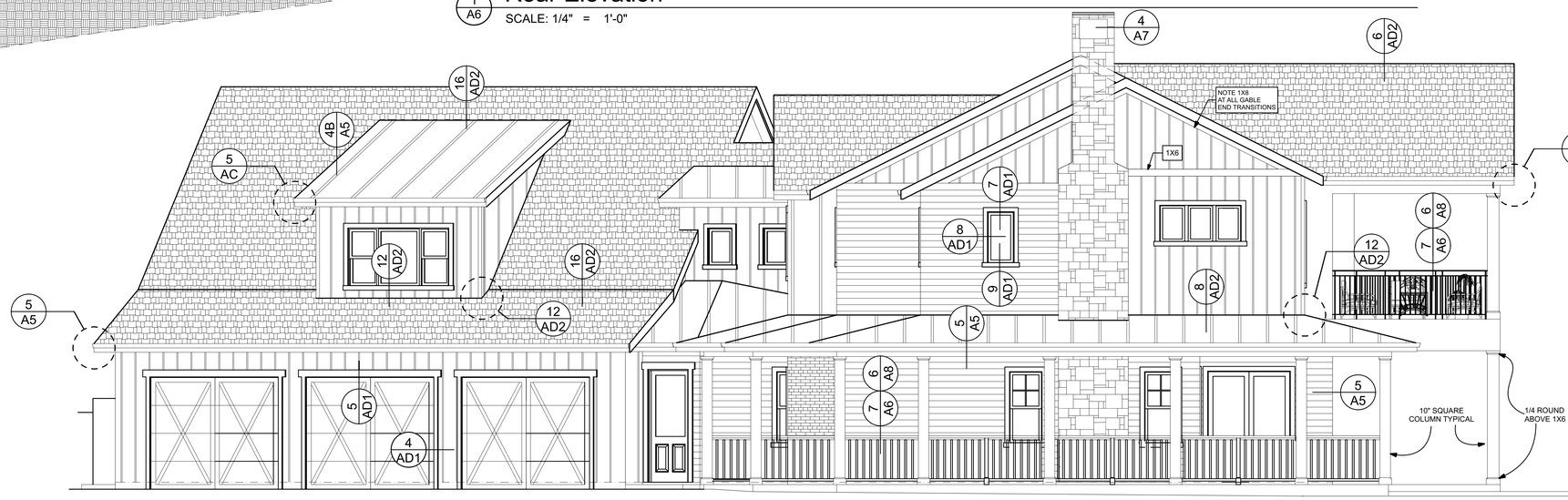
Hamilton Residence



1 A6 **Rear Elevation**
SCALE: 1/4" = 1'-0"



2 A6 **Right Elevation**
SCALE: 1/4" = 1'-0"

Elevation Materials

REV 12-13-21T

SEE SHEET AD1 AND AD2 FOR TYPICAL EXTERIOR DETAILS AND SHEET SP FOR SPECIFICATIONS

A. ROOF: (USE CONCEALED RIDGE VENT WITH COLOR TO MATCH ROOF)

-15 YEAR DIMENSIONAL COMP TILE (10 lbs/SF MAX) over 30# felt (VENT COLOR TO MATCH ROOF)

-STANDING SEAM METAL ROOF
VERSA-SPAN BY TAYLOR METAL
15" WIDE (10 lbs/SF MAX) WITH CONT RIDGE VENT
@ 3/12 PITCH OR ABOVE USE 30# felt
@ 3/12 PITCH OR BELOW USE SINGLE PLY MEMBRANE

EXTERIOR FLAT SOFFITS: STUCCO

B. EXTERIOR WALL:
WALLS: 2 X 6 STUDS @ 16" OC (R-21 MIN.) (ADD R-11 AT INT BEDROOM WALLS)

WINDOWS: VINYL (SEE TITLE 24 CF-1R FOR SPEC)
(SEE ELEVATIONS FOR DIVIDERS)
SEE DETAIL 5/A5 FOR TYPICAL TRIM SIZES

DOORS: STEEL OR FIBERGLASS
(ALL GLASS PANELS TO BE TEMPERED)
SEE DETAIL 5/A5 FOR TYPICAL TRIM SIZES
-NOTE: ALL DOORS 8' TALL UNO

GARAGE DOOR: INSULATED SECTIONAL
(SEE OWNER FOR SPEC)

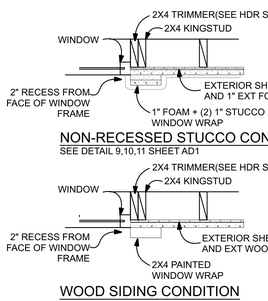
C. TRIM PACKAGE:
STUCCO: (SEE SHT SP FOR SPEC)
DISTRESSED STEEL TROWEL FINISH
OMEGA DIAMOND WALL SYSTEM (ICC#ESR-1194)
DISTRESSED STEEL TROWEL FINISH
(2) COAT STUCCO (1/2" THICK) (CRC 703.9)
1" FOAM WITH WIRE MESH OVER
TYVEK (OR 2 LAYERS GRADE 'D' PAPER)
26 ga. GI WEEP SCREED AT FDN PLATE LINE (R703.6.2.1 & R703.12.2)
(6" MIN TO FINISHED GRADE OR 2" AT SLAB AREA)

LAP SIDING:
"Hardie Plank" FIBER CEMENT LAP SIDING (Smooth) (ICC#ESR-2290, DSA PA-019) W/ Z-BAR AS REQ
SEE MFG SPEC FOR ADDITIONAL INFO
https://www.jameshardie.com/Products/HardiePlank-Lap-Siding
VERIFY COLOR WITH OWNER
OVER #30 FELT OR EQUAL
SEE INSTALLATION MANUAL
http://www.hardieinstallation.com
CORNER TRIM 1/2" X 3"/ 1/2" X 3" Hardi TRIM TYPICAL

BOARD & BATT SIDING:
"Hardie Panel" FIBER CEMENT PANEL SIDING (Cedarmill) (ICC#ESR-1844) 4X10 SHEETS W/ Z-BAR AS REQ
SEE MFG SPEC FOR ADDITIONAL INFO
http://www.jameshardiepros.com/Products/HardiePanel-Vertical-Siding
VERIFY COLOR WITH OWNER
OVER #30 FELT OR EQUAL
SEE INSTALLATION MANUAL
http://www.jameshardiepros.com/getattachment/66210c4c-50f-4003-a3ca-f03ac07bd464/hardiepanel-single-family-hz5-us-en.pdf
BATTS 1/2" X 2" HARDIE TRIM @ 12" OC (SEE DETAIL 7/A5)
(NOTE ALL BATTS FULL LENGTH WITH NO HORZ SEAMS)
CORNER TRIM 1/2" X 3"/ 1/2" X 3" HARDIE TRIM TYPICAL

STONE VENEER:
EL DORADO STONE (1" thick typical)
ATTACHMENT PER MFG SPEC (ASTM C482)

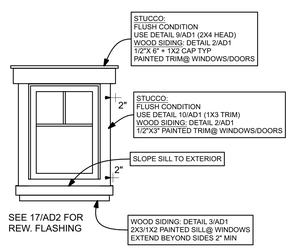
TRIM:
AT STUCCO: 1-1/2" FOAM TRIM (WITH STUCCO OVER)
AT SIDING: 1/2" X 3" HARDIE TRIM TYPICAL



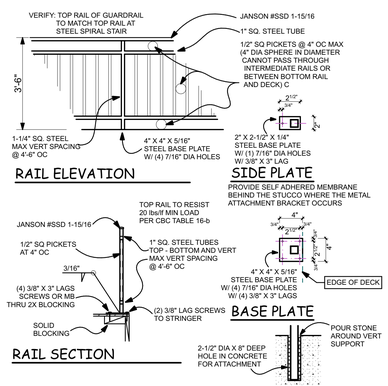
NON-RECESSED STUCCO CONDITION
SEE DETAIL 9,10,11 SHEET AD1

WOOD SIDING CONDITION
SEE DETAIL 1,2,3 SHEET AD1

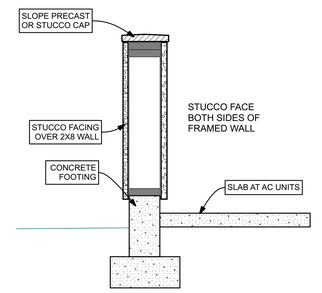
2" Window Recess 9 A6
TYPICAL ALL WINDOWS REV 5-6-10



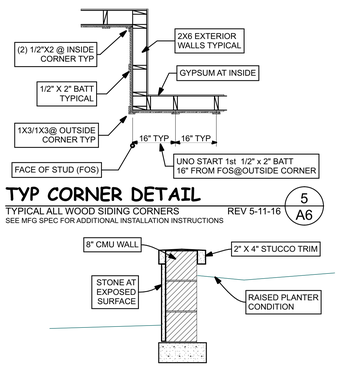
DOOR & WINDOW TRIM DETAIL 8 A6
1/2" = 1'-0" REV 12-13-21



W.I. RAILING BASE @ CONC 7 A6
ALL RAILINGS TO MEET THE REQUIREMENTS CRC 312.2 & 312.3 REV 9-29-16



AC ENCLOSURE WALL 9 A6
SIMILAR AT ALL EXTERIOR WALLS REV 1-28-16



TYP CORNER DETAIL 5 A6
TYPICAL ALL WOOD SIDING CORNERS REV 5-11-16
SEE MFG SPEC FOR ADDITIONAL INSTALLATION INSTRUCTIONS

CMU PLANTER WALL 4 A6
SIMILAR AT ALL PLANTER WALLS

ELEVATIONS
10 5 3 2 1

JOB #	#21.05.3
SCALE	1/4"= 1'-0"

DATE
5-28-21 3d Model Set
7-7-21 BANK SET
7-16-21 ENG SET
10-8-21 REV ENG SET
3-14-22 PC SET

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4993 Golden Foothill Pkwy, Suite 9
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Cell (916) 749-6049

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Cell (530) 320-0900
Web Email
www.milestonestudio.com
info@milestonestudio.com
Milestone STUDIO
MIKE OSTERMAN

Hamilton Residence
175 Elvies Way Folsom CA 95630
ELEVATIONS

SHEET
A6

Hamilton Residence

JOB #	#21.05.3
SCALE	1/4"= 1'-0"

DATE
5-28-21 3d Model Set
7-7-21 BANK SET
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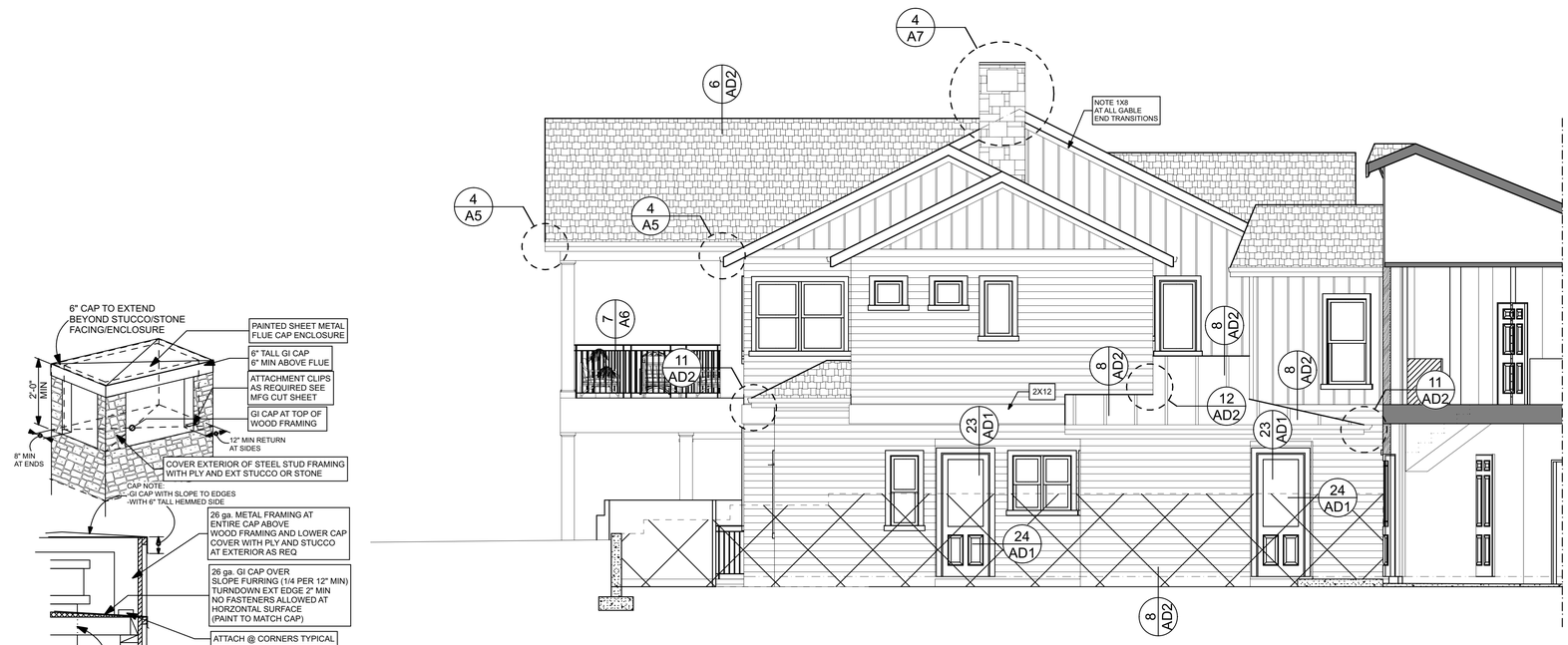
1/A7 Left Elevation-1
SCALE: 1/4" = 1'-0"



2/A7 Left Elevation-2
SCALE: 1/4" = 1'-0"

FIREPLACE CAP DETAIL

1/2" = 1'-0" REV 6-29-18 4/A7

Elevation Materials

REV 12-13-21

SEE SHEET AD1 AND AD2 FOR TYPICAL EXTERIOR DETAILS AND SHEET SP FOR SPECIFICATIONS

A. ROOF : (USE CONCEALED RIDGE VENT WITH COLOR TO MATCH ROOF)

-15 YEAR DIMENSIONAL COMP TILE (10 lbs/SF MAX) over 30# felt (VENT COLOR TO MATCH ROOF)

-STANDING SEAM METAL ROOF
VERSA-SPAN BY TAYLOR METAL
15" WIDE (10 lbs/SF MAX) WITH CONT RIDGE VENT @ 3/12 PITCH OR ABOVE USE 30# felt
@ 3/12 PITCH OR BELOW USE SINGLE PLY MEMBRANE

EXTERIOR FLAT SOFFITS: STUCCO

B. EXTERIOR WALL
WALLS: 2 X 6 STUDS @ 16" OC (R-21 MIN.)
-(ADD R-11 AT INT BEDROOM WALLS)

WINDOWS: VINYL (SEE TITLE 24 CF-1R FOR SPEC)
(SEE ELEVATIONS FOR DIVIDERS)
SEE DETAIL 5/A5 FOR TYPICAL TRIM SIZES

DOORS: STEEL OR FIBERGLASS
(ALL GLASS PANELS TO BE TEMPERED)
SEE DETAIL 5/A5 FOR TYPICAL TRIM SIZES
-NOTE: ALL DOORS 8' TALL UNO

GARAGE
DOOR: INSULATED SECTIONAL
(SEE OWNER FOR SPEC)

C. TRIM PACKAGE:
STUCCO : (SEE SHT SP FOR SPEC)
DISTRESSED STEEL TROWEL FINISH
OMEGA DIAMOND WALL SYSTEM (ICCRESR-1194)
DISTRESSED STEEL TROWEL FINISH
(2) COAT STUCCO (1/2" THICK) (CRC 703.9)
1" FOAM WITH WIRE MESH OVER
TYVEK (OR 2 LAYERS GRADE 'D' PAPER)
26 ga. GI WEEP SCREED AT FDN PLATE LINE (R703.6.2.1 & R703.12.2)
(6" MIN TO FINISHED GRADE OR 2" AT SLAB AREA)

LAP SIDING :
"Hardie Plank" FIBER CEMENT LAP SIDING (Smooth)
(ICCRESR-2290, DSA PA-019) W/ Z-BAR AS REQ
SEE MFG SPEC FOR ADDITIONAL INFO
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CORNER TRIM 1/2" X 3\" 1/2" X 3" Hardi TRIM TYPICAL

BOARD & BATT SIDING
"Hardie Panel" FIBER CEMENT PANEL SIDING (Cedarmill)
(ICCRESR-1844) 4X10 SHEETS W/ Z-BAR AS REQ
SEE MFG SPEC FOR ADDITIONAL INFO
http://www.jameshardiepros.com/Products/HardiePanel-Vertical-Siding
VERIFY COLOR WITH OWNER
OVER #30 FELT OR EQUAL
SEE INSTALLATION MANUAL
http://www.jameshardiepros.com/getattachment/66210c4c-50f4-4003-a3ca-f33ac07b5464/hardiepanel-single-family-hz5-us-en.pdf
BATTS 1/2" X 2" HARDIE TRIM @ 12" OC (SEE DETAIL 7/A5)
(NOTE: ALL BATTS FULL LENGTH WITH NO HORZ SEAMS)
CORNER TRIM 1/2" X 3\" 1/2" X 3" HARDIE TRIM TYPICAL

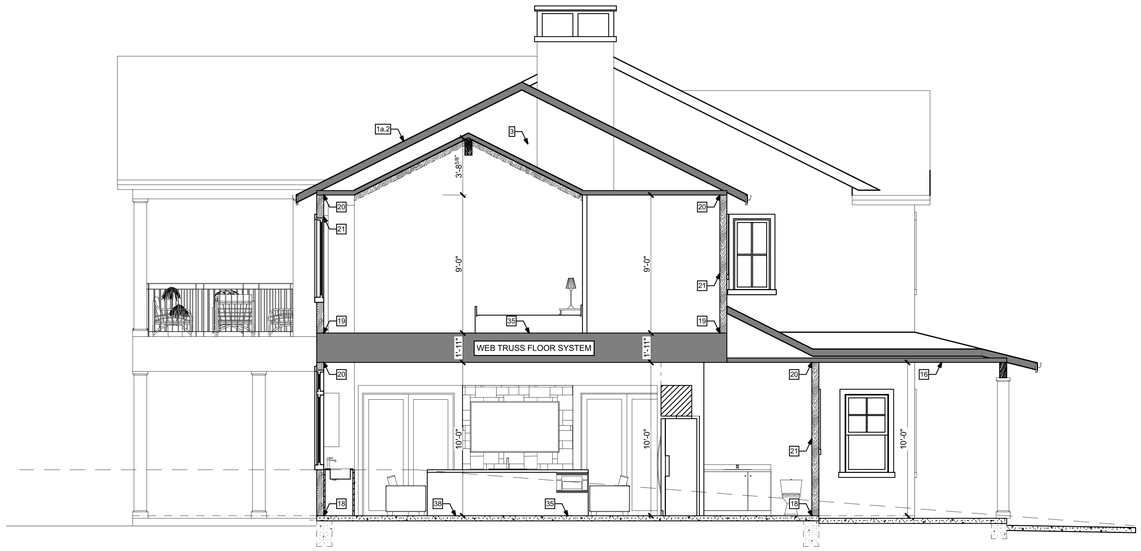
STONE VENEER :
EL DORADO STONE (1" thick typical)
ATTACHMENT PER MFG SPEC (ASTM C482)

TRIM:
AT STUCCO: 1-1/2" FOAM TRIM (WITH STUCCO OVER)
AT SIDING: 1/2" X 3" HARDIE TRIM TYPICAL

Hamilton Residence
175 Elvies Way Folsom CA 95630
ELEVATIONS

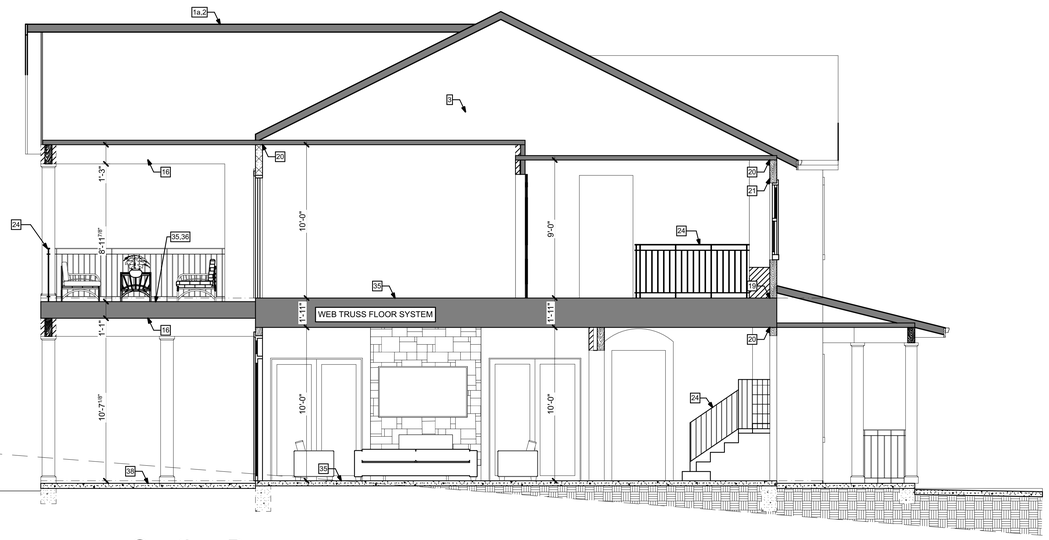
SHEET
A7

ELEVATIONS
10 5 3 2 1



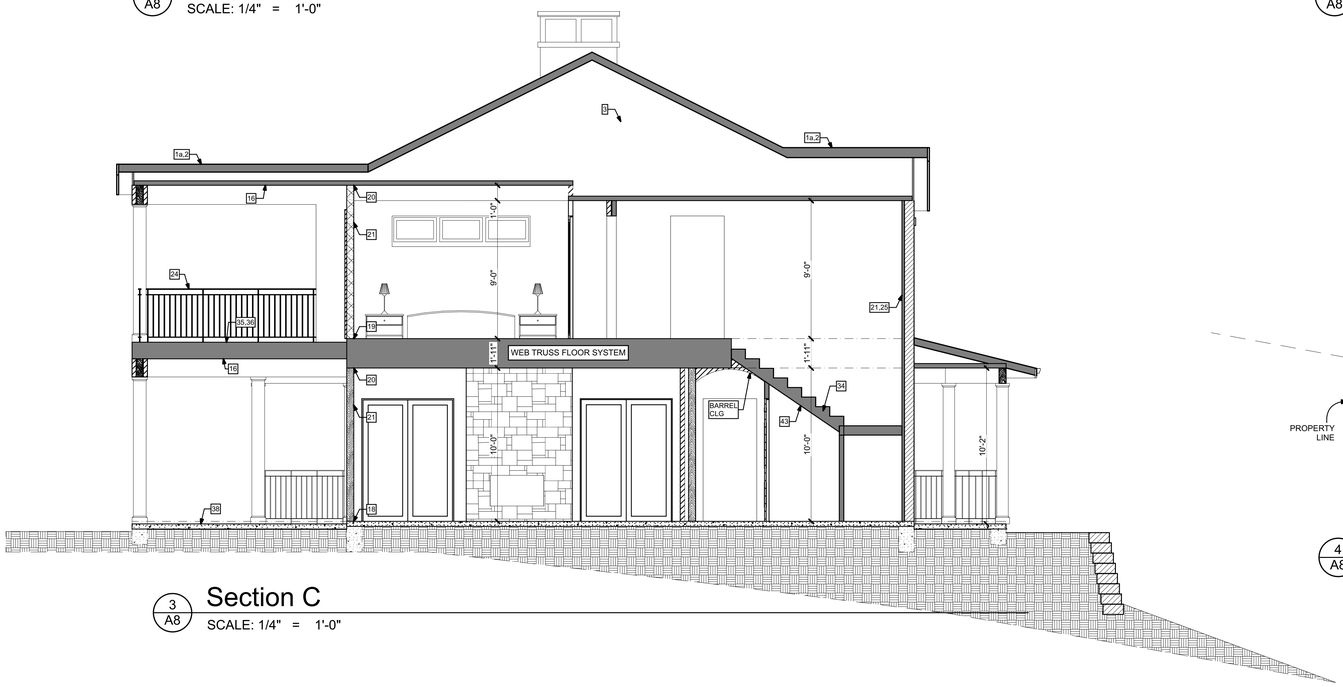
1 A8 **Section A**

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



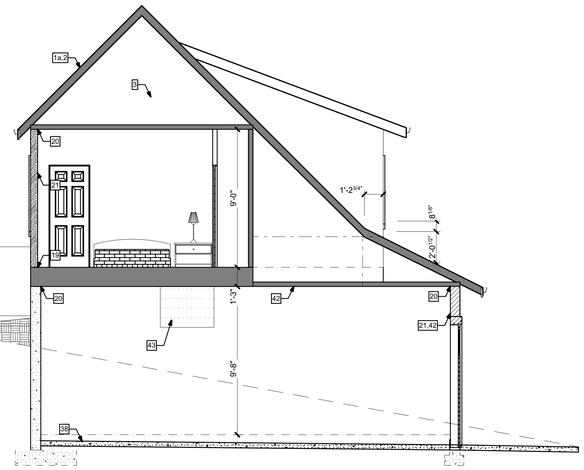
2 A8 **Section B**

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



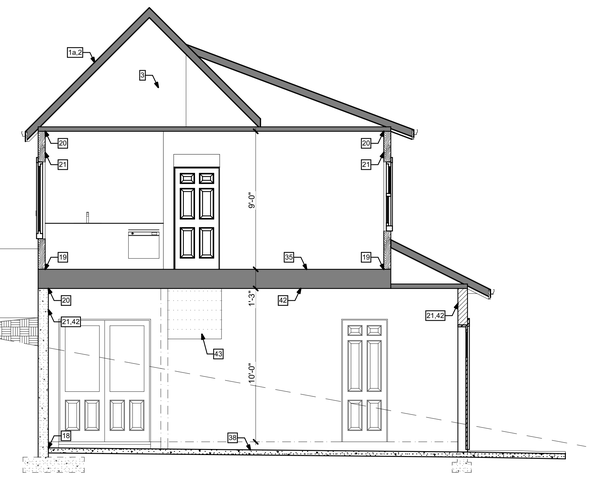
3 A8 **Section C**

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



4 A8 **Section D**

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



4 A8 **Section D1**

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

SECTION KEYNOTES:

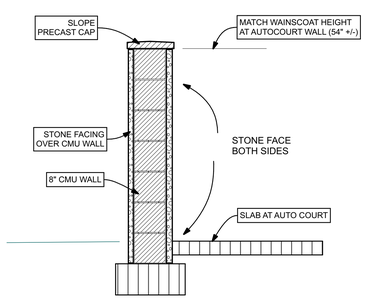
REV 12-13-21

ROOF
1. Roofing: Class A required (Per CBC table 15-B-1 & 15-D-1)
   A. Comp Roofing Material
   B. Standing Seam Metal Roof over 30# felt
      Waterproof Membrane Note:
      -at 4/12 and above use #30 felt minimum
      -at lower slope us single membrane material or
      (2) layers of #30 felt minimum
2. Roof Sheathing, Refer To Framing Plan.
3. Designed Wood Roof Trusses At 24" O.C.
4. Girder Truss, See Truss Drawings For Exact Location.
5. 2x Roof Rafters, Refer To Framing Plans.
6. 2x Ceiling Joist, Refer To Framing Plans
7. 2x Ceiling Furring At 16"O.C.
8. Ridge Board/Beam, Refer To Framing Plans..
9. 2x Purlin & Struts, Refer To Framing Plans.
10. 2x4 Cripple / Gable Studs At 16" O.C.
11. Potshelf, 1/2" GYPBoard Over 3/8" Plywood.
12. G.I. Flashing (Roof To Wall) See sht AD2 details
13. Barge Board
14. Eve Fascia Gutter. See Eave detail for req.
15. Skylight.
16. Exterior Soffit (See Elevation)
17.

WALLS
18. 2x P.T.D.F. Sill Plate (on conc typ)
19. 2x Sole Plate.
20. Double 2x Top Plate.
21. 2X6 Studs @ 16" o.c. (with ply and R-19 insulation at ext.)
22. 2x6 Plumbing Wall.
23. 2x4 Studs @ 16" O.C. (with ply and R-13 insulation at ext.)
24. 42" High Railing/Wall.(2x6 min)
25. Balloon Framed Wall, See Framing Plans
26. Header Refer To Framing Plans

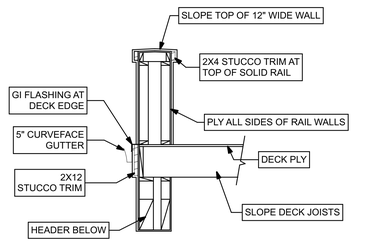
FLOORS
27. Designed Floor Trusses, Refer To Framing Plan.
28. 2x Floor Joists, Refer To Framing Plans.
29. 2x Blocking, Refer To Framing Plans.
30. Slope all ext decks min of 1/4" per 12" for all weather exposed walking surfaces. (CRC R311.3)
31. Flush Beam, Refer To Framing Plans.
32. Dropped Beam, Refer To Framing Plans.
33. Exposed Beam, Refer To Framing Plans.
34. 1.75" X 14" LVL Stair Stringer @ 16" oc typical. with 1" PLY treads UNO, see details sheet AD1
35. Floor Sheathing, Refer To Framing Plan.
36. Elastometric Decking Over Plywood Subfloor, 3/4"min. Installed To Manufacturers Specs.
37. 2x "Nail Spaced"Decking.
38. Concrete Floor Slab.

MISC.
39. F.A.U. Located In Attic (Per CMC 904.10) See detail 3/AD2
40. 5/8" Gypsum Wall Board Typical.
41. Fiberbatt Insulation-See Sht. 1 Notes and Title 24.
42. -1/2" type 'X' gypsum is required at all separation walls, and ceilings, at the garage, installed on garage side of wall. CRC R302.6 .Openings per Section CRC 302.5.1.
    -Where there is living space above garage area use 5/8" Type "X" gypsum wallboard installed on garage side of wall (at all garage walls, ceiling and at all supporting structural elements) CRC 302.6.
    -Enclosed accessible space under stairs shall have walls, under-stair surface and any soffits protected on the enclosed side with 1/2-inch (12.7 mm) gypsum board. (CRC 302.7)
    -Attach Gypsum per CRC Table R702.3.5 as referenced in CRC R302.6.
43. At all accessible areas under stairs use 5/8" Type "X" gypsum wallboard. CRC 302.7.
44. Exterior Finish, Refer To Elevations



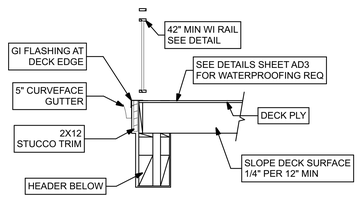
AUTO COURT CMU WALL — 7 A8

SIMILAR AT ALL EXTERIOR WALLS REV 3/18/11



DECK EDGE DETAIL — 6 A8

TYPICAL ALL DECKS 5-11-06



JOB #	#21.05.3
SCALE	1/4"= 1'-0"

DATE
5-28-21 3d Model Set
7-7-21 BANK SET
7-16-21 ENG SET
10-8-21 REV ENG SET
3-14-22 PC SET

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Hamilton Residence
175 Elvies Way Folsom CA 95630
SECTIONS

SHEET
A8

SECTIONS
10 5 3 2 1

Hamilton Residence

JOB #	#21.05.3
SCALE	1/4"= 1'-0"

DATE
5-28-21 3d Model Set
7-7-21 BANK SET
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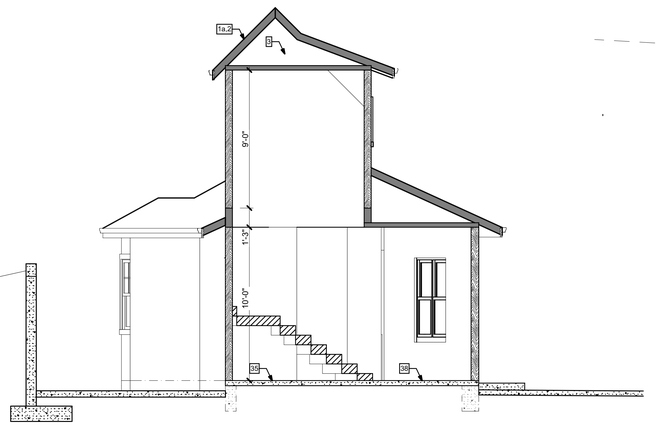

1/A9 Section D2
SCALE: 1/4" = 1'-0"

2/A9 Section E
SCALE: 1/4" = 1'-0"

SECTION KEYNOTES:

REV 12-13-21

ROOF
1. Roofing: Class A required (Per CBC table 15-B-1 & 15-D-1)
   A. Comp Roofing Material
   B. Standing Seam Metal Roof over 30# felt
      Waterproof Membrane Note:
      -at 4/12 and above use #30 felt minimum
      -at lower slope us single membrane material or
      (2) layers of #30 felt minimum
2. Roof Sheathing, Refer To Framing Plan.
3. Designed Wood Roof Trusses At 24" O.C.
4. Girder Truss, See Truss Drawings For Exact Location.
5. 2x Roof Rafters, Refer To Framing Plans.
6. 2x Ceiling Joist, Refer To Framing Plans
7. 2x Ceiling Furring At 16"O.C.
8. Ridge Board/Beam, Refer To Framing Plans..
9. 2x Purlin & Struts, Refer To Framing Plans.
10. 2x4 Cripple / Gable Studs At 16" O.C.
11. Potshelf, 1/2" GYP.Board Over 3/8" Plywood.
12. G.I. Flashing (Roof To Wall) See sht AD2 details
13. Barge Board
14. Eve Fascia Gutter. See Eave detail for req.
15. Skylight.
16. Exterior Soffit (See Elevation)
17.

WALLS
18. 2x P.T.D.F. Sill Plate.(on conc typ)
19. 2x Sole Plate.
20. Double 2x Top Plate.
21. 2X6 Studs @ 16" o.c. (with ply and R-19 insulation at ext.)
22. 2x6 Plumbing Wall.
23. 2x4 Studs @ 16" O.C. (with ply and R-13 insulation at ext.)
24. 42" High Railing/Wall.(2x6 min)
25. Balloon Framed Wall, See Framing Plans
26. Header Refer To Framing Plans

FLOORS
27. Designed Floor Trusses, Refer To Framing Plan.
28. 2x Floor Joists, Refer To Framing Plans.
29. 2x Blocking, Refer To Framing Plans.
30. Slope all ext.decks min of 1/4" per 12" for all
    Weather exposed walking surfaces. (CRC R311.3)
31. Flush Beam, Refer To Framing Plans.
32. Dropped Beam, Refer To Framing Plans.
33. Exposed Beam, Refer To Framing Plans.
34. 1.75" X 14" LVL Stair Stringer @ 16" oc typical.
    with 1" PLY treads UNO, see details sheet AD1
35. Floor Sheathing, Refer To Framing Plan.
36. Elastometric Decking Over Plywood Subfloor, 3/4"min.
    Installed To Manufacturers Specs.
37. 2x "Nail Spaced"Decking.
38. Concrete Floor Slab.

MISC.
39. F.A.U. Located In Attic (Per CMC 904.10) See detail 3/AD2
40. 5/8" Gypsum Wall Board Typical.
41. Fiberbatt Insulation-See Sht. 1 Notes and Title 24.
42. -1/2" type 'X' gypsum is required at all separation walls,
    and ceilings, at the garage, installed on garage side of wall.
    CRC R302.6 ,Openings per Section CRC 302.5.1.
    -Where there is living space above garage area use 5/8" Type "X"
    gypsum wallboard installed on garage side of wall (at all garage
    walls, ceiling and at all supporting structural elements) CRC 302.6.
    -Enclosed accessible space under stairs shall have walls,
    under-stair surface and any soffits protected on the enclosed
    side with 1/2-inch (12.7 mm) gypsum board. (CRC 302.7)
    -Attach Gypsum per CRC Table R702.3.5 as referenced
    in CRC R302.6.
43. At all accessible areas under stairs use 5/8" Type "X"
    gypsum wallboard. CRC 302.7.
44. Exterior Finish, Refer To Elevations

3/A9 Section F
SCALE: 1/4" = 1'-0"

SECTIONS
10 5 3 2 1

Hamilton Residence
175 Elvies Way Folsom CA 95630
SECTIONS

SHEET
A9

Division 00 - Conditions of Contract

0.01 Terminology
A. Reference Organizations.
ACI American Concrete Institute
AISC American Institute of Steel Construction
AITI American Institute of Timber Construction
ANSI American National Standard Institute
APA American Plywood Association
ASHRAE American Society of Heating, Refrigeration, and Air Conditioning Engineering
ASTM American Society for Testing and Materials
AWS American Welding Society
AAMA Architectural Aluminum Manufacturers' Association
CEC California Energy Commission
CRSI Concrete Reinforcing Steel Institute
FS Federal Specification
GA Gypsum Association
ICBO International Conference of Building Officials
NBS PS National Bureau of Standards, Product Standards
NEMA National Electrical Manufactures Association
NFPA National Fire Protection Association
NFRC National Fenestration Rating Council
NOFMA National Oak Flooring Manufacturers Association
NRCA National Roofing Contractors Association
NWWDA National Wood, Window and Door Association
PDCA Painting and Decorating Contractors of America
SDI Steel Door Institute
SMACNA Sheet Metal and Air Conditioning Contractors National Association
TCA Tile Council of America
TPI Truss Plate Institute
UL Underwriters' Laboratories Inc.
WIC Woodwork Institute of California

B. Definitions
1. Contract Documents: The Contract Documents shall include the drawings, specifications, structural calculations, soils report, and California Title 24 energy compliance forms. These documents are intended to supplement and complement each other. In case of conflict, contact the Architect.
2. Owner: The term "Owner" shall mean the Owner or the Owner's authorized representatives(s).
3. Contractor: The term "Contractor" shall mean the general contractor or the general contractor's authorized representative(s).
4. Engineer: the term "Engineer" shall mean the structural engineer or the structural engineer's authorized representative(s).
5. Builder: the term "Builder" shall mean a person or entity who is both an Owner and Contractor, and whose responsibilities are for both Owner and contractor.

Division 01 - General Requirements

1.01 Scope of Work:
A. Contractor shall provide all labor, materials, equipment, permits, and services necessary for construction of the building and site improvements conforming to the contract documents. Drawings and specifications represent finished structure. The contractor shall be responsible for means and methods of construction including shoring and temporary bracing and shall take all necessary measures to insure the safety of all persons and structures near or adjacent to the site and on adjoining properties. Any trimming or other alteration done to trees shall be done so only by approval of the owner.
B. The Designer will not be providing the Owner with regular on site contract administration and is available only at request of the Owner. The Contractor is solely responsible for the quality control and construction standards for this project.
C. These plans are for general construction purposes only. They are neither exhaustively detailed nor fully specified. The drawings were prepared to a level of completion satisfactory for building permit purposes and for construction by a knowledgeable and experienced contractor. The Contractor is responsible for preparation of any supplemental details, product specifications, coordination and installation of all materials and equipment.
D. Mechanical, electrical, and plumbing systems are shown for intent only. These systems shall be design/build by the Contractor. The Contractor shall be responsible for all necessary permits, drawings, calculations and Title 24 Energy Compliance.
E. These drawings and specifications are divided into sections for convenience only. Contractors, subcontractors and materials suppliers shall refer to all relevant sections in bidding and performing their work and shall be responsible for all aspects of the work regardless of where the information occurs in the drawings.
F. Clean-up: The Contractor will remove all debris from the building site and in general keep the work as clear of rubbish as possible during the course of the work. Before filling the Notice of Completion, the building will be fully cleaned, including all glass polished, floors scrubbed and cleaned, and the building shall be suitable for immediate occupancy by Owner.

1.02 Quality Control
A. All work shall comply with applicable requirements of all governing codes, regulations and ordinances. These shall include State amended editions of:
-2019 California Administrative Code (CAC)
-2019 California Building Code (CBC) Based on the 2019 ICC
-2019 California Residential Code (CRC) Based on the 2019 ICC
-2019 California Mechanical Code (CMC) Based on the 2015 IAPMO.
-2019 California Plumbing Code (CPC) Based on the 2015 IAPMO
-2019 California Electrical Code (CEC) Based on the 2014 NFPA
-2019 California Energy Code (CEC), Title 24 Part 6
-2019 California Fire Code (CFC) Based on the 2015 ICC
-2019 California Green Building Standards Code (CGBC)
-2019 California Referenced Standards Code, Title 24, Part 12
-2019 Accessibility Standards, Chapter 11A of the CA. Bldg. Code.
-ANY OTHER APPLICABLE State, County or Local Regulations.
-CA OSHA regulations and all the health and safety codes, ordinances and requirements.
-See sheet sheets AD1 & AD2 for Architectural Details
In the case of conflicts between these regulations and the contract documents, the most restrictive requirements shall apply

B. The Contractor shall verify, at the site, all conditions affecting work and shall review the contract documents for any areas of question affecting cost, construction and warranty and any drawing dimensional or note conflict, discrepancy, illegibility or omission. All areas of question shall be brought to the attention of the designer in writing before commencing any work and/or submitting any bid. Commencement of any work shall constitute acceptance by the Contractor of all conditions affect

Division 02 - Sitework

2.01 Soils Report: (This section only applies if a Soils report is required)
A. All work shall be in conformance with the Soils, Compaction and Geological Report.
- See sheet A1 of plans for additional information on Geotechnical Engineer.
B. The Contractor shall have the Soils Engineer review and approve in writing to the Building Official and Designer that the foundation and site design are in conformance with the soils report prior to commencement of work.
C. The Contractor shall be solely responsible for compliance with all recommendations of the Soils Report.
D. Prior to the contractor requesting a foundation inspection by the building department, the Soils Engineer shall advise the Building Official and Owner in writing that:
1. Site grading, subgrade preparation, cutting slopes, excavation, placement of engineered fill material and compaction is in accordance with the Soils Report.
2. The utility trenches have been properly back filled and compacted.
3. The foundation excavations, forming, footing and pier depths, and reinforcement comply with the soils report and approved plans.

2.02 General requirements
A. The site plan is not a survey. It is based on site information provided by the Owner and is for building and site work layout only. The Contractor shall verify on site all grades, soil conditions, ground water, existing improvements, property lines, easements, setbacks, utilities and structures. Where discrepancies with the drawings occur, contact Designer.
B. Grade surface of fill under concrete slabs shall be smooth and even, free of voids, compacted as specified and to require elevation.
C. Unless detailed otherwise or noted, pad grade under building shall have positive slope to a perforated drain set in gravel trench. Extend pipe to all portions of under floor area. The drain shall discharge into the street or approved drainage facility.
D. Unless otherwise detailed or noted, a perforated drain set in a gravel trench shall be installed around the entire perimeter of the foundation. The drain shall discharge into the street or approved drainage facility. Use only rigid pipe, flexible pipe will not be allowed. (CBC 1807.4.2)
E. It shall be the responsibility of the Contractor to take proper erosion control measures. The Contractor shall be responsible for proper surface and subsurface drainage of the site. Slope all finish grading away from buildings, walks, drives or decks and provide catch basins where required.
F. Finish grades shall be held down in planting areas. The Contractor shall provide and install a 6" minimum thickness of clean select top soils in these areas.
G. Rough grading for slabs-on-grade shall be within 2/10th of one foot, plus or minus.
H. Site grading shall be within 5/10th of one foot, plus or minus.
I. All roof drainage shall be piped in a closed pipe system to street or approved drainage facility (UNO).
J. Builder shall provide landscape development guidelines to Buyer that shall include information on site maintenance and development and state such items as "Irrigation system shall be designed to prevent saturation of soil adjacent to building".
K. All utilities unless indicated otherwise shall be installed under ground. The Contractor shall be responsible to insure that all trenching within building area shall be backfilled and compacted with structural soils material free of any rocks or other sharp objects which may damage underground utilities.
L. Underground piping shall be laid to a minimum 24" depth below finished grade. When utilities are placed in a common trench, all utilities shall maintain separations and coverage both vertically and horizontally, as required by applicable codes.

Division 03 - Concrete

3.01 Quality Control
A. In addition to complying with all pertinent codes and regulations, comply with all applicable provisions of the latest editions of:
1. ACI 301 "Specifications for Structural Concrete for Buildings"
2. ACI 318 "Building Code Requirements for Reinforced Concrete"
3. CRSI "Manual of Standard Practice."

3.02 General Requirements
A. Provide underfloor vents as per CRC 408. Add two 6 x 14 vents to garage. All first floor double-framed areas shall be vented.
B. Provide expansion and control joints in all exterior concrete slabs. Spacing of joints shall be per industry standard (U.O.N).
C. Refer to architectural, structural, mechanical, plumbing and electrical drawings for all molds, grooves and ornamental clips, location of sleeves, inserts, etc. to be cast in concrete and for extent of depressions, curbs and ramps.
D. Finishes:
1. All interior slabs shall receive trowel smooth finish (U.O.N.).
2. All driveways, sidewalks, and stairs shall receive broom-smooth finish (U.O.N.s).
3. Garage slabs and other interior slabs that will remain unfinished shall be treated with Lipidolith Hardner by Sonneborn, or equal.

Division 04 - Masonry

4.01 Quality Control
A. Materials shall meet or exceed the following standards (U.O.N.):
1. Glass Block: Minimum performance specifications shall be as Pittsburg Corning glass block units. The units shall be the pattern and size indicated on the plans.
2. Precast architectural concrete columns and trims: Concrete designs Inc. (CDI) U.O.N.
3. Grout for precast concrete: ASTM A118.6, Latex Portland Cement, color to match precast concrete.
4. Expoxy Grout: ANSI A108.6 and A118.3
4.01 General Requirements
A. Concrete block
1. Mortar joints to be "flush" (U.O.N.).
2. Bond shall be "running" (U.O.N.).
B. Brick:
1. Mortar joints shall be "raked" (U.O.N.). Raked joints shall be more than 3/8" deep. And where exposed to weather, shall be tooled. Brick joints shall be concaved where subject to freezing.
2. Bond shall be "running" (U.O.N.).
C. Stone:
1. Field Sample: A sample panel shall be built approximately 4 feet by 6 feet. This sample panel may be a part of the project. Veneer installation shall not proceed until the sample panel is accepted by the Designer and Owner. Full size units which have been selected and approved by the Designer and Owner to show color range, maximum texture range, bond, mortar, tooling of joints, and quality of workmanship shall be used in the sample panel. The remainder of the veneer installation shall be consistent with the approved sample panel.
D. Glass Block"
1. Mortar for glass block installed on exterior walls and other damp locations shall be waterproofed with Laticrete 8510 or equal.

Division 05 - Metals

5.02 General requirements
A. All bolt heads and nuts that bear on wood shall have malleable iron washers if exposed or cut washers if concealed.
B. Exposed welds shall be ground smooth.
C. Shop paint structural steel work, except those members or portions of members to be embedded in concrete or mortar. Paint the initial 2" of embedded areas only Do not paint surfaces which are to be welded or high strength bolted with friction type connections. After installation is completed, all welded and other abraded areas shall be touched up. On surfaces inaccessible after assembly or erection, apply two (2) coats of the specific primer.
D. All exterior steel, exposed, concealed or embedded, or where called for on the Drawings, shall be thoroughly zinc-coat galvanizing after fabrication by the hot-dipped method. Touch-up field welds with similar galvanizing product.
E. Dissimilar materials in contact with each other shall be protected to prevent galvanic or corrosive action. Use vinyl pressure tape, polyisobutylene tape, or similar product.
F. Fasteners and connectors in contact with preservative-treated wood and fire-retardant-treated wood shall be in accordance with this CRC Section R317.3. The coating weights for zinc-coated fasteners shall be in accordance with ASTM A 153

Division 06 - Wood and Plastics

6.01 Quality Control:
A. Materials shall meet or exceed the following standards:
1. Lumber
a. Each piece of lumber shall bear the trademark of the WCLIB (or WWPA) or of an agency certified by the WCLIB, (WWPA).
b. All wood in contact with concrete or masonry or located within 6" of finish grade shall be pressure treated Douglas or Hem Fir with pentachlorophenol or approved equal preservative.
c. All timbers 6 x 8 and larger exposed to view shall be free of heart center (FOHC), with moisture content of 19% maximum.
d. Max. deflection (DL +LL) shall be:(per CRC R301.7)
Roof = L/180
Floor = L/360
Floor with Tile = L/450
6.02 General framing requirements:
A. Blocking
1. Block floor joists at all supports, line up double joists under all walls parallel to floor joists and space double joists under plumbing walls.
2. Provide solid full width blocking or post below structural posts - continuous to foundation.
3. Provide blocking and nailers for all finishes and fixtures as required.
4. Provide blocking in all walls so that the unbraced length of studs does not exceed10 feet.
5. Corbels, knee braces, etc., shall be construction select materials.
6. At double-framed floors "sleepers" shall be perpendicular to framing below.
7. Fire blocking is required to provide a separation between concealed vertical and horizontal spaces, in walls at stair stringers (top & bottom), at soffits, drop ceilings, cove ceilings and at openings around ducts, vents, pipes and flue chases. Fire blocking shall be provided vertically at the ceiling and floor levels and horizontally at intervals not exceeding 10 feet. CRC R302.11.
6.03 Attic Ventilation Requirments
Provide attic and sofit ventilation as per CRC 806.2
Vent all double framed areas. See elevations for calculations
6.04 Finish Carpentry
A. All millwork and casework shall be in accordance with W.I.C. "Manual of Millwork" custom or premium grade standards, latest edition.
B. All cabinets and millwork shall be selected by the owner.
C. Provide 30" clear above kitchen range to unprotected undersides of upper cabinetry or 24" clear to metal hood as per CMC Section 904.11.
D. Plastic laminates and solid surfacing products shall meet or exceed ANSI/NEMA standards LD3.
E. Install and anchor all cabinetry to preclude movement, overturning, or distortion to other materials or finishes. Install level and plumb. Comply with manufacturer's instructions for support of supplied units.
F. Install all trim in as long of lengths as possible. All splices in finish members shall be bevel splices. Where joints within a piece are required they shall be as unapparent as possible.

Division 07-Thermal & Moisture Protection

7.01 Quality Control
A. Materials shall meet or exceed the following standards:
1. Insulation:
a. Fiberglass batt insulation shall be installed per -2019 California Energy Code (CEC).
b. Install all fiberglass batt insulation with foil or kraft-facing toward interior living spaces.
c. All plumbing walls adjacent to interior living spaces shall be sound insulated with fiberglass batts
d. Insulation Certification Note; Upon completion of the installation of insulation, a card giving the data of installation shall be completed and executed by the applicator and the builder shall be poster at a conspicuous location within the dwelling.
e. Insulation Flame Spread Index & Smoke Developed Index Req:
1. Batt or Blown insulation Flame Spread Index less than 25 and a Smoke Developed Index less than 450
2. Foam insulation Flame Spread Index less than 75 and a Smoke Developed Index less than 450 (ASTM E 84 or UL 723)
- This includes all installation materials including facings in walls, ceilings and attics.
- Facings do not apply to those standards in type VB construction as long as they have been installed in direct contact with the unexposed surface of the wall, ceilings or floor finish.

2. Roofing:
a. All work shall comply with the NCRA "Roofing and Waterproofing Manual."
b. Roofing material shall be concrete flat tile over 50 lb. felt /over sheathing and shall be applied according to manufacturers specifications.
c. The minimum performance standards for concrete tile roofing shall be Monier (ICC ESR-1647) or equal as approved by Owner and bear a UL Class A fireproof rating. Installed weight shall be a maximum of 900 lb. per square. Trim units shall include manufacturer's standard ridge, hip and rake pieces. Color as selected by Owner (U.O.N.). Minimum one nail per tile, two nails on all rake tiles. Minimum pitch shall be as per manufacturer's recommendations.
d. The minimum performance standard for built up roofing for nailable decks shall be Schuller International 4GNC or equal as approved by Owner and bear a Class A fire proof rating. All products and components shall be by same manufacture. Color as selected by Owner (U.O.N.).
e. Underlayment for concrete or clay tile roofing shall be 30 lb. asphalt-saturated organic roofing felt, complying with ASTM D 226, 36" wide appalled per manufacturer's recommendations. 3-ply built up roof underlayment required for pitch less than 3:12. For asphalt shingle underlayment shall be 15 lb. felt, 2 layers at pitch less than 4:12.
f. Roofing nails shall be aluminum or hot dip galvanized 11 or 12 GA sharp, pointed conventional roofing nails with barbed shanks, min. 3/8" dia. head and or sufficient length to penetrate min. ¾" into solid decking or to penetrate through plywood sheathing (U.O.N.).
g. The roofing contractor shall supply to the Owner a written guarantee to repair without cost to the Owner, any leaks due to faulty materials or workmanship, which develop within 1 year from the date of acceptance by Owner of completed building. During this time period, any repair work required because of Act of God, abuse, alterations, or failure to the substrate and/or supporting structure (other than caused by defects in the roofing work) shall be completed by the contractor and paid for by the Owner, promptly after completion of the required repair work in each instance. The roofing contractor shall furnish the manufacturer's standard limited material warranty for a minimum of 10 years from the date of the completion of the roof.
3. Flashing:
a. All work shall comply with the SMACNA "Architectural Sheet Metal Manual".
b. All metal flashing to conform to ASTM A525, commercial grade with 0.20% copper.
c. All metal flashing shall be 26 gauge for work less than 8" wide, 20 gauge for work over 8" wide as indicated on drawings. Use 20 gauge minimum for clips.
d. Sheet metal flashing shall be installed at all locations where different material intersect such as roof to wall, roof to roof, deck/balcony/landing to wall, penetrations into wall, chimneys and as detailed. Flash and counter-flash as required to make watertight.
e. The center of all flashing for all through vents and all electrical service connections, shall not be less than 16" from center of any valley. See manufacturer's printed installation instruction recommendations for roofing tile.
4. Sheathing Paper
a. Provide sheathing paper under exterior metal lath and plaster, under wood siding, under masonry veneer, under metal flashings and where indicated or detailed.
b. Use 15 lb. asphalt-saturated organic felt complying to ASTM D226, Type 1, (U.O.N.).
c. Install single layers on vertical surfaces, double layer over wall caps, and where indicated. Double layer behind masonry veneer with corners double lapped. For additional information regarding installation behind stucco see Division 9.
d. Lapping:
Horizontal Joints: Lap paper as detailed and not less than 3 inches;
Wall Corners: Wrap paper to overlap not less than 12 inches each side of corner;
Vertical Joints: Lap paper not less than 6 inches.
e. Lap paper over head flashings and base screeds, roof and waterproof membranes, and under sill flashings. Treat penetrations and other details as necessary for adequate weather protection.
f. Wall openings: individually flash all exterior openings for fixtures such as windows, doors, and vents to make them waterproof. Flashing material shall provide a four hour minimum protection from water penetration when tested in accordance with ASTM D-779. Sealant shall comply to F.S. TT-S-1657. In high wind areas W.R. Grace ice and water shield shall be used, over solid backing. Flashing material at least 9" wide shall be applied in a weatherboard fashion, beginning with the sill with a strip long enough to protect beyond the jamb flashing to be applied. The two jamb flashings are then applied, with sufficient length to extend beyond the sill flashing, and with the same distance at the top. For fixtures without nail or flanges the flashing shall be 12" minimum width and extend into the rough frame at the sill and jamb. For nail on flange fixtures install by pressing flange into a continuous bead of sealant which extends around the bottom and sides of a fixture. Apply the top horizontal flashing last, sufficient length to extend beyond the jamb flashing. Overlap and seal against top nailing flange or GSM head flashing with a continuous bead of sealant. Apply remaining wall sheathing paper in a weatherboard fashion with the sill flashing lapping over the top and the head and jamb flashings below.
(See flashing details sheet AD2 (and AD3 if used))

Division 07 - Cont.

5. Sheet Membrane Waterproofing
a. The minimum performance standard shall be W.R. Grace "ICE AND WATER SHIELD", no substitutions allowed. All products and components shall be by same manufacturer. Install in strict accordance with manufacturer's instructions to assure waterproof integrity.
b. Quality Assurance. Pre-installation conference: A pre-installation conference shall be held prior to commencement of field operations to establish procedures to maintain optimum working conditions and to coordinate this work with related and adjacent work. Agenda for meeting shall include review of special details and flashing. This meeting shall include the representatives of the General Contractor, Applicator and Manufacturer. A trained employee of the manufacturer shall be on site periodically during membrane waterproofing work to review installation procedures.
c. Water test: Deck membranes shall be water tested and approved immediately before installation of finish materials. Water tests shall be witnessed by the Architect. A water test is conducted by closing any deck drains and erecting temporary dams where required to retain water on the waterproofing material surface, then flooding the surface to a minimum depth of 2". Care must be taken so that the weight of water retained does not exceed the load carrying capacity of the structural deck, and that the height of the water does not exceed the lowest flashing. For well sloped decks, tests should be segmented to avoid deep water near drain. The water tests should be conducted on a arm day (i.e. 65 degrees F. minimum). The water should be allowed to remain on the deck for 24 hours minimum, during and after which the areas beneath the membrane should be inspected for leaks. If leaks are detected, the test should be stopped, repairs made, and the area retested. When the test is successful, the drains should be opened and the temporary dams removed. Temporary protections boards should be installed over the tested area, and the area roped off to prevent construction traffic across the surface until drainage composite or permanent protections board has been installed.
6. Roof Accessories
a. The minimum performance standard for prefabricated acrylic skylights shall be Bristolite, "AL-CM2" (ICC #ER-2469) or equal as approved by Owner. Color as selected by Owner, install as per manufacturer's instructions.
7. Caulking and Sealants/Locations:
a. Sealant Locations:
-Locations such as ceramic tile, plumbing fixtures, and other where mildew resistant sealant is req.
- Location where high degree of movement is anticipated.
-Joints and cracks around windows, thresholds, door-frames, wall penetrations, connections and other joints necessary to seal off building from outside air and moisture.
-Between exterior wall sole plate and slab on grade.
-All joints necessary to make the building watertight and to prevent the passage of dirt,dust, wind, air or water.
-At interior insulated sound walls.
-Fire stopping at penetrations of fire rated assembled.
b. Minimum product standards for sealants shall be as follows:
-Exterior Window and Door Frames and Masonry to Cement Plaster: Sonolastic NP2, by Sonneborn or equal. Color to match-wall surface.
-Interior Sound Walls at Sill: Tremco Acoustical Sealant or equal.
-Wood Sole Plate to Concrete, Window Sills and Door thresholds: Dow Corning 790 Silcone Building Sealant or equal. Color: Natural stone.
-Painted Exterior Windows Frames to Metal Frames or Flashing: Dow Corning 999A Glazing Sealant or equal. Color: Clear.
-Caulking for Joints in Floor Slabs on Grade: PRC Rubber Caulk 230, two-part self-leveling polyurethane, Shore A hardness 35.
-Joint Fillers: Closed cell insert polyurethane or polyethylene as recommended by caulking manufacturer. Width or diameter of performed backing material to be 1-1/4 to 1-1/3 times the width of the joint to be sealed.
-Fire stopping at penetrations of fire rated assemblies: 3M Fire Protection Products CP 25 Caulk.
-Caulking and sealants shall be installed per manufacturer's written specifications. Consult manufacturer when sealant cannot be applied within recommended temperature ranges. All exposed caulking shall be free of wrinkles, sags, air pockets, ridges and embedded impurities. After joints are completely filled, they shall be tooled to a slight, neat concave joint.

Division 8 - Doors and Windows

8.01 Quality Control
A. Material shall meet or exceed the following standards:
1. Wood Doors:
a. Doors shall meet or exceed the standards of the WIC "Manual of Wood Work", Section 20, Custom Grade and NFRC 200 (or ASTM e-972) (U.O.N.).
b. Wood doors shall be 1-3/4" thick solid core at exterior doors and where noted at selected interior doors, and 1-3/8" thick doors at remaining locations.
2. Fire Ratings:
a. Frame assemblies and fire rated doors shall carry equal rating. Fire rated doors and frames indicated shall carry Underwriters Laboratory Label for exposures indicated. Construct and install assemblies to comply with NFPA Standard No. 80. Hardware shall include smoke gasketing and self closures and be UL listed.
b. Exterior doors and doors leading from garage areas into private residences and multiple dwellings residences shall be of solid core construction and shall be no less than 1-3/4" in thickness. CRC 302.5.1
c. Exterior doors and doors leading from garage areas into private residences and multiple dwellings residences shall have a deadlocking latch device with a minimum throw of ½" and a deadbolt lock with a cylinder guard, hardened steel insert with a minimum throw of 1". Both locking mechanisms shall be interconnected so that both may be disengaged by turning door knobs from the inside of the unit without the use of a key, special knowledge or effort. CRC R312.2.
3. Doors, General Requirements
a. Accessible under-floor areas shall be provided with minimum 18-inch by 24-inch opening unobstructed by pipes, ducts and similar construction
b. Provide attic access opening (22" x 30" min.) readily accessible with a 30" min. clear head room above access in all attic spaces with a minimum vertical height of 30" If attic HVAC unit is installed provide a 30" x 30" min opening (for the largest piece of equipment to be removed).
c. Doors between conditioned and unconditional spaces shall be fully weatherstripped.
d. All hardware shall be located per industry recognized standards and shall comply with applicable fire and building code requirements.
e. Door stops shall be furnished wherever an open door or any item of hardware thereon strikes a wall, column, or part of the building construction.
f. All swinging doors shall be accurately hung to fit snug against all stops and shall hand free from hinge blind.
4. Metal and Vinyl Windows and Sliding Glass Doors
a. Metal and vinyl units shall meet or exceed ANSI/AAMA 101 spec. and NFRC 200 (or ASTM e-972) .
b. Sliding glass doors opening unto patios or balconies which are less than one story above grade or are otherwise accessible from the outside shall be secured as follows;
1. All sliding glass doors shall have a hook bolt deadlock which us no less than 1/8" in thickness, and which has a minimum throws of ½".
2. The hook bolt and the strike shall be made from hardened steel.
3. All sliding windows shall have safety locks
c. Windows and doors lights shall be of tempered glass as required by CRC and local codes.
d. All units shall have a nail on flange (U.O.N.).
e. Frame color as selected by Owner.
5. Wood and Clad Windows and Doors
a. Wood and clad units shall be tested and labeled as conforming to the following ANSI/NWWDA standards:
-Windows: ANSI 1.5.3, AAMA/WDMA/CSA 101/I.S.2/A440
-Ext. Hinged Doors: AAMA/WDMA/CSA 101/I.S.2/A440 or comply with Section R612.5 per CRC R612.3
b. Frame color as selected by Owner.
6. Glazing and Windows, General Requirements: (NFRC 200 (or ASTM e-972)
a. Provide tempered glass where required by the CRC in all hazardous areas such as sliding glass doors, French doors, glass panels adjacent to doors and walking surfaces, glass panels in tub and enclosures, etc. Verify if CBC Chapter R337 requirements apply (ie temp all exterior panels)
The following are considered as hazardous locations for the purpose of glazing (CRC 308.4)
1. Glazing in entrance and exit doors.
2. Glazing in fixed panels and sliding or swinging type doors others than wardrobe doors.
3. Glazing in storm doors
4. Glazing in all unframed swinging doors.
5. Glazing shower and bath doors and enclosures.
6. Glazing, operable or inoperable, adjacent to a door and within the same wall plane as the door whose nearest vertical edge is within 24" of the door in a closed position and whose bottom edge is less that 60' above the floor or walking surface.
7. Glazing in fixed panels which have a glazed area in excess of 9 square feet and the lowest edge is less that 18" above the finished floor level or walking surface with 36" of such glazing. In lieu or safety glazing such glazed panels may be protected with a horizontal member not less than 1-1/2" in width when located between 24" and 36" above the walking surface.
8. Glazing in the railing regardless of height above a walking surface. This includes structural baluster panels and non-structural baluster panels and non-structural in-fill panels.
9. Glazing within 60" (vert) of stair or stair landing.
b. Provide screens at all operable sash.
c. All escape or rescue windows shall have a minimum net clear openable area of 5.7 square feet. The minimum net clear openable height dimension shall be 24inches. The minimum net clear openable width dimension shall be 20 inches when windows are provided as a means of escape or rescue they shall have the "clear opening" not more than 44 inches above the floor. (CRC 310.1.2 & 310.1.3)
d. WINDOW FALL PROTECTION: (ASTM F 2090 & R312.2.2)
-Operable window with window sill of 72" above finished grade or surface below, and with less than 24" above interior floor surface shall be provided with window fall protection per R312.2.2. Operable sections of windows shall not permit openings that allow passage of a 4-inch-diameter sphere.
e. U-valves shall be determined in accordance to NFRC 100.
f. Air infiltration shall meet the air infiltration requirements of the CEC.
g. VT shall be rated in accordance with NFRC 200 or ASTM E 972
h. Water infiltration shall be tested in accordance to NFRC or Table 116a of the 2019 CGBSC Standards.
i. Window system manufacturer shall certify that its system can structurally perform to the following -Iinfiltration standards of the current American National Standards Institute ASIM E283-T3 with a pressure differential of 157 pounds per square foot and shall be certified and labeled.
j. Glazing in wardrobe doors shall meet the impact test requirements for safety glazing as set forth in CRC. Laminated glass shall also meet the boil test requirements of the same standard. Mirror panels shall be safety glazed to conform with ANSI 297.1.
7. Overhead Garage Doors:
a. Spring must be contained with a restraint device to anchor the springs or any part thereof in the event it fractures.
b. Both the spring and the restraint devices must be identified as conforms to the requirements of the California Department of Housing and Community Development.
c. Overhead and sectional garage doors shall be secured with a cylinder lock, pad with hardened steel shackle, metal slide bar bolt or equivalent when not otherwise locked by electrical power operator.

Division 09 - Finishes

9.01 Quality Control
A. Materials shall meet or exceed the following standards:
1. Stucco - installed per Approved Proprietary wall system by OMEGA DIAMOND Wall System (ICC#ESR-1194) 2 coat acrylic stucco system (CRC 703.9)
a. Color Coat Omega "Akroflex" (or equal)
b. Brown Coat; Job-mixed cement plaster mix, Bondcrete or Mortaseal Mason's Lime with Portland Cement and Sand in accordance with ANSI A42.2, Type L.
c. No. 17 gauge galvanized stucco netting meeting Federal specification QQ-L-101 with two horizontal No. 19 gauge galvanized wires at 6 inches O.C.
d. 1" polystyrene system shall be La-Habra-Wall (ICBO #4226) or approved equal. Foam shall bear the label of the an approved agency, showing the manufacturer's name, the product listing, product identification and information sufficient to determine that the end use will comply with the requirements of the listing per CRC R316 and CRC R316.2.
e. (2) layers of 15# Type D felt or approved equal. (See Division 07).
2. Stucco - 3 coat system (CRC 703.6.1 & 703.6.2)
a. Application shall be in compliance with applicable sections of ANSI A42.2 "Portland Cement and Portland Cement-Lime Plastering, Exterior (Stucco) and Interior" and ANSI A42.3 " Lathing and Furring for Portland Cement and Portland Cement-Lime Plastering, Exterior (Stucco) and Interior.
b. In addition, materials shall meet or exceed the following:
Portland Cement: ASTM C 150, Type 1, natural color.
Special Finishing hydrated lime: ASTM C 206, Type S.
Aggregates: ASTM C 144, all sand to pass No. 8 sleve.

Division 09 - Finishes Cont.

b. cont.
Cement Plaster Finish Coat: A packaged blend of Portland cement (ASTM C 150), hydrated lime (ASTM C 206), and properly graded quality 20 mesh aggregate, with integral color and paint finish.
Mixes: Job-mixed cement plaster mix, Bondcrete or Mortaseal Mason's Lime with Portland Cement and Sand in accordance with ANSI A42.2, Type L.
Proportions:
Scratch Coat: 1 bag Portland Cement, ¾ to 1 bag lime to 6 cu. ft. sand.
Brown Coat: 1 bag Portland cement, 1 bag lime, 6 to 7 cu. ft. sand.
Finish coat: 1 bag Portland cement, 2 bags lime, 7 to 10 cu. ft sand. See drawings for location of cement plaster finish coat.
Maximum Slump: 2-1/2 in. using Slump test ASTM C143, modified slump cone 2 in. x 4 in. x 6 in.
Wall Metal Lath: At vertical surface: Paper-backed lath, USG paper-backed lath or equal. No. 17 gauge galvanized stucco netting meeting Federal specification QQ-L-101 with two horizontal No. 19 gauge galvanized wires at 6 inches O.C. over one additional layer. 15#, Type D felt. (See Division 07).
Lath at horizontal soffit: Galvanized mesh, 3.4 lbs./sq. yd. Over 1 layer of 15#, Type D felt.
Staples: 14 gauge wire staples, divergent points, ¾ inch crown, lin. legs.
Nails (if soffit supported by wood framing): 1 ¾ inch 11 gauge, 3/8" head, ¾" washer.
Stucco accessories shall meet or exceed the criteria of ASTM C1063
3. Cement Plaster, General
a. Finish texture and color shall be as approved by Owner.
b. Climate Conditions: Air Temperature must be 40° F minimum and rising when applying cement plaster or exterior finish coat. Air temperature must remain above 40° F for a minimum of 24 hours. Consult National Weather Service before beginning work. Protect cement plaster and exterior finish coat from uneven and excessive evaporation during hot, dry weather.
c. Allowable tolerances: Maximum deviation from true plan 1/8 inch in 10 feet as measured by straight edge placed at any location on surface.
d. Field Sample: A sample panel shall be prepared approximately 2 feet by 2 feet. This sample panel will be a separate part of the project. Installation shall not proceed until the sample panel is accepted by the Designer and Owner. The sample shall show color, texture, and workmanship of finished work. The sample panel shall remain on the project for comparison purposes with the actual work.
3e. Other materials where applicable:
- Polystyrene Board and Architectural Moldings: ASTM C-78 Type 1. Nominal 1 lb./c.f. cured expanded polystyrene. Flame spread and smoke development equal to or less that 24 and 450 respectively per ASTM E-84/UL listed.
-Insulation Board shall carry the seal of the RADCO testing agency.
-Fabric A balanced, open weave, glass fiber fabric, complying with ASTM D1682, standard mesh, as recommended for wrapping polystyrene board and moldings.
-Primer/Adhesive Mixture: A field mixed blend of standard polymer-based primer adhesive and Portland cement. For use as a primer and leveler over cement plaster brown coat and for use as an adhesive for fabric and polystyrene board and moldings.
-Acrylic Resin Bonding Agent: Bonsel, tammsway, or approved equal. For use on concrete or masonry before applicable of cement plaster.
-Add Mixtures: No add mixtures or plastic cements will be allowed without approval of the Designer.
-Synthetic Exterior Finish coating: A 100% pure acrylic resin based, textured, factory-mixed coating, having integral color, for exterior use. Minimum standard shall be Dry-vit Systems Inc., or Designer approved equal.
f. Curing:
-Wet base as necessary before applicable with fine fog spry to produce uniform moist condition.
- When required, apply bond coat to concrete base and moist cure for minimum of 24 hours before applying first coat of cement plaster.
-Do not apply brown coat sooner than 48 hours after application of scratch coat.
-Do not apply cement plaster finish coat sooner than 14 days after application of brown coat.
-Inspect and repair base coats before application of finish coat.
-Cure base coats minimum of 48 hours after application.
-Maintain moist conditions by fine fog spray.
-Cure finish coat for minimum of 7 days.
4. Gypsum Board
a. Material, application, and finish shall comply to applicable sections of ASTM C 840 "Standard Specifications for Application and Finishing of Gypsum Board" and its reference standards.
b. Specific assemblies for fire restive and sound transmissive control construction shall be as specified in GA-600 "Fire Resistance and Sound Control Design Manual for Gypsum Products" (U.O.N.).
c. Provide a Occupancy Separation wall between garage (Occupancy Group U-1) and dwelling (Occupancy Group R-1 or R-3): 2 x 4 wood studs at 16" o.c. with 1/2" Type "X" gypsum wallboard (on garage side and ceiling), nailed with 6d cooler nails at 7" o.c. (U.O.N.).
-Where living space above use 5/8" Type "X" gypsum wallboard (on garage side and ceiling), nailed with 6d cooler nails at 7" o.c. (U.O.N.). CRC 302.6 & CRC 302.7
d. Product Application (U.O.N.):
1. Use ½" gypsum board on all walls and ceilings (ASTM C36).
2. Use ½" water resistant gypsum bd. at all wall areas subject to moisture (CRC 702.3.8.1,ASTM C630).
3. Use 1/2" or 5/8" type "X" gypsum board at all wall and ceiling areas of fire restive construction (ASTM C36 and C630). CRC 302.6.
4. Radius corner beads shall be at all outside corners.
5. All painted areas shall receive a texture except in garage and mechanical closets. The texture shall be specified by the Owner.
6. All areas to receive wall coverings shall be taped and sanded smooth.
e. Field Sample: A sample panel shall be prepared approx. two feet by two feet. This sample panel will be a separate part of the project. Installation shall not proceed until the sample panel is accepted by the Designer and Owner. The sample shall show color, texture, and workmanship of finished work.
5. Tile:
a. Material and application shall comply to applicable sections of TCA "Handbook for Ceramic tile Installation:" and its reference standards.
b. Tile shall meet or exceed the following standards:
1. Quarry and ceramic Tile: ANSI 137.1
2. Granite; ASTM 615
3. Marble: ASTM C503
4. Slate: ASTM C629
5. Limestone: ASTM C568
c. Product Application:
1. Tile shall be installed in accordance to the latest addition of TCA "Handbook for Ceramic tile Installation" (U.O.N.),
2. Floor tile installed over wood frame floors shall be thickset and as per TCA F141.
3. Ceramic tile and grout shall be selected by Owner.
4. Tile in all showers shall extend to +72" height (minimum) (U.O.N.). Tile shall be over thinset or 1/2" WonderBoard cement backer over 15# felt (U.O.N.). Also install Custom Building Products "Waterproofing and Crack Prevention Membrane" as additional waterproofing typical. Note: Waterproof Gypsum NOT allowed at Tub/Shower areas.(CRC R307.2)
5. Provide and install porcelain soap and grab at tubs and showers (U.O.N.).
6. Shower pans shall be tested with a full head of water for a period of not less than 24 hours, inspected, and repaired before pan is covered with finish materials.
7. Conform to establish pattern and expansion joint locations as approved by the owner. Expansion joints should be at 12'-0" o.c. maximum and at all wall intersections as per TCA EJ171. Align expansion joints with slab control joints, or plywood joints.
8. Lay out for minimum cutting of tile; start at external corners, cut at internal corners, center on floor (U.O.N.).
9. Gauge joints, uniform spacing throughout.
10. Prohibit traffic on floor not less than 48 hours after setting, not less than 24 hours after grouting, and do not grout earlier than 48 hours after setting tile.
11. Prohibit work on walls, and on opposite side of wall not less than 24 hours after setting, not less than 24 hours after grouting, and do not grout earlier than 24 hours after setting tile
12. All tile shall be sealed upon completion with appropriate products, no sooner than 48 hours after grouting.
6. Wood Flooring
a. Installation shall comply with NOFMA "Installing Hardwood Flooring Manual" and "Hardware Flooring Finishing/Refinishing Manual".
b. Material shall be in accordance to NOFMA "Grading Rules", unfinished oak shall be "Select" or better (U.O.N.). prefinished oak shall be "Prime" grade (U.O.N.).
c. Product Application:
1. Wood Flooring shall be selected by the Owner.
2. Provide expansion space at walls and other obstructions and terminations of flooring, not less than ½" unless otherwise shown on drawings. Unless fully concealed by trim, fill expansion
7. Resilient Flooring
a. Materials shall be meet or exceed the following:
1. Vinyl Sheet: FSL-F-475A, Type 11, Grade A
2. Vinyl Tile: FS SS-T-312B, Type IV, Comp 1
3. Rubber Tile: FS S-T-312B, Type11
4. Vinyl Wall Base: FS SS-W-40, Type 11
5. Rubber Wall Base: FS SS-W-40, Type 1
b. Product Application:
1. Resilient flooring shall be selected by the Owner.
2. Install in strict accordance with manufacturer's written instructions.
3. Provide particle board underlayment for all resilient flooring unless installed directly over concrete slab.
4. Lay sheet flooring with minimum number seams. Avoid cross seams.
5. Sheet flooring in bathrooms and kitchens shall have 4" self cover base with metal cap UNO.
6. Install 4" vinyl or rubber wall base at other vinyl floor areas (U.O.N.).
7. Resilient Flooring Cont.
8. Carpentry
a. Product application:
1. Carpeting shall be selected by the Owner.
2. Install in strict accordance with manufacturer's written instructions.
3. Lay out carpeting with minimum number of seams. Seams shall be perpendicular to traffic. Four feet minimum strip width, no more than one each side of the room. Single cut centered at doorways. No seams in room field. Pile the same direction throughout. All seams shall be sewn with thread approved by the carpet manufacturer, and then glued with approved tape seaming adhesive, then "backed" with thin tissue.
4. Finish installation of carpet shall be free from "tacks", scraps, carpet ripples, scallops and puckers.
5. Provide matching edge guard.
9. Painting
a. Application systems and materials shall comply to the PDCA. "Architectural Specifications Manual."
b. Painting shall be included but not limited to the following (U.O.N.):
1. All exposed metal. This includes flashing, scuppers, gutters, down-spouts, louvers, gates, railings, etc. Sheet metal roof valleys, roof flashings and valleys shall be painted to match roofing materials.
2. All exposed exterior wood shall be painted and back primed.
3. All precast exposed concrete shall be sealed.
4. All doors and frames shall be painted, after being hung and fitted, doors shall be painted on all six sides.
5. All gypsum board shall be painted except in garage or mechanical closets.
6. All gypsum board receiving wall covering shall be primed.
7. All exposed interior wood shall be painted, including casework where indicated.
c. Surfaces not to be painted shall include the following (U.O.N.):
1. Prefinished materials such as acoustic ceiling board, baked and porcelain enamel, plated metals, laminated plastics, vinyls, etc.
2. Stainless steel, bronze and aluminum.
3. Do not paint any moving parts or operating units, mechanical and electrical parts, such as valve and damper operators, linkages, sensing devices, motor and fan shafts.

Division 09 - Finishes Cont.

c. cont.
4. Do not paint over any code-required labels, such as Underwriters Laboratories, and Factory Mutual, or any equipment identification, performance rating, name, or nomenclature plates. Neatly mask all such items, and remove masking at completion of painting.
d. Owner shall select paint colors.
e. Paint all metal registers and grills to match adjacent surfaces (U.O.N.).
f. Paint all gutters to match fascia and paint all downspouts and vents to match adjacent surfaces (U.O.N.).
g. Kitchen and bathrooms shall receive semi-glass enamel paint (U.O.N.).

Division 10 - Specialties

This section not used

Division 11 - Equipment

11.01 Quality Control
A. Listing and installation manual shall be available for review by the City Field Inspector upon request per CRC R1005.1
B. All appliances will be selected by the Owner.
C. Gas fired appliances shall be equipped with intermittent type ignition devices.
D. Provide recessed connections in wall for water and waste at clothes washer space and water shut off for refrigerator icemaker. If washer is located on a second floor or above, provide a G.S.M. pan under washer with drain outside. Washer standpipe shall extend between 18 and 30 inches above its trap. The trap shall be between 6 and 10 inches above the floor (CPC Section 804).
E. Clothes Dryer:
1. Clothes dryer located in an area that is habitable or containing other fuel burning appliances shall be exhausted to the outsider or to an area which is not habitable and does not contain other fuel burning appliances (not beneath building or in attic area.
2. Clothes dryer moisture exhaust duct is limited to 14' with two elbows from the clothes dryer to the point of termination. Reduce this length by 2' for each elbow in excess of 2 (CMC 504.3). See Detail 15/AD2
F. Kitchen hood and clothes dryer ducts shall be of metal and have a smooth interior surface. Kitchen hood ducts for down-draft grill-range may be Schedule 40 PVC when installed below concrete slab floors (CMC 504.2). Dryer duct may have six feet (maximum) of approved flexible duct (CMC 504).
G. Exhaust fans required in bath and/or laundry rooms must connect directly to the outside and must provide a fan capable of 50 CFM intermittent or 25 CFM continious. (CRC 303.3). Environmental air ducts (vent fans, range hoods, dryers, etc.) shall not terminate less than 3 feet from property line, or 3 feet from opening into the building (CRC 303.4.2, CMC 504.3.1, CPC 906.2).
H. Dishwater shall be connected to a drainage system or food waste disposer with the use of an approved dishwater airgap fitting (CPC Section 807.4).
I. Tubs & Showers to have a smooth, hard, non-absorbent surface (e.g. ceramic tile or fiberglass) and shall extend to +72" height above drain inlet. (CRC 307.2, CPC 411.7) Tile shall be installer over thin-set or 1/2" Wonder Board cement backer over 15# felt (U.O.N.). Also install Custom Building Products "Waterproofing and Crack Prevention Membrane" as additional waterproofing typical.
Note: Waterproof Gypsum NOT allowed at Tub/Shower areas. All tub-shower combinations shall be provided with individual control valves of the pressure balance or the thermostatic mixing valve type. The water temperature maximum as a setting to 120 DEG. (Or 49 DEG C.) (CPC 418)

Division 12 - Furnishings

This section not used

Division 13 - Special Construction

This section not used

Division 14 - Conveying Systems

This section not used (see sheet EL for elevator spec if used)

Division 15 - Mechanical

15.01 General Requirements
A. Mechanical and plumbing systems are shown for location intent only. These systems shall be engineered by others. The Contractor shall be responsible for proper installation, placement and performance.
B. Fire sprinkler systems when required shall be "design build" and are not a part of the Architectural Documents. Layout of sprinkler heads shall be approved by Owner. Fire sprinkler plans and calculations shall be submitted to the Building Department for review and approved prior to installation.
C. Anchor or strap water heater and HVAC units to structure to resist earthquake motion (CPC 507.2, CMC table 3-3 and CMC 303.4).
D. Water heater and HVAC units shall be accessible for inspection, service, repair, and placement without removing permanent construction (CMC 304).
E. Water heating and HVAC units installed in garages where they may be subjected to damage shall be suitably guarded against such damage by being installed behind protective barriers or by being elevated or located out of the normal path of vehicles. Such equipment when located in a garage shall be installed so that the pilots or burners are at least 18" above the floor level (CMC 307.1).
F. Warm-air furnaces installed in attics or furred spaces shall be installed per CMC and include the following: (CMC 304.10)
1. A minimum 30 inch by 30 inch access (maximum 20 feet from furnace). (CMC 904.10, CPC 509.4.1)
2. Continuous solid flooring not less than 24 inches wide from access to furnace.
3. A level working platform minimum 30 inches in depth along the entire firebox side of furnace.
4. A permanent 110V electrical outlet and lighting fixture (controlled by switch located at required access) at or near furnace.
5. FAU shall be listed for installation in attics and on combustible flooring - clearances shall be as specified in the listing and as per CMC 904.11.

15.02 Heating, Ventilation and Air Condition (HVAC)
A. All work shall comply to the applicable standards of the ASHRAE handbooks and the SMACNA standards
B. All ducts penetrating R-3/U-1 occupancy firewalls shall be minimum 26 gauge galvanized sheet metal on garage side. Flexable ducts shall not be used at fire rated wall (CRC 305.2).
C. A concrete pad shall be provided for grade mounted condensers.
D. All ductwork to be installed to ACCA Manual D standards and practices.

15.03 Plumbing
A. American Standard Inc. plumbing products shall be the minimum performance product standard for plumbing fixtures. The Owner will select all plumbing fixtures. **WATER CONSERVATION REQ**;(SEC 4.303, TABLE 4.303.1)
Perscriptive minimum indoor plumbing requirements: (See 2019 Cal-Green Req)
-Showerheads @ 1.8 GPM or less @ 80 PSI (INC multi-head designs)
-Lav Faucets @ 1.2 GPM or less @ 60 PSI, Kitchen Faucets @ 1.5 GPM or less @ 60 PSI
-Water Closets @ 1.28 GAL/FLUSH, Urnals @ 0.125 GAL/FLUSH gallons per minute (GPM) maximum flow rate.
B. Waste and Vent System: All soil, waste and vent piping shall be approved ABS per local code (U.O.N.). All soil pipes penetrating rated fire walls shall be cast iron. All sewer pipes under driveway shall be cast iron. Provide minimum of ¼" per foot slope for horizontal drainage pipe. (CPC Section 718). Cleanouts shall be installed per CPC Section 719. Cleanout locations shall be located in least visible areas. All plumbing vents shall be combined into a minimum amount of roof penetrations. All roof penetrations shall occur to the rear of the main ridge.
C. Domestic Water Piping System: water service main piping shall be one inch minimum or larger as per load and pressure requirements. Provide shut-off valve at foundation wall. Hot and cold water supply shall be copper. No water supply will be allowed under concrete building slab. All runs shall be made so that branch connections occur at fixture locations where fittings can be installed. System shall be as free as possible from fittings and sharp turns. Provide hose bibbs as per drawings with tee fittings above ground for future sprinklers installation at front and rear of house (U.O.N.). Provide a non-removable backflow preventer or vacuum breaker at all hose bibbs (CPC 409.5).
D. Water Heating System: Water heater shall be size and type as specified in Title 24 Energy Compliance. Water heater shall have R-12 insulation blanket (U.O.N.). Insulate the first 5 feet of the hot and cold water pipes with R-4 insulation. All continuously circulating domestic heating or hot water piping shall be insulated as required by plumbing division. (Also see T-24 report for additional req.) If water heater is located on a second floor or above, provide a G.S.M. pan under water heater with drain to outside. Water heaters shall be provided with a pressure relief valve (CPC 608.2) with a drain line from relief valve to the outside of the building with the end of the pipe not more than 2' or closer than 6" to exterior grade. (CPC 608.5)
E. Domestic Gas Service: All gas piping shall be new and shall be black steel or galvanized (U.O.N.). No gas piping shall be installed in or on the ground under any building or structure unless properly protected per CPC and all exposed gas piping shall be kept at least six inches above grade or structure (CPC 313.7).
F. Plumbing projecting through or embedded in concrete or masonry shall be protected during the placing of concrete and placed in an oversized sleeve or approved expansion wrap to allow for expansion, contraction and structural movement (CPC 312.10).
G. Provide 1/8" rubber between all water piping where contact is eminent. ¼" felt cushioning or equal shall be installed between all water pipes and any structure or framing member where contact would otherwise be eminent. In framing members: provide strip of rock wool batt, packed in place, as a seal or stop around plumbing pipes passing through members.
H. All copper pipe connections to ferrous piping shall be made with dielectric couplings or isolation flanges.

Division 16 - Electrical

16.01 General Requirements (see sheet E1 for additional notes)
A. Electrical systems are shown for intent only. These systems shall be engineered by others. The Contractor shall be responsible for proper installation, placement, and performance.
B. Materials and equipment shall be new and listed by Underwriter's Laboratories, Inc. (U.L.) and bear their label wherever standards have been established and their label service is regularly furnished.
C. Service Distribution:
1. Main electrical service shall be 200 AMP minimum (U.O.N.).
2. Main service panel electrical load calculations shall comform to CEC Section 220.
3. Install a main service disconnect as per CEC 230-70.
4. Provide grounding at service entrance to comply with CEC Section 250-90 & CPC 1211.
5. Branch circuit load distribution shall comform to CEC Section 210.
6. Panels shall not be located in closets or similar confined spaces. (CEC 110-16).
7. Aluminum wire small than No. 6 A.W.G. shall not be used in electrical wiring.
8. Protection of wiring shall be as per CEC Section 320.
D. Receptacle Outlets:
1. Outlet boxes on opposite sides of rated walls (wall separating garage from dwelling) shall be separated by a horizontal distance of 24 inches (CBC Section 712.3.2).
2. Provide GFCI (GFI) protection per CEC Section 210-8(a).
3. Outlet locations shall comply with CEC Sections 210-50 and 210-52.
4. Install outlets at 1'-3" above finished floor (U.O.N.).
5. Switched outlets shall be one-half hot (U.O.N.).
E. Lighting:
1. Owner shall follow the WS-5R for installed fixtures.
2. All lighting to be installed in accordance with the 2019 Residential Energy Standards (Per section 150(k))
3. Fixture locations shall comply with CEC Section 210-70 and 410.
4. Ceiling mounted junction boxes shall be capable of supporting 60# minimum (U.O.N.). and supported. per NEC Section 410-16.
5. Fixtures installed in closets shall comply to CEC Section 410-8.
6. Install switches at 42" above finished floor (U.O.N.).
F. Smoke Detectors: Install 110 volt smoke detectors with battery backup as per CBC Section 907.2.10 and conforming to NFPA 74. Install the detector in strict accordance with manufacturer's printed installation instructions.
G. Provide combustion air to HVAC units as per CMC Section 703; and to water heaters as per CPC Sec. 507.
H. Installation of HVAC and plumbing systems shall insure properly balanced and quiet operation.
I. Vibration isolation of mechanical equipment shall be incorporated into the installation.
J. If duct leakage testing is performed for Title-24 compliance credit, each HVAC system must pass with a maximum 6% loss at final inspection.

JOB #	Spec Sheet
SCALE	N/A
DATE 4-17-20 Code updates	

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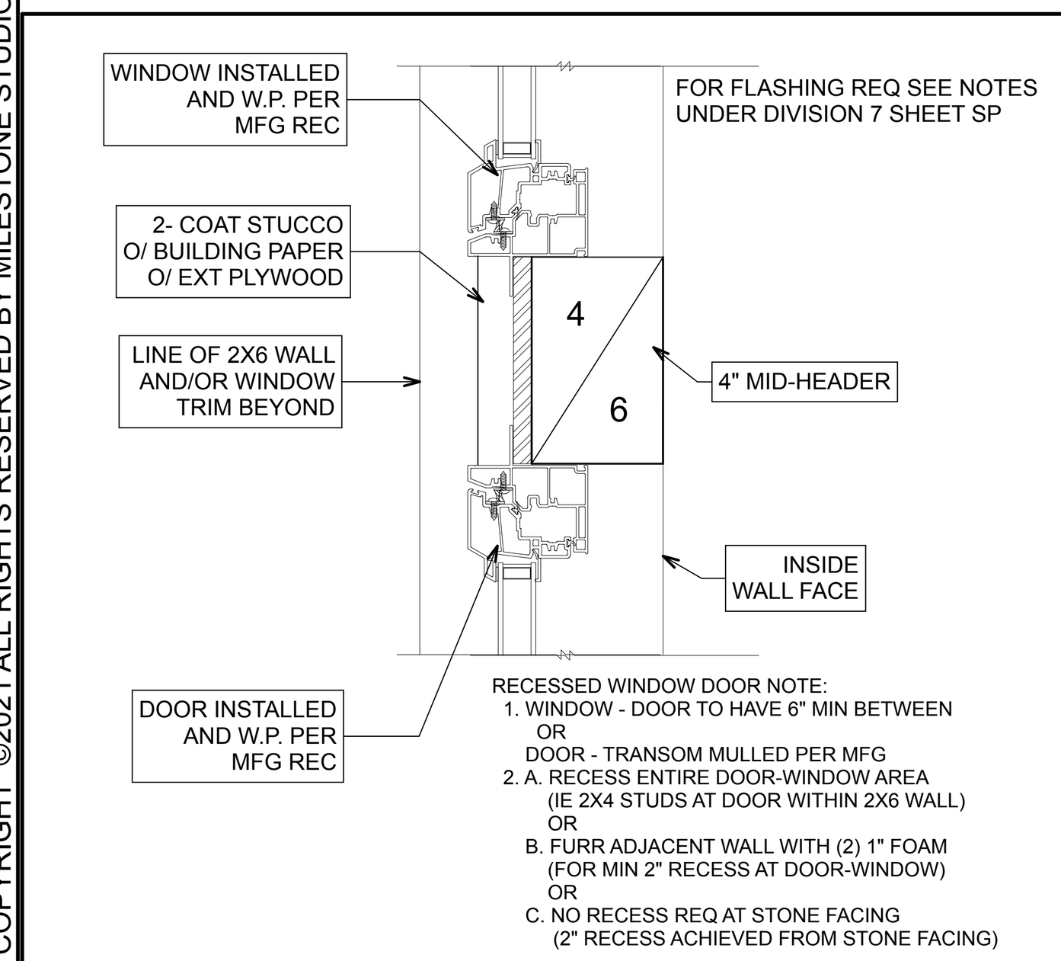
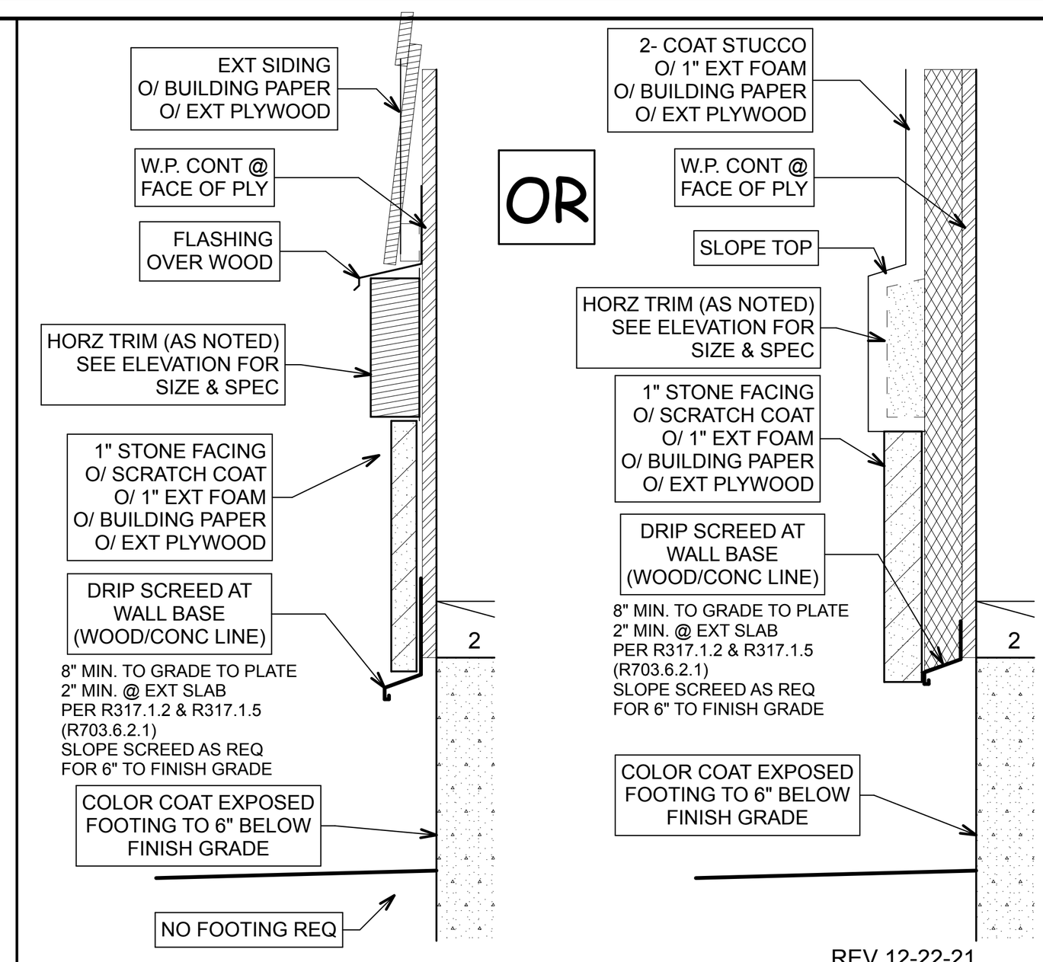
SPECIFICATIONS

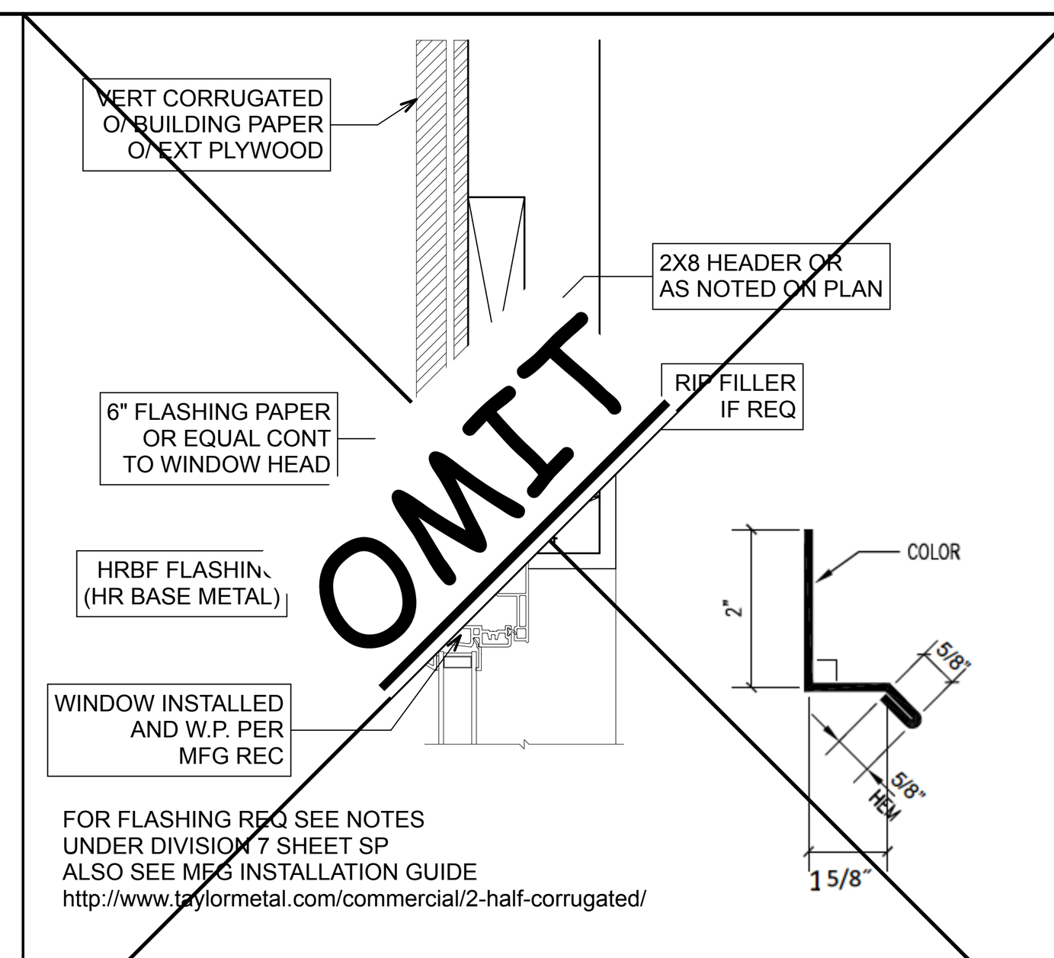
SHEET
SP



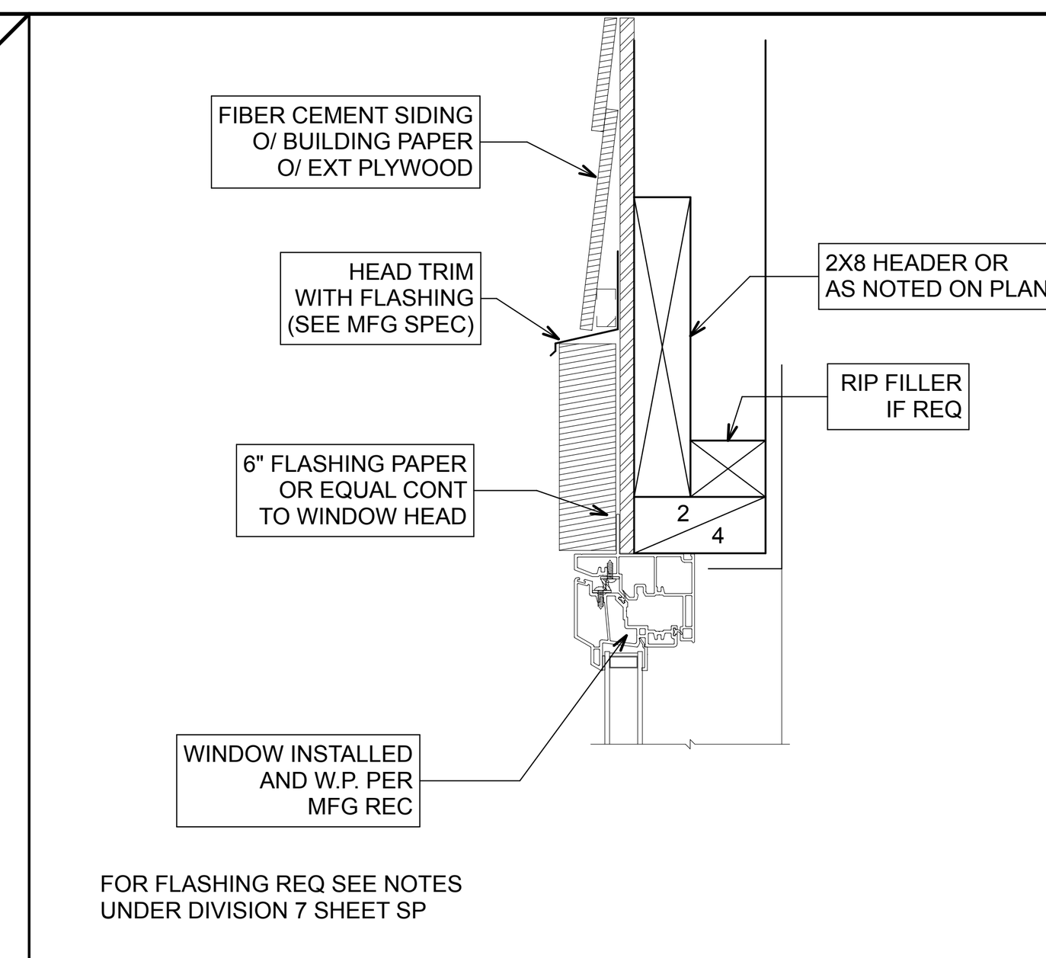
DOOR-TRANSOM DETAIL 22



ROCK BASE TRANSITION 17



WINDOW HEAD W/ STEEL 12



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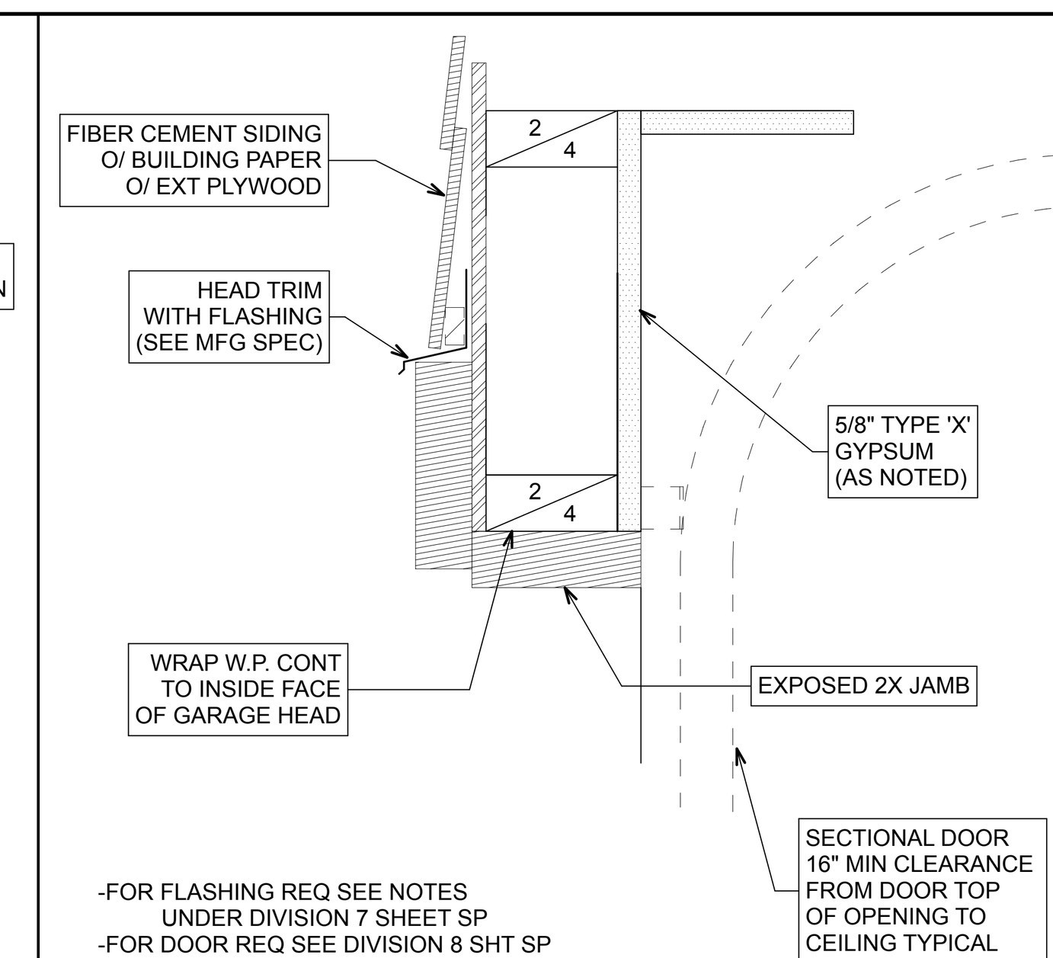

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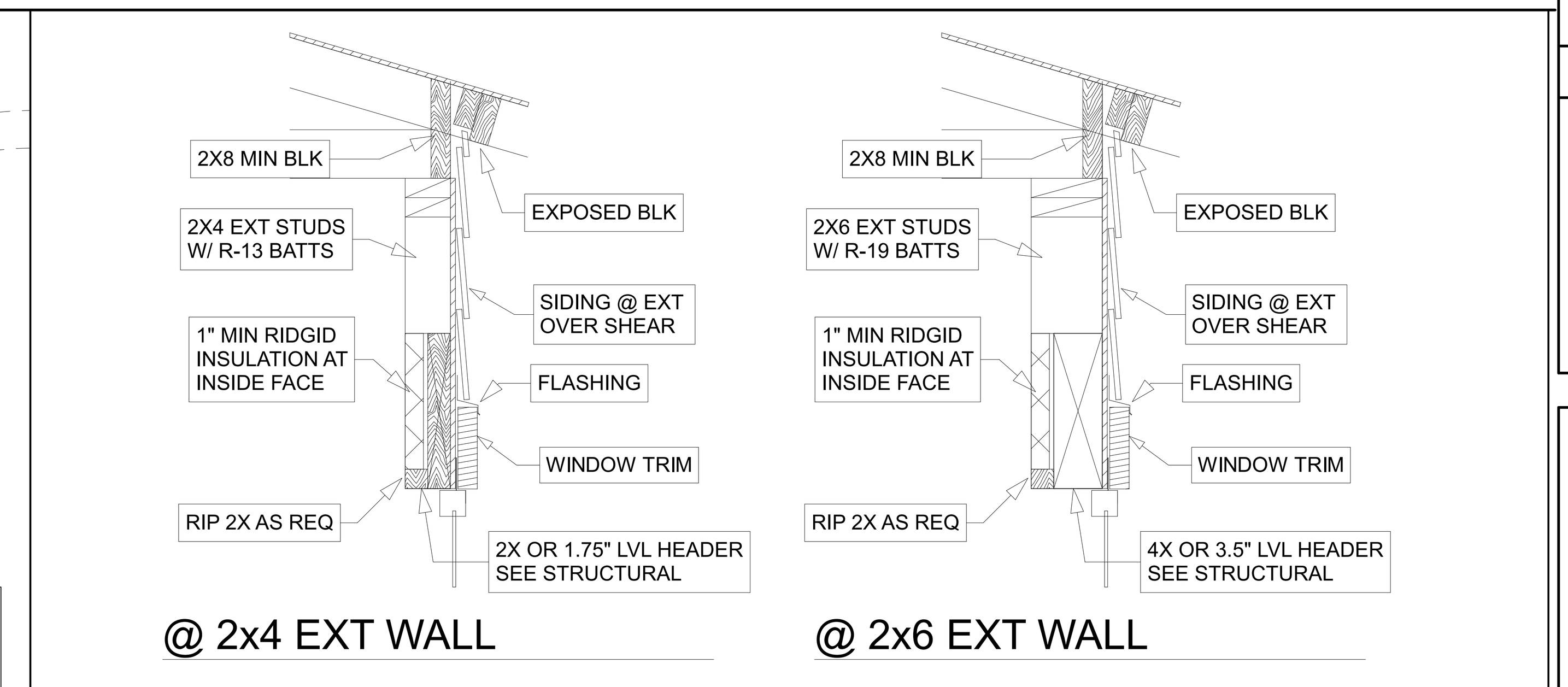

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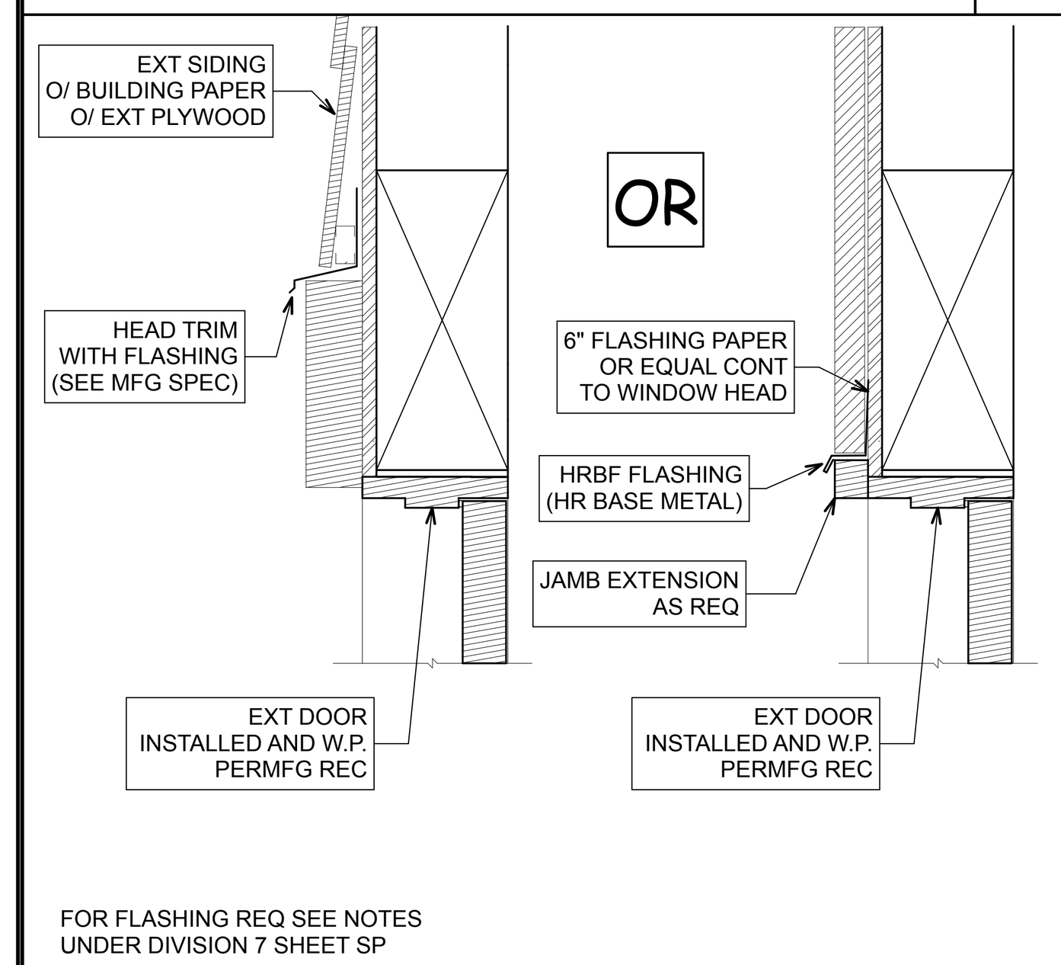

DOOR HEAD DETAIL 23

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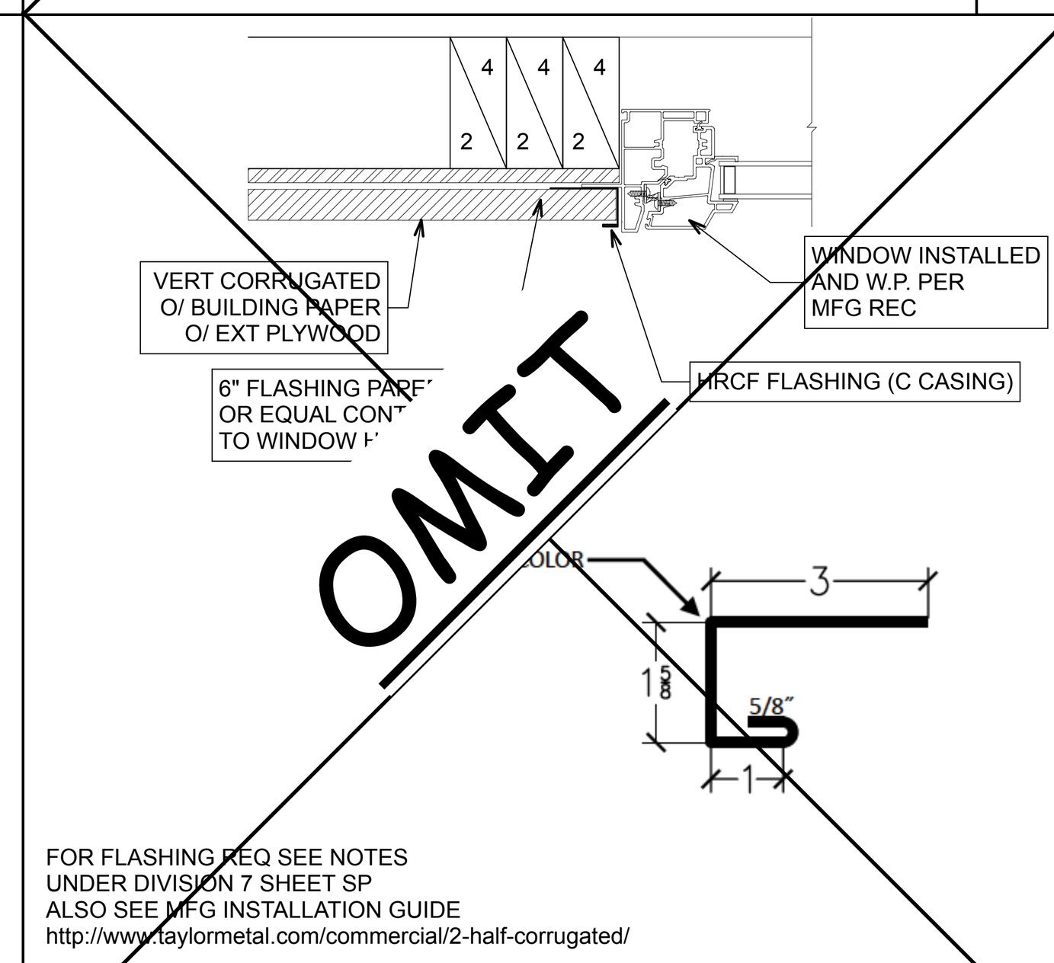

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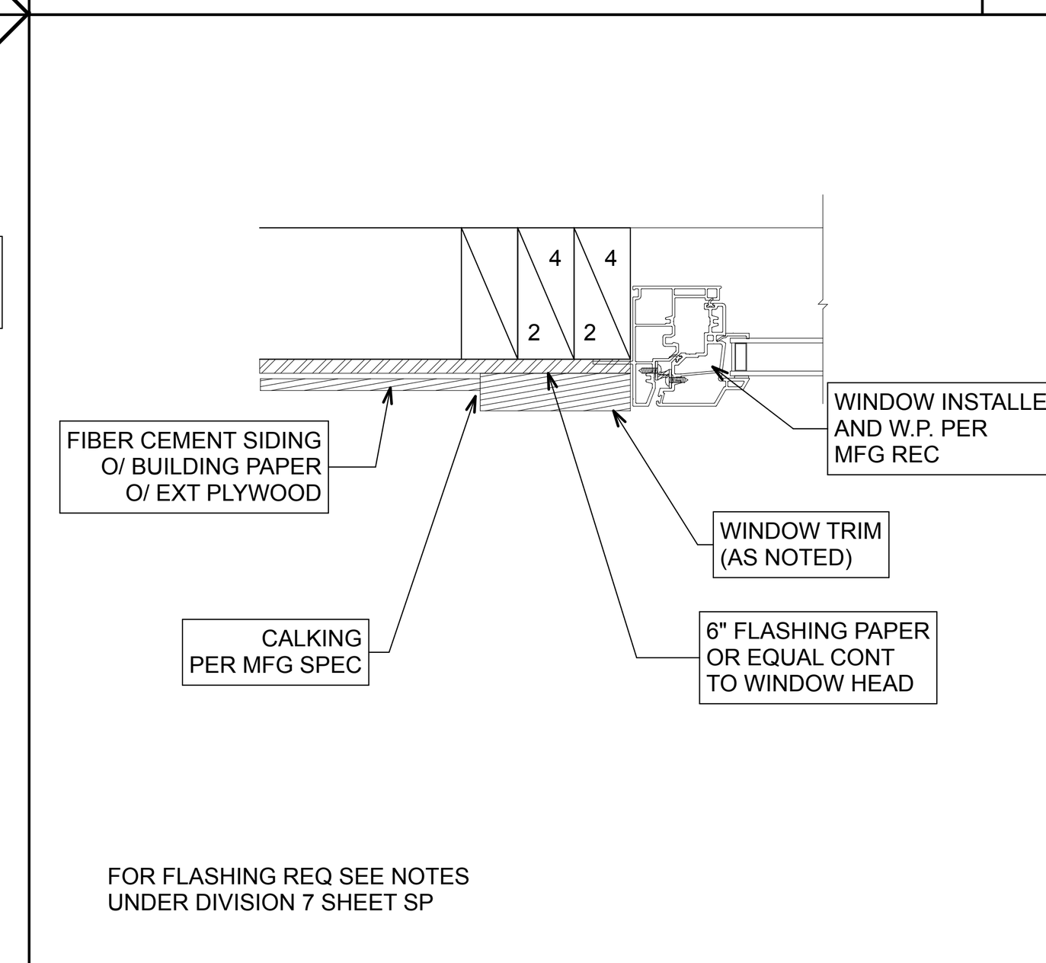

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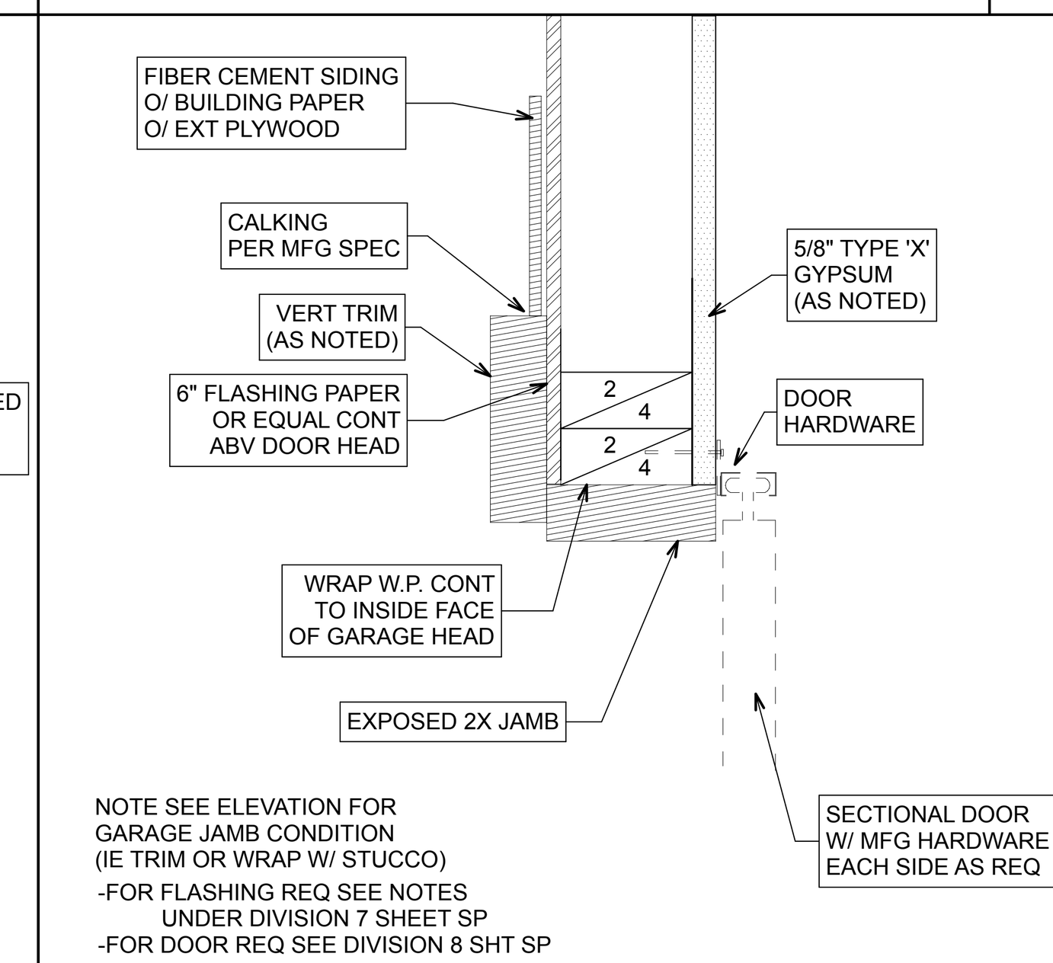
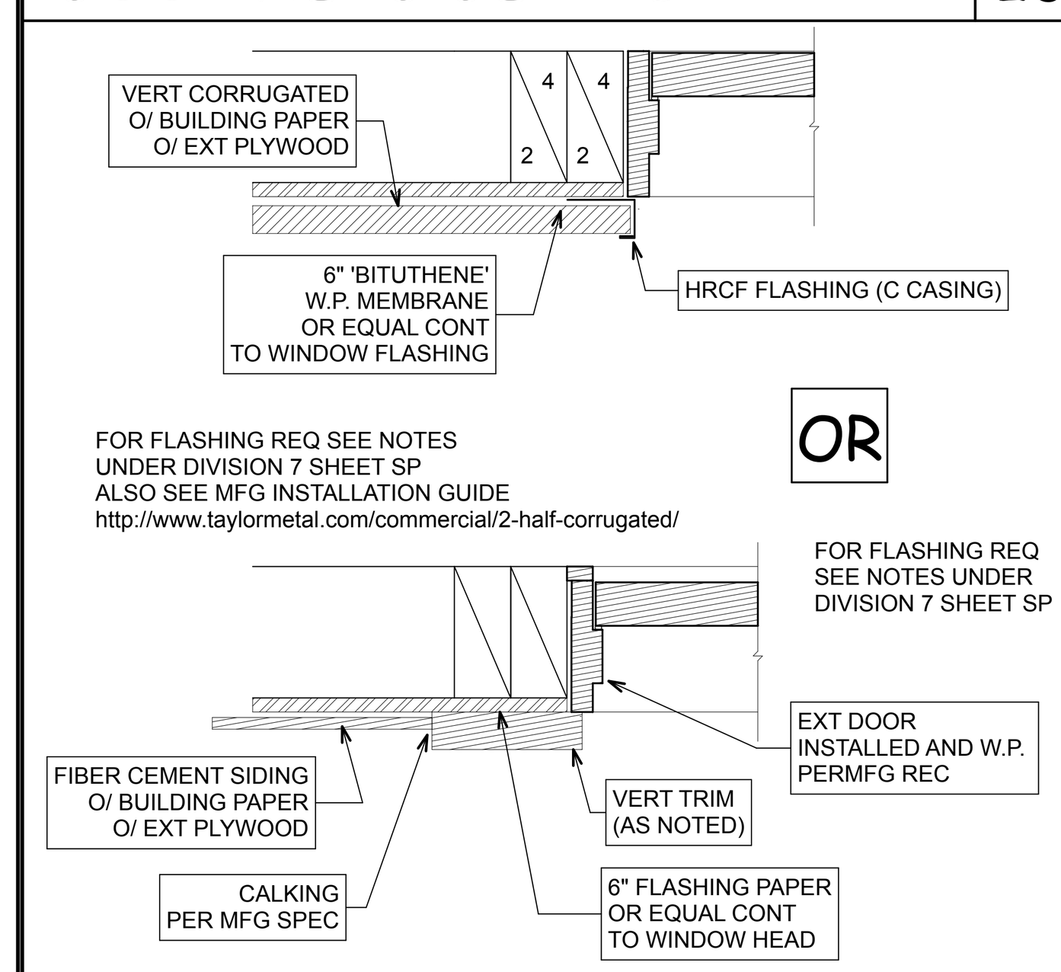
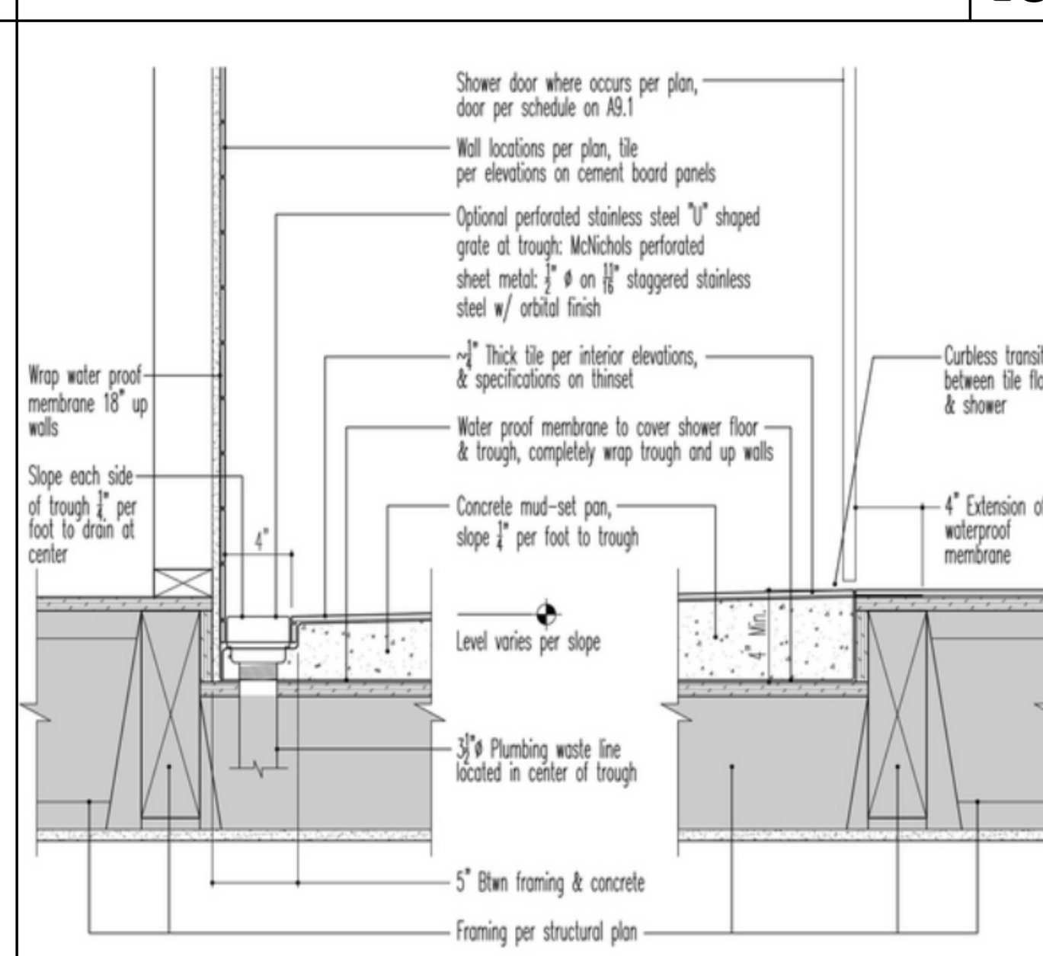


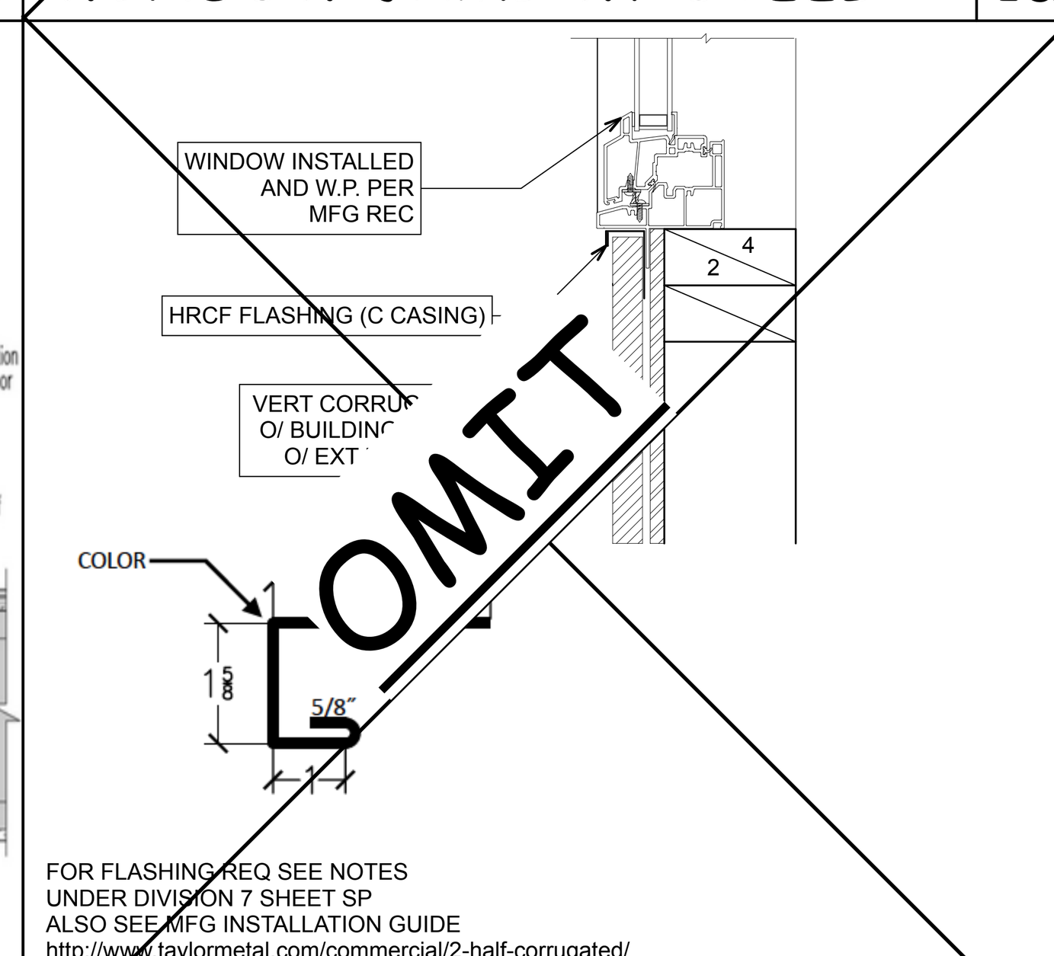
GARAGE DOOR JAMB 6



DOOR JAMB 24



CURBLESS SHOWER ENTRY 19



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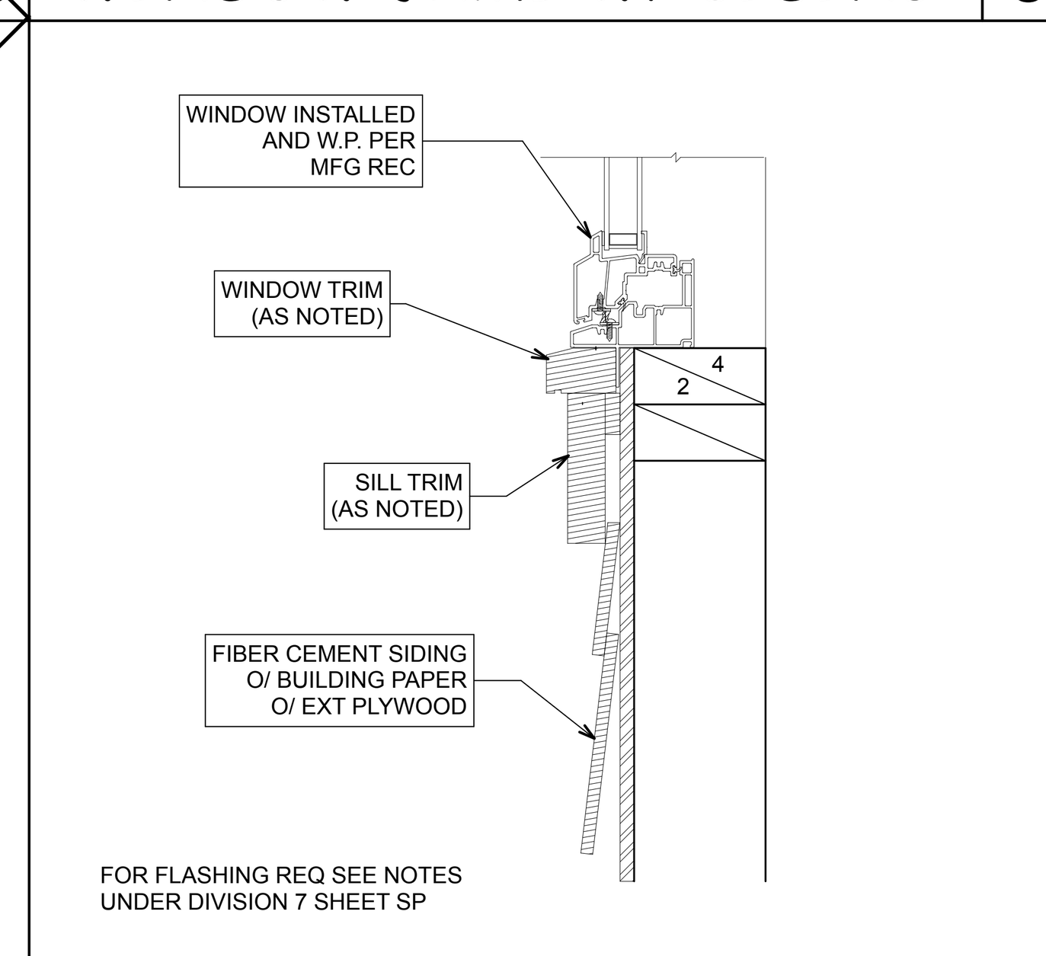

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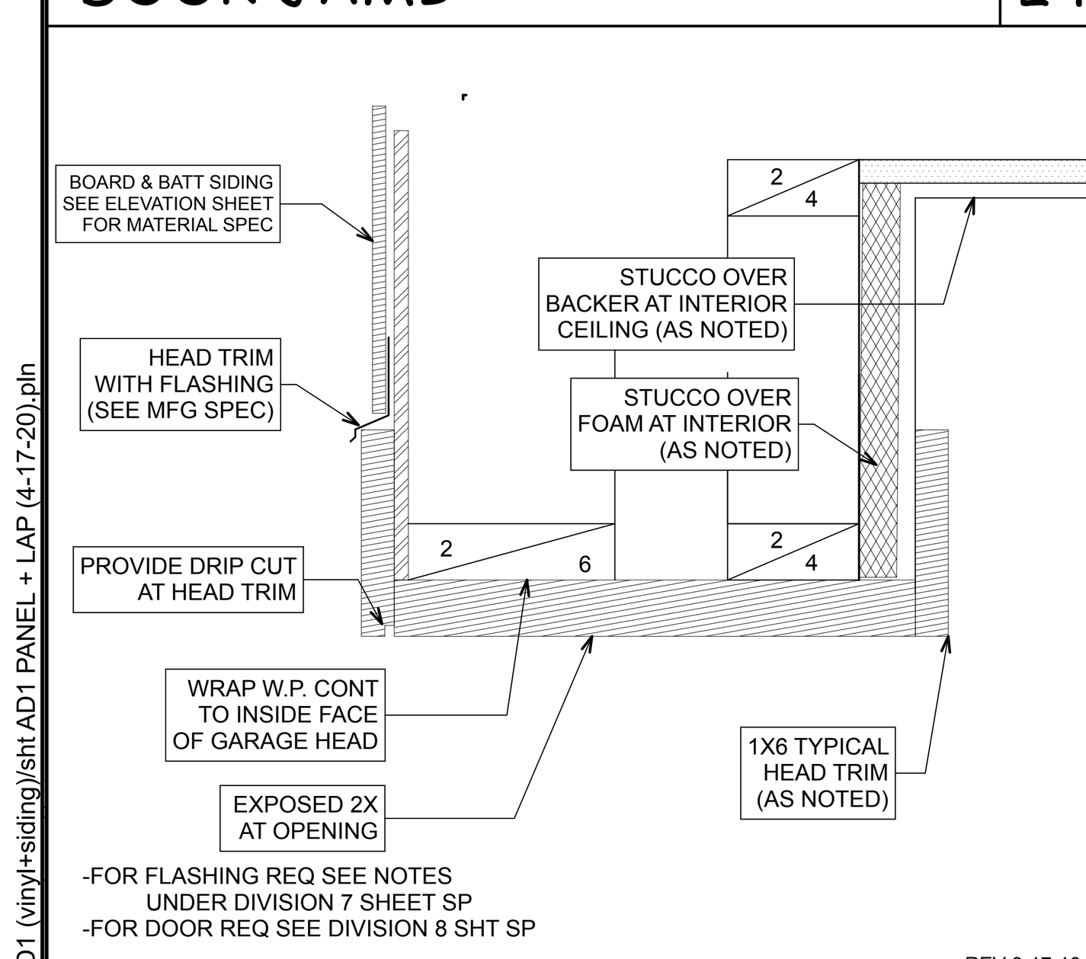
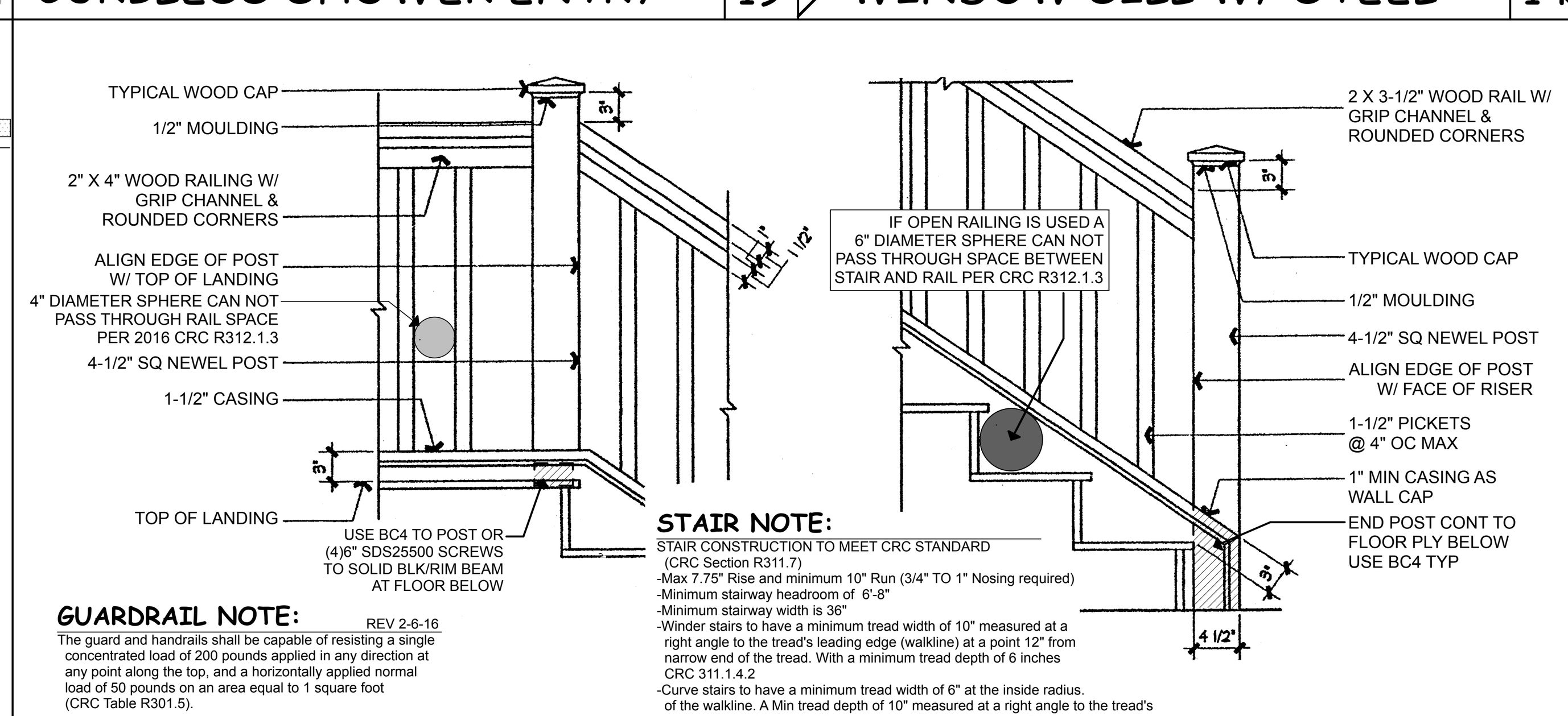


SIDING OPENING HEAD 25



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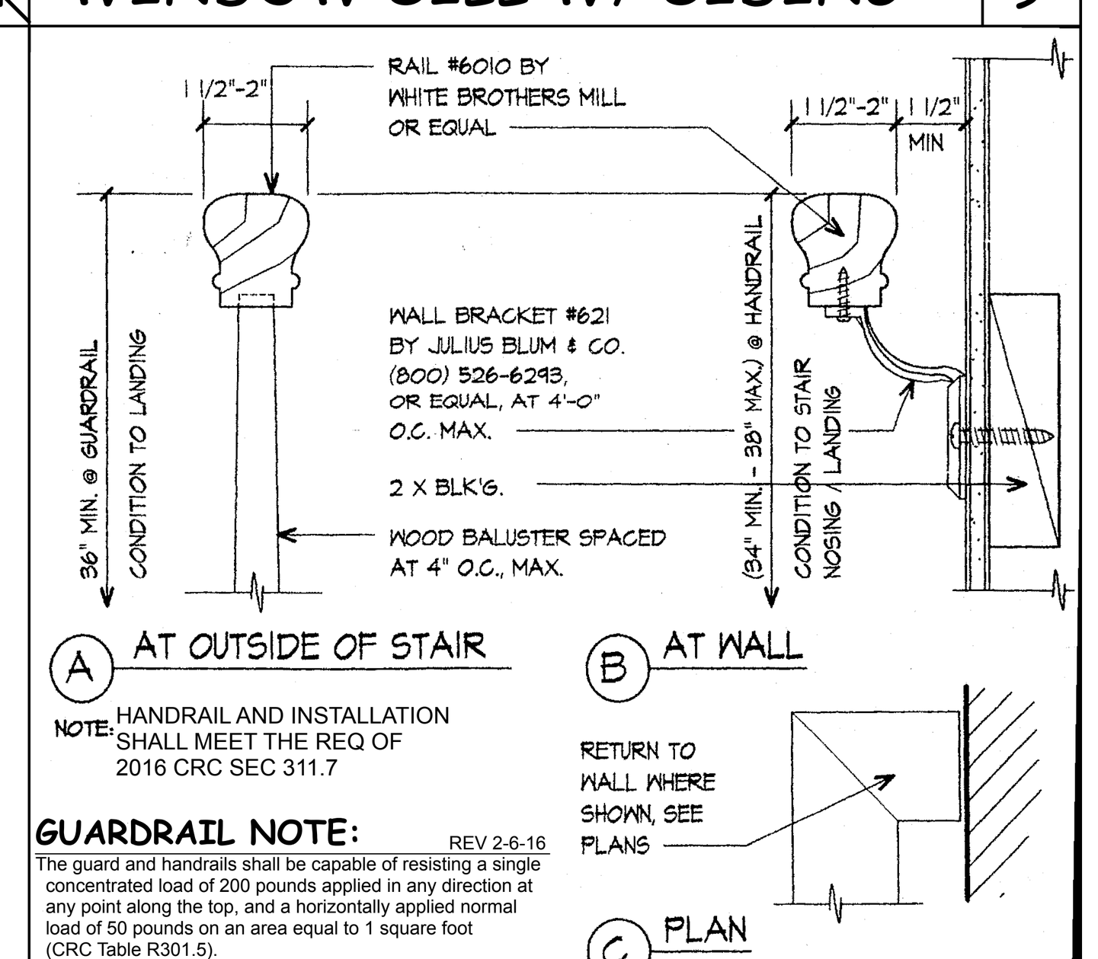

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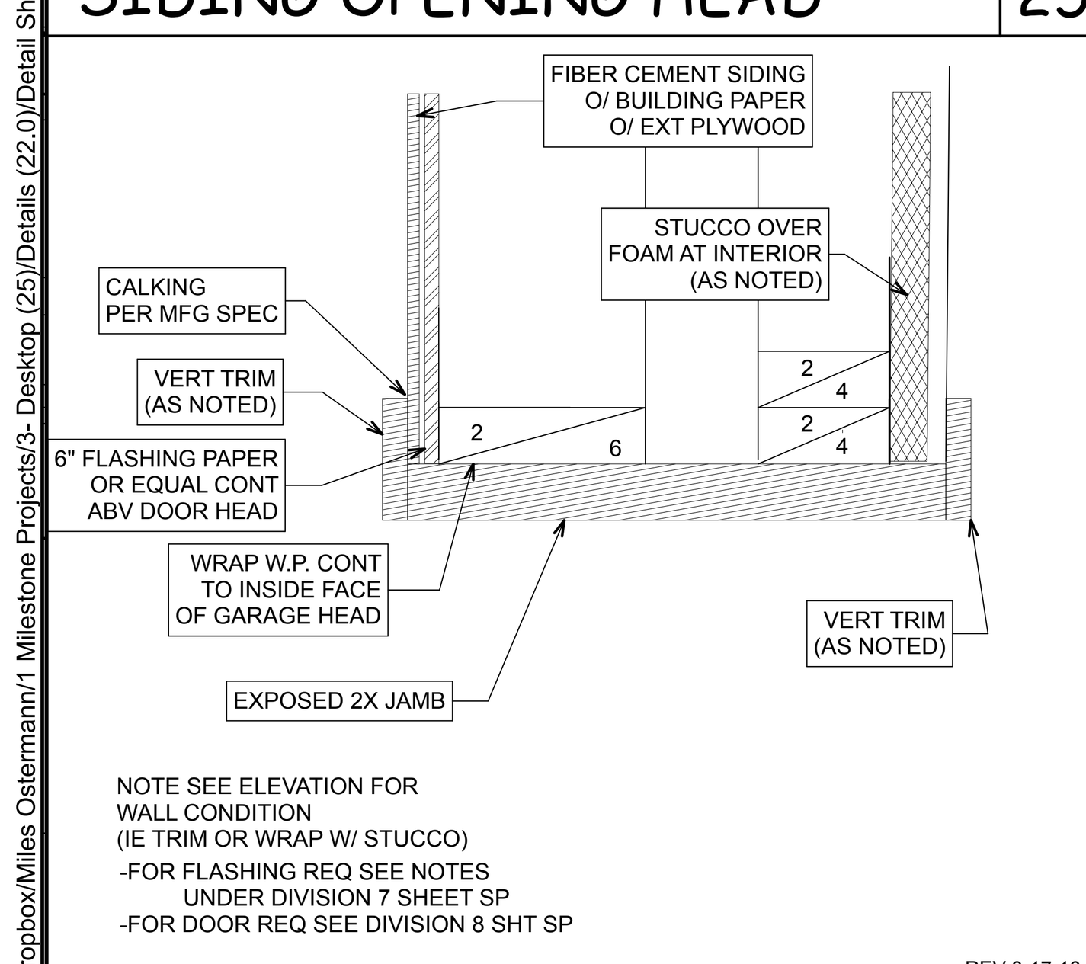
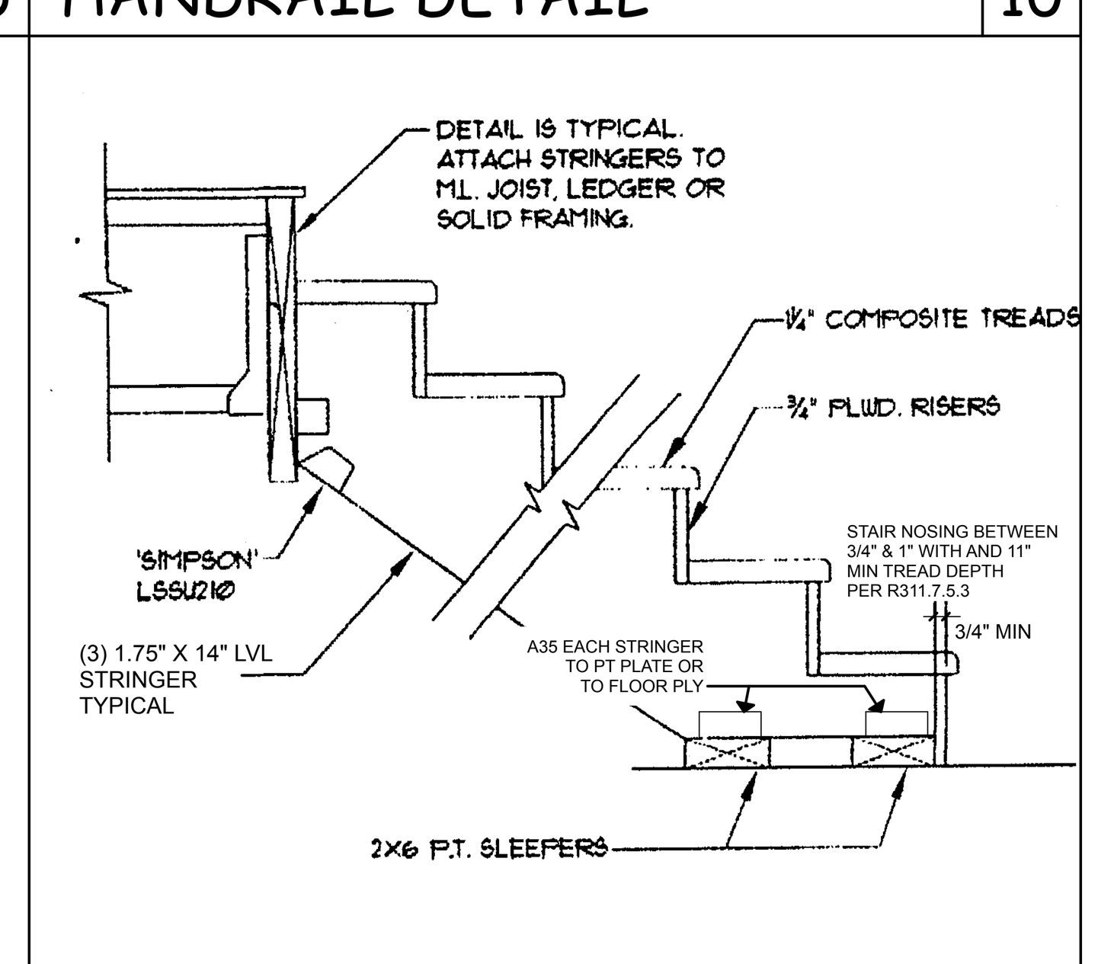
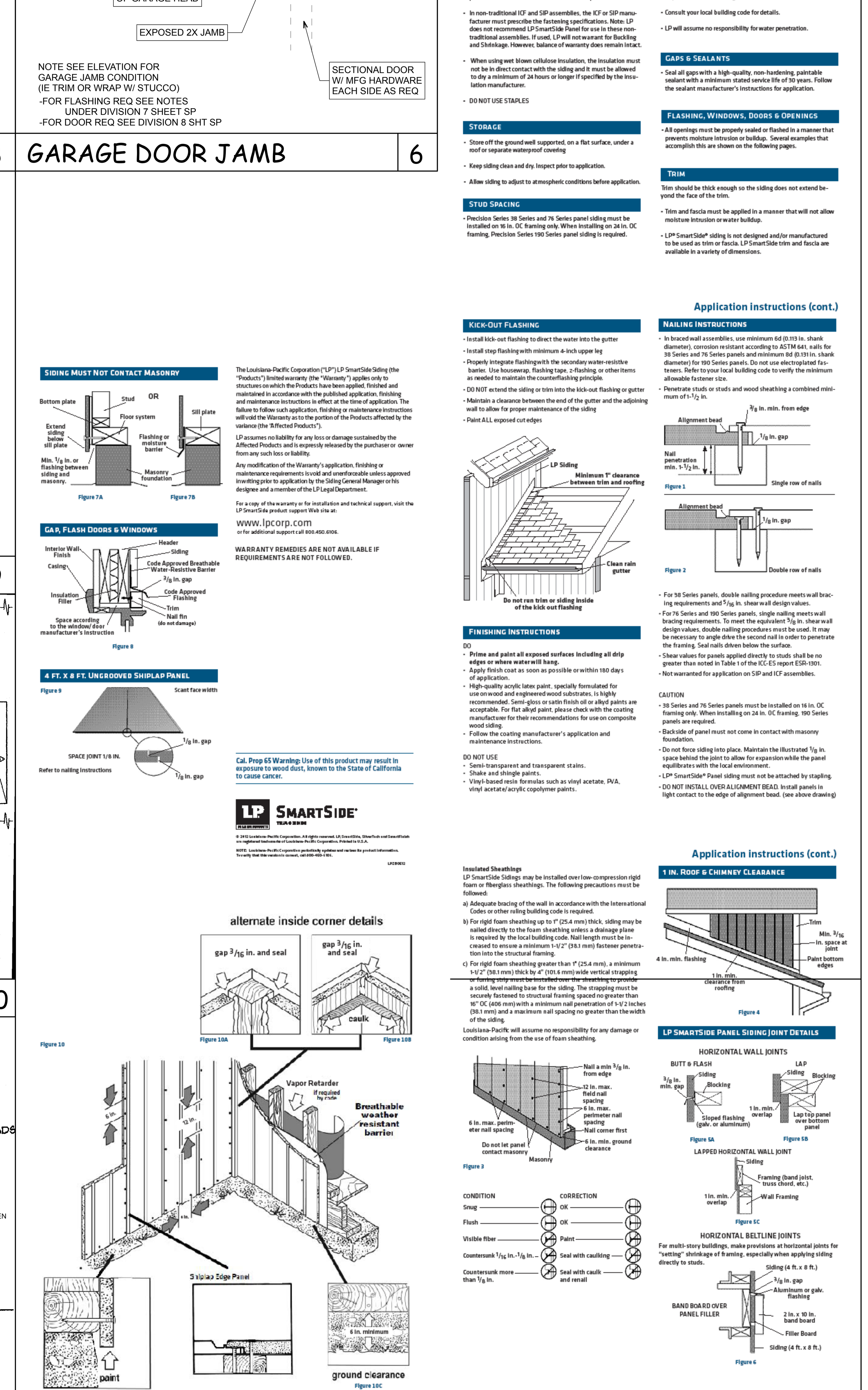


SIDING OPENING JAMB 26

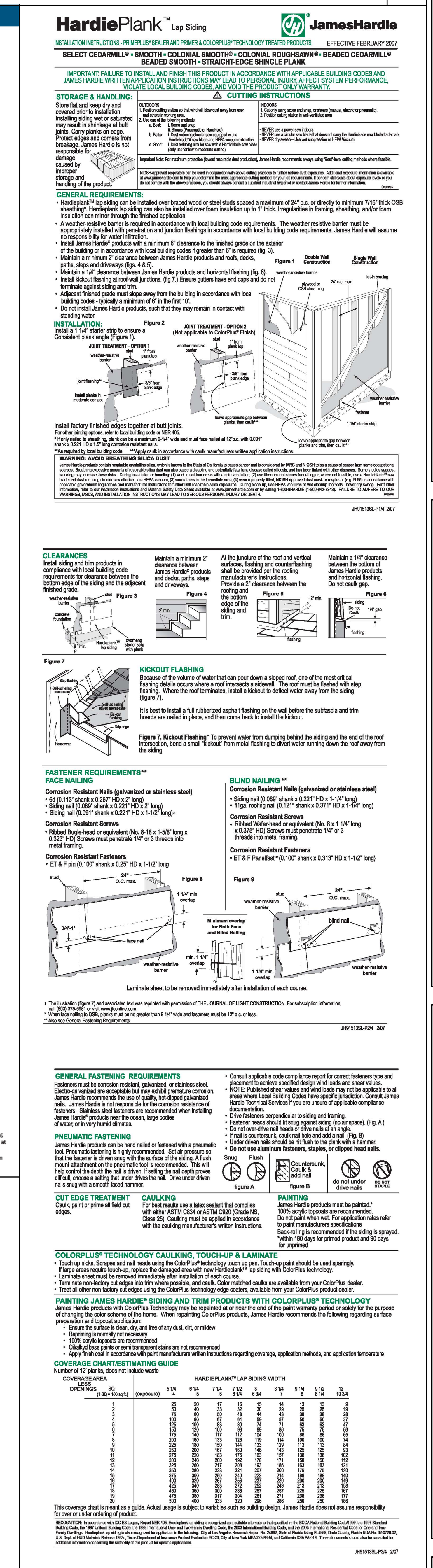
16



TYPICAL STAIR DETAIL 11



SIDING DETAILS 4



SIDING DETAILS 2

JOB #	FILE
SCALE	N/A

DATE
1-17-17 Code Update
11-13-17 DETAIL REV
6-5-20 PC SET
10-21-20 UPDATES
10-11-21 UPDATES
12-22-21 updates

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Milestone STUDIO

Architectural Details

ARCHITECTURAL DETAIL NOTE:
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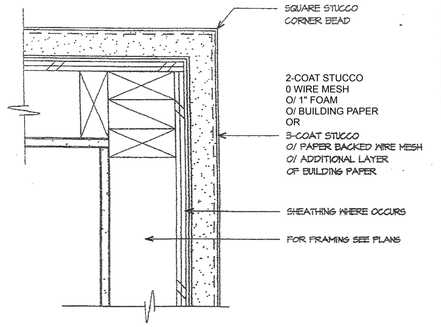
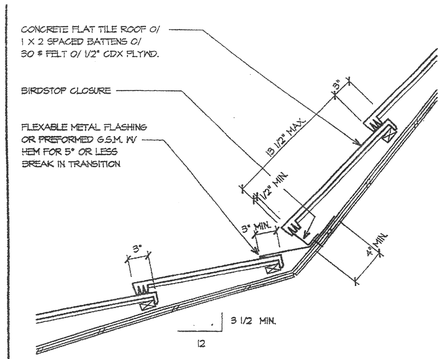
SHEET
AD1

/Users/milesostermann/MSS Dropbox/Miles Ostermann/1 Milestone Projects/3- Desktop (25)/Details (22.0)/Detail Sheets/AD1 (vinyl+siding)/sht AD1 PANEL + LAP (4-17-20).pln



SCALE: 3" = 1'-0"

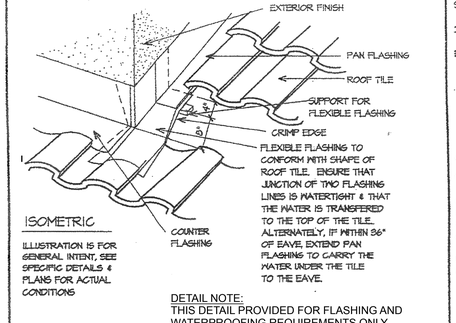
SQUARE STUCCO CORNER — REV 3-21-13 — 20



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

NOTE:
FOR CHANGES IN PITCH GREATER THAN 5"

CHANGE IN PITCH — 16

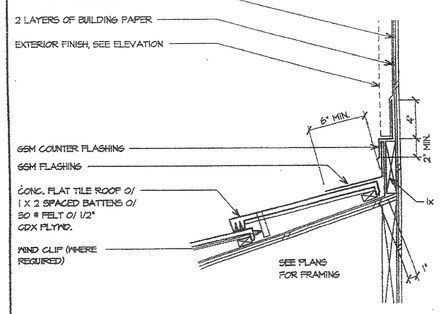


ISOMETRIC

ILLUSTRATION IS FOR GENERAL INTENT, SEE SPECIFIC DETAILS & PLANS FOR ACTUAL CONDITIONS

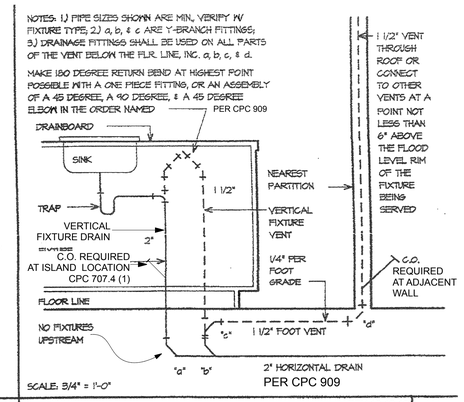
DETAIL NOTE:
THIS DETAIL PROVIDED FOR FLASHING AND WATERPROOFING REQUIREMENTS ONLY
SEE ROOF PLAN FOR ACTUAL ROOFING TYPE
(IE COMP, FLAT TILE, S TILE OR 2-PIECE CLAY TILE)

PARALLEL WALL AT CORNER — REV 10-7-19 — 12



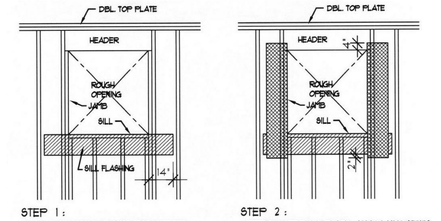
SCALE: 1 1/2" = 1'-0"

ROOF PERPEND. TO WALL — 8



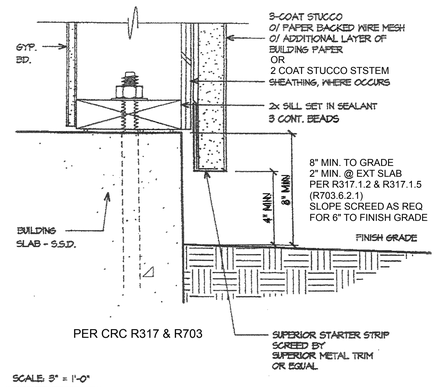
SCALE: 3/4" = 1'-0"

ISLAND VENTING — REV 10-12-16 — 4



1. ALL MATERIALS USED AND PROCEDURES SHALL BE IN STRICT CONFORMANCE WITH CBC SECTION 1503
2. MATERIAL FOR FLASHING SHALL BE 15 LB. ASPHALT-SATURATED FELT WHENEVER POSSIBLE. CAULK BACK OF WINDOW PRIOR TO SETTING. INSTALL WINDOWS THAT ARE WATERTIGHT CONSTRUCTION.

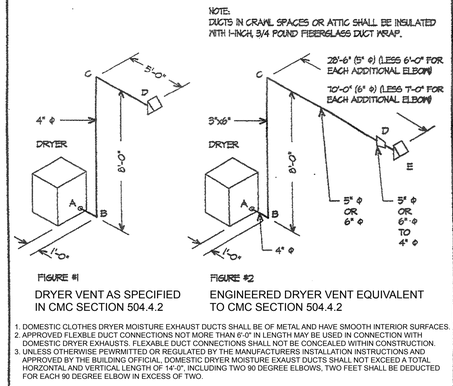
WINDOW FLASHING DETAIL — REV 3-21-13 — 17



PER CRC R317 & R703

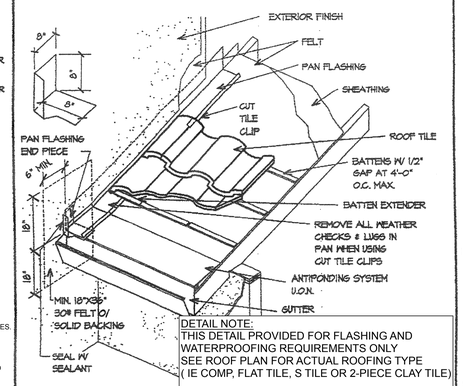
SCALE: 3" = 1'-0"

WALL SILL PLATE — REV 3-12-15 — 19



1. DOMESTIC CLOTHES DRYER MOISTURE EXHAUST DUCTS SHALL BE OF METAL AND HAVE SMOOTH INTERIOR SURFACES.
2. APPROVED FLEXIBLE DUCT CONNECTIONS NOT MORE THAN 6'-0" IN LENGTH MAY BE USED IN CONNECTION WITH DOMESTIC DRYER EXHAUSTS. FLEXABLE DUCT CONNECTIONS SHALL NOT BE CONCEALED WITHIN CONSTRUCTION.
3. UNLESS OTHERWISE PEWRMITTED OR REGULATED BY THE MANUFACTURERS INSTALLATION INSTRUCTIONS AND APPROVED BY THE BUILDING OFFICIAL, DOMESTIC DRYER MOISTURE EXAUST DUCTS SHALL NOT EXCEED A TOTAL HORZONTAL AND VERTICAL LENGTH OF 14'-0", INCLUDING TWO 90 DEGREE ELBOWS. TWO FEET SHALL BE DEDUCTED FOR EACH 90 DEGREE ELBOW IN EXCESS OF TWO.

CLOTHES DRYER VENTING — REV 9-18-17 — 15



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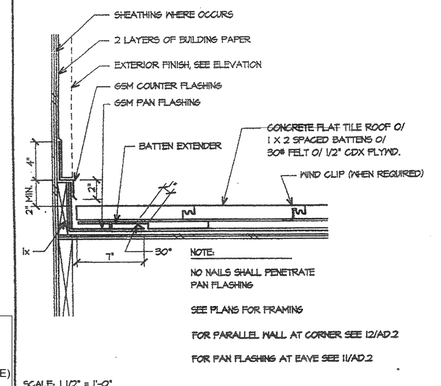
(IE COMP, FLAT TILE, S TILE OR 2-PIECE CLAY TILE)

TYPICAL PAN FLASHING AT EAVE — REV 10-7-19 — 11

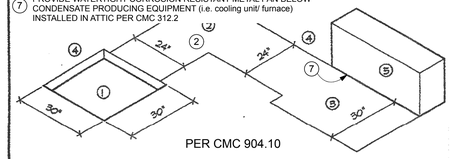


SCALE: 1 1/2" = 1'-0"

ROOF PARALLEL TO WALL — 7

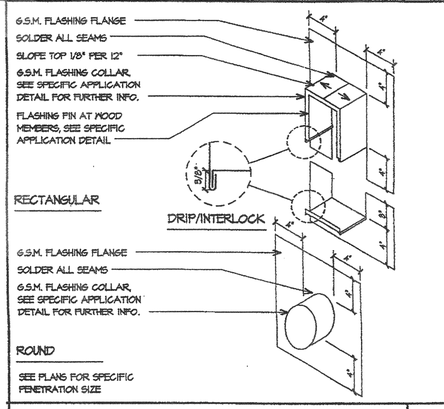
MARK AIR FURNACES INSTALLED IN ATTICS OR FURRED SPACES SHALL BE INSTALLED AS PER UMC 304 AND SHALL INCLUDE THE FOLLOWING: (CRC 807.1, CMC 904.10)

1. A MINIMUM 30" x 30" ACCESS (20 FEET MAXIMUM FROM FURNACE)
2. CONTINUOUS SOLID FLOORING (5/8" CDX OR EQ) 24" MIN WIDE FROM ACCESS TO FURNACE
3. A LEVEL WORKING PLATFORM 30" MIN IN DEPTH ALONG ENTIRE FIREBOX SIDE OF FURNACE
4. A PERMANENT 110V ELECTRICAL OUTLET AND LIGHTING FIXTURE LOCATED AT OR NEAR FURNACE. LIGHTING FIXTURE TO BE CONTROLLED BY A SWITCH LOCATED AT ACCESS.
5. THE FAU SHALL BE LISTED FOR INSTALLATION IN ATTICS AND ON COMBUSTABLE FLOORING. CLEARANCES SHALL BE AS PER MANUFACTURERS SPECIFICATIONS AND PER UMC 304.
6. PROVIDE 2x8 RAISED PLATFORM MOUNTED PARALLEL ON TOP OF 2x4 BOTTOM CORD @ TRUSS TO ALLOW ADEQUATE SPACE FOR CONTINUOUS R-30 INSULATION @ CEILING.
7. PROVIDE WATERTIGHT CORROSION RESISTANT METAL PAN BELOW CONDENSATE PRODUCING EQUIPMENT (i.e. cooling unit/ furnace) INSTALLED IN ATTIC PER CMC 312.2

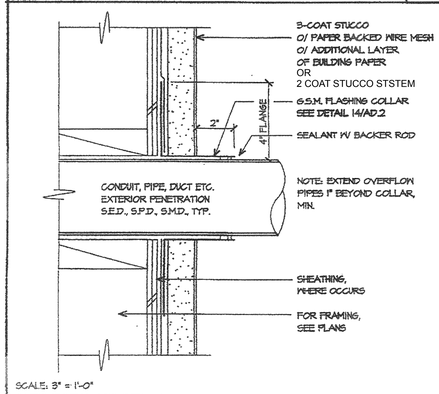


PER CMC 904.10

ATTIC FURNACE — REV 9-18-17 — 3

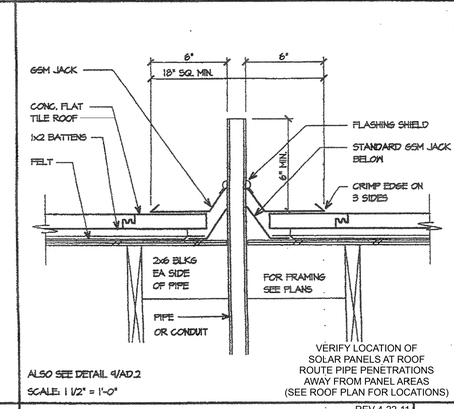


TYP. PENETRATION FLASHING — 14



SCALE: 3" = 1'-0"

PIPE PENETRATION — REV 4-22-11 — 13

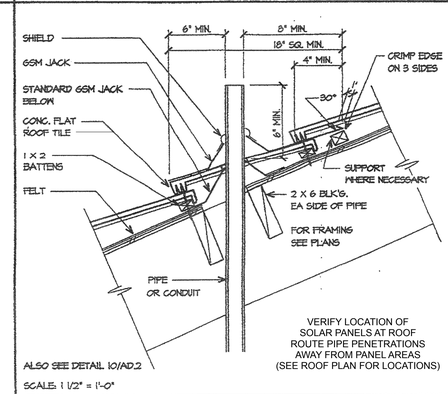


ALSO SEE DETAIL 9/AD.2

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

VERIFY LOCATION OF SOLAR PANELS AT ROOF
ROUTE PIPE PENETRATIONS AWAY FROM PANEL AREAS
(SEE ROOF PLAN FOR LOCATIONS)

PIPE PENETRATION — REV 4-22-11 — 10

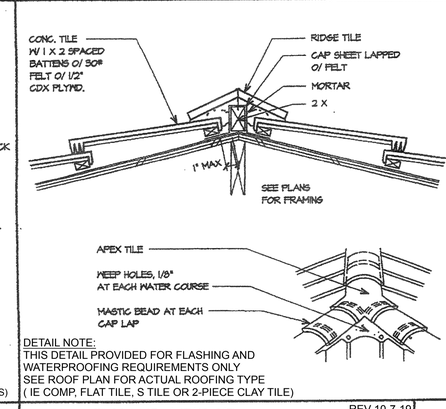


ALSO SEE DETAIL 10/AD.2

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

VERIFY LOCATION OF SOLAR PANELS AT ROOF
ROUTE PIPE PENETRATIONS AWAY FROM PANEL AREAS
(SEE ROOF PLAN FOR LOCATIONS)

CONC. TILE HIP / RIDGE — REV 10-7-19 — 6



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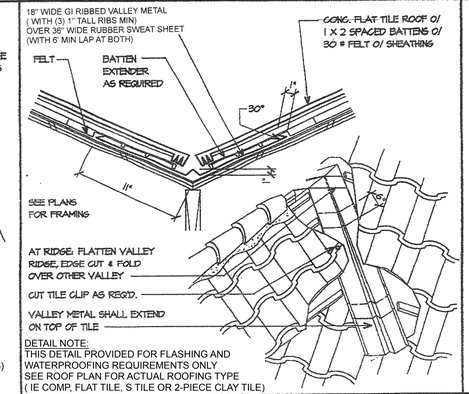
W/H ANCHORAGE — REV 9-18-17 — 2



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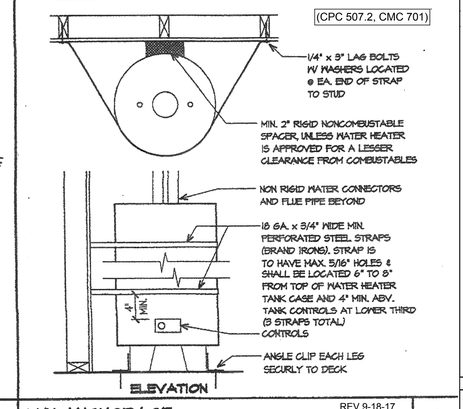
VALLEY — REV 10-7-19 — 5



— — 1

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Milestone Studio

JOB #	File
SCALE	1/4"= 1'-0"

DATE
2-26-16 Rev Detail #3
10-12-16 Rev Detail #4
9-18-17 Rev #2, #3 & #15
10-7-19 ADD ROOFING MATERIAL NOTE
5-2-21 Detail Updates

Architectural Details

SHEET
AD2

Hydraulic Drive System - Technical Reference:

General
- Capacity - 750 lbs or 1000 lbs with standard doors and gates, 1400 lbs. with automatic sliding doors
- 40' (12.2 M) per minute nominal car speed
- Up to 6 stops, Maximum 6 landing doors
- Maximum floor total travel of 50' (15.2 m) with standard swing doors or 32' (9.75 m) with automatic sliding doors. Reduced capacity of 1000 lbs. (455 kg) allows for 36' (10.9 m) of travel with sliding doors
- Pit depth of 8" (200 mm) is recommended for units with standard swing doors. 14" (356 mm) pit required for units with automatic sliding doors
- Overhead clearance of 96" (2440 mm) from upper landing with standard 84" (2135 mm) cab and swing doors. 135" (3429 mm) for units with automatic sliding doors
- Minimum distance between floors is 10" (255 mm)

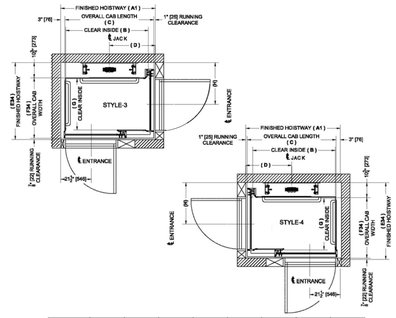
Equipment
- Two speed control valve with soft start and stop
- 1:2 cable hydraulic drive
- Single stage Hydraulic drive with two 3/8" aircraft cables
- Heavy duty cantilever design utilizing 8 lbs per foot steel elevator guide rail system
- Submersible pump and motor assembly for quiet operation
- Standard power supply is 230 VAC single phase – 60/ 50 Hz. Optional 208 VAC three phase

Controls
- Collective automatic operation with illuminated push buttons
- PLC (Programmable Logic Controller) with backup system for lights, locks, gate and/or door operator(s) where equipped and elevator descent
- Digital position indicator in cab
- Automatic cab lighting
- Low oil protection timer circuit
- Emergency stop and alarm

Safety Features
- Emergency manual lowering
- Slack/broken cable instantaneous safety device
- Upper and Lower terminal limit switches and a Final limit at top and bottom of travel
- Hoistway door interlocks ensure the car does not move unless all hall doors and cab gate(s) are closed and locked
- Emergency battery backup light and alarm
- UL and/or CSA certified electrical control system
- Automatic bi-directional leveling (Encoder)
- Solid cab gates with safety switch

Options
- Pipe rupture valve
- Keyed hall stations
- Recessed telephone box or integrated telephone in cab control panel
- Automatic cab gate operator
- Automatic hoistway door operator
- Custom cab sizes and cab heights
- Buffer Springs – required for hoistways with habitable space under the pit

90º Entry / Exit Configuration Style 3 & 4:



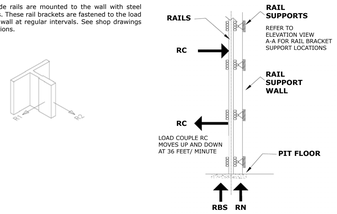
Cab Size	A1	B	C	D	E34	F34	G	H
36" x 48"	56 1/4"	48"	52 1/4"	30"	53 7/8"	42 1/4"	36"	29 1/4"
36" x 54"	62 1/4"	54"	58 1/4"	33"	53 7/8"	42 1/4"	36"	29 1/4"
36" x 60"	68 1/4"	60"	64 1/4"	36"	53 7/8"	42 1/4"	36"	29 1/4"
40" x 54"	62 1/4"	54"	58 1/4"	33"	57 7/8"	46 1/4"	40"	31 1/4"
* 42" x 60"	70 1/4"	60"	66 1/4"	36 5/8"	59 7/8"	48 1/4"	42"	33 1/4"
* 48" x 60"	70 1/4"	60"	66 1/4"	36 5/8"	65 7/8"	54 1/4"	48"	41 1/4"

*Cab sizes are limited to 15 sq. ft. in some areas. Consult with your local Garaventa Lift representative.

Loading Diagram

The walls of the elevator hoistway can be constructed of wood, poured concrete or concrete block. The wall behind the rails must be load bearing and able to withstand the loads imposed by the elevator.

The guide rails are mounted to the wall with steel brackets. These rail brackets are fastened to the load bearing wall at regular intervals. See shop drawings for locations.

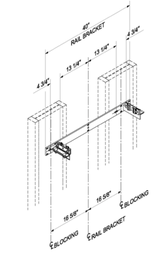


Load	Description	lbf [N]
RBS	Reaction due to buffer safety engagement	4569 [20321.74]
RN	Reaction due to normal operation	2619 [11647.71]
RC	Load imposed during normal or emergency operation maximum pull-out force on rail support	636 [2829.797]
R1	Rail Reaction	318 [1415
R2	Rail Reaction	94 [420]

Wood Construction
2" x 4" wood studs should be used, 2" x 12"'s laid flat are then fastened between the studs. Consult with your local Garaventa Lift representative if you plan on using wood studs larger than 2" x 4", as this can affect clearances controlled by code.

The hoistway dimensions indicate the clear inside finished hoistway. Please ensure you allow for wall finishing (plywood/drywall) on top of the studs.

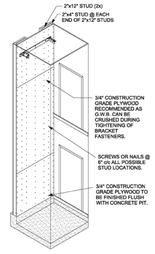
Masonry Construction
It is not necessary to make the return walls on either side of the doors in concrete. More flexibity in door positioning during the installation can be achieved with wood framing around hoistway entrances.



Wood Blocking Guidelines

Door Openings
Garaventa Lift recommends that the walls on either side of the hoistway entrances be framed and finished after the doors and frames have been aligned on site. However a header frame above the door will be required to mount the door in place.

During installation the rails system and floor of the cab are installed, then the doors are aligned to the centerline of the cab opening.



Rail Bracket in Hoistway

ELEVATOR SPECIFICATION

Division 14235

Residential Elevator 1:2 Roped Hydraulic

PART 1 GENERAL

1.01 SECTION INCLUDES
A. Residential elevator with 1:2 roped hydraulic lift system.

1.02 WORK INCLUDED
A. Furnish all labor and materials, equipment and incidentals necessary to assemble and erect a residential elevator, complete with a remote power unit and all hoses, rails, brackets, connections and controls essential for proper operation.

1.03 WORK BY OTHERS
A. Construct a hoistway of the size required by the manufacturer, complete with all demolition, additional framing, headers and framing components necessary to prepare the existing building to receive the elevator.
1. Hoistway size: Dependant upon car size.
2. The hoistway shall be vertical to within 1/8" throughout the entire height.
3. Provide structural members, installed, full length vertically of hoistway between floor plates per manufacturer's recommendation.
4. Pit requirements: Provide 8" deep pit (minimum 6" deep). Install reinforcement and concrete as necessary. Floor must sustain load specified in job drawings.
B. Construct a machine room:
1. Provide elevator electrical circuit: 208/230 volt AC/ 1 phase/ 60hz (30 amp)
2. Provide elevator lighting electrical circuit: 115 volt (15amp)
C. Provide system to maintain hoistway and machine room temperature between 50-90 degrees Fahrenheit.

1.04 REFERENCES:
A. General: The applicable provisions of the following standards shall apply as if written here in their entirety.
B. American Society of Mechanical Engineers / American National Standards Institute (ASME/ANSI) publications: ASME/ANSI A17.1 "Safety Codes for Elevators and Escalators", Section 5.3.
C. National Fire Protection Association (NFPA) publications: NFPA 70 National Electrical Code

1.05 SYSTEM DESCRIPTION:
A. Travel: _____ (50' max)
B. Stops: _____ (up to 6)
C. Load Capacity: 950 lb. (750 lb opt.)
D. Speed: 36 fpm

1.06 SUBMITTALS:
A. Submittals shall be in accordance with Section 01300, SUBMITTALS.
B. Product Data: Submit product data, including manufacturer's specifications.
C. Shop Drawings:
1. Shop drawings showing all field construction, including dimensions.
2. Hoistway dimensions
3. Wiring diagrams
4. Maintenance instructions
5. Car and Gate selection charts

1.07 QUALITY ASSURANCE
A. Qualifications:
Installer Qualifications: A company experienced in the assembly and erection of lifts and residential elevators of the type specified; trained and certified by the manufacturer.
Manufacturer Qualifications: A company specializing in the manufacture of residential elevators.
B. Regulatory Requirements: The complete manufacture, fabrication and erecting of the elevator shall be in compliance with all Federal, State and local codes and ordinances. The installer shall verify requirements of the local authority having jurisdiction and shall comply with all local codes and ordinances.

1.08 DELIVERY, HANDLING & STORAGE
A. All components shall be shipped to the site in substantial crates to protect from damage during shipping and handling. Upon arrival, inspect components and keep under cover until installed.

1.09 WARRANTY
A. Unit shall have a three (3) year limited parts warranty.

1.10 MAINTENANCE:
A. Maintenance of the private residential elevator shall consist of regular cleaning and inspection at intervals not longer than every 12 months.
72. Inspection: ASME A17.1 requires all private residential elevators to be inspected every 12 months.

PART 2 PRODUCTS

2.01 MANUFACTURERS
A. Manufacturer: "Destiny" model by The National Wheel-O-Vator Co., Inc.
B. Substitutions: No substitution shall be considered unless written request for approval has been submitted and received by the architect at least ten (10) days prior to the bid date.

2.02 COMPONENTS
A. Car:
1. Size: 36" W x 48" D MIN Clear (actual size depending on space available)
2. Enclosure: Securely fastened to the car frame and platform. The car shall be constructed of a minimum ¾" wood walls. Floorboard shall be constructed of 1" AC plywood.
3. Gate: Accordion or scissors type equipped with a positively opened mechanical switch to indicate that the door is closed. Scissor type gates shall also be designed to prevent car movement if the gate is moved up or down due to any protruding objects encountering an obstruction.
4. Handrail: One, located on the car wall. Height between 31" and 33" from the elevator floor with a space at least 1-1/2" between the wall and the rail. CBC 3003.4.12
5. Telephone: Wall mount telephone jack shipped loose with elevator.
6. Control panel: Provide one momentary pressure illuminated button for each landing, emergency stop and alarm button, and a digital position indicator; all mounted in a control panel having a stainless steel or brass cover.
7. Interior lighting: Provide overhead light fixtures that automatically turn on when the car is in operation and turn off by means of a timer circuit.
B. Hoistway door:
1. Size: 3'0" W x 8'-0"H swing type
2. The general contractor or owner is to furnish (elevator contractor may opt to furnish) and install hoistway doors, frames, hinges and passage sets at each landing. The type and installation of the doors and frames must comply with ASME A17.1, all local codes and manufacturer's layout drawings.
3. Locking Device: Door shall have a concealed locking device, interlocked with the car operation, to interrupt electrical power when the door is not securely closed and a car is not at the landing. The door shall be locked when car is not in the landing zone.
C. Hydraulic power unit:
1. The pump, submerged motor and valve shall be pre-wired, ready for connection to the controller in the field.
2. Up direction acceleration adjustment.
3. Two speed operation.
4. Adjustable pressure relief valves.
5. Manually operated down valve for emergency operation.
6. Pressure gauges and pressure gauge isolation valves.
7. Manual valve isolation between pump unit and jack.
8. Negative pressure switch provided.
9. Testing: Shall be factory tested prior to shipment.
10. Muffler provides for quiet operation.
D. Cylinder:
1. Construction: Steel pipe with cylinder head having an internal guide ring and self-adjusting packing.
2. Safety valve: Cylinder shall be equipped with a pipe rupture safety valve to prevent uncontrolled car descent.
E. Plunger:
1. Construction: Shall be a machined steel shaft equipped with a stop, electrically welded to bottom end, to prevent plunger from leaving shaft cylinder.
2. Diameter: 70 or 80 mm, depending on travel distance.
F. Cable system: 1:2 system using (2) 3/8" - 7x19 aircraft cables integrated with rams header sheave mounted to the plunger. (THHN, THW, THWN, TW, XHHW or equal) NEC 620-11(d)
G. Guide rail: Shall consist of two 6 ½ lb. tee rails assembled and fastened. Provide brackets to hold rail assembly to walls. Rail shall be furnished with steel splice plates and hardware.
H. Car frame: Shall be equipped with non-metallic faced roller guide wheels.
I. Leveling device: Provide Hall Effect Position Sensor to maintain car within ½" of the landing.
J. Control systems: Non-Selective collective PLC (Programmable Logic Controller).
K. Motor (submerged): 3.0 HP, 1750-RPM 208/230 VAC, single phase.
L. Wiring:
1. Provide flexible traveling cable for electrical lights and controls in car.
2. All other electrical wiring shall be insulated, flame retardant and moisture proof copper wiring, installed in ridgid metal conduit. NEC 620-621
M. Safety Devices:
1. Slack cable protection: Provide a stainless steel linkage device that stops and sustains the car in the event of breakage or slackening of cables.
2. Terminal stopping device: Shall be provided at the top and bottom of the car travel.
3. Provide a platform toe guard at the car entrance.
N. Battery powered emergency operation system:
1. Powers a light in the car.
2. Powers an emergency alarm system.
3. Powers a system to allow car to descend to floor selected by passenger.
4. The batteries shall be a re-chargeable type complete with an automatic re-charging system.
O. "Self Diagnostic System" utilizing diagnostic codes displayed in hall and car acknowledgement lights to provide information in the event the elevator will not operate.

2.03 ACCESSORIES
Specifier Note: - Due to the individual nature of elevator installations, accessories such as, but not limited to, those in the following list are available:

A. Hoistway doors and door locks.
B. Flush mounted telephone box.
C. Car door finish and design.
D. Car operating panel and hall call finishes
E. Car trim and wood specie.
F. Custom platform and car size.
G. Finished flooring.
H. Hydraulic tank heater.
I. Electrical disconnects.

PART 3 EXECUTION

3.01 INSTALLATION
A. Inspect the hoistway and determine if the hoistway meets the manufacturer's requirements for clearances and plumb.
B. All components shall be assembled and erected in strict compliance with manufacturer's printed instructions.
C. All wiring shall be in accordance with the wiring diagram furnished by the manufacturer.

3.02 FIELD QUALITY CONTROL
A. Static/Running Load Test: All load rating and safety factors shall meet or exceed those specified in ASME A17.1

3.03 ADJUSTING
A. Test the elevator to assure proper operation under all conditions of use. Make proper adjustments and review operating components for proper operation.

For more details, see http://www.garaventalift.com/en/architects-and-builders.html
Garaventa Lift
Phone: 1-800-663-6556
Email: customerrelations@garaventalift.com

Hydraulic Drive System - Machine Room & Electrical Requirements

In order to satisfy code requirements, the hydraulic pump unit and fused disconnect switches must be located in a room or area which is lockable. A lockable cabinet is acceptable. However, to meet electrical code, Service Personnel must have the following clearance in front of the electrical box:

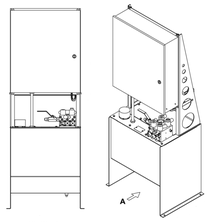
US - 36" x 36" x 7' (915 x 915 x 2135mm)
Canada - 39 1/2" x 39 1/2" x 7' (1000 x 1000 x 2135mm)

The machine room does not have to be a separate, dedicated room. The machinery could be located in a closet or under the stairs, as long as the above requirements are met. The optimum location is at the lowest level, adjacent to the hoistway, preferable on the same side as the guide rails. The dimensions of the pump unit are 23" wide x 16 ½" deep x 59 ¼" high (585 x 420 x 1505 mm).

To save space the electrical control box can be disconnected from the tank. They can be separated up to 10' (3048 mm) away. The control box is 23" wide x 6" deep x 30" high (585 x 155 x 765 mm). The tank for the pump and motor is 23" wide x 16 ½" deep x 31" high (585 x 420 x 790 mm). You will need 4" (155 mm) above the pump and motor tank for servicing purposes.

One PVC sleeve, at least 4" (105 mm) in diameter, will be required between the hoistway and the machinery for the hydraulic hose and electrical conduit. This is to enable the installers to make the connection between the cylinder and the pumping unit. The sleeves should enter the hoistway at either corner of the support wall.

Please contact your local Garaventa Lift representative for specific local code requirements.



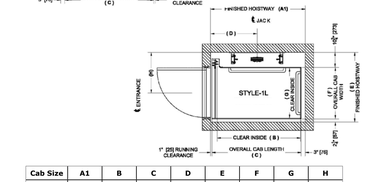
VIEW - A

On / Off Same Side Front Configuration Style 5:

Cab Size	A5	B	C5	D5	E34	F34	G	H
36" x 48"	54 1/4"	48"	49"	27 1/8"	53 7/8"	42 1/4"	36"	27 1/8"
36" x 54"	60 1/4"	54"	55"	30 1/8"	53 7/8"	42 1/4"	36"	30 1/8"
36" x 60"	66 1/4"	60"	61"	33 1/8"	53 7/8"	42 1/4"	36"	33 1/8"
40" x 54"	60 1/4"	54"	55"	30 1/8"	57 7/8"	46 1/4"	40"	30 1/8"
* 42" x 60"	66 1/4"	60"	61"	33 1/8"	59 7/8"	48 1/4"	42"	33 1/8"
* 48" x 60"	66 1/4"	60"	61"	33 1/8"	65 7/8"	54 1/4"	48"	33 1/8"

*Cab sizes are limited to 15 sq. ft. in some areas. Consult with your local Garaventa Lift representative.

On / Off Same Side Configuration Style 1:



Cab Size	A1	B	C	D	E	F	G	H
36" x 48"	56 ¼"	48"	52 ¼"	30"	50"	37"	36"	29 ¼"
36" x 54"	62 ¼"	54"	58 ¼"	30"	50"	37"	36"	29 ¼"
36" x 60"	68 ¼"	60"	64 ¼"	33"	50"	37"	36"	29 ¼"
40" x 54"	62 ¼"	54"	58 ¼"	30"	54"	41"	40"	31 ¼"
* 42" x 60"	70 ¼"	60"	66 ¼"	36 ⅛"	56"	43"	42"	35 ¼"
* 48" x 60"	70 ¼"	60"	66 ¼"	36 ⅛"	62"	49"	48"	41 ¼"

*Cab sizes are limited to 15 sq. ft. in some areas. Consult with your local Garaventa Lift representative.

Construction of Pit:

The pit must be the same width and length as the hoistway, and should have a minimum 4" thick concrete floor. Reactions are indicated on each project's shop drawings. A pit depth of 8" (200 mm) is recommended, a 6" (152 mm) pit depth is available, contact Garaventa Lift for details*.

A pit ladder is required only if the pit depth exceeds 3' (900 mm). Consult your Garaventa Lift representative for details as changes to the finished hoistway size maybe required.

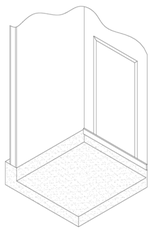
Pit Lighting
A pit light is required if the lighting is less than 50 lx at the pit floor with the lowest door open. The general contractor can install a light in the hoistway pit or provide a separate 110v duplex receptacle outside the hoistway, within 10' (3000 mm) of either side of the lowest landing door.

Overhead Clearance
84" (2134 mm) Cab Height - Standard
• 96" (2440 mm) is required from top landing to the ceiling of hoistway

If an In-line Drive system is used and the electrical control box is located at the top of the hoistway, extra overhead clearance is required, 108" (2745 mm)

96" (2438 mm) Cab Height
• 108" (2745 mm) is required from top landing to the ceiling of hoistway

If an In-line Drive system is used and the electrical control box is located at the top of the hoistway, extra overhead clearance is required, 120" (3050 mm)



*Larger cabs can require up to a 12" (305mm) pit.

Lighting
You must provide at least 100 lx lighting over the pumping unit and disconnect switches.

Electrical Disconnects
In the machine room, you will need to provide two separate lockable fused disconnects – one 15 amp for lighting and one 30 amp for the pumping unit. Disconnect switches should be located on the lock jamb side of the machine room door. In accordance to the electrical code, you must provide a minimum of 36" (915 mm) square in the US and 39 3/8" (1000 mm) square in Canada of working space in front of each disconnect switch.

The fused disconnect switch rating and fuse rating for the lift will be shown on the shop drawings for your project.

At least one GFCI duplex receptacle connected to a dedicated 15 amp branch circuit must be installed in the machine room.

Ventilation Requirements
No special requirements needed. The elevator pump unit will generate approximately 3200 BTU per hour under normal operating conditions. Recommended temperature for elevator equipment is 50º – 90º F (15º – 32º C) and 5% – 90% non-condensing. Please contact your local Garaventa Lift representative for possible local code variations.

Mains Power Requirements
The standard motor on the pump unit is 3 HP and it can be ordered to suit either single or three phase power.

• 230 VAC Single phase 30 amps
• 208 VAC Three phase 20 amps

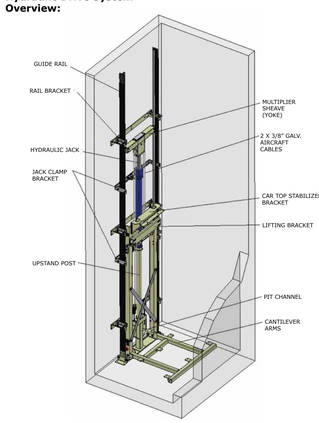
Lighting Power Requirements
• 120 VAC Single phase 15 amps

Emergency Battery Lowering
In case of a power outage the elevator is provided with a second power source that allows the car to be lowered to the lowest landing. While descending, the car can stop and the passenger can exit the car at any landing along the way.

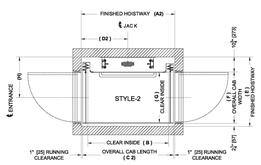
Emergency Manual Lowering
The elevator can be manually lowered from the release valve located on the top of the Control assembly tank.

Electrical Disconnects

Hydraulic Drive System Overview:



Straight Through Configuration Style 2:



Cab Size	A2	B	C2	D2	E	F	G	H
36" x 48"	54 3/4"	48"	52 3/4"	27 3/8"	50"	37"	36"	29 ¼"
36" x 54"	60 3/4"	54"	58 3/4"	30 3/8"	50"	37"	36"	29 ¼"
36" x 60"	66 3/4"	60"	64 3/4"	33 3/8"	50"	37"	36"	29 ¼"
40" x 54"	60 3/4"	54"	58 3/4"	30 3/8"	54"	41"	40"	31 ¼"
* 42" x 60"	73 1/2"	60"	71 1/2"	36 3/4"	56"	43"	42"	35 ¼"
* 48" x 60"	73 1/2"	60"	71 1/2"	36 3/4"	62"	49"	48"	41 ¼"

*Cab sizes are limited to 15 sq. ft. in some areas. Consult with your local Garaventa Lift representative.

Hoistway Doors

Residential solid core doors must be used as the hoistway doors for the elevator. The doors are equipped with an interlock, during installation, to lock the doors when the elevator is not present at that landing.

The doors need to comply with the "3 & 5 Rule" which references the positioning of the door in relation to the elevator hoistway (see drawing).

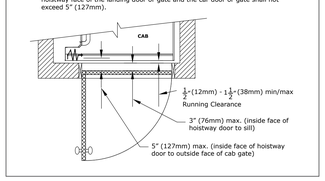
Automatic Cab Gate (Optional)
The cab gate(s) can be equipped with a power operator for automatic gate opening and closing when the cab arrives at a landing or the landing door is opened.

Hall Door Operator (Optional)
Each hall door may be supplied with a power door operator. This feature will open the landing door when the cab arrives at a landing or when the hall station is pressed. The operator is mounted above the door frame and requires extra support or blocking and a separate 110 VAC power supply above the door header.

Hoistway Door Interlock
The hoistway door is fitted with an interlock that ensures the car can not be moved from a landing unless all the hall doors and cab gate(s) are both closed and locked.

3" & 5" Door & Gate Rule

The clearance between the hoistway doors or gates and the hoistway edge of the landing sill shall not exceed 3" (76mm). The distance between the hoistway face of the landing door or gate and the car door or gate shall not exceed 5" (127mm).



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Elevator Details & Specifications

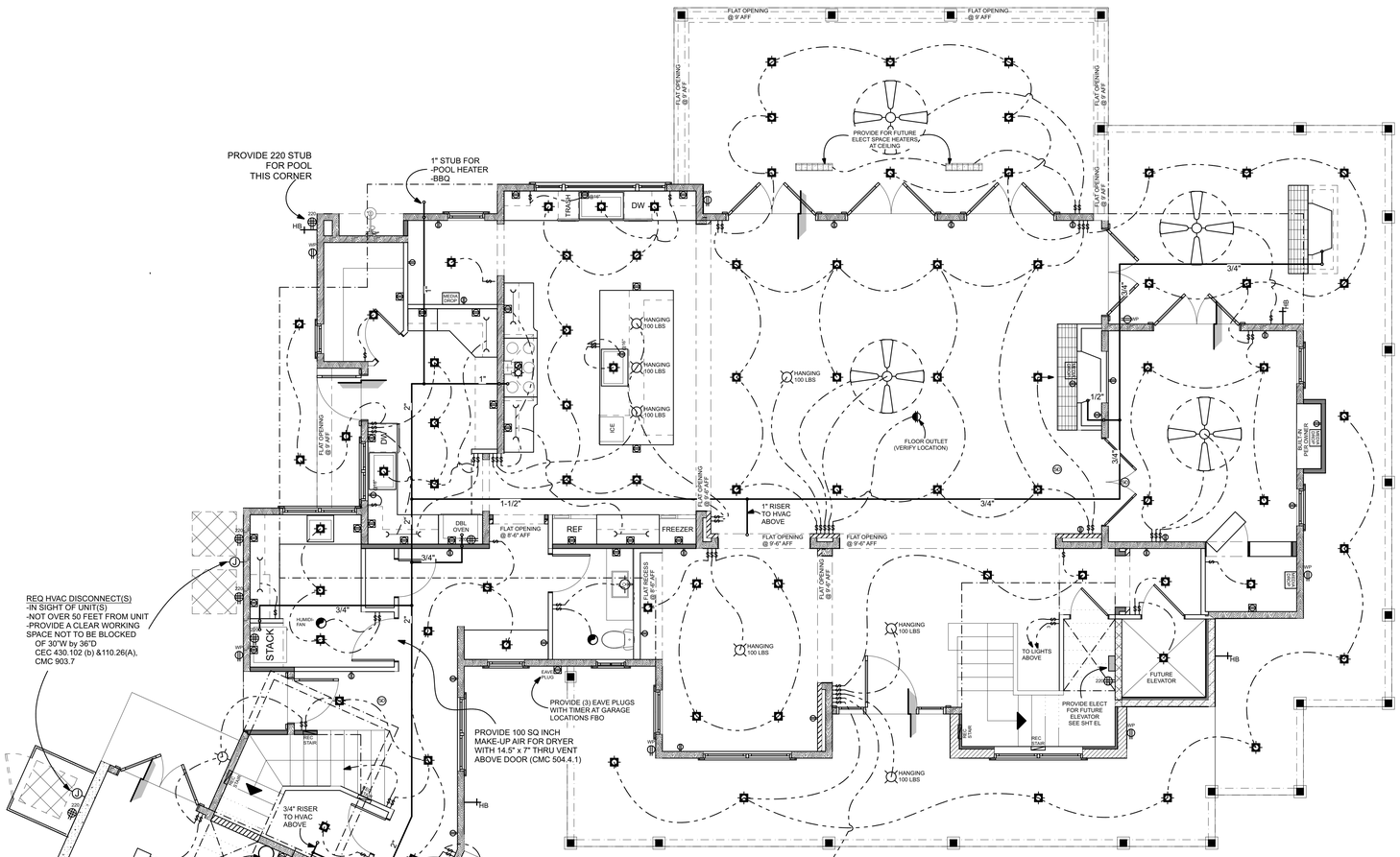
JOB #	19.10.4
SCALE	1/4"= 1'-0"
DATE	5-2-21 PC Set

SHEET

EL

OUTDOOR PLUMBING NOTES:

1. ALL HOSE BIBS AND LAWN SPRINKLER SYSTEMS SHALL HAVE APPROVED NON-REMOVABLE BACKFLOW PREVENTION DEVICES. (CPC 603.4.7)



SITE ADDRESS:

REV 9-29-16

PROVIDE SITE ADDRESS (HOUSE NUMBER) LIGHTED ADDRESS NUMBERS REQUIRED PER CITY OF FOLSOM FIRE DEPARTMENT AND PER PER 2016 CBC R319.1

ELECTRICAL LEGEND

REV 10-7-17

- DUPLEX OUTLET (GROUNDED TYPE)
- WALL SWITCHED DUPLEX OUTLET (1/2 HOT)
- GFIC DUPLEX OUTLET
- WATERPROOF GFIC DUPLEX OUTLET
- 220 VOLT OUTLET OF CONNECTION (GFIC PROTECTED WHEN INSTALLED AT GARAGE OR LAUNDRY LOCATIONS)
- ELECTRIC VEHICLE CHARGING OUTLET (220 VOLT W/ OVERLOAD PROTECTION)
- TELEPHONE LOCATION
- (2) RG6 + (2) CAT5 CABLES
- S/P SWITCH
- AIR SWITCH
- EXTERIOR HOSE -BIB LOCATION
- ELECTRICAL DISCONNECT LOCATION (REQ AT HVAC, SEPTIC TANK PUMPS)
- WHOLE HOUSE FAN
- CEILING MOUNT FLUORESCENT FIXTURE
- WALL MOUNT LED LIGHT FIXTURE
- WALL MOUNT FLUORESCENT FIXTURE
- RECESSED LED CEILING LIGHT FIXTURE
- RECESSED CEILING FLUORESCENT FIXTURE
- SURFACE MOUNT 4' FLUORESCENT LIGHT
- UNDER CABINET FIXTURE
- RECESSED LED LIGHT / FAN FIXTURE
- RECESSED HUMIDISTAT EXAUST FAN
- WALL MOUNT LED WALL SCONCE LIGHT FIXTURE
- RECESSED LED STAIR LIGHT
- CARBON MONIXIDE-SMOKE DETECTOR (WIRED IN SERIES WITH BATTERY BACK-UP)
- CEILING FAN WITH LED LIGHT

ELECTRICAL NOTES:

REV 3-4-20

1. All construction shall conform to the following codes;
   -2019 California Administrative Code (CAC)
   -2019 California Building Code (CBC) Based on the 2019 ICC
   -2019 California Residential Code (CRC) Based on the 2019 ICC
   -2019 California Mechanical Code (CMC) Based on the 2015 IAPMO.
   -2019 California Plumbing Code (CPC) Based on the 2015 IAPMO
   -2019 California Electrical Code (CEC) Based on the 2014 NFPA
   -2019 California Energy Code (CEC), Title 24 Part 6
   -2019 California Fire Code (CFC) Based on the 2015 ICC
   -2019 California Green Building Standards Code (CGBC)
   -2019 California Referenced Standards Code, Title 24, Part 12
   -2019 Accessibility Standards, Chapter 11A of the CA. Bldg. Code.
   -ANY OTHER APPLICABLE STATE, COUNTY OR LOCAL REGULATIONS.
2. Contractor to provide mfg. installation instructions to Field Inspector (at time of inspection) of all installed equipment.
3. Aluminum wire shall not be used in Electrical Wiring within the Building or Dwelling Unit.
4. The requirements for electrical installations shall follow Article 110 and the 2019 CEC.
5. Branch circuits for lighting and for appliances, including motor-operated appliances, shall be provided to supply the loads computed in accordance with 2019 CEC Article 220. In addition, branch circuits shall be provided where required elsewhere in this Code and for dwelling unit loads as specified in the 2019 CEC Article 210.11(C). Central heating equipment other than fixed electric space-heating equipment shall be supplied by an individual branch circuit. (CEC 422.12)
6. Carbon Monoxide-Smoke detector, (UL & I.C.C listed/approved), shall be wired in series on dedicated circuit, receive their primary power from the building wiring and shall be equipped with a battery back-up. The alarm shall be audible in all sleeping areas of the dwelling. (CRC 314.4, CRC 315.1 and CRC 315.2) -All alarms within this dwelling unit shall be "listed" as complying with UL 2034 and UL 2075 per CRC R315.
7. All penetrations through fire rated walls shall be metallic and extend a minimum of 12" from wall and shall be sealed so that hot gases cannot pass through. (CRC 302.5.2)
8. Automatic garage door opener shall be listed in accordance with UL 325 per CRC R309.4 and Health and Safety Code Sections 19890 and 19891.

Lighting:

9. Wall switches shall be installed vertically at +42" above finish floor or as determined by Contractor / Designer.
10. All recessed light fixtures in insulated ceilings shall be approved, listed, zero-clearance insulation cover (IC) rated, electronic ballast, air-tight (ASTM E283) and sealed with a gasket or caulked between housing and ceiling, allow replacement and maintenance to be readily accessible from below the ceiling without cutting holes in the ceiling, shall not contain screw base sockets; and shall contain light sources that comply with JAB.. CENC 150 (k) (C)
11. Closet/Storage lights cannot be closer than 12" from the nearest point of a storage area on a shelf in closets. (As measured from a vertical plane)
12. Elect. boxes shown to have hanging fixtures and/or Ceiling Fans (that weigh more than 50 lbs) shall be supported independant of the outlet box CEC Art. 410.30 (a). Unless the outlet box is listed for the weight to be supported (CEC 314.27(D) and 422.18). If outlet boxes are to be used provide listings for proposed boxes. (Rated for 100 lbs min)
13. Min. lighting requirements: Per chapter 7 of 2019 CENC
    - Kitchens; All luminaries in kitchens shall be high efficacy.(Table 150.0-A) Any under cabinet lighting must be switched separately from other lighting systems. (per 150.0(k)2L)
    -Bathrooms: All luminaries in bathrooms must be high efficacy. At least one luminary must be controlled by vacancy sensor. (per 150.0(k)2J)
    -Garage, Laundry & Utility: All luminaries must be high efficacy and at least one fixture must be controlled by a vacancy sensor (2019 CENC 150.0(k)6)
    -Other Rooms: All installed luminaries shall be high efficacy and shall be controlled by a vacancy sensor or dimmer. Closets that are less than 70 ft2 are exempt from this requirement.
    -Outdoor Lighting: In single-family residences, all luminaries mounted to the building (or to other buildings on the same lot) shall be high efficacy luminaries, or shall be controlled by a motion sensor and also by a photo-control, astronomical time clock, or energy management control system (EMCS). (per 150.0(k)3)
    -Night Lights. Permanently installed night lights and night lights integral to installed luminaires or exhaust fans shall be rated to consume no more than five watts of power per luminaire or exhaust fan as determined in accordance with Section 130.0(c). Night lights shall not be required to be controlled by vacancy sensors. (per 150.0(k)2L)

Outdoor or Wet Use Locations:

14. All equipment installed outdoor and exposed to the weather or in wet-use areas (such as in showers and/or tub area) shall be "Weather-Proof" and approved for wet locations and shall be provided with GFIC. CEC 406.9(b) & CEC 410.10 (See note #30 below for additional requirements)

Outlets:

15. All 125-volt, 15 and 20 amp receptacles in the dwelling shall be listed tamper-resistant. CEC 406.12
16. All receptacles shall be installed vertically at +12" above finish floor.
17. Provide Ground Fault-interrupter circuit (GFIC) protection at all Bathroom, Kitchen, Laundry Room, Storage Rooms, Garages and Outdoor locations. (required within 6' (six feet) of all sink locations) CEC 210.8
18. ARC-FAULT Interrupters (AFIC) All 120-volt, single phase, 15- & 20-amp branch circuits supplying outlets installed in dwelling unit kitchens, dining rooms, family rooms, living rooms, parlors, libraries, dens, bedrooms, sunrooms, rec rooms, closets, laundry areas, hallways and similar rooms shall be protected by a listed arc-fault circuit interrupter, combination type, installed to provide protection of the branch circuit. CEC 210.12 (not req at GFIC protected circuits)
    Note: There shall be no point along a wall that is more than 6 feet from an electrical outlet (CEC 210.52(A) & 210.52 (H))
19. Ranges, Ovens and Dryers shall be on 4-wire receptacles per CEC 250-60
20. Receptacles in habitable rooms shall be installed so that no point along the uninterrupted floor line in any wall space, greater than two feet in width, is more than 6 feet horizontally from an outlet. CEC 210.52(A) & 210.52 (H)
21. General use receptacles in kitchen shall be installed vertically above work top and splash at +47" abv finish floor (at bathrooms +42") unless noted otherwise on plans. Outlets shall be spaced such that any point along the wall at the counter level is not more than 2' from a receptacle. (CEC 210.52(c))

Outlets cont:

22. ELECTRIC VEHICLE CHARGING REQ. (CAL GREEN Sec 4.106.4)
    -The builder shall install a nominal one (1) inch inside diameter, listed raceway to accommodate a dedicated a 208/240 volt branch circuit. The raceway shall originate in the main or sub panel, and will terminate into a listed box at the purposed site of the EV charger. This and all additional specifications of California Green Building Standards section 4.106.4 shall be meet."
    -Elect service or subpanel circuit directory shall identify the overcurrent protection device space(s) as reserved for future EV charging as "EV CAPABLE. The raceway termination location shall be permanently and visibly marked as "EV CAPABLE"
23. Switched lighting outlets shall be installed per CEC 210.70(A)(B).&(C)

Circuits & Grounding:

24. Provide required intersystem bonding connector. An Intersystem Bonding Electrode which includes provisions for connecting at least three grounding or bonding conductors required for communications systems shall be installed externally at the service entrance panel as specified in CEC 800.100(B) and CEC 250.94
25. Provide minimum two methods of Electrical Grounding:
    I) Positive clamping at metal hose bib. Provide UFER ground wire where non-metallic water service is used. (CEC article 250-90, CEC 250.32 and CPC 1211.14)
    II) One additional #4 metal re-bar, minimum twenty (20) foot in length in the footing at electric meter location.
26. HVAC disconnect(s). Electrical disconnects for equipment such as HVAC units, septic pumps, etc. shall be within sight of the equipment and not over 50' from the unit. (CEC 430.102(b),440.14 & 903.7)
27. Provide a minimum two (2) 20 ampere small appliance circuits at the Kitchen, Dining, Family Room areas.
    -Small appliance circuits shall not supply disposal, dishwasher or other large appliances. CEC 210-52(b)
28. HVAC unit to have dedicated circuit CEC 422.12
29. Branch circuit serving the garage receptacles shall not serve outlets outside of the garage. CEC 210.52(G)(1)

Kitchens, Bathrooms & Laundry:

30. At Bath & Laundry provide a separate 20 ampere circuit with GFIC.
    -Circuit shall not have lighting, exhaust fans or other outlets on it CEC 210.11 (c) & 210-52(b&f)
    -All associated electrical components for Therapeutic/Hydrospa Bathtubs shall be bonded together (grounded) and all outlets within 5 feet of the inside wall of such tubs shall be GFIC protected (CEC 680.71). Provide access door for hydro-pump per CPC 409.6 (ie large enough for access and or service)
    -Light fixtures in tub or shower enclosures to be labeled "suitable for damp location" per CEC Art. 410.10 (A)
    -At Bathtub and Shower Areas. No parts of cord connected luminaires, chain-, cable-, or cord-suspended luminaires, lighting track, pendants, or ceiling-suspended (paddle) fans shall be located within a zone measured (3 ft) horizontally and (8 ft) vertically from the top of the bathtub rim or shower stall threshold. Luminaires located within the actual outside dimension of the bathtub or shower to a height of (8 ft) vertically from the top of the bathtub rim or shower threshold shall be marked for damp locations, or marked for wet locations where subject to shower spray.
    -Recessed LED light-fan combo fixture must comply with the requirements of CalEnergy 150.0(K)2.B or the fan and light are not to be switched together. per CEC Art. 410.10 (D)
31. Clothes dryer vent shall be installed per detail 15/AD2 and meet the requirements of CMC 504.4.2. Verify make-up air requirement of 100 sq. inches. Provide 1.5" undercut at door plus either 6x14 transfer duct above door or louvered door at laundry to meet this req.

Hamilton Residence

SEE SHEET EN FOR ELECTRICAL GENERAL NOTES

2019 CALGREEN NOTES

SEE SHEET EN FOR CAL-GREEN REQUIREMENTS

INSPECTION NOTE:

CONTRACTOR TO PROVIDE; MFG. INSTALLATION INSTRUCTIONS TO BE PROVIDED TO FIELD INSPECTIOR (AT TIME OF INSPECTION) OF ALL INSTALLED EQUIPTMENT

Whole House Ventilation:

REV 3-14-22

Main House Area:
Conditioned Floor Area 4394
Number of Bedrooms 4
Continuous Ventilation Rate (cfm) = 82 cfm
Provide:Broan Model # ZB110 fan in the laundry and label the switch to indicate the owner should leave it on all the time.

Above Garage Area:
Conditioned Floor Area 664
Number of Bedrooms 1
Continuous Ventilation Rate (cfm) = 52 cfm
Provide:Broan Model # ZB110 fan in the restroom and label the switch to indicate the owner should leave it on all the time.

VENT RATE (cfm) = (CFA/100) + [7.5 x (NUMBER OF BEDROOMS +1)]
Venting to be provided by either exaust vent, supply vent or a combination of the two. See section 4.6 of the 2016 Residence Compliance Manual. (per ANSI-ASHRAE 62.2)

NATURAL GAS

REV 3-14-22

APPLIANCE	BTU	PIPE SIZE
8-BURNER COOKTOP	85,000	1"
DBL OVEN	2@25,000=50,000	3/4"
TANKLESS WH	200,000	1"
FURNACE	3@100,000 = 300,000	3/4"
FIREPLACE	2@25,000 = 50,000	1/2"
DRYER	35,000	3/4"
BBQ	50,000	3/4"
POOL HEATER	100,000	1"
TOTAL USAGE	870,000 BTU	2"

CALCULATIONS BASED UPON: (Natural Gas) Table 1216.2(1), [NFPA54: Table 6.3(b)] CPC 1217 WHICH ASSUMES SCHEDULE 40 METALLIC PIPE PIPING TO BE USED. IF OTHER PIPING IS USED CONTRACTOR TO ADJUST SIZING

JOB #	#21.05.3
SCALE	1/4"= 1'-0"

DATE
10-8-21 REV ENG SET
3-14-22 PC SET

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Hamilton Residence
175 Elvies Way Folsom CA 95630
MAIN FLOOR **ELECTRICAL PLAN**

SHEET
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Hamilton Residence

JOB #	#21.05.3
SCALE	1/4"= 1'-0"

DATE
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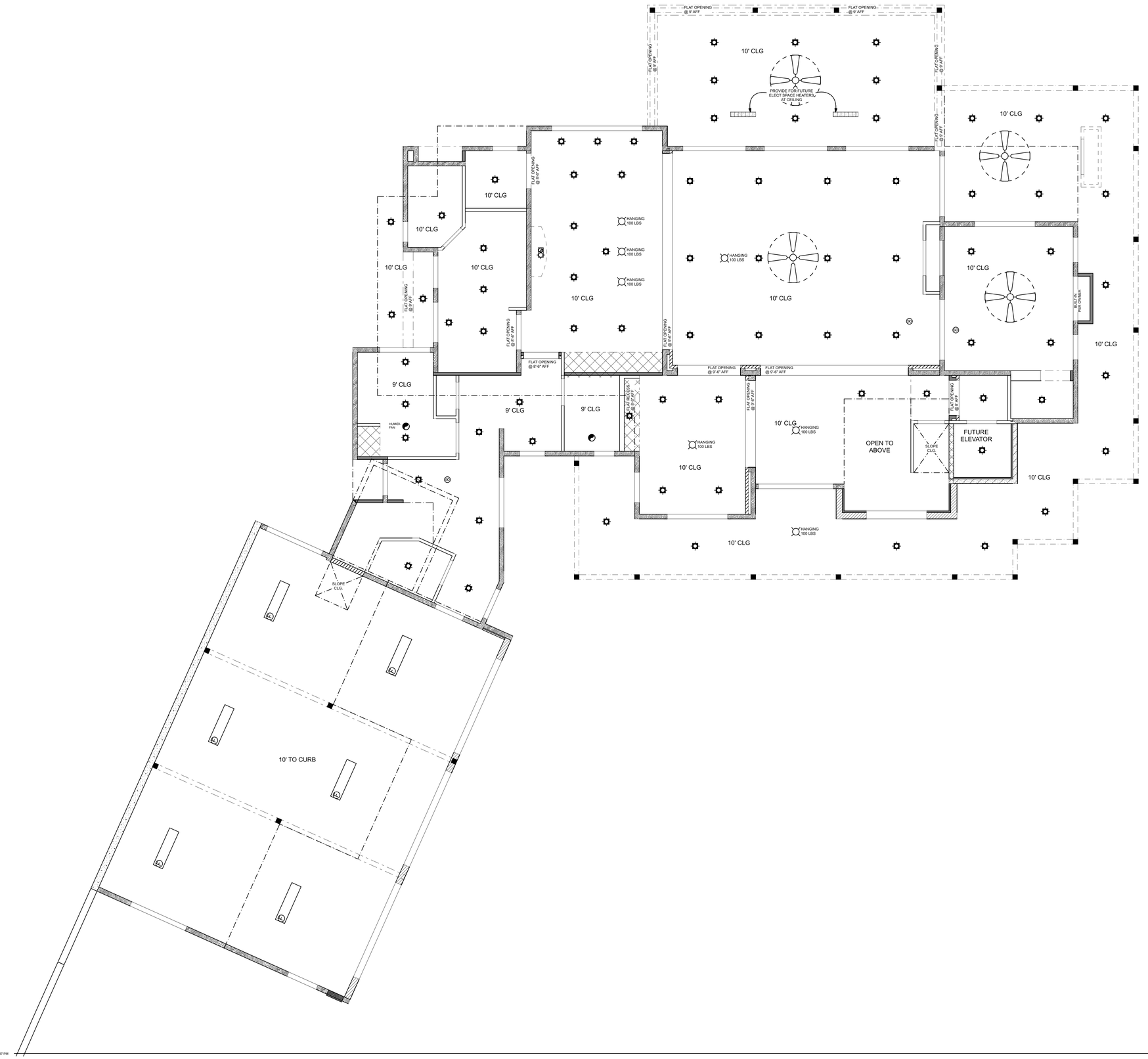

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Hamilton Residence
175 Elvies Way Folsom CA 95630
MAIN LEVEL REFLECTED CEILING PLAN

SHEET
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MAIN LEVEL REF CEILING

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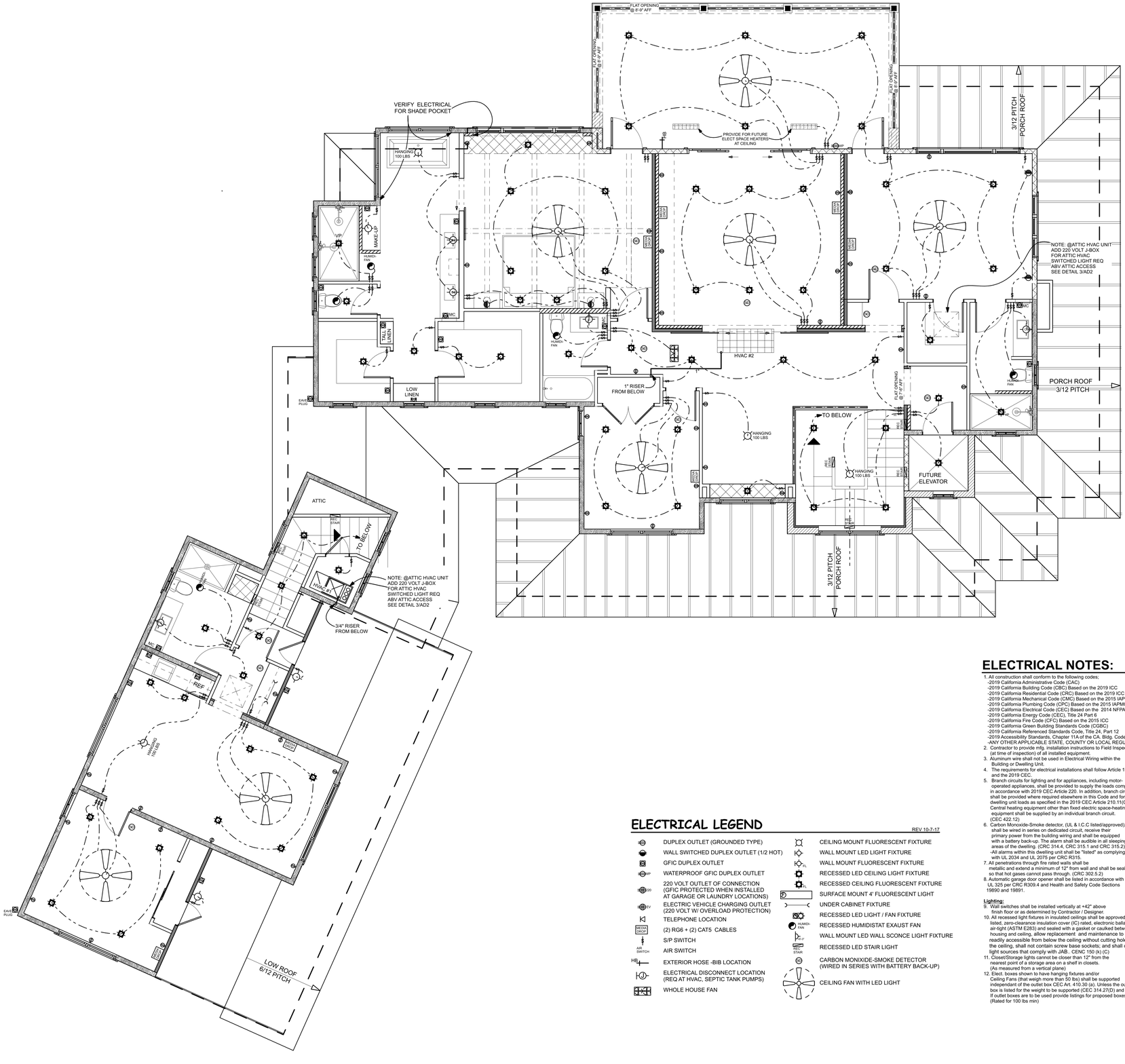
OUTDOOR PLUMBING NOTES:

1. ALL HOSE BIBS AND LAWN SPRINKLER SYSTEMS SHALL HAVE APPROVED NON-REMOVABLE BACKFLOW PREVENTION DEVICES. (CPC 603.4.7)



ELECTRICAL LEGEND

REV 10-7-17

	DUPLEX OUTLET (GROUNDED TYPE)		CEILING MOUNT FLUORESCENT FIXTURE
	WALL SWITCHED DUPLEX OUTLET (1/2 HOT)		WALL MOUNT LED LIGHT FIXTURE
GFIC	GFIC DUPLEX OUTLET	WL	WALL MOUNT FLUORESCENT FIXTURE
WP	WATERPROOF GFIC DUPLEX OUTLET		RECESSED LED CEILING LIGHT FIXTURE
220	220 VOLT OUTLET OF CONNECTION (GFIC PROTECTED WHEN INSTALLED AT GARAGE OR LAUNDRY LOCATIONS)		RECESSED CEILING FLUORESCENT FIXTURE
EV	ELECTRIC VEHICLE CHARGING OUTLET (220 VOLT W/ OVERLOAD PROTECTION)		SURFACE MOUNT 4' FLUORESCENT LIGHT
	TELEPHONE LOCATION		UNDER CABINET FIXTURE
MEDIA GROUP	(2) RG6 + (2) CAT5 CABLES		RECESSED LED LIGHT / FAN FIXTURE
	S/P SWITCH	HUMID. FAN	RECESSED HUMIDISTAT EXAUST FAN
AIR SWITCH	AIR SWITCH	6'-0"	WALL MOUNT LED WALL SCONCE LIGHT FIXTURE
HB	EXTERIOR HOSE -BIB LOCATION	STAIR	RECESSED LED STAIR LIGHT
	ELECTRICAL DISCONNECT LOCATION (REQ AT HVAC, SEPTIC TANK PUMPS)	SD	CARBON MONIXIDE-SMOKE DETECTOR (WIRED IN SERIES WITH BATTERY BACK-UP)
	WHOLE HOUSE FAN		CEILING FAN WITH LED LIGHT

ELECTRICAL NOTES:

REV 3-4-20

1. All construction shall conform to the following codes;
 -2019 California Administrative Code (CAC)
 -2019 California Building Code (CBC) Based on the 2019 ICC
 -2019 California Residential Code (CRC) Based on the 2019 ICC
 -2019 California Mechanical Code (CMC) Based on the 2015 IAPMO.
 -2019 California Plumbing Code (CPC) Based on the 2015 IAPMO
 -2019 California Electrical Code (CEC) Based on the 2014 NFPA
 -2019 California Energy Code (CEC), Title 24 Part 6
 -2019 California Fire Code (CFC) Based on the 2015 ICC
 -2019 California Green Building Standards Code (CGBC)
 -2019 California Referenced Standards Code, Title 24, Part 12
 -2019 Accessibility Standards, Chapter 11A of the CA. Bldg. Code.
 -ANY OTHER APPLICABLE STATE, COUNTY OR LOCAL REGULATIONS.
2. Contractor to provide mfg. installation instructions to Field Inspector (at time of inspection) of all installed equipment.
3. Aluminum wire shall not be used in Electrical Wiring within the Building or Dwelling Unit.
4. The requirements for electrical installations shall follow Article 110 and the 2019 CEC.
5. Branch circuits for lighting and for appliances, including motor-operated appliances, shall be provided to supply the loads computed in accordance with 2019 CEC Article 220. In addition, branch circuits shall be provided where required elsewhere in this Code and for dwelling unit loads as specified in the 2019 CEC Article 210.11(C). Central heating equipment other than fixed electric space-heating equipment shall be supplied by an individual branch circuit. (CEC 422.12)
6. Carbon Monoxide-Smoke detector, (UL & I.C.C listed/approved), shall be wired in series on dedicated circuit, receive their primary power from the building wiring and shall be equipped with a battery back-up. The alarm shall be audible in all sleeping areas of the dwelling. (CRC 314.4, CRC 315.1 and CRC 315.2)
 -All alarms within this dwelling unit shall be "listed" as complying with UL 2034 and UL 2075 per CRC R315.
7. All penetrations through fire rated walls shall be metallic and extend a minimum of 12" from wall and shall be sealed so that hot gases cannot pass through. (CRC 302.5.2)
8. Automatic garage door opener shall be listed in accordance with UL 325 per CRC R309.4 and Health and Safety Code Sections 19890 and 19891.

Lighting:

9. Wall switches shall be installed vertically at +42" above finish floor or as determined by Contractor / Designer.
10. All recessed light fixtures in insulated ceilings shall be approved, listed, zero-clearance insulation cover (IC) rated, electronic ballast, air-tight (ASTM E283) and sealed with a gasket or caulked between housing and ceiling, allow replacement and maintenance to be readily accessible from below the ceiling without cutting holes in the ceiling, shall not contain screw base sockets; and shall contain light sources that comply with JAB. CENC 150 (k) (C)
11. Closet/Storage lights cannot be closer than 12" from the nearest point of a storage area on a shelf in closets. (As measured from a vertical plane)
12. Elect. boxes shown to have hanging fixtures and/or Ceiling Fans (that weigh more than 50 lbs) shall be supported independant of the outlet box CEC Art. 410.30 (a). Unless the outlet box is listed for the weight to be supported (CEC 314.27(D) and 422.18). If outlet boxes are to be used provide listings for proposed boxes. (Rated for 100 lbs min)
13. Min. lighting requirements: Per chapter 7 of 2019 CENC
 - Kitchens; All luminaries in kitchens shall be high efficacy.(Table 150.0-A) Any under cabinet lighting must be switched separately from other lighting systems. (per 150.0(k)2L)
 -Bathrooms: All luminaries in bathrooms must be high efficacy. At least one luminary must be controlled by vacancy sensor. (per 150.0(k)2J)
 -Garage, Laundry & Utility: All luminaries must be high efficacy and at least one fixture must be controlled by a vacancy sensor (2019 CENC 150.0(k)6)
 -Other Rooms: All installed luminaries shall be high efficacy and shall be controlled by a vacancy sensor or dimmer. Closets that are less than 70 ft2 are exempt from this requirement.
 -Outdoor Lighting: In single-family residences, all luminaries mounted to the building (or to other buildings on the same lot) shall be high efficacy luminaries, or shall be controlled by a motion sensor and also by a photo-control, astronomical time clock, or energy management control system (EMCS). (per 150.0(k)3)
 -Night Lights. Permanently installed night lights and night lights integral to installed luminaires or exhaust fans shall be rated to consume no more than five watts of power per luminaire or exhaust fan as determined in accordance with Section 130.0(c). Night lights shall not be required to be controlled by vacancy sensors. (per 150.0(k)2L)

Outdoor or Wet Use Locations:

14. All equipment installed outdoor and exposed to the weather or in wet-use areas (such as in showers and/or tub area) shall be "Weather-Proof" and approved for wet locations and shall be provided with GFIC. CEC 406.9(b) & CEC 410.10 (See note #30 below for additional requirements)

Outlets:

15. All 125-volt, 15 and 20 amp receptacles in the dwelling shall be listed tamper-resistant. CEC 406.12
16. All receptacles shall be installed vertically at +12" above finish floor.
17. Provide Ground Fault-interrupter circuit (GFIC) protection at all Bathroom, Kitchen, Laundry Room, Storage Rooms, Garages and Outdoor locations. (required within 6' (six feet) of all sink locations) CEC 210.8
18. ARC-FAULT Interrupters (AFIC) All 120-volt, single phase, 15- & 20-amp branch circuits supplying outlets installed in dwelling unit kitchens, dining rooms, family rooms, living rooms, parlors, libraries, dens, bedrooms, sunrooms, rec rooms, closets, laundry areas, hallways and similar rooms shall be protected by a listed arc-fault circuit interrupter, combination type, installed to provide protection of the branch circuit. CEC 210.12 (not req at GFIC protected circuits)
 Note: There shall be no point along a wall that is more than 6 feet from an electrical outlet (CEC 210.52(A) & 210.52 (H))
19. Ranges, Ovens and Dryers shall be on 4-wire receptacles per CEC 250-60
20. Receptacles in habitable rooms shall be installed so that no point along the uninterrupted floor line in any wall space, greater than two feet in width, is more than 6 feet horizontally from an outlet. CEC 210.52(A) & 210.52 (H)
21. General use receptacles in kitchen shall be installed vertically above work top and splash at +47" abv finish floor (at bathrooms +42") unless noted otherwise on plans. Outlets shall be spaced such that any point along the wall at the counter level is not more than 2' from a receptacle. (CEC 210.52(c))

Outlets cont:

22. ELECTRIC VEHICLE CHARGING REQ. (CAL GREEN Sec 4.106.4)
 -The builder shall install a nominal one (1) inch inside diameter, listed raceway to accommodate a dedicated a 208/240 volt branch circuit. The raceway shall originate in the main or sub panel, and will terminate into a listed box at the purposed site of the EV charger. This and all additional specifications of California Green Building Standards section 4.106.4 shall be meet."
 -Elect service or subpanel circuit directory shall identify the overcurrent protection device space(s) as reserved for future EV charging as "EV CAPABLE. The raceway termination location shall be permanently and visibly marked as "EV CAPABLE"
23. Switched lighting outlets shall be installed per CEC 210.70(A)(B),&(C)

Circuits & Grounding:

24. Provide required intersystem bonding connector. An Intersystem Bonding Electrode which includes provisions for connecting at least three grounding or bonding conductors required for communications systems shall be installed externally at the service entrance panel as specified in CEC 800.100(B) and CEC 250.94
25. Provide minimum two methods of Electrical Grounding:
 I) Positive clamping at metal hose bib. Provide UFER ground wire where non-metallic water service is used. (CEC article 250-90, CEC 250.32 and CPC 1211.14)
 II) One additional #4 metal re-bar, minimum twenty (20) foot in length in the footing at electric meter location.
26. HVAC disconnect(s). Electrical disconnects for equipment such as HVAC units, septic pumps, etc. shall be within sight of the equipment and not over 50' from the unit. (CEC 430.102(b),440.14 & 903.7)
27. Provide a minimum two (2) 20 amperes small appliance circuits at the Kitchen, Dining, Family Room areas.
 -Small appliance circuits shall not supply disposal, dishwasher or other large appliances. CEC 210-52(b)
28. HVAC unit to have dedicated circuit. CEC 422.12
29. Branch circuit serving the garage receptacles shall not serve outlets outside of the garage. CEC 210.52(G)(1)

Kitchens, Bathrooms & Laundry:

30. At Bath & Laundry provide a separate 20 ampere circuit with GFIC.
 -Circuit shall not have lighting, exhaust fans or other outlets on it CEC 210.11 (c) & 210-52(b&f)
 -All associated electrical components for Therapeutic/Hydrospa Bathtubs shall be bonded together (grounded) and all outlets within 5 feet of the inside wall of such tubs shall be GFIC protected (CEC 680.71). Provide access door for hydro-pump per CPC 409.6 (ie large enough for access and or service)
 -Light fixtures in tub or shower enclosures to be labeled "suitable for damp location" per CEC Art. 410.10 (A)
 -At Bathtub and Shower Areas. No parts of cord connected luminaires, chain-, cable-, or cord-suspended luminaires, lighting track, pendants, or ceiling-suspended (paddle) fans shall be located within a zone measured (3 ft) horizontally and (8 ft) vertically from the top of the bathtub rim or shower stall threshold. Luminaires located within the actual outside dimension of the bathtub or shower to a height of (8 ft) vertically from the top of the bathtub rim or shower threshold shall be marked for damp locations, or marked for wet locations where subject to shower spray.
 -Recessed LED light-fan combo fixture must comply with the requirements of CalEnergy 150.0(K)2.B or the fan and light are not to be switched together. per CEC Art. 410.10 (D)
31. Clothes dryer vent shall be installed per detail 15/AD2 and meet the requirements of CMC 504.4.2. Verify make-up air requirement of 100 sq. inches. Provide 1.5" undercut at door plus either 6x14 transfer duct above door or louvered door at laundry to meet this req.

Hamilton Residence

SEE SHEET EN FOR ELECTRICAL GENERAL NOTES

2019 CALGREEN NOTES

SEE SHEET EN FOR CAL-GREEN REQUIREMENTS

INSPECTION NOTE:

CONTRACTOR TO PROVIDE; MFG. INSTALLATION INSTRUCTIONS TO BE PROVIDED TO FIELD INSPECTOR (AT TIME OF INSPECTION) OF ALL INSTALLED EQUIPTMENT

Whole House Ventilation:

REV 3-14-22

Main House Area:	
Conditioned Floor Area	4394
Number of Bedrooms	4
Continuous Ventilation Rate (cfm) =	82 cfm

Provide:Broan Model # ZB110 fan in the laundry and label the switch to indicate the owner should leave it on all the time.

Above Garage Area:	
Conditioned Floor Area	664
Number of Bedrooms	1
Continuous Ventilation Rate (cfm) =	52 cfm

Provide:Broan Model # ZB110 fan in the restroom and label the switch to indicate the owner should leave it on all the time.

VENT RATE (cfm) = (CFA/100) + [7.5 x (NUMBER OF BEDROOMS +1)]
Venting to be provided by either exaust vent, supply vent or a combination of the two. See section 4.6 of the 2016 Residence Compliance Manual. (per ANSI-ASHRAE 62.2)

NATURAL GAS

REV 3-14-22

APPLIANCE	BTU	PIPE SIZE
8-BURNER COOKTOP	85,000	1"
DBL OVEN	2@25,000=50,000	3/4"
TANKLESS WH	200,000	1"
FURNACE	3@100,000 = 300,000	3/4"
FIREPLACE	2@25,000 = 50,000	1/2"
DRYER	35,000	3/4"
BBQ	50,000	3/4"
POOL HEATER	100,000	1"
TOTAL USAGE	870,000 BTU	2"

CALCULATIONS BASED UPON: (Natural Gas) Table 1216.2(1), [NFPA54: Table 6.3(b)] CPC 1217 WHICH ASSUMES SCHEDULE 40 METALLIC PIPE PIPING TO BE USED. IF OTHER PIPING IS USED CONTRACTOR TO ADJUST SIZING

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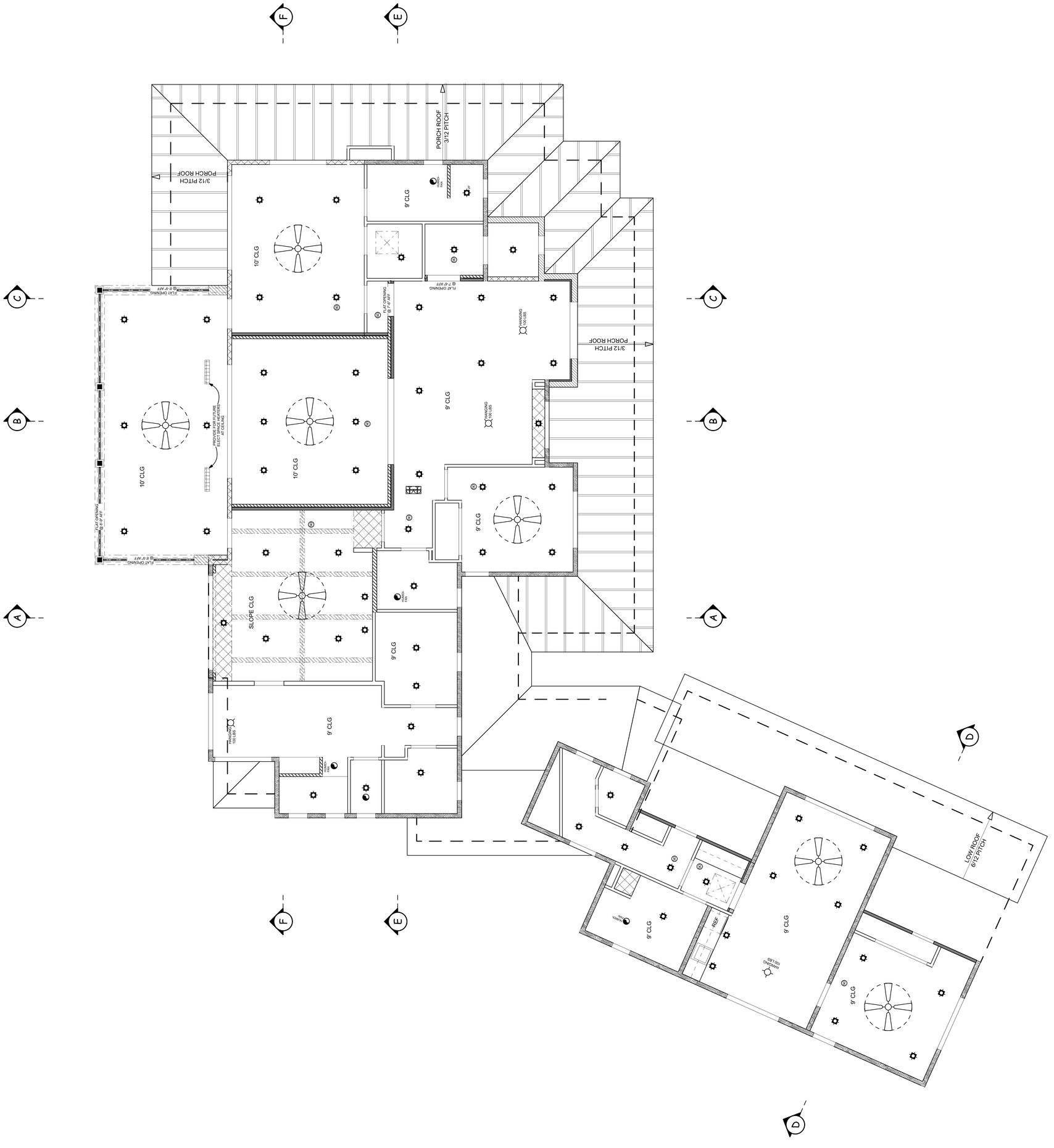
Hamilton Residence
175 Elvies Way Folsom CA 95630
2nd FLOOR ELECTRICAL PLAN

JOB #	#21.05.3
SCALE	1/4"= 1'-0"

DATE
10-8-21 REV ENG SET
3-14-22 PC SET

SHEET
E2

Hamilton Residence



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2nd FLOOR REFLECTED CEILING

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REV 3-14-22

Hamilton Residence

GAS PIPE ISOMETRIC

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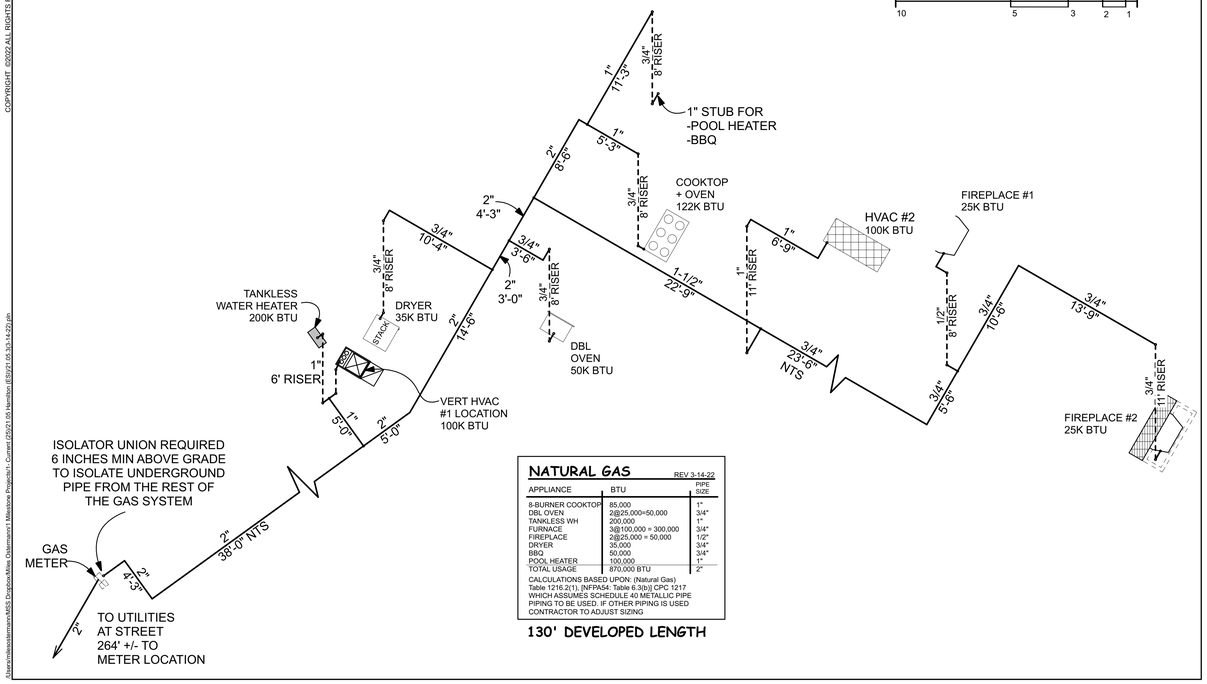

NATURAL GAS

REV 3-14-22

APPLIANCE	BTU	PIPE SIZE
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DBL OVEN	2@25,000=50,000	3/4"
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FURNACE	3@100,000 = 300,000	3/4"
FIREPLACE	2@25,000 = 50,000	1/2"
DRYER	35,000	3/4"
BBQ	50,000	3/4"
POOL HEATER	100,000	1"
TOTAL USAGE	870,000 BTU	2"

CALCULATIONS BASED UPON: (Natural Gas)
Table 1216.2(1), [NFPA54: Table 6.3(b)] CPC 1217
WHICH ASSUMES SCHEDULE 40 METALLIC PIPE
PIPING TO BE USED. IF OTHER PIPING IS USED
CONTRACTOR TO ADJUST SIZING

130' DEVELOPED LENGTH

2019 Building Energy Efficiency Standards (CEC)

See attached T-24 report for additional information REV 3-4-20

All new construction to comply with;
-2019 California Energy Code (CEC) Chapter 7
-2019 California Green Building Standards Code (CGBC)
-Title-24 Part 11 & current state accessibility standards.
-Mandatory Mechanical Ventilation, per Standards Section 150(o).
-California Energy Commission Requirements (Section 150)

a. Interior Venting Requirements:
NEW Construction;
-Kitchen to have a min. of 100 cfm exaust fan.
-Bathroom, laundry and wet rooms to have a min. of 50 cfm exaust fan.
-Whole house ventilation (per ANSI-ASHRAE 62.2)
VENT RATE (cfm) = (CFA/100) + (7.5 x (NUMBER OF BEDROOMS +1))
-Venting: either exhaust vent, supply vent or a combination of the two. See section 4.6 of the 2019 Residence Compliance Manual.

b. All permanently installed luminaries in kitchen to be high efficacy in accordance with table 150.0-A.

c. All luminaries required to have light sources compliant with Reference Joint Appendix JA8 , except hallways and closets over 70 sf, shall be controlled by Dimmers or vacancy sensors. (This applies to all GU-24 LEDs and recessed luminaires.) CBEES 150.0(k)2iK

c. All permanently installed luminaires in bathrooms to be high efficacy. At least one luminair to be controlled by an occupant sensor (150.0(k)2J) and must be certified to comply with section 119(d) that does not turn on automatically or have an "always on" option.
-Recessed LED light-fan combo fixture must comply with the requirements of CalEnergy 150.0(K)2.B or the fan and light are not to be switched together.

d. Permanently installed luminaires in garages, laundry rooms and utility rooms shall be high efficacy luminaries and at least one luminaire in each of these spaces shall be controlled by a vacancy sensor.

e. Permanently installed luminaries located other than in kitchens, bathrooms, garages, laundry rooms, closets and utility rooms shall be high-efficacy in accordance with Table 150.0-A.

f. Dimmers or vacancy sensors shall control all luminaires required to have light sources compliant with Reference Joint Appendix JA8.
EXCEPTION 1 to Section 150.0(k)2K: Luminaires in closets less than 70 square feet.
EXCEPTION 2 to Section 150.0(k)2K: Luminaires in hallways.
-Occupant sensor(s) certified to comply with section 119(d) that does not turn on automatically or have an "always on" option.

g. Outdoor lighting;
-Luminaries providing outdoor lighting and permanently mounted to a residential building or to other buildings on the same lot shall be high efficacy luminaries (not including lighting around swimming pools & water features or other Article 680 locations) or are controlled by occupant sensors with integral photo control certified to comply with section 119(d).
-Lighting shall be controlled by a manual ON and OFF switch that does not override to ON and one of the following: Controlled by photocell and motion sensor, Photo control and automatic switch control, Astronomical time clock, or Energy management control system. 150(k)3

2019 CalGreen Notes (CGBC)

REV 3-15-21

1. SITE SURFACE AND STORMWATER DRAINAGE (SEC 4.106)
-4.106.2 Storm water pollution prevention plan. For projects of one acre or less, develop a Storm Water Pollution Prevention Plan (SWPPP) that has been designed, specific to its site, conforming to the State Storm water NPDES Construction Permit or local ordinance, whichever is stricter, as is required for projects over one acre. The plan should cover prevention of soil loss by storm water run-off and/or wind erosion, of sedimentation and/or of dust/particulate matter air pollution.
-AS.106.2 Storm water design. Design storm water runoff rate and quantity in conformance with Section AS.106.3.1 and storm water runoff quality by Section AS.106.3.2 or by local requirements, whichever are stricter.
-AS.106.2.1 Storm water runoff rate and quantity. Implement a storm water management plan resulting in no net increase in rate and quantity of storm water runoff from existing to developed conditions.
Exception: If the site is already greater than 50 percent impervious, implement a storm water management plan resulting in a 25 percent decrease in rate and quantity.
-AS.106.2.2 Storm water runoff quality.Use post construction treatment control best management practices (BMPs) to mitigate (infiltrate, filter or treat) storm water runoff from the 85th percentile 24-hour runoff event (for volume-based BMPs) or the runoff produced by a rain event equal to two times the 85th percentile hourly intensity (for flow-based BMPs).
-AS.106.3 Low impact development (LID). Reduce peak runoff in compliance with Section 5.106.3.1. Employ at least two of the following methods or other best management practices approved by the enforcing agency to incorporate into the air or collect in storage receptacles for irrigation or other beneficial uses.

2. WATER CONSERVATION REQUIREMENTS (SEC 4.303, TABLE 4.303.1)
Prescriptive minimum indoor plumbing requirements:
-Single Showerheads @ 1.8 GPM or less @ 80 PSI (INC multi-head designs)
-Multiple Showerheads @ 1.8 GPM or less @ 80 PSI (INC multi-head designs)
-Lav Faucets @ 1.2 GPM or less @ 60 PSI
-Kitchen Faucets @ 1.8 GPM or less @ 60 PSI
-Water Closets @ 1.28 GAL/FLUSH
-Urnals @ 0.125 GAL/FLUSH
-Appliances. Install at least one qualified ENERGY STAR dishwasher or clothes washer. (A4.303.3)
-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 California Plumbing Code, California Energy Code, and the manufacturer's installation instructions. (CGBC A4.303.5 for Hot water recirculation systems)

3. IRRIGATION CONTROLLERS (SEC 4.304.1)
Controllers shall be weather-or soil moisture-based controllers that automatically adjust irrigation in response to changes in plants' needs as weather conditions change.

4. CONSTRUCTION WASTE: (SEC 4.408)
Waste Reduction Plan and documentation to be provided by Contractor.
See http://www.hcd.ca.gov/building-standards/calgreen/docs/CW-1.pdf

5. FIREPLACES (SEC 4.503.1)
-Gas units must be direct-vent sealed combustion type.
-Wood/fired burning units shall comply with EPA phase-2 emission limits.

6. POLLUTANT CONTROL (SEC 4.504)
-Dust Covering (sec 4.504.1) Covering of duct openings and protection of mechanical equipment during construction. At the time of rough installation or during storage on the construction site and until final startup of the heating, cooling and distribution equipment, all duct and other related air distribution component openings shall be covered with tape, plastic, sheetmetal or other methods acceptable to the enforcing agency to reduce the amount of dust or debris which may collect in the system.
-VOC limits (Per Tables 4.504.2, 4.504.4, 4.504.5)
All Finish materials shall comply with the values shown in the tables listed for indoor air quality.

7. INDOOR AIR QUALITY (MOISTURE ISSUES) (Sec 4.505)
- A 4-inch (101.6 mm) thick base of ¾ inch (12.7 mm) or larger clean aggregate shall be provided with a vapor barrier in direct contact with concrete and a concrete mix design, which will address bleeding, shrinkage, and curling, shall be used. For additional information, see American Concrete Institute, ACI 302.2R-06. (SEC 4.505.2.1)
-Moisture content of building materials. Building materials with visible signs of water damage shall not be installed. Wall and floor framing shall not be enclosed when the framing members exceed 19 percent moisture content. Moisture content shall be verified (SEC 4.505.3)
-Bathroom exhaust fans which exhaust directly from bathrooms shall be ENERGY STAR compliant and be ducted to terminate outside the building. Unless functioning as a component of a whole house ventilation system, fans must be controlled by a humidistat which shall be readily accessible(SEC 4.506.1)

8. INDOOR AIR QUALITY (ENVIRONMENTAL COMFORT) (Sec 4.507)
-Whole house exhaust fans shall have insulated louvers or covers which close when the fan is off. Covers or louvers shall have a minimum insulation value of R-4.2 (SEC 4.507.1)
-Heating and Air Conditioning systems shall be sized, designed, and equipment is selected using the following methods:
1 - The heat loss and heat gain is established according to ACCA Manual J, ASHRAE handbooks or other equivalent design software or methods.
2 - Duct systems are sized according to ACCA 29-D Manual D, ASHRAE handbooks or other equivalent design software or methods.
3 - Select heating and cooling equipment according to ACCA 36-S Manual S or other equivalent design software or methods.

9. ELECTRIC VEHICLE CHARGING REQ. (Sec 4.106.4)
-The builder shall install a nominal one (1) inch inside diameter, listed raceway to accommodate a dedicated a 208/240 volt branch circuit. The raceway shall originate in the main or sub panel, and will terminate into a listed box at the purposed site of the EV charger. This and all additional specifications of California Green Building Standards section 4.106.4 shall be met."
-Elect service or subpanel circuit directory shall identify the overcurrent protection device space(s) as reserved for future "EV CAPABLE". The raceway termination location shall be permanently and visibly marked as "EV CAPABLE"

PLUMBING NOTES:

REV 9-30-20

1. Clearance for water closet to be a minimum of 24 inches in front, and 15 inches from its center to any side wall or obstruction. CPC 402.5
2. ABS and PVC drain waste and vent piping material is limited to 2 stories max. (CPC 701.1(2) (a). and 903.1.1)
3. ABS and PVC roof and deck drain material is limited to 2 stories max. (CPC 1101.3)
4. Roof and deck drain systems inside the building are required to be installed with directional DWV drainage fittings. (CPC 1101.3 and & 706.0)
5. Cleanouts are required within 2 feet of the connection between the interior roof and deck drain piping system, and the exterior onsite storm drain system. (CPC 1101.12)
6. All hose bibs are to have vacuum breakers. All house bibs and lawn sprinklers systems shall have approved non-removable backflow prevention devices. (CPC 603.4.7)
7. The maximum amount of water closets on a 3 inch horizontal drainage system line is 3. For 3" sewer line only four water closets or six-unit traps allowed on a vertical pipe or stack; and not to exceed three water closets or six-unit traps on a horizontal branch or drain. (CPC Table 703.2)
8. The maximum amount of water closets on a 3 inch vertical drainage system line is 4. (CPC Table 703.2)
9. Provide gas line with a min capacity of 200,000 btu for water heater. Cal energy code 150.0(n)
10. At gas or propane water heaters for individual dwelling units, provide the following requirements per CEC. 150.0(n)1:
a. Provide 120V electrical receptacle that is within 3 feet from the water heater and accessible to the water heater with no obstructions;
b. 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 CEC150.0 (n)
c. Provide a condensate drain that is no more than 2 inches higher than the base of the installed water heater, and allows natural draining without pump assistance. Cal energy code 150.0 (n)
d. Water heater shall have isolation valves on both the cold water supply and the hot water pipe leaving the water heater, and hose bibs or other fittings on each valve for flushing the water heater when the valves are closed. CBEES 110.3(c)7
11. Insulate all hot water pipe Cal energy code 150.0 (j) (2)
12. All gas line sizing is based upon:
Gas: Table 1216.2(1), [NFPA54: Table 6.3(b)] CPC 1217
Propane: Table 1215.2(27), [NFPA54: Table 6.3(d)] CPC 1217
based upon using Schedule 40 Metalic piping. If other gas piping is used it is the responsibility of the contractor to adjust sizing.
13. Pressure absorbing device (or approved mechanical device), located as close as possible to quick acting valves, that will absorb high pressures resulting from the quick closing of quick-acting valves (i.e., dishwasher, washing machine, etc.) per CPC 609.10.
14. If crawlspace HVAC or other Gas mechanical units are installed, provide fire sprinkler head above Gas units or install fire stop at underside of floor system. (per CRC R302.13, CRC 313, NFPA 13D)
15. Underground gas piping shall meet the requirements of CPC 1210.0. 18" min cover for all gas piping is required per CPC 1210.1.1
16. Control valves and shower heads shall be located on the sidewall of shower compartment or otherwise arranged so that the showerhead does not discharge directly at the entrance to the compartment and the bather can adjust the valves prior to stepping into the shower spray per CPC 408.9.
17. Two-way sanitary clean-out will be installed within five feet of the perimeter of the residence foundation

MECHANICAL NOTES:

REV 3-17-21

1. Rooms containing bathtubs, showers, spas and similar fixtures shall be provided with an exhaust fan with a minimum capacity of 25 cfm/unit continuous or 50 cfm/unit intermittent, ducted to terminate outside the building.
(CRC R303.3, CGBC 4.506.1, CBC 1203.4.3.2.1, CMC 402.5)
2. At clothes dryer: (see detail 15/AD2)
a. Vent shall not exceed 14 ft in overall length with maximum two 90 degree elbows. (CMC 504.4.2) See detail 15/AD2
b. Provide 100 sq inch make-up air for dryer with 14.5" x 7" thru vent above Laundry door (CMC 504.1(2))
c. Dryer exhaust vent will maintain a minimum five-foot distance from an AC condenser.
d. Moisture exhaust duct for the clothes dryer shall be minimum 4" in diameter, ducted outside and of metal or approved smooth material. (CMC 504)
3. Environmental air ducts shall terminate min 3 feet from property line or openings into building.
4. Mechanical equipment shall be installed per the manufacture's installation instructions. (CMC 303.1)
5. Domestic range vents to be smooth metallic interior surface. (CMC 508)
6. Supply and return air ducts to be insulated at a min of R-6. Cal energy code table 150-1- A (Verify with T-24 Report Requirements)
7. Appliances designed to be fixed in position shall be securely fastened in place in accordance with the manufacturer's installation instructions. Supports for appliances shall be designed and constructed to sustain vertical and horizontal loads within the stress limitations specified in the building code. (CMC 303.4)
8. Sound Ratings for interior fans (ASHRAE 62.2, Section 7.2)
a. Whole House Fans or continuous fans shall be rated for sound at a max of 1.0 sone
b. Intermittent Local Exhaust Fans shall be rated for sound at a max of 3.0 sone unless their max rated airflow exceeds 400 cfm
-All ratings listed above based upon a Water Column of .25 or greater.
-Remote-mounted fans need not meet any of these requirements as log as there is at least 4 feet of duct between the grill and the fan.

SOLAR PLAN NOTES

REV 4-9-20

1. Solar installation will comply with all applicable sections of the 2019 CRC and 2019 CEC. Also, the installation will comply with the regulations set forth by the Office of State Fire Marshall, and any applicable local codes/ordinances. (R324 & CFC605.11)
2. Solar design and installation to be provided by others.
3. Separate permit required for all solar installation
4. All Rooftop-mounted photovoltaic panel systems shall be designed to structurally support the system and withstand applicable gravity loads in accordance with CRC Chapter 3.
5. Residential structures shall be designed so that each photovoltaic array is no greater than 150 feet by 150 feet in either axis. (CFC 605.11.3)
6. Panel locations and Solar Pool Panel locations are shownfor reference only. They are intended to keep these area of potential solar locations to be free of vents, skylights, attic vents or other obstructions. (R326.6.1 & CFC 605.11.3)
7. Panels and modules installed on dwellings shall not be placed on the portion of a roof that is below an emergency escape and rescue opening. A pathway not less than 36 inches wide shall be provided to the emergency escape and rescue opening. (CRC324.6.2.2
8. Roof top access to residential solar systems for residential dwellings shall be provided in accordance with Sections R326.1.1 and CFC 605.11.3
-Panels cannot be located closer than 1'-6" to any Hip , Valley or Ridge locations or within 3 feet of any roof bottom edge. All access pathways to be a min of 36" wide.
-Provide a 3-foot-wide clear access pathway from the eave to the ridge on each roof slope where panels/modules are located. The access pathway shall be located at a structurally strong location on the building capable of supporting the live load of fire fighters accessing the roof. (R324.6.1 & CFC 605.11.3.2.1)
9. Photovoltaic panels and modules shall be listed and labeled in accordance with UL 1703. Inverters shall be listed and labeled in accordance with UL 1741.

Hamilton Residence

175 Elvies Way

ELECTRICAL NOTES:

REV 3-4-20

1. All construction shall conform to the following codes;
-2019 California Administrative Code (CAC)
-2019 California Building Code (CBC) Based on the 2019 ICC
-2019 California Residential Code (CRC) Based on the 2019 ICC
-2019 California Mechanical Code (CMC) Based on the 2015 IAPMO.
-2019 California Plumbing Code (CPC) Based on the 2015 IAPMO
-2019 California Electrical Code (CEC) Based on the 2014 NFPA
-2019 California Energy Code (CEC), Title 24 Part 6
-2019 California Fire Code (CFC) Based on the 2015 ICC
-2019 California Green Building Standards Code (CGBC)
-2019 California Referenced Standards Code, Title 24, Part 12
-2019 Accessibility Standards, Chapter 11A of the CA. Bldg. Code.
-ANY OTHER APPLICABLE STATE, COUNTY OR LOCAL REGULATIONS.
2. Contractor to provide mfg. installation instructions to Field Inspector (at time of inspection) of all installed equipment.
3. Aluminum wire shall not be used in Electrical Wiring within the Building or Dwelling Unit.
4. The requirements for electrical installations shall follow Article 110 and the 2019 CEC.
5. Branch circuits for lighting and for appliances, including motor-operated appliances, shall be provided to supply the loads computed in accordance with 2019 CEC Article 220. In addition, branch circuits shall be provided where required elsewhere in this Code and for dwelling unit loads as specified in the 2019 CEC Article 210.11(C). Central heating equipment other than fixed electric space-heating equipment shall be supplied by an individual branch circuit. (CEC 422.12)
6. Carbon Monoxide-Smoke detector, (UL & I.C.C listed/approved), shall be wired in series on dedicated circuit, receive their primary power from the building wiring and shall be equipped with a battery back-up. The alarm shall be audible in all sleeping areas of the dwelling. (CRC 314.4, CRC 315.1 and CRC 315.2)
-All alarms within this dwelling unit shall be "listed" as complying with UL 2034 and UL 2075 per CRC R315.
7. All penetrations through fire rated walls shall be metallic and extend a minimum of 12" from wall and shall be sealed so that hot gases cannot pass through. (CRC 302.5.2)
8. Automatic garage door opener shall be listed in accordance with UL 325 per CRC R309.4 and Health and Safety Code Sections 19890 and 19891.

Lighting:
9. Wall switches shall be installed vertically at +42" above finish floor or as determined by Proctor / Designer.
10. All recessed light fixtures in insulated ceilings shall be approved, listed, zero-clearance insulation cover (IC) rated, electronic ballast, air-tight (ASTM E283) and sealed with a gasket or caulked between housing and ceiling, allow replacement and maintenance to be readily accessible from below the ceiling without cutting holes in the ceiling, shall not contain screw base sockets; and shall contain light sources that comply with JAB., CENC 150 (k) (C)
11. Closet/Storage lights cannot be closer than 12" from the nearest point of a storage area on a shelf in closets. (As measured from a vertical plane)
12. Elect. boxes shown to have hanging fixtures and/or Ceiling Fans (that weigh more than 50 lbs) shall be supported independant of the outlet box CEC Art. 410.30 (a). Unless the outlet box is listed for the weight to be supported (CEC 314.27(D) and 422.18). If outlet boxes are to be used provide listings for proposed boxes. (Rated for 100 lbs min)
13. Min. lighting requirements: Per chapter 7 of 2019 CENC
- Kitchens; All luminaires in kitchens shall be high efficacy.(Table 150.0-A) Any under cabinet lighting must be switched separately from other lighting systems. (per 150.0)(K)2L
-Bathrooms: All luminaires in bathrooms must be high efficacy. At least one luminary must be controlled by vacancy sensor. (per 150.0(k)2J)
-Garage, Laundry & Utility: All luminaires must be high efficacy and at least one fixture must be controlled by a vacancy sensor (2019 CENC 150.0(k)6)
-Other Rooms: All installed luminaires shall be high efficacy and shall be controlled by a vacancy sensor or dimmer. Closets that are less than 70 ft2 are exempt from this requirement.
-Outdoor Lighting: In single-family residences, all luminaries mounted to the building (or to other buildings on the same lot) shall be high efficacy luminaires, or shall be controlled by a motion sensor and also by a photo-control, astronomical time clock, or energy management control system (EMCS). (per 150.0)(k)3)
-Night Lights. Permanently installed night lights and night lights integral to installed luminaires or exhaust fans shall be rated to consume no more than five watts of power per luminaire or exhaust fan as determined in accordance with Section 130.0(c). Night lights shall not be required to be controlled by vacancy sensors. (per 150.0(k)2L)

Outdoor or Wet Use Locations:
14. All equipment installed outdoor and exposed to the weather or in wet-use areas (such as in showers and/or tub area) shall be "Weather-Proof" and approved for wet locations and shall be provided with GFIC. CEC 406.9(b) & CEC 410.10 (See note #30 below for additional requirements)

Outlets:
15. All 125-volt, 15 and 20 amp receptacles in the dwelling shall be listed tamper-resistant. CEC 406.12
16. All receptacles shall be installed vertically at +12" above finish floor.
17. Provide Ground Fault-interrupter circuit (GFIC) protection at all Bathroom, Kitchen, Laundry Room, Storage Rooms, Garages and Outdoor locations. (required within 6' (six feet) of all sink locations) CEC 210.8
18. ARC-FAULT Interrupters (AFIC) All 120-volt, single phase, 15- & 20-amp branch circuits supplying outlets installed in dwelling unit kitchens, dining rooms, family rooms, living rooms, parlors, libraries, dens, bedrooms, sunrooms, rec rooms, closets, laundry areas, hallways and similar rooms shall be protected by a listed arc-fault circuit interrupter, combination type, installed to provide protection of the branch circuit. CEC 210.12 (not req at GFIC protected circuits) Note: There shall be no point along a wall that is more than 6 feet from an electrical outlet (CEC 210.52(A) & 210.52 (H))
19. Ranges, Ovens and Dryers shall be on 4-wire receptacles per CEC 250-60
20. Receptacles in habitable rooms shall be installed so that no point along the uninterrupted floor line in any wall space, greater than two feet in width, is more than 6 feet horizontally from an outlet. CEC 210.52(A) & 210.52 (H)
21. General use receptacles in kitchen shall be installed vertically above work top and splash at +47" abv finish floor (at bathrooms +42") unless noted otherwise on plans. Outlets shall be spaced such that any point along the wall at the counter level is not more than 2' from a receptacle. (CEC 210.52(c))
22. ELECTRIC VEHICLE CHARGING REQ. (CAL GREEN Sec 4.106.4)
-The builder shall install a nominal one (1) inch inside diameter, listed raceway to accommodate a dedicated a 208/240 volt branch circuit. The raceway shall originate in the main or sub panel, and will terminate into a listed box at the purposed site of the EV charger. This and all additional specifications of California Green Building Standards section 4.106.4 shall be met."
-Elect service or subpanel circuit directory shall identify the overcurrent protection device space(s) as reserved for future "EV CAPABLE". The raceway termination location shall be permanently and visibly marked as "EV CAPABLE"
23. Switched lighting outlets shall be installed per CEC 210.70(A)(B)&(C)

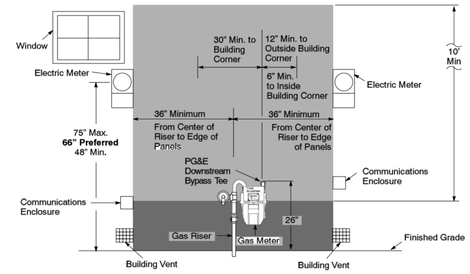
Circuits & Grounding:
24. Provide required intersystem bonding connector. An Intersystem Bonding Electrode which includes provisions for connection, least three grounding or bonding conductors required for communications systems shall be installed externally at the service entrance panel as specified in CEC 800.100(B) and CEC 250.94
25. Provide minimum two methods of Electrical Grounding:
I) Positive clamping at metal hose bib. Provide UFER ground wire where non-metallic water service is used. (CEC article 250-90, CEC 250.32 and CPC 1211.14)
II) One additional #4 metal re-bar, minimum twenty (20) foot in length in the footing at electric meter location.
26. HVAC disconnect(s). Electrical disconnects for equipment such as HVAC units, septic pumps, etc. shall be within sight of the equipment and not over 50' from the unit. (CEC 430.102(b),440.14 & 90.3)
27. Provide a minimum two (2) 20 ampere small appliance circuits at the Kitchen, Dining, Family Room areas.
-Small appliance circuits shall not supply disposal, dishwasher or other large appliances. CEC 210-52(b)
28. HVAC unit to have dedicated circuit CEC 422.12
29. Branch circuit serving the garage receptacles shall not serve outlets outside of the garage. CEC 210.52(G)(1)

Kitchens, Bathrooms & Laundry:
30. At Bath & Laundry provide a separate 20 ampere circuit with GFIC.
-Circuit shall not have lighting, exhaust fans or other outlets on it CEC 210.11 (c) & 210-52(b&f)
-All associated electrical components for Therapeutic\Hydrospa Bathtubs shall be bonded together (grounded) and all outlets within 5 feet of the inside wall of such tubs shall be GFIC protected (CEC 680.71). Provide access door for hydro-pump per CPC 409.6 (ie large enough for access and or service)
-Light fixtures in tub or shower enclosures to be labeled "suitable for damp location" per CEC Art. 410.10 (A)
-At Bathtub and Shower Areas. No parts of cord connected luminaires, chain-, cable-, or cord-suspended luminaires, lighting track, pendants, or ceiling-suspended (paddle) fans shall be located within a zone measured (3 ft) horizontally and (8 ft) vertically from the top of the bathtub rim or shower threshold shall be marked for damp locations, or marked for wet locations where subject to shower spray.
-Recessed LED light-fan combo fixture must comply with the requirements of CalEnergy 150.0(K)2.B or the fan and light are not to be switched together. per CEC Art. 410.10 (D)
31. Clothes dryer vent shall be installed per detail 15/AD2 and meet the requirements of CMC 504.4.2. Verify make-up air requirement of 100 sq. inches. Provide 1.5" undercut at door plus either 6x14 transfer duct above door or louvered door at laundry to meet this req.

ELECTRICAL LEGEND

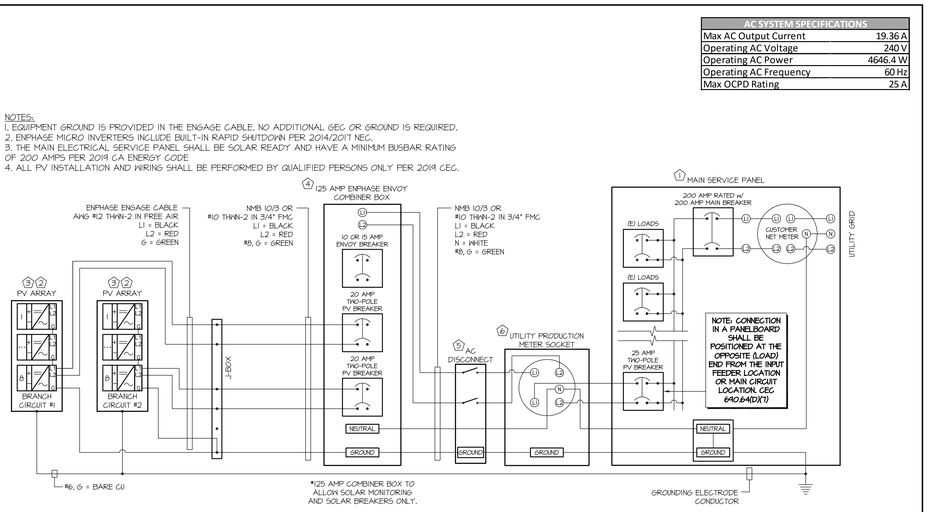
REV 10-7-17

	DUPLEX OUTLET (GROUNDED TYPE)
	WALL SWITCHED DUPLEX OUTLET (1/2 HOT)
GFIC	GFIC DUPLEX OUTLET
WP	WATERPROOF GFIC DUPLEX OUTLET
220	220 VOLT OUTLET OF CONNECTION (GFIC PROTECTED WHEN INSTALLED AT GARAGE OR LAUNDRY LOCATIONS)
EV	ELECTRIC VEHICLE CHARGING OUTLET (220 VOLT W/ OVERLOAD PROTECTION)
	TELEPHONE LOCATION
MEDIA GROUP	(2) RG6 + (2) CAT5 CABLES
	S/P SWITCH
AIR SWITCH	AIR SWITCH
HB	EXTERIOR HOSE -BIB LOCATION
J	ELECTRICAL DISCONNECT LOCATION (REQ AT HVAC, SEPTIC TANK PUMPS)
	WHOLE HOUSE FAN
	CEILING MOUNT FLUORESCENT FIXTURE
	WALL MOUNT LED LIGHT FIXTURE
FL	WALL MOUNT FLUORESCENT FIXTURE
	RECESSED LED CEILING LIGHT FIXTURE
FL	RECESSED CEILING FLUORESCENT FIXTURE
D	SURFACE MOUNT 4" FLUORESCENT LIGHT
	UNDER CABINET FIXTURE
	RECESSED LED LIGHT / FAN FIXTURE
HUMID-FAN	RECESSED HUMIDISTAT EXAUST FAN
LED 2'-0"	WALL MOUNT LED WALL SCONCE LIGHT FIXTURE
LED STAIR	RECESSED LED STAIR LIGHT
CO	CARBON MONIXIDE-SMOKE DETECTOR (WIRED IN SERIES WITH BATTERY BACK-UP)
	CEILING FAN WITH LED LIGHT



1 EN — **Meter Separations** REV 6/10/20

Reprinted from both SMUD and P G & E design manual



AC SYSTEM SPECIFICATIONS	
Max AC Output Current	19.36 A
Operating AC Voltage	240 V
Operating AC Power	4646.4 W
Operating AC Frequency	60 Hz
Max OCPD Rating	25 A

BUILDER:	BUILDER ADDRESS:
ESI BUILDERS	4993 GOLDEN FOOTHILL PKWY, STE 9, EL DORADO HILLS, CA
PROJECT:	PROJECT ADDRESS:
HAMILTON RESIDENCE	175 ELVIES WAY, FOLSOM, CA 95630

KEY	EQUIPMENT	QTY
1	(E) MAIN SERVICE PANEL	1
2	INVERTER: ENPHASE IQ7 PLUS-72-2-US 240	16
3	SOLAR MODULES: REC SOLAR REC400AA PURE BLACK	16
4	AC COMBINER BOX: ENPHASE IQ X-IQ-AM1-240-3	1
5	AC DISCONNECT: SQUARE D D222NRB, 30 AMP	1
6	PV METER	1

JOB NUMBER: | DRAWN BY: KH | DATE: 01/17/22

CITADEL ROOFING & SOLAR
4980 ALLISON PARKWAY I VACAVILLE, CA 95688 I P: 707-446-5500 I CITADELRS.COM I CA LICENSE 647149

3 EN — **Solar One-Line** REV 1/17/22

SCALE: N/A

JOB #	#21.05.3
SCALE	N/A

DATE
3-4-20 code update
9-30-20 note updates
3-17-21 Cal-Green REV

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Hamilton Residence
175 Elvies Way Folsom CA 95630
Elect Notes + Gas Plan + Solar One-line

SHEET
EN

2019 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.*
(01/2020)

Building Envelope Measures:	
§ 110.6(a)1:	**Air Leakage.** Manufactured fenestration, exterior doors, and exterior pet doors must limit air leakage to 0.3 CFM per square foot or less when tested per NFRC-400, ASTM E283 or AAMA/WDMA/CSA 101/I.S.2/A440-2011.*
§ 110.6(a)5:	**Labeling.** Fenestration products and exterior doors must have a label meeting the requirements of § 10-111(a).
§ 110.6(b):	**Field fabricated exterior doors and fenestration** products must use U-factors and solar heat gain coefficient (SHGC) values from Tables 110.6-A, 110.6-B, or JA4.5 for exterior doors. They must be caulked and/or weather-stripped.*
§ 110.7:	**Air Leakage.** All joints, penetrations, and other openings in the building envelope that are potential sources of air leakage must be caulked, gasketed, or weather stripped.
§ 110.8(a):	**Insulation Certification by Manufacturers.** Insulation must be certified by the Department of Consumer Affairs, Bureau of Household Goods and Services (BHGS).
§ 110.8(g):	**Insulation Requirements for Heated Slab Floors.** Heated slab floors must be insulated per the requirements of § 110.8(g).
§ 110.8(i):	**Roofing Products Solar Reflectance and Thermal Emittance.** The thermal emittance and aged solar reflectance values of the roofing material must meet the requirements of § 110.8(i) and be labeled per §10-113 when the installation of a cool roof is specified on the CF1R.
§ 110.8(j):	**Radiant Barrier.** When required, radiant barriers must have an emittance of 0.05 or less and be certified to the Department of Consumer Affairs.
§ 150.0(a):	**Ceiling and Rafter Roof Insulation.** Minimum R-22 insulation in wood-frame ceiling; or the weighted average U-factor must not exceed 0.043. Minimum R-19 or weighted average U-factor of 0.054 or less in a rafter roof alteration. Attic access doors must have permanently attached insulation using adhesive or mechanical fasteners. The attic access must be gasketed to prevent air leakage. Insulation must be installed in direct contact with a continuous roof or ceiling which is sealed to limit infiltration and exfiltration as specified in § 110.7, including but not limited to placing insulation either above or below the roof deck or on top of a drywall ceiling.*
§ 150.0(b):	**Loose-fill Insulation.** Loose fill insulation must meet the manufacturer's required density for the labeled R-value.
§ 150.0(c):	**Wall Insulation.** Minimum R-13 insulation in 2x4 inch wood framing wall or have a U-factor of 0.102 or less, or R-20 in 2x6 inch wood framing or have a U-factor of 0.071 or less. Opaque non-framed assemblies must have an overall assembly U-factor not exceeding 0.102. Masonry walls must meet Tables 150.1-A or B.*
§ 150.0(d):	**Raised-floor Insulation.** Minimum R-19 insulation in raised wood framed floor or 0.037 maximum U-factor.*
§ 150.0(f):	**Slab Edge Insulation.** 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 percent; have a water vapor permeance no greater than 2.0 perm per 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:	**Vapor Retarder.** In climate zones 1 through 16, the earth 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(d).
§ 150.0(g)2:	**Vapor Retarder.** In climate zones 14 and 16, a Class I or Class II vapor retarder must be installed on the conditioned space side of all insulation in all exterior walls, vented attics, and unvented attics with air-permeable insulation.
§ 150.0(q):	**Fenestration Products.** Fenestration, including skylights, separating conditioned space from unconditioned space or outdoors must have a maximum U-factor of 0.58; or the weighted average U-factor of all fenestration must not exceed 0.58.*
Fireplaces, Decorative Gas Appliances, and Gas Log Measures:	
§ 110.5(e)	**Pilot Light.** Continuously burning pilot lights are not allowed for indoor and outdoor fireplaces.
§ 150.0(e)1:	**Closable Doors.** Masonry or factory-built fireplaces must have a closable metal or glass door covering the entire opening of the firebox.
§ 150.0(e)2:	**Combustion Intake.** Masonry or factory-built fireplaces must have a combustion outside air intake, which is at least six square inches in area and is equipped with a readily accessible, operable, and tight-fitting damper or combustion-air control device.*
§ 150.0(e)3:	**Flue Damper.** Masonry or factory-built fireplaces must have a flue damper with a readily accessible control.*
Space Conditioning, Water Heating, and Plumbing System Measures:	
§ 110.0-§ 110.3:	**Certification.** Heating, ventilation and air conditioning (HVAC) equipment, water heaters, showerheads, faucets, and all other regulated appliances must be certified by the manufacturer to the California Energy Commission.*
§ 110.2(a):	**HVAC Efficiency.** Equipment must meet the applicable efficiency requirements in Table 110.2-A through Table 110.2-K.*
§ 110.2(b):	**Controls for Heat Pumps with Supplementary Electric Resistance Heaters.** Heat pumps with supplementary electric resistance heaters must have controls that prevent supplementary heater operation when the 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):	**Thermostats.** All heating or cooling systems not controlled by a central energy management control system (EMCS) must have a setback thermostat.*
§ 110.3(c)4:	**Water Heating Recirculation Loops Serving Multiple Dwelling Units.** 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)4.
§ 110.3(c)6:	**Isolation Valves.** Instantaneous water heaters with an input rating greater than 6.8 kBtu per hour (2 kW) must have isolation valves with hose bibbs or other fittings on both cold and hot water lines to allow for flushing the water heater when the valves are closed.
§ 110.5:	**Pilot Lights.** Continuously burning pilot lights are prohibited for natural gas: fan-type central furnaces; household cooking appliances (except appliances without an electrical supply voltage connection with pilot lights that consume less than 150 Btu per hour); and pool and spa heaters.*
§ 150.0(h)1:	**Building Cooling and Heating Loads.** Heating and/or cooling loads are calculated in accordance with the ASHRAE Handbook, Equipment Volume, Applications Volume, and Fundamentals Volume; the SMACNA Residential Comfort System Installation Standards Manual; or the ACCA Manual J using design conditions specified in § 150.0(h)2.

2019 Low-Rise Residential Mandatory Measures Summary

§ 150.0(h)3A:	**Clearances.** Air conditioner and heat pump outdoor condensing units must have a clearance of at least five feet from the outlet of any dryer
§ 150.0(h)3B:	**Liquid Line Drier.** Air conditioners and heat pump systems must be equipped with liquid line filter driers if required, as specified by the manufacturer's instructions.
§ 150.0(j)1:	**Storage Tank Insulation.** Unfired hot water tanks, such as storage tanks and backup storage tanks for solar water-heating systems, must have a minimum of R-12 external insulation or R-16 internal insulation where the internal insulation R-value is indicated on the exterior of the tank.
§ 150.0(j)2A:	**Water Piping, Solar Water-heating System Piping, and Space Conditioning System Line Insulation.** All domestic hot water piping must be insulated as specified in Section 609.11 of the California Plumbing Code. In addition, the following piping conditions must have a minimum insulation wall thickness of one inch or a minimum insulation R-value of 7.7: the first five feet of cold water pipes from the storage tank; all hot water piping with a nominal diameter equal to or greater than 3/4 inch and less than one inch; all hot water piping with a nominal diameter less than 3/4 inch that is: associated with a domestic hot water recirculation system, from the heating source to storage tank or between tanks, buried below grade, and from the heating source to kitchen fixtures.*
§ 150.0(j)3:	**Insulation Protection.** Piping insulation must be protected from damage, including that due to sunlight, moisture, equipment maintenance, and wind as required by Section 120.3(b). Insulation exposed to weather must be water retardant and protected from UV light (no adhesive tapes). Insulation covering chilled water piping and refrigerant suction piping located outside the conditioned space must include, or be protected by, a Class I or Class II vapor retarder. Pipe insulation buried below grade must be installed in a waterproof and non-crushable casing or sleeve.
§ 150.0(n)1:	**Gas or Propane Water Heating Systems.** Systems using gas or propane water heaters to serve individual dwelling units must include all of the following: A dedicated 125 volt, 20 amp electrical receptacle connected to the electric panel with a 120/240 volt 3 conductor, 10 AWG copper branch circuit, within three feet of the water heater without obstruction. Both ends of the unused conductor must be labeled with the word "spare" and be electrically isolated. Have a reserved single pole circuit breaker space in the electrical panel adjacent to the circuit breaker for the branch circuit and labeled with the words "Future 240V Use"; 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 two 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 per hour.
§ 150.0(n)2:	**Recirculating Loops.** Recirculating loops serving multiple dwelling units must meet the requirements of § 110.3(c)5.
§ 150.0(n)3:	**Solar Water-heating Systems.** Solar water-heating systems and collectors must be certified and rated by the Solar Rating and Certification Corporation (SRCC), the International Association of Plumbing and Mechanical Officials, Research and Testing (IAPMO R&T), or by a listing agency that is approved by the Executive Director.
Ducts and Fans Measures:	
§ 110.8(d)3:	**Ducts.** Insulation installed on an existing space-conditioning duct must comply with § 604.0 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:	**CMC Compliance.** All air-distribution system ducts and plenums must meet the requirements of the CMC §§ 601.0, 602.0, 603.0, 604.0, 605.0 and ANSI/SMACNA-006-2006 HVAC Duct Construction Standards Metal and Flexible 3rd Edition. Portions of supply-air and return-air ducts and plenums must be insulated to a minimum installed level of R-6.0 or a minimum installed level of R-4.2 when ducts are entirely in conditioned space as confirmed through field verification and diagnostic testing (RA3.1.4.3.8). Portions of the duct system completely exposed and surrounded by directly conditioned space are not required to be insulated. Connections of metal ducts and inner core of flexible ducts must be mechanically fastened. Openings must be sealed with mastic, tape, or other duct-closure system that meets the applicable requirements of UL 181, UL 181A, or UL 181B or aerosol sealant that meets the requirements of UL 723. If mastic or tape is used to seal openings greater than ¼ inch, the combination of mastic and either mesh or tape must be used. Building cavities, support platforms for air handlers, and plenums designed or constructed with materials other than sealed sheet metal, duct board or flexible duct must not be used to convey 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.*
§ 150.0(m)2:	**Factory-Fabricated Duct Systems.** 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:	**Field-Fabricated Duct Systems.** Field-fabricated duct systems must comply with applicable requirements for: pressure-sensitive tapes, mastics, sealants, and other requirements specified for duct construction.
§ 150.0(m)7:	**Backdraft Damper.** Fan systems that exchange air between the conditioned space and outdoors must have backdraft or automatic dampers.
§ 150.0(m)8:	**Gravity Ventilation Dampers.** Gravity ventilating systems serving conditioned space must have either automatic or readily accessible, manually operated dampers in all openings to the outside, except combustion inlet and outlet air openings and elevator shaft vents.
§ 150.0(m)9:	**Protection of Insulation.** Insulation must be protected from damage, 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:	**Porous Inner Core Flex Duct.** Porous inner core flex ducts must have a non-porous layer between the inner core and outer vapor barrier.
§ 150.0(m)11:	**Duct System Sealing and Leakage Test.** 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:	**Air Filtration.** Space conditioning systems with ducts exceeding 10 feet and the supply side of ventilation systems must have MERV 13 or equivalent filters. Filters for space conditioning systems must have a two inch depth or can be one inch if sized per Equation 150.0-A. Pressure drops and labeling must meet the requirements in §150.0(m)12. Filters must be accessible for regular service.*
§ 150.0(m)13:	**Space Conditioning System Airflow Rate and Fan Efficacy.** Space conditioning systems that use ducts to supply cooling must have a hole for the placement of a static pressure probe, or a permanently installed static pressure probe in the supply plenum. Airflow must be ≥ 350 CFM per ton of nominal cooling capacity, and an air-handling unit fan efficacy ≤ 0.45 watts per CFM for gas furnace air handlers and ≤ 0.58 watts per CFM for all others. Small duct high velocity systems must provide an airflow ≥ 250 CFM per ton of nominal cooling capacity, and an air-handling unit fan efficacy ≤ 0.62 watts per CFM. Field verification testing is required in accordance with Reference Residential Appendix RA3.3.*

2019 Low-Rise Residential Mandatory Measures Summary

Requirements for Ventilation and Indoor Air Quality:	
§ 150.0(o)1:	**Requirements for Ventilation and Indoor Air Quality.** All dwelling units must meet the requirements of ASHRAE Standard 62.2, Ventilation and Acceptable Indoor Air Quality in Residential Buildings subject to the amendments specified in § 150.0(o)1.
§ 150.0(o)1C:	**Single Family Detached Dwelling Units.** Single family detached dwelling units, and attached dwelling units not sharing ceilings or floors with other dwelling units, occupiable spaces, public garages, or commercial spaces must have mechanical ventilation airflow provided at rates determined by ASHRAE 62.2 Sections 4.1.1 and 4.1.2 and as specified in § 150.0(o)1C.
§ 150.0(o)1E:	**Multifamily Attached Dwelling Units.** Multifamily attached dwelling units must have mechanical ventilation airflow provided at rates in accordance with Equation 150.0-B and must be either a balanced system or continuous supply or continuous exhaust system. If a balanced system is not used, all units in the building must use the same system type and the dwelling-unit envelope leakage must be ≤ 0.3 CFM at 50 Pa (0.2 inch water) per square foot of dwelling unit envelope surface area and verified in accordance with Reference Residential Appendix RA3.8.
§ 150.0(o)1F:	**Multifamily Building Central Ventilation Systems.** Central ventilation systems that serve multiple dwelling units must be balanced to provide ventilation airflow for each dwelling unit served at a rate equal to or greater than the rate specified by Equation 150.0-B. All unit airflows must be within 20 percent of the unit with the lowest airflow rate as it relates to the individual unit's minimum required airflow rate needed for compliance.
§ 150.0(o)1G:	**Kitchen Range Hoods.** Kitchen range hoods must be rated for sound in accordance with Section 7.2 of ASHRAE 62.2.
§ 150.0(o)2:	**Field Verification and Diagnostic Testing.** Dwelling unit ventilation airflow must be verified in accordance with Reference Residential Appendix RA3.7. A kitchen range hood must be verified in accordance with Reference Residential Appendix RA3.7.4.3 to confirm it is rated by HVI to comply with the airflow rates and sound requirements as specified in Section 5 and 7.2 of ASHRAE 62.2.
Pool and Spa Systems and Equipment Measures:	
§ 110.4(a):	**Certification by Manufacturers.** 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:	**Piping.** Any pool or spa heating system or equipment must be installed with at least 36 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:	**Covers.** Outdoor pools or spas that have a heat pump or gas heater must have a cover.
§ 110.4(b)3:	**Directional Inlets and Time Switches for Pools.** 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:	**Pilot Light.** Natural gas pool and spa heaters must not have a continuously burning pilot light.
§ 150.0(p):	**Pool Systems and Equipment Installation.** Residential pool systems or equipment must meet the specified requirements for pump sizing, flow rate, piping, filters, and valves.*
Lighting Measures:	
§ 110.9:	**Lighting Controls and Components.** All lighting control devices and systems, ballasts, and luminaires must meet the applicable requirements of § 110.9.*
§ 150.0(k)1A:	**Luminaire Efficacy.** All installed luminaires must meet the requirements in Table 150.0-A.
§ 150.0(k)1B:	**Blank Electrical Boxes.** The number of electrical boxes that are more than five 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(k)1C:	**Recessed Downlight Luminaires in Ceilings.** 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(k)1C.
§ 150.0(k)1D:	**Electronic Ballasts for Fluorescent Lamps.** Ballasts for fluorescent lamps rated 13 watts or greater must be electronic and must have an output frequency no less than 20 kHz.
§ 150.0(k)1E:	**Night Lights, Step Lights, and Path Lights.** Night lights, step lights and path lights are not required to comply with Table 150.0-A or be controlled by vacancy sensors provided they are rated to consume no more than 5 watts of power and emit no more than 150 lumens.
§ 150.0(k)1F:	**Lighting Integral to Exhaust Fans.** 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(k)1G:	**Screw based luminaires.** Screw based luminaires must contain lamps that comply with Reference Joint Appendix JA8.*
§ 150.0(k)1H:	**Light Sources in Enclosed or Recessed Luminaires.** Lamps and other separable light sources that are not compliant with the JA8 elevated temperature requirements, including marking requirements, must not be installed in enclosed or recessed luminaires.
§ 150.0(k)1I:	**Light Sources in Drawers, Cabinets, and Linen Closets.** Light sources internal to drawers, cabinetry or linen closets are not required to comply with Table 150.0-A or be controlled by vacancy sensors provided that they are rated to consume no more than 5 watts of power, emit no more than 150 lumens, and are equipped with controls that automatically turn the lighting off when the drawer, cabinet or linen closet is closed.
§ 150.0(k)2A:	**Interior Switches and Controls.** All forward phase cut dimmers used with LED light sources must comply with NEMA SSL 7A.
§ 150.0(k)2B:	**Interior Switches and Controls.** Exhaust fans must be controlled separately from lighting systems.*
§ 150.0(k)2C:	**Interior Switches and Controls.** Lighting must have readily accessible wall-mounted controls that allow the lighting to be manually turned ON and OFF.*
§ 150.0(k)2D:	**Interior Switches and Controls.** Controls and equipment must be installed in accordance with manufacturer's instructions.
§ 150.0(k)2E:	**Interior Switches and Controls.** Controls must not bypass a dimmer, occupant sensor, or vacancy sensor function if the control is installed to comply with § 150.0(k).
§ 150.0(k)2F:	**Interior Switches and Controls.** Lighting controls must comply with the applicable requirements of § 110.9.

2019 Low-Rise Residential Mandatory Measures Summary

§ 150.0(k)2G:	**Interior Switches and Controls.** An energy management control system (EMCS) may be used to comply with control requirements if it: provides functionality of the specified control according to § 110.9; meets the Installation Certificate requirements of § 130.4; meets the EMCS requirements of § 130.0(e); and meets all other requirements in § 150.0(k)2.
§ 150.0(k)2H:	**Interior Switches and Controls.** 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)2.
§ 150.0(k)2I:	**Interior Switches and Controls.** In bathrooms, garages, laundry rooms, and utility rooms, at least one luminaire in each of these spaces must be controlled by an occupant sensor or a vacancy sensor providing automatic-off functionality. If an occupant sensor is installed, it must be initially configured to manual-on operation using the manual control required under Section 150.0(k)2C.
§ 150.0(k)2J:	**Interior Switches and Controls.** Luminaires that are or contain light sources that meet Reference Joint Appendix JA8 requirements for dimming, and that are not controlled by occupancy or vacancy sensors, must have dimming controls.*
§ 150.0(k)2K:	**Interior Switches and Controls.** Under cabinet lighting must be controlled separately from ceiling-installed lighting systems.
§ 150.0(k)3A:	**Residential Outdoor Lighting.** 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)3Ai (ON and OFF switch) and the requirements in either § 150.0(k)3Aii (photocell and either a motion sensor or automatic time switch control) or § 150.0(k)3Aiii (astronomical time clock), or an EMCS.
§ 150.0(k)3B:	**Residential Outdoor Lighting.** For low-rise residential buildings with four or more dwelling units, outdoor lighting for private patios, entrances, balconies, and porches; and residential parking lots and carports with less than eight vehicles per site must comply with either § 150.0(k)3A or with the applicable requirements in Sections 110.9, 130.0, 130.2, 130.4, 140.7 and 141.0.
§ 150.0(k)3C:	**Residential Outdoor Lighting.** For low-rise residential buildings with four or more dwelling units, any outdoor lighting for residential parking lots or carports with a total of eight or more vehicles per site and any outdoor lighting not regulated by § 150.0(k)3B or § 150.0(k)3D must comply with the applicable requirements in Sections 110.9, 130.0, 130.2, 130.4, 140.7 and 141.0.
§ 150.0(k)4:	**Internally illuminated address signs.** 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:	**Residential Garages for Eight or More Vehicles.** Lighting for residential parking garages for eight or more vehicles must comply with the applicable requirements for nonresidential garages in Sections 110.9, 130.0, 130.1, 130.4, 140.6, and 141.0.
§ 150.0(k)6A:	**Interior Common Areas of Low-rise Multifamily Residential Buildings.** 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 comply with Table 150.0-A and be controlled by an occupant sensor.
§ 150.0(k)6B:	**Interior Common Areas of Low-rise Multifamily Residential Buildings.** 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 for the interior common areas in that building must: i. Comply with the applicable requirements in Sections 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.
Solar Ready Buildings:	
§ 110.10(a)1:	**Single Family Residences.** Single family residences located in subdivisions with 10 or more single family residences and where the application for a tentative subdivision map for the residences has been deemed complete and approved by the enforcement agency, which do not have a photovoltaic system installed, must comply with the requirements of § 110.10(b) through § 110.10(e).
§ 110.10(a)2:	**Low-rise Multifamily Buildings.** Low-rise multi-family buildings that do not have a photovoltaic system installed must comply with the requirements of § 110.10(b) through § 110.10(d).
§ 110.10(b)1:	**Minimum Solar Zone Area.** 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 less 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 roof area of the building excluding any skylight area. The solar zone requirement is applicable to the entire building, including mixed occupancy.*
§ 110.10(b)2:	**Azimuth.** All sections of the solar zone located on steep-sloped roofs must be oriented between 90 degrees and 300 degrees of true north.
§ 110.10(b)3A:	**Shading.** 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:	**Shading.** 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:	**Structural Design Loads on Construction Documents.** For areas of the roof designated as a solar zone, the structural design loads for roof dead load and roof live load must be clearly indicated on the construction documents.
§ 110.10(c):	**Interconnection Pathways.** The construction documents must indicate: a location reserved for inverters and metering equipment and a pathway reserved for routing of conduit from the solar zone to the point of interconnection with the electrical service; and for single family residences and central water-heating systems, a pathway reserved for routing plumbing from the solar zone to the water-heating system.
§ 110.10(d):	**Documentation.** 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:	**Main Electrical Service Panel.** The main electrical service panel must have a minimum busbar rating of 200 amps.
§ 110.10(e)2:	**Main Electrical Service Panel.** 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 permanently marked as "For Future Solar Electric".

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Calculation Description: Title 24 Analysis — **Input File Name:** Milestone_Hamilton_2.ribd19x

HVAC - HEATING UNIT TYPES

01	02	03	04
Name	System Type	Number of Units	Heating Efficiency
Heating Component 1	Central gas furnace	2	AFUE-95

HVAC - COOLING UNIT TYPES

01	02	03	04	05	06	07	08
Name	System Type	Number of Units	Efficiency EER/CEER	Efficiency SEER	Zonally Controlled	Mulit-speed Compressor	HERS Verification
Cooling Component 1	Central split AC	2	11.7	14	Not Zonal	Single Speed	Cooling Component 1-hers-cool

HVAC COOLING - HERS VERIFICATION

01	02	03	04	05	06
Name	Verified Airflow	Airflow Target	Verified EER	Verified SEER	Verified Refrigerant Charge
Cooling Component 1-hers-cool	Required	350	Not Required	Not Required	Required

HVAC - DISTRIBUTION SYSTEMS

01	02	03	04	05	06	07	08	09	10	11	12
			Duct Ins. R-value		Duct Location		Surface Area				
Name	Type	Design Type	Supply	Return	Supply	Return	Supply	Return	Bypass Duct	Duct Leakage	HERS Verification
Air Distribution System 1	Unconditioned attic	Non-Verified	R-8	R-8	Attic	Attic	n/a	n/a	No Bypass Duct		Air Distribution System 1-hers-dist

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HVAC DISTRIBUTION - HERS VERIFICATION

01	02	03	04	05	06	07	08	09
Name	Duct Leakage Verification	Duct Leakage Target (%)	Verified Duct Location	Verified Duct Design	Buried Ducts	Deeply Buried Ducts	Low-leakage Air Handler	Low Leakage Ducts Entirely in Conditioned Space
Air Distribution System 1-hers-dist	Yes	5.0	Not Required	Not Required	Not Required	Credit not taken	Required	No

HVAC - FAN SYSTEMS

01	02	03	04
Name	Type	Fan Power (Watts/CFM)	Name
HVAC Fan 1	HVAC Fan	0.45	HVAC Fan 1-hers-fan

HVAC FAN SYSTEMS - HERS VERIFICATION

01	02	03
Name	Verified Fan Watt Draw	Required Fan Efficacy (Watts/CFM)
HVAC Fan 1-hers-fan	Required	0.45

IAQ (INDOOR AIR QUALITY) FANS

01	02	03	04	05	06
Dwelling Unit	IAQ CFM	IAQ Watts/CFM	IAQ Fan Type	IAQ Recovery Effectiveness (%)	IAQ Recovery Effectiveness - SREIAQ Recovery Effectiveness - SRE
SFam IAQVentRpt 1-1	197	0.502538	Balanced HRV	72	n/a

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DOCUMENTATION AUTHOR'S DECLARATION STATEMENT

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

Documentation Author Name: Jeffery Burkard	Documentation Author Signature: *Jeffery Burkard*
Company: California Energy Design	Signature Date: 2021-12-07 14:26:43
Address: 7475 Texas Canyon Rd. (No US mail)	CEA/ HERS Certification Identification (If applicable): R16-09-20101 / CC2005632
City/State/Zip: Placerville, CA 95667	Phone: 530-626-1386

CABEC — California Association of Building Energy Consultants — CERTIFIED ENERGY ANALYST

RESPONSIBLE PERSON'S DECLARATION STATEMENT

I certify the following under penalty of perjury, under the laws of the State of California:
1. I am eligible under Division 3 of the Business and Professions Code to accept responsibility for the building design identified on this Certificate of Compliance.
2. 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: Miles Ostermann	Responsible Designer Signature: *Miles Ostermann*
Company: Milestone Studio	Date Signed: 2021-12-09 09:48:37
Address: 2905 Clemson Drive	License: N5759011
City/State/Zip: Cameron Park, CA 95682	Phone: 530-676-0900

Digitally signed by CalCERTS. 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.

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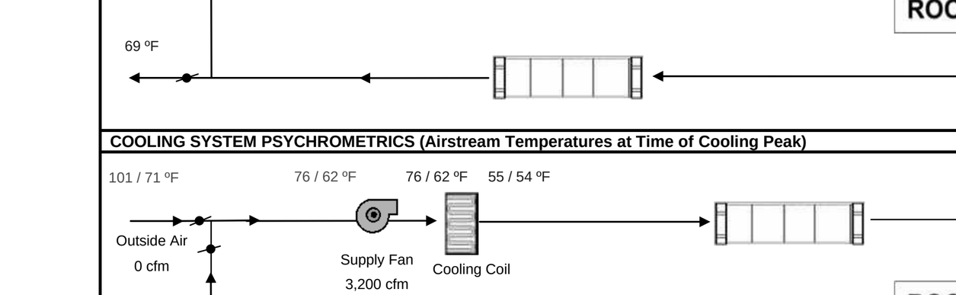
HVAC SYSTEM HEATING AND COOLING LOADS SUMMARY

Project Name: Dennis & Michelle Hamilton	Date: 12/7/2021
System Name: Total 8tons Split Gas/Elect	Floor Area: 4,394

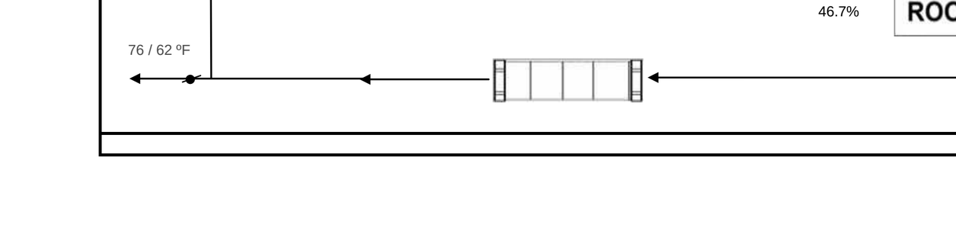
ENGINEERING CHECKS	
Number of Systems	2
Heating System	
Output per System	73,600
Total Output (Btuh)	147,200
Output (Btuh/sqft)	33.5
Cooling System	
Output per System	48,000
Total Output (Btuh)	96,000
Total Output (Tons)	8.0
Total Output (Btuh/sqft)	21.8
Total Output (sqft/Ton)	549.3
Air System	
CFM per System	1,600
Airflow (cfm)	3,200
Airflow (cfm/sqft)	0.73
Airflow (cfm/Ton)	400.0
Outside Air (%)	0.0%
Outside Air (cfm/sqft)	0.00
Note: values above given at ARI conditions	

SYSTEM LOAD	COIL COOLING PEAK CFM	Sensible	Latent	COIL HTG. PEAK CFM	Sensible
Total Room Loads	3,499	71,124	2,214	1,242	45,461
Return Vented Lighting		0			
Return Air Ducts		3,194			2,234
Return Fan		0			0
Ventilation	0	0	0	0	0
Supply Fan		0			0
Supply Air Ducts		3,194			2,234
TOTAL SYSTEM LOAD		77,512	2,214		49,930
HVAC EQUIPMENT SELECTION					
4ton Split Gas/Elect 14/11.7/95%		76,957	8,871		147,200
Total Adjusted System Output (Adjusted for Peak Design conditions)		76,957	8,871		147,200
TIME OF SYSTEM PEAK		Aug 3 PM			Jan 1 AM

HEATING SYSTEM PSYCHROMETRICS (Airstream Temperatures at Time of Heating Peak)



COOLING SYSTEM PSYCHROMETRICS (Airstream Temperatures at Time of Cooling Peak)



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OVERHANGS AND FINS

01	02	03	04	05	06	07	08	09	10	11	12	13	14
	Overhang					Left Fin				Right Fin			
Window	Depth	Dist Up	Left Extent	Right Extent	Flap Ht.	Depth	Top Up	Dist L	Bot Up	Depth	Top Up	Dist R	Bot Up
2656 3	3.33	1	6	1	0	0	0	0	0	2	0	1	0
9066	1.33	1	2	2	0	0	0	0	0	14	0	0.5	0
6080	14	1	10	10	0	2	0	1.5	0	0	0	0	0
6080 2	14	1	10	10	0	2	0	9.5	0	0	0	0	0
6080 3	14	1	10	10	0	2	0	17.75	0	0	0	0	0
6080 4	14	1	10	10	0	7.5	0	3	0	0	0	0	0
3080 Mud Room/Hallway	1.33	1	2	2	0	57	0	10	0	3	0	0.5	0
2040 2	1.33	1	2	2	0	0	0	0	0	0	0	0	0
2040 3	1.33	1	2	2	0	12.5	0	14.83	0	0	0	0	0
2040 4	1.33	1	2	2	0	12.5	0	8	0	0	0	0	0
2040 5	1.33	1	2	2	0	12.5	0	1.25	0	0	0	0	0
6050	1.33	1	2	2	0	0	0	0	0	0	0	0	0
5050	1.33	1	2	2	0	3	0	2	0	3	0	2	0
6050 2	1.33	1	2	2	0	0	0	0	0	0	0	0	0
2040 6	1.33	1	2	2	0	0	0	0	0	3.5	0	2	0
2040 7	1.33	1	2	2	0	0	0	0	0	6	0	2	0
2040 8	1.33	1	2	2	0	0	0	0	0	0	0	0	0

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OVERHANGS AND FINS

01	02	03	04	05	06	07	08	09	10	11	12	13	14
	Overhang					Left Fin				Right Fin			
Window	Depth	Dist Up	Left Extent	Right Extent	Flap Ht.	Depth	Top Up	Dist L	Bot Up	Depth	Top Up	Dist R	Bot Up
9020 (3x 3020)	1.33	1	2	2	0	0	0	0	0	0	0	0	0
2040 9	1.33	1	2	2	0	0	0	0	0	0	0	0	0
2020	1.33	1	2	2	0	0	0	0	0	0	0	0	0
2020 2	1.33	1	2	2	0	0	0	0	0	0	0	0	0
6050 (2x 3050)	1.33	1	2	2	0	6	0	0.25	0	0	0	0	0
6050 (2x 3050) 2	1.33	1	2	2	0	0	0	0	0	0	0	0	0
10056	1.33	1	2	2	0	0	0	0	0	0	0	0	0
3080 French Door	15.33	1	11	23	0	2	0	0.1	0	0	0	0	0
12080 Slider	15.33	1	11	23	0	0	0	0	0	0	0	0	0
3080 French Door 2	15.33	1	11	23	0	2	0	0.1	0	0	0	0	0
10060 Slider	1.33	1	2	2	0	2	0	0.1	0	0	0	0	0

SLAB FLOORS

01	02	03	04	05	06	07	08
Name	Zone	Area (ft²)	Perimeter (ft)	Edge Insul. R-value and Depth	Edge Insul. R-value and Depth	Carpeted Fraction	Heated
Slab	Floor 1 Zone 1	2392.23	252.22	none	0	80%	No
Slab 2	__Garage__	1108.67	119	none	0	0%	No

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OPAQUE SURFACE CONSTRUCTIONS

01	02	03	04	05	06	07	08
Construction Name	Surface Type	Construction Type	Framing	Total Cavity R-value	Interior / Exterior Continuous R-value	U-factor	Assembly Layers
R-0 Wall Stucco	Exterior Walls	Wood Framed Wall	2x4 @ 16 in. O. C.	R-0	None / None	0.361	Inside Finish: Gypsum Board Cavity / Frame: no insul. / 2x4 Exterior Finish: 3 Coat Stucco
2x6 R-19 Wall Wood Siding	Exterior Walls	Wood Framed Wall	2x6 @ 16 in. O. C.	R-19	None / None	0.07	Inside Finish: Gypsum Board Cavity / Frame: R-19 in 5-1/2 in. (R-18) / 2x6 Exterior Finish: Wood Siding/sheathing/decking
R-0 Roof Attic Comp	Cathedral Ceilings	Wood Framed Ceiling	2x4 @ 16 in. O. C.	R-0	None / None	0.484	Roofing: Light Roof (Asphalt Shingle) Roof Deck: Wood Siding/sheathing/decking Cavity / Frame: no insul. / 2x4 Inside Finish: Gypsum Board
2x6 R-24 Wall to Garage	Interior Walls	Wood Framed Wall	2x6 @ 16 in. O. C.	R-24	None / None	0.06	Inside Finish: Gypsum Board Cavity / Frame: R-24 / 2x6 Other Side Finish: Gypsum Board
Attic RoofFloor 1 Zone 1	Attic Roofs	Wood Framed Ceiling	2x6 @ 24 in. O. C.	R-30	None / None	0.034	Roofing: Light Roof (Asphalt Shingle) Roof Deck: Wood Siding/sheathing/decking Cavity / Frame: R-20.4 / 2x6 Under Roof Joists: R-9.6 insul.
Attic RoofFloor 2 Zone 2	Attic Roofs	Wood Framed Ceiling	2x6 @ 24 in. O. C.	R-30	None / None	0.034	Roofing: Light Roof (Asphalt Shingle) Roof Deck: Wood Siding/sheathing/decking Cavity / Frame: R-20.4 / 2x6 Under Roof Joists: R-9.6 insul.
R-30 Unvented Attic	Ceilings (below attic)	Wood Framed Ceiling	2x4 @ 24 in. O. C.	R-0	None / None	0.481	Cavity / Frame: no insul. / 2x4 Inside Finish: Gypsum Board

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OPAQUE SURFACE CONSTRUCTIONS

01	02	03	04	05	06	07	08
Construction Name	Surface Type	Construction Type	Framing	Total Cavity R-value	Interior / Exterior Continuous R-value	U-factor	Assembly Layers
R-30 Floor No Crawlspace	Exterior Floors	Wood Framed Floor	2x10 @ 16 in. O. C.	R-30	None / None	0.034	Floor Surface: Carpeted Floor Deck: Wood Siding/sheathing/decking Cavity / Frame: R-30 / 2x10
R-0 Floor No Crawlspace	Interior Floors	Wood Framed Floor	2x12 @ 16 in. O. C.	R-0	None / None	0.196	Floor Surface: Carpeted Floor Deck: Wood Siding/sheathing/decking Cavity / Frame: no insul. / 2x12 Ceiling Below Finish: Gypsum Board

BUILDING ENVELOPE - HERS VERIFICATION

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

WATER HEATING SYSTEMS

01	02	03	04	05	06	07
Name	System Type	Distribution Type	Water Heater Name (#)	Solar Heating System	Compact Distribution	HERS Verification
DHW Sys 1	Domestic Hot Water (DHW)	Demand Recirculation Manual Control	DHW Heater 1 (2)	n/a	None	n/a

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WATER HEATERS

01	02	03	04	05	06	07	08	09	10	11	12
Name	Heating Element Type	Tank Type	# of Units	Tank Vol. (gal)	Energy Factor or Efficiency	Input Rating or Pilot	Tank Insulation R-value (Int/Ext)	Standby Loss or Recovery Eff	1st Hr. Rating or Flow Rate	NEEA Heat Pump Brand or Model	Tank Location or Ambient Condition
DHW Heater 1	Gas	Consumer Instantaneous	2	0	0.96-UEF	<= 200 kBtu/hr	0	n/a	n/a	n/a	n/a

RECIRCULATION LOOPS

01	02	03	04	05
Water Heating System Name	Number of Recirculation Loops	Loop Insulation Thickness (in)	Recirculation Loop Location	Recirculation Pump Power (W)
DHW Sys 1	1	1.5	Conditioned Space	0

WATER HEATING - HERS VERIFICATION

01	02	03	04	05	06	07	08
Name	Pipe Insulation	Parallel Piping	Compact Distribution	Compact Distribution Type	Recirculation Control	Central DHW Distribution	Shower Drain Water Heat Recovery
DHW Sys 1 - 1/2	Not Required	Not Required	Not Required	None	Not Required	Not Required	Not Required

SPACE CONDITIONING SYSTEMS

01	02	03	04	05	06	07	08	09	10	11
Name	System Type	Heating Unit Name	Cooling Unit Name	Fan Name	Distribution Name	Required Thermostat Type	Status	Verified Existing Condition	Heating Equipment Count	Cooling Equipment Count
Total 8tons Split Gas/Ele1	Heating and cooling system other	Heating Component 1	Cooling Component 1	HVAC Fan 1	Air Distribution System 1	Setback	New	NA	2	2

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OPAQUE SURFACES

01	02	03	04	05	06	07	08
Name	Zone	Construction	Azimuth	Orientation	Gross Area (ft²)	Window and Door Area (ft2)	Tilt (deg)
Front Wall 3	__Garage__	R-0 Wall Stucco	131	n/a	400	240	90
Right Wall 3	__Garage__	R-0 Wall Stucco	41	n/a	110	72	90
Left Wall 3	__Garage__	R-0 Wall Stucco	221	n/a	280	54	90
Rear Wall 3	__Garage__	R-0 Wall Stucco	311	n/a	400	0	90

OPAQUE SURFACES - CATHEDRAL CEILINGS

01	02	03	04	05	06	07	08	09	10	11
Name	Zone	Construction	Azimuth	Orientation	Area (ft²)	Skylight Area (ft²)	Roof Rise (x in 12)	Roof Reflectance	Roof Emittance	Cool Roof
Roof	__Garage__	R-0 Roof Attic Comp	0	n/a	429.36	0	5	0.1	0.85	No

ATTIC

01	02	03	04	05	06	07	08
Name	Construction	Type	Roof Rise (x in 12)	Roof Reflectance	Roof Emittance	Radiant Barrier	Cool Roof
Attic Floor 1 Zone 1	Attic RoofFloor 1 Zone 1	Unventilated	6	0.1	0.85	No	No
Attic Floor 2 Zone 2	Attic RoofFloor 2 Zone 2	Unventilated	6	0.1	0.85	No	No

FENESTRATION / GLAZING

01	02	03	04	05	06	07	08	09	10	11	12	13	14
Name	Type	Surface	Orientation	Azimuth	Width (ft)	Height (ft)	Mult.	Area (ft²)	U-factor	U-factor Source	SHGC	SHGC Source	Exterior Shading
2656 ? or 2650	Window	Front Wall	Front	197	2.5	5.5	1	13.75	0.25	NFRC	0.21	NFRC	Bug Screen
2040	Window	Front Wall	Front	197	2	4	1	8	0.25	NFRC	0.21	NFRC	Bug Screen
6056 (2x 3056)	Window	Front Wall	Front	197	6	5.5	1	33	0.25	NFRC	0.21	NFRC	Bug Screen

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FENESTRATION / GLAZING

01	02	03	04	05	06	07	08	09	10	11	12	13	14
Name	Type	Surface	Orientation	Azimuth	Width (ft)	Height (ft)	Mult.	Area (ft²)	U-factor	U-factor Source	SHGC	SHGC Source	Exterior Shading
6090 ??? Entry Door	Window	Front Wall	Front	197	6	9	1	54	0.25	NFRC	0.21	NFRC	Bug Screen
6056 (2x 3056) 2	Window	Front Wall	Front	197	6	5.5	1	33	0.25	NFRC	0.21	NFRC	Bug Screen
2656	Window	Right Wall	Right	107	2.5	5.5	1	13.75	0.25	NFRC	0.21	NFRC	Bug Screen
2656 2	Window	Right Wall	Right	107	2.5	5.5	1	13.75	0.25	NFRC	0.21	NFRC	Bug Screen
6080 French Doors	Window	Right Wall	Right	107	6	8	1	48	0.25	NFRC	0.21	NFRC	Bug Screen
5056	Window	Right Wall	Right	107	5	5.5	1	27.5	0.25	NFRC	0.21	NFRC	Bug Screen
3080 Wud Room Door	Window	Left Wall	Left	287	3	8	1	24	0.25	NFRC	0.21	NFRC	Bug Screen
4040 (2x 2040)	Window	Left Wall	Left	287	4	4	1	16	0.25	NFRC	0.21	NFRC	Bug Screen
3080 Kitchen Door	Window	Left Wall	Left	287	3	8	1	24	0.25	NFRC	0.21	NFRC	Bug Screen
2050	Window	Left Wall	Left	287	2	5	1	10	0.25	NFRC	0.21	NFRC	Bug Screen
3056	Window	Left Wall	Left	287	3	5.5	1	16.5	0.25	NFRC	0.21	NFRC	Bug Screen
2656 3	Window	Rear Wall	Back	17	2.5	5.5	1	13.75	0.25	NFRC	0.21	NFRC	Bug Screen
9066	Window	Rear Wall	Back	17	9	6.5	1	58.5	0.25	NFRC	0.21	NFRC	Bug Screen
6080	Window	Rear Wall	Back	17	6	8	1	48	0.25	NFRC	0.21	NFRC	Bug Screen
6080 2	Window	Rear Wall	Back	17	6	8	1	48	0.25	NFRC	0.21	NFRC	Bug Screen
6080 3	Window	Rear Wall	Back	17	6	8	1	48	0.25	NFRC	0.21	NFRC	Bug Screen
6080 4	Window	Rear Wall	Back	17	6	8	1	48	0.25	NFRC	0.21	NFRC	Bug Screen
3080 Mud Room/Hallway	Window	Exterior Front Wall (Mud		131	3	8	1	24	0.25	NFRC	0.21	NFRC	Bug Screen
2040 2	Window	Front Wall 2	Front	197	2	4	1	8	0.25	NFRC	0.21	NFRC	Bug Screen
2040 3	Window	Front Wall 2	Front	197	2	4	1	8	0.25	NFRC	0.21	NFRC	Bug Screen
2040 4	Window	Front Wall 2	Front	197	2	4	1	8	0.25	NFRC	0.21	NFRC	Bug Screen
2040 5	Window	Front Wall 2	Front	197	2	4	1	8	0.25	NFRC	0.21	NFRC	Bug Screen
6050	Window	Front Wall 2	Front	197	6	5	1	30	0.25	NFRC	0.21	NFRC	Bug Screen
5050	Window	Front Wall 2	Front	197	5	5	1	25	0.25	NFRC	0.21	NFRC	Bug Screen
6050 2	Window	Front Wall 2	Front	197	6	5	1	30	0.25	NFRC	0.21	NFRC	Bug Screen

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FENESTRATION / GLAZING

01	02	03	04	05	06	07	08	09	10	11	12	13	14
Name	Type	Surface	Orientation	Azimuth	Width (ft)	Height (ft)	Mult.	Area (ft²)	U-factor	U-factor Source	SHGC	SHGC Source	Exterior Shading
2040 6	Window	Front Wall 2	Front	197	2	4	1	8	0.25	NFRC	0.21	NFRC	Bug Screen
2040 7	Window	Front Wall 2	Front	197	2	4	1	8	0.25	NFRC	0.21	NFRC	Bug Screen
2040 8	Window	Right Wall 2	Right	107	2	4	1	8	0.25	NFRC	0.21	NFRC	Bug Screen
9020 (3x 3020)	Window	Right Wall 2	Right	107	9	2	1	18	0.25	NFRC	0.21	NFRC	Bug Screen
2040 9	Window	Left Wall 2	Left	287	2	4	1	8	0.25	NFRC	0.21	NFRC	Bug Screen
2020	Window	Left Wall 2	Left	287	2	2	1	4	0.25	NFRC	0.21	NFRC	Bug Screen
2020 2	Window	Left Wall 2	Left	287	2	2	2	8	0.25	NFRC	0.21	NFRC	Bug Screen
6050 (2x 3050)	Window	Left Wall 2	Left	287	6	5	1	30	0.25	NFRC	0.21	NFRC	Bug Screen
6050 (2x 3050) 2	Window	Rear Wall 2	Back	17	6	5	1	30	0.25	NFRC	0.21	NFRC	Bug Screen
10056	Window	Rear Wall 2	Back	17	10	5.5	1	55	0.25	NFRC	0.21	NFRC	Bug Screen
3080 French Door	Window	Rear Wall 2	Back	17	3	8	1	24	0.25	NFRC	0.21	NFRC	Bug Screen
12080 Slider	Window	Rear Wall 2	Back	17	12	8	1	96	0.25	NFRC	0.21	NFRC	Bug Screen
3080 French Door 2	Window	Rear Wall 2	Back	17	3	8	1	24	0.25	NFRC	0.21	NFRC	Bug Screen
10060 Slider	Window	Rear Wall 2	Back	17	10	6	1	60	0.25	NFRC	0.21	NFRC	Bug Screen
6050 3	Window	Left Wall 3		221			1	30	0.25	NFRC	0.21	NFRC	Bug Screen

OPAQUE DOORS

01	02	03	04
Name	Side of Building	Area (ft²)	U-factor
3080	Interior Wall to Garage	24	0.2
10080 Roll-up Door	Front Wall 3	80	1
10080 Roll-up Door 2	Front Wall 3	80	1
10080 Roll-up Door 3	Front Wall 3	80	1
3080 Metal Man Door	Right Wall 3	24	0.5
6080 Double Doors	Right Wall 3	48	0.5

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OPAQUE DOORS

01	02	03	04
Name	Side of Building	Area (ft²)	U-factor
3080 Metal Man Door 2	Left Wall 3	24	0.5

OVERHANGS AND FINS

01	02	03	04	05	06	07	08	09	10	11	12	13	14
	Overhang					Left Fin				Right Fin			
Window	Depth	Dist Up	Left Extent	Right Extent	Flap Ht.	Depth	Top Up	Dist L	Bot Up	Depth	Top Up	Dist R	Bot Up
2656 ? or 2650	1.5	1	2	2	0	6.25	0	8.91	0	54	0	1.58	0
2040	14.25	1	10	10	0	6.25	0	8.91	0	54	0	1.58	0
6056 (2x 3056)	8	1	10	10	0	0	0	0	0	47.75	0	16.25	0
6090 ??? Entry Door	11	0.1	0.25	0.25	0	3	0	0.25	0	3	0	0.25	0
6056 (2x 3056) 2	8	1	10	10	0	0	0	0	0	0	0	0	0
2656	8	1	10	10	0	0	0	0	0	0	0	0	0
2656 2	8	1	10	10	0	0	0	0	0	0	0	0	0
6080 French Doors	21.25	1	8	1	0	0	0	0	0	13.25	0	1	0
5056	1.33	1	2	2	0	57	0	10	0	3	0	0.5	0
3080 Wud Room Door	6	1	0.5	0.5	0	3.5	0	0.5	0	3.5	0	0.5	0
4040 (2x 2040)	6	1	0.5	5	0	8	0	0.5	0	3	0	5	0
3080 Kitchen Door	6	1	5	0.5	0	8	0	0.5	0	3	0	5	0
2050	3.5	1	10.5	4	0	5	0	10.5	0	0	0	0	0
3056	8	0.1	10	2	10	0	0	0	0	13	0	2	0

Title-24 Energy Requirement Summary

Project: Hamilton Residence — Climate Zone: 12 — Fuel: N.G.
This Project complies with the Residential 2019 Building Energy Efficiency Standards with the following minimum assemblies and efficiencies:

* HERS VERIFICATIONS REQUIRED (see below)

Envelope Assemblies:
- Roofing = Radiant Barrier on Sheeting Not Required. Cool Roof Shingles Not Required.
- Ceiling / Attic / Roof = Unvented Attic, Minimum R-30 Under Roof Deck
- High Performance Attic = Not Required
- Walls = 2x6, R-19, Wood Siding or Stucco
- Exterior Wall Door and Window Headers Insulated to minimum R-5 = No
- Floor = Uninsulated Slab and R-30 Raised Floor
- Front Door Orientation: 197 degrees (on plot plan)

Glazing:
- Average Weighted Total = Wood or Vinyl, Low-E3 (U=.25 & shgc=.21)
- Skylights = NA
- Solar Tubes = NA

H.V.A.C.:
- Whole House Fan = Not Required
- All Zones = Total 8 nominal tons Split Gas/Elect's, (2) Systems (14.0seer/11.7eer/95%afue)
- Ducting = R-8.0 insulated ducts located in attic space w/ min. 2" MERV 13 R/A & HRV Filters
- I.A.Q. = Broan HRV-200 (or equal) rated at 197cfm @ .7"sp, ASRE .72, & 99watts
- Sizing of HVAC equipment is for reference only.
- Mechanical Contractor responsible for properly sizing and installing the HVAC system.

Solar P.V.: Minimum 3.6kWdc / 180 Azimuth / 22deg Array / 4.8 Tilt / 96% Inverter Eff.

* HERS Verification / Testing Required:
- * HERS Indoor Air Quality Balanced HRV (197cfm) Verification
- * HERS Duct Leakage Test w/Low Leakage Air Handler (<5%)
- * HERS Air Flow & Fan Watt Draw test (350cfm p/ton, .45w p/cfm)
- * HERS Refrigerant Charge Test
- * HERS Kitchen Exhaust Hood Verification (>100cfm, <3.0 Sones)

Domestic Hot Water:
(2) Instant/Tankless Gas rated at max. 199Kbtu input and a min. .96 UEF.
R-7.7 pipe insulation required on all hot water pipes. Push Button Demand Recirc.

Any brand of material or equipment that is approved for use in California and is equal to or greater than the above mentioned ratings and efficiencies may be used for this project.

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GENERAL INFORMATION

01	Project Name	Milestone Studio - Hamilton Residence			
02	Run Title	Title 24 Analysis			
03	Project Location	175 Elives Way			
04	City	Folsom	05	Standards Version	2019
06	Zip code	95630	07	Software Version	EnergyPro 8.2
08	Climate Zone	12	09	Front Orientation (deg/ Cardinal)	197
10	Building Type	Single family	11	Number of Dwelling Units	1
12	Project Scope	NewConstruction	13	Number of Bedrooms	3
14	Addition Cond. Floor Area (ft²)	0	15	Number of Stories	2
16	Existing Cond. Floor Area (ft²)	n/a	17	Fenestration Average U-factor	0.25
18	Total Cond. Floor Area (ft²)	4394.21	19	Glazing Percentage (%)	25.52%
20	ADU Bedroom Count	n/a	21	ADU Conditioned Floor Area	n/a
22	Is Natural Gas Available?	Yes			

COMPLIANCE RESULTS

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

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Calculation Description: Title 24 Analysis — **Input File Name:** Milestone_Hamilton_2.ribd19x

ENERGY DESIGN RATING

	Energy Design Ratings		Compliance Margins	
	Efficiency[1] (EDR)	Total[2] (EDR)	Efficiency[1] (EDR)	Total[2] (EDR)
Standard Design	40.4	26.3		
Proposed Design	39.4	25.3	1	1

RESULT: [3] COMPLIES

1: Efficiency EDR includes improvements to the building envelope and more efficient equipment
2: Total EDR includes efficiency and demand response measures such as photovoltaic (PV) systems and batteries
3: Building complies when efficiency and total compliance margins are greater than or equal to zero

- Standard Design PV Capacity: 3.60 kWdc
- PV System resized to 3.60 kWdc (a factor of 3.600) to achieve 'Standard Design PV' PV scaling

ENERGY USE SUMMARY

Energy Use (kTDV/ft²-yr)	Standard Design	Proposed Design	Compliance Margin	Percent Improvement
Space Heating	31.49	28.31	3.18	10.1
Space Cooling	17.17	16.48	0.69	4
IAQ Ventilation	4.67	5.47	-0.8	-17.1
Water Heating	5.86	6.78	-0.92	-15.7
Self Utilization/Flexibility Credit	n/a	0	0	n/a
Compliance Energy Total	**59.19**	**57.04**	**2.15**	**3.6**

REQUIRED PV SYSTEMS - SIMPLIFIED

01	02	03	04	05	06	07	08	09	10	11	12
DC System Size (kWdc)	Exception	Module Type	Array Type	Power Electronics	CFI	Azimuth (deg)	Tilt Input	Array Angle (deg)	Tilt: (x in 12)	Inverter Eff. (%)	Annual Solar Access (%)
3.6	NA	Standard	Fixed	none	true	150-270	n/a	n/a	<=7:12	96	100

CERTIFICATE OF COMPLIANCE — CF1R-PRF-01E (Page 3 of 16)
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REQUIRED SPECIAL FEATURES

The following are features that must be installed as condition for meeting the modeled energy performance for this computer analysis.
- Indoor air quality, balanced fan
- Floor has high level of insulation
- Insulation below roof deck
- Window overhangs and/or fins
- Recirculating with demand control, push button

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 buildng tables below. Registered CF2Rs and CF3Rs are required to be completed in the HERS Registry

Building-level Verifications:
- Indoor air quality ventilation
- Kitchen range hood

Cooling System Verifications:
- Minimum Airflow
- Verified Refrigerant Charge
- Fan Efficacy Watts/CFM

Heating System Verifications:
- -- None --

HVAC Distribution System Verifications:
- Duct leakage testing
- Low-leakage Air Handling Unit

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

BUILDING - FEATURES INFORMATION

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
Milestone Studio - Hamilton Residence	4394.21	1	3	2	0	1

CERTIFICATE OF COMPLIANCE — CF1R-PRF-01E (Page 4 of 16)
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ZONE INFORMATION

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
Floor 1 Zone 1	Conditioned	Total 8tons Split Gas/Ele1	2392.23	10	DHW Sys 1	N/A
Floor 2 Zone 2	Conditioned	Total 8tons Split Gas/Ele1	2001.98	9.5	DHW Sys 1	N/A

OPAQUE SURFACES

01	02	03	04	05	06	07	08
Name	Zone	Construction	Azimuth	Orientation	Gross Area (ft²)	Window and Door Area (ft2)	Tilt (deg)
Front Wall	Floor 1 Zone 1	2x6 R-19 Wall Wood Siding	197	Front	630	141.75	90
Right Wall	Floor 1 Zone 1	2x6 R-19 Wall Wood Siding	107	Right	880.41	103	90
Left Wall	Floor 1 Zone 1	2x6 R-19 Wall Wood Siding	287	Left	463.54	90.5	90
Rear Wall	Floor 1 Zone 1	2x6 R-19 Wall Wood Siding	17	Back	780	264.25	90
Exterior Back Wall (Mud R	Floor 1 Zone 1	2x6 R-19 Wall Wood Siding	311	n/a	51.75	0	90
Exterior Front Wall (Mud	Floor 1 Zone 1	2x6 R-19 Wall Wood Siding	131	n/a	40.5	24	90
Front Wall 2	Floor 2 Zone 2	2x6 R-19 Wall Wood Siding	197	Front	660.64	133	90
Right Wall 2	Floor 2 Zone 2	2x6 R-19 Wall Wood Siding	107	Right	399	26	90
Left Wall 2	Floor 2 Zone 2	2x6 R-19 Wall Wood Siding	287	Left	378	50	90
Rear Wall 2	Floor 2 Zone 2	2x6 R-19 Wall Wood Siding	17	Back	660.64	289	90
Interior Wall to Garage	Floor 1 Zone 1>>__Garage__	2x6 R-24 Wall to Garage	n/a	n/a	153	24	n/a
Roof 2	Floor 1 Zone 1	R-30 Unvented Attic	n/a	n/a	306.29	n/a	n/a
Roof 3	Floor 2 Zone 2	R-30 Unvented Attic	n/a	n/a	2001.98	n/a	n/a
Raised Floor	Floor 2 Zone 2	R-30 Floor No Crawlspace	n/a	n/a	187.02	n/a	n/a
Interior Surface (Ceiling	Floor 2 Zone 2	R-0 Floor No Crawlspace	n/a	n/a	2085.94	n/a	n/a

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JOB #	#21.05.3
SCALE	1/4"= 1'-0"
DATE	3-14-22 PC Set

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Hamilton Residence
#Project Custom
T-24 REPORT

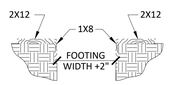
SHEET
T24

CONCRETE

1. CONCRETE 28 DAY COMPRESSIVE STRENGTH, F'C = 2500PSI, U.N.O.
2. WATER TO CEMENT RATIO SHALL NOT EXCEED 0.50.
3. MOIST CURE SLABS FOR A MINIMUM OF 3 DAYS.
4. CONCRETE MIX DESIGN SHALL BE PREPARED BY A 3RD PARTY INDEPENDENT LABORATORY. SELECTION OF CONCRETE MIX PROPORTIONS SHALL BE PER THE CALIFORNIA BUILDING CODE.
5. CEMENT SHALL CONFORM TO ASTM C-150 TYPE I OR II.
6. CONCRETE AGGREGATES SHALL CONFORM TO ASTM C-33. AGGREGATES FOR LIGHTWEIGHT CONCRETE SHALL CONFORM TO ASTM C-330.
9. REINFORCING DIMENSIONS SHOWN FOR LOCATION OF REINFORCING ARE TO THE FACE OF MAIN BARS AND DENOTE CLEAR COVERAGE. CONCRETE COVERAGE SHALL BE AS FOLLOWS: CONCRETE DEPOSITED AGAINST GROUND (EXCEPT SLABS) -3". CONCRETE EXPOSED TO GROUND BUT PLACES IN FORMS -2". SLABS (ON GROUND) -2" CLEAR FROM TOP U.N.O.
10. ALL PREHEATING AND WELDING OF REINFORCING BARS SHALL BE DONE IN ACCORDANCE WITH AWS D1.4 LATEST EDITION AND SHALL BE CONTINUOUSLY INSPECTED BY A QUALIFIED LABORATORY. CONTRACTOR SHALL FURNISH TO THE LABORATORY, REBAR MILL CERTIFICATES.
11. REINFORCING STEEL SHALL BE FABRICATED ACCORDING TO "MANUAL OF STANDARD PRACTICE FOR REINFORCED CONCRETE CONSTRUCTION".
12. WIRE FABRIC SHALL CONFORM TO ACI 318-3.5.1, ACI 318-3.5.7, AND ASTM A-1064.
13. REINFORCING STEEL SHALL CONFORM TO ASTM A615-GRADE 60 FOR NO. 5 AND LARGER, AND ASTM A615-GRADE 40 FOR NO. 4 AND SMALLER, EXCEPT REINFORCING STEEL TO BE WELDED SHALL CONFORM TO ASTM A706.
14. SPLICES IN CONTINUOUS REINFORCEMENT FOR A CLASS "A" LAP SPLICE FOR NORMAL WEIGHT CONCRETE WHERE LESS THAN 12" OF CONCRETE IS BELOW THE LAP SPLICE SHALL BE 48 BAR DIAMETERS AND SPLICES IN ADJACENT BARS SHALL BE NOT LESS THAN 5'-0" APART. CLASS "B" LAP SPLICES SHALL BE 63 BAR DIAMETERS. SPLICE CONTINUOUS BARS IN SPANDRELS, GRADE BEAMS, ETC., AS FOLLOWS: TOP BARS AT MID-SPAN; BOTTOM BARS AT CENTERLINE AT SUPPORT, UNLESS NOTED OTHERWISE. SPLICES IN WWF SHALL BE 1.5 MESHES WIDE.
15. REINFORCING, DOWELS, BOLTS, ANCHORS, SLEEVES, ETC., TO BE EMBEDDED IN CONCRETE SHALL BE TIED SECURELY IN POSITION BEFORE PLACING CONCRETE PER ACI 318-12.18.
16. CONSTRUCTION JOINTS SHALL BE MADE ROUGH AND SURFACE FREE OF LOOSE DEBRIS. CONCRETE MY BE ROUGHENED BY SAND BLASTING OR CHIPPING THE ENTIRE SURFACE TO PRODUCE ¼" DEEP DEFORMATIONS.
17. REMOVE ALL DEBRIS FROM FORMS BEFORE CASTING ANY CONCRETE.
18. 3'-0" SHALL BE THE MAXIMUM ALLOWED FREE FALL FOR CONCRETE TO MORE CLOSELY CONFORM TO ACI 318-5.10.
19. CONSOLIDATE CONCRETE PLACED IN FORMS BY MECHANICAL VIBRATING EQUIPMENT SUPPLEMENTED BY HAND-SPADING, RODDING OR TAMPING. USE EQUIPMENT AND PROCEDURES FOR CONSOLIDATION OF CONCRETE IN ACCORDANCE WITH THE RECOMMENDED PRACTICES OF ACI 309 TO SUIT THE TYPE OF CONCRETE AND PROJECT CONDITIONS.
20. NO WOOD SPREADERS ALLOWED. NO WOOD STAKES ALLOWED IN AREAS TO BE CONCRETED.
21. ALL SAW CUTTING SHALL BE DONE AFTER INITIAL SET HAS OCCURRED TO AVOID TEARING OR DAMAGE BY THE SWABBED, BUT BEFORE INITIAL SHRINKING HAS OCCURRED.
22. DRILL THROUGH STEEL COLUMNS, BEAMS AND PLATES TO PASS CONTINUOUS REINFORCING.
23. ADDITIONAL REINFORCING IN PRECAST OR TILT-UP PANELS REQUIRED FOR LIFTING STRESSES SHALL BE SUPPLIED BY THE CONTRACTOR.
24. PROVIDE 2-NO.5X4'-0" DIAGONAL REINFORCING AT MID-DEPTH OF SLAB AT ALL REENTRANT CORNERS TYPICAL.

FOUNDATIONS

1. BOTTOMS OF ALL FOUNDATIONS SHALL BE LEVEL. CHANGES IN BOTTOM OF FOUNDATION ELEVATION SHALL BE MADE ACCORDING TO STEPPED FOOTING DETAIL ON THE TYPICAL DETAIL SHEET.
2. ALL PILE CAPS, GRADE BEAMS, TIE BEAMS & OTHER FOOTINGS SHALL BE FORMED UNLESS SPECIFICALLY APPROVED BY THE ENGINEER OF RECORD. FOUNDATIONS MAY BE CAST IN NEAT EXCAVATIONS PROVIDED WRITTEN APPROVAL IS OBTAINED AND FOOTINGS ARE INCREASED 2" IN WIDTH. USE 2X12 PLANK AT EDGE OF EXCAVATION TO PROTECT AGAINST SLUFFING, AS REQUIRED.
3. WORK PERFORMED ON FOUNDATION SHALL BE DONE IN ACCORDANCE WITH THE REQUIREMENTS OF THE CURRENT CBC
4. IF A TWO POUR FOUNDATION IS UTILIZED, THE COLD JOINT BETWEEN THE EXTERIOR FOOTING AND SLAB-ON-GRADE SHOULD BE LOCATED AT LEAST 4 INCHES ABOVE ADJACENT GRADE. IF THIS IS NOT DONE, A WATERSTOP BETWEEN THE TWO POURS SHALL BE USED.



SHEARWALL

1. MIN 2X FRAMING MEMBERS OR BLOCKING REQUIRED AT ALL PANEL EDGES IN SHEAR WALL.
2. TABLE VALUES ARE BASED ON 16" O.C. STUD SPACING.
3. ALL ANCHOR BOLTS IN WALLS INCLUDING SHEARWALLS REQUIRE 3"x3"x.229" THICK PLATE WASHERS. ONE EDGE OF THE STEEL PLATE WASHER SHALL EXTEND TO WITHIN 1/2" OF THE MUDSILL ON THE SIDE(S) WITH APA RATED WOOD SHEATHING. THE HOLE IN THE PLATE WASHER IS PERMITTED TO BE DIAGONALLY SLOTTED WITH A WIDTH OF UP TO 3/16" (44 mm) LARGER THAN THE BOLT DIAMETER AND A SLOT LENGTH NOT TO EXCEED 1 3/4" (44 mm), PROVIDED A STANDARD CUT WASHER IS PLACED BETWEEN THE PLATE WASHER AND THE NUT.
4. SOLE PLATE NAILING LESS THAN 6" O.C. SHALL BE STAGGERED 1/2" ABOUT THE CENTERLINE OF THE SOLID RIM.
5. (2) ANCHOR BOLTS MINIMUM PER SHEAR WALL.
6. 3X and 4X MEMBERS AT ADJOINING PANEL EDGES MUST BE A SINGLE MEMBER.
7. FOR SHEAR WALLS ON RAISED WOOD, FOUNDATIONS AND UPPER FLOORS REQUIRING LTP5 CLIPS AT THE 2x SOLE PLATE, A MINIMUM OF (1) CLIPS MUST ALWAYS BE INSTALLED.
8. SOLE PLATE TO RIM, OR SOLE PLATE TO BEAM/BLOCKING TO BE 2X U.O.N.
9. WHEN A SHEARWALL IS LOCATED IN A FIRE PROTECTED WALL, THE FIELD NAILING SHALL BE 8" O.C. MAX REGARDLESS OF THE SHEAR WALL SPECIFICATIONS. EDGE NAILING AND NAIL SIZE SHALL BE THE SAME AS SPECIFIED ON THE PLANS.
10. DRYWALL SCREWS ARE PERMITTED TO SUBSTITUTE FOR THE 5D AND 6D NAILS.
11. ALL FIELD NAILING SHALL BE @ 12" O.C. MAX., U.N.O.

NAILING SCHEDULE

REF. CBC 2019, TABLE 2304.10.1. ALL NAILS FOR STRUCTURAL WORK SHALL BE COMMON WIRE NAILS CONFORMING TO THE FOLLOWING MINIMUM SIZES:

8D	0.131" Ø X 2 ½"
10D	0.148" Ø X 3"
10D SHORTS	0.148" Ø X 1 ⅝" PLUS THICKNESS OF S.P.
16D	0.162" Ø X 3 ½"
20D	0.192" Ø X 4"

HOLES SHALL BE SUB-DRILLED WHERE NECESSARY TO PREVENT SPLITTING. NAILING NOT NOTED BELOW OR ON PLANS SHALL BE MINIMUM OF NAILS AT EACH CONTACT.
8D NAILS FOR 1" MATERIAL AND 16D NAILS FOR 2" MATERIAL.

1. BLOCKING BTWN CEILING JSTS, RAFTER OR TRUSS TO TOP PLATE OR FRAMING BELOW; END NAIL, TOENAIL ---------- 3-8D
2. BLOCKING BTWN RAFTERS OR TRUSS NOT AT THE WALL TOP PLATE, TO RAFTER OR TRUSS; END NAIL, TOENAIL ---------- 2-8D
3. FLAT BLOCKING TO TRUSS AND WEB FILLER; FACE NAIL ---------- 16D
4. CEILING JST TO TOP PLATE; EACH JST, TOENAIL ---------- 3-8D
5. CEILING JST NOT ATTACHED TO PARALLEL RAFTER, (NO THRUST); FACE NAIL --- 3-16D
6. CEILING JST ATTACHED TO PARALLEL RAFTER (HEEL JOINT); FACE NAIL ---------- TABLE 2308.7.3.1
7. COLLAR TIE TO RAFTER; FACE NAIL ---------- 3-10D
8. RAFTER OR ROOF TRUSS TO TOP PLATE; TOENAIL ---------- 3-10D
9. ROOF RAFTERS TO RIDGE VALLEY OR HIP RAFTERS, OR ROOF RAFTERS TO 2" RIDGE BEAM; END NAIL ---------- 2-16D
10. STUD TO STUD (NOT AT BRACED WALL PANELS); 24" O.C. FACE NAIL ---------- 16D
11. STUD TO STUD AND ABUTTING STUDS AT INTERSECTING WALL CORNERS (AT BRACED WALL PANEL); 16" O.C. FACE NAIL ---------- 16D
12. BUILT UP HEADER (2" TO 2" HEADER); 16" O.C. EACH EDGE, FACE NAIL ---------- 16D
13. CONTINUOUS HEADER TO STUD; TOENAIL ---------- 4-8D
14. TOP PLATE TO TOP PLATE; 16" O.C. FACE NAIL ---------- 16D
15. TOP PLATE TO TOP PLATE, AT END JOINTS; EA. SIDE END, FACE NAIL, MIN 24" LAP ---------- 8-16D
16. BOTTOM PLATE TO JST, RIM JST, BAND JST, OR BLOCKING (NOT AT BRACED WALL PANELS); 16" O.C. FACE NAIL ---------- 16D
17. BOTTOM PLATE TO JST, RIM JST, BAND JST, OR BLOCKING AT BRACED WALL PANELS; 16" O.C. FACE NAIL ---------- 2-16D
18. STUD TO TOP OR BOTTOM PLATE; TOENAIL ---------- 4-8D
19. TOP OR BOTTOM PLATE TO STUD; END NAIL ---------- 2-16D
20. TOP PLATES, LAPS AT CORNERS AND INTERSECTIONS; FACE NAIL ---------- 2-16D
21. 1" BRACE TO EACH STUD & PLATE, FACE NAIL; FACE NAIL ---------- 2-8D
22. 1"X6" SHEATHING TO EACH BEARING; FACE NAIL ---------- 2-8D
23. WIDER THAN 1"X8" SHEATHING TO EACH BEARING; FACE NAIL ---------- 3-8D
24. JOIST TO SILL, TOP PLATE, OR GIRDER; TOENAIL ---------- 3-8D
25. RIM JST, BAND JST, OR BLOCKING TO TOP PLATE, SILL, OR OTHER FRAMING; 6" O.C. TOENAIL ---------- 8D
26. 1" X 6" SUBFLOOR OR LESS TO EACH JST; FACE NAIL ---------- 2-8D
27. 2" SUBFLOOR TO JST OR GIRDER; FACE NAIL ---------- 2-16D
28. 2" PLANKS (PLANK & BEAM - FLOOR AND ROOF); EACH BEARING, FACE NAIL --- 2-16D
29. BUILT UP GIRDERS AND BEAMS, 2" LUMBER LAYERS; 24" O.C. FACE NAIL TOP & BOT. STAGGERED ON OPP SIDES ---------- 20D
30. LEDGER STRIP SUPPORTING JST OR RAFTERS; EACH JST OR RAFTER, FACE NAIL ---------- 3-16D
31. JOIST TO BAND JOIST OR RIM JOIST; END NAIL ---------- 3-16D
32. BRIDGING OR BLOCKING TO JST, RAFTER, OR TRUSS; EACH END, TOENAIL ---- 2-8D
33. WOOD STRUCTURAL PANELS:
    SUBFLOOR, ROOF, & INTERIOR WALL SHEATHING TO FRAMING
    ½" AND LESS----------
    ⁹/₃₂" - ¾"----------
    ⅞" - 1-¼"----------
    COMBINATION SUBFLOOR UNDERLAYMENT TO FRAMING
    ¾" - 1"----------
    1- ⅛" - 1- ¼"----------
    NAILS SPACED @ 6"O.C. AT EDGES, 12"O.C. @ INTERMEDIATE SUPPORTS EXCEPT 6" AT ALL SUPPORTS WHERE SPANS ARE 48" OR MORE. FOR NAILING OF BRACED WALL PANELS OR SHEAR WALLS, SEE PLAN.
34. PANEL SIDING TO FRAMING
    ½" OR LESS----------
    ⅝"----------

WOOD

1. ALL WOOD IN DIRECT CONTACT WITH EARTH OR CONCRETE SHALL BE PRESSURE TREATED DOUGLAS FIR.
2. BEARING AND SHEAR WALLS SHALL HAVE DOUBLE TOP PLATES, LAPPED AT WALL AND PARTITION INTERSECTION WITH 3-16D NAILS.
3. PROVIDE SOLID BLOCKING BETWEEN JOISTS AND RAFTERS AT ALL SUPPORTS.
4. PROVIDE BLOCKING AT ALL CEILING LEVELS.
5. ALL STRUCTURAL WOOD SHALL CONFORM WITH THE FOLLOWING SPECIFICATION:
   DOUGLAS FIR - COAST REGION - WCLIB GRADING RULES NO.17 OF NO.2, U.N.O.
   REDWOOD - CALIFORNIA REDWOOD ASSOCIATION GRADING RULES, LATEST EDITION.
   GLUED LAMINATED BEAMS - SHALL BE 24F-V4 OR 24F-V8 FOR CANTILEVERED BEAMS. BEAMS SHALL ALSO BE MANUFACTURED AND IDENTIFIED AS REQUIRED IN ANSI/AITC A190.1 AND ASTM D3737. STANDARD SPEC. FOR STRUCTURAL GLUED LAMINATED TIMBER AITC 117 LATEST ADDITION. SUBMIT SHOP DRAWINGS PRIOR TO FABRICATION OF GLUED-LAMINATED MEMBERS.
   PLYWOOD - U.S. PRODUCT STANDARDS PSI AND PS2. PLYWOOD SHALL BE APA RATED EXPOSURE 1, OR EXTERIOR, AS REQUIRED; STRUCTURAL 1 AND C-D TO MEET PS1 AND PS2 AS REQUIRED. CDX (C-D EXPOSURE 1) OR OSB (ORIENTED STRAND BOARD) @ FLOORS ADN ROOF - U.N.O.
6. PRESSURE TREATED DOUGLAS FIR - AWPA (AMERICAN WOOD PRESERVERS' ASSOCIATION) U1. USE CATEGORY UC2 FOR INTERIOR USE. WATERBORNE PRESERVATIVES SHALL HAVE A MINIMUM RETENTION LEVEL OF 0.25 LB/FT^3 AND SHALL NOT CONTAIN CHROMIUM, COPPER, OR ARSENATE. NEWLY EXPOSED SURFACES, RESULTING FROM FIELD MODIFICATION SUCH AS CUTTING, BORING, OR HANDLING, SHALL BE FIELD TREATED IN ACCORDANCE WITH AWPA M-4.
7. HOLES FOR BOLTS IN WOOD SHALL BE BORED WITH A BIT OF THE SAME NOMINAL DIAMETER AS THE BOLT PLUS $^{1}/_{16}$".
8. HOLES FOR LAG SCREW SHALL BE BORED TO THE SAME DIAMETER AND DEPTH AS THE SHANK AND THE REST NO LARGER THAN THE ROOT OF THE THREAD.
9. LAG SCREWS AND WOOD SCREWS SHALL BE SCREWED AND NOT DRIVEN INTO PLACE. SOAP MAY BE USED TO LUBRICATE THE SCREWS.
10. ALL BOLTS AND LAG SCREWS SHALL BE PROVIDED WITH METAL WASHERS UNDER HEADS AND NUTS WHICH BEAR ON WOOD. APPLIES ALSO TO INSERTED EXPANDING FASTENERS, RED HEAD ETC.

BOLT DIAMETER	MI WASHER	STEEL WASHER
½" DIA.	2" DIA. X $^{15}/_{16}$"	3" X 3" X ¼"
⅝" DIA.	2¾" DIA. X $^{15}/_{16}$"	3" X 3" X ¼"
¾" DIA.	3" DIA. X $^{7}/_{16}$"	3" X 3" X $^{5}/_{16}$"
⅞" DIA.	3½" DIA. X $^{7}/_{16}$"	3½" X 3½" X ⅜"

11. ALL BOLTS AND LAG SCREWS SHALL BE TIGHTENED ON INSTALLATION AND RETIGHTENED BEFORE CLOSING IN OR AT COMPLETION OF JOB.
12. BLOCK SP JOINTS WITH 2X4 FLAT BLOCKING WHERE NOTED ON ROOF OR FLOOR FRAMING PLANS AND WITH BLOCKING SAME AS STUDS AT WALLS.
13. LAY ALL STRUCTURAL PLYWOOD ON ROOF AND FLOORS WITH FACE GRAIN PERPENDICULAR TO SUPPORT UNLESS NOTED OTHERWISE.
14. CONNECTOR HARDWARE MODEL NUMBER ARE THOSE FOR SIMPSON STRONG-TIE COMPANY. EQUIVALENT CONNECTORS WITH ICC ACCEPTANCE MAY BE SUBSTITUTED WITH WRITTEN APPROVAL FROM THE ENGINEER OF RECORD. ALL JOIST HANGERS SHALL BE SIMPSON U SERIES UNLESS NOTED OTHERWISE.
15. FASTENERS FOR PRESERVATIVE TREATED & FIRE RETARDANT TREATED WOOD SHALL BE OF HOT DIPPED ZINC COATED GALVANIZED STEEL (PER ASTM A153, CLASS G185), STAINLESS STEEL, SILICON BRONZE OR COPPER. THE COATING WEIGHTS FOR ZINC COATED FASTENERS SHALL BE IN ACCORDANCE WITH ASTM A 153.
16. ALL WOOD FRAMING SHALL HAVE LESS THAN 19% MOISTURE CONTENT AT TIME OF INSTALLATION.

TRUSS NOTES

DESIGN LOADS:

TOP CHORD
14 PSF DL
20 PSF LL (REDUCIBLE)

BOTTOM CHORD
5 PSF DL
10 PSF LL (NON-CONCURRENT W/ TOP CHORD LL)

1. TOP CHORD TO BE MINIMUM 2X4 TYPICAL - 2X4 ALL OTHER MEMBERS (U.N.O.).
2. TRUSS MEMBERS SHALL BE DOUGLAS FIR (DF) NO.2 OR BETTER.
3. WOOD UNDER PLATES MUST BE FREE OF KNOTS, KNOT HOLES AND GREATLY DISTORTED GRAINS.
4. CALCULATIONS AND TRUSS DRAWINGS SHALL BE SUBMITTED TO THE ARCHITECT AND/OR ENGINEER FOR REVIEW PRIOR TO FABRICATION. GIRDER TRUSSES CALCULATIONS SHALL INCLUDE POINT LOADS FROM CARRIER TRUSS REACTIONS. ALL CALCULATIONS SHALL BE SIGNED BY A CIVIL ENGINEER REGISTERED IN THE STATE OF CALIFORNIA.
5. FABRICATION AND DESIGN SHALL CONFORM TO THE ICBO, CURRENT EDITION AND TPI-85 OF THE TRUSS PLATE INSTITUTE.
6. PROVIDE TEMPORARY ERECTION BRACING AS REQUIRED.
7. ALLOWABLE STRESS INCREASE FOR LOAD DURATION SHALL BE 25% (PERCENT) MAXIMUM.
8. INCREASE FOR ALLOWABLE STRESSES FOR REPETITIVE MEMBERS, SHALL BE PERMISSIBLE.
9. EFFECTS OF ECCENTRIC LOADING SHALL BE CONSIDERED IN THE DESIGN OF ALL JOINTS.
10. GENERAL CONTRACTOR TO PROVIDE WEB BRACING AS REQUIRED BY TRUSS MANUFACTURERS DESIGN.
11. BUILT-UP GIRDER TRUSSES SHALL BE LAMINATED USING ½" BOLTS AT 24" CC MAXIMUM THROUGH ALL MEMBERS.
12. ALL HARDWARE REQUIRED FOR CONNECTING TRUSSES (JACK TO HIP, HIP TO GIRDER, GIRDER TO GIRDER, ETC) SHALL BE DESIGNED, DETAILED AND SPECIFIED BY TRUSS FABRICATOR.
13. TRUSS MANUFACTURER SHALL SUBMIT LATEST ICBO APPROVED TEST DATA FOR TRUSS METAL PLATE CONNECTIONS TO ARCHITECT AND/OR ENGINEER PRIOR TO FABRICATION.
14. TRUSS MANUFACTURER TO PROVIDE PLAN DRAWING SHOWING TRUSS LOCATIONS AND TRUSS PROFILE SHOP DRAWINGS PRIOR TO FABRICATION.
15. GENERAL CONTRACTOR TO VERIFY ALL DIMENSIONS SHOWN ON TRUSS PROFILES WITH ARCHITECTURAL DRAWINGS AND IN FIELD WITH WALL LAYOUT PRIOR TO FABRICATION. PROVIDE SHOP DRAWINGS WITH DIMENSIONS REVIEWED AND APPROVED BY GENERAL CONTRACTOR.
16. TRUSS MANUFACTURER TO ACCOUNT FOR THE WEIGHT OF ALL MECHANICAL EQUIPMENT IN DESIGN OF ALL TRUSSES WHICH SUPPORT SUCH UNITS.

GENERAL CONSTRUCTION NOTES

1. THE GENERAL CONTRACTOR IS RESPONSIBLE FOR ENSURING THAT ALL WORK AND CONSTRUCTION MEETS ALL CURRENT FEDERAL, STATE, COUNTY, AND LOCAL CODES, ORDINANCES, REGULATIONS, ETC. THESE CODES ARE TO BE CONSIDERED PART OF THE SPECIFICATIONS FOR THIS BUILDING AND SHOULD BE ADHERED TO EVEN IF THEY ARE IN VARIANCE OF THE PLAN.
2. DIMENSIONS SHALL TAKE PRECEDENCE OVER SCALE DRAWING (DO NOT SCALE DRAWING.)
3. THE ENGINEER HAS NOT BEEN ENGAGED FOR CONSTANT CONSTRUCTION SUPERVISION AND ASSUMES NO RESPONSIBILITY FOR CONSTRUCTION COORDINATING WITH THESE PLANS, NOR RESPONSIBILITY FOR CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCE, OR PROCEDURES, OR FOR SAFETY PRECAUTIONS AND PROGRAMS IN CONNECTION WITH THE WORK. THERE ARE NO WARRANTIES FOR A SPECIFIC USE EXPRESSED OR IMPLIED IN THE USE OF THESE PLANS.
4. REFER TO ARCHITECTURAL SHEETS FOR FLOOR PLANS, EXTERIOR ELEVATIONS, AND WINDOW AND DOOR SIZES AND TYPES.

ABBREVIATIONS

AB	ANCHOR BOLT	MI	MALLEABLE IRON
BTWN	BETWEEN	(N)	NEW
CC	CENTER TO CENTER	PTDF	PRESSURE TREATED DOUGLAS FIR
CJ	CONSTRUCTION JOINT	PSL	PARALLEL STRAND LUMBER
CJT	CONTROL JOINT		2900Fb, 290Fv, 2.0E
CLR	CLEAR	NTS	NOT TO SCALE
CONC	CONCRETE	OH	OPPOSITE HAND
CONTIN	CONTINUOUS	PC	PIECE
CP	COMPLETE PENETRATION	PP	PARTIAL PENETRATION
DF	DOUGLAS FIR	PW	PANEL WALL
DL	DEAD LOAD	RDWD	REDWOOD
(E)	EXISTING	SC	SHEAR CONNECTOR
EJ	EXPANSION JOINT	SDSTS	SELF DRILLING SLF TAPPING SCRW
EN	EDGE NAILING	SP	STRUCTURAL PLY
FB	FACE OF BLOCK	SPEN	STRUCTURAL PLY EDGE NAILING
FC	FACE OF CONCRETE	STFNR	STIFFENER
FF	FINISH FLOOR	STGGRD ...	STAGGERED
FLR	FLOOR	T&B	TOP & BOTTOM
FS	FACE OF STUD	T&G	TONGUE & GROOVE
FTG	FOOTING	TN	TOE NAIL
GA	GAUGE	TOF	TOP OF FRAMING
GLB	GLUED-LAMINATED BEAM	TOS	TOP OF STEEL
HDR	HEADER	UNO	UNLESS NOTED OTHERWISE
HSB	HIGH STRENGTH BOLT (A-325)	W/	WITH
HT	HEIGHT	W/O	WITHOUT
JH	JOIST HANGER (SIMPSON)	WP	WORK POINT
LL	LIVE LOAD	WS	WOOD SCREW
LS	LAG SCREW	WWF	WELDED WIRE FABRIC
LSL	LAMINATED STRAND LUMBER	℄	CENTERLINE
	2325 Fb, 310 Fv, 1.55E	℔	PLATE
LT WT	LIGHT WEIGHT	#	NUMBER OF POUNDS
LVL	LAMINATED VENEER LUMBER	□	SQUARE
	2600Fb, 285Fv, 1.8E	Ø	ROUND OR DIAMETER
MFR	MANUFACTURER	.....	CONTINUOUS WOOD IN SECTION
		.....	WOOD BLOCKING IN SECTION
		.....	END OF WOOD PIECE

DESIGN CRITERIA

SEISMIC CRITERIA

SDC	C
SITE CLASS	D
RISK CATEGORY	II
SEISMIC IMPORTANCE FACTOR	1.00
RESPONSE MODIFICATION FACTOR	6.5
SEISMIC FORCE RESISTING SYSTEM:	
LIGHT FRAME WOOD SHEAR WALL	
S_s	0.411g
S_1	0.211g
S_{DS}	0.356g
S_{D1}	0.211g
C_s	0.05g
Ω_o	3.0
C_d	3.5
ANALYSIS PROCESS	EQUIVALENT LATERAL FORCE
SEISMIC BASE SHEAR	

GRAVITY LOADING

ROOF LIVE	20psf
ROOF DEAD	21psf
FLOOR LIVE	40psf
FLOOR DEAD	15psf
BALCONY LIVE	60psf
BALCONY DEAD	25psf
WALL DEAD	17psf

GUARDRAIL LOADING
200 lb OR 50 plf - WHICHEVER IS GREATER

WIND CRITERIA

ULTIMATE WIND, Vult	95mph
BASIC WIND, Vasd	74mph
WIND EXPOSURE	B
INTERNAL PRESSURE COEFF	+1-0.18
Iw	1.0

SOIL BEARING 3000psf
PER GEOTECH REPORT No. 29115.043 DATED 11-11-2021 BY YOUNGDAHL CONSULTING GROUP, INC.

CODES
ASCE 7-16, CBC 2019, ACI318-14, 2018 NDS

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SD5 STRUCTURAL DETAILS

WCD
916-251-9798 | WWW.WCDASSOCIATES.COM
6930 DESTINY DRIVE SUITE #300, ROCKLIN, CA 95677

TITLE: STRUCTURAL NOTES AND SPECIFICATIONS

ADDRESS: 175 ELVIES WAY FOLSOM CA, 95630

REGISTERED PROFESSIONAL ENGINEER — WESLEY CULLUMBER — No. 80675 — 12-31-23 — CIVIL — STATE OF CALIFORNIA

NO.	REVISIONS
△	
△	
△	
△	

SCALE:	AS NOTED
DATE:	12/10/2021
DESIGNED BY:	T.HAMEL
DRAWN BY:	M.LAMONT
CHECKED BY:	W.CULLUMBER
JOB NO:	RN071921
SHEET NO.	SN1

SHEARWALL SCHEDULE

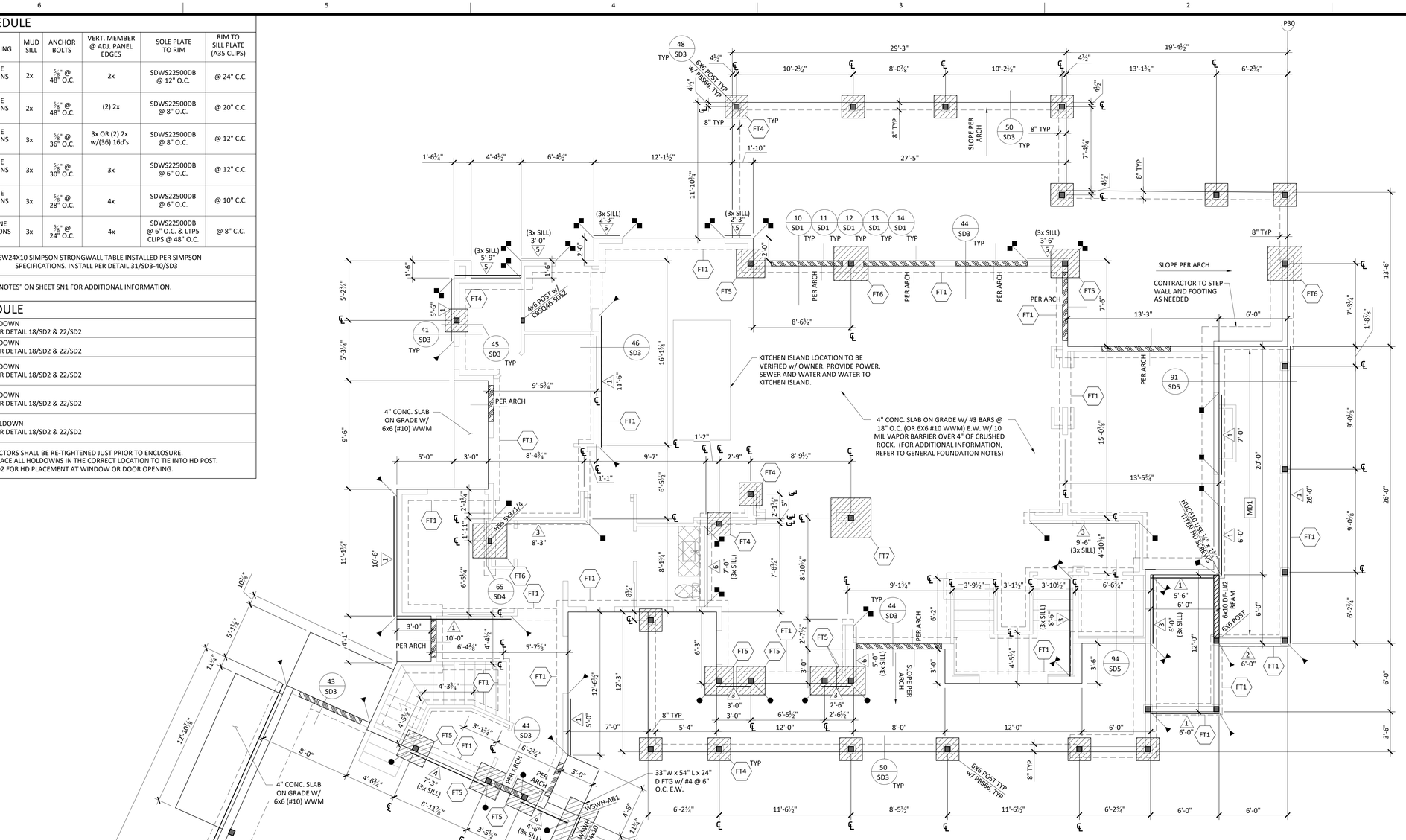
# #### PLF	SHEATHING/NAILING	MUD SILL	ANCHOR BOLTS	VERT. MEMBER @ ADJ. PANEL EDGES	SOLE PLATE TO RIM	RIM TO SILL PLATE (A35 CLIPS)
1 260 PLF	3/8" APA RATED ONE FACE w/8d COMMONS @ 6" O.C. EDGE	2x	5/8" @ 48" O.C.	2x	SDWS22500DB @ 12" O.C.	@ 24" C.C.
2 350 PLF	3/8" APA RATED ONE FACE w/8d COMMONS @ 4" O.C. EDGE	2x	5/8" @ 48" O.C.	(2) 2x	SDWS22500DB @ 8" O.C.	@ 20" C.C.
3 490 PLF	3/8" APA RATED ONE FACE w/8d COMMONS @ 3" O.C. EDGE	3x	5/8" @ 36" O.C.	3x OR (2) 2x w/(36) 16d's	SDWS22500DB @ 8" O.C.	@ 12" C.C.
4 590 PLF	3/8" APA RATED ONE FACE w/8d COMMONS @ 2" O.C. EDGE	3x	5/8" @ 30" O.C.	3x	SDWS22500DB @ 6" O.C.	@ 12" C.C.
5 640 PLF	3/8" APA RATED ONE FACE w/8d COMMONS @ 2" O.C. EDGE	3x	5/8" @ 28" O.C.	4x	SDWS22500DB @ 6" O.C.	@ 10" C.C.
6 770 PLF	15/32" APA RATED ONE FACE w/10d COMMONS @ 2" O.C. EDGE	3x	5/8" @ 24" O.C.	4x	SDWS22500DB @ 6" O.C. & LTP5 CLIPS @ 48" O.C.	@ 8" C.C.
WSWH	WSW24X10 SIMPSON STRONGWALL TABLE INSTALLED PER SIMPSON SPECIFICATIONS. INSTALL PER DETAIL 31/SD3-40/SD3					

1. REFER TO "SHEARWALL NOTES" ON SHEET SN1 FOR ADDITIONAL INFORMATION.

HOLDOWN SCHEDULE

3,075 LBS	HDU2 HOLDOWN INSTALL PER DETAIL 18/SD2 & 22/SD2
4,565 LBS	HDU4 HOLDOWN INSTALL PER DETAIL 18/SD2 & 22/SD2
5,645 LBS	HDU5 HOLDOWN INSTALL PER DETAIL 18/SD2 & 22/SD2
6,970 LBS	HDU8 HOLDOWN INSTALL PER DETAIL 18/SD2 & 22/SD2
9,535 LBS	HDU11 HOLDOWN INSTALL PER DETAIL 18/SD2 & 22/SD2

1. ALL HOLDOWN CONNECTORS SHALL BE RE-TIGHTENED JUST PRIOR TO ENCLOSURE.
2. CONTRACTOR SHALL PLACE ALL HOLDOWNS IN THE CORRECT LOCATION TO TIE INTO HD POST.
3. REFER TO DETAIL 18/SD2 FOR HD PLACEMENT AT WINDOW OR DOOR OPENING.



FOUNDATION AND LOWER LEVEL SHEARWALL PLAN

SCALE: ¼" = 1'-0"

FOUNDATION LEGEND

- (N) STEMWALL AND FOOTING - SEE FOOTING SCHEDULE FOR DIMENSIONS AND REINFORCEMENT.
- (N) FOOTING - SEE FOOTING SCHEDULE FOR DIMENSIONS AND REINFORCEMENT.
- DOOR SLEEPER PER FOUNDATION NOTE #5.
- POST - SEE IN VIEW FOR POST SIZE AND TYPE. (POST SIZE / KING)
- MD1 — INDICATES 20 GA. 1.0C-32 VECRO DECK ATTACH PER DETAIL 91/SD5
- FIRST FLOOR PLUMBING FIXTURES

FOOTING SCHEDULE

TYPE	DIMENSIONS			REINFORCEMENT					MAX. CAPACITY	NOTES
	LENGTH	WIDTH	DEPTH	PARALLEL NO.	PARALLEL SIZE	PARALLEL LENGTH	PERPENDICULAR NO.	PERPENDICULAR SIZE	PERPENDICULAR LENGTH	
FT1	CONT.	12"	12"	2	#4	CONT.	-	-	-	3,000 PLF	(1) TOP, (1) BOT
FT2	CONT.	15"	18"	2	#4	CONT.	-	-	-	3,750 PLF	(1) TOP, (1) BOT
FT3	18"	18"	12"	3	#4	12"	3	#4	12"	6,413 LBS	
FT4	24"	24"	18"	4	#4	18"	4	#4	18"	11,100 LBS	
FT5	30"	30"	18"	5	#4	24"	5	#4	24"	17,344 LBS	
FT6	36"	36"	18"	6	#4	30"	6	#4	30"	24,975 LBS	
FT7	42"	42"	24"	7	#4	36"	7	#4	36"	33,075 LBS	
FT8	48"	48"	24"	8	#4	42"	8	#4	42"	43,200 LBS	

GENERAL FOUNDATION NOTES

1. THE CONTRACTOR IS RESPONSIBLE FOR REFERRING TO THE PLANS TO VERIFY HOLDOWN LOCATIONS, STRUCTURAL PLYWOOD SHEATHING SPECIFICATIONS AND NAILING SCHEDULE.
2. POSTS SHOWN ON THE FOUNDATION PLAN ARE THOSE DIRECTLY CONNECTED TO THE FOUNDATION WITH A HOLDOWN OR POST BASE CONNECTOR.
3. TYPICAL ONE STORY FOUNDATION, U.N.O. - 12" WIDE X 12" DEEP FOOTING WITH (1) #4 REBAR TOP AND BOTTOM (TOT. 2).
4. PROVIDE ⅝"X10" ANCHOR BOLTS @ 4'-0" O.C. AND 12" FROM ALL EDGES AT THE BEARING WALLS AND EXTERIOR NON-SHEAR WALLS W/ 7" MIN. EMBEDMENT. FASTEN TO BOTTOM PLATE USING 3"X3"X5/16" STEEL WASHERS.
5. PROVIDE 2X PTDF SLEEPER EMBEDDED IN SLAB AT DOORS LEADING TO EXTERIOR AND GARAGE. EXTEND 6" PAST DOOR CASING. (2) 20d @ EA END & 24" O.C.
6. ALL FOOTINGS, FOUNDATIONS, EXCAVATIONS, GRADING, AND FILL SHALL COMPLY TO THE PROVISIONS OF THE CALIFORNIA BUILDING CODE.
7. SLAB REINFORCEMENT SHALL BE PROVIDED EACH WAY, AS INDICATED ON THE PLANS, IN THE MIDDLE THIRD OF SLAB. WHERE VAPOR BARRIER IS REQUIRED, VAPOR RETARD BARRIER SHALL BE SEALED AT ALL PENETRATIONS AND SHALL CONFORM TO CLASS A VAPOR RETARDER IN ACCORDANCE WITH THE MOST CURRENT VERSION OF ASTM E 1745, "STANDARD SPECIFICATIONS FOR PLASTIC WATER VAPOR RETARDERS USED IN CONTACT WITH SOIL OR GRANULAR FILL UNDER CONCRETE SLABS". VAPOR BARRIER SHALL BE UNDERLAIN WITH 4" DEEP ¾" CRUSHED ROCK WITH 100% PASSING THE ¾" SIEVE AND LESS THAN 5% PASSING THE NO. 4 SIEVE.
8. CONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL MEASUREMENTS AGAINST THE ARCHITECTURAL PLAN SET. ANY DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE EOR AND DESIGNER BEFORE FORMING AND/OR POURING CONCRETE.

WCD
916-251-9798 | WWW.WCDASSOCIATES.COM
6930 DESTINY DRIVE SUITE #300, ROCKLIN, CA 95677

TITLE: FOUNDATION AND LEVEL 1 SHEARWALL PLAN

ADDRESS: 175 ELVIES WAY FOLSOM CA, 95630

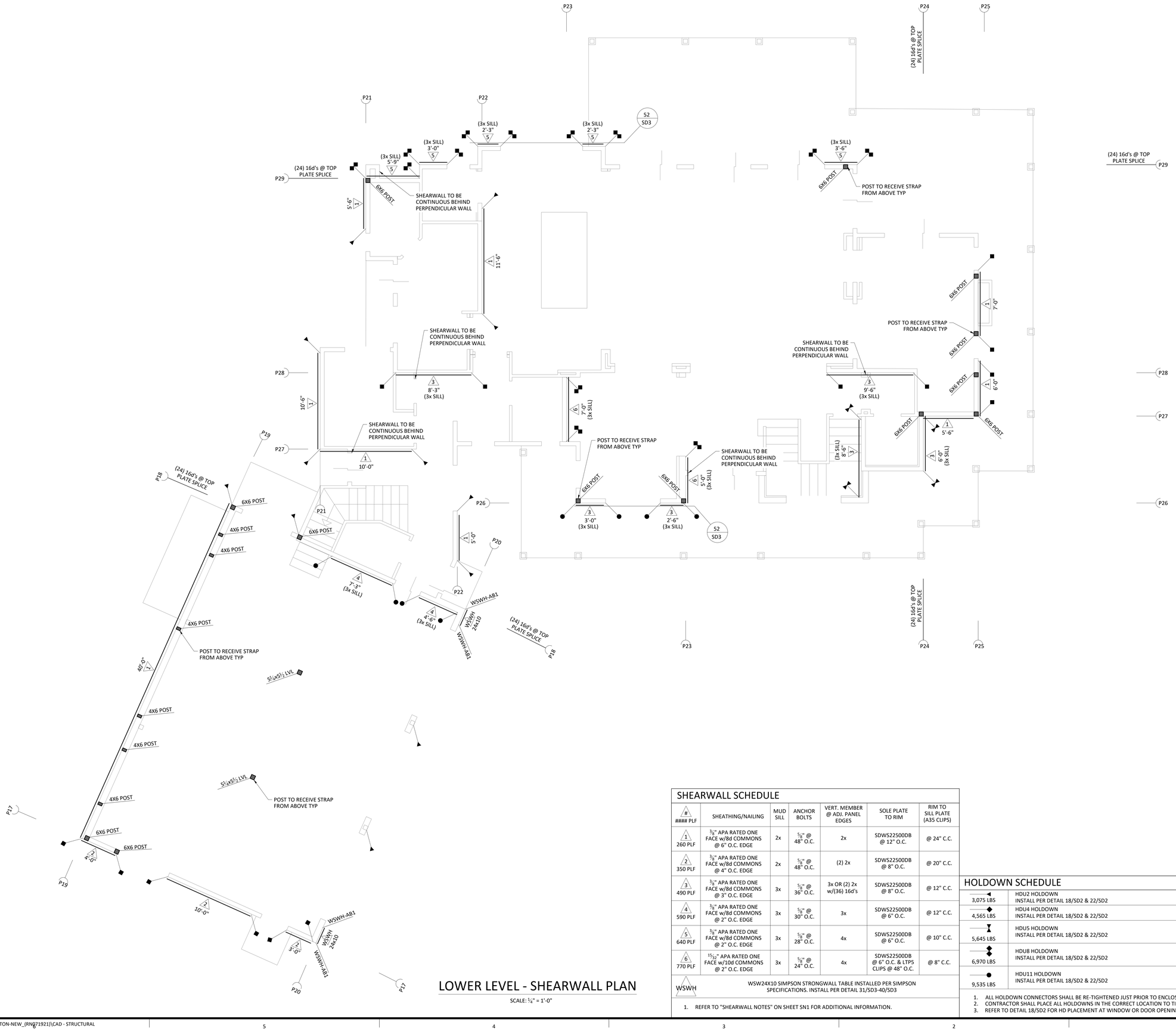
REGISTERED PROFESSIONAL ENGINEER — WESLEY CULLUMBER — 80675 — 09-30-23 — CIVIL — STATE OF CALIFORNIA

NO.	REVISIONS

SCALE:	AS NOTED
DATE:	12/10/2021
DESIGNED BY:	T.HAMEL
DRAWN BY:	M.LAMONT
CHECKED BY:	W.CULLUMBER
JOB NO:	RN071921

SHEET NO.

S1.0



LOWER LEVEL - SHEARWALL PLAN

SCALE: ¼" = 1'-0"

SHEARWALL SCHEDULE

# / #### PLF	SHEATHING/NAILING	MUD SILL	ANCHOR BOLTS	VERT. MEMBER @ ADJ. PANEL EDGES	SOLE PLATE TO RIM	RIM TO SILL PLATE (A35 CLIPS)
1 / 260 PLF	⅜" APA RATED ONE FACE w/8d COMMONS @ 6" O.C. EDGE	2x	⅝" @ 48" O.C.	2x	SDWS22500DB @ 12" O.C.	@ 24" C.C.
2 / 350 PLF	⅜" APA RATED ONE FACE w/8d COMMONS @ 4" O.C. EDGE	2x	⅝" @ 48" O.C.	(2) 2x	SDWS22500DB @ 8" O.C.	@ 20" C.C.
3 / 490 PLF	⅜" APA RATED ONE FACE w/8d COMMONS @ 3" O.C. EDGE	3x	⅝" @ 36" O.C.	3x OR (2) 2x w/(36) 16d's	SDWS22500DB @ 8" O.C.	@ 12" C.C.
4 / 590 PLF	⅜" APA RATED ONE FACE w/8d COMMONS @ 2" O.C. EDGE	3x	⅝" @ 30" O.C.	3x	SDWS22500DB @ 6" O.C.	@ 12" C.C.
5 / 640 PLF	⅜" APA RATED ONE FACE w/8d COMMONS @ 2" O.C. EDGE	3x	⅝" @ 28" O.C.	4x	SDWS22500DB @ 6" O.C.	@ 10" C.C.
6 / 770 PLF	15/32" APA RATED ONE FACE w/10d COMMONS @ 2" O.C. EDGE	3x	⅝" @ 24" O.C.	4x	SDWS22500DB @ 6" O.C. & LTP5 CLIPS @ 48" O.C.	@ 8" C.C.
WSWH	WSW24X10 SIMPSON STRONGWALL TABLE INSTALLED PER SIMPSON SPECIFICATIONS. INSTALL PER DETAIL 31/SD3-40/SD3					

1. REFER TO "SHEARWALL NOTES" ON SHEET SN1 FOR ADDITIONAL INFORMATION.

HOLDOWN SCHEDULE

3,075 LBS	HDU2 HOLDOWN INSTALL PER DETAIL 18/SD2 & 22/SD2
4,565 LBS	HDU4 HOLDOWN INSTALL PER DETAIL 18/SD2 & 22/SD2
5,645 LBS	HDU5 HOLDOWN INSTALL PER DETAIL 18/SD2 & 22/SD2
6,970 LBS	HDU8 HOLDOWN INSTALL PER DETAIL 18/SD2 & 22/SD2
9,535 LBS	HDU11 HOLDOWN INSTALL PER DETAIL 18/SD2 & 22/SD2

1. ALL HOLDOWN CONNECTORS SHALL BE RE-TIGHTENED JUST PRIOR TO ENCLOSURE.
2. CONTRACTOR SHALL PLACE ALL HOLDOWNS IN THE CORRECT LOCATION TO TIE INTO HD POST.
3. REFER TO DETAIL 18/SD2 FOR HD PLACEMENT AT WINDOW OR DOOR OPENING.

WCD
916-251-9798 | WWW.WCDASSOCIATES.COM
6930 DESTINY DRIVE SUITE #300, ROCKLIN, CA 95677

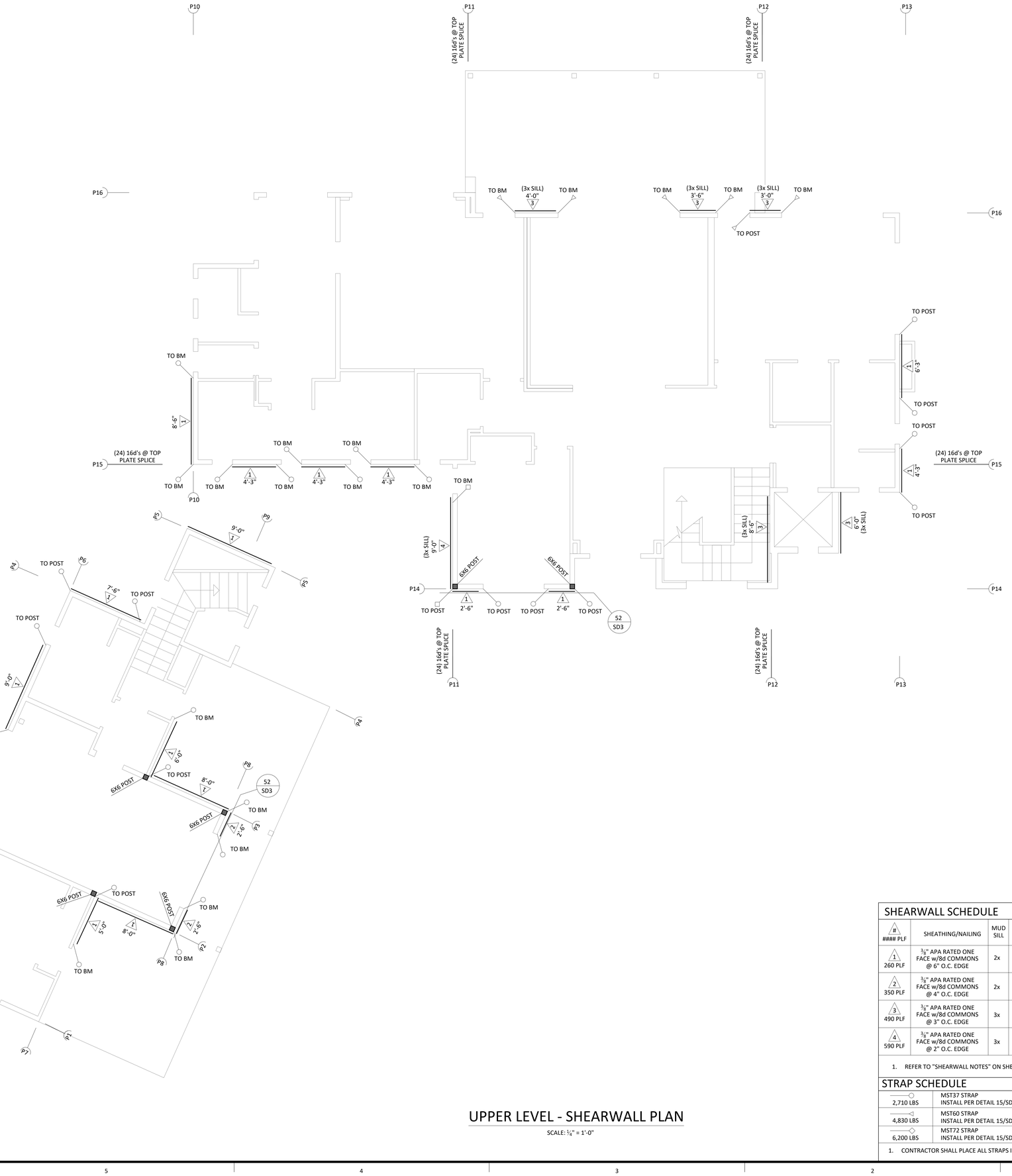
TITLE: LEVEL 1 - SHEARWALL PLAN

ADDRESS: 175 ELVIES WAY FOLSOM CA, 95630

WESLEY CULLUMBER No. 80575 Exp. 6/30/23 CIVIL STATE OF CALIFORNIA

NO.	REVISIONS

SCALE:	AS NOTED
DATE:	12/10/2021
DESIGNED BY:	T.HAMEL
DRAWN BY:	M.LAMONT
CHECKED BY:	W.CULLUMBER
JOB NO:	RN071921
SHEET NO.	S2.0



UPPER LEVEL - SHEARWALL PLAN

SCALE: ¼" = 1'-0"

SHEARWALL SCHEDULE

# ##### PLF	SHEATHING/NAILING	MUD SILL	ANCHOR BOLTS	VERT. MEMBER @ ADJ. PANEL EDGES	SOLE PLATE TO RIM	RIM TO SILL PLATE (A35 CLIPS)
1 260 PLF	3/8" APA RATED ONE FACE w/8d COMMONS @ 6" O.C. EDGE	2x	5/8" @ 48" O.C.	2x	SDWS22500DB @ 12" O.C.	@ 24" C.C.
2 350 PLF	3/8" APA RATED ONE FACE w/8d COMMONS @ 4" O.C. EDGE	2x	5/8" @ 48" O.C.	(2) 2x	SDWS22500DB @ 8" O.C.	@ 20" C.C.
3 490 PLF	3/8" APA RATED ONE FACE w/8d COMMONS @ 3" O.C. EDGE	3x	5/8" @ 36" O.C.	3x OR (2) 2x w/(36) 16d's	SDWS22500DB @ 8" O.C.	@ 12" C.C.
4 590 PLF	3/8" APA RATED ONE FACE w/8d COMMONS @ 2" O.C. EDGE	3x	5/8" @ 30" O.C.	3x	SDWS22500DB @ 6" O.C.	@ 12" C.C.

1. REFER TO "SHEARWALL NOTES" ON SHEET SN1 FOR ADDITIONAL INFORMATION.

STRAP SCHEDULE

2,710 LBS	MST37 STRAP INSTALL PER DETAIL 15/SD2 &16/SD2
4,830 LBS	MST60 STRAP INSTALL PER DETAIL 15/SD2 &16/SD2
6,200 LBS	MST72 STRAP INSTALL PER DETAIL 15/SD2 &16/SD2

1. CONTRACTOR SHALL PLACE ALL STRAPS IN THE CORRECT LOCATION TO TIE INTO HD POST.

WCD
916-251-9798 | WWW.WCDASSOCIATES.COM
6930 DESTINY DRIVE SUITE #300, ROCKLIN, CA 95677

TITLE: LEVEL 2 - SHEARWALL PLAN

ADDRESS: 175 ELVIES WAY FOLSOM CA, 95630

REGISTERED PROFESSIONAL ENGINEER
WESLEY CULLUMBER
No. 80675
12/31/23
CIVIL
STATE OF CALIFORNIA

NO.	REVISIONS

SCALE:	AS NOTED
DATE:	12/10/2021
DESIGNED BY:	T.HAMEL
DRAWN BY:	M.LAMONT
CHECKED BY:	W.CULLUMBER
JOB NO:	RN071921

SHEET NO.

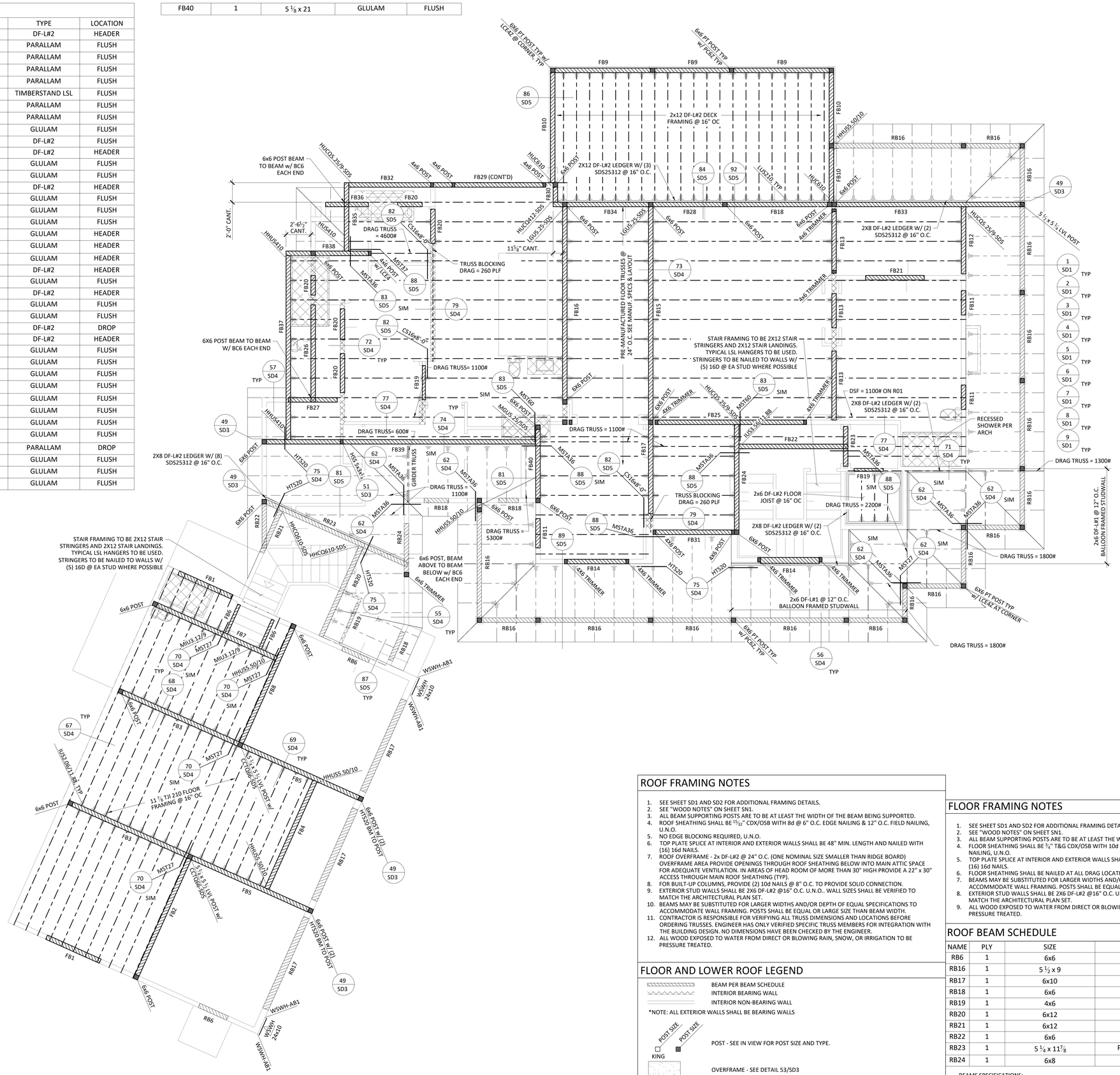
S3.0

FLOOR BEAM SCHEDULE

NAME	PLY	SIZE	TYPE	LOCATION
FB1	1	6x8	DF-L#2	HEADER
FB2	1	5 ¼ x 11 ⅞	PARALLAM	FLUSH
FB3	1	5 ¼ x 11 ⅞	PARALLAM	FLUSH
FB4	1	5 ¼ x 11 ⅞	PARALLAM	FLUSH
FB5	1	5 ¼ x 11 ⅞	PARALLAM	FLUSH
FB6	1	3 ½ x 11 ⅞	TIMBERSTAND LSL	FLUSH
FB7	1	5 ¼ x 11 ⅞	PARALLAM	FLUSH
FB8	1	5 ¼ x 11 ⅞	PARALLAM	FLUSH
FB9	1	5 ½ x 9	GLULAM	FLUSH
FB10	1	6x10	DF-L#2	FLUSH
FB11	1	6x6	DF-L#2	HEADER
FB12	1	5 ⅛ x 21	GLULAM	FLUSH
FB13	1	5 ⅛ x 21	GLULAM	FLUSH
FB14	1	6x12	DF-L#2	HEADER
FB15	1	5 ⅛ x 21	GLULAM	FLUSH
FB16	1	5 ⅛ x 21	GLULAM	FLUSH
FB17	1	5 ⅛ x 21	GLULAM	FLUSH
FB18	1	5⅛ x 21	GLULAM	HEADER
FB19	1	3½X21	GLULAM	HEADER
FB20	1	5⅛ x 21	GLULAM	HEADER
FB21	1	6x6	DF-L#2	HEADER
FB22	1	3 ½ x 21	GLULAM	FLUSH
FB23	1	6x6	DF-L#2	HEADER
FB24	1	5 ⅛ x 21	GLULAM	FLUSH
FB25	1	5 ⅛ x 21	GLULAM	FLUSH
FB26	1	6x8	DF-L#2	DROP
FB27	1	6x6	DF-L#2	HEADER
FB28	1	5 ⅛ x 21	GLULAM	FLUSH
FB29	1	5 ⅛ x 21	GLULAM	FLUSH
FB30	1	3 ½ x 21	GLULAM	FLUSH
FB31	1	5⅛ x 21	GLULAM	FLUSH
FB32	1	5⅛ x 21	GLULAM	FLUSH
FB33	1	8 ¾ x 15	GLULAM	FLUSH
FB34	1	5 ⅛ x 21	GLULAM	FLUSH
FB35	1	5 ⅛ x 21	GLULAM	FLUSH
FB36	1	5 ¼ x 9 ¼	PARALLAM	DROP
FB37	1	3 ½ x 21	GLULAM	FLUSH
FB38	1	3 ½ x 21	GLULAM	FLUSH
FB39	1	5 ⅛ x 21	GLULAM	FLUSH

BEAMS SPECIFICATIONS:
- PSL 2900Fb, 290Fv, 2.0E
- LVL 2600Fb, 285Fv, 1.8E
- LSL 2300Fb, 285Fv, 1.55E
- GLB 2400Fb, 265Fv, 1.9E

FB40	1	5 ⅛ x 21	GLULAM	FLUSH



UPPER FLOOR & LOWER ROOF FRAMING PLAN

SCALE: ¼" = 1'-0"

ROOF FRAMING NOTES

1. SEE SHEET SD1 AND SD2 FOR ADDITIONAL FRAMING DETAILS.
2. SEE "WOOD NOTES" ON SHEET SN1.
3. ALL BEAM SUPPORTING POSTS ARE TO BE AT LEAST THE WIDTH OF THE BEAM BEING SUPPORTED.
4. ROOF SHEATHING SHALL BE $^{23}/_{32}$" CDX/OSB WITH 8d @ 6" O.C. EDGE NAILING & 12" O.C. FIELD NAILING, U.N.O.
5. NO EDGE BLOCKING REQUIRED, U.N.O.
6. TOP PLATE SPLICE AT INTERIOR AND EXTERIOR WALLS SHALL BE 48" MIN. LENGTH AND NAILED WITH (16) 16d NAILS.
7. ROOF OVERFRAME - 2x DF-L#2 @ 24" O.C. (ONE NOMINAL SIZE SMALLER THAN RIDGE BOARD) OVERFRAME AREA PROVIDE OPENINGS THROUGH ROOF SHEATHING BELOW INTO MAIN ATTIC SPACE FOR ADEQUATE VENTILATION. IN AREAS OF HEAD ROOM OF MORE THAN 30" HIGH PROVIDE A 22" x 30" ACCESS THROUGH MAIN ROOF SHEATHING (TYP).
8. FOR BUILT-UP COLUMNS, PROVIDE (2) 10d NAILS @ 8" O.C. TO PROVIDE SOLID CONNECTION.
9. EXTERIOR STUD WALLS SHALL BE 2X6 DF-L#2 @16" O.C. U.N.O.. WALL SIZES SHALL BE VERIFIED TO MATCH THE ARCHITECTURAL PLAN SET.
10. BEAMS MAY BE SUBSTITUTED FOR LARGER WIDTHS AND/OR DEPTH OF EQUAL SPECIFICATIONS TO ACCOMMODATE WALL FRAMING. POSTS SHALL BE EQUAL OR LARGE SIZE THAN BEAM WIDTH.
11. CONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL TRUSS DIMENSIONS AND LOCATIONS BEFORE ORDERING TRUSSES. ENGINEER HAS ONLY VERIFIED SPECIFIC TRUSS MEMBERS FOR INTEGRATION WITH THE BUILDING DESIGN. NO DIMENSIONS HAVE BEEN CHECKED BY THE ENGINEER.
12. ALL WOOD EXPOSED TO WATER FROM DIRECT OR BLOWING RAIN, SNOW, OR IRRIGATION TO BE PRESSURE TREATED.

FLOOR AND LOWER ROOF LEGEND

- BEAM PER BEAM SCHEDULE
- INTERIOR BEARING WALL
- INTERIOR NON-BEARING WALL

*NOTE: ALL EXTERIOR WALLS SHALL BE BEARING WALLS

- POST - SEE IN VIEW FOR POST SIZE AND TYPE.
- OVERFRAME - SEE DETAIL 53/SD3
- SECOND FLOOR PLUMBING FIXTURES

FLOOR FRAMING NOTES

1. SEE SHEET SD1 AND SD2 FOR ADDITIONAL FRAMING DETAILS
2. SEE "WOOD NOTES" ON SHEET SN1.
3. ALL BEAM SUPPORTING POSTS ARE TO BE AT LEAST THE WIDTH OF THE BEAM BEING SUPPORTED.
4. FLOOR SHEATHING SHALL BE ¾" T&G CDX/OSB WITH 10d @ 6" O.C. EDGE NAILING & 12" O.C. FIELD NAILING, U.N.O.
5. TOP PLATE SPLICE AT INTERIOR AND EXTERIOR WALLS SHALL BE 48" MIN. LENGTH AND NAILED WITH (16) 16d NAILS.
6. FLOOR SHEATHING SHALL BE NAILED AT ALL DRAG LOCATIONS WITH 10d @ 6" O.C., U.N.O.
7. BEAMS MAY BE SUBSTITUTED FOR LARGER WIDTHS AND/OR DEPTH OF EQUAL SPECIFICATIONS TO ACCOMMODATE WALL FRAMING. POSTS SHALL BE EQUAL OR LARGE SIZE THAN BEAM WIDTH.
8. EXTERIOR STUD WALLS SHALL BE 2X6 DF-L#2 @16" O.C. U.N.O.. WALL SIZES SHALL BE VERIFIED TO MATCH THE ARCHITECTURAL PLAN SET.
9. ALL WOOD EXPOSED TO WATER FROM DIRECT OR BLOWING RAIN, SNOW, OR IRRIGATION TO BE PRESSURE TREATED.

ROOF BEAM SCHEDULE

NAME	PLY	SIZE	TYPE	LOCATION
RB6	1	6x6	DF-L#2	HEADER
RB16	1	5 ½ x 9	GLULAM	DROP
RB17	1	6x10	DF-L#2	HEADER
RB18	1	6x6	DF-L#2	HEADER
RB19	1	4x6	DF-L#2	HEADER
RB20	1	6x12	DF-L#2	FLUSH
RB21	1	6x12	DF-L#2	FLUSH
RB22	1	6x6	DF-L#2	DROP
RB23	1	5 ¼ x 11 ⅞	PARALLAM	FLUSH
RB24	1	6x8	DF-L#2	HEADER

BEAMS SPECIFICATIONS:
- PSL 2900Fb, 290Fv, 2.0E
- LVL 2600Fb, 285Fv, 1.8E
- LSL 2300Fb, 285Fv, 1.55E
- GLB 2400Fb, 265Fv, 1.9E

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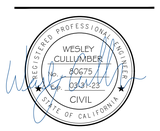
916-251-9798 | WWW.WCDASSOCIATES.COM
6930 DESTINY DRIVE SUITE #300, ROCKLIN, CA 95677

TITLE: UPPER FLOOR & LOWER ROOF FRAMING PLAN

ADDRESS: 175 ELVIES WAY FOLSOM CA, 95630

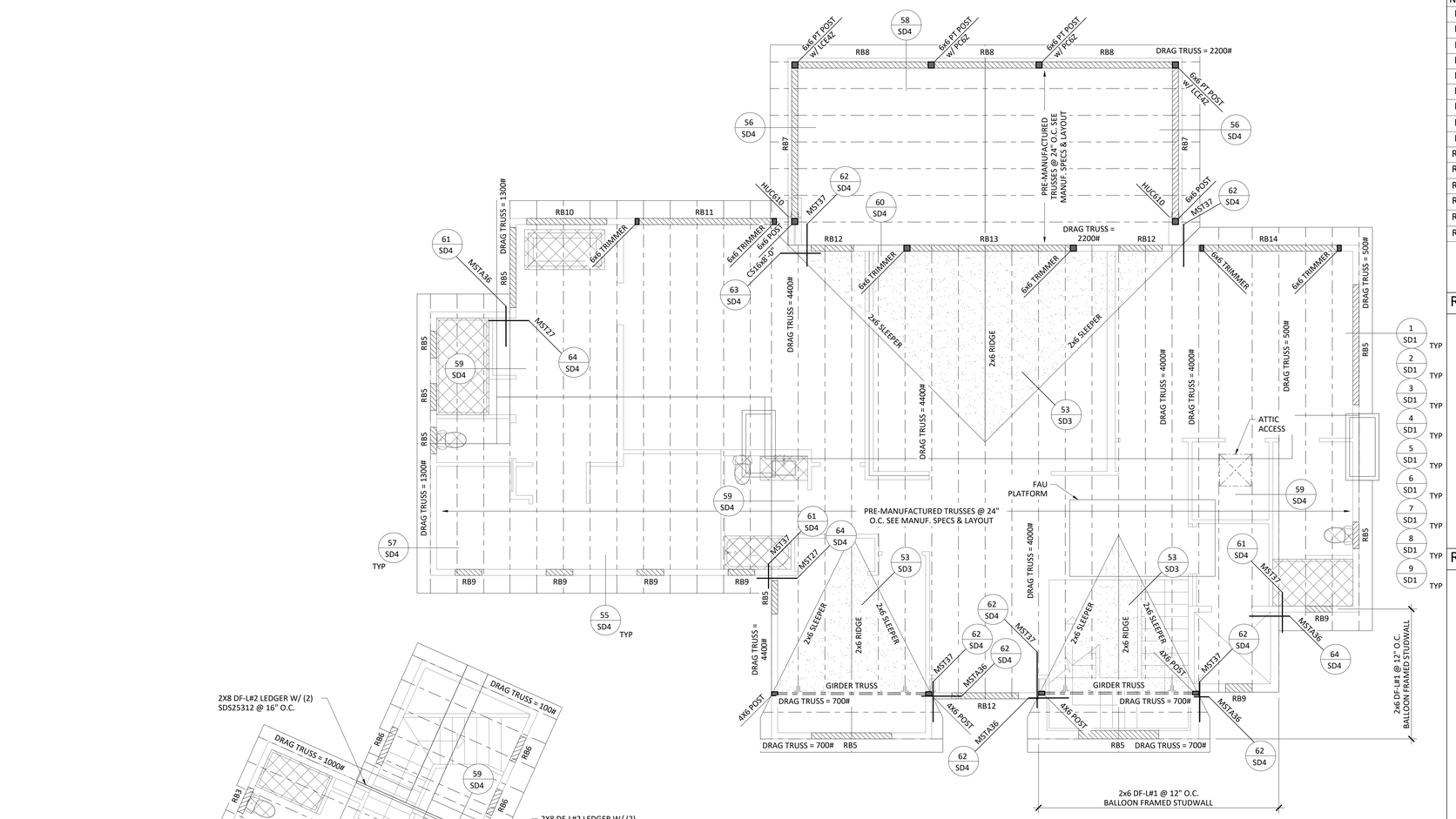


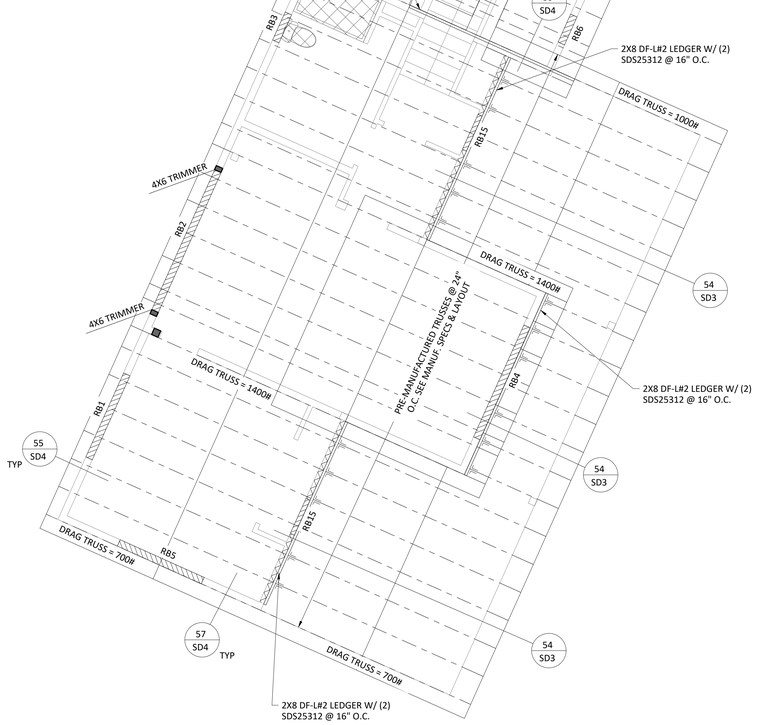
NO.	REVISIONS

SCALE:	AS NOTED
DATE:	12/10/2021
DESIGNED BY:	T.HAMEL
DRAWN BY:	M.LAMONT
CHECKED BY:	W.CULLUMBER
JOB NO:	RN071921

SHEET NO.

S4.0





ROOF FRAMING PLAN

SCALE: ¼" = 1'-0"

ROOF BEAM SCHEDULE

NAME	PLY	SIZE	TYPE	LOCATION
RB1	1	6X8	DF-L#2	HEADER
RB2	1	5 ¼ x 9 ½	PARALLAM	HEADER
RB3	1	6x6	DF-L#2	HEADER
RB4	1	6x10	DF-L#2	HEADER
RB5	1	6x6	DF-L#2	HEADER
RB6	1	6x6	DF-L#2	HEADER
RB7	1	5 ½ x 9	GLULAM	DROP
RB8	1	5 ½ x 9	GLULAM	DROP
RB9	1	6x6	DF-L#2	HEADER
RB10	1	6x8	DF-L#2	HEADER
RB11	1	5 ¼ x 9 ½	PARALLAM	HEADER
RB12	1	6x8	DF-L#2	HEADER
RB13	1	5 ¼ x 9 ½	PARALLAM	HEADER
RB14	1	5 ¼ x 9 ½	PARALLAM	HEADER
RB15	1	4x6	DF-L#2	HEADER

BEAMS SPECIFICATIONS:
- PSL 2900Fb, 290Fv, 2.0E
- GLB 2400Fb, 265Fv, 1.9E

ROOF FRAMING NOTES

1. SEE SHEET SD1 AND SD2 FOR ADDITIONAL FRAMING DETAILS.
2. SEE "WOOD NOTES" ON SHEET SN1.
3. ALL BEAM SUPPORTING POSTS ARE TO BE AT LEAST THE WIDTH OF THE BEAM BEING SUPPORTED.
4. ROOF SHEATHING SHALL BE $^{15}/_{32}$" CDX/OSB WITH 8d @ 6" O.C. EDGE NAILING & 12" O.C. FIELD NAILING, U.N.O.
5. NO EDGE BLOCKING REQUIRED, U.N.O.
6. TOP PLATE SPLICE AT INTERIOR AND EXTERIOR WALLS SHALL BE 48" MIN. LENGTH AND NAILED WITH (16) 16d NAILS.
7. ROOF OVERFRAME - 2x6 DF-L#2 @ 24" O.C. (ONE NOMINAL SIZE SMALLER THAN RIDGE BOARD) OVERFRAME AREA PROVIDE OPENINGS THROUGH ROOF SHEATHING BELOW INTO MAIN ATTIC SPACE FOR ADEQUATE VENTILATION. IN AREAS OF HEAD ROOM OF MORE THAN 30" HIGH PROVIDE A 22" x 30" ACCESS THROUGH MAIN ROOF SHEATHING (TYP).
8. FOR BUILT-UP COLUMNS, PROVIDE (2) 10d NAILS @ 8" O.C. TO PROVIDE SOLID CONNECTION.
9. EXTERIOR STUD WALLS SHALL BE 2X6 DF-L#2 @16" O.C. U.N.O.. WALL SIZES SHALL BE VERIFIED TO MATCH THE ARCHITECTURAL PLAN SET.
10. BEAMS MAY BE SUBSTITUTED FOR LARGER WIDTHS AND/OR DEPTH OF EQUAL SPECIFICATIONS TO ACCOMMODATE WALL FRAMING. POSTS SHALL BE EQUAL OR LARGE SIZE THAN BEAM WIDTH.
11. CONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL TRUSS DIMENSIONS AND LOCATIONS BEFORE ORDERING TRUSSES. ENGINEER HAS ONLY VERIFIED SPECIFIC TRUSS MEMBERS FOR INTEGRATION WITH THE BUILDING DESIGN. NO DIMENSIONS HAVE BEEN CHECKED BY THE ENGINEER.
12. ALL WOOD EXPOSED TO WATER FROM DIRECT OR BLOWING RAIN, SNOW, OR IRRIGATION TO BE PRESSURE TREATED.

ROOF LEGEND

- BEAM PER BEAM SCHEDULE
- INTERIOR BEARING WALL
- INTERIOR NON-BEARING WALL

*NOTE: ALL EXTERIOR WALLS SHALL BE BEARING WALLS

- POST - SEE IN VIEW FOR POST SIZE AND TYPE. (POST SIZE / KING / POST SIZE)
- OVERFRAME - SEE DETAIL 53/SD3
- SECOND FLOOR PLUMBING FIXTURES

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6930 DESTINY DRIVE SUITE #300, ROCKLIN, CA 95677

TITLE: ROOF FRAMING PLAN

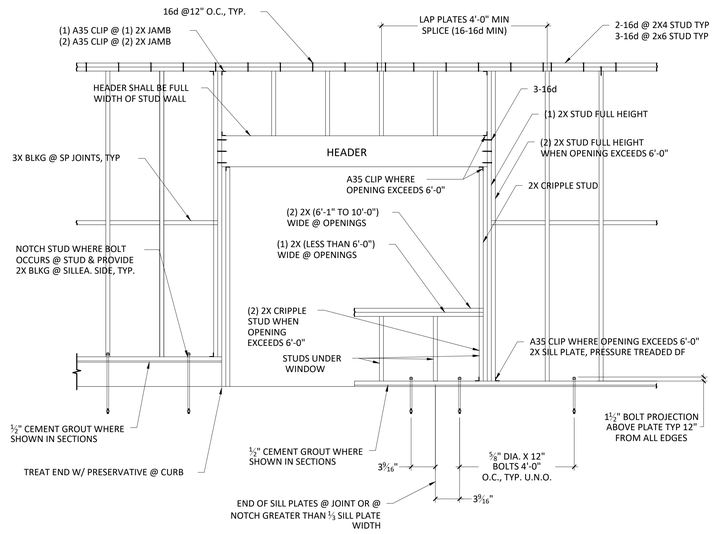
ADDRESS: 175 ELVIES WAY FOLSOM CA, 95630

REGISTERED PROFESSIONAL ENGINEER — WESLEY CULLUMBER — 80275 — CIVIL — STATE OF CALIFORNIA

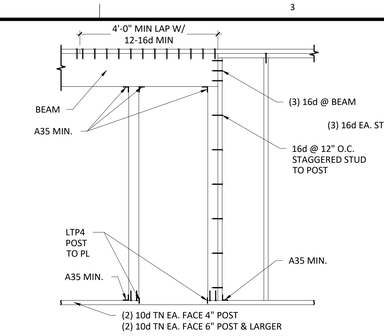
NO.	REVISIONS

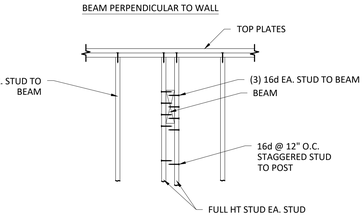
SCALE:	AS NOTED
DATE:	12/10/2021
DESIGNED BY:	T.HAMEL
DRAWN BY:	M.LAMONT
CHECKED BY:	W.CULLUMBER
JOB NO:	RN071921
SHEET NO.	

S5.0

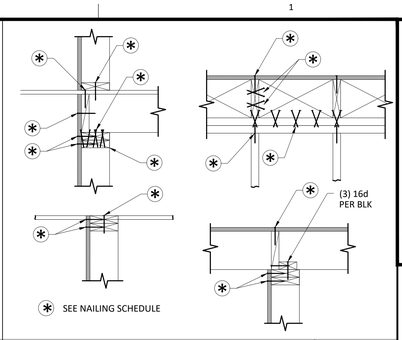


TYPICAL STUD WALL & OPENING FRAMING | 1

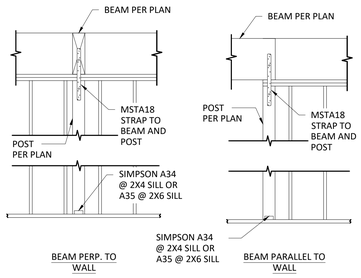




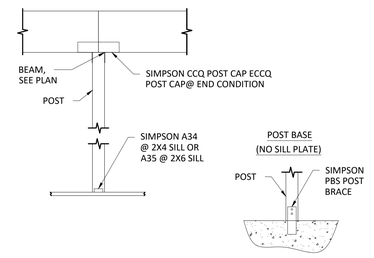
POST AND BEAM CONNECTIONS | 2



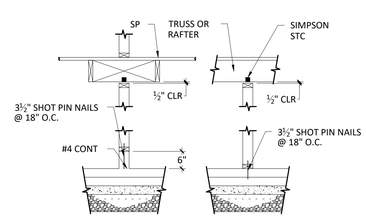
TYPICAL NAILING EXAMPLE | 3



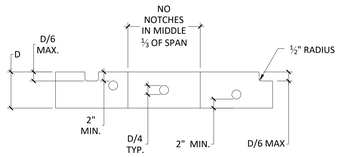
TYPICAL BEAM & POST IN WALL CONNECTION | 4



TYPICAL BEAM & POST CONNECTION | 5

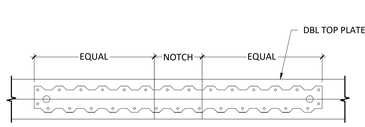


NON-BEARING PARTITION FRAMING | 6



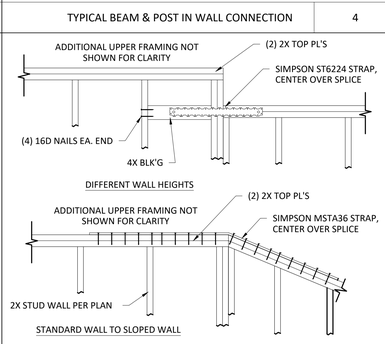
NOTES:
1. PREDRILL CORNERS OF NOTCHES SO AS NOT TO OVER CUT.
2. NOTCHES ON THE ENDS OF JOISTS & HEADERS SHALL NOT EXCEED ⅙ THE DEPTH.
3. NOTCHES IN THE TOP OF JOISTS SHALL NOT EXCEED ⅙ THE DEPTH AND SHALL NOT BE LOCATED IN THE MIDDLE THIRD OF THE SPAN.
4. NOTCHES ON THE BOTTOM OF JOISTS ALLOWED ONLY WHERE SPECIFICALLY SHOWN ON DRAWINGS.
5. HOLES BORED IN JOISTS SHALL NOT BE WITHIN 2 INCHES OF THE TOP OR BOTTOM AND SHALL NOT HAVE A DIAMETER LARGER THAN ¼ THE DEPTH.

NOTCHES & HOLES IN JOISTS & HEADERS | 7

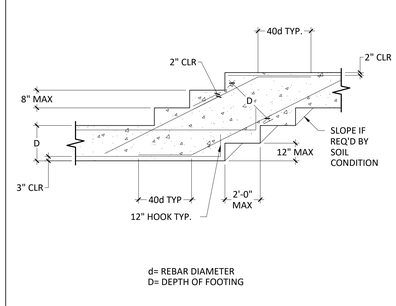


NOTE: SIMPSON ST6224 W/ 12-16d EA END WHERE NOTCH IS 3" OR LESS. ST6236 WHERE NOTCH IS GREATER THAN 3" BUT LESS THAN 6". USE SINGLE STRAP ON NOTCH SIDE WHERE NOTCH IS UP TO ⅓ WIDTH OF PLATES. USE STRAP ON EA SIDE WHERE NOTCH IS GREATER THAN ⅓ WIDTH BUT LESS THAN ⅔ WIDTH OF PLATE. NO NOTCH GREATER THAN ⅔ WIDTH OF PLATE.

SPLICE AT TOP PLATE AT NOTCH OR HOLES FOR PIPES OR CONDUITS | 8

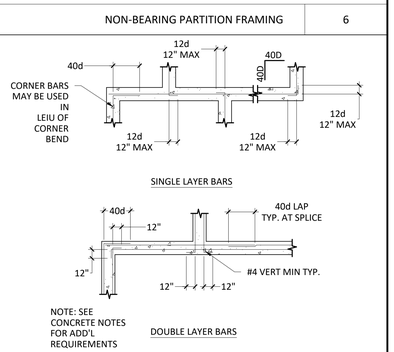


SPLICE AT WALL TRANSITION | 9

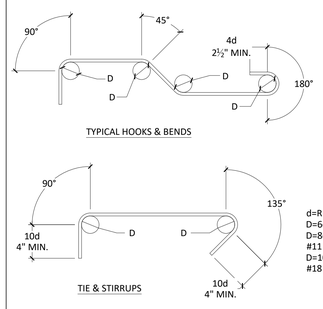


d= REBAR DIAMETER
D= DEPTH OF FOOTING

TYPICAL FOOTING STEP | 10

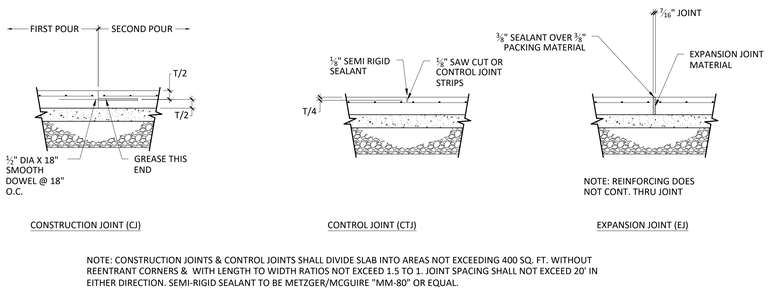


TYPICAL CORNER REINFORCING | 11



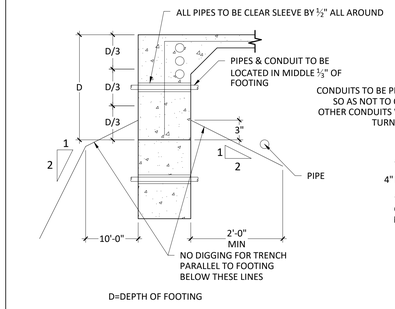
d=REBAR DIAMETER
D=6d FOR #3 THRU #8
D=8d FOR #9 THRU #11
D=10dFOR #14 THRU #18

REBAR HOOK & BENDS | 12



NOTE: CONSTRUCTION JOINTS & CONTROL JOINTS SHALL DIVIDE SLAB INTO AREAS NOT EXCEEDING 400 SQ. FT. WITHOUT REENTRANT CORNERS & WITH LENGTH TO WIDTH RATIOS NOT EXCEED 1.5 TO 1. JOINT SPACING SHALL NOT EXCEED 20' IN EITHER DIRECTION. SEMI-RIGID SEALANT TO BE METZGER/MCGUIRE "MM-80" OR EQUAL.

SLAB-ON-GRADE JOINT | 13



NOTES:
1. LEAN MIX CONCRETE FILL TO BE PLACED BEFORE FOOTING IS CAST. MAKE SAME WIDTH AS FOOTING AND FULL WIDTH OF PIPE TRENCH. STEP FOOTING IF PIPE IS MORE THAN 2'-6" BELOW BOTTOM OF FOOTING
2. NO PIPES SHALL BE PLACED BELOW SPREAD FOOTING TYP.
3. IF PIPE IS IN PLACE PRIOR TO CASTING CONCRETE, WRAP PIPE, W/ GLASS WOOD INSULATION (1" MIN ALL AROUND) IN LIEU OF SLEEVE

CONCRETE FOOTING AT PIPES & CONDUITS | 14

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6930 DESTINY DRIVE SUITE #300, ROCKLIN, CA 95677

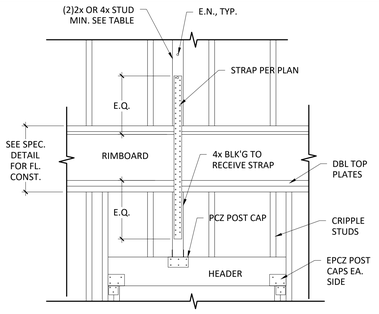
TITLE: STRUCTURAL DETAILS

ADDRESS: 175 ELVIES WAY FOLSOM CA, 95630

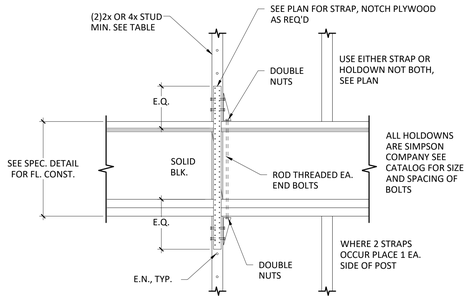
REGISTERED PROFESSIONAL ENGINEER — WESLEY CULLUMBER — 80675 — 09-30-23 — CIVIL — STATE OF CALIFORNIA

NO.	REVISIONS

SCALE:	AS NOTED
DATE:	12/10/2021
DESIGNED BY:	T.HAMEL
DRAWN BY:	M.LAMONT
CHECKED BY:	W.CULLUMBER
JOB NO:	RN071921
SHEET NO.	SD1



STRAP TO HEADER | 15



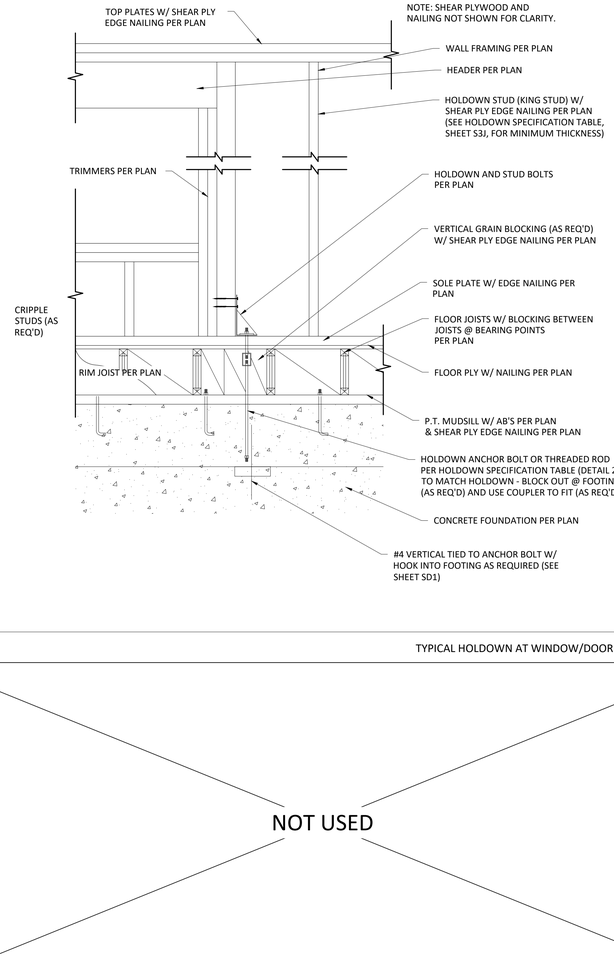
STANDARD INSTALLATION

STRAP	HD POST	HD TO POST CONNECTION
MST37	(2) 2x	(22) 16d SINKERS
MST48	(2) 2x	(34) 16d SINKERS
MST60	4x	(48) 16d SINKERS
MST72	4x	(62) 16d SINKERS

TYPICAL STRAP AT FLOOR FRAMING | 16

NOT USED

17



TYPICAL HOLDOWN AT WINDOW/DOOR | 18

NOT USED

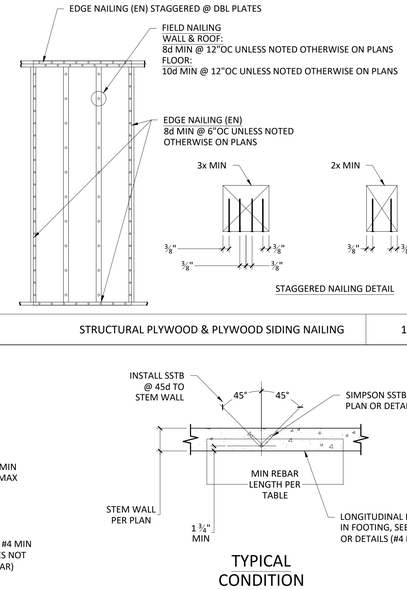
21

EDGE NAILING (EN) AS CALLED FOR ON PLANS & SECTIONS APPLIES TO EDGES OF ALL SHEETS & AT ALL INTERIOR LINES AS FOLLOWS:

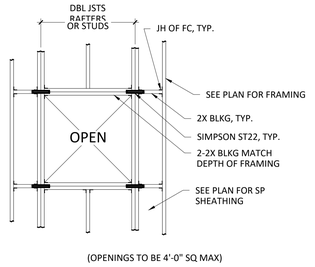
AT SHEAR WALLS
1. WHERE SP CONTACTS WALL PLATES & SOLID BLOCKING OVER WALL CONSTRUCTION. SEE DETAILS ON THIS SHEET.
2. AT 4X STUD ADJACENT TO HOLDOWN STRAP SEE DETAIL ON THIS SHEET.

AT ROOF & FLOOR - DIAPHRAGMS
1. AT BLOCKING OR TOP P'S OVER SHEAR WALLS.
2. AT TIES & BEAM IN LINE WITH SHEAR WALLS.
3. ADDITIONAL NAILINGS AS NOTED ON DRAWINGS.

NOTES:
1. WHERE 8d NAILS ARE SPACED @ 2½"OC OR LESS OR 10d NAILS @ 3"OC OR LESS, NAILS SHALL BE STAGGERED & FRAMING SP JOINTS SHALL BE 3X OR LARGER.SEE DETAIL AT RIGHT.
2. WHERE 10d NAILS ARE SPACED @ 3"OC OR LESS, NAILS SHALL BE 10d SHORTS. SEE TYP NAILING SCHEDULE.
3. STAGGER SP JOINTS WHERE SHEAR WALL IS MORE THAN ONE VERTICAL PANEL IN HEIGHT.

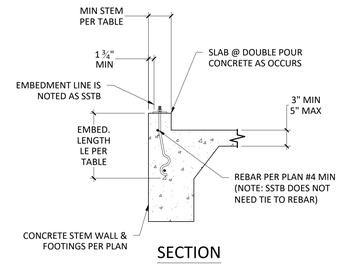


STRUCTURAL PLYWOOD & PLYWOOD SIDING NAILING | 19



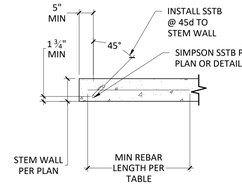
(OPENINGS TO BE 4'-0" SQ MAX)

TYPICAL OPENING IN ROOF OR WALL PLYWOOD DIAPHRAGM | 20

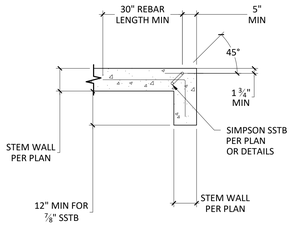


SECTION

TYPICAL CONDITION



END CONDITION



CORNER CONDITION

HOLDOWN	APPLICABLE SIMPSON MODEL NO.		DIA	MIN STEM	MIN EMBED Le	MIN REBAR IN FOOTING	HD POST	HD TO POST CONNECTION
	SINGLE POUR	DOUBLE POUR						
HDU2 [1]	SSTB20 [2]	SSTB20 [2]	5/8"	6"	12"	(1) #4 TOP, 4'-0" EA. DIR.	(2) 2x	(6) SDS ¼"x2 ½"
HDU4 [1]	SSTB24 [2]	SSTB24 [2]	5/8"	6"	17"	(1) #4 TOP, 4'-0" EA. DIR.	(2) 2x	(10) SDS ¼"x2 ½"
HDU5	SSTB24 [3]	SSTB24 [2]	5/8"	6"	21"	(1) #4 TOP, 4'-0" EA. DIR.	(2) 2x	(14) SDS ¼"x2 ½"
HDU8	SSTB28 [2]	SSTB34	7/8"	8"	24"	(1) #4 TOP & (1) #4 BOT 5'-6" EA. DIR.	4x	(20) SDS ¼"x2 ½"
HDU11	SB1x30	SB1x30	1"	8"	24"	(2) #4 TOP & (2) #4 BOT 10'-0" EA. DIR.	4x6	(30) SDS ¼"x2 ½"
HDU14	SB1x30	SB1x30	1"	8"	24"	(2) #4 TOP & (2) #4 BOT 10'-0" EA. DIR.	4x6	(36) SDS ¼"x2 ½"
HDQ8	SSTB28 [2]	SSTB34	7/8"	8"	24"	(1) #4 TOP & (1) #4 BOT 5'-6" EA. DIR.	4x	(20) SDS ¼"x3"
HDQ8	SSTB28 [2]	SSTB34	7/8"	8"	24"	(1) #4 TOP & (1) #4 BOT 7'-0" EA. DIR.	4x6	(20) SDS ¼"x3"
HDQ11	PAB7-24	PAB7-24	1"	8"	24"	(2) #4 TOP & (2) #4 BOT 10'-0" EA. DIR.	4x6	(24) SDS ¼"x2 ½"
HDQ14	PAB7-24	PAB7-24	1"	8"	24"	(2) #4 TOP & (2) #4 BOT 10'-0" EA. DIR.	4x8	(24) SDS ¼"x2 ½"

1. FOR RETROFIT APPLICATION, OMIT SSTB. REFER TO DETAIL 21/SD2.
2. PROVIDE SSTBXXL ANCHOR BOLT FOR 3x MUD SILLS.
3. SEE ADDITIONAL DETAILS AS APPLICABLE FOR ALTERNATIVE HOLDOWN REQUIREMENTS.
4. ALL HARDWARE TO BE SIMPSON OR EQUAL.
5. PROVIDE 8" DIA. OR 8" SQ DEEPENED AREA AROUND HOLDOWN ANCHOR TO ACHIEVE 3" CLEAR COVER BELOW BOTTOM OF HOLDOWN ANCHORS AS REQUIRED.
6. ALL HOLDOWN NAILS TO BE COMMON WIRE NAILS U.N.O.
7. CONNECT DOUBLE HOLDOWN STUDS TOGETHER WITH (24) 16d SINKER NAILS MINIMUM.
8. WHEN USING STAINLESS STEEL OR HOT-DIP GALVANIZED CONNECTORS, THE CONNECTORS AND FASTENERS SHOULD BE OF THE SAME MATERIAL.
9. HDU14 REQUIRES HEAVY HEX NUT.
10. CONTINUE HD POST TO MUDSILL OR PROVIDE SOLID BLOCKING.
11. MINIMUM CONCRETE COMPRESSIVE STRENGTH IS 2500psi. FOR 2000psi ALLOWABLE LOADS ARE 0.89x THE TABLE ALLOWABLE LOADS. FOR CORNER CONDITIONS, ALLOWABLE LOADS BASED ON 2000psi CONCRETE.
12. 16d SINKER OR 10d COMMON NAILS MAY BE SUBSTITUTED FOR SPECIFIED 16d COMMON NAILS AT 0.85x THE ALLOWABLE TABLE LOADS.
13. CALCULATE ALLOWABLE LOADS USING STRAIGHT LINE INTERPOLATION FOR CORNER DISTANCES BETWEEN ½" AND 8".
14. SEE CURRENT SIMPSON CATALOG FOR ADDITIONAL DESIGN REQUIREMENTS.

SSTB INSTALLATION AND DETAILS | 22

WCD
916-251-9798 | WWW.WCDASSOCIATES.COM
6930 DESTINY DRIVE SUITE #300, ROCKLIN, CA 95677

TITLE: STRUCTURAL DETAILS

ADDRESS: 175 ELVIES WAY FOLSOM CA, 95630

REGISTERED PROFESSIONAL ENGINEER
WESLEY CULLUMBER
No. 86275
12-31-22
CIVIL
STATE OF CALIFORNIA

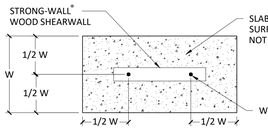
NO.	REVISIONS

SCALE:	AS NOTED
DATE:	12/10/2021
DESIGNED BY:	T.HAMEL
DRAWN BY:	M.LAMONT
CHECKED BY:	W.CULLUMBER
JOB NO:	RN071921

SHEET NO.

SD2

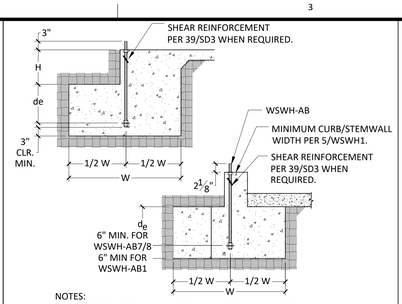
NOTES:
1. ANCHORAGE DESIGNS CONFORM TO ACI 318-11 APPENDIX D AND ACI 318-14 WITH NO SUPPLEMENTARY REINFORCEMENT FOR CRACKED OR UNCRACKED CONCRETE AS NOTED.
2. ANCHOR STRENGTH INDICATES REQUIRED GRADE OF WSW-AB ANCHOR BOLT. STANDARD (ASTM F1554 GRADE 36) OR HIGH STRENGTH (HS) (ASTM A449).
3. SEISMIC INDICATES SEISMIC DESIGN CATEGORY C - F. DETACHED 1 AND 2 FAMILY DWELLINGS IN SDC C MAY USE WIND ANCHORAGE SOLUTIONS. SEISMIC ANCHORAGE DESIGNS CONFORM TO ACI 318-11 SECTION D.3.3.4.3 AND ACI 318-14 SECTION 17.2.3.4.3.
4. WIND INCLUDES SEISMIC DESIGN CATEGORY A AND B AND DETACHED 1 AND 2 FAMILY DWELLINGS IN SDC C.
5. FOUNDATION DIMENSIONS ARE FOR ANCHORAGE ONLY. FOUNDATION DESIGN (SIZE AND REINFORCEMENT) BY OTHERS. THE REGISTERED DESIGN PROFESSIONAL MAY SPECIFY ALTERNATE EMBEDMENT, FOOTING SIZE OR ANCHOR BOLT.
6. REFER TO 1/WSW1 FOR d_e.



FOUNDATION PLAN VIEW

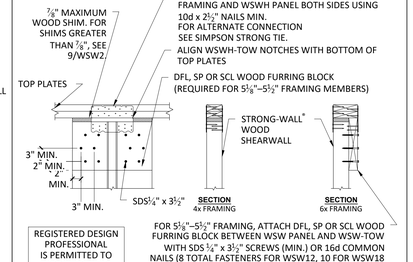
WSWH ANCHORAGE SOLUTIONS FOR 2500 PSI CONCRETE								
			WSWH-AB7/8 ANCHOR BOLT			WSWH-AB1 ANCHOR BOLT		
DESIGN CRITERIA	CONCRETE CONDITION	ANCHOR STRENGTH	ASD ALLOWABLE TENSION (lb.)	W (in.)	d_e (in.)	ASD ALLOWABLE TENSION (lb.)	W (in.)	d_e (in.)
SEISMIC	CRACKED	STANDARD	8,800	22	8	16,100	33	11
SEISMIC	CRACKED	STANDARD	9,600	24	8	17,100	35	12

STRONG WALL ANCHORAGE | 31



NOTES:
1. SEE 56/SD4 FOR DIMENSIONS AND ADDITIONAL NOTES.
2. SEE 64/SD4 FOR SHEAR REINFORCEMENT WHEN REQUIRED.
3. MAXIMUM H = le - de. SEE 31/SD4 FOR le.

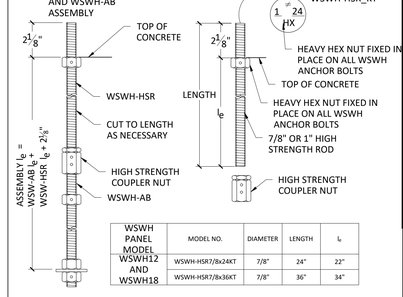
SLAB ON GRADE & CURB OR STEMWALL ANCHORAGE | 32



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

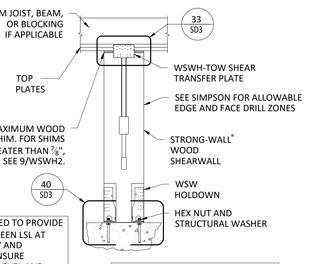
FOR 5½"–5½" FRAMING, ATTACH DFL, SP OR SCL WOOD FURRING BLOCK BETWEEN WSW PANEL AND WSW-TOW WITH SDS ¼" x 3½" SCREWS (MIN.) OR 16d COMMON NAILS (8 TOTAL FASTENERS FOR WSW12, 10 FOR WSW18 AND 14 FOR WSW24). MINIMUM BLOCK SIZE IS 1¾" x 11⅞" x WSW PANEL WIDTH.

STANDARD TOP CONNECTION | 33



WSWH PANEL MODEL	MODEL NO.	DIAMETER	LENGTH	l_e
WSWH12 AND WSWH18	WSWH-HSR7/8x24KT	7/8"	24"	22"
	WSWH-HSR7/8x36KT	7/8"	36"	34"

WSW ANCHOR BOLT EXTENSION | 34



WSW DESIGNED TO PROVIDE ½" GAP BETWEEN LSL AT BASE OF WSW AND CONCRETE. ENSURE CONCRETE IS LEVEL AND SMOOTH BENEATH PANEL. GRIND OR FILL AS NECESSARY.

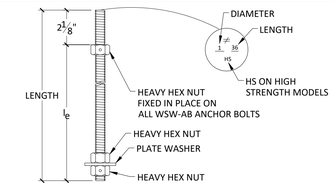
REGISTERED DESIGN PROFESSIONAL IS PERMITTED TO MODIFY DETAILS FOR SPECIFIC CONDITIONS.

SINGLE STORY WOOD STRONG WALL | 35

MODEL NO.	W (in.)	H (in.)	ANCHOR BOLTS QUANTITY	ANCHOR BOLTS DIA. (in.)	TOTAL WALL WEIGHT (lb.)
WSWH12x7	12	78	2	7/8	100
WSWH18x7	18	78	2	7/8	145
WSWH12x7.5	12	85 1/2	2	7/8	110
WSWH18x7.5	18	85 1/2	2	7/8	155
WSWH12x8	12	93 1/4	2	7/8	115
WSWH18x8	18	93 1/4	2	7/8	165
WSWH24x8	24	93 1/4	2	1	225
WSWH12x9	12	105 1/4	2	7/8	130
WSWH18x9	18	105 1/4	2	7/8	185
WSWH24x9	24	105 1/4	2	1	245
WSWH12x10	12	117 1/4	2	7/8	140
WSWH18x10	18	117 1/4	2	7/8	205
WSWH24x10	24	117 1/4	2	1	270
WSWH12x11	12	129 1/4	2	7/8	150
WSWH18x11	18	129 1/4	2	7/8	220
WSWH24x11	24	129 1/4	2	1	295
WSWH12x12	12	141 1/4	2	7/8	165
WSWH18x12	18	141 1/4	2	7/8	240
WSWH24x12	24	141 1/4	2	1	320
WSWH18x13	18	153 1/4	2	7/8	255
WSWH24x13	24	153 1/4	2	1	345
WSWH24x14	24	168	2	1	375
WSWH24x16	24	192	2	1	425
WSWH18x20	18	240	2	7/8	385
WSWH24x20	24	240	2	1	520

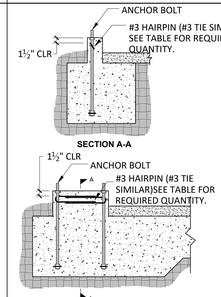
NOTES:
1. FOR HEIGHTS NOT LISTED, ORDER THE NEXT TALLEST PANEL AND TRIM TO FIT. MINIMUM TRIMMED HEIGHT FOR ALL PANELS IS 74¼".
2. ALL PANELS COME WITH TWO PRE-INSTALLED HOLDOWNS, TWO STANDARD HEX NUTS, TWO STRUCTURAL WASHERS, TWO WSW-TOW PLATES AND INSTALLATION INSTRUCTIONS.
3. ALL PANELS ARE 35" THICK.

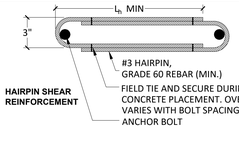
STRONG WALL WOOD MODELS | 36



WSW PANEL MODEL	MODEL NO.	DIAMETER	LENGTH	l_e
WSWH12 AND WSWH18	WSWH-AB7/8x24	7/8"	24"	20"
	WSWH-AB7/8x24HS	7/8"	24"	20"
	WSWH-AB7/8x30	7/8"	30"	26"
	WSWH-AB7/8x30HS	7/8"	30"	26"
	WSWH-AB7/8x36HS	7/8"	36"	32"

STRONG WALL BOLT | 37

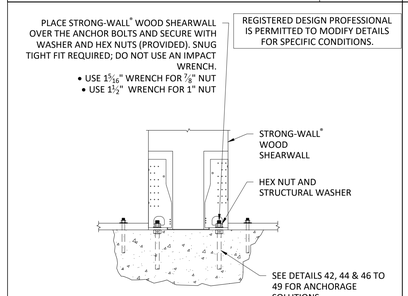




MODEL	L_t OR L_h (in.)	SEISMIC [3] SHEAR REINFORCEMENT	SEISMIC [3] MINIMUM CURB/ STEMWALL WIDTH (in.)	WIND [4] SHEAR REINFORCEMENT	WIND [4] MINIMUM CURB/ STEMWALL WIDTH (in.)	ASD ALLOWABLE SHEAR LOAD, V (lb.) [6] UNCRACKED	ASD ALLOWABLE SHEAR LOAD, V (lb.) [6] CRACKED
WSWH18	10¼	(1) #3 HAIRPIN	8[5]	SEE NOTE 6	6	1,035	740

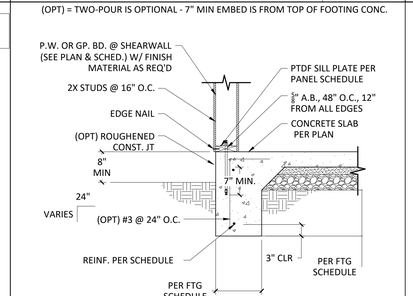
NOTES:
1. SHEAR ANCHORAGE DESIGNS CONFORM TO ACI 318-11 AND ACI 318-14 AND ASSUME MINIMUM 2,500 PSI CONCRETE.
2. SHEAR REINFORCEMENT IS NOT REQUIRED FOR INTERIOR FOUNDATION APPLICATIONS (PANEL INSTALLED AWAY FROM EDGE OF CONCRETE), OR BRACED WALL PANEL APPLICATIONS.
3. SEISMIC INDICATES SEISMIC DESIGN CATEGORY C THROUGH F. DETACHED 1 AND 2 FAMILY DWELLINGS IN SDC C MAY USE WIND ANCHORAGE SOLUTIONS.
4. WIND INCLUDES SEISMIC DESIGN CATEGORY A AND B AND DETACHED 1 AND 2 FAMILY DWELLINGS IN SDC C.
5. WHERE NOTED, MINIMUM CURB/STEMWALL WIDTH IS 6 INCHES WHEN STANDARD STRENGTH ANCHOR BOLT IS USED.
6. USE (1) #3 TIE FOR WSW12 WHEN PANEL DESIGN SHEAR FORCE EXCEEDS TABULATED ANCHORAGE ALLOWABLE SHEAR LOAD.
7. #4 GRADE 40 SHEAR REINFORCEMENT MAY BE SUBSTITUTED FOR WSWH SHEAR ANCHORAGE SOLUTIONS.

STRONG WALL REINFORCEMENT | 39

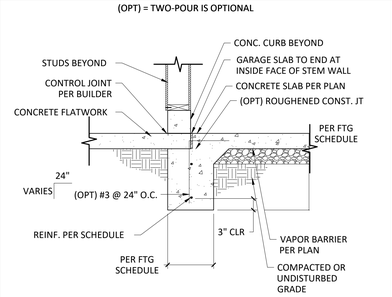


REGISTERED DESIGN PROFESSIONAL IS PERMITTED TO MODIFY DETAILS FOR SPECIFIC CONDITIONS.

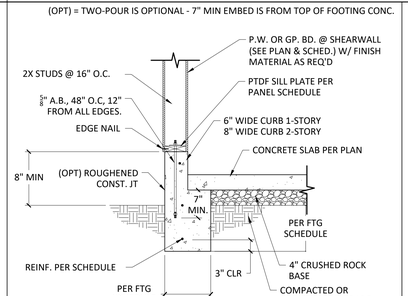
STANDARD BASE CONNECTION | 40



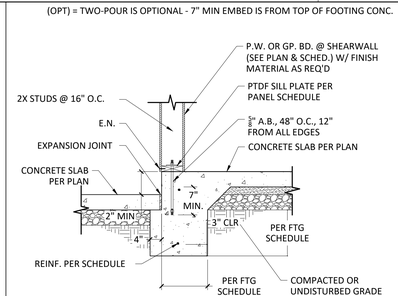
TYPICAL EXTERIOR FOOTING | 41



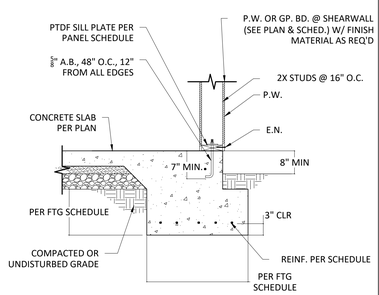
GARAGE CURB OPENING | 42



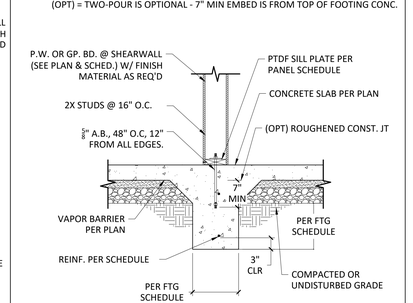
GARAGE STEM WALL | 43



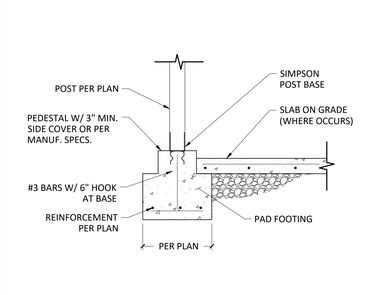
FOOTING TO LOWER SLAB DETAIL | 44



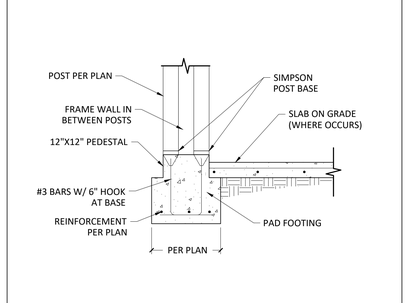
SPOT FTG ON CONT. FTG | 45



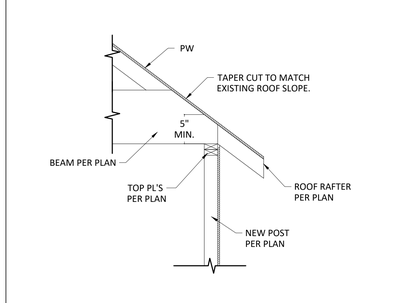
TYPICAL INTERIOR FOOTING | 46



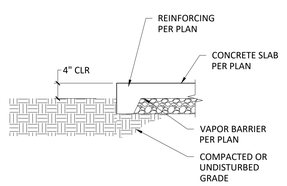
POST BASE | 47



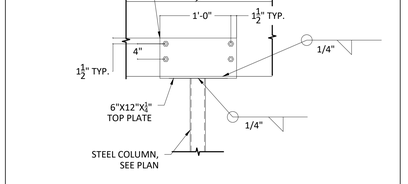
BUILT UP POST BASE | 48



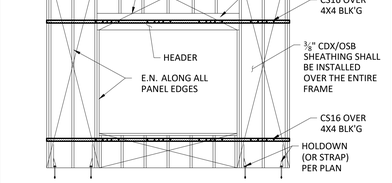
RAFTER TO WALL CONNECTION | 49



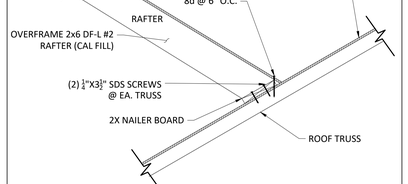
PATIO SLAB @ EDGE | 50



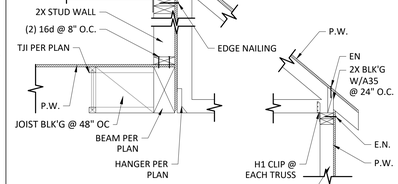
TYPICAL BEAM TO COLUMN | 51



BLOCK HEADER AND SILL | 52



OVERFRAMING | 53



LOWER ROOF TO FLOOR CONNECTION | 54

WCD
916-251-9798 | WWW.WCDASSOCIATES.COM
6930 DESTINY DRIVE SUITE #300, ROCKLIN, CA 95677

TITLE: STRUCTURAL DETAILS

ADDRESS: 175 ELVIES WAY FOLSOM CA, 95630

REGISTERED PROFESSIONAL ENGINEER WESLEY CULLUMBER 80675 12/31/21 CIVIL STATE OF CALIFORNIA

NO.	REVISIONS

SCALE:	AS NOTED
DATE:	12/10/2021
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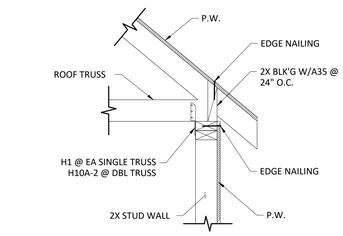
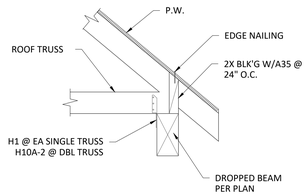
SHEET NO.	SD3

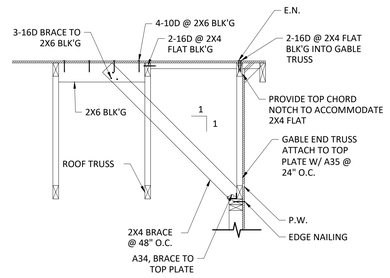
Z:\PROJECTS\ELVIESWAY_MS-HAMILTON-NEW_(RN071921)\CAD - STRUCTURAL



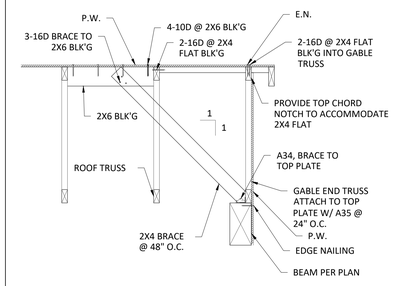
TRUSS TO WALL CONNECTION | 55



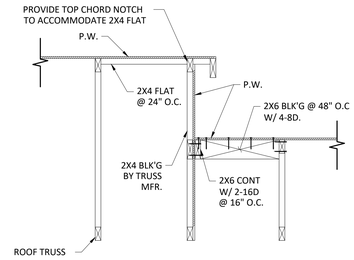
TYPICAL HIP END TRUSS CONNECTION | 56



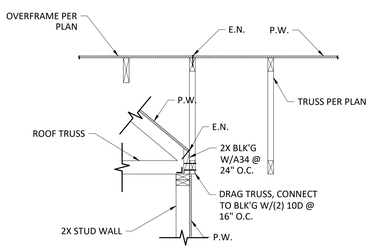
TYPICAL GABLE END TRUSS CONNECTION | 57



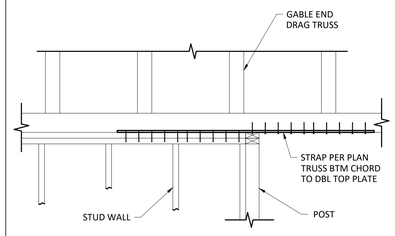
TYPICAL GABLE END TRUSS CONNECTION | 58



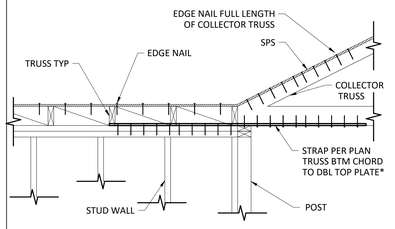
VARYING ROOF HEIGHT CONNECTION | 59



DRAG TRUSS CONNECTION TO BLOCKING | 60

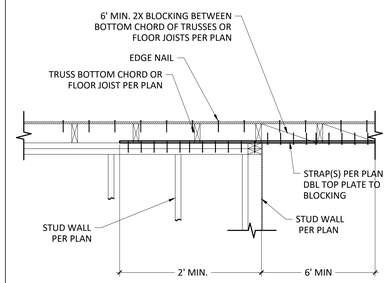


DRAG TRUSS TO STRAP | 61

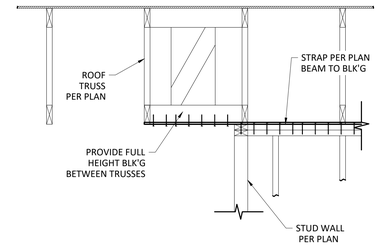


*ADD BLK'G TO TRUSS W/ 16D @ 6" O.C., AS REQUIRED

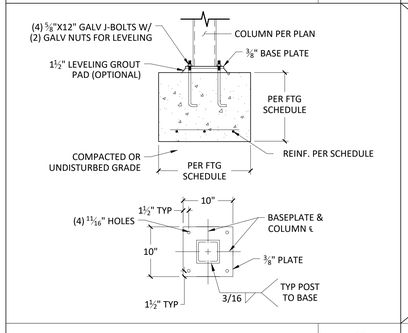
DRAG TRUSS TO STRAP | 62



STRAP TO TOP PLATES AND BLOCKING | 63



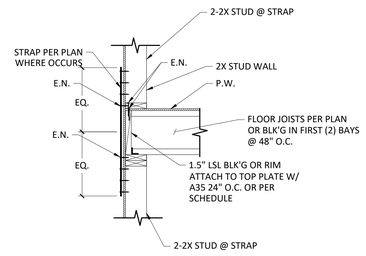
STRAP TO BLK'G AND TOP PLATES | 64



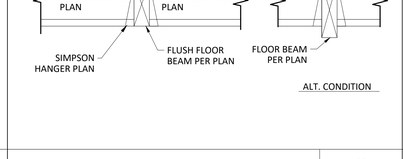
STEEL COLUMN TO FOOTING CONNECTION | 65

NOT USED

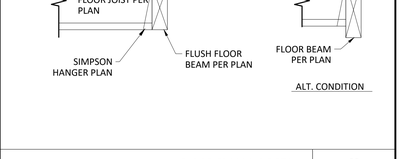
66



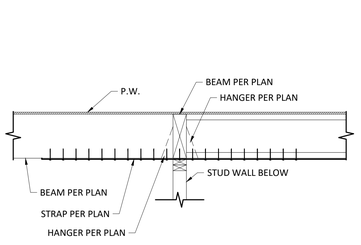
STRAP TO WALL | 67



FLOOR FRAMING DETAIL | 68

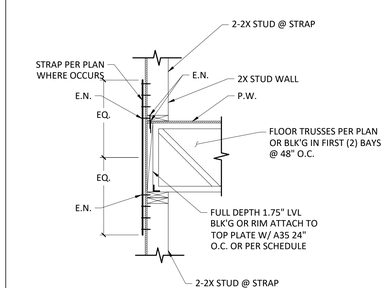


FLOOR FRAMING DETAIL | 69

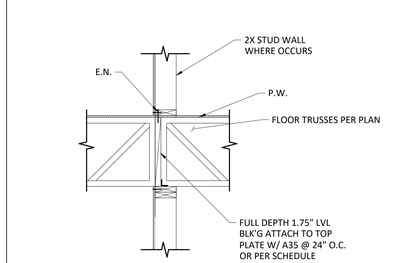


NOTE: SEE DETAIL 95/SD5 FOR GLULAM FURRING CONNECTION

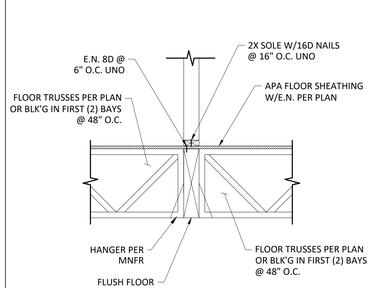
BEAM STRAP | 70



STRAP TO WALL CONNECTION | 71

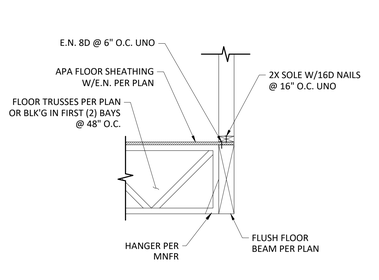


INTERIOR BEARING WALL | 72



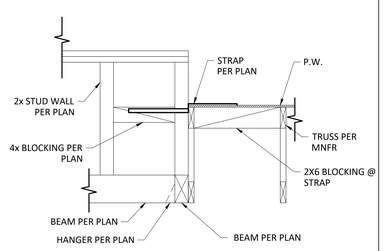
NOTE: SEE DETAIL 95/SD5 FOR GLULAM FURRING CONNECTION

FLOOR FRAMING DETAIL | 73

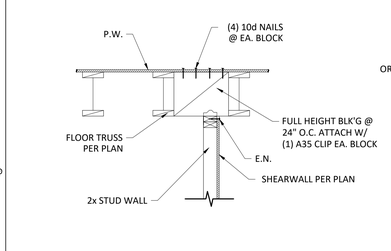


NOTE: SEE DETAIL 95/SD5 FOR GLULAM FURRING CONNECTION

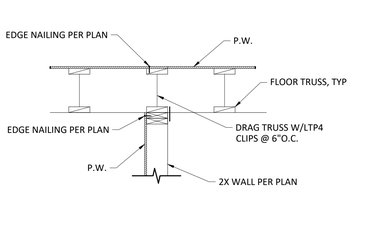
FLOOR FRAMING DETAIL | 74



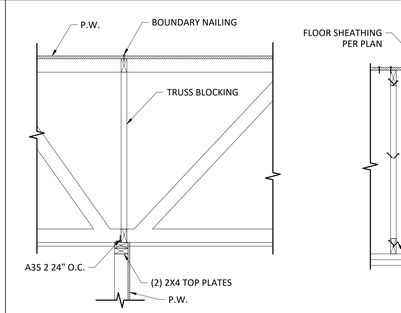
WALL TO BLOCKING CONNECTION | 75



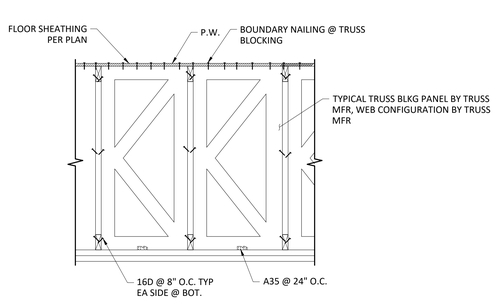
OR



TRUSS TO INTERIOR SHEARWALL | 77



TRUSS BLOCKING TO INTERIOR SHEARWALL | 79



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TITLE: STRUCTURAL DETAILS

ADDRESS: 175 ELVIES WAY FOLSOM CA, 95630

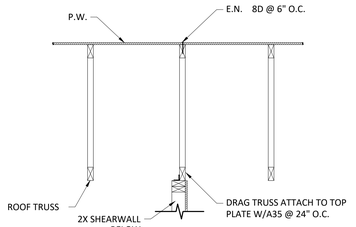
REGISTERED PROFESSIONAL ENGINEER WESLEY CULLUMBER 80675 12-31-23 CIVIL STATE OF CALIFORNIA

NO.	REVISIONS

SCALE:	AS NOTED
DATE:	12/10/2021
DESIGNED BY:	T.HAMEL
DRAWN BY:	M.LAMONT
CHECKED BY:	W.CULLUMBER
JOB NO:	RN071921

SHEET NO.

SD4



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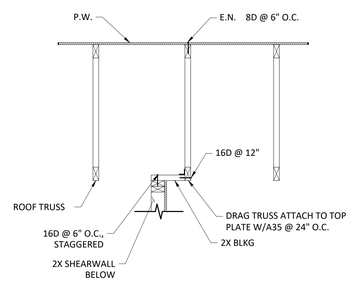
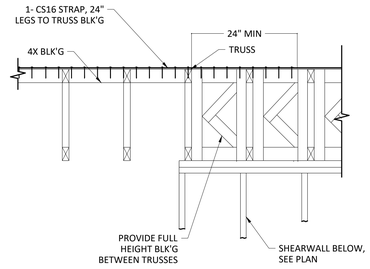
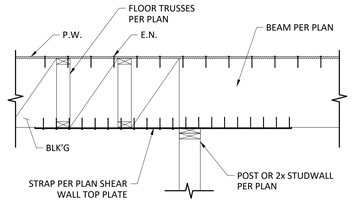


TRUSS TO INTERIOR SHEARWALL | 81

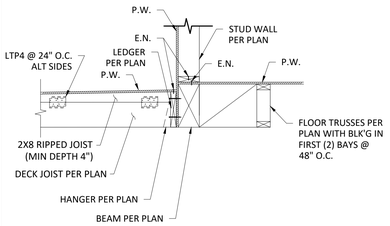


STRAP AT TRUSS BLOCKING | 82



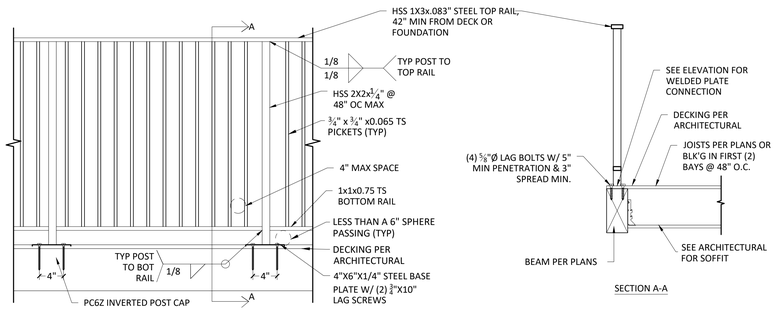
NOTE: SEE DETAIL 95/SD5 FOR GLULAM FURRING CONNECTION

FLOOR JOIST BLOCKING AND BEAM CONNECTION | 83

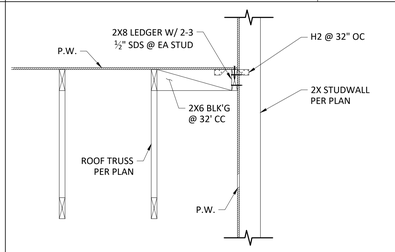


NOTE: SEE DETAIL 95/SD5 FOR GLULAM FURRING CONNECTION

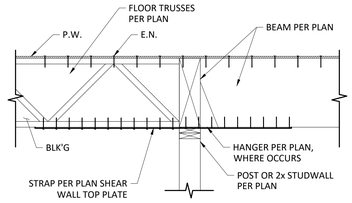
DECK JOIST & FLOOR TRUSS CONNECTION TO BEAM | 84



DECK RAILING CONNECTIONS | 86

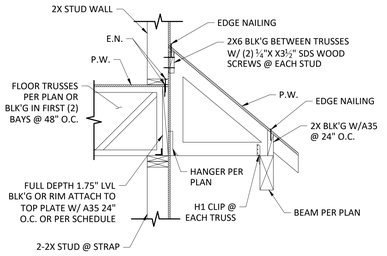


ROOF TO GABLE WALL | 87

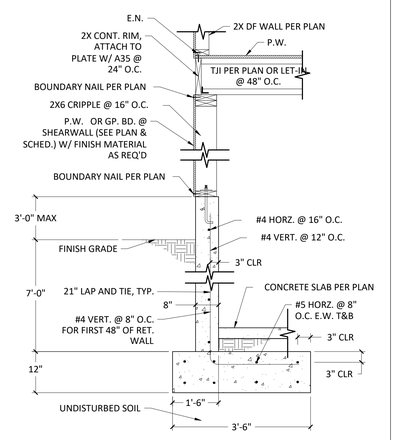


NOTE: SEE DETAIL 95/SD5 FOR GLULAM FURRING CONNECTION

FLOOR JOIST BLOCKING AND BEAM CONNECTION | 88

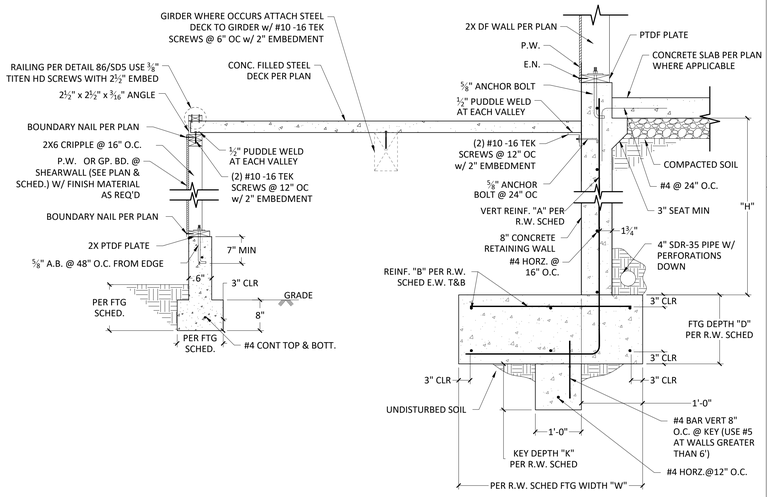


LOWER ROOF TO FLOOR CONNECTION | 89

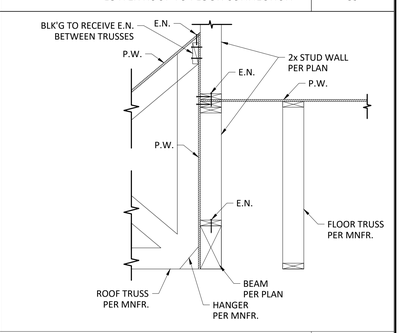


CONCRETE RETAINING WALL @ GARAGE | 90

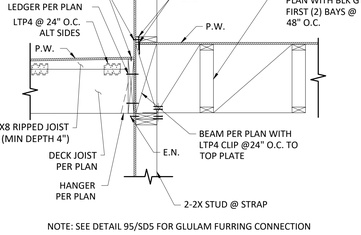
RETAINING WALL SCHED.					
"H"	"D"	"W"	"K"	"A"	"B"
4'-0"	12"	2'-0"	8"	#4 @ 12" O.C.	#5 @ 12" O.C.
6'-0"	12"	2'-9"	22"	#4 @ 12" O.C.	#5 @ 12" O.C.
8'-0"	14"	4'-0"	36"	#5 @ 12" O.C.	#5 @ 12" O.C.
9'-0"	14"	5'-3"	42"	#5 @ 12" O.C.	#5 @ 12" O.C.



CONC. RETAINING WALL @ DECK | 91

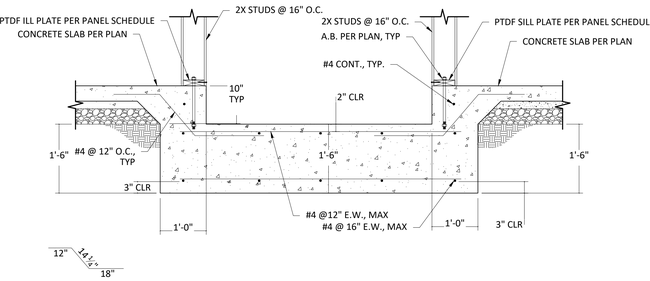


ROOF TRUSS TO BEAM | 93

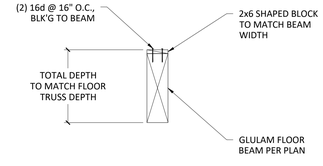


NOTE: SEE DETAIL 95/SD5 FOR GLULAM FURRING CONNECTION

DECK JOIST TO WALL CONNECTION | 92



WALL AND SLAB OVER LOWER FOOTING | 94



GLULAM FURRING DETAIL | 95

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NO.	REVISIONS

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SHEET NO.	

SD5