

GENERAL

- 1. Provide each bedroom, basement, and habitable attics with a minimum of one exterior window with a 44" maximum clear opening height, 5.7 sq. ft. minimum clear openable area (minimum 5.0 sq. ft. at grade floor openings), 24" minimum clear openable height and 20" minimum clear width, or an openable exterior exit door. (CRC R310.2.1 and CRC R310.2.2) Window wells, ladders, and steps shall comply with CRC R310.2.3. Bars, grilles, covers, ands screens shall be releasable or removable from the inside without the use of a key, tool, special knowledge, or force greater than 15lbs to operate the emergency escape and rescue openings. (CRC R310.4) Photovoltaic panels & modules shall not be below an emergency escape and rescue opening within 36". (R324.6.2.2)
- 2. Each bathroom containing a bathtub, shower or tub/shower combination shall be mechanically ventilated with Energy Star approved equipment (minimum 50cfm) with an integral humidistat installed. (CRC R303.3.1)
- 3. Provide attic cross ventilation: 1/150 of attic area or 1/300 with at least 40% but not more than 50% of vents are a maximum 3 ft. below the ridge or highest space in the attic and the balance is provided in the lower third of the attic space (not limited to eaves or cornice vents). As an alternative in Climate Zone 16 (Truckee region), the net area may be reduced to 1/300 when a Class I or II vapor barrier is installed on the warm-in-winter side of the ceiling. Baffles are required at vents for insulation. Provide minimum of 1" inch of air space between insulation and roof sheathing.
- 4. Enclosed rafter spaces shall have a 1-inch clear cross ventilation. (Properly sized raft ers for insulation) (CRC R806.3)
- 5. Under floor cross ventilation: minimum 1.0 sq. ft. for each 150 sq. ft. of under floor area. When a class 1 vapor retarder is installed on the ground surface the minimum area of ventilation may be limited to 1sq.ft for each 1,500 square feet of under-floor space. One ventilation opening shall be within three (3) feet of each corner of the building (CRC R408.1). Unvented crawl spaces shall comply with CRC R408.3. Unvented crawl space added option for dehumidification of 70 pints moisture per day per 1,000 sf to requirement for exemption. (R408.3)
- 6. Exterior balconies and elevated walking surfaces exposed to water, where structural framing is protected by an impervious moisture barrier require construction documents with manufacturer's installation instructions (R106.1.5). Must be inspected and approved before concealing barrier. (R109.1.5.3)
- 7. Enclosed framing in exterior balconies and elevated walking surfaces exposed to rain, snow or drainage from irrigation shall be provided with crossventilation area of at least 1/150. (R317.1.6)
- 8. Provide landings and a porch light at all exterior doors. Landings are to be minimum 3 ft deep x width of door. Landings at required egress doors may step down a maximum of 7.75 inches when the door does not swing over the landing and 1.5 inches when door swings onto the landing. Other than required exterior exit doors may have a threshold of 7.75 inches maximum; a landing is not required if a stair with two or fewer isers is located on the exterior side and the door does not swing over the stairway. (CRC R311.3-R311.3.2)
- 9. Mezzanines shall not be greater than 1/3 of the story unless fire sprinklers are installed then the area can be ½ of the story. (R325.3)
- 10. The following windows shall be fully tempered: (CRC R308.4)
- Sliding/swinging glass doors
 Claring in walls and enclosure.
- Glazing in walls and enclosures facing hot tubs, spas, whirlpools, saunas, steam rooms, bathtubs, showers and swimming pools where the glazing is less than 60 inches es above the standing surface within the compartment and within 60 inches horizontally of the water's edge (CRC R308.4.5)
- Glazing within a 24" arc of a door that is less than 60 inches above the floor. Safety glazing required on a wall **less than 180 degrees from the plane of the door** in a closed position and within 24" of hinge side of an in-swing door. (R308.4.2)
- Glazing where the exposed area is greater than 9sq.ft, bottom is less than 18 in. and at least 36 in. above the floor, and adjacent to a walking surface
- Within 60in. of the bottom tread of a stairway and less than 36in. above the landing
 Glazing in guards and railings
- Glazing adjacent to stairways, landings, and ramps within 36in. horizontally of the walking surface less than 36in. above the walking surface

FOUNDATIONS & CONCRETE SLABS

- Slope drainage 6" within the first 10ft. from the foundation wall. If physical obstructions or lot lines prohibit the 10ft distance, a 2-5 percent slope shall be provided to an approved alternative method of diverting the water away from the foundation. Impervious surfaces shall also be sloped a minimum of 2 percent for 10ft away from structures to an approved drainage way. (CRC R401.3)
- Footings shall extend at least 12 inches into the undisturbed ground surface. (CRC R403.1.4) Unless erected on solid rock, to protect against frost and freezing, the minimum foundation depth is 18 inches below grade if between 4,000-7,000 foot elevation and 24 inches below grade for 7,000 foot elevation and above. Exception: Interior footings shall be a minimum of 12 inches below grade. (L-V 3.14)
- Stepped footings shall be used when slope of footing bottom is greater than 1 in 10 (V: H). Step footing detail shall be shown on building elevations and foundation plan. (CRC R403.1.5)
- Concrete slabs: 3 ½" minimum (CRC R506.1). Slabs under living areas and garages shall be reinforced with wire 6" x 6", 10 gauge x 10 gauge welded mesh or equivalent steel reinforcement and 4" thickness of 3/8 minimum gravel under the concrete slab. Separate from soil with a 6 mil polyethylene vapor retarder with joints lapped not less than 6 inches in living areas. A capillary break shall be installed when a vapor retarder is required.
- Provide an 18" x 24" under-floor access, unobstructed by pipes or ducts and within 5' of each under-floor plumbing cleanout and not located under a door to the residence, is required. Provide a solid cover or screen. (CRC 408.4 & CPC 707.9)
- 6. Minimum sill bolting: ½" anchor bolts or approved anchors at 6 ft. o.c. maximum for one-story. (CRC R403.1.6) Use anchor bolts at 4 ft. o.c. maximum for three story construction. Embed bolts 7" minimum. The anchor bolts shall be placed in the middle third of the width of the plate. Locate end bolts not less than 7 bolt diameters, nor more than 12" from ends of sill members. In SDC D0 and above: Provide 3"X3"X0.229 plate washers on each bolt at braced or shear wall locations, standard cut washers shall be permitted for anchor bolts not located in braced/shear wall lines. (CRC R403.1.6.1 & R602.11.1)

CLEARANCES AND TREATMENT FOR WOOD FRAMING

- Weather exposed glu-lam, beams and posts shall be pressure treated or shall be wood of natural resistance to decay (CRC R317.1.3 & 5)
- 2. Columns exposed to the weather or in basements when supported on concrete pier or metal pedestals shall be pressure treated or natural resistance to decay <u>unless</u> the pier/pedestals project 1" above concrete or 6" above earth <u>and</u> the earth is covered by an approved impervious moisture barrier. (CRC R317.1.4 exc. 1)
- 3. Columns in enclosed crawl spaces or unexcavated areas located within the periphery of the building shall be pressure treated or natural resistance to decay <u>unless</u> the column is supported by a concrete pier or metal pedestal of a height 8" or more <u>and</u> the earth is covered by an impervious moisture barrier. (CRC R317.1.4 exc. 2)
- 4. Deck posts supported by concrete piers or metal pedestals projecting not less than 1' above a concrete floor or 6" above exposed earth. (CRC R317.1.4 exc. 3)

<u>FLOORS</u>

Under-floor areas with storage, fuel-fired equipment or **electric-powered** equipment with less than 2x10 solid joists shall be protected on the underside by half-inch sheet-rock or a sprinkler system. (R302.13

Balconies must be designed for a minimum live load of 60lbs per square foot. (CRC T-

WALLS oncurs against unlift and lateral displa

- Positive connection shall be provided to ensure against uplift and lateral displacement (CRC R502.9 & CBC 2304.10.7)
- corrosion resistant type. (CRC R317.3)
 Fire-block in concealed spaces of stud walls/partitions, vertically at ceiling/floor levels, & horizontally at 10ft, intervals. Fire-block at soffits, drop ceilings/similar locations &

All fasteners used for attachment of siding & into pressure treated lumber shall be of a

- & horizontally at 10ft. intervals. Fire-block at soffits, drop ceilings/similar locations & in concealed spaces at the top/bottom of stair stringers. (CRC R302.11)
 H. Provide approved building paper under the building siding and approved flashing at exterior openings. (CRC R703.2) Specify a minimum of 2 layers of Grade D paper under stucco and 2 layers of 15lb felt (or equivalent) under stone veneer.
- Stucco shall have a minimum clearance to earth of 4 inches and 2 inches to paved surfaces with an approved weep screed. (CRC R703.7.2.1) Masonry stone veneer shall be flashed beneath the first course of masonry and provided with weep holes immediately above the flashing. (CRC R703.8.5 and R703.8.6)

RO

- Roof sheathing can only cantilever 9 inches beyond a gable end wall unless supported by overhang framing. (R802.5.2.1)

 Provide a minimum 22" x 30" access opening to attic (CRC R807); may be required to be 30"x30" to remove the largest piece of mechanical equipment per the California
- Roof drains/gutters required to be installed per the California Plumbing Code with leaf/ debris protection also installed.

- 4. Roof construction and coverings shall comply with CRC Chapters 8, 9 and local ordinance. All roofing shall be tested/listed Class A minimum.
- Asphalt shingles with sloped roofs 2/12 to <4/12 shall have two layers of underlayment applied per CRC R905.2.2.

GARAGE AND CARPORT

- 1. Garage shall be separated from the dwelling unit & attic area by ½ inch gypsum board applied to the garage side. Garage beneath habitable rooms shall be separated by not less than 5/8" type X gypsum board. Structure supporting floor/ceiling assemblies used for required separations shall have ½" gypsum board installed minimum. Door openings from the garage to the dwelling shall be solid wood/steel doors or honeycomb steel doors not less than 1 3/8" thick or a 20-minute rated fire door. Doors shall be self-closing & self-latching. No openings directly into a sleeping room from the garage. When the dwelling and garage has fire sprinklers installed per R309.6 and R313, doors into the dwelling unit from the garage only need to be self-closing and self-latching. (CRC R302.5.1 & T-R302.6)
- Ducts penetrating the garage to dwelling separation shall be a minimum of 26 gauge with no openings into the garage. (CRC R302.5.2)
- 3. Penetrations through the garage to dwelling separation wall (other than ducts as listed above) shall be fire-blocked per CRC section R302.11, item #4.
- 4. Garage and carport floor surfaces shall be non-combustible material and slope to drain towards the garage door opening. (CRC R309.1)
 5. Appliances and receptacles installed in garage generating a glow, spark or flame shall be located 18" above floor unless it is listed as flammable vapor ignition resistant.
- (CMC 305.1) Provide protective post or other impact barrier from vehicles. (CMC 305.1.1)

 Appliances in private garages and carports shall be installed with a minimum clearance of 6ft above the floor unless they are protected from vehic-

mum clearance of 6ft above the floor unless they are protected from vehular impact. (CBC 406.2.9.3)

STAIRWAYS & RAMPS Stair landings required every 12'7" of vertical rise. (CRC R311.7.3)

- Exterior stair stringers must be naturally resistant to decay or pressure treated. (CRC R317.1)
- 3. Rise shall be maximum 7.75"; Run shall be 10" minimum; headroom 6'-8" minimum; width 36" minimum, 31.5" between a handrail on one side and 27" with handrails on two sides. Variation between riser heights 3/8" maximum. A nosing not less than .75 inches but not more than 1.25 inches shall be provided on stairways with solid risers where the tread depth is less than 11 inches. The leading edge of treads shall project not more than 1.25 inches beyond the tread below. Open risers are permitted, provided the opening between the treads does not permit the passage of a 4" sphere. (Openings are not limited when the stair has a rise of 30" or less). (CRC R311.7)
- 4. Stairways with 4 or more risers shall have a handrail on one side 34" to 38" above the tread nosing. Circular handrails shall have an outside diameter of 1.25"-2"; if not circular, it shall have a perimeter dimension of 4"-6.25" with a maximum cross-sectional dimension of 2.25". See R311.7.8.3 item# 2 for type II handrails with a parameter over 6.25". A minimum clearance of 1.5" shall be maintained from the wall or other surface. Handrails shall be returned, terminate in newel posts, or safety terminals. (CRC R311.7.8.2)
- 5. Guards shall be 42" minimum height (unless acting as a handrail/guard for a stairway; the guard height may be 34"-38" in height), with openings less than 4" inches clear (guards on the open sides of stairs may have 4 3/8" openings). (CRC R312)
 6. Provide landings at the top/bottom of the stairway the width of the stairway. The depth of the landing shall be 36" minimum. (see CRC R311, 7.6 for exceptions).
- depth of the landing shall be 36" minimum. (see CRC R311.7.6 for exceptions).
 7. Usable spaces underneath enclosed/unenclosed stairways shall be protected by a minimum of ½" gypsum board. (CRC R302.7)
- 8. Ramps serving the egress door shall have a slope of not more than 1 unit vertical in 12 units horizontal (8.3-percent slope). All other ramps shall have a maximum slope of 1 unit vertical in 8 units horizontal (12.5-percent slope). Exception: Where it is technically infeasible to comply because of site constraints, ramps shall have a slope of not more than 1 unit vertical in 8 units horizontal (12.5-percent slope) (CRC R311.8.1). Provide 3'X3' landings at the top and bottom of ramps, where doors open onto ramps, and where ramps change directions. (CRC R311.8.2)
- Guards are required if deck or floor is over 30" above grade, minimum 42" high, with openings less than 4" (CRC R312). Guardrails shall be designed and detailed for lateral forces according to CRC Table 301.5.
- Provide deck lateral load connections at each end of the deck and at deck intersections per CRC R507.9.2. Specify connectors with a minimum allowable stress design capacity of 1,500lbs and install with 24" of the end of the deck. 750lb rated devices are allowed (DTT1Z as example) if located at 4 points along the deck.
- Posts/columns shall be retrained at the bottom end to prevent lateral displacement; clearly show approved post bases, straps, etc to achieve this per CRC R407.3
 Joists, girders, structural blocking and support posts shall be wood of natural resistance to decay or pressure-treated lumber when exposed to the weather. (CRC R317.1.3)

<u>ELECTRICAL</u>

- No electrical panels in closets of bathrooms. Maintain a clearance of 36" inches in front of panels, 30" wide or width of equipment and 6'-6" high for headroom. (CEC 110.26)
- Provide a minimum 3 lug intersystem bonding busbar at the main electrical service. (CEC 250.94)
 All automatic garage door openers that are installed in a residence shall have a battery backup function that is designed to operate when activated because of an electrical outage. (CBC 406.2.1)
- A concrete-encased electrode (ufer) consisting of 20' of rebar or #4 copper wire placed in the bottom of a footing is required for all new construction. (CEC 250.52(A) (3)) Bond all metal gas and water pipes to ground. All ground clamps shall be accessing.
- (3)) Bond all metal gas and water pipes to ground. All ground clamps shall be accessible and of an approved type. (CEC 250.104)
 All 15/20 ampere receptacles installed per CEC 210.52 shall be listed tamper-resistant receptacles. (CEC 406.12)
- All branch circuits supplying 15/20 ampere outlets in family rooms, dining rooms, living rooms, parlors, libraries, dens, bedrooms, sunrooms, recreation rooms, closets, hallways, kitchens, laundry room or similar rooms/areas shall be protected by a listed combination type arc-fault circuit interrupter. (CEC 210.12)
- Provide a minimum of one 20A circuit to be used for the laundry receptacle. (CEC 210.11(C)(2)) Provide a minimum of one 20A circuit for bathroom receptacle outlets. (CEC 210.11(C)(3)
- Provide at least 1 outlet in basements, garages, laundry rooms, decks, balconies, porches and within 3' of the outside of each bathroom basin. (CEC 210.52 (D), (F) & (G))

 Furnaces installed in attics and crawl spaces shall have an access platform (catwalk
- in attics), light switch and receptacle in the space. Provide a service receptacle for the furnace. (CEC 210.63)

 10. All dwellings must have one exterior outlet at the front and the back of the dwelling.
- (CEC 210.52(E))

 11. Garage receptacles shall not serve outlets outside the garage. **Exception: Garage circuit may serve readily accessible outdoor receptacle outlets.** ((CEC 210.11 (C)(4)) A minimum of 1 receptacle shall be provided for each car space. (210.52(G)
- 2. At least one wall switched lighting outlet or fixture shall be installed in every habitable room, bathroom, hallways, stairways, attached garages and detached garages with electrical power, equipment spaces (attics, basements, etc). (CEC 210.70)
- 3. Kitchens, dining rooms, pantries, breakfast nooks, and similar areas must have a minimum of two 20A circuits. Kitchen, pantry, breakfast nooks, dining rooms, **work surfaces** and similar areas counter outlets must be installed in every counter space 12" inches or wider, not greater than 4' o.c., within 24" inches of the end of any counter space and not higher than 20" above counter. (CEC 210.52 (C)) Island counter spaces shall have at least 1 receptacle outlet unless a range top or sink is installed than 2 receptacles may be required. 1 receptacle is required for peninsular counter spaces. Receptacles shall be located behind kitchen sinks if the counter area depth behind the sink is more than 12" for straight counters and 18" for corner installations. (CEC Figure 210.52(C)(1))
- 4. Receptacles shall be installed at 12' o.c. maximum in walls starting at 6' maximum from the wall end. Walls longer than two feet shall have a receptacle. Hallway walls longer than 10 ft shall have a receptacle in hallways. (CEC 210.52(A))
- 5. Receptacles shall not be installed within or directly over a bathtub or shower stall. (CEC 406.9(C) Light pendants, ceiling fans, lighting tracks, etc shall not be located within 3ft horizontally and 8ft vertically above a shower and/or bathtub threshold. (CEC 410.10(D))
- 16. All lighting/fan fixtures located in wet or damp locations shall be rated for the application. (CEC 410.10)
- 17. GFCI outlets are required: for all kitchen receptacles that are designed to serve countertop surfaces, dishwashers, bathrooms, in under-floor spaces or below grade level, in unfinished basements, crawl space lighting outlets, in exterior outlets, within 6' of a laundry/utility/wet bar sinks, laundry areas, and in all garage outlets including outlets dedicated to a single device or garage door opener. (CEC 210.8)
- 8. Carbon-monoxide alarms shall be installed in dwelling units with fuel-burning appliances or with attached garages (CRC R315):

- Outside of each separate sleeping area in the immediate vicinity of bedrooms
- On every level of a dwelling unit including basements
- Alterations, repairs, or additions exceeding 1,000 dollars (May be battery operated)
- 19. Smoke alarms shall be installed (CRC (R314):
- In each room used for sleeping purposes.
- Outside of each separate sleeping area in the immediate vicinity of bedrooms.
 In each story, including basements.
- 20. At the top of stairways between habitable floors where an intervening door or obstruction prevents smoke from reaching the smoke detector.21. Shall not be installed within 20ft horizontally of cooking appliances and no closer
- than 3ft to mechanical registers, ceiling fans and bathroom doors with a bathtub or shower unless this would prevent placement of a smoke detector (314.3(4)).

 22. Alterations, repairs, or additions exceeding 1,000 dollars. (May be battery operat-
- 23. All smoke and carbon-monoxide alarms shall be hardwired with a battery backup (smoke alarms shall have a 10-year sealed battery). (CRC R314.4 & R315.1.2)
 24. Smoke detectors within 10 feet to 20 feet of the stove shall be ionization
- type with alarm silencing switch. CRC R314.3.3.
 25. All 15/20 ampere receptacles in wet locations shall have in-use (bubble) covers installed. All receptacles in wet locations shall also be listed weather-resistant type. (CEC 406.9(B)(1))

PLUMBING

- Underfloor cleanouts shall not be more than 5' from an underfloor access, access door or trap door. (CPC 707.9)
- ABS piping shall not be exposed to direct sunlight unless protected by water based synthetic latex paints. (CPC 312.13)

 2. Difference that not be exposed to direct sunlight unless protected by water based.
- 3. PVC piping shall not be exposed to direct sunlight unless protected by water based synthetic latex paint, .04" thick wrap or otherwise protected from UV degradation. (CPC 312.14)
- 4. Underground water supply lines shall have a 14 awg blue tracer wire. (CPC 604.10.1)
 5. The adjacent space next to showers without thresholds shall be considered a "wet
- location" when using the CRC, CBC, and the CEC. (CPC 408.5)

 6. Shower compartments, regardless of shape, shall have a minimum finished interior of 1024 square inches (32" by 32") and shall also be capable of encompassing a 30" circle. The required area and dimensions shall be measured at a height equal to the top of the threshold and shall be maintained to a point of not less than 70" above the shower drain outlet. (CPC 408.6) Provide curtain rod or door a minimum of 22" in width. (CPC 408.5) Showers and tubs with showers require a non-absorbent surface up to 6' above the floor. (CRC R307.2) Minimum shower receptor slope is 1/8" per foot. (408.5)
- 7. Show location and size of the water heater on plans. Provide pressure relief valve with drain to outside for water heater. (CPC 504.6) Provide seismic strapping in the upper & lower third of the water heater a minimum of 4" above controls. (CPC 507.2) The water heater shall be of an instantaneous type or the following shall be provided (new construction only) (CEC 150(n)):
- A 120V receptacles provided within 3ft
- A category III or IV vent, or a straight (without bends) Type B vent
- Condensate drain that is no more than 2 inches higher than the base of the water heater
 Gas supply line with a minimum 200,000 Btu/hr dedicated capacity for the water
- A dedicated 120/240, 3 wire circuit with 10AWG wire to a receptacle outlet within 3' of the water heater. The unused conductor shall be electrically isolated and have a reserved circuit breaker space. Both ends of the conductor shall be labeled "spare" and be electrically isolated. A reserve single-pole circuit breaker space near this circuit labeled "Future 240V Use." (CEC 150.0(n))
- 8. Domestic hot water lines shall be insulated. Insulation shall be the thickness of the pipe diameter up to 2" in size and minimum 2" thickness for pipes larger than 2" in diameter. (CPC 609.11)
- . A 3-inch gravity drain shall be provided at the low point of the space, installed which provides 1/4-inch per foot grade and terminate at an exterior point of the building protected from blockage. The opening shall be screened with a corrosion-resistant wire mesh with mesh openings of 1/4-inch in dimension. Lengths of the gravity drains over 10 feet in length shall be first approved by the Building Official. (L-V 8.8)
- 10. Water heaters located in attics, ceiling assemblies and raised floor assemblies shall show a water-tight corrosion resistant minimum 1 ½" deep pan under the water heater with a minimum ¾ inch drain to the exterior of the building. (CPC 507.5)
- heater with a minimum ¾ inch drain to the exterior of the building. (CPC 507.5)

 11. Water closet shall be located in a space not less than 30" in width (15" on each side) and 24" minimum clearance in front. (CPC 402.5)
- 12. Indicate on the plans that the maximum hot water temperature discharging from a bathtub or whirlpool bathtub filler shall not exceed 120 degrees F. (CPC 408.3)

 13. Provide anti-sinhon valves on all hose hibs. (CPC 603.5.7)
- 13. Provide anti-siphon valves on all hose bibs. (CPC 603.5.7)14. Floor drains shall be provided with a trap primer. (CPC 1007)
- 15. Clearly label on the plans the maximum water flow rates per the (CGBSC 4.303.1):
- Water Closets: 1.28gpfUrinals: .125gpf
- Kitchen Faucets: 1.8gpm @ 60psi
- Lavatory Faucets: 1.2gpm @ 60psiShowerheads: 1.8gpm

MECHANICAL

- All newly installed gas fireplaces shall be direct vent and sealed-combustion type. (CMC 912.2)
 Any installed wood stove or pellet stove shall meet the U.S. EPA New Source Performance Standard emission limits and shall have a permanent label certifying
- emission limits.

 3. Top chimney must extend a minimum of 2 ft. above any part of the building within 10 ft. (CMC 802.5.4)
- 4. Fireplaces shall have closable metal or glass doors, have combustion air intake drawn from the outside and have a readily accessible flue dampener control. Continuous burning pilot lights are prohibited. (CEC 150.0(e))
- 5. Provide combustion air for all gas fired appliances per CMC Chapter 7.
 6. Gas vents passing through an insulated assembly shall have a metal insulation shield a minimum 2" above insulation. (CMC 509.6.2.7)
- Gas water heater and furnace are not allowed in areas opening into bathrooms, closets or bedrooms <u>unless</u> installed in a closet equipped with a listed gasketed door assembly and a listed self-closing device with all combustion air obtained from the outdoors. (CPC 504)
- 8. Roof top equipment on roofs with over 4/12 slope shall have a level 30"x30" working platform. (CMC 304.2)
- Exhaust openings terminating to the outdoors shall be covered with a corrosion resistant screen ¼"-1/2" in opening size (not required for clothes dryers). (CMC 502.1)
 Vent dryer to outside of building (not to under-floor area). Vent length shall be 14 ft. maximum. Shall terminate a minimum of 3' from the property line and any
- opening into the building. (CMC 504.4.2)

 11. Environmental Air Ducts shall not terminate less than 3' to a property line, 10' to a forced air inlet, 3' to openings into the building and shall not discharge on to a public way. (CMC 502.2.1)
- 12. Provide minimum 100 square inches make-up air for clothes dryers installed in closets. (CMC 504.4.1(1))13. Heating system is required to maintain 68 degrees at 3 ft. above floor level and 2ft
- from exterior walls in all habitable rooms. (CRC R303.10)

 4. Wood burning appliances shall not be installed in a new or existing project that is not one of the following:
- A U.S. EPA Phase II Certified wood burning heater.

 An appliance or fireplace determined to meet the U.S. EPA particulate matter emission standard of less than 7.5 grams per hour for a non-catalytic wood fired appli-

ance or 4.1 grams per hour for a catalytic wood fired appliance and is approved in

A pellet-fueled wood burning heater.

TITLE 24 ENERGY All ducts in conditioned spaces must include R-4.2 insulation. (150.1(c)9) Mini-

- mum heating and cooling filter ratings shall be MRV 13 (150.0(m)12)
- Isolation water valves required for instantaneous water heaters 6.8kBTU/hr and above. Valves shall be installed on both cold and hot water lines. Each valve will need a hose bib or other fitting allowing for flushing the water heater when the valves are closed. (CEC 110.3(c)6)
- . ALL luminaires must be high efficacy (150.0(k)1A)
- Luminaries recessed in insulated ceilings must meet five requirements (150.0(k) 1C):
- They must be rated for direct insulation contact (IC).
- They must be certified as airtight (AT) construction.
- They must have a sealed gasket or caulking between the housing and ceiling to prevent flow of heated or cooled air out of living areas and into the ceiling cavity.
- They may not contain a screw base sockets
- They shall contain a JA8 compliant light source
- 5. In bathrooms, garages, laundry rooms, and utility rooms, at least on luminaire in each of these spaces shall be controlled by a vacancy sensor **or occupant sensor provided the occupant sensor is initially programmed like a vacancy sensor (manual-on operation).** (150.0(k)2I)
- 6. Joint Appendix A (JA8) certified lamps shall be considered high efficacy. JA8 compliant light sources shall be controlled by a vacancy sensor or dimmer. (Exception: <70sf closets and hallway) (150.0(k)2K)
- Under-cabinet lighting shall be switched separately from other lighting systems. (150.0(k)2L)

 All exterior lighting shall be high efficacy, be controlled by a manual on/off switch and have one of the following controls (the manual switch shall not override the
- Photo-control and motion sensor

the kitchen and shall be HERS verified.

automatic control device): (150.0(k)3A)

- Photo-control and automatic time switch control
 Astronomical time clock control turning lights off during the day
- Astronomical time clock control turning lights on during the day
 All high efficacy light fixtures shall be certified as "high-efficacy" light fixtures by the California Energy Commission.
- 10. Contractor shall provide the homeowner with a luminaire schedule giving the lamps used in the luminaires installed. (10-103(b))
- 11. The number of blank electrical boxes more than 5 feet above the finished floor shall not be greater than the number of bedrooms. These electrical boxes must be served by a dimmer, vacancy sensor, or fan speed control. (150(k)1B)
- 12. Provide a gasket/ insulation on all interior attic/under-floor accesses. (110.7)

 13. Provide verification on the plans how the building will meet the minimum ventilation and acceptable indoor air quality requirements per ASHRAE Standard 62.2. Window operation is not a permissible method of providing the whole building ventilation airflow required. This is subject to HERS testing. The following label must be attached to the fan switch: "To maintain minimum levels of outside air ventilation required for good health, the fan control should be on at all times when the building is occupied, unless there is severe outdoor air contamination." (California Energy Code 150.0(o)) A minimum 100 CFM indoor air quality fan is required in

WILDLAND URBAN INTERFACE (WUI)

perforated cap sheet complying with ASTM D 3909. (CRC R337.5.2)

- 1. Exterior wall coverings shall be noncombustible, ignition resistant, heavy timber, log wall or fire resistive construction. (CRC R337.7)
- Exterior wall coverings shall extend from the foundation to the roof and terminate at 2 inch nominal solid blocking between rafters and overhangs. (CRC R337.7.3.2)
 Open/enclosed roof eaves and soffits, exterior porch ceilings, floor projections, under-floor areas and undersides of appendages to comply with ignition resistant con-
- struction requirements. (CRC R337.5-9)

 4. Spaces created between roof coverings and roof decking shall be fire stopped by approved materials or have one layer of minimum 72lb mineral surfaced non-
- Indicate on the plans where valley flashing is installed, the flashing shall be not less than 26awg and installed over not less than one layer of minimum 72lb mineral surfaced non-perforated cap sheet complying with ASTM D 3909 and at least 36 inches wide running the full length. (CRC R337.5.3)
 Attic gable and eaves above 12ft and under-floor ventilation shall be provided with
- inch and maximum 1/8 inch openings, non-combustible and corrosion resistant. All other eave vents shall be listed/approved to resist the intrusion of flame and burning embers. (CRC R337.6)

 Indicate on plans exterior glazing shall have a minimum of one-tempered pane,

glass block, have a fire resistive rating of 20 minutes or be tested to meet perfor-

material, minimum 1 3/8 inch solid core, minimum 20 minute fire resistive rating or

fully covered metal wire mesh, vents, or other materials that have a minimum 1/16

- mance requirements of SFM Standard 12-7A-2. (CRC R337.8.2)
 8. Operable skylights shall be protected by a noncombustible mesh screen 1/8" max openings (R337.8.2.2
 9. Exterior doors including garage doors shall be noncombustible, ignition resistant
- shall be tested to meet the performance requirements of SFM Standard 12-7Å-1. (CRC R337.8.3)

 10. Garage door perimeter gap maximum 1/8". Metal flashing, jamb and header overlap, and weather-stripping meeting section requirements are

permitted. (R337.8.4) The walking surface material of decks, porches, balconies and stairs within 10ft of grade level shall be ignition resistant material, exterior fire-retardant treated wood

or noncombustible material. (CRC R337.9) GREEN BUILDING

- Projects which disturb less than one acre of soil and are not part of a larger common plan of development which in total disturbs one acre or more, shall manage storm water drainage during construction, one or more of the following measures shall be implemented to prevent flooding of adjacent property, prevent erosion and retain soil runoff on the site (CGBSC 4.106.2):
- Retention basins of sufficient size shall be utilized to retain storm water on site
 Where storm water is conveyed to a public drainage system, collection point, gutter or similar disposal method, water shall be filtered by use of a barrier system.
- ter, or similar disposal method, water shall be filtered by use of a barrier system, wattle or other method approved by the enforcing agency.

 2. All new residential construction with attached private garages shall have the following for electric vehicle (EV) charging stations (CGBSC 4.106.4):
- 3. Install a minimum 1-inch conduit capable of supplying a 208/240V branch circuit to a suitable box location for EV charging. The other end shall terminate to the main service and/or subpanel.
- 4. The main panel and/or subpanel shall be of sufficient size to install a 40-ampere dedicated branch circuit. The dedicated overcurrent protection space shall be labeled "EV CAPABLE".
- Multiple shower heads serving a single shower shall have a combined flow rate of 1.8 gpm or the shower shall be designed to allow only one shower outlet to be in operation at a time. (CGBSC 4.303.1.3.2)
 Residential projects with an aggregate landscape area equal to or greater than 500 square feet shall comply with either a local water efficient landscape ordinance or

the current California Department of Water Resources' Model Water Efficient Land-

scape Ordinance (MWELO), whichever is more stringent. Automatic irrigation sys-

- tem controllers installed at time of final inspection shall have weather or soil based controllers and/or weather based controllers with rain sensors. Soil moisture based controllers are not required to have rain sensor input. (CGBSC 4.304)

 7. Recycle and/or reuse a minimum of **65 percent** of nonhazardous construction and
- demolition waste. (CGBSC 4.408.2)

 8. (Clearly note on the plans) At time of final inspection, a building operation and maintenance manual, compact disc, etc shall be provided containing the following:
- Directions that manual shall remain onsite for the life of the building
- Operation and maintenance instructions for equipment, appliances, roof/yard drainage, irrigation systems, etc.
 Information from local utility, water and waste recovery providers
- Public transportation and carpool options
 Material regarding importance of keeping humidity levels between 30-60 percent
 Information regarding routine maintenance procedures
- State solar energy incentive program information
 A copy of any required special inspection verifications that were required (if any)
- 10. Duct openings related to HVAC systems shall be covered with tape, plastic, sheet metal or other methods to reduce the amount of water, dust and debris which may enter the system. (CGBSC 4.504.1)

ants, caulks, paints, carpet, resilient flooring systems, etc. (CGBSC 4.504)

The project shall meet minimum pollutant control requirements for adhesives, seal-

Construction Waste Management Worksheet (Weight Method) - CW 3 Page of Project Location: ompleted By Project Manager Waste Hauler: Insert weight totals into proper category below Waste Material Type Diverted phalt Shingles ardboard arpet/Carpet Pad psum Board (Drywall) ood (engineered) Vood (solid sawn) Office Waste

Step 1 - Insert weight totals into Columns A, B, and D where appropriate.

Step 2 - Add Column A to Column B and insert total into Column C for total diverted weight.

Step 3 - Add each column down and enter totals in the boxes provided.

If Column C is larger than Column D (on the summary sheet), compliance with 65 percent waste reduction requirement is achieved.

For additional instructions and information, please see reverse.

multiple worksheets are used, transfer column totals from each worksheet to the summary sheet.

	Constru	ctic	on waste M	iana	agement W	orksneet (Volume Method	•
Project Name:							Date:	Page of
Project Location:							Completed By:	
Project Manager:								
Waste Hauler:							Signature:	
	Α		В		С	D		
	Insert cub	ic foo	t or cubic yard t	otals	into proper cate	gory below	Notes:	
						Non-Recycled		
Waste Material Type	Recycled		Reused		Diverted	(Disposed)		
Asphalt		+		=				
Asphalt Shingles		+		=				
Brick (broken)		+		=				
Cardboard		+		=				
Carpet/Carpet Pad		+		=				
Concrete		+		=				
Gypsum Board (Drywall)		+		=				
Masonry		+		=				
Metals		+		=				
Pallets		+		=				
Plastic		+		=				
Wood (engineered)		+		=				
Wood (solid sawn)		+		=				
Office Waste		+		=				
Other		+		=				
Other		+		=				<u> </u>
Other		+		=				
Total:		+		=				

Step 1 - Insert volume totals into Columns A, B, and D where appropriate.

Step 2 - Add Column A to Column B and insert total into Column C for total diverted volume.

Step 3 - Add each column down and enter totals in the boxes provided.

Instructions for Weight or Volume Method:

lf multiple worksheets are used, transfer column totals from each worksheet to the summary sheet. For additional instructions and information, please see reverse.

f Column C is larger than Column D (on the summary sheet), compliance with 65 percent waste reduction requirement is achieved.

Choose which method of construction waste tracking to be used throughout the project. Choose either the Weight Method or the Volume Method, but do not use different methods on the same worksheet.

To minimize confusion, use the same unit of measure and do not mix pounds and tons, or Cu. Yds. and Cu. Ft. on the same

worksheet. It is easiest to stay with the same unit of measure for the entire project to avoid the need for conversions.

Enter construction waste materials that are to be recycled under Recycled (Column A).
 Enter construction waste materials that are to be reused under Reused (Column B).

Enter construction waste materials that will not get recycled or reused under Non-Recycled/Disposed (Column D).
 Add amounts from Column A to amounts from Column B and enter the total under Diverted (Column C).

Add amounts in each Column (A, B, C, and D) and enter these sums into Total boxes.
 If the Diverted amount (Column C) is greater than the Non-Recycled/Disposed amount (Column D), compliance with the

construction waste reduction requirement of at least 65 percent per Section 4.408.1 has been achieved.
 When more than one worksheet is used, transfer the data onto the Weight or Volume Summary Worksheet at the completion of the project.

Examples of weights and volumes of some typical construction waste materials*

Material	Range of pounds per cubic yard	Typical pounds per cubic yard	Typical cubic yards per ton
Asphalt roofing material	250-460	360	5.5
Asphalt - paving	1300-2200	1750	1.1
Cardboard	70-135	85	23.5
Concrete	1300-2200	1750	1.1
Gypsum Drywall	315-470	400	5
Metals	220-1940	540	3.7
Wood	200-540	499	5

Standard Conversions: 1 cubic yard equals 27 cubic feet
1 ton equals 2000 pounds

* Source: Sacramento Regional Solid Waste Authority

RUSSELL DAVIDSON ARCHITECTURE + DESIGN

No. C36895
Ren. 11-30-23

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337 BANNER LAVA CAP ROAD EVADA CITY, CA 95959 PN: 037-280-016

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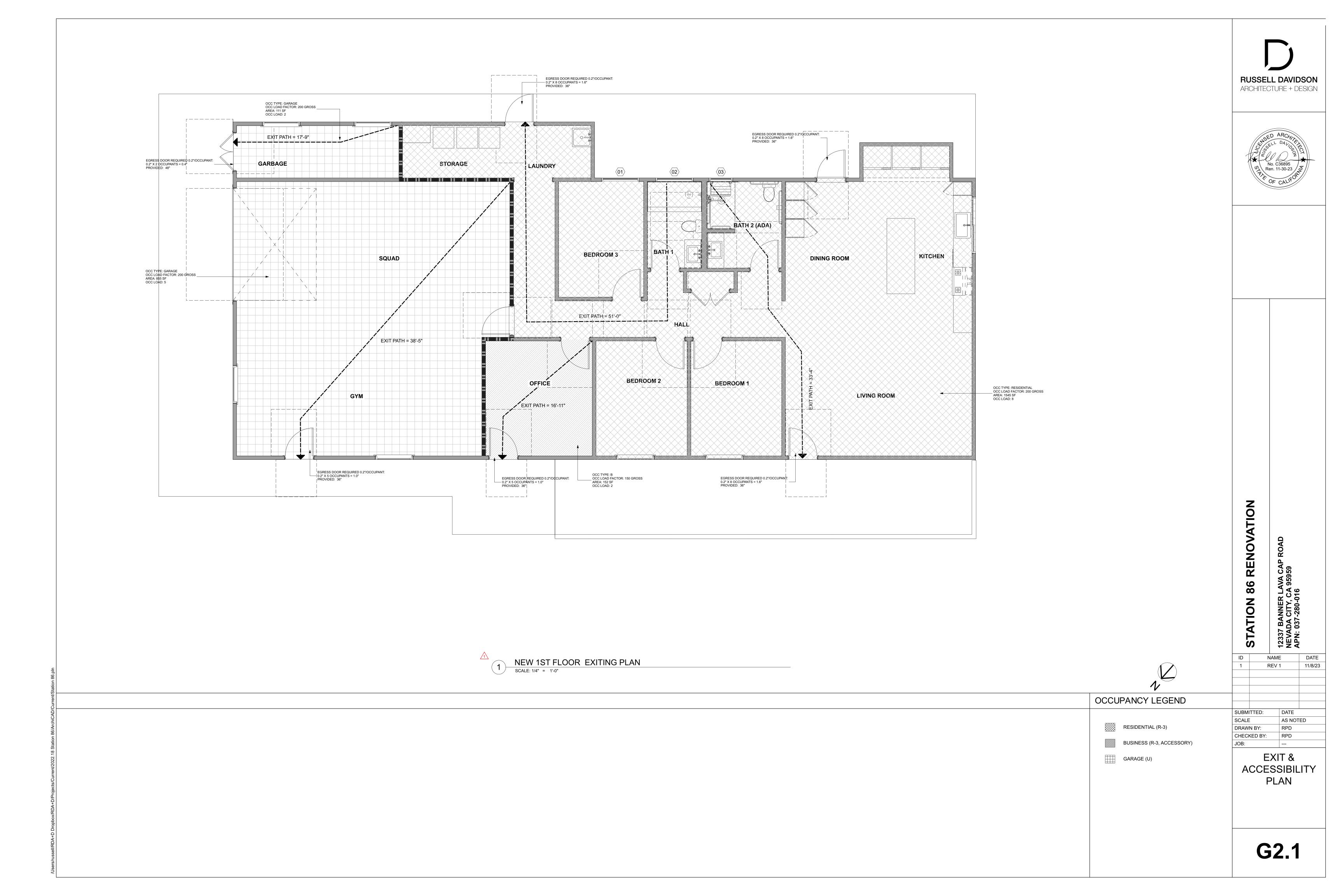
 SCALE
 AS NOTED

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 RPD

 CHECKED BY:
 RPD

GENERAL NOTES

C4 0



4.106.4.1.1 Identification. The service panel or subpanel circuit directory shall identify the overcurrent

protective device space(s) reserved for future EV charging as "EV CAPABLE". The raceway termination

location shall be permanently and visibly marked as "EV CAPABLE".

California 2022 CALIFORNIA GREEN BUILDING STANDARDS CODE

RESIDENTIAL MANDATORY MEASURES, SHEET 1 (January 2023)

installed in close proximity to the location or the proposed location of the EV space at the time of original **CHAPTER 3** construction in accordance with the California Electrical Code. I.106.4.2 New multifamily dwellings, hotels and motels and new residential parking facilities. **GREEN BUILDING** When parking is provided, parking spaces for new multifamily dwellings, hotels and motels shall meet the **SECTION 301 GENERAL** requirements of Sections 4.106.4.2.1 and 4.106.4.2.2. Calculations for spaces shall be rounded up to the nearest The service panel or subpanel circuit directory shall identify the overcurrent protective device space(s) reserved for whole number. A parking space served by electric vehicle supply equipment or designed as a future EV charging future EV charging purposes as "EV CAPABLE" in accordance with the California Electrical Code. space shall count as at least one standard automobile parking space only for the purpose of complying with any **301.1 SCOPE.** Buildings shall be designed to include the green building measures specified as mandatory in applicable minimum parking space requirements established by a local jurisdiction. See Vehicle Code Section 22511.2 4.106.4.2.5 Electric Vehicle Ready Space Signage. the application checklists contained in this code. Voluntary green building measures are also included in the Electric vehicle ready spaces shall be identified by signage or pavement markings, in compliance with Caltrans application checklists and may be included in the design and construction of structures covered by this code, Traffic Operations Policy Directive 13-01 (Zero Emission Vehicle Signs and Pavement Markings) or its but are not required unless adopted by a city, county, or city and county as specified in Section 101.7. 4.106.4.2.1Multifamily development projects with less than 20 dwelling units; and hotels and motels with less than 20 sleeping units or guest rooms. 301.1.1 Additions and alterations. [HCD] The mandatory provisions of Chapter 4 shall be applied to The number of dwelling units, sleeping units or guest rooms shall be based on all buildings on a project site subject to 4.106.4.3 Electric vehicle charging for additions and alterations of parking facilities serving existing additions or alterations of existing residential buildings where the addition or alteration increases the building's conditioned area, volume, or size. The requirements shall apply only to and/or within the When new parking facilities are added, or electrical systems or lighting of existing parking facilities are added or specific area of the addition or alteration. 1.EV Capable. Ten (10) percent of the total number of parking spaces on a building site, provided for all types altered and the work requires a building permit, ten (10) percent of the total number of parking spaces added or of parking facilities, shall be electric vehicle charging spaces (EV spaces) capable of supporting future Level 2 altered shall be electric vehicle charging spaces (EV spaces) capable of supporting future Level 2 EVSE. The mandatory provision of Section 4.106.4.2 may apply to additions or alterations of existing parking EVSE. Electrical load calculations shall demonstrate that the electrical panel service capacity and electrical facilities or the addition of new parking facilities serving existing multifamily buildings. See Section system, including any on-site distribution transformer(s), have sufficient capacity to simultaneously charge all 4.106.4.3 for application. EVs at all required EV spaces at a minimum of 40 amperes. 1.Construction documents are intended to demonstrate the project's capability and capacity for facilitating future Note: Repairs including, but not limited to, resurfacing, restriping and repairing or maintaining existing The service panel or subpanel circuit directory shall identify the overcurrent protective device space(s) reserved lighting fixtures are not considered alterations for the purpose of this section. for future EV charging purposes as "EV CAPABLE" in accordance with the California Electrical Code. 2. There is no requirement for EV spaces to be constructed or available until EV chargers are installed for use Note: On and after January 1, 2014, residential buildings undergoing permitted alterations, additions, or improvements shall replace noncompliant plumbing fixtures with water-conserving plumbing fixtures. **DIVISION 4.2 ENERGY EFFICIENCY** Plumbing fixture replacement is required prior to issuance of a certificate of final completion, certificate 1.When EV chargers (Level 2 EVSE) are installed in a number equal to or greater than the required number of occupancy or final permit approval by the local building department. See Civil Code Section 1101.1, et seq., for the definition of a noncompliant plumbing fixture, types of residential buildings affected and **4.201.1 SCOPE.** For the purposes of mandatory energy efficiency standards in this code, the California Energy other important enactment dates. 2.When EV chargers (Level 2 EVSE) are installed in a number less than the required number of EV capable Commission will continue to adopt mandatory standards. spaces, the number of EV capable spaces required may be reduced by a number equal to the number of EV chargers installed. 301.2 LOW-RISE AND HIGH-RISE RESIDENTIAL BUILDINGS. [HCD] The provisions of DIVISION 4.3 WATER EFFICIENCY AND CONSERVATION individual sections of CALGreen may apply to either low-rise residential buildings high-rise residential 4.303 INDOOR WATER USE buildings, or both. Individual sections will be designated by banners to indicate where the section applies 4.303.1 WATER CONSERVING PLUMBING FIXTURES AND FITTINGS. Plumbing fixtures (water closets and specifically to low-rise only (LR) or high-rise only (HR). When the section applies to both low-rise and a. Construction documents are intended to demonstrate the project's capability and capacity for facilitating urinals) and fittings (faucets and showerheads) shall comply with the sections 4.303.1.1, 4.303.1.2, 4.303.1.3, high-rise buildings, no banner will be used. b. There is no requirement for EV spaces to be constructed or available until receptacles for EV charging or **SECTION 302 MIXED OCCUPANCY BUILDINGS** Note: All noncompliant plumbing fixtures in any residential real property shall be replaced with water-conserving plumbing fixtures. Plumbing fixture replacement is required prior to issuance of a certificate of final **302.1 MIXED OCCUPANCY BUILDINGS.** In mixed occupancy buildings, each portion of a building completion, certificate of occupancy, or final permit approval by the local building department. See Civil 2.EV Ready. Twenty-five (25) percent of the total number of parking spaces shall be equipped with low power shall comply with the specific green building measures applicable to each specific occupancy. Code Section 1101.1, et seq., for the definition of a noncompliant plumbing fixture, types of residential Level 2 EV charging receptacles. For multifamily parking facilities, no more than one receptacle is required per buildings affected and other important enactment dates. dwelling unit when more than one parking space is provided for use by a single dwelling unit. 1. [HCD] Accessory structures and accessory occupancies serving residential buildings shall 4.303.1.1 Water Closets. The effective flush volume of all water closets shall not exceed 1.28 gallons per comply with Chapter 4 and Appendix A4, as applicable. Exception: Areas of parking facilities served by parking lifts. 2. [HCD] For purposes of CALGreen, live/work units, complying with Section 419 of the California flush. Tank-type water closets shall be certified to the performance criteria of the U.S. EPA WaterSense Building Code, shall not be considered mixed occupancies. Live/Work units shall comply with Specification for Tank-type Toilets. I.106.4.2.2 Multifamily development projects with 20 or more dwelling units, hotels and motels with 20 or more Chapter 4 and Appendix A4, as applicable. sleeping units or guest rooms Note: The effective flush volume of dual flush toilets is defined as the composite, average flush volume DIVISION 4.1 PLANNING AND DESIGN The number of dwelling units, sleeping units or guest rooms shall be based on all buildings on a project site subject to of two reduced flushes and one full flush. **ABBREVIATION DEFINITIONS:** 4.303.1.2 Urinals. The effective flush volume of wall mounted urinals shall not exceed 0.125 gallons per flush. 1.EV Capable. Ten (10) percent of the total number of parking spaces on a building site, provided for all types Department of Housing and Community Development The effective flush volume of all other urinals shall not exceed 0.5 gallons per flush. of parking facilities, shall be electric vehicle charging spaces (EV spaces) capable of supporting future Level 2 California Building Standards Commission EVSE. Electrical load calculations shall demonstrate that the electrical panel service capacity and electrical Division of the State Architect, Structural Safety 4.303.1.3 Showerheads. system, including any on-site distribution transformer(s), have sufficient capacity to simultaneously charge all OSHPD Office of Statewide Health Planning and Development EVs at all required EV spaces at a minimum of 40 amperes. Low Rise **4.303.1.3.1 Single Showerhead.** Showerheads shall have a maximum flow rate of not more than 1.8 High Rise gallons per minute at 80 psi. Showerheads shall be certified to the performance criteria of the U.S. EPA The service panel or subpanel circuit directory shall identify the overcurrent protective device space(s) reserve AA Additions and Alterations WaterSense Specification for Showerheads. for future EV charging purposes as "EV CAPABLE" in accordance with the California Electrical Code. 4.303.1.3.2 Multiple showerheads serving one shower. When a shower is served by more than one CHAPTER 4 Exception: When EV chargers (Level 2 EVSE) are installed in a number greater than five (5) percent of showerhead, the combined flow rate of all the showerheads and/or other shower outlets controlled by parking spaces required by Section 4.106.4.2.2, Item 3, the number of EV capable spaces required may be a single valve shall not exceed 1.8 gallons per minute at 80 psi, or the shower shall be designed to only **RESIDENTIAL MANDATORY MEASURES** reduced by a number equal to the number of EV chargers installed over the five (5) percent required. allow one shower outlet to be in operation at a time. Note: A hand-held shower shall be considered a showerhead **SECTION 4.102 DEFINITIONS** a. Construction documents shall show locations of future EV spaces. 4.303.1.4 Faucets. 4.102.1 DEFINITIONS The following terms are defined in Chapter 2 (and are included here for reference) b.There is no requirement for EV spaces to be constructed or available until receptacles for EV charging or 4.303.1.4.1 Residential Lavatory Faucets. The maximum flow rate of residential lavatory faucets shall EV chargers are installed for use. not exceed 1.2 gallons per minute at 60 psi. The minimum flow rate of residential lavatory faucets shall FRENCH DRAIN. A trench, hole or other depressed area loosely filled with rock, gravel, fragments of brick or similar not be less than 0.8 gallons per minute at 20 psi. **2.EV Ready.** Twenty-five (25) percent of the total number of parking spaces shall be equipped with low power pervious material used to collect or channel drainage or runoff water. Level 2 EV charging receptacles. For multifamily parking facilities, no more than one receptacle is required pe **4.303.1.4.2** Lavatory Faucets in Common and Public Use Areas. The maximum flow rate of lavatory WATTLES. Wattles are used to reduce sediment in runoff. Wattles are often constructed of natural plant materials dwelling unit when more than one parking space is provided for use by a single dwelling unit. faucets installed in common and public use areas (outside of dwellings or sleeping units) in residential such as hay, straw or similar material shaped in the form of tubes and placed on a downflow slope. Wattles are also buildings shall not exceed 0.5 gallons per minute at 60 psi. used for perimeter and inlet controls. Exception: Areas of parking facilities served by parking lifts. **4.303.1.4.3 Metering Faucets.** Metering faucets when installed in residential buildings shall not deliver 4.106 SITE DEVELOPMENT 3.EV Chargers. Five (5) percent of the total number of parking spaces shall be equipped with Level 2 EVSE. **4.106.1 GENERAL**. Preservation and use of available natural resources shall be accomplished through evaluation Where common use parking is provided, at least one EV charger shall be located in the common use parking and careful planning to minimize negative effects on the site and adjacent areas. Preservation of slopes, area and shall be available for use by all residents or guests. **4.303.1.4.4 Kitchen Faucets.** The maximum flow rate of kitchen faucets shall not exceed 1.8 gallons management of storm water drainage and erosion controls shall comply with this section. per minute at 60 psi. Kitchen faucets may temporarily increase the flow above the maximum rate, but not When low power Level 2 EV charging receptacles or Level 2 EVSE are installed beyond the minimum required, to exceed 2.2 gallons per minute at 60 psi, and must default to a maximum flow rate of 1.8 gallons per I.106.2 STORM WATER DRAINAGE AND RETENTION DURING CONSTRUCTION. Projects which disturb less an automatic load management system (ALMS) may be used to reduce the maximum required electrical than one acre of soil and are not part of a larger common plan of development which in total disturbs one acre capacity to each space served by the ALMS. The electrical system and any on-site distribution transformers or more, shall manage storm water drainage during construction. In order to manage storm water drainage shall have sufficient capacity to deliver at least 3.3 kW simultaneously to each EV charging station (EVCS) Note: Where complying faucets are unavailable, aerators or other means may be used to achieve during construction, one or more of the following measures shall be implemented to prevent flooding of adjacent served by the ALMS. The branch circuit shall have a minimum capacity of 40 amperes, and installed EVSE shall property, prevent erosion and retain soil runoff on the site. have a capacity of not less than 30 amperes. ALMS shall not be used to reduce the minimum required electrical capacity to the required EV capable spaces. 4.303.1.4.5 Pre-rinse spray valves. Retention basins of sufficient size shall be utilized to retain storm water on the site. When installed, shall meet the requirements in the California Code of Regulations, Title 20 (Appliance 2. Where storm water is conveyed to a public drainage system, collection point, gutter or similar 4.106.4.2.2.1 Electric vehicle charging stations (EVCS). Efficiency Regulations), Sections 1605.1 (h)(4) Table H-2, Section 1605.3 (h)(4)(A), and Section 1607 disposal method, water shall be filtered by use of a barrier system, wattle or other method approved Electric vehicle charging stations required by Section 4.106.4.2.2, Item 3, shall comply with Section 4.106.4.2.2.1. (d)(7) and shall be equipped with an integral automatic shutoff. by the enforcing agency. 3. Compliance with a lawfully enacted storm water management ordinance. Exception: Electric vehicle charging stations serving public accommodations, public housing, motels and hotels FOR REFERENCE ONLY: The following table and code section have been reprinted from the California shall not be required to comply with this section. See California Building Code, Chapter 11B, for applicable Code of Regulations, Title 20 (Appliance Efficiency Regulations), Section 1605.1 (h)(4) and Section Note: Refer to the State Water Resources Control Board for projects which disturb one acre or more of soil, or are part of a larger common plan of development which in total disturbs one acre or more of soil. 4.106.4.2.2.1.1 Location. EVCS shall comply with at least one of the following options: (Website: https://www.waterboards.ca.gov/water_issues/programs/stormwater/construction.html) TABLE H-2 1.106.3 GRADING AND PAVING. Construction plans shall indicate how the site grading or drainage system will 1.The charging space shall be located adjacent to an accessible parking space meeting the requirements of the California Building Code, Chapter 11A, to allow use of the EV charger from the accessible parking space. manage all surface water flows to keep water from entering buildings. Examples of methods to manage surface STANDARDS FOR COMMERCIAL PRE-RINSE SPRAY water include, but are not limited to, the following: VALUES MANUFACTURED ON OR AFTER JANUARY 28, 2019 2. The charging space shall be located on an accessible route, as defined in the California Building Code, 2. Water collection and disposal systems PRODUCT CLASS French drains Exception: Electric vehicle charging stations designed and constructed in compliance with the California MAXIMUM FLOW RATE (gpm) [spray force in ounce force (ozf)] Building Code, Chapter 11B, are not required to comply with Section 4.106.4.2.2.1.1 and Section Water retention gardens 5. Other water measures which keep surface water away from buildings and aid in groundwater Product Class 1 (≤ 5.0 ozf) 1.00 4.106.4.2.2.1.2 Electric vehicle charging stations (EVCS) dimensions. The charging spaces shall be designed to comply with the following: **Exception**: Additions and alterations not altering the drainage path. Product Class 2 (> 5.0 ozf and \leq 8.0 ozf) 1.20 Product Class 3 (> 8.0 ozf) 1.106.4 Electric vehicle (EV) charging for new construction. New construction shall comply with Sections 1. The minimum length of each EV space shall be 18 feet (5486 mm). 4.106.4.1 or 4.106.4.2 to facilitate future installation and use of EV chargers. Electric vehicle supply Title 20 Section 1605.3 (h)(4)(A): Commercial prerinse spray values manufactured on or after January equipment (EVSE) shall be installed in accordance with the California Electrical Code, Article 625. 2. The minimum width of each EV space shall be 9 feet (2743 mm). 1, 2006, shall have a minimum spray force of not less than 4.0 ounces-force (ozf)[113 grams-force(gf)] 3.One in every 25 charging spaces, but not less than one, shall also have an 8-foot (2438 mm) wide minimum 4.303.2 Submeters for multifamily buildings and dwelling units in mixed-used residential/commercial 1. On a case-by-case basis, where the local enforcing agency has determined EV charging and aisle. A 5-foot (1524 mm) wide minimum aisle shall be permitted provided the minimum width of the EV space is infrastructure are not feasible based upon one or more of the following conditions: Submeters shall be installed to measure water usage of individual rental dwelling units in accordance with the 1.1 Where there is no local utility power supply or the local utility is unable to supply adequate California Plumbing Code. a.Surface slope for this EV space and the aisle shall not exceed 1 unit vertical in 48 units horizontal (2.083 1.2 Where there is evidence suitable to the local enforcing agency substantiating that additional percent slope) in any direction. **4.303.3 Standards for plumbing fixtures and fittings**. Plumbing fixtures and fittings shall be installed in local utility infrastructure design requirements, directly related to the implementation of Section accordance with the California Plumbing Code, and shall meet the applicable standards referenced in Table 4.106.4, may adversely impact the construction cost of the project. 4.106.4.2.2.1.3 Accessible EV spaces. 1701.1 of the California Plumbing Code. 2. Accessory Dwelling Units (ADU) and Junior Accessory Dwelling Units (JADU) without additional In addition to the requirements in Sections 4.106.4.2.2.1.1 and 4.106.4.2.2.1.2, all EVSE, when installed, shall comply with the accessibility provisions for EV chargers in the California Building Code, Chapter 11B. EV ready parking facilities. spaces and EVCS in multifamily developments shall comply with California Building Code, Chapter 11A, Section THIS TABLE COMPILES THE DATA IN SECTION 4.303.1, AND IS INCLUDED AS A CONVENIENCE FOR THE USER. 4.106.4.1 New one- and two-family dwellings and townhouses with attached private garages. For each dwelling unit, install a listed raceway to accommodate a dedicated 208/240-volt branch circuit. The raceway TABLE - MAXIMUM FIXTURE WATER USE shall not be less than trade size 1 (nominal 1-inch inside diameter). The raceway shall originate at the main 1.Single EV space required. Install a listed raceway capable of accommodating a 208/240-volt dedicated branch circuit. The raceway shall not be less than trade size 1 (nominal 1-inch inside diameter). The raceway shall service or subpanel and shall terminate into a listed cabinet, box or other enclosure in close proximity to the **FIXTURE TYPE FLOW RATE** proposed location of an EV charger. Raceways are required to be continuous at enclosed, inaccessible or originate at the main service or subpanel and shall terminate into a listed cabinet, box or enclosure in close concealed areas and spaces. The service panel and/or subpanel shall provide capacity to install a 40-ampere proximity to the location or the proposed location of the EV space. Construction documents shall identify the SHOWER HEADS (RESIDENTIAL) 1.8 GMP @ 80 PSI 208/240-volt minimum dedicated branch circuit and space(s) reserved to permit installation of a branch circuit raceway termination point, receptacle or charger location, as applicable. The service panel and/ or subpanel shall have a 40-ampere minimum dedicated branch circuit, including branch circuit overcurrent protective device MAX. 1.2 GPM @ 60 PSI MIN. 0.8 GPM @ 20 installed, or space(s) reserved to permit installation of a branch circuit overcurrent protective device. LAVATORY FAUCETS (RESIDENTIAL) Exemption: A raceway is not required if a minimum 40-ampere 208/240-volt dedicated EV branch circuit is installed in close proximity to the proposed location of an EV charger at the time of original construction in Exception: A raceway is not required if a minimum 40-ampere 208/240-volt dedicated EV branch circuit is LAVATORY FAUCETS IN COMMON & PUBLIC 0.5 GPM @ 60 PSI accordance with the California Electrical Code. installed in close proximity to the location or the proposed location of the EV space, at the time of original **USE AREAS** construction in accordance with the California Electrical Code.

2.Multiple EV spaces required. Construction documents shall indicate the raceway termination point and the

electrical load calculations. Plan design shall be based upon a 40-ampere minimum branch circuit. Required

raceways and related components that are planned to be installed underground, enclosed, inaccessible or in

location of installed or future EV spaces, receptacles or EV chargers. Construction documents shall also provide information on amperage of installed or future receptacles or EVSE, raceway method(s), wiring schematics and

NOT APPLICABLE
RESPONSIBLE PARTY (ie: ARCHITECT, ENGINEER, 4.304 OUTDOOR WATER USE 4.304.1 OUTDOOR POTABLE WATER USE IN LANDSCAPE AREAS. Residential developments shall comply with a local water efficient landscape ordinance or the current California Department of Water Resources' Model Water Efficient Landscape Ordinance (MWELO), whichever is more stringent. 1. The Model Water Efficient Landscape Ordinance (MWELO) is located in the California Code Regulations, Title 23, Chapter 2.7, Division 2. MWELO and supporting documents, including water budget calculator, are available at: https://www.water.ca.gov/ DIVISION 4.4 MATERIAL CONSERVATION AND RESOURCE **EFFICIENCY** 4.406 ENHANCED DURABILITY AND REDUCED MAINTENANCE 4.406.1 RODENT PROOFING. Annular spaces around pipes, electric cables, conduits or other openings in sole/bottom plates at exterior walls shall be protected against the passage of rodents by closing such openings with cement mortar, concrete masonry or a similar method acceptable to the enforcing 4.408 CONSTRUCTION WASTE REDUCTION, DISPOSAL AND RECYCLING **4.408.1 CONSTRUCTION WASTE MANAGEMENT.** Recycle and/or salvage for reuse a minimum of 65 percent of the non-hazardous construction and demolition waste in accordance with either Section 4.408.2, 4.408.3 or 4.408.4, or meet a more stringent local construction and demolition waste 1. Excavated soil and land-clearing debris. 2. Alternate waste reduction methods developed by working with local agencies if diversion or recycle facilities capable of compliance with this item do not exist or are not located reasonably 3. The enforcing agency may make exceptions to the requirements of this section when isolated jobsites are located in areas beyond the haul boundaries of the diversion facility. I.408.2 CONSTRUCTION WASTE MANAGEMENT PLAN. Submit a construction waste management plan in conformance with Items 1 through 5. The construction waste management plan shall be updated as necessary and shall be available during construction for examination by the enforcing agency. 1. Identify the construction and demolition waste materials to be diverted from disposal by recycling, reuse on the project or salvage for future use or sale. 2. Specify if construction and demolition waste materials will be sorted on-site (source separated) or bulk mixed (single stream) 3. Identify diversion facilities where the construction and demolition waste material collected will be 4. Identify construction methods employed to reduce the amount of construction and demolition waste 5. Specify that the amount of construction and demolition waste materials diverted shall be calculated by weight or volume, but not by both. 1.408.3 WASTE MANAGEMENT COMPANY. Utilize a waste management company, approved by the enforcing agency, which can provide verifiable documentation that the percentage of construction and demolition waste material diverted from the landfill complies with Section 4.408.1. Note: The owner or contractor may make the determination if the construction and demolition waste materials will be diverted by a waste management company. I.408.4 WASTE STREAM REDUCTION ALTERNATIVE [LR]. Projects that generate a total combined weight of construction and demolition waste disposed of in landfills, which do not exceed 3.4 lbs./sq.ft. of the building area shall meet the minimum 65% construction waste reduction requirement in 4.408.4.1 WASTE STREAM REDUCTION ALTERNATIVE. Projects that generate a total combined weight of construction and demolition waste disposed of in landfills, which do not exceed 2 pounds per square foot of the building area, shall meet the minimum 65% construction waste reduction requirement in Section 4.408.1 I.408.5 DOCUMENTATION. Documentation shall be provided to the enforcing agency which demonstrates compliance with Section 4.408.2, items 1 through 5, Section 4.408.3 or Section 4.408.4... 1. Sample forms found in "A Guide to the California Green Building Standards Code (Residential)" located at www.hcd.ca.gov/CALGreen.html may be used to assist in documenting compliance with this section. 2. Mixed construction and demolition debris (C & D) processors can be located at the California Department of Resources Recycling and Recovery (CalRecycle). 4.410 BUILDING MAINTENANCE AND OPERATION **4.410.1 OPERATION AND MAINTENANCE MANUAL.** At the time of final inspection, a manual, compact disc, web-based reference or other media acceptable to the enforcing agency which includes all of the following shall be placed in the building: 1. Directions to the owner or occupant that the manual shall remain with the building throughout the life cycle of the structure. 2. Operation and maintenance instructions for the following: a. Equipment and appliances, including water-saving devices and systems, HVAC systems, photovoltaic systems, electric vehicle chargers, water-heating systems and other major appliances and equipment. b. Roof and yard drainage, including gutters and downspouts. c. Space conditioning systems, including condensers and air filters. d. Landscape irrigation systems. e. Water reuse systems. Information from local utility, water and waste recovery providers on methods to further reduce resource consumption, including recycle programs and locations. 4. Public transportation and/or carpool options available in the area. 5. Educational material on the positive impacts of an interior relative humidity between 30-60 percent and what methods an occupant may use to maintain the relative humidity level in that range. 6. Information about water-conserving landscape and irrigation design and controllers which conserve 7. Instructions for maintaining gutters and downspouts and the importance of diverting water at least 5 feet away from the foundation. 8. Information on required routine maintenance measures, including, but not limited to, caulking, painting, grading around the building, etc.

9. Information about state solar energy and incentive programs available.

DIVISION 4.5 ENVIRONMENTAL QUALITY

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

12. Information and/or drawings identifying the location of grab bar reinforcements.

space around residential structures.

ordinance, if more restrictive.

SECTION 4.501 GENERAL

SECTION 4.502 DEFINITIONS

4.501.1 Scope

1.8 GPM @ 60 PSI

0.2 GAL/CYCLE

1.28 GAL/FLUSH

0.125 GAL/FLUSH

5.102.1 DEFINITIONS

10. A copy of all special inspections verifications required by the enforcing agency or this code.

4.410.2 RECYCLING BY OCCUPANTS. Where 5 or more multifamily dwelling units are constructed on a

building site, provide readily accessible area(s) that serves all buildings on the site and are identified for the

depositing, storage and collection of non-hazardous materials for recycling, including (at a minimum) paper, corrugated cardboard, glass, plastics, organic waster, and metals, or meet a lawfully enacted local recycling

Exception: Rural jurisdictions that meet and apply for the exemption in Public Resources Code Section

The provisions of this chapter shall outline means of reducing the quality of air contaminants that are odorous,

irritating and/or harmful to the comfort and well being of a building's installers, occupants and neighbors.

AGRIFIBER PRODUCTS. Agrifiber products include wheatboard, strawboard, panel substrates and door

medium density fiberboard. "Composite wood products" does not include hardboard, structural plywood,

structural panels, structural composite lumber, oriented strand board, glued laminated timber, prefabricated

COMPOSITE WOOD PRODUCTS. Composite wood products include hardwood plywood, particleboard and

wood I-joists or finger-jointed lumber, all as specified in California Code of regulations (CCR), title 17, Section

DIRECT-VENT APPLIANCE. A fuel-burning appliance with a sealed combustion system that draws all air for

cores, not including furniture, fixtures and equipment (FF&E) not considered base building elements.

combustion from the outside atmosphere and discharges all flue gases to the outside atmosphere.

42649.82 (a)(2)(A) et seq. are note required to comply with the organic waste portion of

11. Information from the Department of Forestry and Fire Protection on maintenance of defensible

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concealed areas and spaces shall be installed at the time of original construction. DISCLAIMER: THIS DOCUMENT IS PROVIDED AND INTENDED TO BE USED AS A MEANS TO INDICATE AREAS OF COMPLIANCE WITH THE CALIFORNIA GREEN BUILDING STANDARDS (CALGREEN) CODE. DUE TO THE VARIABLES BETWEEN BUILDING DEPARTMENT, INCLUDING VERIFICATION WITH THE FULL CODE.

KITCHEN FAUCETS

WATER CLOSET

URINALS

METERING FAUCETS



California 2022 CALIFORNIA GREEN BUILDING STANDARDS CODE

RESIDENTIAL MANDATORY MEASURES, SHEET 2 (January 2023)

MAXIMUM INCREMENTAL REACTIVITY (MIR). The maximum change in weight of ozone formed by adding a compound to the "Base Reactive Organic Gas (ROG) Mixture" per weight of compound added, expressed to hundredths of a gram (g O3/g ROC). Note: MIR values for individual compounds and hydrocarbon solvents are specified in CCR, Title 17, Sections 94700

MOISTURE CONTENT. The weight of the water in wood expressed in percentage of the weight of the oven-dry wood. PRODUCT-WEIGHTED MIR (PWMIR). The sum of all weighted-MIR for all ingredients in a product subject to this

article. The PWMIR is the total product reactivity expressed to hundredths of a gram of ozone formed per gram of product (excluding container and packaging). Note: PWMIR is calculated according to equations found in CCR, Title 17, Section 94521 (a).

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

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

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

4.504 POLLUTANT CONTROL

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

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

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

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

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

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

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

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

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

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

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

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

TABLE 4.504.3 - VOC CONTENT LIMITS FOR

ARCHITECTURAL COATINGS2

COATING CATEGORY	VOC LIMIT
FLAT COATINGS	50
NON-FLAT COATINGS	100
NONFLAT-HIGH GLOSS COATINGS	150
SPECIALTY COATINGS	
ALUMINUM ROOF COATINGS	400
BASEMENT SPECIALTY COATINGS	400
BITUMINOUS ROOF COATINGS	50
BITUMINOUS ROOF PRIMERS	350
BOND BREAKERS	350
CONCRETE CURING COMPOUNDS	350
CONCRETE/MASONRY SEALERS	100
DRIVEWAY SEALERS	50
DRY FOG COATINGS	150
FAUX FINISHING COATINGS	350
FIRE RESISTIVE COATINGS	350
FLOOR COATINGS	100
FORM-RELEASE COMPOUNDS	250
GRAPHIC ARTS COATINGS (SIGN PAINTS)	500
HIGH TEMPERATURE COATINGS	420
INDUSTRIAL MAINTENANCE COATINGS	250
LOW SOLIDS COATINGS1	120
MAGNESITE CEMENT COATINGS	450
MASTIC TEXTURE COATINGS	100
METALLIC PIGMENTED COATINGS	500
MULTICOLOR COATINGS	250
PRETREATMENT WASH PRIMERS	420
PRIMERS, SEALERS, & UNDERCOATERS	100
REACTIVE PENETRATING SEALERS	350
RECYCLED COATINGS	250
ROOF COATINGS	50
RUST PREVENTATIVE COATINGS	250
SHELLACS	
CLEAR	730
OPAQUE	550
SPECIALTY PRIMERS, SEALERS & UNDERCOATERS	100
STAINS	250
STONE CONSOLIDANTS	450
SWIMMING POOL COATINGS	340
TRAFFIC MARKING COATINGS	100
TUB & TILE REFINISH COATINGS	420
WATERPROOFING MEMBRANES	250
WOOD COATINGS	275
WOOD PRESERVATIVES	350
ZINC-RICH PRIMERS	340

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

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

TABLE 4.504.5 - FORMALDEHYDE LIMITS ₁						
MAXIMUM FORMALDEHYDE EMISSIONS IN PA	RTS PER MILLION					
PRODUCT	CURRENT LIMIT					
HARDWOOD PLYWOOD VENEER CORE	0.05					
HARDWOOD PLYWOOD COMPOSITE CORE	0.05					
PARTICLE BOARD	0.09					
MEDIUM DENSITY FIBERBOARD	0.11					
THIN MEDIUM DENSITY FIBERBOARD2	0.13					

- 1. VALUES IN THIS TABLE ARE DERIVED FROM THOSE SPECIFIED BY THE CALIF, AIR RESOURCES BOARD, AIR TOXICS CONTROL MEASURE FOR COMPOSITE WOOD AS TESTED IN ACCORDANCE WITH ASTM E 1333. FOR ADDITIONAL INFORMATION, SEE CALIF. CODE OF REGULATIONS, TITLE 17, SECTIONS 93120 THROUGH
- 2. THIN MEDIUM DENSITY FIBERBOARD HAS A MAXIMUM THICKNESS OF 5/16" (8 MM).

DIVISION 4.5 ENVIRONMENTAL QUALITY (continued) 4.504.3 CARPET SYSTEMS. All carpet installed in the building interior shall meet the requirements of the California Department of Public Health, "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers," Version 1.2, January 2017 (Emission testing method for

See California Department of Public Health's website for certification programs and testing labs.

https://www.cdph.ca.gov/Programs/CCDPHP/DEODC/EHLB/IAQ/Pages/VOC.aspx.

California Specification 01350)

4.504.3.1 Carpet cushion. All carpet cushion installed in the building interior shall meet the requirements of the California Department of Public Health, "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers," Version 1.2, January 2017 (Emission testing method for California Specification 01350)

See California Department of Public Health's website for certification programs and testing labs.

https://www.cdph.ca.gov/Programs/CCDPHP/DEODC/EHLB/IAQ/Pages/VOC.aspx.

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

4.504.4 RESILIENT FLOORING SYSTEMS. Where resilient flooring is installed, at least 80% of floor area receiving resilient flooring shall meet the requirements of the California Department of Public Health, "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers," Version 1.2, January 2017 (Emission testing method for California Specification 01350)

See California Department of Public Health's website for certification programs and testing labs.

hhtps://www.cdph.ca.gov/Programs/CCDPHP/DEODC/EHLB/IAQ/Pages/VOC.aspx.

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

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

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

4.505 INTERIOR MOISTURE CONTROL

4.505.1 General. Buildings shall meet or exceed the provisions of the California Building Standards Code.

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

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

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

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

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

acceptable to the enforcing agency provided at the time of approval to enclose the wall and floor framing.

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

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

1. Fans shall be ENERGY STAR compliant and be ducted to terminate outside the building.

2. Unless functioning as a component of a whole house ventilation system, fans must be controlled by a

a. Humidity controls shall be capable of adjustment between a relative humidity range less than or

equal to 50% to a maximum of 80%. A humidity control may utilize manual or automatic means of b. A humidity control may be a separate component to the exhaust fan and is not required to be integral (i.e., built-in)

DISCLAIMER: THIS DOCUMENT IS PROVIDED AND INTENDED TO BE USED AS A MEANS TO INDICATE AREAS OF COMPLIANCE WITH THE CALIFORNIA GREEN BUILDING STANDARDS (CALGREEN) CODE. DUE TO THE VARIABLES BETWEEN BUILDING DEPARTMENT JURISDICTIONS, THIS CHECKLIST IS TO BE USED ON AN INDIVIDUAL PROJECT BASIS AND MAY BE MODIFIED BY THE END USER TO MEET THOSE INDIVIDUAL NEEDS. THE END USER ASSUMES ALL RESPONSIBILITY ASSOCIATED WITH THE VARIABLES BETWEEN BUILDING VERIFICATION WITH THE FULL CODE.

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

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

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

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

NOT APPLICABLE
RESPONSIBLE PARTY (ie: ARCHITECT, ENGINEER,

CHAPTER 7 **INSTALLER & SPECIAL INSPECTOR QUALIFICATIONS**

702 QUALIFICATIONS

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

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

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

- Certification by a national or regional green building program or standard publisher.
- 2. Certification by a statewide energy consulting or verification organization, such as HERS raters, building performance contractors, and home energy auditors.
- Successful completion of a third party apprentice training program in the appropriate trade. 4. Other programs acceptable to the enforcing agency.
- 1. Special inspectors shall be independent entities with no financial interest in the materials or the project they are inspecting for compliance with this code.
- HERS raters are special inspectors certified by the California Energy Commission (CEC) to rate homes in California according to the Home Energy Rating System (HERS).

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

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

703 VERIFICATIONS

703.1 DOCUMENTATION. Documentation used to show compliance with this code shall include but is not

limited to, construction documents, plans, specifications, builder or installer certification, inspection reports, or other methods acceptable to the enforcing agency which demonstrate substantial conformance. When specific documentation or special inspection is necessary to verify compliance, that method of compliance will be specified in the appropriate section or identified applicable checklist

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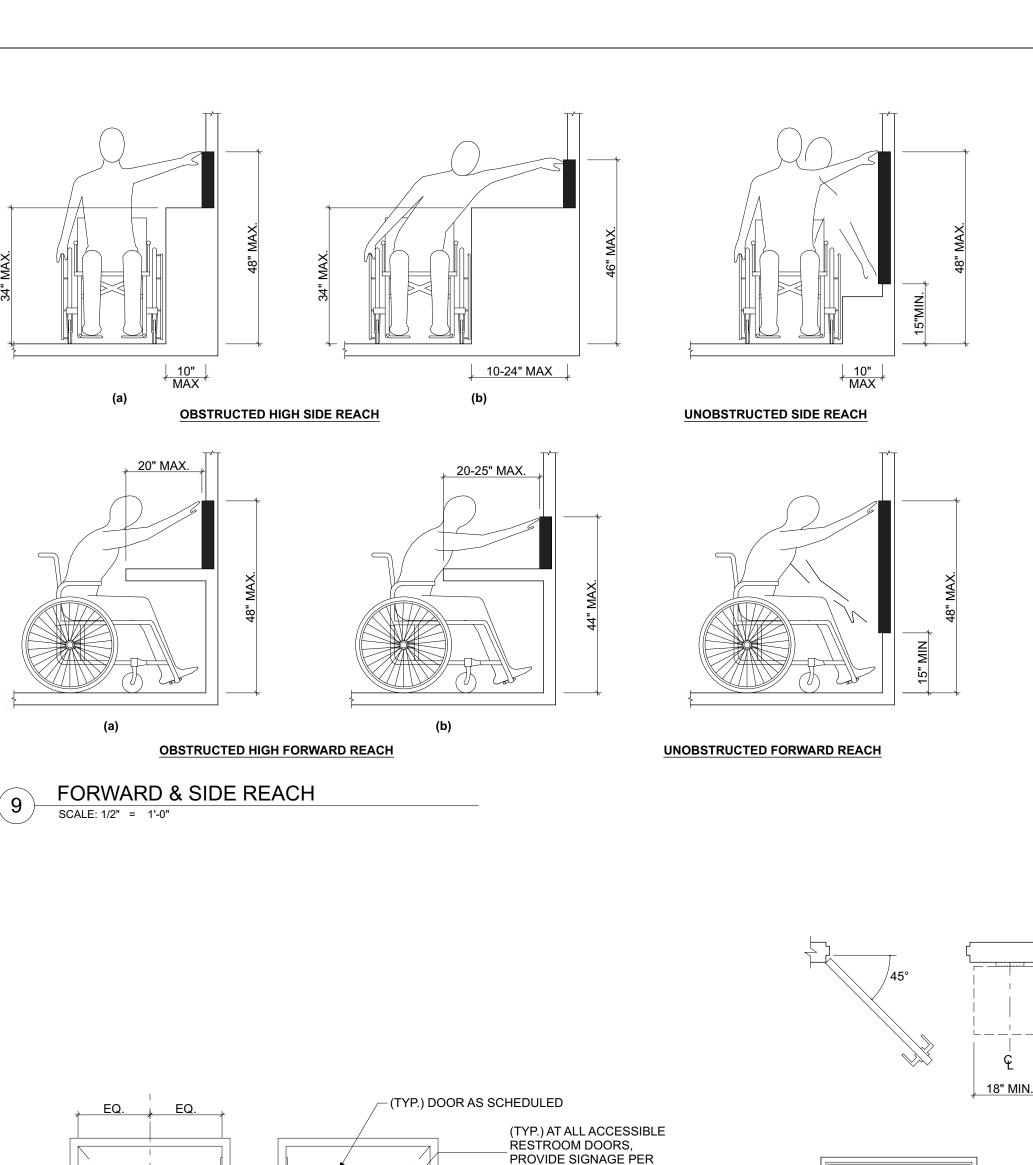


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CBC 11B-703.7.2.6

11B-703.7.2.1

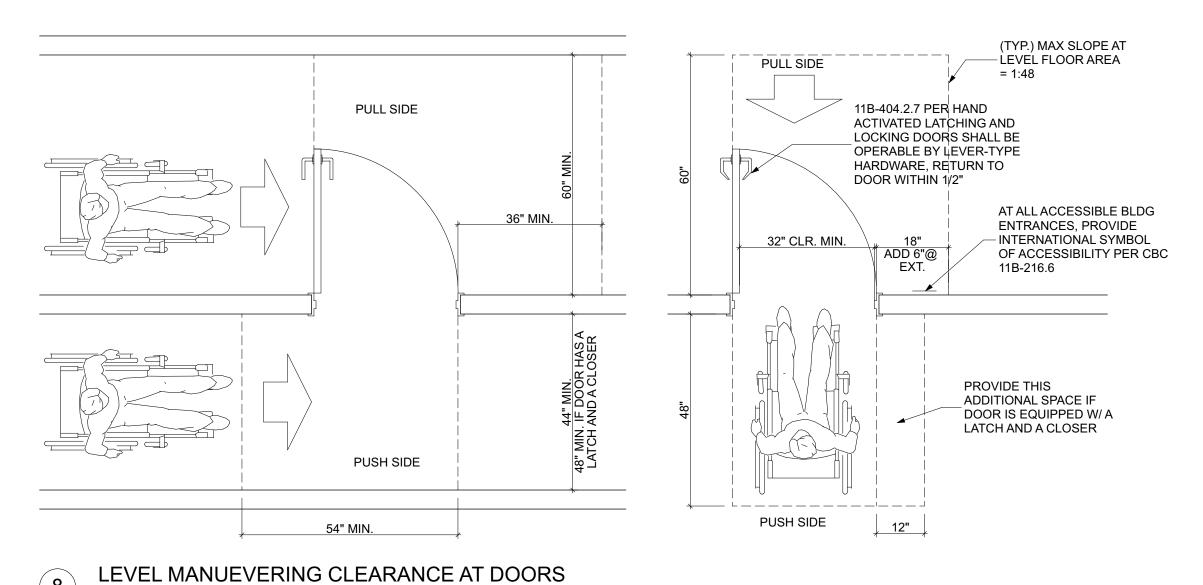
HARDWARE

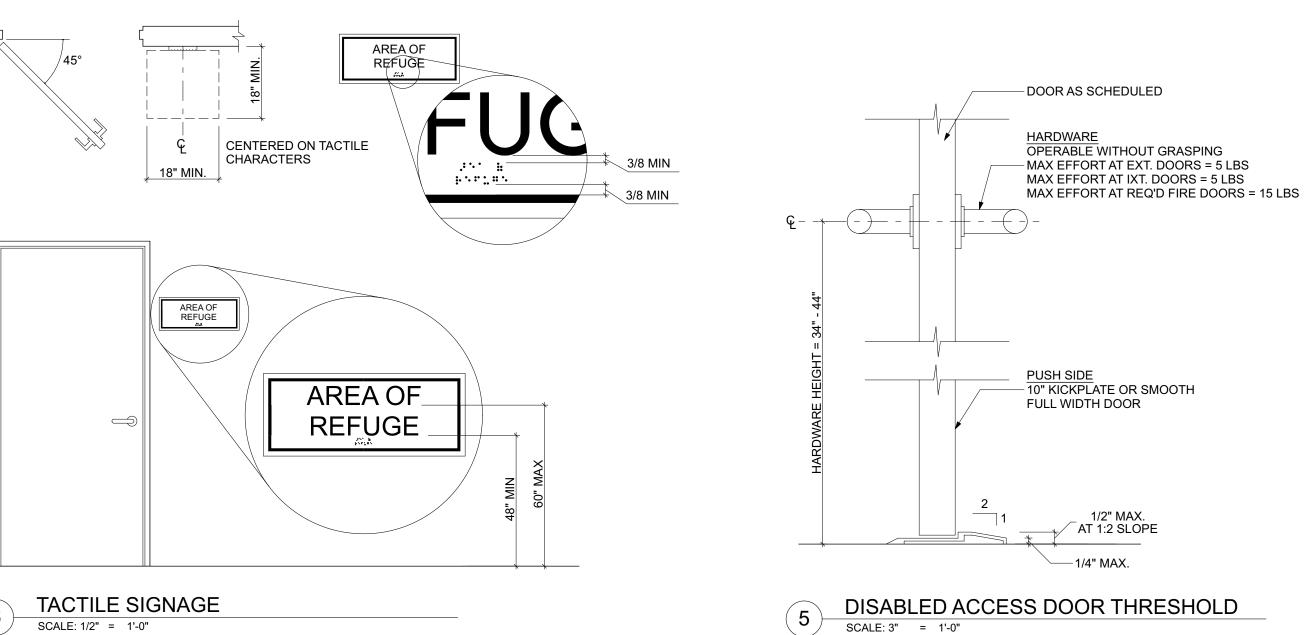
-CLEAR PER CBC 11B-703.4

(TYP.) AT ALL DESIGNATED

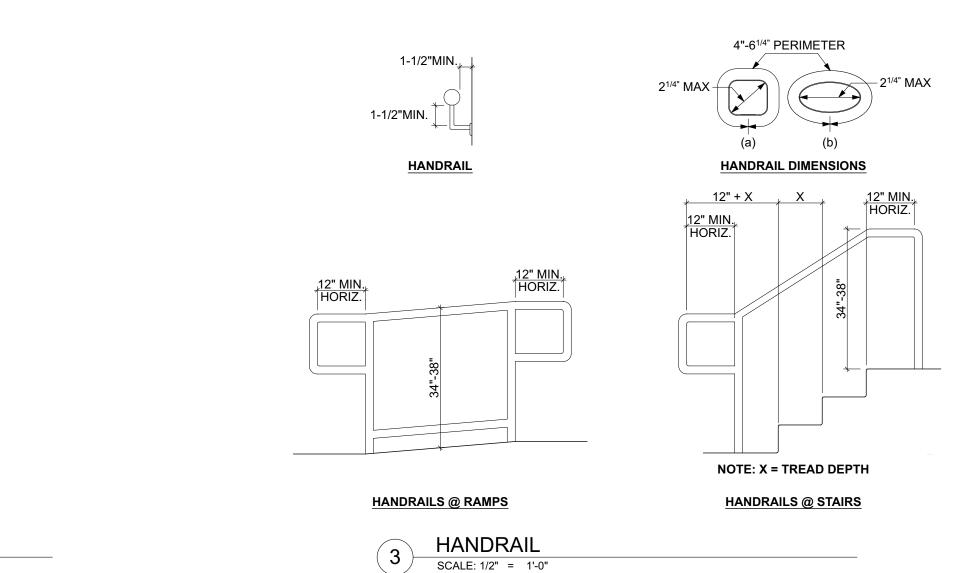
PER CBC 11B-309.4, HAND-ACTIVATED LATCHING AND LOCKING DOORS SHALL BE OPERABLE BY LEVER-TYPE

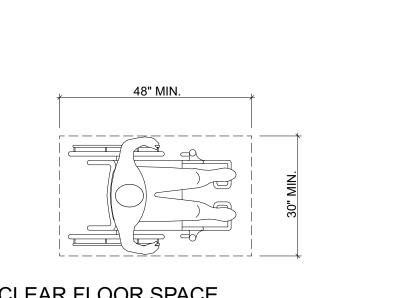
ACCÉSSIBLE DOORWAYS, PROVIDE PERMANENT INTERNATIONAL SYMBOL OF ACCESSIBLITY AND ROOM SIGNAGE PER CBC





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





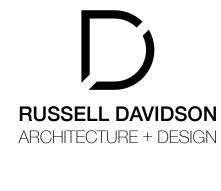
2 CLEAR FLOOR SPACE

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

ACCESSIBILITY NOTES:

- 1. A CLEAR OPENING OF 32 INCHES WITH THE DOOR OPEN 90 DEGREES MEASURED BETWEEN THE FACE OF THE DOOR AND THE
- OPPOSITE STOP. 2. WHERE THE DOORS ARE LOCATED WITHIN THE ACCESSIBLE ROUTE. THE DOOR LANDING IS REQUIRED TO HAVE A DEPTH CLEARANCE OF 60 INCHES MINIMUM IN THE DIRECTION OF THE DOOR SWING. THE DEPTH CLEARANCE SHALL BE 48 INCHES IN THE OPPOSITE
 - DIRECTION OF DOOR SWING OR: A. IF APPROACH CAN BE MADE FROM THE LATCH SIDE, THE CLEARANCE DEPTH CAN BE 44 INCHES IF THE DOOR HAS NO
 - B. IF APPROACH CAN BE MADE FROM THE STRIKE SIDE AND THE DOOR, THE CLEARANCE DEPTH CAN BE 44 INCHES IF IT HAS
- NEITHER LATCH NOR CLOSER (CBC 1003.3.3.2) 3. DOORS SHALL BE EQUIPPED WITH SINGLE-EFFORT, NON-GRASP HARDWARE (I.E., LEVER) CENTERED BETWEEN 34" AND 44" ABOVE THE FLOOR AND THE DOOR SHALL HAVE A 10" KICK-PLATE. (CBC 11B-404.2.7, 11B-404.2.10)
- 4. THE FORCE FOR PUSHING OR PULLING OPEN EXTERIORS ACCESSIBLE EGRESS DOORS IS 5 LB. AND 15 LB AT REQUIRED FIRE
- DOORS. (CBC 11B-404.2.9) 5. LANDINGS AT DOORS SHALL BE LEVEL EXCEPT THAT EXTERIOR DOOR LANDINGS MAY HAVE A SLOPE NOT TO EXCEED 1/4" PER FT (2%
- SLOPE). (CBC 11B-404.2.4.4) 6. WHEN THE ACCESSIBLE DOOR HAS A CLOSER, THE SWEEP PERIOD OF THE CLOSER SHALL BE ADJUSTED SO THAT FROM AN OPEN POSITION OF 90 DEGREES, THE TIME REQUIRED TO MOVE THE DOOR TO A POSITION OF 12 DEGREES FROM THE LATCH IS 5 SECONDS MIN. (CBC 11B-404.2.8.1)
- 7. WHERE THERE IS A CARPET DOORMAT, ACCESSIBILITY WILL BE MAINTAINED AND THE DOORMAT SHALL BE SECURELY ATTACHED; EXPOSED EDGES SHALL BE FASTENED TO FLOOR SURFACES AND HAVE A TRIM ALONG ENTIRE LENGTH OF THE EXPOSED EDGE. PILE HEIGHT SHALL BE NO MORE THAN 1/2". CHANGES IN LEVEL OF 1/4" MAX SHALL BE PERMITTED TO BE VERTICAL AND WITHOUT EDGE TREATMENT. (CBC 11B-303 AND CBC 11B-302.2).
- 8. 4" STRIKE SIDE X 60" DEEP CLEARANCE AT EXTERIOR DOORS. THE TOTAL CLEARANCE DIMENSIONS ON THE PULL SIDE OF THE DOOR ARE 60"X60" (36" DOOR WIDTH PLUS 24" SIDE STRIKE). (CBC 11B-404.2.4)
- 9. EXIT DOOR'S SHALL HAVE WITH AN ILLUMINATED EXIT SIGN AND TACTILE SIGNAGE WITH SPECIAL PROVISIONS PER (CBC 1007.9) 10. MANUALLY OPERATED EDGE OR SURFACE MOUNTED FLUSH BOLTS
- AND SURFACE BOLTS OR ANY OTHER TYPE OF DEVICE THAT MAY BE USED TO CLOSE OR RESTRAIN THE DOOR OTHER THAN OPERATION OF THE LOCKING DEVICE SHALL NOT BE USED PER CBC 1008.1.9.4. 11. EXIT DOORS ARE TO BE OPENABLE FROM INSIDE WITHOUT USE OF A KEY, SPECIAL KNOWLEDGE OR EFFORT. HOWEVER, KEY-LOCKING HARDWARE MAY BE USED ON THE MAIN EXIT WHEN THE MAIN EXIT DOOR HAS A DURABLE SIGN ON OR ADJACENT TO THE DOOR STATING THIS DOOR MUST REMAIN UNLOCKED DURING BUSINESS HOURS. THE SIGN SHALL BE IN LETTERS NOT LESS THAN ONE INCH HIGH ON A CONTRASTING BACKGROUND. WHEN UNLOCKED, THE DOOR MUST BE FREE TO SWING WITHOUT OPERATION OF ANY LATCHING DEVICE. (CBC 1008.1.9.3)
- 12. FLOORS AND WALL BASE FINISH MATERIALS. IN OTHER THAN DWELLING UNITS, TOILET, BATHING AND SHOWER ROOM FLOOR FINISH MATERIALS SHALL HAVE A SMOOTH, HARD, NONABSORBENT SURFACE. THE INTERSECTIONS OF SUCH FLOORS WITH WALLS SHALL HAVE A SMOOTH, HARD, NONABSORBENT VERTICAL BASE THAT EXTENDS UPWARD ONTO THE WALLS AT LEAST 4 INCHES. (CBC 1210.2.1)
- 13. WALLS AND PARTITIONS. WALLS AND PARTITIONS WITHIN 2 FEET OF URINALS AND WATER CLOSETS SHALL HAVE A SMOOTH, HARD, NONABSORBENT SURFACE, TO A HEIGHT OF 4 FEET ABOVE THE FLOOR, AND EXCEPT FOR STRUCTURAL ELEMENTS, THE MATERIALS USED IN SUCH WALLS SHALL BE OF A TYPE THAT IS NOT ADVERSELY AFFECTED BY MOISTURE. (CBC 1210.2) **EXCEPTIONS:**
- 1. DWELLING UNITS AND SLEEPING UNITS. 2. TOILET ROOMS THAT ARE NOT ACCESSIBLE TO THE PUBLIC AND WHICH HAVE NOT MORE THAN ONE WATER CLOSET. ACCESSORIES SUCH AS GRAB BARS, TOWEL BARS, PAPER DISPENSERS AND SOAP DISHES, PROVIDED ON OR WITHIN WALLS, SHALL BE INSTALLED AND SEALED TO PROTECT STRUCTURAL ELEMENTS FROM MOISTURE.

(CBC 2010.2)





RENOVATION CAP 86 STATION

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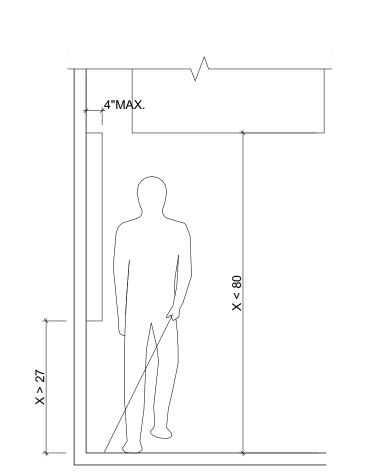
TYPICAL ACCESSIBILITY DETAILS

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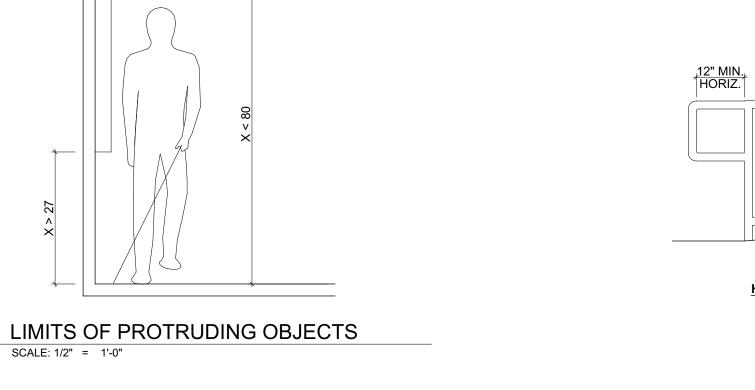
VERTICAL CHANGE IN LEVEL 1 VERTICAL CHANGE IN LEVEL
SCALE: 1/2" = 1'-0"

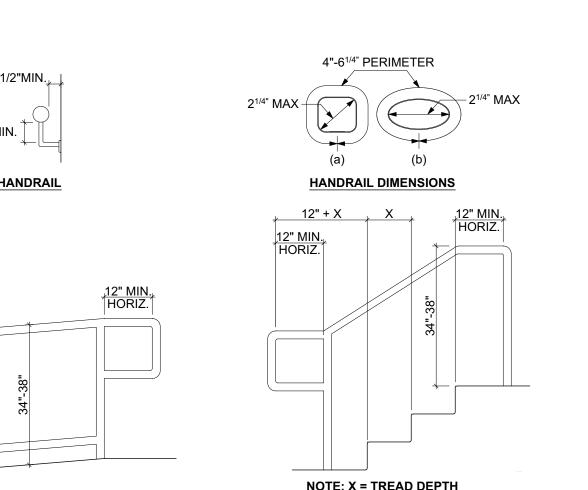
CARPET PILE HEIGHT

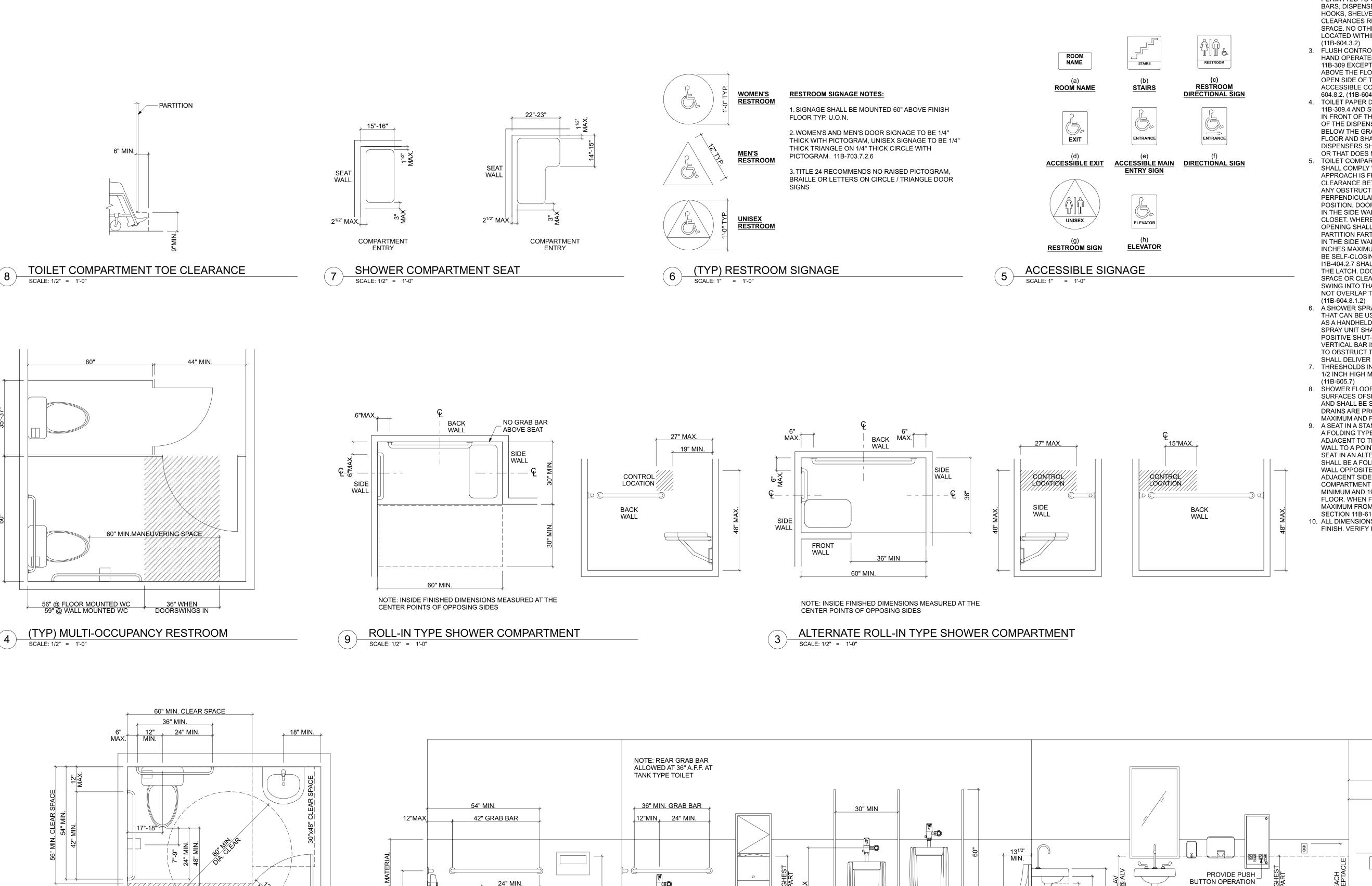
BEVELED CHANGE IN LEVEL



DISABLED ACCESS DOOR SIGNAGE







4" MIN. COVED

FLOOR AND

WALL BASE

FIXTURE MOUNTING HEIGHTS

17-18"

DOOR PERMITTED TO SWING OVER

HATCHED PORTION OF -

MANEUVERING SPACE

(TYP) ACCESSIBLE RESTROOM

ACCESSIBILITY NOTES:

1. ALL DRINKING FOUNTAINS SHALL EITHER BE LOCATED COMPLETELY WITHIN ALCOVES, POSITIONED COMPLETELY BETWEEN WING WALLS, OR OTHERWISE POSITIONED SO AS NOT TO ENCROACH INTO PEDESTRIAN WAYS. THE PROTECTED AREA WITHIN WHICH A DRINKING FOUNTAIN IS LOCATED SHALL BE 32 INCHES WIDE MINIMUM AND 18 INCHES DEEP MINIMUM, AND SHALL COMPLY WITH SECTION 11B-305.7. WHEN USED, WING WALLS OR BARRIERS SHALL PROJECT HORIZONTALLY AT LEAST AS FAR AS THE DRINKING FOUNTAIN AND TO WITHIN 6 INCHES VERTICALLY FROM THE FLOOR OR GROUND SURFACE. (11B-602.9)

OR GROUND SURFACE. (11B-602.9)

2. THE REQUIRED CLEARANCE AROUND THE WATER CLOSET SHALL BE PERMITTED TO OVERLAP THE WATER CLOSET, ASSOCIATED GRAB BARS, DISPENSERS, SANITARY NAPKIN DISPOSAL UNITS, COAT HOOKS, SHELVES, ACCESSIBLE ROUTES, CLEAR FLOOR SPACE AND CLEARANCES REQUIRED AT OTHER FIXTURES, AND THE TURNING SPACE. NO OTHER FIXTURES OR OBSTRUCTIONS SHALL BE LOCAL OF A SALE OF THE PROPERTY OF

(11B-604.3.2)
3. FLUSH CONTROLS SHALL BE HAND OPERATED OR AUTOMATIC. HAND OPERATED FLUSH CONTROLS SHA11 COMPLY WITH SECTION 11B-309 EXCEPT THEY SHALL BE LOCATED 44 INCHES MAXIMUM ABOVE THE FLOOR. FLUSH CONTROLS SHALL BE LOCATED ON THE OPEN SIDE OF THE WATER CLOSET EXCEPT IN AMBULATORY ACCESSIBLE COMPARTMENTS COMPLYING WITH SECTION 11B-604.8.2. (11B-604.6)

4. TOILET PAPER DISPENSERS SHALL COMPLY WITH SECTION 11B-309.4 AND SHALL BE 7 INCHES MINIMUM AND 9 INCHES MAXIMUM IN FRONT OF THE WATER CLOSET MEASURED TO THE CENTERLINE OF THE DISPENSER. THE OUTLET OF THE DISPENSER SHALL BE BELOW THE GRAB BAR, 19 INCHES MINIMUM ABOVE THE FINISH FLOOR AND SHALL NOT BE LOCATED BEHIND GRAB BARS. DISPENSERS SHALL NOT BE OF A TYPE THAT CONTROLS DELIVERY

OR THAT DOES NOT ALLOW CONTINUOUS PAPER FLOW. (11B-604.7) 5. TOILET COMPARTMENT DOORS, INCLUDING DOOR HARDWARE, SHALL COMPLY WITH SECTION 11B-404 EXCEPT THAT IF THE APPROACH IS FROM THE PUSH SIDE OF THE COMPARTMENT DOOR. CLEARANCE BETWEEN THE DOOR SIDE OF THE COMPARTMENT AND ANY OBSTRUCTION SHALL BE 48 INCHES MINIMUM MEASURED PERPENDICULAR TO THE COMPARTMENT DOOR IN ITS CLOSED POSITION. DOORS SHALL BE LOCATED IN THE FRONT PARTITION OR IN THE SIDE WALL OR PARTITION FARTHEST FROM THE WATER CLOSET. WHERE LOCATED IN THE FRONT PARTITION, THE DOOR OPENING SHALL BE 4 INCHES MAXIMUM FROM THE SIDE WALL OR PARTITION FARTHEST FROM THE WATER CLOSET. WHERE LOCATED IN THE SIDE WALL OR PARTITION, THE DOOR OPENING SHALL BE 4 INCHES MAXIMUM FROM THE FRONT PARTITION. THE DOOR SHALL BE SELF-CLOSING. A DOOR PULL COMPLYING WITH SECTION 11B-404.2.7 SHALL BE PLACED ON BOTH SIDES OF THE DOOR NEAR THE LATCH. DOORS SHALL NOT SWING INTO THE CLEAR FLOOR SPACE OR CLEARANCE REQUIRED FOR ANY FIXTURE. DOORS MAY SWING INTO THAT PORTION OF MANEUVERING SPACE WHICH DOES NOT OVERLAP THE CLEARANCE REQUIRED AT A WATER CLOSET.

A SHOWER SPRAY UNIT WITH A HOSE 59 INCHES LONG MINIMUM THAT CAN BE USED BOTH AS A FIXED-POSITION SHOWER HEAD AND AS A HANDHELD SHOWER SHALL BE PROVIDED. THE SHOWER SPRAY UNIT SHALL HAVE AN ON/OFF CONTROL WITH A NON-POSITIVE SHUT-OFF. IF AN ADJUSTABLE-HEIGHT SHOWER HEAD ON A VERTICAL BAR IS USED, THE BAR SHALL BE INSTALLED SO AS NOT TO OBSTRUCT THE USE OF GRAB BARS. SHOWER SPRAY UNITS SHALL DELIVER WATER THAT IS 120 F (49°C) MAXIMUM. (11B-605.6)
 THRESHOLDS IN ROLL-IN TYPE SHOWER COMPARTMENTS SHALL BE 1/2 INCH HIGH MAXIMUM IN ACCORDANCE WITH SECTION 11B-303.

(11B-605.7)

8. SHOWER FLOOR OR GROUND SURFACE. FLOOR OR GROUND SURFACES OFSHOWERS SHALL COMPLY WITH SECTION 11B-302.1 AND SHALL BE SLOPED 1:48 MAXIMUM IN ANY DIRECTION. WHERE DRAINS ARE PROVIDED, GRATE OPENINGS SHALL BE 1/4 INCH

MAXIMUM AND FLUSH WITH THE FLOOR SURFACE. (11B-605.9)

9. A SEAT IN A STANDARD ROLL-IN SHOWER COMPARTMENT SHALL BE A FOLDING TYPE, SHALL BE INSTALLED ON THE SIDE WALL ADJACENT TO THE CONTROLS, AND SHALL EXTEND FROM THE BACK WALL TO A POINT WITHIN 3 INCHES OF THE COMPARTMENT ENTRY. A SEAT IN AN ALTERNATE ROLL-IN TYPE SHOWER COMPARTMENT SHALL BE A FOLDING TYPE, SHALL BE INSTALLED ON THE FRONT WALL OPPOSITE THE BACK WALL, AND SHALL EXTEND FROM THE ADJACENT SIDE WALL TO A POINT WITHIN 3 INCHES OF THE COMPARTMENT ENTRY. THE TOP OF THE SEAT SHALL BE 17 INCHES MINIMUM AND 19 INCHES MAXIMUM ABOVE THE BATHROOM FINISH FLOOR. WHEN FOLDED, THE SEAT SHALL EXTEND 6 INCHES MAXIMUM FROM THE MOUNTING WALL. SEATS SHALL COMPLY WITH SECTION 11B-610 3 1 OR 11B-610 3 2 (11B-610 3)

SECTION 11B-610.3.1 OR 11B-610.3.2. (11B-610.3)

10. ALL DIMENSIONS ARE TO FINISHED INTERIOR OR EXTERIOR WALL FINISH. VERIFY IN FIELD.

48" MIN. FOR DOUBLE

32" MIN. FOR SINGLE

LOW REACH BOTTOM OF

RECEPTACLE

PROVIDE INSULATION FOR

EXPOSED PIPES

RUSSELL DAVIDSON ARCHITECTURE + DESIGN

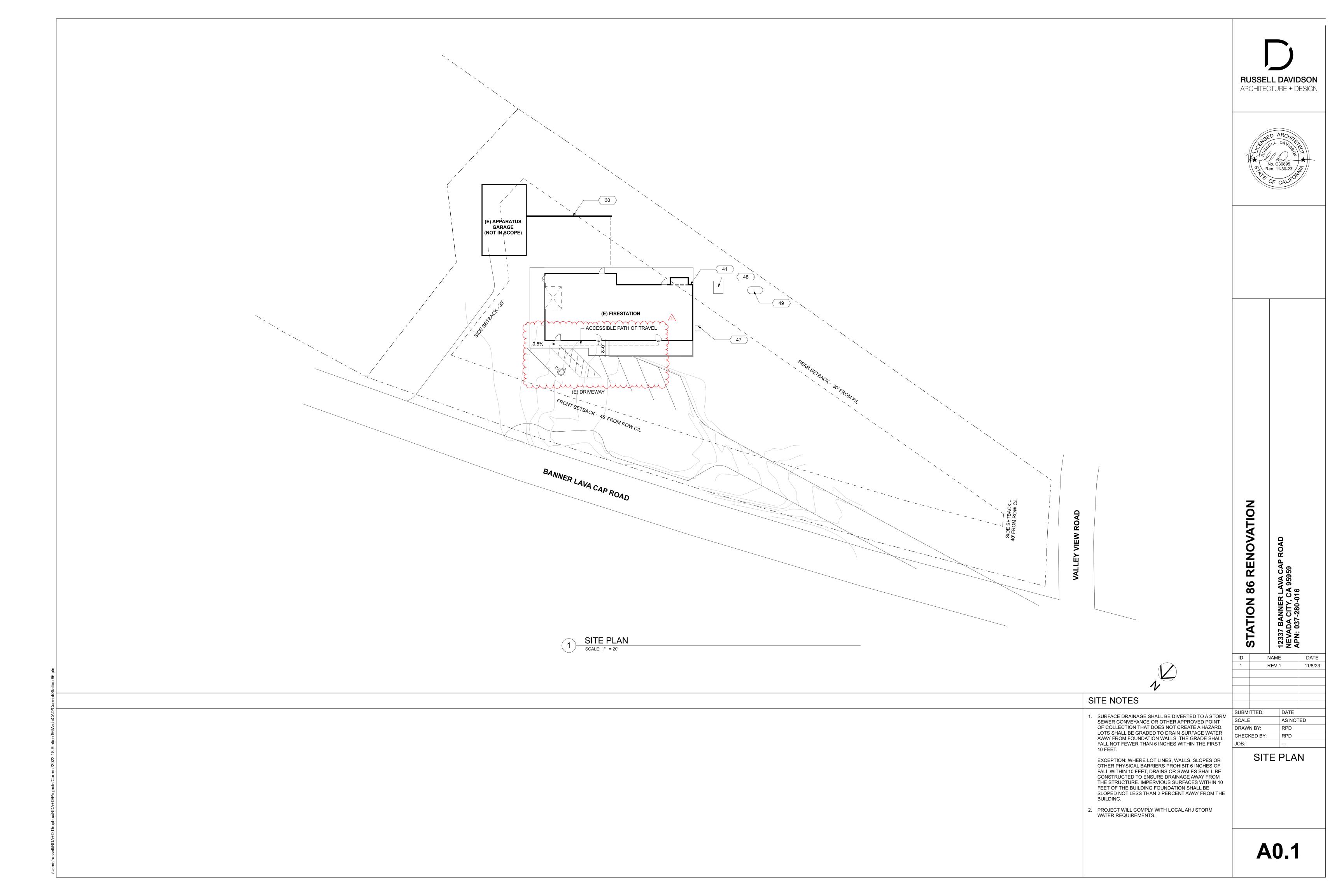


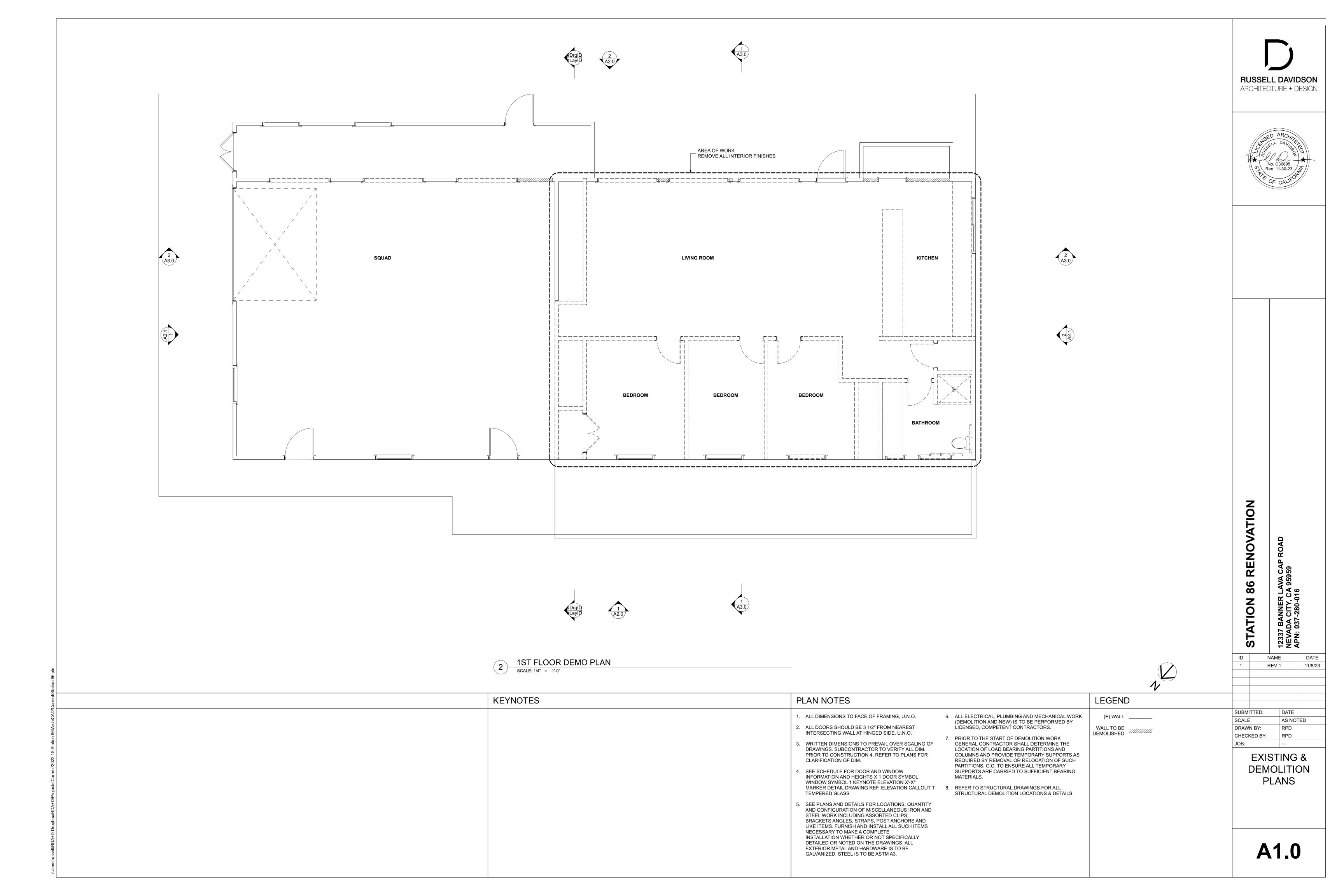
STATION 86 RENOVATION

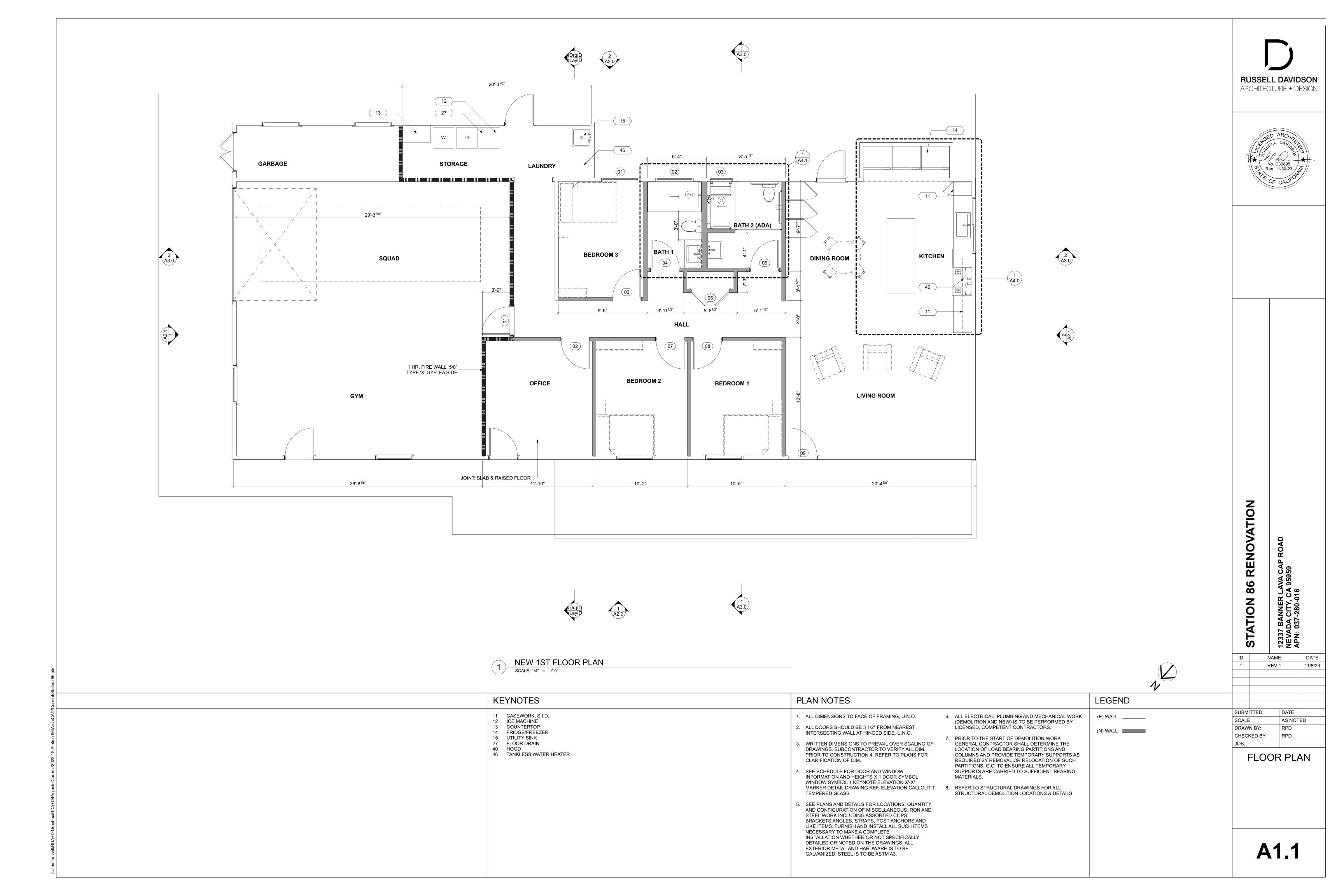
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TYPICAL ACCESSIBILITY DETAILS

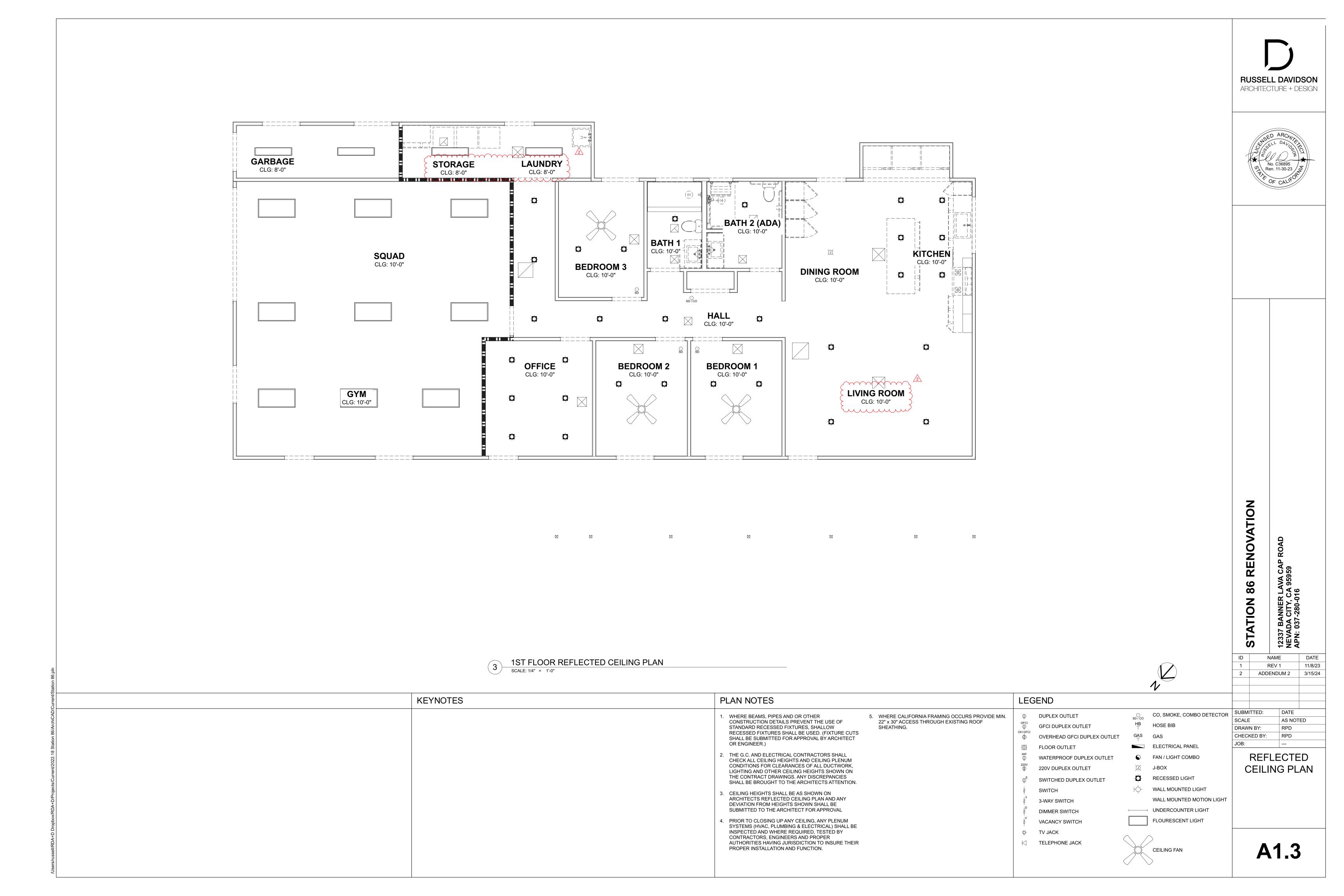
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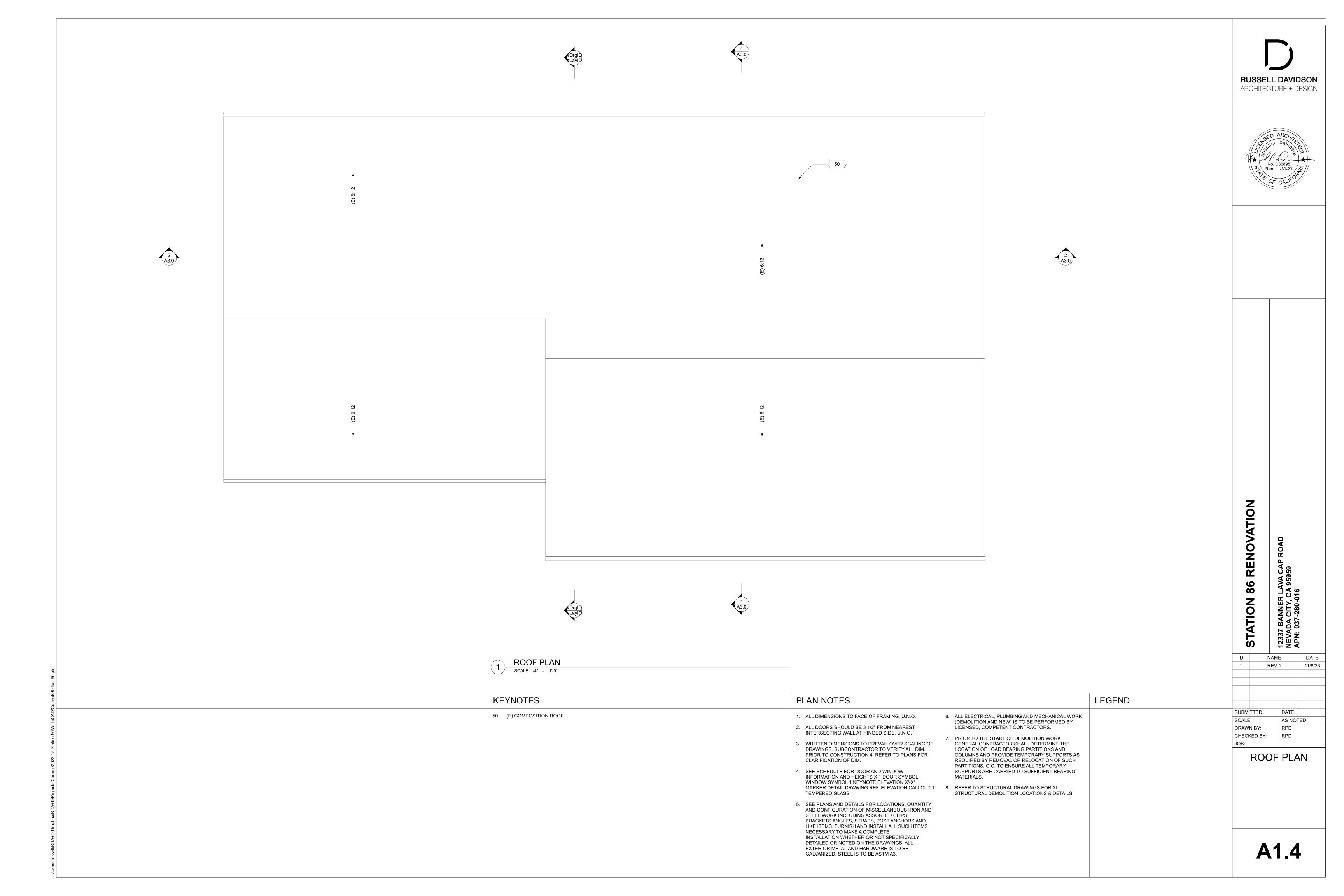


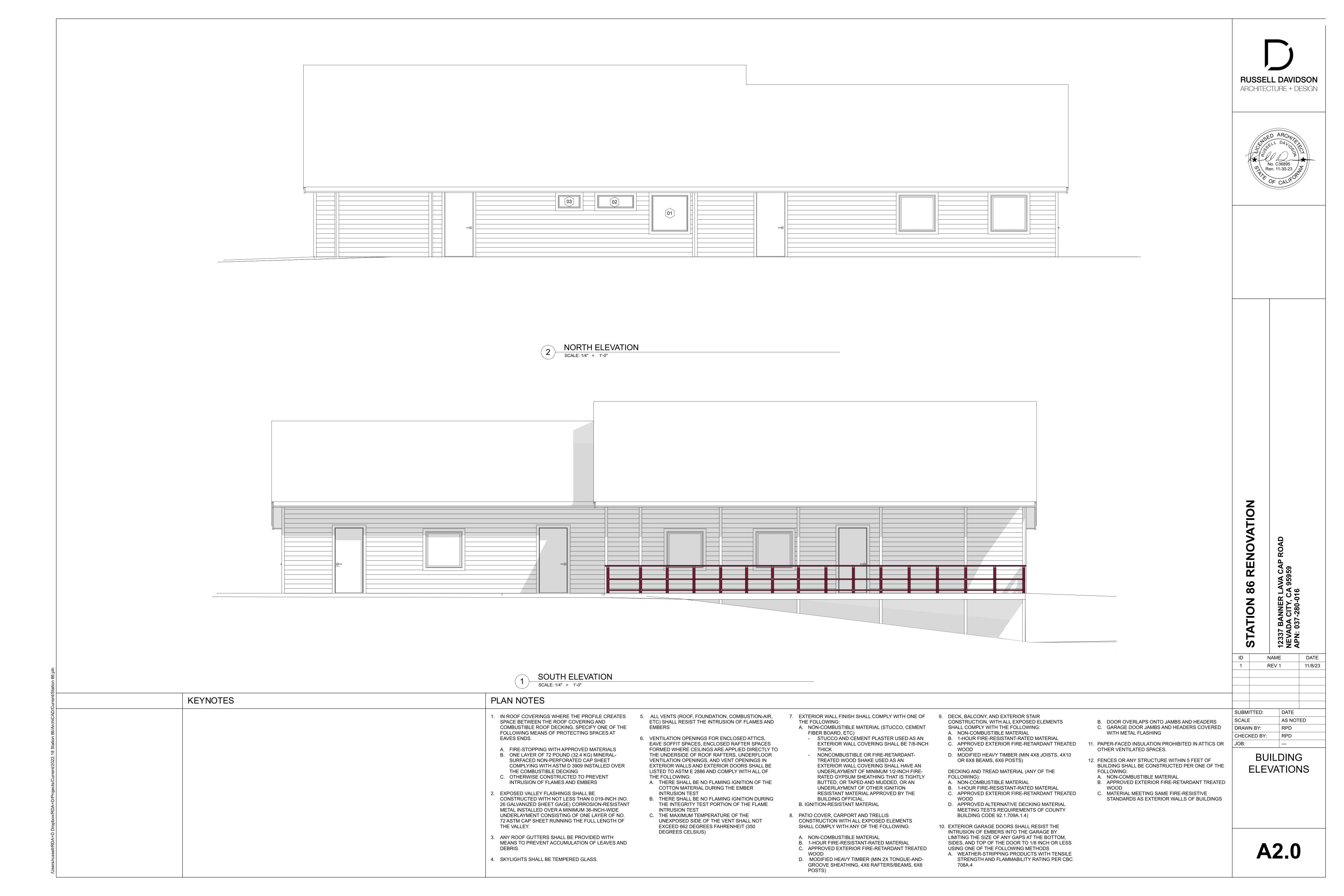


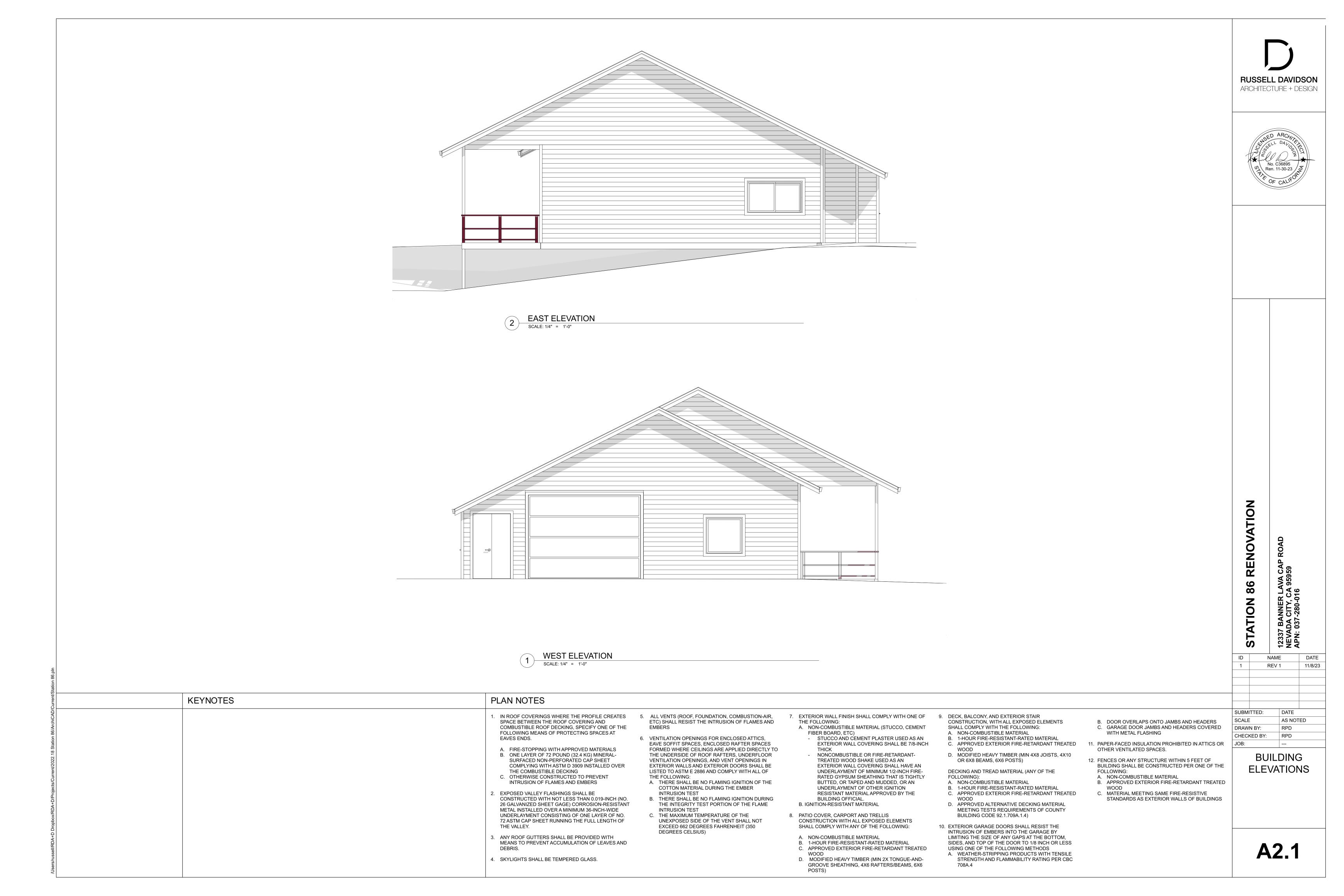


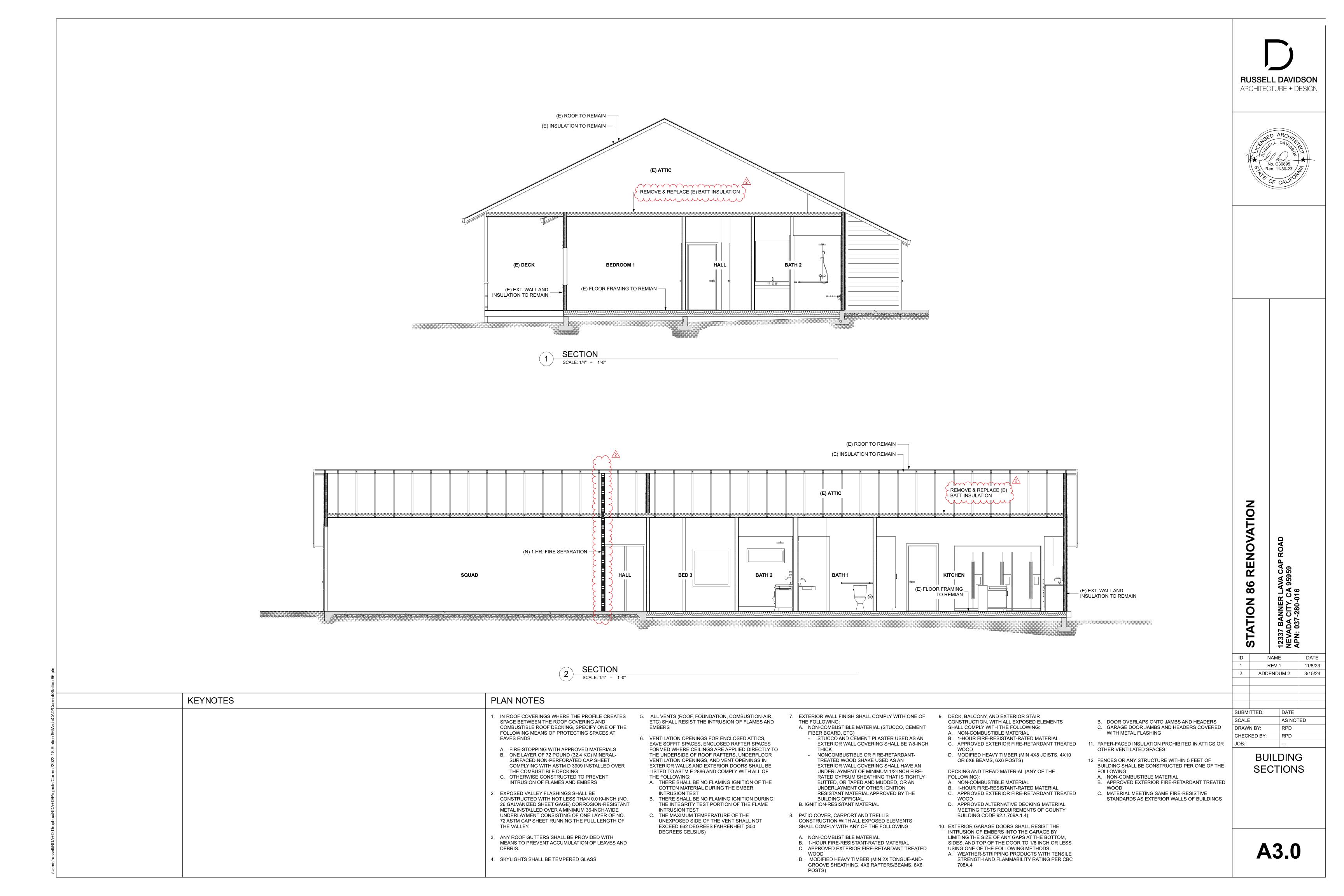


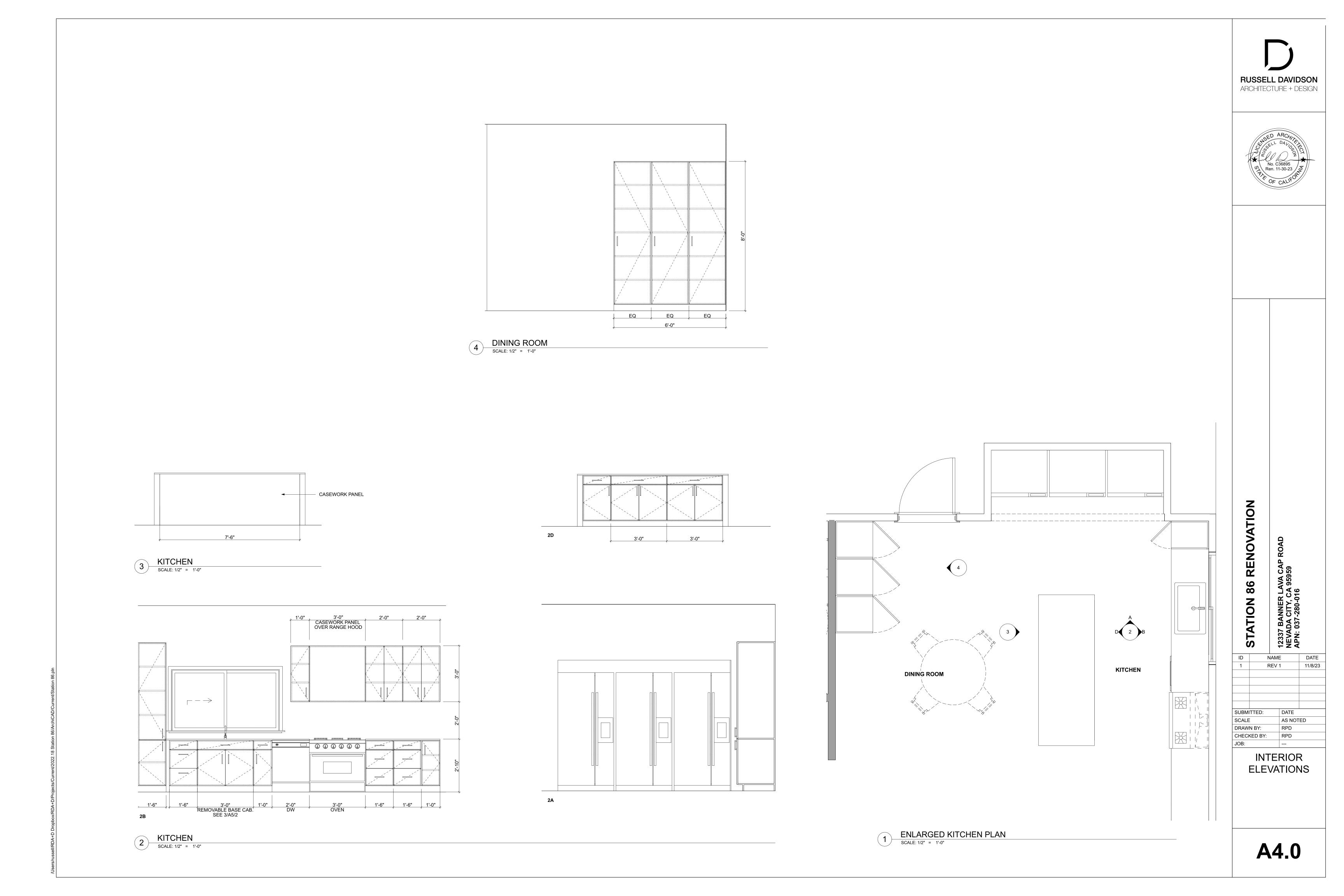




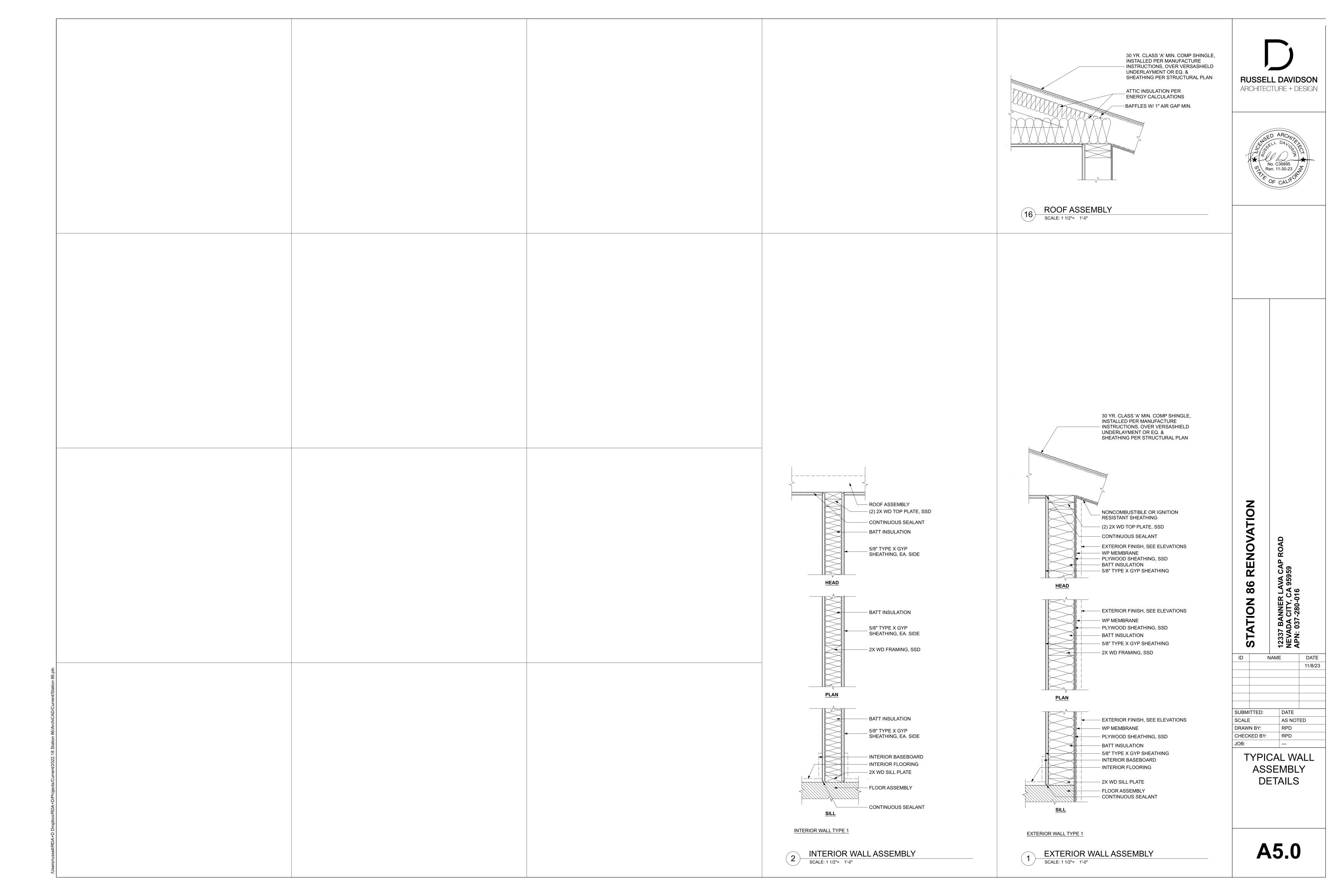


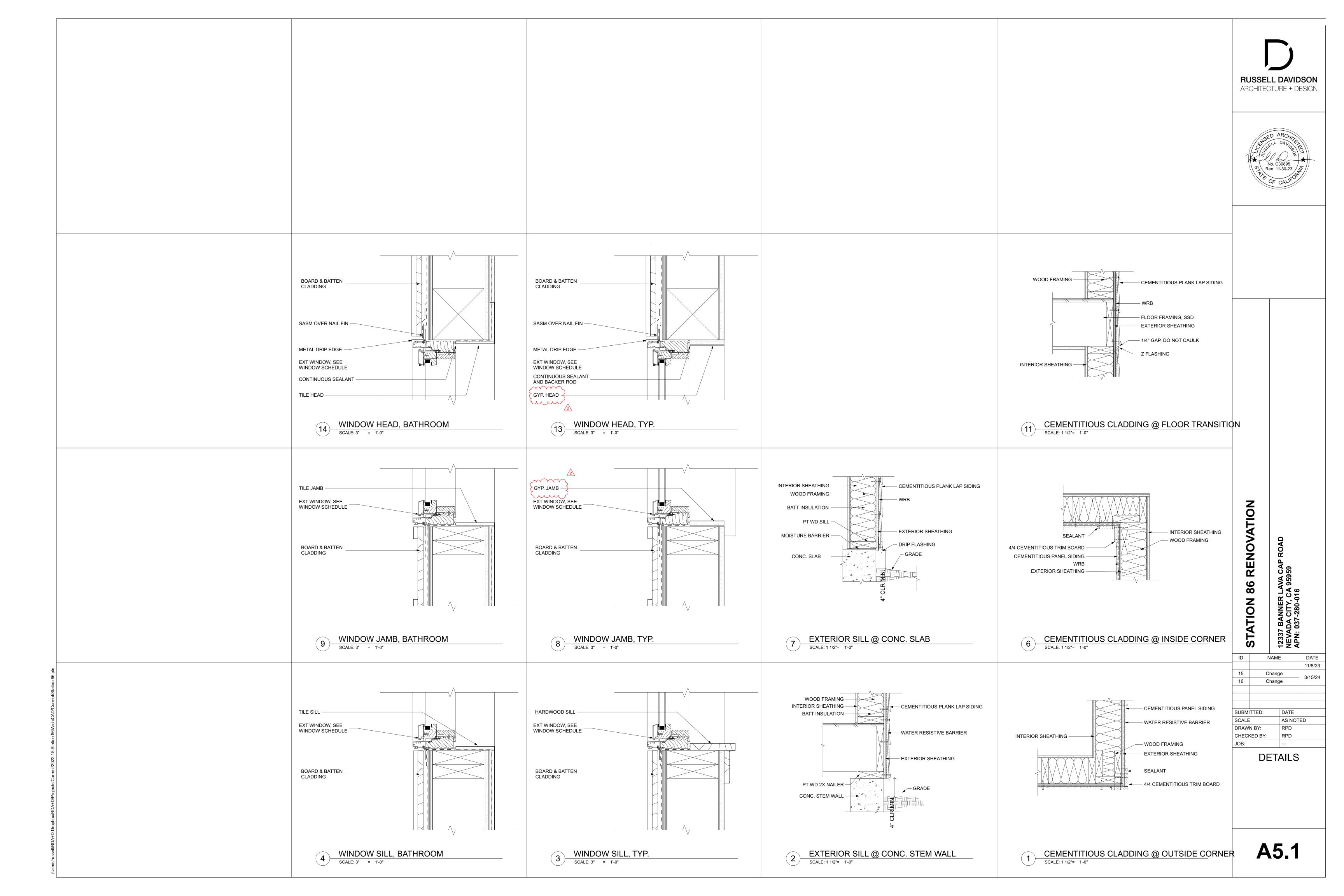


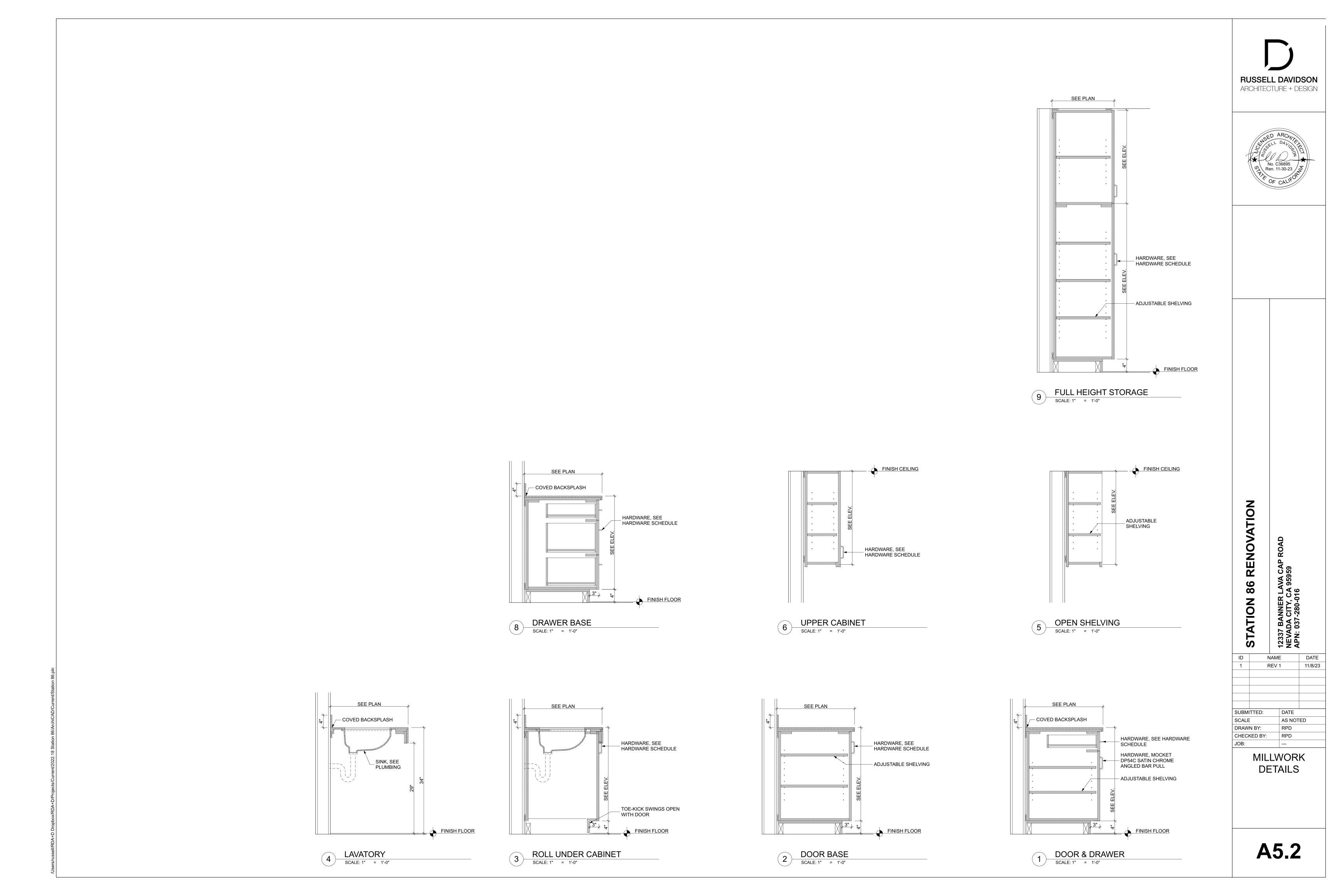




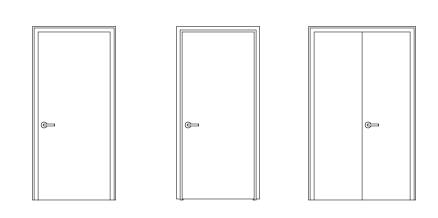








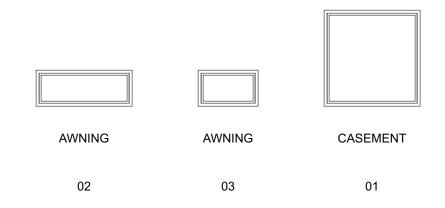
								DOOR SCHEDULE	<u> </u>					
DOOR#	LOCATION	TYPE	EXPOSURE	w	Н	TH	MFG	MODEL	MATERIAL	FINISH	HARDWARE	CLOSER	FIRE RATING	REMARKS
01	SQUAD	В	INT	3'-0"	7'-0"	1 ^{5/8} "				PTD	TYPE 2	Υ	45 MIN.	
02	OFFICE	А	INT	3'-0"	7'-0"	1 ^{3/8} "	TRIMLITE	3068FSCPHB	SCWD	PTD	TYPE 3	N		
03	BEDROOM 3	А	INT	3'-0"	7'-0"	1 ^{3/8} "	TRIMLITE	3068FSCPHB	SCWD	PTD	TYPE 3	N		
04	BATH 1	А	INT	3'-0"	7'-0"	1 ^{3/8} "	TRIMLITE	3068FSCPHB	SCWD	PTD	TYPE 3	N		
05	HALL	С	INT	4'-0"	7'-0"	1 ^{3/8} "			SCWD	PTD	TYPE 4	N		
06	BATH 2 (ADA)	Α	INT	3'-0"	7'-0"	1 ^{3/8} "	TRIMLITE	3068FSCPHB	SCWD	PTD	TYPE 3	N		
07	BEDROOM 2	А	INT	3'-0"	7'-0"	1 ^{3/8} "	TRIMLITE	3068FSCPHB	SCWD	PTD	TYPE 3	N		
08	BEDROOM 1	А	INT	3'-0"	7'-0"	1 ^{3/8} "	TRIMLITE	3068FSCPHB	SCWD	PTD	TYPE 3	N		
09	LIVING ROOM	В	EXT	3'-0"	7'-0"	1 ^{3/8} "	ANDERSEN	STRAIGHTLINE #334	SCWD/GLASS	FACTORY	TYPE 1	N		



02, 03, 04, 06, 07, 08

DOOR TYPES SCALE: 1' = 1'-0"

	WINDOW SCHEDULE													
ID	TYPE	LOCATION	W	Н	MFG	FRAME MATL	REMARKS							
01	CASEMENT	BEDROOM 3	4'-0"	4'-0"	JELD-WEN									
02	AWNING	BATH 1	4'-0"	1'-6"	JELD-WEN	3								
03	AWNING	BATH 2 (ADA)	2'-6"	1'-6"	JELD-WEN	}								
		1				٨								



SCALE: 1' = 1'-0"

DOOR NOTES 1. ALL GLASS IN DOORS SHALL BE TEMPERED.

- TEMPERED GLASS SHALL BE PERMANENTLY IDENTIFIED AND VISIBLE WHEN THE UNIT IS GLAZED. 2. ALL GLAZING WILL BE INSTALLED WITH A CERTIFYING
- LABEL ATTACHED, SHOWING THE "U" VALUE. 3. REFER TO FLOOR PLANS FOR DIRECTION OF DOOR
- 4. DOORS SHALL MEET THE MINIMUM INFILTRATION
- REQUIREMENTS PER SECTION 116 E.E.S.
- 5. VENTILATION SHALL COMPLY WITH C.B.C. 1203.4 AND
- 6. ALL EXTERIOR WINDOW AND EXTERIOR DOOR ASSEMBLIES TO HAVE AN STC RATING OF 36 OR GREATER.
- 7. DOORS MAY OPEN TO THE EXTERIOR ONLY IF THE FLOOR OR LANDING IS NOT MORE THAN 11/2 INCH LOWER THAN THE DOOR THRESHOLD. SECTION
- R311.3.1 CRC 8. GLAZED OPENINGS WITHIN EXTERIOR DOORS SHALL BE INSULATING-GLASS UNITS WITH A MINIMUM OF ONE TEMPERED PANE,

SEE EXTERIOR ELEVATION FOR DIRECTION OF OPERATION OF WINDOWS (ALL OPERABLE WINDOWS TO HAVE SCREENS).

WINDOW NOTES

- ALL WINDOW DIMENSIONS PERTAIN TO ROUGH OPENINGS (R.O.), CONTRACTOR TO FIELD VERIFY ACTUAL DIMENSIONS FOR WINDOWS.
- . ALL GLAZING WILL BE INSTALLED WITH A CERTIFYING LABEL ATTACHED, SHOWING THE NFRC LABEL.
- . ALL GLAZING SHALL BE SPECTRALY SELECTIVE LOW E
- COATED TO MEET TITLE 24 ENERGY REQUIREMENTS.
- WINDOWS SHALL MEET THE MINIMUM INFILTRATION REQUIREMENTS PER SECTION 116 E.E.S.D
- 6. VENTILATION SHALL COMPLY WITH C.B.C. 1203.4 AND
- . EVERY SLEEPING ROOM SHALL HAVE ONE OPERABLE A MIN. NET CLEAR OPENABLE AREA OF 5.7 SQ. FT, MIN. NET CLEAR OPENABLE HEIGHT OF 24" MIN., NET CLEAR WIDTH OF 20" AND A FIN. SILL HEIGHT OF NOT MORE THAN 44" A.F.F. PER CRC SECTION 3101

- 8. ALL EXTERIOR WINDOW AND EXTERIOR DOOR ASSEMBLIES TO HAVE AN STC RATING OF 30 OR
- 9. TEMPERED GLASS SHALL BE PERMANENTLY IDENTIFIED AND VISIBLE WHEN THE UNIT IS GLAZED.

DOOR & WINDOW 10. EVERY SPACE INTENDED FOR HUMAN OCCUPANCY NATURAL LIGHT BY MEANS OF VENTILATION /

- ARTIFICIAL LIGHT. CBC SECTIONS 1203.4 AND 1205.1 AND R303 A) THE MINIMUM NET GLAZED AREA FOR NATURAL LIGHT SHALL NOT BE LESS THAN 8%OF THE
- FLOOR AREA OF THE ROOM SERVED. CBC **SECTION 1205.2** B) THE MINIMUM OPENABLE AREA TO THE OUTDOORS FOR NATURAL VENTILATION SHALL

BE 4% OF THE FLOOR AREA BEING VENTILATED.

WINDOW FOR EMERGENCY ESCAPE OR RESCUE WITH 11. EXTERIOR WINDOWS AND EXTERIOR GLAZED DOOR ASSEMBLIES SHALL BE CONSTRUCTED OF MULTIPANE GLAZING WITH ONE TEMPERED PANE, HAVE A FIRE RESISTANCE RATING OF 20 MINUTES OR MEET THE REQUIREMENTS OF SFM 12-7A-2.

SECTION 1203.4

RUSSELL DAVIDSON ARCHITECTURE + DESIGN



RENOVATIO 98 TATION

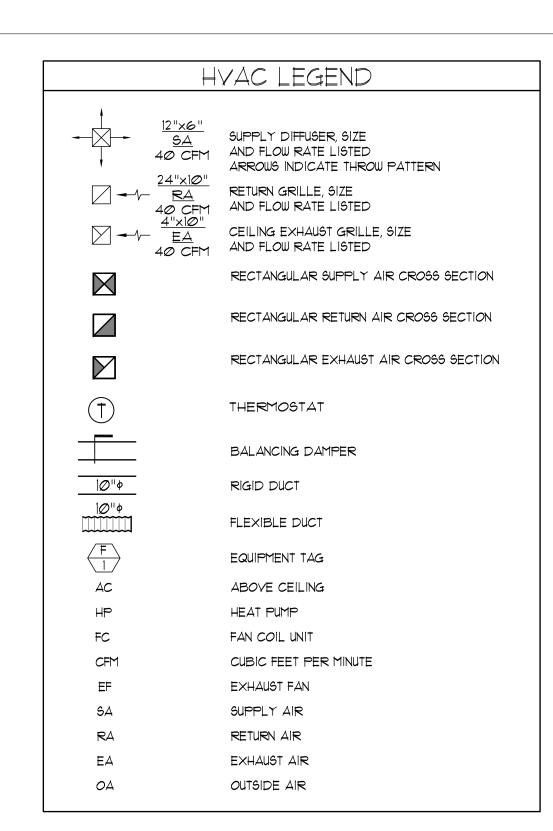
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HVAC NOTES

1. SCOPE OF WORK

REMOVE EXISTING FURNACE AND CONDENSING UNIT.

REMOVE EXISTING DUCTING, DIFFUSERS AND GRILLES.
PATCH SURFACES WHERE REGISTERS AND GRILLES HAVE BEEN

PAICH SURFACES WHERE REGISTERS AND GRILLES HAVE BEEN REMOVED. PATCH TO MATCH EXISTING CONDITION.
 ANY DISCREPANCIES BETWEEN THE PLANS AND EXISTING CONDITIONS DISCOVERED DURING DEMOLITION SHALL BE BROUGHT TO THE

ARCHITECT AND ENGINEER'S ATTENTION TO REVISE PLANS AS NECESSARY.

• INSTALL NEW INVERTER DRIVEN VARIABLE SPEED HEAT PUMP AS INDICATED ON PLANS.

INSTALL NEW EXHAUST FANS.INSTALL ALL NEW DUCTING.

2. FURNISH AND INSTALL ALL MATERIALS AND PERFORM ALL LABOR
NECESSARY FOR A COMPLETE INSTALLATION OF HVAC WORK INDICATED
ON THE DRAWINGS. ALSO, PROVIDE ANY INCIDENTAL WORK NOT SHOWN
OR SPECIFIED, WHICH CAN REASONABLY BE INFERRED OR TAKEN AS
BELONGING TO THE WORK AND NECESSARY TO PROVIDE THE COMPLETE

SYSTEM.

3. IT IS THE INSTALLING CONTRACTOR'S RESPONSIBILITY TO ASSURE ALL MECHANICAL SYSTEMS FUNCTION PROPERLY, SAFELY, AND MEET ALL LOCAL, STATE AND REGIONAL CODES.

4. ALL WORK SHALL CONFORM TO THE ACCEPTED STANDARDS OF THE TRADE. THE ENGINEER IS TO BE NOTIFIED IF ANY SUBSTITUTIONS ARE SEEN TO BE NECESSARY.

5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVAL AND PROPER DISPOSAL OF EQUIPMENT INDICATED TO BE REMOVED, UNLESS OTHERWISE INSTRUCTED BY THE OWNER. EXISTING REFRIGERANT SHALL BE RECLAIMED AND PROPERLY DISPOSED OF IN ACCORDANCE WITH THE 1990 CLEAN AIR ACT AMENDMENT.

6. THE CONTRACTOR SHALL PARTICIPATE IN BID WALK-THRU AND SHALL FAMILIARIZE THEMSELVES WITH EXISTING CONDITIONS. BIDS SHALL BE ADJUSTED TO ACCOMMODATE ANY EXISTING CONDITIONS WHICH ARE NOT SHOWN ON PLANS AND ARE VISIBLE DURING WALK-THRU. ANY AND ALL DEVIATIONS FROM PLANS SHALL BE BROUGHT TO THE ARCHITECTS' ATTENTION.

7. <u>Controls - General</u>

COOLING.

A.THE VENTILATION SYSTEM SHALL BE WIRED TO OPERATE

CONTINUOUSLY DURING OCCUPIED HOURS. DURING UNOCCUPIED HOURS

THE UNIT SHALL CYCLE ON AND OFF WITH A DEMAND FOR HEATING AND

B.ROOM THERMOSTATS SHALL BE PROGRAMMABLE WITH 5-1-1 DAY C.PROGRAMMING AND 24-HOUR HEATING AND COOLING SETBACK CAPABILITY.

D.THERMOSTATS SHALL HAVE DEMAND RESPONSIVE CAPABILITIES IN ACCORDANCE WITH CEC SECTION 110.12(A). ALL THERMOSTATS MUST BE CERTIFIED OPENADR 2.0A OR OPENADR 2.0B VIRTUAL END NODE (VEN) CAPABLE, AND BE CAPABLE OF COMMUNICATING WITH THE VEN USING A WIRED OR WIRELESS BIDIRECTIONAL COMMUNICATION PATHWAY.

E.THERMOSTATS SHALL BE INSTALLED WHERE INDICATED ON PLANS, 48

INCHES ABOVE FINISHED FLOOR LEVEL.

F. INSTALLING SUB-CONTRACTOR SHALL PROVIDE ENGINEER WITH

COMPLETE CONTROL SCHEMATIC INCLUDING SUBMITTALS FOR EACH

G.ALL LOW VOLTAGE WIRING FOR CONTROLS AND SENSORS IS THE RESPONSIBILITY OF THE MECHANICAL/HYAC CONTRACTOR. ALL CONDUIT PULLS (AND LOW VOLTAGE WIRING INSTALLATION) IS TO BE COORDINATED WITH ELECTRICAL CONTRACTOR DURING CONSTRUCTION.

8. AIR DIFFUSERS AND RETURN/EXHAUST GRILLES SHALL BE SHOEMAKER,
OR EQUAL. PROPOSED MODEL NUMBERS FOR DIFFERENT APPLICATIONS
ARE AS FOLLOWS:

APPLICATION MODEL * REMARKS

CLG GYPSUM SUPPLY MA (W/OBD) MODULAR CORE

THROW PATTERN INDICATED

CLG GYPSUM RETURN 915 HORIZONTAL BAR

FIXED BLADE

EXTERIOR LOUVER 4525 STORM RESISTANT, DRAINABLE BLADE EXTERIOR LOUVER WITH BIRDSCREEN

9. FOR THE EXACT LOCATION OF DIFFUSERS AND GRILLES REFER TO

EGGCRATE GRILLE

ARCHITECTURAL REFLECTED CEILING PLAN.

10. PROVIDE CAM-FARR, 2 INCH DEEP, MERV-13 FILTERS IN RETURN AIR

PLENUM OF AIR HANDLERS. INSTALL DOWNSTREAM OF RETURN AIR AND FRESH AIR INTAKE.

11. OUTSIDE AIR INTAKE SHALL BE A MINIMUM OF 10 FEET AWAY OR 3 FEET

BELOW EXHAUST AIR DISCHARGE OR PLUMBING VENTS. COVER AIR

INTAKE WITH 1" MESH WIRE.

12. SLOPE ALL CONDENSATE LINES AT 1/4" PER FOOT. PRIMARY
CONDENSATE SHALL TERMINATE OUTSIDE A MINIMUM OF 6" ABOVE
GRADE WITH A DOWNWARD ELBOW OR INDIRECTLY TO APPROVED
PLUMBING FIXTURE. SECONDARY CONDENSATE SHALL TERMINATE IN A
CONSPICUOUS LOCATION. PIPING SHALL BE 3/4" SCHEDULE 40 PVC

UNLESS OTHERWISE NOTED.

13. DUCT MATERIAL AND SEALING:

CLG GYPSUM EXHAUST 600

A.DUCTING IN CONCEALED LOCATION SHALL BE GALVANIZED SHEET
METAL. PRE-INSULATED FLEX DUCT MAY BE USED AS LEADERS (5'
MAX.) TO AND FROM AIR TERMINALS, PER CMC 603.4.1. DUCT SHALL BE
MANUFACTURED IN ACCORDANCE WITH CHAPT. 6 OF THE 2022 CMC AND
SMACNA GUIDELINES.

B.PRE-INSULATED FLEX DUCT SHALL HAVE AN R-VALUE = 8.0.

C.FACTORY-FABRICATED DUCT SYSTEMS SHALL COMPLY WITH ULIBI.

D.METAL TO METAL JOINTS SHALL BE SEALED WITH MASTIC SEALANT TO PROVIDE AIRTIGHT PROTECTION PRIOR TO INSULATION. APPLY SEALANT ACCORDING TO MANUFACTURER'S RECOMMENDATION.

E.INNER LINING OF FLEX DUCTING SHALL BE SECURELY FASTENED WITH A PANDUIT STRAP. THE EXTERIOR LINING (INSULATION) SHALL BE SECURELY TAPED TO THE SHEET METAL FITTING.

F. WHERE TURNS AND/OR TRANSITIONS EXCEED 45 DEGREES USE SHEET METAL FITTINGS AND ELBOWS. PROVIDE SHEET METAL SLEEVES FOR ALL SPLICES.

G.CORRUGATED ALUMINUM FLEX DUCT SHALL NOT BE ALLOWED. H.ALL TAPES AND MASTIC SEALANTS SHALL COMPLY WITH ULISI, UL 181A,

OR ULISIB.

14. INCREASE DUCT SIZES GRADUALLY, NOT EXCEEDING 15 DEGREES DIVERGENCE WHEREVER POSSIBLE. DIVERGENCE UPSTREAM OF EQUIPMENT SHALL NOT EXCEED 20 DEGREES: CONVERGENCE DOWNSTREAM SHALL NOT EXCEED 30 DEGREES.

15. SUPPORTS AND HANGERS FOR DUCTING SHALL BE IN ACCORDANCE WITH THE 2022 CALIFORNIA MECHANICAL CODE AND IN ACCORDANCE WITH SMACNA HYAC DUCT CONSTRUCTION STANDARDS - METAL AND FLEXIBLE. DUCTS SHALL BE SUPPORTED AT EACH CHANGE OF DIRECTION, SUPPORTS AND 8' INTERVALS (MIN.).

16. WRAP ALL UNLINED CONCEALED SUPPLY AND RETURN DUCTS WITH O.C. FIBERGLASS DUCT WRAP OR JM MICROLITE, 2" THICK AND 1" PER CUBIC FOOT DENSITY. WRAP INSULATION ENTIRELY AROUND DUCT AND WIRE SECURELY IN PLACE WITH #16 WIRE 12" O.C. ON EACH SIDE OF STANDING SEAM AND OVER INSULATION JOINT. LAP ALL INSULATION JOINTS 3" MIN. INSULATE DUCTS TIGHT AGAINST OTHER WORK BEFORE HANGING IN PLACE

17. DUCTS WITHIN 5 FEET OF AIR MOVING DEVICE SHALL BE LINED ON THE INTERIOR WITH 1" OWENS CORNING TYPE 150 AEROFLEX, OR EQUAL.

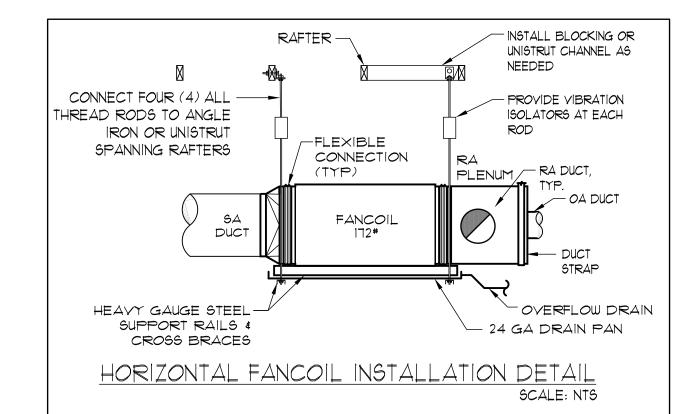
MATERIAL HAS A "K" OF 0.28 (BTU/HR-FT-°F)

18. AT TIME OF ROUGH INSTALLATION OR DURING STORAGE OF THE CONSTRUCTION SITE AND UNTIL FINAL STARTUP OF THE HVAC SYSTEM, ALL DUCTING AND RELATED AIR DISTRIBUTION COMPONENTS SHALL BE COVERED WITH TAPE, PLASTIC, SHEET METAL, OR OTHER METHODS ACCEPTABLE TO THE ENFORCING AGENCY TO REDUCE THE AMOUNT OF DUST OR DEBRIS WHICH MAY COLLECT IN THE SYSTEM.

19. AIR DISTRIBUTION SYSTEM SHALL BE BALANCED WITH AN APPROVED AND CALIBRATED AIR FLOW MEASURING DEVICE IN ACCORDANCE WITH THE REQUIREMENTS SET FORTH BY THE NATIONAL ENVIRONMENTAL BALANCING BUREAU (NEBB). PROVIDE INDICATED AIR FLOW RATES (WITHIN ±5%). PROVIDE OWNER WITH COMPLETE AIR BALANCE REPORT.

20. NO DUCTED OR NON-DUCTED AIR MOVING DEVICE SHALL TERMINATE IN ATTIC.

21. INSULATE CONDENSATE LINE WITH ARMSTRONG® 1/2" WALL THICKNESS "DG TUBO-SLIT". COND = 0.29 (BTU-IN/HR-°F) AT 75°F IN ACCORDANCE WITH ASTM C 177 OR C 518 WITH THIRD PARTY TESTING SUPERVISION.



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								HVAC	CEQUIP	MENT SO	CHEDU	LE					
			COOLING		HEATING			FAN			E	LECT.					
SYMBOL	AREA SERVED	TOTAL (BTU/HR)	SENSIBLE (BTU/HR)	COIL EDB/EWB (°F)	HIGH INPUT/OUTPUT (BTU/HR)	DB (°F)	CFM	S.P. (WC)	O.A. (CFM)	VOLTAGE	MCA	COMP. LRA	FUSE/MOCP	MFGR & MODEL NO.	WEIGHT (LBS)	EFFICIENCY	REMARKS
FC-1	FIRE STATION	47,000	38,500	80/63	54,000	47	1,485	0.8	375	208/230 V. 1 PHASE	5.63		15	MITSUBISHI # PVFY-P54NAMU-E1	172		MULTI-POISE FANCOIL, INSTALL IN HORIZONTAL POSITION DIMENSIONS: W=21-5/8", H=21", L=54-1/4" BUILT-IN FLOAT SWITCH FOR CONDENSATE SOUND - 50 DbA
HP-1	FIRE STATION	47,000	38,500	80/63	54,000	47				208/230 V. 1 PHASE	36		50	MITSUBISHI # MXZ-SM60NAM	302	HSPF = 10.7 SEER = 17.8 EER = 11.1	GROUND MOUNTED OUTDOOR HEAT PUMP SOUND - 46 DbA DIMENSIONS: W=41-11/32", D=18", H=52-11/16"

11011	-5.
1.	INSTALL EQUIPMENT ACCORDING TO MANUFACTURER'S RECOMMENDATION.

	EXHAUST FAN SCHEDULE												
			COOLING		FAN			ELECT.					
SYMBOL	QTY.	AREA SERVED	DESCRIPTION	CFM	S.P. (WC)	RPM	VOLTAGE	ВНР	WATTS	MFGR & MODEL NO.	WEIGHT (LBS)	SONES	REMARKS
EF-1	1	LAUNDRY	IN-LINE EXHAUST FAN	200	0.4		115 V. 1 PHASE		53.2	PANASONIC WHISPERLINE™ FV-20-NLF1	19.1	1.2	UNIT HAS BUILT-IN BACKDRAFT DAMPER FAN SHALL BE ENERGIZED BY FAN IN FC-1 SUSPEND FAN FROM ROOF FRAMING L=13-3/8", W=9-1/2',H=7-7/8"; 6" DUCT CONNECTION
EF-2	1	BATH 1	CEILING CABINET FAN	110	0.25		115 V. 1 PHASE		12.5	PANASONIC WHISPERGREENFIT™ FV-0511VF1	11.2	1.2	UNIT HAS BUILT-IN BACKDRAFT DAMPER EXHAUST FAN SHALL HAVE 6" DUCT CONNECTION FAN HAS 3 HIGH SPEED SETTINGS: 50, 80, OR 110 CFM FAN SHALL BE ENERGIZED BY ROOM LIGHT SWITCH
EF-3	1	BATH 2	CEILING CABINET FAN	110	0.25		115 V. 1 PHASE		12.5	PANASONIC WHISPERGREENFIT™ FV-0511VF1	11.2	1.2	UNIT HAS BUILT-IN BACKDRAFT DAMPER EXHAUST FAN SHALL HAVE 6" DUCT CONNECTION FAN HAS 3 HIGH SPEED SETTINGS: 50, 80, OR 110 CFM FAN SHALL BE ENERGIZED BY ROOM LIGHT SWITCH

NOTES:

(1) INSTALL/MOUNT EXHAUST FANS ACCORDING TO MANUFACTURER'S RECOMMENDATIONS.
 (2) FIELD LOCATE DUCT TERMINATIONS FOR EXHAUST FANS. THEY SHALL NOT TERMINATE IN ATTIC OR WITHIN 3 FEET OF OPERABLE DOOR OR WINDOW.

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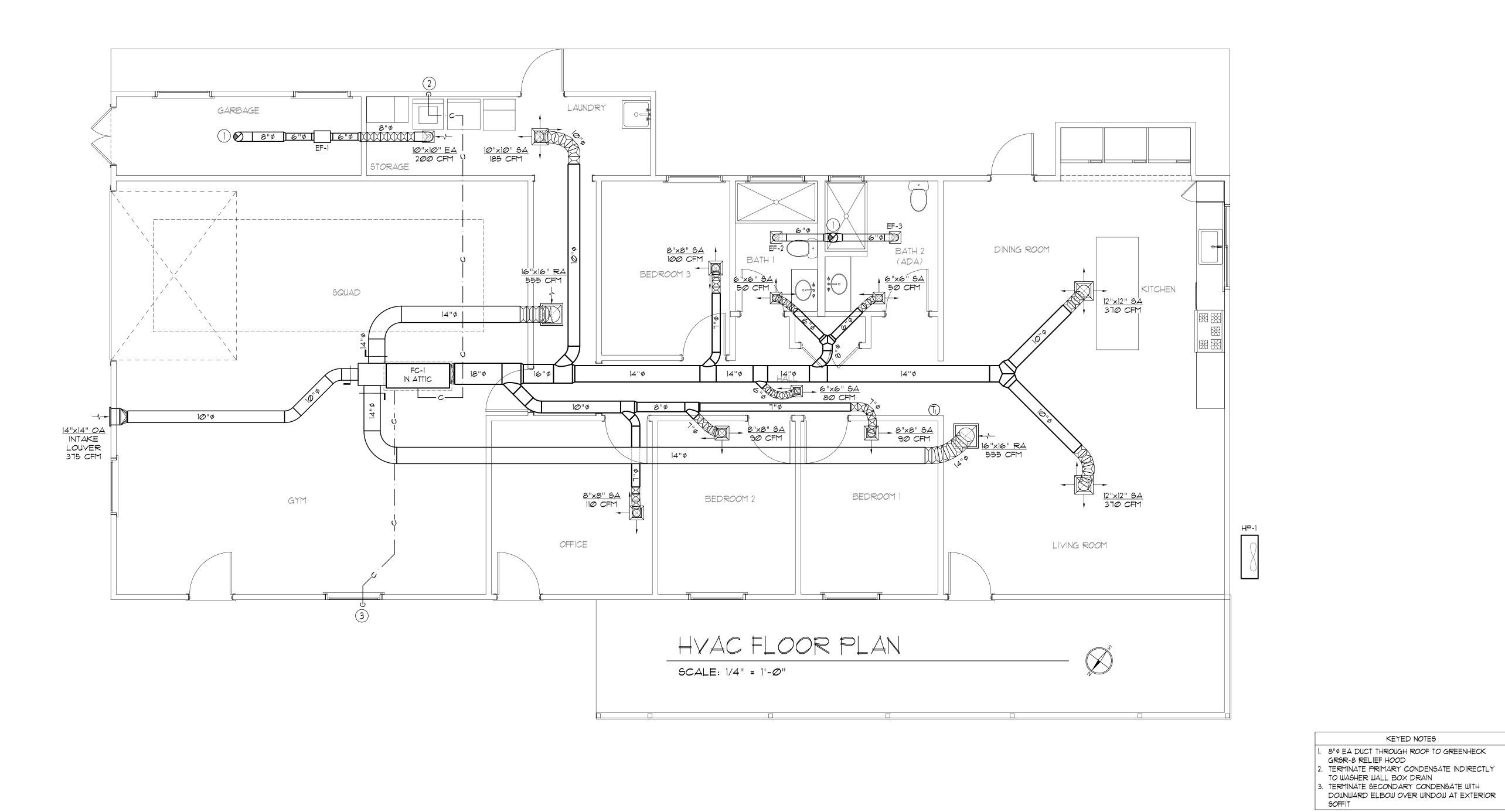
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ENGINEERING ENERGY & MECHANICAL CONSULTANTS



STATION 86 RENOVATION		12337 BANNER LAVA CAP ROAD	EVADA CIIY, CA 95959	HVAC FLOOR PLAN				
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KEYED NOTES

PIPE MATERIAL SCHEDULE

- SANITARY WASTE & VENTING MATERIALS
- (A) DRAINAGE WASTE AND VENT PIPING SHALL BE SCHEDULE 40 ABS DWY, NO HUB CAST IRON OR OTHER APPROVED MATERIAL HAVING A SMOOTH AND UNIFORM BORE. FITTINGS SHALL BE MADE OF SIMILAR MATERIAL. EXCEPTION:
- 1) NO HUB CAST IRON SHALL BE USED WHERE SLOPE OF WASTE LINE IS LESS THAN 1/4 IN PER FOOT, OR WHERE WASTE PIPING IS ROUTED BETWEEN FLOORS OR RISERS IN WALLS.
- (A) VENT PIPING SHALL EXTEND 12 INCHES ABOVE THE ROOF (MIN.) AND SHALL BE FLASHED WITH GALVANIZED ROOF JACKS AND RUBBER, WATERPROOF, VENT COLLARS. THE MINIMUM VENT SIZE AT VENT EXTENSION THROUGH ROOF SHALL BE 3" (MIN.) TO PREVENT FROST/SNOW CLOSURE. THE CHANGE IN DIAMETER SHALL BE MADE INSIDE THE BUILDING AT LEAST ONE (1) FOOT BELOW THE ROOF, VENTS SHALL BE PLACED ADJACENT TO UPPER RIDGE OF ROOF AND SHALL BE PROTECTED BY "MURPHY SPLITTER" OR METAL FORMED CRICKET APPROVED BY ADMINISTRATIVE AUTHORITY.

POTABLE WATER PIPING

- (A) SCHEDULE 40 PVC PIPE MEETING THE REQUIREMENTS OF ATM D 1785 MAY BE USED FOR COLD WATER DISTRIBUTION OUTSIDE THE BUILDING.
- FITTINGS SHALL BE IN COMPLIANCE ASTMD 2464. (B) WATER PIPE AND FITTINGS SHALL BE TYPE K COPPER, ASTM B88. COPPER PIPING SHALL BE JOINED WITH VIEGA® PRESS FITTING. ALL MATERIAL USED WITHIN THE WATER SUPPLY SYSTEM EXCEPT VALVES AND SIMILAR DEVICES, SHALL BE OF SIMILAR MATERIAL, EXCEPT
- (C) ALL PIPING 2" AND SMALLER MAY BE NON-BARRIER PEX TUBING BY UPONOR®, VIEGA®, OR EQUAL. PEX TUBING SHALL MEET OR EXCEED THE REQUIREMENTS OF ASTM \$876-08 AND F877. FITTINGS SHALL BE ZERO LEAD FITTINGS MEETING THE REQUIREMENTS OF ASTM F1807. PEX PIPING SHALL MEET THE REQUIREMENTS OF SECTION 604.1.2 OF THE 2016 CPC. POTABLE PEX PIPING PLACED IN SOIL SHALL BE SLEEVED WITH IN ACCORDANCE WITH TABLE 604.1 (FOOTNOTE 2). THE FOLLOWING ARE EXCEPTIONS TO THE USE OF PEX PIPING:

WHERE OTHERWISE APPROVED BY THE ADMINISTRATIVE AUTHORITY.

(1) PIPING WITHIN 18 INCHES OF WATER HEATER SHALL BE TYPE L

PLUMBING SYMBOLS AND LEGEND

VTR

WD,R

CWR,D

HWR,D

HWRT

P.O.C.

WCO, GCO

----- V

---- IND

_____G____ G

 $\longrightarrow \bigvee \longrightarrow$

1" G (378)

0+

WH

ABOVE CEILING UNDER COUNTER

BELOW FLOOR

BELOW SLAB BELOW GROUND

SURFACE MOUNT VENT RISER

VENT THRU ROOF

GREASE WASTE

WASTE DROP, RISER

WATER HEATER (SEE SCHEDULE)

WALL CLEANOUT, GRADE CLEANOUT

COLD WATER RISER DROP

HOT WATER RISER, DROP

HOT WATER RETURN

POINT OF CONNECTION

COLD WATER PIPING

HOT WATER RETURN PIPING

GAS PIPING, SIZE INDICATED

GAS FLOW IN KBTU/hr

SHUT OFF VALVE (S.O.V.) (LINE SIZED)

INDICATED IN PARENTHESIS

SANITARY WASTE PIPING

INDIRECT WASTE LINE

GAS REGULATOR

GAS SHUT-OFF BIBB

HOT WATER PIPING

FLOOR SINK

VENT PIPING

CLEANOUT

IN WALL

- (A) SCHEDULE 40 BLACK STEEL PIPE, ASTM A53, SCHEDULE 40 BLACK, WITH MALLEABLE IRON OR FORGED STEEL FITTINGS, SCREWED (THROUGH 2"). PROVIDE GAS COCK, DIRT LEG AND UNION AT EACH CONNECTION. GAS PIPING SHALL NOT BE BURIED BELOW SLAB UNLESS SPECIFICALLY INDICATED ON PLANS AND MEETING THE REQUIREMENTS OF CPC SECTION 1211.1.6.
- (B) BURIED GAS PIPING MAY BE BLACK STEEL PIPE WITH FACTORY WRAPPED PLASTIC COVER AS APPROVED BY LOCAL ADMINISTRATIVE AUTHORITY, ASTM A53, SCHEDULE 40 BLACK, WITH MALLEABLE IRON OR FORGED STEEL FITTINGS, SCREWED (THROUGH 2").

NAVIEN NPE-240A2

a) PROVIDE ADDITIONAL "HOT BUTTON SWITCH" ACCESSORY FOR

b) RECIRCULATION LOOP SHALL BE ENERGIZED PUSH-BUTTON OR

c) PUSH-BUTTONS SHALL BE HARD WIRED TO RECIRCULATION PUMP.

d) OCCUPANCY SENSORS SHALL BE TACO ONCOMMAND MOTION SENSOR.

e) PROVIDE PUSHBUTTONS AND OCCUPANCY SENSORS WHERE INDICATED

ON MECHANICAL PLANS. BUTTON AND OCCUPANCY SENSORS ENERGIZE

INSTALL ADDITIONAL SENSOR ACCORDING TO NAVIEN TECHNICAL

EXPANSION TANK SHALL BE WILKINS MODEL # XT-8, OR EQUAL. TANK

RECIRCULATION LOOP

ON-DEMAND RECIRCULATION.

BULLETIN NO. 2016-A-009.

f) INSULATE ENTIRE RECIRCULATION LOOP.

YOL .= 2.1 GALLONS, MAX WORKING PRESS .= 150 PSIG.

RECIRCULATION PUMP.

EXPANSION TANK:

OCCUPANCY SENSOR.

-EXPANSION TANK

RETURN

SUPPLY

- SCOPE OF WORK • REMOVE ONE BATHROOM AND ADD TWO (2) NEW BATHROOMS.
- · REVISED PLUMBING IN KITCHEN. • REFER TO ARCHITECTURAL DEMOLITION PLANS FOR PLUMBING
- FIXTURES TO BE REMOVED. • REPLACE EXISTING WATER HEATER WITH NEW ON-DEMAND WATER
- HEATERS. • FIELD YERIFY PIPING CONFIGURATION. ANY ALTERATION FROM WHAT
- IS INDICATED ON PLANS SHALL BE BROUGHT TO THE ARCHITECT'S ATTENTION. • REMOVE EXISTING PIPING NOT SHOWN TO BE REUSED ON PLANS.
- 2. ALL WATER AND WASTE PLUMBING INSTALLATION WORK AND ALL PLUMBING MATERIALS SHALL BE IN ACCORDANCE WITH THE 2022 CALIFORNIA PLUMBING CODE.
- 3.IT IS THE INSTALLING CONTRACTORS' RESPONSIBILITY TO ASSURE ALL MECHANICAL SYSTEMS FUNCTION PROPERLY, SAFELY, AND MEET ALL LOCAL, STATE AND REGIONAL CODES.
- 4.ALL WORK SHALL CONFORM TO THE ACCEPTED STANDARDS OF THE TRADE. THE ENGINEER IS TO BE NOTIFIED IF ANY SUBSTITUTIONS ARE SEEN TO BE NECESSARY.
- 5.HOT AND COLD-WATER PIPE SIZING IS BASED ON CHART A 105.1 OF THE 2022 CPC AT THE FRICTION LOSS PER 100 FT INDICATED ON WATER AND WASTE SERVICE CALCULATIONS.
- 6.GAS PIPING SIZED ACCORDING TO TABLE 1216.2(1) OF THE 2022 CPC. PIPE SIZING FOR NATURAL GAS LESS THAN 2 PSI WITH PRESSURE
- DROP = 0.5 IN.WC. • DISTANCE FROM METER TO FURTHEST APPLIANCE = 65 FEET.
- FITTING EQUIVALENT LENGTH = 40 FEET. • USE 125 FEET ROW IN TABLE 1216.2(1).
- 1. PROVIDE SHUTOFF VALVES OR STOPS AT EACH CONNECTION. AT GAS CONNECTIONS, PROVIDE GAS COCK, DIRT LEG, UNION AND FLEX CONNECTION.
- 8.CONTRACTOR SHALL PARTICIPATE IN BID WALK-THRU AND SHALL FAMILIARIZE THEMSELVES WITH EXISTING CONDITIONS. BIDS SHALL BE ADJUSTED TO ACCOMMODATE ANY EXISTING CONDITIONS WHICH ARE NOT SHOWN ON PLANS AND ARE VISIBLE DURING WALK-THRU. ANY AND ALL DEVIATIONS FROM PLANS SHALL BE BROUGHT TO THE ENGINEERS' ATTENTION.
- 9. CONTRACTOR SHALL VERIFY SITE DIMENSIONS. NO CHANGE ORDERS WILL BE ALLOWED FOR CONDITIONS WHICH COULD BE VERIFIED BEFORE CONSTRUCTION.
- 10. CONTRACTOR SHALL COORDINATE WITH OTHER TRADES. NO CHANGE ORDERS WILL BE ALLOWED FOR ITEMS THAT COULD HAVE BEEN COORDINATED IN THE FIELD.

PLUMBING NOTES

- II. PLUMBING FIXTURES NOT SPECIFIED ON PLANS SHALL BE SELECTED BY INSTALLING SUB-CONTRACTOR AND SUBMITTED TO OWNER'S REPRESENTATIVE FOR APPROVAL, FIXTURES SHALL MEET 2022 CPC AND CAL-GREEN CODES. MAXIMUM FLOW RATES SHALL BE AS
- FOLLOWS: SINKS 1.8 GPM
- LAVATORIES (RESIDENTIAL) 1.2 GPM • LAVATORIES (COMMERCIAL) Ø.5 GPM
- 1.8 GPM SHOWERS • WATER CLOSETS 1.28 GPF
- URINALS Ø.125 GPF METERING FAUCETS 0.25 GAL/CYCLE
- 12.FURNISH AND INSTALL ALL MATERIALS AND PERFORM ALL LABOR NECESSARY FOR A COMPLETE INSTALLATION OF PLUMBING WORK INDICATED ON THE DRAWINGS. PROVIDE ANY INCIDENTAL WORK NOT SHOWN OR SPECIFIED, WHICH CAN REASONABLY BE INFERRED OR TAKEN AS BELONGING TO THE WORK AND NECESSARY TO PROVIDE THE COMPLETE SYSTEM.
- 13. PROVIDE ALL NECESSARY PLUMBING CONNECTIONS TO EQUIPMENT FURNISHED UNDER OTHER DIVISIONS OR SECTION OR BY OWNERS. PROVIDE SHUTOFF VALVES OR STOPS AT EACH CONNECTION.
- 14. PIPING IS TO BE FIELD LOCATED IN SUCH A WAY AS TO AVOID OBSTACLES, MEET CALIFORNIA PLUMBING CODE (CPC) REQUIREMENTS AND ALLOW SERVICE CLEARANCE TO AREAS AND EQUIPMENT THAT MAY REQUIRE SERVICING.
- 15. ALL HORIZONTAL WASTE / YENT PIPES SHALL HAVE A MINIMUM SLOPE OF 1/4" PER FOOT. IF EXISTING INVERT ELEVATION DOES NOT FOR 1/4" PER FOOT, 1/8" PER FOOT WILL BE ALLOWED WITH THE WASTE PIPING UPSIZED.
- 16. HORIZONTAL VENT PIPE SHALL BE SO GRADED AND CONNECTED AS TO DRIP BACK BY GRAVITY TO THE DRAINPIPE IT SERVES PER 2022 CPC 905.2. VENT PIPE SHALL TERMINATE A MINIMUM OF 10 FEET
- FROM FRESH AIR INTAKE. 17.INSULATE ALL POTABLE HOT WATER SUPPLY & RETURN PIPING WITH K-FLEX 3/1" WALL THICKNESS INSUL-TUBE® OR EQUAL CONDUCTIVITY = 0.29 (BTU-IN/HR-°F) AT 75°F IN NON-CONDITIONED
- SPACE, IN ACCORDANCE WITH ASTM CITT OR C518. 18. FOR EXACT LOCATION OF PLUMBING FIXTURES AND MOUNTING HEIGHTS, SEE ARCHITECTURAL ELEVATIONS.
- 19. PIPING SHALL BE SUPPORTED AND BRACED IN ACCORDANCE WITH CHAPTER 3 OF THE 2022 CPC WITH SUPERSTRUT HANGERS, OR EQUAL. PROVIDE ISOLATORS AT ALL HANGERS WHERE PIPING IS NOT INSULATED.
- 20.TRAP PRIMERS SHALL BE PROVIDED FOR ALL FLOOR DRAINS. 21.CLEANOUTS IN FIRE RATED WALLS SHALL HAVE BOTH METAL BODY AND COVER CONSISTENT WITH PIPE MATERIAL SCHEDULE.
- 22. PLUMBING VENTS SHALL BE AT LEAST 10' FROM OR 3' ABOVE ANY DOOR, OPENABLE WINDOW, MECHANICAL AIR INTAKE, OR OTHER INLETS INTO THE BUILDING PER CPC 906.2.

23. DISINFECTION OF WATER SYSTEM

- PRIOR TO FINAL INSPECTION, CLEAN AND DISINFECT DOMESTIC HOT AND COLD-WATER PIPING CONNECTED TO DOMESTIC WATER MAINS. • PIPING SHALL BE STERILIZED WITH A MIXTURE OF 2 POUNDS CHLORINATED LIME TO EACH 1,000 GALLONS OF WATER (50 PPM
- OF AVAILABLE CHLORINE). • RETAIN THE MIXTURE IN PIPES 24 HOURS AND FLUSH IT THOROUGHLY
- WITH POTABLE WATER PRIOR TO PLACING IT IN SERVICE. • PERFORM ALL WORK PER AWWA STANDARD PROCEDURES FOR DISINFECTING WATER MAINS AND AS REQUIRED BY LOCAL BUILDING AND HEALTH DEPARTMENT CODES.

24. GAS PIPE TESTING

- · ALL TESTING SHALL BE IN COMPLIANCE WITH SECTION 1316 OF THE 2010 CALIFORNIA MECHANICAL CODE.
- TEST ALL NEW PIPING AT FOUR (4) TIMES THE WORKING PRESSURE BUT NOT LESS THAN 3 PSI FOR A PERIOD OF NOT LESS THAN TWO (2) HOURS, ANY LOSS IN PRESSURE DURING THAT TIME PERIOD WILL BE SEEN AS A LEAK IN THE SYSTEM. CONNECTIONS BETWEEN NEW PIPING AND EXISTING PIPING SHALL BE TESTED USING SOAP AND WATER OR OTHER APPROVED LEAK-DETECTING FLUID.
- ALL JOINTS AND WELDS SHALL BE LEFT EXPOSED FOR EXAMINATION DURING TEST.
- REPAIR ANY LEAKS FOUND BY REMAKING THE JOINT, DO NOT USE CAULKING OR SIMILAR METHODS TO CORRECT LEAKS. AFTER LEAKS ARE REPAIRED, AGAIN TEST THAT PORTION OF THE SYSTEM AS DESCRIBED ABOVE.

25. TESTING OF PIPING

- (A) ALL PIPING SHALL TESTED AT COMPLETION OF ROUGH-IN. TEST IN ACCORDANCE WITH THE FOLLOWING SCHEDULE TO SHOW NO LOSS IN PRESSURE OR VISIBLE LEAKS AFTER A MINIMUM DURATION OF FOUR (4) HOURS AT THE TEST PRESSURE INDICATED.
- (B) ISOLATE FROM THE SYSTEM ALL EQUIPMENT WHICH MAY BE DAMAGED BY TEST PRESSURE. TEST SCHEDULE AS FOLLOWS:
- SYSTEM TESTED TEST PRESSURE PSIG TEST WITH ALL SOIL, WASTE, DRAIN FILL WITH WATER TO TOP OF WATER AND VENT PIPING WITHIN HIGHEST JOINT IN SYSTEM !
- BUILDINGS. ALLOW TO STAND 2 HOURS OR LONGER AS DIRECTED BY INSPECTOR.
- ALL HOT TEMPERED AND 150 PSIG WATER COLD PIPING.

PLUMBING FIXTURE SCHEDULE

SYMBOL	DESCRIPTION	MFGR. & MODEL No.	NOTES							
FS	FLOOR SINK	J.R. SMITH 320-Y02	ENAMEL 3/4 GRATE, 2"Ø NO-HUB OUTLET							
WCO	WALL CLEANOUT	ZURN Z-1468	ROUND STAINLESS STEEL WALL ACCESS COVER WITH BRONZE RAISED HEX HEAD PLUG							
NOTE: SEE ARCHI	NOTE: SEE ARCHITECTURAL PLANS FOR OTHER PLUMBING FIXTURE SPECIFICATIONS A second seco									

DI LIMBING FOLLIDMENT SCHEDLILE

PLUMBING EQUIPMENT SCHEDULE										
SYMBOL	DESCRIPTION	MFGR. & MODEL No.	SPECIFICATIONS	ACCESSORIES						
WH-1	NPE SERIES TANKLESS GAS WATER HEATER	NAVIEN NPE-240A2	TANKLESS WATER HEATER, UEF=0.95 RECOVERY = 5.8 GPM AT 67°F RISE INPUT = 13,300 - 199,900 BTU/HR DIMENSIONS: 17.3"W x 13.2"D x 27.4" HT POWER: 120V, 350W, 4A	1. PROVIDE 2" PVC INTAKE AND EXHAUST VENTS TROUGH ROOF 2. PROVIDE HARDWIRED PUSH BUTTONS AND OCCUPANCY SENSORS TO ENERGIZE RECIRCULATION PUMP, LOCATION OF CONTROLS INDICATED ON PLANS. 4. DRAIN T&P TO EXTERIOR PER CODE 5. DRAIN CONDENSATE INDIRECTLY TO MOP SINK						

WATER AND WASTE SERVICE CALCULATIONS STATION 86

		Fixture L	Jnits (Ea.)	D.H.W.	Fixture Unit	S	D.H.V
Fixtures	Quantity	Water	Waste	(GPH) (Ea.)	Water	Waste	(GPF
Water Closet FT	2	2.5	4	0	5	8	
Lavatory	2	1	1	6	2	2	
Shower	2	2	3	30	4	6	
Washer/Lau Sink	1	4	3	30	4	3	
Dishwasher	1	2	3	30	2	3	
Mop Sink	1	3	3	30	3	3	;
Kitchen Sink	1	1.5	3	30	1.5	3	;
Hose Bibb (1st)	1	2.5	0	0	2.5	0	
Hose Bibbs (Each Additional)	3	1	0	0	3	0	
Total	14				27	28	1
Hot Water FU"s		16.5	X 0.75 =	12.3	(9 GPM)		
Peak Flow =	20	(GPM)	(Ref. Char	t A-3 2022 C	PC)		

Pressure Available at Site	65 psi
Pressure Booster	0 psi
Total Available Pressure	65 psi
3/4" Meter Loss at 20 GPM	5.1 psi
Elevation Rise (Ft) 10 FT	4.3 psi
Backflow Preventer Loss	10 psi
Required Residual Pressure required for WC	15 psi
Equivalent pipe length from meter to most remote fixture	200 ft
Friction Loss Available Pressure	30.6 psi
Maximum Allowable Friction Loss (psi/100Ft)	15.3
Minimum required water pipe size (inches)	1
Minimum required waste pipe size (inches)	3

Sched. 40 PVC Piping Ouside the Building -Piping downstream of SOV -PEX

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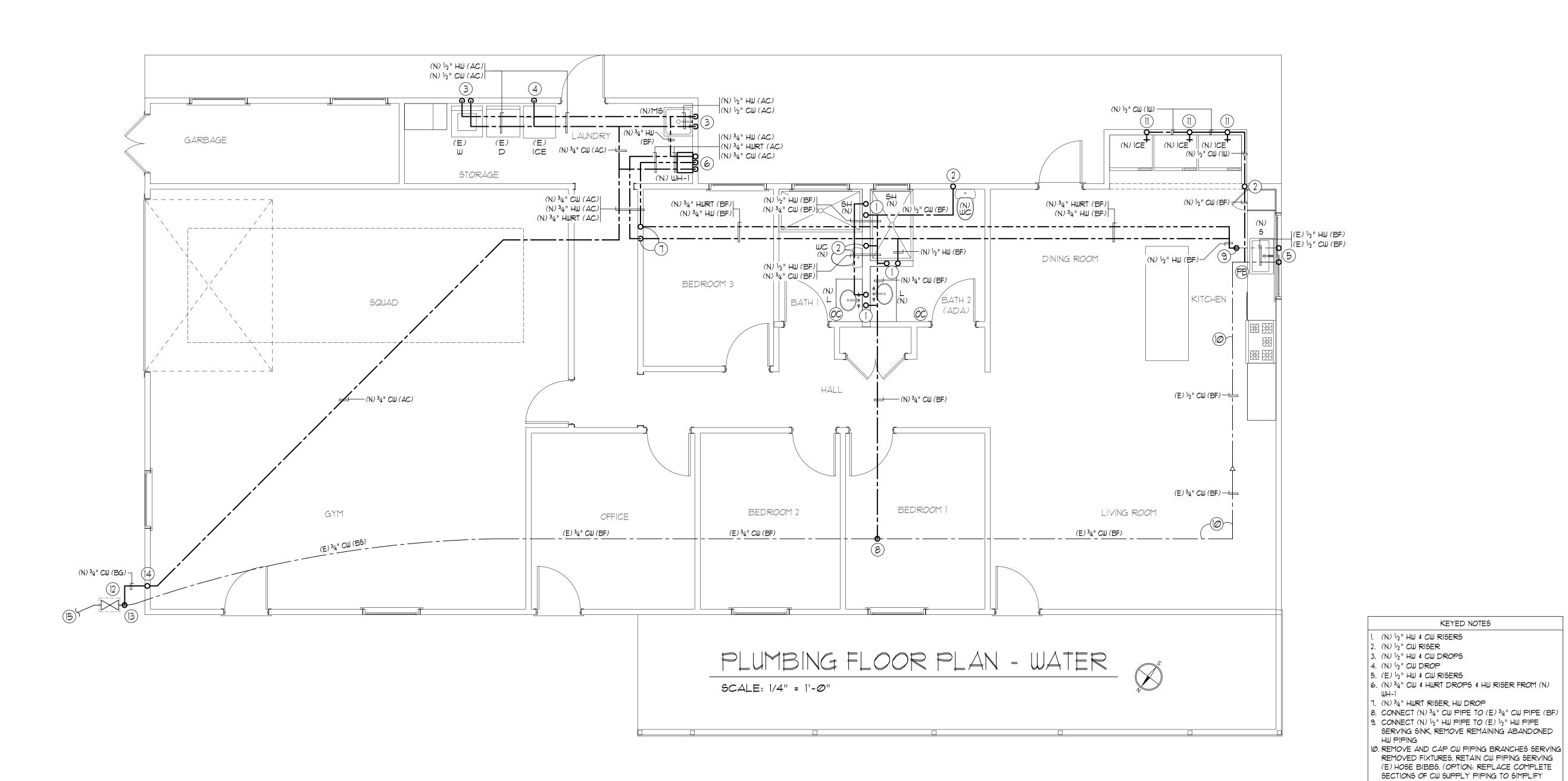
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9-11-2023

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CTATION & DENOVATION			12337 BANNER LAVA CAP ROAD	NEVADA CITY, CA 95959	PLUMBING FLOOR PLAN - WATER	
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9-11-2023

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KEYED NOTES

II. (N) CW CONNECTION TO (N) ICE MAKER BOX, VERIFY WITH OWNER LOCATIONS AND QUANTITY

13. CONNECT (N) 34" CW PIPE TO (E) CW PIPE DOWN

15. (E) CW SUPPLY TO (E) WATER METER AT STREET

PIPING SYSTEM)

12. (E) S.O.V. IN VALVE BOX

STREAM OF (E) S.O.V. (BG)

14. (N) 34" CW RISER TO ATTIC

■ N	EW DEXISTING			,	11	Α	11		AIC:		65K
VOI	_TAGE: 120/24	0V-1Ø-3W			ı	H			MAIN:		MLC
BU:	S:	200A	MOUNT		RECESSED			LOCATI	ON:	EXTERIOR	
2 8	LOAD DESCRIPTION	VOLT-A	MPERES	СВ		3US	СВ	VOLT-A	MPERES	LOAD DESCRIPTION	¥.
		ØΑ	øΒ	<u></u>	Α.	В	Į, j	ØΑ	ØΒ		
1_	GARAGE DOOR OPENER	180		20 1	+		- 20 1	1,500		STATION LTG	2
<u>3</u>	OFFICE RECS		720	20 1	+	\dashv	20 1		1,500	WASHER	4
5	BEDROOM 2 & 3 RECS	1,440		20 1	+	-	- 30/	2,500		DRYER	6
7	BEDROOM 1 / CONVENIENCE RECS		1,620	²⁰ 1	+	\rightarrow	· / 2		2,500	\rightarrow	8
9	BATHROOM 1 GFCI REC	180		20 1	+	-	- 20 1	180		GARBAGE AREA REC	10
11	BATHROOM 2 GFCI REC		180	20 1	+	+	•			SPACE	12
13	EXTERIOR GFCI RECS	360		20 1	+	+	•			SPACE	14
15	SPARE			20 1	+	-	- 20 1		540	KITCHEN RECS 1	16
17	SPARE			20 1	+	+	- 20 1	540		KITCHEN RECS 2	18
19	SPARE			20 1	+	\rightarrow	- 20/		1,127	DISPOSAL	20
21	SPARE			20 1	\rightarrow	_	· / 2	1,200		DISHWASHER	22
23	SPACE				+	\rightarrow	. 20 1	,	300	RANGE HOOD	24
25	SPACE				-	_	. [SPACE	26
27	(E) PANEL "1B"		6,758	100/	+	-	- 60/		4.680	(E) PANEL "1C"	28
29	\(\sqrt{\sq}\sqrt{\sq}}\sqrt{\sq}}}}}}}}}}}}}}}}}}}}}}}}}}}}}}}}}}}}	6,658	-,	2	+	+	· / 2	4,680	,	\	30
SUE	BTOTAL	8,818	9,278		·	•		10,600	10,647	SUBTOTAL	
тот	AL VOLT-AMPERES/PHASE:	Ø	A = 19,4	18			Ø	B = 19,92	25		
TOTAL PANEL VOLT-AMPERES: 39,343				AMPS = 164							

■N	IEW DEXISTING			,	'1B	11		AIC:	65K		
VOL	VOLTAGE: 120/240V-1Ø-3W				ID			MAIN:		MLO	
BUS	BUS: 100A		MOUNTING:				ESSED	LOCATI	ON:	EXTERIOR	
ŠČ Š	LOAD DESCRIPTION	VOLT-A	MPERES	СВ	BUS	СВ	VOLT-A	MPERES	LOAD DESCRIPTION	CKT NO.	
02		ØΑ	ØΒ	Ţρ	A B	T P	ØΑ	ØΒ		OZ	
1	FRIDGE 1	1,000		20/1	+-+	· 15/	518		FAN COIL "FC-1"	2	
3	FRIDGE 2		1,000	20 1	+	· 🖊 2		518	<u> </u>	4	
5	FRIDGE 3	1,000		20/1	++	50/	4,140		HEAT PUMP "HP-1"	6	
7	ICE MACHINE		600	20 1	+	· / 2		4,140	<u> </u>	8	
9	SPACE				+-+	•			SPACE	10	
11	LIGHTING		500	20 1	++	· 🗆 🗆			SPACE	12	
13	SPACE				+-+	· 🗀			SPACE	14	
15	SPACE				+	• 🖂			SPACE	16	
17	SPACE				++	•			SPACE	18	
SUE	BTOTAL	2,000	2,100				4,658	4,658	SUBTOTAL		
TOTAL VOLT-AMPERES/PHASE:		Ø	A = 6,658 ØB = 6,758								
TOTAL PANEL VOLT-AMPERES: 13,146									AMPS = 55		

□ NE\	W ■EXISTING			ı	'1C	11		AIC:	EXISTING		
VOLT	AGE: 1	20/240V-1Ø-3W						MAIN:			
BUS:		100A	MOUNT	MOUNTING:		SI	JRFACE	LOCAT	ION: APPARA	TUS BLDG	
CKT NO.	LOAD DESCRIPTION		MPERES	СВ	BUS	СВ		MPERES	LOAD DESCRIPTION	SK T S	
		ØA	øΒ	Ţ þ	A B	IP	ØΑ	øΒ			
1A 1B	REGS			20 /		20/1			- DOOR-MOTOR	2A 2B	
	20V REC			40_/		20/			+LIGHTS	4A 4B	
5A					1 —	40 /			SCBA	6A	
5B				7-2	1 					6B	
	AIR CLEANER			20 /	1	- 7				8A	
7B		<u>†</u>		/	ĺ - 	- 7 - 2			T	8B	
9A 9B					1++	30 /			PLYMOVENT EXHAUST SYSTEM	10A	
9B				7 2] 🕂 🕂	\cdot				10E	
	.OAD			20 1] 	·		ļ		124	
11B ⊦	HEATER			20/1	ļ 	/ 2				12E	
SUBT	OTAL	2,340	2,340				2,340	2,340	SUBTOTAL		
TOTA	L VOLT-AMPERES/PHASE:	Ø	A = 4,680)	•	Ø	B = 4,680	0	•		
TOTAI	L PANEL VOLT-AMPERES: 9,360								AMPS = 39		

* UTILITY COMMITMENT LETTER SHALL BE MADE AVAILABLE AT OR BEFORE TIME OF FIRST INSPECTION. E.C. SHALL VERIFY EQUIPMENT AIC RATINGS ARE GREATER THAN AFC SHOWN ON LETTER. SERIES RATE SYSTEM.

LOAD & FEEDER	CALCS
PANEL "1C" ASSUME LOADING @ 65% OF 60A CB TOTAL DEMAND AMPS @ 120/240V-1Φ-3W	9,360 W 9,360 W 39 A
PANEL "1B" LIGHTING REFRIGERATOR: 3 @ 1,000 W EACH ICE MACHINE HEAT PUMP "HP-1" FAN COIL "FC-1" SUBTOTAL 25% CONTINUOUS LOAD 25% LARGEST MOTOR TOTAL DEMAND AMPS @ 120/240V-1Ф-3W A 100 AMP FEEDER IS ADEQUATE.	500 W 3,000 W 600 W 1,035 W 8,280 W 13,415 W 0 W 2,000 W 15,415 W
PANEL "1A" LIGHTING: 2,671 SF @ 1.3 W/SF GARBAGE DISPOSAL DISHWASHER RANGE HOOD WASHER DRYER PANEL "1B" PANEL "1C" RECEPTACLES: 33 @ 180 W EACH SUBTOTAL 25% CONTINUOUS LOAD 25% LARGEST MOTOR TOTAL	3,472 W 1,127 W 1,200 W 300 W 1,500 W 5,000 W 13,415 W 9,360 W 5,940 W 41,314 W 0 W 2,600 W
DEMAND AMPS @ 120/240V-1Ф-3W	183 A
A 200 AMP SERVICE IS ADEQUATE.	

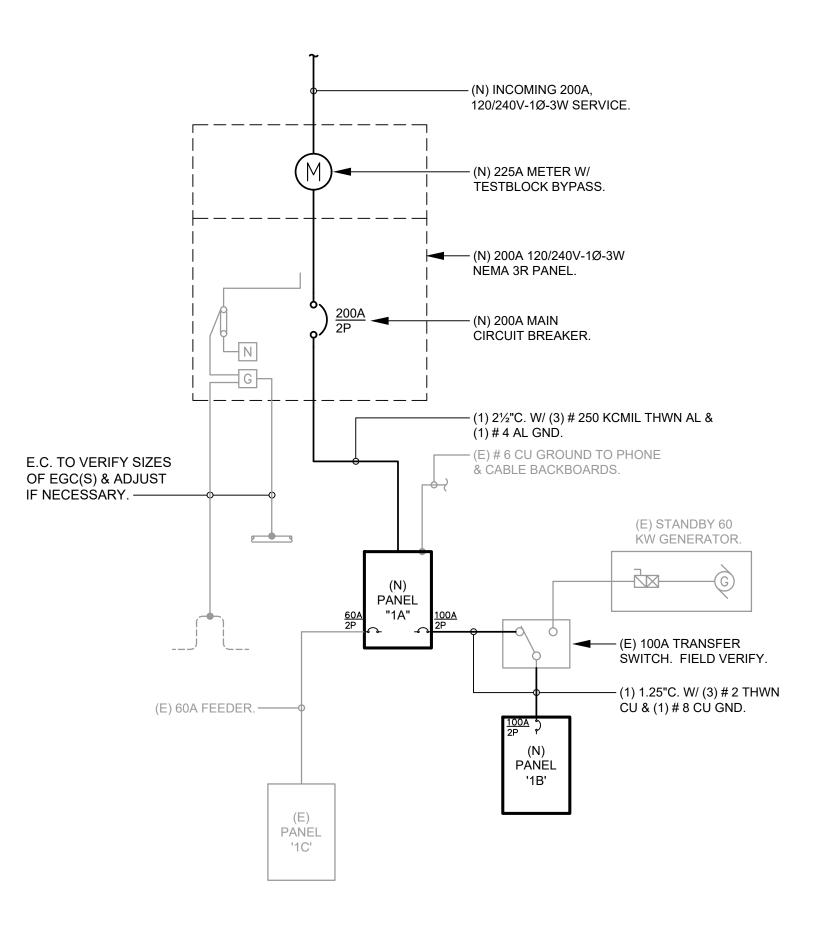
GENERAL NOTES

- 1. ELECTRICAL CONTRACTOR SHALL VERIFY ALL ONSITE UTILITY REQUIREMENTS WITH THE ELECTRIC UTILITY AND THE TELEPHONE COMPANY PRIOR TO SUBMITTING A BID. INCLUDE ALL PULLBOXES, CONDUITS, SPLICEBOXES, TRANSFORMER PAD, TERMINAL BOXES, RISERS, TRENCHING, ETC. AS REQUIRED FOR COMPLETE AND OPERATIONAL UTILITY SERVICES, WHETHER INDICATED ON DRAWINGS OR NOT. VERIFY POINT OF SERVICE FEEDS WITH UTILITY COMPANIES AT JOBSITE.
- 2. PRIOR TO SUBMITTING BID, CONTRACTOR SHALL VISIT JOBSITE AND THOROUGHLY EXAMINE ALL EXISTING CONDITIONS WHICH MAY AFFECT THE WORK. NO ADDITIONAL COSTS WILL BE CONSIDERED FOR CONTRACTOR'S FAILURE TO DO SO. REPORT ANY DISCREPANCIES OR PROBLEMS ENCOUNTERED TO ARCHITECT.
- 3. REFER TO ARCHITECTURAL DRAWINGS FOR ALL DIMENSIONS. **DO NOT** SCALE FROM ELECTRICAL DRAWINGS.
- 4. CONTRACTOR SHALL INSTALL A #14 AWG OR 3/16" POLYPYLENE PULL LINE IN ALL EMPTY CONDUITS.
- 5. PROVIDE WEATHERPROOF CAPS ON ALL ENDS OF CONDUITS TERMINATED OUTSIDE OF BUILDING. STAKE AND RECORD ALL CONDUIT LOCATIONS. PLACE AN ELECTRONIC MARKER FOR ALL STUB OUTS.
- 6. THE CALCULATED AVAILABLE FAULT CURRENT THAT COULD BE PROVIDED TO THE SERVICE EQUIPMENT SHALL BE FIELD MARKED AS REQUIRED BY NEC 110.24(A).
- 9. FIRE SEAL ALL FIRE WALL PENETRATIONS FOR CONDUITS WITH AN APPROVED FIRE SEALANT AFTER CONDUIT INSTALLATION. FIRE SEAL SHALL PROVIDE EQUAL FIRE RATING AS WALL.
- 10. ELECTRICAL EQUIPMENT SHALL BE LISTED OR CERTIFIED BY A RECOGNIZED ELECTRICAL TESTING LABORATORY OR APPROVED BY THE DEPARTMENT.
- 11. NO PIPING, DUCTS OR EQUIPMENT FOREIGN TO ELECTRICAL EQUIPMENT SHALL BE PERMITTED TO BE LOCATED WITHIN THE DEDICATED SPACE ABOVE THE INDOOR/OUTDOOR ELECTRICAL EQUIPMENT.
- 12. PROVIDE AND MAINTAIN REQUIRED WORK SPACE, ACCESS TO WORK SPACE, AND HEAD ROOM ABOUT ELECTRICAL EQUIPMENT PER TABLE

ELECTRICAL NOTES

ARCHITECT & E.E.

- 1. LOADS SHOWN IN PANEL SCHEDULES ARE TAKEN FROM (E) PANEL SCHEDULES. E.C. TO FIELD VERIFY BREAKERS & CIRCUITING.
- 2. PROVIDE UPDATED TYPEWRITTEN PANEL SCHEDULES SHOWING NEW/EXISTING/SPACE/SPARES.
- 3. PANEL FEEDERS SHALL BE FIELD VERIFIED. E.C. TO PERFORM CODE MANDATED 30-DAY TEST TO VERIFY FEEDER LOADING & ISSUE RESULTS TO
- 4. CONNECT NEW LOADS TO SPARE BREAKERS RESULTING FROM DEMO



(E) ONE-LINE DIAGRAM

NOTE TO CONTRACTOR

SYMBOL LIST

⊢O STRIPLIGHT

RECESSED FIXTURE

RECESSED LIGHT FIXTURE

SURFACE MOUNTED LIGHT FIXTURE

O SURFACE MOUNTED LIGHT FIXTURE

EXIT LIGHT - CEILING MOUNTED WITH ARROWS AS SHOWN

\$K KEY OPERATED SINGLE POLE TOGGLE SWITCH, @ +44" UNO

JUNCTION BOX, SIZE & TYPE AS INDICATED OR AS REQUIRED

15 AMP 125V 3W NEMA 5-15R DUPLEX RECEPTACLE, @ +18" UNO

DEDICATED, 15 AMP 125V 3W NEMA 5-15R DUPLEX RECEPTACLE, @ +18" UNO

SWITCHED, 15 AMP 125V 3W NEMA 5-15R DUPLEX RECEPTACLE, @ +18" UNO

15 AMP 125V 3W NEMA 5-15R DOUBLE DUPLEX RECEPTACLE, @ +18" UNO

ZEZZ MAIN SWITCHBOARD OR MOTOR CONTROL CENTER, SEE ONE LINE DIAGRAM

DATA OUTLET, 4" SQ. BOX w/ SINGLE DEVICE RING & PLATE @ +18" UNO

TELEPHONE TERMINAL BACKBOARD; 4' x 8' x 3/4" PLYWOOD OR AS NOTED

▼ TELEPHONE OUTLET, 4" SQ. BOX w/ SINGLE DEVICE RING & PLATE @ +18" UNO

▼ COMBINATION PHONE/DATA OUTLET, 4" SQ. BOX w/ SINGLE DEVICE RING & PLATE @ +18" UNO

BRANCH CIRCUIT WITHOUT FURTHER DESIGNATION INDICATES A 2 #12 WIRE CIRCUIT

ADDITIONAL NO. OF #12; \longrightarrow HI , 3 #12; \longrightarrow H , 2 #12 &

SIZES; $-\frac{11}{10}$, 2 #10 & 1 #12 GND; $-\frac{11}{10}$, 3 #4 & 1 #8 GND;

■ EMERGENCY LIGHTING FIXTURE — SURFACE MOUNTED

\$ SINGLE POLE TOGGLE SWITCH, @ +44" UNO

\$3 THREE-WAY TOGGLE SWITCH, @ +44" UNO

\$M MOTOR RATED SINGLE POLE SWITCH, @ UNIT UNO

FY FUSED DISCONNECT SWITCH, SIZE PER UNIT LABEL

☐ CONTROL EQUIPMENT, N.I.E.S. CONNECT AS REQUIRED

w/ DOUBLE DUPLEX RECEPTACLE & 1 #6 GND

HOMERUN TO RESPECTIVE PANEL OR TERMINAL CABINET

— CONDUIT CONCEALED IN CEILING OR WALL

── CONDUIT RISER — UP

EL EMERGENCY LIGHT

NL NIGHT LIGHT

WP WEATHERPROOF

PIR PASSIVE INFRARED

SMOKE DETECTOR

FACP FIRE ALARM CONTROL PANEL

UNO UNLESS NOTED OTHERWISE

FLAG NOTE SHOWN ON SAME SHEET

ET BOTTOM LETTER/NUMBER INDICATES SHEET

ET BOTTOM LETTER/NUMBER INDICATES SHEET

DT DUAL-TECH

OR OVERRIDE

(E) EXISTING C. CONDUIT

CONDUIT RISER - DOWN

MT EMPTY CONDUIT WITH PULLSTRING

---- CONDUIT RUN CONCEALED BELOW FLOOR OR FINISHED GRADE

NIES NOT IN ELECTRICAL SECTION OF THESE PLANS & SPECIFICATIONS

SECTION DESIGNATION; TOP LETTER INDICATES SECTION,

DETAIL DESIGNATION; TOP NUMBER INDICATES DETAIL,

MECHANICAL & PLUMBING EQUIPMENT DESIGNATION

SPECIAL OUTLET. SEE PLANS FOR SPECIFICATION

MOTOR, N.I.E.S. CONNECT AS REQUIRED, NUMBER INDICATES HP

x FIXTURE TAG; LETTER INDICATES TYPE

□ NON-FUSED DISCONNECT SWITCH

PANELBOARD - SEE SCHEDULE

CIRCUIT BREAKER DISCONNECT SWITCH

\$2 TWO POLE TOGGLE SWITCH, @ +44" UNO

OH WALL MOUNTED LIGHT FIXTURE

\$D DIMMER SWITCH, @ +44" UNO

THE CONTRACTOR SHALL THOROUGHLY REVIEW THESE ELECTRICAL CONSTRUCTION DOCUMENTS PRIOR TO PREPARING A BID FOR THE ELECTRICAL WORK SHOWN. THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR FIELD VERIFICATION OF EXISTING ELECTRICAL SERVICES AND CONNECTION REQUIREMENTS. THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY OF ANY CONFLICTS OR DISCREPANCIES FOUND PRIOR TO BID. BY SUBMITTING A BID FOR THE ELECTRICAL WORK, THE ELECTRICAL CONTRACTOR IS AFFIRMING THAT THE REQUIRED FIELD VERIFICATION OF EXISTING CONDITIONS HAS BEEN COMPLETED AND ASSUMES FULL RESPONSIBILITY FOR CONFLICTS FOUND AFTER THE AWARD OF THE ELECTRICAL CONTRACT. NO ADDITIONAL COMPENSATION WILL BE CONSIDERED FOR CONFLICTS AND/OR DISCREPANCIES FOUND TO EXIST AFTER THE AWARD OF THE ELECTRICAL CONTRACT.

RUSSELL DAVIDSON ARCHITECTURE + DESIGN





0 ENOV

TION NAME DATE SUBMITTED: 03.13.2024 AS NOTED DRAWN BY: JL/JP

> ONE-LINE & PANEL **SCHEDULES**

CHECKED BY:

E1.0







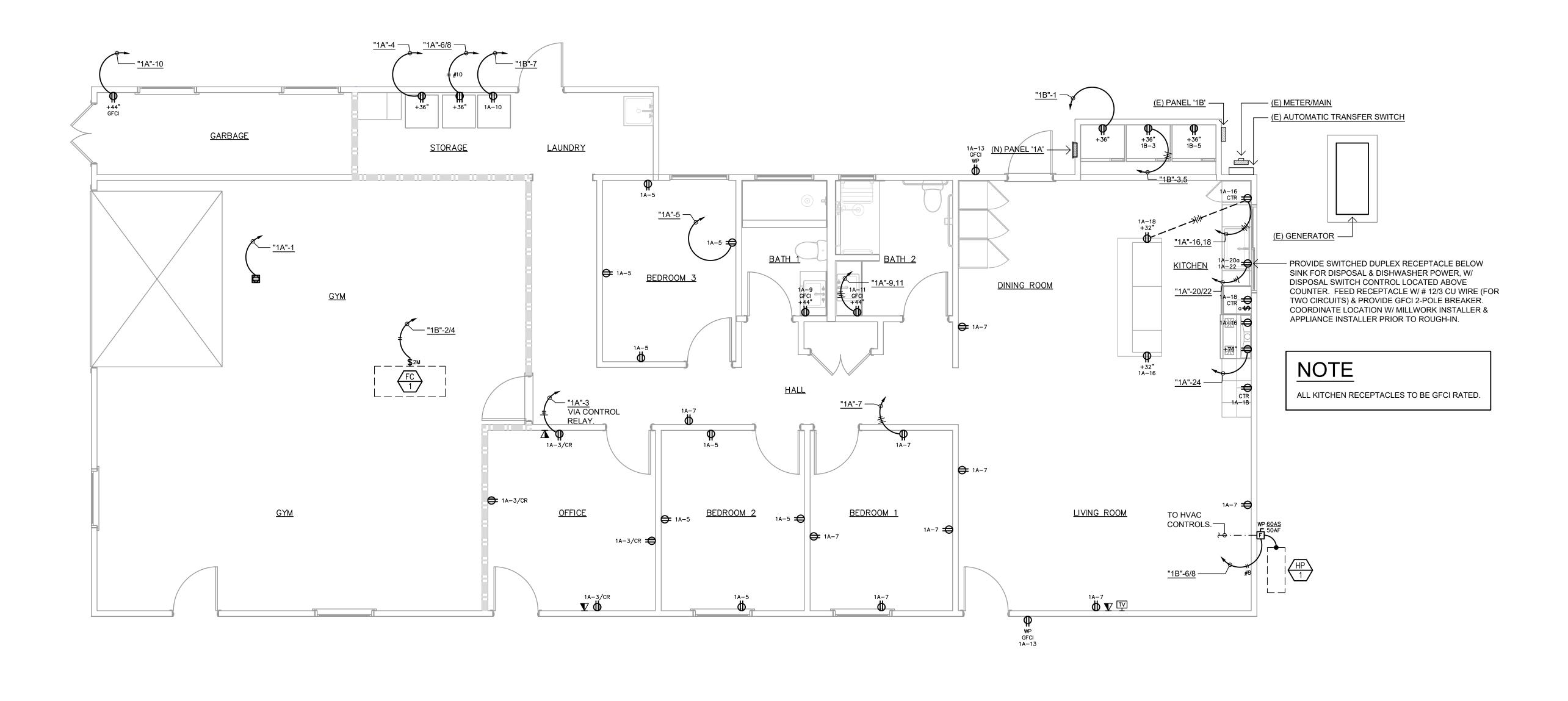
STATION 86 RENOVATION

12337 BANNER LAVA CAP RC NEVADA CITY, CA 95959

SUBMITTED:	03.13.20)24
SCALE	AS NOT	ED
DRAWN BY:	JL/JP	
CHECKED BY	: JP	
IOB:	23025	

POWER & SIGNAL PLAN

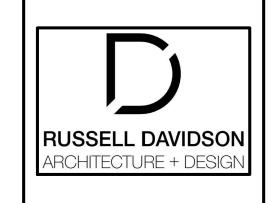
E2.0



1 POWER & SIGNAL PLAN

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

3/15/2024 8:27:40 AM







STATION 86 RENOVATION

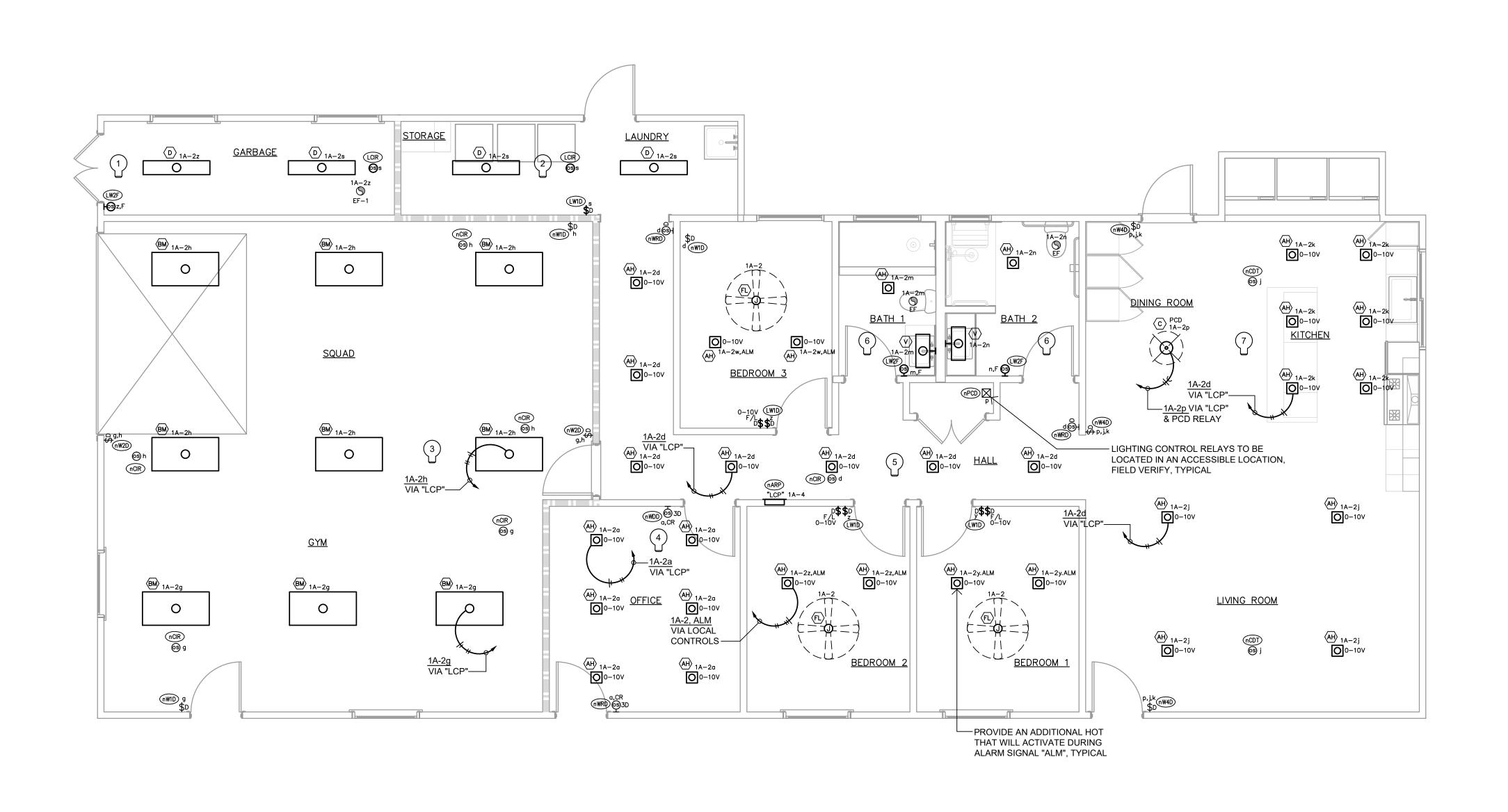
12337 BANNER LAVA CAP I NEVADA CITY, CA 95959

DATE

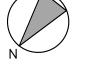
SUBMI	TTED:	03.13.20)24
SCALE		AS NOT	ED
DRAW	N BY:	JL/JP	
CHEC	KED BY:	JP	
JOB:		23025	
		· ·	· ·

LIGHTING PLAN

E3.0



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



	LIGHTING FIXTURE SCHEDULE							
TAG	DESCRIPTION	MANUFACTURER	V	LAMPS	W	DIMMING	MOUNTING	REMARKS
(AH)	5" DIA. RECESSED LED DOWNLIGHT w/ SELECTABLE LUMENS & CCT. WARM-DIM (HIGH SETTING)	LITHONIA JPDZ5 DC ALO10 SWW5WD 90CRI w/ JPDZRMUBX MVOLT ZT10 WWH	MV	LED 1,200 LUMENS 1,900K - 2850K, 90CRI	15	0-10V	RECESSED	
(BM)	2 FT. x 4 FT. LAY-IN FLAT PANEL LUMINAIRE w/ SELECTABLE LUMENS & CCT. (MEDIUM SETTING)	LITHONIA CPANL 2X4 ALO6 SWW7 M2	MV	LED 5,000 LUMENS 4,000K, 80CRI	45	0-10V	LAY-IN GRID	
C	DECORATIVE DINING ROOM PENDANT	CONTRACTOR ALLOWANCE OF \$750	120V	LED 2000 LUMENS 3,000K, 90CRI	30	PHASE CONTROL DIMMING	PENDANT	
D	4 FT. SURFACE MOUNTED WRAPAROUND LUMINAIRE	LITHONIA LBL 4 LP840	120V	LED 4300 LUMENS 4,000K, 80CRI	32	0-10V	CEILING SURFACE	
(FL)	52" DIA. CEILING FAN w/ LED LIGHT KIT, WHITE	WAC - ATLANTIS F-002L MW MW	120V	LED 1600 LUMENS 3000K, 90CRI	20	0-10V	CEILING	MUST BE CA TITLE-20 APPROVED
\overline{V}	24" x 5" WALL MOUNTED VANITY LIGHT	MODERN FORMS - NEO WS-3724 3000L AL (BRUSHED ALUM)	120V	LED 1200 LUMENS 3000K, 90CRI	31	ELV	WALL ABOVE MIRROR	

LIGHT FIXTURE AND CONTROL NOTES:

- 1. SUBSTITUTIONS AND/OR EQUAL FIXTURES MUST RECEIVE APPROVAL PRIOR TO BIDDING, THEY MUST BE SUBMITTED TO THE ENGINEER & LIGHTING DESIGNER NO LESS THAN ONE (1) WEEK PRIOR TO BID OPENING. ANYTHING SUBMITTED AFTER THIS TIME FRAME WILL NOT BE REVIEWED AND WILL BE CONSIDERED NON-APPROVED FOR BIDDING PURPOSES. ALL LIABILITY ASSOCIATED WITH NON-APPROVED FIXTURES THAT DO NOT MEET THE PROJECT REQUIREMENTS AS DETERMINED BY THE ENGINEERING TEAM, LIGHTING DESIGNER AND THE OWNER WILL REST SOLELY WITH THE CONTRACTOR.
- 2 ALL SUBSTITUTIONS AND/OR EQUAL FIXTURES SHALL BE ACCOMPANIED WITH THE APPROPRIATE IES FILE, SPECIFICATION SHEET, LM-79 REPORT & WARRANTY INFORMATION. ADDITIONAL INFORMATION ABOUT THE MANUFACTURER ITSELF AND FIXTURE COMPONENTS MAY BE REQUESTED.
- 3 ALL FIXTURES SHALL BE LISTED AND APPROVED FOR THEIR INTENDED USE.
- 4. VERIFY THE PROPER MOUNTING KITS OR ACCESSORIES TO FACILITATE INSTALLATION AS SHOWN AT EACH LOCATION ON THE DRAWINGS.
- 5. SAMPLES FOR TABLE TOP EVALUATION MUST BE PROVIDED FOR ANY AND ALL FIXTURES UPON REQUEST.
- 6. ALL LIGHTING VALUE ENGINEERING PROVIDED FOR THIS PROJECT SHALL BE SUBMITTED TO THE ELECTRICAL ENGINEER & LIGHTING DESIGNER FOR REVIEW AND APPROVAL AFTER THE PROJECT HAS BEEN BID AND AWARDED. ANY CREDITS FOR VE SHALL INCLUDE TIME TO COMPENSATE OUR OFFICES FOR ENGINEERING REVIEW AND VERIFICATION OF BRANCH CIRCUIT LOADING, ENERGY CODE COMPLIANCE AND/OR PHOTOMETRIC REVIEW. NO VE SUBMITTALS WILL BE APPROVED WITHOUT THIS PROCESS IN PLACE
- 7. ALL LIGHT FIXTURES TO BE COMPATIBLE WITH FRESCO LIGHTING CONTROL SYSTEM.

	LINE VOLTAGE LIGHTING CONTROL SCHEDULE						
TAG	DESCRIPTION	MANUFACTURER	OPERATION	REMARKS			
LCIR	CEILING MOUNTED INFRARED OCCUPANCY SENSOR	SENSOR SWITCH # CMR 9 WH	AUTO-ON / AUTO OFF, DETERMINES OCCUPANCY OF SPACE.				
LWIR	WALL MOUNTED SINGLE POLE SWITCH w/ INTEGRATED LINE VOLTAGE IR OCC. SENSOR	INTEGRATED LINE SENSOR SWITCH MANUAL OR AUTO-ON WITH VACANCY OFF					
(W1D)	WALL MOUNTED 0-10V DIMMING WALL SWITCH	SENSOR SWITCH # SPODMRD WH	MANUAL ON / OFF / 0-10V DIMMING				
(W2F)	WALL MOUNTED DUAL POLE SWITCH w/ INTEGRATED LINE VOLTAGE IR OCC. SENSOR	SENSOR SWITCH # WSX 2P WH	POLE 1 = AUTO ON / VACANCY OFF - FAN POLE 2 = MANUAL ON / VACANCY OFF - LIGHTS				

	LOW VOLTAGE LIGHTING CONTROL SCHEDULE							
TAG	DESCRIPTION	MANUFACTURER	OPERATION	REMARKS				
(nW1D)	nLIGHT SINGLE POLE DIMMING WALL SWITCH	ACUITY BRANDS CONTROLS - nLIGHT nPODM DX WH	MANUAL ON / OFF & DIMMING	PROVIDE ALL CAT 5 CONNECTIONS AND PROGRAMMING				
nW2D	nLIGHT DUAL POLE DIMMING WALL SWITCH	ACUITY BRANDS CONTROLS - nLIGHT nPODM 2P DX WH	MANUAL ON / OFF AND DIMMING	PROVIDE ALL CAT 5 CONNECTIONS AND PROGRAMMING				
nW4D	nLIGHT QUAD POLE DIMMING WALL SWITCH	ACUITY BRANDS CONTROLS - nLIGHT nPODM 4P DX WH	MANUAL ON / OFF AND DIMMING	PROVIDE ALL CAT 5 CONNECTIONS AND PROGRAMMING				
(nWRD)	nLIGHT SINGLE POLE DIMMING WALL SWITCH w/ INTEGRAL INFRARED OCCUPANCY SENSOR	ACUITY BRANDS CONTROLS - nLIGHT nWSXA LV DX WH	MANUAL OR AUTO ON / OFF & DIMMING	PROVIDE ALL CAT 5 CONNECTIONS AND PROGRAMMING				
(WDD)	nLIGHT SINGLE POLE DIMMING WALL SWITCH w/ INT. DUAL-TECH OCCUPANCY SENSOR	ACUITY BRANDS CONTROLS - nLIGHT nWSXA PDT LV DX WH	MANUAL OR AUTO ON / OFF & DIMMING	PROVIDE ALL CAT 5 CONNECTIONS AND PROGRAMMING				
nCIR	nLIGHT CEILING MOUNT INFRARED OCCUPANCY SENSOR	ACUITY BRANDS CONTROLS - nLIGHT nCM 9 RJB	DETERMINES OCCUPANCY AND VACANCY OF A ROOM OR AREA	PROVIDE ALL CAT 5 CONNECTIONS AND PROGRAMMING				
(nCDT)	nLIGHT CEILING MOUNT DUAL-TECH OCCUPANCY SENSOR	ACUITY BRANDS CONTROLS - nLIGHT nCM PDT 9 RJB	DETERMINES OCCUPANCY AND VACANCY OF A ROOM OR AREA	PROVIDE ALL CAT 5 CONNECTIONS AND PROGRAMMING				
(nPCD)	nLIGHT PHASE CONTROL DIMMING POWER PACK AND RELAY	ABC - nLIGHT nPP PCD	PROVIDES FOR ON/OFF AND DIMMING OF PHASE CONTROL LIGHTING LOADS	PROVIDE ALL CAT 5 CONNECTIONS AND PROGRAMMING				
(nARP)	nLIGHT RELAY PANEL WITH 0-10V DIMMING AND ASTRO TIMECLOCK	ABC - nLIGHT ARP SERIES FLUSH MOUNT sized as required	ASTRONOMICAL TIMECLOCK WITH 32 SWITCH FUNCTION CAPABILITY	PROVIDE ALL 120V & CAT 5 CONNECTIONS AND PROGRAMMING				

LIGHTING GENERAL NOTES:

- 1. ALL EMERGENCY & EXIT SIGN LUMINAIRES SHALL BE CONNECTED TO THE UNSWITCHED SIDE OF THE LIGHTING BRANCH CIRCUIT. LIGHT FIXTURES W/ EMERGENCY DRIVERS SHALL BE NORMALLY SWITCHED & CONTROLLED W/ THE AREA LIGHTING. HOWEVER, THEIR EMERGENCY DRIVERS SHALL BE CONNECTED UPSTREAM OF THE AREA LIGHT SWITCH, LIGHTING CONTROL PANEL OR RELAY. FIXTURES ARE TO REMAIN ON FOR NOT LESS THAN 90 MINUTES PER NATIONAL ELECTRIC CODE REQUIREMENTS.
- 2. IT IS THE INTENT OF THESE CONSTRUCTION DOCUMENTS THAT ALL CONDUIT IS TO BE INSTALLED WITHIN WALLS, ABOVE CEILINGS, & CONCEALED WHERE POSSIBLE
- COORDINATE ALL MOUNTING HEIGHTS OF CORD, PENDANT, OR WALL HUNG LUMINAIRES W/ ARCHITECTURAL ELEVATIONS PRIOR TO ROUGH-IN OF ELECTRICAL BOXES.
- 4. ELECTRICIAN TO VERIFY LUMINAIRE DIMMING CONTROLS & TO PROVIDE NECESSARY WIRING & DEVICES REQUIRED FOR DIMMING OPERATION.
- 5. ALL LUMINAIRE & FIXTURE DRIVERS TO BE CONCEALED IN ACCESSIBLE LOCATIONS, OUT OF DIRECT VIEW OF BUILDING OCCUPANTS.
- S. LIGHTING CONTROL SYSTEM BASIS OF DESIGN IS ACUITY BRANDS SENSOR SWITCH & nLIGHT DIGITAL LIGHTING SYSTEM (FRESCO). ELECTRICAL CONTRACTOR TO SEE MANUFACTURER SHOP DRAWINGS & DESIGN FOR A COMPLETE AN OPERATIONAL SYSTEM. PROVIDE ALL HARDWARE, SET-UP, PROGRAMMING, OWNER TRAINING, ETC., PER OWNER & TITLE-24 REQUIREMENTS.

BUILDING LIGHTING CONTROL NOTES:

THE CONTROL BASIS OF DESIGN IS ACUITY BRANDS CONTROLS.

CONTROL MANUFACTURER TO THOROUGHLY REVIEW THE ELECTRICAL PLANS AND PROVIDE THE REQUIRED DEVICE QUANTITIES AND DESIGN FOR A COMPLETE CURRENT TITLE-24 COMPLIANT SYSTEM, INCLUDING ALL REQUIRED PROGRAMMING.

,	THE PERIOD TO THE PERIOD THE PERIOD TO THE PERIOD THE P						
	SMALL RC	OOM					
$\langle \cdot \rangle$	130.1 (a)	AREA LIGHTING CONTROL	■ YES; WALL SWITCH	□ N/A	☐ EXCEPTION:		
U	130.1 (b)	MULTI-LEVEL LIGHTING CONTROL	☐ YES; WALL DIMMER	□ N/A	■ EXCEPTION: ONE FIXTURE		
	130.1.(c)	AUTOMATIC SHUT-OFF CONTROL	■ YES; OCC SENSOR	□ N/A	☐ EXCEPTION:		
	130.1 (d)	AUTOMATIC DAYLIGHT CONTROL	☐ YES;	■ N/A	☐ EXCEPTION:		
	130.1 (e)	DEMAND RESPONSE CONTROL	☐ YES;	□ N/A	■ EXCEPTION: < 4,000W		
	130.5 (d)	CONTROLLED RECEPTACLES	☐ YES;	■ N/A	☐ EXCEPTION:		
	SEQUENC	E OF OPERATION: (STAND ALONE LINI	E VOLTAGE CONTROL)				
	LIGHTING;	AUTO-ON / AUTO OFF					

	STORAGE	/ LAUNDRY			
(2)	130.1 (a)	AREA LIGHTING CONTROL	■ YES; WALL SWITCH	□ N/A	☐ EXCEPTION:
\cup	130.1 (b)	MULTI-LEVEL LIGHTING CONTROL	■ YES; WALL DIMMER	□ N/A	☐ EXCEPTION:
	130.1.(c)	AUTOMATIC SHUT-OFF CONTROL	■ YES; OCC SENSORS	□ N/A	☐ EXCEPTION:
	130.1 (d)	AUTOMATIC DAYLIGHT CONTROL	☐ YES;	■ N/A	☐ EXCEPTION:
	130.1 (e)	DEMAND RESPONSE CONTROL	☐ YES;	□ N/A	■ EXCEPTION: < 4,000W
	130.5 (d)	CONTROLLED RECEPTACLES	☐ YES;	■ N/A	☐ EXCEPTION:
	SEQUENC	E OF OPERATION: (STAND ALONE LINE	VOLTAGE CONTROL)		
	LIGHTING;	MANUAL-ON / AUTO OFF	ŕ		
\bigcirc	SQUAD / G	YM			

		,			
\bigcirc	SQUAD / G	GYM			
(3)	130.1 (a)	AREA LIGHTING CONTROL	■ YES; WALL SWITCH	□ N/A	☐ EXCEPTION:
	130.1 (b)	MULTI-LEVEL LIGHTING CONTROL	■ YES; WALL DIMMER	□ N/A	☐ EXCEPTION:
	130.1.(c)	AUTOMATIC SHUT-OFF CONTROL	■ YES; OCC SENSORS	□ N/A	☐ EXCEPTION:
	130.1 (d)	AUTOMATIC DAYLIGHT CONTROL	☐ YES;	■ N/A	☐ EXCEPTION:
	130.1 (e)	DEMAND RESPONSE CONTROL	☐ YES;	□ N/A	■ EXCEPTION: < 4,000W
	130.5 (d)	CONTROLLED RECEPTACLES	☐ YES;	■ N/A	☐ EXCEPTION:
	SEQUÈNC	E OF OPERATION: (LOW VOLTAGE NE	TWORK CONTROL)		
	LIGHTING;	; MANUAL-ON / AUTO-OFF	,		
	,				
	SMALL OF	FICE			
(4)	130.1 (a)	AREA LIGHTING CONTROL	■ YES: WALL SWITCH	□ N/A	☐ EXCEPTION:

·)	SMALL OF	<u>FICE</u>			
7	130.1 (a)	AREA LIGHTING CONTROL	YES; WALL SWITCH	□ N/A	☐ EXCEPTION:
J	130.1 (b)	MULTI-LEVEL LIGHTING CONTROL	■ YES; WALL DIMMER	□ N/A	☐ EXCEPTION:
	130.1.(c)	AUTOMATIC SHUT-OFF CONTROL	■ YES; OCC. SENSOR	□ N/A	☐ EXCEPTION:
	130.1 (d)	AUTOMATIC DAYLIGHT CONTROL	☐ YES;	■ N/A	☐ EXCEPTION:
	130.1 (e)	DEMAND RESPONSE CONTROL	☐ YES;	□ N/A	■ EXCEPTION: < 4,000W
	130.5 (d)	CONTROLLED RECEPTACLES	■ YES; OCC. SENSOR	□ N/A	☐ EXCEPTION:
	SEQUENC	E OF OPERATION: (LOW VOLTAGE NE	TWORK CONTROL)		
	WALL SWI	TCH FOR ON / OFF & DIMMING. PROGE	RAM FOR AUTO-ON TO 50%;	MANUAL ON	TO 100%. CONTROLLED RECEPTACLE
	OCCUPAN	CY SENSOR.			

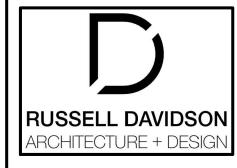
(5)	<u>HALLWAY</u>				
	130.1 (a)	AREA LIGHTING CONTROL	YES; WALL SWITCH	□ N/A	☐ EXCEPTION:
	130.1 (b)	MULTI-LEVEL LIGHTING CONTROL	■ YES; WALL DIMMER	□ N/A	☐ EXCEPTION:
	130.1.(c)	AUTOMATIC SHUT-OFF CONTROL	■ YES; OCC SENSOR	□ N/A	☐ EXCEPTION:
	130.1 (d)	AUTOMATIC DAYLIGHT CONTROL	☐ YES;	■ N/A	☐ EXCEPTION:
	130.1 (e)	DEMAND RESPONSE CONTROL	☐ YES;	□ N/A	■ EXCEPTION: < 4,000W
	130.5 (d)	CONTROLLED RECEPTACLES	☐ YES;	N/A	☐ EXCEPTION:

SEQUENCE OF OPERATION: (STAND ALONE LINE VOLTAGE CONTROL)

FAN; AUTO-ON / AUTO OFF AFTER 30 MINS.

	LIGHTING	; AUTO-ON / AUTO OFF			
6)	SINGLE-S 130.1 (a) 130.1 (b)	TALL RESTROOM AREA LIGHTING CONTROL MULTI-LEVEL LIGHTING CONTROL	■ YES; WALL SWITCH □ YES:	□ N/A	☐ EXCEPTION: ■ EXCEPTION: <0.5W/SQ.FT.
	130.1.(c) 130.1 (d) 130.1 (e)	AUTOMATIC SHUT-OFF CONTROL AUTOMATIC DAYLIGHT CONTROL DEMAND RESPONSE CONTROL	■ YES; OCC. SENSOR □ YES; □ YES;	□ N/A ■ N/A □ N/A	☐ EXCEPTION: ☐ EXCEPTION: ■ EXCEPTION: <4000W
		CONTROLLED RECEPTACLES E OF OPERATION: (STAND ALONE LINI ; AUTO-ON / AUTO OFF AFTER 20 MINU	,	■ N/A	☐ EXCEPTION:

	130.1 (d)	AUTOMATIC DAYLIGHT CONTROL	⊔ YES;	N/A	☐ EXCEPTION:
	130.1 (e)	DEMAND RESPONSE CONTROL	☐ YES;	□ N/A	■ EXCEPTION: <4000W
	130.5 (d)	CONTROLLED RECEPTACLES	☐ YES;	N/A	☐ EXCEPTION:
	SEQUENC	E OF OPERATION: (STAND ALONE LINE	VOLTAGE CONTROL)		
	LIGHTING;	AUTO-ON / AUTO OFF AFTER 20 MINU	TES.		
	FAN; AUTO	O-ON / AUTO OFF AFTER 30 MINS.			
	,				
$\overline{(7)}$	MAIN LIVIN	IG AREA			
$\langle ' \rangle$	130.1 (a)	AREA LIGHTING CONTROL	■ YES; WALL SWITCH	□ N/A	☐ EXCEPTION:
	130.1 (b)	MULTI-LEVEL LIGHTING CONTROL	■ YES; DIMMER SWITCH	□ N/A	☐ EXCEPTION:
	130.1.(c)	AUTOMATIC SHUT-OFF CONTROL	■ YES; OCC. SENSOR	□ N/A	☐ EXCEPTION:
	130.1 (d)	AUTOMATIC DAYLIGHT CONTROL	☐ YES;	■ N/A	☐ EXCEPTION:
	130.1 (e)	DEMAND RESPONSE CONTROL	☐ YES;	□ N/A	■ EXCEPTION: <4000W
	130.5 (d)	CONTROLLED RECEPTACLES	☐ YES:	■ N/A	☐ EXCEPTION:
	\ /	E OF OPERATION: (STAND ALONE LINE	_ ,		_
		AUTO-ON / AUTO OFF AFTER 20 MINU	· · · · · · · · · · · · · · · · · · ·		
	,		. = - :		







STATION 86 RENOVATION

SUBMITTED: 03.13.2024
SCALE AS NOTED
DRAWN BY: JL/JP
CHECKED BY: JP

LIGHTING & CONTROL SCHEDULES

E3.1

3/15/2024 8:28:06 AM

ELECTRICAL SPECIFICATIONS

ELECTRICAL SPECIFICATIONS

PART 1 GENERAL

1.01 WORK INCLUDED

- A. All labor, tools, and materials necessary to install, test, and place in operation complete and functional electrical systems, as shown on the plans and described herein.
- B. Secure all permits and pay all fees necessary for the execution and completion of this work.

1.02 DRAWINGS

The electrical layouts are generally diagrammatic. The location of outlets and equipment are approximate unless dimensioned. The exact locations and routing of conduits shall be governed by structural conditions and physical interferences and by the location of electrical terminations of equipment.

1.03 QUALITY ASSURANCE

- A. All work shall be in full accordance with the latest edition of the National Electrical Code, all local, state, and federal codes, and with the requirements of the serving utility companies.
- B. All electrical materials used on this project shall be best possible grade of their kinds, new, free from defects and, unless otherwise specifically noted, shall conform to applicable standards of National Electrical Manufacturers Association, the American National Standards Institute and Underwriters Laboratories, Inc. Each article of a kind shall be the standard product of a single manufacturer.
- C. Specific brand names and catalog numbers are used to describe materials in order to establish standards of performance and quality. The decision of the Architect shall govern as to what materials may be substituted, but the burden of proof as to the equivalency of any proposed substitution shall be upon the Contractor.

1.04 SUBMITTALS

Submit to the Architect a complete list of materials and equipment stating manufacturer's names, catalog numbers, etc. No materials shall be installed until final approval is given.

Guarantee all work for one year from date of acceptance against all defects in material, equipment and workmanship.

PART 2 PRODUCTS

2.01 RACEWAYS

- A. Rigid Steel Conduit: Galvanized, complying with specifications UL—6, ANSI C80.1, Federal WW—C—58IE or latest revisions.
- B. Intermediate Metallic Conduit (IMC): Galvanized, complying with specifications UL 1242, Federal WW—C—58IE of latest revisions.
- C. Electrical Metallic Tubing (EMT): Galvanized, complying with specifications UL 797, ANSI C.80.3, Federal WW—C—563 or latest revisions.
- D. Polyvinylchloride Conduit (PVC): Minimum Schedule 40.
- E. Steel Flexible Conduit: Galvanized interlocking spirally wound steel.
- F. Steel Liquidtight Flexible Conduit: Liquidtight, non metallic, sunlight resistant jacket over flexible metal core.
- G. Electrical Non—Metallic Tubing (ENT): A non—metallic pliable corrugated raceway, resistant to moisture and chemicals.

2.02 RACEWAY FITTINGS

- A. Rigid Steel Conduit and IMC:
- 1. Galvanized, waterproof, and threaded type.
- B. Electrical Metallic Tubing:
- 1. Galvanized steel
- 2. Die cast3. Compression ring type4. Set screw type
- C. Polyvinylchloride and ENT:
- 1. PVC Schedule 40, cemented type.
- D. Metallic Flexible Conduit:1. Galvanized, clamp, type, and approved for grounding.
- E. Liquidtight Flexible Metal Conduit:
- 1. Galvanized, screw in type, approved for grounding.

2.03 WIRE AND CABLE

- A. Plainly marked with UL label, gauge, voltage and insulation type.
- B. General Wiring: 600V type "TW" of "THHN" Copper, minimum size #12 AWG.
- C. Feeders: 600V type "THW" Aluminum, or as shown on plans.

2.04 DEVICES

- A. Wall switches: "AC" rated, heavy duty, quiet type, rated 20 amperes at 120 volts AC. Special switches as noted.
- B. Convenience outlets: Rated 15 amperes at 120 volts AC, 3—wire groundable type, Leviton #5262 duplex or #5261 single. Special outlets shall be as noted on plans.
- C. Plates: Supply for all outlet or junction boxes, flush or surface. Two or more gangs in box shall have gang plates. Color of box covers to be selected by Architect.

PART 3 EXECUTION & APPLICATION

3.01 RACEWAY APPLICATION

- A. Rigid Steel Conduit and IMC:
- May be exposed, concealed, installed underground, or in concrete.
- 2. Shall be installed per the designation on the
- B. Electrical Metallic Tubing:
- 1. Shall be concealed in protected attic spaces, or hollow stud spaces.
- 2. May be exposed in mechanical and electrical rooms where designated on the plans.
- C. Polyvinylchloride Conduit:
- 1. Shall be a minimum of 3/4".
- 2. Shall only be installed beneath grade or in concrete.
- A Maximum of 4 feet of exposed or concealed PVC may extend from grade or the concrete slab to the bottom or a switchboard, panelboard, device box, or similar equipment in electrical rooms only.
- A maximum of 18 inches of PVC may extend from the concrete slab to the first device box when concealed in a stud space.
- 5. PVC shall not be installed in fire rated areas or where subject to mechanical damage.

D. Flexible Steel Conduit:

- 1. May be used in interior, dry, and non—hazardous locations only.
- Shall be used in lengths no longer than 3 feet for motors and other equipment requiring flexible connections.
- Shall be used in lengths no longer than 6 feet for connection of light fixtures.
- E. Liquidtight Metallic Flexible Conduit:
- Shall be used as indicated in item "D" above for damp or wet locations.
- F. Electrical Non-Metallic Tubing:
- May be installed in buildings not exceeding three stories.
- 2. Shall be concealed in walls, ceilings, and floors having a minimum finish rating of 15 minutes.
- 3. Shall not be installed in fire rated and assembly areas.

3.02 RACEWAY INSTALLATION

- A. Rigid or intermediate metal conduit shall have threads filled with conductive sealant before screwing into fittings.
- B. Entire electrical raceway system shall form a continuous metallic electrical conductor from service point to every outlet, and shall be grounded by connection to main service ground conductor.
- C. Install conduit runs exposed to view parallel or at right angles to structural members, walls or building lines.
- D. Close open ends of conduit with factory made conduit seals during construction. Examine inside of each piece of conduit just before installation and remove any dirt or foreign objects.
- E. Support conduit with one—hole malleable factory made pipe straps, fastened with screws; nails shall not be used.

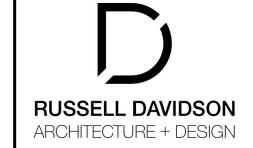
3.03 WIRE INSTALLATION

- A. Make joints, splices, taps and connections of conductors with solderless connectors.
- B. Provide grounding and bonding in accordance with applicable codes and regulations.
- C. Connect all air conditioning motors to conduit systems with sections of flexible conduit to facilitate removal of motor. Use approved fittings only.
- 3.04 LIGHTING FIXTURE INSTALLATION
- A. Install fixtures complete with all necessary connectors and brackets. Remove all labels except UL label from exposed parts of fixtures. Clean fixtures upon project completion.
- B. Where structural members or mechanical equipment prevent installation of fixtures as shown, resulting layout shall be symmetrical within ceiling space and approved by the Architect.
- C. Install lamps of proper type.

3.05 TESTS

Test all systems upon completion of work to demonstrate that the equipment furnished and installed as connected functions electrically in the manner required.

END OF SPECIFICATION







ATION 86 RENOVATION

TE337 BAI NEVADA O APN: 037-

03.13.2024

CAP

SCALE AS NOTED
DRAWN BY: JL/JP
CHECKED BY: JP
JOB: 23025

ELECTRICAL

SPECIFICATIONS

SUBMITTED:

E4.0

3/15/2024 8:28:14 AM

V. DECLARATION OF REQUIRED CERTIFICATES OF ACCEPTANCE

CA Building Energy Efficiency Standards - 2022 Nonresidential Compliance

NRCA-LTI-02-A - Must be submitted for occupancy sensors and automatic time switch controls.

Selections have been made based on information provided in this document. If any selections have been changed by the permit applicant, an explanation should be included in Table E. Additional Remarks. These documents must be provided to the building inspector during construction and any with "-A" in the form name must be completed through an Acceptance

Generated Date/Time:

Report Version: 2022.0.000

Schema Version: rev 20220101

Test Technician Certification Provider (ATTCP). For more information visit: http://www.energy.ca.gov/title24/attcp/providers.html

Form/Title

STATE OF CALIFORNIA Indoor Lighting CALIFORNIA ENERGY COMMISSION CERTIFICATE OF COMPLIANCE Project Name: NC Fire Station 86 (Page 3 of 8) Date Prepared: 2024-03-13T15:19:31-04:00

F. INDOOR LIGHTING FIXTURE SCHEDULE This table includes all planned permanent and portable lighting other than dwelling unit/hotel/motel room lighting. Multifamily dwelling unit and hotel/motel room lighting is documented in Table T. If using Table T to document lighting in multifamily common use areas providing shared provisions for living, eating, cooking or sanitation, those luminaires are not included here. gned Wattage: Conditioned Spaces

resigned wattage. Conditioned Spaces										
01	02	03	04	05	06	07	08	09	1	0
Name or Item	Complete Luminaire	Modular	Small	Watts per	How is Wattage	Total Number	Excluded per		Field In	spector
Tag	Description	(Track) Fixture	Aperture & Color Change ¹	luminaire ²	determined	of Luminaires	140.6(a)3 / 170.2(e)2C	Design Watts	Pass	Fail
AH	Recessed LED Downlight	No	NA	15	Mfr. Spec	31	No	465		
ВМ	2x4 LED Flat Panel	No	NA	45	Mfr. Spec	9	No	405		
С	Decorative Pendant	No	NA	30	Mfr. Spec	1	No	30		
D	Surface Wrap LED	No	NA	32	Mfr. Spec	4	No	128		
V	LED Vanity Light	No	NA	31	Mfr. Spec	2	No	62		
Total Designed Watts: CONDITIONED SPACES							1,090			

¹FOOTNOTE: Design Watts for small aperture and color changing luminaires which qualify per 140.6(a)4B / 170.2(e)2D is adjusted to be 75% /80% of their rated wattage. Table F automatically makes this adjustment, the permit applicant should enter full rated wattage in column 05. ²Authority Having Jurisdiction may ask for Luminaire cut sheets to confirm wattage used for compliance per 130.0(c) / 160.5(b). Wattage used must be the maximum rated for the luminaire, not the lamp.

G. MODULAR LIGHTING SYSTEMS			
This section does not apply to this project.			
H. INDOOR LIGHTING CONTROLS (Not including PAFs)			
This table includes lighting controls for conditioned and unconditioned spaces.			
Building Level Controls			
01	02	С)3
Mandatory Demand Response 110.12(c)	Shut-off controls 130.1(c) / 160.5(b)4C		spector
iviandatory Demand Response 110.12(c)			Fail

STATE OF CALIFORNIA Indoor Lighting CALIFORNIA ENERGY COMMISSION CERTIFICATE OF COMPLIANCE NRCC-LTI-E Project Name: NC Fire Station 86 (Page 6 of 8) Report Page:

CA Building Energy Efficiency Standards - 2022 Nonresidential Compliance

This section does not apply to this project.

This section does not apply to this project.

Systems/Spaces To Be Field

Verified

Bathrooms; Bedrooms; Dining Room; Garbage; Gym; Hall; Kitchen; Living Room; Office; Squad; Laundry

Documentation Software: Energy Code Ace

Report Generated: 2024-03-13 12:19:34

Compliance ID: 184184-0324-0002

Generated Date/Time:

Report Version: 2022.0.000

Schema Version: rev 2022010

Documentation Software: Energy Code Ace

Report Generated: 2024-03-13 12:19:34

Compliance ID: 184184-0324-0002 Report Generated: 2024-03-13 12:19:34

,	1	, ,
	Date Prepared:	2024-03-13T15:19:31-04:0
K. TAILORED METHOD GENERAL LIGHTING POWER ALLOWANCE		
This section does not apply to this project.		
L. ADDITIONAL LIGHTING ALLOWANCE: TAILORED WALL DISPLAY		
L. ADDITIONAL LIGHTING ALLOWANCE: TAILORED WALL DISPLAY		
This section does not apply to this project.		
M. ADDITIONAL LIGHTING ALLOWANCE: TAILORED FLOOR AND TASK LIGHTING		
This section does not apply to this project.		
IN ADDITIONAL LIGHTING ALLOWANICE, TALLOPED DECORATIVE (SDECIAL EFFECTS		

IN. ADDITIONAL LIGHTING ALLOWANCE: TAILORED DECORATIVE /SPECIAL EFFECTS This section does not apply to this project. O. ADDITIONAL LIGHTING ALLOWANCE: TAILORED VERY VALUABLE MERCHANDISE This section does not apply to this project. P. POWER ADJUSTMENT: LIGHTING CONTROL CREDIT (POWER ADJUSTMENT FACTOR (PAF))

Q. RATED POWER REDUCTION COMPLIANCE FOR ONE-FOR-ONE ALTERATIONS
This section does not apply to this project.

Documentation Software: Energy Code Ace	Generated Date/Time:	
Compliance ID: 184184-0324-0002	Report Version: 2022.0.000	CA Building Energy Efficiency Standards - 2022 Nonresidential Compliance

Schema Version: rev 20220101

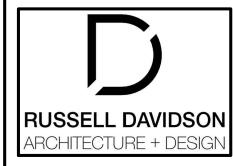
STATE OF CALIFORNIA		
Indoor Lighting		CALIFORNIA ENERGY COMMISSION
CERTIFICATE OF COMPLIANCE		NRCC-LTI-E
Project Name: NC Fire Station 86	Report Page:	(Page 8 of 8)
Project Address: 12337 Banner Lava Cap Road, Nevada City, CA 95959	Date Prepared:	2024-03-13T15:19:31-04:00

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT	
certify that this Certificate of Compliance documentation is	accurate and complete.
Oocumentation Author Name: Iim Puga	Documentation Author Signature:
Company: Jp-Light Electrical Engineering, Inc.	Signature Date: U 2024.03.15
Address: 3130 Twitchell Island Road	CEA/ HERS Certification Identification (if applicable):
City/State/Zip: West Sacramento, CA 95691	Phone: 916.826.1824

1.	The information provided on this Certificate of Compliance is true and correct.				
2.	I am eligible under Division 3 of the Business and Professions Code to accept responsibility for the building design or system design identified on this Certificate of Compliance (responsible designer)				
3.	The energy features and performance specifications, materials, components, and manufactured devices for the building design or system design identified on this Certificate of Compliance conform to the requirements of Title 24, Part 1 and Part 6 of the California Code of Regulations.				
4.	The building design features or system design features identified on this Certificate of Compliance are con plans and specifications submitted to the enforcement agency for approval with this building permit appli		other applicable con	npliance documents, worksheets, calculations,	
5.	I will ensure that a completed signed copy of this Certificate of Compliance shall be made available with the inspections. I understand that a completed signed copy of this Certificate of Compliance is required to be				
Responsi	ible Designer Name: Re	esponsible Designer Signature:	1.		
Jim Pug	ga	\bigcup	ノレーシング		
	_				

5. I w		this building permit application. be made available with the building permit(s) issued for the building, and made available to the enforcement agency for all applicable applicable applicable to the building owner at occupancy.
Responsible De Jim Puga	esigner Name:	Responsible Designer Signature:
Company: Up-Light Ele	ectrical Engineering, Inc.	Date Signed: 2024.03.15
Address:	3130 Twitchell Island Road	License: E16872
City/State/Zip:	West Sacramento, CA 95691	Phone: 916.826.1824

Generated Date/Time: Documentation Software: Energy Code Ace CA Building Energy Efficiency Standards - 2022 Nonresidential Compliance Report Version: 2022.0.000 Compliance ID: 184184-0324-0002 Schema Version: rev 20220101 Report Generated: 2024-03-13 12:19:34







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DATE NAME SUBMITTED: 03.13.2024 AS NOTED DRAWN BY: JL/JP

> TITLE-24 **INTERIOR FORMS**

23025

CHECKED BY:

STATE OF CALIFORNIA Mechanical Systems CERTIFICATE OF COMPLIANCE CALIFORNIA ENERGY COMMISSI NRCC-MC	E CERTIFICATE OF COMPLIANCE NRCC-MCH-	STATE OF CALIFORNIA Mechanical Systems CALIFORNIA ENERGY COMMISSION CERTIFICATE OF COMPLIANCE NRCC-MCH-E	STATE OF CALIFORNIA Mechanical Systems CALIFORNIA ENERGY COMMISSION CERTIFICATE OF COMPLIANCE NRCC-MCH-E	
This document is used to demonstrate compliance for mechanical systems that are within the scope of the permit application and are demonstrating compliance using the prescriptive path outlined in 140.4, or 141.0(b)2 for alterations. Project Name: Station 86 Mechanical Compliance Report Page: (Page 1 of Project Address: 12337 Banner Lava Cap Rd. Date Prepared: 9/11/21	Project Name: Station 86 Mechanical Compliance Report Page: (Page 4 of 11 Date Prepared: 9/11/2023	Project Name: Station 86 Mechanical Compliance Report Page: (Page 7 of 11) Date Prepared: 9/11/2023	Project Name: Station 86 Mechanical Compliance Report Page: (Page 10 of 11) Date Prepared: 9/11/2023	MELAS
A. GENERAL INFORMATION O1 Project Location (city) Nevada City 04 Total Conditioned Floor Area 1441 O2 Climate Zone 11 O5 Total Unconditioned Floor Area 0 O3 Occupancy Types Within Project: 06 # of Stories (Habitable Above Grade) 1 • Classroom • Hotel/Motel • Office • Support Areas • All Other Occupancies	H. FAN SYSTEMS & AIR ECONOMIZERS This table is used to demonstrate compliance with prescriptive requirements found in 140.4(c), 140.4(e), 140.4(m), 170.2(c)3, and 170.2(c)4A for fan systems. Fan systems serving only process loads are exempt from these requirements and do not need to be included in Table H. System Name HVAC Quantit y 1 Fan System Status Alteration System Status Alteration Systems Units Serving Dwelling Units Serving Dwelling Units Serving Dwelling Units Of Dwelling Units Serving Only Dwelling Units Serving Dwelling Units Of Dwel	Dining Room Restaurant Dining Rooms 104 2 52 140 0 DCV NA: Not required per \$120.1(d)3	N. DECLARATION OF REQUIRED CERTIFICATES OF INSTALLATION Selections have been made based on information provided in previous tables of this document. If any selection needs to be changed, please explain why in Table E Additional Remarks. These documents must be provided to the building inspector during construction and can be found online at https://www.energy.ca.gov/title24/2019standards/2019_compliance_documents/Nonresidential_Documents/NRCI/ Form/Title NRCI-MCH-01-E - Must be submitted for all buildings	ENGINEERING ENERGY & MECHANICAL CONSULTANTS
B. PROJECT SCOPE This table Includes mechanical systems or components that are within the scope of the permit application and are demonstrating compliance using the prescriptive path outlined in 140.4, 170.2(b) or 141.0(b)2 and 180.2(b)2 for alterations. O1 O2 O3 Air System(s) Wet System Components Dry System Components Heating Air System Water Economizer Air Economizer Cooling Air System Pumps Electric Resistance Heat	Fan Type or Item Tag SF Supply Airflow through Component Airflow through Component (%) Airflow through Component (%) Airflow through Component (%) Airflow through Component (%) Water Gauge (w.g.) Allowance Compone nt Allowance (watt/cfm) 3 Allowance Design Fan Type or Item Tag Motor Nameplate Horsepower Noter Gauge (watt/cfm) 3 MERV 13-16 Filter upstream of thermal conditioning equipment 1,485 206 Manufacturer provided Manufacturer provided Ocity of the manufacturer provided Ocity of t	Office Office space 156 2 23.4 140 0 DCV NA: Not required per \$120.1(d)3 NA: Not required NA: Not required	O. DECLARATION OF REQUIRED CERTIFICATES OF ACCEPTANCE Selections have been made based on information provided in previous tables of this document. If any selection needs to be changed, please explain why in Table E Additional Remarks. These documents must be provided to the building inspector during construction and can be found online at https://www.energy.ca.gov/title24/2019standards/2019_compliance_documents/Nonresidential_Documents/NRCA/ Form/Title NRCA-MCH-02-A - Outdoor Air must be submitted for all newly installed HVAC units. Note: MCH-02-A can be performed in conjunction with MCH-07-A Supply Fan VFD Acceptance (if applicable) since testing activities overlap.	541 UREN STREET NEVADA CITY, CA 95959 PHONE (530) 265-2492 FAX (530) 265-2213
Mechanical Controls (existing to remain, altered or new) Cooling Towers Ductwork (existing to remain, altered or new) Chillers Zonal Systems/Terminal Boxes	Hydronic/DX cooling coil or heat pump coil Supply Fan System 1,485 206 Supply Fan Base Allowance (kW) Fan System Electrical Allowance (kW) 1 FOOTNOTES: Fans serving spaces with design background noise goals below NC35 Low-turndown single-zone VAV fan system must be capable of and configured to reduce airflow to 50 percent of design airflow and use no more than 30 percent of the design wattage at that airflow. No more than 10 percent of the design load served by the equipment shall have fixed loads. Fan System allowance includes fan system base allowance. Filter pressure loss can only be counted once per fan system. Complex Fan System means a fan system that combines a single cabinet fan system with other supply fans, exhaust	Halls Corridor 217 2 32.6 140 0 DCV NA: Not required per \$120.1(d)3 Occ Sensor NA: Not required per \$120.1(d)3 Occ Sensor NA: Not required space type 17 Total System Required Min OA CFM 311 18 Ventilation for this System Complies? Yes POOTNOTES: System CFM should include both mechanical and natural ventilation for the zone/system Air filtration requirements apply to the following three system types per 120.1(c)1A: space conditioning systems utilizing ducts to supply air to occupiable space; supply-only ventilation systems providing outside air to occupiable space; supply side of balanced ventilation systems including heat recovery and energy recovery ventilation systems providing outside air to occupiable space. 3 Uniform Mechanical Code may have more stringent ventilation requirements; the most stringent code requirement takes precedence. 4 See Standards Tables 120.1-A and 120.1-B. 5 For lecture halls with fixed seating, the expected number of occupants shall be determined in accordance with the California Building Code.	NRCA-MCH-03-A - Constant Volume Single Zone HVAC NOTE: This form does not automatically move to "Yes'. If Constant Volume Single Zone HVAC Systems are included in the scope, permit applicant should move this form to "Yes". NRCA-MCH-11-A Automatic Demand Shed Controls P. DECLARATION OF REQUIRED CERTIFICATES OF VERIFICATION There are no NRCV forms required for this project. Q. MANDATORY MEASURES DOCUMENTATION LOCATION This table is used to indicate where mandatory measures are documented in the plan set or construction documentation. 01 02 Compliance with Mandatory Measures documented through MCH Plan sheet or construction document location	M 26789 G EAD 9/30/24 SATE OF CALIFORNIA
Generated Date/Time: Documentation Software: EnergyP CA Building Energy Efficiency Standards - 2022 Nonresidential Compliance Report Version: 2022.0.000 Compliance ID: EnergyPro-3103-0923-011 Schema Version: rev 20220101 Report Generated: 2023-09-11 14:17:	CA Building Energy Efficiency Standards - 2022 Nonresidential Compliance Report Version: 2022.0.000 Compliance ID: EnergyPro-3103-0923-0160	Generated Date/Time: Documentation Software: EnergyPro CA Building Energy Efficiency Standards - 2022 Nonresidential Compliance Report Version: 2022.0.000 Compliance ID: EnergyPro-3103-0923-0160 Schema Version: rev 20220101 Report Generated: 2023-09-11 14:17:29	Mandatory Measures Note Block Yes M-Sheets Generated Date/Time: Documentation Software: EnergyPro	
STATE OF CALIFORNIA Mechanical Systems CERTIFICATE OF COMPLIANCE Project Name: Station 86 Mechanical Compliance Report Page: (Page 2 of Date Prepared: 9/11/20	CERTIFICATE OF COMPLIANCE Project Name: Station 86 Mechanical Compliance Report Page: (Page 5 of 11	Mechanical Systems CERTIFICATE OF COMPLIANCE Project Name: Station 86 Mechanical Compliance Report Page: (Page 8 of 11) Date Prepared: 9/11/2023	STATE OF CALIFORNIA Mechanical Systems CALIFORNIA ENERGY COMMISSION CERTIFICATE OF COMPLIANCE Project Name: Station 86 Mechanical Compliance Project Address: 12337 Banner Lava Cap Rd. Date Prepared: 9/11/2023	
C. COMPLIANCE RESULTS Table C will indicate if the project data input into the compliance document is compliant with mechanical requirements. This table is not editable by the user. If this table says "DOES NOT COMPLY" or "COMPLIES with Exceptional Conditions" refer to Table D., or the table indicated as not compliant for guidance. O1	H. EXHAUST AIR HEAT RECOVERY 140.4(q), 170.2(c)40 01 02 03 04 05 06 07 08 09 10 11 Fan System Name Qty Hours of Operation per Year Design Supply Airflow Rate Airflow Airflow Airflow Airflow Airflow Pear Name O1 02 03 03 04 05 06 07 08 09 09 09 09 09 09 09 09 09 09 09 09 09	J. VENTILATION AND INDOOR AIR QUALITY	DOCUMENTATION AUTHOR'S DECLARATION STATEMENT I certify that this Certificate of Compliance documentation is accurate and complete. Documentation Author Name: Chris Miller Company: MELAS ENERGY ENGINEERING Address: Stature Date: CEA/ HERS Certification Identification (if applicable): CEA R19-15-30070 City/State/Zip: Nevada City CA 95959 Fhone: Nevada City CA 95959	
170.2(c)	Name or Item Tag FEI Exception FEI	This table is used to show compliance with mandatory pipe insulation requirements found in 120.3 and mandatory requirements found in 120.4(g) for duct sealing. Insulation shall be protected from damage, including that due to sunlight, moisture, equipment maintenance, and wind. Insulation exposed to weather shall be installed with a cover suitable for outdoor service. Insulation covering chilled water piping and refrigerant suction piping located outside the conditioned space shall have a Class I or Class II vapor retarder. All penetrations and joints of which shall be sealed. Duct Leakage Testing	RESPONSIBLE PERSON'S DECLARATION STATEMENT I certify the following under penalty of perjury, under the laws of the State of California: 1. The information provided on this Certificate of Compliance is true and correct. 2. I am eligible under Division 3 of the Business and Professions Code to accept responsibility for the building design or system design identified on this Certificate of Compliance (responsible designer) 3. The energy features and performance specifications, materials, components, and manufactured devices for the building design or system design identified on this Certificate of Compliance conform to the requirements of Title 24, Part 1 and Part 6 of the California Code of Regulations. 4. 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. 5. I will ensure that a completed signed copy of this Certificate of Compliance shall be made available with the building permit(s) issued for the building, and made available to the enforcement agency for all applicable inspections. I understand that a completed signed copy of this Certificate of Compliance is required to be included with the documentation the builder provides to the building owner at occupancy. Responsible Designer Name: Michael Melas	
E. ADDITIONAL REMARKS This table includes remarks made by the permit applicant to the Authority Having Jurisdiction. F. HVAC SYSTEM SUMMARY (DRY & WET SYSTEMS) Space Conditioning System Information 01 02 03 04 05 06 System Name Quantity System Serving System Status Space Type Utilizing Recovered Heat HVAC 1 Single zone Alteration	System Name Zoning Being Served (ft²) 160.3(a)2A or 141.0(b)2E & 120.2(e)		Company: Date Signed: Melas Energy Engineering 2023-09-11 Address: License: 547 Uren St. M26789 City/State/Zip: Phone: Nevada City CA 95959 530 265-2492	IPLIANCE
Generated Date/Time: Documentation Software: EnergyP CA Building Energy Efficiency Standards - 2022 Nonresidential Compliance Report Version: 2022.0.000 Compliance ID: EnergyPro-3103-0923-01 Schema Version: rev 20220101 Report Generated: 2023-09-11 14:17:	CA Building Energy Efficiency Standards - 2022 Nonresidential Compliance Report Version: 2022.0.000 Compliance ID: EnergyPro-3103-0923-0160	Generated Date/Time: Documentation Software: EnergyPro CA Building Energy Efficiency Standards - 2022 Nonresidential Compliance Report Version: 2022.0.000 Compliance ID: EnergyPro-3103-0923-0160 Schema Version: rev 20220101 Report Generated: 2023-09-11 14:17:29 STATE OF CALIFORNIA	Generated Date/Time: CA Building Energy Efficiency Standards - 2022 Nonresidential Compliance Report Version: 2022.0.000 Schema Version: rev 20220101 Compliance ID: EnergyPro-3103-0923-0160 Report Generated: 2023-09-11 14:17:29	VATION P ROAD INICAL CON
Mechanical Systems CERTIFICATE OF COMPLIANCE Project Name: Station 86 Mechanical Compliance Report Page: (Page 3 of Date Prepared: 9/11/20 F. HVAC SYSTEM SUMMARY (DRY & WET SYSTEMS)	CERTIFICATE OF COMPLIANCE Project Name: Station 86 Mechanical Compliance Report Page: (Page 6 of 11	Mechanical Systems CERTIFICATE OF COMPLIANCE Project Name: Station 86 Mechanical Compliance Report Page: (Page 9 of 11) Date Prepared: 9/11/2023 L. DISTRIBUTION (DUCTWORK and PIPING)		RENO AVA CA A 95959 REPOR
Dry System Equipment Sizing (includes air conditioners, condensers, heat pumps, VRF, furnaces and unit heaters and DOAS systems) 01 02 03 04 05 06 07 08 09 10 11 Equipment Sizing per Mechanical Schedule (kBtu/h) 140.4(a&b), 170.2(c)1 & 170.2(c)2 Equipment Category per Tables 110.2, 140.4(a)2 and 170.2(c)3aii Equipment Type per Tables 110.2 and Title 20 Smallest Size Available¹ 140.4(a) and 170.2(c)1 Per Design Rated (kBtu/h) Uniput (kBtu/h) Rated (kBtu/h) Uniput (kBtu	This table is used to demonstrate compliance with mandatory ventilation requirements in 120.1 120.2(e)3B 140.4(p) and 140.4(q) for all nonresidential and hotel/motel and d:t24refnolink/]160.2, 160.3(a)3D, 170.2(a)4N, 170.2(a)4O for high-rise residential occupancies. For alterations, only ventilation systems being altered within the scope of the permit application need to be documented in this table. In lieu of this table, the required outdoor ventilation rates and airflows may be shown on the plans or the calculations can be presented in a spreadsheet. O1	Dwelling Units: Total duct leakage of duct system shall not exceed 12% or duct system to outside shall not exceed 6% per RA3.1.4 required for systems? Duct leakage testing per CMC Section 603.10.1 required for these systems? 11 No The scope of the project includes only duct systems serving healthcare facilities 12 Yes Duct system provides conditioned air to an occupiable space for a constant volume, single zone, space-conditioning system. 13 Yes The space conditioning system serves less than 5,000 ft² of conditioned floor area. 14 No The combined surface area of the ducts is more than 25% of the total surface area of the entire duct system:		ON 86 A CITY, CA ENERGY SIDENTIA
HVAC Unitary Heat Pumps Air-cooled, split (1phase) Air-cooled, split (1phase) 141.0(b)2E and 23.34 54 0 44.79 38.5 76.68 51.54 180.2(b)2 1FOOTNOTES: Equipment shall be the smallest size, within the available options of the desired equipment line, necessary to meet the design heating and cooling loads of the building particles are excepted. 2 It is common practice to show rated output capacity on the equipment schedule. Sensible cooling output comes from specification sheet tables. 3 If equipment is heating only, leave cooling output and load blank. If equipment is cooling only, leave heating output and load blank. 4 Authority Having Jurisdiction may ask for load calculations used for compliance per 140.4(b) and 170.2(c). Dry System Equipment Efficiency (other than Package Terminal Air Conditioners (PTAC) and Package Terminal Heat Pumps (PTHP), DX-DOAS and Dual Fuel Heat Pumps)	Name	The scope of the project includes extending an existing duct system, which is constructed, insulated or sealed with asbestos. 16 No The scope of the project includes an existing duct system that is documented to have been previously sealed as confirmed through field verification and diagnostic testing in accordance with procedures in the Reference Nonresidential Appendix NA2. 17 All Ductwork and plenums with pressure class ratings shall be constructed to Seal Class A 18 All ductwork is an extension of an existing duct system 19 Ductwork serving individual dwelling unit 20 < 25 ft of new or replacement space conditioning ducts installed 21 R-8 Duct Insulation R-value		STATI STATI NEVAD, TITLE-2, NONRE
Name or Item Tag Size Category (Btu/h) Size Category (Btu/h) Fig. Condition (°F) Fig. Fisher	Baths Toilet, private 145 2 0 100 220 DCV NA: Not required per \$120.1(d)3 NA: Not required per \$120.1(d)3 Occ Sensor NA: Not required space type	M. COOLING TOWERS This section does not apply to this project.		Revisions: No. Date: By: Description:
Generated Date/Time: Generated Date/Time: Documentation Software: EnergyP CA Building Energy Efficiency Standards - 2022 Nonresidential Compliance Report Version: 2022.0.000 Schema Version: rev 20220101 Compliance ID: EnergyPro-3103-0923-01 Report Generated: 2023-09-11 14:17:	CA Building Energy Efficiency Standards - 2022 Nonresidential Compliance Report Version: 2022.0.000 Compliance ID: EnergyPro-3103-0923-0160	Generated Date/Time: Documentation Software: EnergyPro CA Building Energy Efficiency Standards - 2022 Nonresidential Compliance Report Version: 2022.0.000 Compliance ID: EnergyPro-3103-0923-0160 Schema Version: rev 20220101 Report Generated: 2023-09-11 14:17:29		
			ENERGY FEATURES SUMMARY	Plot Date: Job # 23-235
			SCOPE: MECHANICAL EQUIPMENT AND DUCTWORK ALTERATION PV SYSTEM: NOT REQUIRED SPECIAL FEATURES: NONE SPACE HEATING: DUCTED HEAT PUMP (HSPF2=9) SPACE COOLING: DUCTED AIR CONDITIONERS (SEERS=17 EER=10.6) DUCT INSULATION: R-8	Scale N/A
			WATER HEATING: NEW GAS ON-DEMAND WATER HEATER (EF=0.95)	