REMODEL & ADDITIONS TO THE: RENFREW RESIDENCE

14500 ARNERICH HILL ROAD - APN 537-12-012 LOS GATOS, CALIFORNIA

GENERAL NOTES

LIFE-SAFETY

Provide combustion air for all gas-fired appliances. (CMC Chapter 7) Vent dryer to outside of building (not to under-floor area). Vent length shall be 14' maximum or

vent size shall be increased. (CMC 504.3) Provide Tempered glass at all hazardous locations per CBC 2406.4 & CRC 308.4

Safety glazing shall be required within 24" of a door edge or within 36" of a stairway, landing or ramp when the bottom edge of the glazing is less than 60" from the floor or walking surface. Safety glazing is required in all fixed and operable panels of swinging, sliding and bi-fold doors. Skylights shall comply with CRC R 308.6

Safety glazing is required in enclosures and walls facing hot tubs, saunas, steam rooms, showers and tubs where the bottom edge of the glazing is less than 60" from any standing or walking

Fire blocking shall be provided in concealed spaces of stud walls and partitions, including furred spaces, and parallel rows of studs or staggered studs; vertically at floor and ceiling levels, horizontally at intervals not to exceed 10'. Openings around gas vents, ducts, chimneys and fireplaces at ceiling and floor levels shall have fire blocking per CBC 717.1 & CRC 302.11.

Provide minimum 22" x 30" access opening to attic. In attics in which an appliance is installed, an opening and passageway at least as large as the largest component of the appliance shall be

Floor and ceiling assemblies shall be draft stopped so that the area of concealed space does not exceed 1000 SF. The draft stops shall divide the concealed space into approximately equal spaces per CBC 718.2 & CRC 302.12.

LIGHT & VENTILATION

Provide ventilation for products of combustion to outside air. (CMC 801.1)

Attic ventilation: 1/150 of attic area. If a Class I or II vapor barrier is applied to warm-in winter side of ceiling, or, if 50% - 80% of the vents are at least 3' above the eaves and the remaining vents are in the eaves then the ratio may be reduced to 1/300. Enclosed rafter spaces shall have cross ventilation (min. 1" clear) Under-floor space shall have a ventilation opening area of 1/150 square feet of under-floor area.

If a Class I vapor retarder is used the ratio may be reduced to 1/1500. One opening shall be placed within 3 feet of each building corner. Openings shall be covered with a covering having openings no greater than 1/4". Air infiltration, insulation, space heating, space cooling, water heating...etc. shall meet CA Energy

HERS certification testing is required for Indoor Air Quality DOORS, STAIRWAYS AND LANDINGS

Stairways shall comply with CBC 1009 & CRC R311.7

Required egress door shall be side hinged and have a minimum net clear width of 32" and a

There shall be a landing at each side of all doors. The landing shall be at least as wide as the door served and 36"min length measured in the direction of travel. There may one step down of no more than 7.75" provided the door does not swing over the landing.

Stairway rise shall be 4" min and 7.75" max. Run shall be 10" min. Headroom shall be 80" min.

Width shall be 36" min. Handrails shall be 34" to 38" above tread nosing with openings less than

Enclosed useable space under interior stairs shall be finished with 1/2" gypsum board Fire blocking is required in concealed spaces between stair stringers at the top and bottom of the

There shall be a floor or landing at the top and bottom of each stairway. Width and length of landings shall be not less than the width of the stairway and shall be at least 36" in the direction of travel. A floor or landing is not required at the top of an interior flight of stairs, including stairs in an enclosed garage, provided a door does not swing over the stairs.

Guardrails shall comply with CBC 1013.4 & CRC R 312. Guards shall be located along open sided walking surfaces, including stairs, ramps, landings, and decks, that are more than 30" above the floor or grade. Required guards shall be not less than 42" above the adjacent walking surface. Except that handrails may be considered as guards at stairways. Openings in guards shall not exceed 4". Handrails shall comply with CBC 1012 & CRC R 311.7

Glazing used in doors, sidelights and panels of the shower enclosure shall be fully tempered, laminated safety glass or approved plastic. Per CRC R308.3 & R308.4.1. WEATHER & CORROSION DAMAGE PREVENTION MEASURES

Naturally durable wood or preservative treated wood shall be required in the following locations Wood joists and girders closer than 18" or 12" respectively, to the exposed

- Wood framing members that rest on concrete or masonry and are less than 8"
- ground unless separated by an impervious moisture barrier.

Sills and sleepers on a concrete or masonry slab that is in direct contact with the

Wood siding, sheathing and wall framing on the exterior of the building having a clearance of less than 6" from the ground or less than 2" from a horizontal concrete surface.

GARAGE

Common wall between garage and dwelling shall have 5/8" gypsum board applied on the garage side. Garage ceiling with habitable space above shall have 5/8" type 'X' gypsum board applied to

No openings may be provided between a garage and a sleeping room. Other openings shall be equipped with solid wood or steel doors 1-3/8" in thickness and shall be self-closing and selflatching, 20 min. labeled assembly.

Garage floor surfaces shall be of approved noncombustible material.

Appliances and receptacles installed in garages and carports generating a glow, spark, or flame shall be located 18" min. above the floor. Provide protective bollard or other impact barrier. (CMC

ELECTRICAL

Do not install electrical panels larger than 16 square inches in rated fire walls. Never install electrical panels in closet. Maintain a clearance of 36" in front of the panels. (CEC 110.26) Provide a minimum of one 20 Amp receptacle in laundry areas. (CEC 210.52(F)) Kitchens and dining areas must have a minimum of two 20 Amp branch circuits (CEC 210.11).

Kitchen counter outlets must be installed in every counter space 12" or wider, not greater than 4' o.c. and within 24" of the end of any counter space. (CEC 210.52) GFCI outlets are required for all kitchen receptacles that are designed to serve countertop surfaces, in bathroom, in under-floor spaces or below grade level, in exterior outlets, and in all garage outlets not dedicated to a single device or appliance. (CEC 210.8) All dwellings must have at least one exterior outlet at the front and the back of the dwelling. (CEC 210.52(E))

Receptacles must be installed at 12' o.c. maximum in walls. Walls longer than 2 feet and halls longer than 10' must have a receptacle. A receptacle must be provided within 3' of bathroom sinks. (CEC 210.52). Spacing of kitchen and dining room countertop receptacles shall meet minimum requirements of CEC 210.52(C), Parts 1-5. Bond all metal gas and water pipes to ground. All ground clamps must be accessible and of an approved type. (CEC 250.104)

Furnaces installed in attics and crawl spaces must have an access platform (catwalk in attics), light, light switch, and receptacle in the space. (CMC 904.11) Smoke detector/ alarms are to be provided with battery back-up and audible in all sleeping areas and shall be hard-wired and inter-connected per CRC R314.5. When alterations, repairs, or

An approved carbon monoxide alarm shall be installed in dwellings within which fuel-burning appliances are installed, and in dwellings with an attached garage. Carbon monoxide detector/ alarms on all habitable levels and shall be hard-wired and inter-connected per CRC R315.1 Arc-Fault Circuit-Interrupter (AFCI) protected receptacles shall be installed in all rooms not requiring GFCI protection. The maximum length of the branch circuit to the AFCI is 50 feet for 14

additions require a permit, smoke alarms shall be installed where required in new dwellings.

Receptacles on 120- volt 15 & 20 amp circuits shall be listed tamper resistant. (CEC 406.11) Except when located more than 5.5' above the floor; within cabinets or cupboards; or when part Provide exhaust fans in bathrooms vented to outside and sized as follows: >/= 50 CFM intermittent >= 20 CFM continuous. Exhaust fan ratings to be <= 1 sone continuous, <= 3

AWG conductors or 70 feet for a12 AWG conductor.

controls for adjustment of relative humidity from 50- to 80%. CalGreen Code 4.506.1 Provide a whole building mechanical exhaust system to outdoor air, with a properly labeled accessible off/ on switch. Covers or louvers are to have min. R 4.2 insulation. Whole House Ventilation Calculation per CEC 150(O) & ASHRAE 62.2: 0.03 X heated area + 7.5 x (# of

bedrooms + 1) = minimum required CFM exhaust fan, with 2 sone maximum sound rating.

sones intermittent. Bath fans are to be Energy Star compliant and equipped with humidistat

The whole house fan shall be continuously on, unless there are exterior air contaminates present. The on/off mechanism shall be labeled to identify it as controlling the whole house fan, Any new appliances (installed as part of any remodel, addition or new construction) shall be

Provide a listed raceway to accommodate a dedicated 208/240-volt branch circuit for electric vehicle charging not less than 1" nominal inside diameter. The raceway shall originate at the main service or subpanel and shall terminate in a listed cabinet, box or enclosure in close proximity to the proposed location of the EV charger. Raceways are required to be continuous at enclosed, inaccessible or concealed areas and spaces. The raceway termination location shall be permanently and visibly marked as "EV CAPABLE". The service panel and/or sub-panel shall provide capacity to install a 40-amp, minimum dedicated branch circuit and space(s) reserved to permit installation of a branch circuit overcurrent protective device. The service panel or subpanel shall identify the overcurrent protective device space(s) reserved for future EV charging as "EV CAPABLE". The charging circuit must be rated for continuous duty at 125% of load. All Electrical Vehicle Supply Equipment (EVSE) shall be installed in accordance with the California

PLUMBING

Electrical Code.

Fuel burning water heater is not allowed in bedroom or bathroom unless direct vent type or

Water closet shall be located in a space not less than 30" in width with 24" minimum clearance in

Provide 18" x 24" foundation access within 20' of plumbing cleanout. (CPC 707.9) Provide anti-siphon valves on all hose bibs. (CPC 603.4.7) Strap water heater at points within upper and lower third of tank and 4" min. above controls.

Copper, galvanized or plastic piping shall not be installed under building slab. All solder joints to be lead free. Type M copper tubing shall not be used for water piping. Provide low flow shower heads and water closets consuming 1.28 gallons per flush or less. (CPC 402.2.2). Install chlorine filters on shower heads, or whole house chlorine filter.

Showers and walls above bathtubs with shower heads shall be finished with a smooth, hard non-

absorbent surface to a height of at least 72 in. above the drain outlet per CBC 1210.3 & CRC Provide curtain rod or shower door enclosure with tempered safety glazing per CRC R308.4.

Showers and tub-showers shall be provided with individual control valves of the pressure balance, thermostatic, or combination pressure balance/thermostatic mixing valve type that provide scald and thermal shock protection pre CPC 408.3.

All new waterlines ¾" dia. or larger and all new hot waterlines to the kitchen will be insulated per CEnC150(j)2.A & minimum insulation Table 120.3-A.

GREEN BUILDING NOTES

- Conduct Pre-construction Green Building Conference. Provide Construction Waste Management Plan for 65% Recycling Job Site Construction
- This project does not include any Fencing.
- Donate Unused materials
- Protect annular spaces around openings in plates at exterior wall per Cal Green sec. 4.505.2.
- Substitution of solid sawn lumber with engineered lumber for Structural Beams and Headers including non-structural Headers is acceptable. Acquire final approval by Architect & Structural Engineer where applicable.
- Substitution of Plywood with OSB for sheathing is acceptable. Acquire final approval by Architect & Structural Engineer where applicable. Provide ENERGY STAR rated appliances, typical, provide cut sheets for inspector
- Install built-in recycling center in Kitchen cabinetry.
- Install Insulation after building is Weather-Tight and outside of the rainy season. Insulation shall be recycled-content, formaldehyde-free fiberglass insulation. Insulate all hot water pipes.
- Check moisture content materials for walls & floor before enclosure
- Cover duct openings/air distribution openings during construction. Clean ducts before occupancy. Use duct mastic on all duct joints. Use Low / No VOC, water based products and solvent-free adhesives and sealers. Install
- Low VOC carpet systems (where applicable). Develop Homeowner Manual including Green Measures & Benefits

DEFERRED SUBMITTA

METHODS

SUBMITTAL DOCUMENTS FOR DEFERRED SUBMITTAL ITEMS SHALL BE SUBMITTED TO THE ARCHITECT OR ENGINEER OF RECORD, WHO SHALL REVIEW THEM AND FORWARD THEM TO THE BUILDING OFFICIAL WITH A NOTATION INDICATING THAT THE DEFERRED SUBMITTAL DOCUMENTS HAVE BEEN REVIEWED AND THAT THEY HAVE BEEN FOUND O BE IN GENERAL CONFORMANCE WITH THE DESIGN OF THE BUILDING. THE DEFERRED SUBMITTAL ITEMS SHALL NOT BE INSTALLED UNTIL THE DESIGN AND SUBMITTAL DOCUMENTS HAVE BEEN APPROVED BY THE BUILDING OFFICIAL. THI

PROVIDE COMPLETE DESIGN CALCULATIONS, DRAWINGS AND SPECIFICATIONS FOR FIRE SPRINKLER SYSTEM FOR APPROVAL PRIOR TO INSTALLATION PROVIDE DESIGN AND DOCUMENTATION FOR A COMPLETE HEATING SYSTEM PLANS AND SPECIFICATIONS TO INCLUDE APPLIANCE MODELS. SPECIFICATIONS, BTU VALUES, DUCT LAYOUT, MATERIALS AND SIZES, ETC. HEATING AND/OR AIR-CONDITIONING SYSTEMS SHALL BE SIZED, DESIGNED AND HAVE THE EQUIPMENT SELECTED USING THE FOLLOWING METHODS:

- THE HEAT LOSS AND HEAT GAIN IS ESTABLISHED ACCORDING TO ANSI/ACCA 2 MANUAL J-2011, ASHRAE HANDBOOKS OR OTHER EQUIVALENT DESIGN SOFTWARE OR METHODS.
- DUCT SYSTEMS ARE SIZED ACCORDING TO ANSI/ACCA 1 MANUAL D-2014, ASHRAE HANDBOOKS OR OTHER EQUIVALENT DESIGN SOFTWARE

MANUAL S-2014 OR OTHER EQUIVALENT DESIGN SOFTWARE OR

HERS NOTE

HERS registered forms are required by installing mechanical contractor for the heat pum system. Installing contractor to register project with HERS provider and submit CF2Rs & CF3Rs to jurisdiction before beginning work; HERS certification is required for indoor air quality ventilation. HERS inspection and certification is required for installation of Kitchen downdraft cooktop exhaust. HERS inspection and certification is required for cooling system; verified SEER, Verified Refrigerant Charge, Airflow in Habitable rooms (SC3.1.4.1.7). HERS inspection and certification is required for Heating System; verified HSPF, verified heat pump rated heating capacity, wall-mounted thermostat in zones greater than 150ft2 (SC3.4.5), ductless indoor units located entirely in conditioned space (SC3.1.4.1.8). Quality Insulation Installation (QII) at Music Room. General Contractor shall meet with the HERS Rater prior to commencement of construction.

GRADING NOTES

	EXCAVATED MATERIAL SHALL BE PLACED IN THE FILL AREAS DESIGNATED OR
	SHALL BE HAULED AWAY FROM THE SITE. WHERE FILL MATERIAL IS TO BE
	PLACED ON NATURAL GRADE IT SHALL BE STRIPPED OF ALL VEGETATION, TO
	ACHIEVE PROPER BOND WITH THE FILL MATERIAL, THE SURFACE OF THE
	GROUND SHALL BE SCARIFIED TO A DEPTH OF 6" BEFORE THE FILL IS PLACED.
	WHERE NATURAL GROUND IS STEEPER THAN 5:1, IT SHALL BE BENCHED AND
	THE FILL KEYED IN TO ACHIEVE STABILITY. WHERE NEW FILL IS TO BE PLACED
	ON EXISTING FILL, THE EXISTING FILL SHALL BE REMOVED, UNTIL MATERIAL
	COMPACTED TO 90% RELATIVE DENSITY IS EXPOSED. THE NEW FILL SHALL BE
	PLACED PER THESE CONSTRUCTION NOTES. FILL MATERIAL SHAL BE PLACED
•	IN UNIFORM LIFTS NOT EXCEEDING 6" IN COMPACTED THICKNESS. BEFORE
	COMPACTION BEGINS THE FILL SHALL BE BROUGHT TO A WATER CONTENT
	THAT WILL PERMIT PROPER COMPACTION BY EITHER (1) AERATING THE FILL IF
	IT IS TOO WET, OR (2) MOISTENING THE FILL WITH WATER IF IT IS TOO DRY.
	EACH LIFT SHALL BE THOROUGHLY MIXED BEFORE COMPACTION TO INSURE

- UNIFORM DISTRIBUTION OF MOISTURE. NO ORGANIC MATERIAL SHALL BE PLACED IN ANY FILL. THE UPPER 12" OF SUB-GRADE BELOW DRIVEWAY OR PARKING AREA SHALL BE
- COMPACTED TO 95% RELATIVE DENSITY. BUILDING LOCATION AND PAD ELEVATION TO BE DONE BY A LICENSED SURVEYOR OR CIVIL ENGINEER PRIOR TO GRADING.
- CONTRACTOR TO ARRANGE A PRE-GRADING MEETING WITH THE SANTA CLARA COUNTY INSPECTOR PRIOR TO BEGINNING ANY WORK. NO POTABLE WATER TO BE USED FOR ANY GRADING PURPOSES ON THIS
- PERMITTED HOURS OF WORK ARE 7:30 AM TO 6:00 PM, MONDAY THROUGH ALL UTILITIES TO BE UNDERGROUND, TYPICAL. PROVIDE CHECK VALVE ON

ESTIMATED GRADING QUANTITIES

LOCATION	CUT	FILL	MAX. VERT DEPTH
DRIVEWAY	8	- 8	3 FT
GARAGE/SHOP	108	0	8 FT
HOUSE	0	0	0
POOL CABANA	Ŏ	6	3 FT
TOTAL	116 Cu. Yds.	14 Cu. Yds	

9455 4238
4238
4200
1121
700
1000
175

TREE REMOVAL SUMMARY

UNKNOWN

E NUMBER	COMMON NAME	DBH	QUAN.	LOCATION
	0.114	4.4.0		OPE OF IT BOUTHING
1	OAK	10"	7	SIDE OF (E) DRIVEWAY
2	OAK	12"	3	SIDE OF (E) DRIVEWAY
3	OAK	12"	3	SIDE OF (E) DRIVEWAY
4	CEDAR	8"	1	BEHIND (È) GARAGE
5	CEDAR	12"	1	BEHIND (E) GARAGE
6	CEDAR	14"	1	BEHIND (E) GARAGE
7	CEDAR	16"	1	BEHIND (E) GARAGE
8	SNAG	16"	1	SIDE OF (É) DRIVEWAY
ž	0.414	400	À	@ (E) DOOL TEDDACE

ADJACENT TO ENTRY

FIRE DEPARTMENT NOTES

These plans are in compliance with the California Building and Fire Codes (2019 edition) and Santa Clara County Central Fire Protection District Amendments.

- The structure is situated within the boundaries of the State Responsibility Area (SRA) and is subject to the requirements contained in CBC Chapter 7-A for construction within the Wildland
- Building numbers shall be provided. Numbers shall be a minimum of six (6) inches in height on a contrasting background and visible from the street. Where numbers are not visible from the street additional numbers shall be installed on a directional sign at the property driveway and the street Roof coverings shall be no less than Class "B" fire rated roof.
- nstall smoke detectors per CBC sections 907.2.10.1.1 & CRC R 314 nstall carbon-monoxide detectors per CBC 420 & CRC R 315.2
- Maintain a 30-foot clearance with non-combustible vegetation around all structures. Electric gates shall be equipped with KNOX key entry system.
- Job copies of the building and fire system plans and permits must be on-site during
- As a condition of submittal of these plans, the submitter, designer and installer certify that these plans and details comply with applicable Specifications, Standards, Codes and Ordinances agree that they are solely responsible for compliance with applicable Specifications, Standards, Code and Ordinances, and further agree to correct any deficiencies noted by this review, subsequent review, inspection or other source and, to hold harmless and without prejudice, the reviewer and

Wildland Urban Interface Construction Codes and Standards

Roofs and Roof Edges CBC 705A.1 / CRC R337.5
A non-combustible (tile or metal) or Class "A" roofing assembly is required in SRA – very high fire hazard severity zones. All other areas require Class "B" minimum roof assembly including LRA, SRA-moderate, & SRA-high areas.

Where the roof profile allows a space between the roof covering and the roof decking, the spaces shall be constructed to prevent the intrusion of flames or embers, be fired stopped with approved materials, or have layer of No. 72 cap sheet installed over the combustible decking. Where provided, valley flashing must be not less than 26 gauge galvanized sheet metal over a 36-inch wide No. 72 ASTM cap sheet. Roof gutters shall be provided with non-combustible gutter guards to prevent the accumulation of leaves and debris in the gutter.

Exterior Walls / Siding CBC 707A.3 / CRC R337.8 Noncombustible, listed ignition-resistant materials, heavy timber, 5/8" Type X gypsum sheathing behind exterior covering, exterior portion of one-hour assembly or log wall construction is allowed. Note: ignition-resistive materials are those tested by the SFM or ICC-Evaluation Service to have a flame spread rating not over 25, and comply with accelerated

Eaves and Porch Ceilings CBC 707A.4, A.6 / CRC R327.7.4 R327.7.6 The exposed roof deck under enclosed eaves and the underside of porch ceilings shall be noncombustible, listed ignition-resistant materials, or 5/8" type X gypsum sheathing behind exterior coverings. Solid wood rafter tails on the exposed underside of roof eaves having a minimum 2" nominal Dimension may be unprotected.

CBC 706A / CRC R337.6 Attic vents and under-floor vent openings must resist the intrusion of flames and embers or shall be a minimum of 1/16" and maximum 1/8" corrosion-resistant, non-combustible wire mesh or equivalent. Combustible vents of the top of roofs must be covered with this material to comply. Ventilation openings on the underside of eaves are not permitted, unless the SFM approved vent is installed, or the eaves are fire sprinklered, or vents are 12 feet above a walking surface or grade below.

Windows and Exterior Doors CBC 708A / CRC R337.8 Windows must be insulated glass with a minimum of 1 tempered pane exterior, or be 20 minute rated, or glass block. Exterior doors must be non-combustible, of ignition resistant materials, or 1-3/8" solid core, or have a 20-minute fire resistant rating.

Exterior Decking and Stairs CBC 709A / CRC R337.9 Walking surfaces of decks, porches, balconies, and stairs within 10 ft. of the building must be constructed of non-combustible, fire-retardant treated, of heavy-timber construction. Alternate materials can be used if they are ignition-resistant and pass performance requirements specified by the State Fire Marshal.

Under-floor and Appendages CBC 707A.8 / CRC R337.7.7 & R337.7.8 Exposed under-floors, underside of cantilevered or overhanging decks, balconies, and similar appendages shall be non-combustible, ignition-resistant, 5/8" Type X gypsum sheathing behind exterior coverings, exterior portion of 1-hour assembly, meet performance criteria SFM Standard 12-7A-3 or be enclosed to grade.

STORMWATER MANAGEMENT & MAINTENANCE AGREEMENT NOTES THERE ARE NO EXISTING STORMWATER (DRAINAGE) ISSUES ON OR NEAR THE SITE AND THERE ARE NO STORMWATER (DRAINAGÉ) ISSUES ANTICIPATED RESULTING FROM THE PROPOSED IMPROVEMENTS.

THE PROPOSED DEVELOPMENT WILL NOT CAUSE PROBLEMS TO THE NEARBY

THE ON-SITE DRAINAGE WILL BE CONTROLLED IN SUCH A MANNER AS TO NOT INCREASE THE DOWNSTREAM PEAK FLOW OR CAUSE A HAZARD OR PUBLIC NUISANCE. OWNER CONSENTS AND AGREES TO INSPECT AND MAINTAIN ANNUALLY 'PRIOR TO THE RAINY SEASON' THE ON-SITE DRAINAGE SYSTEMS AND STORMWATER MANAGEMENT FACILITIES ON THE SUBJECT PROPERTY.

MAINTENANCE SCHEDULE FOR ON-SITE DRAINAGE SYSTEMS AND STORMWATER MANAGEMENT FACILITIES

ROOF GUTTERS AND DOWNSPOUTS - SHALL BE CLEANED AS REQUIRED PRIOR TO RAINY SEASON ANNUALLY. <u>PERCOLATION TRENCHES</u> – INSPECT VIA CLEAN-OUTS / INSPECTION PORTS, DRAIN PIPES AND OVERFLOW RISERS PRIOR TO THE RAINY SEASON ANNUALLY TO ASSURE DRAINAGE PERCOLATION SYSTEMS FUNCTIONS PROPERLY.

APPLICABLE CODES

ALL WORK INDICATED ON THE PLANS SHALL COMPLY WITH THE FOLLOWING GOVERNING CODES:

2019 CALIFORNIA BUILDING CODE 2019 CALIFORNIA RESIDENTIAL CODE 2019 CALIFORNIA ELECTRICAL CODE 2019 CALIFORNIA PLUMBING CODES 2019 CALIFORNIA MECHANICAL CODE 2019 CALIFORNIA ENERGY CODE 2019 CALIFORNIA GREEN BUILDING STANDARDS CODE 2019 CALIFORNIA FIRE CODE SANTA CLARA COUNTY MUNICIPAL & FIRE CODE

PROJECT CONSULTANTS

Michael Helm & Associates 200 Seventh Ave., #110 Santa Cruz, CA 95062 831-476-5386 George Reynolds, S. E. 111 Younglove Ave. Santa Cruz, CA 95060 Monterey Energy Group 26465 Carmel Rancho Blvd., #8 Carmel, CA 93923 831-372-8328 1796 Laurel Glen Road Soquel, CA 95073 831-800-2244 LANDSCAPE **Thomas Scherer Associates** P.O. Box 68 Aptos, CA 95001 831-688-8913 SOILS 750 Camden Ave., STE A Campbell, CA 95008 408-866-5436

ALL SOILS WORK AND FOUNDATION PLACEMENT SHALL COMPLY WITH THE RECOMMENDATIONS IN THE GEOTECHNICAL INVESTIGATION BY C2 EARTH. PROJECT NO. 21137C-01R1, DATED JULY 29, 2022

SHEET INDEX

SITE PLAN – OVERALL SITE / GRADING & DRAINAGE PLAN

EXISTING - HOUSE LOWER FLOOR PLAN EXISTING - HOUSE MAIN FLOOR PLAN EXISTING - HOUSE EXTERIOR ELEVATIONS PROPOSED - HOUSE LOWER FLOOR PLAN PROPOSED - HOUSE MAIN FLOOR PLAN

PROPOSED - HOUSE UPPER FLOOR PLAN PROPOSED - HOUSE EXTERIOR ELEVATIONS ROPOSED - HOUSE EXTERIOR ELEVATION & BUILDING SECTION HOUSE - LOWER / UPPER FLOOR ELECTRICAL SCHEMATIC PLAN HOUSE - MAIN FLOOR ELECTRICAL SCHEMATIC PLAN HOUSE - FOUNDATION / FLOOR FRAMING PLAN HOUSE - UPPER FLOOR / ROOF FRAMING PLAN CONSTRUCTION DETAILS

EXISTING & PROPOSED - GARAGE / SHOP / MUSIC & GUEST FLOOR PLANS GARAGE / SHOP / ADU- EXTERIOR ELEVATIONS GARAGE / SHOP / ADU - ELECTRICAL SCHEMATIC PLANS GARAGE / SHOP / ADU - FOUNDATION / FLOOR / ROOF FRAMING CONSTRUCTION DETAILS

POOL CABANA - FLOOR PLAN / ELEVATIONS / ELECTRICAL SCHEMATIC PLAN POOL CABANA - FOUNDATION / ROOF FRAMING PLANS ARCHITECTURAL SPECIFICATIONS

STANDARD CONSTRUCTION DETAILS TITLE 24 - ENERGY COMPLIANCE FORMS TITLE 24 - LOW-RISE RESIDENTIAL MANDATORY MEASURES SUMMARY GREEN BUILDING STANDARDS CODE

STRUCTURAL SPECIFICATIONS & NOTES

WW4 WASTEWATER SYSTEM SCHEMATIC & DETAILS

WW5 OWTS SPECIFICATIONS & EROSION CONTROL

WW1 OWTS COVER SHEET WW2 EXISTING SITE LAYOUT

WASTEWATER SYSTEM PLAN

VICINITY MAP

PARCEL SIZE

LOT COVERAGE

PROJECT DATA

537-12-012 **ADDRESS** 14500 Americh Hill Road, Los Gatos, CA **OWNER**

Robert & Katrina Renfres 14500 Arnerich Hill Road Los Gatos, CA 95070 650-440-3231

ZONING OCCUPANCY CONST. TYPE FIRE RATING Sprinklered

390,298 SF = 9 Acres

BUILDING AREA HOUSE - HEATED AREA EXISTI HOUSE - (E) LOWER FLOOR 1387.2 HOUSE - (E) MAIN FLOOR 3677.81 700 SF STORAGE 374 SF HOUSE - (E) COV. PORCHES 374 FLOOR AREA RATIO (E) 6279.08 + (P) 3065.62 = 9344.7 SF / 390.298 SF = 2.3%

PROPOSED 4238.69 4238.69 SHOP + STORAGE

species and patterns.

PROJECT DESCRIPTION

This project consists of remodeling an existing 5,065 SF Single Family Dwelling and constructing a new upper floor 3 bedroom, 3 bathroom addition of approximately 1,078 SF, resulting in a 5 bedroom, 6 bath SFD of approximately 6,143 SF.

Areas disrupted during Construction shall be restored to be consistent with native vegetation

This project consists of remodeling an existing 840 SF detached 3-car garage and constructing an additional garage bay of approximately 281 SF, resulting in a 4-car garage of approximately 1121 SF.

This project consists of a new ground floor shop addition of approximately 350 SF and storage addition of approximately 350 SF to the rear of the existing garage with a new upper floor ADU of approximately 700 SF that includes a music/guest room with bathroom. This project consists of a new detached accessory structure for a non-heated pool cabana of approximately 756 SF that includes of a covered sitting area, bathroom, mechanical/storage room and outdoor kitchen with BBQ.

All construction will be predominately of wood frame and WUI compliant. STORMWATER MANAGEMENT & MAINTENANCE AGREEMENT NOTES OWNER CONSENTS AND AGREES TO INSPECT AND MAINTAIN ANNUALLY 'PRIOR TO THE RAINY SEASON' THE ON-SITE DRAINAGE SYSTEMS AND STORMWATER

MANAGEMENT FACILITIES ON THE SUBJECT PROPERTY. MAINTENANCE SCHEDULE FOR ON-SITE DRAINAGE SYSTEMS AND STORMWATER MANAGEMENT FACILITIES ROOF GUTTERS AND DOWNSPOUTS - SHALL BE CLEANED AS REQUIRED PRIOR TO RAINY SEASON ANNUALLY.

PERCOLATION TRENCHES - INSPECT VIA CLEAN-OUTS / INSPECTION PORTS, DRAIN PIPES AND OVERFLOW RISERS PRIOR TO THE RAINY SEASON ANNUALLY TO ASSURE DRAINAGE PERCOLATION SYSTEMS FUNCTIONS PROPERLY THERE ARE NO EXISTING STORMWATER (DRAINAGE) ISSUES ON OR NEAR THE SITE AND THERE ARE NO STORMWATER (DRAINAGE) ISSUES ANTICIPATED RESULTING FROM THE PROPOSED

Santa Clara County REBUILD Determination and Points Allocation ¹ A. Existing Residence Ratio Maximum Resultin Removed L.F. 8Z 1b Slab - structural slabs and basement areas Existing Area Modified Area 1387 0 New/modified or Ratio Maximum Resulting 2 Walls - interior and exterio Existing L.F.² Removed L.F. 1902 new, replaced, 90.5 .06 in linear feet Ratio Maximum Resulting altered or removed Existing S.F. Roof S.F. 4238 1078 125

Ratio 1 pt/

40 S.F.

Sub-Total

42

Points

Hirst floor and upper story C. Cumulative rebuild points from permits issued within last 2 years:

Existing Residence Subtota

B. Proposed Additions

TOTAL POINT ALLOCATIONS

2 LF. = Uneal Feet measured to outside face or end of wall or footing. Lengths of intersecting walls or footings at corners may not be double counted.

3 Lineal feet of rectangular footings shall be taken on the longest length. Lineal feet shall also include thickened slab areas for bearing walls. non-bearing & bearing walls (including framed openings) measured along the double too plate, includes walls remon 5 includes all california framing, eaves, rakes, attached outdoor covered areas enclosed by more than 50% of the perimeter d substantial changes to roof framing (i.e. going from a flat ceiling to vaulted ceiling) that substantiali under the second story addition

EXISTING WALLS - (EXTERIOR & INTERIOR @ LOWER AND MAIN FLOOR) = 1502 LF **DEMOLISHED WALLS** - (EXTERIOR & INTERIOR @ MAIN FLOOR) = 90.5 LFNEW WALLS - (EXTERIOR & INTERIOR @ MAIN & UPPER FLOOR) = 310 LF

11-14-02

SIDENCI SIDENCI D - APN 537-12-

RENDBEL & ADDITION RESTOR A SOUTH ROAD LOS GATOR CALLS

Michael

FLOOR ADDITION (SEE SHEETS 7 - 16)

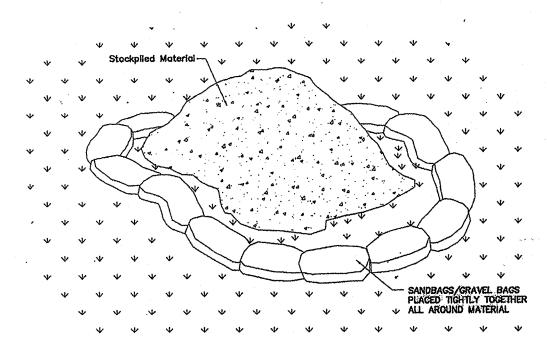
) GROUND MOUNTED SOLAR

PHOTOVOLTAIC 84 PANEL ARRAY

1. Catch Basin/Inlet protection shall be installed wherever there is a potential of stormwater or non-stormwater being discharged into it. 2. Inlet protection is required along with other pollution prevention measures such as; erosion control, soil stabilization, and measures to prevent tracking onto 3. Modify inlet protection as needed to avoid creating traffic hazards 4. Include inlet protection measures at hillside v-ditches and misc. drainage swales.
5. Inlet protection shall be inspected and accumulated sediments removed. Sediment

shall be disposed of properly and in a manner that assures that the sediment does not enter the storm drain system Damaged bags shall be replaced immediately. Additional sandbag sediment traps shall be placed at intervals as indicated or

CATCH BASIN/INLET PROTECTION

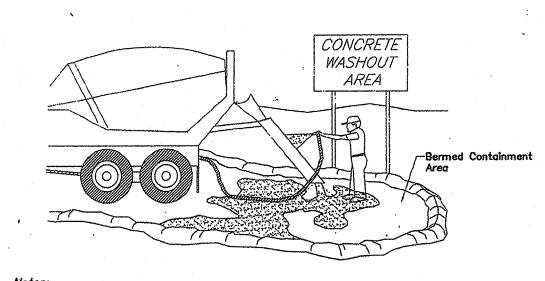


eliminate air and storm water pollution from stockpiles of soil, and paving materials such as portland cement concrete (PCC) rubble, asphalt concrete (AC), asphalt concrete rubble, aggregate base, aggregate subbase or pre-mixed aggregate, asphalt binder (i.e. cold mix) and pressure treated wood.

 Protection of stockpiles is a year-round requirement.
 Locate stockpiles a minimum of 50 feet away from concentrated flows of storm water, drainage courses, and drain inlets. Implement wind erosion/transport control practices as appropriate.
 All stockpiles shall be covered, stabilized, or protected with a temporary linear

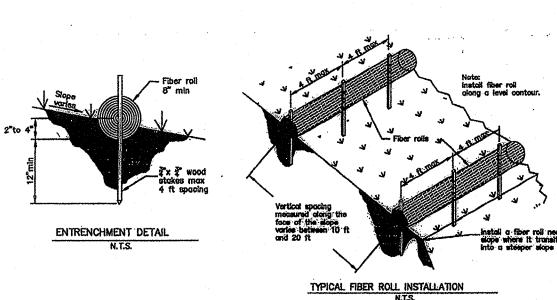
barrier (i.e. sandbags, etc.) prior to the onset of precipitation.

MATERIAL STORAGE



1. Excess and waste concrete shall not be washed into the street or into 2. For washout of concrete and mortar products, a designated containment facility of sufficient capacity to retain liquid and solid waste shall be provided on site and disposed of properly off site. 3. Slurry from concrete and asphalt saw cutting shall be vacuumed or contained dried, picked up and disposed of properly.

CONCRETE WASTE MANAGEMENT



1. Place along the toe, top, face, and at grade breaks of exposed and erodible

Place on the down-slope of exposed soil areas.
Place around temporary stockpiles. Place along the perimeter of a project. Slopes greater than 1:5 may require the use of 20 inch diameter fiber rolls at the top of slopes. 6. Fiber rolls shall be either prefabricated or rolled tubes of erosion control blankets with a minimum 8 inch diameter.

7. Slopes 1:4 or flatter require fiber rolls to be placed no more than 20 feet 8. Slopes 1:4 to 1:2 require fiber rolls to be placed no more than 15 feet apart. 9. Slopes 1:2 or greater require fiber rolls to be placed no more than 10 feet

10. Fiber rolls shall be placed in a 2 to 4 inch deep trench. 11. Wooden commercial grade stakes, \$ " X \$ ", shall be used to secure the fiber roll to the ground surface. Stakes shall be a minimum length of 24 inches and driven a minimum of 12 inches.

12. A single-stake installation requires the stakes to be placed no more than 2 13. If more than one fiber roll is placed in a row, the rolls shall be overlapped, not abutted, a minimum of 1 foot.

() FIBER ROLL

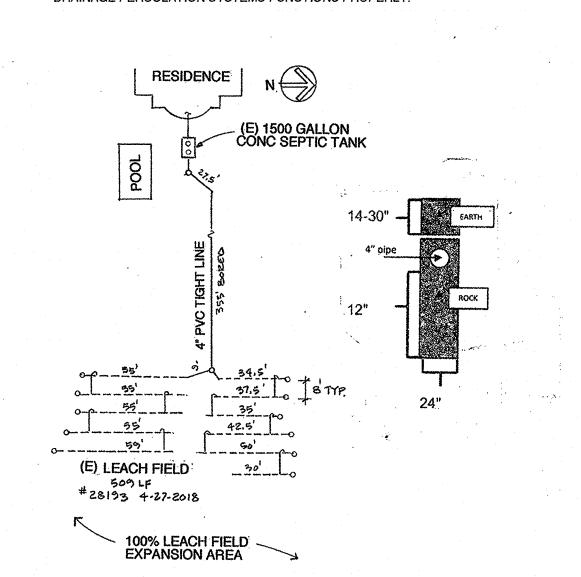
STORMWATER MANAGEMENT & MAINTENANCE AGREEMENT NOTES

THERE ARE NO EXISTING STORMWATER (DRAINAGE) ISSUES ON OR NEAR THE SITE AND THERE ARE NO STORMWATER (DRAINAGE) ISSUES ANTICIPATED RESULTING FROM THE THE PROPOSED DEVELOPMENT WILL NOT CAUSE PROBLEMS TO THE NEARBY

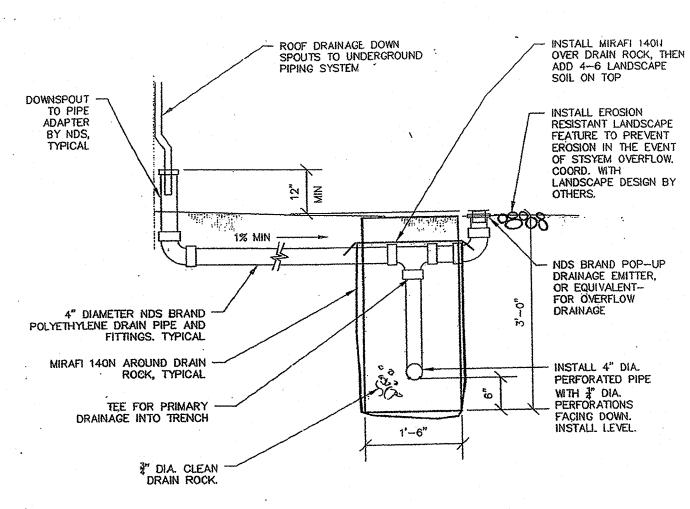
THE ON-SITE DRAINAGE WILL BE CONTROLLED IN SUCH A MANNER AS TO NOT INCREASE THE DOWNSTREAM PEAK FLOW OR CAUSE A HAZARD OR PUBLIC NUISANCE. OWNER CONSENTS AND AGREES TO INSPECT AND MAINTAIN ANNUALLY 'PRIOR TO THE RAINY SEASON' THE ON-SITE DRAINAGE SYSTEMS AND STORMWATER MANAGEMENT FACILITIES ON THE SUBJECT PROPERTY.

MAINTENANCE SCHEDULE FOR ON-SITE DRAINAGE SYSTEMS AND STORMWATER MANAGEMENT FACILITIES

ROOF GUTTERS AND DOWNSPOUTS - SHALL BE CLEANED AS REQUIRED PRIOR TO RAINY SEASON ANNUALLY. <u>PERCOLATION TRENCHES</u> – INSPECT VIA CLEAN-OUTS / INSPECTION PORTS, DRAIN PIPES AND OVERFLOW RISERS PRIOR TO THE RAINY SEASON ANNUALLY TO ASSURE DRAINAGE PERCOLATION SYSTEMS FUNCTIONS PROPERLY.



EXISTING SEPTIC SYSTEM DETAIL



DOWNSPOUT TO PERCOLATION TRENCH

NOTE:
CONSTRUCT PERCOLATION TRENCH SUCH THAT OVERFLOW SIDE
IS LEVEL, OR SLOPED AT 2% MAX IN ORDER TO PREVENT
CONCENTRATED FLOW IN THE EVENT OF SYSTEM OVERFLOW.

(H) SILT FENCE

around the fence.

SEPTIC TANK INSPECTION REPORT

DATE: 08-26-22

CUSTOMER HAS CESSPOOL (

IS UNIT ALL CONCRETE

FAILED () OR QUESTIONABLE ()

MAP LOCATION OF SEPTIC TANK:

Typical contours
(used for illustration purposes only)

DID ABLE PUMP TANK: YES (X) NO ()

REPORT COMPLETED BY: Clint Beltterent

Turn last 6' of -

Construct the silt fence along a level contour.

BUYERS: NA

REALTY COMPANY: W

1020 Ruff Drive

San Jose, California 95110

Office (408) 377-9990

Fax (408) 492-1008

24 Hour Emergency Service

INVOICE NO: 66774

DATE PUMPED: 08-26-22

- Silt fence constructed

along level contour

Front of

_ 2"X2" wooden post **⊕** 10

BORRES: Rob & Katriaa Renfrom

SEPTIC TANK

AGENT: NA PHONE: NA

CONCRETE WITH WOOD ()

<u>SITE PLAN – OVERALI</u>

JOB SITE: 14500 Arnerich Rd. Los Gatos, Ca. 95032

DOES UNIT NEED PUMPING: YES (X NO () ESTIMATED GALLONS:

10:30 A.M. Scotic trank passer inspection.

Maximum tributary

area .25 acre/100f

width=500

P. Silt fences shall remain in place until the disturbed area is permanently

Provide sufficient room for runoff to pond behind the fence and allow

for every acre draining to the fence.
4. Turn the ends of the filter fence uphill to prevent stormwater from flowing

5. Leave an undisturbed or stabilized area immediately downslope from the

When standard filter fabric is used, a wire mesh support fence shall be

inch) wire staples at least 1.75 inches long, tie wires or hog rings.

fastened securely to the upslope side of the posts using heavy-duty (0.6

Filter fabric shall be woven polypropylene geotextile with a minimum width of 36 inches and a minimum tensile strength of 100 lb force.

9. Wood stakes shall be commercial quality lumber no less than 2 inch by 2 inch. Wood stakes shall be driven to a depth of no less than 18 inches from

Do not place in live stream or intermittently flowing channels.

sediment removal equipment to pass between the silt fence and toe of slope or other obstructions. About 1200 sq. ft. of ponding area shall be provided

DOES LIQUID LEVEL INDICATE LEECHING APPEARS TO BE IN WORKING ORDER: YES

ANY EVIDENCE OF SEWAGE OR SEWER WATER BREAKING OUT OF GROUND: YES () NO

Septic tanks is in working condition. Leach field passed 30 minute water took As of 08-96-22 at

4" PVC TIGHT LINE, 2% SLOPE

PROPOSED 756 SF DETACHED POOL CABANA ACCESSORY STRUCTURE (SEE SHEETS 22 - 23)

(SPECIAL PERMIT REQUIRED)

1. Solid and Demolition Waste Management: Provide designated waste collection areas and containers on site away from streets, gutters, storm drains, and waterways, and arrange for regular disposal. Waste containers must be watertight and covered at all times except when waste is deposited. Refer to Erosion & Sediment Control Field Manual, 4th Edition (page C3) or

2. <u>Hazardous Waste Management</u>: Provide proper handling and disposal of hazardous wastes by a licensed hazardous waste material hauler. Hazardous wastes shall be stored and properly labeled in sealed containers constructed of suitable materials. Refer to Erosion & Sediment Control Field Manual, 4th Edition (pages C-5 to C-6) or latest.

STANDARD BEST MANAGEMENT PRACTICE NOTES

1 INCH = 50 FEET

3. Spill Prevention and Control: Provide proper storage areas for liquid and solid materials, including chemicals and hazardous substances, away from streets, gutters, storm drains, and waterways. Spill control materials must be kept on site where readily accessible. Spills must be cleaned up immediately and contaminated soil disposed properly. Refer to Erosion & Sediment Control Field Manual, 4th Edition (pages C-7 to C-8, C-13 to C-14) or latest.

4. Vehicle and Construction Equipment Service and Storage: An area shall be designated for the maintenance, where onsite maintenance is required, and storage of equipment that is protected from stormwater run-on and runoff. Measures shall be provided to capture any waste oils, lubricants, or other potential pollutants and these wastes shall be properly disposed of off site. Fueling and major maintenance/repair, and washing shall be conducted off-site whenever feasible. Refer to Erosion & Sediment Control Field Manual, 4th Edition (page C9) or

5. Material Delivery, Handling and Storage: In general, materials should not be stockpiled on site. Where temporary stockpiles are necessary and approved by the County, they shall be covered with secured plastic sheeting or tarp and located in designated areas near construction entrances and away from drainage paths and waterways. Barriers shall be provided around storage areas where materials are potentially in contact with runoff. Refer to Erosion & Sediment Control Field

Manual, 4th Edition (pages C-11 to C-12) or latest. 6. Handling and Disposal of Concrete and Cement: When concrete trucks and equipment are washed on-site, concrete wastewater shall be contained in designated containers or in a temporary lined and watertight pit where wasted concrete can harden for later removal. If possible have concrete contractor remove concrete wash water from site. In no case shall fresh concrete be washed into the road right-of-way. Refer to Erosion & Sediment Control Field Manual, 4th Edition (pages C-15 to C-16) or latest.

7. Pavement Construction Management: Prevent or reduce the discharge of pollutants from paving operations, using measures to prevent run-on and runoff pollution and properly disposing of wastes. Avoid paving in the wet season and reschedule paving when rain is in the forecast. Residue from saw-cutting shall be vacuumed for proper disposal. Refer to Erosion & Sediment Control Field Manual, 4th Edition (pages C-17 to C-18) or latest.

8. Contaminated Soil and Water Management: Inspections to identify contaminated soils should occur prior to construction and at regular intervals during construction. Remediating contaminated soil should occur promptly after identification and be specific to the contaminant identified, which may include hazardous waste removal. Refer to Erosion & Sediment Control Field Manual, 4th Edition (pages C-19 to C-20) or

9. Sanitary/Septic Water Management: Temporary sanitary facilities should be located away from drainage paths, waterways, and traffic areas. Only licensed sanitary and septic waste haulers should be used. Secondary containment should be provided for all sanitary facilities. Refer to Erosion & Sediment Control Field Manual, 4th Edition (page C-21) or

10. Inspection & Maintenance: Areas of material and equipment storage sites and temporary sanitary facilities must be inspected weekly. Problem areas shall be identified and appropriate additional and/or alternative control measures implemented immediately, within 24 hours of the problem being identified.

STANDARD EROSION CONTROL NOTES

1. Sediment Control Management:

THE EXISTING ARNERICH ROAD IS CONSTRUCTED TO PROVIDE A MINIMUM OF TWO TEN (10) FOOT TRAFFIC LANES, NOT INCLUDING SHOULDER AND STRIPING TO THE BUILDING SITE FROM HICKS ROAD AND MADE OF AN 'ALL WEATHER' MATERIAL

· (E) EDGE OF PAVEMENT (E) CURB & GUTTER

CAPABLE OF SUPPORTING THE IMPOSED LOAD OF A FIRE APPARATUS WEIGHING

AT LEAST 75,000 POUNDS

L = 102.19'

(E) LEACH FIELD (SEE DET. 1/2)

N-NAMED INTERMITTENT STREAM WITH

(E) FIRE HYDRANT

(STANDARD)

Tracking Prevention & Clean Up: Activities shall be organized and measures taken as needed to prevent or minimize tracking of soil onto the public street system. A gravel or proprietary device construction entrance/exit is required for all sites. Clean up of tracked material shall be provided by means of a street sweeper prior to an approaching rain event, or at least once at the end of each workday that material is tracked, or, more frequently as determined by the County Inspector. Refer to Erosion & Sediment Control Field Manual

4th Edition (pages B-31 to B-33) or latest. Storm Drain Inlet and Catch Basin Inlet Protection All inlets within the vicinity of the project and within the project limits shall be protected with gravel bags placed around inlets or other inlet protection. At locations where exposed soils are present, staked fiber roles or staked silt fences can be used. Inlet filters are not allowed due to clogging and subsequent flooding. Refer to Erosion & Sediment Control Field Manual, 4th Edition

(pages B-49 to B-51) or latest.

Storm Water Runoff: No storm water runoff shall be allowed to drain in to the existing and/or proposed underground storm drain system or other above ground watercourses until appropriate erosion control measures are fully installed.

Dust Centrol: The contractor shall provide dust control in graded areas as required by providing we suppression or chemical stabilization of exposed soils, providing for rapid clean up of sediments deposited on paved roads, furnishing construction road entrances and vehicle wash down areas, and limiting the amount of areas disturbed by clearing and earth moving operations by scheduling these activities in phases.

Stockpiling: Excavated soils shall not be placed in streets or on paved areas. Borrow and temporary stockpiles shall be protected with appropriate erosion control measures(tarps, straw bales, silt fences, ect.) to ensure silt does not leave the site or enter the storm drain system or neighboring watercourse.

2. Erosion Control: During the rainy season, all disturbed areas must include an effective combination of erosion and sediment control. It is required that temporary erosion control measures are applied to all disturbed soil areas prior to a rain event. During the non-rainy season, erosion control measures must be applied sufficient to control wind erosion at the site.

3. Inspection & Maintenance: Disturbed areas of the Project's site, locations where vehicles enter or exit the site, and all erosion and sediment controls that are identified as part of the Erosion Control Plans must be inspected by the Contractor before, during, and after storm events, and at least weekly during seasonal wet periods. Problem areas shall be identified and appropriate additional and/ or alternative control measures implemented immediately, within 24 hours of the problem being

signoff by the County Inspector, all disturbed areas shall be reseeded, planted, or landscaped to minimize the potential for erosion on the subject site.

4. Project Completion: Prior to project completion and

5. It shall be the Owner's/Contractor's responsibility to maintain control of the entire construction operation and to keep the entire site in compliance with the erosion control plan.

6. Erosion and sediment control best management

practices shall be operable year round or until

vegetation is fully established on landscaped

surfaces.

VICINITY MAP

PROJECT DATA

OWNER

OCCUPANCY

FIRE RATING

PARCEL SIZE

537-12-012 ADDRESS 14500 Americh Hill Road, Los Gatos, CA

> Robert & Katrina Renfrey 14500 Arnerich Hill Road Los Gatos, CA 95070 650-440-3231

(P) ADU 700 SF PROPOSED HOUSE - (E) COV. PORCHES 374 374 SF

FLOOR AREA RATIO (E) 6279.08 + (P) 3065.62 = 9344.7 SF / 390.298 SF = 2.3%

LOT COVERAGE		
LOCATION	EXISTING	PROPOSED
HOUSE	4238.69	4238.69
GARAGE	840	1121
SHOP + STORAGE	0	700
POOL	1000	1000
POOL CABANA	0	756
TOTAL LOT COVERAGE	6078.69 SF	7534.69 SF

Areas disrupted during Construction shall be restored to be consistent with native vegetation species and patterns.

EROSION CONTROL NOTES Erosion control planting or permanent landscaping shall be completed by October 15,

2 Permanent landecape areae require auto-irrigation.

Hydro-mulching is the best effective seeding method for large areas. Best time for planting is September-October, unless there is a sprinkler system.

4 Broadcast is approved for small areas. In this case apply fertilizer before seeding, after seeding apply straw or hay mulch.

Apply erosion control material on all drainage swales, cuts and fill, also any location where any existing vegetation has been removed.

If mulching, seeding, or fertilizing manually, mulch with straw or hay at 4000 lbe/acre. Fertilize with Ammonium Phosphate with Sulphur (16-20-0) at 350 lbe/acre. If Hydro-mulching, use wood fiber mulch at 2000 lbe/acre.

GRASS/LEGUME SEED MIX FOR FROSION CONTROL

Seed Mix	Rate of Application
Blando Brome	15 lbe/acre
Rose Clover	12 lbe/acre
Zorro Annual Fescue	3 lbe/acre
Creeping Red Fescue	5 lbe/acre
Apply seed mix at rate of	35 lbe/acre <u>or</u> 8 lbe/ 10,000 Sq. Ft. <u>or</u> 3/ lbe/ 1000 Sq. Ft.
Fertilizer (16-20-0)	350 lbe/acre or

8 lbs/1000 Sq. Ft.

• All loose stockpiled construction materials that are not actively being used (i.e. spoils, aggregate, fly-ash, stucco, hydrated lime, etc.) shall be covered and bermed. · All chemicals shall be stored in watertight containers (with appropriate secondary containment to prevent any spillage or leakage) or in a storage shed (completely

· Exposure of construction materials to precipitation shall be minimized. This does not include materials and equipment that are designed to be outdoors and exposed to environmental conditions (i.e. poles, equipment pads, cabinets, conductors, insulators,

· Best Management Practices to prevent the off-site tracking of loose construction and landscape materials shall be implemented.

Disposal of any rinse or wash waters or materials on impervious or pervious site surfaces

or into the storm drain system shall be prevented. • Sanitation facilities shall be contained (e.g., portable toilets) to prevent discharges of pollutants to the storm water drainage system or receiving water, and shall be located a minimum of 20 feet away from an inlet, street or driveway, stream, riparian area or other drainage facility.

· Sanitation facilities shall be inspected regularly for leaks and spills and cleaned or replaced as necessary. Cover waste disposal containers at the end of every business day and during a rain event. • Discharges from waste disposal containers to the storm water drainage system or receiving water shall be prevented. Stockpiled waste material shall be contained and securely protected from wind and rain at

all times unless actively being used. · Procedures that effectively address hazardous and non-hazardous spills shall be · Equipment and materials for cleanup of spills shall be available on site and that spills and leaks shall be cleaned up immediately and disposed of properly; and · Concrete washout areas and other washout areas that may contain additional pollutants shall be contained so there is no discharge into the underlying soil and onto the

------Vehicle Storage and Maintenance

surrounding areas.

 Measures shall be taken to prevent oil, grease, or fuel to leak in to the ground, storm. drains or surface waters. • All equipment or vehicles, which are to be fueled, maintained and stored onsite shall be in a designated area fitted with appropriate BMPs. · Leaks shall be immediately cleaned and leaked materials shall be disposed of properly.

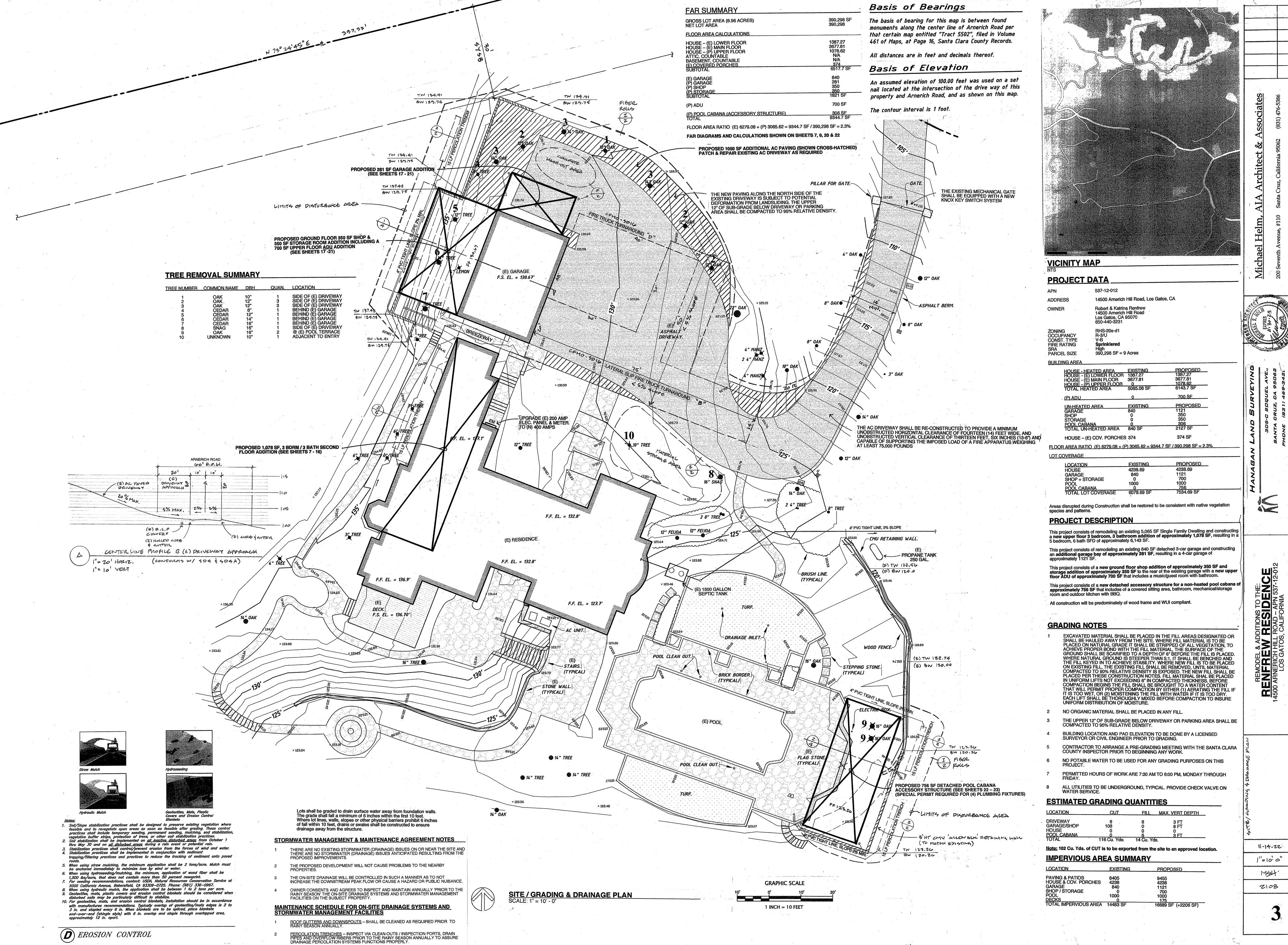
RENFREW F 4500 ARNERICH HILL F

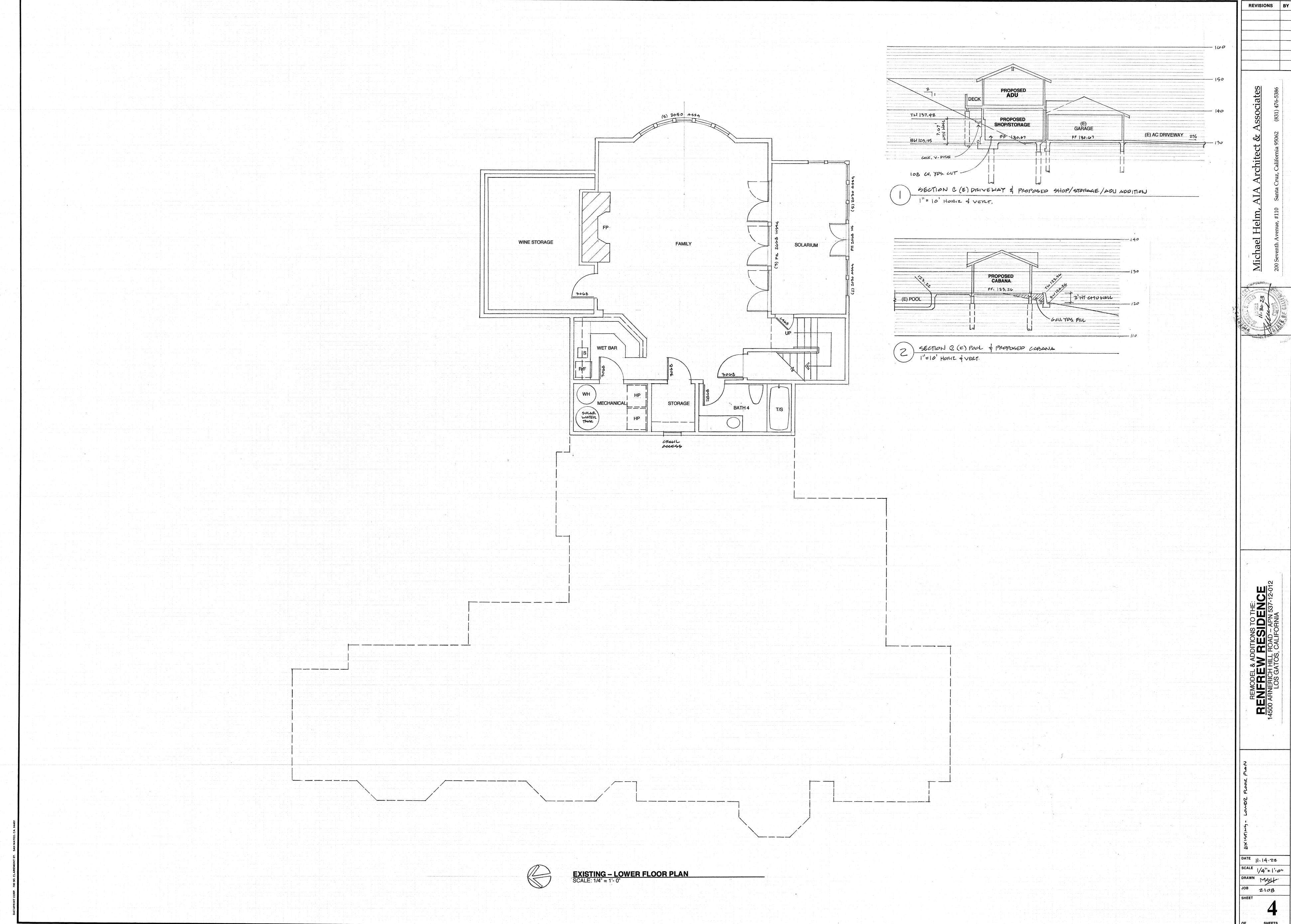
RESIDENCE ROAD - APN 537-12-0

Mich

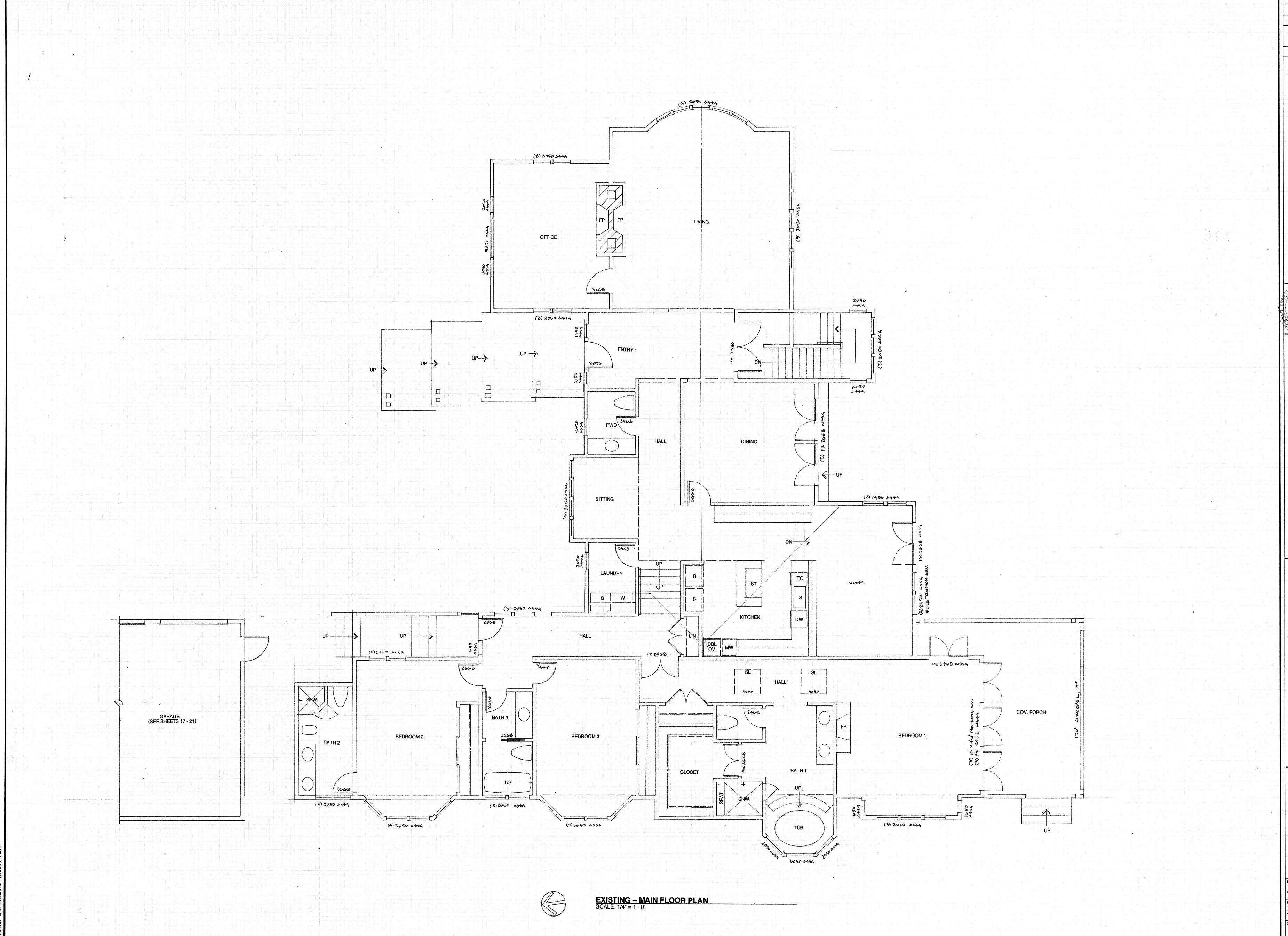
11-14-22 1"= 50'0"

MEH 2108





STOCKDRAFTING FORM NO. 101-57



STOCKDRAFTING FORM NO. 101-57

REMODEL & ADDITIONS TO THE:
RENFREW RESIDENCE
14500 ARNERICH HILL ROAD – APN 537-12-012
LOS GATOS, CALIFORNIA

DATE 11.14.22 SCALE 1/4"= 1'0" DRAWN MEST. 1 JOB 2108

EXISTING - MATERIALS SCHEDULE

FOUNDATIONS

8" wide perimeter concrete stem wall with 15" wide footing & 12" diameter redundant piers 8' deep @ ± 7 feet o.c.

CONCRETE SLABS

4" thick concrete slab w/ 6X6 10/10 wire mesh on 2" sand on 10 mil vapor barrier on 4" crushed rock.

FLOORS

2X10FJ's@ 16" o.c., with ¾" T&G plywood subfloor glued and nailed w/ 10d @ 6" o.c. edges & 10" o.c. field, U.N.O. with R-19 batt insulation.

WALLS

Hand sawn redwood shingles on Dbl. layer 15 lb. felt on 3/8" CDX plywood sheathing, nailed w/ 8d @ 6" o.c. edges and 12" o.c. field, U.N.O., on 2 X 4 studs @ 16" o.c. with R-11 high density batt insulation, 1/2" gypsum wallboard interior finish, typical. Battered river rock stone veneer at foundation.

veneer at foundation.

Flat clay tile over Dbl. layer 30 lb. felt on 5/8" CDX plywood sheathing nailed w/ 10d @ 6" o.c. edges and 12" o.c. field, U.N.O., to 2 X 8 Rafters @ 16" o.c. with R-19 batt insulation.

GUTTERS & 16 oz. copper beveled gutters w/ 2" X3" rectangular downspouts deposit into existing landscaped areas.

ROOF / WALL 16 oz. copper where shown or required. Pan flash @ ext. door sills

ROOF / WALL 16 oz. copper where shown or required. Pan flash @ ext. door sills with 16 oz. copper solder all joints, typical

WINDOWS & Aluminum sash with single glazed leaded art glass with screens at all operable windows.

INSULATION

FLOORS
EXT. WALLS
INT. WALLS
ROOFS

R-19 fiberglass batts
R-11 high density fiberglass batts
3-1/2" fiberglass sound batts
R-19 fiberglass batts

Michael Helm, Al

Architect

REMODEL & ADDITIONS TO THE:

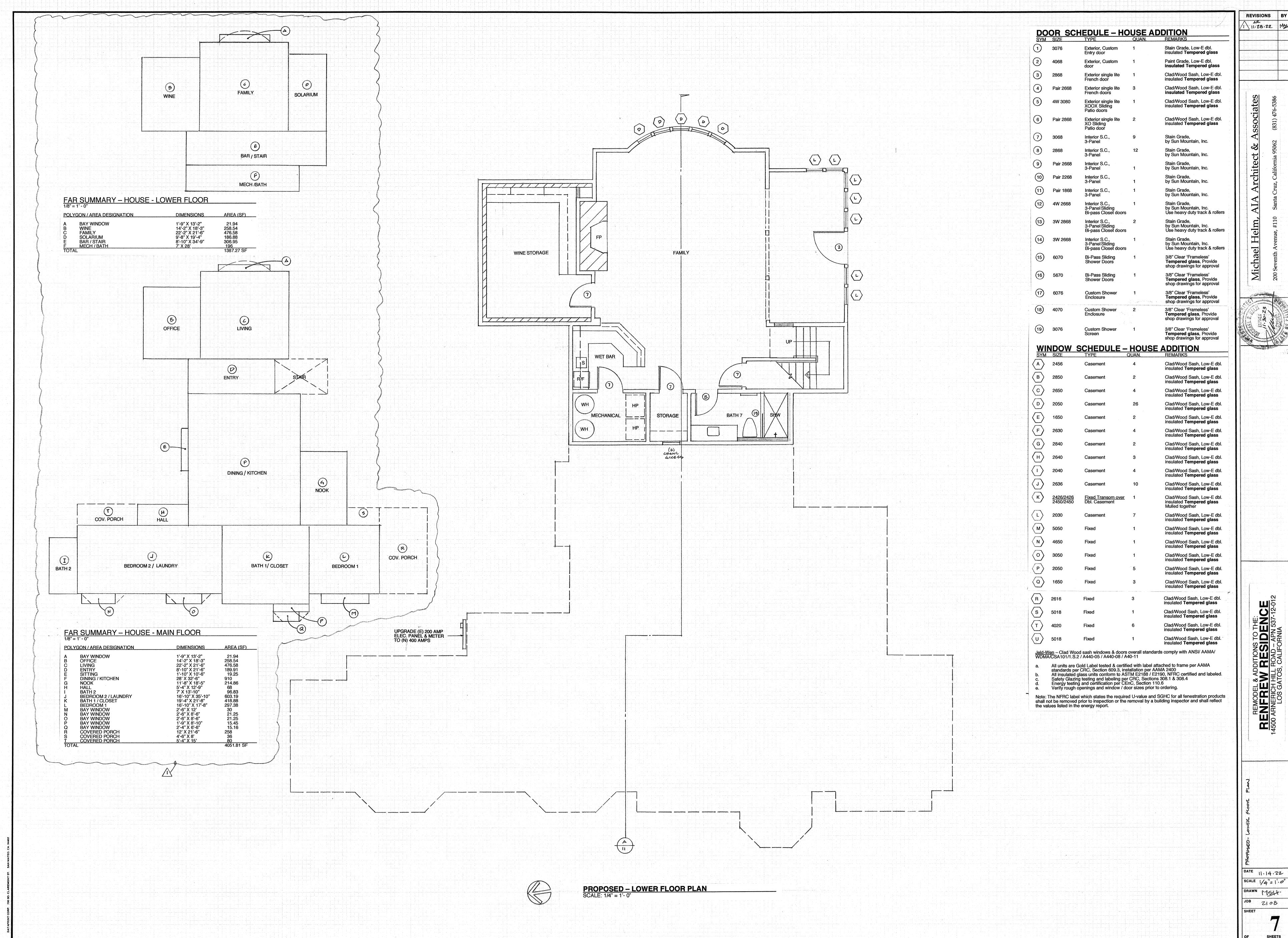
RENFREW RESIDENCE

14500 ARNERICH HILL ROAD – APN 537-12-012

LOS GATOS, CALIFORNIA

11-14-22

1/4"=1"0" MELT: 2108

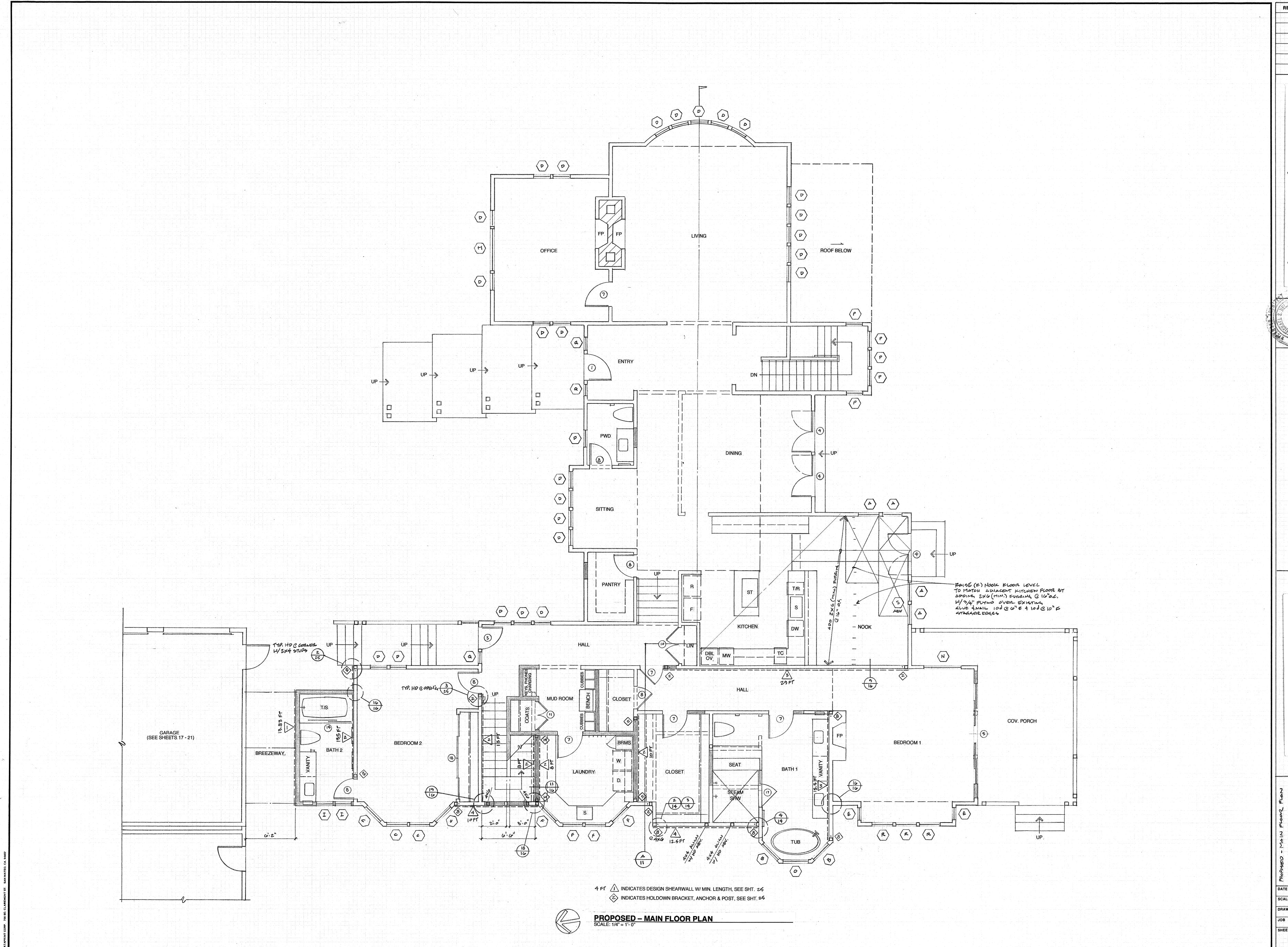


STOCKDRAFTING FORM NO 101-57

REVISIONS BY 1 11.28.22 MSH

REMODEL & ADDITIONS TO THE:

RENFREW RESIDENCE
4500 ARNERICH HILL ROAD – APN 537-12-01
LOS GATOS, CALIFORNIA

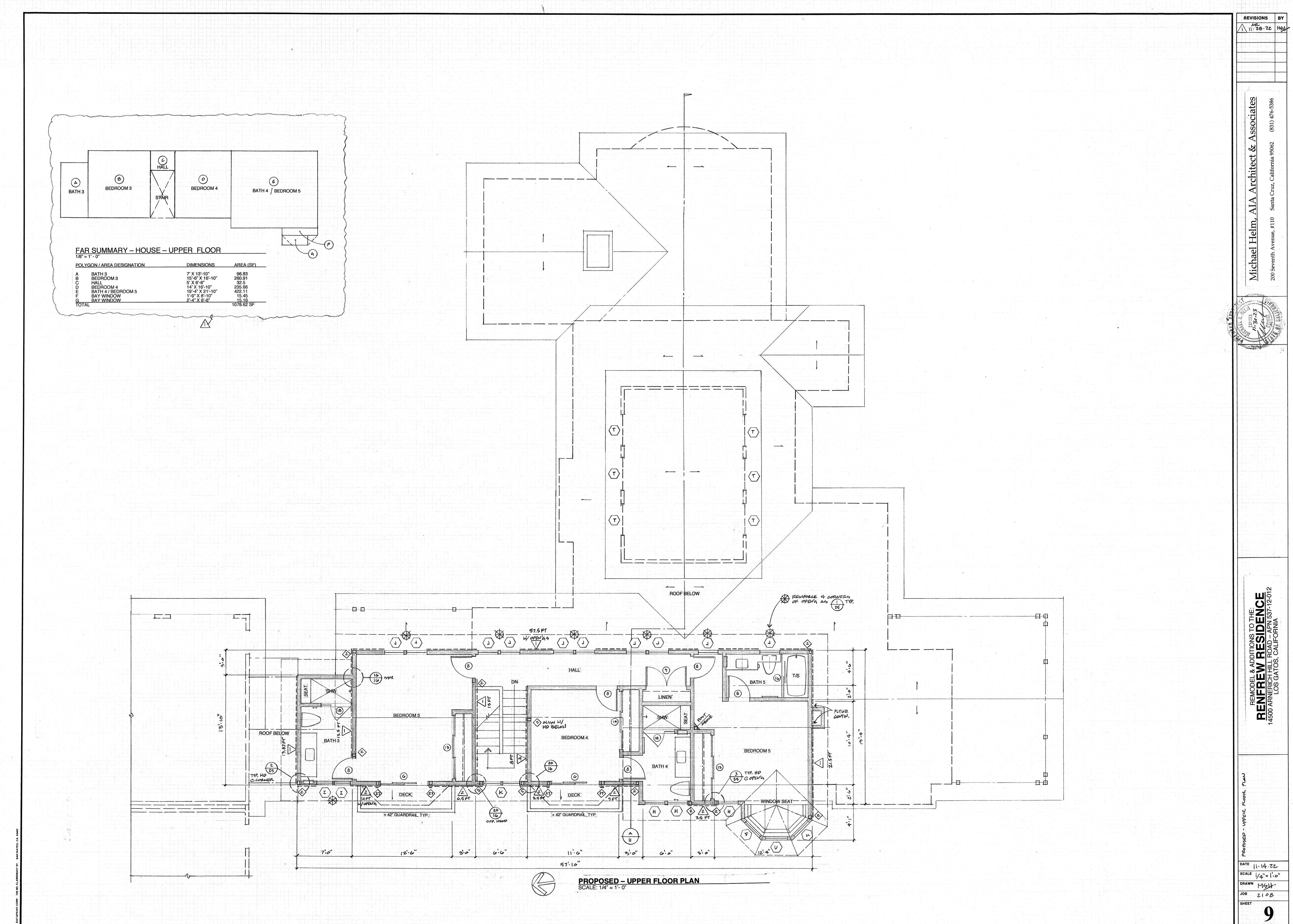


STOCKDRAFTING FORM NO. 101-57

REMODEL & ADDITIONS TO THE:
RENFREW RESIDENCE
4500 ARNERICH HILL ROAD – APN 537-12-012
LOS GATOS, CALIFORNIA

DATE 1114-22
SCALE 1/4"=10"
DRAWN
JOB 2100

2108 ET **3**



STOCKDRAFTING FORM NO. 101-57



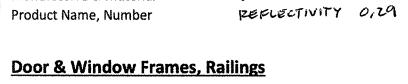
CONSTRUCTION SCHEDULE - HOUSE ADDITION 24" wide X 24" deep concrete grade beam with 2 - #5 bars T & B w/ #3 ties @ 12" o.c.
CONCRETE SLABS: 5" thick concrete slab w/ #4 bars @ 16" o.c. each way, on 15 mil vapor barrier on 6" crushed rock. FOUNDATIONS CONCRETE MIX: Substitute Portland Cement with recycled flyash, 35% by volume, typical. Keep receipts for Inspector verification.
TREATED LUMBER: Substitute ACQ pressure treatment for CCA products, typical.
FORM BOARDS: Clean and re-use for scaffolding, forms, blocking, etc...
FORM RELEASE AGENT: Use Non-toxic soy based 0-VOC form release agent by BIO-GUARD CO. or Architect approved equal. TJI's @ 16" o.c., with ¾" T&G plywood subfloor glued and nailed w/ 10d @ 6" o.c. edges & 10" o.c. field, U.N.O. with R-19 batt insulation. FLOORS 5/16" James Hardie fiber cement horizontal siding or shingles over 'TYVEK' house wrap on 5/8" Type 'X' exterior gypsum sheathing on 7/16" CDX plywood or OSB sheathing, nailed w/10d @ 6" o.c. edges and 12" o.c. field, U.N.O., on 2 X 6 studs @ 16" o.c. with R-23 high density batt insulation, 1/2" gypsum wallboard interior finish, typical. Use low/No VOC exterior paints. Wall construction shall meet SFM12-7A-1 WALLS Class B (min.) flat clay tile (to match existing), install per mfg. specs over Dbl. layer 30 lb. felt over 5/8" CDX plywood sheathing nailed w/ 10d @ 6" o.c. edges and 12" o.c. field, U.N.O., to 2X Rafters @ 24" o.c. with R-30 closed cell polyurethane spray foam insulation. Underlayment shall comply with ASTM D226 Type I; ASTM Type I, II, III or IV; ASTM D6757, and shall bear a label indicating compliance to the standard designation. Eave construction shall meet SFM 12-7A-3 requirements. GUTTERS & DOWNSPOUTS 16 oz. copper beveled gutters w/ 2" diameter round downspouts deposit into existing landscaped areas. Gutters shall be provided with leaf/debris protection. ROOF/WALL FLASHINGS 16 oz. copper where shown or required. Pan flash all ext. door sills with 16 oz. copper solder all joints, typical WINDOWS & EXT. GLASS DRS. Jeld-Wen – Alum. Clad/Wood sash with Dbl. insulated **Tempered** Low-E glass, provide screens at all operable windows. **Exterior door** assemblies shall conform to SFM 12-7A-1 requirements. FLOORS EXT. WALLS INSULATION R-19 fiberglass batts R-23 high density fiberglass batts 3-1/2" fiberglass sound batts R-30 closed cell polyurethane spray foam INT. WALLS Provide neoprene gaskets and 16 oz. copper roof jack / rain cap, typical. All exhaust vents shall be located a min. of 4' from or 1' above all roof or wall openings per CMC. All plumbing vents shall be located a min. of 10' from or 3' above all roof or wall openings per CPC. ROOF JACKS WALL PENETRATIONS Use weatherproofing wall jacks by QUICKFLASH or approved equal for plumbing, electrical and mechanical penetrations. PAINTS, STAINS, Use Low / No VOC, water based products and solvent-free adhesives, ADHESIVES & SEALERS PLUMBING Install Low-flow toilets. Install Low-flow shower heads with chlorine filters. CABINETS & TRIM Use formaldehyde-free particle board and MDF by MEDITE or approved equal for all cabinets and trim applications

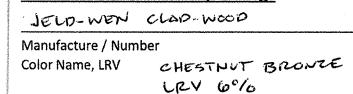
14500 ARNEYLICH RD., LOS GATES Project Address 537-12-012

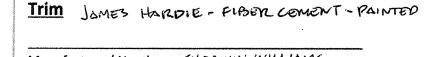
ARZZ-2476 Project File Number

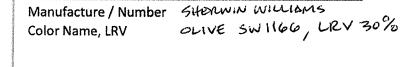
Color/Materials Board*

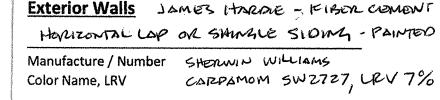
Roof perenson Alum. Lorep, 18 WIDE, 2440, PAC-CLOD STONOING SOM METAL PROFING DARK BRONZE Manufacture & Material Product Name, Number

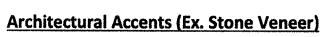










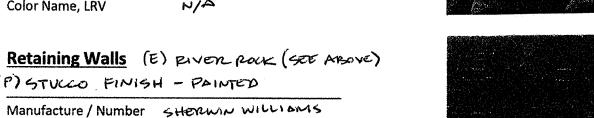


Color Name, LRV

TAHOE RIVER ROCK (EXISTING TO REMAIN) Manufacture / Number Color Name, LRV

Retaining Walls (E) RIVER POUR (SEE ABOVE) (P) STUCCO FINISH - PAINTED

OLIVE SWIIGG LRY 30%



REMODEL & ADDITIONS TO THE:

RENFREW RESIDENCE
4500 ARNERICH HILL ROAD – APN 537-12-01
LOS GATOS. CALIFORNIA

1 11.28.22 May

Associates

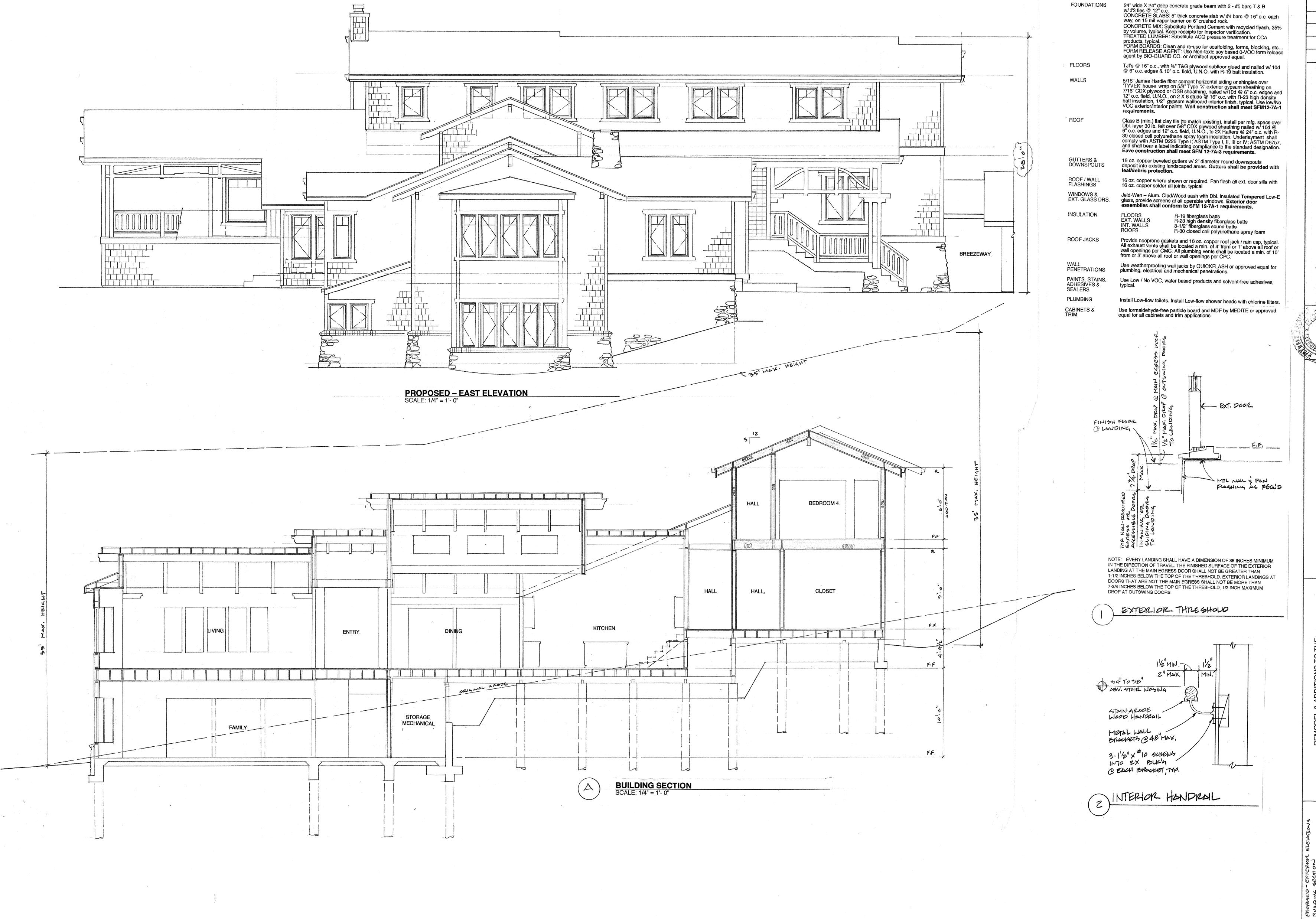
8

Architect

AIA

Michael Helm

11.14.22 1/4"=10"



AR MAY

CONSTRUCTION SCHEDULE - HOUSE ADDITION

ssociates AIA Michael Helm,

RENDEL & ADDITIONS TO THE:

RENFREW RESIDENCE
4500 ARNERICH HILL ROAD – APN 537-12-01
LOS GATOS, CALIFORNIA

- 1 All Electrical work to comply with the latest adopted edition of the California Electrical Code. Electrical contractor to submit load calculations and panel diagrams to the Building
- Department prior to beginning work. Do not install electrical panels larger than 16 square inches in rated fire walls. Maintain a clearance of 36" in front of the panels.
- Bond all metal gas and water pipes to ground. All ground clamps must be accessible and of an
- All joints and penetrations to be caulked and sealed.

accordance with the California Electrical Code.

- Central heating equipment shall be supplied by an individual branch circuit. Verify electrical requirements for all mechanical equipment.
- All exterior, garage, kitchen and bathroom circuits shall be on GFCI circuits. Combination AFCI/GFCI outlets are required at kitchen and laundry areas.
- All branch circuits that supply 125-volt, single-phase, 15- and 20-ampere outlets (i.e. receptacles, lights, smoke alarms, etc.) to be protected by Arc-Fault Circuit Interrupter (AFCI) listed to provide protection of the entire branch circuit per CEC 210-12(B) in kitchens, laundry rooms, family rooms, dining rooms, living rooms, bedrooms, closets, hallways, and similar living spaces. CEC 210.12
- One 20A circuit shall be provided to supply the bathroom receptacle outlets. Such circuit shall have no other outlets CEC 210.11(C).
- Provide two small appliance branch circuits for Kitchen refrigerator and counter outlets only, not to include outside plugs, range hood, disposal, dishwasher or microwave.
- Provide a dedicated 20 amp circuit to serve the required bathroom outlets. This circuit cannot serve any other receptacles, lights, fans, etc... Exception: where the circuit supplies a single bathroom, outlets for other equipment within the bathroom shall be permitted.
- Provide a dedicated 20 amp circuit to supply laundry receptacle outlets. Dryer and cooking units shall have a four-prong outlet with four conductor wires with an insulated neutral.
- Provide a listed raceway to accommodate a dedicated 208/240-volt branch circuit for electric vehicle charging not less than 1" nominal inside diameter. The raceway shall originate at the main service or sub panel and shall terminate in a listed cabinet, box or enclosure in close proximity to the proposed location of the EV charger. Raceways are required to be continuous at enclosed, inaccessible or concealed areas and spaces. The raceway termination location shall be permanently and visibly marked as "EV CAPABLE". The service panel and/or subpanel shall provide capacity to install a 40-amp, minimum dedicated branch circuit and space(s) reserved to permit installation of a branch circuit overcurrent protective device. The service panel or subpanel shall identify the overcurrent protective device space(s) reserved for future EV charging as "EV CAPABLE". The EV Charging circuit must be rated for continuous duty at 125% of load. All Electrical Vehicle Supply Equipment (EVSE) shall be installed in

- Wall switches to be 42" @ centerline above finish floor. All outlets to be 12" @ centerline above finish floor, unless noted otherwise.
- Dimmers or vacancy sensors shall control all luminaires required to have light source compliant with Reference Joint Appendix JA8 per Table 150.0-A. Exceptions are provided for closets smaller than 70 sq. ft. floor area and light fixtures in hallways per CA Energy 150.0(k)3. At least one luminaire in bathrooms, garages, laundry rooms, and utility rooms shall be controlled by a vacancy sensor. (CEnC 150.0(k)2J)
- Exterior lighting attached to any building shall be high efficacy, controlled by a manual ON and OFF switch that does not override to ON, and controlled by a motion sensor with photocontrol, or other methods allowed by CEnC 150.0(k)3

Receptacles

- Receptacles on 125-volt 15 & 20 amp circuits shall be listed tamper resistant. (CEC 406.12) Except when located more than 5.5' above the floor; within cabinets or cupboards; or when part of a luminaire or appliance.
- Receptacles must be installed at 12' o.c. maximum in walls. Walls longer than 2 feet and halls longer than 10' must have a receptacle. A receptacle must be provided within 3' of bathroom sinks. (CEC 210.52). Spacing of kitchen and dining room countertop receptacles shall meet minimum requirements of CEC 210.52(C), Parts 1-5.
- Ground-Fault Circuit-Interrupter (GFCI) protected receptacles shall be installed in bathrooms, garages, outdoors, crawl spaces, kitchen, unfinished basements, and receptacles within 6 ft. of the outside edge of laundry, utility, and wet sinks. All dwellings must have at least one exterior outlet at the front and the back of the dwelling. (CEC 210.52(E)
- GFCI outlets are required for all kitchen receptacles that are designed to serve countertop surfaces, in bathroom, in under-floor spaces or below grade level, in exterior outlets, and in all garage outlets not dedicated to a single device or appliance. (CEC 210.8)
- Arc-Fault Circuit-Interrupter (AFCI) protected receptacles shall be installed in all rooms not requiring GFCI protection. The maximum length of the branch circuit to the AFCI is 50 feet for 14 AWG conductors or 70 feet for a 12 AWG conductor. Arc-fault circuit interrupter protection must be provided in accordance with CEC 210.12(A), (B) and (C). AFCI devices shall be installed in readily accessible locations. All branch circuits that supply 125 volt, single phase, 15 ampere and 20 ampere outlets (i.e. receptacles, lights, smoke alarms, etc.) to be protected by Arc-fault Circuit Interrupter (AFCI) listed to provide protection of the entire branch circuit per CEC 210-12(B) in kitchens, family rooms, dining rooms, living rooms, parlors, libraries, dens, bedrooms, sunrooms, recreation rooms, closets, hallways, laundry areas, or similar living spaces. Cabinetry or being dedicated to appliances does not exempt requirement.
- Exterior Outlets @ Grade: At least one readily accessible outlet from grade and not more than 6-1/2 feet above grade level shall be installed at the front and back of dwelling, be GFCI protected, and have a weatherproof enclosure.
- Exterior Outlets @ Balconies, Decks, and Porches: Each balcony, deck, and porch shall have at least one readily accessible outlet not more than 6-1/2 feet above the walking surface, be GFCI protected, and have a weatherproof enclosure.

- All new light fixtures must be high efficacy. Bathroom lighting and closet lighting are not exempt. Lighting in bathrooms, garages, laundry rooms & utility rooms must be controlled by a vacancy sensor or dimmer switch per CA Energy Standard 150.0(k)1A.
- Dimmers or vacancy sensors shall control all luminaires. Exceptions are provided for closets smaller than 70 sq. ft. floor area and light fixtures in hallways per CA Energy 150.0(k)3. At least one of the high efficacy light fixtures in bathrooms shall be controlled by a vacancy sensor and the other(s) shall be high efficacy. Exterior lighting shall be high efficacy or controlled by a photo/motion sensor per CEnC 150.0(k)9A
- All LED lighting shall be California Energy Commission certified to quality as high efficacy.
- All recessed light fixtures shall be IC listed per CEnC 150.0(k)8
- Fixtures installed in wet or damp locations shall be installed so that water cannot enter or accumulate in wiring compartments, lamp holders, or other electrical parts. Fixtures in wet or damp locations will be marked for such use. Lighting fixtures located within 3 feet horizontally and 8 feet vertically of the bathtub rim or shower stall threshold shall be listed for a damp location, or listed for wet locations where subject to shower spray per CEC 410.10

JA8 marking is required for the following:

- All lighting must be high efficacy. High efficacy luminaires may require JA8-2016 or JA8-20160-E labeling. Per CEnE 150.0(k)1A, 150.0(K)1G, 150.0(K)2K Table 150.0-A Fixtures recessed into ceilings shall be listed for zero clearance insulation contact (IC) have a label that certifies that the fixture is airtight with air leakage less than 2.0CFMN at 75 Pascal's (AT), be sealed with a gasket or caulk to the ceiling, have an accessible ballasts/drivers if hardwired, and not contain a screw base socket. They shall contain light sources that comply with Reference Joint Appendix JA8, including the elevated temperature requirements, and that are marked "JA8-2106-E" Per CenC 150.0(K)(1)(C).
- Recessed Down-light Luminaires in Ceilings: Recessed downlight luminaires in ceilings must be installed per CEnC150.0(k)1C, be listed IC rated, labeled for air leakage less than 2.0 CFM, be sealed with a gasket or caulk to the ceiling, have accessible ballasts/drivers if hardwired, not contain a screw base sockets, comply with JA8, and marked JA8-2016-E as specified in
- Screw Based Luminaires: Screw based luminaires shall be high efficacy and controlled by dimmers or vacancy sensors. Installed lamps shall be marked with 'JA8-2026' or JA8-2016-E' as specified in Reference Joint appendix JA8. Light sources not marked 'JA8-2016-E' shall not
- A GU-24 lamp fitting is a 2-pin connector for compact fluorescent lamps (CFL) or LED lamps that use bayonet mount-like twist-lock 2-pin connector instead of an Edison screw fitting. Any light source not otherwise listed above and certified to the Commission as complying with

- Contractor must install or verify the existence of smoke alarms and carbon monoxide alarms outside each bedroom as well as one on every level. An additional smoke alarm is required inside each bedroom. Alarms in existing areas where access to the area above the ceiling is not possible may be powered by a D/C battery source. In the areas of new construction or existing rooms where the area above the ceiling is accessible, alarms must be powered by an A/C power source with a battery back-up and be interconnected.(CRC 314, 315).
- Smoke detector/ alarms are to be provided with battery back-up and audible in all sleeping areas and shall be hard-wired and inter-connected per CRC R314.5. Smoke alarms shall be ocated more than 36 inches clear from heating supply registers per NFPA 72, Section 29.8.3.4 (6), and bathroom doors per NFPA 72, Section 29.8.3.4 (5), CRC R314.3.3.
- An approved carbon monoxide alarm shall be installed in dwellings within which fuel-burning appliances are installed, and in dwellings with an attached garage. Carbon monoxide detector/ alarms on all habitable levels and shall be hard-wired and inter-connected per CRC R315.1. Where more than one smoke alarm is required to be installed within an individual dwelling unit in accordance with CRC R314.3, the alarm devices shall be inter-connected in such a manner that the actuation of one alarm will activate all of the alarms in the individual dwelling unit. Physical inter-connection of smoke alarms shall not be required where listed wireless alarms are installed and all alarms sound upon activation of one alarm. The alarms shall be clearly

audible in all bedrooms over background noise levels with all intervening doors closed.

- Provide exhaust fans in kitchen and each bathroom vented to outside and sized as follows. Kitchen: >/= 100 CFM intermittent, >/= 5 AC/h continuous with a tested static pressure of 25 wc, rated @ =/<3 sones. Fans to be attached to a minimum 5" diameter smooth duct, <70 in. ft., subtract 15' of allowed length for each elbow. Bathrooms: >/= 50 CFM intermittent, >/= 20 CFM continuous with a tested static pressure of 25 wc, rated @ =/<3 sones. Fans to be attached to a minimum 4" diameter smooth duct, <70 in. ft., subtract 15' of allowed length for each elbow. Exhaust fan ratings to be </= 1 sone continuous, </= 3 sones intermittent. Bath fans to be Energy Star compliant and equipped with humidistat controls for adjustment of relative humidity from 50 to 80%, per CalGreen code 4,506.1.
- Bathroom exhaust fans shall be switched separately from lighting system per CA Energy Code 150.0(k)2B. Provide a whole-building mechanical exhaust system to outdoor air at the minimum rate of
- 70 CFM with a tested static pressure of .25 wc, rated @ =/<3 sones. Fans to be attached to a minimum 5" diameter smooth duct, <70 lin. ft., subtract 15' of allowed length for each elbow. System to have an accessible off/on switch that is properly labeled. Covers and louvers for he whole house ventilation fan(s) shall be provided so that they close when the system is turned off. Covers or louvers shall have min. R 4.2 insulation value. Switch for fan must be labeled such as "Fan is to be left on to ensure indoor air quality".
- WHOLE HOUSE VENTILATION CALCULATION per CEC 150 (O) & ASHRAE 62.2 0.03 X 7101 SF Htd. Area + 7.5 X (5 bedrms + 1) = 258 CFM req'
- The thermal capacity of electric floor warming matt in bathrooms shall not exceed 2 Kilowatts or 7,000 BTU/HR and shall be controlled by a time-limiting device not exceeding 30 minutes. Provide a dedicated circuit with GFCI protection.
- Furnaces installed in attics and crawl spaces must have an access platform (catwalk in attics), light, light switch, and receptacle in the space.

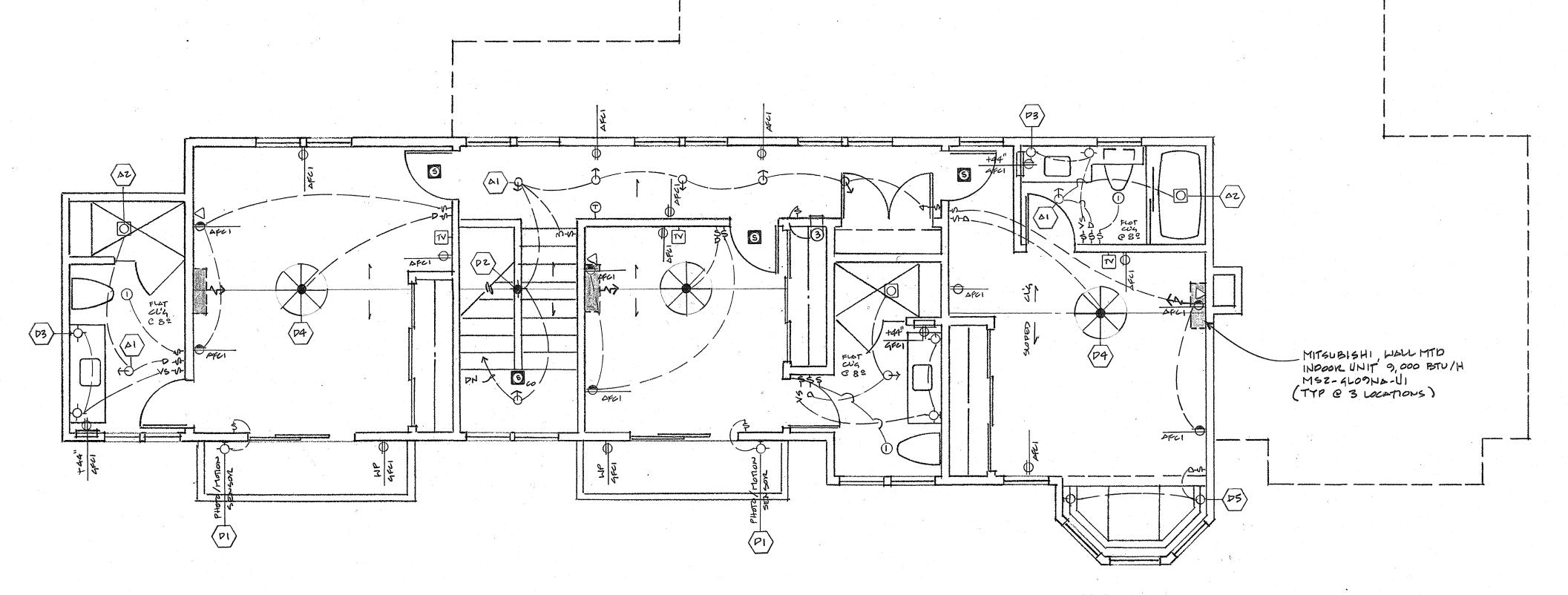
VENTILATION NOTES

- All bathroom fans are to be used for Local Ventilation Exhaust. Minimum 50 CFM fan tested at a static pressure of .25 wc and rated @ 3 sones or less required to be installed Fan must be attached to a minimum 4" duct and no longer than 70' of flex duct. Subtract 15' of allowed length for each elbow.
- All kitchen range hoods are to be used for Local Ventilation Exhaust. Minimum 100 CFM tested at a static pressure of .25 wc and rated @ 3 sones or less required to be installed. Fan must be attached to a minimum 5" **smooth** duct and no longer than 85'. Subtract 15' of allowed length for each elbow.
- This fan is to be used for Whole Building Ventilation. Minimum 70 CFM fan tested at a static pressure of .25 wc and rated @ 1 sone or less required to be installed. Fan must be attached to a minimum 5" duct and no longer than 70'. Subtract 15' of allowed length for each elbow. Switch for fan must be labeled to indicate the fan's required function such as "Fan is to be left on to ensure indoor air quality".

ELECTRICAL SYMBOL LEGEND

- DUPLEX OUTLET, +12" ABOVE FIN. FLR., TAMPER RESISTANT, TYPICAL DUPLEX OUTLET W/ ARC FAULT INTERRUPT CIRCUIT
- DUPLEX OUTLET W/ GROUND FAULT INTERRUPT CIRCUIT DUPLEX OUTLET W/ GROUND FAULT & ARC FAULT INTERRUPT CIRCUIT
- DUPLEX OUTLET W/ WATERPROOF COVER DUPLEX OUTLET W/ 1/2 SWITCHED
- SPECIAL PURPOSE 220 V. OUTLET
- LIGHT SWITCH, +42" ABOVE FIN. FLR. TYPICAL
- LIGHT SWITCH, 3 WAY LIGHT SWITCH W/ DIMMER
- LIGHT SWITCH W/ VACANCY SENSOR
- LIGHT, CEILING SURFACE MOUNTED LIGHT, WALL SURFACE MOUNTED
- LIGHT, PENDANT
- LIGHT, RECESSED DOWNLIGHT LIGHT, RECESSED WALL WASHER
- LIGHT, RECESSED ADJUSTABLE
- EXHAUST FAN
- TELEPHONE OUTLET TY OUTLET
- O DATA OUTLET
- COMBO SMOKE/ CO DETECTOR
- THERMOSTAT @ +60" ABOVE FIN. FLR

-----Swrop Model # ENT 50 100 Serial # 1605J001368 240V, 1 phase, 4500 watts 208/230V 208/230 V (6) **LOWER FLOOR - ELECTRICAL / LIGHTING SCHEMATIC**



UPPER FLOOR - ELECTRICAL / LIGHTING SCHEMATIC

MITSUBISH ELECTRIC System Reference □ 1/2' x 5/8' Port Adapter (MAC-A456JP-E)
□ 1/3'' x 5/8' Port Adapter (PAC-493PI)
□ 3/8'' x 5/8' Port Adapter (PAC-493PI)
□ 3/8'' x 5/8' Port Adapter (PAC-493PI)
□ 3/8'' x 5/8' Port Adapter (PAC-493PI)
□ M-NET Adapter (PAC-491MNT-E)
□ Base Heater (PAC-645BH-E) 28,400 / 27,400 2,600-28,400 / 12,600-27,400 (Non-ducted / Ducted) Rated Capacity 28,600 / 27,600 Heating at 47°F* apacity Range (Non-ducted / Ducted 2,150 / 2,220 16,000 / 15,100 <u>Michael Helm,</u> Max. Piping Length for Each Indoor Ur Max. Refrigerant Pipe Height | If IDU is Above ODU Cooling | Indoor: 80° F (27° C) DB / 67° F (19° C) WB Heating at 47°F | Indoor. 70°F (21°C) D8 / 60°F (16°C) WB Heating at 17°F | Indoor. 70°F (21°C) D8 Cooling | Outdoor, 95° F (35° C) DB / 23.9° C (75° F) WB Heating at 47°F | Outdoor: 47°F (8°C) DB / 43°F (6°C) WB Heating at 17°F | Outdoor: 17°F (-8°C) DB / 15°F (-9°C) WB Indoor Unit Type SEER EER HSPF COP @ COP @ 17° Outdoor Cooling 14 to 115° F (~10 to 46° C) DB Heating 5 to 65° F (-15 to 18° C) WB NOTES:

• Minimum of two Indoor Units must be connected to the MXZ-3C30NA2. Minimum installed capacity cannot be less than 12,000 Btu/h. Total connected capacity must not exceed 130% of outdoor unit capacity. System can operate with only one Indoor Unit turned on. Information provided at 208/230V. For Reference:
 MXZ-C Technical & Service Manual for detailed specifications and additional information per Indoor Unit Combination. - MXZ Series Multi-Zone Indoor/Outdoor Combination Table for allowed unit combinations. MVZ CONNECTION RULES: · Only 1 MVZ may be used on any system. · When an MVZ is connected, total connected capacity must be 100% or less. · When an MVZ is connected, no P-Series indoor units can be used (PCA, PLA, or PEAD) 2.SERVICE SPACE RESIDENCE
ROAD - APN 537-12-012 13-25/32° or nore 3-25/32° or nor SUBNITION DAYAR MSZEGEU9NAGU 9,000 BTU/H WALL-MOUNTED INDOOR UNIT FOR MXZ-C MULTI-ZONE HEAT-PUMP SYSTEMS System Reference: Blu/n/W 9,000 Heating at 47° F² | Btu/h / W | 10,900 Rating Conditions per AHRI Standard: Cooling | Indoor: 80° F(27° C)DB 67° F(18° C)WB; Outdoor: 95° F(35° C)DB / 75° F(24° C)WB Heating at 47°F | Indoor: 70° F (21° C)DB / 80° F (16° C)WB; Outdoor: 47° F (8° C)DB / 43° F (8° C)WB Indoor Unit: MSZ-GL09NA-U1 For data on specific indoor units (all ducted, all non-ducted, and both ducted and non-ducted) combinations, see the MXZ Technical and Service Manual. RENODEL & RENODEL & RENODEL & RENODEL & RENODER & RENODE Applications should be restricted to comfort cooling only, equipment cooling applications are not 08 / 230V, 1-Phase, 60 Hz ACCESSORIES: ndoor Unit □ Condensate Pump (BlueDiamond X87-711/721; 115/230V) Condensate Pump (Sauermann SI30-115/230; 115/230V) a Anti-Allergy Enzyme Filter (MAC-408FT-E) Platinum Catalyst Deodorizing Filter (MAC-308FT-E)
 Drain Pan Level Sensor (DPLS2) □ Wireless Controller (MHK1)
□ Wired Remote Controller PAR-31MAA (Requires MAC-333!F-E) ☐ Wireless Interface for kumo cloud™ (PAC-WHS01WF-E)
☐ Thermostat Interface (PAC-US444CN-1) 145-170-237-321-399 109-134-201-286-364 145-170-237-321-406 19-22-30-37-43 19-22-30-37-43 COOLING & HEATING (295 x 798 x 232) 1340 Satellite Boulevard, Suwanee, GA 30024 Toll Free: 800-433-4822 www.mehvac.com Munsell 1.0Y 9.2 / 0.2 © 2016 Mitsubishi Electric US, In > MSZ-GL09NA-U1 1/4 = 10"

2108

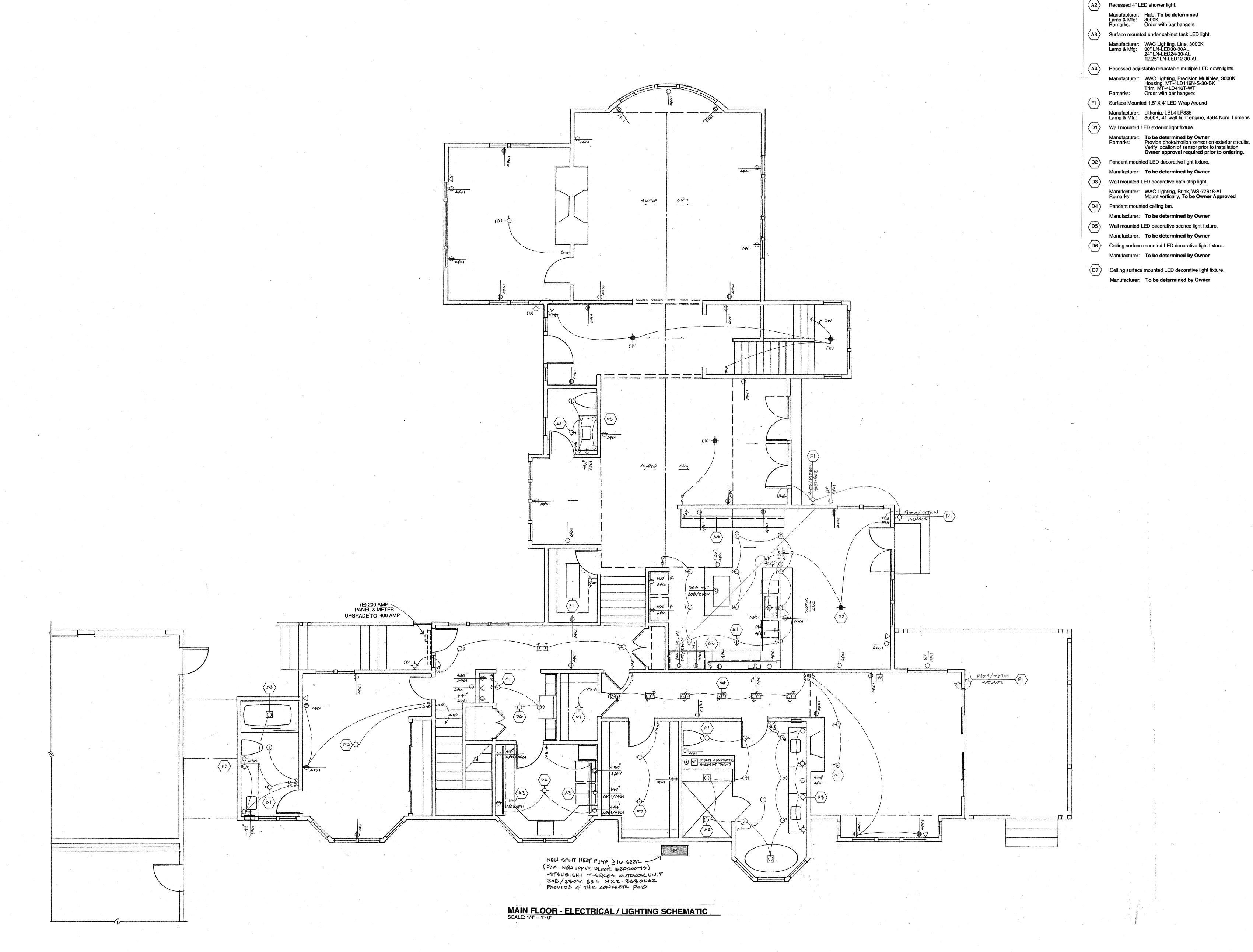
11.14.22

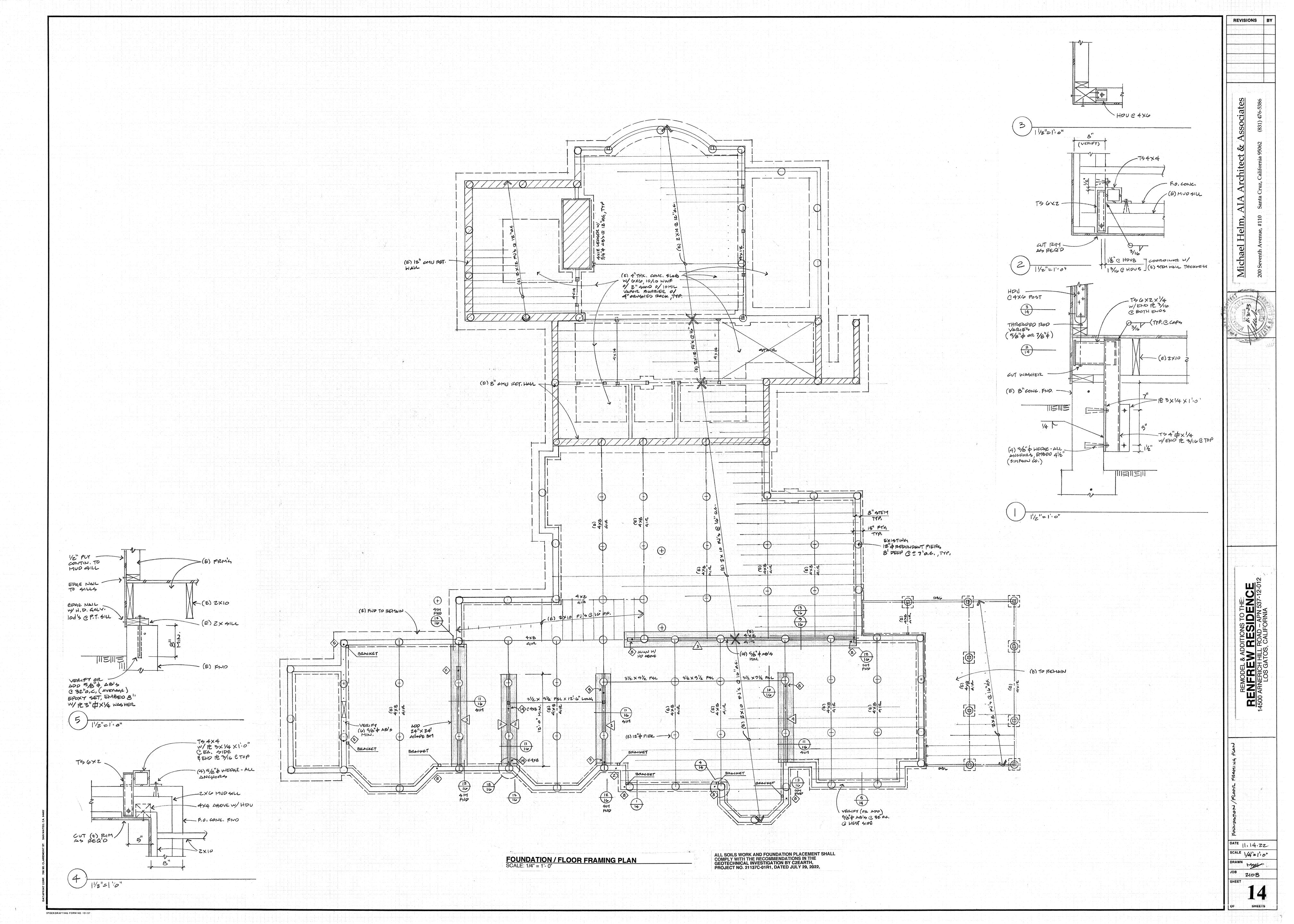
MSH

LIGHTING FIXTURE SCHEDULE - HOUSE

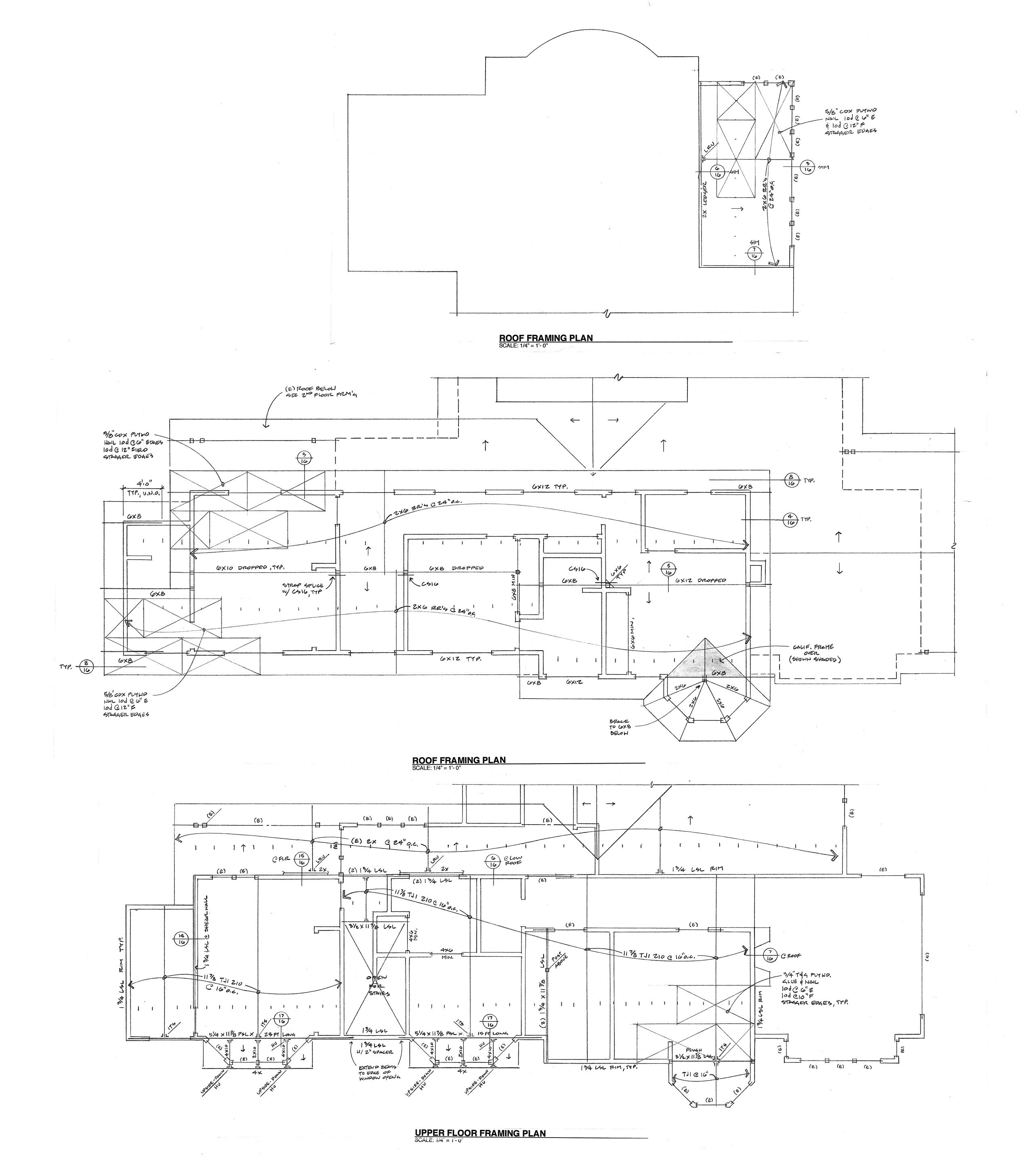
Manufacturer: WAC Lighting, Precision Multiples, 3000K Housing, MT-4LD116N-S-30-BK Trim, MT-4LD116T-WT Remarks: Order with bar hangers

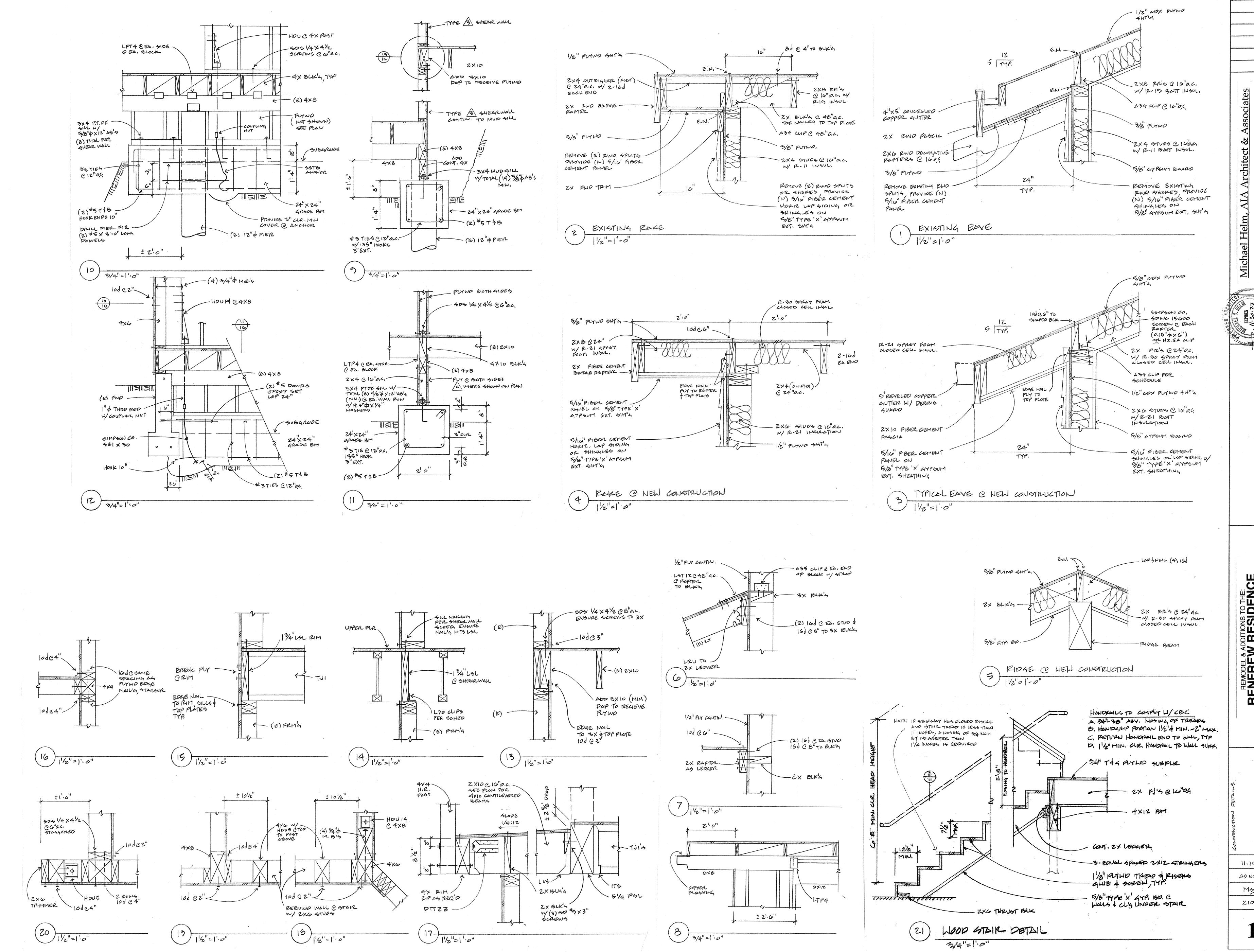
A1 Recessed 4" adjustable retractable LED downlight.





1/4"=1'0" M3H





ssociates

Architect

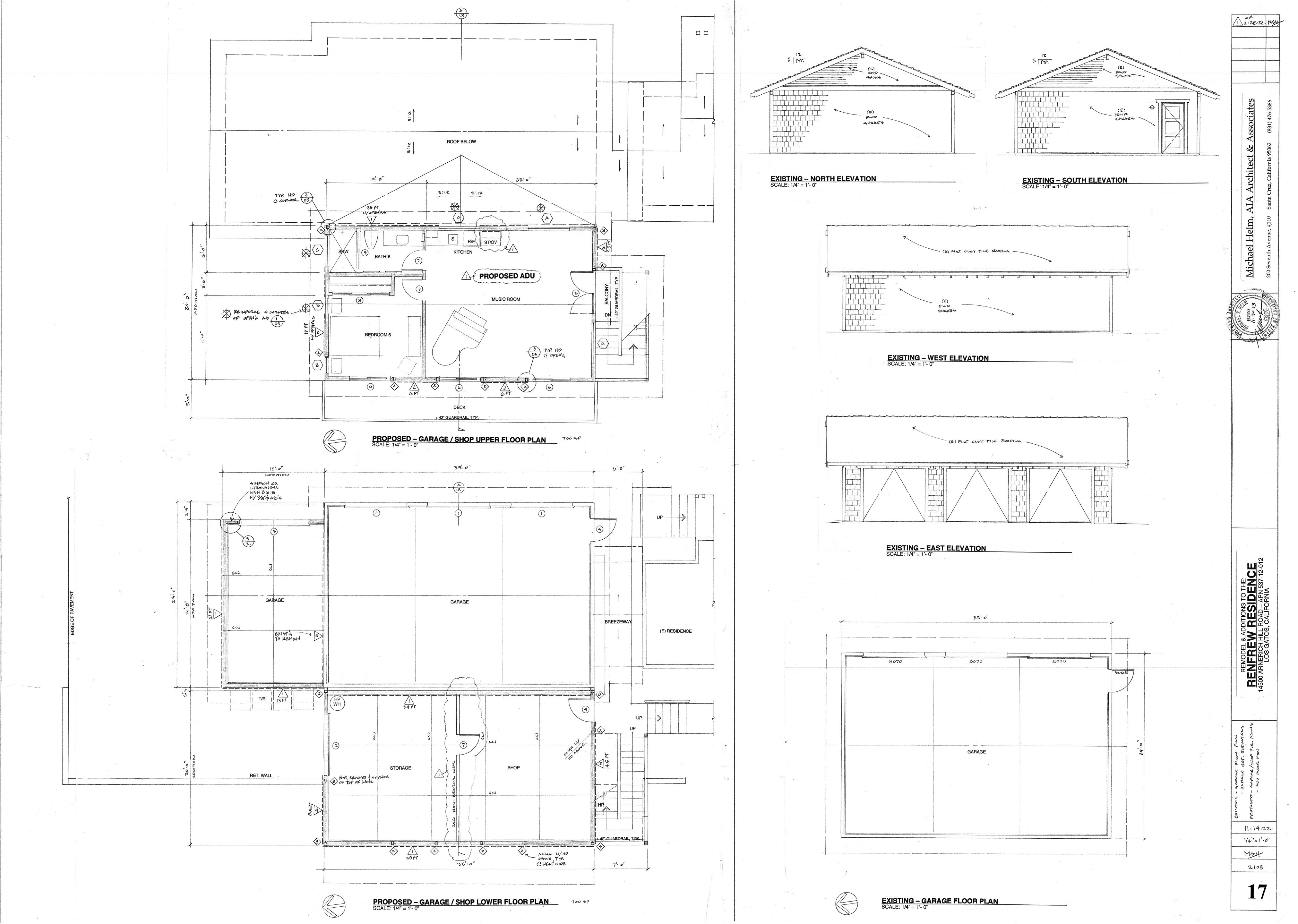
AIA

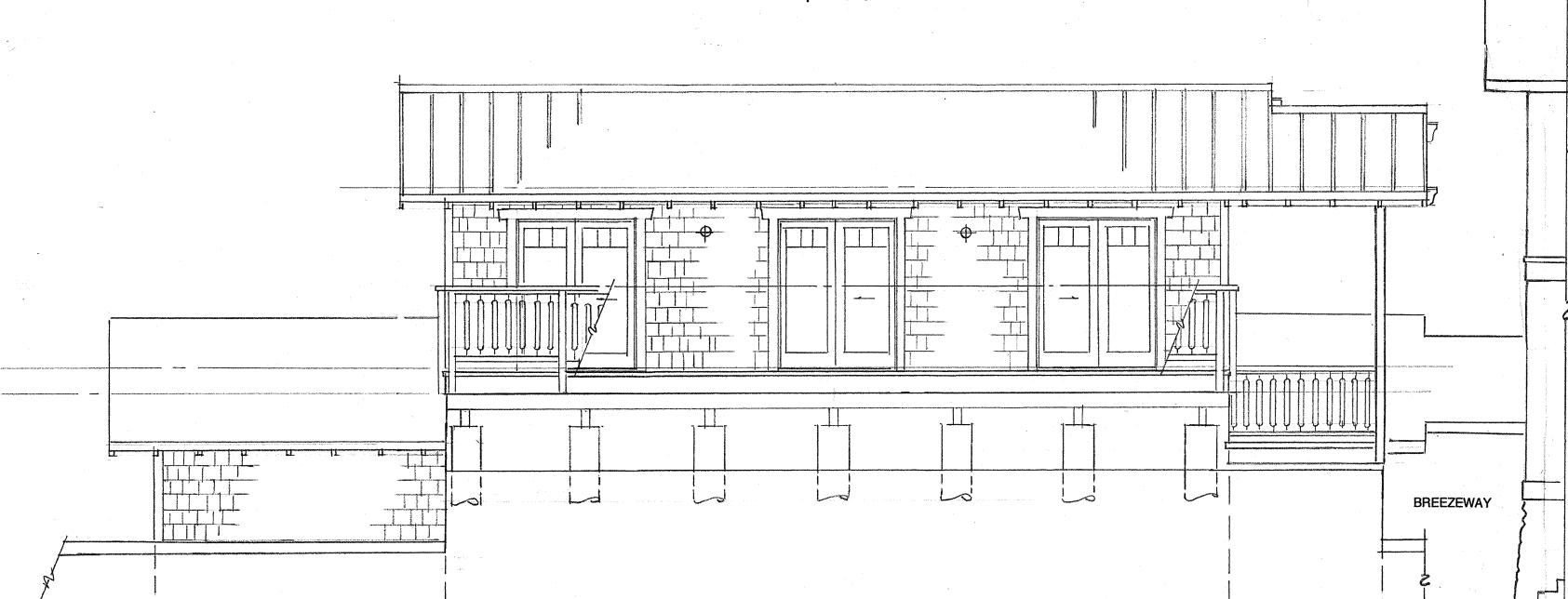
Michael

REMODEL & ADDITIONS TO THE:
RENFREW RESIDENCE
4500 ARNERICH HILL ROAD – APN 537-12-01
LOS GATOS, CALIFORNIA

1114.22 AS NOTED

MSH 2108





JELD-WEN CLAP-WOOD Manufacture / Number Color Name, LRV CHESTNUT BRONZE LRV 6% Trim James Hardie - FIBER COMENT - PAINTED Manufacture / Number SHERWIN WILLIAMS Color Name, LRV OLIVE SWILGO, LRV 30% Exterior Walls JAMES HARDLE - KIBOR CEMENT HOYLIZONTAL LOP OX SHINGLE SLOWY - PAINTED Manufacture / Number SHERWIN WILLIAMS Color Name, LRV CARPAMOM SW 2727, URV 7%

Roof PETERSON AWN. LORP, 18"WIDE, 2440,

DARK BRONZE

REFLECTIVITY 0,29

PAC-CLAD STONOING SEAM METAL PROOFING

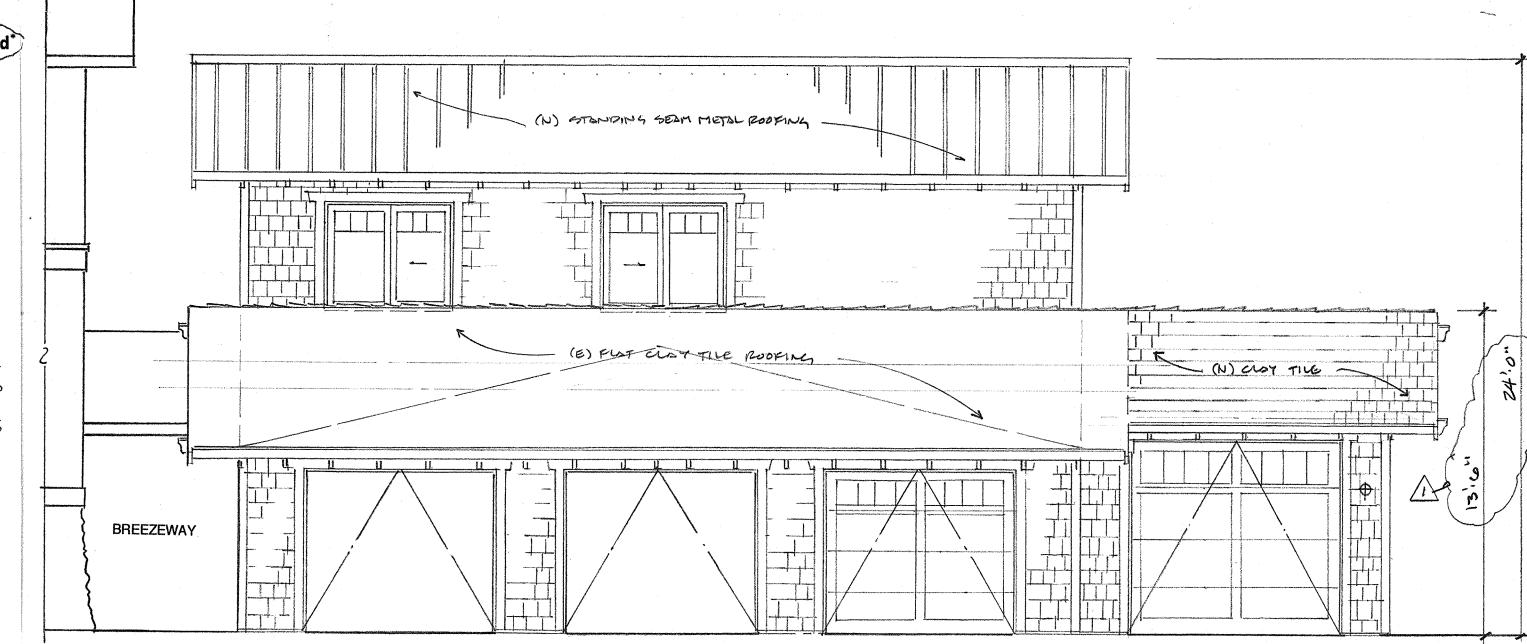
Manufacture & Material

Product Name, Number

Door & Window Frames, Railings

<u>Architectural Accents (Ex. Stone Veneer)</u> TAHOE RIVER ROCK (EXISTING TO REMAIN) Manufacture / Number N/A Color Name, LRV

Retaining Walls (E) RIVER POUR (SEE AROVE) (P) STUCCO FINISH - PAINTED Manufacture / Number SHERWIN WILLIAMS OLIVE SW 1164 LRY 30%



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

PLUMBING FIXTURE MAXIMUM FLOW RATES 1.28 GPF LAVATORY FAUCETS 1.2 GPM @ 60 PSI TUB / SHOWER VALVES 1.8 GPF @ 80 PSI KITCHEN FAUCETS 1.8 GPM @ 60 PSI

PLUMBING FIXTURE CONNECTION SCHEDULE

I LOIVI		IIL OUIT	IAFOLIO	4 OUILLD	<u>VLL</u>
SYMBOL	TYPE	WASTE	VENT	HOT	COLD
LV	LAVATORY	1-1/2"	1-1/2"	1/2"	1/2"
WC	TOILET	3"	2"	-	1/2"
T/SH	TUB / SHOWER	2"	1-1/2"	1/2"	1/2"
KS	KITCHEN SINK	2"	1-1/2"	1/2"	1/2"
ws	WASHER	1-1/2"	1-1/2"	1/2"	1/2"
НВ	HOSE BIBB				3/4"
EINIICL	COMEDIN	E NOTE			

FINISH SCHEDULE NOTES

- VERIFY ALL FINISHES WITH OWNER
- ALL CLOSET FLOORING AND BASEBOARDS SHALL MATCH THE ADJACENT ROOM
- PROVIDE A SMOOTH, HARD, NON-ABSORBENT SURFACE OVER MOISTURE RESISTANT UNDERLAYMENT TO A HEIGHT OF 72" ABOVE THE DRAIN OUTLET IN ALL SHOWER AND TUB LOCATIONS. UNDERLYING BASE FOR ALL TILE SHALL BE CEMENT, FIBER-CEMENT OR GLASS
- MAT GYPSUM BACKER BOARDS IN COMPLIANCE WITH ASTM C1178, C1288 OR C1325 AND INSTALLED IN ACCORDANCE WITH THE MANUFACTURER RECOMMENDATIONS. IT SHALL BE USED AS A BASE FOR WALL TILE IN TUB AND SHOWER AREAS AND AS CEILING PANELS IN SHOWER AREAS.

VENTILATION NOTES

All **bathroom fans** are to be used for **Local Ventilation Exhaust**. Minimum 50 CFM fan tested at a static pressure of .25 wc and rated @ 3 sones or less required to be installed. Fan must be attached to a minimum 4" duct and no longer than 70' of flex duct. Subtract 15' of allowed length for each elbow.

DOOR SCHEDULE - SHOP / GARAGE SYM SIZE TYPE OLIAN REMARKS

	\A/IAI	DOW CO	PUEDINE C	SHOD / C	ADACE
	9	5670	Bi-Pass Sliding Shower Doors	1	3/8" Clear 'Frameless' Tempered glass , Provide shop drawings for approval
	8	3W - 2868	Interior S.C., 3-Panel Sliding Bi-pass Closet Doors	1	Stain Grade, by Sun Mountain, Inc.
	7	2868	Interior S.C., 3-Panel	3	Stain Grade, by Sun Mountain, Inc.
	6	5468	Exterior single lite OX Sliding Patio Doors	3	Clad/Wood Sash, Low-E dbl. insulated Tempered glass
w 10°	5	Pair 2868	Exterior single lite French doors	1	Clad/Wood Sash, Low-E dbl. insulated Tempered glass
	4	3068	Exterior S.C., 3-Panel	2	Paint Grade, with Tempered glass panel
	3	9080	'Carriage Style' Sectional Garage Door	1	Paint Grade with Tempered glass panel w/ elec. auto opener
	2	8080	'Carriage Style' Sectional Garage Door	1	Paint Grade with Tempered glass panel w/ elec. auto opener
	1	8070	'Carriage Style' Sectional Garage Door	3	Paint Grade w/ 4-lite Tempered glass panel w/ elec. auto opener

WINDOW SCHEDULE - SHOP / GARAGE SYM SIZE TYPE QUAN. REMARKS

$\langle A \rangle$	2046	OX Slider	3	Clad/Wood Sash, Low-E dbl. insulated Tempered glass
$\langle B \rangle$	2046	Casement	2	Clad/Wood Sash, Low-E dbl. insulated Tempered glass
$\langle c \rangle$	4016	OX Slider	1	Clad/Wood Sash, Low-E dbl. insulated Tempered glass

<u>Jeld-Wen</u> – Clad Wood sash windows & doors overall standards comply with ANSI/ AAMA/ WDMA/CSA101/1.S.2 / A440-05 / A440-08 / A40-11 All units are Gold Label tested & certified with label attached to frame per AAMA standards per CRC, Section 609.3, installation per AAMA 2400 All insulated glass units conform to ASTM E2188 / E2190, NFRC certified and labeled.

Safety Glazing testing and labeling per CRC, Sections 308.1 & 308.4 Energy testing and certification per CEnC, Section 110.6 Verify rough openings and window / door sizes prior to ordering. Note: The NFRC label which states the required U-value and SGHC for all fenestration products shall not be removed prior to inspection or the removal by a building inspector and shall reflect the values listed in the energy report.

CONSTRUCTION SCHEDULE - GARAGE / SHOP

OUNDATIONS	12" wide X 27" deep concrete grade beam with 2 - #5 bars T & B w/ #3 ties @ 6" o.c. on 18" diameter drilled piers X 8' deep (min.) CONCRETE SLABS: 5" thick concrete slab w/ #4 bars @ 16" o.c. each way, on 15 mil vapor barrier (Stego Wrap or equal) on 6" crushed rock. CONCRETE MIX: Substitute Portland Cement with recycled flyash, 35% by volume, typical. Keep receipts for Inspector verification. TREATED LUMBER: Substitute ACQ pressure treatment for CCA products, typical. FORM BOARDS: Clean and re-use for scaffolding, forms, blocking, etc FORM RELEASE AGENT: Use Non-toxic soy based 0-VOC form release agent by BIO-GUARD CO. or Architect approved equal.	5
LOORS	TJI's @ 16" o.c., with ¾" T&G plywood subfloor glued and nailed w/ 10d @ 6" o.c. edges & 10" o.c. field, U.N.O. with R-19 batt insulation.	

7/8" Stucco finish over two layers of grade 'D' paper on 'TYVEK' house wrap on 7/16" CDX plywood or OSB sheathing, nailed w/10d @ 6" o.c. edges and 12" o.c. field, U.N.O., on 2 X 6 studs @ 16" o.c. with R-21 LOWER WALLS high density batt insulation, 1/2" gypsum wallboard interior finish, typical. Use low/No VOC exterior/interior paints. Wall construction shall meet SFM12-7A-1 requirements.

5/16" James Hardie fiber cement horizontal siding or shingles over 'TYVEK' house wrap on 5/8" Type 'X' exterior gypsum sheathing on 7/16" CDX plywood or OSB sheathing, nailed w/10d @ 6" o.c. edges and 12" o.c. field, U.N.O., on 2 X 6 studs @ 16" o.c. with R-23 high density batt insulation, 1/2" gypsum wallboard interior finish, typical. Use low/No VOC exterior/interior paints. Wall construction shall meet SFM12-7A-1

ROOF

INSULATION

ROOF JACKS

PENETRATIONS

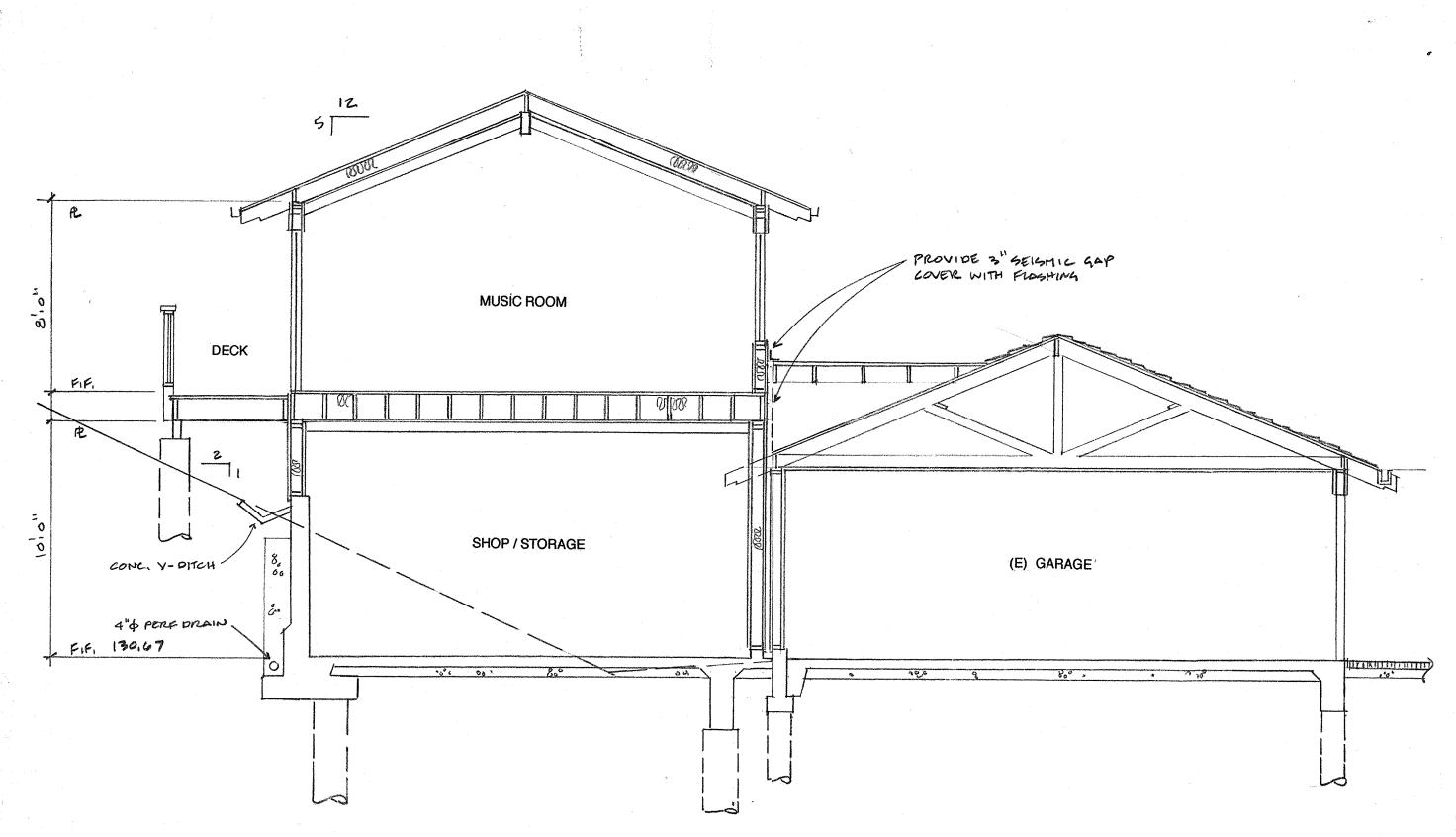
Class B (min.) standing seam metal roofing, install per mfg. specs over Dbl. layer 30 lb. felt over 5/8" CDX plywood sheathing nailed w/ 10d @ 6" o.c. edges and 12" o.c. field, U.N.O., to 2X Pre-fabricated trusses @ 24" o.c. with R- 30 closed cell polyurethane spray foam insulation. Underlayment shall comply with ASTM D226 Type I; ASTM Type I, II, III or IV; ASTM D6757, and shall bear a label indicating compliance to the standard designation. **Eave construction shall meet SFM 12-7A-3**

GUTTERS & DOWNSPOUTS 16 oz. copper beveled gutters w/ 2" diameter round downspouts deposit into existing landscaped areas. Gutters shall be provided with leaf/debris protection. 16 oz. copper where shown or required. Pan flash all ext. door sills with 16 oz. copper solder all joints, typical FLASHINGS Jeld-Wen – Alum. Clad/Wood sash with Dbl. insulated **Tempered** Low-E glass, provide screens at all operable windows. **Exterior door** EXT. GLASS DRS.

assemblies shall conform to SFM 12-7A-1 requirements. R-19 fiberglass batts R-23 high density fiberglass batts
3-1/2" fiberglass sound batts
R-30 closed cell polyurethane spray foam EXT. WALLS INT. WALLS ROOFS

Provide neoprene gaskets and 16 oz. copper roof jack / rain cap, typical. All exhaust vents shall be located a min. of 4' from or 1' above all roof or wall openings per CMC. All plumbing vents shall be located a min. of 10' from or 3' above all roof or wall openings per CPC. Use weatherproofing wall jacks by QUICKFLASH or approved equal for plumbing, electrical and mechanical penetrations.

PAINTS, STAINS, Use Low / No VOC, water based products and solvent-free adhesives, ADHESIVES & SEALERS PLUMBING Install Low-flow toilets. Install Low-flow shower heads with chlorine filters. CABINETS & TRIM Use formaldehyde-free particle board and MDF by MEDITE or approved equal for all cabinets and trim applications



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

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

REMODEL & ADDITIONS TO THE:

RENFREW RESIDENCE
1500 ARNERICH HILL ROAD – APN 537-12-01

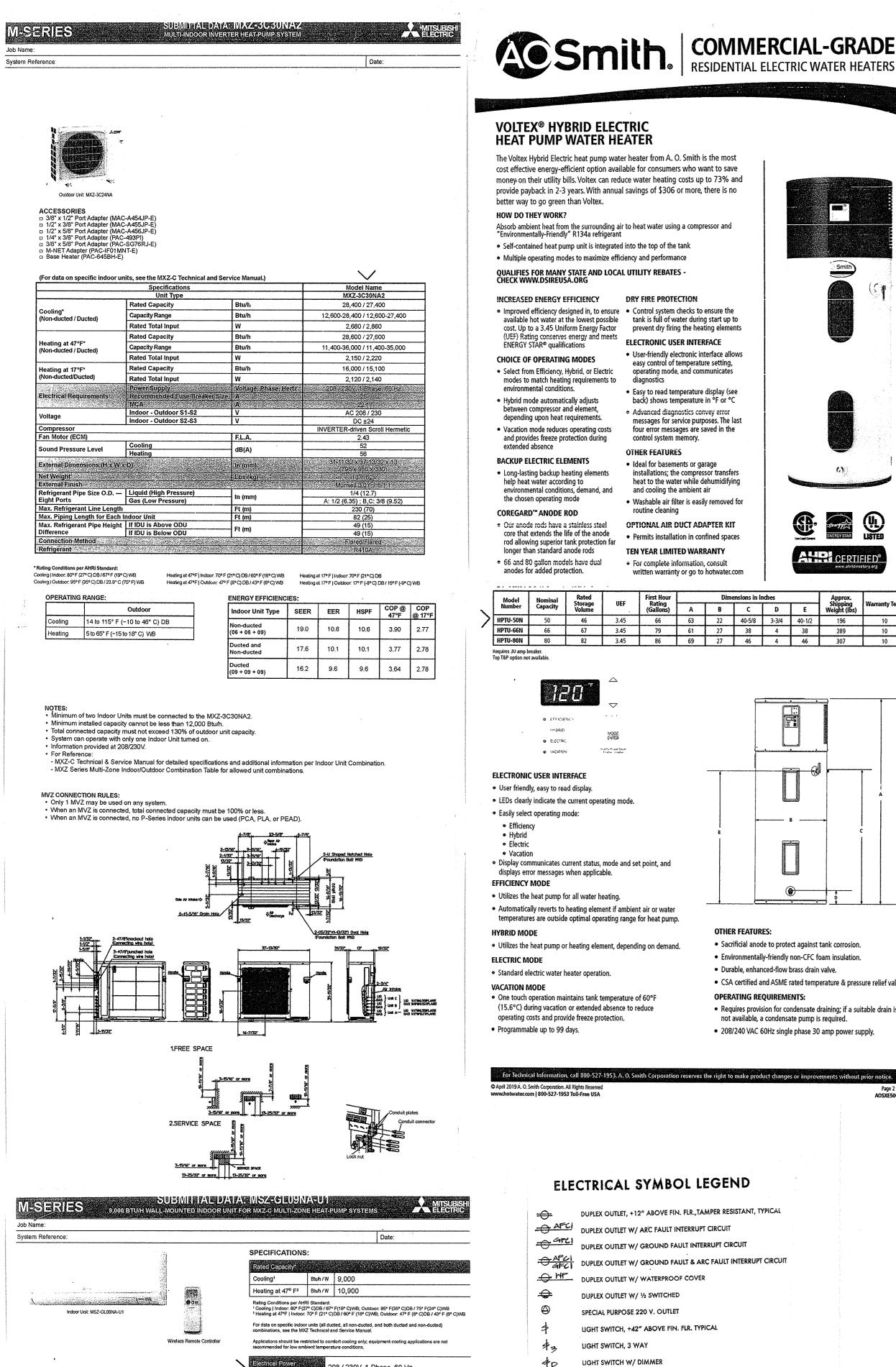
1 11:28-22 My

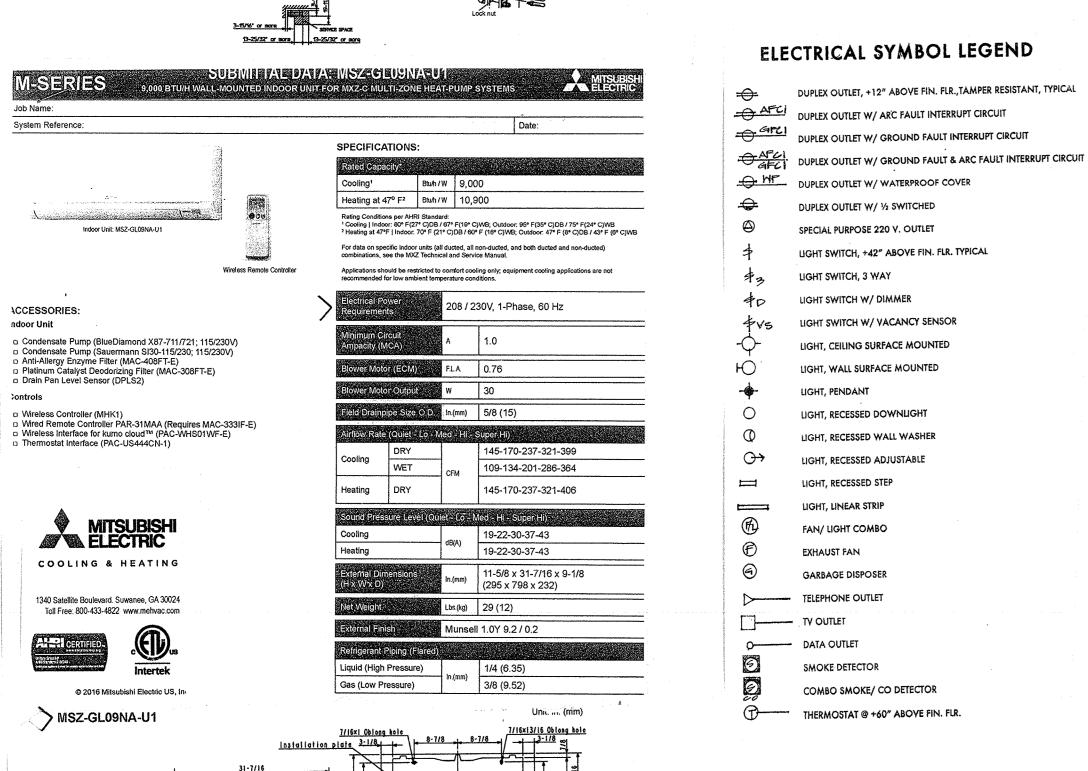
Associates

Architect &

Mich

1114.22 1/4"=10 MSH' 2108





#all hole #2-9/16

ELECTRONIC USER INTERFACE

User-friendly electronic interface allows

easy control of temperature setting,

operating mode, and communicates

Easy to read temperature display (see

back) shows temperature in °F or °C

Advanced diagnostics convey error

four error messages are saved in the

installations: the compressor transfers

heat to the water while dehumidifying

Washable air filter is easily removed for

Permits installation in confined spaces

written warranty or go to hotwater.com

OTHER FEATURES:

Durable, enhanced-flow brass drain valve.

not available, a condensate pump is required. • 208/240 VAC 60Hz single phase 30 amp power supply.

• Requires provision for condensate draining; if a suitable drain is

OPERATING REQUIREMENTS:

TEN YEAR LIMITED WARRANTY

For complete information, consult

control system memory.

Ideal for basements or garage

and cooling the ambient air

OTHER FEATURES

routine cleaning

120

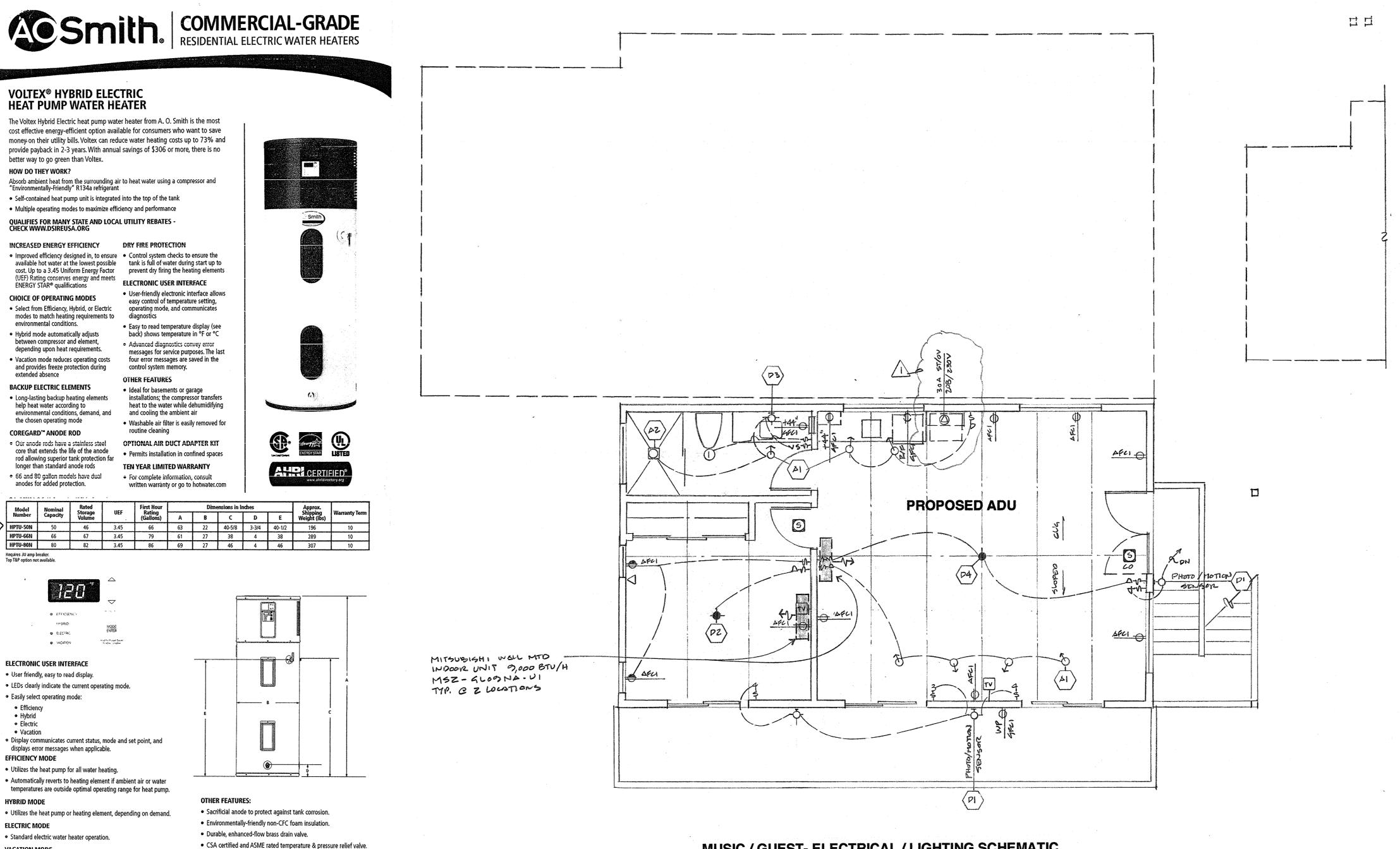
44.9400

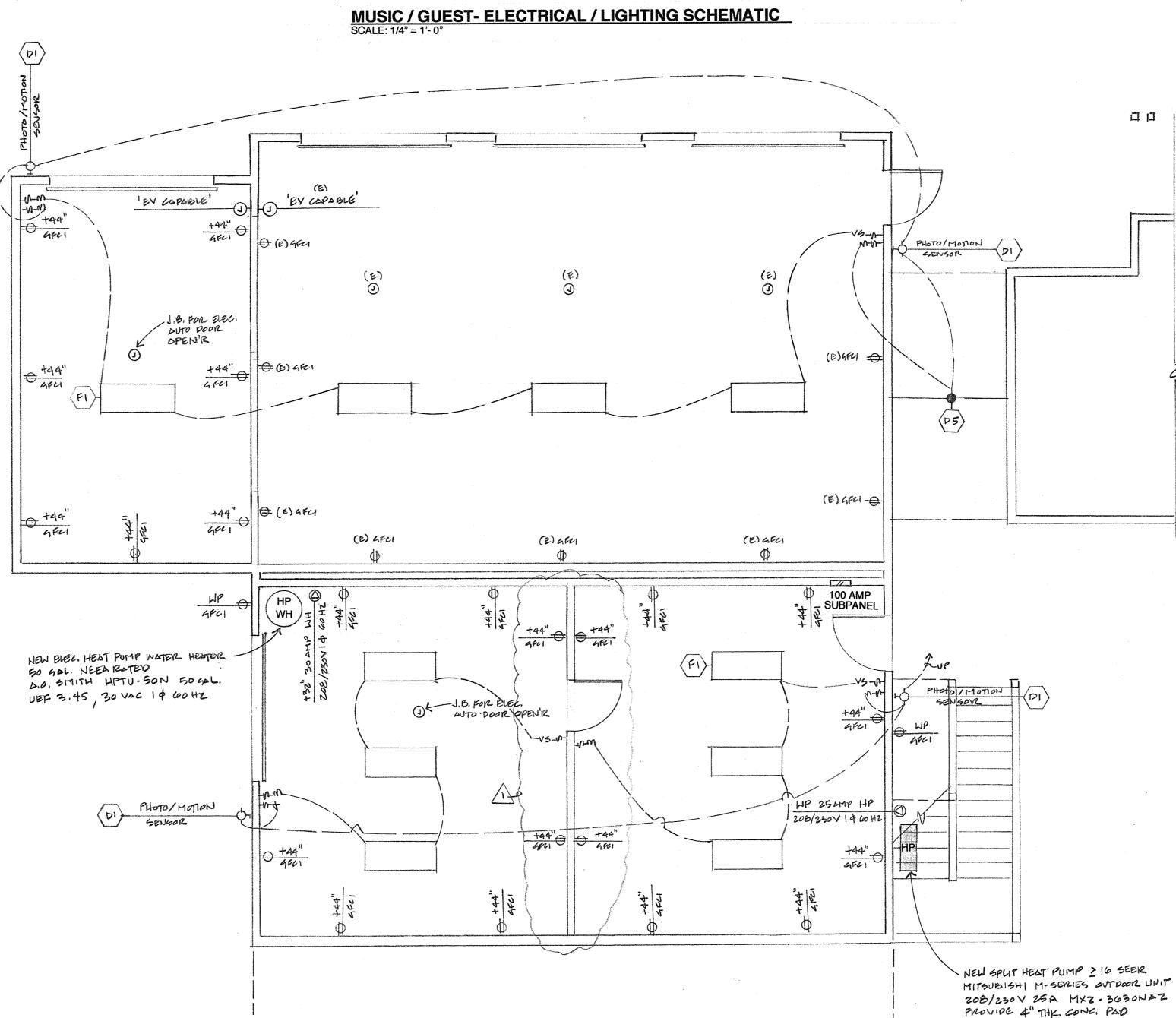
♠ ELECTRIC

VACATION

michaellagel Sanet Erabia (Vastum

messages for service purposes. The last





Provide a listed raceway to accommodate a dedicated 208/240-volt branch circuit for electric vehicle charging not less than 1" nominal inside diameter. The raceway shall originate at the main service or sub panel and shall terminate in a listed cabinet, box or enclosure in close proximity to the proposed location of the EV charger. Raceways are required to be continuous at enclosed, inaccessible or concealed areas and spaces. The raceway termination location shall be permanently and visibly marked as "EV CAPABLE". The service panel and/or subpanel shall provide capacity to install a 40-amp, minimum dedicated branch circuit and space(s) reserved to permit installation of a branch circuit overcurrent protective device. The service panel or subpanel shall identify the overcurrent protective device space(s) reserved for future EV charging as "EV CAPABLE". The EV Charging circuit must be rated for continuous duty at 125% of load. All Electrical Vehicle Supply Equipment (EVSE) shall be installed in accordance with the California Electrical Code.

LIGHTING FIXTURE SCHEDULE

Tag Description

Recessed 4" adjustable retractable LED downlight. Manufacturer: WAC Lighting, Precision Multiples, 3000K Housing, MT-4LD116N-S-30-BK Trim, MT-4LD116T-WT

Remarks: Order with bar hangers Recessed 4" LED shower light with drop opal lens Manufacturer: Halo, To be determined

Lamp & Mfg: 3500K Order with bar hangers Surface Mounted 1.5' X 4' LED Wrap Around Manufacturer: Lithonia, LBL4 LP835

Wall mounted LED exterior light fixture. Manufacturer: To be determined by Owner Provide photo/motion sensor on exterior circuits,

Verify location of sensor prior to installation Owner approval required prior to ordering. Pendant mounted LED decorative light fixture.

Lamp & Mfg: 3500K, 41 watt light engine, 4564 Nom. Lumens

Manufacturer: To be determined by Owner Wall mounted LED decorative bath strip light. Manufacturer: WAC Lighting, Brink, WS-77618-AL Mount horizontally, **To be Owner Approved**

Pendant mounted LED decorative light fixture. Manufacturer: To be determined by Owner

Pendant mounted LED decorative exterior light fixture Manufacturer: To be determined by Owner

REMODEL & ADDITIONS TO THE:

RENFREW RESIDENC

1500 ARNERICH HILL ROAD – APN 537-12

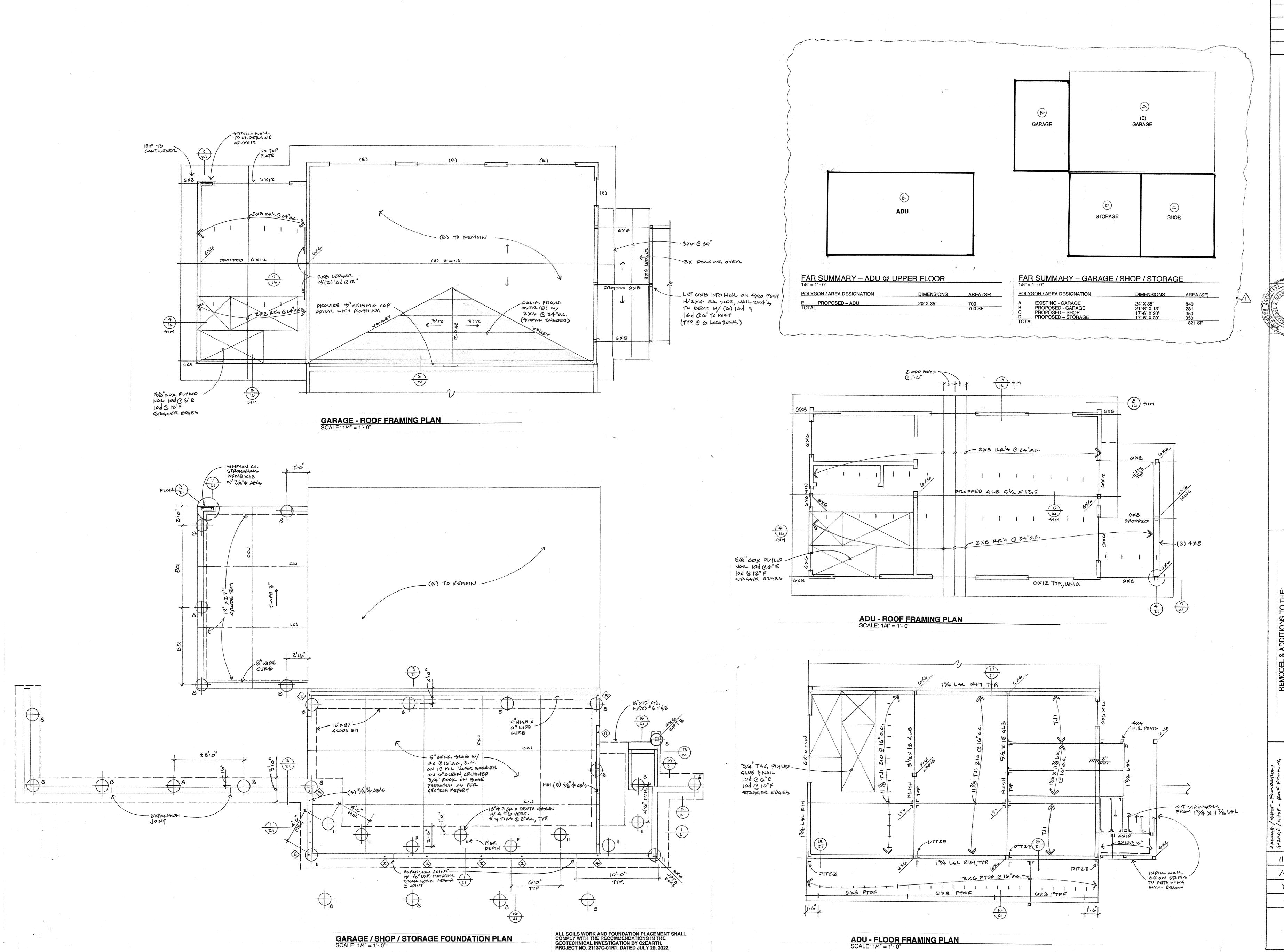
1 11.28.22 MEH

ssociates

11.14.22 1/4"=1'0" Melt

2108

GARAGE / SHOP- ELECTRICAL / LIGHTING SCHEMATIC
SCALE: 1/4" = 1'-0"



Michael Helm, AIA Architect & Associates

11-28.22 M24

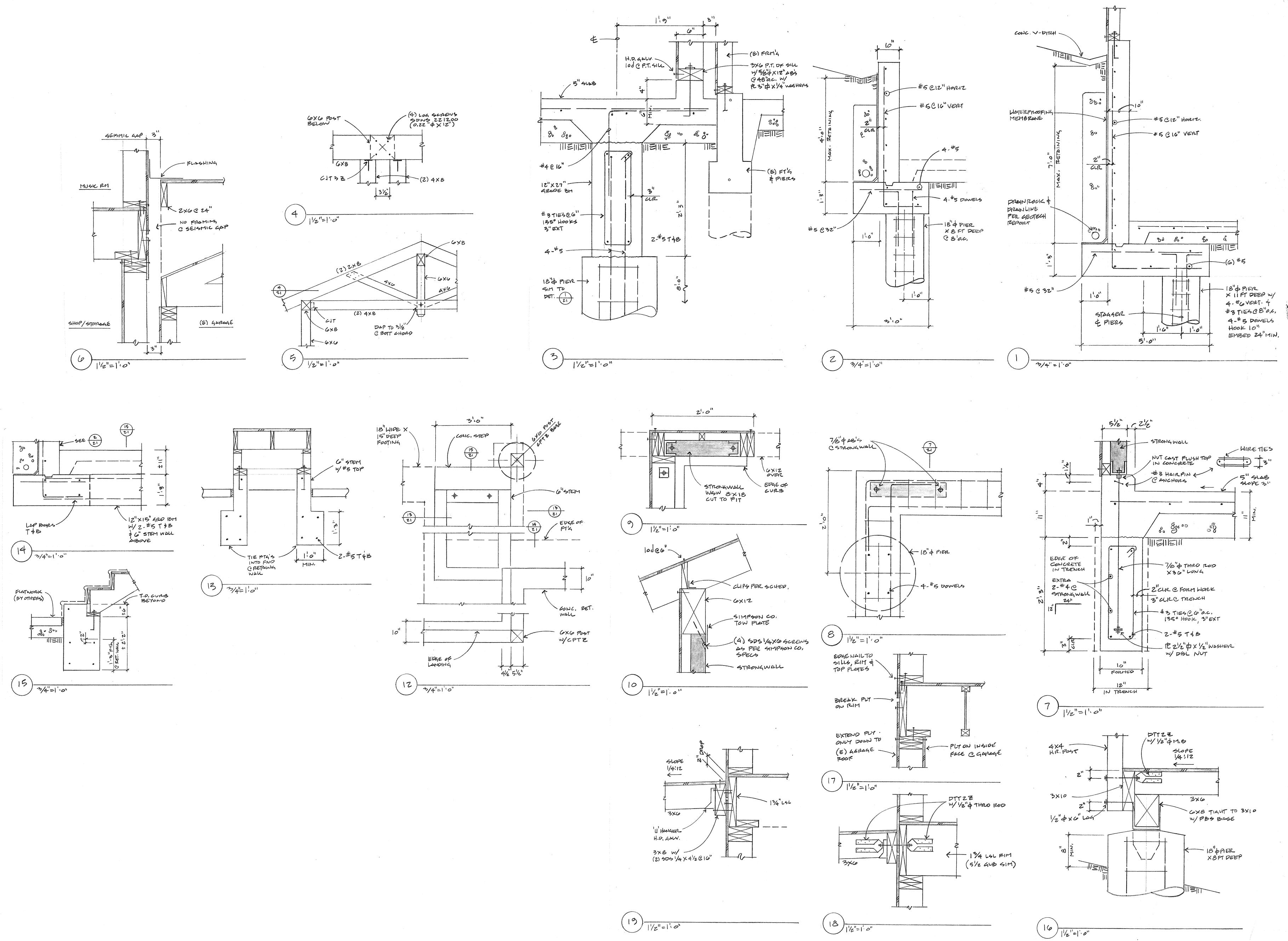
EXPINES TO CORRECT OF THE PARTY OF THE PARTY

REMODEL & ADDITIONS TO THE:

RENFREW RESIDENCE
4500 ARNERICH HILL ROAD – APN 537-12-012
LOS GATOS, CALIFORNIA

ADJ - FLOOVE FRAMING
ADJ - 1200F FRAMING

11.14.22 1/4"=1'0" MGH 2108

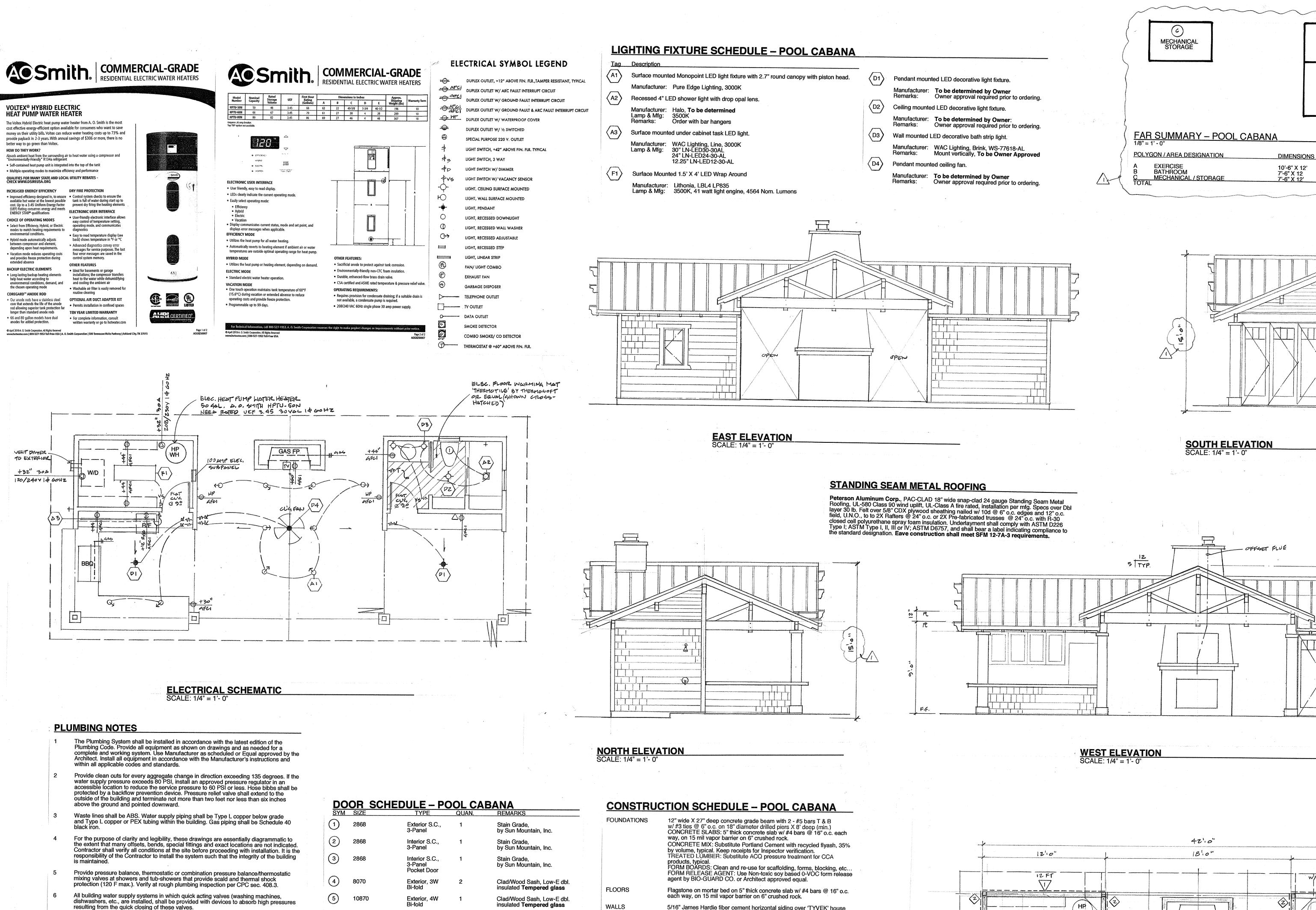


Michael Helm, AIA Architect & Associates

WANTED TO STATE OF THE STATE OF

REMODEL & ADDITIONS TO THE:
RENFREW RESIDENCE
4500 ARNERICH HILL ROAD – APN 537-12-012
LOS GATOS, CALIFORNIA

11.14.22 ASNOTED MSH 2108



<u>STIVI</u>	SIZE	IYPE	QUAN.	HEMARKS
1	2868	Exterior S.C., 3-Panel	1	Stain Grade, by Sun Mountain, Inc.
2	2868	Interior S.C., 3-Panel	1	Stain Grade, by Sun Mountain, Inc.
3	2868	Interior S.C., 3-Panel Pocket Door	1	Stain Grade, by Sun Mountain, Inc.
4	8070	Exterior, 3W Bi-fold	2	Clad/Wood Sash, Low-E dbl. insulated Tempered glass
5	10870	Exterior, 4W Bi-fold	1	Clad/Wood Sash, Low-E dbl. insulated Tempered glass
6	5470	Bi-Pass Sliding	1	3/8" Clear 'Frameless'

WINDOW SCHEDULE-POOL CABANA

Energy testing and certification per CEnC, Section 110.6

SYIVI	SIZE	IYPE	QUAN.	REMARKS
A	2036	Casement	2	Clad/Wood Sash, Low-E dbl. insulated Tempered glass
Jeld-W WDMA	<u>/en</u> – Clad \ \/CSA101/1	Nood sash windows & .S.2 / A440-05 / A440-	doors overall stan 08 / A40-11	dards comply with ANSI/ AAMA/

Tempered glass, Provide shop drawings for approval

All units are Gold Label tested & certified with label attached to frame per AAMA standards per CRC, Section 609.3, installation per AAMA 2400 All insulated glass units conform to ASTM E2188 / E2190, NFRC certified and labeled. Safety Glazing testing and labeling per CRC. Sections 308.1 & 308.4

Verify rough openings and window / door sizes prior to ordering. Note: The NFRC label which states the required U-value and SGHC for all fenestration products shall not be removed prior to inspection or the removal by a building inspector and shall reflect

FINISH SCHEDULE NOTES

Water lines shall be insulated per CA Energy Code as follows;

Table 120.3-A, CPC 609.11

TOILET

LAVATORY FAUCETS

KITCHEN FAUCETS

TUB / SHOWER VALVES

LAVATORY

TOILET

TUB / SHOWER

WASHER

HOSE BIBB

KITCHEN SINK 2'

Install a minimum 1.5 inch thick insulation on all hot water pipes, all piping with a nominal

diameter of 3/4 inch or larger, piping associated with recirculation systems regardless of pipe diameter, and cold water pipes for the first 5 feet from a storage tank, piping buried

below grade, all hot water pipes from heating source to kitchen fixtures. Hot water pipes puried below grade must be installed in a waterproof and non-crushable casing or sleeve.

Provide "DSA Certified" earthquake actuated shut-off valve at gas meter or regulator.

No domestic dishwashing machine shall be directly connected to a drainage system or

food waste disposer without the use of an approved dishwasher air gap fitting on the discharge side of the dishwashing machine. Listed air gaps shall be installed with the

flood-level (FL) marking at or above the flood level of the sink or drainboard, whichever is

compartment or otherwise arranged so that the shower head does not discharge directly

at the entrance to the compartment and the bather can adjust the valves prior to stepping into the shower spray per CPC 408.9

1-1/2"

1-1/2"

1.28 GPF

1.2 GPM @ 60 PSI

1.8 GPF @ 80 PSI

1.8 GPM @ 60 PSI

1/2"

1/2"

1/2"

3/4"

Insulation outside conditioned space shall be protected per CEnC 150.0(j)2.,

Control valves and shower heads shall be located on the sidewall of shower

PLUMBING FIXTURE MAXIMUM FLOW RATES

PLUMBING FIXTURE CONNECTION SCHEDULE

WASTE VENT

VERIFY ALL FINISHES WITH OWNER ALL CLOSET FLOORING AND BASEBOARDS SHALL MATCH THE ADJACENT

PROVIDE A SMOOTH, HARD, NON-ABSORBENT SURFACE OVER MOISTURE RESISTANT UNDERLAYMENT TO A HEIGHT OF 72" ABOVE THE DRAIN OUTLET IN ALL SHOWER AND TUB LOCATIONS.

UNDERLYING BASE FOR ALL TILE SHALL BE CEMENT, FIBER-CEMENT OR GLASS MAT GYPSUM BACKER BOARDS IN COMPLIANCE WITH ASTM C1178, C1288 OR C1325 AND INSTALLED IN ACCORDANCE WITH THE MANUFACTURER 1/2" RECOMMENDATIONS. IT SHALL BE USED AS A BASE FOR WALL TILE IN TUB AND SHOWER AREAS AND AS CEILING PANELS IN SHOWER AREAS. 1/2"

VENTILATION NOTES

All bathroom fans are to be used for Local Ventilation Exhaust. Minimum 50 CFM fan ested at a static pressure of .25 wc and rated @ 3 sones or less required to be installed. Fan must be attached to a minimum 4" duct and no longer than 70' of flex duct. Subtract 15' of allowed length for each elbow.

WALLS 5/16" James Hardie fiber cement horizontal siding over 'TYVEK' house wrap on 5/8" Type 'X' exterior gypsum sheathing on 7/16" CDX plywood or OSB sheathing, nailed w/10d @ 6" o.c. edges and 12" o.c. field,

U.N.O., on 2 X 6 studs @ 16" o.c. with R-23 high density batt insulation, 1/2" gypsum wallboard interior finish, typical. Use low/No VOC exterior/interior paints. Wall construction shall meet SFM12-7A-1 Class B (min.) standing seam metal roofing, install per mfg. specs over Dbl. layer 30 lb. felt over 1/2" CDX plywood sheathing, w/ #6 X 1-1/2" screws @ 6" o.c. edges & 12" o.c. field over 2X decking on 3X6 Rafters @ 24" o.c.. Underlayment shall comply with ASTM D226 Type I; ASTM

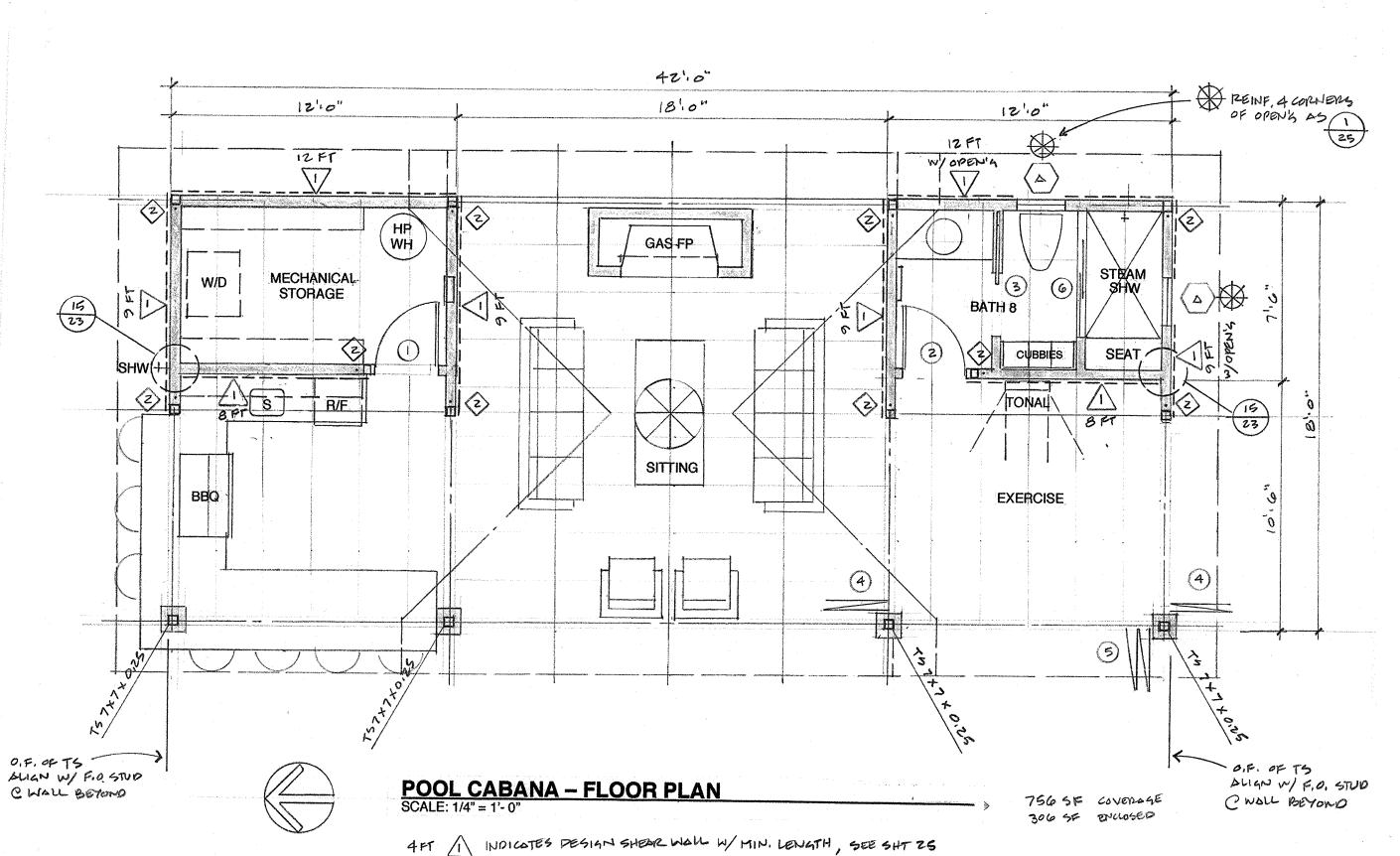
Type I, II, III or IV; ASTM D6757, and shall bear a label indicating compliance to the standard designation. **GUTTERS &** 16 oz. copper beveled gutters w/ 2" diameter round downspouts deposit into existing landscaped areas. Gutters shall be provided with ROOF / WALL 16 oz. copper where shown or required. Pan flash all ext. door sills with FLASHINGS 16 oz. copper solder all joints, typical

EXT. GLASS DRS. glass, provide screens at all operable windows. Exterior door assemblies shall conform to SFM 12-7A-1 requirements. INSULATION EXT. WALLS R-23 high density fiberglass batts **ROOF JACKS** Provide neoprene gaskets and 16 oz. copper roof jack / rain cap, typical. All exhaust vents shall be located a min. of 4' from or 1' above all roof or wall openings per CMC. All plumbing vents shall be located a min. of 10' from or 3' above all roof or wall openings per CPC.

Use weatherproofing wall jacks by QUICKFLASH or approved equal for PENETRATIONS plumbing, electrical and mechanical penetrations. PAINTS, STAINS, Use Low / No VOC, water based products and solvent-free adhesives, ADHESIVES &

Jeld-Wen - Alum. Clad/Wood sash with Dbl. insulated Tempered Low-E

SEALERS PLUMBING Install Low-flow toilets. Install Low-flow shower heads with chlorine filters CABINETS & Use formaldehyde-free particle board and MDF by MEDITE or approved equal for all cabinets and trim applications



(2) INDICOTES HOLDOWN BROCKET, SUCHOR & POST, SEE SHT 25

(Color/Materials Board

11.22-22 MSH

rchitect

Helm,

Michael

ROOF PETERSON AWM. LORP, 18"WIDE, 2440, PAC-CLAD STONDING SEAM METAL PROFING

Manufacture & Material DARK BRONZE REFLECTIVITY 0,29 Product Name, Number

Door & Window Frames, Railings

JELD-WEN CLAP-WOOD

Manufacture / Number Color Name, LRV CHESTHUT BROWNE LRV 6%

Trim James Hardie - FIBER COMENT - PAINTED

Manufacture / Number SHERWIN WILLIAMS Color Name, LRV OLIVE SW1166, LRV 30%

Exterior Walls JAMES HARDLE - KIBER COMENT HOPLIZONTAL LOP OR SHUGLE SLOWY - PAINTED Manufacture / Number SHERWIN WILLIAMS Color Name, LRV CARPAMOM SWZ7Z7, URV 7%

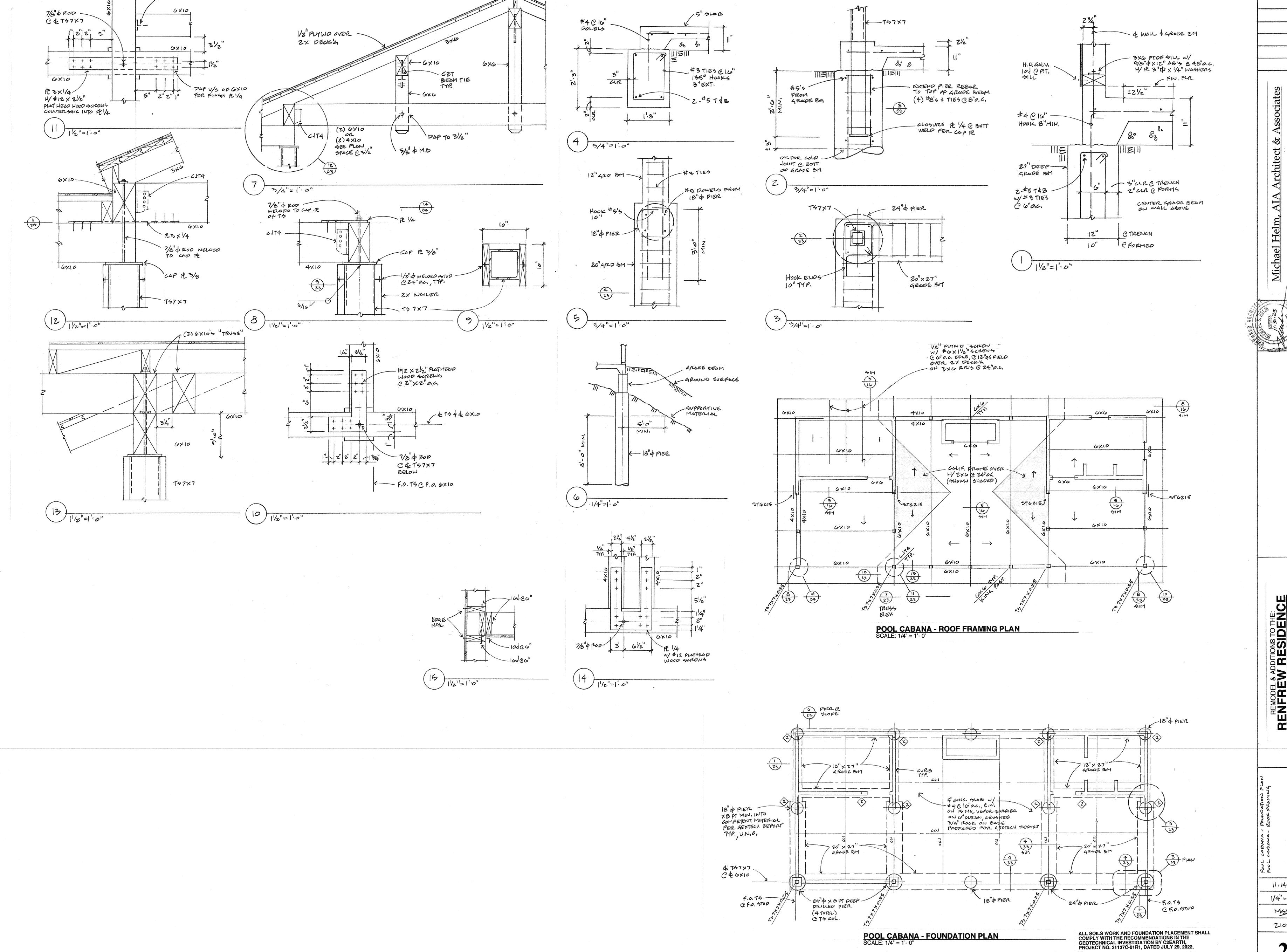
BATH

EXERCISE

AREA (SF)

SIDENCE SIDENCE D - APN 537-12-

11.14.22 1/4"=1"0" 2108



REMODEL & ADDITIONS TO THE:
RENFREW RESIDENCE
4500 ARNERICH HILL ROAD – APN 537-12-012
LOS GATOS, CALIFORNIA

11.14.22 1/4"=110" MSH 2108

QUIK-SHIELD® 118 is the first Ultra-Efficient closed-cell, spray foam on the market today. It is specially formulated to increase jobsite efficiency, decrease labor and overhead costs, reduce jobsite risk, and deliver the lowest cost installed. **EXCEPTIONAL CONTRACTOR VALUE:** FEATURE-RICH: Ultra lift—up to 8" applications Up to 50% increase in jobsite Robust Formulation · Long-Range Application Keeps making good foam, even under adverse conditions • Up to 20' application range PROCEDURE

TYPICAL PHYSICAL PROPERTIES*: Core Density (minimum, lb/ft³) Water Vapor Permeance at 1.2" (perms/in) Water Absorption (%) Dimensional Stability (%) Tensile Strength (psi) Compressive Strength (psi) Air Leakage (L/s.m²) Air Permeance at 1" (L/s.m²) THERMAL BARRIER NFPA 286 DC 315 (wet mils) RELATIVE INSULATION VALUES (aged): R-value at 1" R-value per inch at >3.5"

HANDLING PROPERTIES at 77°F (25°C): A SIDE (ISO) B SIDE (RESIN Viscosity, cps Specific Gravity RECOMMENDED PROCESSING INFORMATION (ADDITIONAL DETAILS ON BACK): Dispensing Ratio 15-140°F (46-60° C Primary Heaters (A&B 115-140°F (46-60° C Dynamic Pressure (A&B) 1000 psi minimum Static Pressure (A&B) 1100-1600 psi

MIXING (ADDITIONAL DETAILS ON BACK): Do not recirculate

Drum Conditioning Temperature 55 - 80°F (12 - 27° C)

Ambient Temperature²

RECOMMENDED STORAGE AND SHELF LIFE (ADDITIONAL DETAILS ON BACK): Storage temperatures 40-100°F** (4-38° C). See back for preconditioning of material. Shelf life from date of manufacture (unopened containers): - A-Side (iso): 12 months - B-Side (resin): 6 months

Keep container tightly sealed. Store out of direct sunlight, in a cool dry place, avoid freezing

*Properties achieved in a lab environment at 77°F. Field conditions may cause variation in properties ** Caution: If the drum temperature is 80°F (26.6°C) or higher, use caution when opening the drum! The contents

PREPARATION OF SUBSTRATES Providing the proper substrate is the responsibility of the owner, the owner's appointed representative, the contractor, and/or inspector. preparation techniques may be required given unique/specialized application circumstances. Contact SWD for technical questions

It is recommended to remove dust, dirt, oil, paint, and alternative polymers from all surfaces prior to applying SWD products. See SWD specifications or SPFA guidelines for further details on

representative for more details.

 Ensure wood is relatively dry and protect surfaces from Water or oil present may cause poor adhesion or excessive Fill large voids with appropriate backer rods or appropriate fillers.

If additional information is required, contact an SWD

STEEL & OTHER METALS It is the responsibility of the contractor/end user to determine proper adhesion and suitability through field testing. Blasting and/or priming is not always required. If additional information is required, contact an SWD representative for more details.

If applying foam to concrete, the concrete surface should be structurally sound, clean, and dry/cured (typically 28 days). Fill large voids with appropriate backer rods or appropriate fillers. Blasting and/or priming is not always required. It is the responsibility of the contractor/end user to determine proper adhesion and suitability. If additional information is required,

PREVIOUSLY APPLIED FOAM or OTHER POLYMERS As practical, remove previously applied foam and other polymer products. Application of product over existing materials should be performed only after adhesion/compatibility is verified by the contractor and accepted by the building owner or owner's

contact an SWD representative for more details.

WIRING & PLUMBING: Quik-Shield® 118 is fully compatible with CPVC piping systems (Paschal Engineering Study for the SPFA) Quik-Shield® 118 is compatible with typical electrical wiring

PROCESSING 1. It is recommended to precondition material to 55-80°F prior to application. Material may thicken at lower temperatures which can cavitate pumps. Do not mix. 3. Product should be sprayed with a high pressure pluralAPPROVALS/ COMPLIANCE IBC, IRC, IECC: 2009, 2012, 2015 AC377 compliant barrier needed Type I-V construction Class 1— ASTM E-84 E-84, NFPA 285, E-119

Appendix X compliant - no ignition

INDUSTRY LEADING TEMPERATURES: Continuous use temperature can be as high as 257°F (125°C) and -60°F (-51°C). Solid performance in all climates. including extreme heat and cold, and high humidity

PACKAGING: 275 Gallon Tote 55 Gallon Drum INISHED PRODUCT COLOR: White to off-white (UV exposure will cause discoloration, discoloration by itself is not a sign of product

> LEED INFORMATION: Quik-Shield® 118 has a minimum of 9% total renewable/recycle content 2.3% pre-consumer recycled 5.2% post-consumer recycled 1.6% rapidly renewable

> > IEQ Credit- Low Emitting Materials

AN ARTHORITATION TO THE PROPERTY OF THE PROPER dynamic pressure and a maximum pressure differential of 200psi between resin and isocyanate.

Static pressure is typically set between 1100 and 1600psi. Primary heaters and hose heaters are typically set between 115 140°F. Higher temperatures are utilized in winter months, lower temperatures are utilized in summer months. Proper application temperature setting is the responsibility of the end user. Equipment temperature varies and can be dependent on equipment, hose length, elevation, ambient temperature, substrate temperature humidity, and other factors. If additional information is required, contact an SWI representative for more details.

APPLICATION Clean surfaces according to "Preparation of Substrates" section. If priming, follow manufacturer recommendations. Ensure primer is adequately cured prior to application. Substrate temperatures should be between 25-130°F Flashing is recommended at lower temperatures. Higher and lower application temperatures are possible, contact an SWD representative for more details.

4. Flush an adequate amount of material through the lines/gun prior to spraying desired surface when changing between systems. Flush amount will be dependent on prior system used. If additional information is required, contact an SWD representative for more details. 5. Do not recirculate. . Do not exceed a 8 inch lift per pass. It is the responsibility of

actor to determine when the first layer has coole sufficiently for additional passes. SWD recommends waiting a minimum of 20 minutes. Before application, test material to ensure that material sprays. Inspect applied material intermittently to ensure no problems exist. If problems are detected, discontinue application and inspect all substrates, equipment, gun, and liquid material for

> CLEANING AND MAINTENANCE Spray equipment must be maintained in proper operating condition. Failure to adequately maintain spray equipment may result in poor product performance. Refer to your equipment nanufacturer's maintenance procedures for more details. . Contact SWD for long-term equipment storage

ARCHITECTURAL SPECIFICATIONS

GENERAL REQUIREMENTS

GENERAL CONDITIONS

The Work under this contract includes furnishing all labor, equipment's, appliances, and materials required for construction of this home in strict accordance with these specifications and the applicable drawings subject to the terms of the contract.

governed by the State of California; policies as follows:

Before commencing any work under this contract, the CONTRACTOR shall have in his possession the necessary and required insurance as

a. Workmen's Compensation Insurance's: This policy shall cover the full liability of the contractor and his workmen. Each sub-contractor shall be required to provide the same for his workmen.

b. Public Liability Insurance: This policy shall cover the full liability and

claims for damages for personal injury including accidental death.

The Construction of this building shall comply with all applicable requirements and regulations set forth by the latest of the California Building Code; and all applicable requirements and regulations set forth by Labor Codes and local Ordinances.

The CONTRACTOR shall inspect the site and familiarize himself with all local conditions and take full responsibility for maintaining ingress to and egress from the site at all times.

Temporary water and electricity shall be provided by the CONTRACTOR and he shall pay all installation and meter charges.

Temporary toilet facilities shall be installed and maintained by the CONTRACTOR.

The CONTRACTOR shall provide, procure, and pay for all building permits required for the execution of the contract and the completion of the job.

During the execution of the work called for on the plans and in these specifications, the CONTRACTOR will be held responsible for any and all damage to existing adjacent property, structures, sidewalks, curbe, and guttere.

Upon the completion of the work, the building shall be broom cleaned and ready for occupancy. Finished surfaces scratched or damaged shall be refinished, resurfaced or replaced, as the case may be. The entire premises shall be clean and free from all debris and evidence of construction. Temporary facilities, construction and equipment shall be removed.

All concrete slabs, walls and driveways shall be adequately protected from damage from any source until acceptance of the work.

The CONTRACTOR shall check and verify drawings as to scale and dimensions: and if errors appear in the drawings or conflicts in these specifications, the CONTRACTOR shall bring them to the attention of

THE CONTRACTOR shall layout the building in accordance with the general location of the building as shown on the drawings. The CONTRACTOR shall furnish all engineering services necessary to the proper layout and construction of the building.

The CONTRACTOR shall make no deviations from the drawings unless such deviations are approved by the OWNER.

EXCAYATION, GRADING, AND PAVING

See plane for extent of work. In general, this consists of preparing the site, excavation of foundation trenches, all fills and backfills, removal of excess material to area designated, spreading same and finish grading and paving on areas designated. Slope finish grade to drain away from building. All filled areas are to be keyed into hillside and compacted as required.

CONCRETE WORK

1. MATERIALS

The quality of the materials used in the concrete and the quality of the concrete shall conform to the physical and chemical properties as specified in C.B.C.

a. Reinforcing wire Welded wire fabric 6" x 6" #10 (ASTM A185) b. Design mix for 2,500 pounds per square inch concrete at 28 days. (unless noted otherwise)

c. Sill anchors to be 5/8" x 12" anchor bolts embedded 9" minimum, and located 3'-0" O.C. for two story structures and 4'-0" O.C. for single story structures. Place anchors within 12" of corners. d. Reinforcing steel shall be deformed, intermediate grade, conforming

FIREPLACE AND BLOCK WORK

See plans for extent of masonry work to be included in this building OWNER is to select type of rocks or bricks prior to construction. The Masonry Contractor will design the lintel and flue as required by code.

FRAMING MATERIALS

All framing lumber shall be graded in conformance with the West Coast Lumber Inspection Bureau Grading Rules No. 16 as amended to date. Grades to be as follows unless noted otherwise on the plans:

Mudeille-foundation grade redwood or equivalent treated materials.

2. Posts and Beams- 4" & thicker D.F. #1(Para. 130-b) F.O.H.C.

Joists and rafters- 2" to 4" thick, 6" & wider construction grade Douglas Fir #2 (Para. 123-c)

Girders- construction grade Douglas Fir #1

Stude- construction grade Douglas Fir #2 (Para 121-c)

Plywood Flooring - 3/4" Douglas Fir T & G exterior plywood CDX

Sub-flooring- Douglas Fir 2" x 6" T & G utility decking

8. Exposed beams- Douglas Fir #1 select F.O.H.C. (Para. 130-b)

Exposed ceiling -select Pine T & G decking

10. Exterior decking-select "A" grade Redwood

11. Sheathing Paper-#30 Bldg. paper Kraft type or equal **GENERAL FRAMING NOTES**

shown or noted.

Floore to be level within 3/16" + all around.

Structural members shall not be cut for pipes, etc. unless specifically

3. Provide washers for all bolts.

Use aluminum or galvanized nails for all exterior siding or trim.

Use anchor hold type nails for all plywood flooring.

All plywood floors and exterior decking to be glued with P.L-400 or

Use cement coated 16^d sinker nails for framing.

Provide an 18" x 24" minimum access area to underside of home.

Provide access for bath tub trap; 20' maximum distance to all plumbing in crawl area.

All stairways to have a maximum rise of 8" and a minimum tread width of 10". Provide headroom clearance of 7'-0" min. Install handrails as required 34" to 38" above treads.

Unless indicated otherwise all headers are to be 4" x 12" D.F. #2.

Double floor joiets under all parallel wall partitions.

All required handrails are to be 36" high and constructed to withstand a horizontal force of 20 pounds per lineal foot, applied at the top of the railing. Maximum spacing in handrails shall not exceed 6".

14. Provide an attic access of a t least 22" x 30".

15. Open flame for furnace and water heater shall be 18" above floor level if they are to be located in the garage.

16. Provide combustion air for furnace and water heaters required. Combustion air intakes to be located within 6" of floor and ceiling. Provide 6" clearance between furnace and combustibles.

17. If home has an underfloor crawl area, provide 2 square feet of vent space per each 25 linear feet of exterior wall. 18. Provide fire blocking at floor, ceiling, coves, and mid-height of walls over

19. Provide 50 square inches of fixed vents per car to outside air within 6" of garage floor.

TRIM WORK

All external fascias shall be scarfed. No butt joints or spaced boards will be allowed. All trim connections should be tight and fit flush against the

All exterior redwood decking is to be installed in a craftemanlike manner. Sand all mitered corners and exposed edges. Remove all sharp edges from

WOOD BASE:

a. Shelves - 3/4" plywood or particle board with glued-on solid edge or

plastic lid. Solid pine shelves may be used as a substitute. b. Clothes Pole-Hardwood 1-3/8" diameter. Provide an intermediate

support for spans longer than 4'-0". c. Hook Strip - 1" x 4" acts also as shelf support.

UNDERLAYMENT: Use 3/8" particle board under all resilient flooring except for slab areas. Nail 3" at edge 1/2" in and 6" in field each way.

DRYWALL:

Includes a complete gypsum board wall and ceiling installation as indicated on the drawings. Wall board shall be 5/8" recessed edge type board such as manufactured by U.S. Gypsum Co. or equal. Nails 5d-13 1/2 gauge, cement coated, flathead, 15/8" long. Taping, "Perfetape" joint reinforcing tape and cement as manufactured by U.S. Gypsum Co. Use 5/8", type'X" one hour fire-rated gypsum board between garage and home where indicated on the drawings, and under stairways.

All Exterior corners to have metal edges. The best workmanship and construction practices are required. In the event the Drywall Contractor finds crooked walls or bad joints occurring in the frame structure then these should not be covered but brought to the attention of the CONTRACTOR so they may be fixed prior to covering with drywall. Special care must be taken to protect and preserve the finish wood surfaces. All doors and window sills to be trimmed flush with openings. All scraps to be hauled away within 3 days of hanging. Do not break joints at plates in stairwells, header connections, or at plates on two story high walls. All recessed kitchen lights to have clean straight lines. Keep sheetrock within 3/16" of all rough in boxes.

THERMAL INSULATION:

R-30 CLOSED CELL SPRAY POLYURETHANE FORM

12.23 HIGH DENSIM BOTTS

R-30 BATTS

RIIS BATTS

Weather-stripping: At all windows and doors, typical.

Provide 3-1/2" sound insulation between floors and in walls around all bathrooms, all bedrooms and laundry room.

SHEET METAL:

All sheet metal shall be 16 Oz. Copper unless indicated otherwise on the drawinge. Sheet metal work includes chimney saddles, gutters, downspouts, flashing, counter flashing and all other sheet metal not specifically a part of other trades. Fabrication and installation in accordance with the best workmanship standards is required. Soldered joints shall have continuous solder and be watertight. Free edges projecting from adjoining surfaces shall have metal bent on itself. Nails shall be copper.

Downspouts shall be of round design unless noted otherwise. Offsets shall be fully soldered. Connection to gutter shall be rigid and watertight. Fascia gutter to be straight with all intersection soldered. Do not use short pieces.

Provide vents to kitchen fans, bath fans, gas ranges, gas heaters, and any other areas indicated on the drawings.

ROOFING:

SPECIAL NOTES:

MATCH (E) FLAT CLAY TILE

METAL PLODEING COLOR TO BE OWNER/ARCHITECT APPROVED

DOORS:

See drawings for size, location, and type of doors needed. Interior doors shall be 13/4" solid core type unless indicated otherwise. Provide 13/4" solid core door with self-closing hinge between home and garage. Sliding doors shall have tempered glass panels with operable screen panel. Sizes as indicated on drawings. Pocket door frames to be Nordal or

SPECIAL NOTES:

WINDOWS:

See drawings for size and location of windows. Windows to be ' 🛆 or approved equal. Provide ocreens for all openings. Windows shall be straight, plumb, and true, and shall operate easily without binding.

JELD-WEN

SPECIAL NOTES:

FIXED GLASS:

See drawings for size and location of fixed glass. All glazing shall be guaranteed water tight and any glass which leaks shall be re-glazed. Size glase to meet minimum C. B. C. requirements.

SPECIAL NOTES:

SHOWER DOORS AND MIRRORS:

See drawings for size and location of shower doors and mirrors. Shower doors to have approved shatter-proof glass. Mirrors to be 1/4 " polished plate glass.

3/8" CLR FRAMELESS STAR-FIRE TEMP, GL PROVIDE SHOP DWG'S FOR APPROVAL

ociates

Helm,

HARDWARE:

An allowance of \$ 5,000 is to be made for finish hardware. This is to include all door knobs, cabinet handles, door, pulls, towel bars, paper holders, etc.

TO BE OWNER SPPROVED

EMTER OR EQUAL

PAINTING:

MATERIALS: Paint materials shall be as manufactured by the Kelly-Moore Co. or an approved equal, unless otherwise noted.

WORKMANSHIP: No painting or finishing shall be done under conditions which jeopardize the quality of the work. Surfaces to be finished shall be in proper condition to receive same. Each coat shall be applied at the proper consistency, free of runs, sags, brush marks, spattering, or any other evidence of poor workmanship. Surfaces shall be sanded smooth. Nail holes and imperfections in the wood shall be filled with material of the same color as the finish. All items having factory finish will not be painted. All other surfaces shall be painted or finished whether specifically mentioned herein or not.

EXTERIOR SURFACES: Wood siding, trim, fascia, decks, beams, railings, treat with a semi-transparent or heavy body penetrating stain unless noted otherwise. Exterior doors use two coats of exterior type spar varnish. Prime all galvanized metal and coat with exterior flat enamel.

INTERIOR SURFACES: Natural woods use semi-transparent stain and sealer. Cabinets and wood doors to be sanded, stained, sealed, and lacquered. Drywall in kitchen and bath areas to be sealed and stippled. Other drywall areas to have one coat of interior flat latex wall finish. Special care should be taken to preserve natural woodwork. Work shall be neat, clean and accurate so as not to damage finish of natural wood surfaces. All surfaces not intended to have paint shall be left in clean condition.

SPECIAL NOTES:

Tile shall be installed in accordance with the best methods and construction practices. Tiles are to be soaked before applying and joints are to be kept neat, symmetrical and all lines true and straight. Joints and tile shall be thoroughly washed. Owner to select color.

TO BE OWNER APPROVED

FLOORING MATERIALS:

An allowance of \$ 85/60 YD, is to be made for floor coverings. This is to include all resilient flooring, carpete, and wood floors used in the project. Ceramic tile floore are not included in this allowance.

SPECIAL NOTES:

KITCHEN APPLIANCES:

Furnish and install the following: ENERGY STAR COMPLIANT TO BE OWNER APPROVED

PLUMBING:

The Plumbing Contractor shall design and install a complete plumbing system as indicated on the drawings. Pipes shall be sized adequately to accommodate the fixtures served. The Plumbing Contractor shall make all necessary connections to utilities shown on plot plan and install all piping. etc. required. Stop valves should be at each fixture or appliance. Plumb system for future soft water system. Plumb for a least 4 exterior hose bibs or more if the size of the house indicates. Provide plumbing for automatic dishwasher. Provide a pressure relief valve at water heater. Provide a pressure reducer if water pressure exceeds 50 PSI.

SPECIAL NOTES:

ELECTRICAL:

The Electrical Contractor will design his system for a complete and operating system. The drawings show only the location and type of outlets. lighting, including control ewitches. No extra charges will be paid for furnishing items not specified in the plans but required by the local electrical codes. Provide doorbell as standard item. Provide all recessed, under counter, and soffit lighting if indicated on plans.

Provide an allowance of \$ 100 /perc for fixtures not specified on plans and

ELECTRICAL FIXTURES:

normal installation. **HEATING SYSTEM:**

This eystem to be designed and installed by the Contractor doing the

installation. Type of system: ELECTRIC HEAT PUMP (SEE MECHIANICAL SCHEMATICS)

GENERAL NOTES:

1. The CONTRACTOR and all sub-contractors shall guarantee and be responsible for and make good all defects due to faults of labor or materials in the work included in the contract for one year following the completion of the structure.

2. All sub-contractors will be responsible for damages caused by: poor workmanship, system failures, breakage, or their employees' irresponsibilities that cause additional time and expense to the general contractor. Sub-contractors will be charged for such items as they may occur for a period of one year after the home is completed.

2108

1114.22

RENDEL & ADDITIONS TO THE:
RENFREW RESIDENCE
4500 ARNERICH HILL ROAD - APN 537-12-01

NO STRUCTURAL MEMBER SHALL BE CUT OR NOTCHED UNLESS SPECIFICALLY SHOWN, NOTED, OR APPROVED BY THE STRUCTURAL ENGINEER. ALL WORK SHALL COMPLY WITH THE 2019 CALIFORNIA BUILDING CODE, AND ALL APPLICABLE LOCAL CODES AND ORDINANCES.

CONTRACTOR SHALL SUBMIT COPIES OF TEST AND INSPECTION REPORTS TO THE ENGINEER AND

FOUNDATIONS

BUILDING DEPARTMENT.

ALL GRADING AND SITE WORK SHALL BE DONE IN ACCORDANCE WITH THE GEOTECHNICAL REPORT BY C2 EARTH, REPORT #19953 (JULY 2022)

THE CONTRACTOR SHALL NOTIFY THE GEOTECHNICAL ENGINEER'S OFFICE A MINIMUM OF 48 HOURS PRIOR TO ALL FOOTING EXCAVATIONS TO ENSURE THAT THE ANTICIPATED SOIL AND ROCK CONDITIONS ARE CONSISTENT WITH THOSE NOTED IN THE GEOTECHNICAL REPORT. THE GEOTECHNICAL ENGINEER IS TO BE RETAINED TO PROVIDE OBSERVATION OF THE SITE PREPARATION AND RECOMPACTION, THE FOOTING EXCAVATIONS, AND THE PLACEMENT AND COMPACTION OF THE BASE ROCK.

THE GEOTECHNICAL ENGINEER SHALL PROVIDE A LETTER OF ACCEPTANCE FOR ALL FOUNDATION PREPARATION, BACKFILL, COMPACTION, ETC., PRIOR TO THE PLACEMENT OF ANY FOUNDATION CONCRETE, HE SHALL ALSO PREPARE A FINAL COMPREHENSIVE REPORT FOR THE BUILDING DEPARTMENT STATING THAT ALL WORK WAS DONE PER HIS GEOTECHNICAL REPORT, AND WHAT, IF ANY CHANGES WERE DONE DURING FOUNDATION CONSTRUCTION THAT WERE DIFFERENT FROM THE REVIEWED GEOTECHNICAL REPORT.

THE CONTRACTOR SHALL DIRECTLY CONTACT THE GEOTECHNICAL ENGINEER TO COORDINATE SITE VISITS, OBSERVATIONS, TESTS, ETC. THAT ARE REQUIRED BY THEIR OFFICE.

EXCAVATIONS SHALL CONFORM AS NEARLY AS POSSIBLE TO THE NEAT LINES REQUIRED BY THE SIZE AND SHAPE OF THE FOOTINGS SHOWN ON THE DRAWINGS. FOOTINGS SHALL BE CAST IN EARTH TRENCHES WITHOUT FORMING. OVER EXCAVATION SHALL BE BACK FILLED WITH CONCRETE, WET TRENCHES IMMEDIATELY BEFORE PLACING CONCRETE.

IF FILL IS REQUIRED, IT SHALL BE COMPACTED WITH OBSERVATION AND COMPACTION TESTING PERFORMED BY A REPRESENTATIVE OF THE GEOTECHNICAL ENGINEER. PROVIDE NON-EXPANSIVE FILL AND PERFORM GRADING IN ACCORDANCE WITH GEOTECHNICAL REQUIREMENTS.

CONTRACTOR SHALL BE RESPONSIBLE FOR ALL TEMPORARY SLOPES, TRENCHES, AND FOUNDATIONS EXCAVATED AT THE SITE AND THE DESIGN OF ANY REQUIRED TEMPORARY SHORING. SHORING, BRACING, AND BENCHING SHALL BE PERFORMED BY THE CONTRACTOR IN ACCORDANCE WITH THE STRICTEST GOVERNING SAFETY STANDARDS.

ALL FILL AREAS UNDER BUILDING AND PARKING AREAS SHALL BE COMPACTED TO MINIMUIM 90% DENSITY AND CERTIFIED BY A GEOTECHNICAL ENGINEER. PROVIDE NON-EXPANSIVE FILL AND PERFORM GRADING IN ACCORDANCE WITH GEOTECHNICAL REPORT.

DEEP EXCAVATIONS SHALL BE CUT AND SUPPORTED PER DIRECTION OF GEOTECHNICAL ENGINEER. DRILLED PIER HOLES SHALL BE INSPECTED BY THE GEOTECHNICAL ENGINEER, WHO WILL DETERMINE THEIR FINAL DEPTH. NOTIFY STRUCTURAL ENGINEER BEFORE SHORTENING ANY PIERS, ALL GROUND WATER SHALL BE REMOVED FROM THE PIER HOLES PRIOR TO PLACING CONCRETE.

FOOTING EXCAVATIONS SHALL BE OBSERVED BY THE PROJECT GEOTECHNICAL ENGINEER PRIOR TO PLACING REINFORCING STEEL.

FOOTINGS SHALL NOT HAVE PLUMBING, CONDUIT, OR OTHER PENETRATIONS WITHOUT THE PRIOR APPROVAL BY GEORGE REYNOLDS AND ASSOCIATES, STRUCTURAL ENGINEERS. SUPPLEMENTAL REINFORCING AND / OR OTHER MODIFICATIONS SHALL BE REQUIRED FOR FOOTING PENETRATIONS PER THE DIRECTION OF GEORGE REYNOLDS AND ASSOCIATES, STRUCTURAL ENGINEERS.

DO NOT BACK FILL STEM WALL / PIERS OR REMOVE SHORING UNTIL 15% DESIGN STRENGTH HAS BEEN

FOOTINGS SHALL NOT BE EXPOSED AT THE LOWEST FINISH GRADE.

DIMENSIONS

DIMENSIONS, UNLESS OTHERWISE SHOWN, ARE TO THE CENTER LINE OF COLUMNS AND BEAMS OR ROUGH

CONTRACTOR SHALL VERIFY, AND BE RESPONSIBLE FOR, ALL DIMENSIONS AND CONDITIONS ON THE JOB. NOTIFY THIS OFFICE OF ANY VARIATIONS FROM THE DIMENSIONS AND CONDITIONS SHOWN ON THESE DRAWINGS PRIOR TO ANY CONSTRUCTION.

CONCRETE

CONCRETE WORK SHALL CONFORM TO ALL REQUIREMENTS OF ACI 318-(LATEST EDITION), "BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE", EXCEPT AS MODIFIED BELOW:

ALL CONCRETE SHALL BE REGULAR WEIGHT HARD ROCK, AND HAVE A MINIMUM 28-DAY COMPRESSIVE STRENGTH OF 3000 PSI (FOR QUALITY CONTROL ONLY). MAXIMUM SLUMP SHALL BE FOUR INCHES. USE TYPE II CEMENT PER ASTM CI50. MAXIMUM AGGREGATE SIZE SHALL BE 3/4 INCH.

THE WATER / CEMENT RATIO FOR ALL CONCRETE POURED DIRECTLY ONTO THE VAPOR BARRIER SHALL BE 0.45

CONCRETE FOR SITE FLATWORK SHALL HAVE A MINIMUM OF 2500 PSI, 28-DAY COMPRESSIVE STRENGTH. SPECIAL INSPECTION IS NOT REQUIRED FOR CONCRETE OR SITE FLATWORK, UNLESS NOTED

PLACE CONCRETE IN LAYERS NOT EXCEEDING 18 INCHES IN DEPTH. FREE FALL OF CONCRETE SHOULD NOT EXCEED 5 FEET IN UNEXPOSED WORK NOR 3 FEET IN EXPOSED WORK. PLACE CONCRETE IN LEVEL LIFTS THROUGHOUT FORM WORK RECEIVING THE MATERIAL.

ALL CONCRETE WORK SHALL BE CAST-IN-PLACE UNLESS NOTED OTHERWISE. ALL FORMS SHALL BE THOROUGHLY MOISTENED BEFORE CONCRETE IS PLACED.

BEFORE DEPOSITING NEW CONCRETE ON OR AGAINST SET CONCRETE, CLEAN, SATURATE, AND SLUSH A COAT OF CONCRESIVE LIQUID IOOILPL BY MASTER BUILDERS OVER THE EXISTING CONCRETE, PER MANUFACTURER'S INSTRUCTIONS.

CONSTRUCTION JOINT CONTACT SURFACES SHALL BE ROUGHENED TO 1/4". CONSOLIDATE ALL CONCRETE BY VIBRATION, SPADING, RODDING OR FORKING. THOROUGHLY WORK

CONCRETE AROUND REINFORCEMENT AND EMBEDDED ITEMS. ELIMINATE ALL AIR OR STONE POCKETS WHICH MAY CAUSE HONEYCOMBING, PITTING OR PLANES OF WEAKNESS. OPERATE VIBRATORS ONLY WITH EXPERIENCED PERSONNEL. LIMIT DURATION OF VIBRATION TO THAT

SEGREGATION, DO NOT INSERT VIBRATOR INTO LOWER COURSES THAT HAVE BEGUN TO SET, UNDER NO

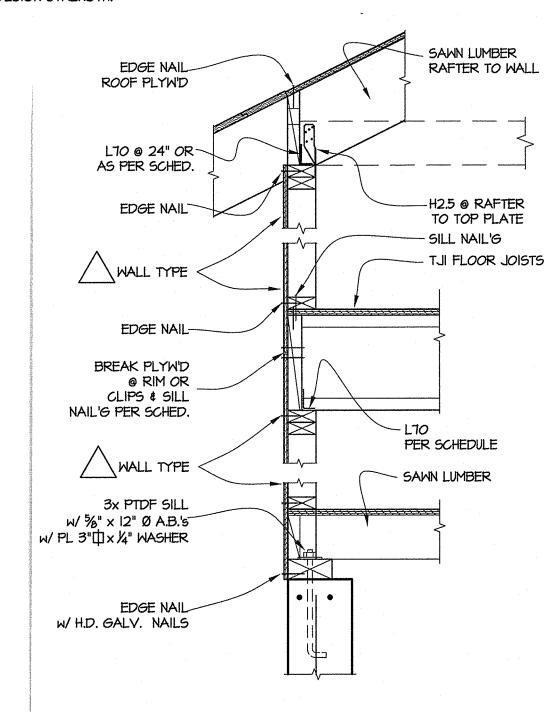
NECESSARY TO PRODUCE SATISFACTORY CONSOLIDATION WITHOUT CAUSING OBJECTIONABLE

CONDITION IS VIBRATOR TO BE PLACED AGAINST REINFORCING STEEL. MINIMUM ANCHOR BOLT IS 5/8" DIA. X 12" @ 48" O.C. WITH A MINIMUM OF TWO BOLTS PER SILL PIECE, WITHIN 12" OF EACH END, BUT NO CLOSER THAN 4" FROM EACH END. ANCHOR BOLTS LESS THAN 1-1/2" FROM SILL EDGE SHALL BE REPLACED WITH EPOXY SET ANCHOR BOLT (EMBED 6" MIN). PROVIDE PL 3" SQUARE X 以" WASHER WITH ALL ANCHOR BOLTS. ALL BOLTS & PLATES SHALL BE HOT DIP

SET ALL POST BASES FLUSH WITH TOP OF CONCRETE.

GALVANIZED. MINIMUM ANCHOR BOLT EMBEDMENT SHALL BE 8 INCHES.

EXPANSION ANCHOR BOLTS AND POWER DRIVEN NAILS SHALL NOT BE INSTALLED UNTIL CONCRETE HAS REACHED DESIGN STRENGTH.



TYPICAL SHEAR TRANSFER DETAILS

REINFORCING STEEL

FURNISH AND ERECT REINFORCING STEEL IN ACCORDANCE WITH THE ACI MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES.

USE DEFORMED REINFORCED BAR PER ASTM A615. FOR #3 BAR AND SMALLER, USE GRADE 40. FOR #4 BAR AND LARGER, USE GRADE 60.

ALL REINFORCEMENT SHALL BE CONTINUOUS, STAGGER SPLICES IN ADJACENT BARS. CONTACT SPLICES SHALL LAP 40 DIAMETERS MINIMUM.

HOLD REINFORCEMENT IN ITS TRUE HORIZONTAL AND / OR VERTICAL POSITION WITH DEVICES SUFFICIENT TO PREVENT DISPLACEMENT.

REINFORCING STEEL SHALL NOT BE WELDED. NO EXCEPTIONS.

SUPPORT HORIZONTAL STEEL AT BOTTOM OF FOOTING ON MORTAR BLOCKS. MINIMUM 3-INCH CLEARANCE FOR SURFACES POURED AGAINST EARTH, 2" CLEARANCE AT FORMED SURFACES EXPOSED TO EARTH, AND MINIMUM 1.5 INCH U.N.O.

STRUCTURAL STEEL

ALL STRUCTURAL STEEL SHALL BE FABRICATED AND ERECTED IN CONFORMANCE WITH THE AISC MANUAL OF STEEL CONSTRUCTION (LATEST EDITION).

ALL STRUCTURAL STEEL WIDE FLANGE SHAPES SHALL CONFORM TO ASTM A-572 GRADE 50, WITH SPECIAL REQUIREMENTS PER AISC TECHNICAL BULLETIN #3, DATED MARCH 1997, ALL STEEL CHANNELS, ANGLES, PLATES, AND BARS SHALL CONFORM TO ASTM A-36. ALL TUBE COLUMNS SHALL CONFORM TO ASTM A-500, GRADE B. ALL PIPE COLUMNS SHALL CONFORM TO ASTM A-53 GRADE B.

THE ALIGNMENT OF COLUMNS SHALL BE WITHIN THE TOLERANCES SPECIFIED IN THE AISC CODE OF STANDARD PRACTICE FOR STEEL BUILDINGS AND BRIDGES.

PROVIDE SPECIAL INSPECTION FOR ALL WELDING CONFORMING TO C.B.C SECTION 1704.3 ALL WELDED

MOMENT CONNECTIONS SHALL BE INSPECTED AND NONDESTRUCTIVE TESTED AS PER C.B.C. SECTIONS 1705.5.2 AND SECTION 1703. ALL WELDING SHALL BE MADE BY ETOXX LOW HYDROGEN ELECTRODES. WELD SIZES SHOWN ARE MINIMUM AND MAY HAVE TO BE INCREASED ACCORDING TO THE LIMITATIONS STATED IN THE 1989 AISC SECTION J2.

METAL PRIMER SHALL CONFORM WITH FEDERAL SPECIFICATION TT-P-645A FOR SHOP COAT PAINT. APPLY ONE COAT TO ALL SURFACES EXCEPT AT AREAS OF FIELD WELDING, HIGH STRENGTH BOLTING

- AND WHERE EMBEDDED IN CONCRETE, FIELD PAINT ALL EXPOSED FIELD WELDS. ALL ANCHOR BOLTS AND THREADED RODS SHALL BE A307 STEEL, U.N.O.
- ALL BOLTED STEEL CONNECTIONS SHALL BE MADE WITH A325N BOLTS U.N.O.
- ALL NUTS SHALL BE INSTALLED OVER PLATE WASHERS OR HEAVY OUT WASHERS.
- ALL STRUCTURAL STEEL TO BE EMBEDDED IN CONCRETE OR TO RECEIVE FIREPROOFING MATERIAL SHALL BE CLEAN AND FREE OF PAINT, OIL, OR DIRT.
- PROVIDE ENGINEER WITH STEEL SHOP DRAWINGS TO AVOID ERRORS.
- PROVIDE WELDERS CERTIFIED FOR THE TYPE OF WELD CALLED FOR ON DRAWING AS PER CALIFORNIA BUILDING CODE (C.B.C. 1704.3) REQUIREMENTS.

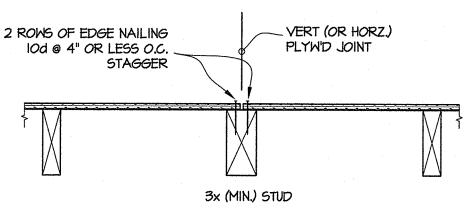
ALL WELDING SHALL BE ELECTRIC ARC PER AWS DI.I LATEST EDITION, WITH ETOXX ELECTRODE.

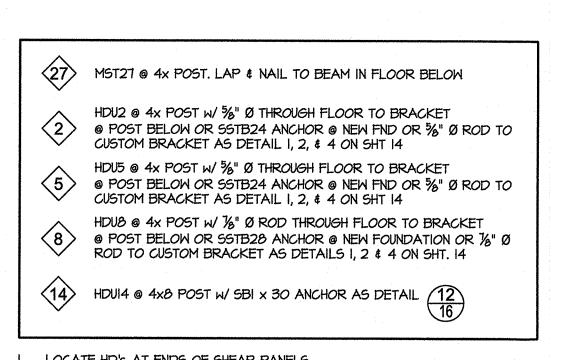
		REFER	TO SHEAR	TRANSFER D	DETAILS		
SHEAR WALL	PLYW'D	ED6E	FIELD	SHEAR T	RANSFER	BLK'G @	ANCHOR
TYPE	ILIND	NAIL'G	NAIL'G	SILL NAIL	LTO CLIPS	FL00R	BOLTS
\triangle	児" CDX	lOd @ 6"	lOd ⊛ l2"	16d @ 4"	24" O.C.	2x	%" Ø⊕ 48"
<u>^</u> 2*	が CDX	lOd @ 4"	lOd @ 12"	l6d @ 3"	16" O.C.	4x	%" Øø 32"
<u>3</u> *	た" CDX	10d ⊜ 3"	l0d ⊕ l2"	(2) × 16d @ 4"	12" O.C.	4x	%" Ø⊜ 24"
<u></u>	及" CDX	10d @ 2"	lOd @ l2"	(2) x l6d @ 4"	10" O.C.	4x	%" Ø⊕ I&"
<u>\$</u> *	¾" CDX	10d ø 2°	10d @ 12"	SEE DETA	AILS ——		 →

- BLOCK ALL EDGES OF PLYW'D *- PROVIDE 3x (MIN.) STUDS & BLK'G @ ALL PLYW'D BUTT JOINTS AS PER DETAIL 5 - DO NOT BREAK PLYW'D SKIN BY OVERDRIVING NAILS

- PRE-DRILL AS REQ'D TO AVOID SPLITTING SILLS, ETC. - SHEAR TRANSFER BLOCK'G & CLIPS MAY BE OMITTED IF PLYWD @ SHEAR WALL IS CONTINUOUS PAST FLOOR FRAMING (I.E. @ EXTERIOR WALLS)







LOCATE HD'S AT ENDS OF SHEAR PANELS 2. EDGE NAIL SHEAR WALL PLYW'D TO ALL POSTS @ HD's 3. HARDMOUNT ANCHORS TO FORMWORK PRIOR TO CONCRETE POUR 4. USE SIMPSON CO. "SET-XP" EPOXY OR APPROVED EQUAL (AS REQ'D)

TIMBER

ALL WOOD BOLT CONNECTIONS SHALL HAVE A WASHER UNLESS A STEEL PLATE IS SPECIFIED. NO COUNTERSINKING PERMITTED WITHOUT ENGINEER'S APPROVAL.

LUMBER SHALL CONFORM TO GRADING RULES OF WWPA, W.C.L.I.B. RULES #17, OR OTHER PER C.B.C. 2303.I. MAXIMUM MOISTURE CONTENT SHALL NOT EXCEED 19%.

ALL EXPOSED JOISTS, BEAMS, & GLULAMS SHALL HAVE A PRESSURE PRESERVATIVE TREATMENT UNLESS ALL-HEART REDWOOD IS SPECIFIED.

ALL FIELD CUTS AND DRILLED HOLES FOR EXPOSED MEMBERS SHALL BE TREATED IN ACCORDANCE

WITH AMERICAN WOOD PRESERVERS ASSOCIATION AWPA M4.

LUMBER SHALL BE GRADE MARKED DOUGLAS FIR: JOISTS, LEDGERS, PURLINS, AND BEAMS NO.1 OR BETTER RAFTERS AND POSTS NO.I OR BETTER STUDS, SILLS, & PLATES NO.2 OR BETTER

ALL SILLS AND FRAMING MEMBERS IN CONTACT WITH CONCRETE SHALL BE PRESSURE-TREATED DOUGLAS FIR. THE PRESERVATIVE TREATMENT UTILIZED SHALL BE PERFORMED IN ACCORDANCE WITH AWPA STANDARD C-2.

THE MANUFACTURE AND FABRICATION OF ANY STRUCTURAL GLUED LAMINATED TIMBER SHALL BE UNDER THE SUPERVISION OF QUALIFIED PERSONNEL. PROVIDE APA-EWS CERTIFICATES TO THE APPLICABLE BUILDING INSPECTOR.

PROVIDE A.I.T.C. CERTIFICATE WITH ALL GLULAM BEAMS. PROVIDE NO CAMBER WITH GLULAM BEAMS UNLESS NOTED OTHERWISE. PROVIDE (24F-V4) STRESS GRADE UNLESS NOTED OTHERWISE. ALL HANGERS, ETC. SHALL BE ATTACHED DIRECTLY TO THE FRAMING MEMBERS. DO NOT NAIL HARDWARE OVER PLYWOOD OR SHIMS, U.N.O.

NOTES FOR PLYWOOD APPLY TO SUBSTITUTED OSB PANELS. ALL PLYWOOD SHEATHING APPLIED TO WALLS, FLOORS, AND / OR ROOFS SHALL HAVE A 1/2-INCH GAP

OSB PANELS MAY BE USED IN LIEU OF PLYWOOD FOR GREEN POINTS OR ECONOMIC REASONS, ALL

BETWEEN ADJACENT SHEETS. TYPICAL PLYWOOD NAILING: SET ALL NAIL GUNS TO AVOID BREAKING THE TOP PLYWOOD LAYER. USE A HAMMER TO SEAT NAILS FLUSH TO THE PLYWOOD. NAILS THAT BREAK THE SURFACE OF THE

PLYWOOD ARE UNACCEPTABLE AND REQUIRE SUPPLEMENTAL NAILS. NAILS SHALL BE 3/" MINIMUM FROM THE PLYWOOD EDGES AND SHALL BE INSTALLED PERPENDICULAR TO THE PLYWOOD SURFACE. NAILS LOCATED TOO CLOSE TO A PANEL EDGE ARE UNACCEPTABLE AND REQUIRE SUPPLEMENTAL NAILS. NUMEROUS NAILING VIOLATIONS WILL VOID THE SHEET AND REQUIRE THE PANEL TO BE REPLACED. ROOF PLYWOOD SHALL BE OF THICKNESS AS PER PLANS WITH A MIN. A.P.A. RATING OF 24 / O U.N.O.

MIN. NAILING IS TO BE IOD @ 6" O.C. INTERMEDIATE FRAMING U.N.O. UNSUPPORTED PLY EDGES SHALL BE SUPPORTED BY BLOCKING OR PLYWOOD CLIPS.

FLOOR AND DECK PLYWOOD SHALL BE 3/4" WITH A MIN. A.P.A. RATING OF 40 / 20, U.N.O. WHERE NOTED ON THE PLANS, DECK PLYWOOD SHALL HAVE A C-C EXTERIOR EXPOSURE RATING. OTHERWISE, EXPOSURE I CDX PLYWOOD SHALL BE USED. MIN. NAILING IS TO BE IOd @ 6" O.C. EACH EDGE, EACH SHEET, AND IOD @ IO" O.C. AT INTERMEDIATE FRAMING U.N.O. UNSUPPORTED PLYWOOD EDGES SHALL BE EITHER T&G OR SUPPORTED BY BLOCKING, FLOOR PLYWOOD SHALL BE GLUED TO SUPPORTING JOISTS AND BLOCKING.

ALL ROOF AND FLOOR PLYWOOD SHALL BE APPLIED WITH THE FACE GRAIN ORIENTED PERPENDICULAR TO THE DIRECTION OF THE SUPPORTIVE FRAMING U.N.O.

ALL FLOORS AND ROOFS SHALL BE CONSTRUCTED WITH PLYWOOD SHEETS NOT LESS THAN FOUR FEET BY EIGHT FEET, EACH PANEL SHALL BE AT LEAST 24 INCHES IN WIDTH, THE ADJACENT SHEET MAY HAVE TO BE TRIMMED TO ACCOMMODATE THIS REQUIREMENT. PANELS LESS THAN 24 INCHES IN WIDTH SHALL HAVE ALL EDGES SUPPORTED BY EITHER FRAMING MEMBERS OR BLOCKING.

ALL ROOF OR FLOOR FRAMING SHALL BE 3-INCH NOMINAL OR WIDER AND NAILS SHALL BE STAGGERED WHERE DIAPHRAGM NAILS ARE SPACED 2 INCHES, 2 ½ AND 3 INCHES ON CENTER AS PER TABLE 2306.2.1(1) OF THE 2019 C.B.C.

TO BE TRIMMED TO ACCOMMODATE THIS REQUIREMENT. ALL SHEAR WALL PANEL EDGES SHALL BE BACKED WITH 3x MATERIAL WHERE DESIGNATED, PER C.B.C. TABLE 2306.3 PLYWOOD SHEAR WALL HOLDOWN LOCATIONS: THE NEW HOLDOWN LOCATIONS SHOWN ON THE PLANS ARE APPROXIMATE. THE HOLDOWNS AND HOLDOWN STUDS SHALL BE LOCATED AS CLOSE TO THE

MATERIAL. EACH PANEL SHALL BE AT LEAST 24 INCHES IN WIDTH -- THE ADJACENT SHEET MAY HAVE

SHEAR WALL ENDS AS POSSIBLE, U.N.O. HOLDOWNS AND HOLDOWN STUDS SHALL NOT BE LOCATED GREATER THAN 12-INCHES FROM THE END OF THE SHEAR WALL, U.N.O. ALL SOLID-SAWN RECTANGULAR LUMBER BEAMS, RAFTERS AND JOISTS SHALL BE SUPPORTED LATERALLY TO PREVENT ROTATION OR LATERAL DISPLACEMENT IN ACCORDANCE WITH N.D.S. 3.3.3

THE EDGES OF ALL SHEAR WALL PLYWOOD PANELS SHALL BE BLOCKED WITH A MINIMUM OF 2x

ROOF JOISTS OR RAFTERS OF MORE THAN 8-INCH DEPTH SHALL BE PROVIDED WITH BRIDGING EVERY IO FEET. BRIDGING SHALL BE IN ACCORDANCE WITH N.D.S. 3.3.3

ALL BLOCKING SHALL BE FIRMLY ATTACHED TO THE SUPPORTING FRAMING WITH TOE NAILS OR FRAMING CLIPS.

USE COMMON NAILS. WHERE NOT SPECIFIED OTHERWISE, THE NAILING REQUIREMENTS OF CBC PERTAIN.

USE STRONG-TIE METAL CONNECTORS BY SIMPSON CO., OR APPROVED EQUAL. PROVIDE NAILING AS PER SIMPSON CO. SPECIFICATIONS.

ALL FRAMING HARDWARE AND FASTENERS EXPOSED TO WEATHER OR AT PRESSURE TREATED LUMBER SHALL BE HOT-DIPPED GALVANIZED 2.0 oz/S.F, STAINLESS STEEL OR SILICON BRONZE.

BOLT HOLES SHALL BE NOMINAL DIAMETER OF BOLT PLUS 1/16 INCH. ALL WOOD BOLT CONNECTIONS SHALL HAVE A WASHER UNLESS STEEL PLATE IS SPECIFIED. DO NOT COUNTERSINK. TYPICAL TOP PLATE SPLICE: MINIMUM LAP SHALL BE FOUR FEET LONG NAILED WITH 16d @ 4" O.C.

PROVIDE DOUBLE JOIST UNDER ALL PARALLEL WALLS U.N.O.

UNLESS NOTED OTHERWISE.

FOR SHEAR WALL NAILING, ANCHOR BOLTS, AND SHEAR TRANSFER NAILING, SEE SHEAR WALL SCHEDULE.

MANUFACTURED WOOD PRODUCTS SUPPLIED BY (WEYERHAEUSER ILEVEL (OR APPROVED EQUAL) SHALL BE "SILENT FLOOR SYSTEM" TJI FLOOR JOISTS, (1.5E & 1.3E) TIMBERSTRAND LSL BEAMS, (1.9E) MICROLLAM LVL, AND (2.0E) PARALLAM PSL IN THE PLANS. PROVIDE ALL BLOCKING, BRACING, WEB STIFFENER'S & FILLER BLOCKS @ WEBS AS REQUIRED BY MANUFACTURER & BUILDING CODE FOR A COMPLETE STRUCTURAL SYSTEM.

GLULAM BEAMS (24 F-V4) OF WIDTHS 3 ½" & 5 ½" SHALL BE "X-BEAMS" AS SUPPLIED BY ROSBORO SPRINGFIELD, OR. PHONE: 1-888-323-2304, info@rosboro.com OR APPROVED EQUAL

EPOXY CONNECTIONS

USE "SIMPSON" SET-XP EPOXY FOR ALL EPOXYSET THREADED RODS, BOLTS, AND / OR REINFORCING BARS SET INTO CONCRETE. EPOXY INJECTION SHALL BE PERFORMED IN ACCORDANCE WITH THE MANUFACTURER'S PROCEDURES, PROVIDE SPECIAL INSPECTION, DURING THE INSTALLATION OF THE ANCHORS, IN ACCORDANCE WITH SECTION 1704.4 OF THE 2019 C.B.C.

"SIMPSON" SET ET, ETF, AND / OR ETR EPOXY SHALL NOT BE USED IN SUBSTITUTION FOR "SIMPSON" SET-XP EPOXY. THE USE OF "SIMPSON" ET, ETF, AND / OR ETR EPOXY IS UNACCEPTABLE AND WILL BE

OMISSIONS

CONTRACTOR SHALL FAMILIARIZE HIMSELF / HERSELF WITH ALL CONDITIONS OF THE PROJECT AND BE RESPONSIBLE FOR ALL WORK REQUIRED TO COMPLETE THE PROJECT EVEN IF NOT SPECIFICALLY MENTIONED ON DRAWINGS.

IN THE EVENT THAT CERTAIN FEATURES OF THE WORK ARE NOT FULLY SHOWN ON THE DRAWINGS OR CALLED FOR IN THE GENERAL NOTES, THEN THEIR CONSTRUCTION SHALL BE OF THE SAME CHARACTER AS FOR SIMILAR CONDITIONS THAT ARE SHOWN OR CALLED FOR.

SPECIAL INSPECTIONS & TESTING

SPECIAL GRADING, EXCAVATION, AND FILLING PERIODIC INSPECTION - PER GEOTECHNICAL ENGINEER SUBGRADE TESTS □ COMPACTION TESTS

- STRUCTURAL WELDING PERIODIC VISUAL INSPECTION 図 FILLET WELDS ≤%" CONTINUOUS VISUAL INSPECTION ☑ ALL WELDING > 5/16"
- REINFORCING STEEL NOT PERMITTED SHEAR WALL NAIL'G:
- ☑ ALL WALLS NAILED @ 4" O.C. OR LESS

A. SPECIAL INSPECTIONS DO NOT NEGATE THE C.B.C. REQUIREMENTS FOR THE APPLICABLE BUILDING DEPARTMENT INSPECTIONS.

REFER TO THE GENERAL NOTES FOR MORE INFORMATION.

SITE VISITS BY G. REYNOLDS AND ASSOC. WILL ONLY BE CONSIDERED "SPECIAL INSPECTIONS" WHEN ALLOWED BY THE BUILDING DEPT. (LIMITED TO INSPECTIONS OF EPOXY SET ANCHORS AND NAILING OF PLYWOOD SHEAR WALLS) AND ARRANGED WITH THE OWNER / CONTRACTOR PRIOR TO THE SITE VISIT.

40 PSF

PROJECT DESIGN INFORMATION:

PIER & GRADE BEAM (SEE REPORT) PER GEOTECH. REPORT WIND AND EARTHQUAKE DESIGN DATA PURSUANT TO 2019 CBC SECTIONS 1603.1.4 AND 1603.1.

BASIC WIND SPEED: IIO MPH WIND EXPOSURE: RISK CATEGORY EISMIC IMPORTANCE FACTOR 0.888

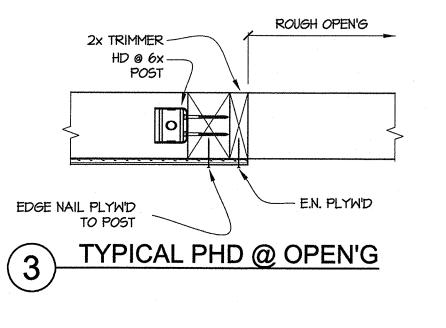
ALLOWABLE SOIL BEAR'S CAPACITY:

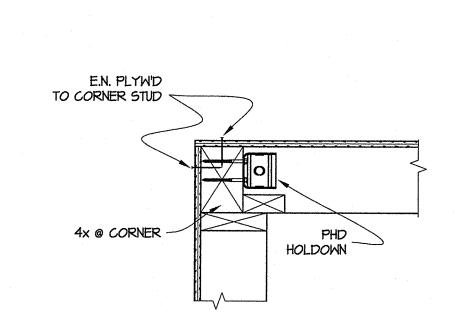
ROOF LIVE LOAD:

FLOOR LIVE LOAD:

SITE CLASS 1.958 SITE DESIGN CATEGORY DESIGN BASE SHEAR BEDROOM ADD. 29300 LBS MUSIC / SHOP 12,850 LBS CABANA 6,100 LBS

BASIC SEISMIC FORCE-RESISTING SYSTEM: LIGHT FRAMED WALLS SHEATHED WITH WOOD STRUCTURAL PANELS





DETAIL IS SYMMETRICAL ABOUT CL OF OPEN'G (II) 10d , 10d @ 2" O.C. 2'-0" MIN. 12" MIN. EDGE NAIL TO HEADER CSI6 STRAP_ OVER PLYW'D OPEN'G PLYW'D -NOT SHOWN CSI6 STRAP_ OVER PLYW'D EDGE NAIL PLYW'D TO KING STUD # BLK'G

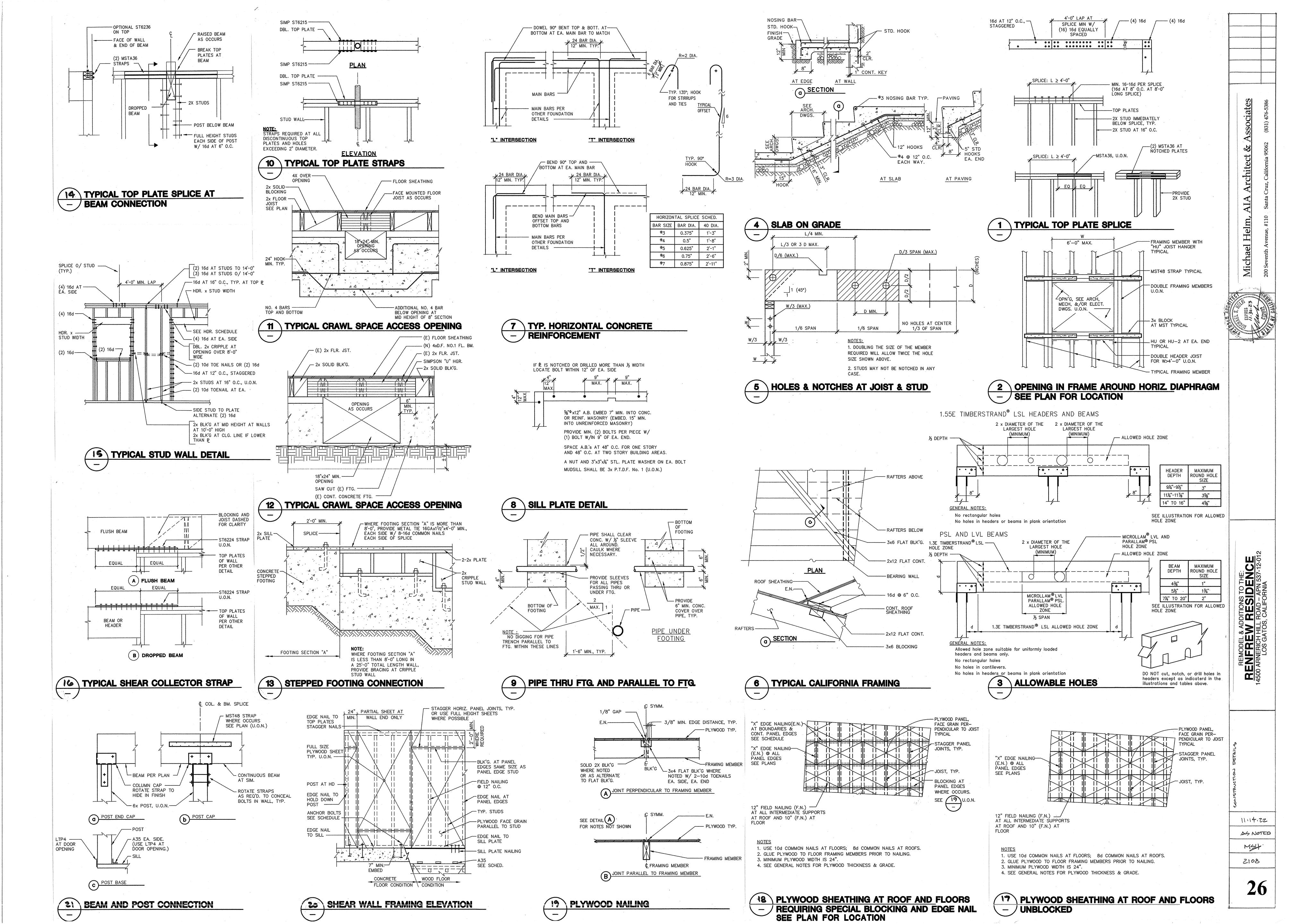
REINFORCED OPEN'G

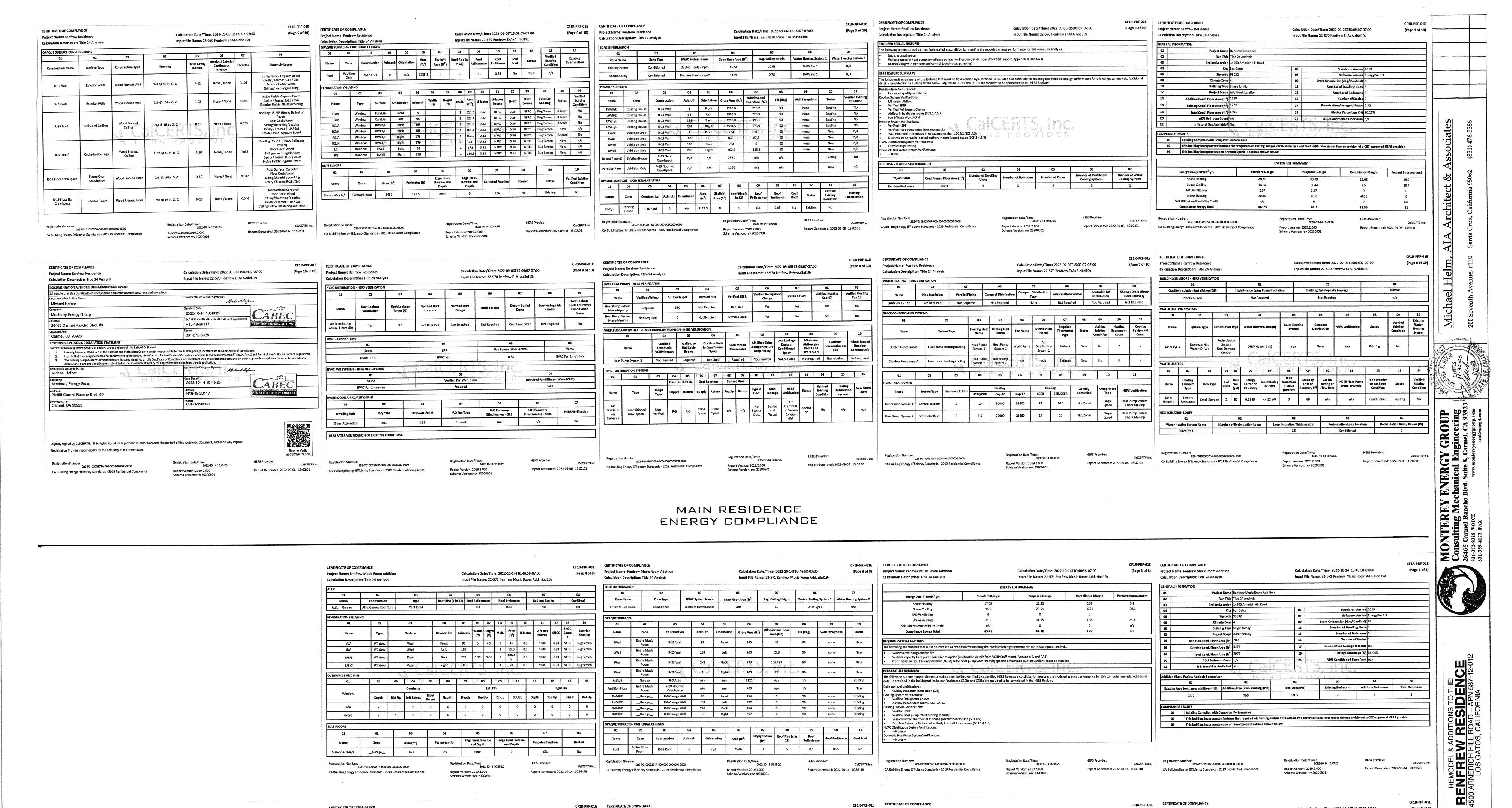
Micha

11.14.22 NTS

2108/2221

HOLDOWN SCHEDULE TYPICAL PHD @ CORNER





Continuous U-factor R-value Inside Finish: Gypsum Board Cavity / Frame: no insul. / 2x4 Exterior Finish: 3 Coat Stucco R-0 Garage Wall None / None Inside Finish: Gypsum Board None / None 2x6 @ 16 in. O. C. Cavity / Frame: R-23 / 2x6 Exterior Finish: All Other Siding Roofing: Light Roof (Metal Tile) Tile Gap: present 2x12 @ 16 in. O. C. R-38 None / None Siding/sheathing/decking Cavity / Frame: R-38 / 2x12 Inside Finish: Gypsum Board Roofing: Light Roof (Metal Tile) Tile Gap: present None / None Roof Deck: Wood Attic Roofs 2x4 @ 24 in. O. C. Attic Garage Roof Cons Siding/sheathing/decking Cavity / Frame: no insul. / 2x Ceilings (below Wood Framed attic) Ceiling Cavity / Frame: no insul. / 2x4 R-0 None / None 2x4 @ 24 in. O. C. R-O Attic Inside Finish: Gypsum Board Floor Deck: Wood R-19 Floor No R-19 None / None Interior Floors Wood Framed Floor 2x12 @ 16 in. O. C. Siding/sheathing/decking Crawlspace Cavity / Frame: R-19 / 2x12 Celling Below Finish: Gypsum Boar

Registration Date/Time:

Report Version: 2019.2.000

Schema Version: rev 20200901

2022-10-14 10:45:20

Report Version: 2019.2.000

Schema Version: rev 20200901

Calculation Date/Time: 2022-10-14T10:46:58-07:00

Input File Name: 22-571 Renfrew Music Room Add..ribd19x

CalCERTS Inc.

CA Building Energy Efficiency Standards - 2019 Residential Compliance

222-P010203371A-000-000-0000000-0000

CA Building Energy Efficiency Standards - 2019 Residential Compliance

CERTIFICATE OF COMPLIANCE

PAQUE SURFACE CONSTRUCTIONS

Project Name: Renfrew Music Room Addition

Report Generated: 2022-10-14 10:39:48

n/a

Solar Heating System | Compact Distribution | HERS Verification

or Ambient Condition

Garage

Central DHW Distribution

Report Generated: 2022-10-14 10:39:48

Heat Recover

CalCERTS Inc.

NEEA Heat Pump

T2 RH37515 (50

Brand or Model

Calculation Date/Time: 2022-10-14T10:46:58-07:00

Water Heater Name (#)

DHW Heater 1 (1)

01 02 03 04 05 06 07 08 09 10 11 12 13 14

Registration Date/Time:

Report Version: 2019.2.000

Schema Version: rev 20200901

04

Not Required

Standby 1st Hr.
Loss or Rating or Recovery Eff Flow Rate

2022-10-14 10:45:20

Input File Name: 22-571 Renfrew Music Room Add..ribd19x

11.14.22 NTS

MOST MEG CalCERTS Inc. Report Generated: 2022-10-14 10:39:48 2108

Report Generated: 2022-10-14 10:39:48

(Page 5 of 8)

Registration Date/Time: 2022-10-14 10:45:20

Report Version: 2019.2.000

Schema Version: rev 20200901

Report Version: 2019.2.000

Schema Version: rev 20200901

Calculation Date/Time: 2022-10-14T10:46:58-07:00

Name

02 03 04 05 06 07 08 09 10 11

System Type Number of Units Heating Cooling Zonally Compressor HSPF/COP Cap 47 Cap 17 SEER EER/CEER Controlled Type

Verified SEER

Not Required

Not Required

Input File Name: 22-571 Renfrew Music Room Add..ribd19x

05 | 06 | 07 | 08 | 09 | 10

Verified HSPF

Wall Mount
Thermostat

Air Filter Sizing & Low Leakage Ducts in Conditioned Space SC3.3.3.4.1

Air Filter Sizing & Low Leakage Ducts in Conditioned Space SC3.3.3.4.1

Continuously

Setback

CA Building Energy Efficiency Standards - 2019 Residential Compliance

Not Required

222-P010203371A-000-000-0000000-0000

CA Building Energy Efficiency Standards - 2019 Residential Compliance

1-hers-htpump

CERTIFICATE OF COMPLIANCE

Report Generated: 2022-10-14 10:39:48

Not Zonal Single Heat Pump System
Speed 1-hers-htpump

Yes

Verified Heating Verified Heating Cap 47 Cap 17

Report Generated: 2022-10-14 10:39:48

CA Building Energy Efficiency Standards - 2019 Residential Compliance

Domestic Hot Water Standard Distribution

of Units Vol. Factor or Units (gal) Efficiency | Input Rating Insulation | R-value (Int/Ext) |

Not Required

CERTIFICATE OF COMPLIANCE

Project Name: Renfrew Music Room Addition

BUILDING ENVELOPE - HERS VERIFICATIO

NATER HEATING - HERS VERIFICATION

Registration Number

DHW Sys 1 - 1/1 Not Required

222-P010203371A-000-000-0000000-0000

CA Building Energy Efficiency Standards - 2019 Residential Compliance

Registration Number: 222-P010203371A-000-000-0000000-0000

CERTIFICATE OF COMPLIANCE

Michael Hafner

Monterey Energy Group

Carmel, CA 93923

Responsible Designer Name: Michael Hafner

City/State/Zip: Carmel, CA 93923

Monterey Energy Group

Address: 26465 Carmel Rancho Blvd. #8

Registration Provider responsibility for the accuracy of the information.

CA Building Energy Efficiency Standards - 2019 Residential Compliance

Registration Number: 222-P010203371A-000-000-0000000-0000

26465 Carmel Rancho Blvd. #8

RESPONSIBLE PERSON'S DECLARATION STATEMEN

The building design features or system design features identified on this Certificate of Comp

Project Name: Renfrew Music Room Addition

CA Building Energy Efficiency Standards - 2019 Residential Compliance

Report Version: 2019.2.000

Schema Version: rev 20200901

2022-10-14 10:45:20

2022-10-14 10:45:20

R16-18-20117

831-372-8328

Report Version: 2019.2.000

Schema Version: rev 20200901

R16-18-20117

i certify that the energy features and performance specifications identified on this Certificate of Compliance conform to the requirements of Title 24, Part 1 and Part 6 of the California Code of Regulations.

1. I am eligible under Division 3 of the Business and Professions Code to accept responsibility for the building design identified on this Certificate of Compliance.

calculations, plans and specifications submitted to the enforcement agency for approval with this building permit application

Digitally signed by CalCERTS. This digital signature is provided in order to secure the content of this registered document, and in no way implies

Calculation Date/Time: 2022-10-14T10:46:58-07:00

Input File Name: 22-571 Renfrew Music Room Add..ribd19x

Michael Hafner

Michael Hafner

CABEC

Easy to Verify at CalCERTS.com

Report Generated: 2022-10-14 10:39:48

CalCERTS inc.

Report Generated: 2022-10-14 10:39:48



2019 Low-Rise Residential Mandatory Measures Summary

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

Building Envelop	
§ 110.6(a)1:	Air Leakage. Manufactured fenestration, exterior doors, and exterior pet doors must limit air leakage to 0.3 cfm per square foot or less when tested per NFRC-400, ASTM E283 or AAMA/WDMA/CSA 101/I.S.2/A440-2011.*
§ 110.6(a)5:	Labeling. Fenestration products and exterior doors must have a label meeting the requirements of Section 10-111(a).
§ 110.6(b):	Field fabricated exterior doors and fenestration products must use U-factors and solar heat gain coefficient (SHGC) values from Tables 110.6-A, 110.6-B, or JA4.5 for exterior doors. They must be caulked and/or weather stripped.*
§ 110.7:	Air Leakage. All joints, penetrations, and other openings in the building envelope that are potential sources of air leakage must be caulked, gasketed, or weather stripped.
§ 110.8(a):	Insulation Certification by Manufacturers. Insulation must be certified by the Department of Consumer Affairs, Bureau of Household Goods and Services (BHGS).
§ 110.8(g):	Insulation Requirements for Heated Slab Floors. Heated slab floors must be insulated per the requirements of Section 110.8(g).
§ 110.8(i):	Roofing Products Solar Reflectance and Thermal Emittance. The thermal emittance and aged solar reflectance values of the roofing material must meet the requirements of § 110.8(i) and be labeled per §10-113 when the installation of a cool roof is specified on the CF1R.
§ 110.8(j):	Radiant Barrier. When required, radiant barriers must have an emittance of 0.05 or less and be certified to the Department of Consumer Affairs
§ 150.0(a):	Ceiling and Rafter Roof Insulation. Minimum R-22 insulation in wood-frame ceiling; or the weighted average U-factor must not exceed 0.043. Minimum R-19 or weighted average U-factor of 0.054 or less in a rafter roof alteration. Attic access doors must have permanently attached insulation using adhesive or mechanical fasteners. The attic access must be gasketed to prevent air leakage. Insulation must be installed in direct contact with a continuous roof or ceiling which is sealed to limit infiltration and exfiltration as specified in § 110.7, including but not limited to placing insulation either above or below the roof deck or on top of a drywall ceiling.*
§ 150.0(b):	Loose-fill Insulation. Loose fill insulation must meet the manufacturer's required density for the labeled R-value.
§ 150.0(c):	Wall Insulation. Minimum R-13 insulation in 2x4 inch wood framing wall or have a U-factor of 0.102 or less, or R-20 in 2x6 inch wood framing or have a U-factor of 0.071 or less, (R-19 in 2x6 or U-factor of 0.074 or less). Opaque non-framed assemblies must have an overall assembly U-factor not exceeding 0.102, equivalent to an installed value of R-13 in a wood framed assembly. Masonry walls must meet Table 150.1-A or B.*
§ 150.0(d):	Raised-floor Insulation. Minimum R-19 insulation in raised wood framed floor or 0.037 maximum U-factor.*
§ 150.0(f):	Slab Edge Insulation. Slab edge insulation must meet all of the following: have a water absorption rate, for the insulation material alone without facings no greater than 0.3%; have a water vapor permeance no greater than 2.0 perm per inch; be protected from physical damage and UV light deterioration; and, when installed as part of a heated slab floor, meet the requirements of § 110.8(g).
§ 150.0(g)1:	Vapor Retarder. In climate zones 1 through 16, the earth floor of unvented crawl space must be covered with a Class I or Class II vapor retarder. This requirement also applies to controlled ventilation crawl space for buildings complying with the exception to § 150.0(d).
§ 150.0(g)2:	Vapor Retarder. In climate zones 14 and 16, a Class I or Class II vapor retarder must be installed on the conditioned space side of all insulation in all exterior walls, vented attics, and unvented attics with air-permeable insulation.
§ 150.0(q):	Fenestration Products. Fenestration, including skylights, separating conditioned space from unconditioned space or outdoors must have a maximum U-factor of 0.58; or the weighted average U-factor of all fenestration must not exceed 0.58.*
Fireplaces, Deco	rative Gas Appliances, and Gas Log Measures:
§ 110.5(e)	Pilot Light. Continuously burning pilot lights are not allowed for indoor and outdoor fireplaces.
§ 150.0(e)1:	Closable Doors. Masonry or factory-built fireplaces must have a closable metal or glass door covering the entire opening of the firebox.
§ 150.0(e)2:	Combustion Intake. Masonry or factory-built fireplaces must have a combustion outside air intake, which is at least six square inches in area and is equipped with a readily accessible, operable, and tight-fitting damper or combustion-air control device.
§ 150.0(e)3:	Flue Damper. Masonry or factory-built fireplaces must have a flue damper with a readily accessible control.
Space Conditioni	ng, Water Heating, and Plumbing System Measures:
§ 110.0-§ 110.3:	Certification. Heating, ventilation and air conditioning (HVAC) equipment, water heaters, showerheads, faucets, and all other regulated appliances must be certified by the manufacturer to the Energy Commission.*
§ 110.2(a):	HVAC Efficiency. Equipment must meet the applicable efficiency requirements in Table 110.2-A through Table 110.2-K.*
§ 110.2(b):	Controls for Heat Pumps with Supplementary Electric Resistance Heaters. Heat pumps with supplementary electric resistance heaters must have controls that prevent supplementary heater operation when the heating load can be met by the heat pump alone; and in which the cut-on temperature for compression heating is higher than the cut-on temperature for supplementary heating, and the cut-off temperature for compression heating is higher than the cut-off temperature for supplementary heating.*
§ 110.2(c):	Thermostats. All heating or cooling systems not controlled by a central energy management control system (EMCS) must have a
§ 110.3(c)4:	setback thermostat.* Water Heating Recirculation Loops Serving Multiple Dwelling Units. Water heating recirculation loops serving multiple dwelling units must meet the air release valve, backflow prevention, pump priming, pump isolation valve, and recirculation loop connection requirements of § 110.3(c)4.
§ 110.3(c)6:	Isolation Valves. Instantaneous water heaters with an input rating greater than 6.8 kBTU per hour (2 kW) must have isolation valves with hose bibbs or other fittings on both cold and hot water lines to allow for flushing the water heater when the valves are closed.
§ 110.5:	Pilot Lights. Continuously burning pilot lights are prohibited for natural gas: fan-type central furnaces; household cooking appliances (appliances without an electrical supply voltage connection with pilot lights that consume less than 150 Btu/hr are exempt); and pool and spa heaters
§ 150.0(h)1:	Building Cooling and Heating Loads. Heating and/or cooling loads are calculated in accordance with the ASHRAE Handbook, Equipment Volume, Applications Volume, and Fundamentals Volume; the SMACNA Residential Comfort System Installation Standards



2019 Low-Rise Residential Mandatory Measures Summary

	2013 LOW-Mise Mesideritial Mandatory Measures Cummary
§ 150.0(h)3A:	Clearances. Air conditioner and heat pump outdoor condensing units must have a clearance of at least 5 feet from the outlet of any dryer vent.
§ 150.0(h)3B:	Liquid Line Drier. Air conditioners and heat pump systems must be equipped with liquid line filter driers if required, as specified by the manufacturer's instructions.
§ 150.0(j)1;	Storage Tank Insulation. Unfired hot water tanks, such as storage tanks and backup storage tanks for solar water-heating systems, must have a minimum of R-12 external insulation or R-16 internal insulation where the internal insulation R-value is indicated on the exterior of the tank.
§ 150.0(j)2A:	Water Piping, Solar Water-heating System Piping, and Space Conditioning System Line Insulation. All domestic hot water piping must be insulated as specified in Section 609.11 of the California Plumbing Code. In addition, the following piping conditions must have a minimum insulation wall thickness of 1 inch or a minimum insulation R-value of 7.7: the first 5 feet of cold water pipes from the storage tank; all hot water piping with a nominal diameter equal to or greater than 3/4 inch and less than 1 inch; all hot water piping with a nominal diameter less than 3/4 inch that is: associated with a domestic hot water recirculation system, from the heating source to storage tank or between tanks, buried below grade, and from the heating source to kitchen fixtures.*
§ 150.0(j)3:	Insulation Protection. Piping insulation must be protected from damage, including that due to sunlight, moisture, equipment maintenance, and wind as required by Section 120.3(b). Insulation exposed to weather must be water retardant and protected from UV light (no adhesive tapes). Insulation covering chilled water piping and refrigerant suction piping located outside the conditioned space must include, or be protected by, a Class I vapor retarder. Pipe insulation buried below grade must be installed in a waterproof and non-crushable casing or sleeve.
§ 150.0(n)1:	Gas or Propane Water Heating Systems. Systems using gas or propane water heaters to serve individual dwelling units must include all of the following: A dedicated 125 volt, 20 amp electrical receptacle that is connected to the electric panel with a 120/240 volt 3 conductor, 10 AWG copper branch circuit, within 3 feet from the water heater without obstruction. Both ends of the unused conductor must be labeled with the word "spare" and be electrically isolated. Have a reserved single pole circuit breaker space in the electrical panel adjacent to the circuit breaker for the branch circuit and labeled with the words "Future 240V Use"; a Category III or IV vent, or a Type B vent with straight pipe between the outside termination and the space where the water heater is installed; a condensate drain that is no more than 2 inches higher than the base of the water heater, and allows natural draining without pump assistance; and a gas supply line with a capacity of at least 200,000 Btu per hour.
§ 150.0(n)2:	Recirculating Loops. Recirculating loops serving multiple dwelling units must meet the requirements of § 110.3(c)5.
§ 150.0(n)3:	Solar Water-heating Systems. Solar water-heating systems and collectors must be certified and rated by the Solar Rating and Certification Corporation (SRCC), the International Association of Plumbing and Mechanical Officials, Research and Testing (IAPMO R&T), or by a listing agency that is approved by the Executive Director.
Ducts and Fans	Measures:
§ 110.8(d)3:	Ducts. Insulation installed on an existing space-conditioning duct must comply with California Mechanical Code (CMC) Section 604.0. If a contractor installs the insulation, the contractor must certify to the customer in writing, that the insulation meets this requirement.
§ 150.0(m)1:	CMC Compliance. All air-distribution system ducts and plenums must meet the requirements of the CMC Section 601.0, 602.0, 603.0, 604.0, 605.0 and ANSI/SMACNA-006-2006 HVAC Duct Construction Standards Metal and Flexible 3rd Edition. Portions of supply-air and return-air ducts and plenums must be insulated to a minimum installed level of R-6.0 or a minimum installed level of R-4.2 when ducts are entirely in conditioned space as confirmed through field verification and diagnostic testing (RA3.1.4.3.8). Portions of the duct system completely exposed and surrounded by directly conditioned space are not required to be insulated. Connections of metal ducts and inner core of flexible ducts must be mechanically fastened. Openings must be sealed with mastic, tape, or other duct-closure system that meets the applicable requirements of UL 181, UL 181A, or UL 181B or aerosol sealant that meets the requirements of UL 723. If mastic or tape is used to seal openings greater than ¼ inch, the combination of mastic and either mesh or tape must be used. Building cavities, support platforms for air handlers, and plenums designed or constructed with materials other than sealed sheet metal, duct board or flexible duct must not be used to convey conditioned air. Building cavities and support platforms must not be compressed to cause reductions in the cross-sectional area.*
§ 150.0(m)2:	Factory-Fabricated Duct Systems. Factory-fabricated duct systems must comply with applicable requirements for duct construction, connections, and closures; joints and seams of duct systems and their components must not be sealed with cloth back rubber adhesive duct tapes unless such tape is used in combination with mastic and draw bands.
§ 150.0(m)3:	Field-Fabricated Duct Systems. Field-fabricated duct systems must comply with applicable requirements for: pressure-sensitive tapes, mastics, sealants, and other requirements specified for duct construction.
§ 150.0(m)7:	Backdraft Damper. Fan systems that exchange air between the conditioned space and outdoors must have backdraft or automatic dampers.
§ 150.0(m)8:	Gravity Ventilation Dampers. Gravity ventilating systems serving conditioned space must have either automatic or readily accessible, manually operated dampers in all openings to the outside, except combustion inlet and outlet air openings and elevator shaft vents.
§ 150.0(m)9:	Protection of Insulation. Insulation must be protected from damage, sunlight, moisture, equipment maintenance, and wind. Insulation exposed to weather must be suitable for outdoor service. For example, protected by aluminum, sheet metal, painted canvas, or plastic cover. Cellular foam insulation must be protected as above or painted with a coating that is water retardant and provides shielding from solar radiation.
§ 150.0(m)10:	Porous Inner Core Flex Duct. Porous inner core flex ducts must have a non-porous layer between the inner core and outer vapor barrier.
§ 150.0(m)11:	Duct System Sealing and Leakage Test. When space conditioning systems use forced air duct systems to supply conditioned air to an occupiable space, the ducts must be sealed and duct leakage tested, as confirmed through field verification and diagnostic testing, in accordance with § 150.0(m)11 and Reference Residential Appendix RA3.
§ 150.0(m)12:	Air Filtration. Space conditioning systems with ducts exceeding 10 feet and the supply side of ventilation systems must have MERV 13 or equivalent filters. Filters for space conditioning systems must have a 2 inch depth or can be 1 inch if sized per Equation 150.0-A. Pressure drops and labeling must meet the requirements in §150.0(m)12. Filters must be accessible for regular service.*
§ 150.0(m)13:	Space Conditioning System Airflow Rate and Fan Efficacy. Space conditioning systems that use ducts to supply cooling must have a hole for the placement of a static pressure probe, or a permanently installed static pressure probe in the supply plenum. Airflow must be ≥ 350 CFM per ton of nominal cooling capacity, and an air-handling unit fan efficacy ≤ 0.45 watts per CFM for gas furnace air handlers and ≤ 0.58 watts per CFM for all others. Small duct high velocity systems must provide an airflow ≥ 250 CFM per ton of nominal cooling capacity, and an air-handling unit fan efficacy ≤ 0.62 watts per CFM. Field verification testing is required in accordance with Reference Residential Appendix RA3.3.*



2019 Low-Rise Residential Mandatory Measures Summary

Requirements	or Ventilation and Indoor Air Quality:
§ 150.0(o)1:	Requirements for Ventilation and Indoor Air Quality. All dwelling units must meet the requirements of ASHRAE Standard 62.2, Ventilation and Acceptable Indoor Air Quality in Residential Buildings subject to the amendments specified in § 150.0(o)1.
§ 150.0(o)1C:	Single Family Detached Dwelling Units. Single family detached dwelling units, and attached dwelling units not sharing ceilings or floors wi other dwelling units, occupiable spaces, public garages, or commercial spaces must have mechanical ventilation airflow provided at rates determined by ASHRAE 62.2 Sections 4.1.1 and 4.1.2 and as specified in § 150.0(o)1C.
§ 150.0(o)1E:	Multifamily Attached Dwelling Units. Multifamily attached dwelling units must have mechanical ventilation airflow provided at rates in accordance with Equation 150.0-B and must be either a balanced system or continuous supply or continuous exhaust system. If a balanced system is not used, all units in the building must use the same system type and the dwelling-unit envelope leakage must be ≤ 0.3 CFM at 50 (0.2 inch water) per square foot of dwelling unit envelope surface area and verified in accordance with Reference Residential Appendix RA3.8
§ 150.0(o)1F:	Multifamily Building Central Ventilation Systems. Central ventilation systems that serve multiple dwelling units must be balanced to proviventilation airflow for each dwelling unit served at a rate equal to or greater than the rate specified by Equation 150.0-B. All unit airflows mus within 20% of the unit with the lowest airflow rate as it relates to the individual unit's minimum required airflow rate needed for compliance.
§ 150.0(o)1G:	Kitchen Range Hoods. Kitchen range hoods must be rated for sound in accordance with Section 7.2 of ASHRAE 62.2.
§ 150.0(o)2:	Field Verification and Diagnostic Testing. Dwelling unit ventilation airflow must be verified in accordance with Reference Residential Appendix RA3.7. Kitchen range hoods must be verified in accordance with Reference Residential Appendix RA3.7.4.3 to confirm it is rated by HVI to comply with the airflow rates and sound requirements as specified in Section 5 and 7.2 of ASHRAE 62.2.
Pool and Spa'S	ystems and Equipment Measures:
§ 110.4(a):	Certification by Manufacturers. Any pool or spa heating system or equipment must be certified to have all of the following: a thermal efficient that complies with the Appliance Efficiency Regulations; an on-off switch mounted outside of the heater that allows shutting off the heater without adjusting the thermostat setting; a permanent weatherproof plate or card with operating instructions; and must not use electric resistance heating.*
§ 110.4(b)1:	Piping. Any pool or spa heating system or equipment must be installed with at least 36 inches of pipe between the filter and the heater, or dedicated suction and return lines, or built-in or built-up connections to allow for future solar heating.
§ 110.4(b)2:	Covers. Outdoor pools or spas that have a heat pump or gas heater must have a cover.
§ 110.4(b)3:	Directional Inlets and Time Switches for Pools. Pools must have directional inlets that adequately mix the pool water, and a time switch the will allow all pumps to be set or programmed to run only during off-peak electric demand periods.
§ 110.5:	Pilot Light. Natural gas pool and spa heaters must not have a continuously burning pilot light.
§ 150.0(p):	Pool Systems and Equipment Installation. Residential pool systems or equipment must meet the specified requirements for pump sizing, rate, piping, filters, and valves.*
Lighting Measu	res:
§ 110.9:	Lighting Controls and Components. All lighting control devices and systems, ballasts, and luminaires must meet the applicable requireme of § 110.9.*
§ 150.0(k)1A:	Luminaire Efficacy. All installed luminaires must meet the requirements in Table 150.0-A.
§ 150.0(k)1B:	Blank Electrical Boxes. The number of electrical boxes that are more than 5 feet above the finished floor and do not contain a luminaire or other device must be no greater than the number of bedrooms. These electrical boxes must be served by a dimmer, vacancy sensor control fan speed control.
§ 150.0(k)1C:	Recessed Downlight Luminaires in Ceilings. Luminaires recessed into ceilings must meet all of the requirements for: insulation contact (leabeling; air leakage; sealing; maintenance; and socket and light source as described in § 150.0(k)1C.
§ 150.0(k)1D:	Electronic Ballasts for Fluorescent Lamps. Ballasts for fluorescent lamps rated 13 watts or greater must be electronic and must have an output frequency no less than 20 kHz.
§ 150.0(k)1E:	Night Lights, Step Lights, and Path Lights. Night lights, step lights and path lights are not required to comply with Table 150.0-A or be controlled by vacancy sensors provided they are rated to consume no more than 5 watts of power and emit no more than 150 lumens.
§ 150.0(k)1E: § 150.0(k)1F:	Night Lights, Step Lights, and Path Lights. Night lights, step lights and path lights are not required to comply with Table 150.0-A or be
	Night Lights, Step Lights, and Path Lights. Night lights, step lights and path lights are not required to comply with Table 150.0-A or be controlled by vacancy sensors provided they are rated to consume no more than 5 watts of power and emit no more than 150 lumens. Lighting Integral to Exhaust Fans. Lighting integral to exhaust fans (except when installed by the manufacturer in kitchen exhaust hoods)
§ 150.0(k)1F:	Night Lights, Step Lights, and Path Lights. Night lights, step lights and path lights are not required to comply with Table 150.0-A or be controlled by vacancy sensors provided they are rated to consume no more than 5 watts of power and emit no more than 150 lumens. Lighting Integral to Exhaust Fans. Lighting integral to exhaust fans (except when installed by the manufacturer in kitchen exhaust hoods) must meet the applicable requirements of § 150.0(k).* Screw based luminaires. Screw based luminaires must contain lamps that comply with Reference Joint Appendix JA8.*
§ 150.0(k)1F: § 150.0(k)1G:	Night Lights, Step Lights, and Path Lights. Night lights, step lights and path lights are not required to comply with Table 150.0-A or be controlled by vacancy sensors provided they are rated to consume no more than 5 watts of power and emit no more than 150 lumens. Lighting Integral to Exhaust Fans. Lighting integral to exhaust fans (except when installed by the manufacturer in kitchen exhaust hoods) must meet the applicable requirements of § 150.0(k).* Screw based luminaires. Screw based luminaires must contain lamps that comply with Reference Joint Appendix JA8.* Light Sources in Enclosed or Recessed Luminaires. Lamps and other separable light sources that are not compliant with the JA8 elevate temperature requirements, including marking requirements, must not be installed in enclosed or recessed luminaires. Light Sources in Drawers, Cabinets, and Linen Closets. Light sources internal to drawers, cabinetry or linen closets are not required to comply with Table 150.0-A or be controlled by vacancy sensors provided that they are rated to consume no more than 5 watts of power, emi
§ 150.0(k)1F: § 150.0(k)1G: § 150.0(k)1H:	Night Lights, Step Lights, and Path Lights. Night lights, step lights and path lights are not required to comply with Table 150.0-A or be controlled by vacancy sensors provided they are rated to consume no more than 5 watts of power and emit no more than 150 lumens. Lighting Integral to Exhaust Fans. Lighting integral to exhaust fans (except when installed by the manufacturer in kitchen exhaust hoods) must meet the applicable requirements of § 150.0(k).* Screw based luminaires. Screw based luminaires must contain lamps that comply with Reference Joint Appendix JA8.* Light Sources in Enclosed or Recessed Luminaires. Lamps and other separable light sources that are not compliant with the JA8 elevate temperature requirements, including marking requirements, must not be installed in enclosed or recessed luminaires. Light Sources in Drawers, Cabinets, and Linen Closets. Light sources internal to drawers, cabinetry or linen closets are not required to comply with Table 150.0-A or be controlled by vacancy sensors provided that they are rated to consume no more than 5 watts of power, emit
§ 150.0(k)1F: § 150.0(k)1G: § 150.0(k)1H: § 150.0(k)1I:	Night Lights, Step Lights, and Path Lights. Night lights, step lights and path lights are not required to comply with Table 150.0-A or be controlled by vacancy sensors provided they are rated to consume no more than 5 watts of power and emit no more than 150 lumens. Lighting Integral to Exhaust Fans. Lighting integral to exhaust fans (except when installed by the manufacturer in kitchen exhaust hoods) must meet the applicable requirements of § 150.0(k).* Screw based luminaires. Screw based luminaires must contain lamps that comply with Reference Joint Appendix JA8.* Light Sources in Enclosed or Recessed Luminaires. Lamps and other separable light sources that are not compliant with the JA8 elevate temperature requirements, including marking requirements, must not be installed in enclosed or recessed luminaires. Light Sources in Drawers, Cabinets, and Linen Closets. Light sources internal to drawers, cabinetry or linen closets are not required to comply with Table 150.0-A or be controlled by vacancy sensors provided that they are rated to consume no more than 5 watts of power, emit more than 150 lumens, and are equipped with controls that automatically turn the lighting off when the drawer, cabinet or linen closet is closed.
§ 150.0(k)1F: § 150.0(k)1G: § 150.0(k)1H: § 150.0(k)1I: § 150.0(k)2A:	Night Lights, Step Lights, and Path Lights. Night lights, step lights and path lights are not required to comply with Table 150.0-A or be controlled by vacancy sensors provided they are rated to consume no more than 5 watts of power and emit no more than 150 lumens. Lighting Integral to Exhaust Fans. Lighting integral to exhaust fans (except when installed by the manufacturer in kitchen exhaust hoods) must meet the applicable requirements of § 150.0(k). Screw based luminaires. Screw based luminaires must contain lamps that comply with Reference Joint Appendix JA8. Light Sources in Enclosed or Recessed Luminaires. Lamps and other separable light sources that are not compliant with the JA8 elevate temperature requirements, including marking requirements, must not be installed in enclosed or recessed luminaires. Light Sources in Drawers, Cabinets, and Linen Closets. Light sources internal to drawers, cabinetry or linen closets are not required to comply with Table 150.0-A or be controlled by vacancy sensors provided that they are rated to consume no more than 5 watts of power, emi more than 150 lumens, and are equipped with controls that automatically turn the lighting off when the drawer, cabinet or linen closet is close Interior Switches and Controls. All forward phase cut dimmers used with LED light sources must comply with NEMA SSL 7A.
§ 150.0(k)1F: § 150.0(k)1G: § 150.0(k)1H: § 150.0(k)1I: § 150.0(k)2A: § 150.0(k)2B:	Night Lights, Step Lights, and Path Lights. Night lights, step lights and path lights are not required to comply with Table 150.0-A or be controlled by vacancy sensors provided they are rated to consume no more than 5 watts of power and emit no more than 150 lumens. Lighting Integral to Exhaust Fans. Lighting integral to exhaust fans (except when installed by the manufacturer in kitchen exhaust hoods) must meet the applicable requirements of § 150.0(k).* Screw based luminaires. Screw based luminaires must contain lamps that comply with Reference Joint Appendix JA8.* Light Sources in Enclosed or Recessed Luminaires. Lamps and other separable light sources that are not compliant with the JA8 elevate temperature requirements, including marking requirements, must not be installed in enclosed or recessed luminaires. Light Sources in Drawers, Cabinets, and Linen Closets. Light sources internal to drawers, cabinetry or linen closets are not required to comply with Table 150.0-A or be controlled by vacancy sensors provided that they are rated to consume no more than 5 watts of power, emi more than 150 lumens, and are equipped with controls that automatically turn the lighting off when the drawer, cabinet or linen closet is close Interior Switches and Controls. All forward phase cut dimmers used with LED light sources must comply with NEMA SSL 7A. Interior Switches and Controls. Exhaust fans must be controlled separately from lighting systems.* Interior Switches and Controls. Lighting must have readily accessible wall-mounted controls that allow the lighting to be manually
§ 150.0(k)1F: § 150.0(k)1G: § 150.0(k)1H: § 150.0(k)1I: § 150.0(k)2A: § 150.0(k)2B: § 150.0(k)2C:	Night Lights, Step Lights, and Path Lights. Night lights, step lights and path lights are not required to comply with Table 150.0-A or be controlled by vacancy sensors provided they are rated to consume no more than 5 watts of power and emit no more than 150 lumens. Lighting Integral to Exhaust Fans. Lighting integral to exhaust fans (except when installed by the manufacturer in kitchen exhaust hoods) must meet the applicable requirements of § 150.0(k).* Screw based luminaires. Screw based luminaires must contain lamps that comply with Reference Joint Appendix JA8.* Light Sources in Enclosed or Recessed Luminaires. Lamps and other separable light sources that are not compliant with the JA8 elevate temperature requirements, including marking requirements, must not be installed in enclosed or recessed luminaires. Light Sources in Drawers, Cabinets, and Linen Closets. Light sources internal to drawers, cabinetry or linen closets are not required to comply with Table 150.0-A or be controlled by vacancy sensors provided that they are rated to consume no more than 5 watts of power, emi more than 150 lumens, and are equipped with controls that automatically turn the lighting off when the drawer, cabinet or linen closet is close Interior Switches and Controls. All forward phase cut dimmers used with LED light sources must comply with NEMA SSL 7A. Interior Switches and Controls. Exhaust fans must be controlled separately from lighting systems.* Interior Switches and Controls. Lighting must have readily accessible wall-mounted controls that allow the lighting to be manually turned ON and OFF.*



AAAA Laur Diaa Daaidayatial Mayadataya Ma

	2019 Low-Rise Residential Mandatory Measures Summary
§ 150.0(k)2G:	Interior Switches and Controls. An energy management control system (EMCS) may be used to comply with control requirements if it: provides functionality of the specified control according to § 110.9; meets the Installation Certificate requirements of § 130.4; meets the EMCS requirements of § 130.0(e); and meets all other requirements in § 150.0(k)2.
§ 150.0(k)2H:	Interior Switches and Controls. A multiscene programmable controller may be used to comply with dimmer requirements in § 150.0(k) if it provides the functionality of a dimmer according to § 110.9, and complies with all other applicable requirements in § 150.0(k)2.
§ 150.0(k)2I:	Interior Switches and Controls. In bathrooms, garages, laundry rooms, and utility rooms, at least one luminaire in each of these spaces must be controlled by an occupant sensor or a vacancy sensor providing automatic-off functionality. If an occupant sensor is installed, it must be initially configured to manual-on operation using the manual control required under Section 150.0(k)2C.
§ 150.0(k)2J:	Interior Switches and Controls. Luminaires that are or contain light sources that meet Reference Joint Appendix JA8 requirements for dimming, and that are not controlled by occupancy or vacancy sensors, must have dimming controls.*
§ 150.0(k)2K:	Interior Switches and Controls. Under cabinet lighting must be controlled separately from ceiling-installed lighting systems.
§ 150.0(k)3A:	Residential Outdoor Lighting. For single-family residential buildings, outdoor lighting permanently mounted to a residential building, or to other buildings on the same lot, must meet the requirement in item § 150.0(k)3Ai (ON and OFF switch) and the requirements in either § 150.0(k)3Aii (photocell and either a motion sensor or automatic time switch control) or § 150.0(k)3Aii (astronomical time clock), or an EMCS. Residential Outdoor Lighting. For low-rise residential buildings with four or more dwelling units, outdoor lighting for private patios, entrances,
§ 150.0(k)3B:	balconies, and porches; and residential parking lots and carports with less than eight vehicles per site must comply with either Section 150.0(k)3A or with the applicable requirements in Sections 110.9, 130.0, 130.2, 130.4, 140.7 and 141.0.
§ 150.0(k)3C:	Residential Outdoor Lighting. For low-rise residential buildings with four or more dwelling units, any outdoor lighting for residential parking lots or carports with a total of eight or more vehicles per site and any outdoor lighting not regulated by Section 150.0(k)3B or Section 150.0(k)3D mus comply with the applicable requirements in Sections 110.9, 130.0, 130.2, 130.4, 140.7 and 141.0.
§ 150.0(k)4:	Internally illuminated address signs. Internally illuminated address signs must comply with § 140.8; or must consume no more than 5 watts of power as determined according to § 130.0(c).
§ 150.0(k)5:	Residential Garages for Eight or More Vehicles. Lighting for residential parking garages for eight or more vehicles must comply with the applicable requirements for nonresidential garages in Sections 110.9, 130.0, 130.1, 130.4, 140.6, and 141.0.
§ 150.0(k)6A:	Interior Common Areas of Low-rise Multifamily Residential Buildings. In a low-rise multifamily residential building where the total interior common area in a single building equals 20 percent or less of the floor area, permanently installed lighting for the interior common areas in that building must be comply with Table 150.0-A and be controlled by an occupant sensor.
§ 150.0(k)6B:	Interior Common Areas of Low-rise Multifamily Residential Buildings. In a low-rise multifamily residential building where the total interior common area in a single building equals more than 20 percent of the floor area, permanently installed lighting for the interior common areas in that building must: i. Comply with the applicable requirements in Sections 110.9, 130.0, 130.1, 140.6 and 141.0; and ii. Lighting installed in corridors and stairwells must be controlled by occupant sensors that reduce the lighting power in each space by at least 50 percent. The occupant sensors must be capable of turning the light fully on and off from all designed paths of ingress and egress.
Solar Ready Buil	
§ 110.10(a)1:	Single Family Residences. Single family residences located in subdivisions with ten or more single family residences and where the application for a tentative subdivision map for the residences has been deemed complete and approved by the enforcement agency, which do not have a photovoltaic system installed, must comply with the requirements of § 110.10(b) through § 110.10(e).
§ 110.10(a)2:	Low-rise Multifamily Buildings. Low-rise multi-family buildings that do not have a photovoltaic system installed must comply with the requirements of § 110.10(b) through § 110.10(d).
§ 110.10(b)1:	Minimum Solar Zone Area. The solar zone must have a minimum total area as described below. The solar zone must comply with access, pathway, smoke ventilation, and spacing requirements as specified in Title 24, Part 9 or other Parts of Title 24 or in any requirements adopted by a local jurisdiction. The solar zone total area must be comprised of areas that have no dimension less than 5 feet and are no less than 80 square feet each for buildings with roof areas less than or equal to 10,000 square feet or no less than 160 square feet each for buildings with roof areas greater than 10,000 square feet. For single family residences, the solar zone must be located on the roof or overhang of the building and have a total area no less than 250 square feet. For low-rise multi-family buildings the solar zone must be located on the roof or overhang of the building, or on the roof or overhang of another structure located within 250 feet of the building, or on covered parking installed with the building project, and have a total area no less than 15 percent of the total roof area of the building excluding any skylight area. The solar zone requirement is applicable to the entire building, including mixed occupancy.*
§ 110.10(b)2:	Azimuth. All sections of the solar zone located on steep-sloped roofs must be oriented between 90 degrees and 300 degrees of true north.
§ 110.10(b)3A:	Shading. The solar zone must not contain any obstructions, including but not limited to: vents, chimneys, architectural features, and roof mounted equipment.*
§ 110.10(b)3B:	Shading. Any obstruction located on the roof or any other part of the building that projects above a solar zone must be located at least twice the distance, measured in the horizontal plane, of the height difference between the highest point of the obstruction and the horizontal projection of the nearest point of the solar zone, measured in the vertical plane.*
§ 110.10(b)4:	Structural Design Loads on Construction Documents. For areas of the roof designated as a solar zone, the structural design loads for roof dead load and roof live load must be clearly indicated on the construction documents.
§ 110.10(c):	Interconnection Pathways. The construction documents must indicate: a location reserved for inverters and metering equipment and a pathway reserved for routing of conduit from the solar zone to the point of interconnection with the electrical service; and for single family residences and central water-heating systems, a pathway reserved for routing plumbing from the solar zone to the water-heating system.
§ 110.10(d):	Documentation. A copy of the construction documents or a comparable document indicating the information from § 110.10(b) through § 110.10(c) must be provided to the occupant.
§ 110.10(e)1:	Main Electrical Service Panel. The main electrical service panel must have a minimum busbar rating of 200 amps.
§ 110.10(e)2:	Main Electrical Service Panel. The main electrical service panel must have a reserved space to allow for the installation of a double pole circuit breaker for a future solar electric installation. The reserved space must be permanently marked as "For Future Solar Electric".

Michael Helm, AIA Architect & Associates





MSH MEG

2019 LOW-RISE RESIDENTIAL MANDATORY MEASURES SUMMARY

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

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

COMPOSITE WOOD PRODUCTS. Composite wood products include hardwood plywood, particleboard and medium density fiberboard, "Composite wood products" does not include hardboard, structural plywood. structural panels, structural composite lumber, oriented strand board, glued laminated timber, prefabricated

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

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

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

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

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

SECTION 4.502 DEFINITIONS

5.102.1 DEFINITIONS

Y NVA RESPON. CHAPTER 3 4.303.1.4.1 Residential Lavatory Faucets. The maximum flow rate of residential lavatory faucets shall not exceed 1.2 gallons per minute at 60 psi. The minimum flow rate of residential lavatory faucets shall **GREEN BUILDING SECTION 301 GENERAL** 301.1 SCOPE. Buildings shall be designed to include the green building measures specified as mandatory in the application checklists contained in this code. Voluntary green building measures are also included in the application checklists and may be included in the design and construction of structures covered by this code, 4.303.1.4.2 Lavatory Faucets in Common and Public Use Areas. The maximum flow rate of lavatory faucets installed in common and public use areas (outside of dwellings or sleeping units) in residential buildings shall not exceed 0.5 gallons per minute at 60 psi. but are not required unless adopted by a city, county, or city and county as specified in Section 101.7. 4.303.1.4.3 Metering Faucets. Metering faucets when installed in residential buildings shall not delive **301.1.1 Additions and alterations. [HCD]** The mandatory provisions of Chapter 4 shall be applied to additions or alterations of existing residential buildings where the addition or alteration increases the 4.303.1.4.4 Kitchen Faucets. The maximum flow rate of kitchen faucets shall not exceed 1.8 gallons building's conditioned area, volume, or size. The requirements shall apply only to and/or within the per minute at 60 psi. Kitchen faucets may temporarily increase the flow above the maximum rate, but not to exceed 2.2 gallons per minute at 60 psi, and must default to a maximum flow rate of 1.8 gallons per Note: On and after January 1, 2014, residential buildings undergoing permitted alterations, additions, or improvements shall replace noncompliant plumbing fixtures with water-conserving plumbing fixtures. Plumbing fixture replacement is required prior to issuance of a certificate of final completion, certificate of occupancy or final permit approval by the local building department. See Civil Code Section 1101.1, et seq., for the definition of a noncompliant plumbing fixture, types of residential buildings affected and Note: Where complying faucets are unavailable, aerators or other means may be used to achieve 4.303.2 STANDARDS FOR PLUMBING FIXTURES AND FITTINGS. Plumbing fixtures and fittings shall be installed other important enactment dates. in accordance with the California Plumbing Code, and shall meet the applicable standards referenced in Table 1701.1 of the California Plumbing Code. 301.2 LOW-RISE AND HIGH-RISE RESIDENTIAL BUILDINGS. [HCD] The provisions of individual sections of CALGreen may apply to either low-rise residential buildings high-rise residential buildings, or both. Individual sections will be designated by banners to indicate where the section applies specifically to low-rise only (LR) or high-rise only (HR). When the section applies to both low-rise and THIS TABLE COMPILES THE DATA IN SECTION 4.303.1. AND IS INCLUDED AS A CONVENIENCE FOR THE USER. high-rise buildings, no banner will be used. TABLE - MAXIMUM FIXTURE WATER USE **SECTION 302 MIXED OCCUPANCY BUILDINGS** FIXTURE TYPE **FLOW RATE** 302.1 MIXED OCCUPANCY BUILDINGS. In mixed occupancy buildings, each portion of a building shall comply with the specific green building measures applicable to each specific occupancy. SHOWER HEADS 1.8 GMP @ 80 PSI ABBREVIATION DEFINITIONS: LAVATORY FAUCETS Department of Housing and Community Developmen MIN. 0.8 GPM @ 20 PSI RESIDENTIAL) California Building Standards Commission Division of the State Architect. Structural Safety LAVATORY FAUCETS IN 0.5 GPM @ 60 PSI Office of Statewide Health Planning and Developme **COMMON & PUBLIC USE AREAS** KITCHEN FAUCETS 1.8 GPM @ 60 PSI **METERING FAUCETS** 0.2 GAL/CYCLE WATER CLOSET 1.28 GAL/FLUSH **CHAPTER 4** URINALS 0.125 GAL/FLUSH RESIDENTIAL MANDATORY MEASURES **DIVISION 4.1 PLANNING AND DESIGN** 4.304.1 OUTDOOR POTABLE WATER USE IN LANDSCAPE AREAS. Residential developments shall comply with **SECTION 4.102 DEFINITIONS** a local water efficient landscape ordinance or the current California Department of Water Resources' Model Water Efficient Landscape Ordinance (MWELO), whichever is more stringent. 4.102.1 DEFINITIONS The following terms are defined in Chapter 2 (and are included here for reference) FRENCH DRAIN. A trench, hole or other depressed area loosely filled with rock, gravel, fragments of brick or similar pervious material used to collect or channel drainage or runoff water. 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 WATTLES. Wattles are used to reduce sediment in runoff. Wattles are often constructed of natural plant materials available at: https://www.water.ca.gov/ such as hay, straw or similar material shaped in the form of tubes and placed on a downflow slope. Wattles are also used for perimeter and inlet controls. DIVISION 4.4 MATERIAL CONSERVATION AND RESOURCE 4.106 SITE DEVELOPMENT
4.106.1 GENERAL. Preservation and use of available natural resources shall be accomplished through evaluation **EFFICIENCY** and careful planning to minimize negative effects on the site and adjacent areas. Preservation of slopes. 4.406 ENHANCED DURABILITY AND REDUCED MAINTENANCE management of storm water drainage and erosion controls shall comply with this section. 4.406.1 RODENT PROOFING. Annular spaces around pipes, electric cables, conduits or other openings i 4.106.2 STORM WATER DRAINAGE AND RETENTION DURING CONSTRUCTION. Projects which disturb less 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 than one acre of soil and are not part of a larger common plan of development which in total disturbs one acre during construction, one or more of the following measures shall be implemented to prevent flooding of adjacent 4.408 CONSTRUCTION WASTE REDUCTION, DISPOSAL AND RECYCLING property, prevent erosion and retain soil runoff on the site. 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 1. Retention basins of sufficient size shall be utilized to retain storm water on the site. 2. Where storm water is conveyed to a public drainage system, collection point, gutter or similar 4.408.2, 4.408.3 or 4.408.4, or meet a more stringent local construction and demolition waste disposal method, water shall be filtered by use of a barrier system, wattle or other method approved by the enforcing agency.

3. Compliance with a lawfully enacted storm water management ordinance. Excavated soil and land-clearing debris.
 Alternate waste reduction methods developed by working with local agencies if diversion or 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. recycle facilities capable of compliance with this item do not exist or are not located reasonably (Website: https://www.waterboards.ca.gov/water_issues/programs/stormwater/construction.html) 3. The enforcing agency may make exceptions to the requirements of this section when isolated iobsites are located in areas beyond the haul boundaries of the diversion facility. 4.106.3 GRADING AND PAVING. Construction plans shall indicate how the site grading or drainage system will manage all surface water flows to keep water from entering buildings. Examples of methods to manage surface 4.408.2 CONSTRUCTION WASTE MANAGEMENT PLAN. Submit a construction waste management plan water include, but are not limited to, the following: 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. Swales
 Water collection and disposal systems 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. 4. Water retention gardens 2. Specify if construction and demolition waste materials will be sorted on-site (source separated) or 5. Other water measures which keep surface water away from buildings and aid in groundwater 3. Identify diversion facilities where the construction and demolition waste material collected will be Exception: Additions and alterations not altering the drainage path. 4. Identify construction methods employed to reduce the amount of construction and demolition waste **4.106.4 Electric vehicle (EV) charging for new construction.** New construction shall comply with Sections 4.106.4.1, 4.106.4.2, or 4.106.4.3 to facilitate future installation and use of EV chargers. Electric vehicle supply generated.

Specify that the amount of construction and demolition waste materials diverted shall be calculated equipment (EVSE) shall be installed in accordance with the California Electrical Code. Article 625. 4.408.3 WASTE MANAGEMENT COMPANY. Utilize a waste management company, approved by the enforcing agency, which can provide verifiable documentation that the percentage of construction and On a case-by-case basis, where the local enforcing agency has determined EV charging and infrastructure are not feasible based upon one or more of the following conditions: demolition waste material diverted from the landfill complies with Section 4.408.1. 1.1 Where there is no commercial power supply. Note: The owner or contractor may make the determination if the construction and demolition waste 1.2 Where there is evidence substantiating that meeting the requirements will alter the local materials will be diverted by a waste management company. utility infrastructure design requirements on the utility side of the meter so as to increase the utility side cost to the homeowner or the developer by more than \$400.00 per 4.408.4 WASTE STREAM REDUCTION ALTERNATIVE [LR]. Projects that generate a total combined weight of construction and demolition waste disposed of in landfills, which do not exceed 3.4 2. Accessory Dwelling Units (ADU) and Junior Accessory Dwelling Units (JADU) without additional 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 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 per square foot of the building area, shall meet the minimum 65% construction waste reduction shall not be less than trade size 1 (nominal 1-inch inside diameter). The raceway shall originate at the main service or subpanel and shall terminate into a listed cabinet, box or other enclosure in close proximity to the proposed location of an EV charger. Raceways are required to be continuous at enclosed, inaccessible or **4.408.5 DOCUMENTATION.** Documentation shall be provided to the enforcing agency which demonstrates compliance with Section 4.408.2, Items 1 through 5, Section 4.408.3 or Section 4.408.4.. concealed areas and spaces. The service panel and/or subpanel shall provide capacity to install a 40-ampere minimum dedicated branch circuit and space(s) reserved to permit installation of a branch circuit overcurrent 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 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 location shall be permanently and visibly marked as "EV CAPABLE". documenting compliance with this section. 4.106.4.2.3 Single EV space required. Install a listed raceway capable of accommodating a 208/240-2. Mixed construction and demolition debris (C & D) processors can be located at the California Department of Resources Recycling and Recovery (CalRecycle). volt dedicated branch circuit. The raceway shall not be less than trade size 1 (nominal 1-inch inside diameter). The raceway shall originate at the main service or subpanel and shall terminate into a listed 4.410 BUILDING MAINTENANCE AND OPERATION cabinet, box or enclosure in close proximity to the proposed location of the EV space. Construction 4.410.1 OPERATION AND MAINTENANCE MANUAL. At the time of final inspection, a manual, compac documents shall identify the raceway termination point. The service panel and/or subpanel shall provide capacity to install a 40-ampere minimum dedicated branch circuit and space(s) reserved to permit disc, web-based reference or other media acceptable to the enforcing agency which includes all of the following shall be placed in the building: installation of a branch circuit overcurrent protective device Directions to the owner or occupant that the manual shall remain with the building throughout the DIVISION 4.2 ENERGY EFFICIENCY Operation and maintenance instructions for the following: a. Equipment and appliances, including water-saving devices and systems. HVAC systems. 4.201.1 SCOPE. For the purposes of mandatory energy efficiency standards in this code, the California Energy photovoltaic systems, electric vehicle chargers, water-heating systems and other major Commission will continue to adopt mandatory standards. appliances and equipment. b. Roof and yard drainage, including gutters and downspouts.c. Space conditioning systems, including condensers and air filters. **DIVISION 4.3 WATER EFFICIENCY AND CONSERVATION** d. Landscape irrigation systems. e. Water reuse systems. Information from local utility, water and waste recovery providers on methods to further reduce 4.303 INDOOR WATER USE resource consumption, including recycle programs and locations. 4.303.1 WATER CONSERVING PLUMBING FIXTURES AND FITTINGS. Plumbing fixtures (water closets and Public transportation and/or carpool options available in the area. urinals) and fittings (faucets and showerheads) shall comply with the sections 4.303.1.1, 4.303.1.2, 4.303.1.3, 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. Information about water-conserving landscape and irrigation design and controllers which conserve 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 7. Instructions for maintaining gutters and downspouts and the importance of diverting water at least 5 completion, certificate of occupancy, or final permit approval by the local building department. See Civil feet away from the foundation Code Section 1101.1, et seq., for the definition of a noncompliant plumbing fixture, types of residential 8. Information on required routine maintenance measures, including, but not limited to, caulking buildings affected and other important enactment dates. painting, grading around the building, etc. Information about state solar energy and incentive programs available. 4.303.1.1 Water Closets. The effective flush volume of all water closets shall not exceed 1.28 gallons per 10. A copy of all special inspections verifications required by the enforcing agency or this code. Rosels shall be certified to the performance chieffa of the U.S. EFA waterser: Specification for Tank-type Toilets. 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 Note: The effective flush volume of dual flush toilets is defined as the composite, average flush volume depositing, storage and collection of non-hazardous materials for recycling, including (at a minimum) paper, of two reduced flushes and one full flush. corrugated cardboard, glass, plastics, organic waster, and metals, or meet a lawfully enacted local recycling 4.303.1.2 Urinals. The effective flush volume of wall mounted urinals shall not exceed 0.125 gallons per flush. The effective flush volume of all other urinals shall not exceed 0.5 gallons per flush. Exception: Rural jurisdictions that meet and apply for the exemption in Public Resources Code Section 42649.82 (a)(2)(A) et seq. are note required to comply with the organic waste portion of 4.303.1.3 Showerheads. 4.303.1.3.1 Single Showerhead. Showerheads shall have a maximum flow rate of not more than 1.8 DIVISION 4.5 ENVIRONMENTAL QUALITY gallons per minute at 80 psi. Showerheads shall be certified to the performance criteria of the U.S. EPA NaterSense Specification for Showerheads. SECTION 4.501 GENERAL 4.303.1.3.2 Multiple showerheads serving one shower. When a shower is served by more than one

showerhead, the combined flow rate of all the showerheads and/or other shower outlets controlled by

allow one shower outlet to be in operation at a time.

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

a single valve shall not exceed 1.8 gallons per minute at 80 psi, or the shower shall be designed to only

			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 and 94701.
	·		MOISTURE CONTENT. The weight of the water in wood expressed in percentage of the weight of the oven-dry wood.
			PRODUCT-WEIGHTED MIR (PWMIR). The sum of all weighted-MIR for all ingredients in a product subject to this article. The PWMIR is the total product reactivity expressed to hundredths of a gram of ozone formed per gram of product (excluding container and packaging). Note: PWMIR is calculated according to equations found in CCR, Title 17, Section 94521 (a).
			REACTIVE ORGANIC COMPOUND (ROC). Any compound that has the potential, once emitted, to contribute to ozone formation in the troposphere.
			VOC. A volatile organic compound (VOC) broadly defined as a chemical compound based on carbon chains or rings with vapor pressures greater than 0.1 millimeters of mercury at room temperature. These compounds typically contain hydrogen and may contain oxygen, nitrogen and other elements. See CCR Title 17, Section 94508(a).
			4.503 FIREPLACES
			4.503.1 GENERAL. Any installed gas fireplace shall be a direct-vent sealed-combustion type. Any installed woodstove or pellet stove shall comply with U.S. EPA New Source Performance Standards (NSPS) emission limits as applicable, and shall have a permanent label indicating they are certified to meet the emission limits. Woodstoves, pellet stoves and fireplaces shall also comply with applicable local ordinances.
	L.		4.504 POLLUTANT CONTROL
	旦	·	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.
	_		
믜			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.
-	•	,	 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 <i>California Code of Regulations</i>, Title 17, commencing with section 94507.
			4.504.2.2 Paints and Coatings. Architectural paints and coatings shall comply with VOC limits in Table 1 of
	•		the ARB Architectural Suggested Control Measure, as shown in Table 4.504.3, unless more stringent local limits apply: The VOC content limit for coatings that do not meet the definitions for the specialty coatings categories listed in Table 4.504.3 shall be determined by classifying the coating as a Flat, Nonflat or Nonflat-High Gloss coating, based on its gloss, as defined in subsections 4.21, 4.36, and 4.37 of the 2007 California Air Resources Board, Suggested Control Measure, and the corresponding Flat, Nonflat or Nonflat-High Gloss VOC limit in Table 4.504.3 shall apply.
			4.504.2.3 Aerosol Paints and Coatings. Aerosol paints and coatings shall meet the Product-weighted MIR
			Limits for ROC in Section 94522(a)(2) and other requirements, including prohibitions on use of certain toxic compounds and ozone depleting substances, in Sections 94522(e)(1) and (f)(1) of California Code of Regulations, Title 17, commencing with Section 94520; and in areas under the jurisdiction of the Bay Area Air Quality Management District additionally comply with the percent VOC by weight of product limits of Regulation 8, Rule 49.
			4.504.2.4 Verification. Verification of compliance with this section shall be provided at the request of the enforcing agency. Documentation may include, but is not limited to, the following:
			Manufacturer's product specification. Field verification of on-site product containers.

	2. Field verification of on-site prod
ABLE 4.504.1 - ADHESIVE VOC LIN	AIT _{1,2}
ess Water and Less Exempt Compounds in Gra	ms per Liter)
RCHITECTURAL APPLICATIONS	VOC LIMIT
DOOR CARPET ADHESIVES	50
ARPET PAD ADHESIVES	50
UTDOOR CARPET ADHESIVES	150
OOD FLOORING ADHESIVES	100
UBBER FLOOR ADHESIVES	60
UBFLOOR ADHESIVES	50
ERAMIC TILE ADHESIVES	65
CT & ASPHALT TILE ADHESIVES	50
RYWALL & PANEL ADHESIVES	50
OVE BASE ADHESIVES	50
ULTIPURPOSE CONSTRUCTION ADHESIVE	70
TRUCTURAL GLAZING ADHESIVES	100
NGLE-PLY ROOF MEMBRANE ADHESIVES	250
THER ADHESIVES NOT LISTED	50
PECIALTY APPLICATIONS	
/C WELDING	510
PVC WELDING	490
BS WELDING	325
ASTIC CEMENT WELDING	250
DHESIVE PRIMER FOR PLASTIC	550
ONTACT ADHESIVE	80
PECIAL PURPOSE CONTACT ADHESIVE	250
FRUCTURAL WOOD MEMBER ADHESIVE	140
OP & TRIM ADHESIVE	250
JBSTRATE SPECIFIC APPLICATIONS	
ETAL TO METAL	30
ASTIC FOAMS	50
DROUS MATERIAL (EXCEPT WOOD)	50
OOD	30
BERGLASS	80

IF AN ADHESIVE IS USED TO BOND DISSIMILATE ADHESIVE WITH THE HIGHEST VOC CONTI	
FOR ADDITIONAL INFORMATION REGARDING IE VOC CONTENT SPECIFIED IN THIS TABLE, JALITY MANAGEMENT DISTRICT RULE 1168.	
DALITY MANAGEMENT DISTRICT ROLE 1708.	

TABLE 4.504.2 - SEALANT VOC LIN	VIIT
(Less Water and Less Exempt Compounds in Gr	ams 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 LIMIT ARCHITECTURAL COATINGS23 GRAMS OF VOC PER LITER OF COATING, LESS V COMPOUNDS	
COATING CATEGORY	VOC LIMIT
FLAT COATINGS	50
NON-FLAT COATINGS	100
NONFLAT-HIGH GLOSS COATINGS	150
SPECIALTY COATINGS	
ALUMINUM ROOF COATINGS	400
BASEMENT SPECIALTY COATINGS	400
BITUMINOUS ROOF COATINGS	50
BITUMINOUS ROOF PRIMERS	350
BOND BREAKERS	350
CONCRETE CURING COMPOUNDS	350
CONCRETE/MASONRY SEALERS	100
DRIVEWAY SEALERS	50
DRY FOG COATINGS	150
FAUX FINISHING COATINGS	350
FIRE RESISTIVE COATINGS	350
FLOOR COATINGS	100
FORM-RELEASE COMPOUNDS	250
GRAPHIC ARTS COATINGS (SIGN PAINTS)	500
HIGH TEMPERATURE COATINGS	420
INDUSTRIAL MAINTENANCE COATINGS	250
LOW SOLIDS 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
1. GRAMS OF VOC PER LITER OF COATING, INC	LUDING WATER &

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

CODE OF REGULATIONS, TITLE 17, SECTIONS 93120 THROUGH

2. THIN MEDIUM DENSITY FIBERBOARD HAS A MAXIMUM

THICKNESS OF 5/16" (8 MM).

3. VALUES IN THIS TABLE ARE DERIVED FROM THOSE SPECIFIED BY

AVAILABLE FROM THE AIR RESOURCES BOARD.

THE CALIFORNIA AIR RESOURCES BOARD, ARCHITECTURAL COATINGS

SUGGESTED CONTROL MEASURE, FEB. 1, 2008. MORE INFORMATION IS

 4.504.3 CARPET SYSTEMS. All carpet installed in the building interior shall meet the testing and product requirements of at least one of the following: Carpet and Rug Institute's Green Label Plus Program. California Department of Public Health, "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers" Version 1.1, February 2010 (also known as Specification 01350). NSF/ANSI 140 at the Gold level. Scientific Certifications Systems Indoor Advantage™ Gold. 4.504.3.1 Carpet cushion. All carpet cushion installed in the building interior shall meet the requirements of the Carpet and Rug Institute's Green Label program. 4.504.3.2 Carpet adhesive. All carpet adhesive shall meet the requirements of Table 4.504.1. 	
requirements of at least one of the following: 1. Carpet and Rug Institute's Green Label Plus Program. 2. California Department of Public Health, "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers" Version 1.1, February 2010 (also known as Specification 01350). 3. NSF/ANSI 140 at the Gold level. 4. Scientific Certifications Systems Indoor Advantagetm Gold. 4.504.3.1 Carpet cushion. All carpet cushion installed in the building interior shall meet the requirements of the Carpet and Rug Institute's Green Label program. 4.504.3.2 Carpet adhesive. All carpet adhesive shall meet the requirements of Table 4.504.1.	
 Carpet and Rug Institute's Green Label Plus Program. California Department of Public Health, "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers" Version 1.1, February 2010 (also known as Specification 01350). NSF/ANSI 140 at the Gold level. Scientific Certifications Systems Indoor Advantagetm Gold. 4.504.3.1 Carpet cushion. All carpet cushion installed in the building interior shall meet the requirements of the Carpet and Rug Institute's Green Label program. 4.504.3.2 Carpet adhesive. All carpet adhesive shall meet the requirements of Table 4.504.1. 	
4.504.3.1 Carpet cushion. All carpet cushion installed in the building interior shall meet the requirements of the Carpet and Rug Institute's Green Label program. 4.504.3.2 Carpet adhesive. All carpet adhesive shall meet the requirements of Table 4.504.1.	
requirements of the Carpet and Rug Institute's Green Label program. 4.504.3.2 Carpet adhesive. All carpet adhesive shall meet the requirements of Table 4.504.1.	
A FOLA DECILIFIED ACCIDING AVAILABLE IN A COLUMN ACCIDENTAL ACCIDE	
4.504.4 RESILIENT FLOORING SYSTEMS. Where resilient flooring is installed, at least 80% of floor area recreatilent flooring shall comply with one or more of the following:	eiving
 Products compliant with the California Department of Public Health, "Standard Method for the Testing Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chamb Version 1.1, February 2010 (also known as Specification 01350), certified as a CHPS Low-Emitting M in the Collaborative for High Performance Schools (CHPS) High Performance Products Database. Products certified under UL GREENGUARD Gold (formerly the Greenguard Children & Schools program. Certification under the Resilient Floor Covering Institute (RFCI) FloorScore program. Meet the California Department of Public Health, "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers", Version February 2010 (also known as Specification 01350). 	ers," lateria ram).
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. Chain of custody certifications. 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 C 0121, CSA 0151, CSA 0153 and CSA 0325 standards. 5. Other methods acceptable to the enforcing agency. 	SA
4.505 INTERIOR MOISTURE CONTROL 4.505.1 General. Buildings shall meet or exceed the provisions of the California Building Standards Code.	
4.505.2 CONCRETE SLAB FOUNDATIONS. Concrete slab foundations required to have a vapor retarder by California Building Code, Chapter 19, or concrete slab-on-ground floors required to have a vapor retarder by the California Residential Code, Chapter 5, shall also comply with this section.	: :
4.505.2.1 Capillary break. A capillary break shall be installed in compliance with at least one of the following:	:
 A 4-inch (101.6 mm) thick base of 1/2 inch (12.7mm) or larger clean aggregate shall be provided a vapor barrier in direct contact with concrete and a concrete mix design, which will address ble shrinkage, and curling, shall be used. For additional information, see American Concrete Institution ACI 302.2R-06. 	edina
 Other equivalent methods approved by the enforcing agency. 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 Moisture content shall be determined with either a probe-type or contact-type moisture meter. Equivalent

moisture verification methods may be approved by the enforcing agency and shall satisfy requirements found in Section 101.8 of this code. 2. Moisture readings shall be taken at a point 2 feet (610 mm) to 4 feet (1219 mm) from the grade stamped end

are readings shall be performed on wall and floor framing with documental acceptable to the enforcing agency provided at the time of approval to enclose the wall and floor framing.

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

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

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)

1. For the purposes of this section, a bathroom is a room which contains a bathtub, shower or 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 method 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.
 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

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:

State certified apprenticeship programs. 3. Training programs sponsored by trade, labor or statewide energy consulting or verification organizations.

2. Public utility training programs.

4. Programs sponsored by manufacturing organizations. 5. Other programs acceptable to the enforcing agency. 702.2 SPECIAL INSPECTION [HCD]. When required by the enforcing agency, the owner or the

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.

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

2. Certification by a statewide energy consulting or verification organization, such as HERS raters, building performance contractors, and home energy auditors.

3. Successful completion of a third party apprentice training program in the appropriate trade.

4. Other programs acceptable to the enforcing agency. 1. Special inspectors shall be independent entities with no financial interest in the materials or the project they are inspecting for compliance with this code.

2. HERS raters are special inspectors certified by the California Energy Commission (CEC) to rate

homes in California according to the Home Energy Rating System (HERS). [BSC] When required by the enforcing agency, the owner or the responsible entity acting as the owner's agent shall employ one or more special inspectors to provide inspection or other duties necessary to substantiate compliance with this code. Special inspectors shall demonstrate competence to the satisfaction of the enforcing agency for the

particular type of inspection or task to be performed. In addition, the special inspector shall have a certification from a recognized state, national or international association, as determined by the local agency. The area of certification shall be closely related to the primary job function, as determined by the local agency. Note: Special inspectors shall be independent entities with no financial interest in the materials or the project they are inspecting for compliance with this code.

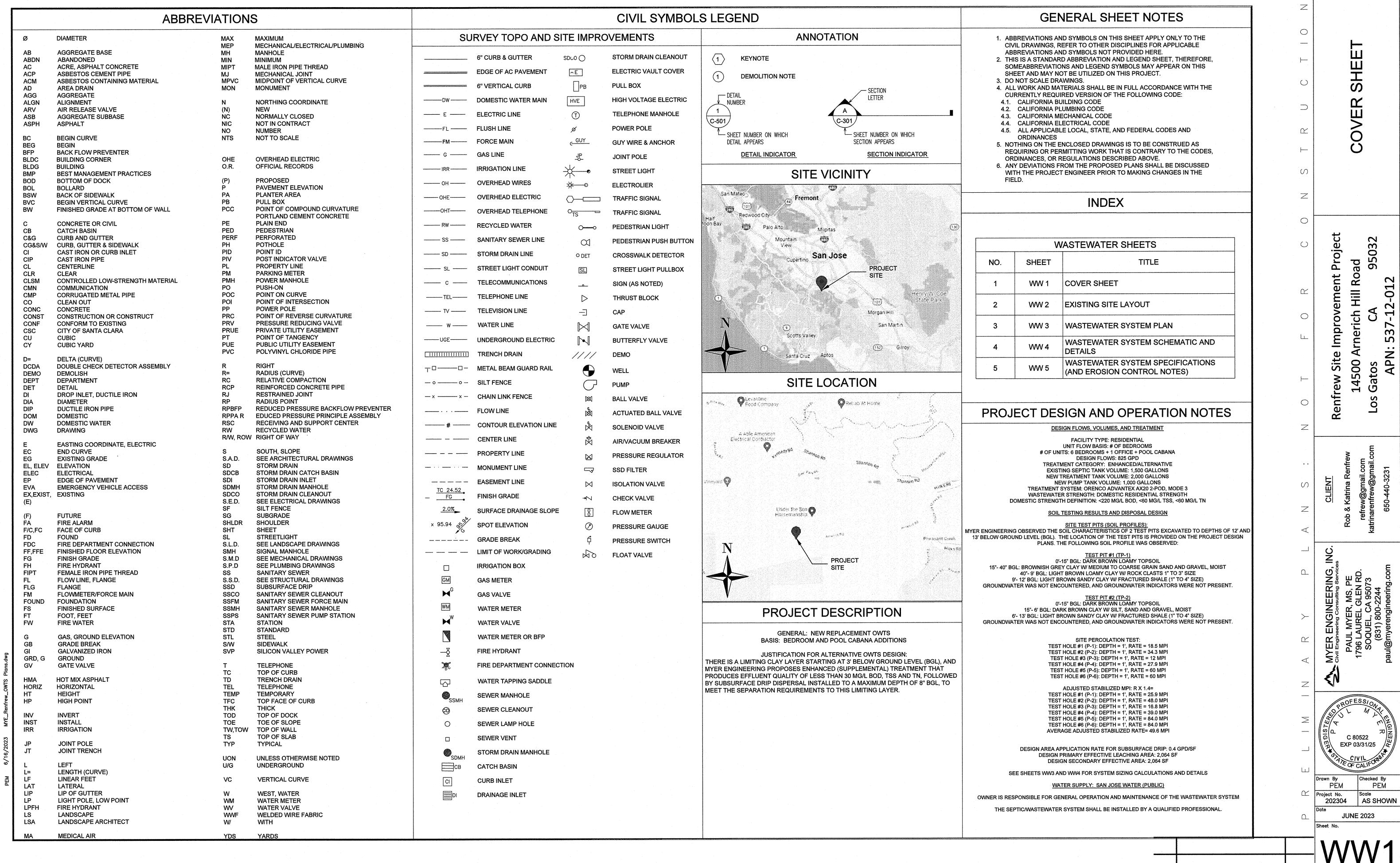
703 VERIFICATIONS

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

> 11.14.22 NTS MEH 2108

PESIDENCE

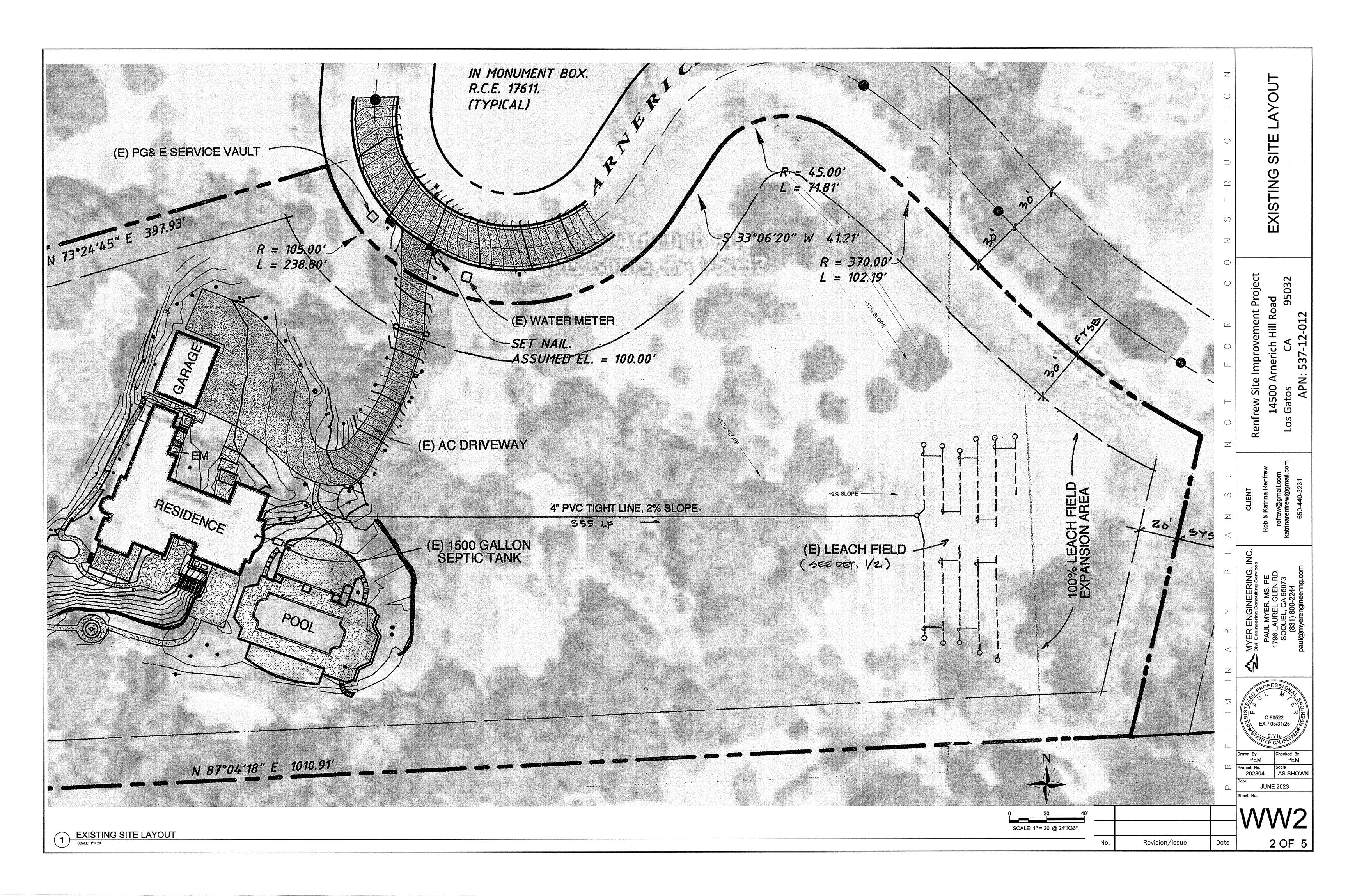
ROAD - APN 537-12-0

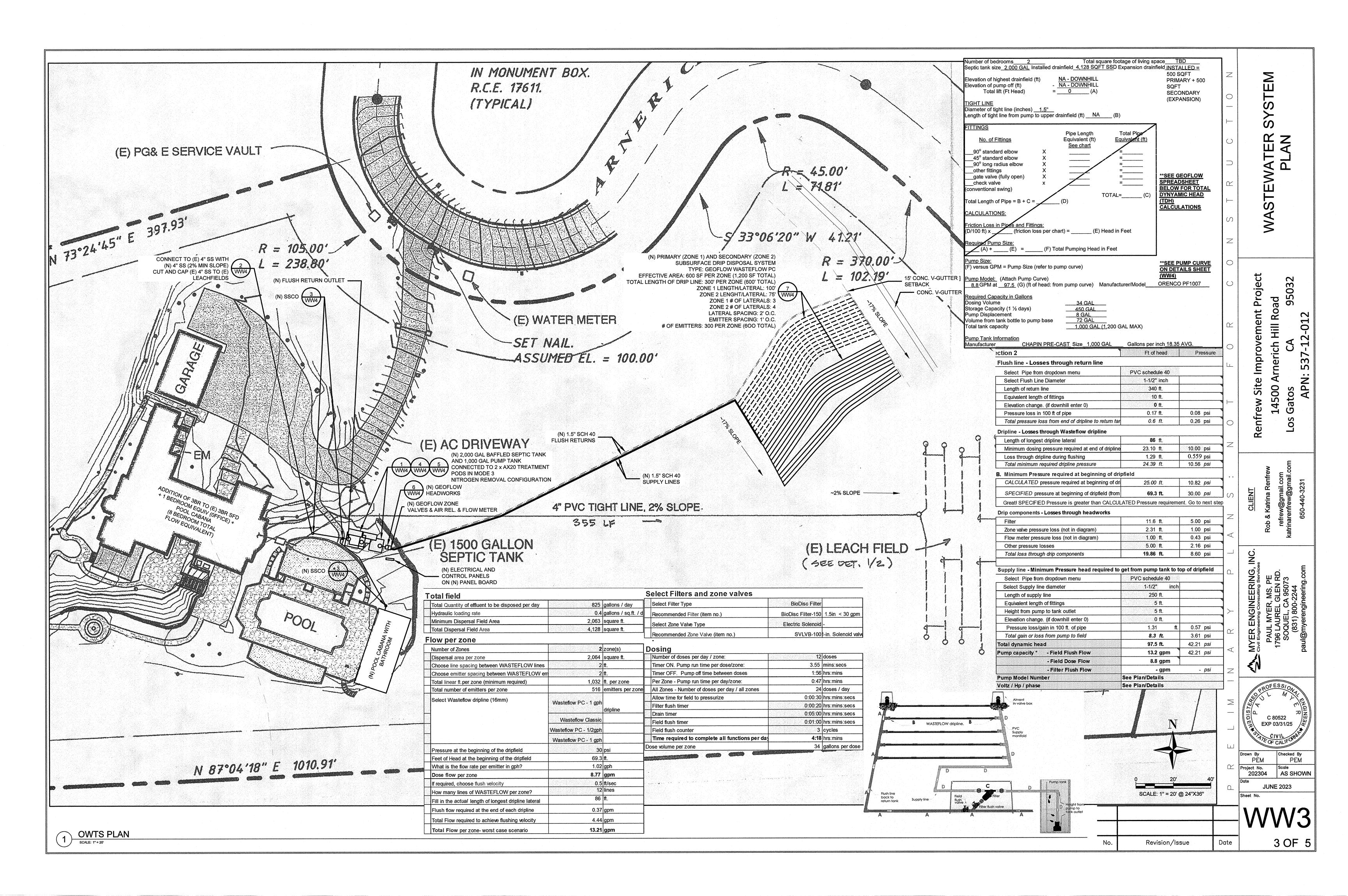


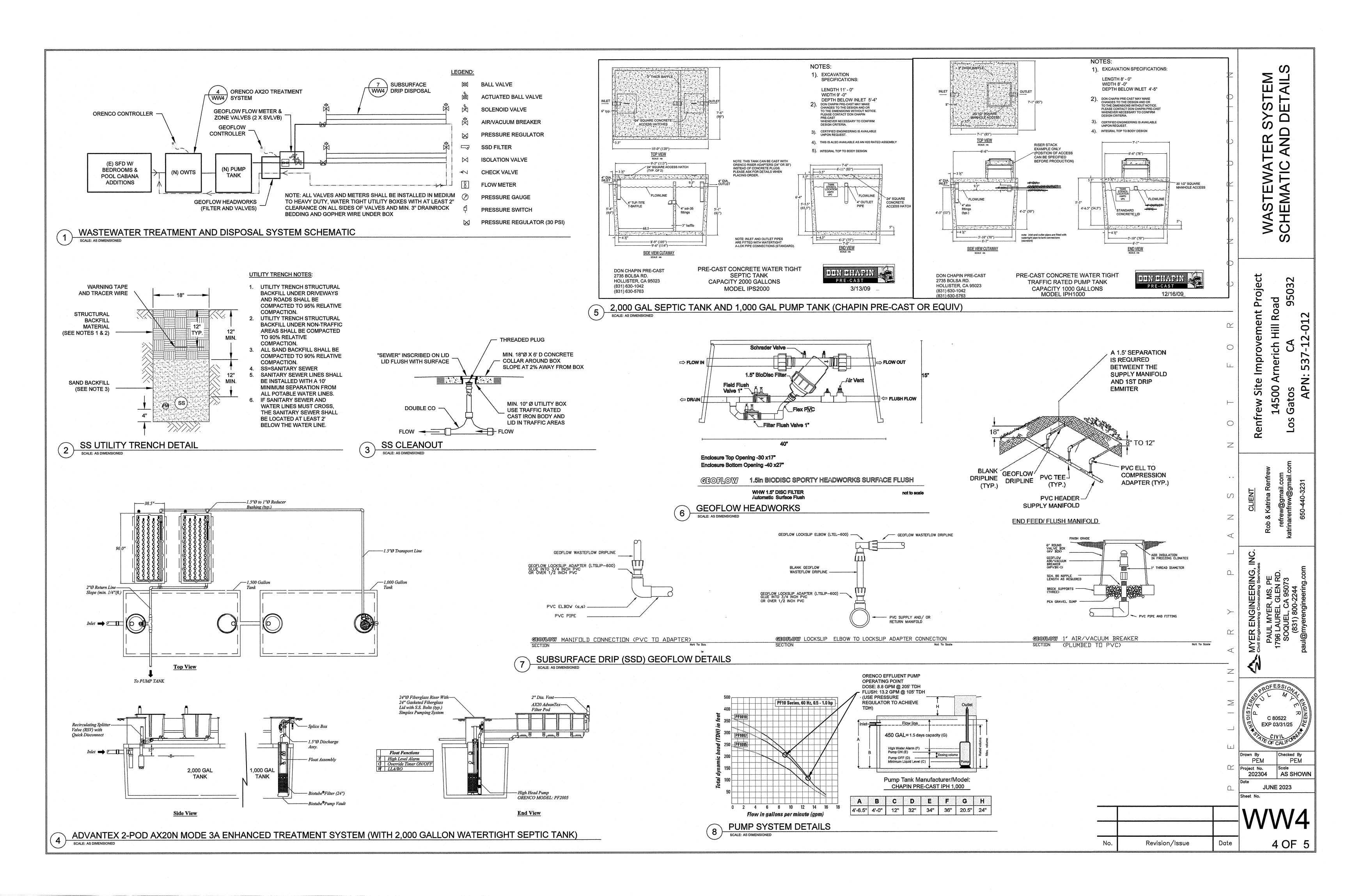
1 OF 4

Date

Revision/Issue







MATERIAL SPECIFICATIONS

THE FOLLOWING ARE MATERIAL SPECIFICATIONS FOR THE WASTEWATER SYSTEM COMPONENTS. ALL MATERIALS USED FOR THE CONSTRUCTION OF THIS PROJECT SHALL CONFORM TO THE FOLLOWING SPECIFICATIONS AND AS DESCRIBED IN THE ACCOMPANIED PLANS OR AN ENGINEER APPROVED

1. SUBSURFACE TANKS

THE SUBSURFACE TANKS INCLUDE THE 2,000 GALLON CONCRETE WATER-TIGHT SEPTIC TANK (TREATMENT TANK) AND THE 1,000 GALLON CONCRETE WATER-TIGHT PUMP TANK.

- 1.1. DIMENSIONS, FITTING SIZES AND LOCATIONS, AND OPTIONAL ACCESSORIES SHALL BE INCLUDED AS SHOWN ON TANK DRAWINGS. THE TANK SHALL BE WATERTIGHT AND TESTED IN THE FIELD AFTER
- PRODUCT STORAGE. THE SUBSURFACE TANKS SHALL BE CAPABLE OF STORING SEPTAGE LIMITED TO THE COLLECTION AND STORAGE OF HUMAN SOLID OR LIQUID ORGANIC WASTE.
- PIPING. SDR35 PVC PIPE, SCHEDULE 40 PVC PIPE, OR ABS PIPE SHALL BE USED FOR INLET AND OUTLET PIPING AS SHOWN ON DRAWINGS. ALL PIPING SHALL BE FACTORY SEALED TO ENABLE FIELD TIGHTNESS TESTING WITH AT LEAST ONE PIPE OPENING PROVIDED WITH A THREADED FITTING FOR CONNECTING A PRESSURE TEST MANIFOLD.
- ACCESS OPENINGS. ALL ACCESS OPENINGS SHALL BE 30 INCHES IN DIAMETER OR LARGER AS SHOWN ON THE PLANS, SHALL BE MANUFACTURED OF FIBERGLASS, CONCRETE OR CAST IRON WITH RESPECT TO SPECIFIED TRAFFIC RATING. LOCATIONS SHALL BE AS SHOWN ON TANK DRAWINGS. EACH MANHOLE SHALL HAVE A WATERTIGHT RISER TO FINISH GRADE.
- RISERS. RISERS SHALL BE REQUIRED FOR ACCESS TO INTERNAL VAULTS AND ACCESS INTO THE TANKS FOR SEPTAGE PUMPING. ALL RISERS SHALL BE CONSTRUCTED WITH WATERTIGHT SEALS PROVIDED. RISERS SHALL BE A MINIMUM OF 30" IN NOMINAL DIAMETER WHEN THE DEPTH OF BURY IS 36" OR GREATER. TO ENSURE PRODUCT COMPATIBILITY, RISERS, LIDS, AND ATTACHMENT COMPONENTS SHALL BE SUPPLIED BY A SINGLE MANUFACTURER AND, WHERE APPLICABLE, SHALL BE FACTORY EQUIPPED WITH THE FOLLOWING:
 - 1.5.1. ADHESIVE. WHEN BONDING TO THE RISER RINGS, AN EPOXY PROVIDED BY THE MANUFACTURER SHALL BE USED. ADHESIVES AND SEALANTS SHALL BE WATERPROOF, CORROSION RESISTANT, AND APPROVED FOR THE INTENDED APPLICATION. THE RISER-TO-TANK CONNECTION SHALL BE WATERTIGHT AND STRUCTURALLY SOUND. THE RISER-TO-TANK CONNECTION SHALL BE CAPABLE OF WITHSTANDING A VERTICAL UPLIFT OF 5,000 POUNDS TO PREVENT RISER SEPARATION DUE TO TANK SETTLEMENT, FROST HEAVE, AND VEHICLE TRAFFIC OVER THE TANK.
 - 1.5.2. LIDS. ONE LID SHALL BE FURNISHED WITH EACH ACCESS RISER. LIDS SHALL BE WATERPROOF, CORROSION RESISTANT, AND UV RESISTANT. LIDS SHALL BE FLAT, WITH NO NOTICEABLE UPWARD DOME. LIDS SHALL NOT ALLOW WATER TO POND ON THEM. LIDS SHALL FORM A WATERTIGHT SEAL WITH THE TOP OF RISER. TRAFFIC-RATED LIDS SHALL BE CAPABLE OF WITHSTANDING A TRUCK WHEEL LOAD (36 SQUARE INCHES) OF 2500 POUNDS FOR 60 MINUTES WITH A MAXIMUM VERTICAL DEFLECTION OF 1-1/2". LIDS SHALL BE PROVIDED WITH TAMPER-RESISTANT STAINLESS STEEL FASTENERS AND A TOOL FOR FASTENER REMOVAL. TAMPER-RESISTANT FASTENERS INCLUDE RECESSED DRIVES, SUCH AS HEX, TORX, AND SQUARE. FASTENERS THAT CAN BE REMOVED WITH COMMON SCREWDRIVERS, SUCH AS SLOTTED AND PHILLIPS, OR FASTENERS THAT CAN BE REMOVED WITH STANDARD TOOLS, SUCH AS PLIERS OR CRESCENT WRENCHES, ARE NOT CONSIDERED TAMPER-RESISTANT. TO PREVENT A TRIPPING HAZARD, FASTENERS SHALL NOT EXTEND ABOVE THE SURFACE OF THE LID.
 - 1.5.3. RISER INSTALLATION. RISER INSTALLATION SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS.

PIPING AND FITTINGS

THE TYPE OF PIPE MATERIALS AND FITTINGS SHALL BE AS DESIGNATED ON THE PLANS AND SHALL COMPLY WITH THE FOLLOWING:

2.1. FITTINGS AND COUPLINGS THE FITTINGS AND COUPLINGS FOR PVC PIPES SHALL BE THREADED OR SLIP-FITTED TAPERED SOCKET SOLVENT WELD. THREADED ADAPTERS SHALL BE PROVIDED WITH SOCKET PIPE FOR CONNECTIONS TO THREADED PIPE

3. VALVES

3.1. GENERA VALVES SHALL BE OF THE SIZE, TYPE, AND CAPACITY DESIGNATED ON THE PLANS OR IN THE SPECIFICATIONS AND SHALL COMPLY WITH THE REQUIREMENTS SPECIFIED HEREIN. ALL VALVES ON PRESSURIZED PORTIONS OF THE SYSTEM SHALL BE CAPABLE OF SATISFACTORY PERFORMANCE AT WORKING PRESSURE OF 150 PSI. ALL VALVES ON GRAVITY PORTIONS OF THE SYSTEM SHALL BE RATED FOR AT LEAST TWICE THE ESTIMATED STATIC HEAD ABOVE THE VALVE, VALVES SHALL BE DESIGNED TO PERMIT DISASSEMBLY TO REPLACE SEALING COMPONENTS WITHOUT REMOVAL OF THE VALVE BODY FROM THE PIPELINE, SUCH AS TRUE UNION BALL VALVES AND CHECK VALVES.

4. PUMP SYSTEMS

ALL PUMP SYSTEMS SHALL BE INSTALLED PER MANUFACTURER RECOMMENDATIONS. IF THERE IS A CONFLICT BETWEEN MANUFACTURER RECOMMENDATIONS, AND THE DESIGN PLANS, THE PROJECT ENGINEER SHALL BE CONTACTED FOR APPROVAL OF INSTALLATION CONFIGURATION.

5. ADDITIONAL COMPONENTS

ALL COMPONENTS SHALL BE INSTALLED PER MANUFACTURER RECOMMENDATIONS. IF THERE IS A CONFLICT BETWEEN MANUFACTURER RECOMMENDATIONS. AND THE DESIGN PLANS. THE PROJECT ENGINEER SHALL BE CONTACTED FOR APPROVAL OF INSTALLATION CONFIGURATION.

7. SUBSURFACE DRIP SYSTEM

THE SUBSURFACE DRIP SYSTEM SHALL PROVIDE ADDITIONAL TREATMENT AND DISPOSAL OF THE WASTEWATER. THE SYSTEM SHALL BE CONSTRUCTED PER MANUFACTURER RECOMMENDATIONS AND AS SHOWN ON PLANS.

7.1. SOIL COVER THE SOIL COVER (CAP) SHALL BE PLACED OVER THE MOUND SYSTEM TO PROVIDE A SUBSTRATE FOR VEGETATION AND REDUCE EROSION CONTROL. THE SOIL SHALL BE A SANDY LOAM TO INCREASE THE POTENTIAL FOR AIR THROUGH THE DEPTH OF THE SOIL.

CONSTRUCTION SPECIFICATIONS

THE CONSTRUCTION OF THE PROJECT SHALL CONFORM TO THE PLANS AND FOLLOWING SPECIFICATIONS. ALL NECESSARY CONSTRUCTION PERMITS SHALL BE OBTAINED PRIOR TO COMMENCEMENT OF ALL SITE WORK.

1. PRECONSTRUCTION CONFERENCE

THE CONTRACTOR SHALL HAVE A PRECONSTRUCTION MEETING WITH THE ENGINEER AND OWNER AT LEAST ONE WEEK PRIOR TO COMMENCEMENT OF SITE WORK. THE ENGINEER SHALL BE CONTACTED 48 HOURS PRIOR TO THE MEETING CONFERENCE. THE MEETING SHOULD BE CONDUCTED TO REVIEW THE DESIGN, MATERIAL, AND CONSTRUCTION SPECIFICATIONS. ALL CONTRACTOR PROPOSED REVISIONS IN THE DESIGN SHALL BE APPROVED BY THE ENGINEER. THE INSTALLATION MUST BE INSPECTED BY THE ENGINEER FOR CONFORMANCE TO THE DESIGN.

2. STAKING

THE CONTRACTOR WILL PROVIDE SUFFICIENT HORIZONTAL AND VERTICAL CONTROL FOR INSTALLATION OF THE WORK AT DATUM POINTS NECESSARY TO ESTABLISH ALIGNMENT AND GRADE. THE PROTECTION AND CARE OF THE STAKES ONCE SET, SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.

3. EXCAVATION

ALL EXCAVATION WORK SHALL BE MADE TO THE LINES, GRADES AND DIMENSIONS SHOWN IN THE ACCOMPANIED PLANS. EXCAVATIONS SHALL BE PERFORMED IN THE DAY AND IN A MANNER THAT MINIMIZES EROSION, FLOODING AND SEDIMENTATION. EXCAVATED SOILS THAT ARE TO BE STOCKPILED ON-SITE SHALL BE PLACED IN A LOCATION AND MANNER THAT MINIMIZES EROSION AND CONTROLS SEDIMENTATION.

THE CONTRACTOR SHALL TAKE EXTRA PRECAUTION WHERE EXCAVATION EQUIPMENT MAY ENCOUNTER EXISTING UNDERGROUND UTILITIES AND OTHER FACILITIES OF ANY NATURE. CONTRACTOR SHALL PERSON HIS OPERATION IN SUCH A MANNER AND SHALL EXERCISE THE GREATEST OF CARE SO AS NOT TO INJURE IN ANY MANNER EXISTING UNDERGROUND UTILITIES. MAINS OR FACILITIES OF ANY NATURE. SHOULD THE

CONTRACTOR INJURE, BREAK OR DAMAGE EXISTING UNDERGROUND UTILITIES, MAINS, OR FACILITIES OF ANY NATURE IN ANY MANNER. THEY SHALL REPAIR THE SAME AT THEIR OWN EXPENSE. IF IT DOES NOT APPEAR FEASIBLE THAT THE CONTRACTOR CAN MAKE NEEDED REPAIRS, THEN SUCH REPAIRS SHALL BE MADE BY THE OWNER AND THE CONTRACTOR SHALL BE CHARGED FOR SUCH REPAIRS.

4. POLLUTION CONTROL

4.1. WATER POLLUTION THE CONTRACTOR SHALL BE RESPONSIBLE FOR ENSURING THAT ALL PERMITTING REQUIREMENTS RELEVANT TO THE CONSTRUCTION OF THE PROJECT ARE MET AT ALL TIMES. ACTIONS BY THE CONTRACTOR, THE SUBCONTRACTORS OR EMPLOYEES THEREOF RESULTING IN NONCOMPLIANCE OF PERMITTING REQUIREMENTS MAY BE GROUNDS FOR TERMINATION OF THIS CONTRACT.

IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO KEEP NOISE POLLUTION, DUE TO THESE CONSTRUCTION ACTIVITIES, AS LOW AS POSSIBLE.

4.3. SOIL CONTAMINATION

THE CONTRACTOR SHALL NOT ALLOW REGULATED MATERIALS TO SPILL ON THE PROJECT SITE. ANY SPILLAGE OR REGULATED MATERIALS RESULTING FROM THE CONTRACTOR'S OPERATION SHALL BE REMOVED IMMEDIATELY BY THE CONTRACTOR AT THE CONTRACTOR'S EXPENSE.

4.4. STORAGE OF REGULATED MATERIALS

THE STORAGE AND USE OF ANY REGULATED MATERIALS SHALL MEET ALL REQUIREMENTS OF LOCAL, STATE, AND FEDERAL REGULATORY AGENCIES. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO SATISFY THE REQUIREMENTS OF ANY REGULATORY AGENCY FOR THE STORAGE, MONITORING, USAGE, TRANSPORTATION SAFETY, REPORTING, OR ANY OTHER REQUIREMENTS REGARDING THE MANAGEMENT OF REGULATED MATERIALS ON AND OFF THE PROJECT SITE.

5. SITE WORK

THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL PREPARATORY WORK AND PLACEMENT OF MATERIALS IN A STAGING AREA REQUIRED FOR CONSTRUCTION OPERATIONS INCLUDING, BUT NOT LIMITED TO, THOSE NECESSARY FOR THE MOVEMENT OF PERSONNEL, EQUIPMENT, SUPPLIES, AND INCIDENTALS TO THE PROJECT SITE; FOR THE ESTABLISHMENT OF FACILITIES NECESSARY FOR WORK ON THE PROJECT; PROVIDING POLLUTION CONTROL MEASURES; AND FOR ALL OTHER WORK AND OPERATIONS WHICH MUST BE

THE CONTRACTOR SHALL PROVIDE MATERIALS, NOT SPECIFICALLY DESCRIBED BUT REQUIRED FOR PROPER COMPLETION OF THE WORK OF THIS SECTION, AS SELECTED BY THE CONTRACTOR SUBJECT TO THE APPROVAL OF THE COUNTY.

CLEAR THE SITE AS SHOWN ON THE DRAWINGS AND AS SPECIFIED IN THIS SECTION. CLEARING AND GRUBBING SHALL CONSIST OF ALL WORK INCLUDING, BUT NOT LIMITED TO, SALVAGED MATERIALS REMOVAL PROVIDING AND INSTALLING TEMPORARY EROSION CONTROL, AND PLACEMENT OF TREES, TREE BRANCHES, TREE STUMPS, BRUSH, ROOTS, BOULDERS, SHRUBS, SEDIMENT, AND ALL OBJECTIONABLE MATERIALS IN AN AGREED UPON LOCATION ADJACENT TO THE WORK SITE.

EXAMINE THE AREAS AND CONDITIONS UNDER WHICH THE WORK OF THIS SECTION WILL BE PERFORMED. CORRECT CONDITIONS DETRIMENTAL TO TIMELY AND PROPER COMPLETION OF THE WORK. DO NOT PROCEED UNTIL UNSATISFACTORY CONDITIONS ARE CORRECTED.

ALL WASTES DISPOSAL SHALL BE CONDUCTED AS FOLLOWS:

- A. REMOVE WASTE FROM CLEARING OPERATIONS. B. DISPOSE OF AWAY FROM THE SITE IN A LEGAL MANNER.
- C. DO NOT STORE OR PERMIT DEBRIS TO ACCUMULATE ON THE JOB SITE. D. DO NOT BURN DEBRIS AT THE SITE.

6. DELETERIOUS MATERIALS

MATERIALS CONTAINING AN EXCESS OF 5% (BY WEIGHT) OF VEGETATION OR OTHER DELETERIOUS MATTER MAY BE UTILIZED IN AREAS OF LANDSCAPING OR OTHER NON-STRUCTURAL FILLS. DELETERIOUS MATERIAL INCLUDES ALL VEGETATIVE AND NON-MINERAL MATTER, AND ALL NON-REDUCIBLE STONE, RUBBLE AND/OR MINERAL MATTER OF GREATER THAN 6 INCHES.

- A. A SELECT, NONCORROSIVE, GRANULAR, EASILY COMPACTED MATERIAL SHOULD BE USED AS BEDDING AND SHADING IMMEDIATELY AROUND UTILITY PIPES. THE SITE SOILS MAY BE USED FOR TRENCH BACKFILL ABOVE THE SELECT MATERIAL. IF OBTAINING COMPACTION IS DIFFICULT WITH THE SITE SOILS, USE OF A MORE EASILY COMPACTED SAND MAY BE DESIRABLE. THE UPPER FOOT OF BACKFILL IN LANDSCAPED OR OTHER OPEN AREAS SHOULD CONSIST OF NATIVE MATERIAL TO REDUCE THE
- POTENTIAL FOR SEEPAGE OF WATER INTO THE BACKFILL. B. TRENCH BACKFILL IN THE UPPER 12 INCHES OF SUBGRADE BENEATH AREAS TO RECEIVE PAVEMENT SHOULD BE COMPACTED TO A MINIMUM OF 95 PERCENT OF MAXIMUM DRY DENSITY. TRENCH BACKFILL IN OTHER AREAS SHOULD BE COMPACTED TO A MINIMUM OF 90 PERCENT OF MAXIMUM DRY DENSITY. JETTING OF UTILITY TRENCH BACKFILL SHOULD NOT BE ALLOWED.

8. PIPE INSTALLATION

8.1. GENERAL

PIPE SHALL BE JOINED BY SOCKET TYPE SOLVENT-WELDED FITTINGS OR THREADED FITTINGS. PLASTIC PIPE SHALL BE CUT SQUARE, EXTERNALLY CHAMFERED APPROXIMATELY 10 TO 15 DEGREES, AND ALL BURRS AND FINS REMOVED, SOLVENT-WELDED JOINTS SHALL BE MADE IN ACCORDANCE WITH ASTM D 2855. THE SOLVENT RECOMMENDED BY THE MANUFACTURER SHALL BE USED.

CARE SHALL BE EXERCISED IN ASSEMBLING A PIPELINE WITH SOLVENT WELDED JOINTS SO THAT STRESS ON PREVIOUSLY MADE JOINTS IS AVOIDED. HANDLING OF THE PIPES FOLLOWING JOINTING, SUCH AS LOWERING THE ASSEMBLED PIPELINE INTO THE TRENCH, SHALL NOT OCCUR PRIOR TO THE SET TIMES SPECIFIED BY THE MANUFACTURER

SOLVENTS SHALL BE APPLIED TO PIPE ENDS IN SUCH A MANNER THAT NO MATERIAL IS DEPOSITED ON THE INTERIOR SURFACE OF THE PIPE OR EXTRUDED INTO THE INTERIOR OF THE PIPE DURING JOINTING. EXCESS CEMENT ON THE EXTERIOR OF THE JOINT SHALL BE WIPED CLEAN IMMEDIATELY AFTER ASSEMBLY.

THREADED PIPE JOINTS SHALL BE MADE USING TEFLON TAPE OR OTHER APPROVED JOINTING MATERIAL SOLVENT SHALL NOT BE USED WITH THREADED JOINTS. PLASTIC PIPE WHICH HAS BEEN NICKED, SCARRED, OR OTHERWISE DAMAGED SHALL BE REMOVED AND REPLACED. PLASTIC PIPE SHALL BE SNAKED FROM SIDE TO SIDE IN THE TRENCH TO ALLOW 1 FOOT OF EXPANSION AND CONTRACTION PER 100 FEET OF STRAIGHT

THE PIPELINE SHALL NOT BE EXPOSED TO WATER FOR 24 HOURS AFTER THE LAST SOLVENT-WELDED JOINT IS MADE.

8.2 GRAVITY PIPE GRAVITY PIPE FOR WASTEWATER SHALL PROVIDE 2 FT VERTICAL AND 10 FT HORIZONTAL CLEARANCE FROM WATER LINES, AND SHALL CROSS SUCH LINES AS NEARLY AS POSSIBLE TO 90 DEGREES, IF CROSSING CAN NOT BE AVOIDED.

PIPE SLOPES SHALL NOT BE LESS THAN 2% FOR 4"Ø PIPE. PIPES SHALL ENTER AND LEAVE CONNECTIONS AS CLOSE TO PARALLEL AS POSSIBLE, BUT IN NO WAY TO EXCEED AN ANGLE OF 45°. 90° TEE CONNECTIONS ARE NOT ALLOWED.

8.3 GENERAL TRENCHING

EXCAVATION OF PIPE TRENCHES SHALL FOLLOW NEAT AND PARALLEL LINES, WITH TRENCH WIDTH, IN GENERAL, TO BE ONE FOOT, WITH SUCH WIDENING, AS REQUIRED TO PLACE VALVES AND FITTINGS WITH A MINIMUM OF 4 INCH CLEARANCE TO TRENCH WALL. THE TRENCH SHALL BE NO LESS THAN 24 INCHES DEEP, EXCEPT WHEN IT IS NECESSARY, TO AVOID UNDERGROUND OBSTRUCTIONS OR ROCKY CONDITIONS. IN ALL CASES, THE PIPE SHALL BE PLACED ON A BEDDING OF IMPORTED OR NATIVE MATERIAL PROVIDING CONTINUOUS SUPPORT THROUGHOUT ITS LENGTH.

BACKFILL FOR THE PIPE TO THE TOP OF THE PIPE PLUS 4 INCHES SHALL BE SELECTED OR IMPORTED SANDY MATERIAL, FREE OF STONE, CLAY, LIMBS OR OTHER DELETERIOUS MATERIALS IN EXCESS OF 1/2 INCH MAXIMUM DIMENSION, PLACED AND TAMPED AND/OR PADDLED ABOUT THE PIPE TO ENSURE PROPER BEDDING PRIOR TO COMPLETION OF TRENCH FILL. THE REMAINING BACKFILL SHALL BE PLACED AT 90% RELATIVE COMPACTION.

9. FLUSHING AND TESTING

AFTER COMPLETION, ALL PIPELINES SHALL BE THOROUGHLY FLUSHED TO REMOVE DIRT, SCALE, OR OTHER MATERIAL. AFTER FLUSHING, THE LINE SHALL BE PRESSURE TESTED. ALL EQUIPMENT, MATERIALS AND LABOR NECESSARY TO PERFORM THE TESTS SHALL BE FURNISHED BY THE CONTRACTOR AND ALL TESTS SHALL BE CONDUCTED IN THE PRESENCE OF THE OWNER OR ENGINEER.

THE CONTRACTOR SHALL PERFORM A TEST TO DEMONSTRATE THAT THE TANKS AND BASINS ARE WATER TIGHT. THE INLET AND OUTLET PIPES OF THE TANKS SHALL BE CAPPED AND THE TANKS SHALL BE COMPLETELY FILLED WITH WATER. THE WATER LEVEL SHALL REMAIN CONSTANT FOR MORE THAN 24 HOURS. OR DURATION BY THE REVIEWING AGENCY JURISDICTION, WHICHEVER IS GREATER, TO DETERMINE IF IT IS WATER TIGHT.

10. OPERATIONAL TEST

THE PERFORMANCE OF ALL COMPONENTS OF THE SYSTEMS SHALL BE EVALUATED BY THE CONTRACTOR.

DURING THE TEST PERIOD AND AT LEAST 15 DAYS PRIOR TO FINAL INSPECTION, THE SYSTEM SHALL OPERATE SATISFACTORILY DURING SUCH PERIOD. ALL NECESSARY REPAIRS, REPLACEMENTS, AND ADJUSTMENTS SHALL BE MADE UNTIL ALL EQUIPMENT, ELECTRICAL WORK, CONTROLS, AND INSTRUMENTATION ARE FUNCTIONING IN ACCORDANCE WITH THE CONTRACTORS DOCUMENTS OR MANUFACTURER SPECIFICATIONS.

11. AS-BUILT DRAWINGS

THE CONTRACTOR SHALL PROVIDE THE OWNER WITH A SET OF AS-BUILT DRAWINGS OF THE LAYOUT AND CONSTRUCTION OF THE SYSTEM.

12. OTHER ITEMS

ANY PROCEDURES NOT NOTED OR INCLUDED IN THE ENGINEERING PLANS OR SPECIFICATIONS SHALL BE APPROVED BY THE PROJECT ENGINEER PRIOR TO IMPLEMENTATION.

13. CONSTRUCTION INSPECTION.

- 13.1. AT A MINIMUM, INSPECTION OF THE DRIP DISPERSAL SYSTEM INSTALLATION SHOULD INCLUDE THE FOLLOWING. THIS IS IN ADDITION TO INSPECTION WORK REQUIREDFOR THE TREATMENT SYSTEM. JOINT INSPECTION BY THE DESIGNER, CONTRACTOR, AND DEH MAY BE REQUIRED.
 - 13.1.1. PRE-CONSTRUCTION INSPECTION WHERE THE CONSTRUCTION STAKING OR MARKING OF THE DRIP LINES, SUPPLY AND RETURN PIPING, PUMP SYSTEM AND APPURTENANCES IS PROVIDED AND CONSTRUCTION PROCEDURES DISCUSSED;
 - 13.1.2. WATER TIGHTNESS OF EFFLUENT DOSING (PUMP) TANK; 13.1.3. DRIP FIELD LAYOUT, PIPING MATERIALS AND INSTALLATION, AND ALL ASSOCIATED VALVES
 - AND CONNECTIONS 13.1.4. HYDRAULIC TESTING OF THE DRIP SYSTEM;
 - 13.1.5. FUNCTIONING AND SETTING OF ALL CONTROL DEVICES; AND 13.1.6. FINAL INSPECTION TO VERIFY THAT ALL CONSTRUCTION ELEMENTS ARE IN CONFORMANCE WITH THE APPROVED PLANS, SPECIFICATIONS, AND MANUFACTURE RECOMMENDATIONS; ALL INSPECTION WELLS ARE INSTALLED; AND EROSION CONTROL HAS BEEN COMPLETED.

14. MANAGEMENT REQUIREMENTS

RECOMMENDED MINIMUM PROCEDURES AND FREQUENCY FOR INSPECTION, MAINTENANCE, MONITORING AND REPORTING ACTIVITIES FOR SUBSURFACE DRIP DISPERSAL SYSTEMS ARE **OUTLINED IN TABLE DD-2.**

15. OPERATING PERMITS (PER SANTA CLARA COUNTY ORDINANCE SECTION B11-92)

- 15.1. (A) IN ADDITION TO AN INSTALLATION PERMIT, AN OPERATING PERMIT IS REQUIRED FOR ALL ALTERNATIVE OWTS, INCLUDING THOSE INSTALLED IN CONNECTION WITH THE REPAIR OR UPGRADE OF EXISTING OWTS AS WELL AS THOSE FOR NEW CONSTRUCTION. GENERAL REQUIREMENTS PERTAINING TO OPERATING PERMITS ARE AS FOLLOWS:
 - 15.1.1. (1) THE OPERATING PERMIT WILL BE ISSUED BY THE DIRECTOR FOLLOWING: A.COMPLETION OF CONSTRUCTION OF THE ALTERNATIVE OWTS; B.SATISFACTORY COMPLIANCE WITH THE INSTALLATION PERMIT REQUIREMENTS; AND C.PAYMENT OF APPLICABLE FEES. OPERATING PERMITS ARE NON-TRANSFERABLE.
 - 15.1.2. (2) AFTER INITIAL ISSUANCE, THE OPERATING PERMIT IS REQUIRED TO BE RENEWED PERIODICALLY, THE STANDARD RENEWAL PERIOD BEING ONE YEAR. THE DIRECTOR MAY ESTABLISH CONDITIONS ALLOWING THE TIME PERIOD BETWEEN RENEWALS TO BE EXTENDED FOR CERTAIN TYPES OF OWTS BASED ON A RECORD OF FAVORABLE PERFORMANCE OR OTHER FACTORS WARRANTING A REDUCTION IN SYSTEM OVERSIGHT BY DEH. PROVISIONS FOR ADJUSTING THE OPERATING PERMIT RENEWAL PERIOD SHALL BE PRESCRIBED BY THE DIRECTOR IN THE ONSITE SYSTEMS MANUAL. OPERATING PERMITS MUST ALSO BE RENEWED AT THE TIME OF CHANGE IN PROPERTY OWNERSHIP
 - (3) OPERATING PERMITS ARE INTENDED TO SERVE AS THE BASIS FOR VERIFYING THE ADEQUACY OF ALTERNATIVE OWTS PERFORMANCE AND ENSURING ON-GOING MAINTENANCE PERMIT CONDITIONS SHALL INCLUDE MONITORING AND INSPECTION REQUIREMENTS, PERMIT DURATION, AND OTHER PROVISIONS AS PRESCRIBED BY THE DIRECTOR IN THE ONSITE SYSTEMS MANUAL OR AS DEEMED APPROPRIATE BY THE DIRECTOR ON A CASE-BY-CASE
 - 15.1.4. (4) RENEWAL OF AN OPERATING PERMIT REQUIRES: A.PAYMENT OF THE APPLICABLE FEES, UPON RECEIPT OF NOTICE FROM THE DIRECTOR; ANDB.SUBMISSION OF THE RESULTS OF REQUIRED SYSTEM INSPECTION AND MONITORING
 - 15.1.5. (5) FAILURE TO PAY THE REQUIRED FEE OR SUBMIT THE SPECIFIED MONITORING AND INSPECTION INFORMATION, OR FAILURE TO UNDERTAKE ANY REQUIRED CORRECTIVE WORK SPECIFIED BY THE DIRECTOR MAY BE CAUSE FOR ISSUANCE OF A CITATION, PENALTY FEES, NON-RENEWAL AND/OR REVOCATION OF THE OPERATING PERMIT BY THE DIRECTOR. THE DIRECTOR MAY PLACE A LIEN ON THE PROPERTY FOR RECOVERY OF ANY ASSOCIATED
- ABATEMENT COSTS AND UNPAID FEES. 15.1.6. (6) A CERTIFIED COPY OF THE FOLLOWING SHALL BE RECORDED AGAINST THE PROPERTY IN THE OFFICE OF THE COUNTY RECORDER OF SANTA CLARA COUNTY:A.INITIAL OPERATING PERMIT ISSUED FOR THE SYSTEM; B.REISSUANCE OF OPERATING PERMIT TO NEW OWNERS; ANDC.NOTICES OF WITHDRAWAL OF ANY OPERATING PERMIT.
- 15.2. (B) OTHER USES OF OPERATING PERMITS. AN OPERATING PERMIT MAY ALSO BE UTILIZED FOR CÍRCUMSTANCES OTHER THAN ALTERNATIVE OWTS, SUCH AS FOR LARGER FLOW OWTS (> 2,500 GPD), IN CONNECTION WITH HOLDING TANK EXEMPTIONS OR WHERE, IN THE OPINION OF THE DIRECTOR, THE TYPE. SIZE. LOCATION OR OTHER ASPECTS OF A PARTICULAR OWTS INSTALLATION WARRANT THE ADDITIONAL LEVEL OF OVERSIGHT PROVIDED BY AN OPERATING PERMIT. IN SUCH CASES, THE ISSUANCE AND SCOPE OF OPERATING PERMITS WILL BE ISSUED IN ACCORDANCE WITH THE GENERAL REQUIREMENTS LISTED IN SECTION B11-92(A)(1) THROUGH (A)(6) ABOVE, AND ANY ADDITIONAL REQUIREMENTS PRESCRIBED BY THE DIRECTOR IN THE ONSITE SYSTEMS MANUAL FOR PARTICULAR CIRCUMSTANCES.

16. PERFORMANCE MONITORING AND REPORTING.

- 16.1. (A) A MONITORING PROGRAM WILL BE ESTABLISHED FOR EACH ALTERNATIVE OWTS AS A CONDITION OF THE OPERATING PERMIT AT THE TIME OF PERMIT ISSUANCE, AND MAY BE AMENDED AT THE TIME OF PERMIT RENEWAL. SAID MONITORING SHALL BE PERFORMED TO ENSURE THAT THE ALTERNATIVE OWTS IS FUNCTIONING SATISFACTORILY TO PROTECT WATER QUALITY AND PUBLIC HEALTH AND SAFETY. THE MONITORING PROGRAM WILL BE IN ACCORDANCE WITH GUIDELINES IN THE ONSITE SYSTEMS MANUAL AND MAY ALSO INCORPORATE RECOMMENDATIONS OF THE SYSTEM DESIGNER,
- MANUFACTURER, OR THIRD-PARTY REVIEWER. (B) MONITORING REQUIREMENTS WILL VARY DEPENDING UPON THE SPECIFIC TYPE OF ALTERNATIVE
- OWTS IN ACCORDANCE WITH GUIDELINES IN THE ONSITE SYSTEMS MANUAL. (C) THE REQUIRED FREQUENCY OF MONITORING WILL BE IN ACCORDANCE WITH GUIDELINES IN THE ONSITE SYSTEMS MANUAL, MONITORING FREQUENCY MAY BE INCREASED IF, IN THE OPINION OF THE
- DIRECTOR, SYSTEM PROBLEMS ARE EXPERIENCED. (D) MONITORING OF ALTERNATIVE OWTS SHALL BE CONDUCTED BY OR UNDER THE SUPERVISION OF ONE OF THE FOLLOWING:
- 16.4.1. (1) REGISTERED CIVIL ENGINEER: 16.4.2. (2) PROFESSIONAL GEOLOGIST:
- 16.4.3. (3) REGISTERED ENVIRONMENTAL HEALTH SPECIALIST; OR 16.4.4. (4) OTHER ONSITE WASTEWATER MAINTENANCE PROVIDER REGISTERED WITH THE DEPARTMENT OF ENVIRONMENTAL HEALTH AND MEETING QUALIFICATIONS AS ESTABLISHED

ANY ALTERNATIVE OWTS WHERE DEEMED NECESSARY BECAUSE OF SPECIAL

MONITORING REPORTS, THE DIRECTOR SHALL BE NOTIFIED IMMEDIATELY OF ANY SYSTEM PROBLEMS

ADDITIONALLY, THE DIRECTOR MAY REQUIRE THIRD-PARTY OR COUNTY MONITORING OF

- IN THE ONSITE SYSTEMS MANUAL. REGISTRATION SHALL ENTAIL 16.4.4.1. A. DOCUMENTATION OF REQUIRED QUALIFICATIONS; B. PARTICIPATION IN ANNUAL TRAINING/REVIEW CONDUCTED BY THE DIRECTOR; AND C. PAYMENT OF AN ANNUAL FEE ESTABLISHED BY THE BOARD OF SUPERVISORS.
- CIRCUMSTANCES, SUCH AS THE COMPLEXITY OF THE SYSTEM OR THE SENSITIVE NATURE OF THE SITE. THE COSTS FOR SUCH ADDITIONAL MONITORING WOULD BE THE RESPONSIBILITY OF THE OWNER. 16.5. (E) MONITORING RESULTS SHALL BE SUBMITTED TO THE DIRECTOR IN ACCORDANCE WITH REPORTING GUIDELINES PROVIDED IN THE ONSITE SYSTEMS MANUAL. THE MONITORING REPORT SHALL BE SIGNED BY THE PARTY RESPONSIBLE FOR THE MONITORING. NOTWITHSTANDING FORMAL
- OBSERVED DURING SYSTEM INSPECTION AND MONITORING THAT THREATEN PUBLIC HEALTH OR (F) IN ADDITION TO REGULAR INSPECTION AND MONITORING ACTIVITIES, POST-SEISMIC INSPECTION AND EVALUATION OF ALTERNATIVE OWTS LOCATED IN HIGH-RISK SEISMIC AREAS WILL BE REQUIRED IN THE EVENT OF AN EARTHQUAKE CAUSING SIGNIFICANT GROUND SHAKING IN THE REGION, AS DETERMINED BY THE DIRECTOR IN CONSULTATION WITH THE COUNTY GEOLOGIST, THE DIRECTOR WILL BE RESPONSIBLE FOR ISSUING APPROPRIATE NOTICES WHEN SUCH INSPECTIONS ARE REQUIRED; THOSE CONDUCTING THE INSPECTIONS WILL BE REQUIRED TO REPORT THE INSPECTION RESULTS TO THE DIRECTOR. THE PURPOSE OF SUCH INSPECTIONS WILL BE TO ASSESS AND DOCUMENT ANY DAMAGE TO THE OWTS AND TO IMPLEMENT CORRECTIVE MEASURES. AS NEEDED, IN A TIMELY MANNER. POST-SEISMIC INSPECTION SHALL BE IN ACCORDANCE WITH REQUIREMENTS PRESCRIBED BY THE DIRECTOR, IN CONSULTATION WITH THE COUNTY GEOLOGIST, AND CONTAINED
- IN THE ONSITE SYSTEMS MANUAL. (G)THE DIRECTOR WILL, FROM TIME-TO-TIME, COMPILE AND REVIEW MONITORING AND INSPECTION RESULTS FOR ALTERNATIVE OWTS AND, AT LEAST EVERY TWO YEARS, WILL PROVIDE A SUMMARY OF RESULTS TO THE SAN FRANCISCO BAY AND CENTRAL COAST REGIONAL WATER QUALITY CONTROL BOARDS, BASED ON THIS REVIEW. THE DIRECTOR MAY REQUIRE CORRECTIVE ACTION FOR SPECIFIC PROPERTIES OR CERTAIN TYPES OF ALTERNATIVE OWTS, OR GENERAL CHANGES IN MONITORING AND INSPECTION REQUIREMENTS.

EROSION CONTROL NOTES:

GENERAL. THE CONTRACTOR SHALL INSTALL, MAINTAIN AND INSPECT EROSION CONTROL AND TEMPORARY STORMWATER CONTROL MEASURES TO CONTROL SEDIMENT AND RUNOFF IN ACCORDANCE WITH THESE PLANS AND THE LOCAL JURISDICTION.

- 1.1. THE CONSTRUCTION OF THIS PROJECT IS NOT EXPECTED TO OCCUR DURING THE WINTER SEASON (OCTOBER 15TH THROUGH APRIL 15TH).

1.2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR EROSION AND SEDIMENT CONTROL BMP INSTALLATION AND MAINTENANCE.

- 1.3. ALL GRADING SHALL CONFORM TO THE LOCAL GRADING ORDINANCE, EROSION CONTROL ORDINANCES, AND CALIFORNIA BUILDING CODE.
- 1.4. ALL DISTURBED SURFACES SHALL BE PREPARED AND MAINTAINED TO CONTROL EROSION AND TO ESTABLISH NATIVE OR NATURALIZED VEGETATIVE GROWTH COMPATIBLE WITH THE AREA. THIS CONTROL SHALL CONSIST OF: A. EFFECT TEMPORARY PLANTING SUCH AS RYE GRASS, SOME OTHER FAST-GERMINATION SEED, AND MULCHING WITH STRAW AND/OR OTHER SLOPE STABILIZATION MATERIAL; B) PERMANENT PLANTING OF NATIVE OR NATURALIZED DROUGHT RESISTANT SPECIES OF SHRUBS, TREES, OR OTHER VEGETATION, PURSUANT TO THE COUNTY'S LANDSCAPE CRITERIA, WHEN THE PROJECT IS COMPLETED; C) MULCHING, FERTILIZING, WATERING OR OTHER METHODS MAY BE REQUIRED TO ESTABLISH NEW VEGETATION, ON SLOPES LESS THAN 20%, TOPSOIL SHOULD BE STOCKPILED AND REAPPLIED.

SEED AND MULCH. ALL AREAS ON- AND OFF-SITE EXPOSED DURING CONSTRUCTION ACTIVITIES, IF NOT PERMANENTLY LANDSCAPED PER PLAN, SHALL BE PROTECTED BY MULCHING AND/OR HAND BROADCASTING OF THE FOLLOWING STERIL, WEED FREE, SEED MIX AND INCORPORATED OVER ALL DISTURBED SLOPES:

BROMUS CARINATUS 10#/ACRE LEYMUS TRITICOIDES 8#/AC HORDEUM BRACHYANTHERUM 5#/AC.

FESTUCA RUBRA 8#/AC.

DESCHAMPSIA CESPITOSA 8#/AC.

THE MIX/APPLICATION SHALL ALSO CONTAIN: - FERTILIZER (6-3-3) SHALL BE HAND BROADCAST AND INCORPORATED AT 30-LB/ACRE OVER ENTIRE AREA.

- MYCHORRHIZAL FUNGI SHALL BE ADDED AT 50 LB/ ACRE. - IF HYDROSEEDING, ADD MULCH AND TACKIFIER TO ABOVE.

ALL EXCAVATED MATERIAL SHALL BE REMOVED TO AN APPROVED DISPOSAL SITE OR DISPOSED OF ON-SITE IN A MANNER THAT WILL NOT CAUSE EROSION

CONCRETE WASHOUT. TEMPORARY CONCRETE WASHOUT FACILITIES SHALL BE LOCATED A MINIMUM OF 50 FEET FROM STORM DRAIN INLETS, OPEN DRAINAGE FACILITIES, AND WATERCOURSES. THE CONCRETE WASHOUT FACILITY SHALL BE BELOW GRADE AND CONSTRUCTED WITH A MINIMUM LENGTH AND MINIMUM WIDTH OF 10 FEET. TEMPORARY CONCRETE FACILITIES SHALL BE CONSTRUCTED AND MAINTAINED IN SUFFICIENT QUANTITY AND SIZE TO CONTAIN ALL LIQUID AND CONCRETE WASTE GENERATED BY WASHOUT OPERATIONS. THE WASHOUT SHALL HAVE A 10 MIL POLYETHYLENE PLASTIC LINER. WHEN CONCRETE WASHOUT FACILITIES ARE NO LONGER REQUIRED FOR THE WORK, THE HARDENED CONCRETE AND MATERIALS FOR THE WASHOUT SHALL BE REMOVED AND DISPOSED OF. HOLES, DEPRESSIONS, OR OTHER GROUND DISTURBANCES CAUSED BY THE REMOVAL OF THE CONCRETE WASHOUT SHOULD BE BACKFILLED AND REPAIRED.

OTHER PROVISIONS. IF CONSTRUCTION OCCURS BETWEEN OCTOBER 15TH AND APRIL 15TH, EXPOSED SOIL NOT INVOLVED IN IMMEDIATE CONSTRUCTION ACTIVITY SHALL BE PROTECTED FROM EROSION AT ALL TIMES. AFTER APRIL 15TH, EROSION CONTROL MEASURES SHALL BE IN PLACE DURING INCLEMENT WEATHER.

EROSION CONTROL MEASURES SHALL BE KEPT IN PLACE BY THE CONTRACTOR UNTIL NATIVE VEGETATION HAS BEEN ESTABLISHED AND PROVIDES NECESSARY SLOPE COVER (MINIMUM 70% COVER). Worksheet 3 - Parts List WFPC16-4-24 2.064 ft. Wasteflow PC . 1 gph, 24 in. emitter spacing Airvent and box APVBK-1 1" airvent for use on zones less than 50gpm AV BOX 6 inch Pressure Regulators - Use to keep pressure from being too high Restricts pressure from exceeding required pressure. Required with Classic dripline. Controllers Select Controller from list left Pre-assembled Headworks Select from cell with BioDisc Filter WHWS-V-1F-A Sporty Headworks box & guts with 1" Vortex Filter. Automatic flush BIODISC Filter Headworks GEOVAC filter Headworks Solenoid Flush valves - Select only if Headworks is not selected above Filters - Select only if Headworks is not selected above RioDisc Filter-150

Pressure Gauges - Select only if Headworks is not selected above Flow Meters Select Flow Meter Flow Meter - Digital Display Zone valves -1" Solenoid valve. 24V.FPT.Normally closed. SVLVB-100 2 ea.

Dripline fittings - Quantities below are estimates only. LTSLIP-600 Lockslip Adapter. 3/4" PVC slip to Wasteflow dripline 48 ea .TC-600 This adds 2 couplings for each coil ordered. 8 ea. LTTEE-600 Lockslip Tee. Fits 16mm Wasteflow dripline ea. LTELL-600 Lockslip Elbow. Fits 16mm Wasteflow dripline LTFlex-R-18 18" flex PVC riser with 1 lockslip adapter. Used for risers LTFlex-L-36 36" flex PVC with 2 lockslip adapters. Used for risers or loops Check Valves - Check design for quantities 1" True Union ball check PVC/Viton CV-B-10

Select size from drop down menu left

Crenco Technical Data Sheet **PF-Series Submersible Effluent Pumps:** 3-Phase, 60-Hz, 4-inch (100-mm)

Spring check

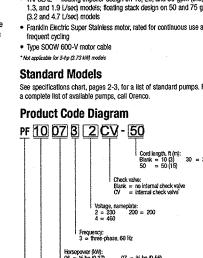
Unions



Suction connection

ea.

Jnions



Available for 10 gpm (0.6 L/sec), 1/2 hp (0.37 kW) only

See specifications chart, pages 2-3, for a list of standard pumps.

Date

Revision/Issue

0

JUNE 2023

0

ERING,

EXP 03/31/25

Checked By PEM PEM Project No. 202304 AS SHOWN