

SUMMARY OF WORK:

The Contractor shall verify all dimensions and conditions on the plans and at the site and shall notify the Architect of any discrepancies found.

REGULATORY REQUIREMENTS CODES:

All work shall comply with applicable State statutes, city ordinances and the regulations of other agencies having jurisdiction. The contractor shall assume full responsibility for complying with the construction safety orders of the State Division of Industrial Safety, the regulations of the Federal and State Occupational Safety and Health Administrations, and such other agencies governing the contractor's acts. The Contractor shall be responsible for and hold harmless the Architect for any damages and/or penalties resulting from his failure to comply with said laws, statutes, ordinances, and regulations.

ALTERNATIVES:

No alternate methods of construction or substitutions shall be allowed without approval of the Architect:

DISCREPANCIES:

Drawings take precedence over specifications, detailed drawing and specifications take precedence over general drawings and specifications, dimensions take precedence over scaled measurements.

The General Contractor shall co-ordinate and verify with the plumbing, mechanical, and electrical contractors the size and location of all piping, ductwork, trenches, sleeves, special bolting for equipment conduits, etc., through and under concrete slabs prior to pouring of footings and floor slabs.

The design, adequacy, and safety of erection bracing, shoring, temporary supports, etc. is the sole responsibility of the Contractor, and has not been considered by the Structural Engineer.

GENERAL NOTES

- The contractor shall in the work of all trades perform any and all cutting and patching necessary to complete the work, and shall protect the existing building from damage caused by the work. The contractor shall repair and restore the existing construction to it's original condition to the satisfaction of the owner.
- The contractor shall not disrupt existing services, operations or utilities, without obtaining owners prior approval and instructions.
- Coordinate demolition and construction to remain so as to provide the best possible joint or underlying surface for the new work.
- All construction and workmanship shall conform to local building codes.
- The contractor shall visit the job site and be responsible for the verification of all conditions and dimensions prior to commencing construction.
- The contractor shall be responsible for leaving all finish surfaces clean at completion of the work and shall remove all excess material and debris from the job regularly.

GENERAL NOTES

- The contractor shall verify all dimensions before starting work. The owner shall be notified immediately of any discrepancies. Contractor is responsible for the accurate placement of the building on the site
- Plans and specifications shall conform to all local codes.
- The contractor shall be responsible for leaving all finish surfaces clean, at completion of the work and shall remove all excess material and debris from the job regularly.

SITE WORK

- Provide labor, materials, equipment and services necessary for excavating, backfilling and compacting in accordance with architectural drawings and these specifications.
- The contractor shall remove all excess materials from the site and repair any damaged areas to the owner's satisfaction.

CONCRETE / FOUNDATION

- Furnish, install and finish concrete work complete, including grading under all slabs, plastic membranes, form work, reinforcing, etc., and placement of bolts, supplied by other trades as indicated on drawings.
- All concrete for slabs on grade shall have 4500 psi ultimate compressive strength in 28 days. Slab finish to be wood float and steel trowel to smooth dense finish. Apply broom finish to exposed slab surfaces.
- All reinforcing steel and anchor bolts shall be well secured in position prior to pouring concrete.
- Provide 5/8"dia. x 10" anchor bolts embedded 7" in concrete @ 48" O.C. (or as with bolt maximum 9" from sill ends.
- Concrete shall be type V cement and have a maximum 0.45 water / cement ratio
- Reinforcing steel shall be intermediate grade deformed bars conforming to ASTM A-615 and A-305.
- Minimum lap for reinforcing bars shall be 20 dia. or 1'-6" in concrete.
- Minimum protective coverage of steel in concrete footing pad or any concrete poured against earth shall be 3"; slab- 3/4".
- Provide 6x6/#10-10 WW Mesh at all on-grade building slabs. (U.N.O.)
- Note: extend one lower footing bar up 18" above finish floor for electrical ground at service panel, bar 20'-0" long minimum.
- The slab shall be placed over 2" sand over 6 mil. plastic film vapor barrier. The vapor barrier shall be properly lapped and sealed.

WOOD FRAMING

- All framing lumber shall be douglas fir no. 2 grade or larch except as noted. Studs shall be douglas fir no. 2 grade. All posts and beams shall be graded no. 1.
- All lumber in contact with concrete less than 48" from the ground shall be pressure treated or durable wood.
- The number and size of nails connecting wood members together shall be in accordance with Table 2304.10.1 of the Calif. Building Code unless otherwise noted or detailed.
- Isolated wood posts shall be attached to concrete slab or foundations with ICC approved metal anchors. Separate from concrete 1" with min. 1/8" thick metal plate. Isolated wood posts shall be attached to beams at top with ICC approved metal post caps or straps.

- Plywood notes:
 - Douglas fir PS-1-94
 - Face grain shall be perpendicular to joists.
 - Stagger all joints
 - Plywood shall be structural grade as graded by an approved grading agency
 - All plywood used on walls, roofs, floors, shall be bonded with exterior glue.
 - Roof diaphragm nailing: min. 8d box nails @ 6" O.C. @ edges; 12" O.C. @ intermediate supports.
- Top plate of all stud walls shall be two pieces same size as studs, splices to lap 4'-0" min. and nailed with (8) 16d min. each side of joint.
- Provide 18g. x 1 1/4" Simp. ST12 where plates are interrupted or broken.
- Holes for bolts shall be same size as bolts or 1/16" larger.
- Provide 2x3 cross bridging @ 10'-0" O.C. for roof joists (or approved metal cross bridging).
- Floor joists shall have blocking @ 8'-0" O.C.
- Provide 2x solid blocking at each support.
- Provide double joists under parallel partitions.
-
- Provide 2x solid fire blocking stud walls and partitions, including furred spaces, so placed that maximum dimension of any concealed space does not exceed 10'-0". Also firestop at ceilings and furred soffits.
- Unless otherwise noted, all exterior wall studs shall be 2x4 @ 16" O.C.; interior walls shall be 2x4 @ 16" O.C. with larger studs to be provided where required to accommodate plumbing lines electrical panels, etc.
- Provide minimum 1" clearance between all wood and fireplace chimney.
- Header schedule:
 - 2 - 2x4 to 3'-0"
 - 2 - 2x6 to 4'-0"
 - 2 - 2x8 to 6'-0"
 - 2 - 2x10 to 8'-0"
- Contractor shall provide necessary blocking, backing and framing for light fixtures, electrical units, A.C. equipment, and all other misc. items requiring same.
- Header joists over 6'-0" long and tail joists over. 12'-0" long shall be supported by approved metal hangers.
- HANGING OF WOOD DOORS AND WINDOWS: Sand and refinish doors and window sash as required. Hang doors with clearances of not more than 3/32" at jambs; 1/2" or as required at sills. Bevel lock edge. Install windows as indicated on plans. Do all mortising for hardware before finish is applied. Do not install hardware until painting/staining is complete. Keep all hardware free from scratches, dents or other defacements.
- Framing contractor shall supply all sisakraft paper used at exterior door and window frames.
- Framing contractor shall supply and apply approved mastic caulking material at all points in the framing where leaks are apt to occur. This shall include, but is not limited to, sills, flashings, windows, etc. Special care shall be used in the application of all sisakraft and building papers to prevent leaks, using waterproof lap over all doors and windows.
- Exposed overhangs shall be 1"x 6" tongue and groove S4S solid from fascia to Roof sheathing must edge nail into freize/shear block for proper shear transfer from roof to wall.

ENERGY INSULATION

- All exterior walls shall be insulated with blanket-type mineral fiber or glass fiber insulation conforming to federal spec. HH-1-521 E with a thermal resistance (R) of not less than 13
- All ceilings of roof ceiling assemblies shall be insulated with blanket-type mineral or glass fiber insulation conforming to federal spec. HH-1-521 E with a thermal resistance (R) of not less than 30.
- Swinging doors or windows to the exterior or to unconditioned spaces such as garages shall be fully weather-stripped to limit air infiltration.
- All sliding glass doors and windows shall be certified and labeled to show conformance with air infiltration standards of American National Standards Institute
- All heating or cooling ducts located outside the building energy envelope shall have all joints and seams sealed and shall be insulated with a minimum 1" thick (.6lb/cuft.) fibrous insulation.
- Insulate interior walls around bathrooms and service rooms adjacent to habitable areas and floor/ceiling assemblies above habitable areas with fiberglass or mineral wool batts, 3 1/2" thick.

FINISHES

- Paper backed plaster lath to be "stucco-rite" galvanized wire mesh with paper backing or equal.
- The application shall be a three coat application consisting of scratch coat, brown coat and finish coat. Proportions to meet manufacturer's recommendations and shall be in accordance with the recommendations of the California Lathing and Plastering Contractor's Association and the American National Standards Institute, Standards A422 and A423.
- Painting materials shall be of general quality as Sherwin-Williams, Sinclair, Dunn-Edwards, or Devco Products. All primer and finish coats including color pigments, shall be lead free. Colors as directed by owner.

EPOXY MORTAR

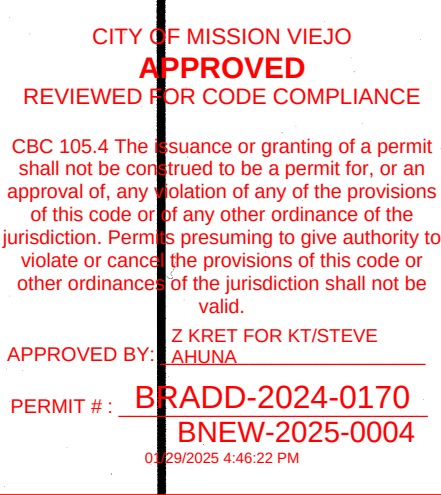
- Materials: Simpson Set XP ESR 2508 epoxy mortar or equal.

GYPSUM WALLBOARD

Gypsum board, ASTM C36, regular 1/2" typical, 5/8" Type "X" fire code for walls and ceilings where indicated complete with manufacturer's standard metal trim accessories at connections with other materials.

PAINTING

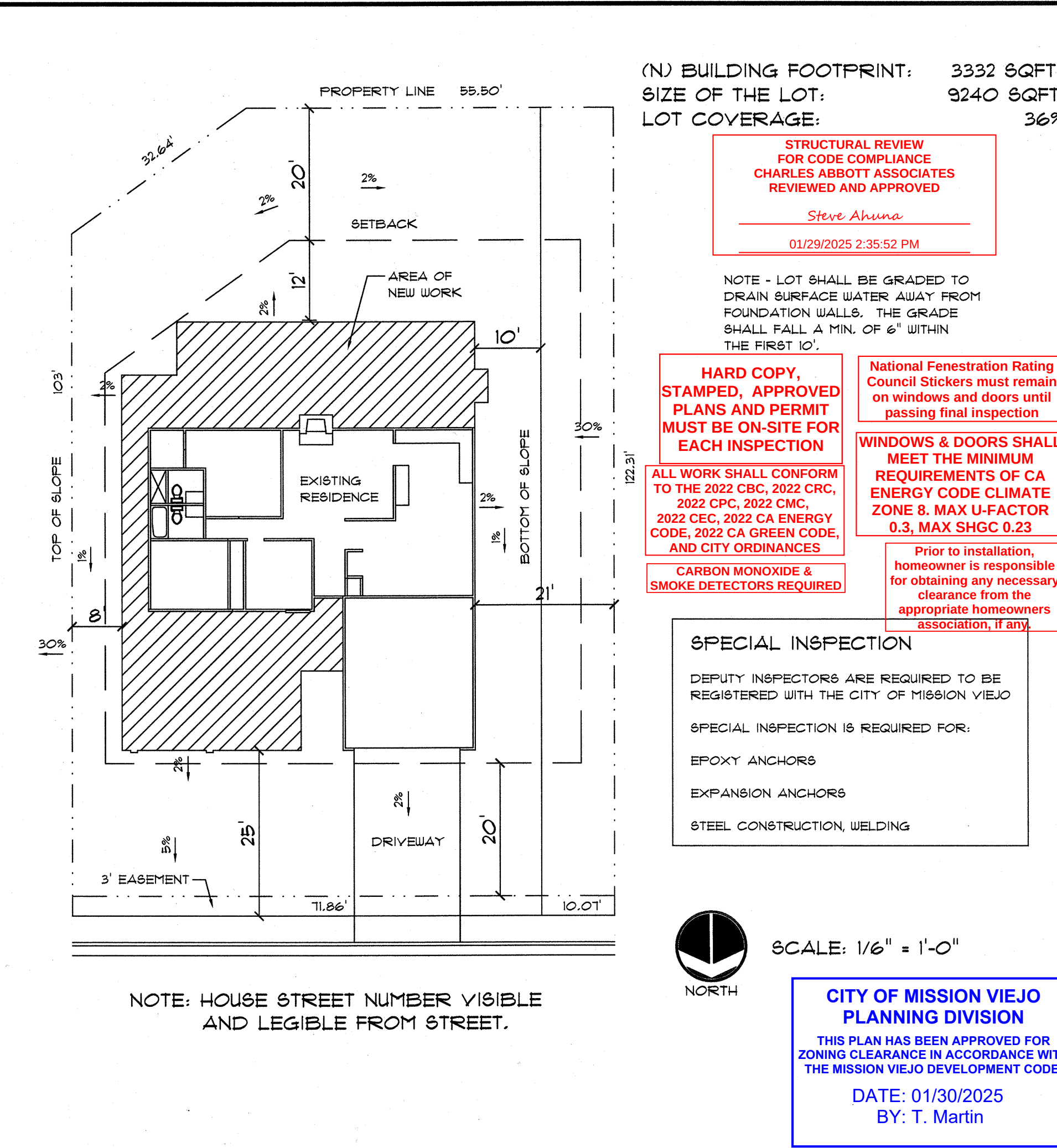
Painting materials shall be of general quality as Dunn-Edwards, or Frazee Products. All primer and finish coats including color pigments, shall be lead free. Colors as directed by Owner. Painting shall be in accordance with the recommendations of the "Painting and Decorating Contractor's of America" Architectural Specifications Manual and manufacturer's installation instructions.



RESIDENTIAL REMODEL PLANS FOR: Residence

24142 Amurro Dr., Mission Viejo, CA. 92691

THERE SHALL BE NO TRENCHES OR EXCAVATIONS 5 FEET OR MORE IN DEPTH INTO WHICH A PERSON IS REQUIRED TO DESCEND OR OBTAIN PERMIT FROM CAL/OSHA. THIS PERMIT AND ANY OTHER SAFETY PERMIT SHALL BE OBTAINED PRIOR TO COMMENCEMENT OF ANY WORK. CAL/OSHA 714-558-4451



NOTE: HOUSE STREET NUMBER VISIBLE AND LEGIBLE FROM STREET.

NPDES NOTES

- In case of emergency, call _____ at work phone # _____, or home phone # _____
- Sediment from areas disturbed by construction shall be retained on site using structural controls to the maximum extent practicable
- Stockpiles of soil shall be properly contained to minimize sediment transport from the site to streets, drainage facilities or adjacent properties via runoff, vehicle tracking, or wind.
- Appropriate BMP's for construction related materials, wastes, spills shall be implemented to minimize transport from the site to streets, drainage facilities, or adjoining properties by wind or runoff.
- Runoff from equipment and vehicle washing shall be contained at construction sites unless treated to reduce or remove sediment and other pollutants
- All construction contractor and subcontractor personnel are to be made aware of the required best management practices and good housekeeping measures for the project site and any associated construction staging areas
- At the end of each day of construction activity all construction debris and waste materials shall be collected and properly disposed in trash or recycle bins
- Construction sites shall be maintained in such a condition that an anticipated storm does not carry wastes or pollutants off the site. Discharges of material other than stormwater only when necessary for performance, completion of construction practices and where they do not cause or contribute to a violation of any water quality standard, cause or threaten to cause pollution, contamination, or nuisance; or contain a hazardous substance in a quantity reportable under Federal Regulations 40 CFR Parts 117 and 302.
- Potential pollutants include but are not limited to: solid or liquid chemical spills; wastes from paints, stains, sealants, glues, lime, pesticides, herbicides, wood preservatives and solvents; asbestos fibers, paint flakes or stucco fragments; fuels, oils lubricants, and hydraulic, radiator or battery fluids; fertilizers, vehicles/equipment wash water and concrete wash water; concrete, detergent or flammable wastes; wastes from any engine/equipment steam cleaning or chemical degreasing and superchlorinated potable water line flushing. During construction, permittee shall dispose of such materials in a specified and controlled temporary area on-site, physically separated from potential stormwater runoff, with ultimate disposal in accordance with local, state and federal requirements.
- Dewatering of contaminated groundwater, or discharging contaminated soils via surface erosion is prohibited. Dewatering of non-contaminated groundwater requires a national pollutant discharge elimination system permit from the respective State Regional Water Quality Control Board. Graded areas on the permitted area perimeter must drain away from the face of slopes at the conclusion of each working day. Drainage is to be directed toward deslting facilities.
- The permittee and contractor shall be responsible and shall take necessary precautions to prevent public trespass onto areas where impounded water creates a hazardous condition.
- The permittee and contractor shall inspect the erosion control work and insure that the work is in accordance with the approved plans.
- The permittee shall notify all general contractors, subcontractors, material suppliers, leasees, and property owners; that dumping of chemicals into the storm drain system or the watershed is prohibited.
- Equipment and workers for emergency work shall be made available at all times during the rainy season. Necessary materials shall be available on site and stockpiled at convenient locations to facilitate rapid construction of temporary devices when rain is imminent
- All removable erosion protective devices shall be in place at the end of each working day when the 5-day rain probability forecast exceeds 40%.
- Sediments from areas disturbed by construction shall be retained on site using an effective combination of erosion and sediment controls to the maximum extent practicable, and stockpiles of soil shall be properly contained to minimize sediment transport from the site to the streets, drainage facilities or adjacent properties via runoff, vehicle tracking, or wind.
- Appropriate BMP's for construction related materials, wastes, spills or residues shall be implemented and retained on site to minimize transport from the site to streets, drainage facilities, or adjoining property by wind or runoff.

FLOOR LIVE LOAD	40 PSF
ROOF LIVE LOAD	20 PSF
WIND SPEED	110 MPH
OCC CATEGORY	II
SEISMIC DESIGN CAT.	E
SEISMIC FORCE RESIST SYS.	BEAR'G WALL (A)
IMPORTANCE FACTOR	1
WIND EXPOSURE	C
Ss	1.205
Sd1	0.434
Sds	0.964
DESIGN BASE SHEAR	0.098
ALLOWABLE STRESS	0.070
REDUNDANCY	0.091
R	6.5

CODE USED	2022 ED. CRC / CBC
OCCUPANCY	R-3 / U
TYPE OF CONSTRUCTION	TYPE V-B - SPRINKLERED
AREA OF NEW WORK	1303 SQFT. EXISTING FLOOR AREA 1821 SQFT. NEW FLOOR AREA ADD 464 SQFT. EXISTING GARAGE
DESCRIPTION OF WORK	EXPAND MASTER BEDROOM, GREAT ROOM REMODEL KITCHEN, (2) BEDROOMS, BATHS, ADD BEDROOM AND (2) BATHS
PLANS COMPLY WITH	2022 ED. CALIFORNIA PLUMBING CODE 2022 ED. CALIFORNIA MECHANICAL CODE 2022 ED. CALIFORNIA ELECTRICAL CODE 2022 ED. CALIF. ENERGY EFFIC. STDs. 2022 ED. CALIF. GREEN BLDG. STDs.
ASSESSOR'S PARCEL #	809-354-02
SITE CLASS	D - STIFF SOIL (8C)
WIND SPEED	110 MPH - EXPOSURE C

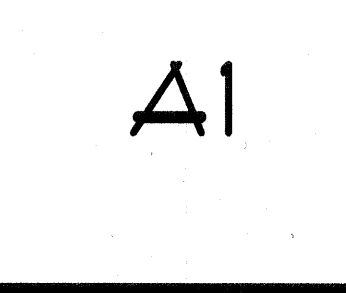
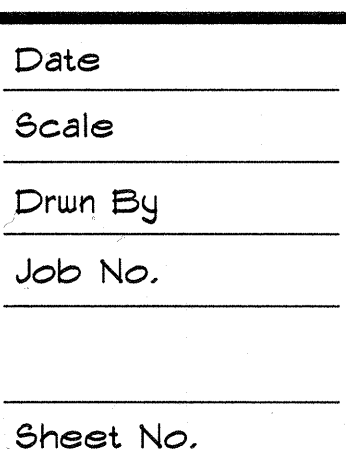
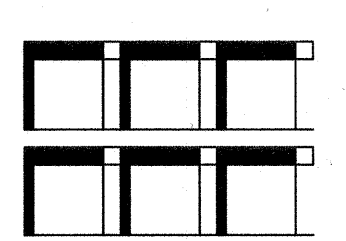
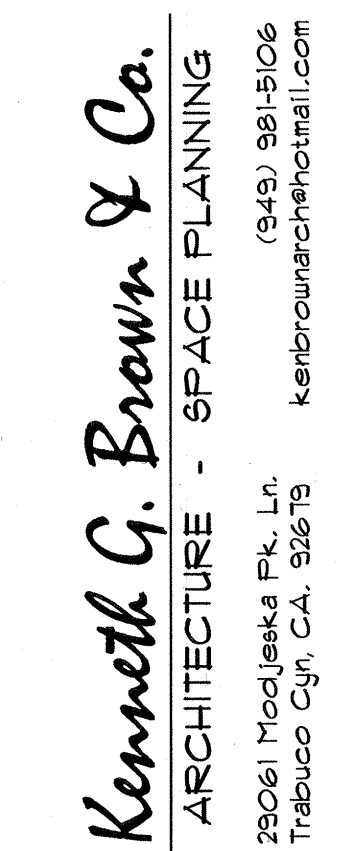
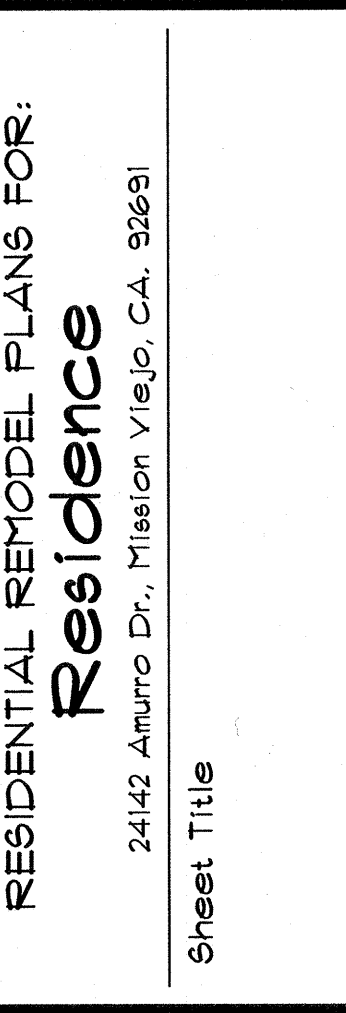
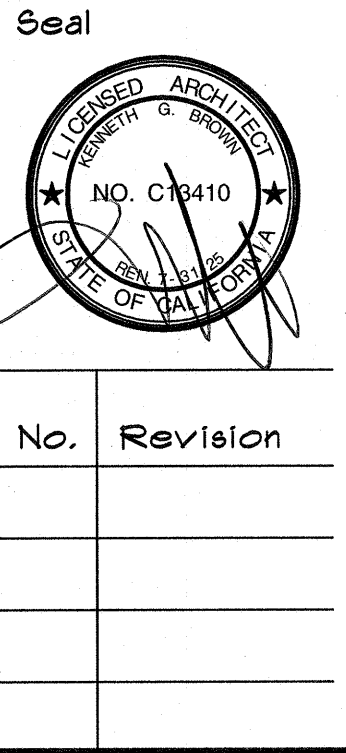
SHEET INDEX

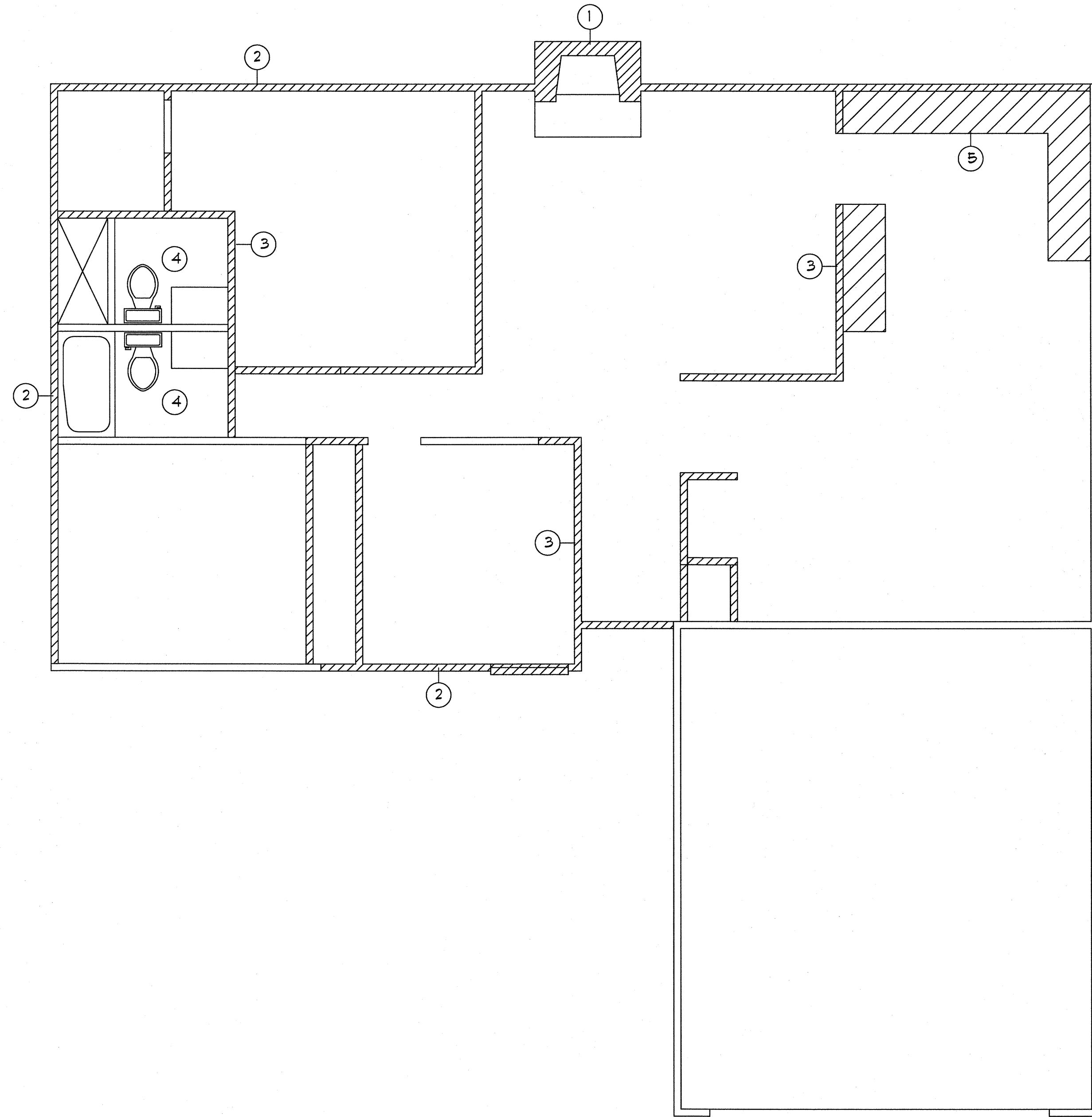
NO.	DESCRIPTION
A1	TITLE SHEET - GENERAL NOTES
A2	EXISTING FLOOR PLAN - DEMO
A3	NEW FLOOR PLAN
A4	EXTERIOR ELEVATIONS
A5	EXTERIOR ELEVATIONS
A6	ROOF PLAN
S1	STRUCTURAL GENERAL NOTES - DET.
S2	FOUNDATION PLAN
S3	ROOF FRAMING PLAN
S4	DETAILS
S&W1	SHEARWALL DETAILS
S&W2	SHEARWALL DETAILS
T1	TITLE 24 INFORMATION
T2	TITLE 24 INFORMATION

The contract drawings and specifications represent the finished structure, unless otherwise shown. They do not indicate the method of construction. The contractor shall supervise and direct the work and he shall be solely responsible for all construction means, methods, techniques, sequences and procedures. Observation visits to the site by field representatives of the Architect/Engineer shall not include inspection of the protective measures or the construction procedures required for same. Any support services performed by the Architect/Engineer during construction shall be distinguished from continuous and detailed inspection services which are furnished by others. These support services performed by the Architect/Engineer, whether of material or work, and whether performed prior to, during, or after completion of construction are performed solely for the purpose of assisting in quality control and in achieving conformance with contract drawings and specifications, but they do not guarantee contractors performance and shall not be construed as supervision of construction.

Unless otherwise provided in the contract documents, the contractor shall provide and pay for all labor, materials, equipment, tools, construction equipment and machinery, water, heat, utilities, transportation, fencing, barricades and other facilities and services necessary for the proper execution and completion of the work, whether temporary or permanent and whether or not incorporated or to be incorporated in the work.

The contractor shall be responsible for all cutting, fitting or patching that may be required to complete the work or to make its several parts fit together properly.





DEMOLITION NOTES

1. REMOVE FIREPLACE AND CHIMNEY
2. REMOVE EXTERIOR WALL FRAMING, DOOR/WINDOW - SHORE, BRACE FRAMING ABOVE AS REQUIRED
3. REMOVE INTERIOR WALL FRAMING - SHORE AND BRACE FRAMING ABOVE AS REQUIRED
4. REMOVE/RELOCATE BATHROOM FIXTURES, PLUMBING
5. REMOVE KITCHEN CABINETS, APPLIANCES AND FIXTURES.

CITY OF MISSION VIEJO
APPROVED
REVIEWED FOR CODE COMPLIANCE
CBC 105.4 The issuance or granting of a permit shall not be construed to be a permit for, or an approval of, any violation of any of the provisions of this code or of any other ordinance of the jurisdiction. Permits presuming to give authority to violate or cancel the provisions of this code or other ordinances of the jurisdiction shall not be valid.
APPROVED BY: Z KRET FOR KY/STEVE
PERMIT # : BRADD-2024-0170
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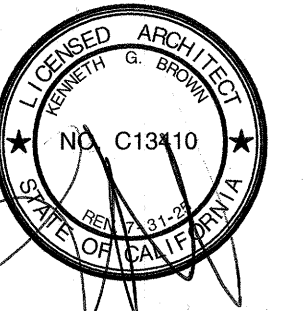
(E) FLOOR PLAN - DEMO SCALE 1/4" = 1'-0"

1312 SQFT

LEGEND

EXISTING WALL FRAMING TO REMAIN
EXISTING TO BE REMOVED
NEW WALL

Seal



No. Revision

RESIDENTIAL REMODEL PLANS FOR:

Residence

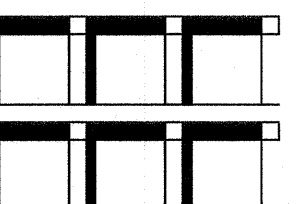
24142 Amuro Dr., Mission Viejo, CA. 92691

Sheet Title

Kenneth G. Brown & Co.

ARCHITECTURE - SPACE PLANNING

28061 Modjeska Pk. Ln. (949) 991-5106
Troy, CA 94678 kentrarchitectural.com



Date

Scale

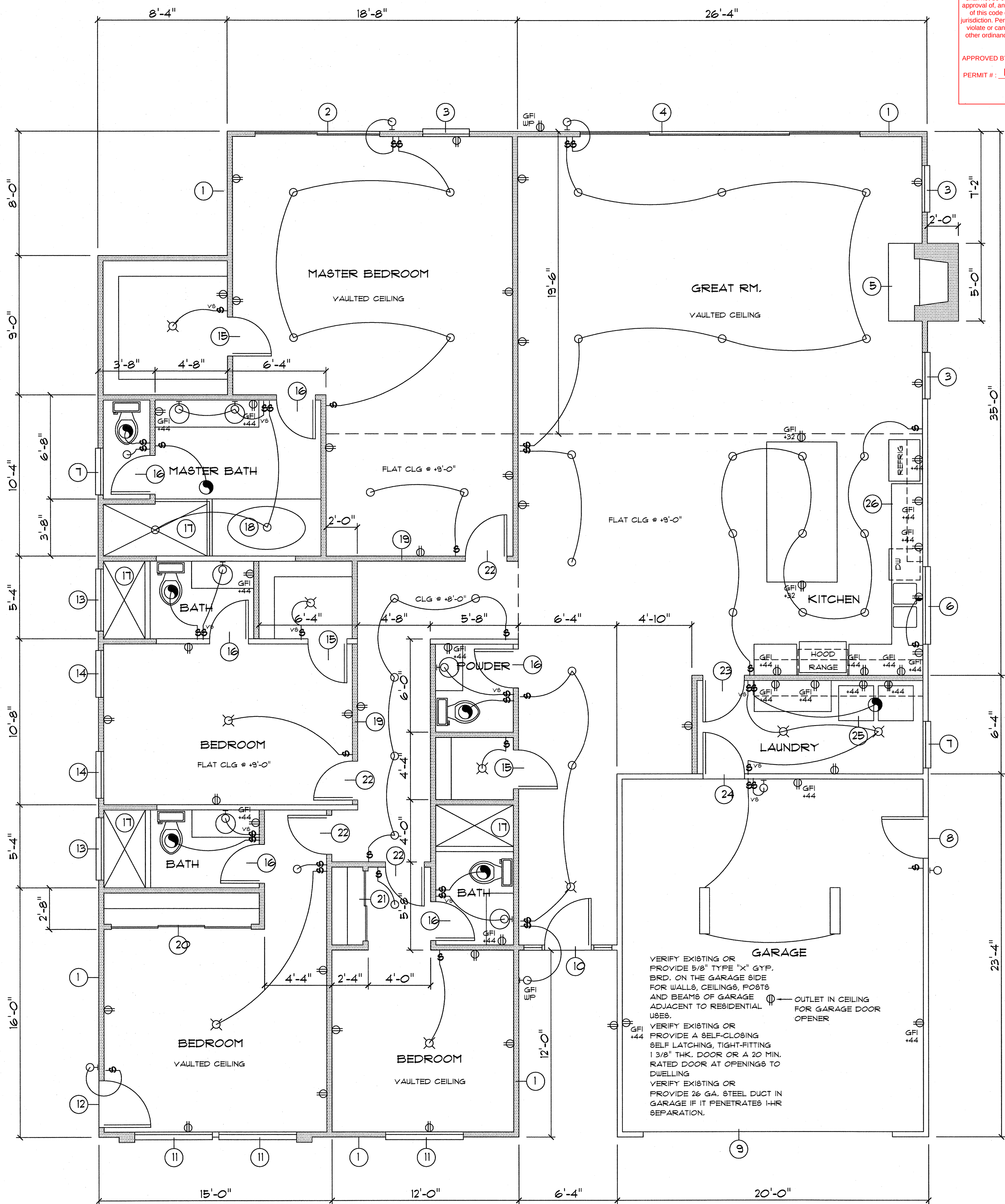
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Job No.

Sheet No.

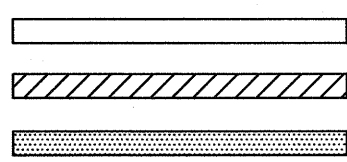
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APPROVED BY: Z. KRET FOR KTSISTEVE
PERMIT #: BRADD-2024-0170
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LEGEND

EXISTING WALL FRAMING TO REMAIN
EXISTING TO BE REMOVED
NEW WALL



(N) FLOOR PLAN

SCALE 1/4" = 1'-0"

ALL NEW GLAZING WILL BE INSTALLED WITH LABELS TO REMAIN IN PLACE FOR INSPECTION

ELECTRICAL LEGENDS

- WALL MOUNTED LED FIXTURE
- ⊗ CEILING MOUNTED LED FIXTURE
- RECESSED DOWNLIGHT LED FIXTURE
- ⊗ EXHAUST FAN - 75 CFM
- 2-TUBE LED FIXTURE
- ⊕ SINGLE CONVENIENCE OUTLET
- ⊕ DUPLEX CONVENIENCE OUTLET
- ⊕ HALF SWITCHED DUPLEX OUTLET
- ⊕ WEATHER PROOF DUPLEX OUTLET
- +48" MOUNTING HEIGHT ABOVE FIN. FLR.
- ⊕ SINGLE POLE SWITCH
- ⊕ 3-WAY SWITCH
- ⊕ VACANCY SENSOR
- ⊕ SMOKE DETECTOR
- ⊕ COMBINATION SMOKE/CARBON MONOXIDE DETECTOR

EXHAUST FANS SHALL BE ENERGY STAR COMPLIANT AND DUCTED TO THE OUTSIDE. FANS MUST BE CONTROLLED BY A HUMIDITY CONTROL, MIN. EXH. RATE 50 CFM INTERMITTANT OR 20 CFM CONTINUOUS.

INTERIOR SPACES INTENDED FOR HUMAN OCC. SHALL BE PROVIDED WITH SPACE HEATING SYSTEMS CAPABLE OF MAINTAINING AN INDOOR TEMPERATURE OF NOT LESS THAN 68 DEGREES AT A POINT 3' ABOVE THE FLOOR.

ALL EXTENDED DUCT SYSTEMS SHALL COMPLY WITH 2022 ENERGY STDs. DUCTS TO BE SEALED AND INSULATED WITH R-6 INSULATION.

ALL EXISTING PLUMBING FIXTURES MUST BE UPGRADED PURSUANT TO CALIF. CIVIL CODE TO COMPLY WITH THE FOLLOWING CONSUMPTION LIMITS. A COMPLETED AFFIDAVIT MAY BE PROVIDED TO THE BLDG. INSPECTOR AT OR BEFORE FINAL IN LIEU OF INSPECTION OF THESE FIXTURES.

FIXTURE TYPE

SHOWERHEADS	1.8 GPM @ 80 PSI
LAVATORY FAUCET	1.5 GPM @ 60 PSI
TANK TYPE WATER CLOSET	1.28 GAL. PER FLUSH
KITCHEN FAUCET	1.5 GPM @ 60 PSI

CARBON MONOXIDE ALARMS SHALL BE PROVIDED AT THE OUTSIDE OF EACH SEPARATE DWELLING UNIT SLEEPING AREA IN THE IMMEDIATE VICINITY OF THE BEDROOMS, ON EVERY LEVEL OF A DWELLING UNIT INCLUDING BASEMENTS. CARBON MONOXIDE ALARMS SHALL RECEIVE THEIR PRIMARY POWER FROM THE BUILDING WIRING AND BE EQUIPPED WITH A BATTERY BACK-UP. CARBON MONOXIDE ALARM IS PERMITTED TO BE SOLELY BATTERY OPERATED WHERE REPAIRS OR ALTERATIONS DO NOT RESULT IN THE REMOVAL OF WALL AND CEILING FINISHES OR THERE IS NO ACCESS BY MEANS OF ATTIC, BASEMENT OR CRAWL SPACE.

NOTE - VERIFY SMOKE DETECTORS EXISTING IN ALL SLEEPING ROOMS. PROVIDE NEW SMOKE DETECTORS AS REQUIRED - HARD WIRE IN NEW CONSTRUCTION - BATTERY OPERATED IN EXISTING. ALARMS SHALL BE INTERCONNECTED.

CONSTRUCTION NOTES

- 2x4 @ 16" O.C. WOOD FRAME WALL W/ 1/8" STUCCO OVER PAPERBACKED WIRE LATH (2-LAYERS GRADE "D" PAPER OVER WOOD SHTG.) EXTERIOR R-15 BATT INSULATION, 1/2" GYP.BRD. INTERIOR
- 8'-0"x 8'-0" VINYL FRAME, TEMP. GLASS, SLIDING PATIO DOOR
- 3'-0"x 6'-0" DOUBLE HUNG, VINYL FRAME WINDOW
- 18'-0"x 8'-0" VINYL FRAME TEMP GLASS, CENTER PARTING, 4 - PANEL SLIDING PATIO DOOR
- FIREPLACE - METAL BOX, REAR VENT, GAS, GLASS FRONT PANEL
- 5'-0"x 4'-10" HORIZ. SLIDING, VINYL FRAME WINDOW
- 3'-0"x 3'-0" HORIZ. SLIDING, VINYL FRAME WINDOW
- 2'-8"x 6'-8"x 1 3/4" RAISED PANEL WOOD DOOR WITH WOOD FRAME/PAINTED ENTRANCE LOCK W/ DEADBOLT, WEATHER STRIPPING ALL AROUND
- 16'-0"x 1'-0" OVERHEAD, SECTIONAL ALUM. GARAGE DOOR W/ OPENER
- 3'-0"x 6'-8"x 1 3/4" RAISED PANEL WOOD DOOR WITH WOOD FRAME, PAINTED ENTRANCE LOCK W/ DEADBOLT, WEATHER STRIPPING ALL AROUND W/ 1'-0"x 6'-0" FIXED SIDE LIGHTS EACH SIDE
- 5'-0"x 5'-0" HORIZ. SLIDING, VINYL FRAME WINDOW
- 3'-0"x 6'-8"x 1 3/4" RAISED PANEL WOOD DOOR WITH WOOD FRAME/PAINTED ENTRANCE LOCK W/ DEADBOLT, WEATHER STRIPPING ALL AROUND
- 4'-0"x 1'-6" HORIZ. SLIDING, VINYL FRAME WINDOW
- 2'-8"x 4'-0" DOUBLE HUNG, VINYL FRAME WINDOW
- 2'-6"x 6'-8"x 1 3/8" EMBOSSED WOOD DOOR W/ WOOD FRAME, PAINTED PASSAGE LATCH
- 2'-6"x 6'-8"x 1 3/8" EMBOSSED WOOD DOOR W/ WOOD FRAME, PAINTED PRIVACY LOCK
- SHOWER - CERAMIC TILE FLOOR AND WALLS TO CEILING, SAFETY GLASS ENCLOSURE
- TUB - CERAMIC TILE DECK AND SURROUND TO +48"
- 2x4 @ 16" O.C. WOOD FRAME WALL WITH 1/2" GYP.BRD. EACH SIDE
- 9'-0"x 6'-8" BI-PASS CLOSET DOORS
- 5'-0"x 6'-8" BI-PASS CLOSET DOORS
- 2'-6"x 6'-8"x 1 3/8" EMBOSSED WOOD DOOR W/ WOOD FRAME, PAINTED PRIVACY LOCK
- 2'-8"x 6'-8"x 1 3/8" EMBOSSED WOOD DOOR W/ WOOD FRAME, PAINTED PASSAGE LATCH
- 2'-8"x 6'-8"x 1 3/4" RAISED PANEL WOOD DOOR WITH WOOD FRAME, PAINTED ENTRANCE LOCK W/ DEADBOLT, WEATHER STRIPPING ALL AROUND, 20 MIN. ASSEM.
- WASHER/DRYER - RECESSED STANDPIPE DRAIN W/ HOT AND COLD WATER SUPPLY, 4" VENT TO OUTSIDE AIR W/ G.I. WALL CAP
- KITCHEN CABINETS, APPLIANCES AND FIXTURES

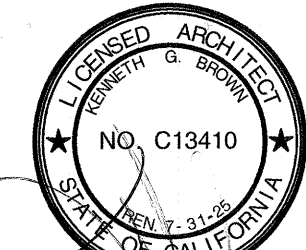
ELECTRICAL NOTES

- INSTALL ELECTRICAL WORK AS SHOWN ON PLANS TO CONFORM TO ALL APPLICABLE CODES
- CONVENIENCE OUTLETS SHALL BE SPACED NOT TO EXCEED 12'-0" O.C. ALONG FURNISHABLE WALL SPACE 2'-0" IN LENGTH OR GREATER
- PROVIDE GFI AT EACH EXTERIOR OUTLET WITHIN 6'-0" OF GRADE, ALL BATHROOMS, AND WITHIN 6'-0" OF KITCHEN SINK
- WIRING FOR LIGHTING CIRCUITS SHALL BE NOT LESS THAN #14. WIRING FOR OUTLET CIRCUITS SHALL BE NOT LESS THAN #12. NO ALUMINUM WIRING.
- PROVIDE DEDICATED CIRCUIT FOR EACH KITCHEN APPLIANCE
- PROVIDE ARC FAULT PROTECTION FOR OUTLETS IN SLEEPING ROOMS
- RECEPTACLES SHALL BE LISTED AS TAMPER-RESISTANT FOR ALL 15 AND 20 AMP RECEPTACLES IN DWELLING UNIT FAMILY, DINING LIVING, PARLORS, LIBRARY, DENS, BEDROOMS, SUN ROOMS, REC ROOMS, CLOSETS, HALLWAYS OR SIMILAR ROOMS AND AREAS
- PROVIDE A.F.C.I. PROTECTION FOR ALL 15 AND 20 AMP BRANCH CIRCUITS SUPPLYING OUTLETS IN DWELLING UNIT FAMILY, DINING LIVING, PARLORS, LIBRARY, DENS, BEDROOMS, SUN ROOMS, REC ROOMS, CLOSETS, HALLWAYS OR SIMILAR ROOMS AND AREAS

LIGHTING

- ALL INSTALLED LUMINAIRES MUST BE HIGH EFFICACY.
- LUMINAIRES RECESSED INTO CEILINGS MUST MEET ALL OF THE REQUIREMENTS FOR INSULATION CONTACT (IC) AND CERTIFIED AIR TIGHT (AT)
- EXHAUST FANS MUST BE SWITCHED SEPARATELY FROM LIGHTING SYSTEMS
- IN BATHROOMS, GARAGES, LAUNDRY ROOMS AND UTILITY ROOMS, AT LEAST ONE LUMINAIRE IN EACH OF THESE SPACES MUST BE CONTROLLED BY A VACANCY SENSOR
- DIMMERS OR VACANCY SENSORS MUST CONTROL ALL LUMINAIRES REQUIRED TO HAVE LIGHT SOURCES COMPLIANT WITH (JAB) EXCEPT LUMINAIRES IN CLOSETS LESS THAN 10 SF. AND LUMINAIRES IN HALLWAYS
- OUTDOOR LIGHTING THAT IS ATTACHED TO A BUILDING MUST BE CONTROLLED BY A MOTION SENSOR WITH AN INTEGRAL PHOTO CONTROL.

Seal



No. Revision

RESIDENTIAL REMODEL PLANS FOR:

Residence

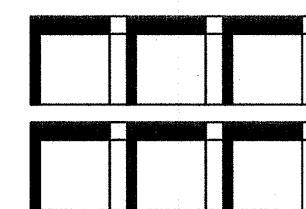
24142 Amuro Dr., Mission Viejo, CA. 92691

Sheet Title

Kenneth G. Brown & Co.

ARCHITECTURE - SPACE PLANNING

29061 Modjeska Pl., La Jolla, CA 92037
(949) 981-5106
kbrown@kbrownco.com



Date

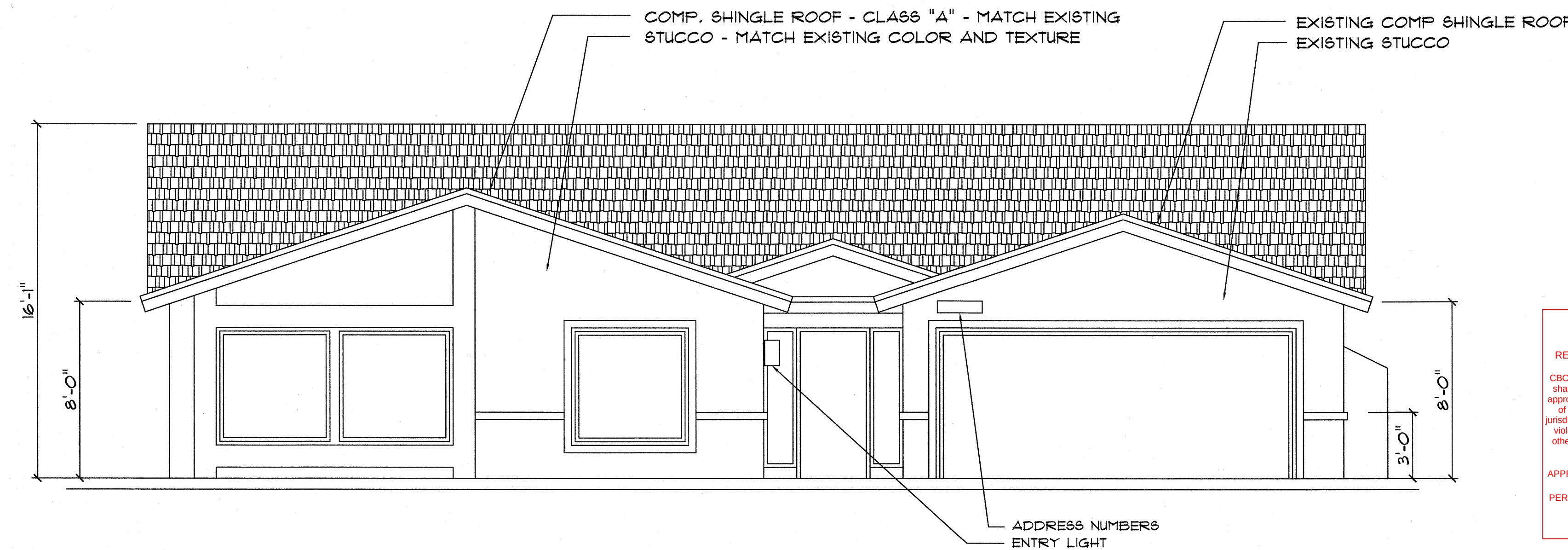
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Drawn By

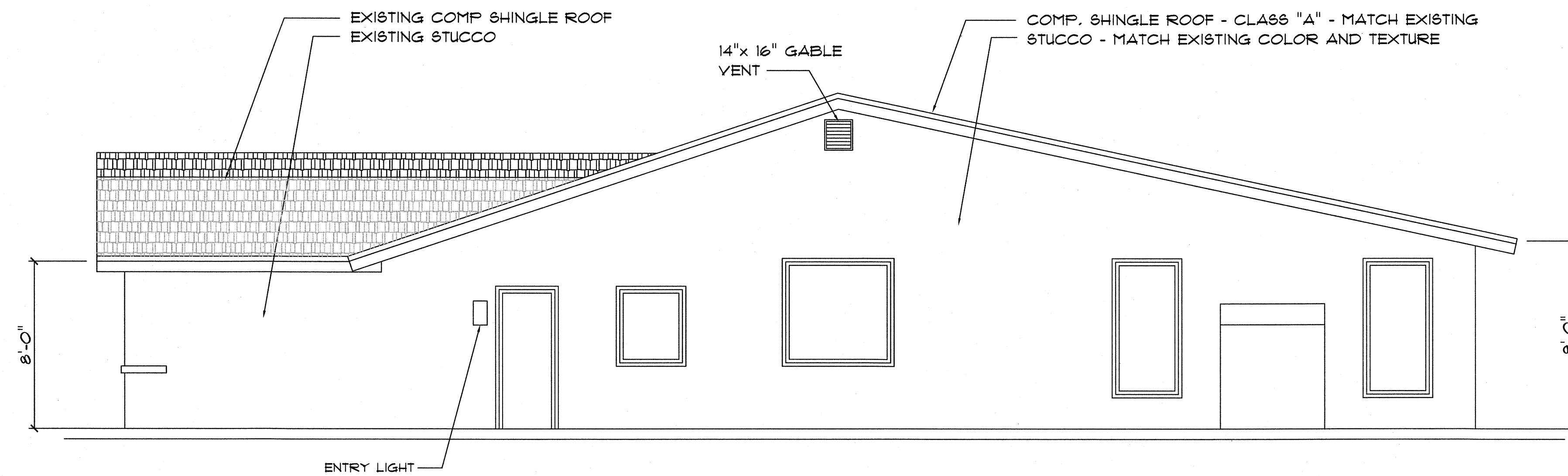
Job No.

Sheet No.

A3



FRONT ELEVATION SCALE 1/4" = 1'-0"



SIDE ELEVATION

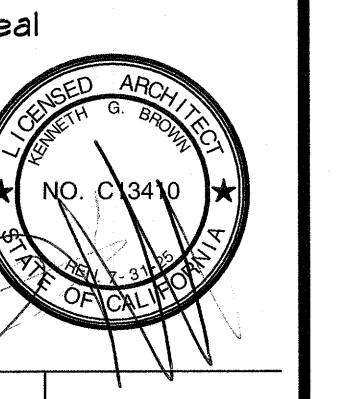
ATTIC VENTILATION

ATTIC AREA	995 SQFT.
VENTILATION REQUIRED	995 / 150 = 6.6 SQFT. = 950 SQIN.
VENTILATION PROVIDED	(3) GABLE VENTS @ 224 SQIN. EA. = 672 SQIN. (38) VENTED EAVE BLOCKS @ 15 SQIN. EA. = 570 SQIN. TOTAL VENT AREA = 1242 SQIN. > 950 SQIN.

VENTILATION NOTES

OPENINGS SHALL HAVE CORROSION RESISTANT WIRE MESH OR OTHER APPROVED MATERIAL WITH 1/8" MIN. AND 1/4" MAX. OPENING SIZE

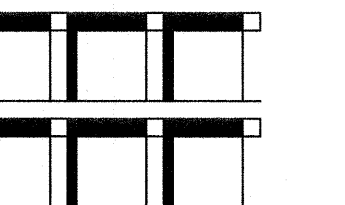
A MIN. OF 1" AIRSPACE SHALL BE PROVIDED BETWEEN INSULATION AND ROOF SHEATHING



No.	Revision

RESIDENTIAL REMODEL PLANS FOR:
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24142 Amuro Dr., Mission Viejo, CA. 92691
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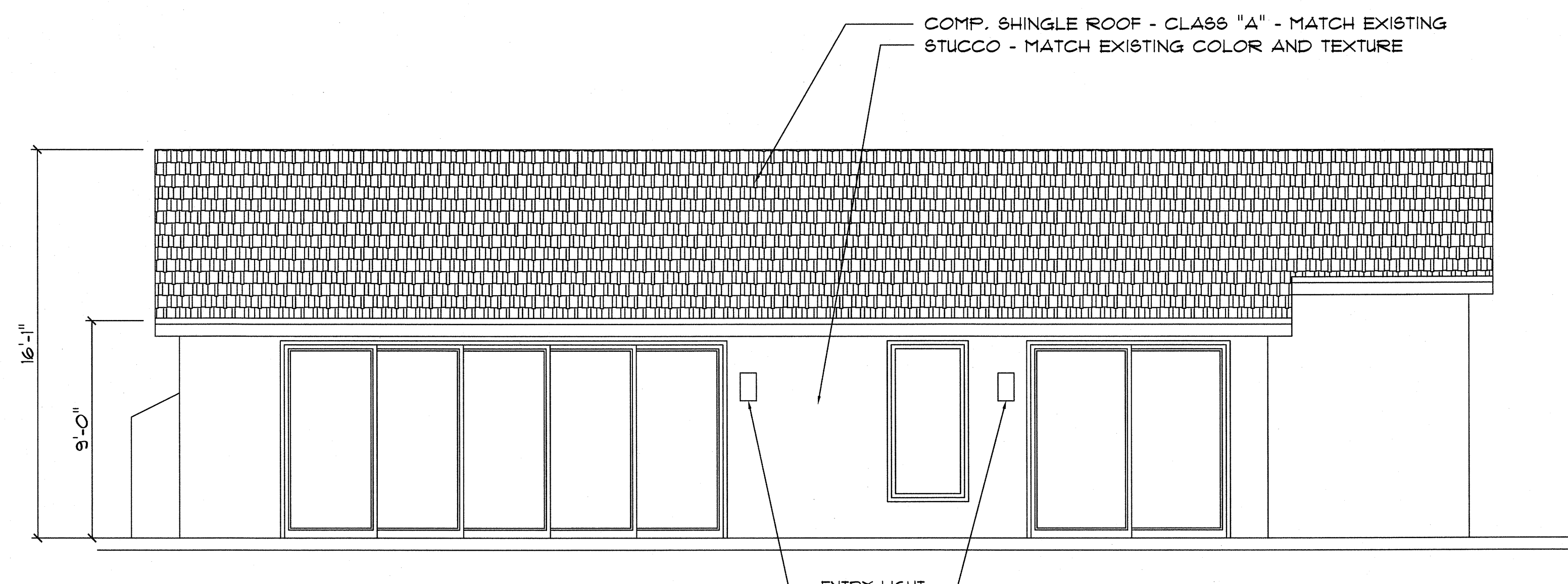
Kenneth G. Brown & Co.
ARCHITECTURE - SPACE PLANNING
28061 Modjeska Pk. Ln. (949) 981-5106
Trabuco Cn. CA. 92610 kentrbrwnarchitect.com



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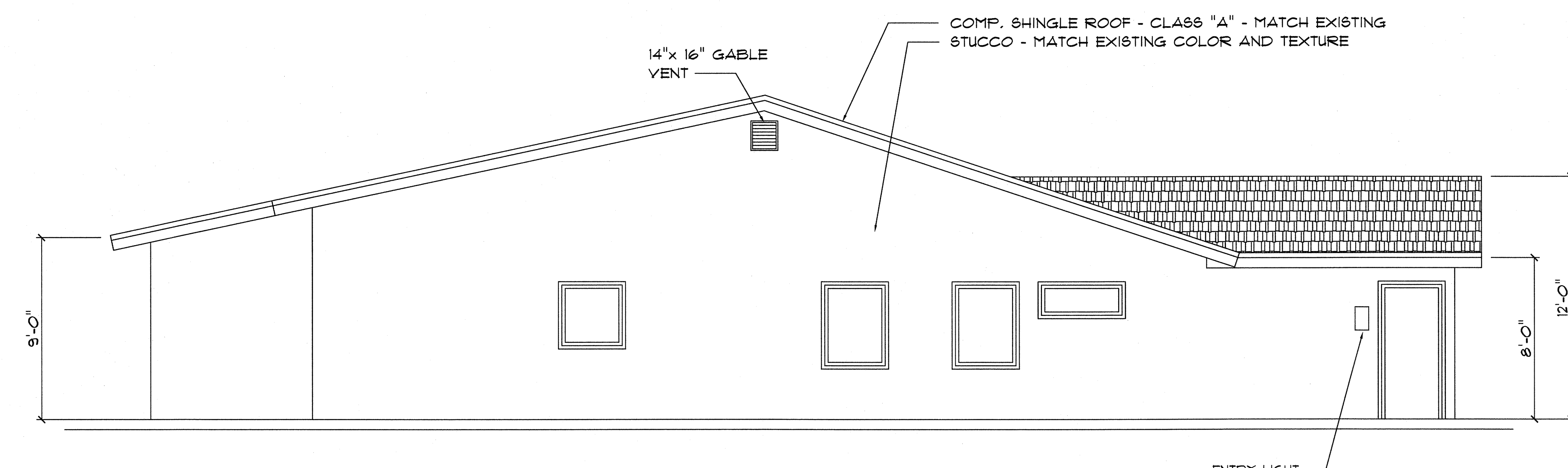
Sheet No.

A4



REAR ELEVATION SCALE 1/4" = 1'-0"

CITY OF MISSION VIEJO
APPROVED
REVIEWED FOR CODE COMPLIANCE
CBC 105.4 The issuance or granting of a permit shall not be construed to be a permit for, or an approval of, any violation of any of the provisions of this code or of any other ordinance of the jurisdiction. Permits presuming to give authority to violate or cancel the provisions of this code or other ordinances of the jurisdiction shall not be valid.
APPROVED BY: Z KRET FOR KT/STEVE
PERMIT # : BRADD-2024-0170
01/09/2025 4:47:45 PM



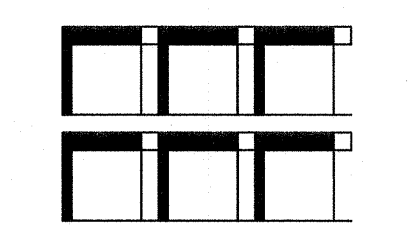
SIDE ELEVATION

Seal

No.	Revision

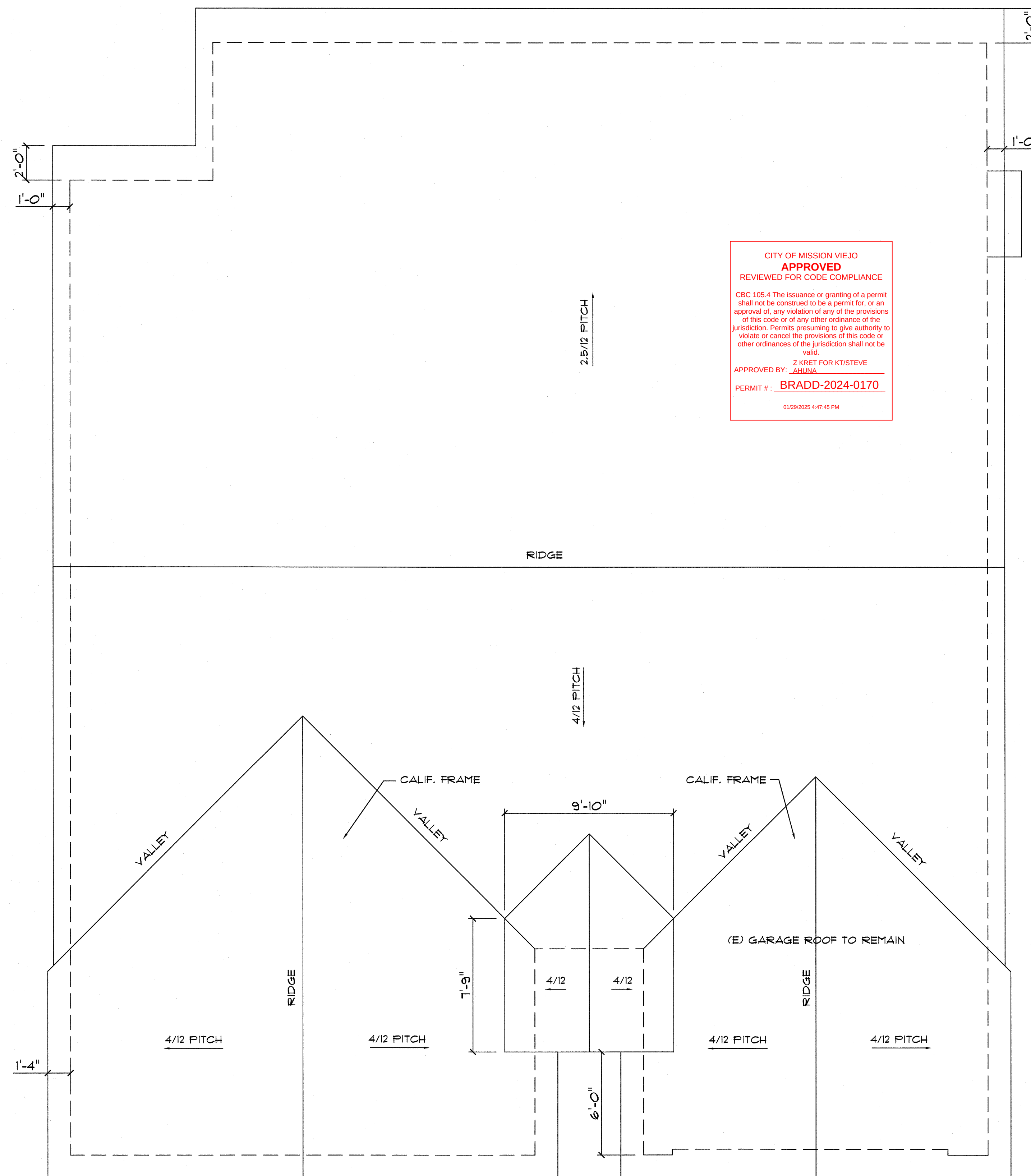
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Residence
24142 Anuro Dr., Mission Viejo, CA. 92691
Sheet Title

Kenneth G. Brown & Co.
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Troy, CA. 92615
(949) 981-5106
kenbrownarchitects.com



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Scale
Drawn By
Job No.
Sheet No.

A5

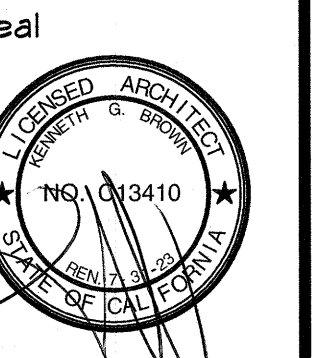
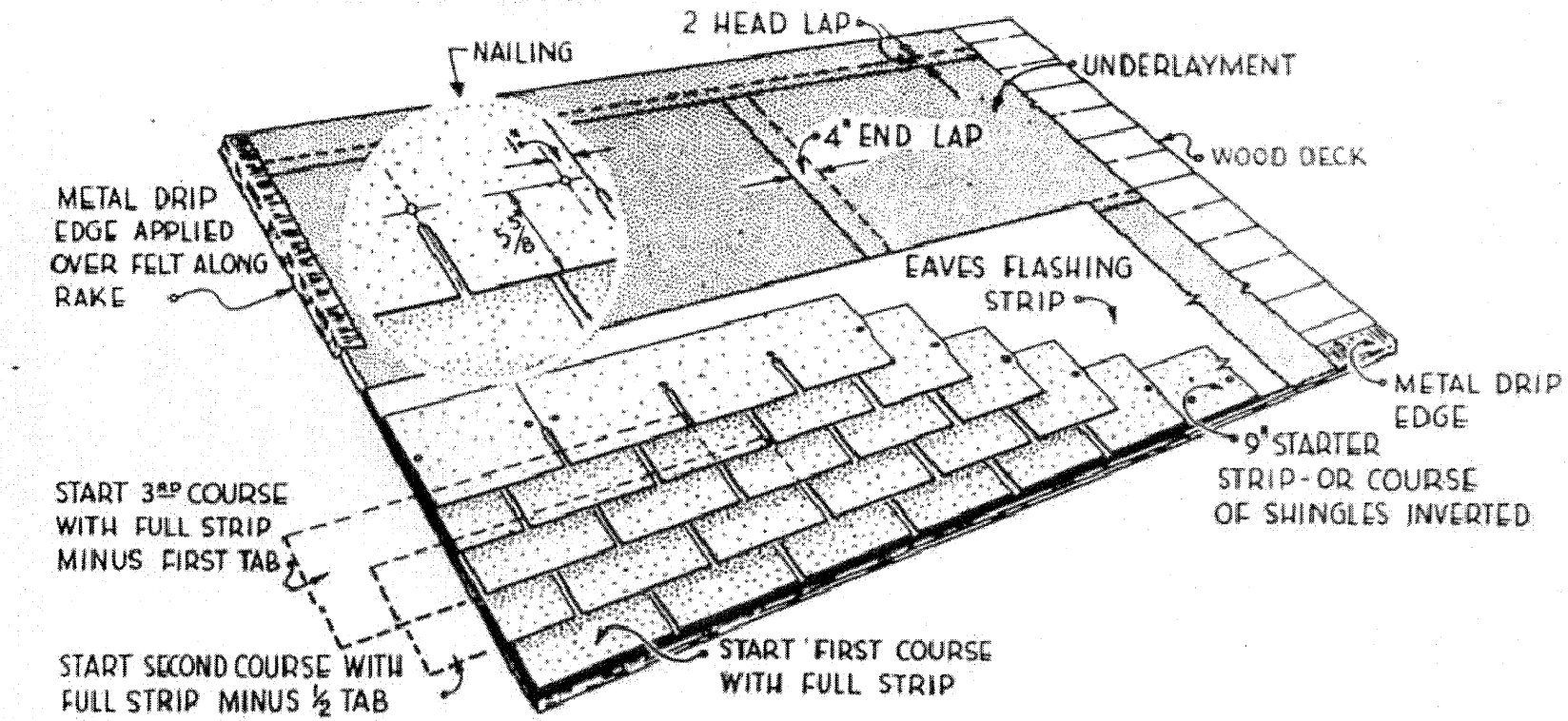


CITY OF MISSION VIEJO
APPROVED
 REVIEWED FOR CODE COMPLIANCE
 CBC 105.4 The issuance or granting of a permit shall not be construed to be a permit for, or an approval of, any violation of any of the provisions of this code or of any other ordinance of the jurisdiction. Permits presuming to give authority to violate or cancel the provisions of this code or other ordinances of the jurisdiction shall not be valid.
 APPROVED BY: Z KRET FOR KT/STEVE
 PERMIT #: **BRADD-2024-0170**
 01/29/2025 4:47:45 PM

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

ROOFING-2
 Asphalt strip shingles

GENERAL APPLICATION PROCEDURES



No.	Revision

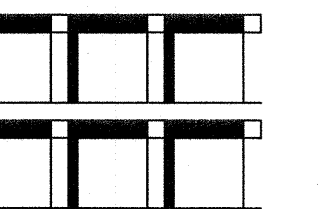
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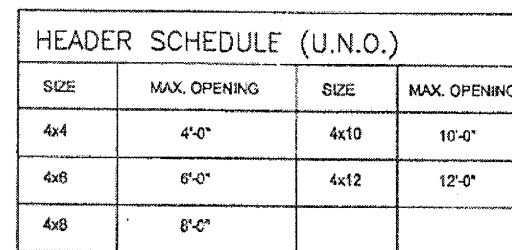
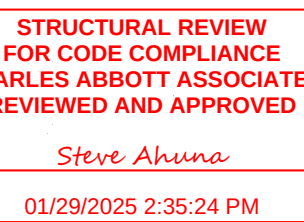
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 kgbrownarchitects@gmail.com



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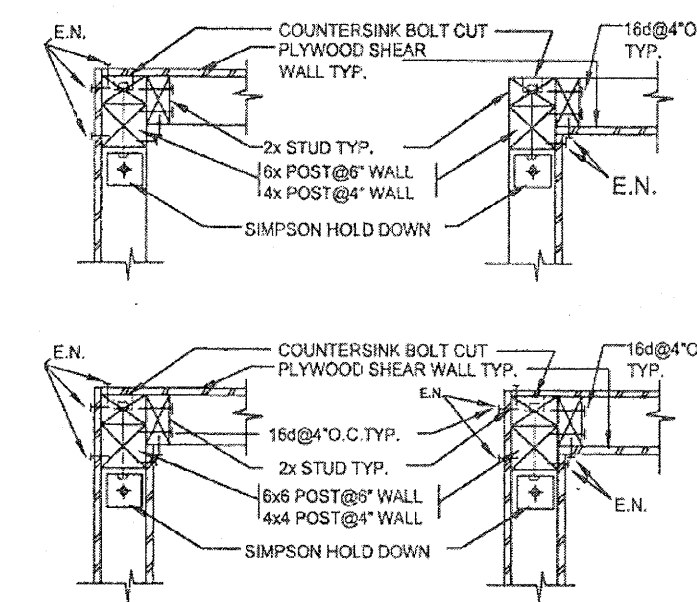
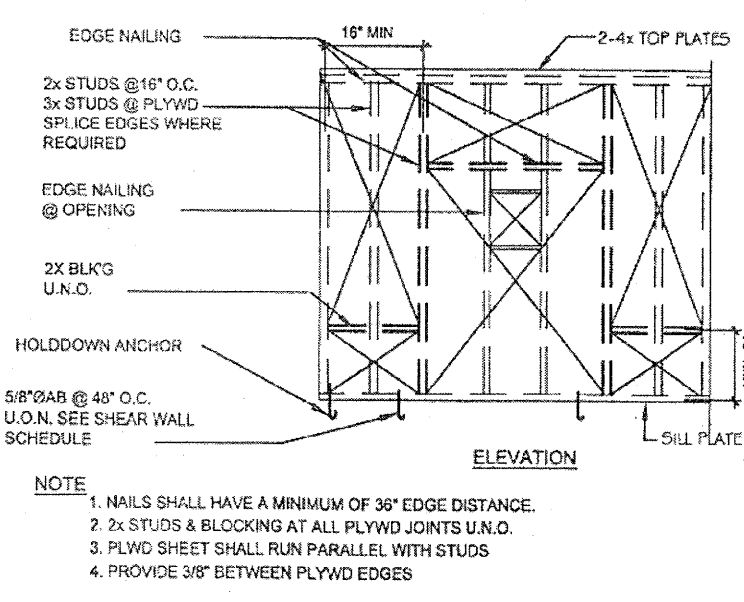
A6



NOTE: WHERE 0" STUDS ARE USED, USE 6x HEADS



HEADER SCHEDULE (U.N.O.)			
SIZE	MAX. OPENING	SIZE	MAX. OPENING
4x4	4'-0"	4x10	10'-0"
4x6	6'-0"	4x12	12'-0"
4x8	8'-0"		

4ち6.

22. JOIST TO BELL TOP FLATE, OR GROUND	3-BRD COMMON (4" X 0.131) OR 50D BOX (3" X 0.018) OR 3" X 5.0" NAILB OR 3 1/4 14 GAUGE STAPLES, FACE CROWN	TORNAIL
23. RM JOIST BAND JOIST OR BLOCKING TO TOP FLATE, SILL OR OTHER BRACING BELONGS	2-BRD COMMON (4" X 0.131) OR 50D BOX (3" X 0.018) OR 3" X 5.0" NAILB OR 3 1/4 14 GAUGE STAPLES, FACE CROWN	6" O.C., TORNAIL
24. 1 X 8 SUBFLOOR OR LESS TO EACH JOIST	2-BRD COMMON (4" X 0.131) OR 50D BOX (3" X 0.018) OR 3" X 5.0" NAILB OR 3 1/4 14 GAUGE STAPLES, FACE CROWN	FACE NAIL FACE BENCHING, FACE NAIL
25. 2 SUBFLOOR TO JOIST OR GROUND	2-BRD COMMON (4" X 0.131) OR 50D COMMON (4" X 0.018) OR 3" X 5.0" NAILB OR 3 1/4 14 GAUGE STAPLES, FACE CROWN	FACE NAIL FACE BENCHING, FACE NAIL
26. 2 FLOORING (PLANK, BEAM, FLOOR, & ROOF)	20D COMMON (4" X 0.018) OR 50D BOX (3" X 0.018) OR 3" X 5.0" NAILB OR 3 1/4 14 GAUGE STAPLES, FACE CROWN	32" O.C. FACE NAIL AT TOP AND BOTTOM STAGGERED ON OPPOSITE SIDES
27. BUILDUP (PARTICLE BOARD AND BEAMS & LUMBER LAYERS)	2-BRD COMMON (4" X 0.131) OR 50D BOX (3" X 0.018) OR 3" X 5.0" NAILB OR 3 1/4 14 GAUGE STAPLES, FACE CROWN	24" O.C. FACE NAIL AT TOP AND BOTTOM STAGGERED ON OPPOSITE SIDES
28. FLOOR TRIM SUPPORTING JOISTS OR RAFTERS	2-BRD COMMON (4" X 0.131) OR 50D BOX (3" X 0.018) OR 3" X 5.0" NAILB OR 3 1/4 14 GAUGE STAPLES, FACE CROWN	END AND AT EACH END FACE NAIL
29. LEDGER TRIM SUPPORTING JOISTS OR RAFTERS	3-BRD COMMON (4" X 0.131) OR 50D BOX (3" X 0.018) OR 3" X 5.0" NAILB OR 3 1/4 14 GAUGE STAPLES, FACE CROWN	BACH JOIST OR RAFTER, FACE NAIL
30. JOIST TO BAND JOIST OR RM JOIST	2-BRD COMMON (4" X 0.131) OR 50D COMMON (4" X 0.018) OR 3" X 5.0" NAILB OR 3 1/4 14 GAUGE STAPLES, FACE CROWN	END NAIL
31. BRIDGING OR BLOCKING TO JOIST, RAFTER OR TRUSS	2-BRD COMMON (4" X 0.131) OR 50D BOX (3" X 0.018) OR 3" X 5.0" NAILB OR 3 1/4 14 GAUGE STAPLES, FACE CROWN	BACH END, TORNAIL
WOOD STRUCTURAL PLATE, GROUND, INTERIOR DAIL SHEATHING TO		

FOR NAILS 1 INCH x 25.4 MM.

A. NAILS SPACED AT 6 INCHES AT INTERMEDIATE SUPPORTS WHERE SPANS ARE 48 INCHES OR MORE, FOR NAILING OF WOOD STRUCTURAL PANEL AND PARTICLEBOARD DIAPHRAGMS AND SHEAR WALLS, REFER TO SECTION 3205.

B. NAILS FOR WALL TO FLOOR JOINTS ARE FIRSTLY SET COMMON BOX OR GABING.

C. SPACING SHALL BE 6 INCHES ON CENTER ON THE EDGES AND 12 INCHES ON CENTER AT INTERMEDIATE SUPPORTS FOR NONSTRUCTURAL APPLICATIONS, PANEL SUPPORTS AT 16 INCHES (20 INCHES IF STRENGTH AXIS IN THE LONG DIRECTION OF THE PANEL UNLESS OTHERWISE MARKED).

D. WHERE A PARTER IS FASTENED TO AN ADJACENT PANEL, CEILING JOINT IN ACCORDANCE WITH THIS SCHEDULE AND THE CEILING JOINT IS FASTENED TO THE TOP PLATE IN ACCORDANCE WITH THIS SCHEDULE, THE NUMBER OF TORNAILS IN THE PARTER SHALL BE PERMITTED TO BE REDUCED BY ONE NAIL.

1. DESIGN BEARING PRESSURE IS 1500 PSF WITH A 33% INCREASE FOR WIND OR SEISMIC LOADING.
2. ALL EXCAVATIONS ARE TO BE INSPECTED AND APPROVED PRIOR TO THE PLACEMENT OF ANY REINFORCING OR FILL.
3. DESIGN COEFFICIENT OF FRICTION OF 0.28 WITH A 33% INCREASE FOR WIND OR SEISMIC LOADING.
4. FOUNDATIONS SHALL BE OF THE SIZE AND TYPE AS INDICATED ON THE DRAWINGS.
5. DESIGN LATERAL BEARING PRESSURE IS 100 PSF/FT. WITH A 33% INCREASE FOR WIND OR SEISMIC LOADING AND A 200% INCREASE FOR ISOLATED POLE TYPE FOOTINGS.
6. REFER TO FOUNDATION AND SOIL INVESTIGATION BY:
7. FOOTINGS ARE TO BE CARRIED A MINIMUM OF 24" INTO UNDISTURBED FIRM NATURAL SOIL, OR APPROVED COMPACTED FILL.
8. 90% MIN. COMPACTION UNDER NEW SLAB/FOOTINGS

CONCRETE

1. NO PIPES OR DUCTS ARE TO BE PLACED IN CONCRETE SLABS UNLESS SPECIFICALLY DETAILED.
2. AGGREGATES SHALL BE NATURAL SAND AND ROCK CONFORMING TO ASTM C33.
3. ALL CONCRETE SHALL ATTAIN A MINIMUM COMPRESSIVE STRENGTH AT 28 DAYS.

A. FOOTINGS, GRADE BEAMS AND WALLS	4500 PSI
B. STRUCTURAL SLABS	4500 PSI
C. COLUMNS	4500 PSI
D. SLABS ON GRADE	4500 PSI

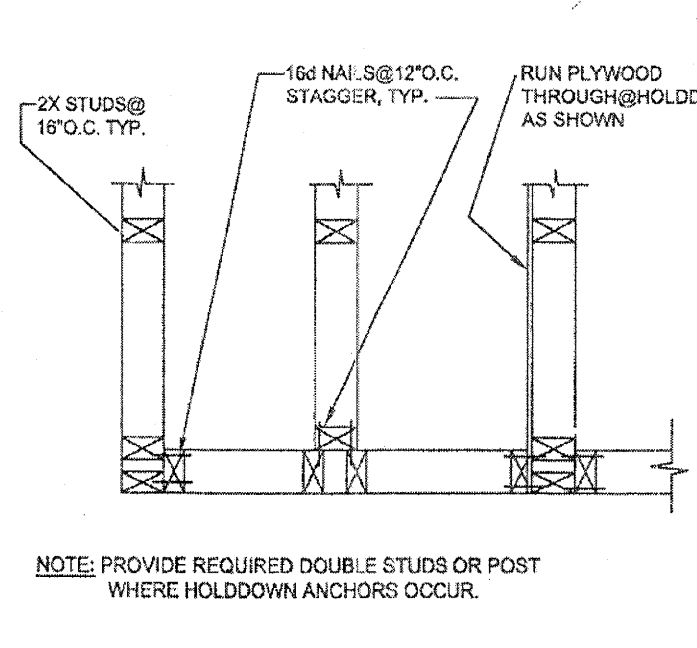
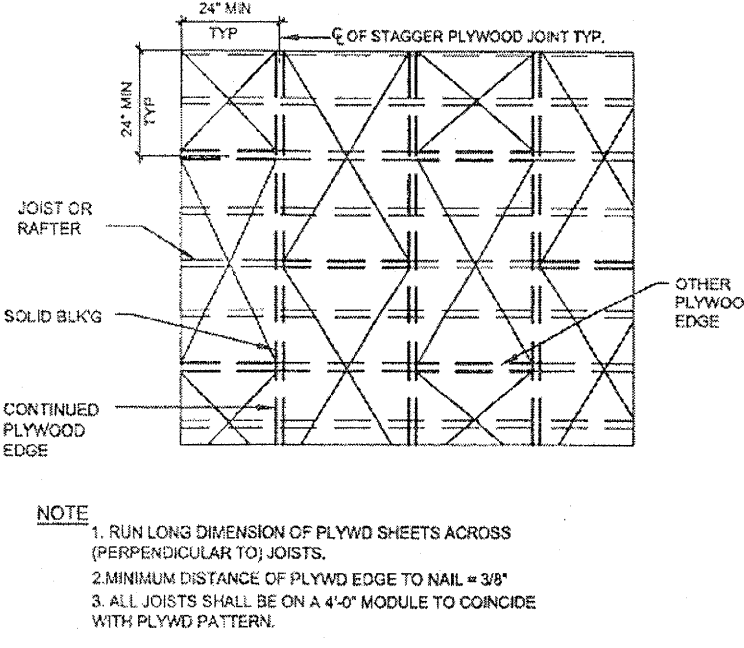
*8P, INSP. NOT REQ'D DESIGN BASED ON FC + 2500 PSI
4. SPLICES OF HORIZONTAL REBAR IN WALLS AND FOOTINGS SHALL BE STAGGERED.
5. LAP ALL BARS A MINIMUM OF 36 BARS DIAM. (2'-0" MIN.) AT ALL SPLICES UNLESS OTHERWISE NOTED.

1. ALL WOOD BEARING ON MASONRY OR CONCRETE SHALL BE PRESSURE TREATED DOUGLAS FIR.
2. THE TOP PLATE OF ALL STUD WALLS SHALL BE 2 PIECES THE SAME SIZE AS STUDS. SPICES TO LAP 4'-0" MINIMUM AND BE NAILED WITH 12-16d MINIMUM ON EACH SIDE OF JOINT.
3. ALL BOLTS SHALL BE RETIGHTENED PRIOR TO THE APPLICATION OF PLASTER, SHEATHING, ETC.
4. STRUCTURAL MEMBERS SHALL NOT BE CUT FOR PIPES, ETC. UNLESS SPECIFICALLY DETAILED.
5. PROVIDE FIRE STOPS AT ALL INTERSECTIONS OF STUD WALLS AT CEILING, FLOOR, AND FLOOR. FIRE STOPS SHALL BE 2X NOMINAL THICKNESS OF WOOD AND SHALL BE THE FULL WIDTH OF THE ENCLOSED SPACE. FIRE STOPS SHALL BE PLACED AT A MAXIMUM SPACING OF 8'-0" IN EACH DIRECTION AND AT THE SAME LINE AS STOPS IN ADJACENT STUD WALLS.
6. ALL PLYWOOD NAILS SHALL BE COMMON ONLY. ALL OTHER NAILS SHALL BE GALVANIZED OR COMMON BOX. NAILING SHALL BE PER CHAPTER 23 OF THE CALIFORNIA BUILDING CODE.
7. BOLT HOLES IN WOOD SHALL BE 1/32" TO 1/16" LARGER THAN THE NOMINAL BOLT DIAMETER. ALL BOLTS SHALL HAVE STANDARD CUT WASHERS UNDER THE HEAD AND NUT UNLESS OTHERWISE NOTED.
8. CROSS BRIDGING SHALL BE PROVIDED AT 8'-0" O.C. MAXIMUM FOR ALL RAFTERS AND JOISTS MORE THAN 8' DEEP.
9. PROVIDE SOLID 2X FULL DEPTH BLOCKING UNDER PARTITIONS WHICH ARE PERPENDICULAR TO THE JOISTS.
10. BORED HOLES SHALL BE LOCATED AT THE SAME SECTION OF A STUD AS A NOTCH OR CUT.
11. PLYWOOD FOR ROOF SHEATHING SHALL BE CDX. WHERE PLYWOOD IS EXPOSED TO WEATHERS, USE EXTERIOR TYPE PLYWOOD. MINIMUM C-C GRADE. PLYWOOD FOR FLOOR SHEATHING SHALL BE CDX. EXTERIOR TYPE GLUE SHALL BE USED TO GLUE PLYWOOD. ALL PLYWOOD SHALL CONFORM TO U.S. PRODUCT STANDARD F84-03 OR DOC F82-10
12. PROVIDE DOUBLE JOISTS UNDER PARTITIONS WHICH ARE PARALLEL TO THE JOISTS.
13. WOOD STUDS MAY BE NOTCHED TO A DEPTH OF 25% OF WIDTH. MAXIMUM. INTERIOR NONBEARING STUDS MAY BE NOTCHED TO 40% OF WIDTH MAXIMUM.
14. IN NO CASE SHALL THE EDGE OF A BORED HOLE BE NEARER THAN 5/8" TO THE EDGE OF A STUD.
15. PROVIDE 1 X 6 DIAGONAL LET-IN BRACING (AT APPROXIMATELY 45) EVERY 25'-0" MAXIMUM IN ALL STUD WALLS NOT PLYWOOD SHEATHED. BRACING SHALL RUN CONTINUOUS FROM TOP PLATE TO SOLE PLATE. NAIL WITH 2-6d PER STUD AND 3-6d EACH END TO PLATES.
16. STUDS MAY BE BORED TO 40% OF WIDTH MAXIMUM EXCEPT INTERIOR NONBEARING STUDS. THEY MAY BE BORED TO 60% OF WIDTH MAXIMUM WHEN EACH BORED STUD IS DOUBLED WITH NOT MORE THAN TWO SUCCESSIVE DOUBLED STUDS.
17. PROVIDE 2X SOLID BLOCKING BETWEEN RAFTERS AND JOISTS AT ALL SUPPORTS. BLOCKING SHALL BE ONE PIECE AND THE FULL DEPTH OF THE RAFTER OR JOIST.
18. ALL STRUCTURAL LUMBER SHALL BE DOUGLAS FIR - LARCH , CONFORMING TO DOC F82-03 UNLESS OTHERWISE NOTED
19. WOOD BASED SHEATHING TO COMPLY WITH DOC F81 OR F82 OR EQUIVALENT

<u>ABBREVIATIONS</u>			
A.B.	ANCHOR BOLT	M.B.	MACHINE BOLT
B.	BOUNDARY NAILING	C/G	ON CENTERS
C.B.	CARRIAGE BOLT	O.H.	OPPOSITE HAND
C.J.	CEILING JOIST	F.O.	FOUR JOINT
C.L.	CEILING LINE	F.T.D.F.	FIRE RESIST TREATED
C.O.	COLUMN		DOUGLAS FIR
CONC.	CONCRETE	P.D.S.P.	POUR DRIVE
CONT.	CONTINUOUS	R.D.	9/16" PIN
D.	DITTO	R.F.	ROOF DRAIN
D.I.A. - Ø	DIAMETER	R.J.	ROOF JOIST
E.J.	EXPANSION JOINT	RAFT.	RAFTER
E.N.	EDGE NAIL	S.E.	STRUCTURAL
E.Q.	EQUAL		ENGINEER
F.G.	FLOOR GRADE	SQ.	SQUARE
F.L.O.R.	FLOOR JOIST	S.T.	STEEL
F.L.	FLOOR LINE	STL.	STEEL
F.N.	FIELD NAILING	T.C.C.	TOP OF CONCRETE
F.O.C.	FACE OF CONCRETE	T.O.M.	TOP OF MASONRY
F.O.S.	FACE OF STUD	T.O.P.	TOP OF FLYWOOD
F.P.	FULL PENETRATION	T.O.S.	TOP OF STEEL
F.F.	FINISH SURFACE	TYP.	TYPICAL
G.	GAUGE	U.O.	UNLESS NOTED OTHERWISE
HORIZ.	HORIZONTAL		ULTRASONIC TESTED
HIGH-8	HIGH-8 BENTH BOLT	U.N.T.	VERTICAL
L.T.W.	LIGHT WEIGHT	VERT.	VERTICAL
M.B.	MASONRY	W.U.M.	WELD WIRE MESH

SHEAR SCHEDULE									
SYM.	SIDE	* FT.	MATERIAL	NAIL'S	EDGE	FIELD	GRADE FLOOR	UPPER FLOOR	A3
			1/8" P.C. W/ PAPER BACKED LATH (ICBO#223) UNBLOCKED W/ 6 GAGE STAPLES				ANCHOR BOLT	NAILING	
△	ONE	180		6	6	12	5/8" x 60"	16D x 6"	52°
△	TWO	360		6	6	12	5/8" x 32"	16D x 4"	35°
△	ONE	325		3	3	12	5/8" x 32"	16D x 4"	28°
△	TWO	650		3 (1)	3	12	5/8" x 16"	16D x 3"	14°
SYM.	SIDE	* FT.	MATERIAL	NAIL'S	EDGE	FIELD	GRADE FLOOR	UPPER FLOOR	A3
			PLYWOOD THICKNESS (STRUCT. I)				ANCHOR BOLT	NAILING	
△	ONE	210	3/8" (24/0)	8D	6	12	5/8" x 48"	16D x 6"	32°
△	TWO	460	3/8" (24/0)	8D	6 (1)	12	5/8" x 24"	16D x 3"	18°
△	ONE	360	3/8" (24/0)	8D	4	12	5/8" x 32"	16D x 4"	20°
△	TWO	720	3/8" (24/0)	8D	4 (1)	12	5/8" x 16"	16D x 2"	10°
△	ONE	460	3/8" (24/0)	8D	3 (1)	12	5/8" x 32"	16D x 3"	14°
△	TWO	920	3/8" (24/0)	8D	3 (1)	12	5/8" x 16"	16D x 2"	7°
△	ONE	600	3/8" (24/0)	8D	2 (1)	12	5/8" x 16"	16D x 2"	17°
△	TWO	1200	3/8" (24/0)	8D	2 (1)	12	5/8" x 8"	16D x 1"	8°
△	ONE	320	1/2" (32/16)	10D	6	12	5/8" x 32"	16D x 4"	26°
△	TWO	680	1/2" (32/16)	10D	6 (1)	12	5/8" x 16"	16D x 2"	13°
△	ONE	425	1/2" (32/16)	10D	4	12	5/8" x 32"	16D x 3"	18°
△	TWO	1020	1/2" (32/16)	10D	4 (1)	12	5/8" x 16"	16D x 2"	9°
△	ONE	665	1/2" (32/16)	10D	3 (1)	12	5/8" x 32"	16D x 3"	13°
△	TWO	1330	1/2" (32/16)	10D	3 (1)	12	5/8" x 8"	16D x 1"	6°
△	ONE	730	1/2" (32/16)	10D	2 (1)	12	5/8" x 16"	16D x 2"	17°
△	TWO	1460	1/2" (32/16)	10D	2 (1)	12	5/8" x 8"	16D x 1"	8°

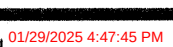
1. FRAMING, STUDS AND TOP/ BOTTOM BILLS SHALL BE 3X OR WIDER AND NAILS SHALL BE STAGGERED WHERE NAILS ARE SPACED @ 2' O.C. AND WHERE 10D NAILS HAVING A PENETRATION INTO FRAMING OF MORE THAN 13/8" ARE SPACED 3' O.C. ALSO USE 3X FRAMING FOR PLYWOOD ON TWO SIDES OF WALL.
2. SHOT PILING BY HLT. CONFORMING TO BSR 2318 MAY BE USED IN LIEU OF A.B. FOR INTERIOR WALLS ONLY ON CONCRETE FOUNDATION.
3. GYPSUM WALL BOARD VALUES MAY BE DOUBLED WHEN IN SEISMIC ZONES O, I, OR 2 OR FOR WIND LOAD.



10.	PLYWD SHTG DET.
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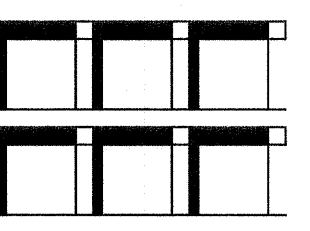
STUD WALL CONNECT12

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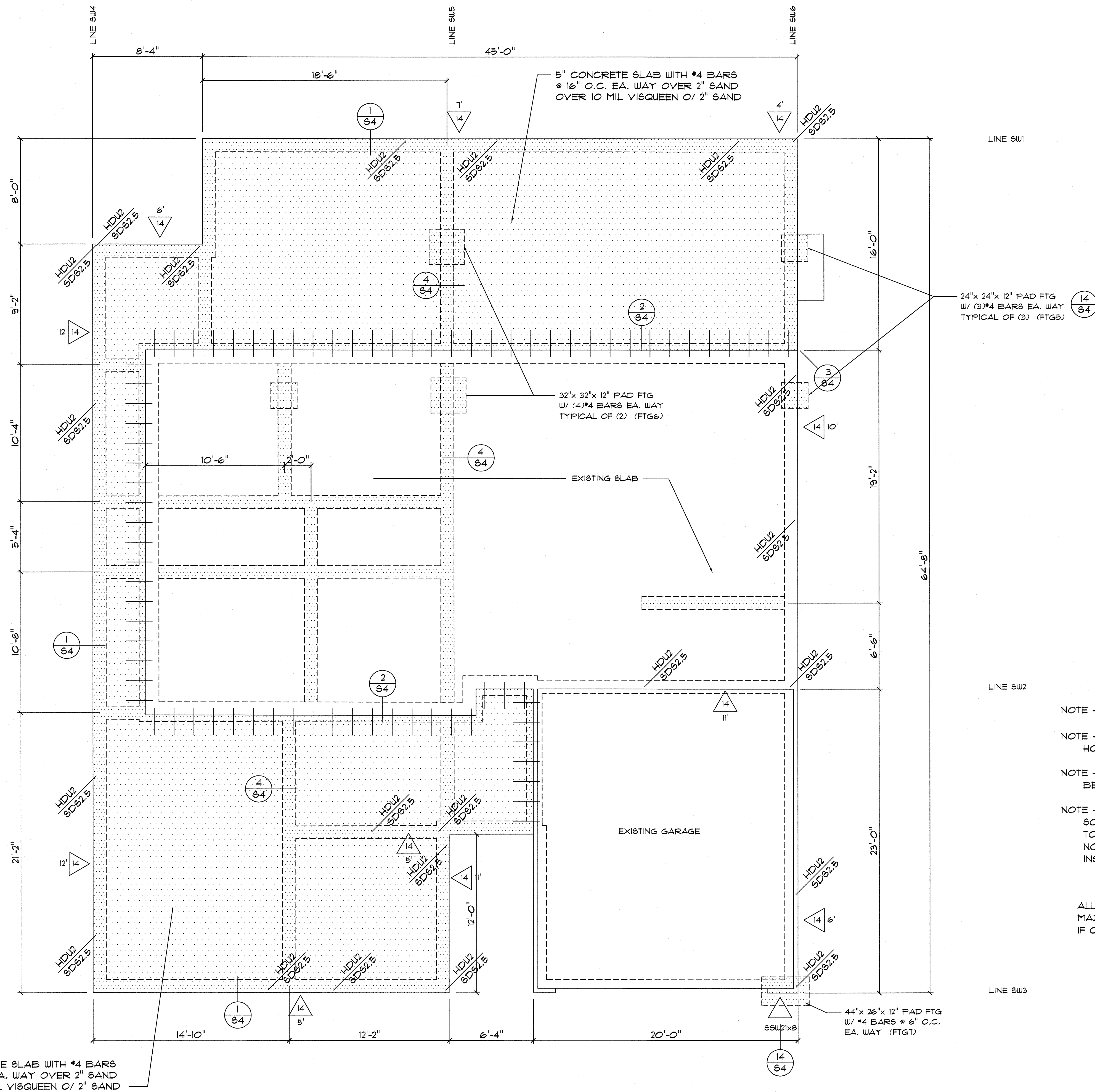
— 10 —

ARCHITECTURE - SPACE PLANNING
3061 Modjeska Pl. Ln.
Alhambra Cyn, CA. 92619
(949) 981-5106
kenbrowmarchenotmail.com



Date _____
Scale _____
Drawn By _____
Job No. _____

Si



5" CONCRETE SLAB WITH #4 BARS
@ 16" O.C. EA. WAY OVER 2" SAND
OVER 10 MIL VISQUEEN O/ 2" SAND

FOUNDATION PLAN

SCALE 1/4" = 1'-0"

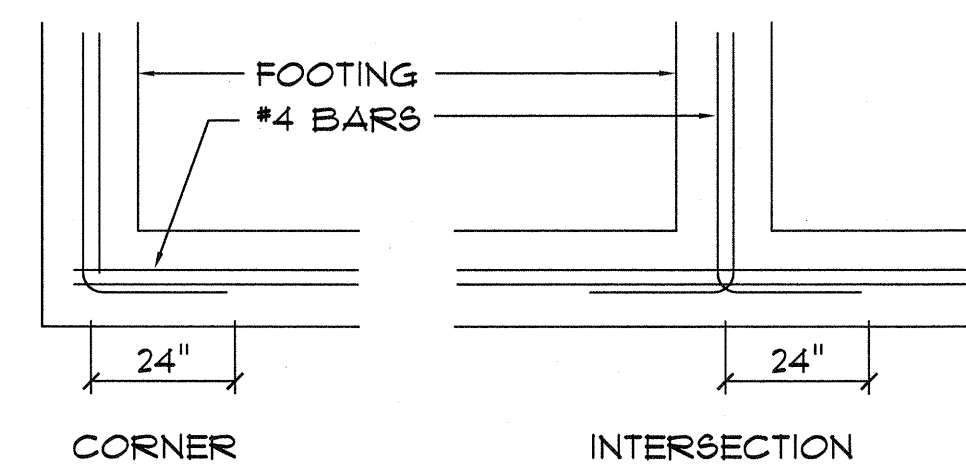
NOTE - 90% MIN. COMPACTION UNDER NEW SLAB/FOOTINGS

NOTE - FASTENERS FOR PRESERVATIVE TREATED LUMBER SHALL BE
HOT DIPPED ZINC COATED GALVANIZED STEEL

NOTE - SHEARWALL ANCHOR BOLTS AND HOLDDOWN HARDWARE MUST
BE SECURED IN PLACE PRIOR TO FOUNDATION INSPECTION

NOTE - POST TENSIONED SLABS ARE USED IN AREAS WITH EXPANSIVE
SOILS. FOUNDATION/SLAB WORK SHALL PROCEED WITH CAUTION
TO PREVENT DAMAGE TO THE TENDONS. SHOULD DAMAGE OCCUR
NOTIFY THE ARCHITECT/ENGINEER IMMEDIATELY FOR REPAIR
INSTRUCTIONS

ALL CONCRETE SHALL BE $f'c = 4500$ psi W/ TYPE "V" CEMENT AND
MAX. WATER CEMENT RATIO OF 0.45 NO SPECIAL INSPECTION REQ.
IF CONC. TRUCK MIX TICKET IS PROVIDED.



STRUCTURAL REVIEW
FOR CODE COMPLIANCE
CHARLES ABBOTT ASSOCIATES
REVIEWED AND APPROVED
Steve Ahuna
01/29/2025 2:35:14 PM

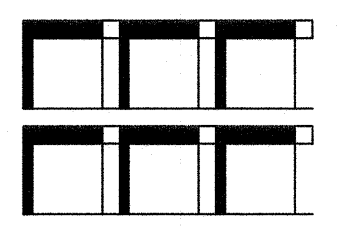
CITY OF MISSION VIEJO
APPROVED
REVIEWED FOR CODE COMPLIANCE
CBC 105.4 The issuance or granting of a permit
shall not be construed to be a permit for, or an
approval of, any violation of any of the provisions
of this code or of any other ordinance of the
jurisdiction. Permits presuming to give authority to
violate or cancel the provisions of this code or
other ordinances of the jurisdiction shall not be
valid.
Z KRET FOR KT/STEVE
APPROVED BY: AHUNA
PERMIT #: BRADD-2024-0170
01/29/2025 4:47:45 PM



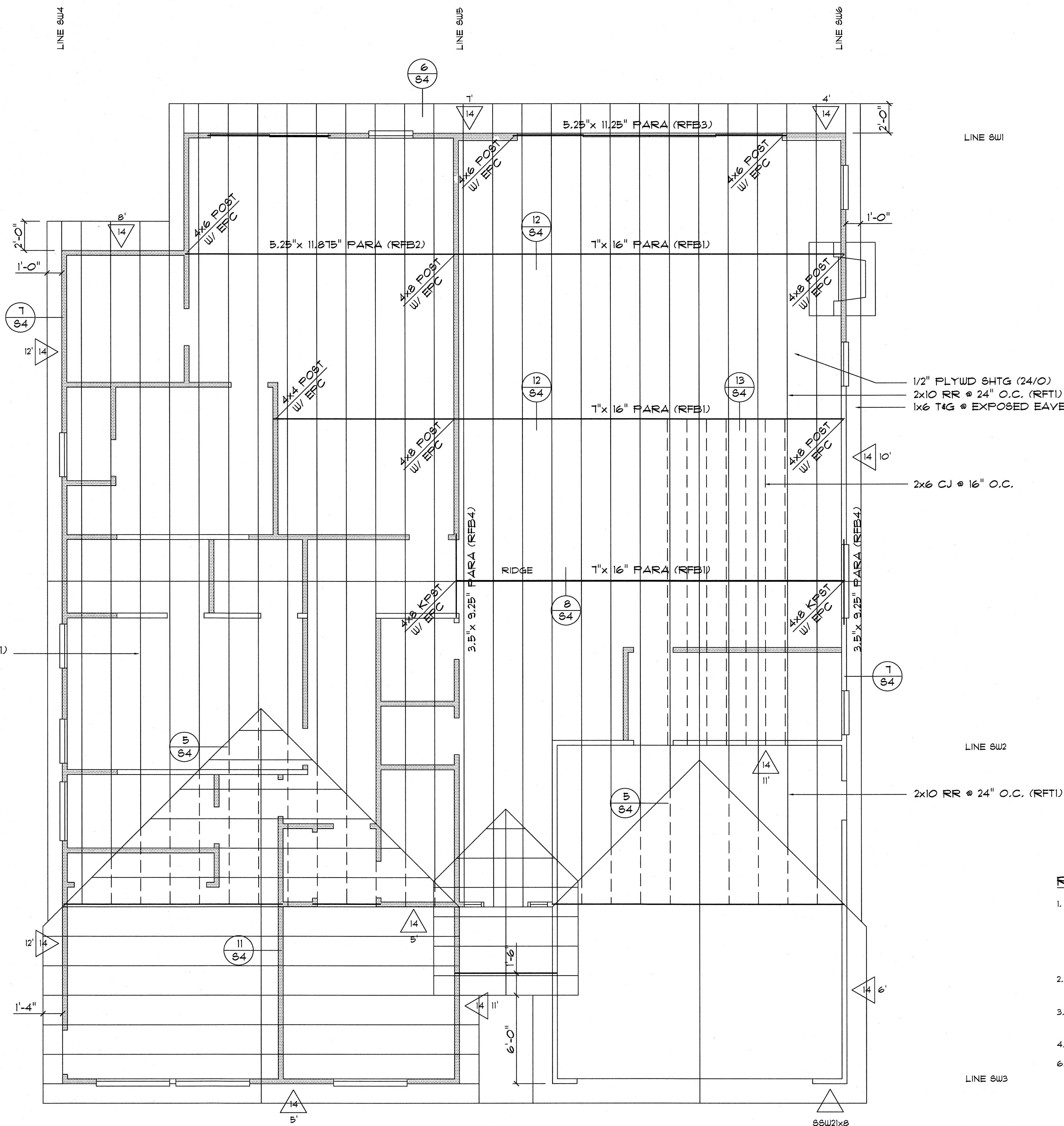
No.	Revision

RESIDENTIAL REMODEL PLANS FOR:
Residence
24142 Amuro Dr., Mission Viejo, CA. 92691
Sheet Title

Kenneth G. Brown & Co.
ARCHITECTURE - SPACE PLANNING
23061 Modjeska Fk. Ln.
Troy, CA. 94678
(949) 991-5106
kenbrownarchitect@gmail.com



Date
Scale
Drawn By
Job No.
Sheet No.



ROOF FRAM'G PLAN

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

NOTE - ALL WEATHER EXPOSED SURFACES SHALL HAVE A WEATHER RESISTIVE BARRIER TO PROTECT THE INTERIOR WALL COVERING AND THAT EXTERIOR OPENINGS SHALL BE FLASHED IN SUCH A MANNER AS TO MAKE THEM WEATHER PROOF

WHERE TOP OR SOLE PLATE ARE CUT FOR PIPES A METAL TIE MIN. 0.054 INCHES THICK AND 1 1/2" WIDE SHALL BE FASTENED ACROSS THE OPENING WITH 8-10d NAILS MIN. EACH SIDE. THE STRAPS SHALL NOT EXTEND LESS THAN 6" BEYOND THE CUT OR NOTCH.

WOOD

WEST COAST DOUGLAS FIR LARCH
RAFTERS, CEILING JOISTS, FLOOR JOISTS: #2 DFL
BEAMS AND POSTS: #1 DFL
ROOF DECK, FLOOR DECK, EXTER. WALL SHEATHING:
DOUGLAS FIR PLYWD, STRUCTURAL GRADE DOC P&I OR P&2
P&L: 2.0E PARALLAM - ILEVEL TRUS JOIST

SIMPSON STEEL STRONGWALL SHEARWALL PANELS ICC ESR-1679

STRUCTURAL REVIEW
FOR CODE COMPLIANCE
CHARLES ABBOTT ASSOCIATES
REVIEWED AND APPROVED
Steve Ahuna
01/29/2025 2:35:05 PM

CITY OF MISSION VIEJO
APPROVED
REVIEWED FOR CODE COMPLIANCE
CBC 105.4 The issuance or granting of a permit shall not be construed to be a permit for, or an approval of, any violation of any of the provisions of this code or of any other ordinance of the jurisdiction. Permits presuming to give authority to violate or cancel the provisions of this code or other ordinances of the jurisdiction shall not be valid.
APPROVED BY: AHUNA
PERMIT #: BRADD-2024-0170
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ROOF FRAMING NOTES:

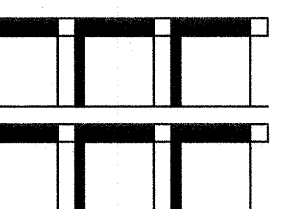
1. ROOF SHEATHING: 1/2" APA RATED SHEATHING INDEX NO. 24/0 WITH EXTERIOR GLUE. USE 8d NAILS AT 6" O.C. AT ALL PANEL EDGES, BOUNDARIES AND SHEAR WALLS, 12" O.C. FIELD. NO BLOCKING UNLESS NOTED ON PLANS.
2. ROOF DIAPHRAGM NAILING SHALL BE INSPECTED PRIOR TO COVERING.
3. ROOF SHEATHING SHALL BE CONTINUOUS UNDER CALIFORNIA FRAMED AREAS.
4. PLACE SHEATHING PERPENDICULAR TO JOISTS.
5. FULL HEIGHT OF SHEAR WALL SHALL NOT BE INTERRUPTED WITH CEILING JOISTS. SHEAR WALL SHALL RUN CONTINUOUSLY FROM FLOOR SHEATHING TO ROOF SHEATHING OR FROM SLAB TO FLOOR FRAMING UNLESS NOTED OTHERWISE.
6. USE 4 X 4 POST AT END OF SHEAR WALLS THAT HAVE MST, ST, OR HPA HOLDDOWNS UNLESS NOTED OTHERWISE ON PLANS.
7. ALL (2) 2 X TOP PLATE SPLICES SHALL BE (12) 16d NAILS WITH 4'-0" LAP.
8. THREE OR MORE MULTIPLE JOISTS SHALL BE BOLTED TOGETHER WITH 1/2" DIAMETER BOLTS AT 24" O.C. STAGGERED. RETIGHTEN BOLTS PRIOR TO APPLYING FINISH MATERIAL.
9. USE SIMPSON PC OR EPC ON ALL POST TO BEAM CONNECTIONS UNLESS NOTED OTHERWISE ON PLANS.
10. 2 - 2 X 4 STUDS AT ENDS OF 4 X BEAMS - TYPICAL UNLESS NOTED OTHERWISE.
11. 3 - 2 X 4 STUDS AT ENDS OF 6 X BEAMS - TYPICAL UNLESS NOTED OTHERWISE.
12. CEILING JOISTS SHALL BE 2 X 6 AT 16" O.C. (MAX SPAN = 14'-0") UNLESS NOTED ON PLAN.
13. PROVIDE 2 - 2 X 4 OR 4 X 4 POST UNDER ALL GIRDER TRUSSES TO FOUNDATION.
14. CROSS BRIDGING SHALL BE PROVIDED AT 8'-0" O.C. MAX. FOR ALL JOISTS AND RAFTERS MORE THAN 8" IN DEPTH. USE 2 X 3 OR AN APPROVED METAL TYPE BRIDGING.
15. 2 X SOLID BLOCKING SHALL BE PLACED BETWEEN JOISTS OR RAFTERS AT ALL SUPPORTS.



No.	Revision

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Residence
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Sheet Title

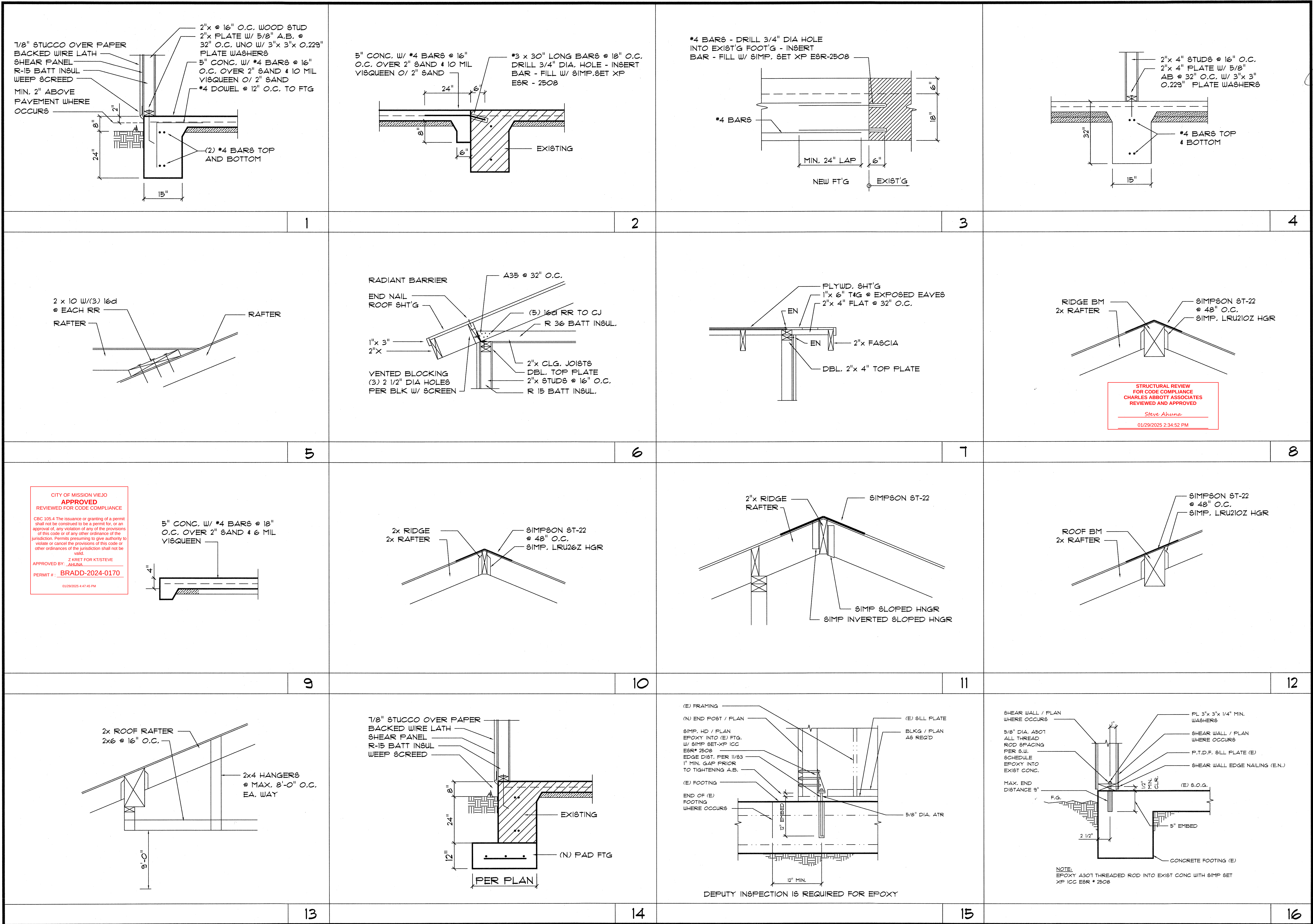
Kenneth G. Brown & Co.
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53



Seal

NO. 03410

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RESIDENTIAL REMODEL PLANS FOR:

Residence

24142 Amuro Dr., Mission Viejo, CA. 92691

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Kenneth G. Brown & Co.

ARCHITECTURE - SPACE PLANNING

29061 Modjeska Pk. Ln.
Troy, CA. 95061

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kenbrowncorp@gmail.com

Date

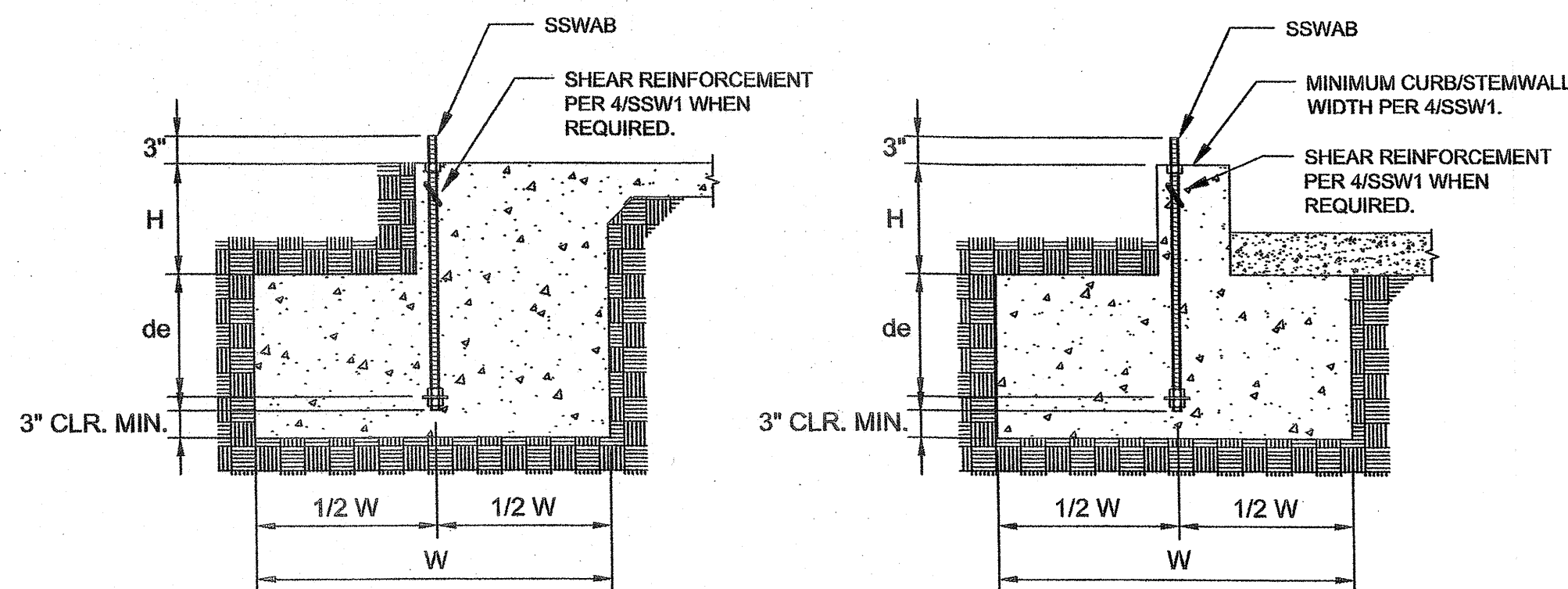
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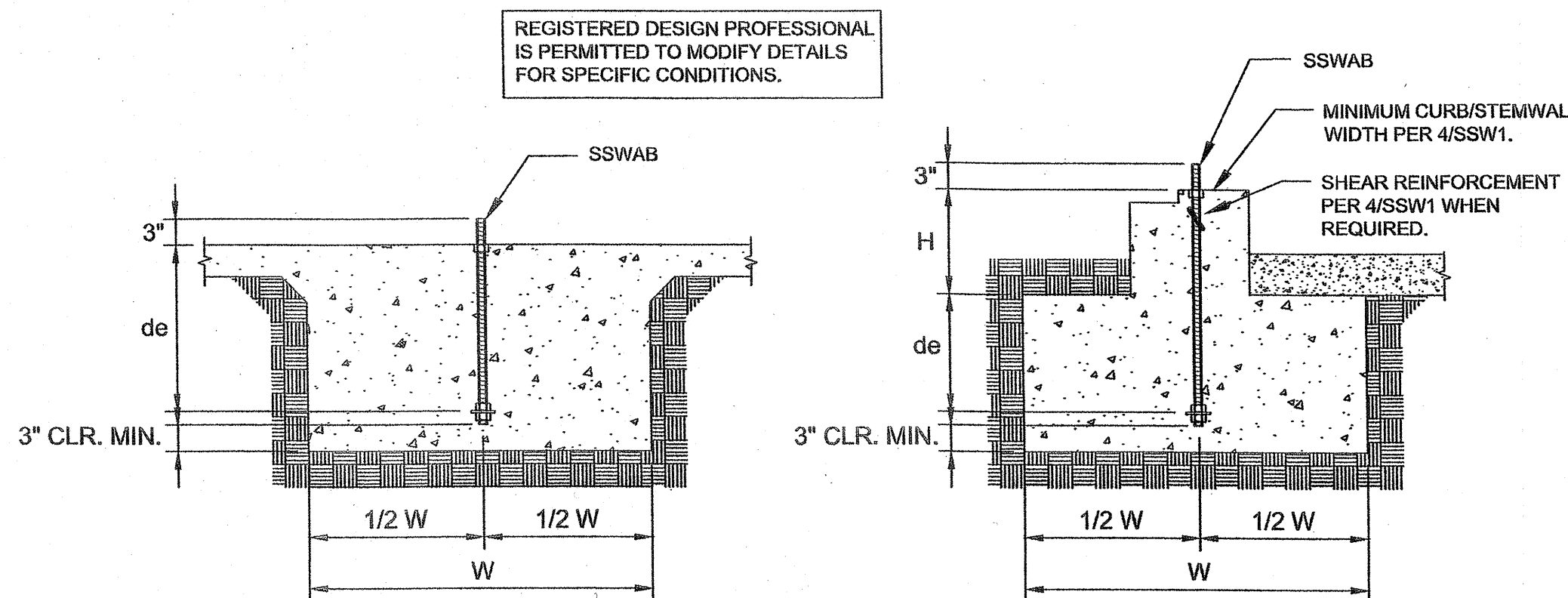
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SLAB ON GRADE FOUNDATION

CURB OR STEMWALL FOUNDATION



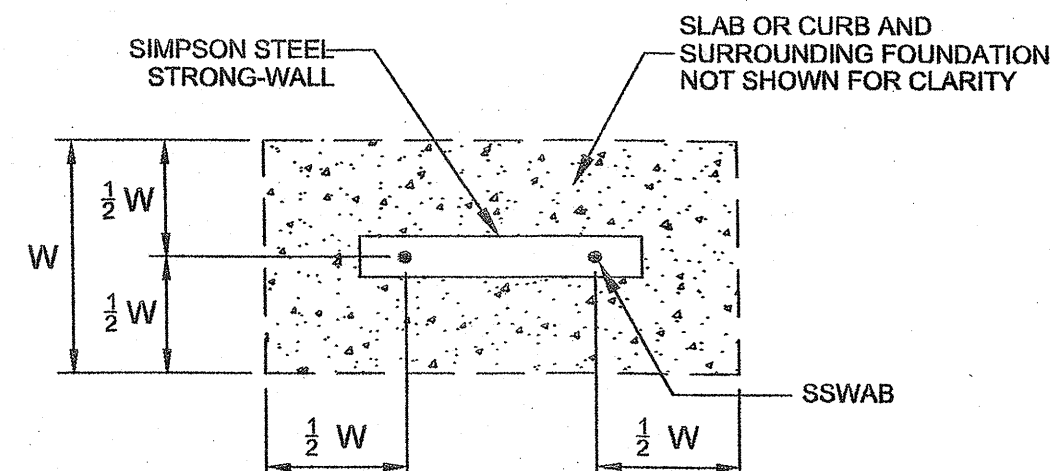
INTERIOR FOUNDATION

BRICK LEDGE FOUNDATION

- NOTES:
1. SEE 2/SSW1 AND 3/SSW1 FOR DIMENSIONS AND ADDITIONAL NOTES.
 2. SEE 4/SSW1 FOR SHEAR REINFORCEMENT WHEN REQUIRED.
 3. MAXIMUM H = $l_e - d_e$. SEE 5/SSW1 AND 6/SSW1 FOR l_e .

STEEL STRONG-WALL ANCHORAGE - TYPICAL SECTIONS

1



SEE TABLES BELOW FOR DIMENSIONS
FOUNDATION PLAN VIEW

STEEL STRONG-WALL ANCHORAGE SOLUTIONS FOR 2500 PSI CONCRETE									
DESIGN CRITERIA	CONCRETE CONDITION	ANCHOR STRENGTH	SSWAB 3/4" ANCHOR BOLT			SSWAB 1" ANCHOR BOLT			
			ASD ALLOWABLE UPLIFT (lbs)	W (in)	d _e (in)	ASD ALLOWABLE UPLIFT (lbs)	W (in)	d _e (in)	
SEISMIC	CRACKED	STANDARD	8,800	22	8	16,100	33	11	
		HIGH STRENGTH	9,600	24	8	17,100	35	12	
			18,900	36	12	33,000	51	17	
	UNCRAKED	STANDARD	8,800	19	7	15,700	28	10	
		HIGH STRENGTH	9,600	21	7	17,100	30	10	
			18,300	31	11	32,300	44	15	
WIND	CRACKED	STANDARD	5,100	14	6	6,200	16	6	
			7,400	18	6	11,400	24	8	
			9,600	22	8	17,100	32	11	
		HIGH STRENGTH	11,400	24	8	21,100	36	12	
			13,600	27	9	27,300	42	14	
			15,900	30	10	31,800	46	16	
	UNCRAKED	STANDARD	5,000	12	6	6,400	14	6	
			7,800	16	7	12,500	22	8	
			9,600	19	7	17,100	26	10	
		HIGH STRENGTH	12,500	22	8	21,900	32	11	
			14,300	24	8	26,400	36	12	
			17,000	27	9	31,500	40	14	

- NOTES:
1. ANCHORAGE DESIGNS CONFORM TO ACI 318-11 APPENDIX D WITH NO SUPPLEMENTARY REINFORCEMENT FOR CRACKED OR UNCRACKED CONCRETE AS NOTED.
 2. ANCHOR STRENGTH INDICATES REQUIRED GRADE OF SSWAB ANCHOR BOLT. STANDARD (ASTM F1554 GRADE 36) OR HIGH STRENGTH (HS) (ASTM A449).
 3. SEISMIC INDICATES SEISMIC DESIGN CATEGORY C THROUGH F. DETACHED 1 AND 2 FAMILY DWELLINGS IN SDC C MAY USE WIND ANCHORAGE SOLUTIONS. SEISMIC ANCHORAGE DESIGNS CONFORM TO ACI 318-11 SECTION D.3.3.4.
 4. WIND INCLUDES SEISMIC DESIGN CATEGORY A AND B AND DETACHED 1 AND 2 FAMILY DWELLINGS IN SDC C.
 5. FOUNDATION DIMENSIONS ARE FOR ANCHORAGE ONLY. FOUNDATION DESIGN (SIZE AND REINFORCEMENT) BY OTHERS. THE REGISTERED DESIGN PROFESSIONAL MAY SPECIFY ALTERNATE EMBEDMENT, FOOTING SIZE OR ANCHOR BOLT.
 6. REFER TO 1/SSW1 FOR d_e .

SSWAB TENSION ANCHORAGE SCHEDULE 2500 PSI

2

SSW ANCHOR BOLTS

5

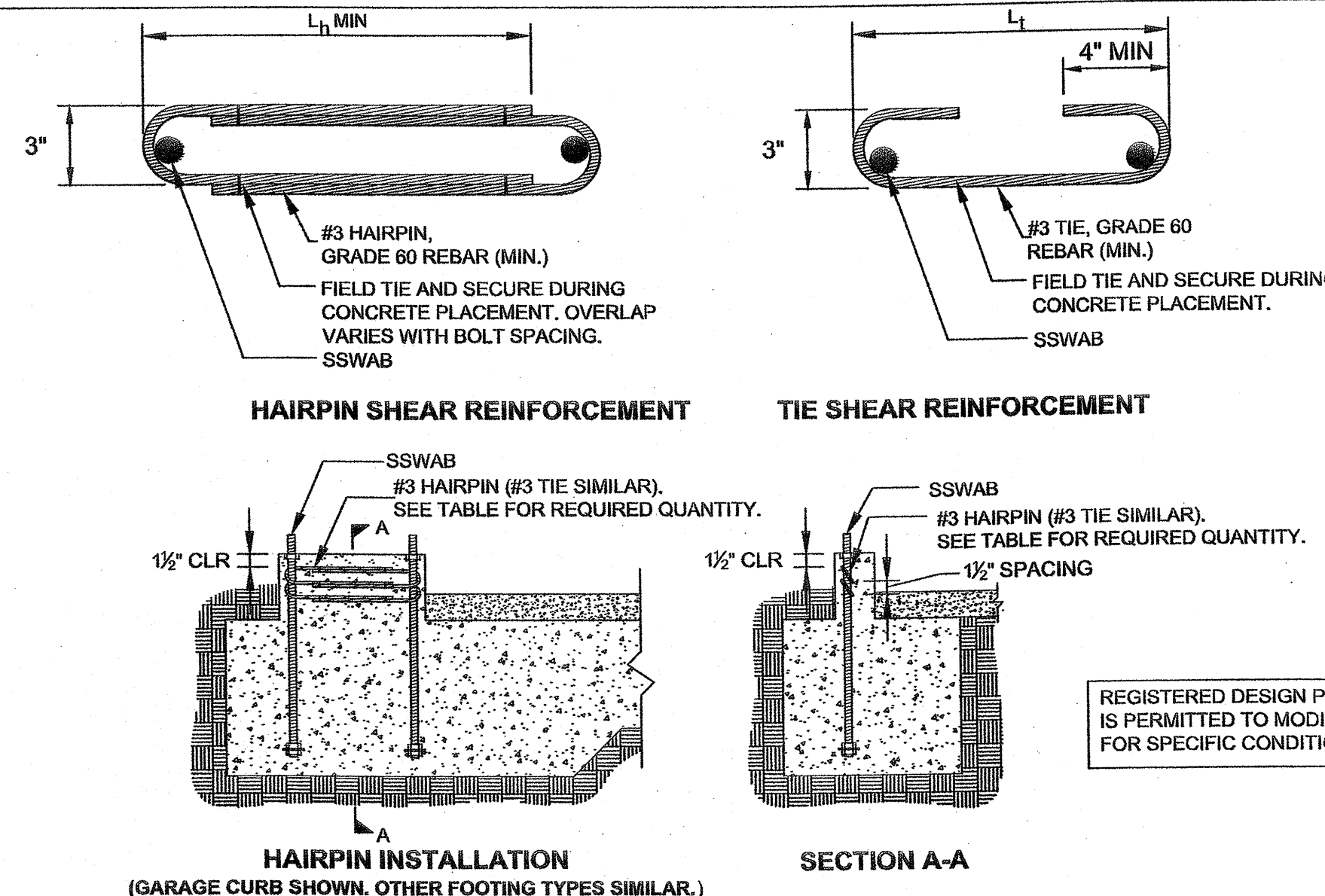
SSW ANCHOR BOLT EXTENSION

6

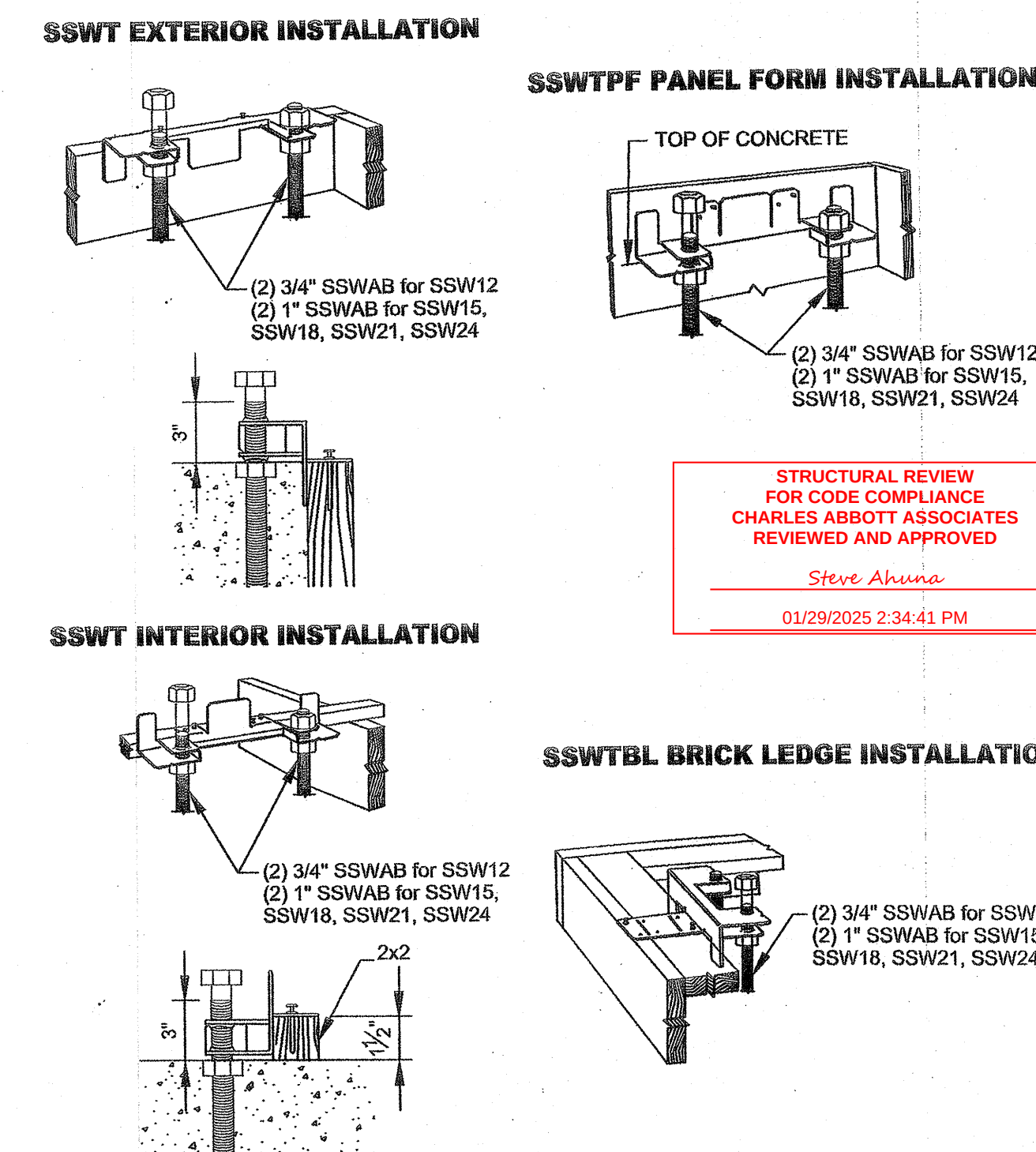
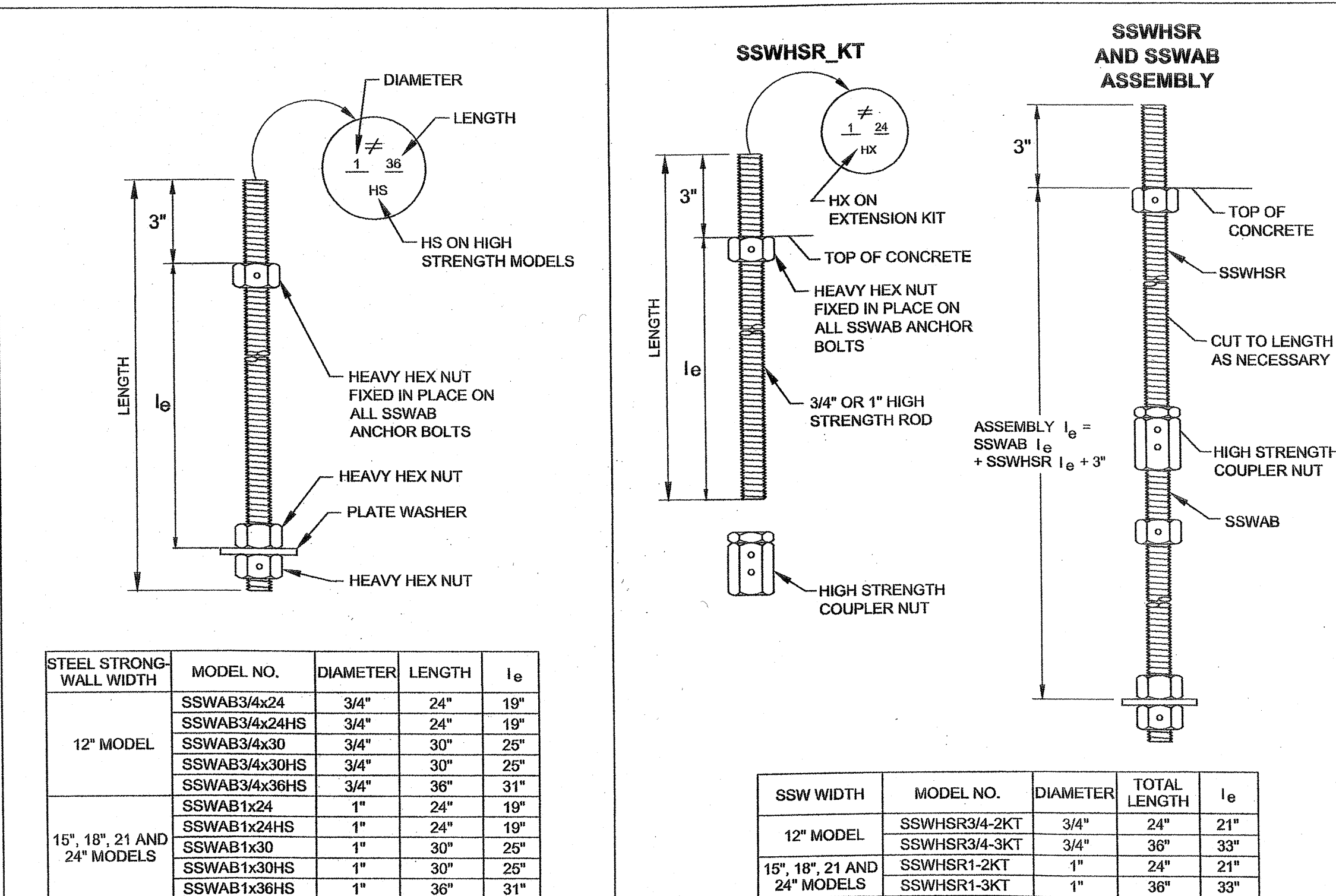
SSW ANCHOR BOLT TEMPLATES

7

SSWAB TENSION ANCHORAGE SCHEDULE 3500/4500 PSI



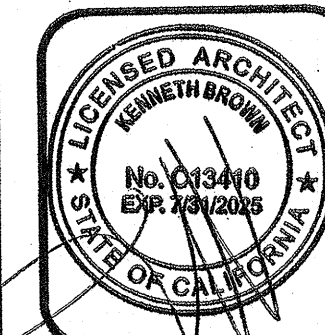
STEEL STRONG-WALL ANCHOR BOLT SHEAR ANCHORAGE



STEEL STRONG-WALL ANCHORAGE SOLUTIONS FOR 4500 PSI CONCRETE									
DESIGN CRITERIA	CONCRETE CONDITION	ANCHOR STRENGTH	SSWAB 3/4" ANCHOR BOLT			SSWAB 1" ANCHOR BOLT			
			ASD ALLOWABLE UPLIFT (lbs)	W (in)	d _e (in)	ASD ALLOWABLE UPLIFT (lbs)	W (in)	d _e (in)	
SEISMIC	CRACKED	STANDARD	8,700	18	6	16,000	27	9	
			9,600	20	7	17,100	29	10	
		HIGH STRENGTH	17,800	28	10	32,100	42	14	
	UNCRAKED	STANDARD	9,100	16	6	15,700	23	8	
			9,600	17	6	17,100	25	9	
		HIGH STRENGTH	17,800	25	9	32,500	37	13	
WIND	CRACKED	STANDARD	5,400	12	6	6,800	14	6	
			8,300	16	6	11,600	20	7	
			9,600	18	6	17,100	26	9	
		HIGH STRENGTH	11,600	20	7	21,400	30	10	
			13,400	22	8	25,800	34	12	
			17,300	28	9	31,000	38	13	
	UNCRAKED	STANDARD	5,400	12	6	6,800	12	6	
			8,500	14	6	12,400	18	6	
			9,600	16	6	17,100	23	8	
		HIGH STRENGTH	12,400	18	6	21,600	26	9	
			14,500	20	7	26,700	30	10	
			16,800	22	8	32,200	34	12	

- NOTES:
1. SHEAR ANCHORAGE DESIGNS CONFORM TO ACI 318-11 AND ASSUME MINIMUM $f_c=2,500$ PSI CONCRETE. SEE DETAILS 1/SSW1 TO 3/SSW1 FOR TENSION ANCHORAGE.
 2. SHEAR REINFORCEMENT IS NOT REQUIRED FOR PANELS INSTALLED ON A WOOD FLOOR, INTERIOR FOUNDATION APPLICATIONS (PANEL INSTALLED AWAY FROM EDGE OF CONCRETE), OR BRACED WALL PANEL APPLICATIONS.
 3. SEISMIC INDICATES SEISMIC DESIGN CATEGORY C THROUGH F. DETACHED 1 AND 2 FAMILY DWELLINGS IN SDC C MAY USE WIND ANCHORAGE SOLUTIONS.
 4. WIND INCLUDES SEISMIC DESIGN CATEGORY A AND B.
 5. MINIMUM CURB/STEMWALL WIDTH IS 8" WHEN STANDARD STRENGTH SSWAB IS USED.
 6. USE (1) #3 TIE FOR SSW12 AND SSW15 WHEN THE STEEL STRONG-WALL PANEL DESIGN SHEAR FORCE EXCEEDS THE TABULATED ANCHORAGE ALLOWABLE SHEAR LOAD.
 7. CONCRETE EDGE DISTANCE FOR ANCHORS MUST COMPLY WITH ACI 318-11 D.8.2.

REVISIONS	DATE	NO.	2006 IBC REVISIONS	2012 IBC REVISIONS
1	9/2/2009	1		
2	4/16/2014	2		



SIMPSON STRONG-TIE COMPANY, INC.
HOME OFFICE:
5956 LAS POSITAS BLVD.
PLEASANTON, CA 94588
TEL: (800) 999-5099

STEEL STRONG-WALL ANCHORAGE DETAILS ENGINEERED DESIGNS

SIMPSON
FOR CODE COMPLIANCE
CHARLES ABBOTT ASSOCIATES
REVIEWED AND APPROVED
Steve Ahuna
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NAME
DATE 4-16-2014
SCALE N.T.S.
CHECKED
SHEET
SSW1
OF SHEETS
JOB NO.

STEEL STRONG-WALL MODELS					
STD. WALL MODEL NO.	STK WALL MODEL NO.	H (in)	T (in)	HOLDOWN ANCHOR BOLTS	QTY. OF TOP OF WALL SCREWS
SSW12x7	--	80	3 1/2	(2) 3/4"	4
SSW15x7	--	80	3 1/2	(2) 1"	6
SSW18x7	--	80	3 1/2	(2) 1"	9
SSW21x7	--	80	3 1/2	(2) 1"	12
SSW12x7.4	--	85 1/2	3 1/2	(2) 3/4"	4
SSW15x7.4	--	85 1/2	3 1/2	(2) 1"	6
SSW18x7.4	--	85 1/2	3 1/2	(2) 1"	9
SSW21x7.4	--	85 1/2	3 1/2	(2) 1"	12
SSW24x7.4	--	85 1/2	3 1/2	(2) 1"	14
SSW12x8	--	93 1/4	3 1/2	(2) 3/4"	4
SSW15x8	--	93 1/4	3 1/2	(2) 1"	6
SSW18x8	--	93 1/4	3 1/2	(2) 1"	9
SSW21x8	--	93 1/4	3 1/2	(2) 1"	12
SSW24x8	--	93 1/4	3 1/2	(2) 1"	14
SSW12x9	--	105 1/4	3 1/2	(2) 3/4"	4
SSW15x9	--	105 1/4	3 1/2	(2) 1"	6
SSW18x9	--	105 1/4	3 1/2	(2) 1"	9
SSW21x9	--	105 1/4	3 1/2	(2) 1"	12
SSW24x9	--	105 1/4	3 1/2	(2) 1"	14
SSW12x10	--	117 1/4	3 1/2	(2) 3/4"	4
SSW15x10	--	117 1/4	3 1/2	(2) 1"	6
SSW18x10	--	117 1/4	3 1/2	(2) 1"	9
SSW21x10	--	117 1/4	3 1/2	(2) 1"	12
SSW24x10	--	117 1/4	3 1/2	(2) 1"	14
SSW15x11	--	129 1/4	5 1/2	(2) 1"	6
SSW18x11	--	129 1/4	5 1/2	(2) 1"	9
SSW21x11	--	129 1/4	5 1/2	(2) 1"	12
SSW24x11	--	129 1/4	5 1/2	(2) 1"	14
SSW15x12	--	141 1/4	5 1/2	(2) 1"	6
SSW18x12	--	141 1/4	5 1/2	(2) 1"	9
SSW21x12	--	141 1/4	5 1/2	(2) 1"	12
SSW24x12	--	141 1/4	5 1/2	(2) 1"	14
SSW18x13	--	153 1/4	5 1/2	(2) 1"	9
SSW21x13	--	153 1/4	5 1/2	(2) 1"	12
SSW24x13	--	153 1/4	5 1/2	(2) 1"	14

STEEL STRONG-WALL MODELS

CITY OF MISSION VIEJO
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CBC 105.4 The issuance or granting of a permit shall not be construed to be a permit for, or an approval of any violation of any of the provisions of this code or of any other ordinance of the jurisdiction. It is the responsibility of the applicant to obtain all necessary permits and to comply with all applicable codes and ordinances of the jurisdiction. The City of Mission Viejo does not assume any liability for any damage or loss resulting from the use of this code or any other ordinance of the jurisdiction.

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PERMIT # BRADD-2024-0170

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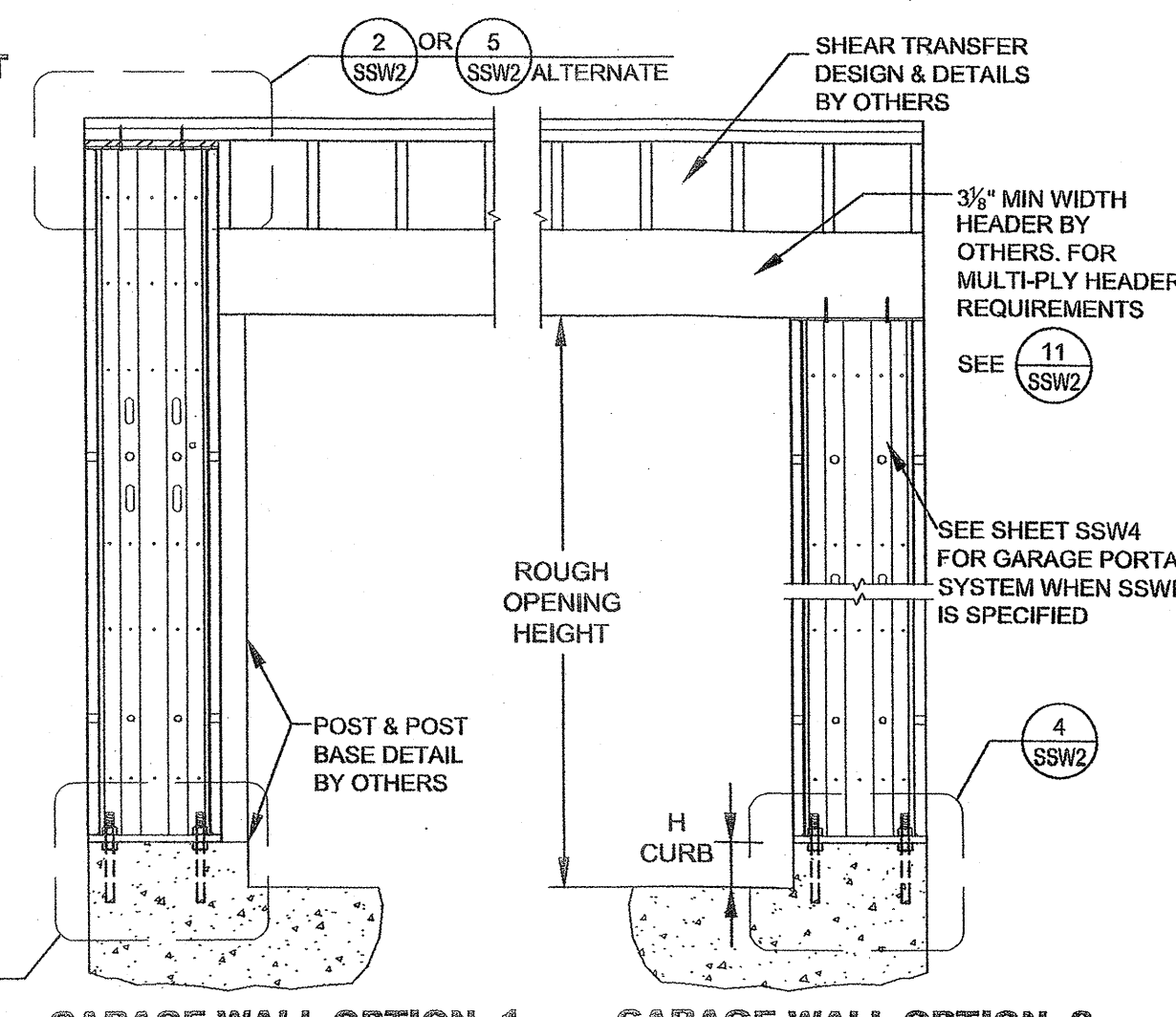
SINGLE-STORY SSW ON CONCRETE

GARAGE HEADER ROUGH OPENING HEIGHT

Model No.	H CURB	ROUGH OPENING HEIGHT
SSW12x7	5 1/2"	7' - 1 1/2"
SSW15x7	5 1/2"	7' - 1 1/2"
SSW18x7	6"	7' - 2"
SSW21x7	6"	7' - 2"
SSW24x7	6"	7' - 2"
SSW12x8	5 1/2"	8' - 2 3/4"
SSW15x8	5 1/2"	8' - 2 3/4"
SSW18x8	6"	8' - 3 1/4"
SSW21x8	6"	8' - 3 1/4"
SSW24x8	6"	8' - 3 1/4"

- THE HEIGHT OF THE GARAGE CURB ABOVE THE GARAGE SLAB IS CRITICAL FOR THE ROUGH HEADER OPENING AT GARAGE RETURN WALLS.
- SHIMS ARE NOT PROVIDED WITH STEEL STRONG-WALL.
- FURRING ON UNDERSIDE OF GARAGE HEADER MAY BE NECESSARY FOR LESSER ROUGH OPENING HEIGHTS.

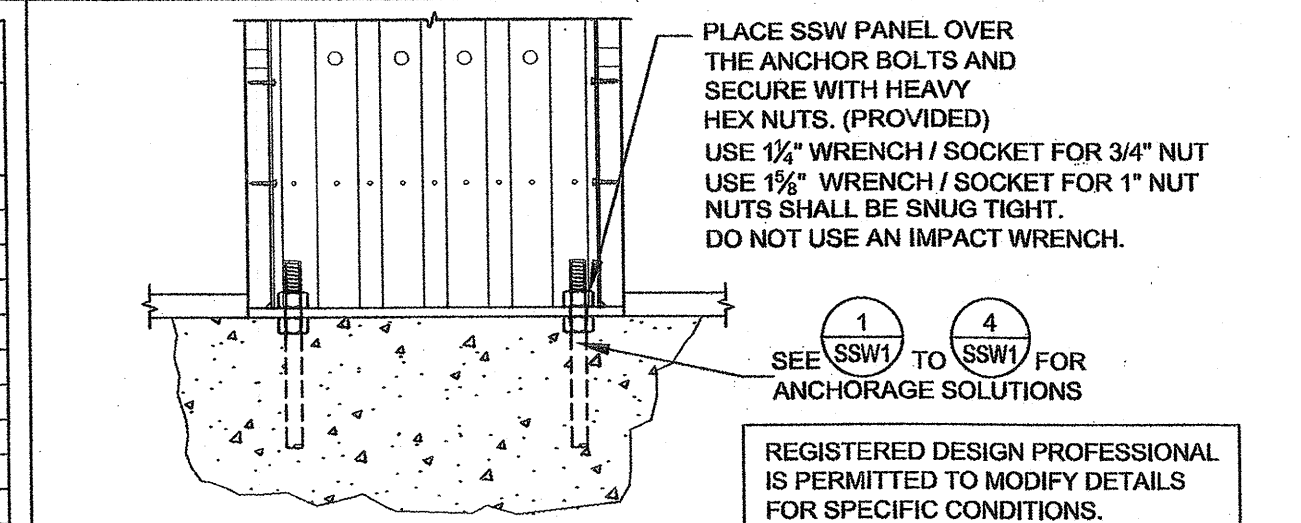
REGISTERED DESIGN PROFESSIONAL IS PERMITTED TO MODIFY DETAILS FOR SPECIFIC CONDITIONS.



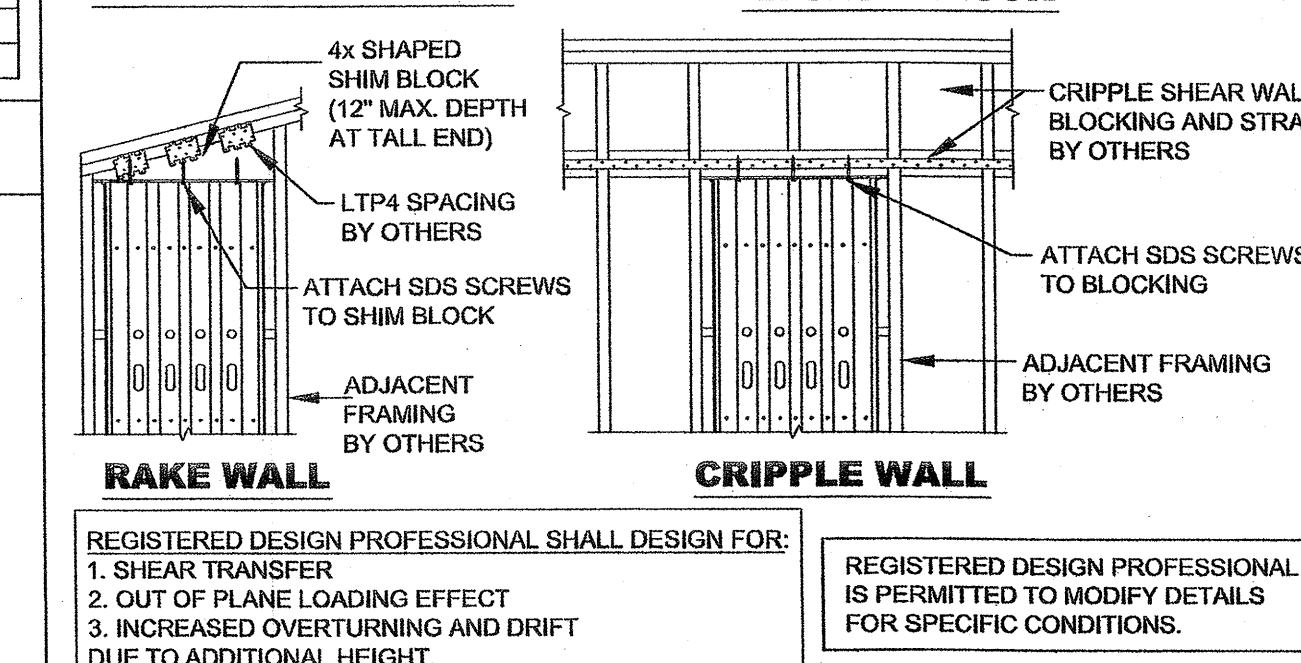
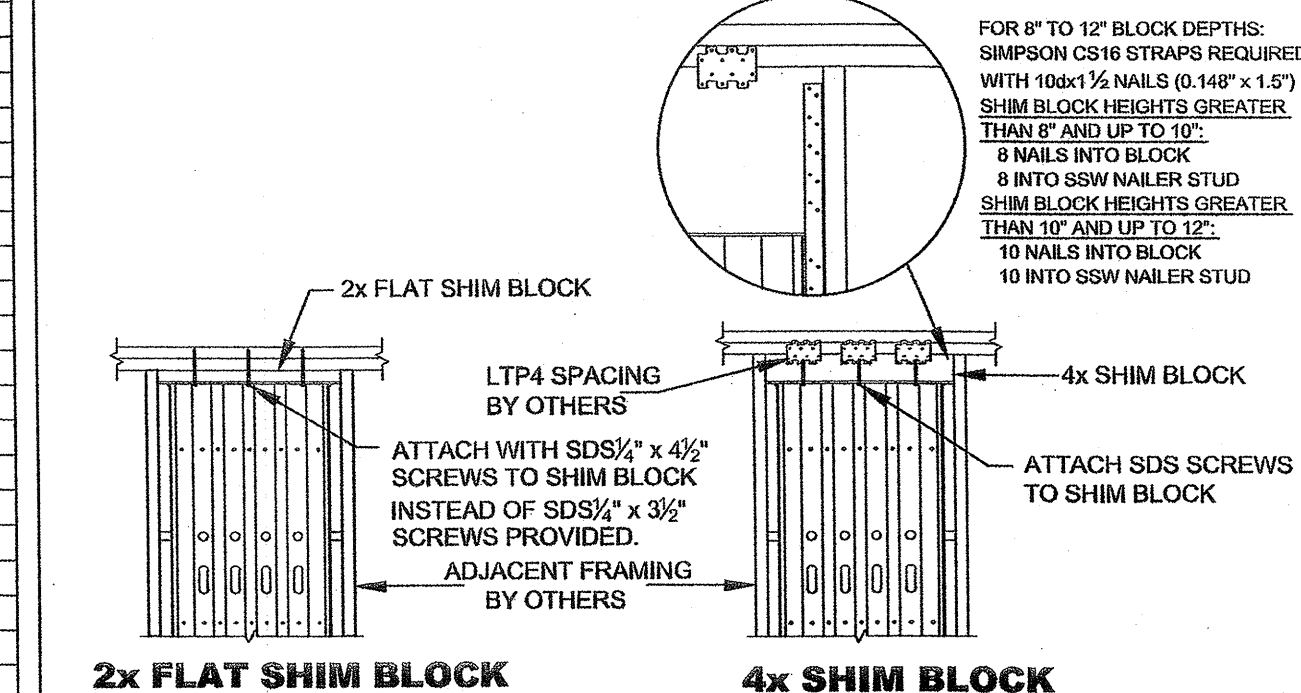
NOTE:
7-FT. HIGH STEEL STRONG-WALL MODELS ARE 80", 2" TALLER THAN 7-FT. HIGH WOOD STRONG-WALL SHEARWALLS

REGISTERED DESIGN PROFESSIONAL SHALL DESIGN FOR:
1. SHEAR TRANSFER
2. OUT OF PLANE LOADING EFFECT
3. INCREASED OVERTURNING AND DRIFT DUE TO ADDITIONAL HEIGHT.

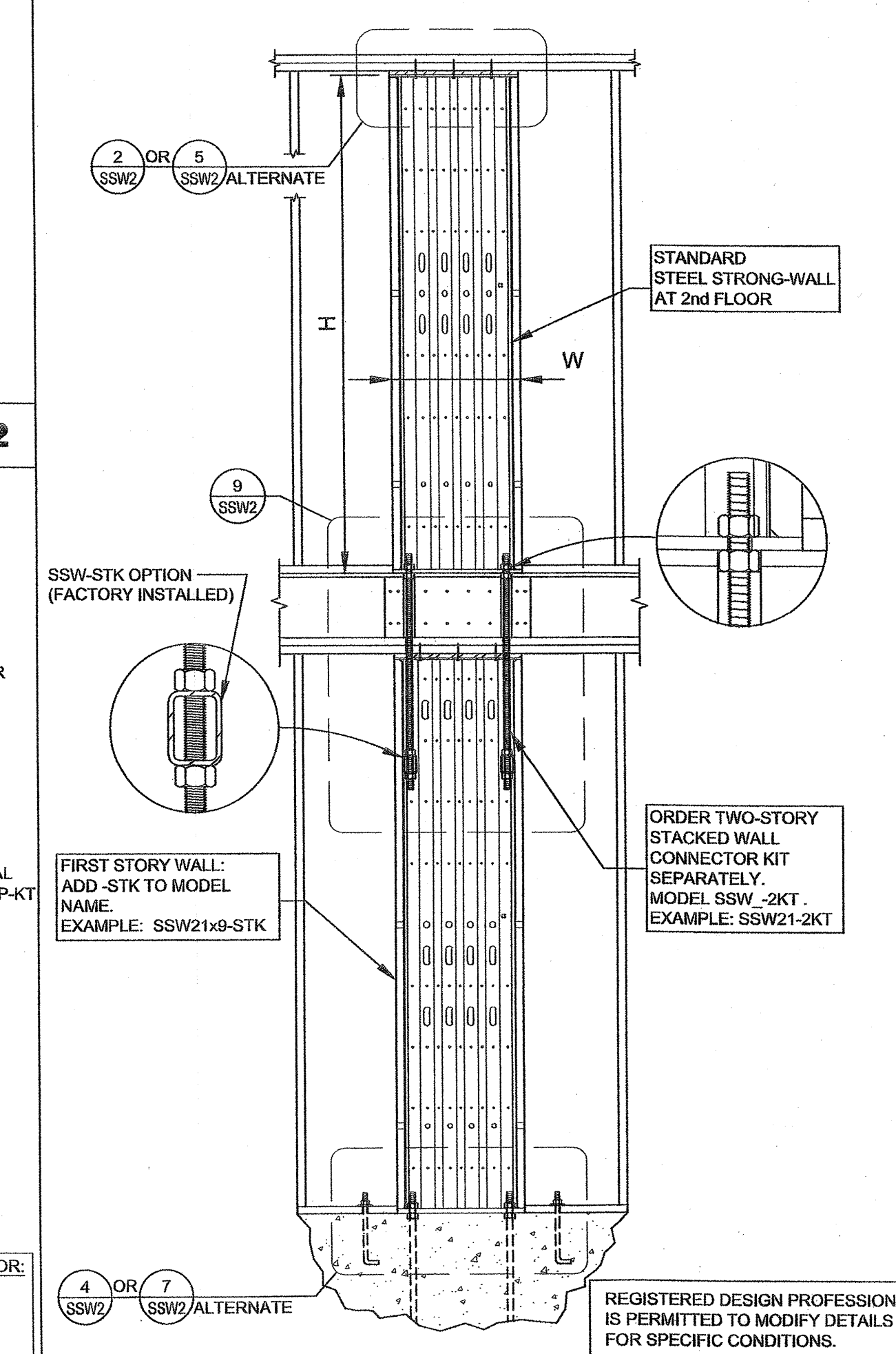
ALTERNATE GARAGE WALL OPTIONS



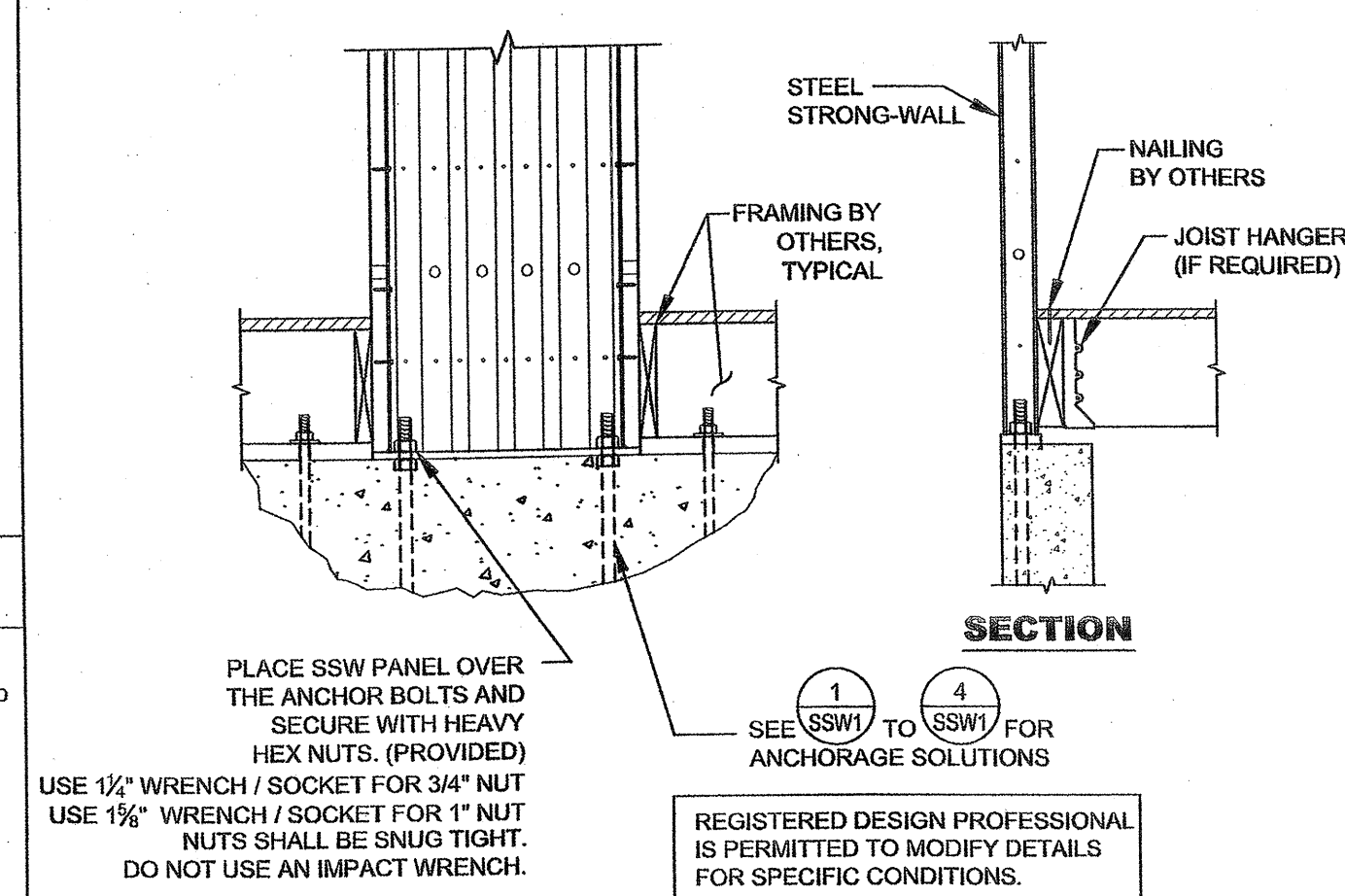
STRONG-WALL ON CONCRETE



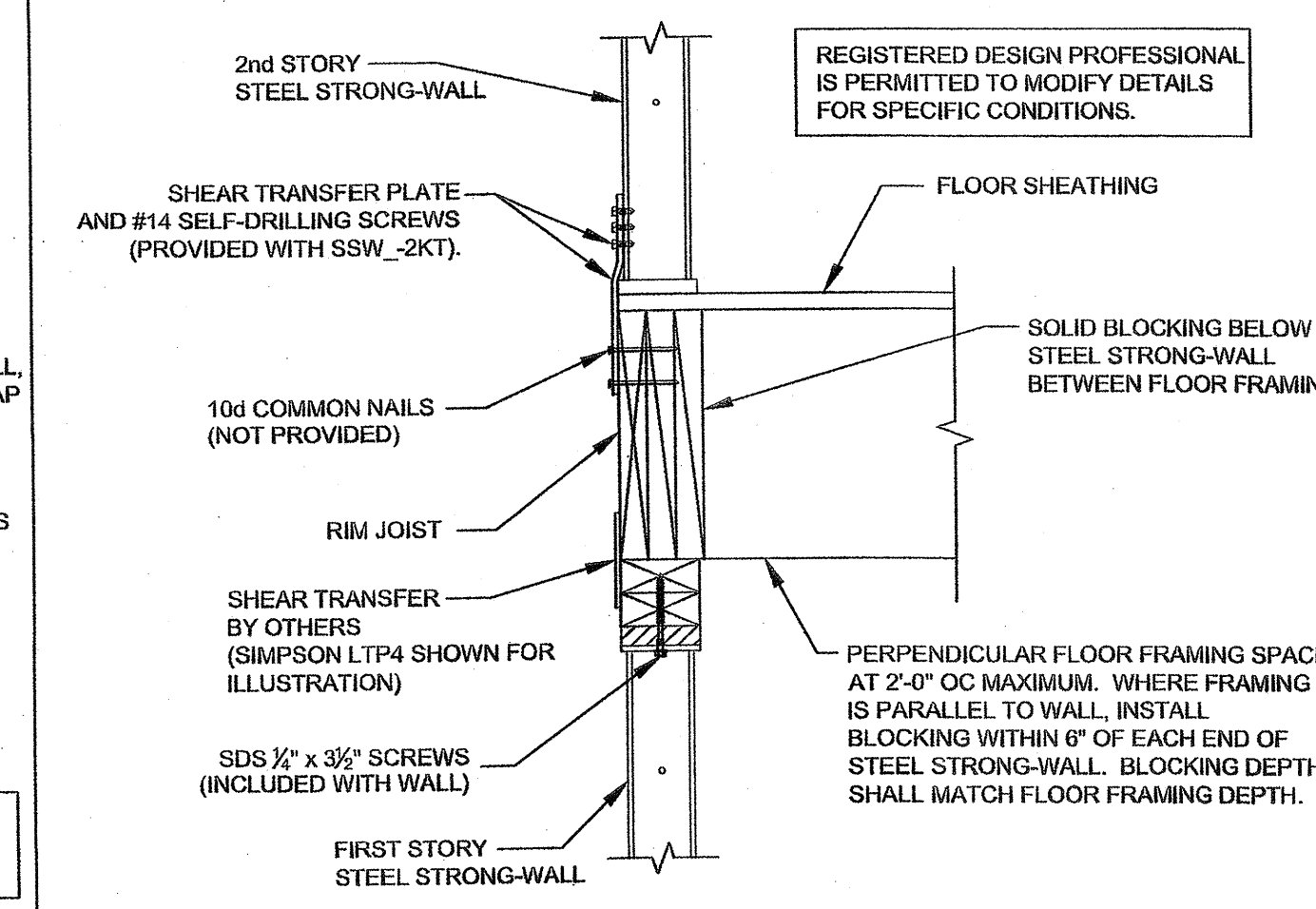
TOP OF WALL HEIGHT ADJUSTMENTS



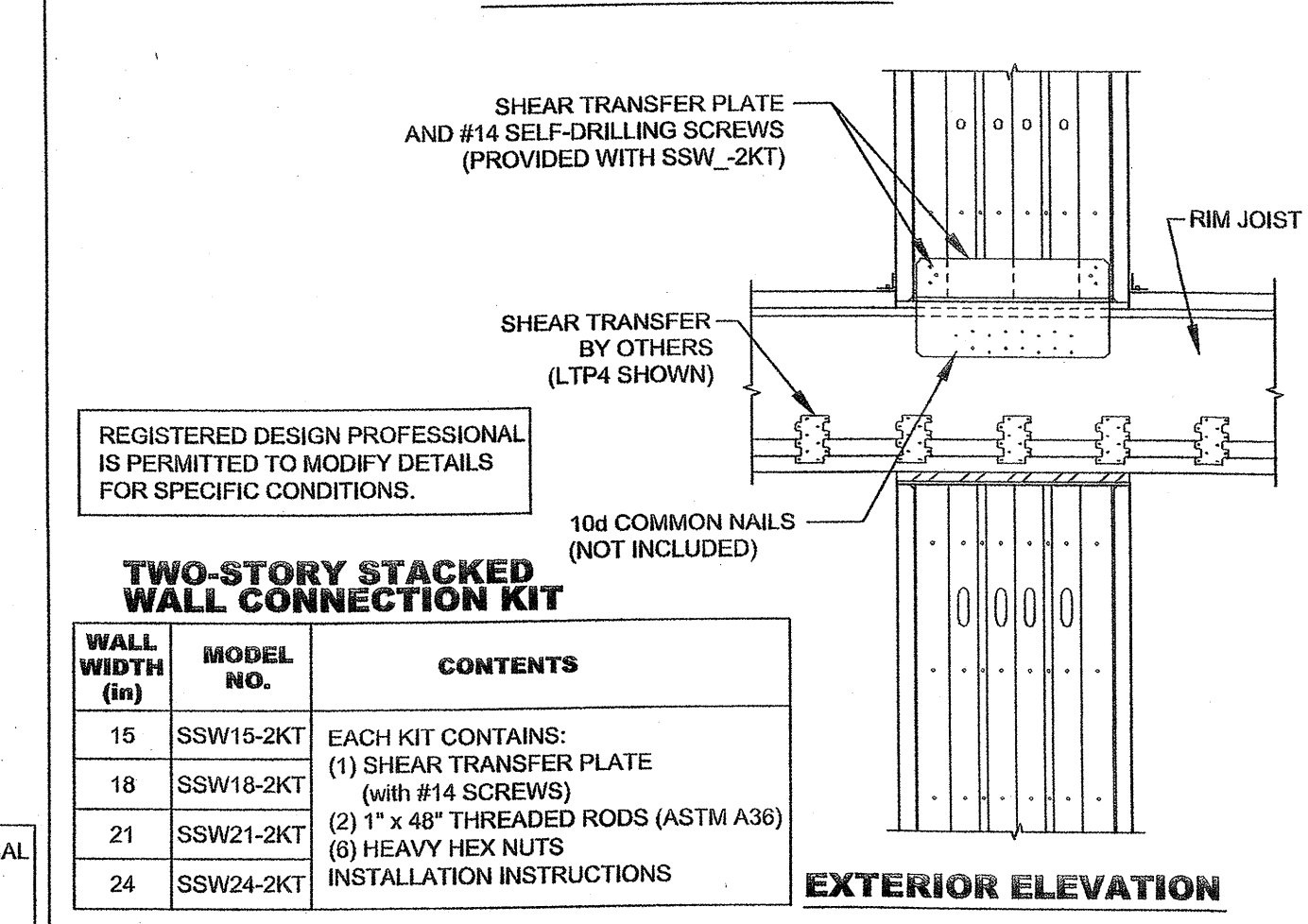
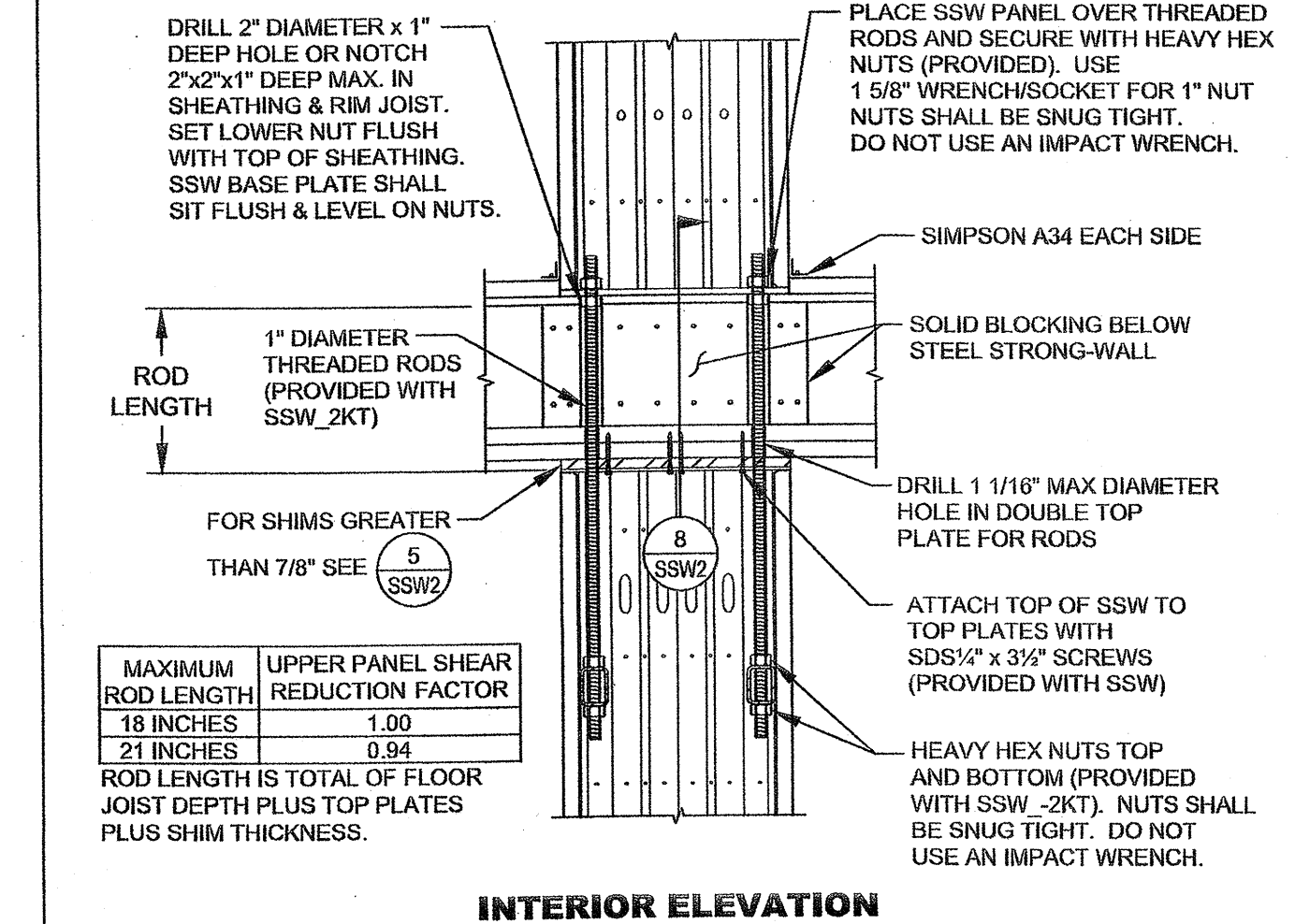
TWO-STORY STACKED



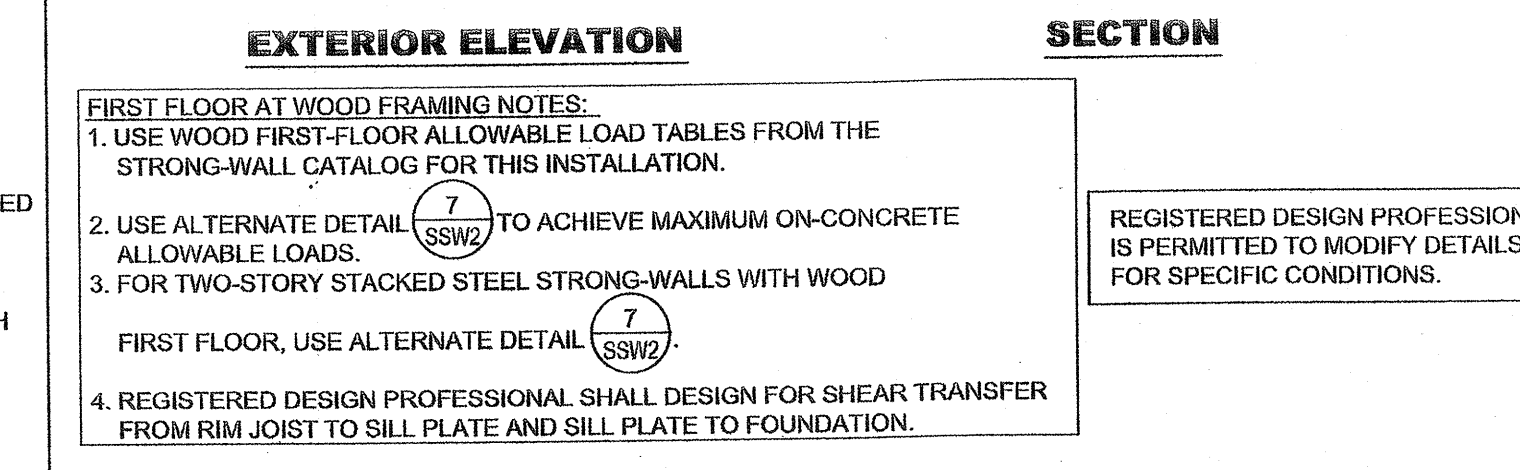
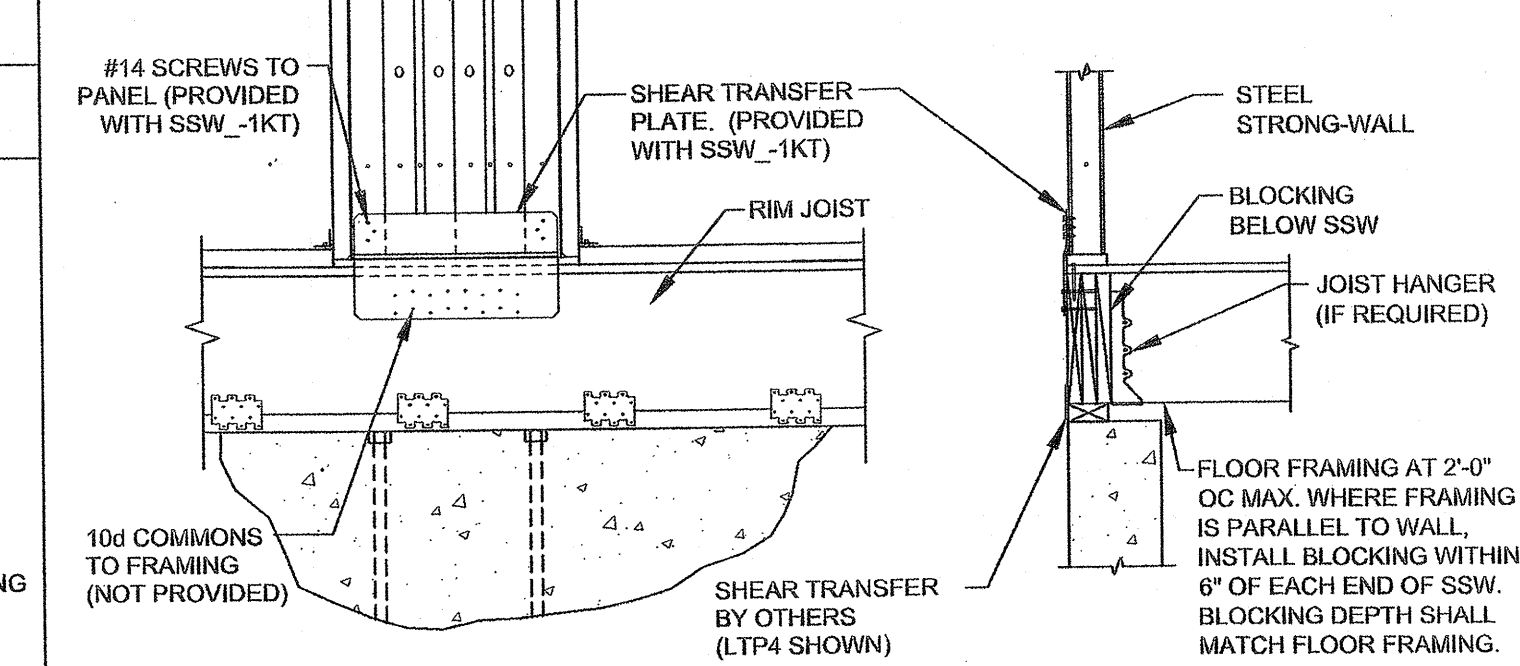
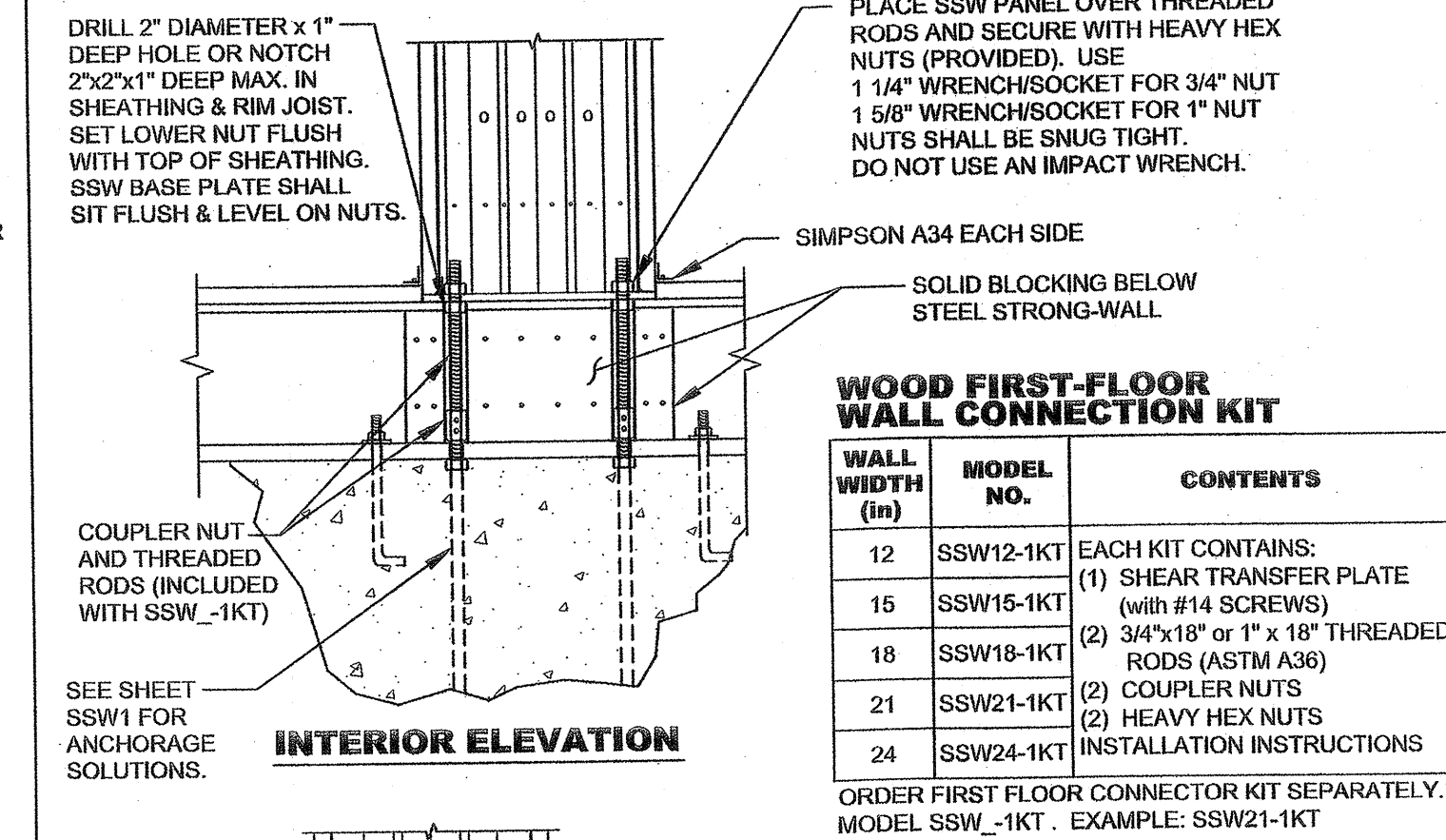
ALTERNATE 1ST FLOOR WOOD FRAMING



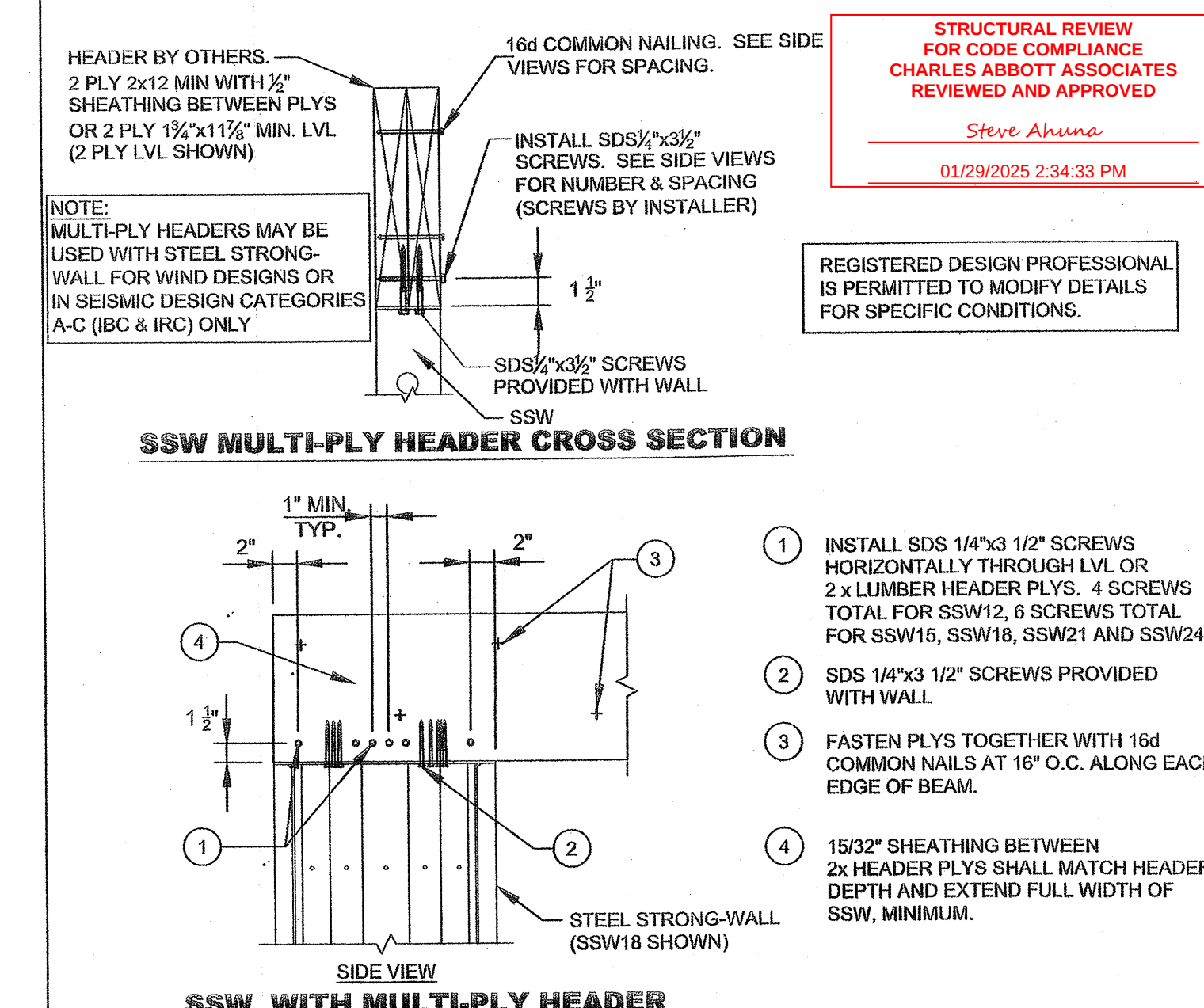
TWO-STORY STACKED FLOOR SECTION



TWO-STORY STACKED FLOOR FRAMING



FIRST FLOOR AT WOOD FRAMING



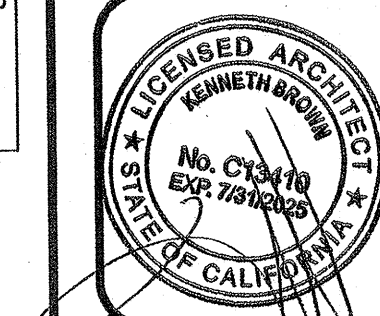
SSW WITH MULTI-PLY HEADER

MULTI-PLY HEADERS

- STEEL STRONG-WALL SHEARWALL IS MANUFACTURED AND TRADEMARKED BY "SIMPSON STRONG-TIE COMPANY, INC." HOME OFFICE: 5956 W. LAS POSITAS BLVD., PLEASANTON, CA 94588 TEL: (925) 999-5099, FAX: (925) 847-1597.
- USE OF THIS PRODUCT IS SUBJECT TO THE APPROVAL OF THE LOCAL BUILDING DEPARTMENT.
- THIS PRODUCT IS PART OF THE OVERALL LATERAL FORCE RESISTING SYSTEM OF THE STRUCTURE. DESIGN OF THE BUILDING'S LATERAL FORCE RESISTING SYSTEM, INCLUDING THE LOAD PATH TO TRANSFER LATERAL FORCES FROM THE STRUCTURE TO THE GROUND, IS THE RESPONSIBILITY OF THE SPECIFIER.
- ENGINEER OF RECORD IS PERMITTED TO MODIFY DETAILS FOR SPECIFIC CONDITIONS.
- THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS, CONDITIONS, ELEVATIONS, ETC. PRIOR TO INSTALLATION OF ANY COMPONENTS FOR THE STEEL STRONG-WALL SYSTEM. IF ANY DISCREPANCIES ARE FOUND, THEY SHALL BE BROUGHT TO THE ATTENTION OF THE SPECIFIER FOR CLARIFICATION PRIOR TO CONSTRUCTION.
- INSTALLATION OF PRODUCT SHALL BE DONE IN CONFORMANCE TO THESE DRAWINGS. THE PERFORMANCE OF MODIFIED PRODUCTS OR ALTERED INSTALLATION PROCEDURES ARE THE SOLE RESPONSIBILITY OF THE SPECIFIER.
- SIMPSON STRONG-TIE COMPANY, INC. RESERVES THE RIGHT TO CHANGE SPECIFICATIONS, DESIGNS, AND MODELS WITHOUT NOTICE OR LIABILITY FOR SUCH CHANGES.
- ALL HARDWARE CALLED OUT IS SIMPSON STRONG-TIE.

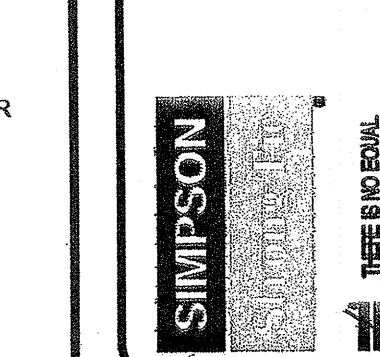
NOTES

NO.	DATE	REVISIONS
1	9/21/2009	2006 IBC REVISIONS
2	4/16/2014	2012 IBC REVISIONS



SIMPSON STRONG-TIE COMPANY, INC.
HOME OFFICE: 5956 W. LAS POSITAS BLVD., PLEASANTON, CA 94588
TEL: (925) 999-5099
FAX: (925) 847-1597
WWW.SIMPSONSTRONGTIE.COM

STEEL STRONG-WALL FRAMING DETAILS ENGINEERED DESIGNS



NAME	DATE
SCALE	N.T.S.
CHECKED	
SHEET	SSW2
OF SHEETS	
JOB NO.	

CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD

Project Name: Residential Building
Calculation Description: Title 24 Analysis

Calculation Date/Time: 2024-11-12T10:45:14-08:00
Input File Name: 24142 Amurro Dr Mission Viejo, CA 92691-main house.rbd22x

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GENERAL INFORMATION									
01	Project Name	Residential Building							
02	Run Title	Title 24 Analysis							
03	Project Location	24142 Amurro Dr							
04	City	Mission Viejo	05	Standards Version	2022				
06	Zip code	92691	07	Software Version	EnergyPro 9.3				
08	Climate Zone	8	09	Front Orientation (deg/ Cardinal)	180				
10	Building Type	Single family	11	Number of Dwelling Units	1				
12	Project Scope	Addition and/or Alteration	13	Number of Bedrooms	4				
14	Addition Cond. Floor Area (ft²)	1521	15	Number of Stories	1				
16	Existing Cond. Floor Area (ft²)	1303	17	Fenestration Average U-factor	0.38				
18	Total Cond. Floor Area (ft²)	2824	19	Glazing Percentage (%)	11.46%				
20	ADU Bedrooms Count	n/a	21	ADU Conditioned Floor Area	n/a				
22	Fuel Type	Natural gas	23	No Dwelling Unit:	No				

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

Registration Number: 424-P010279371A-000-000-0000000-0000
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Schema Version: rev 20220901
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ENERGY USE SUMMARY									
Energy Use	Standard Design Source Energy (EDR1) (kBtu/ft² - yr)	Standard Design TDV Energy (EDR2) (kBtu/ft² - yr)	Proposed Design Source Energy (EDR1) (kBtu/ft² - yr)	Proposed Design TDV Energy (EDR2) (kBtu/ft² - yr)	Compliance Margin (EDR1)	Compliance Margin (EDR2)			
Space Heating	0	5.46	0	6.79	0	-1.33			
Space Cooling	0	26.61	0	22.19	0	4.42			
IAQ Ventilation	0	3.47	0	3.47	0	0			
Water Heating	0	9.62	0	7.53	0	2.09			
Self Utilization/Flexibility Credit				0		0			
Efficiency Compliance Total	0	45.16	0	39.98	0	5.18			
Photovoltaics		0		0					
Battery				0					
Flexibility									
Indoor Lighting	0	6.18	0	6.18					
Appl. & Cooking	0	13.78	0	13.74					
Plug Loads	0	23.1	0	23.1					
Outdoor Lighting	0	1.6	0	1.6					
TOTAL COMPLIANCE	0	89.82	0	84.6					

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ENERGY USE INTENSITY									
	Standard Design (kBtu/ft² - yr)	Proposed Design (kBtu/ft² - yr)	Compliance Margin (kBtu/ft² - yr)	Margin Percentage					
Gross EUI¹	10.24	9.67	0.57	5.57					
Net EUI²	10.24	9.67	0.57	5.57					

Notes:
1. Gross EUI is Energy Use Total (not including PV) / Total Building Area.
2. Net EUI is Energy Use Total (including PV) / Total Building Area.

REQUIRED SPECIAL FEATURES
The following are features that must be installed as condition for meeting the modeled energy performance for this computer analysis.
• Non-standard duct location (any location other than attic)
• Northwest Energy Efficiency Alliance (NEEA) rated heat pump water heater; specific brand/model, or equivalent, must be installed

HERS FEATURE SUMMARY
The following is a summary of the features that must be field-verified by a certified HERS Rater as a condition for meeting the modeled energy performance for this computer analysis. Additional detail is provided in the building tables below. Registered CF1R and CF3R are required to be completed in the HERS Registry

- Indoor air quality ventilation
- Kitchen range hood
- Minimum Airflow
- Verified SEER/SEER2
- Verified Refrigerant Charge
- Fan Efficiency Watts/CFM
- Verified HSPF
- Verified heat pump rated heating capacity
- Duct leakage testing
- Ducts located entirely in conditioned space confirmed by duct leakage testing

BUILDING - FEATURES INFORMATION									
01	02	03	04	05	06	07			
Project Name	Conditioned Floor Area (ft²)	Number of Dwelling Units	Number of Bedrooms	Number of Zones	Number of Ventilation Cooling Systems	Number of Water Heating Systems			
Residential Building	2824	1	4	2	0	1			

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ZONE INFORMATION									
01	02	03	04	05	06	07			
Zone Name	Zone Type	HVAC System Name	Zone Floor Area (ft²)	Avg. Ceiling Height	Water Heating System 1	Status			
1st Floor Existing	Conditioned	(N) AC-1 & AC-21	1303	9	DHW Sys 1	Existing Unchanged			
New Addition#1	Conditioned	(N) AC-1 & AC-21	1521	9	DHW Sys 1	New			

OPAQUE SURFACES										
01	02	03	04	05	06	07	08	09	10	11
Name	Zone	Construction	Azimuth	Orientation	Gross Area (ft²)	Window and Door Area (ft2)	Tilt (deg)	Wall Exceptions	Status	Verified Existing Condition
W Wall	1st Floor Existing	Default Wall Prior to 1978	270	Left	310	23.5	90	none	Existing	No
N Wall	1st Floor Existing	R-15 Wall	0	Back	264	53.76	90	none	Altered	No
S Wall	New Addition#1	R-15 Wall	180	Front	533	208	90	none	New	n/a
W Wall 2	New Addition#1	R-15 Wall	270	Left	199	36	90	Extension	New	n/a
E Wall	New Addition#1	R-15 Wall	90	Right	684	62.28	90	none	New	n/a
Interior Surface	New Addition#1>>1st Floor Existing	R-0 Wall	n/a	n/a	199	0	n/a		New	n/a
Interior Surface 2	New Addition#1>>1st Floor Existing	R-0 Wall	n/a	n/a	534	0	n/a		New	n/a
Roof 2	1st Floor Existing	R-38 Roof Attic-ALT	n/a	n/a	1303	n/a	n/a		Altered	No
Roof 3	New Addition#1	R-38 Roof Attic	n/a	n/a	461	n/a	n/a		New	n/a

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OPAQUE SURFACES - CATHEDRAL CEILINGS													
01	02	03	04	05	06	07	08	09	10	11	12	13	14
Name	Zone	Construction	Area (ft²)	Skylight Area (ft²)	Roof Rise (ft in 12)	Roof Reflectance	Roof Emittance	Cool Roof	Status	Verified Existing Condition	Existing Construction		
Roof	New Addition#1	R-30 Roof-New 2x10	0	Back	1060	0	4	0.1	0.85	No	New	n/a	

ATTIC									
01	02	03	04	05	06	07	08	09	10
Name	Construction	Type	Roof Rise (ft in 12)	Roof Reflectance	Roof Emittance	Radiant Barrier	Cool Roof	Status	Verified Existing Condition
Attic 1st Floor Existing	Attic Roof1st Floor Existing	Ventilated	4	0.1	0.85	No	No	Existing	No
Attic New Addition#1	Attic RoofNew Addition#1	Ventilated	4	0.1	0.85	No	No	New	n/a

FENESTRATION / GLAZING															
01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16
Name	Type	Surface	Orientation	Area (ft²)	U-factor	U-factor Source	SHGC	SHGC Source	Exterior Shading	Status	Verified Existing Condition				
Window 6	Window	W Wall	Left	270	1	14.5	0.3	NFRC	0.23	NFRC	Bug Screen	Altered	No		
Window 7	Window	W Wall	Left	9	1	9	0.3	NFRC	0.2	NFRC	Bug Screen	Altered	No		
Glass Door 30-side light	Window	N Wall	Back	0	1	6.88	0.41	NFRC	0.23	NFRC	Bug Screen	Altered	No		
Glass Door 30-side light 2	Window	N Wall	Back	0	1	6.88	0.41	NFRC	0.2	NFRC	Bug Screen	Altered	No		
Glass Door 4	Window	S Wall	Front	180	1	144	0.41	NFRC	0.2	NFRC	Bug Screen	New	NA		
Glass Door 2	Window	S Wall	Front	180	1	64	0.41	NFRC	0.2	NFRC	Bug Screen	New	NA		

Registration Number: 424-P010279371A-000-000-0000000-0000
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FENESTRATION / GLAZING															
01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16
Name	Type	Surface	Orientation	Area (ft²)	U-factor	U-factor Source	SHGC	SHGC Source	Exterior Shading	Status	Verified Existing Condition				
Window 3	Window	W Wall 2	Left	270	1	18	0.3	NFRC	0.23	NFRC	Bug Screen	New	NA		
Window 3 2	Window	W Wall 2	Left	270	1	18	0.3	NFRC	0.23	NFRC	Bug Screen	New	NA		
Window 7 2	Window	E Wall	Right	90	1	9	0.3	NFRC	0.23	NFRC	Bug Screen	New	NA		
Window 14	Window	E Wall	Right	90	1	10.6	4	0.3	NFRC	0.23	NFRC	Bug Screen	New	NA	
Window 14 2	Window	E Wall	Right	90	1	10.6	4	0.3	NFRC	0.23	NFRC	Bug Screen	New	NA	
Window 13	Window	E Wall	Right	90	1	6	0.3	NFRC	0.23	NFRC	Bug Screen	New	NA		
Window 13 2	Window	E Wall	Right	90	1	6	0.3	NFRC	0.23	NFRC	Bug Screen	New	NA		

OPAQUE DOORS					
01	02	03	04	05	06
Name	Side of Building	Area (ft²)	U-factor	Status	Verified Existing Condition
Door 24	N Wall	20	0.2	Altered	No
Door 10	N Wall	20	0.2	Altered	No
Door 12	E Wall	20	0.2	New	n/a

CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD

CFJR-PRF-01-E

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01	02	03	04	05	06	07	08	09
Name	Verified Airflow	Airflow Target	Verified EER/EER2	Verified SEER/SEER2	Verified Refrigerant Charge	Verified HSPF/HSPF2	Verified Heating Cap 47	Verified Heating Cap 17
Heat Pump System 1-hers-htpump	Required	350	Not Required	Required	Yes	Yes	Yes	Yes

01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16
Name	Type	Design Type	Duct Ins. R-value	Duct Location	Surface Area	Bypass Duct	Duct Leakage	HERS Verification	Status	Verified Existing Condition	Existing Distribution system	New Ducts >= 25 ft			
Air Distribution System 1	Conditioned space-entirely	Non-Verified	R-6	R-6	Conditioned Zone	n/a	No Bypass Duct	Air Distribution System 1-hers-dist	Alteration	No		n/a			

01	02	03	04	05	06	07	08	09
Name	Duct Leakage Verification	Duct Leakage Target (%)	Verified Duct Location	Verified Duct Design	Buried Ducts	Deeply Buried Ducts	Low-leakage Air Handler	Low Leakage Ducts Entirely in Conditioned Space
Air Distribution System 1-hers-dist	Yes	10.0	Required	Not Required	Not Required	Credit not taken	Required	No

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

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

01	02	03	04	05	06	07	08	09
Dwelling Unit	Airflow (CFM)	Fan Efficacy (W/CFM)	IAQ Fan Type	Includes Heat/Energy Recovery?	IAQ Recovery Effectiveness - SRE/ASRE	Includes Fault Indicator Display?	HERS Verification	Status
SFan IAQVentDpt	120	0.35	Exhaust	No	n/a / n/a	No	Yes	

01	02	03	04	05	06	07
Name	Airflow (CFM)	Fan Efficacy (W/CFM)	IAQ Fan Type	Includes Heat/Energy Recovery?	IAQ Recovery Effectiveness - SRE/IAQ Recovery Effectiveness - SRE	IAQ Recovery Effectiveness - ASRE/IAQ Recovery Effectiveness - ASRE

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DOCUMENTATION AUTHOR'S DECLARATION STATEMENT

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

Documentation Author Name: Arash Nazari

Documentation Author Signature:

Company: A & N Design Group Inc.

Signature Date: 11/12/2024

Address: 21550 Oxnard Street #300

City/State/Zip: Woodland Hills, CA 91367

CEA/HERS Certification Identification (if applicable):

Phone: 818-288-4361

RESPONSIBLE PERSON'S DECLARATION STATEMENT

I certify the following under penalty of perjury, under the laws of the State of California:

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

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

3. The building design features or system design features identified on this Certificate of Compliance are consistent with the information provided on other applicable compliance documents, worksheets, calculations, plans and specifications submitted to the enforcement agency for approval with this building permit application.

Responsible Designer Name: Arash Nazari

Responsible Designer Signature:

Company: A & N Design Group Inc.

Date Signed: 11/12/2024

Address: 21550 Oxnard Street #300

City/State/Zip: Woodland Hills, CA 91367

License: M34638

Phone: 818-288-4361

Digitally signed by California Home Energy Efficiency Rating Services (CHEERS). This digital signature is provided in order to secure the content of this registered document, and in no way implies Registration Provider responsibility for the accuracy of the information.

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CITY OF MISSION VIEJO

APPROVED

REVIEWED FOR CODE COMPLIANCE

CBC 105.4 The issuance or granting of a permit shall not be construed to be a permit for, or an approval of, any violation of any of the provisions of this code or of any other ordinance of the jurisdiction. Permits presuming to give authority to violate or cancel the provisions of this code or other ordinances of the jurisdiction shall not be valid.

APPROVED BY: Z KRET FOR KT/STEVE

PERMIT #: BRADD-2024-0170

01/29/2025 4:47:45 PM

A & N DESIGN GROUP

MECHANICAL • PLUMBING • ELECTRICAL

21550 OXNARD STREET #300

WOODLAND HILLS, CA 91367

TEL: (818)-288-4361

FAX: (818)-758-0067

Seal

No.	Revision

RESIDENTIAL REMODEL PLANS FOR:

Residence

24142 Amurro Dr., Mission Viejo, CA. 92691

Sheet Title

TITLE--24 CALCULATIONS

Date

Scale

Drwn By

Job No.

Sheet No.

T-24.2

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11/12/2024 1:27:29 PM

2022 Single-Family Residential Mandatory Requirements Summary

NOTE: Single-family residential buildings subject to the Energy Codes must comply with all applicable mandatory measures, regardless of the compliance approach used. Review the respective section for more information.
(04/2022)

Building Envelope:

- | | |
|--|--|
| \$110.6(f) | L Air Leakage. Manufacturer's installation, exterior doors, and exterior pool doors must limit air leakage to 0.3 CFM per square foot or less when tested per NFRC-400, ASTM E283, or AAMA/NWMA S1011.5/24M440.2011. |
| \$110.6(g) | Labels. Floor products and exterior doors must have a label that displays the U-factor and the air leakage value of 0.3 CFM per square foot. |
| \$110.6(h) | Field Fabricated exterior doors and fenestration products must use U-factors and air leakage values that have gain coefficient (SHGC) values from U-0.45 A, U-0.6 B, or J, and U-4.5 for exterior doors. They must be caulked and/or weatherstripped. |
| \$110.7 | Air Leakage. All joints, penetrations, and other openings in the building envelope that are potential sources of air leakage must be sealed, caulked, or weatherstripped. |
| \$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(b) | Insulation Requirements for Heated Slab Floors. Heated slab floors must be insulated per the requirements of § 110.9(g). |
| \$110.8(c) | Roofing Products for Resistance to Heat and Thermal Insulation. The thermal resistance values of the roofing products must meet the requirements of § 110.8(f) and be labeled per § 110.113 when the installation of a cool roof is specified on the CRF. |
| \$110.9(a) | Radiant Barrier. When required, radiant barriers must have an emittance of 0.05 or less and be certified by the Department of Consumer Affairs. |
| \$110.9(b) | Roof Deck, Ceiling and Rafter Roof Insulation. Roof decks in newly constructed attics in climate zones 4 and 6 and 16-area-weighted average U-factor not exceeding U-0.04, Ceiling and rafter roofs minimum R-22 insulation in wood-frame ceiling; or area-weighted average U-factor must not exceed 0.04. The ceiling and rafter roof alterations must include U-factor of 0.04 or less. 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 roof or ceiling which is sealed to limit infiltration and exfiltration, as specified in § 110.7, including insulation either above or below the roof deck and on top of a drywall ceiling. |
| \$110.9(c) | Loose-fill Insulation. Loose fill insulation must meet the manufacturer's required density for the labeled R-value. |
| \$110.9(d) | Wall Insulation. Minimum R-13 insulation in 2x4 inch wood framed wall or have a U-factor of 0.022 or less, or R-20 in 2x6 inch wood framing of U-factor of 0.015 or less. Opaque non-framing assemblies must have an overall assembly U-factor not exceeding 0.102. |
| \$110.9(e) | Masonry walls. Minimum R-value 15.91, per ASHRAE 90.1, Table 6-1. |
| \$110.9(f) | Raised-floor Insulation. Minimum R-13 insulation in raised wood framed floor or 0.037 maximum U-factor. |
| \$110.9(g) | Slab Edge Insulation. Slab edge insulation must meet all of the following: have a water absorption ratio, for the insulation material properties, no greater than 0.3 percent; have a water vapor permeance no greater than 2.0 perm per inch; be protected from physical damage and UV light deterioration; and, when installed as part of a heated slab floor, must meet the requirements of § 110.9(h). |
| \$110.9(h) | Vapor Retarder. In climate zones 3 through 16, the earth floor of unvented crawl spaces must be covered with a Class I or Class II vapor retarder. This requirement also applies to conditioned crawl space buildings complying with the exception to § 110.9(d). |
| \$110.9(i) | 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 fenestration in all exterior walls, vented attics, and unvented attics with air-permeable insulation. |
| \$110.9(j) | Fenestration Products. Fenestration, including skylights, separating conditioned space from unconditioned space or outdoors must have a minimum U-factor of 0.4. Fenestration products must be labeled with a U-factor of all fenestration must not exceed 0.45. |
| Fireplaces, Decorative Gas Appliances, and Gas Log: | |
| \$110.9(k) | Pilot Light. Continuously burning pilot lights are not allowed for indoor and outdoor fireplaces. |
| \$110.9(l) | Closable Doors. Masonry or factory-built fireplaces must have a closable metal or glass door covering the entire opening of the firebox. |
| \$110.9(m) | 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 lifting-tight damper or combustion air control device. |
| \$110.9(n) | Fus Dumper. Masonry or factory-built fireplaces must have a fus damper with a readily accessible control. |
| Space Conditioning, Water Heating, and Plumbing System: | |
| \$110.9(o) | Certification. Heating, ventilating and air conditioning (HVAC) equipment, water heaters, showerevents, fountains, and all other regulated appliances must be certified by the manufacturer to the California Energy Efficiency. |
| \$110.9(p) | HVAC Efficiency. Equipment must meet the applicable efficiency requirements in Table 110.2-2A through Table 110.2-2N. |
| \$110.9(q) | Heat Pump Water Heaters with Supplementary Electric Resistance Heaters. Heat pumps with supplementary electric resistance heaters must have controls that shut the supplementary electric resistance heaters off when the heat pump alone can maintain the water temperature and which the on-temperature for compression heating is higher than the off-temperature for supplementary heating, and which the on-temperature for compression heating is higher than the off-temperature for supplementary heating. |
| \$110.9(r) | Thermostats. All heating or cooling systems not controlled by a central energy management control system (EMCS) must have a setback thermostat. |
| \$110.9(s) | Insulation. Unvented service water heater storage tanks and solar water-heating backup tanks must have adequate insulation, or tank insulation with no air gaps. |
| \$110.9(t) | Insulation Values. Instantaneous water heaters with an input rating between 6.6 kWh per hour (2 kW) must have insulation values 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. |

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- Space Conditioning System Airflow Rate and Fan Efficiency.** 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 ≥ 360 CFM per ton of nominal cooling capacity, and an air-handling unit fan efficiency ≥ 0.45 watts per CFM for gas-fueled 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 efficiency ≤ 0.62 watts per CFM. Field verification testing is required in accordance with Reference Residential Appendix RA3.3. *

Ventilation and Indoor Air Quality

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| \$ 150.00(c) | Requirements for Ventilation and Indoor Air Quality. All dwelling units must meet the requirements of ASHRAE Standard 62.2, and shall provide acceptable Indoor Air Quality in Residential Buildings subject to the amendments specified in § 150.00(c)(1). |
| \$ 150.00(d)(i) | Central Fan Integrated (CFI) Mechanical Ventilation System. Continuous operation of CFI mechanical ventilation systems that provide dwelling unit ventilation through the space conditioning duct system (when the damper(s) is closed) shall be controlled by the whole-dwelling-unit mechanical ventilation system to control that track outdoor air ventilation run time, and either open or close the motorized damper(s) for compliance with § 150.00(c)(1). |
| \$ 150.00(c) | Whole-Dwelling Unit Mechanical Ventilation for Single-Family Detached and townhouses. Single-family detached dwelling units, and attached dwelling units not sharing ceilings or floors with other dwelling units, occupiable spaces, public garages, or commercial spaces shall have mechanical ventilation systems that meet the requirements of ASHRAE Standard 62.2-2010. |
| \$ 150.00(c)(i) | Local Mechanical Exhaust. Kitchens and bathrooms must have local mechanical exhaust, nonrecirculated kitchenhoods may demand-controlled exhaust system meeting requirements of § 150.00(c)(i)IGI, enclosed kitchens and bathrooms can use demand-controlled or continuous exhaust meeting § 150.00(c)(i)GII; Airflow must be provided by the installer per § 150.00(c)(1)(v), and rated for sound per § 150.00(c)(1)(ix). |
| \$ 150.00(c)(i)(4) | AIRflow Measurement and Sound Ratings of Whole-Dwelling Unit Ventilation Systems. The airflow required per § 150.00(c)(1)(ii) must be measured by using a flow hood, flow grid, or other airflow measuring device at the fan's inlet to obtain terminal/regulator (per Reference Residential Appendix D3.2) and duct static pressure. Ventilation systems must be rated for sound per ASHRAE 62.2 § 7.2.1 or at no less than the minimum airflow rate required by § 150.00(c)(1). |
| | Field Verification and Diagnostic Testing. Whole-Dwelling Unit ventilation airflow, vented range hood airflow and sound rating, and HRV and ERV fan efficacy must be verified in accordance with Reference Residential Appendix RA3.7. Vented range hood must be verified per Reference Residential Appendix RA3.7.3.3 to confirm it is rated by HVI or AHAM to comply with the airflow rates and sound requirements per § 150.00(c)(1). |

Pool and Spa Systems and Equipment:

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| \$ 110.0(A)C: | Certification by Manufacturer. Any pool or spa heating system or equipment must be certified to have all of the following: compliance with the Efficiency Standard; no gas valves, burners, or other combustion components located directly above the heater; double-sided closure of the heater that allows shutting off the heater without adjusting the thermostat setting; a permanent weatherproofed electrical panel or card with operating instructions; and must not use electric resistance heating. |
| \$ 110.0(B)A1: | Any pool or spa heating system or equipment must be installed with at least 36 inches of piping 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. |
| \$ 110.0(B)D: | Covers. Outdoor pools or spas that have a heat pump or gas heater must have a cover. |
| \$ 110.0(B)D3: | Directional Intakes and Time Switches for Pools. Pools must have directional intakes that adequately mix the pool water, and a time switch that allows all pumps to be set or operated during non-peak demand periods. |
| \$ 110.0E: | Pilot Light. Natural gas pool and spa heaters must 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 clogs, flow rate, popups, filters, and valves. |
| Lighting: | |
| \$ 110.0: | Lighting Controls and Components. All lighting control devices and systems, ballasts, and luminaires must meet the applicable requirements of § 110.9. |
| \$ 150.0(X)A: | Luminaire Efficacy. All installed luminaires must meet the requirements in Table 550.0.10, except lighting integral to exhaust fans, kitchen range hoods, built-in vanity mirrors, and garage door openers; navigation lights less than 5 watts; and lighting integral to drawers, cabinets, and inner closets with an efficacy of at least 45 lumens per watt. |
| \$ 150.0(X)B: | Screw-based Luminaires. Screw-based luminaires must contain lamps that comply with Reference Joint Appendix A8. |
| \$ 150.0(X)C: | Recessed Downlight Luminaires in Ceilings. Luminaires recessed into ceilings must not contain screw-based sockets, must be airtight, and must be labeled as such. See Electrical Code Book § 410.116 also be met. |
| \$ 150.0(X)D: | Light Sources in Enclosed or Recessed Luminaires. Lamps and other acceptable light sources that do not comply with the JAS elevated temperature requirements, including marking requirements, must not be installed in enclosed or recessed luminaires. |
| \$ 150.0(X)E: | Electrical Boxes Above Luminaires. Electrical boxes that are more than five feet above the finished floor and do not contain a luminaire or other device shall be no more than three feet from the luminaire. These boxes must be secured by a drilled, waxed screw, lock wiring integrity, or fire speed control. |
| \$ 150.0(X)F: | Lighting Integral to Exhaust Fans. Lighting integral to exhaust fans (except when installed by the manufacturer in kitchen exhaust hood) must meet the applicable requirements of § 150.0(X). |

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| # 110.05 | Pilot Lights. Continuously burning pilot lights are prohibited for natural gas; fan-type central furnaces; household cooking appliances (except appliances without an electrical supply voltage connection with pilot lights that consume less than 150 Btu per hour); and pool area space heaters. |
| # 150.00(h) | Building Cooling and Heating Loads. Heating and/or cooling loads are calculated in accordance with the ASHRAE Handbook, Fundamentals, and the International Energy Conservation Code, the SMACNA Refrigeration System Installation Standards Manual, or the ACCA Manual J using design conditions specified in § 150.01(d). |
| # 150.013A | Clearances. Air conditioner and heat pump outdoor condensing units must have a clearance of at least five feet from the outlet of any duct. |
| # 150.013B | 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. |
| # 150.013C | Water Piping, Solar Water-Heating System Piping, and Space Conditioning System Line Installation. All domestic hot water piping must be installed as specified in § 5901.1 of the California Plumbing Code. |
| # 150.013D | Insulation Protection. Piping installation must be protected from damage, including that due to sunlight, moisture, equipment maintenance, and wind as required by § 1920.303. Piping exposure to weather must be water resistant and protected from UV light (no paint, sealant, or other weathering product is permitted). Piping exposed to weather must be protected by a weather-resistant material, include, or be protected by, a Class I or Class II vapor barrier. Piping installed below grade must be installed in a waterproof and non-crushable casing or sleeve. |
| # 150.013E | Gas or Propane Water Heating Systems. Systems using gas or propane water heaters to serve individual dwelling units must provide a space of at least 18 inches between the water heater and any combustible material, and must be installed and plumbed requirements, based on the distance between this designated space and the water heater location, and a condensate drain no more than 2" higher than the base of the water heater. |
| # 150.013F | Solar Water-Heating System. 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:

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| § 110.6)(c) | Ducts, installed installed on an existing space-conditioning duct must comply with § 60.4 of the California Mechanical Code (CMC). If contractor installs the insulation, the contractor must certify to the customer, in writing, that the insulation meets this requirement. |
| § 110.6)(d) | Flexible Duct Systems. All air conditioning flexible duct systems and plenums must meet CMC § 67.6(1) R-0.85 and ANSI/SMCA A08-2006 HVAC Section 9.1. All air conditioning flexible duct systems and plenums must also meet the following requirements:
1. Flexible ducts shall be constructed of metal or flexible plastic.
2. Duct Construction Standards Metal and Flexible 3rd Edition shall apply.
3. Flexible ducts shall have a minimum R-value of R-6 or higher; ducts located exterior in conditioned spaces as confirmed through verification and diagnostic testing [Section 14.3.1.4.3] do not require insulation.
4. Connections of metal ducts and inner core of flexible ducts must be mechanically fastened. Openings must be sealed with mastic, tape, or caulk that meets the applicable UL requirements, or sealed solely with UL listed T-72.
5. The combination of mastic and other mesh or tape must be used to seal openings greater than X 1/2". Mastic or tape is used. Building cavities, air handler support platforms, and plenums designed or constructed with materials other than sealed sheet metal, duct board or flexible duct must not be used to condition air. Building cavities and support platform may contain sheet ducts; ducts installed in these spaces must not be compressed. |
| § 110.6)(e) | 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 ruber adhesive duct tapes unless such tapes are specifically approved by the manufacturer. |
| § 110.6)(f) | Field-Fabricated Duct Systems. Field-fabricated duct systems must comply with applicable requirements for: pressure-sensitive lases, mastics, sealants, and other requirements specified for duct construction. |
| § 110.6)(g) | Backdraft Damper. Fan systems that exchange air between the conditioned space and outdoors must have backdraft or automatic damper. |
| § 110.6)(h) | 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. |
| § 110.6)(i) | Protection against weather. Ducts must be protected from damage due to sunlight, moisture, equipment maintenance, and wind. Insulation exposed to weather must be protected by one of the following means (see Appendix RA.5):
1. Protective paint.
2. Insulation exposed to weather must be protected as above or painted with a water retardant and solar radiation-resistant coating.
Porous Inner Core Flex Duct. Porous inner cores of flex ducts must have a non-porous layer or air barrier between the inner core and outer jacket with differential movement capability. |
| § 110.6)(j) | Duct System Sealing and Leakage Test. When space conditioning systems use forced air duct systems to supply conditioned air to an occupied space, the ducts must be sealed and duct leakage tested, as confirmed through field verification and diagnostic testing, and shall comply with Differential Air Flow Testing - Appendix RA.5. |
| § 110.6)(k) | Air Filtration. Space conditioning systems with ducts having a design velocity exceeding 10 fpm and the supply side of ductwork must have MERV 13 or equivalent filters. Filters for space conditioning systems must have a two inch depth or can be one inch if sized per Equation 150.0.A, Clean-filter pressure drop and labeling must meet the requirements in § 110.0)(m)2. Filters must be accessible for regular service. Filter racks or grilles must use gaskets, sealing, or other means to close up openings around the inserted filters to prevent air from bypassing the filter. |

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| § 150.001(G) | Scrub based luminaires. Scrub based luminaires must contain lamps that comply with Appendix A4a, * |
| § 150.001(H) | Light Sources in Enclosed or Recessed Luminaires. Lamps and other separable light sources that are not compliant with the JAB elevated temperature requirements, including marking requirements, must not be installed in enclosed or recessed luminaires. |
| § 150.001(I) | Light Sources in Drawers, Cabinets, and Linen Closets. Light sources internal to drawers, cabinets or linen closets are not required to comply with Table 150.0. A or be controlled by vacancy sensors provided that they are rated to consume no more than 5 watts of power, emit no less than 150 lumens, and are equipped with controls that automatically turn the lighting off when the drawer, cabinet or linen closet is closed. |
| § 150.002(A) | Interior Switches and Controls. All forward phase out dimmers used with LED light sources must comply with NEMA SSL 7A. |
| § 150.002(B) | Interior Switches and Controls. Exhaust fans must be controlled separately from lighting systems.* |
| § 150.002(A) | Accessible Controls. Lighting must have readily accessible wall-mounted controls that allow the lighting to be manually turned on and off.* |
| § 150.002(B) | Multiple Controls. Controls must not bypass a driver, occupant sensor, or vacancy sensor function if the driver or sensor is installed to control a § 150.0(C). |
| § 150.002(C) | Mandatory Requirements. Lighting controls must comply with the applicable requirements of § 110.9. |
| § 150.002(D) | Energy Management Control Systems. An energy management control system (EMCS) may be used to comply with dimming, occupancy, and control requirements if it provides the functionality of the specified control per § 110.9 and the physical controls specified in § 150.0(C). |
| § 150.002(E) | Automatic Shutoff Controls. In bathrooms, garages, laundry rooms, utility rooms and walk-in closets, at least one installed luminaire must be controlled by an occupancy or vacancy sensor providing automatic off functionality. Lighting inside drawers and cabinets with opaque fronts or doors must have controls that turn the light off when the drawer or door is closed. |
| § 150.002(F) | Lighting. Lighting in habitable spaces (e.g., living rooms, dining rooms, kitchens, and bedrooms) must have readily accessible wall-mounted dimming controls that allow the lighting to be manually adjusted up and down. Forward phase out dimming controlling LED light sources in these spaces must comply with NEMA SSL 7A. |
| § 150.002(G) | Independent Controls. Integrated lighting of exhaust fans must be controlled independently from the fans. Lighting under cabinets or shelves, lighting in closets, and lighting in utility rooms must be controlled separately from the controlled spaces. |
| § 150.003(A) | Residential Outdoor Lighting. For single family residential buildings, outdoor lighting permanently mounted to a residential building or other buildings on the same lot, must have a manual on/off switch and either a photo cell and motion sensor or automatic time switch (occupancy) or an astronomical time clock. An energy management control system that provides the specified control functionality and meets the applicable requirements may be used to comply with this section. For all other buildings, the requirements must be met. |
| § 150.004(A) | Internally illuminated address signs. Internally illuminated address signs must either comply with § 140.8 or consume no more than 5 watts of power. |
| § 150.005(C) | 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 §§ 110.9, 130.0, 130.1, 130.3, 130.4, 140.8, and 141.0. |

Solar Readiness:

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| § 110.10(a) | <p>Single-Family Residences. Single-family residences located in subdivisions with 10 or more single-family residences and where the applicant has submitted a tentative subdivision map for the residences has been deemed completed and approved by the enforcement agency, which do not have photovoltaic systems installed on the roof of the building must comply with the requirements of this section.</p> <p>Minimum Solar Zone Area. The solar zone must have a minimum total area as described below. The solar zone must comply with access, pathway, egress ventilation, and spacing requirements as specified in Table 24. Part 9 or other parts of Table 24 or in any requirements established 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 100 square feet each for buildings with roof areas less than 10,000 square feet, no less than 150 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 of the overhang of the building and have a total area no less than 250 square feet.</p> |
| § 110.10(b) | <p>Azimuth. All sections of the solar zone located on steep-sloped roofs must have an azimuth between 90.300° of true north.</p> |
| § 110.10(b)(3A) | <p>Shading. The solar zone must not contain any obstructions, including but not limited to: vents, chimneys, architectural features, and roof-mounted equipment.</p> |
| § 110.10(b)(3B) | <p>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 horizontal distance 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.</p> |
| § 110.10(c) | <p>Structural Design Loads on Construction Documents. For areas of the roof designated as a solar zone, the structural design loads for the solar zone must be clearly indicated on the construction documents.</p> |
| § 110.10(d) | <p>Interconnection Pathways. The solar zone indicates a location for the solar zone 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 a pathway reserved and central water-heating systems, a pathway reserved for routing plumbing from the solar zone to the water-heating system is provided. A copy of the construction documents or a comparable document indicating the information from § 110.10(d)-(c) must be provided to the applicant.</p> |
| § 110.10(e) | <p>Main Electrical Service Panel. The main electrical service panel must have a minimum branch rating of 200 amps.</p> |
| § 110.10(f) | <p>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."</p> |

Electric and Energy Storage Ready:

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2022 Single-Family Residential Mandatory Requirements Summary

- § 150.0(e) **Energy Storage System (ESS) Ready.** All single-family residences must meet all of the following: *Either* ESS-ready interconnection equipment with backed up capacity of 60 amps or more and four or more ESS supplied branch circuits, or a dedicated raceway from the main service to a subpanel that supplies the branch circuits in § 150.0(d); at least four branch circuits must be identified and have their conductors labeled at a dedicated panel or subpanel; the panel or subpanel must be installed in a readily accessible location, not near the primary entry, and one circuit supplying a sleeping room receptacle outlet, main panelboard must have a minimum branch rating of 25 amps; sufficient space must be reserved to allow future installation of a system isolation/energy-transfer switch with 3 of the main conductors, connected, with a dedicated panel or subpanel, and a dedicated branch circuit to the ESS, and dedicated power source.
- § 150.0(f) **Heat Pump Space Heater Ready.** Systems using gas or propane furnace for space individual dwelling units must include: A dedicated unobstructed 240V branch circuit wired installed within 3' of the furnace with circuit conductors rated at least 30 amps with the blank cover identified as "240V ready"; and a reserved main electrical service panel space to allow for the installation of a double pole circuit breaker permanently marked as "For Future 240V 30A".
- § 150.0(g) **Electric Cooktop Ready.** Systems using gas or propane cooktop for space individual dwelling units must include: A dedicated unobstructed 240V branch circuit wired installed within 3' of the cooktop with circuit conductors rated at least 50 amps with the blank cover identified as "240V ready"; and a reserved main electrical service panel space to allow for the installation of a double pole circuit breaker permanently marked as "For Future 240V 50A".
- § 150.0(h) **Electric Clothes Dryer Ready.** Clothes dryer locations with gas or propane plumbing to serve individual dwelling units must include: A dedicated unobstructed 240V branch circuit wired installed within 3' of the dryer location with circuit conductors rated at least 30 amps with the blank cover identified as "240V ready"; and a reserved main electrical service panel space to allow for the installation of a double pole circuit breaker permanently marked as "For Future 240V 30A".

*Exceptions may apply

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Sheet Title

TITLE-24 CALCULATIONS

Date _____
 Scale _____
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Sheet No.

T-24.3

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