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2169

THE ARCHER RESIDENCE

26622 HONEY CREEK ROAD RANCHO PALOS VERDES, CA 90275

PROJECT GENERAL NOTES

- 1. A MINIMUM OF 65 PERCENT OF THE NON-HAZARDOUS CONSTRUCTION AND DEMOLITION WASTE SHALL BE RECYCLE AND/OR SALVAGE FOR REUSE IN ACCORDANCE WITH 2019 CALIFORNIA GREEN BUILDING STANDARD CODE, DEMO AND CONSTRUCTION PHASES, 100-PERCENT OF SOIL AND CONCRETE. 2. DUMPSTERS, ROLL-OFFS, CONSTRUCTION MATERIAL/SUPPLIES AND DEBRIS SHALL BE COVERED STORED OUTDOORS
- 3. PLAN CHECK APPLICATIONS FOR WHICH NO PERMIT IS ISSUED WITHIN 180 DAYS FOLLOWING THE DATE OF APPLICATION SHALL AUTOMATICALLY EXPIRE.
- 4. EVERY PERMIT ISSUED SHALL BECOME INVALID UNLESS A SUCCESSFUL INSPECTION WORK IS OBTAINED WITHIN 365 DAYS OF THE PERMIT ISSUANCE. A PERMIT MAY BE EXTENDED IF A WRITTEN REQUEST STATING JUSTIFICATION FOR EXTENSION AND AN EXTENSION FEE IS RECEIVED PRIOR TO EXPIRATION OF THE PERMIT AND GRANTED BY THE BUILDING OFFICIAL
- 5. NO MORE THAN ONE (I) EXTENSION MAY BE GRANTED. PERMITS WHICH HAVE BECOME INVALID SHALL PAY A REACTIVATION FEE OF APPROXIMATELY 50% OF THE ORIGINAL PERMIT FEE AMOUNT WHEN THE PERMIT HAS BEEN EXPIRED FOR UP TO SIX (6) MONTHS
- 6. WHEN A PERMIT HAS BEEN EXPIRED FOR A PERIOD IN EXCESS OF ONE (I) YEAR. THE REACTIVATION FEE SHALL BE APPROXIMATELY 100% OF THE ORIGINAL PERMIT FEE. (RIO5.5 CRC)
- 1. THIS PROJECT SHALL COMPLY WITH TITLE 24, AND 2019 CBC (CHAPTER 1A), 2019 CMC, 2019 CPC, 2019 CEC, 2019 CRC, 2019 CALIFORNIA ENERGY CODE 2019 CALIFORNIA GREEN BUILDING, AND 2020 L.A COUNTY FIRE CODE
- 8. LA CO FIRE CODE 505.1 AND CRC-R319.1. ADDRESS IDENTIFICATION ALL BUILDINGS AND UNITS SHALL BE PROVIDED WITH APPROVED IDENTIFICATION. THE ADDRESS IDENTIFICATION SHALL BE LEGIBLE AND PLACED IN A POSITION THAT IS VISIBLE FROM THE STREET FRONTING THE PROPERTY. ADDRESS IDENTIFICATION CHARACTERS SHALL CONTRAST WITH THEIR BACKGROUND. ADDRESS NUMBERS SHALL BE ARABIC NUMBERS OR ALPHABETICAL LETTERS. NUMBERS SHALL NOT BE SPELLED OUT. EACH CHARACTER SHALL BE NOT LESS THAN 4 INCHES IN HEIGHT WITH A STROKE WIDTH OF NOT LESS THAN 0.5 INCH. WHERE REQUIRED BY THE FIRE CODE OFFICIAL, ADDRESS IDENTIFICATION SHALL BE PROVIDED IN ADDITIONAL APPROVED LOCATIONS TO FACILITATED EMERGENCY RESPONSE. WHERE ACCESS IS BY MEANS OF A PRIVATE WAY, A MONUMENT, POLE OR BUILDINGS AND ON THE CURBS. ADDRESS IDENTIFICATION SHALL BE MAINTAINED.
- 9. SEPARATE PERMITS ARE REQUIRED FOR DEMO, ELECTRICAL MECHANICAL, AND PLUMBING
- 10. HOT WATER TO SHOWER SHALL BE LIMITED TO 120°F, PROVIDE WATER TEMPERING VALVE CONFORM TO ASSE
- 11. A MINIMUM 12" X 12" ACCESS PANEL IS REQUIRED WHEN A SLIP JOINT P-TRAP WASTE \$ OVERFLOW IS PROVIDED
- 12. PROVIDE CAULKING AT THE BOTTOM OF THE TOILET, BETWEEN TOILET AND FLOOR, CPC 401.2
- 13. INSULATION SHALL BE PROVIDED ON ALL HOT WATER PIPING AND THE FIRST 5' ON THE COLD WATER FROM THEWATER HEATER PER CPC SEC. 609.11 AND TITLE 24 PART 6 AS FOLLOW: A. HOT WATER PIPE INSULATION FOR PIPE LESS THAN 2 INCHES SHALL MEET THE MINIMUM WALL THICKNESS INDICATED ON TITLE 24 PART 6, TABLE 120.3-A. B. INSULATION WALL THICKNESS SHALL BE NOT LESS THAN 2 INCHES FOR A PIPE OF 2 INCHES OR MORE IN DIAMETER. (CPC 609.11.2)
- 14. INSULATION SHALL COVER ALL HOT WATER PIPES TO THE KITCHEN, PROVIDE THE FOLLOWING WATER HEATER NOTES ON THE PLANS
- THE FIRST 5 FEET OF HOT AND COLD WATER PIPES FROM THE WATER HEATER SHALL BE INSULATED WITH
- APPROVED PIPE INSULATION.
- 150.0(J)2AI AND SECTION 150.0(J)4.

B. ALL HOT WATER PIPES 3/4" OR LARGER REQUIRES FULL AND CONTINUOUS PIPE INSULATION, SECTION

- ALL PIPING ASSOCIATED WITH A HOT WATER RE-CIRCULATION SYSTEM REGARDLESS OF THE DIAMETER. ALL HOT WATER PIPING BETWEEN THE HEAT SOURCES TO THE KITCHEN FIXTURES
- EACH WATER HEATER HAS OWN GAS SHUT-OFF VALVE. [CPC 1211.15]
- MAXIMUM APPROVED TYPE LENGTH FLEX CONNECTOR 6 FEET: [CPC 1212 \$ 1212.4]
- 15. ALL CONSTRUCTION WASTE AND DEBRIS MUST BE CONTAINERIZED AT ALL TIMES

LEGEND

BLOCK WALL

---- EXISTING GRADE

- · · - SETBACK LINE

T.W. TOP OF WALL

T.R. TOP OF RAILING

T.C. TOP OF CURB

F.L. FLOWLINE AT STREET

F.S. FINSHED SURFACE

T.F. TOP OF FENCE

---- PROPOSED GRADE

F.C. FINISHED CONCRETE

F.F.E FINISHED FLOOR ELEVATION

LANDSCAPING - GRASS

ONE STORY ELEMENT

PROPOSED ADDITION ELEMENT

16. ALL CONTRACTORS, ARCHITECTS, DESIGNERS, \$ ENGINEERS SHALL MAINTAIN A CURRENT CITY BUSINESS LICENSE

SHEET INDEX

VICINITY MAP

GB2: GREEN BUILDING NOTES

SO: STRUCTURAL NOTES

SI: FOUNDATION PLAN

NO MORE THAN 50% OF ANY

WALLS OR EXISITING SQUARE

FOOTAGE MAY BE REMOVED

OR DEMOLISHED

92: FRAMING PLAN

SD2: FRAMING DETAILS

T24-1: TITLE 24 ENERGY CALCULATIONS

T24-2: TITLE 24 ENERGY CALCULATIONS

SDI: FOUNDATION & FRAMING DETAILS

- AI: GENERAL PROJECT INFORMATION/SITE PLAN
- A2: EXISTING FLOOR PLAN
- A3: DEMO PLAN
- A4: PROPOSED FLOOR PLAN A5: PROPOSED SECTIONS
- A6: ROOF PLAN/DETAILS

EI: ELECTRICAL PLAN

1/8" = 1'-0"

- GNI: GENERAL NOTES \$ SPECIFICATIONS
- GN2: GENERAL NOTES \$ SPECIFICATIONS

DESIGNER: GBI: GREEN BUILDING NOTES

- MASSI DESIGNS

DESIGNER & CONSULTANTS

- MATTHEW SUNSERI 3724 SPENCER ST. #214 TORRANCE, CA 90503
- PHONE: (310) 938-6640
- STRUCTURAL ENGINEER:
 - GET STRUCTURAL 3000 E. BIRCH STREET SUITE 201
 - BREA, CA 92821
 - PH: (909) 569-1886
- TITLE 24 CALCULATIONS:
- GET STRUCTURAL
- 3000 E. BIRCH STREET SUITE 201 BREA, CA 92821
- PH: (909) 569-1886

SCOPE OF WORK

- INFILL OF ATRIUM NEW POWDER ROOM \$ CLOSET
- REMODEL KITCHEN REMOVAL OF WALL IN BETWEEN KITCHEN AND LIVING
- 3. MASTER SUITE REMODEL VAULTED CEILINGS
- 4. NEW BATH #3
- 5. REMODEL BATH #2
- 6. NEW WINDOW IN MASTER & REPLACEMENT WINDOWS
- 7. NEW SKYLIGHTS
- 8. 2.398 SQ. FT. REMODEL

RECEIVED

LEGAL DESCRIPTION

City of Rancho Palos Verdes LOT: 32 Building & Safety Division

APN # 1515-003-055

CODE RESEARCH

ZONING: SETBACKS

FRONT:

REAR:

BUILDING HEIGHT:

PARKING:

27'-0" MAXIMUM 3 SPACES PROVIDED AT

TRACT: 21352

GARAGE.

20'-0"

15′-*0*″

5'-0" MINIMUM

TYPE OF CONSTRUCTION: V-B R3 AT LIVING; U AT GARAGE

OCCUPANCIES: NUMBER OF STORIES:

AREAS

EXISTING LIVING EXISTING GARAGE

TOTAL EXISTING LIVING 2,398 SQ. FT.

2,475 SQ. FT.

LOT AREA:

NEW LIVING

9,901 SQ. FT

NORTH

2,398 SQ. FT. 745 SQ. FT.

NEW TOTAL LIVING

LOT COVERAGE:

2,475 SQ. FT. > 9,901 SQ. FT. = 25%

77 SQ. FT. (INFILL OF ATRIUM)

SITE PLAN

The contract of the contract of Boulding

SHOP TO PERFECT OF CONTROLLY

Permit ____

THE SUPPLIES OF THE SUPPLIES O

And white and changes praiterations on this set white horning Division. The Planning Division.

103/13/15/6/6/5-17/7

10 Marour 2/11/2022 52

ONE STORY RESIDENCE

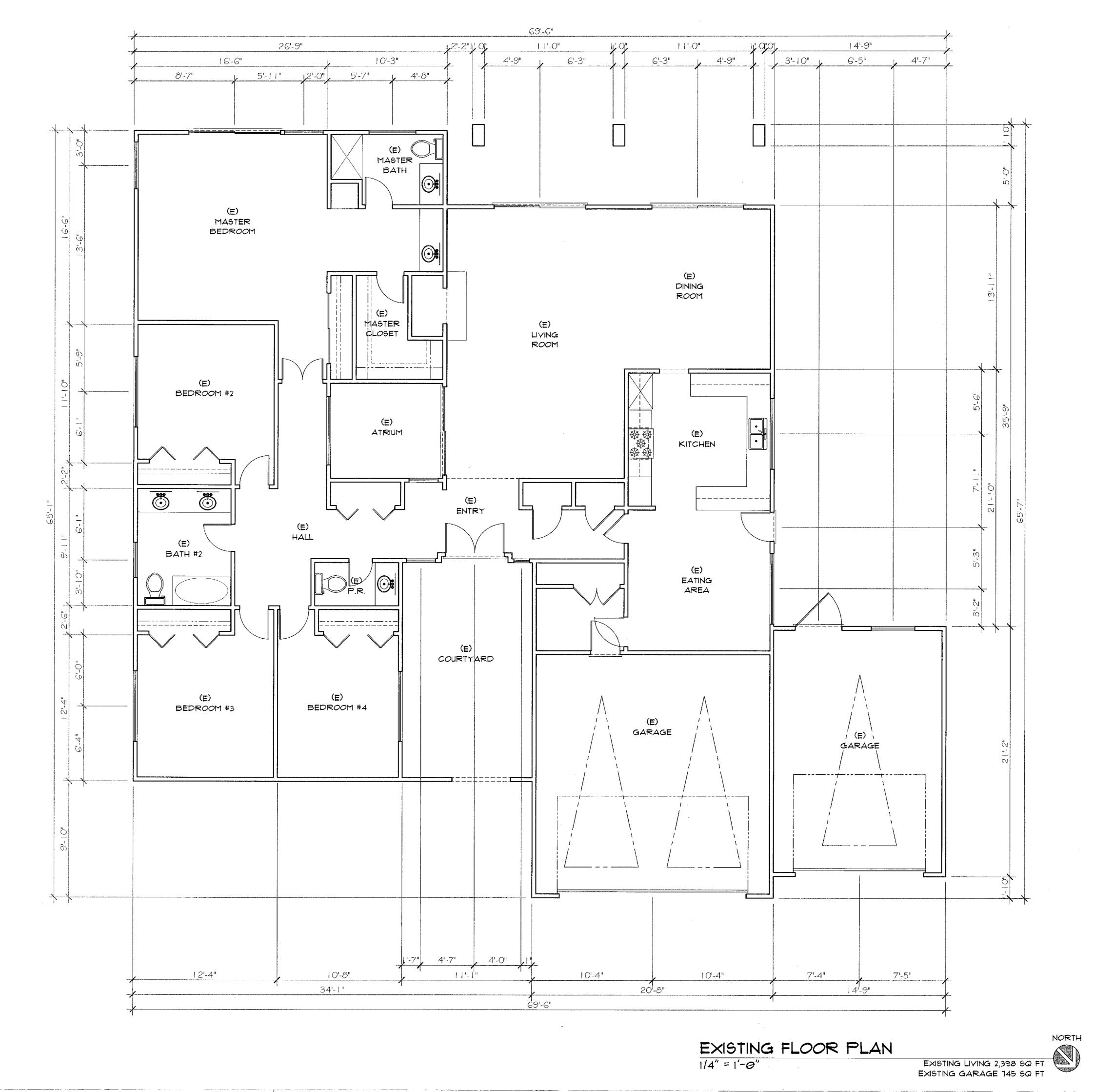
CITY OF RANCHO PALOS VERDES BUILDING & SAFETY DIVISION "REVIEWED FOR CODE COMPLIANCE" This set of plans & specifications must be kept on the job at all times and it is unlawful to make any changes or alterations on same without written permission from Building & Safety, City of Bancho Palos Verdes. The stamping of these plans and specifications SHALL NOT be held to permit

By: IB FOR GAL

on any City Ordinance or State Law.

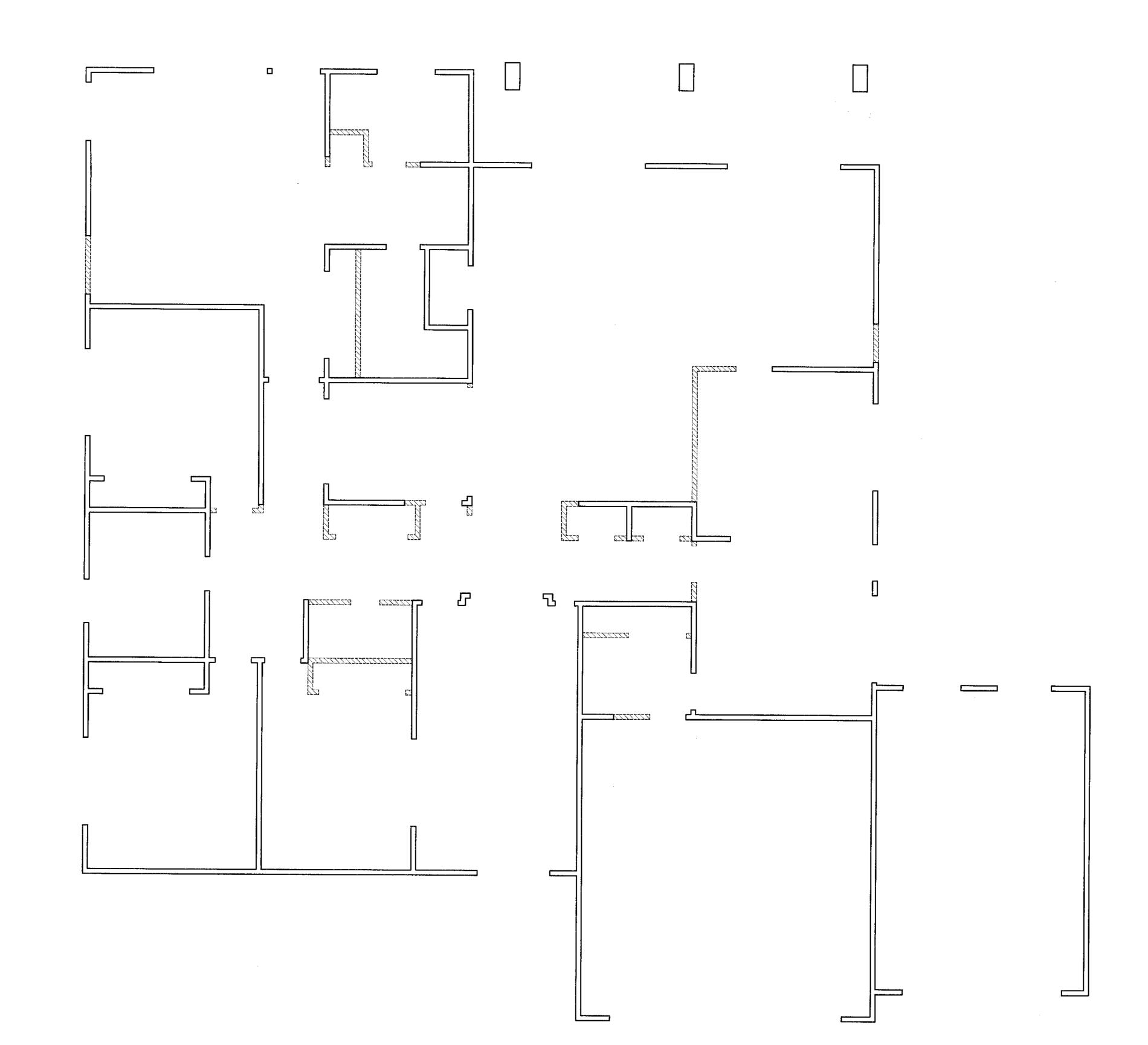
or be approved of the violation of any provisions

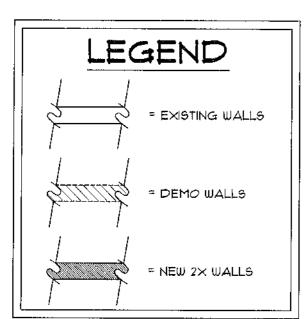
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PROPOSED FLOOR PLAN





MASSI

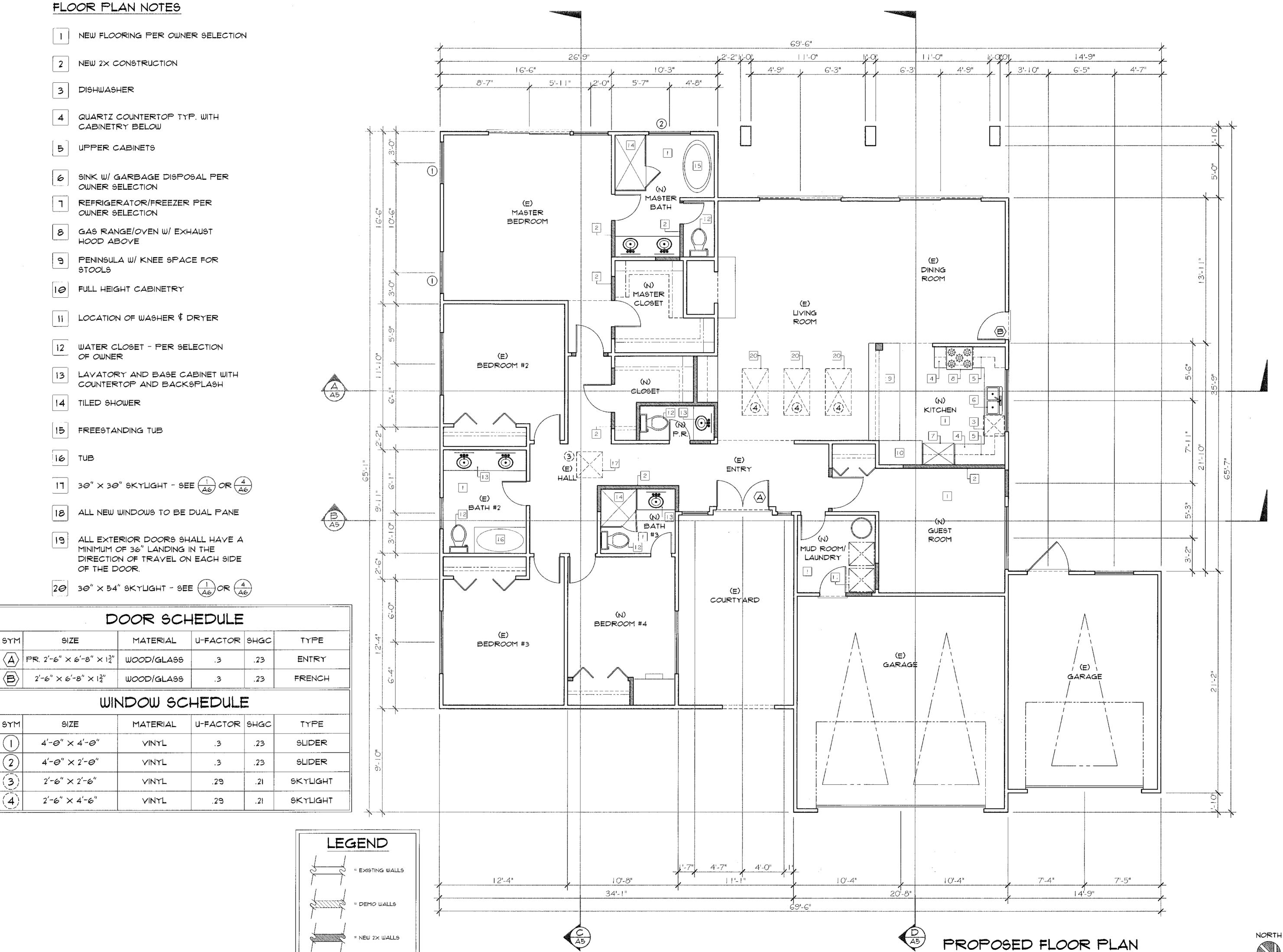
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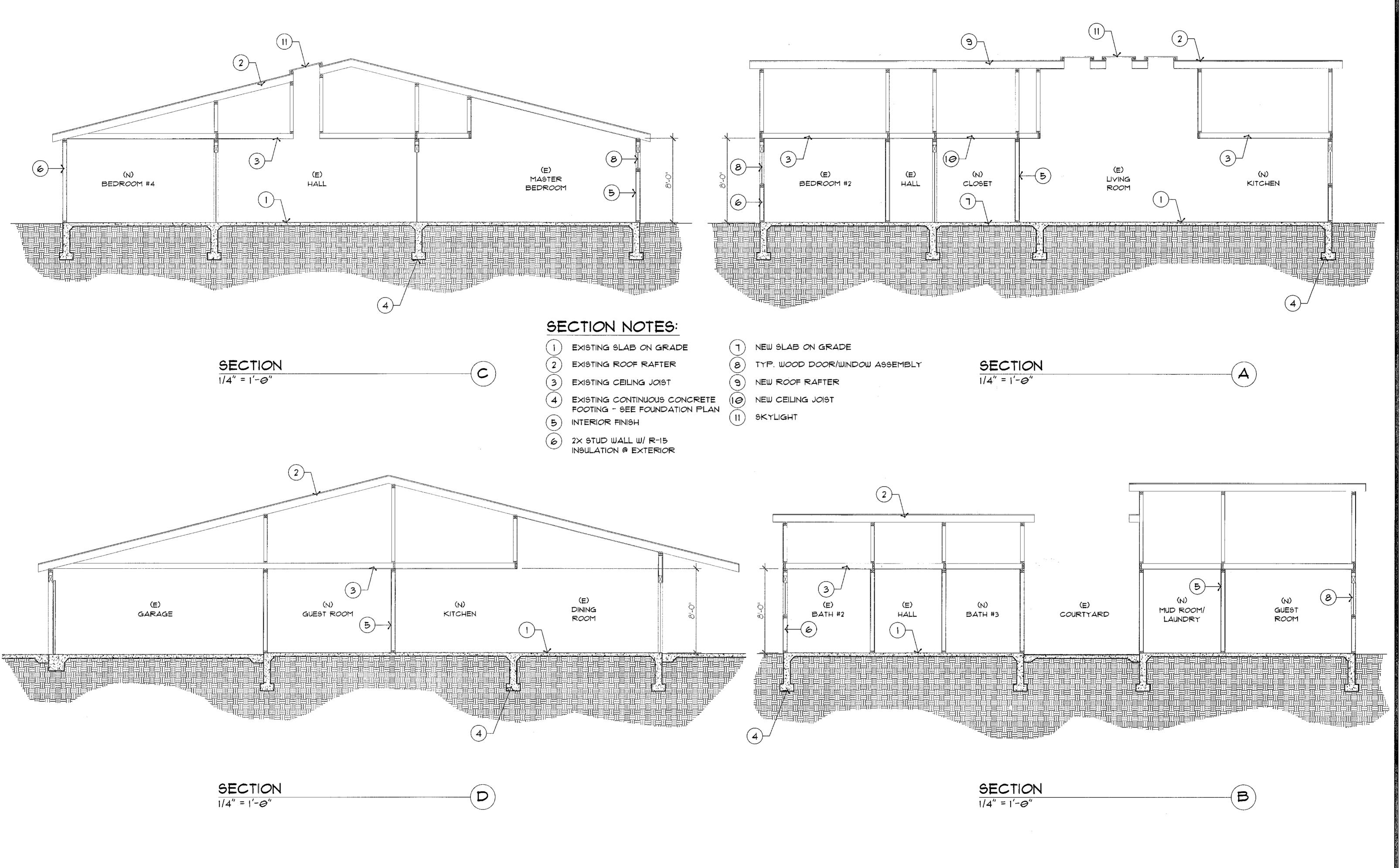
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ADDITIONAL LIVING 17 SQ FT

1/4" = 1'-0"

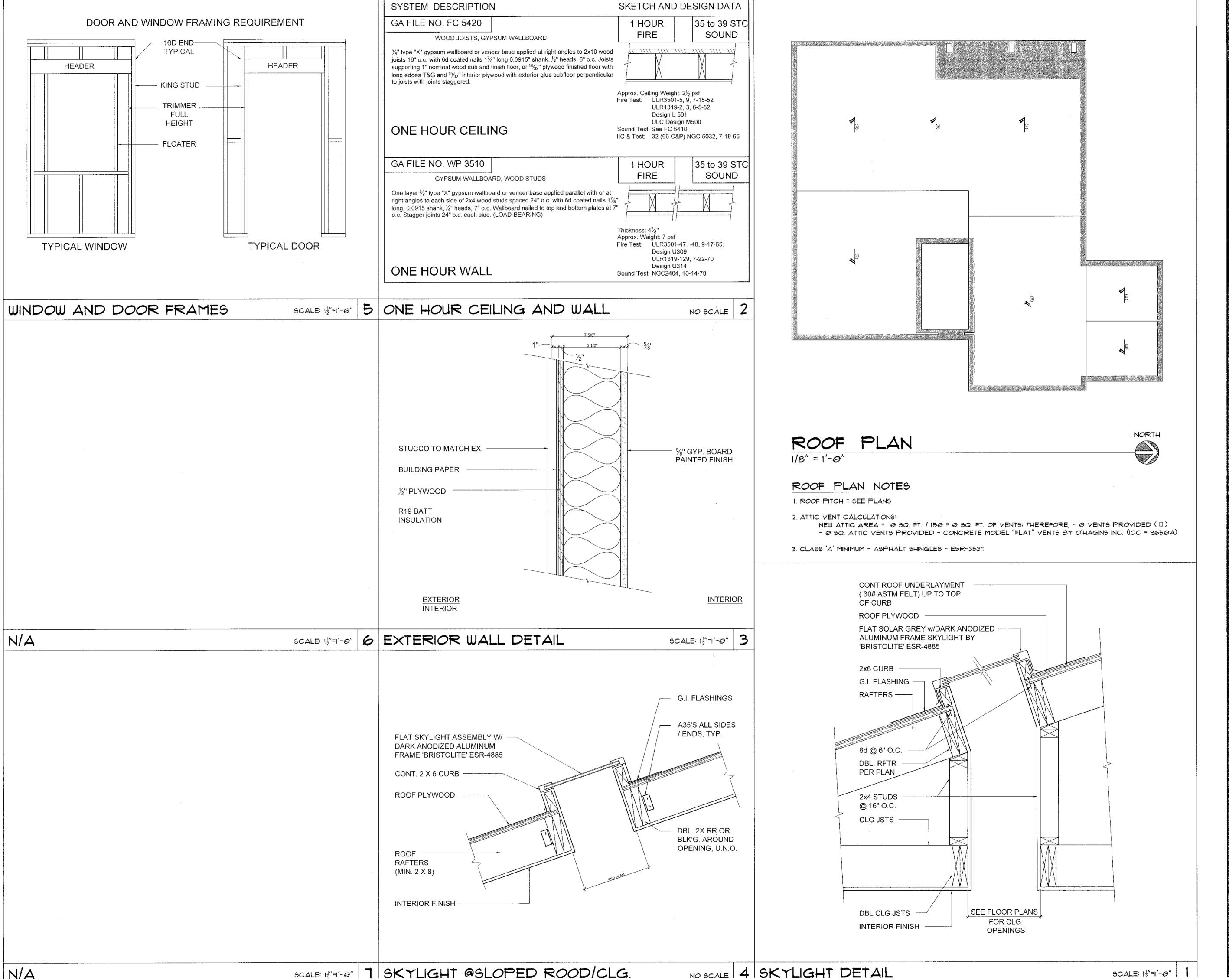




A5

PROPOSED SECTIONS

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SCALE: 12"=1'-0"

FAN TO OUTSIDE AIR HEAT-A-LITE W/ FAN TO OUTSIDE AIR FLOOD LAMPS DUPLEX OUTLET OUTLET W/ SPECIFIED HEIGHT FROM FINISHED FLOOR 1/2 SWITCHED 1/2 HOT OUTLET \longmapsto WP WATERPROOF OUTLET OUTLET W/ SPECIFIED YOLTAGE FLOOR OUTLET SINGLE POLE SWITCH PROVIDE QUAD OUTLETS AT WALLS LIKELY TO BE USED FOR T.Y./STEREO EQUIPMENT PER OWNER り - HOT QUAD OUTLET NUTONE "HEAT-A-VENTLITE" (QT-909 3WH) CEILING-MOUNTED UNIT CONTAINS HEATER/EXHAUST FAN/FLUORESCENT LIGHT, LOW WATT NIGHT LIGHT, SWITCH TO CONTROL PANEL AT 3-WAY SWITCH SWITCH W/ DIMMER POWER PANEL CEILING FAN DOOR BELL DOOR CHIMES INTERCOM TELEVISION OUTLET PHONE JACK SMOKE/CARBON MONOXIDE DETECTOR GAS OUTLET HOSE BIBB BUILT-IN BLENDER THERMOSTAT GARBAGE DISPOSAL TIMER YACUUM OUTLET

NETWORK COMPUTER SYSTEM

G.F.I. GROUND FAULT INTERRUPTER

ROUND FLUORESCENT LIGHT MOUNTED ON

ROPE LIGHTING BEHIND CROWN MOLDING

CEILING MOUNTED OUTLET FOR OVERHEAD GARAGE DOOR OPENER W/ REMOTE

WALL IMMEDIATELY ABOVE DOOR \$

SWITCHED AT ENTRY TO BATHROOM

A.F.I. ARC FAULT INTERRUPTER

T.C. TRASH COMPACTOR

D.W. DISH WASHER

-(F)===== FLUOR, LIGHT UNDER CAB

AND SOFFIT

SWITCH

F.A.U. FORCED AIR UNIT

SOLAR PHOTO CELL

WALL WASH

F.A.U.

30 THE CF-6R FORM SHALL BE COMPLETED PRIOR TO FINAL INSPECTIONS

10 ALL ELECTRIC SERVICES MUST HAVE

12 PROVIDE RG-6 QUAD T.V. CABLING.

13 PROVIDE "HOME RUN" WIRING TYP.

FOR TELEPHONE, T.V. \$ COMPUTER

14 BUNDLE "CATEGORY 5E" TELEPHONE

VACUUM SYSTEM AND INSTALLATION

DATA CABLING \$ RG-6 QUAD

16 BATHROOM RECEPTACLES SHALL

BE SERVED BY A DEDICATED 20

17 ALL BRANCH CIRCUITS THAT SUPPLY

AMP. RECEPTACLE OUTLETS

INTERRUPTER(S) - NEC SECT.

125 YOLT, SINGLE PHASE, 15 AND 20

INSTALLED IN BEDROOMS SHALL BE

PROTECTED BY ARC-FAULT CIRCUIT

18 AT LEAST HALF THE LIGHTING WATTS

HIGH-EFFICACY LIGHT FIXTURES IN

THE KITCHEN SHALL BE SWITCHED

BY HIGH EFFICACY LUMINARIES

SEPARATELY FROM THE NON

19 LIGHTING IN BATHROOMS, LAUNDRY

CONTROLLED BY MANUAL-ON

ROOM AND UTILITY ROOMS SHALL BE

ROOM, FAMILY ROOM, LIVING ROOM,

NOOK, BEDROOMS AND CLOSETS

WITH AN AREA OF 10 SQUARE FEET

OR MORE SHALL BE CONTROLLED

21 OUTDOOR LIGHTING ATTACHED TO

EFFICACY OR MUST BE CONTROLLED

THE BUILDING SHALL BE HIGH

BY A MOTION SENSOR WITH

INTEGRAL PHOTO CONTROL

HIGH-EFFICACY FIXTURES.

20 LIGHTING IN HALLWAYS, DINING

(PROVIDE WS-5, T24)

OCCUPANT SENSORS

BY DIMMER SWITCH

IN THE KITCHEN MUST BE CONSUMED

CABLING TOGETHER IN A

15 PROVIDE BID FOR CENTRAL

PER OWNER'S REQUEST.

AMP CIRCUIT.

21*0*-12(B)

STRUCTURED FORMAT.

PROVISIONS FOR FUTURE

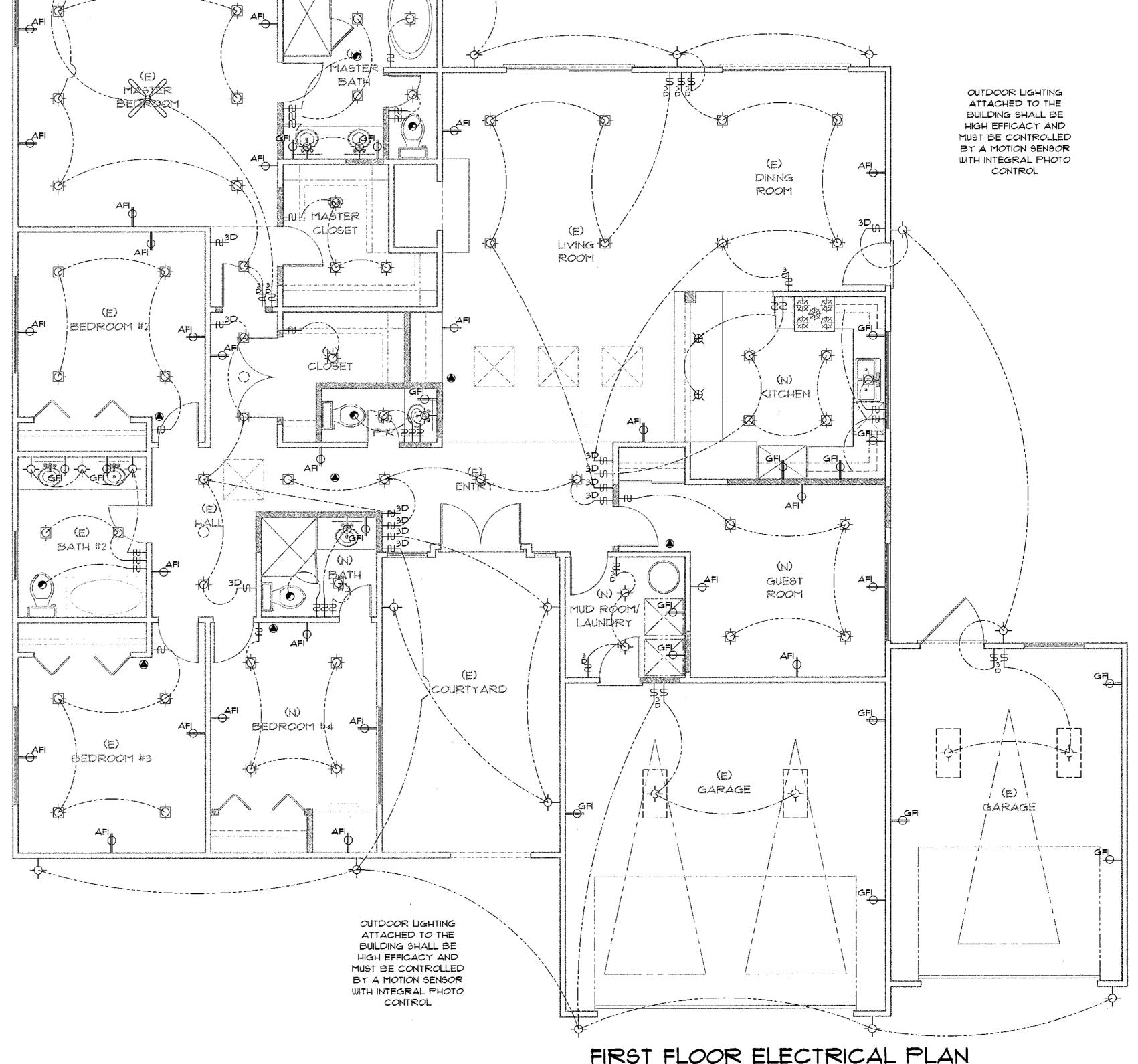
II PROVIDE "CATEGORY 5E"

TELEPHONE CABLING.

UNDERGROUNDING ORD. 252

- THE REQUIREMENTS APPLY ONLY TO PERMANENTLY INSTALLED LUMINAIRES, I.E., LUMINAIRES THAT ARE PART OF THE HOUSE, AS OPPOSED TO PORTABLE LUMINAIRES SUCH AS TORCHIERES OR TABLE LAMPS THAT ARE PROVIDED BY THE OCCUPANT. PERMANENTLY INSTALLED LUMINAIRES INCLUDE CEILING LUMINAIRES, CHANDELIERS, VANITY LAMPS, WALL SCONCES AND ANY OTHER TYPE OF LUMINAIRE THAT IS A PERMANENT PART OF THE HOUSE.
- INTO INSULATED CEILINGS ARE REQUIRED TO BE RATED FOR INSULATION CONTACT ("IC-RATED")

 SO THAT INSULATION CAN BE PLACED OVER THEM. THE HOUSING OF THE LUMINAIRE SHALL BE AIRTIGHT TO PREVENT CONDITIONED AIR ESCAPING INTO THE CEILING CAVITY OR ATTIC, UNCONDITIONED AIR INFILTRATING FROM THE CEILING OR ATTIC INTO THE CONDITIONED SPACE.
- 33 EXTERIOR DOORS THAT PROVIDE DIRECT ACCESS TO THE SWIMMING POOL OR SPA SHALL BE EQUIPPED WITH AN ALARM THAT PRODUCES AN AUDIBLE WARNING WHEN THE DOOR IS OPENED UNLESS POOL HAS A POWER SAFETY COVER OR SPA HAS A LISTED SAFETY COVER. (CBC SECT. 3109.4)
- 34 ROOMS CONTAINING BATHTUBS, SHOWERS, SPAS, AND SIMILAR BATHING FIXTURES SHALL BE MECHANICALLY VENTILATED. PROVIDE AN EXHAUST FAN WITH A MIN. CAPACITY OF 50 CFM. DUCTLESS FANS ARE UNACCEPTABLE.
- 35 PROVIDE A MIN. I FOOT-CANDLE OF STAIRWAY ILLUMINATION AT TREAD RUNS (CBC 1205.4).
 - 36 NEW DWELLING UNIT SHALL HAVE A MECHANICAL VENTILATION SYSTEM PER SECTION 150(0). FORCED AIR UNITS SHALL ALSO PROVIDE VENTILATION FOR THE RESIDENCE. PROVIDE SWITCHES AT EACH FLOOR TO TURN ON AND OFF VENTILATION. PROVIDE ALL SPECS AND



1/4" = 1'-0"

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LIST OF BMPs (BEST MANAGEMENT PRACTICES)

- 1. CA1 Dewatering Operations remove sediments from ground water
- 2. CA2 Paving Operations reduce discharge of pollutants from paving operations.
- 3. CA3 Structure Construction and Painting prevent & reduce discharge from construction sites & painting projects
- 4. CA10 Material Delivery and Storage prevent & reduce discharge of pollutants to storm water from material delivery & storage.
- CA11 Material Use prevent & reduce discharge of pollutants to storm water from material use.
- 6. CA12 Spill Prevention and Control Use prevent & reduce discharge of pollutants to storm water systems with good housekeeping.
- 7. CA20 Solid Waste Management Use prevent & reduce discharge of pollutants to storm water
- systems from solid waste or construction 8. CA21 Hazardous Waste Management - prevent & reduce discharge of pollutants to storm water from
- toxic materials. 9. CA22 Contaminated Soil Management-prevent & reduce discharge of pollutants to storm water from
- contaminated soil
- 10. CA23 Concrete Waste Management prevent & reduce discharge of pollutants to storm water from concrete waste.
- 11. CA24 Sanitary / Septic Waste Management prevent & reduce discharge of pollutants to storm water sanitary & septic systems.
- 12. CA30 Vehicle and Equipment Cleaning prevent & reduce discharge of pollutants to storm water from cleaning of vehicles and equipment.
- 13. CA31 Vehicle and Equipment Fueling prevent & reduce discharge of pollutants to storm water from fueling of vehicles & equipment.
- 14. CA32 Vehicle and Equipment Maintenance prevent & reduce discharge of pollutants to storm water from maintenance of vehicles & equipment.
- 15. CA40 Employee / Subcontractor Training SWPPP Storm Water Pollution Prevention Plan.
- 16. ESC1 Scheduling Sequencing the construction project to reduce the amount of soil exposed to
- 17. ESC2 Preservation of Existing Vegetation minimize damage and erosion by preserving the existing
- 18. ESC10 Seeding and Planting minimize erosion with seeding and planting.
- 19. ESC11 Mulching for stabilizing cleared and freshly seeded areas.
- 20. ESC20 Geotextites and Mats- for stabilization of soils
- 21. **ESC21 Dust Controls** reduce dust and soil erosion.
- 22. ESC22 Temporary Stream Crossing recommendations for installing a temporary culvert, ford or
- 23. ESC23 Construction Road Stabilization recommendations for dust and erosion control.
- 24. ESC24 Stabilized Construction Entrance recommendations for dust, sediment and erosion control for public streets
- 25. ESC30 Earth Dike- temporary berm or ridge of compacted soil. 26. ESC31 Temporary Drains and Swales – to divert off-site runoff around a construction site.
- 27. ESC32 Stope Drain temporary pipe to divert runoff from the top of a slope to the bottom without causing erosion.
- 28. ESC40 Outlet Protection installing rip-rap to reduce sediment in the soil.
- 29. ESC41 Check Dams reduces velocity of concentrated storm water flows and reduces erosion.
- 30. ESC42 Slope Roughening / Terracing creates microclimates for establishing vegetation.
- 31. ESC50 Silt Fence for sedimentation control.
- 32. ESC51 Straw Bale Barriers for sedimentation control.
- 33. ESC52 Sand Bag Barrier for sedimentation control.
- 34. ESC53 Brush or Rock Filter for sedimentation control and velocity reduction
- 35. ESC54 Storm Drain Inlet Protection devices which detain sediment laden runoff.
- 36. ESC55 Sediment Trap small excavated or bermed area for sedimentation.
- 37. ESC56 Sediment Basin pond created to allow excessive sediment to settle.

DIVISION 6 - WOOD AND PLASTICS

- 6.1 NOTES INCLUDED IN THE STRUCTURAL ENGINEER'S SPECIFICATIONS, OR ELSEWHERE ON THE STRUCTURAL PLAN SUPERSEDE ALL NOTES BELOW. WHERE NO SPECIFIC REQUIREMENT IS NOTED ON THE PLAN, USE THE FOLLOWING NOTES TO SET MINIMUM STANDARDS.
- 6.2 ALL WOOD SILLS ON CONCRETE SHALL BE FOUNDATION GRADE REDWOOD OR PRESSURE-TREATED DOUGLAS FIR. PROVIDE 2 CAULKING BEADS OR APPROVED RUBBER GASKETING UNDER ALL EXTERIOR SILL PLATES AT SLABS WHERE SILL LIES DIRECTLY BETWEEN HEATED AND NON-HEATED SPACES.
- 6.3 FIRE-BLOCKING AND FIRE STOPS SHALL BE INSTALLED IN ALL WALLS, FLOOR/CEILING, SOFFITS, CONCEALED SPACES, ATTICS, AND OTHER AREAS ACCORDING TO THE REQUIREMENTS OF THE CALIFORNIA BUILDING CODE. SPECIAL CARE SHALL BE TAKEN TO CORRECTLY BLOCK ALL FIRE-RATED WALLS, CONSULT PLAN FOR TYPICAL CONDITIONS, AND NOTIFY ARCHITECT IMMEDIATELY WHEN ALTERNATE DETAILS ARE REQUIRED.
- 6.4 SOLID BLOCKING FOR STRUCTURAL PURPOSES SHALL ALSO BE INCLUDED AT ALL JOISTS AND RAFTER SUPPORT POINTS, AND AT 8' INTERVALS WHERE HORIZONTAL OR VERTICAL SPANS EXCEED THOSE ALLOWED IN THE CALIFORNIA BUILDING CODE.
- 6.5 DOUBLE TOP PLATE IN BEARING PARTITIONS SHALL BE LAPPED MINIMUM 4' AT ALL BREAKS. PROVIDE FRAMING STRAPS ACCORDING TO THE REQUIREMENTS OF THE FRAMING PLAN.
- 6.6 ALL TYPICAL FRAMING CONNECTIONS SHALL CONFORM TO THE MINIMUM NAILING STANDARDS NOTED IN THE CALIFORNIA BUILDING CODE.
- 6.7 SEE SCHEDULE AT FRAMING PLAN FOR ALL PLYWOOD REQUIRED AT SHEAR PANELS.
- 68 PROVIDE DOUBLE FLOOR JOISTS UNDER ALL PARALLEL PARTITIONS, AND SOLID BLOCKING UNDER ALL PERPENDICULAR BEARING PARTITIONS.
- 6.9 NORMALLY, PROVIDE RAFTER TIES @ MINIMUM 48" O.C. IMMEDIATELY ABOVE CEILING JOISTS WHERE CEILING JOISTS ARE NOT PARALLEL TO ROOF RAFTERS.
- 610 STUDS IN 'RAKED' WALLS SHALL EXTEND FROM THE FLOOR TO THE PLATE AT THE HORIZONTAL DIAPHRAGM ABOVE WITHOUT INTERMEDIATE PLATES UNLESS THE INTERMEDIATE PLATES HAVE BEEN SPECIFICALLY ENGINEERED TO SPAN HORIZONTALLY, MAXIMUM HEIGHTS FOR 2X4 AND 2X6 = 10' FOR BEARING WALLS (WITHOUT SPECIAL ENGINEERING), AND 20' FOR 2X6 AT NON-BEARING WALLS
- 6.11 BRACING OF ALL WALLS SHALL CONFORM TO CALIFORNIA BUILDING CODE. BRACING OF ALL FOUNDATION CRIPPLE WALLS SHALL CONFORM TO CALIFORNIA BUILDING
- 6.12 NOTCHING AND BORING OF ALL WOOD FRAMING MEMBERS SHALL NOT EXCEED LIMITS OUTLINED IN CALIFORNIA BUILDING CODE.
- TYPICAL FRAMING CONNECTORS SHALL BE 'SIMPSON' OR EQUAL
- 6.14 PROVIDE BLOCKING FOR ALL EAVE VENTS, SKYLIGHT OPENINGS, GARAGE VENTS, PLUMING PENETRATIONS; AND BACKING FOR FINISH APPLICATION AS REQUIRED BY GENERAL CONTRACTOR.
- 6.15 CONTRACTOR SHALL DEPRESS OR MAKE OTHER APPROPRIATE ALLOWANCES FOR ALL FINISHES NOTED ON PLAN SUCH AS: CONCRETE TOPPING, TILE AND GROUT, REQUIRED SLOPES FOR DECK AND ROOF SURFACES, ETC.
- 6.16 WHERE REQUIRED TO ACHIEVE MINIMUM ROOF OR DECK SLOPES, PROVIDE 2X RIPPINGS OVER FLAT-FRAMED JOISTS. ATTACH RIPPINGS WITH MINIMUM 16D @ 10" O.C. FACED NAILED TO JOISTS BELOW WHERE RIPPINGS ARE LESS THAN 2 1/2" DEEP. OTHERWISE, ATTACH RIPPINGS WITH MINIMUM SIMPSON A35 (OR EQUAL NAILING CLIPS) @ 48" O.C. MAXIMUM TO JOISTS BELOW.
- 6.17 PROVIDE CANT STRIPS AND CRICKETS AT ALL ROOF AREAS TO ENSURE PROPER DRAINAGE, AND TO EASE BENDS IN BUILT-UP ROOFING TO LESS THAN MAXIMUM OF 45 DEGREE BEND. PROVIDE NAILING BOARDS AND BLOCKS AS REQUIRED FOR PROPER ATTACHMENT OF SHEET-METAL FLASHING AND DRAINAGE.
- 6.18 SOLID BLOCK ALL PANEL EDGES OR USE TEG AT FLOOR SHEATHING.
- 6.19 CONTRACTOR SHALL VERIFY PLAN DIMENSIONS RELATING TO ALL PLUMBING FIXTURE INSTALLATION (CHECK FOR ALLOWANCE AT ONE-PIECE SHOWER/TUB + FINISH BEHIND), AND SASH INSTALLATIONS.
- 6.20 ALL FURRED CEILINGS AND SOFFITS INSTALLED BELOW REQUIRED ONE-HOUR FLOOR/CEILINGS SHALL BE CONSTRUCTED WITH FIRE-RETARDANT TREATED WOOD OR METAL JOIST.
- CONTRACTOR SHALL PROVIDE SUPPORT FOR ALL DRAFT STOPS IN CONCEALED AREAS AND ATTICS. PARTY WALLS SHALL EXTEND CONTINUOUSLY TO THE ROOF SHEATHING ACCORDING TO DETAILS INCLUDED AT THE PLAN.
- 6.22 GLUE ALL PLYWOOD SUB-FLOOR PANEL EDGES CONTINUOUSLY TO FLOOR JOISTS AND BLOCKING.
- PLYWOOD ROOF PANELS TO BE BONDED WITH EXTERIOR GLUE AND BE OF EXTERIOR TYPE WHERE EXPOSED TO THE WEATHER. ALL ROOFING PLYWOOD TO BE T\$G OR APPLIED WITH STAGGERED EDGES ALONG THE LONG AXIS.
- 6.24 PROVIDE MINIMUM OF TWO CAULKING BEADS UNDER ALL EXTERIOR SILL PLATES AT SLABS WHERE SILL IS ADJACENT TO HEATED ROOMS.
- 6.25 SUBMIT CERTIFICATION OF FABRICATION FOR GLU-LAM BEAMS TO BUILDING DEPARTMENT PRIOR TO INSTALLATION.

UNLESS OTHERWISE NOTED AT PLAN.

6.26 GLU-LAM BEAMS TO BE DOUGLAS FIR/LARCH COMBINATION 24F WITH SHOP CAMBER

2.11 ALL UTILITIES SHALL BE UNDERGROUND.

- 2.12 CONSULT CITY ENGINEER REGARDING STREET TREE ORDINANCE INCLUDING REGULATIONS FOR THE PLANTING, PRUNING AND REMOVAL OF TREES AND SHRUBS ON CITY PROPERTY.
- 2.13 ALL EXCAVATIONS TO BE KEPT WET WHILE IN PROGRESS.
- 2.14 ALL YARD DRAINS TO BE MINIMUM 4" P.V.C. OR A.B.S. WITH MINIMUM 1% SLOPE TO OUTLET.
- 2.15 DRAIN LINE FROM CATCH BASIN TO BE MINIMUM 6" P.Y.C. OR A.B.S. WITH 1% SLOP TO
- 2.16 PROVIDE MINIMUM 36" GUARDRAIL AT CHANGE IN GRADE OVER 30".

DIVISION 3 - CONCRETE

- 3.1 NOTES INCLUDED IN THE STRUCTURAL ENGINEER'S SPECIFICATIONS, OR ELSEWHERE ON THE STRUCTURAL PLAN SUPERSEDE ALL NOTES BELOW. WHERE NO SPECIFIC REQUIREMENT IS NOTED ON THE PLAN, USE THE FOLLOWING NOTES TO SET MINIMUM STANDARDS.
- 3.2 ALL REINFORCING BARS SHALL BE SECURED IN POSITION PRIOR TO PLACING OF CONCRETE.
- 3.3 THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS OF FOUNDATIONS AT THE JOB PRIOR TO ANY FRAMEWORK, AND AGAIN PRIOR TO PLACEMENT OF CONCRETE.
- 3.4 PROVIDE A WOOD FLOAT FINISH UNLESS OTHERWISE NOTED ON PLANS BROOM FINISH AT ALL INTERIOR PARKING SLABS, AND ALL EXTERIOR PEDESTRIAN SLABS, UNLESS OTHERWISE NOTED ON PLANS.
- 3.5 BEFORE ANY CONCRETE IS PLACED, THE CONTRACTOR SHALL COORDINATE AND CHECK WITH ALL TRADES TO ENSURE THE PROPER PLACEMENT OF ALL OPENINGS. SLEEVES, INSERTS, CURBS, DEPRESSIONS, ETC. RELATING TO THE PROJECT REQUIREMENTS.
- 3.6 THE CONTRACTOR SHALL USE ADEQUATE METHODS TO ENSURE THAT ALL CONCRETE PLACED CONSISTENTLY FILLS ALL FORMED AREAS, ESPECIALLY AROUND REINFORCEMENT, EMBEDDED FIXTURES, AND AT CORNERS AND OFFSETS IN FRAMEWORK. WET ALL FORMS PRIOR TO THE PLACEMENT OF CONCRETE.
- 3.1 THE CONTRACTOR SHALL REMOVE OR OTHERWISE ALTER ALL FORM TIES AND OTHER PROTRUSIONS FROM THE CONCRETE SURFACE WHICH WILL INTERFERE WITH THE FINISH NOTED ON THE PLAN.
- 3.8 THOROUGHLY COMPACT BASE, WETTING AS REQUIRED FOR OPTIMUM RESULTS. BEFORE POURING CONCRETE SLABS. CURE WITH POLYETHYLENE SHEET OR KEEP WET BY SPRINKLING WITH WATER. SEE PLAN FOR REQUIRED FINISH,

DIVISION 4 - MASONRY

- 4.1 NOTES INCLUDED IN THE STRUCTURAL ENGINEER'S SPECIFICATIONS, OR ELSEWHERE ON THE STRUCTURAL PLAN SUPERSEDE ALL NOTES BELOW, WHERE NO SPECIFIC REQUIREMENT IS NOTED ON THE PLAN, USE THE FOLLOWING NOTES TO SET MINIMUM STANDARDS.
- 4.2 ALL MASONRY CONSTRUCTION SHALL CONFORM TO STANDARDS OR THE CALIFORNIA BUILDING CODE.
- 4.3 WHERE LIFTS EXCEED 4 FEET, PROVIDE INSPECTION HOLES AT BOTTOM OF EVERY CELL CONTAINING A VERTICAL REINFORCING BAR, MORTAR DROPPINGS TO BE CLEANED OUT OF CELL BEFORE STEEL ARE PLACED.
- 4.4 ALL MASONRY UNITS SHALL BE SUFFICIENTLY MOIST AT THE TIME OF LAYING TO PREVENT DEHYDRATION OF MORTAR AND GROUT.
- 4.5 ALL REINFORCING STEEL, IN MASONRY CONSTRUCTION SHALL CONFORM TO STANDARDS NOTED ABOVE IN DIVISION 3 OF THESE SPECIFICATIONS.
- 4.6 CONSULT PLAN NOTES, DETAILS, \$ SCHEDULES FOR MASONRY WHICH THE ENGINEER HAS DETERMINED TO REQUIRE SPECIAL INSPECTION.

DIVISION 5 - METALS

- 5.1 NOTES INCLUDED IN THE STRUCTURAL ENGINEER'S SPECIFICATIONS, OR ELSEWHERE ON THE STRUCTURAL PLAN SUPERSEDE ALL NOTES BELOW. WHERE NO SPECIFIC REQUIREMENT IS NOTED ON THE PLAN, USE THE FOLLOWING NOTES TO SET MINIMUM STANDARDS.
- 5.2 THE AMERICAN WELDING SOCIETY CODE FOR FUSION WELDING OF BUILDINGS AND BRIDGES' SHALL BE USED TO DETERMINE STANDARD WELDING PRACTICE. WHERE SHOP-WELDING IS TO BE PERFORMED, A CERTIFICATE OF FOR WELDING FROM A FABRICATOR APPROVED BY THE CITY IS REQUIRED PRIOR TO FRAMING INSPECTION. ALL FIELD-WELDING IS TO BE PERFORMED UNDER THE SUPERVISION OF AN INSPECTOR APPROVED BY THE LOCAL CITY DEPARTMENT OF BUILDING AND SAFETY.
- 5.3 'STRUCTURAL WELDS' REFER TO ANY WELDS PERFORMED ON STEEL BEAMS, COLUMNS, AND THEIR CONNECTIONS, AND MISCELLANEOUS CUSTOM CONNECTORS WHICH ARE INTEGRAL TO THE SUPPORT OF BUILDING.
- 5.4 STEEL FABRICATOR TO PROVIDE FOR ATTACHMENT OF WOOD NAILER PLATES TO ALL STRUCTURAL STEEL MEMBERS AS REQUIRED BY PLAN BY INCLUDING STAGGERED 1/2" CLEAR DRILLED HOLES AT 48" O.C. MAXIMUM AT BEAM WEBS, AND 1/2" DIAMETER MACHINE BOLT STUDS WELDED TO THE TOP AND BOTTOM FLANGES AT 48" O.C. MAXIMUM (USING MINIMUM 1/8" FILLET WELD ALL AROUND). SIMILAR FASTENERS ARE TO BE PROVIDED ON ALL VERTICAL STEEL MEMBERS. EXPLOSIVE DRIVEN ['RAMSET'] FASTENERS MAY BE USED WITH THE SPECIFIC PERMISSION OF THE PROJECT ENGINEER
- 5.5 STEEL FABRICATOR TO PROVIDE SHOP DRAWINGS OF ALL STEEL MEMBERS AND CONNECTORS FOR APPROVAL BY GENERAL CONTRACTOR AND DESIGNER MINIMUM 2 WEEKS PRIOR TO ANY SHOP FABRICATION.
- 5.6 STEEL FABRICATOR TO VERIFY ALL FIELD DIMENSIONS AFFECTING HIS WORK PRIOR TO FINALIZING SHOP DRAWINGS.
- 5.1 STEEL FABRICATOR TO PROVIDE TEMPLATES WHICH ACCURATELY LOCATE AL ANCHOR BOLTS REQUIRED TO CONNECT STEEL COLUMNS, BEAMS OR OTHER MISCELLANEOUS CONNECTORS TO MASONRY OR CONCRETE FOOTINGS, WALLS, AND SIMILAR SUPPORT POINTS.
- 5.8 ALL WELDS ON ORNAMENTAL IRON TO BE GROUND SMOOTH.
- 5.9 ALL STEEL TO BE SHOP PRIMED PRIOR TO DELIVERY TO SITE.

5.10 WHERE SHOP WELDING IS TO BE PERFORMED. A CERTIFICATE OF WELDING FROM AN APPROVED FABRICATOR IS REQUIRED PRIOR TO FRAMING INSPECTION.

DIVISION 1 - GENERAL REQUIREMENTS

- 1.1 IF ANY ERRORS, DISCREPANCIES, OR OMISSIONS APPEAR IN THE DRAWINGS, SPECIFICATIONS OR OTHER CONTRACT DOCUMENTS, THE CONTRACTOR SHALL NOTIFY THE ARCHITECT IN WRITING OF SUCH ERROR OR OMISSION. IN THE EVENT THE CONTRACTOR FAILS TO GIVE SUCH NOTICE BEFORE CONSTRUCTION AND/OR FABRICATION OF THE WORK, THE CONTRACTOR WILL BE HELD RESPONSIBLE TO THE RESULT OF ANY SUCH ERRORS, DISCREPANCIES, OR OMISSIONS AND THE COST OF RECTIFYING THE SAME.
- 1.2 THIS PROJECT SHALL COMPLY WITH THE REQUIREMENTS OF THE 2013 C.B.C. IN ADDITION, CONTRACTOR AND SUBCONTRACTORS SHALL CONFORM TO ALL LOCAL CODES AND REQUIREMENTS WHICH SUPERSEDE ALL NOTES AND SPECIFICATIONS IN THESE PLANS.
- 1.3 ALL IMPROVEMENTS REQUIRED IN THE CITY RIGHT-OF-WAY SHALL BE PERFORMED ACCORDING TO PROCEDURES AND CONSTRUCTION TECHNIQUES APPROVED BY THE GOVERNING CITY.
- 1.4 THE CONTRACTOR SHALL TAKE SPECIAL CARE TO PROVIDE ADEQUATE SHORING OR PROTECTION FOR ALL EXISTING OR ADJACENT SITE STRUCTURES PRIOR TO ANY SUBSEQUENT CONSTRUCTION ACTIVITY. ALL SHORING CONSTRUCTIONS SHALL BE APPROVED BY THE DEPARTMENT OF BUILDING AND SAFETY, PROVIDE ADEQUATE SHORING FOR ALL VERTICAL CUTS EXCEEDING FIVE (5) FEET AND ALL CUTS AT PROPERTY LINE, ESPECIALLY THOSE AREAS ADJACENT TO EXISTING STRUCTURES AND VEGETATION.
- 1.5 THE CONTRACTOR SHALL SUBMIT TO THE CITY DEPARTMENT OF BUILDING AND SAFETY EVIDENCE OF ALL APPROPRIATE INSURANCES AND LICENSES PRIOR TO OBTAINING ALL CONSTRUCTION PERMITS.
- 1.6 THE CONTRACTOR SHALL SCHEDULE ALL WORK ACCORDING TO DIRECT AGREEMENTS WITH THE OWNER, AND ACCORDING TO ALL LOCAL GOVERNMENTAL SCHEDULING REQUIREMENTS.
- 1.1 PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL VERIFY ALL SITE SERVICE REQUIREMENTS SUCH AS CONNECTIONS FOR SEWER SYSTEM, FRESH WATER, FIRE-SYSTEM, GAS, ELECTRICAL SYSTEM, PHONE SYSTEM, AND CABLE TELEVISION. THE CONTRACTOR SHALL MAKE A SPECIFIC AGREEMENT WITH THE OWNER REGARDING PAYMENT OF ALL COSTS RELATING TO THESE ITEMS. THE CONTRACTOR SHALL NOTIFY THE DESIGNER OF ANY FURTHER PLAN MODIFICATIONS REQUIRED TO ACCOMMODATE THESE ITEMS.
- 1.8 CONTRACTOR SHALL INSTALL HOUSE NUMBERS AND OTHER POSTAL EQUIPMENT ACCORDING TO THE STANDARDS OF THE LOCAL POSTAL AUTHORITIES
- I.9 ALL DIMENSIONS ON PLAN VIEWS OF THE BUILDING ARE SET TO EITHER FACE OF STUD OR CENTERLINE OF STUD AT FRAMED WALLS, FACE OF MASONRY OR CENTERLINE OF MASONRY, FACE OF CONCRETE OR CENTERLINE OF CONCRETE - UNLESS OTHERWISE NOTED. ALL DIMENSIONS ON SECTION AND ELEVATION VIEWS ARE SET TO PLATE LINE OR TOP OF FINISH FLOOR UNLESS OTHERWISE NOTED.
- 1.10 WRITTEN DIMENSIONS SHALL HAVE PRECEDENCE OVER SCALED DIMENSIONS ON THE DRAWINGS. THE CONTRACTOR AND ALL SUBCONTRACTORS SHALL YERIFY ALL DIMENSIONS AND CONDITIONS AT JOB SITE AND REPORT ANY DISCREPANCIES TO THE ARCHITECT BEFORE PROCEEDING WITH WORK.
- I.II EQUIPMENT AND MATERIAL NOT INSTALLED BUT SUPPLIED BY CONTRACTOR OR SUBCONTRACTOR WILL BE THE RESPONSIBILITY OF THAT CONTRACTOR DUE TO LOSS FROM FIRE, THEFT, ETC. EACH SUBCONTRACTOR WILL CLEAN UP HIS WASTE MATERIAL AND RUBBISH AND DEPOSIT SAME AT AN ON-SITE DUMP AREA PROVIDED BY THE CONTRACTOR. CONTRACTOR SHALL LEAVE THE ENTIRE BUILDING AND PREMISES "BROOM CLEAN," ALL GLASS BRUSHED CLEAN AND FREE FROM STAINS AND DISCOLORATION.
- 1.12 CONTRACTOR SHALL BE RESPONSIBLE FOR SUPERVISING ALL WORK AND FOR CONSTRUCTION MEANS, METHODS, SEQUENCE AND PROCEDURE, CONTRACTOR SHALL PROVIDE MEASURES NECESSARY TO PROJECT STRUCTURE DURING CONSTRUCTION. OBSERVATION VISITS TO THE SITE BY THE DESIGNER OR ENGINEER OR THEIR REPRESENTATIVES SHALL NOT INCLUDE INSPECTION OF THESE PROJECT MEASURES. ANY SUPPORT SERVICES PERFORMED BY THE ARCHITECT OR HIS REPRESENTATIVE DURING CONSTRUCTION SHALL BE FOR THE PURPOSE OF ASSISTING IN QUALITY CONTROL AND IN ACHIEVING CONFORMANCE WITH CONTRACTOR'S PERFORMANCE AND SHALL NOT BE CONSTRUED AS SUPERVISION OF CONSTRUCTION.
- 1.13 THESE DRAWINGS AND SPECIFICATIONS ARE THE PROPERTY OF DOUGLAS J. LEACH. ARCHITECT, INC. AND AS SUCH SHALL NOT BE COPIED IN PART OR WHOLE WITHOUT PERMISSION.

DIVISION 2 - SITE WORK

- 2.1 IF A SOILS REPORT IS PERFORMED FOR THE SITE, ALL DESIGN AND CONSTRUCTION PROVISIONS INCLUDED IN THE SOILS REPORT AND SUBSEQUENT ADDENDUMS ARE HEREBY INCORPORATED IN THIS PLAN.
- 2.2 CONTRACTOR SHALL KEEP THE CONSTRUCTION AREA SUFFICIENTLY DAMPENED TO CONTROL DUST CAUSED BY GRADING AND CONSTRUCTION CONTRACTOR SHALL AT ALL TIMES PROVIDE REASONABLE CONTROL OF DUST CAUSED BY WIND.
- 2.3 NO BACKFILL SHALL BE PLACED AGAINST CONSTRUCTIONS IN GRADE UNTIL ALL WORK HAS PASSED INSPECTION. BACKFILLING MUST BE THOROUGHLY TAMPED TO PREVENT FURTHER SETTLING. SEE OTHER PROVISIONS WITHIN THESE SPECIFICATIONS FOR DRAINAGE AND WATERPROOFING REQUIREMENTS, IMPORTANT: NO BACKFILLING PRIOR TO PLACEMENT OF CONCRETE DECK SLAB, IF APPLICABLE, AND PROPER CURING AND INSPECTION PROCESS.
- 2.4 CONTRACTOR SHALL PROVIDE TEMPORARY TOILETS DURING CONSTRUCTION.
- 2.5 CONTRACTOR SHALL CONSULT WITH LOCAL CITY ENGINEERS REGARDING REQUIREMENTS FOR ALL EXISTING AND FUTURE PLANTING WITHIN CITY RIGHT-OF-WAY.
- 2.6 ALL CONSTRUCTION WASTE AND DEBRIS SHALL BE KEPT IN AN ENCLOSED CONTAINER IN ACCORDANCE WITH LOCAL FIRE DEPARTMENT STANDARDS.
- 2.7 UNLESS OTHERWISE NOTED AT PLAN, ALL FOUNDATION BEARING SURFACES FOR THE PROPOSED BUILDING SHALL PENETRATE COMPETENT BEARING SOIL MINIMUM 24". COMPETENT BEARING SOIL SHALL BE DEFINED BY THE PROJECT SOILS REPORT, OR BY ACCEPTED PARAMETERS APPROVED BY THE GOVERNING BUILDING \$ SAFETY DEPARTMENT.
- 2.8 SEE SPECIFIC NOTES AT FOUNDATION PLAN FOR FURTHER, MORE SPECIFIC FOUNDATION REQUIREMENTS.
- 2.9 CONTRACTOR TO PROVIDE A MINIMUM 4" DIAMETER PERFORATED PLASTIC DRAIN LINE AT THE BASE OF ALL RETAINING WALLS. THIS DRAIN LINE SHOULD BE PLACED IN MINIMUM 16" imes 16" Continuous gravel pocket, and be sloped to drain by GRAVITY TO A SITE OUTLET.
- 2.10 CONTRACTOR SHALL VERIFY DEPTH OF BUILDING SEWER LATERAL IN FIELD PRIOR TO THE START OF CONSTRUCTION.

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15.9 MINIMUM 100 SQ. IN. OF COMBUSTION AIR INTAKE IS REQUIRED FOR GAS-FIRED WATER AND AIR HEATERS. PROVIDE A MINIMUM OF 2 OPENINGS OF 50 SQ. IN. EACH, ONE WITHIN 12" OF THE FLOOR, AND THE OTHER WITHIN 12" OF THE CEILING.

15.10 CIRCULATING AIR-SUPPLY OPENINGS OR DUCTS MUST BE SIZED A MINIMUM OF 200 SQ. IN. OR 2 SQ. IN./KBTU, WHICHEVER IS THE LARGER.

15.11 SHOWER-HEADS AND FAUCETS SHALL BE EQUIPPED WITH FLOW RESTRICTORS AS OUTLINED IN THE APPLIANCE EFFICIENCY STANDARDS AND SHALL BE CERTIFIED BY

15.12 CONTRACTOR SHALL CONTACT PROJECT STRUCTURAL ENGINEER PRIOR TO ANY SUBSTANTIAL ALTERATION OF STRUCTURAL MEMBERS IS PERFORMED IN ORDER TO ACCOMMODATE PLUMBING LINES.

5.13 CONTRACTOR SHALL CONSULT WITH DESIGNER PRIOR TO DETERMINING LOCATION, ATTACHMENT, OR DESIGN OF ANY EQUIPMENT NOT NOTED ON PLAN, INCLUDING SOLAR SYSTEM COMPONENTS.

5.14 ALL PERMANENT MECHANICAL EQUIPMENT SUCH AS MOTORS, COMPRESSORS, PUMPS, AND COMPACTORS WHICH MAY BE A SOURCE OF STRUCTURAL VIBRATION OR STRUCTURE-BORN NOUSE, SHALL BE MOUNTED WITH INERTIA BLOCKS OR BASES AND/OR VIBRATION ISOLATORS IN A MANNER APPROVED BY THE LOCAL CITY DEPARTMENT OF BUILDING AND SAFETY.

15.15 PLUMBING CONTRACTOR SHALL NORMALLY FURNISH A WATER LINE TO THE REFRIGERATOR

5.16 ALL GAS-FIRED STORAGE WATER HEATING EQUIPMENT SHALL COMPLY TO CEC T20-1406. SPECIFICALLY, ALL WATER HEATING EQUIPMENT SHALL MEET THE CEC STANDARDS FOR MINIMUM RECOVERY EFFICIENCIES AND MAXIMUM STANDBY ENERGY LOSSES. STORAGE TYPE WATER HEATERS, AND STORAGE (AND BACKUP) TANKS FOR SOLAR SYSTEMS SHALL BE EXTERNALLY WRAPPED WITH R-12 INSULATION OR GREATER.

15.17 SEE FLOOR PLAN FOR METAL FIREPLACE CALL-OUTS. ALL FIREPLACES TO BE EQUIPPED WITH TIGHT-FITTING METAL OR GLASS DOORS COVERING THE ENTIRE OPENING OF THE FIREBOX; A COMBUSTION AIR INTAKE EQUIPPED WITH A READILY ACCESSIBLE, OPERABLE, AND TIGHT FITTING DAMPER TO DRAW AIR FROM THE OUTSIDE OF THE BUILDING; AND A TIGHT FITTING FLUE DAMPER WITH A READILY ACCESSIBLE CONTROL.

15.18 HVAC EQUIPMENT SUPPLIERS SHALL PROVIDE ALL NECESSARY MAINTENANCE AND PERFORMANCE DATA TO ESTABLISH THAT THE EQUIPMENT HAS BEEN MANUFACTURED AND WILL OPERATE ACCORDING TO THE APPLIANCE EFFICIENCY STANDARDS AND SHALL BE CERTIFIED BY THE CEC. THE EQUIPMENT MANUFACTURER SHALL FURNISH THE OWNER WITH FULL OPERATION AND MAINTENANCE INFORMATION REQUIRED THE CEC PRIOR TO OCCUPANCY PERMIT.

15.19 A TWO-STAGE THERMOSTAT, WHICH CONTROLS THE SUPPLEMENTARY HEAT ON ITS SECOND STAGE, SHALL BE PROVIDED FOR HEAT PUMPS. THERMOSTATS SHALL BE EQUIPPED WITH AN AUTOMATIC SETBACK, WHICH THE BUILDING OCCUPANT CAN PROGRAM TO AUTOMATICALLY SET BACK THE THERMOSTAT TWICE IN 24 HOURS.

15.20 PLUMBING AND MECHANICAL CONTRACTORS SHALL PROVIDE SHOP DRAWINGS OR EQUIVALENT DRAWINGS AND SPECIFICATIONS TO THE SATISFACTION OF THE LOCAL BUILDING DEPARTMENT AND THE OWNER, WHICH ILLUSTRATE THE LOCATION AND DESIGN AND ALL PROPOSED SYSTEM COMPONENTS PRIOR TO MECHANICAL OR PLUMBING PERMITS.

15.21 PRESSURE TEMPERATURE RELIEF VALVE REQUIRED ON ALL WATER HEATERS. SECURE WATER HEATER FOR OVERTURN IF FLEX CONNECTORS ARE USED.

15.22 GAS APPLIANCE HAVING STANDING PILOTS ARE PROHIBITED, EFFECTIVE JULY 8, 1918.
ALL GAS APPLIANCES IN GARAGE AREAS SHALL BE MOUNTED ON PLATFORM MIN. 18"

15.23 INSULATION OF DUCTS SHALL CONFORM TO THE PROVISIONS OF SECTION 604 F THE UNIFORM MECHANICAL CODE.

15.24 ALL FAN OR BLOWER SYSTEMS THAT EXHAUST AIR FROM THE CONDITIONED BUILDING ENVELOPE TO THE OUTSIDE SHALL BE PROVIDED WITH BACKDRAFT DAMPERS.

15.25 CONSULT BUILDING ENGINEER OR ARCHITECT PRIOR PLACEMENT OF ANY EQUIPMENT LOADS ON STRUCTURE, EQUIPMENT TO BE PLACED WITHIN 1/4 SPAN OF END SUPPORTS OF ROOF JOISTS UNLESS THERE SUPPORT IS PROVIDED FOR IN PLANS.

15.26 ALL SERVICE HOT WATER HEATING EQUIPMENT SHALL BE MANUFACTURED AND INSTALLED ACCORDING TO CEDR DIV. 7 AND ASHRAE STANDARD 90-75. PROVIDE TIP VALUE @ WATER HEATER, WATER HEATER SHALL BE CERTIFIED BY C.E.C.

15.27 GAS VENTS AND NONCOMBUSTIBLE PIPING PASSING THROUGH 3 FLOORS OR LESS SHALL BE EFFECTIVELY DRAFT STOPPED AT EACH FLOOR OR CEILING.

DIVISION 16 - ELECTRICAL

16.1 GROUND-FAULT-INTERRUPTER IS REQUIRED FOR ALL CIRCUITS SERVING BATHS, KITCHENS, LAUNDRY ROOMS, EXTERIOR OUTLETS, AND TEMPORARY CONSTRUCTION PANELS.

16.2 CONTRACTOR SHALL CONTACT LOCAL ELECTRIC, TELEPHONE, AND CABLE TELEVISION UTILITIES TO VERIFY THEIR REQUIREMENTS FOR SERVICE TO THE SITE BUILDINGS, INCLUDING LOCATION AND DESIGN OF UNDERGROUND CONDUIT AND PULL BOXES, METERS, AND SERVICE TERMINALS.

16.3 FIXTURES USED FOR GENERAL LIGHTING IN KITCHENS AND BATHROOMS SHALL HAVE AN EFFICIENCY OF NOT LESS THAN 40 LUMENS/WATT.

16.4 ALL FLUORESCENT FIXTURES SHOWN ON PLAN TO BE LAMPED WITH RAPID-START WARM-WHITE LAMPS UNLESS OTHERWISE NOTED.

16.5 TEMPORARY ELECTRICAL PANELS ARE TO BE STRUCTURALLY BRACED PRIOR TO INSPECTION FOR APPROVAL.

16.6 ELECTRIC SYSTEM GROUND TO BE PROVIDED PER N.E.C. ARTICLE 210-8.

16.1 PROVIDE GASKETS @ ELECTRICAL PLATES ON PERIMETER WALLS.

LA O LE AO GOOGNEE ADDITANTERO ON ALL MANE INTERMITTENT ICANTION DEVIC

16.8 GAS COOKING APPLIANCES SHALL HAVE INTERMITTENT IGNITION DEVICE.

DIVISION 9 - FINISHES

9.1 ALL PLASTERING MATERIALS AND METHODS TO CONFORM TO THE CALIFORNIA BUILDING CODE.

9.2 REFER TO EXTERIOR ELEVATIONS FOR EXTERIOR PLASTER FINISH COAT. INTEGRAL COLOR TO BE APPROVED BY ARCHITECT OR OWNER.

9.3 ALL INTERIOR DRYWALL SHALL BE TAPED, SEALED, FILLED, SANDED AND OTHERWISE PREPARED FOR PAINTING ACCORDING TO THE FINISH SCHEDULE AND ACCORDING

9.4 ALL GALVANIZED METAL SHALL BE NEUTRALIZED AND PRIMED PRIOR TO APPLICATION OF PAINT.

TO THE PUBLISHED STANDARDS OF THE GYPSUM ASSOCIATION.

9.5 KITCHENS, BATHROOMS, SERVICE ROOMS AND OTHER AREAS EXPOSED TO DAMP CONDITIONS SHALL BE PAINTED WITH ENAMEL OR OTHER APPROVED, WASHABLE PRODUCT

9.6 PLASTERED SURFACES ON WALLS, CEILING AND ROOF SOFFITS EXPOSED TO THE WEATHER SHALL HAVE EXTERIOR LATH AND PLASTER CONFORMING TO THE CALIFORNIA BUILDING CODE.

9.7 INSPECTION IS REQUIRED FOR ALL INTERIOR AND EXTERIOR LATH AND/OR DRYWALL BEFORE ANY PLASTER IS APPLIED OR ANY JOISTS AND FASTENERS HAVE BEEN TAPED AND FINISHED.

ALL SHOWERS AND TUBS MUST BE FINISHED WITH WATERPROOF CERAMIC TILE AND GROUT TO A MINIMUM OF 6' ABOVE THE FLOOR, OR BE OF ONE-PIECE FIBERGLASS CONSTRUCTION.

PROVIDE WATER-RESISTANT DRYWALL FINISH BEHIND ALL FIBERGLASS TUBS AND/OR SHOWERS. WHERE FIRE-RESISTIVE CONSTRUCTION ASSEMBLES ARE REQUIRED (I.E. AT PARTY WALLS), THE PROPER DRYWALL FINISH SHALL BE INSTALLED CONTINUOUSLY PRIOR TO THE INSTALLATION OF THE TUB AND/OR SHOWER UNIT. CONTRACTOR SHALL VERIFY DIMENSIONS OF ALL FRAMING TO ENSURE PROPER ALLOWANCE FOR FIXTURES AND FINISHES.

9.10 PROPER FINISH SHALL BE CONTINUOUSLY APPLIED BEHIND ALL OTHER TYPES OF FIXTURES SUCH AS PLUMBING FIXTURES, CABINETS, FURRED SOFFITS, METAL FIREPLACE UNITS, ETC., WHERE FIRE-RESISTIVE CONSTRUCTIONS ARE REQUIRED.

9.11 ONE-HOUR FLOOR/CEILING ASSEMBLIES SHALL BE INSTALLED WITH FINISHES PER DETAILS AT PLAN PRIOR TO THE CONSTRUCTION OF ANY CEILING SOFFITS OR FURRED AREAS. FURRED CEILINGS SHALL BE FRAMED WITH FIRE-RESISTANT TREATED LUMBER OR METAL JOISTS IN THIS CASE. DRAFT STOPS SHALL BE INSTALLED ACCORDING TO THE AREA LIMITATIONS NOTED IN THE CALIFORNIA BUILDING CODE.

9.12 DRAFT STOPS SHALL BE INSTALLED IN ALL ATTIC AREAS AND CONCEALED SPACES ACCORDING TO THE REQUIREMENTS OF THE CALIFORNIA BUILDING CODE.

9.13 CERAMIC TILE AT THE FLOOR OR WALL SURFACES SHALL BE INSTALLED IN ACCORDANCE WITH ANSI SPECIFICATIONS AS DESCRIBED IN THE 'CERAMIC TILE MANUAL,' PUBLISHED BY THE BUILDING NEWS INC., P.O. BOX 3031, TERMINAL ANNEX, LOS ANGELES, CA 90051.

9.14 CONTRACTOR SHALL PROVIDE MINIMUM FIRE-RESISTIVE ASSEMBLIES REQUIRED FOR ALL CHUTES AND SHAFTS NOTED ON PLAN.

9.15 ALL INTERIOR FINISH MATERIALS SHALL MEET CLASS III FLAME SPREAD CLASSIFICATION.

DIVISION 10 - SPECIALTIES

10,1 HARD-WIRED SMOKE DETECTORS OF A TYPE APPROVED BY THE LOCAL FIRE CHIEF SHALL BE INSTALLED AT LOCATIONS NOTED ON THE PLAN.

10.2 CONTRACTOR SHALL YERIFY WITH THE OWNER THE FINAL LOCATIONS OF ALL COMMUNICATIONS OUTLETS SUCH AS TELEPHONE AND TELEVISION CONNECTIONS PRIOR TO FINAL FRAMING INSPECTION.

DIVISION II - EQUIPMENT

II.I CONTRACTOR SHALL CONSULT WITH OWNER REGARDING PROVISIONS FOR FUTURE EXTERIOR AMENITIES INCLUDING STUBBED-OUT GAS LINES FOR WATER, GAS AND ELECTRICITY PRIOR TO ANY FOUNDATION WORK.

DIVISION 14 - CONVEYING SYSTEMS

14.1 CONTRACTOR SHALL PROVIDE SHOP DRAWINGS FOR ANY DUMBWAITERS NOTED ON PLAN. THE ARCHITECT SHALL BE GIVEN AMPLE TIME TO COORDINATE CONSTRUCTION DETAILS FOR THIS EQUIPMENT.

DIVISION 15 - MECHANICAL

15.1 SEE PROJECT ENERGY CALCULATIONS FOR SIZE AND CODE JUSTIFICATION OF ALL CENTRAL HEATING AND COOLING EQUIPMENT. PROVIDE ZONED HEATING AND COOLING.

15.2 ELECTRICAL RESISTANCE HEATING SYSTEMS ARE NOT TO BE USED IN THIS PROJECT.

15.3 ALL TRANSVERSE DUCTS, PLENUM, AND JOINTS SHALL BE SEALED WITH PRESSURE-SENSITIVE TAPE OR MASTIC TO PREVENT AIR LOSS (T20-1405C I, CEC) AND BE INSTALLED ACCORDING TO THE UNIFORM MECHANICAL CODE, AND THE MINIMUM STANDARDS OF THE CEC. CHECK THE ENERGY CALCULATIONS AND THE NOTES AT THE PLAN FOR SPECIFIC GREATER INSULATION REQUIREMENTS AT THE DUCTING.

INSULATE ALL RECIRCULATING HOT-WATER PIPING IN THE ATTIC, GARAGES,
CRAWLSPACES OR OTHER UNHEATED SPACES TO PROVIDE A MAXIMUM HEAT LOSS
OF 50 BTU/HR PER LINEAL FOOT OF PIPING WHERE PIPES ARE SIZED UP TO 2" IN
DIAMETER. 100 BTU/HR PER LINEAL FOOT IS ALLOWED IN PIPING SIZED LARGER THAN
2" IN DIAMETER. (T20-1406D CEC). THE FIVE FEET OF PIPE CLOSEST TO THE WATER
HEATER, IF THE WATER HEATER IS LOCATED OUTSIDE THE CONDITIONED ENVELOPE OF
THE BUILDING SHALL BE INSULATED WITH A MINIMUM OF R-4.

MECHANICAL VENTILATION IN BATHROOMS AND OTHER ENCLOSED ROOMS TO PROVIDE A MINIMUM OF I AIR CHANGE PER 12 MINUTES. ALL FANS AND BLOWER SYSTEMS EXHAUSTING AIR FROM THE BUILDING ENVELOPE SHALL BE FITTED WITH BACKDRAFT DAMPERS PER 120-1403 D2 CEC.

DIVISION 8 - DOORS AND WINDOWS

8.1 ALL SWINGING DOORS AND WINDOWS EXPOSED TO AMBIENT CONDITIONS OR TO UNCONDITIONED AREAS SUCH AS GARAGES OR ATTICS SHALL BE FULLY WEATHER STRIPPED, GASKETED, OR OTHERWISE TREATED TO LIMIT INFILTRATION. ALL MANUFACTURED WINDOWS AND SLIDING GLASS DOORS SHALL MEET THE AIR INFILTRATION STANDARDS OF THE 1972 ANSI (A 134.1, 134.2, 134.3) WHEN TESTED IN ACCORDANCE WITH ASTM E 283-73 WITH A PRESSURE DIFFERENTIAL OF 1.57 #/SQ. FT., AND SHALL BE CERTIFIED AND LABELED BY MANUFACTURER.

8.2 PROVIDE CAULKING OR GASKETING AT JAMBS AND SILL OF ALL EXTERIOR-MOUNTED FIXED GLASS UNITS, AND OTHER PENETRATIONS SUCH AS OPENINGS FOR PIPES AND WIRE CONDUITS TO LIMIT AIR-FILTRATION.

8.3 EXTERIOR DOORS, DOORS BETWEEN HOUSE AND GARAGE, WINDOWS AND THEIR HARDWARE SHALL CONFORM TO THE SECURITY PROVISIONS OF CALIFORNIA BUILDING CODE:

A SINGLE SWINGING DOORS, ACTIVE LEAF OF A PAIR OF DOORS, AND THE BOTTOM LEAF OF DUTCH DOORS SHALL BE EQUIPPED WITH A DEADBOLT AND A LATCH. IF A KEY-LOCKING FEATURE IS INCORPORATED IN THE LATCHING MECHANISM, A DEAD LATCH SHALL BE USED. DEADBOLT SHALL CONTAIN HARDENED INSERTS OR EQUIVALENT, SO AS TO REPEL CUTTING TOOL ATTACK. THE DEADBOLT LOCKS SHALL BE KEY OPERATED FROM THE EXTERIOR SIDE OF THE DOOR AND ENGAGED OR DISENGAGED FROM THE INTERIOR SIDE OF THE DOOR BY A DEVICE NOT REQUIRING A KEY, TOOL OR EXCESSIVE FORCE.

B INACTIVE LEAF OF A PAIR IF DOORS OR UPPER LEAF OF DUTCH DOOR SHALL HAVE DEADBOLT AS PER PARAGRAPH "A" NOT KEY OPERATED, OR HARDENED DEADBOLT TOP AND BOTTOM WITH 1/2" EMBEDMENT.

C SWINGING WOOD DOOR(S) SHALL BE SOLID CORE NOT LESS THAN 1-3/8" THICK.

D PANELS OF WOOD DOORS SHALL BE FABRICATED OF LUMBER NOT LESS THAN 1 3/8" THICK, PROVIDED SHAPED PORTION OF PANELS ARE NOT LESS THAN 1/4" THICK. INDIVIDUAL PANELS SHALL NOT EXCEED 300 SQUARE INCHES IN AREA.

E HOLLOW-CORE DOORS OR DOORS LESS THAN I 3/8" IN THICKNESS EITHER OF WHICH SHALL BE COVERED ON THE INSIDE FACE WITH 16-GAUGE SHEET METAL ATTACHED WITH SCREWS AT 6" MAXIMUM CENTERS AROUND THE PERIMETER.

F DOOR HINGE PINS ACCESSIBLE FROM THE OUTSIDE SHALL BE NON-REMOVABLE.

G DOOR STOPS OF WOOD JAMBS OF IN-SWINGING DOORS SHALL BE ONE PIECE CONSTRUCTION OR JOINED BY A RABBET.

H WINDOWS AND DOOR LIGHTS WITHIN 40" OF THE LOCKING DEVICE OF THE DOOR SHALL BE FULLY TEMPERED/APPROVED BURGLARY RESISTANT/PROTECTED BY BARS, SCREENS OR GRILLS.

OVERHEAD AND SLIDING GARAGE DOORS SHALL BE SECURED WITH A CYLINDER LOCK, PADLOCK WITH A HARDENED STEEL SHACKLE, OR EQUIVALENT WHEN NOT OTHERWISE LOCKED BY ELECTRIC POWER OPERATION. JAMB LOCKS SHALL BE ON BOTH JAMBS FOR DOOR EXCEEDING 9 FEET IN WIDTH.

J SLIDING GLASS DOORS AND SLIDING GLASS WINDOWS SHALL BE CAPABLE OF WITHSTANDING THE TESTS SET FORTH IN SECTION 6706 AND 6707 OF THE LOS ANGELES COUNTY BUILDING CODE AND SHALL BEAR FORCED-ENTRY-RESISTANT LABELS.

8.4 ALL GLASS OVER 6 SQ. FT. AND WITHIN 18 IN. OF FLOORS OR WALKING SURFACES TO BE MINIMUM 3/16" FULLY TEMPERED.

8.5 SHOWER AND TUB ENCLOSURES TO BE 1/32" SHATTERPROOF GLASS OR APPROVED TYPE PLASTIC, IF DOOR SWINGS, IT MUST SWING OUT FROM SHOWER/TUB.

8.6 FIXED GLASS UNITS SHALL BE CUT AND PLACED IN FRAMES WITH PROPER ALLOWANCE FOR EXPANSION

8.7 ALL WOOD FRAMES AND STOPS TO BE BACK-PRIMED PRIOR TO GLAZING TO PREVENT WARPING.

APPLICATION.

8.8 TYPICAL CAULKING COMPOUND TO BE FLEXIBLE TYPE LATEX SUITABLE FOR GUN

BUILDING PAPER PRIOR TO INSTALLATION OF WINDOW AND DOOR UNITS.

8.10 SEE WINDOW AND DOOR CALLOUTS AT FLOOR PLANS FOR SIZE AND TYPE OF

FENESTRATION.

CORROSION-RESISTANT WIRE MESH.

8.9 WRAP ALL JAMBS, HEADS AND SILLS OF WINDOW OPENINGS WITH APPROVED

8.11 OPENING INTO ATTICS, UNDER FLOOR AREAS, AND OTHER ENCLOSED AREAS (OTHER THAN LIVING AREAS) SHALL BE COVERED WITH MINIMUM 1/4" TO 1/2" SPACED

8.12 SKYLIGHTS SHALL BE MANUFACTURED BY "VELLUX" W/ ICBO #NER-216 OR ICBO APPROVED EQUAL, AND SHALL BE FLAT PROFILE WITH 'BRIGHT-WHITE' ACRYLIC GLAZING AT EXTERIOR LIGHT, UNLESS OTHERWISE NOTED IN PLAN. ICBO #2469. SKYLIGHT SHALL COMPLY CALIFORNIA BUILDING CODE.

8.13 ALL EXTERIOR OPENINGS SHALL COMPLY WITH PROVISIONS OF THE CALIFORNIA BUILDING SECURITY CODE.

DIVISION 7 - THERMAL, MOISTURE AND ACOUSTIC PROTECTION

7.1 PROVIDE MINIMUM I LAYER 15# FELT OR EQUIVALENT VAPOR BARRIER UNDER ALL EXTERIOR WALL FINISHES. 2 LAYERS OF 15# FELT IS REQUIRED OVER ALL EXTERIOR WALL PLYWOOD (SHEAR WALLS).

1.2 WHERE ONE-PIECE FIBERGLASS TUB/SHOWERS ARE NOT USED, PROVIDE CEMENT PLASTER-BACKED TILE WALL FINISH TO A MINIMUM OF 6' ABOVE FLOOR LEVEL. PROVIDE PROPERLY WATERPROOFED TILED JAMB AND SILL @ ALL WINDOW SECTIONS ADJACENT TO SHOWERS AND TUBS BELOW 6' HEIGHT.

ALL ROOF FLASHING, SADDLES, GUTTERS, AND DOWNSPOUTS TO BE MINIMUM 26 GA.

1.3 G.I. PAINTED OUT TO MATCH MOUNTING SURFACE WHERE EXPOSED.

7.4 PROVIDE INSULATION BETWEEN ROOF RAFTERS OR CEILING JOISTS OVER ALL HEATED AREAS PER THE ENERGY CALCULATIONS AND BUILDING SECTIONS.

PROVIDE INSULATION BETWEEN STUDS IN ALL EXTERIOR WALLS, IN WALLS SEPARATING HEATED AND NON-HEATED AREAS, PARTY-WALLS, AND BETWEEN JOISTS OVER GARAGE AREAS PER THE ENERGY CALCULATIONS AND BUILDING SECTIONS.

SLOPED ROOF AREAS PITCHED < 4:12 TO BE ROOF WITH MINIMUM 300# / SQUARE
RAYEL OVER 2 LAYERS 30# FELT HOT-MOPPED OVER, UNDER AND BETWEEN WITH
25# ASPHALT, OVER I LAYER 15# FELT DRY SHEET ATTACHED WITH SPRINKLE-NAILING
@ MAXIMUM 18" O.C. TO PLYWOOD SHEATHING. ROOFING TO BE RATED AS CLASS
-FIRE-RETARDANT CONSTRUCTION.

17 SEE DIVISION & BELOW FOR SKYLIGHTS.

1.8 INSULATION USED SHALL: COMPLY WITH CEC QUALITY STANDARDS. AFTER INSTALLING THE INSULATION, THE INSTALLER SHALL POST IN A CONSPICUOUS LOCATION IN THE BUILDING. A CERTIFICATE SIGNED BY THE INSTALLER AND THE BUILDER, WHICH STATES THAT THE INSTALLATION CONFORMS WITH THE REQUIREMENTS OF INSTALLED CONFORM WITH THE REQUIREMENTS OF TITLE 20, CHAPTER 2, SUBCHAPTER 4, ARTICLE 3 OF THE CALIFORNIA CODE. THE CERTIFICATE SHALL STATE THE MANUFACTURER'S VALUE, AND (IN APPLICATIONS OF LOOSE FILL INSTALLATION) THE MINIMUM INSTALLED WEIGHT PER SQ. FT. CONSISTENT WITH THE MANUFACTURER'S LABELED DENSITY FOR THE DESIRED 'R' VALUE.

ALL ROOF DRAINS AT NEAR-FLAT ROOF AREA TO HAVE RAISED SCREENING DEVICES TO PREVENT DRAIN STOPPAGE DUE TO ACCUMULATED DEBRIS. SEE ROOF PLAN FOR LOCATION OF OVERFLOW DEVICES, DOWNSPOUTS AND DRAIN LINES.

1.10 PROVIDE CANT STRIPE OR RIPPINGS AS REQUIRED TO DRAIN AND EASE ALL BENDS IN FELT BUILT-UP ROOFING.

AT GARAGE SIDE OF ALL WALLS SEPARATING GARAGE FROM DWELLING, AND AT CEILING OF GARAGE, PROVIDE FINISHES WHICH COMPLY TO THE REQUIREMENTS FOR ONE-HOUR CONSTRUCTION.

1.12 SEE PLAN FOR ALL FIRE-PROTECTION REQUIREMENTS AT STRUCTURAL STEEL FRAMING. THE FOLLOWING NOTES DEFINE BASIC OPTIONS FOR COMPLIANCE WITH THESE REQUIREMENTS:

COLUMNS

A GYPSUM WALLBOARD: BASE LAYER ½" REGULAR GYPSUM WALLBOARD OR VENEER BASE TIED TO COLUMN WITH 18 GAUGE WIRE @ 15" O.C. OR ATTACHED TO 2X FURRING WHICH HAS BEEN SECURELY FASTENED TO STEEL SURFACE WITH APPROVED FASTENERS. FACE LAYER OF ½" REGULAR GYPSUM WALLBOARD OR VENEER BASE APPLIED WITH LAMINATING COMPOUND OVER ENTIRE CONTACT SURFACE.

PLASTER: 1/8" 1:3 GYPSUM-SAND PLASTER APPLIED TO 3.4# METAL LATH WRAPPED AND WIRE TIED TO COLUMN WITH 18 GAUGE WIRE TIES @ 6" O.C.

'MONOKOTE': MACHINE-APPLIED DIRECT-TO-STEEL FIRE PROTECTIVE MATERIAL

C ACCORDING TO ICBO RR #1578 AND MANUFACTURER'S SPECIFICATIONS (CONSULT WITH ARCHITECT).

BEAMS

GYPSUM WALLBOARD: ATTACH 2X FURRING MEMBERS AT MAXIMUM 16" O.C. TO A FLANGES AND/OR WEB OF STEEL BASE WITH APPROVED CONNECTORS. APPLY CONTINUOUS LAYER OF 5/8" TYPE 'X' GYPSUM BOARD TO FURRING AT SIDES, BOTTOM, AND TOP (WHERE APPLICABLE) WITH 5D COOLER NAILS OR APPROVED EQUIVALENT CONNECTOR. PROTECT OUTSIDE CORNERS WITH 20 GAUGE CORNER BEAD

PLASTER: PORTLAND CEMENT PLASTER ON METAL LATH ATTACHED TO 3"

B COLD-ROLLED CHANNELS WITH #18 GAUGE WIRE TIES SPACED 3" TO 6" O.C. PLASTER MIXED 1:21/2 BY VOLUME, CEMENT TO SAND.EM

'MONOKOTE': MACHINE APPLIED, DIRECT-TO-STEEL FIRE-PROTECTIVE MATERIAL

ACCORDING TO ICBO RR #1518 AND MANUFACTURER'S SPECIFICATIONS (CONTACT

'ZONOLITE' SALES REPRESENTATIVE, OR ARCHITECT).

1.13 HOT MOP SHOWER PAN AFTER LATH AND PLASTER. PROVIDE DRAINAGE VIA 2 IN.
SQ. WEEP HOLES OR EQUIVALENT OPENINGS AT MINIMUM 32" O.C. TO ADJACENT
LOWER GRADE AT ALL SITE RETAINING WALLS NOT ADJACENT TO ENCLOSED BUILDING
AREAS. A PERFORATED DRAIN PIPE AS DESCRIBED IN 2.9 MAY BE USED AS AN
OPTION.

1.14 PENETRATION OR OPENINGS IN THE CONSTRUCTION FOR PIPING ELECTRICAL OUTLETS AND DEVICES, RECESS CABINETS, BATHTUBS, SOFFITS AND HEATING, VENTILATING AND/OR AIR CONDITIONING INTAKE AND EXHAUST DUCTS AND THE LIKE, SHALL BE SEALED, LINED, INSULATED OR OTHERWISE TREATED TO MAINTAIN THE REQUIRED RATING AND SUCH TREATMENT SHALL BE APPROVED BY THE BUILDING OFFICIAL (SEE ACOUSTICAL DETAILS NEXT SHEET). ALL EXTERIOR JOINTS, PENETRATIONS AND OPENINGS IN THE BUILDING ENVELOPE SHALL BE CAULKED AND SEALED.

PROVIDE CORROSION RESISTANT WEEP SCREED AND PLASTER STOP AT FOUNDATION SILL PLATE TO ALLOW WATER TO DRAIN WHERE EXTERIOR FINISH IS PLASTER

1.16 ONE HOUR CONSTRUCTION REQUIRED AT ALL ENCLOSED AREAS BENEATH WOOD-FRAMED STAIRS. MINIMUM I LAYER 5/8" TYPE 'X' GYPSUM BOARD APPLIED ACCORDING TO CALIFORNIA BUILDING CODE.

REVISED

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2019 CALIFORNIA GREEN BUILDING STANDARDS CODE

RESIDENTIAL MANDATORY MEASURES, SHEET 1 (January 2020, Includes August 2019 Supplement)

YES NOT APPLICABLE

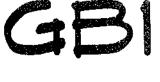
Y N/A RESPON. CHAPTER 3 **GREEN BUILDING SECTION 301 GENERAL** DIVISION 4.4 MATERIAL CONSERVATION AND RESOURCE DIVISION 4.3 WATER EFFICIENCY AND CONSERVATION 4.106.4.2.1.1 Electric Vehicle Charging Stations (EVCS) When EV chargers are installed, EV spaces **EFFICIENCY 301.1 SCOPE.** Buildings shall be designed to include the green building measures specified as mandatory in required by Section 4.106.2.2, Item 3, shall comply with at least one of the following options: the application checklists contained in this code. Voluntary green building measures are also included in the 4.303 INDOOR WATER USE 4.406 ENHANCED DURABILITY AND REDUCED MAINTENANCE application checklists and may be included in the design and construction of structures covered by this code, 1. The EV space shall be located adjacent to an accessible parking space meeting the 4.303.1 WATER CONSERVING PLUMBING FIXTURES AND FITTINGS. Plumbing fixtures (water closets and requirements of the California Building Code, Chapter 11A, to allow use of the EV charger urinals) and fittings (faucets and showerheads) shall comply with the sections 4.303.1.1, 4.303.1.2, 4.303.1.3, but are not required unless adopted by a city, county, or city and county as specified in Section 101.7. 4.406.1 RODENT PROOFING. Annular spaces around pipes, electric cables, conduits or other openings in from the accessible parking space. sole/bottom plates at exterior walls shall be protected against the passage of rodents by closing such 2. The EV space shall be located on an accessible route, as defined in the California Building 301.1.1 Additions and alterations. [HCD] The mandatory provisions of Chapter 4 shall be applied to openings with cement mortar, concrete masonry or a similar method acceptable to the enforcing additions or alterations of existing residential buildings where the addition or alteration increases the Code, Chapter 2, to the building. Note: All noncompliant plumbing fixtures in any residential real property shall be replaced with water-conserving building's conditioned area, volume, or size. The requirements shall apply only to and/or within the plumbing fixtures. Plumbing fixture replacement is required prior to issuance of a certificate of final 4.408 CONSTRUCTION WASTE REDUCTION, DISPOSAL AND RECYCLING **Exception:** Electric vehicle charging stations designed and constructed in compliance with the completion, certificate of occupancy, or final permit approval by the local building department. See Civil specific area of the addition or alteration. California Building Code, Chapter 11B, are not required to comply with Section 4.106.4.2.1.1 and 4.408.1 CONSTRUCTION WASTE MANAGEMENT. Recycle and/or salvage for reuse a minimum of 65 Code Section 1101.1, et seq., for the definition of a noncompliant plumbing fixture, types of residential Note: On and after January 1, 2014, residential buildings undergoing permitted alterations, additions, or percent of the non-hazardous construction and demolition waste in accordance with either Section buildings affected and other important enactment dates. improvements shall replace noncompliant plumbing fixtures with water-conserving plumbing fixtures. 4.408.2, 4.408.3 or 4.408.4, or meet a more stringent local construction and demolition waste Plumbing fixture replacement is required prior to issuance of a certificate of final completion, certificate Note: Electric Vehicle charging stations serving public housing are required to comply with the California 4.303.1.1 Water Closets. The effective flush volume of all water closets shall not exceed 1.28 gallons per management ordinance. of occupancy or final permit approval by the local building department. See Civil Code Section 1101.1, Building Code, Chapter 11B. flush. Tank-type water closets shall be certified to the performance criteria of the U.S. EPA WaterSense et seq., for the definition of a noncompliant plumbing fixture, types of residential buildings affected and Exceptions: Specification for Tank-type Toilets. 4.106.4.2.2 Electric vehicle charging space (EV space) dimensions. The EV space shall be other important enactment dates. designed to comply with the following: Note: The effective flush volume of dual flush toilets is defined as the composite, average flush volume Excavated soil and land-clearing debris. of two reduced flushes and one full flush. 2. Alternate waste reduction methods developed by working with local agencies if diversion or 301.2 LOW-RISE AND HIGH-RISE RESIDENTIAL BUILDINGS. [HCD] The provisions of 1. The minimum length of each EV space shall be 18 feet (5486 mm). recycle facilities capable of compliance with this item do not exist or are not located reasonably 2. The minimum width of each EV space shall be 9 feet (2743 mm). individual sections of CALGreen may apply to either low-rise residential buildings high-rise residential 4.303.1.2 Urinals. The effective flush volume of wall mounted urinals shall not exceed 0.125 gallons per flush. buildings, or both. Individual sections will be designated by banners to indicate where the section applies 3. One in every 25 EV spaces, but not less than one EV space, shall have an 8-foot (2438 mm) 3. The enforcing agency may make exceptions to the requirements of this section when isolated The effective flush volume of all other urinals shall not exceed 0.5 gallons per flush. wide minimum aisle. A 5-foot (1524 mm) wide minimum aisle shall be permitted provided the specifically to low-rise only (LR) or high-rise only (HR). When the section applies to both low-rise and jobsites are located in areas beyond the haul boundaries of the diversion facility. minimum width of the EV space is 12 feet (3658 mm). high-rise buildings, no banner will be used. 4.303.1.3 Showerheads. 4.408.2 CONSTRUCTION WASTE MANAGEMENT PLAN. Submit a construction waste management plan a. Surface slope for this EV space and the aisle shall not exceed 1 unit vertical in 48 units 4.303.1.3.1 Single Showerhead. Showerheads shall have a maximum flow rate of not more than 1.8 in conformance with Items 1 through 5. The construction waste management plan shall be updated as SECTION 302 MIXED OCCUPANCY BUILDINGS horizontal (2.083 percent slope) in any direction. gallons per minute at 80 psi. Showerheads shall be certified to the performance criteria of the U.S. EPA necessary and shall be available during construction for examination by the enforcing agency. WaterSense Specification for Showerheads. 302.1 MIXED OCCUPANCY BUILDINGS. In mixed occupancy buildings, each portion of a building Identify the construction and demolition waste materials to be diverted from disposal by recycling, shall comply with the specific green building measures applicable to each specific occupancy. 4.106.4.2.3 Single EV space required. Install a listed raceway capable of accommodating a 208/240-4.303.1.3.2 Multiple showerheads serving one shower. When a shower is served by more than one reuse on the project or salvage for future use or sale. volt dedicated branch circuit. The raceway shall not be less than trade size 1 (nominal 1-inch inside 2. Specify if construction and demolition waste materials will be sorted on-site (source separated) or showerhead, the combined flow rate of all the showerheads and/or other shower outlets controlled by diameter). The raceway shall originate at the main service or subpanel and shall terminate into a listed a single valve shall not exceed 1.8 gallons per minute at 80 psi, or the shower shall be designed to only bulk mixed (single stream). **ABBREVIATION DEFINITIONS:** cabinet, box or enclosure in close proximity to the proposed location of the EV space. Construction allow one shower outlet to be in operation at a time. Identify diversion facilities where the construction and demolition waste material collected will be Department of Housing and Community Development documents shall identify the raceway termination point. The service panel and/or subpanel shall provide California Building Standards Commission capacity to install a 40-ampere minimum dedicated branch circuit and space(s) reserved to permit 4. Identify construction methods employed to reduce the amount of construction and demolition waste Note: A hand-held shower shall be considered a showerhead. Division of the State Architect, Structural Safety DSA-SS installation of a branch circuit overcurrent protective device. OSHPD Office of Statewide Health Planning and Development 4.303.1.4 Faucets. 5. Specify that the amount of construction and demolition waste materials diverted shall be calculated Low Rise 4.106.4.2.4 Multiple EV spaces required. Construction documents shall indicate the raceway by weight or volume, but not by both. High Rise termination point and proposed location of future EV spaces and EV chargers. Construction documents 4.303.1.4.1 Residential Lavatory Faucets. The maximum flow rate of residential lavatory faucets shall Additions and Alterations shall also provide information on amperage of future EVSE, raceway method(s), wiring schematics and not exceed 1.2 gallons per minute at 60 psi. The minimum flow rate of residential lavatory faucets shall 1.408.3 WASTE MANAGEMENT COMPANY. Utilize a waste management company, approved by the electrical load calculations to verify that the electrical panel service capacity and electrical system, enforcing agency, which can provide verifiable documentation that the percentage of construction and not be less than 0.8 gallons per minute at 20 psi. including any on-site distribution transformer(s), have sufficient capacity to simultaneously charge all EVs demolition waste material diverted from the landfill complies with Section 4.408.1. at all required EV spaces at the full rated amperage of the EVSE. Plan design shall be based upon a 4.303.1.4.2 Lavatory Faucets in Common and Public Use Areas. The maximum flow rate of lavatory **CHAPTER 4** 40-ampere minimum branch circuit. Required raceways and related components that are planned to be faucets installed in common and public use areas (outside of dwellings or sleeping units) in residential Note: The owner or contractor may make the determination if the construction and demolition waste installed underground, enclosed, inaccessible or in concealed areas and spaces shall be installed at the buildings shall not exceed 0.5 gallons per minute at 60 psi. materials will be diverted by a waste management company. RESIDENTIAL MANDATORY MEASURES time of original construction. 4.303.1.4.3 Metering Faucets. Metering faucets when installed in residential buildings shall not deliver 4.408.4 WASTE STREAM REDUCTION ALTERNATIVE [LR]. Projects that generate a total combined DIVISION 4.1 PLANNING AND DESIGN **4.106.4.2.5 Identification.** The service panel or subpanel circuit directory shall identify the overcurrent weight of construction and demolition waste disposed of in landfills, which do not exceed 3.4 more than 0.2 gallons per cycle. protective device space(s) reserved for future EV charging purposes as "EV CAPABLE" in accordance lbs./sq.ft, of the building area shall meet the minimum 65% construction waste reduction requirement in with the California Electrical Code. **SECTION 4.102 DEFINITIONS** 4.303.1.4.4 Kitchen Faucets. The maximum flow rate of kitchen faucets shall not exceed 1.8 gallons per minute at 60 psi. Kitchen faucets may temporarily increase the flow above the maximum rate, but not 4.102.1 DEFINITIONS 4.408.4.1 WASTE STREAM REDUCTION ALTERNATIVE. Projects that generate a total combined The following terms are defined in Chapter 2 (and are included here for reference) to exceed 2.2 gallons per minute at 60 psi, and must default to a maximum flow rate of 1.8 gallons per 4.106.4.3 New hotels and motels. All newly constructed hotels and motels shall provide EV spaces weight of construction and demolition waste disposed of in landfills, which do not exceed 2 pounds capable of supporting future installation of EVSE. The construction documents shall identify the location FRENCH DRAIN. A trench, hole or other depressed area loosely filled with rock, gravel, fragments of brick or similar per square foot of the building area, shall meet the minimum 65% construction waste reduction of the EV spaces. Note: Where complying faucets are unavailable, aerators or other means may be used to achieve requirement in Section 4.408.1 pervious material used to collect or channel drainage or runoff water. 4.408.5 DOCUMENTATION. Documentation shall be provided to the enforcing agency which demonstrates WATTLES. Wattles are used to reduce sediment in runoff. Wattles are often constructed of natural plant materials 4.303.2 STANDARDS FOR PLUMBING FIXTURES AND FITTINGS. Plumbing fixtures and fittings shall be installed compliance with Section 4.408.2, items 1 through 5, Section 4.408.3 or Section 4.408.4... such as hay, straw or similar material shaped in the form of tubes and placed on a downflow slope. Wattles are also 1. Construction documents are intended to demonstrate the project's capability and capacity in accordance with the California Plumbing Code, and shall meet the applicable standards referenced in Table used for perimeter and inlet controls. or facilitating future EV charging. 1701.1 of the California Plumbing Code. 2. There is no requirement for EV spaces to be constructed or available until EV chargers are installed for use. 1. Sample forms found in "A Guide to the California Green Building Standards Code 4.106.1 GENERAL. Preservation and use of available natural resources shall be accomplished through evaluation and careful planning to mínimize negative effects on the site and adjacent areas. Preservation of slopes, (Residential)" located at www.hcd.ca.gov/CALGreen.html may be used to assist in 4.106.4.3.1 Number of required EV spaces. The number of required EV spaces shall be based THIS TABLE COMPILES THE DATA IN SECTION 4.303.1, AND documenting compliance with this section. management of storm water drainage and erosion controls shall comply with this section. on the total number of parking spaces provided for all types of parking facilities in accordance with IS INCLUDED AS A CONVENIENCE FOR THE USER. 2. Mixed construction and demolition debris (C & D) processors can be located at the California Table 4.106.4.3.1. Calculations for the required number of EV spaces shall be rounded up to the 4.106.2 STORM WATER DRAINAGE AND RETENTION DURING CONSTRUCTION. Projects which disturb less Department of Resources Recycling and Recovery (CalRecycle). than one acre of soil and are not part of a larger common plan of development which in total disturbs one acre TABLE - MAXIMUM FIXTURE WATER USE 4.410 BUILDING MAINTENANCE AND OPERATION or more, shall manage storm water drainage during construction. In order to manage storm water drainage 4.410.1 OPERATION AND MAINTENANCE MANUAL. At the time of final inspection, a manual, compact during construction, one or more of the following measures shall be implemented to prevent flooding of adjacent TABLE 4.106.4.3.1 **FIXTURE TYPE** disc, web-based reference or other media acceptable to the enforcing agency which includes all of the property, prevent erosion and retain soil runoff on the site. following shall be placed in the building: TOTAL NUMBER OF PARKING NUMBER OF REQUIRED EV SHOWER HEADS 1.8 GMP @ 80 PSI Retention basins of sufficient size shall be utilized to retain storm water on the site. SPACES (RESIDENTIAL) 1. Directions to the owner or occupant that the manual shall remain with the building throughout the 2. Where storm water is conveyed to a public drainage system, collection point, gutter or similar disposal method, water shall be filtered by use of a barrier system, wattle or other method approved life cycle of the structure. LAVATORY FAUCETS MAX. 1.2 GPM @ 60 PSI 2. Operation and maintenance instructions for the following: by the enforcing agency. MIN. 0.8 GPM @ 20 PSI (RESIDENTIAL) a. Equipment and appliances, including water-saving devices and systems, HVAC systems, 3. Compliance with a lawfully enacted storm water management ordinance. photovoltaic systems, electric vehicle chargers, water-heating systems and other major LAVATORY FAUCETS IN 10-25 0.5 GPM @ 60 PSI Note: Refer to the State Water Resources Control Board for projects which disturb one acre or more of soil, or COMMON & PUBLIC USE AREAS b. Roof and yard drainage, including gutters and downspouts. are part of a larger common plan of development which in total disturbs one acre or more of soil. 1.8 GPM @ 60 PSI KITCHEN FAUCETS c. Space conditioning systems, including condensers and air filters. d. Landscape irrigation systems. (Website; https://www.waterboards.ca.gov/water_issues/programs/stormwater/construction.html) METERING FAUCETS 0.2 GAL/CYCLE 4 3. Information from local utility, water and waste recovery providers on methods to further reduce 4.106.3 GRADING AND PAVING. Construction plans shall indicate how the site grading or drainage system will 1.28 GAL/FLUSH WATER CLOSET 76-100 resource consumption, including recycle programs and locations. manage all surface water flows to keep water from entering buildings. Examples of methods to manage surface 0.125 GAL/FLUSH 4. Public transportation and/or carpool options available in the area. JRINALS water include, but are not limited to, the following: 5. Educational material on the positive impacts of an interior relative humidity between 30-60 percent and what methods an occupant may use to maintain the relative humidity level in that range. Swales 151-200 10 6. Information about water-conserving landscape and irrigation design and controllers which conserve Water collection and disposal systems 6 percent of total 4.304 OUTDOOR WATER USE . Water retention gardens 7. Instructions for maintaining gutters and downspouts and the importance of diverting water at least 5 4,304.1 OUTDOOR POTABLE WATER USE IN LANDSCAPE AREAS. Residential developments shall comply with feet away from the foundation. 5. Other water measures which keep surface water away from buildings and aid in groundwater a local water efficient landscape ordinance or the current California Department of Water Resources' Model Water 4.106.4.3.2 Electric vehicle charging space (EV space) dimensions. The EV spaces shall be designed to Information on required routine maintenance measures, including, but not limited to, caulking, Efficient Landscape Ordinance (MWELO), whichever is more stringent. painting, grading around the building, etc. comply with the following: Information about state solar energy and incentive programs available. Exception: Additions and alterations not altering the drainage path. The minimum length of each EV space shall be 18 feet (5486mm). 10. A copy of all special inspections verifications required by the enforcing agency or this code. 2. The minimum width of each EV space shall be 9 feet (2743mm) 4.106.4 Electric vehicle (EV) charging for new construction. New construction shall comply with Sections 1. The Model Water Efficient Landscape Ordinance (MWELO) is located in the California Code Regulations, 4.410.2 RECYCLING BY OCCUPANTS. Where 5 or more multifamily dwelling units are constructed on a 4.106.4.1, 4.106.4.2, or 4.106.4.3 to facilitate future installation and use of EV chargers. Electric vehicle supply Title 23, Chapter 2.7, Division 2. MWELO and supporting documents, including water budget calculator, are 4.106.4.3.3 Single EV space required. When a single EV space is required, the EV space shall be designed building site, provide readily accessible area(s) that serves all buildings on the site and are identified for the equipment (EVSE) shall be installed in accordance with the California Electrical Code, Article 625. available at: https://www.water.ca.gov/ depositing, storage and collection of non-hazardous materials for recycling, including (at a minimum) paper, in accordance with Section 4.106.4.2.3. corrugated cardboard, glass, plastics, organic waster, and metals, or meet a lawfully enacted local recycling 4.106.4.3.4 Multiple EV spaces required. When multiple EV spaces are required, the EV spaces shall be 1. On a case-by-case basis, where the local enforcing agency has determined EV charging and designed in accordance with Section 4.106.4.2.4. infrastructure are not feasible based upon one or more of the following conditions: Exception: Rural jurisdictions that meet and apply for the exemption in Public Resources Code Section 1.1 Where there is no commercial power supply. 42649.82 (a)(2)(A) et seq. are note required to comply with the organic waste portion of **4.106.4.3.5 Identification.** The service panels or sub-panels shall be identified in accordance with Section 1.2 Where there is evidence substantiating that meeting the requirements will alter the local utility infrastructure design requirements on the utility side of the meter so as to increase the utility side cost to the homeowner or the developer by more than \$400.00 per **4.106.4.3.6** Accessible EV spaces. In addition to the requirements in Section 4.106.4.3, EV spaces for hotels/motels and all EVSE, when installed, shall comply with the accessibility provisions for the EV charging 2. Accessory Dwelling Units (ADU) and Junior Accessory Dwelling Units (JADU) without additional stations in the California Building Code, Chapter 11B. **DIVISION 4.5 ENVIRONMENTAL QUALITY** 4.106.4.1 New one- and two-family dwellings and townhouses with attached private garages. For each **SECTION 4.501 GENERAL** dwelling unit, install a listed raceway to accommodate a dedicated 208/240-volt branch circuit. The raceway DIVISION 4.2 ENERGY EFFICIENCY shall not be less than trade size 1 (nominal 1-inch inside diameter). The raceway shall originate at the main 4.501.1 Scope service or subpanel and shall terminate into a listed cabinet, box or other enclosure in close proximity to the The provisions of this chapter shall outline means of reducing the quality of air contaminants that are odorous, proposed location of an EV charger. Raceways are required to be continuous at enclosed, inaccessible or irritating and/or harmful to the comfort and well being of a building's installers, occupants and neighbors. **4.201.1 SCOPE.** For the purposes of mandatory energy efficiency standards in this code, the California Energy concealed areas and spaces. The service panel and/or subpanel shall provide capacity to install a 40-ampere Commission will continue to adopt mandatory standards. minimum dedicated branch circuit and space(s) reserved to permit installation of a branch circuit overcurrent **SECTION 4.502 DEFINITIONS** 5.102.1 DEFINITIONS The following terms are defined in Chapter 2 (and are included here for reference) **4.106.4.1.1 Identification.** The service panel or subpanel circuit directory shall identify the overcurrent protective device space(s) reserved for future EV charging as "EV CAPABLE". The raceway termination AGRIFIBER PRODUCTS. Agrifiber products include wheatboard, strawboard, panel substrates and door location shall be permanently and visibly marked as "EV CAPABLE". cores, not including furniture, fixtures and equipment (FF&E) not considered base building elements. 4.106.4.2 New multifamily dwellings. If residential parking is available, ten (10) percent of the total number of COMPOSITE WOOD PRODUCTS. Composite wood products include hardwood plywood, particleboard and parking spaces on a building site, provided for all types of parking facilities, shall be electric vehicle charging medium density fiberboard. "Composite wood products" does not include hardboard, structural plywood, spaces (EV spaces) capable of supporting future EVSE. Calculations for the required number of EV spaces shall structural panels, structural composite lumber, oriented strand board, glued laminated timber, prefabricated be rounded up to the nearest whole number. wood I-joists or finger-jointed lumber, all as specified in California Code of regulations (CCR), title 17, Section 1. Construction documents are intended to demonstrate the project's capability and capacity for DIRECT-VENT APPLIANCE. A fuel-burning appliance with a sealed combustion system that draws all air for combustion from the outside atmosphere and discharges all flue gases to the outside atmosphere. 2. There is no requirement for EV spaces to be constructed or available until EV chargers are installed 4.106.4.2.1 Electric vehicle charging space (EV space) locations. Construction documents shall indicate the location of proposed EV spaces. Where common use parking is provided at least one EV space shall be located in the common use parking area and shall be available for use by all residents.

DISCLAIMER: THIS DOCUMENT IS PROVIDED AND INTENDED TO BE USED AS A MEANS TO INDICATE AREAS OF COMPLIANCE WITH THE 2016 CALIFORNIA GREEN BUILDING STANDARDS (CALGREEN) CODE. DUE TO THE VARIABLES BETWEEN BUILDING DEPARTMENT JURISDICTIONS, THIS CHECKLIST IS TO BE USED ON AN INDIVIDUAL PROJECT BASIS AND MAY BE MODIFIED BY THE END USER TO MEET THOSE INDIVIDUAL NEEDS. THE END USER ASSUMES ALL RESPONSIBILITY ASSOCIATED WITH THE USE OF THIS DOCUMENT, INCLUDING VERIFICATION WITH THE FULL CODE.

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4.503.1 GENERAL. Any installed gas fireplace shall be a direct-vent sealed-combustion type. Any installed

4.504.1 COVERING OF DUCT OPENINGS & PROTECTION OF MECHANICAL EQUIPMENT DURING

CONSTRUCTION. At the time of rough installation, during storage on the construction site and until final startup of the heating, cooling and ventilating equipment, all duct and other related air distribution component openings shall be covered with tape, plastic, sheet metal or other methods acceptable to the enforcing agency to

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

pellet stoves and fireplaces shall also comply with applicable local ordinances.

reduce the amount of water, dust or debris which may enter the system.

commencing with section 94507.

Manufacturer's product specification.

2. Field verification of on-site product containers.

ARCHITECTURAL APPLICATIONS

INDOOR CARPET ADHESIVES

OUTDOOR CARPET ADHESIVES

WOOD FLOORING ADHESIVES

RUBBER FLOOR ADHESIVES

SUBFLOOR ADHESIVES

COVE BASE ADHESIVES

CERAMIC TILE ADHESIVES

VCT & ASPHALT TILE ADHESIVES

STRUCTURAL GLAZING ADHESIVES

OTHER ADHESIVES NOT LISTED

SPECIALTY APPLICATIONS

PLASTIC CEMENT WELDING

CONTACT ADHESIVE

TOP & TRIM ADHESIVE

METAL TO METAL

PLASTIC FOAMS

FIBERGLASS

ADHESIVE PRIMER FOR PLASTIC

SPECIAL PURPOSE CONTACT ADHESIVE

STRUCTURAL WOOD MEMBER ADHESIVE

SUBSTRATE SPECIFIC APPLICATIONS

POROUS MATERIAL (EXCEPT WOOD)

PVC WELDING

CPVC WELDING

ABS WELDING

MULTIPURPOSE CONSTRUCTION ADHESIVE

SINGLE-PLY ROOF MEMBRANE ADHESIVES

DRYWALL & PANEL ADHESIVES

CARPET PAD ADHESIVES

management district rules apply:

woodstove or pellet stove shall comply with U.S. EPA New Source Performance Standards (NSPS) emission limits as

4.504.2.1 Adhesives. Sealants and Caulks. Adhesives, sealant and caulks used on the project shall meet the

1. Adhesives, adhesive bonding primers, adhesive primers, sealants, sealant primers and caulks

Such products also shall compty with the Rule 1168 prohibition on the use of certain toxic

2. Aerosol adhesives, and smaller unit sizes of adhesives, and sealant or caulking compounds (in

prohibitions on use of certain toxic compounds, of California Code of Regulations, Title 17,

the ARB Architectural Suggested Control Measure, as shown in Table 4.504.3, unless more stringent local limits

apply. The VOC content limit for coatings that do not meet the definitions for the specialty coatings categories

coating, based on its gloss, as defined in subsections 4.21, 4.36, and 4.37 of the 2007 California Air Resources Board, Suggested Control Measure, and the corresponding Flat, Nonflat or Nonflat-High Gloss VOC limit in

listed in Table 4.504.3 shall be determined by classifying the coating as a Flat, Nonflat or Nonflat-High Gloss

4.504.2.3 Aerosol Paints and Coatings. Aerosol paints and coatings shall meet the Product-weighted MfR

Regulations, Title 17, commencing with Section 94520; and in areas under the jurisdiction of the Bay Area Air

Quality Management District additionally comply with the percent VOC by weight of product limits of Regulation

VOC LIMIT

60

100

50

510

Limits for ROC in Section 94522(a)(2) and other requirements, including prohibitions on use of certain toxic compounds and ozone depleting substances, in Sections 94522(e)(1) and (f)(1) of California Code of

4.504.2.4 Verification. Verification of compliance with this section shall be provided at the request of the

enforcing agency. Documentation may include, but is not limited to, the following:

TABLE 4.504.1 - ADHESIVE VOC LIMIT_{1,2}

(Less Water and Less Exempt Compounds in Grams per Liter)

4.504.2.2 Paints and Coatings. Architectural paints and coatings shall comply with VOC limits in Table 1 of

compounds (chloroform, ethylene dichloride, methylene chloride, perchloroethylene and

tricloroethylene), except for aerosol products, as specified in Subsection 2 below.

shall comply with local or regional air pollution control or air quality management district rules where

applicable or SCAQMD Rule 1168 VOC limits, as shown in Table 4.504.1 or 4.504.2, as applicable.

units of product, less packaging, which do not weigh more than 1 pound and do not consist of more

than 16 fluid ounces) shall comply with statewide VOC standards and other requirements, including

requirements of the following standards unless more stringent local or regional air pollution or air quality

applicable, and shall have a permanent label indicating they are certified to meet the emission limits. Woodstoves,

2019 CALIFORNIA GREEN BUILDING STANDARDS CODE

RESIDENTIAL MANDATORY MEASURES, SHEET 1 (January 2020, Includes August 2019 Supplement)

760

702.1 INSTALLER TRAINING. HVAC system installers shall be trained and certified in the proper

installation of HVAC systems including ducts and equipment by a nationally or regionally recognized training or certification program. Uncertified persons may perform HVAC installations when under the direct supervision and

Examples of acceptable HVAC training and certification programs include but are not limited to the following:

702.2 SPECIAL INSPECTION [HCD]. When required by the enforcing agency, the owner or the

considered by the enforcing agency when evaluating the qualifications of a special inspector:

project they are inspecting for compliance with this code.

shall be closely related to the primary job function, as determined by the local agency.

1. Certification by a national or regional green building program or standard publisher.

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

homes in California according to the Home Energy Rating System (HERS).

[BSC] When required by the enforcing agency, the owner or the responsible entity acting as the owner's agent shall

this code. Special inspectors shall demonstrate competence to the satisfaction of the enforcing agency for the

employ one or more special inspectors to provide inspection or other duties necessary to substantiate compliance with

particular type of inspection or task to be performed. In addition, the special inspector shall have a certification from a recognized state, national or international association, as determined by the local agency. The area of certification

Note: Special inspectors shall be independent entities with no financial interest in the materials or the

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

limited to, construction documents, plans, specifications, builder or installer certification, inspection reports, or other

documentation or special inspection is necessary to verify compliance, that method of compliance will be specified in

methods acceptable to the enforcing agency which demonstrate substantial conformance. When specific

responsible entity acting as the owner's agent shall employ one or more special inspectors to provide inspection or

other duties necessary to substantiate compliance with this code. Special inspectors shall demonstrate competence

to the satisfaction of the enforcing agency for the particular type of inspection or task to be performed. In addition to other certifications or qualifications acceptable to the enforcing agency, the following certifications or education may be

2. Certification by a statewide energy consulting or verification organization, such as HERS raters, building

1. Special inspectors shall be independent entities with no financial interest in the materials or the

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

responsibility of a person trained and certified to install HVAC systems or contractor licensed to install HVAC systems.

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

INSTALLER & SPECIAL INSPECTOR QUALIFICATIONS

CHAPTER 7

702 QUALIFICATIONS

1. State certified apprenticeship programs.

Programs sponsored by manufacturing organizations.

performance contractors, and home energy auditors.

Other programs acceptable to the enforcing agency.

project they are inspecting for compliance with this code.

the appropriate section or identified applicable checklist.

703 VERIFICATIONS

Other programs acceptable to the enforcing agency.

Public utility training programs.

RESPONSIBLE PARTY (ie: ARCHITECT, ENGINEER,

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TABLE 4.504.2 - SEALANT VOC LIMIT MAXIMUM INCREMENTAL REACTIVITY (MIR). The maximum change in weight of ozone formed by adding a compound to the "Base Reactive Organic Gas (ROG) Mixture" per weight of compound added, expressed to (Less Water and Less Exempt Compounds in Grams per Liter) hundredths of a gram (g O3/g ROC). SEALANTS Note: MIR values for individual compounds and hydrocarbon solvents are specified in CCR, Title 17, Sections 94700 VOC LIMIT ARCHITECTURAL MOISTURE CONTENT. The weight of the water in wood expressed in percentage of the weight of the oven-dry wood. MARINE DECK 760 PRODUCT-WEIGHTED MIR (PWMIR). The sum of all weighted-MIR for all ingredients in a product subject to this 300 NONMEMBRANE ROOF article. The PWMtR is the total product reactivity expressed to hundredths of a gram of ozone formed per gram of 250 ROADWAY product (excluding container and packaging). Note: PWMIR is calculated according to equations found in CCR, Title 17, Section 94521 (a). SINGLE-PLY ROOF MEMBRANE 450 REACTIVE ORGANIC COMPOUND (ROC). Any compound that has the potential, once emitted, to contribute to OTHER 420 ozone formation in the troposphere. SEALANT PRIMERS VOC. A volatile organic compound (VOC) broadly defined as a chemical compound based on carbon chains or rings **ARCHITECTURAL** with vapor pressures greater than 0.1 millimeters of mercury at room temperature. These compounds typically contain hydrogen and may contain oxygen, nitrogen and other elements. See CCR Title 17, Section 94508(a). 250 NON-POROUS 775 POROUS

MODIFIED BITUMINOUS

ARE LISTED IN SUBSEQUENT COLUMNS IN THE TABLE.

AVAILABLE FROM THE AIR RESOURCES BOARD.

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

THE CALIFORNIA AIR RESOURCES BOARD, ARCHITECTURAL COATINGS

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

MARINE DECK

OTHER

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

TABLE 4.504.3 - VOC CONTENT LIM	TS FOR
ARCHITECTURAL COATINGS2.3	
GRAMS OF VOC PER LITER OF COATING, LESS	WATER & LESS EXEM
COATING CATEGORY	VOC LIMIT
FLAT COATINGS	50
ION-FLAT COATINGS	100
ONFLAT-HIGH GLOSS COATINGS	150
PECIALTY COATINGS	100
LUMINUM ROOF COATINGS	400
ASEMENT SPECIALTY COATINGS	400
ITUMINOUS ROOF COATINGS	50
TUMINOUS ROOF PRIMERS	350
OND BREAKERS	350
ONCRETE CURING COMPOUNDS	350
ONCRETE/MASONRY SEALERS	100
RIVEWAY SEALERS	
RY FOG COATINGS	150
AUX FINISHING COATINGS	350
RE RESISTIVE COATINGS	350
OOR COATINGS	100
DRM-RELEASE COMPOUNDS	250
RAPHIC ARTS COATINGS (SIGN PAINTS)	500
GH TEMPERATURE COATINGS	420
DUSTRIAL MAINTENANCE COATINGS	250
OW SOLIDS COATINGS	120
AGNESITE CEMENT COATINGS	450
ASTIC TEXTURE COATINGS	100
ETALLIC PIGMENTED COATINGS	500
JLTICOLOR COATINGS	250
V-1-1,	
RETREATMENT WASH PRIMERS	420
RIMERS, SEALERS, & UNDERCOATERS	100
EACTIVE PENETRATING SEALERS	350
ECYCLED COATINGS	250
OOF COATINGS	50
JST PREVENTATIVE COATINGS	250
IELLACS	
.EAR	730
PAQUE	550
PECIALTY PRIMERS, SEALERS & NDERCOATERS	100
TAINS	250
TONE CONSOLIDANTS	450
VIMMING POOL COATINGS	340
RAFFIC MARKING COATINGS	100
JB & TILE REFINISH COATINGS	420
ATERPROOFING MEMBRANES	250
OOD COATINGS	275
OOD PRESERVATIVES	350
NC-RICH PRIMERS	. 340

TABLE 4.504.5 - FORMALDEHYDE L	IMITS₁	
MAXIMUM FORMALDEHYDE EMISSIONS IN PARTS PER MILLION		
PRODUCT	CURRENT LIMIT	
HARDWOOD PLYWOOD VENEER CORE	0.05	
HARDWOOD PLYWOOD COMPOSITE CORE	0.05	
PARTICLE BOARD	0.09	
MEDIUM DENSITY FIBERBOARD	0.11	
THIN MEDIUM DENSITY FIBERBOARD2	0.13	

MEASURE FOR COMPOSITE WOOD AS TESTED IN ACCORDANCE WITH ASTM E 1333. FOR ADDITIONAL INFORMATION, SEE CALIF. CODE OF REGULATIONS, TITLE 17, SECTIONS 93120 THROUGH

2. THIN MEDIUM DENSITY FIBERBOARD HAS A MAXIMUM THICKNESS OF 5/16" (8 MM).

DIVISION 4.5 ENVIRONMENTAL QUALITY (continued)
 4.504.3 CARPET SYSTEMS. All carpet installed in the building interior shall meet the testing and product requirements of at least one of the following:

- 1. Carpet and Rug Institute's Green Label Plus Program.
- 2. California Department of Public Health, "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers" Version 1.1,
- February 2010 (also known as Specification 01350). 3. NSF/ANSI 140 at the Gold level.
- 4. Scientific Certifications Systems Indoor Advantageтм Gold.

4.504.3.1 Carpet cushion. All carpet cushion installed in the building interior shall meet the requirements of the Carpet and Rug Institute's Green Label program.

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

4.504.4 RESILIENT FLOORING SYSTEMS. Where resilient flooring is installed, at least 80% of floor area receiving resilient flooring shall comply with one or more of the following:

- 1. Products compliant with the California Department of Public Health, "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers," Version 1.1, February 2010 (also known as Specification 01350), certified as a CHPS Low-Emitting Material in the Collaborative for High Performance Schools (CHPS) High Performance Products Database.
- 2. Products certified under UL GREENGUARD Gold (formerly the Greenguard Children & Schools program). Certification under the Resilient Floor Covering Institute (RFCI) FloorScore program.
- 4. Meet the California Department of Public Health, "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers", Version 1.1,
- February 2010 (also known as Specification 01350). **4.504.5 COMPOSITE WOOD PRODUCTS.** Hardwood plywood, particleboard and medium density fiberboard composite wood products used on the interior or exterior of the buildings shall meet the requirements for

formaldehyde as specified in ARB's Air Toxics Control Measure for Composite Wood (17 CCR 93120 et seq.), by or before the dates specified in those sections, as shown in Table 4.504.5

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

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

4.505 INTERIOR MOISTURE CONTROL

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

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

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

- 1. A 4-inch (101.6 mm) thick base of 1/2 inch (12.7mm) or larger clean aggregate shall be provided with a vapor barrier in direct contact with concrete and a concrete mix design, which will address bleeding, shrinkage, and curling, shall be used. For additional information, see American Concrete Institute,
- 2. Other equivalent methods approved by the enforcing agency. 3. A slab design specified by a licensed design professional.
- 4.505.3 MOISTURE CONTENT OF BUILDING MATERIALS. Building materials with visible signs of water damage shall not be installed. Wall and floor framing shall not be enclosed when the framing members exceed 19 percent moisture content. Moisture content shall be verified in compliance with the following:
- Moisture content shall be determined with either a probe-type or contact-type moisture meter. Equivalent moisture verification methods may be approved by the enforcing agency and shall satisfy requirements
- 2. Moisture readings shall be taken at a point 2 feet (610 mm) to 4 feet (1219 mm) from the grade stamped end of each piece verified.
- 3. At least three random moisture readings shall be performed on wall and floor framing with documentation acceptable to the enforcing agency provided at the time of approval to enclose the wall and floor framing. Insulation products which are visibly wet or have a high moisture content shall be replaced or allowed to dry prior to enclosure in wall or floor cavities. Wet-applied insulation products shall follow the manufacturers' drying

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

- 1. Fans shall be ENERGY STAR compliant and be ducted to terminate outside the building. 2. Unless functioning as a component of a whole house ventilation system, fans must be controlled by a
- a. Humidity controls shall be capable of adjustment between a relative humidity range less than or equal to 50% to a maximum of 80%. A humidity control may utilize manual or automatic means of
- b. A humidity control may be a separate component to the exhaust fan and is not required to be integral (i.e., built-in)

4.507 ENVIRONMENTAL COMFORT

recommendations prior to enclosure.

- 1. For the purposes of this section, a bathroom is a room which contains a bathtub, shower or 2. Lighting integral to bathroom exhaust fans shall comply with the California Energy Code.
- 4.507.2 HEATING AND AIR-CONDITIONING SYSTEM DESIGN. Heating and air conditioning systems shall be sized, designed and have their equipment selected using the following methods:
- 1. The heat loss and heat gain is established according to ANSI/ACCA 2 Manual J 2011 (Residential Load Calculation), ASHRAE handbooks or other equivalent design software or methods. 2. Duct systems are sized according to ANSI/ACCA 1 Manual D - 2014 (Residential Duct Systems),
- 3. Select heating and cooling equipment according to ANSI/ACCA 3 Manual S 2014 (Residential Equipment Selection), or other equivalent design software or methods.

ASHRAE handbooks or other equivalent design software or methods.

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

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

1. IF AN ADHESIVE IS USED TO BOND DISSIMILAR SUBSTRATES TOGETHER,

THE ADHESIVE WITH THE HIGHEST VOC CONTENT SHALL BE ALLOWED.

DISCLAIMER: THIS DOCUMENT IS PROVIDED AND INTENDED TO BE USED AS A MEANS TO INDICATE AREAS OF COMPLIANCE WITH THE END USER TO MEET THOSE INDIVIDUAL NEEDS. THE END USER ASSUMES ALL RESPONSIBILITY ASSOCIATED WITH THE USE OF THIS DOCUMENT, INCLUDING VERIFICATION WITH THE FULL CODE.

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221-P010260232C-000-000-0000000-0000 CA Building Energy Efficiency Standards - 2019 Residential Compliance

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2019 Low-Rise Residential Mandatory Measures Summary

Building Envelo	pe Measures:
§ 110.6(a)1:	Air Leakage. Manufactured fenestration, exterior doors, and exterior pet doors must limit air leakage to 0.3 CFM per square foot or less when tested per NFRC-400, ASTM E283 or AAMA/WDMA/CSA 101/LS.2/A440-2011.
§ 110.6(a)5:	Labeling. Fenestration products and exterior doors must have a label meeting the requirements of § 10-111(a).
§ 110.6(b):	Field fabricated exterior doors and fenestration products must use U-factors and solar heaf gain coefficient (SHGC) values from Tables 110.6-A, 110.6-B, or JA4.5 for exterior doors. They must be caulked and/or weather-stripped.*
§ 110.7:	Air Leakage, All joints, penetrations, and other openings in the building envelope that are potential sources of air leakage must be caulked, gasketed, or weather stripped.
§ 110.8(a):	Insulation Certification by Manufacturers. Insulation must be certified by the Department of Consumer Affairs, Bureau of Household Goods and Services (BHGS).
§ 110.8(g):	Insulation Requirements for Heated Slab Floors. Heated slab floors must be insulated per the requirements of § 110.3(g).
§ 110.8(i):	Roofing Products Solar Reflectance and Thermal Emittance. The thermal emittance and aged solar reflectance values of the roofing material must meet the requirements of § 110.8(i) and be labeled per §10-113 when the installation of a cool roof is specified on the CF1R.
§ 110.8(j):	Radiant Barrier. When required, radiant barriers must have an emittance of 0.05 or less and be certified to the Department of Consumer Affairs
§ 150.0(a):	Ceiling and Rafter Roof Insulation. Minimum R-22 insulation in wood-frame celling; or the weighted average U-factor must not exceed 0.043. Minimum R-19 or weighted average U-factor of 0.054 or less in a rafter roof alteration. Attic access doors must have permanently attached insulation using adhesive or mechanical fasteners. The attic access must be gasketed to prevent air leakage. Insulation must be installed in direct contact with a continuous roof or ceiling which is sealed to limit infiltration and exfiltration as specified in § 110.7, including but not limited to placing insulation either above or below the roof deck or on top of a drywall ceiling.
§ 150.0(b):	Loose-fill Insulation. Loose fill insulation must meet the manufacturer's required density for the labeled R-value.
§ 150.0(c):	Wall Insulation. Minimum R-13 Insulation in 2x4 inch wood framing wall or have a U-factor of 0.102 or less, or R-20 in 2x6 inch wood framing or have a U-factor of 0.071 or less. Opaque non-framed assemblies must have an overall assembly U-factor not exceeding 0.102. Masonry walls must meet Tables 150.1-A or B.*
§ 150.0(d):	Raised-floor Insulation. Minimum R-19 insulation in raised wood framed floor or 0.037 maximum U-factor."
§ 150.0(f):	Slab Edge Insulation. Slab edge insulation must meet all of the following: have a water absorption rate, for the insulation material alone without facings, no greater than 0.3 percent; have a water vapor permeance no greater than 2.0 perm per inch; be protected from physical damage and UV light deterioration; and, when installed as part of a heated slab floor, meet the requirements of § 110.8(g).
§ 150.0(g)1:	Vapor Retarder. In climate zones 1 through 16, the earth floor of unvented crawl space must be covered with a Class I or Class II vapor retarder. This requirement also applies to controlled ventilation crawl space for buildings complying with the exception to § 159.0(d).
§ 150.0(g)2:	Vapor Retarder. In climate zones 14 and 16, a Class I or Class II vapor retarder must be installed on the conditioned space side of all insulation in all exterior walls, vented attics, and unvented attics with air-permeable insulation.
§ 150.0(q):	Fenestration Products. Fenestration, including skylights, separating conditioned space from unconditioned space or outdoors must have a maximum U-factor of 0.58; or the weighted average U-factor of all fenestration must not exceed 0.58.
Fireplaces, Deco	rative Gas Appliances, and Gas Log Measures:
§ 110.5(e)	Pilot Light. Continuously burning pilot lights are not allowed for indoor and outdoor fireplaces.
§ 150.0(e)1:	Closable Doors. Masonry or factory-built fireplaces must have a closable metal or glass door covering the entire opening of the firebox.
§ 150.0(e)2:	Combustion Intake. Masonry or factory-built fireplaces must have a combustion outside air intake, which is at least six square inches in area and is equipped with a readily accessible, operable, and light-fitting damper or combustion-air control device.
§ 150.0(e)3:	Flue Damper. Masonry or factory-built fireplaces must have a flue damper with a readily accessible control."
Space Condition	ing, Water Heating, and Plumbing System Measures:
	Certification. Heating, ventilation and air conditioning (HVAC) equipment, water heaters, showerheads, faucets, and all other regulated
§ 110.0-§ 110.3:	appliances must be certified by the manufacturer to the California Energy Commission."
§ 110.2(a):	HVAC Efficiency. Equipment must meet the applicable efficiency requirements in Table 110.2-A through Table 110.2-K.
§ 110.2(b):	Controls for Heat Pumps with Supplementary Electric Resistance Heaters. Heat pumps with supplementary electric resistance heaters must have controls that prevent supplementary heater operation when the heating load can be met by the heat pump alone; and in which the cut-on temperature for compression heating is higher than the cut-on temperature for supplementary heating, and the cut-off temperature for compression heating is higher than the cut-off temperature for supplementary heating.
§ 110.2(c):	Thermostats. All heating or cooling systems not controlled by a central energy management control system (EMCS) must have a setback thermostat.
§ 110.3(c)4:	Water Heating Recirculation Loops Serving Multiple Dwelling Units. Water heating recirculation loops serving multiple dwelling units must meet the air release valve, backflow prevention, pump priming, pump isolation valve, and recirculation loop connection requirements of § 110.3(c)4.

Isolation Valves, Instantaneous water heaters with an input rating greater than 6.8 k8tu per hour (2 kW) must have isolation valves with hose bibbs or other fittings on both cold and hot water lines to allow for flushing the water heater when the valves are closed.

Pilot Lights. Continuously burning pilot tights are prohibited for natural gas: fan-type central furnaces; household cooking appliances (except appliances without an electrical supply voltage connection with pilot lights that consume less than 150 Btu per hour); and pool and spa heaters.'

Building Cooling and Heating Loads. Heating and/or cooling loads are calculated in accordance with the ASHRAE Handbook, Equipment Volume, Applications Volume, and Fundamentals Volume; the SMACNA Residential Comfort System Installation Standards Manual; or the ACCA Manual J using design conditions specified in § 150.0(h)2.

§ 150.0(h)3A:	Clearances. Air conditioner and heat pump outdoor condensing units must have a clearance of at least five feet from the outlet of any dryer	
§ 150.0(h)3B;	Liquid Line Drier. Air conditioners and heat pump systems must be equipped with liquid line filter driers if required, as specified by the manufacturer's instructions.	
§ 150.0(j)1:	Storage Tank Insulation. Unfired hot water tanks, such as storage tanks and backup storage tanks for solar water-heating systems, must have a minimum of R-12 external insulation or R-16 internal insulation where the internal insulation R-value is indicated on the exterior of the tank.	
§ 150.0(j)2A:	Water Piping, Solar Water-heating System Piping, and Space Conditioning System Line Insulation. All domestic hot water piping more insulated as specified in Section 609.11 of the California Plumbing Code. In addition, the following piping conditions must have a miniminual insulation wall thickness of one inch or a minimum insulation R-value of 7.7; the first five feet of cold water pipes from the storage tank; all water piping with a nominal diameter equal to or greater than 3/4 inch and less than one inch; all hot water piping with a nominal diameter than 3/4 inch that is: associated with a domestic hot water recirculation system, from the heating source to storage tank or between tanks, buried below grade, and from the heating source to kitchen fixtures."	
§ 150 .0(j)3;	Insulation Protection. Piping insulation must be protected from damage, including that due to sunlight, moisture, equipment maintenance, and wind as required by Section 120.3(b). Insulation exposed to weather must be water retardant and protected from UV light (no adhesive tapes). Insulation covering chilled water piping and refrigerant suction piping located outside the conditioned space must include, or be protected by, a Class I or Class II vapor retarder. Pipe insulation buried below grade must be installed in a waterproof and non-crushable casing or sleeve.	
§ 150.0(n)1:	Gas or Propane Water Heating Systems. Systems using gas or propane water heaters to serve individual dwelling units must include all of the following: A dedicated 125 volt, 20 amp electrical receptacle connected to the electric panel with a 120/240 volt 3 conductor, 10 AWG copper branch circuit, within three feet of the water heater without obstruction. Both ends of the unused conductor must be labeled with the word "spare" and be electrically isolated. Have a reserved single pole circuit breaker space in the electrical panel adjacent to the circuit breaker for the branch circuit and labeled with the words "Future 240V Use"; a Category III or IV vent, or a Type B vent with straight pipe between the outside termination and the space where the water heater is installed; a condensate drain that is no more than two inches higher than the base of the water heater, and allows natural draining without pump assistance; and a gas supply line with a capacity of at least 200,000 Btu per hour.	
§ 150.0(n)2:	Recirculating Loops. Recirculating loops serving multiple dwelling units must meet the requirements of § 110.3(c)5.	
§ 150.0(n)3:	Solar Water-heating Systems. Solar water-heating systems and collectors must be certified and rated by the Solar Rating and Certification Corporation (SRCC), the International Association of Plumbing and Mechanical Officials, Research and Testing (IAPMO R&T), or by a listing agency that is approved by the Executive Director.	
Ducts and Fans	Measures:	
§ 110.8(d)3:	Ducts. Insulation installed on an existing space-conditioning duct must comply with § 604.0 of the California Mechanical Code (CMC). If a contractor installs the insulation, the contractor must certify to the customer, in writing, that the insulation meets this requirement.	
§ 150.0{m}1:	CMC Compliance. Alt air-distribution system ducts and plenums must meet the requirements of the CMC §§ 601.0, 602.0, 603.0, 604.0, 605.0 and ANSI/SMACNA-006-2006 HVAC Duct Construction Standards Metal and Flexible 3rd Edition. Portions of supply-air and return-air ducts and plenums must be insulated to a minimum installed level of R-6.0 or a minimum installed level of R-4.2 when ducts are entirely in conditioned space as confirmed through field verification and diagnostic testing (RA3.1.4.3.8). Portions of the duct system completely exposed and surrounded by directly conditioned space are not required to be insulated. Connections of metal ducts and inner core of flexible ducts must be mechanically fastened. Openings must be sealed with mastic, tape, or other duct-closure system that meets the applicable requirements of UL 181, UL 1818, or UL 1818 or aerosol sealant that meets the requirements of UL 723. If mastic or tape is used to seal openings greater than ¼ inch, the combination of mastic and either mesh or tape must be used. Building cavities, support platforms for air handlers, and plenums designed or constructed with materials other than sealed sheet metal, duct board or flexible duct must not be used to convey conditioned air. Building cavities and support platforms may contain ducts. Ducts installed in cavities and support platforms must not be compressed to cause reductions in the cross-sectional area."	
§ 150.0(m)2:	Factory-Fabricated Duct Systems. Factory-fabricated duct systems must comply with applicable requirements for duct construction, connections, and closures; joints and seams of duct systems and their components must not be sealed with cloth back rubber adhesive duct tapes unless such tape is used in combination with mastic and draw bands.	
§ 150.0(m)3:	Field-Fabricated Duct Systems. Field-fabricated duct systems must comply with applicable requirements for: pressure-sensitive tapes, mastics, sealants, and other requirements specified for duct construction.	
§ 150.0(m)7:	Backdraft Damper. Fan systems that exchange air between the conditioned space and outdoors must have backdraft or automatic dampers.	
§ 150.0(m)8:	Gravity Ventilation Dampers. Gravity ventilating systems serving conditioned space must have either automatic or readily accessible, manually operated dampers in all openings to the outside, except combustion inlet and outlet air openings and elevator shaft vents.	
§ 150.0(m)9:	Protection of Insulation, Insulation must be protected from damage, sunlight, moisture, equipment maintenance, and wind, Insulation exposed to weather must be suitable for outdoor service. For example, protected by aluminum, sheet metal, painted canvas, or plastic cover. Cellular foam insulation must be protected as above or painted with a coating that is water retardant and provides shielding from solar radiation.	
§ 150.0(m)10:	Porous Inner Core Flex Duct. Porous inner core flex ducts must have a non-porous layer between the inner core and outer vapor barrier.	
§ 150.0(m)11:	Duct System Sealing and Leakage Test. When space conditioning systems use forced air duct systems to supply conditioned air to an occupiable space, the ducts must be sealed and duct leakage tested, as confirmed through field verification and diagnostic testing, in accordance with § 150.0(m)11 and Reference Residential Appendix RA3.	
§ 150.0(m)12:	Air Filtration. Space conditioning systems with ducts exceeding 10 feet and the supply side of ventilation systems must have MERV 13 or equivalent filters. Filters for space conditioning systems must have a two inch depth or can be one inch if sized per Equation 150.0-A. Pressure drops and labeling must meet the requirements in §150.0(m)12. Filters must be accessible for regular service.*	
§ 150.0(m)13:	Space Conditioning System Airflow Rate and Fan Efficacy. Space conditioning systems that use ducts to supply cooling must have a hole for the placement of a static pressure probe, or a permanently installed static pressure probe in the supply plenum. Airflow must be ≥ 350 CFM per ton of nominal cooling capacity, and an air-handling unit fan efficacy ≤ 0.45 watts per CFM for gas furnace air handlers and ≤ 0.58 watts per CFM for all others. Small duct high velocity systems must provide an airflow ≥ 250 CFM per ton of nominal cooling capacity, and an air-handling unit fan efficacy ≤ 0.62 watts per CFM. Field verification testing is required in accordance with Reference Residential Appendix RA3.3.*	

	2019 Low-Rise Residential Mandatory Measures Summary
Requirements	for Ventilation and Indoor Air Quality:
§ 150.0(o)1:	Requirements for Ventilation and Indoor Air Quality. All dwelling units must meet the requirements of ASHRAE Standard 62.2, Ventilation and Acceptable Indoor Air Quality in Residential Buildings subject to the amendments specified in § 150.0(o)1.
§ 150.0(o)1C:	Single Family Detached Dwelling Units. Single family detached dwelling units, and attached dwelling units not sharing ceilings or floors with other dwelling units, occupiable spaces, public garages, or commercial spaces must have mechanical ventilation airflow provided at rates determined by ASHRAE 62.2 Sections 4.1.1 and 4.1.2 and as specified in § 150.0(o)1C.
§ 150.0(o)1E:	Multifamily Attached Dwelling Units. Multifamily attached dwelling units must have mechanical ventilation airflow provided at rates in accordance with Equation 150.0-8 and must be either a balanced system or continuous supply or continuous exhaust system. If a balanced system is not used, all units in the building must use the same system type and the dwelling-unit envelope leakage must be ≤ 0.3 CFM at 50 P (0.2 inch water) per square foot of dwelling unit envelope surface area and verified in accordance with Reference Residential Appendix RA3.8.
§ 150.0(o)1F:	Multifamily Building Central Ventilation Systems. Central ventilation systems that serve multiple dwelling units must be balanced to provide ventilation airflow for each dwelling unit served at a rate equal to or greater than the rate specified by Equation 150.0-B. All unit airflows must be within 20 percent of the unit with the lowest airflow rate as it relates to the individual unit's minimum required airflow rate needed for compliance.
§ 150.0(o)1G:	Kitchen Range Hoods. Kitchen range hoods must be rated for sound in accordance with Section 7.2 of ASHRAE 62.2.
§ 150.0(o)2:	Field Verification and Diagnostic Testing. Dwelling unit ventilation airflow must be verified in accordance with Reference Residential Appendix RA3.7. A kitchen range hood must be verified in accordance with Reference Residential Appendix RA3.7.4.3 to confirm it is rated by HVI to comply with the airflow rates and sound requirements as specified in Section 5 and 7.2 of ASHRAE 62.2.
Pool and Spa S	ystems and Equipment Measures:
§ 110.4(a):	Certification by Manufacturers. Any pool or spa heating system or equipment must be certified to have all of the following: a thermal efficiency that complies with the Appliance Efficiency Regulations; an on-off switch mounted outside of the heater that allows shutting off the heater without adjusting the thermostal setting; a permanent weatherproof plate or card with operating instructions; and must not use electric resistance heating.
§ 110.4(b)1:	Piping. Any pool or spa heating system or equipment must be installed with at least 36 inches of pipe between the filter and the heater, or dedicated suction and return lines, or built-in or built-up connections to allow for future solar heating.
§ 110.4(b)2;	Covers. Outdoor pools or spas that have a heat pump or gas heater must have a cover.
§ 110.4(b)3:	Directional Inlets and Time Switches for Pools. Pools must have directional inlets that adequately mix the pool water, and a time switch tha will allow all pumps to be set or programmed to run only during off-peak electric demand periods.
§ 110.5:	Pilot Light. Natural gas pool and spa heaters must not have a continuously burning pilot light.
<u> </u>	Pool Systems and Equipment Installation. Residential pool systems or equipment must meet the specified requirements for pump sizing, flo
§ 150.0(ρ):	rate, piping, filters, and valves.
Lighting Measu	
§ 110.9:	Lighting Controls and Components. All lighting control devices and systems, ballasts, and furninaires must meet the applicable requirement of § 110.9.
§ 150.0(k)1A:	Luminaire Efficacy. All installed luminaires must meet the requirements in Table 150.0-A.
§ 150.0(k)1B:	Blank Electrical Boxes. The number of electrical boxes that are more than five feet above the finished floor and do not contain a luminaire or other device must be no greater than the number of bedrooms. These electrical boxes must be served by a dimmer, vacancy sensor control, or fan speed control.
§ 150,0(k)1C:	Recessed Downlight Luminaires in Ceilings. Luminaires recessed into ceilings must meet all of the requirements for: insulation contact (IC) labeling; air leakage; sealing; maintenance; and socket and light source as described in § 150.0(k)1C.
§ 150.0(k)1D:	Electronic Ballasts for Fluorescent Lamps. Ballasts for fluorescent lamps rated 13 watts or greater must be electronic and must have an output frequency no less than 20 kHz.
§ 150.0(k)1E:	Night Lights, Step Lights, and Path Lights. Night lights, step lights and path lights are not required to comply with Table 150.0-A or be controlled by vacancy sensors provided they are rated to consume no more than 5 watts of power and emit no more than 150 lumens.
§ 150.0(k)1F:	Lighting Integral to Exhaust Fans. Lighting integral to exhaust fans (except when installed by the manufacturer in kitchen exhaust hoods) must meet the applicable requirements of § 150.0(k).
§ 150.0(k)1G:	Screw based luminaires. Screw based luminaires must contain lamps that comply with Reference Joint Appendix JA8.
§ 150.0(k)1H:	Light Sources in Enclosed or Recessed Luminaires. Lamps and other separable light sources that are not compliant with the JA8 elevated temperature requirements, including marking requirements, must not be installed in enclosed or recessed luminaires.
	Light Sources in Drawers, Cabinets, and Linen Closets. Light sources internal to drawers, cabinetry or linen closets are not required to comply with Table 150.0-A or be controlled by vacancy sensors provided that they are rated to consume no more than 5 watts of power, emit n
§ 150.0(k)1]:	more than 150 lumens, and are equipped with controls that automatically turn the lighting off when the drawer, cabinet or linen closet is closed.
	more than 150 lumens, and are equipped with controls that automatically turn the lighting off when the drawer, cabinet or linen closet is closed. Interior Switches and Controls. All forward phase cut dimmers used with LED light sources must comply with NEMA SSL 7A.
§ 150.0(k)2A:	more than 150 lumens, and are equipped with controls that automatically turn the lighting off when the drawer, cabinet or linen closet is closed.
§ 150.0(k)2A: § 150.0(k)2B:	more than 150 lumens, and are equipped with controls that automatically turn the lighting off when the drawer, cabinet or linen closet is closed. Interior Switches and Controls. All forward phase cut dimmers used with LED light sources must comply with NEMA SSL 7A.
§ 150.0(k)11: § 150.0(k)2A: § 150.0(k)2B: § 150.0(k)2C: § 150.0(k)2D:	more than 150 lumens, and are equipped with controls that automatically turn the lighting off when the drawer, cabinet or linen closet is closed. Interior Switches and Controls. All forward phase cut dimmers used with LED light sources must comply with NEMA SSL 7A. Interior Switches and Controls. Exhaust fans must be controlled separately from lighting systems.' Interior Switches and Controls. Lighting must have readily accessible wall-mounted controls that allow the lighting to be manually turned ON and OFF.' Interior Switches and Controls. Controls and equipment must be installed in accordance with manufacturer's instructions.
§ 150.0(k)2A: § 150.0(k)2B: § 150.0(k)2C:	more than 150 lumens, and are equipped with controls that automatically turn the lighting off when the drawer, cabinet or linen closet is closed. Interior Switches and Controls. All forward phase cut dimmers used with LED light sources must comply with NEMA SSL 7A. Interior Switches and Controls. Exhaust fans must be controlled separately from lighting systems.' Interior Switches and Controls. Lighting must have readily accessible wall-mounted controls that allow the lighting to be manually turned ON and OFF.*

§ 150.0(k)2G:	Interior Switches and Controls. An energy management control system (EMCS) may be used to comply with control requirements if it provides functionality of the specified control according to § 110.9; meets the Installation Certificate requirements of § 130.4; meets the
3 100.0(1)20.	EMCS requirements of § 130.0(e); and meets all other requirements in § 150.0(k)2.
§ 150.0(k)2H:	Interior Switches and Controls. A multiscene programmable controller may be used to comply with dimmer requirements in § 150.0(k provides the functionality of a dimmer according to § 110.9, and complies with all other applicable requirements in § 150.0(k)2.
§ 150.0(k)2l:	Interior Switches and Controls. In bathrooms, garages, laundry rooms, and utility rooms, at least one luminaire in each of these space be controlled by an occupant sensor or a vacancy sensor providing automatic-off functionality. If an occupant sensor is installed, it must initially configured to manual-on operation using the manual control required under Section 150.0(k)2C.
§ 150.0(k)2J:	Interior Switches and Controls. Luminaires that are or contain light sources that meet Reference Joint Appendix JA8 requirements for dimming, and that are not controlled by occupancy or vacancy sensors, must have dimming controls."
§ 150.0(k)2K:	Interior Switches and Controls. Under cabinet lighting must be controlled separately from ceiling-installed lighting systems.
§ 150.0(k)3A:	Residential Outdoor Lighting. For single-family residential buildings, outdoor lighting permanently mounted to a residential building, or buildings on the same lot, must meet the requirement in item § 150.0(k)3Ai (ON and OFF switch) and the requirements in either § 150.0(k)3Aii (photocell and either a motion sensor or automatic time switch control) or § 150.0(k)3Aii (astronomical time clock), or an
§ 150.0(k)3B:	Residential Outdoor Lighting. For low-rise residential buildings with four or more dwelling units, outdoor lighting for private patios, entri- balconies, and porches; and residential parking lots and carports with less than eight vehicles per site must comply with either § 150.0(k with the applicable requirements in Sections 110.9, 130.0, 130.2, 130.4, 140.7 and 141.0.
§ 150,0(k)3C:	Residential Outdoor Lighting. For low-rise residential buildings with four or more dwelling units, any outdoor lighting for residential par or carports with a total of eight or more vehicles per site and any outdoor lighting not regulated by § 150.0(k)3B or § 150.0(k)3D must co the applicable requirements in Sections 110.9, 130.0, 130.2, 130.4, 140.7 and 141.0.
§ 150.0(k)4:	Internally illuminated address signs. Internally illuminated address signs must comply with § 140.8; or must consume no more than 5 power as determined according to § 130.0(c).
§ 150.0(k)5:	Residential Garages for Eight or More Vehicles. Lighting for residential parking garages for eight or more vehicles must comply with applicable requirements for nonresidential garages in Sections 110.9, 130.0, 130.1, 130.4, 140.6, and 141.0.
§ 150.0(k)6A:	Interior Common Areas of Low-rise Multifamily Residential Buildings. In a low-rise multifamily residential building where the total common area in a single building equals 20 percent or less of the floor area, permanently installed lighting for the interior common areas building must be comply with Table 150.0-A and be controlled by an occupant sensor.
§ 150.0(k)6B:	interior Common Areas of Low-rise Multifamily Residential Buildings. In a low-rise multifamily residential building where the total in common area in a single building equals more than 20 percent of the floor area, permanently installed lighting for the interior common are that building must: i. Comply with the applicable requirements in Sections 110.9, 130.0, 130.1, 140.6 and 141.0; and ii. Lighting installed in corridors and stainwells must be controlled by occupant sensors that reduce the lighting power in each space by at 150 percent. The occupant sensors must be capable of turning the light fully on and off from all designed paths of ingress and egress.
Solar Ready Bui	
§ 110.10(a)1:	Single Family Residences. Single family residences located in subdivisions with 10 or more single family residences and where the application for a tentative subdivision map for the residences has been deemed complete and approved by the enforcement agency, which do not have a photovoltaic system installed, must comply with the requirements of § 110.10(b) through § 110.10(e).
§ 110.10(a)2:	Low-rise Multifamily Buildings. Low-rise multi-family buildings that do not have a photovoltaic system installed must comply with the requirements of § 110.10(b) through § 110.10(d).
§ 110.10(b)1:	Minimum Solar Zone Area. The solar zone must have a minimum total area as described below. The solar zone must comply with accepathway, smoke ventilation, and spacing requirements as specified in Title 24, Part 9 or other parts of Title 24 or in any requirements add a local jurisdiction. The solar zone total area must be comprised of areas that have no dimension less than 5 feet and are no less than 80 square feet each for buildings with roof areas less than or equal to 10,000 square feet or no less than 160 square feet each for buildings roof areas greater than 10,000 square feet. For single family residences, the solar zone must be located on the roof or overhang of the brand have a total area no less than 250 square feet. For low-rise multi-family buildings the solar zone must be located on the roof or overhang the building, or on the roof or overhang of another structure located within 250 feet of the building, or on covered parking installed with the building project, and have a total area no less than 15 percent of the total roof area of the building excluding any skylight area. The solar requirement is applicable to the entire building, including mixed occupancy.
§ 110.10(b)2:	Azimuth. All sections of the solar zone located on steep-sloped roofs must be oriented between 90 degrees and 300 degrees of true nor
§ 110.10(b)3A:	Shading. The solar zone must not contain any obstructions, including but not limited to: vents, chimneys, architectural features, and roof mounted equipment.
§ 110.10(b)3B:	Shading. Any obstruction located on the roof or any other part of the building that projects above a solar zone must be located at least to distance, measured in the horizontal plane, of the height difference between the highest point of the obstruction and the horizontal project the nearest point of the solar zone, measured in the vertical plane.
§ 110.10(b)4:	Structural Design Loads on Construction Documents. For areas of the roof designated as a solar zone, the structural design loads for dead load and roof live load must be clearly indicated on the construction documents.
§ 110.10(c):	Interconnection Pathways. The construction documents must indicate: a location reserved for inverters and metering equipment and a pathway reserved for routing of conduit from the solar zone to the point of interconnection with the electrical service; and for single family residences and central water-heating systems, a pathway reserved for routing plumbing from the solar zone to the water-heating systems.
§ 110.10(d):	Documentation. A copy of the construction documents or a comparable document indicating the information from § 110.10(b) through
	§ 110.10(c) must be provided to the occupant.
P 440 401 14	
§ 110.10(e)1:	Main Electrical Service Panel. The main electrical service panel must have a minimum busbar rating of 200 amps. Main Electrical Service Panel. The main electrical service panel must have a reserved space to allow for the installation of a double policy.

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".





12/13/2021 R21-1216 SHEET DESCRIPTION

TITLE 24 (CONT.)

T24-2

DIMENSIONING SHALL TAKE PRECEDENCE OVER SCALES SHOWN ON DRAWINGS. TYPICAL DETAILS AND GENERAL NOTES ARE MINIMUM REQUIREMENTS TO BE USED WHEN CONDITIONS ARE NOT SHOWN OTHERWISE.

TYPICAL DETAILS, WHERE NO DETAILS ARE SHOWN CONSTRUCTION SHALL CONFORM TO ALL WORK SHALL CONFORM TO THE MINIMUM STANDARDS OF THE 2019 EDITION OF THE CALIFORNIA BUILDING CODE (CBC), AND ANY OTHER REGULATING AGENCIES WHICH HAVE AUTHORITY OVER ANY PORTION OF THE WORK, INCLUDING THE STATE OF CALIFORNIA DIVISION OF INDUSTRIAL SAFETY, AND THOSE CODES AND STANDARDS LISTED IN THESE

APPROVAL BY THE INSPECTOR DOES NOT CONSTITUTE AUTHORITY TO DEVIATE FROM THE PLANS AND/OR SPECIFICATIONS. ANY DESIGN WHICH FAILS TO BE CLEAR OR IS AMBIGUOUS 📙 MUST BE REFERRED TO THE ENGINEER (GET STRUCTURAL) FOR INTERPRETATION OR CLARIFICATION.

SEE ARCHITECTURAL, ELECTRICAL AND MECHANICAL DRAWINGS FOR PITS, TRENCHES, ROOF OPENINGS, DEPRESSIONS ETC. NOT SHOWN ON STRUCTURAL DRAWINGS. VIBRATION EFFECTS OF MECHANICAL EQUIPMENT HAVE NOT BEEN CONSIDERED BY

THE DESIGN ADEQUACY AND SAFETY OF ERECTION BRACING, SHOKING, TEMPORARY SUPPORTS, ETC. IS SOLE RESPONSIBILITY OF THE CONTRACTOR, AND HAS NOT BEEN CONSIDERED BY THE ENGINEER (GET STRUCTURAL). THE CONTRACTOR IS RESPONSIBLE FOR THE STABILITY OF THE STRUCTURE PRIOR TO THE APPLICATION OF ALL SHEAR WALLS, ROOF AND FLOOR DIAPHRAGMS AND FINISH MATERIALS. HE/SHE SHALL PROVIDE THE NECESSARY BRACING TO PROVIDE STABILITY PRIOR TO THE APPLICATION OF THE AFOREMENTIONED MATERIALS. STRUCTURAL OBSERVATION JOBSITE VISITS BY THE ENGINEER SHALL NOT INCLUDE INSPECTION OF THE ABOVE ITEMS.

CONTRACTOR SHALL INVESTIGATE SITE DURING CLEARING AND EARTHWORK OPERATIONS FOR FILLED EXCAVATIONS OR BURIED STRUCTURES SUCII AS CESSPOOLS, CISTERNS, FOUNDATIONS, ETC. IF ANY SUCII STRUCTURES ARE FOUND, THE ENGINEER (GET STRUCTURAL) AND THE ARCHITECT SHALL BE NOTIFIED IMMEDIATELY.

CONSTRUCTION MATERIALS SHALL BE SPREAD OUT IF PLACED ON FRAMED FLOORS OR ROOF, LOAD SHALL NOT EXCEED THE DESIGN LIVE LOAD PER SQUARE FOOT, PROVIDE ADEQUATE SHORING AND/OR BRACING WHERE STRUCTURE HAS NOT ATTAINED DESIGN STRENGTH.

CONSTRUCTION DOCUMENTS IDENTIFIED AS "BID SET" ON ANY OR ALL SHEETS MAY BE SUBJECT TO REVIEW. THIS REVIEW MAY RESULT IN CHANGES WHICH MAY BE MADE TO THE PLANS PRIOR TO THE ISSUANCE OF THE FINAL CONSTRUCTION SET WHICH WILL CONTAIN NO "BID SET" DESIGNATIONS, CONSTRUCTION DOCUMENTS IDENTIFIED AS "BID SET" ARE NOT CONSTRUED AS BEING THE COMPLETED OR FINAL DRAWINGS AND THEY SHOULD NOT

ALL GUARD AND HANDRAILS SHALL BE DESIGNED TO WITHSTAND A POINT LOAD OF 200 POUNDS APPLIED IN ANY DIRECTION AND AT ANY POINT TO TOP RAIL. A 50 PLF LOAD IS REQUIRED AT 3-STORY AND MULTI-FAMILY PROJECTS. IF OCCUPANT LOAD IS LESS THAN 50,

THESE PLANS ARE INTENDED SOLELY FOR THE USE OF THE OWNER FOR CONSTRUCTION AND ARE EXPRESSLY NOT INTENDED FOR USE IN MARKETING, EXTERIOR ELEVATIONS AND OTHER DETAILS ON THESE PLANS ARE ONLY A REPRESENTATION AND MAY VARY SIGNIFICANTLY FROM THE ACTUAL CONSTRUCTION.

SLAB-ON-GRADE REQUIREMENTS TO BE PER THE SOIL ENGINEERS RECOMMENDATIONS SOLELY, U.N.O. THE SLAB-ON-GRADE IS A NON-STRUCTURAL ITEM AND THEREFORE HAS NOT BEEN DESIGNED BY THE STRUCTURAL ENGINEER, UNLESS NOTED OTHERWISE. IN THE EVENT OF CONFLICT BETWEEN THE ARCHITECTURAL GENERAL NOTES AND THE STRUCTURAL GENERAL NOTES (SHT SGN), THE MORE STRINGENT REQUIREMENT SHALL GOVERN.

REINFORCING STEEL

ALL REINFORCING SHALL BE ASTM A-615 GRADE 40 FOR #4 BARS AND SMALLER. ALL REINFORGING SHALL BE ASTM A-615 GRADE 60 FOR #5 BARS AND LARGER. WELDED WIRE FABRIC TO BE ASTM A-185, LAP 1-1/2 SPACES, 9" MIN. FOR STRUCTURAL SLABS ALL REINFORCING #5 AND LARGER TO BE ASTM A-615 GRADE 60 ALL BARS SHALL BE DEFORMED AS PER ASTM A615 / A615M.

ALL BARS SHALL BE CLEAN OF LOOSE FLAKY RUST, GREASE OR OR OTHER MATERIALS LIKELY TO IMPAIR BOND. ALL BENDS SHALL BE MADE COLD

SPLICING OF #3-#6 BARS SHALL HAVE A MIN. LAPPING OF 30 DIA. OR 2'-0" MIN. IN ALL CONTINUOUS REINFORCEMENT OF FOOTINGS AND CONCRETE WALLS, EXCEPT AS NOTED ON PLANS, MASONRY REINFORCEMENT SHALL HAVE LAPPINGS OF 40 DIA, FOR GRADE 40 AND 48 DIA. FOR GRADE 60 OR 2'-0" MIN., U.N.O.

POURING CONCRETE.

ALL REINFORCING BARS SHALL BE ACCURATELY AND SECURELY PLACED BEFORE

CONCRETE PROTECTION FOR REINFORCEMENT SHALL BE AT LEAST EQUAL TO THE DIAMETER OF THE BARS, COVER SHALL BE AS FOLLOW:

CONCRETE MASONRY A. POURED AGAINST EARTH

B. POURED AGAINST FORM BELOW GRADE #6 AND LARGER #5 AND SMALLER C. FORMED SLABS D. SLABS ON GRADE (FROM TOP OF SLAB) E. COLUMNS AND BEAMS TO MAIN BARS F. WALLS EXPOSED TO WEATHER NOT EXPOSED TO WEATHER, #11 AND SMALLER

#14 AND #18

FOUNDATION/SITEWORK

ALL SITE PREPARATION, EXCAVATION AND COMPACTION SHALL BE DONE UNDER THE SUPERVISION OF THE LICENSE CONTRACTOR AND THE SOIL ENGINEER (IF APPLICABLE) SEPARATE PERMITS SHALL BE OBTAINED FOR ALL FENCES, PLANTERS AND WALLS, AS

PROVIDE NON-EXPANSIVE FILL AS REQUIRED TO LEVEL PAD. SURFACE WATER WILL DRAIN AWAY FROM BUILDING, DRAINAGE SHALL BE 2% (MIN.) FROM BUILDING TO SWALE LINE. SWALE SHALL DRAIN AT 1% (MIN.) FROM REAR OF

BUILDING TO STREET THERE SHALL BE NO UTILITY TRENCH NEAR THE BUILDING FOUNDATION WHICH EXTEND DEEPER THAN A 45 DEGREE LINE PROJECTED DOWN AND AWAY FROM THE BOTTOM OUTSIDE CORNER OF ANY FOOTING.

SLAB SUBGRADE REQUIREMENTS ARE NOT WITHIN THE SCOPE OF WORK AND/OR LIABILITY OF ENGINEER OF RECORD (GET STRUCTURAL). ALL HOLDOWN ANCHORS, POST BASES AND HOLDOWN BOLTS SHALL BE TIED INTO PLACE

PRIOR TO FOUNDATION INSPECTION. PLACE 20'-0" REBAR IN FOUNDATION AT SERVICE LOCATIONS. STUB UP REBAR ABOVE THE FLOOR BY ELECTRIC SERVICE METERS.

FOR THE LOCATION OF CONTROL JOINTS, REFER TO THE FOUNDATION PLAN. (ZIP STRIP OR EQUAL). MINIMUM OF 20'-0" O.C. EACH WAY IS RECOMMENDED. DRIVEWAY PAVING SHALL BE 4" PORTLAND CEMENT CONCRETE (5 SACKS MIN.), U.N.O. FOR POST-TENSION SLAB, REFER TO APPROVED PLANS PREPARED BY OTHERS (WHEN

MINIMUM SLAB REINFORCEMENT AND PAD REQUIREMENT SHALL CONFORM TO THE LOCA ALLI REQUIREMENTS OR THE SOILS ENGINEER'S RECOMMENDATIONS (IF APPLICABLE)

CONCRETE

ALL CONCRETE SHALL CONFORM TO THE LATEST EDITION OF THE CALIFORNIA RESIDENTIAL CODE (CRC 2019) CONCRETE SHALL CONFORM TO "EXPOSURE CLASS" REQUIREMENTS OF ACI 318-14 REFER TO SOILS REPORT FOR

FREEZING THAWING NOTES AND DETAILS ON DRAWINGS SHALL TAKE PRECEDENCE OVER GENERAL NOTES AND ADDITIONAL REQUIREMENTS EXPOSURE ACI 318-14 TABLE 19.3

REQUIREMENTS FOR CONCRETE BY EXPOSURE CLASS

CEMENTIFIOUS MATERIAL TYPE² CALCIUM (PSI) V¹ (P(HS), IS(+70), (HS) IIS NOT PERMITTED 0.45 4.500 V-POZZOLAN or SLAG⁵ Pribs-trozonslag⁵ IIS+POZZOLAN or SLAG³ NOT PERMITTED LOW PERMEABILITY

EXPOSURE MAX. CLASS W C¹ ADDITIONAL REQUIREMENTS (PSI)

EXPOSURE MAX. MIN. Fe CLASS W C¹ (PSI) MAX. CHLORIDE ION CONTLINE **BY WT.*

REINFORCED CONC. PRESTRESSED CONC. PROVISIONS

FOR LIGHT WEIGHT CONCRETE, SEE ACT318-14, SECTION 19.2.4.2

ALTERNATIVE COMBINATIONS OF CEMENTITIOUS MATERIAL OF THOSE LISTED IN TABLE 19.3.2.1 SHALL BE PERMITTED WHEN TESTED FOR SULFATE RESISTANCE AND MEETING THE CRITERIA IN SECTION 19.3.1.1 FOR SEAWATER EXPOSURE, OTHER TYPES OF PORTLAND CEMENTS WITH TRICALCIUM ALUMINATE (C.A.) CONTENTS UP TO 10% ARE PERMITTED IF THE WICIDOES NOT EXCEED 0.40

OTHER AVAILABLE TYPES OF CEMENT SUCH AS TYPE III OR TYPE I ARE PERMITTED IN EXPOSURE CLASSES ST or \$2 IF C3A CONTENTS ARE LESS THAN 8% or 5%. RESPECTIVELY THE AMOUNT OF THE SPECIFIC SOURCE OF POZZOLAN OF SLAG TO BE USED SHALL NOT BE LESS THAN THE AMOUNT DETERMINED BY SERVICE RECORD TO IMPROVE SULFATE RESISTANCE WHEN USED IN CONCRETE CONTAINING TYPE VICEMENT, ALT: THE AMOUNT OF THE SPECIFIC SOURCE OF THE POZZOLAN of SLAG TO BE

TISED SHALL NOT BE LESS THAN THE AMOUNT TESTED PER ASTMICTOR AND MEETING CRITERIA OF ACLUIDADA SECTION 19.3.1.1 WATER SOLUBLE CITLORIDE ION CONTENT THAT IS CONTRIBUTED FROM THE INGREDIENTS INCLUDING WATER, AGGREGATES, CEMENT AND ADMIXTURES SHALL BE DETERMINED PER ASTM C1218 BETWEEN 28 AND

ALL CEMENT SHALL CONFORM TO ASTM C-150, C-595 OR C-1157. USE CEMENT TYPE TYPE II FINE AND COARSE AGGREGATE SHALL CONFORM TO ASTM C-33 FOR STANDARD WEIGHT CONCRETE AND ASTM C-330 FOR LIGHTWEIGHT CONCRETE.

CONCRETE FOR SLAB-ON-GRADE SHALL HAVE A MAX. SLUMP OF 5" PER ASTM C-143 AND MAX. SLUMP OF 4" FOR FOOTINGS AND GRADE BEAMS, U.N.O. READY-MIX CONCRETE SHALI BE MIXED AND DELIVERED PER ASTM C-94. DRYPACK SHALL BE COMPOSED OF ONE PART PORTLAND CEMENT TO NOT MORE THAN

THREE PARTS SAND. ANCHOR BOLTS, HOLDOWN BOLTS, DOWELS, INSERTS, ETC. SHALL BE SECURED INTO PLACE AND INSPECTED PRIOR TO POURING CONCRETE.

CONCRETE SHALL BE CURED BY KEEPING CONTINUOUSLY WET FOR 10-DAYS OR BY AN APPROVED CURING COMPOUND. REFER TO ARCHITECTURAL, MECHANICAL, ELECTRICAL AND PLUMBING DRAWINGS FOR

MISCELLANEOUS ITEMS TO BE CAST INTO CONCRETE AND FLOOR STEPS, DEPRESSIONS, PITS, CURBS, ETC.

SEE ARCHITECTURAL DRAWINGS FOR LOCATIONS OF EXPANSION JOINTS, A/C PADS, SCORING, ETC. FOR CONCRETE WALKS AND SLABS.

 ALL STRUCTURAL CONCRETE $F_e = 2500 \text{ PS}$ ALL SLAB-ON-GRADE $T_e = 2500 \text{ PSI}$ ALL CONTINUOUS FOOTINGS AND PADS - f'e = 2500 PS!

ALL CONCRETE SHALL REACH MINIMUM COMPRESSIVE STRENGTH 28 - DAYS (MIN. W/C

SIMPSON ICC - ESR REPORTS

ESR-1056 TITEN HD SCREW ANCHOR

ESR-1161 CONTINUOUS ROD TIE-DOWN SYSTEM UTILIZING URS UPLIFT ROD RUNS ESL-1168 SET-3G EPOXY ADHESIVE ANCHORS IN CRACKED AND UNCRACKED CONCRETE

ESR-1267 STRONG-WALL SHEAR PANELS ESR-1396 WEDGE-ALL ANCHORS ESR-1472 WSNTL WOOD SCREWS

ESR-1622 POST BASE CONNECTORS FOR WOOD CONSTRUCTION

ESR-1679 STEEL STRONG-WALL SHEAR PANELS ESR-1772 SET EPOXY

ESR-1958 ACRYLIC-TIE ADHESIVE ANCHOR SYSTEM

ESR-2105 STRAPS ESR-2138 POWDER-ACTUATED FASTENERS, THREADED STUDS AND ASSEMBLIES

ESR-2236 STRONG-DRIVE SDS SCREWS ESR-2320 COUPLING TAKE-UP DEVICE (CTUD), TAKE-UP DEVICE (TUD AND ATUD),

RATCHETING TAKE-UP DEVICE (RTUD), AND TAKE-UP WASHER (TUW) ESR-2330 SCREW HOLD-DOWN (HOLDOWN) CONNECTORS ESR-2508 ALSO EN ESPAOL SET-XP EPOXY ADHESIVE ANCHORS FOR CRACKED AND

UNCRACKED CONCRETE INDEX OF SIMPSON STRONG-TIE STAMPED AND WELDED COLD-FORMED STEEL PRODUCTS FOR WOOD OR COLD-FORMED STEEL CONSTRUCTION ESR-2549 FACE-MOUNT HANGERS FOR WOOD FRAMING

ESR-2551 ADJUSTABLE HANGERS AND HIP CONNECTORS FOR WOOD FRAMING ESR-2552 FACE-MOUNT HANGERS SUPPORTING ENGINEERED WOOD PRODUCTS (STRUCTURAL COMPOSITE LUMBER [SCL], PREFABRICATED WOOD I-JOISTS AND GLULAM BEAMS)

ESR-2553 TOP-FLANGE HANGERS FOR SAWN LUMBER ESR-2555 MASA MASAP CAST-IN-PLACE FOUNDATION ANCHOR STRAPS ESR-2604 COLUMN CAPS FOR WOOD CONSTRUCTION

ESR-2605 CONNECTORS FOR METAL PLATE CONNECTED WOOD TRUSS CONSTRUCTION ESR-2607 CONNECTORS FOR PANELIZED ROOF CONSTRUCTION ESR-2608 STUD SHOES, PLATE TIES, WALL BRACING, AND JOIST BRIDGING FOR WOOD

CONSTRUCTION ESR-2611 SSTB SERIES AND SB SERIES CAST-IN-PLACE ANCHOR BOLTS ESR-2613 HURRICANE AND SEISMIC STRAPS AND TIES FOR WOOD FRAMING

ESR-2615 TOP-FLANGE HANGERS FOR ENGINEERED WOOD PRODUCTS (EWP) ESR-2616 CONNECTORS ATTACHING WOOD MEMBERS TO CONCRETE CONSTRUCTION ESR-2652 STRONG-WALL WOOD SHEARWALL PANELS (WSWS) STRONG-WALL SB SHEARWALL

PANELS (SWSBS) ESR-2705 TORQ-CUT SELF-UNDERCUTTING ANCHORS FOR CRACKED AND UNCRACKED CONCRETE

ESR-2713 ALSO EN ESPAOL TITEN HD SCREW ANCHOR AND TITEN HD ROD HANGER FOR CRACKED AND UNCRACKED CONCRETE

ESR-2762 METAL CONNECTOR PLATES FOR WOOD TRUSSES; AS-20 AND AS-18-HS ESR-2802 STRONG FRAME SPECIAL MOMENT FRAME

ESR-2811 GDP AND GDPS GAS-ACTUATED FASTENERS SER-2877 WOOD FRAMING CONNECTORS FOR MASONRY CONSTRUCTION ESR-2920 CAST-IN-PLACE STRAP STYLE HOLDOWNS AND PURLIN ANCHORS IN CONCRETE

ESR-3006 STRONG-DRIVE X AND FPHSD SELF-DRILLING TAPPING SCREWS ESR-3037 ALSO EN ESPAOL STRONG-BOLT 2 WEDGE ANCHOR

ESR-3046 STRONG-DRIVE SD AND SDWF SERIES SCREWS ESR-3050 EMBEDDED COLUMN BASES IN CONCRETE

ESR-3096 CONNECTORS USING SD-SERIES SCREWS ESR-3372 ALSO EN ESPAOL ET-HP EPOXY ADHESIVE ANCHORS FOR CRACKED AND UNCRACKED CONCRETE

ESR-3403 ALSO EN ESPAOL COMPOSITE STRENGTHENING SYSTEMS (CSS) ESR-3638 ET-HP ADHESIVE ANCHOR SYSTEMS FOR UNREINFORCED BRICK MASONRY ESR-3707 BLUE BANGER HANGER CAST-IN-PLACE, INTERNALLY THREADED INSERTS IN

CRACKED AND UNCRACKED CONCRETE ESR-4057 SET-3G EPOXY ADHESIVE ANCHORS IN CRACKED AND UNCRACKED CONCRETE ESR-4208 PPSD AND CBSDQ SELF-DRILLING TAPPING SCREWS

LUMBER/CARPENTRY

ALL STRUCTURAL SAWN LUMBER SHALL BE GRADED BY ONE OF THE FOLLOWING: W.C.L.I.B., W.W.P.A., N.L.G.A, or PS 20.

ALL WOOD BEARING ON CONCRETE OR MASONRY SHALL BE PRESSURE TREATED DOUGLAS FIR (PTDF), U.N.O

HOLES FOR BOLTS SHALL BE BORED WITH A BIT 1/32" TO 1/16" LARGER THAN THE NOMINAL BOLT DIAMETER

ALL BOUTS SHALL BE RE-TIGHTENED PRIOR TO APPLICATION OF FINISH MATERIALS (PLYWOOD,

PLASTER, DRYWALL, INSULATION, ETC.) STRUCTURAL MEMBERS SHALL NOT BE CUT FOR PIPES, ETC. UNLESS SPECIFICALLY NOTED OR DETAILED, CONTACT ENGINEER IF NOT SHOWN.

2X SOLID BLOCKING SHALL BE PLACED BETWEEN JOISTS AND/OR RAFTERS AT ALL SUPPORTS, EXCEPT WHEN LEDGERED (U.N.O.) CROSS-BRIDGING SHALL BE PROVIDED AT 8'-0" O.C. MAX. FOR ALL 2X FLOOR JOISTS OVER 10" IN DEPTH AND ALL 2X ROOF RAFTERS OVER 10" DEPTH. USE SOLID BLOCKING OR AN APPROVED

METAL TYPE BRIDGING. ALL STRUCTURAL PLYWOOD SHALL BE A.P.A. RATED SHEATHING (OR OSB) EXPOSURE 1 OR EXTERIOR UNLESS NOTED OTHERWISE AND CONFORM TO DOC PS1 OR PS2. EACH SHEET SHALL

BE IDENTIFIED BY GRADE MARK OF D.F.P.A. OR A.P.A. ALL BOLTS BEARING ON WOOD SHALL HAVE STANDARD CUT WASHERS UNDER HEAD AND NUT UNLESS NOTED OTHERWISE

ALL METAL ANCHORS, FASTENERS AND CONNECTORS ETC. SHALL BE FROM "SIMPSON STRONG-TIE" (TM), SUBSTITUTIONS MUST BE ICC-ESR PRODUCTS AND PRE-APPROVED IN

WRITING BY ENGINEER (GET STRUCTURAL). ALL STRUCTURAL LUMBER SHALL BE DOUGLAS FIR-LARCH (OR BTR.), 19% MAX. MOISTURE CONTENT, OF THE FOLLOWING GRADES, U.N.O.:

2X4 STUDS (UP TO 10') "STANDARD" OR BETTER NO.2 OR BETTER 2X4 STUDS (OVER 10') "CONSTRUCTION GRADE" OR BETTER 2X PLATES & 3X PLATES NO.2 2X JOIST NQ.2 BEAMS AND STRINGERS

NO.2 4X10 AND SMALLER 4X12 AND LARGER NO.L 6X AND 8X NO.T 4x POST/TIMBERS AND LARGER ROOF PLANKING AND DECKING COM.DEX. BOARD SHTG. AND STRIPPING

SUITABLE FOR INTENDED USE.

2018 NDS STRESS VALUES FOR DOUGLAS FIR-LARCH

		ŞI	NGLE/REPTITIVE	
2X4	#2:	$F_b =$	1350/1552 PSI	; Fv=180 PSI, E=1.6x10 ⁶
2X6	#2;	$F_b =$	1170/1345 PSI	
2X8	#2:	$F_b =$	1080/1242 PSI	
2X10	#2:	F _b =	990/1138 PSI	
2X12	#2:	$F_b =$	900/1150 PSI	
2X14	#2:	$F_b =$	810/931 PSI	
4X4	#2:	$F_b =$	1350 PSI	
4X6	#2:	$F_b =$	1170 PSI	
4X8	#2:	F_{b}	1170 PSI	
4X10	#2:	$F_b =$	1080 PSI	_
4X12	#I:	$F_b =$	1100 PSI	; Fv = 180 PSI, $E = 1.7 \times 10^6$
4X14	#1:	$F_b =$	1000 PSI	
4X16	#I:	$F_b =$	1000 PSI	
6X10	#1:	$F_b =$	1350 PSI	; $Fv=170 PS1$, $E=1.6x10^6$
6X12	#1:	$F_b =$	1350 PSI	

. ALL NAILING TO BE PER TABLE NUMBER 2304.9.1 OF THE LATEST CALIFORNIA BUILDING CODE (CBC), UNLESS NOTED OTHERWISE. . PLY WOOD FLOOR AND ROOF SHEATHING SHALL BE LAID CONTINUOUS OVER TWO OR MORE

SUPPORTS WITH FACE GRAIN PERPENDICULAR TO SUPPORTS (UNLESS SHOWN OTHERWISE). STAGGER ALL PLYWOOD PANELS A MINIMUM OF 4'-0".

. FLOOR SHEATHING TO BE NAILED AND GLUED TO THE JOISTS. USE ADHESIVES PER A.P.A. AFG-01 OR ASTM D3498.

FRAMING CONTRACTOR SHALL PROVIDE BACKING AS REQUIRED FOR ALL LIGHT FIXTURES, CABINETS, WARDROBES, TOWEL BARS, AND HANDRAILS AS REQUIRED AND REQUESTED BY GENERAL CONTRACTOR . EXTERIOR WOOD POSTS AND COLUMNS SUPPORTED BY A CONCRETE SLAB SHALL BE

INSTALLED A MINIMUM OF 8" ABOVE EXPOSED EARTH AND AT LEAST I" ABOVE SLAB ON METAL POST BASES, (EXCEPTION: POSTS OR COLUMNS OF APPROVED WOOD WITH NATURAL RESISTANCE TO DECAY OR TREATED WOOD), POSTS OR COLUMNS RESTING ON CON-CRETE PIERS SURROUNDED BY EXISTING GRADE SHALL BE A MINIMUM OF 8" ABOVE ADJACENT GRADE PER CBC (LATEST EDITION). ALL ISOLATED INTERIOR AND EXTERIOR WOOD POSTS ATTACHED DIRECTLY TO CONCRETE SHALL BE SECURED WITH SIMPSON 'ABU', U.N.O.

PROVIDE 2x4 FLAT HEADERS AT ALL INTERIOR NON-BEARING OPENINGS UP TO 36 INCHES IN WIDTH AND 4x4 HEADERS FOR OPENINGS 3 ft TO 6 ft IN WIDTH. PROVIDE MINIMUM 1/2" CLEARANCE (VOID SPACE) FROM TOP OF ALL INTERIOR NON-BEARING PARTITIONS TO ROOF AND CEILING FRAMING ABOVE.

. ALL EXTERIOR WALLS ADJACENT TO VAULTED CEILINGS SHALL BE BALLOON FRAMED WITH CONTINUOUS STUDS TO BOT, CHORD OF TRUSS OR 2X RAFTER OR DOUBLE 2x TOP PLATE, U.N.O. WHEN PLYWOOD SIDING IS USED AS AN EXTERIOR OR INTERIOR WALL COVERING, PROVIDE SOLID BLOCKING AT ANY HORIZONTAL JOINTS BETWEEN SOLE PLATE AND ANY TOP PLATE. "Z BAR METAL SHALL BE USED AT EXTERIOR HORIZONTAL JOINTS.

INSTALL FIREBLOCKS TO CUT OFF ALL HORIZONTAL AND VERTICAL DRAFT OPENINGS BETWEEN TWO STORIES AND ROOF ATTIC SPACES. FIREBLOCKS SHALL BE OF 2 INCH NOMINAL THICKNESS, LOCATION OF FIREBLOCKS SHALL INCLUDE: STUD WALLS AT FURRED SOFFITS, CEILING AND FLOOR LEVELS.

AROUND TOP, BOTTOM, SIDES AND ENDS OF SLIDING POCKET DOORS BETWEEN STAIR STRINGERS AT TOP AND BOTTOM OF RUN AND BETWEEN STUDS IN A WALL PARALLEL AND ADJOINING RUN OF STAIRS.

FASTENING OF MULTIPLE MEMBERS: DOUBLE & TRIPLE JOISTS;

16d NAILS AT 12" O.C STAGGERED (BOTH SIDES FOR TRIPLES). FOUR OR MORE JOISTS; 1/2" DIA. M.B's AT 18" O.C STAGGERED.

4X OR LARGER BEAMS; 1/2" DIA. M.B's AT 12" O.C STAGGERED. ALL ROUGH OR RESAWN BEAMS ARE TO BE FREE OF GRADING STAMP LABELS AND FREE OF HEART CENTER (FOHC).

ALL HANGING 2X JOISTS SHALL UTILIZE SIMPSON "LUS" HANGERS, U.N.O. AND SIMPSON "IUS" FOR 1-JOISTS, U.N.O. ALL BEARING WALLS ON A WOOD FLOOR ARE TO BE SUPPORTED WITH DOUBLE JOISTS OR

SOLID BLOCKING, UNLESS NOTED OTHERWISE. ALL BEAMS TO BE SUPPORTED WITH FULL BEARING STUDS OR POSTS, U.N.O ROOF SHEATHING IS TO CONTINUE UNDER "CALIFORNIA FRAMING", TYP. 8. APPLY SHEAR WALL PLYWOOD PRIOR TO ALL BOX-OUTS, FUR-OUTS, SOFFITS OR ANY OTHER

FRAMING THAT MAY INTERRUPT CONTINUITY OF PLYWOOD. PROVIDE FURRING AS NEEDED TO ALIGN NON-SHEAR WALLS WITH SHEAR WALLS. PROVIDE 4X OR DOUBLE 2X MEMBERS UNDER SOLE PLATE NAILING LESS THAN 4 in. O.C., U.N.O.

DOUBLE TOP PLATES w/MIN, 48 in, LAP SPLICES TO BE PROVIDED W/ MIN. (12) 16d COMMON NAILS PER TOP PLATE SPLICE U.N.O. PER PLAN. TOP PLATE BREAKS AND SPLICES SHALL OCCUR OVER A STUD OR POST. . PROVIDE SOLID BLK'G BETWEEN PERPENDICULAR JOIST AT BEARING AND AT SHEAR WALLS.

I. ALL EXPOSED BEAMS AND HEAVY TIMBER RECOMMENDED TO BE FREE OF HEART CENTER. ALL ISOLATED POSTS AND BEAMS TO HAVE SIMPSON ABU'S, PB'S AND/OR BC'S MINIMUM, U.N.O. ALL SIMP, HDU, HTT, HDQ, HHDQ, AND CB HOLDOWNS TO BE FASTENED TO 4x4 POST MIN., U.N.O. 7. ALL EXTERIOR WALLS AND INTERIOR BEARING WALLS ARE TO BE SECURED WITH MIN. 5/8" DIA.

x 12" ANCHOR BOLTS AT 72 in. O.C., U.N.O. MIN. (2) BOLTS PER PIECE WITH (1) BOLT LOCATED NOT MORE THAT 12" OR LESS THAN 7 BOLT DIA. FROM EACH END AND/OR SPLICE OF THE PIECE. ALL INTERIOR NON-SHEAR WALLS TO BE SECURED WITH ICC-ESR APPROVED SHOT PINS WITH CADMIUM WASHERS AT 32" O.C. PER MANUF. SPECS., U.N.O. PROVIDE ANCHOR 6" FROM ALL

CORNERS AND SPLICES.). $\,$ ALL CONVENTIONAL FRAME PORTIONS OF STRUCTURE ARE TO BE CONSTRUCTED PER SECTION 2308 OF THE CALIFORNIA BUILDING CODE (CBC), U.N.O.

. ALL SHOP DRAWINGS ARE TO BE REVIEWED BY THE GENERAL CONTRACTOR AND THE ARCHITECT PRIOR TO SUBMITTAL FOR ENGINEER (GET STRUCTURAL) REVIEW. PROVIDE MIN. 2X6 RAFTERS AT 24" O.C. WITH MAX. SPAN OF 6'-0" MAX. BRACED TO FRAMING

BELOW AT OVERSTACK ("CALIFORNIA") FRAMING. PROVIDE DOUBLE 2X SOLE PLATES WITH PROGRESSIVE SOLE PLATE NAILING AS SPECIFIED ON THE PLANS AT BOTH PLATES WHERE 1 1/2" LIGHT WEIGHT CONCRETE IS USED AT THE FLOOR. B. WHERE BOTH TOP PLATES ARE BROKEN, SPLICE WITH ST6224 MIN. U.N.O.

- 8d NAILS OR EQUIVALENT.

44. COMMON NAILS SHALL BE USED FOR ALL SHEATHING AND TOP PLATE SPLICES. BOX NAILS MAY BE USED AT SOLE PLATE NAILING. ALL HARDWARE SHALL BE INSTALLED WITH NAILS PER THE MANUFACTURERS SPECIFICATIONS AND RECOMMENDATIONS. . ALL HEADERS SHALL BE FRAMED WITH A MINIMUM OF (1) 2X4 TRIMMER AND (1) 2X4 KING STUD

6. $\,$ AT ANY SOLE PLATES OR TOP PLATES CUT FOR PIPES, PROVIDE A .058" THICK (16 GA.) AND $1.1.2^\circ$ WIDE PLATE ACROSS EACH SIDE OF OPENING WITH NOT LESS THAN (6) 16d NAILS. . PROVIDE SOIL BLOCKING AT SOFFIT CEILINGS.

48. SHEAR SHALL BE CONTINUOUS FROM BOTTOM PLATES TO TOP PLATES., U.N.O. STAIR STRINGER SHALL BE 2x12 DF#1 AT MAX. 16" O.C., U.N.O 0.- A SINGLE TOP PLATE IS PERMITTED PROVIDED THE PLATE IS ADEQUATELY TIED AT JOINTS, CORNERS AND INTERSECTING WALLS BY AT LEAST THE EQUIVALENT OF 3 IN, X 6 IN. X .036 IN. THICK GALVANIZED STEEL PLATE THAT IS NAILED TO EACH WALL OR SEGMENT OF WALL BY (6)

FASTENERS FOR PRESERVATIVE-TREATED OR FIRE-RETARDANT-TREATED WOOD SHALL BE OF HOT DIPPED ZINC-COATED GALVANIZED STEEL IN ACCORDANCE WITH ASTM A 153

GLULAMS/MFR. WD. PROD.

ALL GLUED LAMINATED MEMBERS SHALL BE MADE OF 1-1/2" DOUGLAS-FIR LARCH (DF) LAMINATIONS, COMBINATION 24F-V4 PER AITC/APA (U.N.O.).

DESIGN VALUES: Fb=2400 PSI; Fv=240 PSI; E=1.8X10⁶ PSI INDUSTRIAL APPEARANCE GRADE PER APA-EWS SHALL BE USED, WITH A MOISTURE CONTENT BETWEEN 7 - 14 PERCENT, UNLESS NOTED OTHERWISE. FABRICATOR SHALL BE A MEMBER OF AITC AND ALL FABRICATION SHALL BE PERFORMED IN ACCORDANCE WITH AITC-A190.1 & ASTM-3737. LUMBER SHALL BE MARKED WITH AN AITC or APA-EWS GRADE STAMP INDICATING CONFORMANCE WITH ALL APPLICABLE SPECIFICATIONS AND REQUIREMENTS.

GLUED LAMINATED MEMBERS SHALL BE ACCOMPANIED BY A CERTIFICATE OF INSPECTION. CONTRACTOR SHALL BEAR EXPENSES OF INSPECTION AND TESTS. A CERTIFICATE OF INSPECTION SHALL BE SUBMITTED TO THE BUILDING DEPARTMENT PRIOR TO

INSTALLATION.

ALL GLUED LAMINATED BEAMS WILL HAVE A STANDARD CAMBER BASED ON A RADIUS : 3500, UNLESS NOTED OTHERWISE.

PARALLAM PSL 2.2E BY I-LEVEL PER ESR-1387 & LARR-25202

 $f_b = 2900 \text{ PSI}$; $f_v = 290 \text{ PSI}$; $E = 2.0 \times 10^6 \text{ PSI}$ TIMBERSTRAND LSL 1,55E BY (-LEVEL PER ESR-1387 & LARR-25202 $f_b = 2250 \text{ PSI}$; $f_v = 310 \text{ PSI}$; $E = 1.55 \times 10^6 \text{ PSI}$

MICROLAM LVL BY I-LEVEL PER ESR-1387 & LARR-25202

 $f_b = 2600 \text{ PSI}$; $f_v = 285 \text{ PSI}$; $E = 2.0 \times 10^6 \text{ PSI}$ ALTERNATE ENGINEERED WOOD PRODUCTS MUST BE APPROVED IN WRITING BY ENGINEER (GET STRUCTURAL) PRIOR TO INSTALLATION.

PROVIDE MULTIPLE 2x4 SQUASH BLOCKS UNDER BEARING POINT LOAD (POST) (OR MSB) FROM ABOVE TO TOP PLATES BELOW AT FLOOR LEVEL. I-LEVEL I-JOISTS PER ICC ESR#1533, RR#25176 LOUISIANA PACIFIC I-JOISTS PER ICC ESR#1130,

RR#24999 BOISE CASCADE I-JOISTS PER ICC ESR#1336, RR#25439 PER ICC ESR#1251. ROSEBURG 1-JOISTS PROVIDE DOUBLE I-JOISTS OR DOUBLE I-JOIST BLOCKS WHEN 16d SOLE PLATE NAILING (SPN) IS LESS THAN 4" O.C. AT SHEAR WALL ABOVE.

REFER TO I-JOIST MANUFACTURER SPECIFICATION FOR DRILLING OF HOLES THRU I-JOIST WEB, NOTCHING OF I-JOIST FLANGE IS PROHIBITED.

TABLE R602.3(1) FASTENER SCHEDULE FOR STRUCTURAL MEMBERS

ITEM	DESCRIPTION OF BUILDING ELEMENTS	NUMBER AND TYPE OF FASTENERa, b, c	SPACING OF FASTENERS
	Roof		
i	Blocking between joists or rafters to top plate, toe nail	3-8d	-
2	Ceiling joists to plate, toe naîl	3-8d	-
3	Ceiling joists not attached to parallel rafter, laps over partitions, face nail	3-10d	-
4	Collar tie rafter, face nail or 1 1/4 x 20 gage ridge strap	3-10d	-
5	Rafter to plate, toe nail	3-16d	-
	Roof rafters to ridge, valley or hip rafters:	4-16d	
6	toe nail face nail	3-16d	-
	Wall		L
7	Built-up studs-face nail	10d	24] o.c.
8	Abutting studs at intersecting wall corners, face nail	16d	12_ o.c.
9	Built-up header, two pieces with 1/21 spacer	16d	16] o.c. along each edge
10	Continued header, two pieces	16d	16] o.c. along each edge
11	Continuous header to stud, toe nail	4-8d	-
12	Double studs, face nail	10d	24Į o.c.
13	Double top plates, face nail	10d	24 <u>l</u> o.c.
14	Double top plates, minimum 24-inch offset of end joints, face nail in lapped area	8-16d -	arrit Grees
15	Sole plate to joist or blocking, face nail	16d	16↓ o.c.
16	Sole plate to joist or blocking at braced wall panels	3-16d	16↓ o.c.
		3-8d	-
17	Stud to sole plate, toe nail	or	
		2-16d	-
18	Top or sole plate to stud, end nail	2-16d	-
19	Top plates, laps at corners and intersections, face nail	2~10d	-
20	1) brace to each stud and plate, face nail	2-8d	-
21	1↓ x δ↓ sheathing to each bearing, face nail	2-8d	-
22	1) x 8) sheathing to each bearing, face nail	2-8d	-
23	Wider than 1↓ x 8↓ sheathing to each bearing, face nail	3-8d	-
	Floor	<u> </u>	
24	Joist to sill or girder, toe nail	3-8d	-
25	Rim Joist to top plate, toe nail (roof applications also)	8d	6] o.c.
26	Rim joist or blocking to sill plate, toe nail	8d	6Į o.c.
27	1↓ x 6↓ subfloor or less to each joist, face nail	2-8d	-
28	2) subfloor to joist or girder, blind and face nail	2-16d	-
29	2] planks (plank & bearn - floor & roof)	2-16d	at each bearing
30	Built-up girders and beams, 2-inch lumber layers	10d	Nail each layer as follows: 32] o.c. at top and bottom and stangered. Two na

Built-up girders and beams, 2-inch lumber layers bottom and staggered. Two nails at ends and at each splice. At each joist or rafter Ledger strip supporting joists or rafters PACING OF FASTENERS DESCRIPTION OF FASTENER b, c, c BUILDING upports^e MATERIALS linches Wood structural panels, subfloor, roof and interior wall sheathing to framing and particleboard wall sheathing to framing -6d common nail (subfloo 3/8↓-1/2↓ wall)j 8d common nail (roof) 12g 19/32↓- 1↓ 8d common nail 10d common nail or 8 deformed nai Other wall sheathingh 1/2| galvanized roofing nail, 7/16| crown or 1| crown cellulosic fiberboard staple 16 ga., 1 1/4↓ long sheathing 1 3/4 galvanized roofing nail, 7/16 crown or 1 crown ellulosic fiberboard staple 16 ga., 1 1/2↓ long 1 1/2 galvanized roofing nail; staple 1/2] gypsum sheathingd galvanized, 11/2 long; 1 1/4 screws, Type W or S 1 3/4 galvanized roofing nail; staple 5/8 gypsum sheathingd galvanized, 15/8 long; 1 5/8 screws, Type W or S Wood structural panels, combination subfloor underlayment to framing 6d deformed nail or 8d 12 3/4] and less ommon nai 8d common nail or 8c 12 10d common nail or 8c

or SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm, 1 mile per hour = 0.447 m/s; 1ksi = 6.895 MPa All nails are smooth-common, box or deformed shanks except where otherwise stated. Nails used for framing and sheathing connections shall

have minimum average bending yield strengths as shown: 80 ksi for shank diameter of 0.192 inch (20d common nail), 90 ksi for shank diameters larger than 0.142 inch but not larger than 0.177 inch, and 100 ksi for shank diameters of 0.142 inch or less. Staples are 16 gage wire and have a minimum 7/16-inch on diameter crown width. Nails shall be spaced at not more than 6 inches on center at all supports where spans are 48 inches or greater. Four-foot-by-8-foot or 4-foot-by-9-foot panels shall be applied vertically

Spacing of fasteners not included in this table shall be based on Table R602.3(2) For regions having basic wind speed of 110 mph or greater, 8d deformed (21/21 x 0.120) nails shall be used for attaching plywood and wood structural panel roof sheathing to framing within minimum 48-inch distance from gable end walls, if mean roof height is more than 25 feet, up to

For regions having basic wind speed of 100 mph or less, nails for attaching wood structural panel roof sheathing to gable end wall framing shall

be spaced 6 inches on center. When basic wind speed is greater than 100 mph, nails for attaching panel roof sheathing to intermediate supports

shall be spaced 6 inches on center for minimum 48-inch distance from ridges, eaves and gable end walls; and 4 inches on center to gable end wall Gypsum sheathing shall conform to ASTM C 1396 and shall be installed in accordance with GA 253. Fiberboard sheathing shall conform to perimeters only. Spacing of fasteners on roof sheathing panel edges applies to panel edges supported by framing members and required blocking.

Blocking of roof or floor sheathing panel edges perpendicular to the framing members need not be provided except as required by other provisions of this code. Floor perimeter shall be supported by framing members or solid blocking. Where a rafter is fastened to an adjacent parallel ceiling joist in accordance with this schedule provide two toe nails on one side of the rafter and toe nails from the ceiling joist to top plate in accordance with this schedule. The toe nail on the opposite side of the rafter shall not be required.

SHEET INDEX:

l l		
	SHEET	TITLE
	\$0	STRUCTURAL NOTES
	Sl	FOUNDATION PLAN
	S2	FRAMING PLAN
}	SD1	FOUNDATION & FRAMING DETAILS
ρİ	SD2	FRAMING DETAILS

IDESIGN LOADS

⟨.	DESIGN FOADS		
	SEISMIC DESIGN DATA		ROOF
	IMPORTANCE FACTOR	1.0	DL = 14 PSF
	SITE CLASS	Ð	LL = 20 PSF
	S _S	1.727	FLOOR
	S_1	0.627	DL - 15 PSF
	S _{DS}	1.382	LL = 40 PSF
	S_{D1}	0.711	CEILING
	SDC	D	DL = 5 PSF
	LATERAL FORCE RESISTING SYSTEM	Λ.15	LL = 10 PSF
	BASE SHEAR		EXTERIOR WALL
3	$\mid C_{S} \mid$	0.213	DL = 15 PSF
	R	6.5	INTERIOR WALL
	Ω_0	2.50	DL = 10 PSF
	PROCEDURE USED	ELF	
	REDUNDANCY FACTOR	1.3	

SPECIAL INSPECTION

CONTINUOUS AND PERIODIC SPECIAL INSPECTION IS REQUIRED FOR THE WORK AS DESCRIBED IN CBC 2019 CHAPTER 17, SEE INSPECTION SCHEDULE BELOW ONLY CHECKED

APPROVAL BY THE INSPECTOR DOES NOT MEAN APPROVAL OF FAILURE TO COMPLY WITH THE PLANS OR SPECIFICATIONS. ANY DETAIL THAT FAILS TO BE CLEAR OR IS AMBIGUOUS MUST BE REFERRED TO THE STRUCTURAL ENGINEER FOR INTERPRETATION OR

FOR VERIFICATION AND INSPECTION OF SOILS SEE SOILS REPORT

STEEL WELDING, EXCEPT FOR SINGLE PASS FILLET WELDS NOT EXCEEDING 5/16" IN SIZE WELDING INSPECTORS SHALL BE AWS Q.C.-I CERTIFIED STRUCTURAL WOOD, PERIODIC SPECIAL INSPECTION IS REQUIRED FOR WOOD SHEAR WALLS, SHEAR PANELS, AND DIAPHRAGMS, INCLUDING NAILING, BOLTING, ANCHORING, AND OTHER FASTENING OF COMPONENTS OF THE SEISMIC FORCE RESISTING SYSTEM, INCLUDING WOOD SHEAR WALLS, WOOD DIAPHRAGMS, DRAG STRUTS, BRACES, SHEAR PANELS, AND HOLDOWNS EXCEPTION: SPECIAL INSPECTION IS NOT REQUIRED FOR WOOD SHEAR WALLS, SHEAR PANELS AND DIAPHRAGMS, INCLUDING NAILING, BOLTING, ANCHORING AND OTHER FASTENING TO OTHER COMPONENTS OF THE

CONTRACTORS RESPONSIBLE FOR CONSTRUCTION OF A WIND OR SEISMIC FORCE RESISTING SYSTEM/COMPONENT LISTED IN THIS STATEMENT OF SPECIAL INSPECTION SHALL SUBMIT A WRITTEN STATEMENT OF RESPONSIBILITY TO THE LADBS INSPECTORS AND THE OWNER PRIOR TO THE COMMENCEMENT OF WORK ON SUCH A SYSTEM OR COMPONENT PER SEC 1704.4.

A FABRICATOR'S SHOP, SPECIAL INSPECTION OF THE FABRICATED ITEMS SHALL BE MANUALS AND PERIODIC AUDITING OF FABRICATION PRACTICES BY AN APPROVED. SPECIAL INSPECTION AGENCY. AT COMPLETION OF FABRICATION, THE APPROVED STATING THAT THE WORK WAS PERFORMED IN ACCORDANCE WITH THE APPROVED CONSTRUCTION DOCUMENTS, CONTRACTOR SHALL BE RESPONSIBLE OF VERIFYING APPROVAL OF FABRICATOR

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\boxtimes

MWFRS PROCEDURE USED 94 MPH BASIC WIND SPEED RISK CATEGORY

1500 PSF PER CBC 2019

WIND EXPOSURE

WIND DESIGN

CONTINUOUS SPECIAL INSPECTION PER AWS DILLIS REQUIRED FOR ALL STRUCTURAL

SEISMIC-FORCE-RESISTING SYSTEM, WHERE THE FASTENER SPACING OF THE SHEATHING IS MORE THAN 4 INCHES ON CENTER (O.C.) INSPECTIONS SHALL BE PERFORMED BEFORE

WHERE FABRICATION OF MEMBERS AND ASSEMBLIES IS PERFORMED ON THE PREMISES OF REQUIRED BY THIS SECTION, UNLESS THE FABRICATOR IS REGISTERED AND APPROVED TO PERFORM SUCH WORK WITHOUT SPECIAL INSPECTION. APPROVAL SHALL BE BASED UPON REVIEW OF THE FABRICATOR'S WRITTEN PROCEDURAL AND QUALITY CONTROL FABRICATOR SHALL SUBMIT A CERTIFICATE OF COMPLIANCE TO THE BUILDING OFFICIAL

CBC TABLE 1705.8

CBC TABLE 1705.6

SEE SOILS REPORT FOR COMPLIANCE

CAST IN PLACE DEEP FOUND.

SOIL CONDITION

EXP. 06/30/2023

12/13/2021 R21-1216 SHEET DESCRIPTION TRUCTURAI

FOUNDATION LEGEND

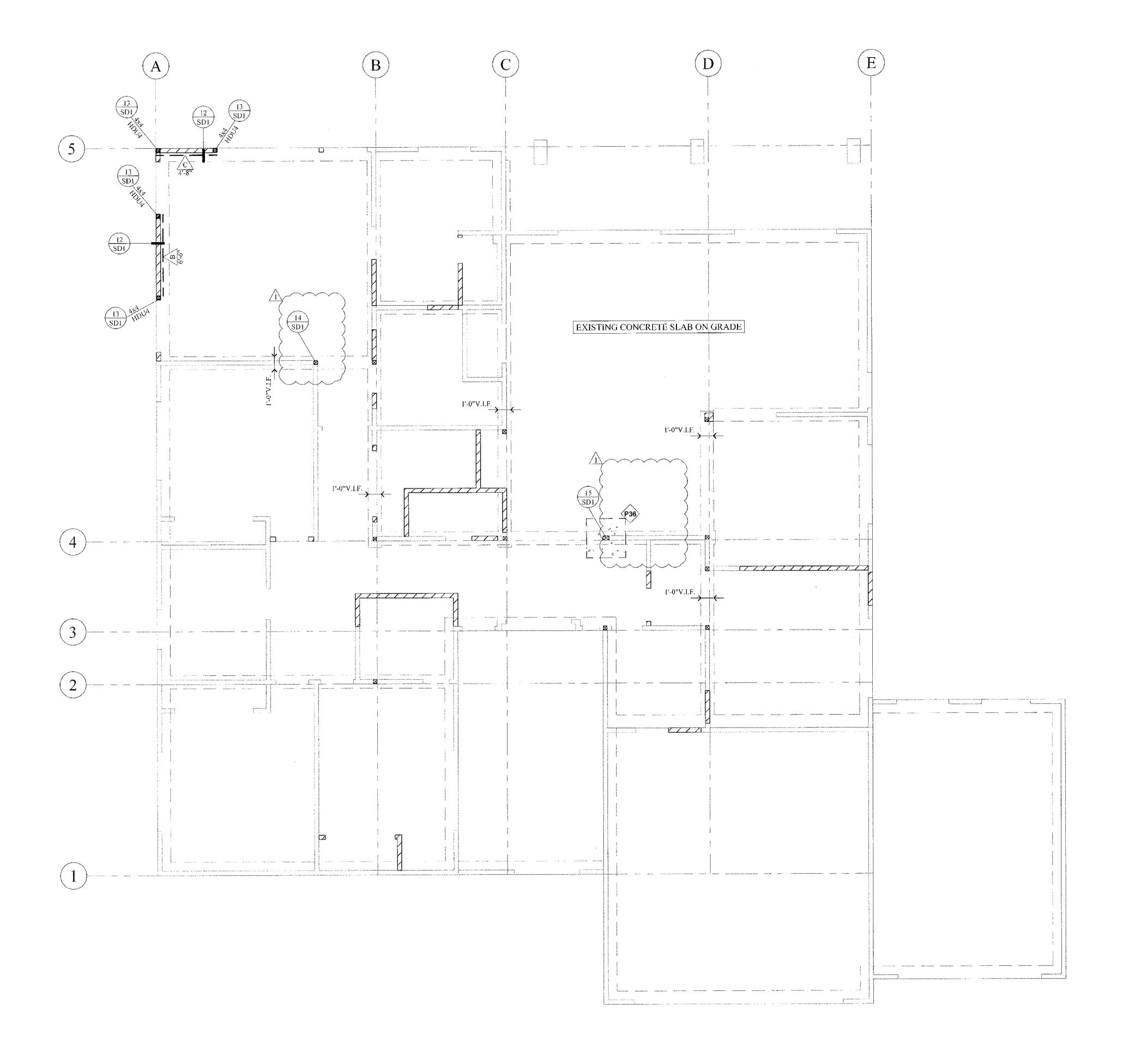
TOUNDATIO	JN LEGEND
	FOOTING
	[E] FOOTING
71	DROP IN SLAB (VERIFY PRIOR TO CONSTRUCTION)
	REBAR
SDX	DETAIL NUMBER DETAIL SHEET NUMBER
PX	CONCRETE PAD FOOTING, SEE SCHEDULE

FOUNDATION NOTES

- REFER TO S.0 SHEET FOR MORE INFO.
 CONTRACTOR SHALL VERIFY ALL EXISTING FOOTINGS AND NOTIFY TO ENG. OF RECORD FOR ALL DISCREPANCIES.
 SPECIAL INSPECTION IS REQUIRED FOR INSTALLATION OF EPOXY.
 CONCRETE COMPRESSIVE STRENGTH SHALL BE f_e = 2500 PSI (U.N.O.)

PAD SCHEDULE (PX)

SYM.	PAD TYPE
P36	3'-0" SQ. X 18" DEEP PAD W/ (4) #5 E.W. BOTT.
<u> </u>	5 to SQ. X to BEEL THE III (1) III (1) III (1)



FOUNDATION PLAN

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



R21-1216 FOUNDATION PLAN

FRAMING LEG	END
(RR)	INDICATES ROOF RAFTERS, SEE FRAMING SCHEDULE
<u></u>	INDICATES CEILING JOISTS, SEE FRAMING SCHEDULE
(FJ)	INDICATES FLOOR JOISTS, SEE FRAMING SCHEDULE
X SDX	DETAIL NUMBER DETAIL SHEET NUMBER
(x)	BEAM NUMBER, REFER TO CALCULATIONS.
4X6	INDICATES BEAM SIZE (DFL HEADER/DROP) U.N.O.
	EXISTING WALL TO BE REMOVED
5	EXISTING WALL TO REMAIN
\$77777Z	NEW WALL

FRAMING SCHEDULE

SYMBOL SIZE & SPACING EXISTING CEILING JOIST EXISTING RAFTERS

BEAM TYPE

Н.	HEADER
F.B.	FLUSH BEAM
C.B.	CEILING BEAM
D.B.	DROP BEAM
R.B.	RIDGE BEAM

FRAMING NOTES

REFER TO STRUCTURAL GENERAL NOTES AND DETAIL SHEETS S.0 FOR MORE INFORMATION. ALL STRUCTURAL HARDWARE SHALL BE SIMPSON STRONG-TIE OR APPROVED EQUIVALENT. . ALL VERTICAL PIPES THROUGH PLATES AND/OR SOLID RIM BEAMS MUST BE DRILLED CLEAN CUT W/ 1/16" TOLERANCE. <u>DO NOT</u> NOTCH OR CUT PLATES.

ALL BEAMS SHOWN ARE DROP (U.N.O.) ON PLANS.

. HANGERS FOR FLUSH FRAMED MEMBERS SHALL BE SIMPSON STRONG-TIE AS FOLLOWS U.N.O.:

HU W/ MAX 4X 6X, OR PSL, LSL, GLU-LAM BEAMS

. THE FOLLOWING TRIMMER SCHEDULE SHOULD BE USED FOR HEADERS IN BEARING WALLS, U.N.O. ON THE PLAN. REQUIRED TRIMMER MUST BE APPLIED @ EACH END OF HEADER. CLEAR SPAN, L

L 11 10 -0"
2-2X4 U.N.O. PER PLAN

BUILDING CODE 2308.5.1 BAŁLOON FRAMED WALLS (NON-BEARING) STUD HEIGHTS: - 2X4'S @ 16" O.C. MAXIMUM 14'-0" HEIGHT

- 2X6'S @ 16" O.C. MAXIMUM 20'-0" HEIGHT BEARING STUD HEIGHTS:

- 2X4'S @ 16" O.C. MAXIMUM 10'-0" HEIGHT - 2X6'S @ 16" O.C. MAXIMUM 16'-0" HEIGHT

2900 psi (MIN)

REFER TO DETAIL 4/SD2 FOR TYPICAL DIAPHRAGM SHEATHING LAYOUT AND NAILING PATTERN. 10. DOUBLE TOP PLATE AT ALL SHEAR WALL LINES SHALL BE SPLICED PER DETAIL 2/SD2.
11. PROVIDE 2X BLK'G @ CEILING JOIST NOT SUPPORTED LATERALLY BY JOIST.

MANUFACTURED LUMBER PRODUCTS:

THE FOLLOWING BEAMS/HEADERS/RIMS CAN BE FROM ANY MANUFACTURER WITH CURRENT APPROVED ICC ES - EVALUATION REPORT WITH THE FOLLOWING MECHANICAL PROPERTIES:

FOR "PSL" BEAMS:

290 psi (MtN) $2.0 \times 10^6 \text{ psi}$ (MIN) FOR "LVL" BEAMS:

2600 PSI (MIN)

285 PSI (MIN) $= 2.0 \times 10^6 \text{ PSI} \text{ (MIN)}$ FOR "LSL" BEAMS/HEADERS:

Fb = 2325 psi (MIN) Fv = 425 psi (MIN) E = 1.55x10⁶ psi (MIN)

FOR MANUFACTURED RIM BOARD W/MIN, 14" THICK, CONTINUOUSLY SUPPORTED BY WALL, AND MATCHES JOIST DEPTH:

680 psi (MIN) 1400 psi (MIN)

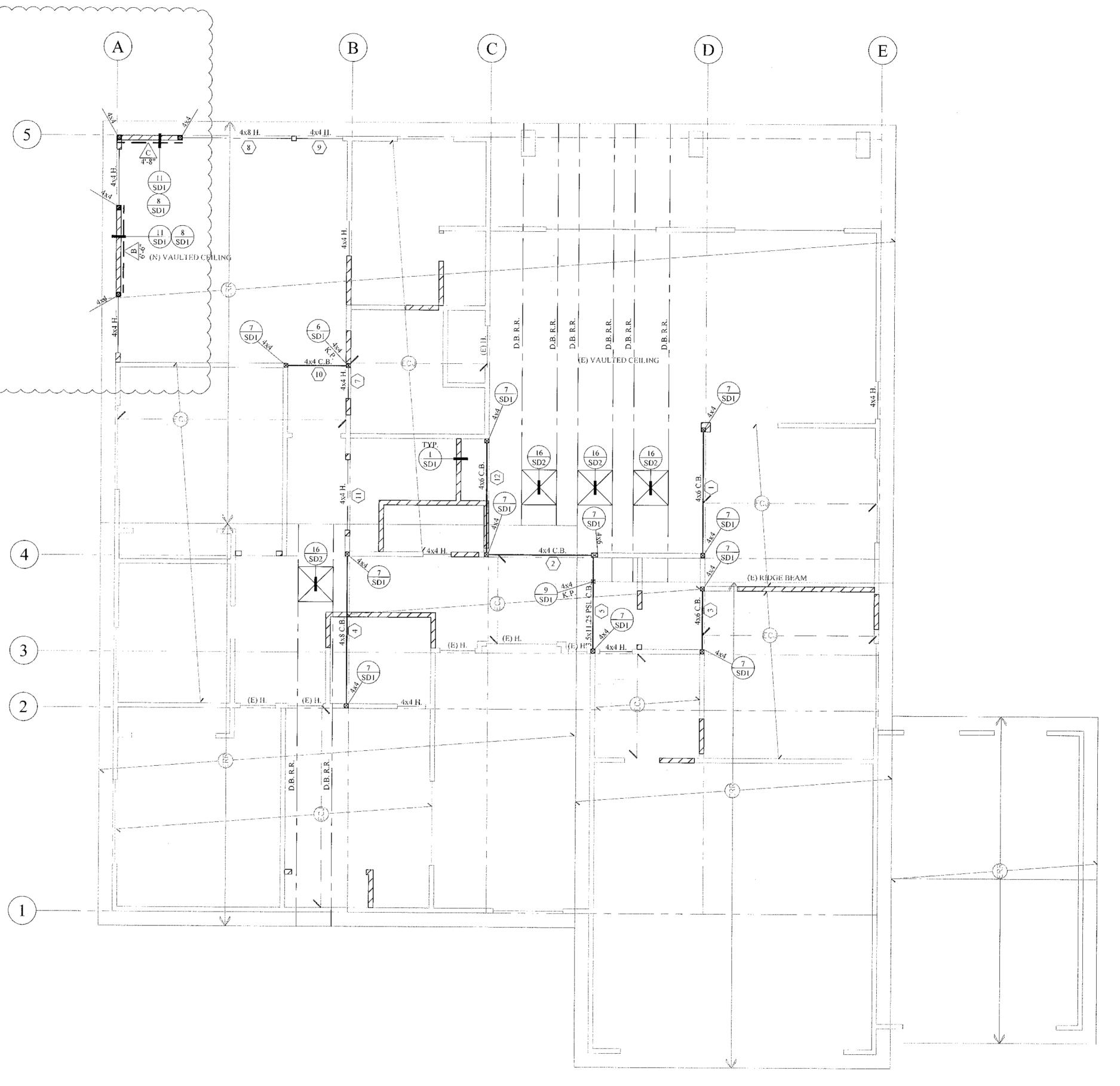
= 1075 psi (MIN) $= 1.3 \times 10^6 \text{ psi} \text{ (MIN)}$

GLU-LAM BEAM SHALL BE 24F-V4, DF/DF

2400 psi @ BOTTOM 1850 psi - @ TOP

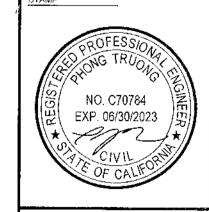
265 psi (MIN) 1.8x10⁶ psi (MIN)

1ST FLOOR PLAN / ROOF FRAMING PLAN



26622 HONEY (RANCHO PALO

Scale: 1/4'' = 1'-0''

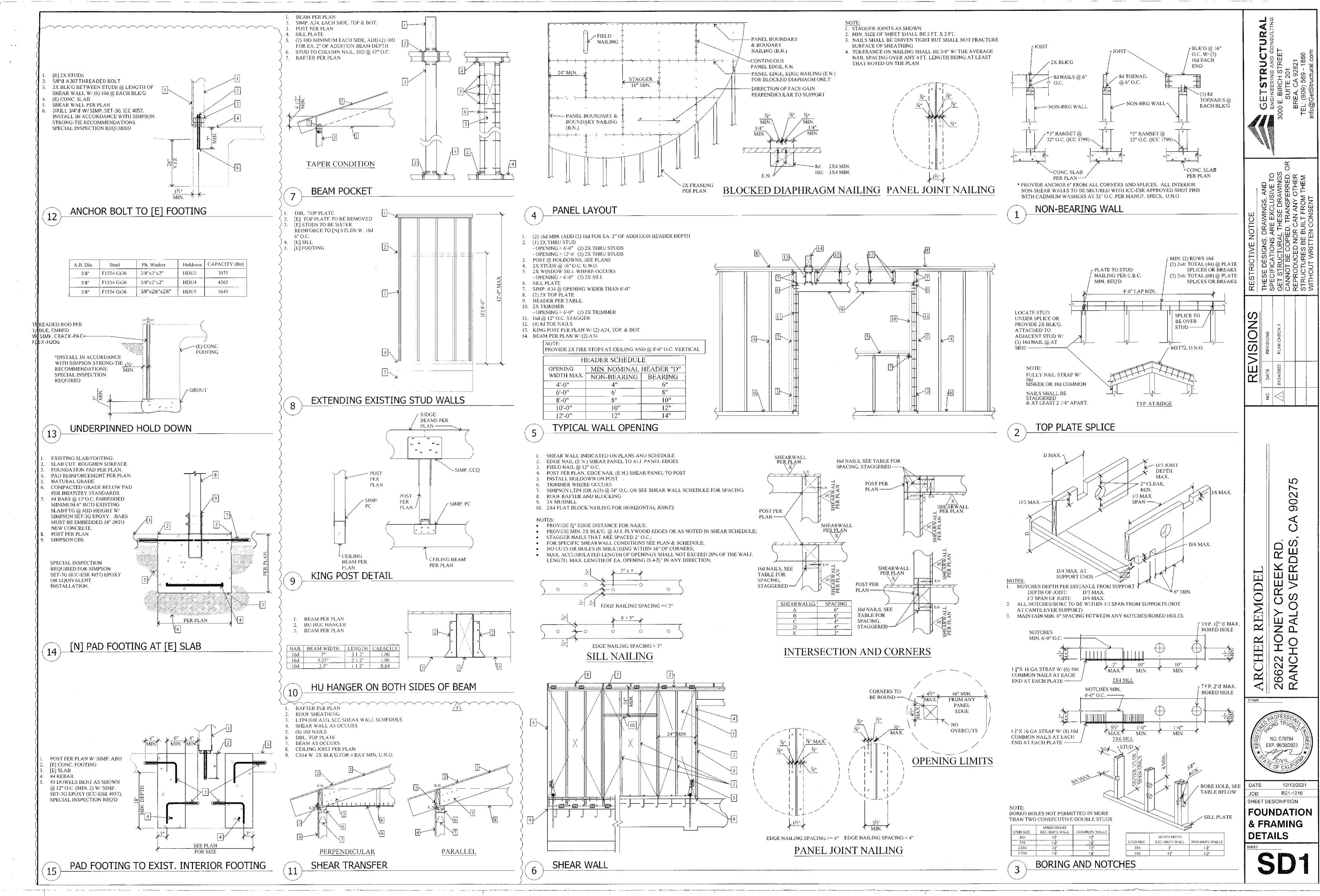


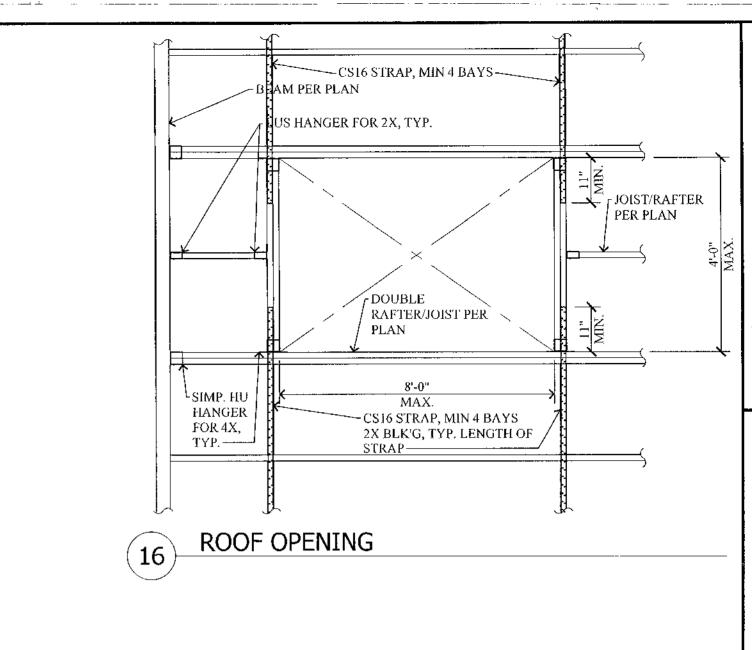
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Y CREEK RD. OS VERDES,

DATE: 12/13/2021 R21-1216 SHEET DESCRIPTION FRAMING

PLAN





NO: DATE REVISIONS

A 01/24/2022 PLAN CHECK 1

2 HONEY CREEK RD.
CHO PALOS VERDES, CA 90275

STAMP

PROFESSION

PROFESSION

REPROFESSION

DATE: 12/13/2021

JOB: R21-1216

SHEET DESCRIPTION

FRAMING DETAILS

SD2