SPECIAL NOTE:
IT WILL BE THE RESPONSIBILITY OF THE OWNER/OWNER'S AGENT/BUILDER/CONTRACTOR/ET. AL. TO VERIFY ALL COND– AND DIMENSIONS FOR THIS PROJECT PRIOR TO START OF CONSTRUCTION. ANY DISCREPANCIES AND/OR OMISSIONS SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT/ENGINEER, FOR REVIEW AND CLARIFICATION, PRIOR TO COMMENCEMENT OF WORK. FAILURE OF NOTIFICATION WILL PLACE THE RESPONSIBILITY AND/OR LIABILITY UPON THE OWNER/OWNER'S AGENT/BUILDER/CONTRACTOR ET. AL.

GENERAL REQUIREMENTS:
1. THE WORK OF THIS CONTRACT SHALL CONSIST OF ALL LABOR, MATERIALS, EQUIPMENT AND RELATED ITEMS NECESSARY TO COMPLETE ALL WORK AS INDICATED ON THE DRAWINGS AND SPECIFIED HEREIN, UNLESS IT IS SPECIFICALLY INDICATED (NIC) NOT IN CONTRACT.
2. THE CONTRACTOR SHALL PAY FOR ALL NECESSARY PLAN CHECK, BUILDING PERMIT AND/OR FEES WITH RESPECT TO THE WORK.
3. THE CONTRACTOR SHALL KEEP THE PREMISES FREE FROM ANY ACCUMULATION OF WASTE MATERIAL AND RUBBISH AND SURPLUS MATERIAL AND LEAVE THE PREMISES BROOM CLEAN DAILY. UPON COMPLETION OF CONSTRUCTION, THE CONTRACTOR SHALL REMOVE ALL TRASH AND DEBRIS FROM THE PROJECT SITE AND DISPOSE OF ALL SUCH MATERIALS IN A LEGAL MANNER.
4. WORK OF THIS CONTRACT SHALL BE ACCOMPLISHED SO THAT IT WILL NOT INTERFERE WITH OR DELAY THE COMPLETION OF ANY OTHER CONSTRUCTION WORK IN THE BUILDING. WORK SHALL BE ACCOMPLISHED ON DAYS AND DURING HOURS ACCEPTABLE TO THE OWNER.
5. SHOP DRAWINGS AND MATERIAL SUBMITTALS REQUIRED SHALL BE PROVIDED BY THE CONTRACTOR FOR REVIEW AND ACCEPTANCE PRIOR TO ORDER AND FABRICATION.
6. PROVIDE SANITARY TOILETS DURING CONSTRUCTION PER LOCAL BUILDING CODES.
7. CONTRACTOR SHALL REPAIR OR REPLACE ALL ITEMS DAMAGED OR DESTROYED BY ANYONE UNDERNEATH HIS RESPONSIBILITY AT NO COST TO OWNER.

GENERAL NOTES:
1. ALL WORK SHALL CONFORM TO THE MINIMUM STANDARDS OF THE CURRENT EDITION OF THE UNIFORM BUILDING CODE, LOCAL BUILDING CODES, ORDINANCES OF LOCAL GOVERNING AUTHORITIES AND ANY OTHER REGULATIONS OVER ANY PORTION OF WORK INCLUDING THE STATE OF CALIFORNIA DIVISION OF INDUSTRIAL SAFETY AND THOSE LISTED IN THESE SPECIFICATIONS.
2. THE DIMENSIONS IN THE DRAWINGS SHALL TAKE PRECEDENCE OVER THE SCALING OF THE DRAWINGS.
3. THE CONTRACTOR SHALL PROVIDE ALL MEASURES NECESSARY TO PROTECT THE STRUCTURE DURING CONSTRUCTION. THIS SHALL INCLUDE BUT NOT BE LIMITED TO BRACING AND STRUCTURAL SHORING.
4. LOADS DUE TO CONSTRUCTION MATERIALS AND EQUIPMENT SHALL NOT EXCEED THE DESIGN LIVE LOAD PER SQUARE FOOT. NECESSARY SHORING SHALL BE PROVIDED WHERE THE STRUCTURE HAS NOT ATTAINED TOTAL DESIGN STRENGTH.
5. ALL APPLIANCES AND ITEMS NOTED TO BE FURNISHED BY OWNER SHALL BE HOOKED UP, CONNECTED AND PROPERLY FITTED BY THE APPROPRIATE SUB–CONTRACTOR.
6. FLOOR AND WALL OPENING SLEEVES, VARIATION IN THE STRUCTURAL SLAB ELEVATIONS, DEPRESSED AREAS, AND ALL OTHER ARCHITECTURAL, MECHANICAL, ELECTRICAL, AND/OR CIVIL REQUIREMENTS MUST BE COORDINATED BEFORE THE CONTRACTOR PROCEEDS WITH CONSTRUCTION.
7. DETAILS MARKED "TYPICAL" SHALL APPLY IN ALL CASES UNLESS SPECIFICALLY INDICATED OTHERWISE.
8. ALL SYMBOLS AND ABBREVIATIONS USED ON THE DRAWINGS ARE CONSIDERED TO BE CONSTRUCTION STANDARDS. IF THE CONTRACTOR HAS QUESTIONS REGARDING SAME, OR THEIR EXACT MEANING, THE ARCHITECT/ENGINEER SHALL BE NOTIFIED FOR CLARIFICATION.
9. ALL WALLS OVER 4' LONG SHALL HAVE DRYWALL NAILED WITH 6d COOLER NAILS AT 7" O.C. AT ALL BEARING WALLS, NOT REQUIRED WHERE PLYWOOD SHEATHING OR OSB EQUIV. OCCURS UNLESS NOTED OTHERWISE.
10. ALL CEILING HEIGHTS AS SHOWN ON DETAILS, PLANS, OR NOTES ARE FROM CONCRETE SLAB FLOOR TO CEILING FRAMING.
11. PROVIDE GALVANIC SEPARATION BETWEEN ALL DISSIMILAR METALS.
12. PROVIDE DUST BARRIERS TO ARREST SPREAD OF DUST, DEBRIS AND NOISE FROM WORK AREAS TO OCCUPIED AREAS.
13. PROVIDE AND LOCATE ACCESS DOORS OR PANELS IN CEILINGS AND WALL CONSTRUCTION AS REQUIRED BY INSTALLATION OF MECHANICAL AND PLUMBING WORK.
14. GENERAL CONTRACTOR SHALL MAKE ALL REQUIRED UTILITY CONNECTIONS.
15. THE CONTRACT DRAWINGS AND SPECIFICATIONS REPRESENT THE FINISHED STRUCTURE. UNLESS OTHERWISE NOTED, THEY DO NOT INDICATE THE METHOD OF CONSTRUCTION. THE CONTRACTOR SHALL SUPERVISE AND DIRECT THE WORK AND HE WILL BE SOLELY RESPONSIBLE FOR ALL CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, AND PROCEDURES. THE CONTRACTOR WILL BE SOLELY AND COMPLETELY RESPONSIBLE FOR CONDITIONS OF THE JOBSITE, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY DURING PERFORMANCE OF THE WORK. THIS REQUIREMENT SHALL APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS.
16. NAILING OF GYPSUM BOARD SHALL BE WITH 6d NAILS AT 7" O.C. UNLESS NOTED OTHERWISE TO ALL STUDS, TOP AND BOTTOM PLATES, AND ALL BLOCKING.
17. ALL WORK SHOWN IS NEW UNLESS OTHERWISE NOTED.
18. PROVIDE MINIMUM 5 AIR CHANGE FANS SWITCHED TO LIGHTS IN ALL INTERIOR BATHROOMS AND SHOWN ELSEWHERE. MINIMUM 55 C.F.M.
19. INSPECTION IS REQUIRED FOR ALL INTERIOR AND EXTERIOR IN–PLACE LATH AND WALLBOARD BEFORE ANY PLASTER IS APPLIED OR ANY JOINT OR FASTENERS HAVE BEEN TAPED AND FINISHED.
20. OPENINGS INTO ATTICS, UNDERFLOOR AREAS AND OTHER ENCLOSED AREAS SHALL BE COVERED WITH 1/4" G.I. CORROSIVE RESISTANT WIRE MESH, EXCEPT FOR OPENINGS WITH SASH OR DOORS.
21. ANY CUTOUTS OF EXISTING WALLS, CEILINGS, OR FLOORS TO ALLOW INSTALLATION OF NEW WORK SHALL BE MADE NEATLY AND BE OF THE MINIMUM DIMENSION POSSIBLE.
22. EXTERIOR STUCCO FINISH SHALL MATCH EXISTING, IF APPLICABLE, AND BE MINIMUM 7/8" THICK OVER METAL LATH AND 15# FELT TO UNDERSIDE OF ROOF SHEATHING WITH CONTINUOUS 26 GA. G.I. STUCCO WEEP SCREED AT SILL PLATE.
23. FIRE RESISTANCE OF EXTERIOR WALLS SHALL COMPLY WITH UBC TABLE 5–A.
24. ALL NEW WALL/ROOF AND ROOF VALLEY FLASHINGS SHALL BE 26 GA. G.I. MINIMUM AND 6"x6".
25. PROVIDE NON–ABSORBENT GYPSUM BOARD 6' HIGH ON 3 WALLS OF SHOWERS AND TUBS, OR INSTALL ONE–PIECE FIBERGLASS UNITS.
26. BATHROOM AND KITCHEN FLOOR/WALLS REQUIRE A NON–ABSORBENT COVERING SUCH AS CERAMIC TILE OR EQUAL. FLOOR COVERING SHALL BE SLIP–RESISTANT. EXTEND WALL COVERING UP 48" MIN. ABOVE FINISH FLOOR.
27. PROVIDE SHATTER PROOF SHOWER ENCLOSURES AT ALL SHOWERS AND AT TUBS WHERE INDICATED.
28. NO BATH MEDICINE CABINETS, ELECTRICAL PANELS, OR WALL HEATERS SHALL PIERCE DIVISION OR SHAFT ENCLOSURE WALLS.
29. INSIDE FINISH DIMENSIONS OF SHOWER AND TOILET COMPARTMENTS MUST BE 30" MIN. CLEAR WIDTH AND 24" MIN. CLEAR SPACE IN FRONT OF TOILET.
30. GAS FIRED WATER HEATERS REQUIRE 100 S.I. COMBUSTION AIR VENTS EACH WITHIN 12" OF CEILING AND FLOOR AND A 24" MIN. WIDTH DOOR. WATER HEATERS ARE NOT PERMITTED IN ANY BEDROOM, BATHROOM, OR CLOTHES CLOSET.
31. WATER HEATERS WITH NON–RIGID WATER CONNECTIONS SHALL BE STRAPPED FOR LATERAL SUPPORT.
32. ALL CHIMNEYS SHALL HAVE AN APPROVED SPARK ARRESTOR OR A MIN. 1/4" G.I. SCREEN.
33. ROOFING:
    A. LOW SLOPE AREAS–TORCH DOWN MODIFIED BITUMEN AS MANUFACTURED BY BITUMEN (ICC ESR–1388) AND SHALL BE INSTALLED OVER 30# FELT AND PER MANUFACTURER'S SPECIFICATIONS. (SEE PLANS)
    B. ALL OTHER SLOPES–TYPE 'A' CONCRETE TILE OR ASPHALT SHINGLES INSTALLED OVER 30# FELT PER MANUFACTURER'S SPECIFICATIONS. (SEE PLAN)

CONCRETE:
1. CONCRETE STRENGTH SHALL BE MINIMUM 2500 PSI W/14 WATER CEMENT RATIO AFTER 28 DAYS UNLESS NOTED OTHERWISE.
2. NEW CONCRETE SLABS SHALL BUTT–JOINT EXISTING SLABS AND BE FLUSH WITH EXISTING SLABS UNLESS NOTED OTHERWISE.
3. CLEARANCES FOR CONCRETE SHALL BE 3" WHERE EXPOSED TO SOIL AND 2" WHERE EXPOSED TO WEATHER.
4. USE DOBY'S TO OBTAIN PROPER PLACEMENT OF ALL REINFORCEMENT, TYPICAL WHERE APPLICABLE.
5. REINFORCING STEEL SHALL BE INTERMEDIATE GRADE CONFORMING TO ASTM A 615–60. WELDED WIRE FABRIC SHALL BE 6"x6"/10#x10# MINIMUM AND CONFORM TO ASTM A 185.
6. FOOTING REINFORCEMENT BARS SHALL OVERLAP MINIMUM 40 DIAMETERS AT ALL CORNERS AND T–INTERSECTIONS.
7. DESIGN SOIL BEARING VALUE IS 1500 PSF WITHOUT SOILS REPORT.

LUMBER:
1. ALL LUMBER USED SHALL BE DOUGLAS FIR AND SHALL HAVE THE FOLLOWING STRESSES (psi):
    NO. 2 Fb=875 Fv=95 E=1,600,00 (U.O.N.)
    GLU–LAM 24F–V4 Fb=2400 Fv=165 E=1,600,00 (U.O.N.)
    PARALLAM Fb=2900 Fv=290 Fc=625 E=2,200,00 (U.O.N.)
2. ALL LUMBER IN CONTACT WITH CONCRETE, AND WITHIN 6" FROM FINISH GRADE, SHALL BE PRESSURE TREATED DOUGLAS FIR OR "GRADE MARKED" FOUNDATION GRADE REDWOOD OR CEDAR.
3. WALLS SHALL BE BRACED AT EACH END AND 25' O.C. MAXIMUM WHERE WALL LENGTH EXCEEDS 25 FEET.
4. FLOOR JOIST HAVING DEPTH/THICKNESS RATIO OF 6 OR MORE SHALL BE SUPPORTED LATERALLY BY BRIDGING INSTALLED AT 8' O.C. BRIDGING MAY BE OMITTED AT ENDS OF JOISTS WHICH ARE NAILED OR FASTENED TO FRAMING MEMBERS. RAFTERS GREATER THAN 8" IN DEPTH SHALL BE SUPPORTED LATERALLY AT ENDS AND AT EACH SUPPORT BY 2" MIN. SOLID BLOCKING, FULL DEPTH, UNLESS NAILED TO HEADER, RIM JOIST, OR ADJOINING STUD.
5. FLOOR JOISTS SHALL BE DOUBLED UNDER ALL BEARING WALLS RUNNING PARALLEL TO RAFTERS. (SEE PLAN)
6. FIRE BLOCK, AT 8' O.C. MAX., STUD WALLS AND PARTITIONS (INCLUDING FURRED SPACES) AT FLOOR–CEILING, SOFFITS, AND MIDHEIGHT OF WALLS OVER 8'–0" IN HEIGHT.
7. NOTCHING OF EXTERIOR BEARING/NON–BEARING WALLS SHALL NOT EXCEED 25%/40% RESPECTIVELY. BORED HOLES SHALL NOT EXCEED 40%/60% RESPECTIVELY.
8. ALL FRAMING SHALL BE FIRST CLASS THROUGHOUT, PROPERLY NAILED, TRUE AND PLUMB.
9. BLOCK ALL EDGES OF PLYWOOD OR USE 3/4" MIN. T&G PLYWOOD. ROOF SHEATHING SHALL HAVE SURFACE GRAIN PERPENDICULAR TO SUPPORTS AND JOINTS SHALL BE STAGGERED. VERTICAL SHEATHING SHALL BE PARALLEL TO SUPPORTS SPACED NO MORE THAN 16" O.C. MAXIMUM.
10. PLYWOOD SHALL BE DOUGLAS FIR CONFORMING TO COMMERCIAL STANDARDS PS–1–95. PLYWOOD SHALL BE BONDED WITH EXTERIOR GLUE AND BE EXTERIOR TYPE WHERE EXPOSED TO WEATHER.
11. ALL SHEAR PANELS SHALL BE FULL HEIGHT FROM SILL PLATE TO UNDERSIDE OF ROOF DIAPHRAGM.
12. ALL CONNECTORS CALLED OUT ARE AS MANUFACTURED BY SIMPSON "STRONG TIE" AND SHALL BE INSTALLED PER MANUFACTURER'S SPECIFICATIONS.
13. PROVIDE DOUBLE TOP PLATE SPLICES WITH MINIMUM 48" OVERLAP AND 16d NAILS AT 6" O.C. U.N.O.
14. ALL NAILING SHALL CONFORM TO CBC TABLE 2304.9.1
15. ALL SHEAR WALL AND ROOF SHEATHING SPECIAL NAILING SHALL BE INSPECTED AND APPROVED BY BUILDING INSPECTOR PRIOR TO BEING COVERED.
16. BOLT HOLES SHALL BE SAME DIAMETER AS BOLT PLUS 1/32". BOLTS AND LAG SCREWS BEARING ON WOOD SHALL HAVE STD. SIZE STEEL OR MALLEABLE IRON WASHER. LAG SCREW HOLES SHALL BE BORED SAME DIA. AND DEPTH AS SCREW SHANK AND THEN DRILLED THE REMAINING DEPTH. LAG SCREWS SHALL BE TURNED IN POSITION AND NOT DRIVEN.
17. ALL EXTERIOR OPENINGS SHALL BE FLASHED WITH AN APPROVED WATERPROOF PAPER.
18. NEW END STUDS ADJACENT TO EXISTING WALLS, POSTS SHALL BE BOLTED TO EXISTING SURFACES WITH 3/8"x 4" LONG MIN. LAG BOLTS AT 24" O.C. MAXIMUM U.N.O.
19. INTERIOR NON–BEARING WALLS MAY BE ANCHORED WITH POWER DRIVEN STEEL STUDS, IN LIEU OF ANCHOR BOLTS PROVIDING IT IS NOT A BRACED WALL, AS FOLLOWS:

MAX. SPACING	24"
MAX. DISTANCE FROM END OF WALL	12"
MIN. HEAD DIAMETER	3/8"
MIN. SHANK DIAMETER	7/32"
MIN. DISTANCE FROM EDGE OF CONCRETE	12"
WASHER SIZE	16 GA. x 12"

20. WOOD MEMBERS EXPOSED TO WEATHER SHALL BE PRESSURE TREATED OR SPECIFIED AS PAINTED.

GENERAL DOOR NOTES:
1. DOORS MUST OPEN OVER A LANDING NOT MORE THAN 1/2" BELOW THE THRESHOLD.
2. GLASS DOORS, ADJACENT PANELS, AND ALL GLAZED OPENINGS WITHIN 18" OF THE ADJACENT FLOOR OR OTHER HAZARDOUS LOCATION SHALL BE OF GLASS APPROVED FOR IMPACT HAZARD AND CONFORM TO ANSI 287.1
3. INTERIOR AND EXTERIOR THRESHOLDS SHALL BE A MAXIMUM 1/2" ABOVE THE ADJACENT FLOOR.

PAINTING:
1. ALL PAINT SHALL BE OF FIRST QUALITY DELIVERED TO THE JOB IN UNBROKEN CONTAINERS, AND SHALL BE MIXED IN ACCORDANCE WITH MANUFACTURER'S DIRECTIONS (DUNN EDWARDS, FRAZEE, DUTCHBOY, OR EQUAL).
2. ALL NAIL HOLES, CRACKS, AND JOINTS ARE TO BE PROPERLY PUTTIED AFTER PRIMING. EXISTING WALLS TO BE PAINTED WITH ONE COAT OF PAINT. NEW WALLS SHALL RECEIVE ONE PRIMER COAT AND TWO FINISH COATS OF SEMI–GLOSS PAINT.
3. PAINT TOP, BOTTOM, AND SIDES OF ALL DOORS ALSO.
4. CLEAN AND PAINT ALL EXISTING CEILINGS TO BE LEFT EXPOSED UNLESS NOTED OTHERWISE.

CERAMIC TILE:
1. PROVIDE CERAMIC AND QUARRY TILE AS SHOWN ON PLANS, AS SPECIFIED HEREIN. ALSO IN ADDITION TO COMPLYING WITH PERTINENT CODES AND REGULATIONS, COMPLY WITH THE RECOMMENDATIONS OF THE TILE TILE COUNCIL OF AMERICA, INC.
2. PORTLAND CEMENT SHALL COMPLY W/ASTM C150, TYPE I.
3. DRY–SET MORTAR SHALL BE STANDARD COMMERCIAL PRESANDED BRAND COMPLYING WITH ANSI A118.1.
4. GROUT SHALL BE "HYDROMENT" GROUT FROM STANDARD COLORS, OF THE MANUFACTURER FOR ALL TILE. OWNER SHALL SELECT COLORS.
5. ALL TILES SHALL MATCH EXISTING COLORS AND SIZE AS CLOSE AS POSSIBLE U.N.O.
6. PROVIDE COVE BASE, NOSINGS, AND OTHER ACCESSORY TILE AS REQUIRED FOR A COMPLETE AND PROPER INSTALLATION.
7. EXAMINE THE AREA AND CONDITIONS WHERE TILE IS TO BE INSTALLED AND VERIFY ALL AREAS TO RECEIVE TILE ARE IN SATISFACTORY CONDITION PRIOR TO TILE INSTALLATION. CORRECT AREAS AS REQUIRED .
8. COMPLY WITH ANSI A108.1 OR ANSI A108.5 AS APPROPRIATE FOR THE CONDITIONS OF INSTALLATION.
9. EXTEND TILE INTO RECESSES AND UNDER EQUIPMENT.
10. TERMINATE TILE NEATLY AT OBSTRUCTIONS, EDGES, AND CORNERS WITHOUT DISRUPTION OF PATTERN OR JOINT ALIGNMENT.
11. ALIGN JOINTS WHEN ADJOINING TILES.
12. PROVIDE UNIFORM JOINT WIDTHS.
13. UPON COMPLETION OF THE WORK OF THIS SECTION, CLEAN ALL SURFACES AS RECOMMENDED BY MFR.
14. ALL TILE INSTALLED AT FLOORS OR ANY FOOT TRAFFIC AREAS SHALL BE SLIP–RESISTANT.

CABINET WORK:
1. ALL CABINET WORK SHALL BE STANDARD GRADE U.N.O.
2. ALL CABINETS SHALL BE AS DETAILED ON PLANS, IF APPLICABLE, BE OF STAIN GRADE CLEAR PINE VENEER PLYWOOD, AND HAVE CAPPED EDGES WHERE EXPOSED.
3. CABINETRY TO HAVE TWO FINISH COATS OF SEMI–GLOSS ENAMEL.
4. SHOP ASSEMBLED UNITS SHALL RECEIVE FINISH IN SHOP.

ENERGY REQUIREMENTS:
1. ALL INSULATION MATERIALS SHALL CONFORM TO STATE OF CALIFORNIA ENERGY STANDARDS.
2. SWINGING DOORS OR WINDOWS TO THE EXTERIOR OR UN–CONDITIONED SPACES SHALL BE FULLY WEATHERSTRIPPED, GASKETED, OR OTHERWISE TREATED TO LIMIT AIR INFILTRATION.
3. ALL DOMESTIC AND HEATING HOT WATER LINES SHALL BE INSULATED AS REQUIRED.
4. NEW FULL HEIGHT WALLS AND ALL UTILITY PENETRATIONS THROUGH NEW AND EXISTING WALLS, FLOORS AND CEILINGS SHALL BE SEALED, CAULKED, OR WEATHER–STRIPPED TO LIMIT AIR INFILTRATION.
5. A NIGHT SETBACK THERMOSTAT SHALL BE INSTALLED AT A HEIGHT NOT TO EXCEED 48" ABOVE FINISH FLOOR.
6. DUCTS SHALL BE CONSTRUCTED, INSULATED, AND INSTALLED PER CA MECHANICAL CODE.
7. BACKDRAFT DAMPERS FOR ALL EXHAUST AND FAN SYSTEMS SHALL BE INSTALLED AS REQUIRED.
8. ALL WATER HEATING AND SPACE CONDITIONING EQUIPMENT, TOILET FIXTURES AND FAUCETS SHALL BE C.E.S. CERTIFIED.
9. UPON COMPLETION OF THE INSULATION INSTALLATION, BOTH THE BUILDER AND INSULATION APPLICATOR SHALL EXECUTE A CARD CERTIFYING THAT THE INSULATION HAS BEEN INSTALLED IN CONFORMANCE WITH TITLE 24, PART 2, CHAPTER 2–53 OF THE C.A.C. THE CARD MUST BE LOCATED IN A CONSPICUOUS PLACE WITHIN BUILDING.
10. ALL EXTERIOR WALLS SHALL BE INSULATED WITH BLANKET TYPE MINERAL FIBER OR GLASS FIBER INSULATION CONFORMING WITH FEDERAL SPECIFICATION HH–521E, WITH THERMAL RESISTANCE VALUE OF NOT LESS THAN R–11 WITH VAPOR BARRIER AT CONDITIONED SIDE U.N.O.
11. ALL CEILINGS OF ROOF/CEILING ASSEMBLIES SHALL BE INSULATED WITH EITHER: A.) BLANKET TYPE MINERAL FIBER CONFORMING TO FED. SPEC. HH–1–52IE R–38 OR B.) FIBERGLASS INSULATION CONFORMING TO FED. SPEC. HH–1–1030A, R–38 UNLESS OTHERWISE NOTED.
12. ALL SLIDING DOORS AND WINDOWS SHALL BE CERTIFIED AND LABELED TO SHOW CONFORMANCE WITH AIR INFILTRATION STANDARDS OF AMERICAN STANDARD INSTITUTE, A134–1 THRU A134–4; WHEN TESTED IN ACCORDANCE WITH ASTM, E 283073 WITH A PRESSURE DIFFERENTIAL OF 1.57 P.S.F.
13. REQUIRED TINTED GLAZING SHALL BE PERMANENTLY TINTED OR PERMANENTLY SURFACE COATED BY THE MANUFACTURER OF THE GLAZING MATERIAL, AND SHALL PROVIDE A MAXIMUM TINTING COEFFICIENT OF 0.55.
14. ALL OPENABLE SLIDING DOORS AND WINDOWS SHALL LIMIT AIR LEAKAGE AND BE CERTIFIED AND LABELED TO COMPLY WITH TABLE 2–53V OF STATE OF CALIFORNIA ENERGY CODE.
15. ALL FIXED WINDOWS SHALL BE SEALED TO LIMIT AIR INFILTRATION.
16. PROVIDE AND INSTALL THE FOLLOWING:
    A. SEAL OR ASTRAGAL AT SILL, HEAD, AND JAMBS
    B. 1" MINIMUM OVERLAP AT JAMBS FOR ALL DOORS MOUNTED ON EITHER SIDE OF EXTERIOR WALLS
    C. WEATHERTIGHT ASTRAGAL OR SEAL AT MEETING PART OF SECTIONAL, BI–PARTING, OR DOUBLE DOORS
    D. CONTINUOUS MOUNTING ANGLE FOR DOORS REQUIRING VERTICAL TRACKS OR GUIDES. SEAL TRACKS ALSO TO LIMIT AIR INFILTRATION
17. OPEN EXTERIOR JOINTS AROUND DOOR AND WINDOW FRAMES; BETWEEN WALLS AND FOUNDATIONS, WALLS AND ROOF, AND WALL PANELS; AND AT UTILITY ENVELOPE PENETRATIONS SHALL BE SEALED, CAULKED, OR WEATHERSTRIPPED TO LIMIT AIR LEAKAGE.
18. 40 LUMENS/WATT EFFICIENCY SHALL BE PROVIDED FOR GENERAL LIGHTING IN KITCHENS AND BATHROOMS.
19. INSTALL AN R–12 EXTERIOR BLANKET ON ALL WATER HEATERS AND R–3 PIPE INSULATION ON THE FIRST FIVE FEET OF THE HOT WATER PIPE OUTLET.
20. MASONRY AND FACTORY–BUILT FIREPLACES SHALL BE INSTALLED WITH TIGHT–FITTING CLOSEABLE METAL OR GLASS DOORS, OUTSIDE AIR INTAKE WITH DAMPER AND FLUE DAMPER. CONTINUOUS BURNING GAS PILOTS ARE PROHIBITED.
21. ALL GLAZED OPENINGS SHALL BE DUAL–GLAZED.

FINISH NOTES:
1. VERIFY ALL FINISHES AND COLORS WITH OWNER.
2. SEE REFLECTED CEILING PLAN, IF ANY, FOR CEILING FINISHES.
3. ALL INTERIOR WALLS, DOORS, TRIM, ETC. TO RECEIVE ONE PRIMER COAT AND TWO FINISH COATS.
4. INTERIOR FINISHES TO HAVE FLAME SPREAD AND SMOKE DENSITY RATINGS AS FOLLOWS:
    CORRIDORS, LOBBYS, FOYERS – SMOKE DENSITY 150 FLAME SPREAD II;
    OTHER ROOMS/AREAS – SMOKE DENSITY 450, FLAME SPREAD III
    GROUP R.3 OCCUPANCIES SHALL HAVE A MINIMUM FLAME SPREAD CLASIFICATION OF III EXCEPT IN KITCHENS, BATHROOMS, AND GARAGES.
5. CONTRACTOR SHALL INSTALL ALL FINISH MATERIALS AND LIGHTING FIXTURES. COORDINATE WITH OWNER AS TO PROVIDING MATERIALS.

ELECTRICAL/MECHANICAL/PLUMBING:
ALL WORK DONE PER THESE DRAWINGS AND MATERIALS SHALL COMPLY WITH ALL CURRENT APPLICABLE CODES AND ORDINANCES. USE NEW MATERIALS ONLY U.N.O. EXISTING MATERIALS MAY BE REUSED IF THEY CONFORM TO ALL APPLICABLE CURRENT CODES. OTHERWISE, CONTRACTOR WILL REPLACE MATERIALS AS REQUIRED. CONTRACTOR SHALL INSPECT AND REPAIR ALL EXISTING MATERIALS, EQUIPMENT, & FIXTURES TO REMAIN TO INSURE PROPER WORKING ORDER.
1. RELOCATE LIGHT FIXTURES AND SWITCHES, OUTLETS, RETURN AIR AND SUPPLY AIR GRILLES, MECHANICAL EQUIPMENT, THERMOSTATS, AND CONTROLS AS REQUIRED FOR NEW CONSTRUCTION. PROVIDE ADEQUATE CLIMATE CONTROL IN AREAS AFFECTED BY CONSTRUCTION.
2. ELECTRICAL CONTRACTOR SHALL DETERMINE ELECTRICAL LOADS AND PROVIDE SINGLE LINE DIAGRAMS, PANEL DIAGRAMS, POWER AND LIGHTING PLANS AS REQUIRED AND OBTAIN ALL ELECTRICAL PERMITS.
3. MECHANICAL CONTRACTOR SHALL PROVIDE COMPLETE MECHANICAL SYSTEM DESIGN AND INSTALLATION AS REQUIRED AND OBTAIN ALL MECHANICAL PERMITS.
4. ALL ELECTRICAL OUTLETS SHALL BE WALL MOUNTED AT A HEIGHT OF 15" A.F.F. AND ALL ELECTRICAL SWITCHES SHALL BE MOUNTED AT 42" A.F.F. U.N.O.
5. ALL CONDUIT FOR TELEPHONE SHALL HAVE PULL WIRES. HOMERUN J. BOXES SHALL BE IDENTIFIED. ALL PHONE CONDUIT MUST COMPLY WITH FCC REQUIREMENTS.
6. N/A
7. ELECTRICAL CONTRACTOR SHALL PROVIDE GROUNDING IN AN APPROVED MANNER AS REQUIRED BY CODE. PROVIDE BONDING JUMPERS FOR ALL RECEPTACLES.
8. VERIFY LOCATIONS OF OUTLETS, PROVIDE CONTROL CONDUIT WIRE AND AUXILIARIES FOR A COMPLETE INSTALLATION.
9. THE ELECTRICAL CONTRACTOR SHALL VISIT THE SITE AND MAKE A SURVEY OF EXISTING CONDITIONS WHICH MAY AFFECT OR BE AFFECTED BY THE WORK UNDER THIS SECTION PRIOR TO BEGINNING WORK. REFERENCES MADE ON THE DRAWINGS TO EXISTING CONDITIONS SHALL BE SUBJECT TO VERIFICATION BY CONTRACTOR IN HIS SURVEY AND IN THE PROGRESS OF THE WORK.
10. FURNISH, INSTALL, AND MAINTAIN TEMPORARY SERVICE.
11. THIS ENGINEER ASSUMES NO LIABILITY OR RESPONSIBILITY TO ANYONE WHATSOEVER AS A RESULT OF ANY INACCURACIES OR CHANGES IN INFORMATION FURNISHED TO ENGINEER ON WHICH THESE PLANS WERE BASED.
12. ALL MATERIAL AND ELECTRICAL EQUIPMENT EXPOSED TO WEATHER SHALL BE WEATHERPROOFED.
13. ALL BALLASTS SHALL BE ENERGY SAVING TYPE, CERTIFIED HIGH POWER FACTOR 120 VOLT AND SHALL HAVE AUTOMATIC CLASS "P" THERMAL OVERLOAD PROTECTION.
14. WHERE SWITCHES ARE SHOWN TOGETHER, THEY SHALL BE MOUNTED IN A SINGLE, TWO, OR THREE GANG OUTLET BOX.
15. ALL OUTLETS WITH 9 TO 13 #12 CONDUCTORS SHALL BE 4" SQ. BY 2–1/8" DEEP OR 5" SQ. BY 1–1/2" DEEP, OUTLETS WITH 14 TO 18 #12 CONDUCTORS SHALL BE 5" SQ. BY 2–1/8" DEEP.
16. ALL BACK TO BACK OUTLETS IN WALL SHALL BE OFFSET A MINIMUM OF 2 FEET. NO BOXES WILL BE PERMITTED BACK TO BACK IN THE STUD SPACE ANY WHERE IN THIS PROJECT.
17. FOR CONNECTION OF EXHAUST FANS, PUMPS, COMPRESSORS, SPACE AND WATER HEATERS, AQUASTATS, SOLENOID VALVE AND OTHER MECHANICAL EQUIPMENT, AND FOR CONDUITS AND WIRE REQUIRED BUT NOT NECESSARILY SHOWN ON ON DRAWINGS, REFER TO MECHANICAL PLANS, IF ANY, AND DETERMINE EXACT LOCATION UNDER DIRECTION OF HVAC AND PLUMBING CONTRACTOR.
18. VERIFY LOCATIONS OF THERMOSTAT CONTROLLING A/C UNITS. DISCONNECT SWITCH SHALL BE WEATHERPROOF.
19. ELECTRICAL OUTLETS IN KITCHENS AND BATHROOMS SHALL BE 42" A.F.F. AND TYPE 'GFI" U.N.O.

SECURITY REQUIREMENTS:
ALL EXTERIOR OPENINGS ARE SECURITY OPENINGS AND SHALL COMPLY WITH THE FOLLOWING:
1. PROVIDE DOOR VIEWERS, VIEW PORTS, OR VIEWING WINDOWS AT ALL DWELLING OR GUEST ROOM ENTRANCE DOORS. SUCH WINDOWS OR VIEW PORTS SHALL BE CONSTRUCTED PER BUILDING CODE.
2. METAL OR DOOR OVERHEAD OR SLIDING DOORS SHALL BE SECURED PER 91.673.
3. METAL ACCORDION–GRATE OR GRILLE–TYPE DOORS SHALL HAVE METAL GUIDES AT TOP AND BOTTOM.
4. SWINGING DOOR REQUIREMENTS:
    A. WOOD DOORS SHALL BE A MINIMUM 1–3/8" THICK WITH A SOLID CORE.
    B. HOLLOW CORE DOORS OR DOORS LESS THAN 1–3/8" THICK SHALL BE COVERED ON THE INSIDE FACE WITH 16 GA. MIN. SHEET METAL ATTACHED WITH SCREWS AT 6" O.C. AROUND PERIMETER OR EQUAL.
    C. WOOD PANEL TYPE DOORS SHALL BE FABRICATED OF LUMBER NOT LESS THAN 9/16" THICK WITH SHAPED PORTIONS NOT LESS THAN 1/4". STILES AND RAILS SHALL NOT BE LESS THAN 1–3/8"x3" IN WIDTH.
    D. GLAZED OPENINGS WITHIN 40" OF DOOR WHEN DOOR IS CLOSED SHALL BE FULLY TEMPERED GLASS OR APPROVED BURGLARY RESISTANT MATERIAL OR SHALL BE PROTECTED BY METAL BARS, SCREENS OR GRILLES HAVING A MAXIMUM 2" OPENING.
    E. DOOR STOPS OF IN–SWINGING DOORS SHALL BE ONE PIECE CONSTRUCTION WITH THE JAMB, OR JOINED BY RABBET TO THE JAMB.
    F. ALL PIN–TYPE HINGES WHICH ARE ACCESSIBLE FROM OUTSIDE WHEN THE DOOR IS CLOSED SHALL HAVE NON–REMOVAL HINGE PINS, AND SHALL HAVE A MINIMUM 1/4" DIA. STEEL JAMB STUD WITH A MIN. 1" PROTECTION TO PREVENT REMOVAL OF THE DOOR IF THE HINGE PINS ARE REMOVED.
    G. STRIKE PLATE FOR LATCHES AND THE HOLDING DEVICE FOR PROJECTING DEADBOLTS IN WOOD CONSTRUCTION SHALL BE SECURED TO THE JAMB AND THE WALL FRAMING WITH SCREWS NOT LESS THAN 2–1/2" IN LENGTH.
    H. DOORS WILL EITHER HAVE DEADBOLTS OR DEAD LOCKING LATCHES AND HAVE HARDENED INSERTS.
    I. STRAIGHT DEADBOLTS SHALL HAVE A MINIMUM THROW OF 1" AND AN EMBEDMENT OF 5/8" MINIMUM.
    J. HOOK–SHAPED OR EXPANDING–LUG DEADBOLTS SHALL HAVE A MINIMUM 3/4" THROW.
    K. CYLINDER GUARDS SHALL BE INSTALLED ON ALL CYLINDER LOCKS WHENEVER THE CYLINDER PROJECTS BEYOND THE FACE OF THE DOOR OR IS OTHERWISE ACCESSIBLE WITH GRIPPING TOOLS.
    L. INSTALL DEADBOLT TOP AND BOTTOM ON INACTIVE LEAF OF DOUBLE DOORS AND UPPER LEAF OF DUTCH TYPE DOORS WITH 1/2" MINIMUM EMBEDMENT.
    M. GLASS DOORS SHALL BE FULLY TEMPERED.
    N. UNFRAMED GLASS DOORS SHALL BE A MINIMUM 1/2" THICK AND FULLY TEMPERED.
    O. NARROW FRAMED GLASS DOORS SHALL HAVE A SINGLE PANE OF MINIMUM 1/4" FULLY TEMPERED GLASS.
5. ALL OPENABLE SLIDING DOORS AND WINDOWS SHALL HAVE SUBSTANIAL LOCKING DEVICES, BEAR FORCED ENTRY DEVICES, AND WITHSTAND TEST AS SET FORTH IN SECTIONS 6706 AND 6707 OF THE U.B.C.
6. SLIDING GLASS DOORS AND WINDOWS SHALL BE EQUIPPED WITH LOCKING DEVICES AND SHALL BE CONSTRUCTED AND INSTALLED SO THAT THEY REMAIN INTACT WHEN SUBJECTED TO TESTS AS SPECIFIED IN THE I.B.C.
7. SLIDING DOORS AND WINDOWS SHALL BE PROVIDED WITH A DEVICE IN THE UPPER CHANNEL OF THE MOVING PANEL TO PROHIBIT RAISING AND REMOVING THE MOVING PANEL IN THE CLOSED OR PARTIALLY CLOSED POSITION.
8. ANY RELEASE OF METAL BARS, GRILLES, GRATES, OR SIMILAR DEVICES TO PRECLUDE HUMAN ENTRY SHALL BE LOCATED ON THE INSIDE OF THE ADJACENT ROOM AND AT LEAST 24" FROM THE CLOSEST OPENING THROUGH SUCH METAL BARS, GRILLES, GRATES, ETC. THAT EXCEEDS 2" IN ANY DIRECTION AND SHALL COMPLY WITH LOCAL FIRE DEPARTMENT REQUIREMENTS.
9. AT ALL EXTERIOR SWINGING DOORS OR ACTIVE LEAF OF DOUBLE DOORS, LOCKING HARDWARE SHALL BE KEY OPERATED FROM THE OUTSIDE AND OPERATED FROM THE INSIDE BY A DEVICE NOT PROHIBITED BY IBC 2006
10. OVERHEAD AND SLIDING GARAGE DOORS SHALL BE SECURED WITH A CYLINDER LOCK, PADLOCK WITH A HARDENED STELL SHACKLE, METAL SLIDE BAR BOLT OR EQUIVALENT WHEN NOT OTHERWISE LOCKED BY ELECTRIC POWER OPERATION. JAMB LOCKS SHALL BE ON BOTH JAMBS FOR DOORS EXCEEDING 9 FEET IN WIDTH.
11. SINGLE SWINGING DOOR, ACTIVE LEAF OF A PAIR OF DOORS, AND THE BOTTOM LEAF OF DUTCH DOORS SHALL BE EQUIPPED WITH A LATCH AND A DEADBOLT KEY OPERATED FROM THE OUTSIDE.
12. DEADBOLT SHALL HAVE A HARDENED INSERT AND A 1" MINIMUM THROW WITH 5/8" MINIMUM EMBEDMENT INTO JAMB. IF THE LATCH HAS A KEY LOCKING FEATURE, IT SHALL BE A DEAD LATCH TYPE.
13. INACTIVE LEAF OF A PAIR OF DOORS OR UPPER LEAF OF DUTCH DOOR SHALL HAVE AS PER PARAGRAPH ABOVE, NOT KEY OPERATED, OR HARDENED DEADBOLT TOP AND BOTTOM WITH 1/2" EMBEDMENT.
14. PANELS OF WOOD DOORS SHALL BE 9/16" THICK AND NOT MORE THAN 300 SQUARE INCHES. STILES AND RAILS TO BE 1–3/8" THICK AND 3" MINIMUM WIDTH.
15. WINDOWS AND DOOR LIGHTS WITHIN 24" OF THE LOCKING DEVICE OF THE DOOR SHALL BE FULLY TEMPERED/APPROVED BURGLARY RESISTANT/PROTECTED BY BARS, SCREENS OR GRILLS.

"Construction Waste Management (CWM) compliance forms and worksheets are a deferred submittal per CBC Section 107.3.4.1. All documents, including waste–separation methods and diversion rates, CWM Acknowledgment, and finish material certificates, will be provided by the contractor prior to construction."

Note: The PV system must be installed prior to final inspection.

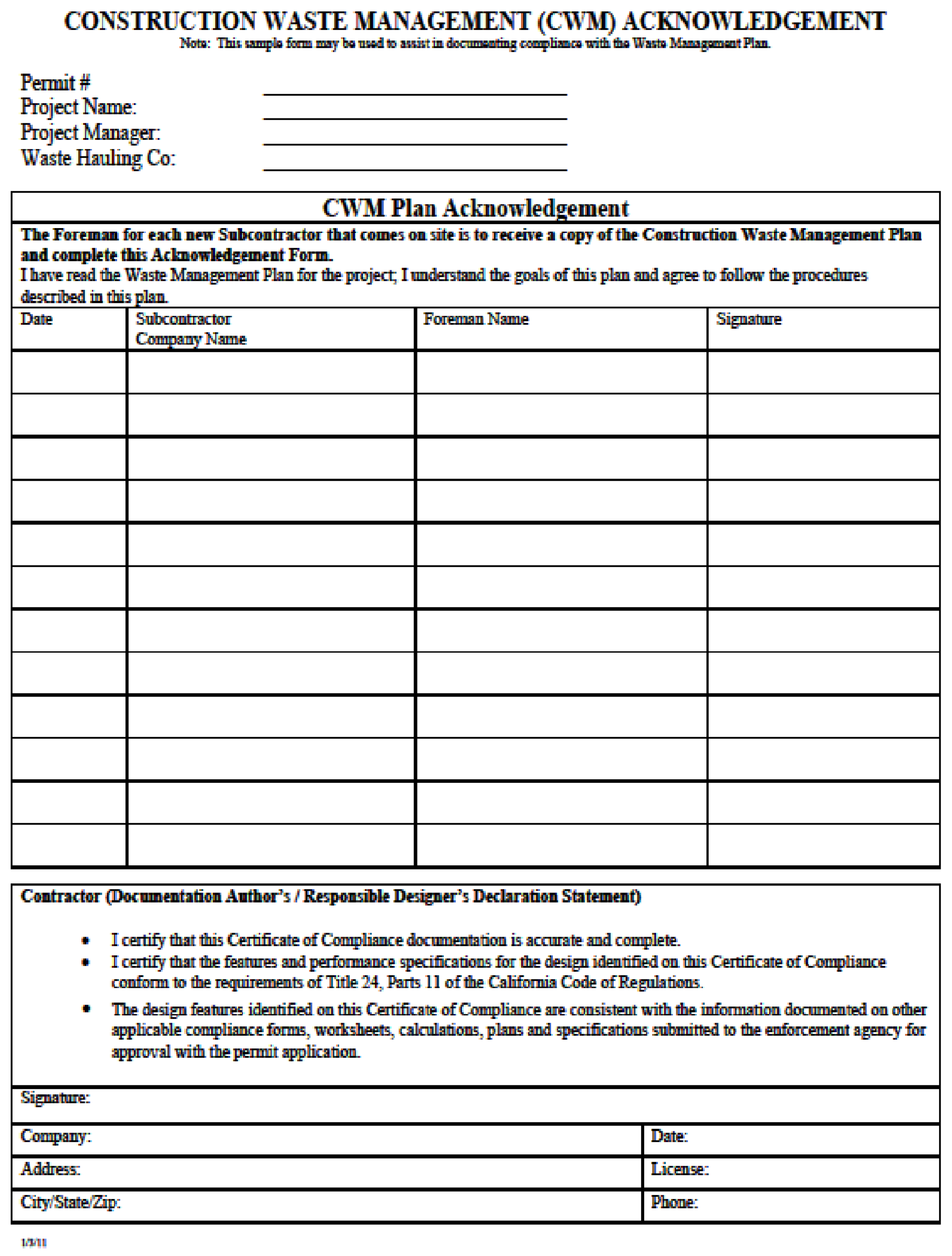
All deferred submittal items must be submitted for plan review and approval before installation. An additional plan review fee may be required for deferred items.

LANDSCAPE NOTE.
Residential developments shall comply with a local water efficient landscape ordinance or the current California Department of Water Resources' Model Water Efficient Landscape Ordinance (MWELO, whichever is more stringent. Section 4.304.1.
THIS PROJECT HAS NO NEW LANDSCAPING.

NOTE: "Building shall have address numbers placed in a position that is plainly legible and visible from the street or road fronting the property. Numbers shall contrast with background, be Arabic or alphabetical letters and be a minimum of 4" high with a minimum stroke of ½ inch." (R319.1 CRC)

Projects which disturb less than one acre of soil and ae not part of a larger common plan of development which in total disturbs one acre or more, shall manage storm water drainage during construction. In order to manage storm drainage during construction, one or more of the following measures shall be implemented to prevent flooding of adjacent property, prevent erosion and retain soil runoff on the site.
a. Retention basins of sufficient size shall be utilized to retain storm water on the site.
b. 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 by the enforcing agency.
c. Compliance with a lawfully enacted storm water management ordinance.

DRAWING INDEX



CONSTRUCTION WASTE MANAGEMENT (CWM) ACKNOWLEDGEMENT

Note: This sample form may be used to assist in documenting compliance with the Waste Management Plan.

Permit # ____________
Project Name: ____________
Project Manager: ____________
Waste Hauling Co: ____________

CWM Plan Acknowledgement

The Foreman for each new Subcontractor that comes on site is to receive a copy of the Construction Waste Management Plan and complete this Acknowledgement Form.
I have read the Waste Management Plan for the project; I understand the goals of this plan and agree to follow the procedures described in this plan.

Date	Subcontractor Company Name	Foreman Name	Signature

Contractor (Documentation Author's / Responsible Designer's Declaration Statement)

- I certify that this Certificate of Compliance documentation is accurate and complete.
- I certify that the features and performance specifications for the design identified on this Certificate of Compliance conform to the requirements of Title 24, Parts 11 of the California Code of Regulations.
- The design features identified on this Certificate of Compliance are consistent with the information documented on other applicable compliance forms, worksheets, calculations, plans and specifications submitted to the enforcement agency for approval with the permit application.

Signature:	
Company:	Date:
Address:	License:
City/State/Zip:	Phone:

1/3/11

SHEAR WALL SCHEDULE

SHT 1

SHEARWALL SCHEDULE						
TYPE	DESCRIPTION	CAPACITY	FOUNDATION BOLTS	SILL PLATE NAILING @ SECOND FLOOR	A–35's PLACEMENT @ TOP PLATE	SILL PLATE SIZE
△1	15/32" PLYWOOD STRUCT–I W/8d NAILS @ 6" O.C. EDGE, 12" O.C. FIELD.	V=280PLF	SEE PLANS AND WALL SECTIONS			
△2	15/32" PLYWOOD STRUCT–I W/8d NAILS @ 4" O.C. EDGE, 12" O.C. FIELD. 3X FRAMING @ PANEL EDGES, 3X SILL	V=430PLF				
△3	15/32" PLYWOOD STRUCT–I W/8d NAILS @ 3" O.C. EDGE, 12" O.C. FIELD. 3X FRAMING @ PANEL EDGES, 3X SILL	V=550PLF				
△4	15/32" PLYWOOD STRUCT–I W/8d NAILS @ 2" O.C. EDGE, 12" O.C. FIELD. 3X FRAMING @ PANEL EDGES, 3X SILL	V=730PLF				
△5	15/32" PLYWOOD STRUCT–I W/10d NAILS @ 2" O.C. EDGE, 12" O.C. FIELD. 3X FRAMING @ PANEL EDGES, 3X SILL	V=870PLF				

NOTES :

1. NAILING:
    a. COMMON NAILS SHALL BE USED FOR PLYWOOD SHEATHING.
    b. USE MIN. 1/2" EDGE NAILING DISTANCE AT PANEL ENDS AND EDGES.
2. 1/2" APPROVED APA STRUCTURAL RATED ORIENTED STRAND BOARDS (OSB) SHEATHING MAY BE USED IN LIEU OF 15/32" OR 3/8" PLYWOOD SHEATHING.
3. THE SHEAR WALL ASSEMBLY SHALL RUN HORIZONTALLY AND CONTINUOUSLY TO THE NEAREST OPENING OR THE END OF THE WALL.
4. THE SHEAR WALL ASSEMBLY SHALL RUN VERTICALLY AND CONTINUOUSLY FROM THE BOTTOM PLATE UP TO THE TOP OF THE NEAREST DOUBLE TOP PLATES (OR BEAM).
5. WHERE A PLYWOOD SHEAR WALL HEIGHT EXCEEDS THE HEIGHT OF A PLYWOOD SHEAR PANEL, PROVIDE SOLID BLOCKING AT UNSUPPORTED PANEL EDGES.
6. EDGE NAILING AT THE END OF A SHEAR WALL (AND SHEAR PANEL) SHALL BE NAILED TO ONE SINGLE STUD OF 1–1/2" MIN. WIDTH, THAT RUNS CONTINUOUSLY FROM THE BOTTOM OR SOLE PLATE TO THE TOP DOUBLE PLATES (U.N.O.).
7. WHERE POSTS OR MULTIPLE STUDS ARE INDICATED AT THE END OF A SHEAR WALL SUCH MEMBERS SHALL BE EDGE NAILED AND SHALL RUN CONTINUOUSLY FROM THE BOTTOM OR SOLE PLATE TO THE DOUBLE TOP PLATES
8. PLYWOD SPECIFIED AS A SHEAR PANEL SHALL BE A.P.A. STAMPED WITH EXTERIOR GLUE.
9. ANCHOR BOLTS : THE SOLE PLATE OF ALL SHEAR WALLS SHALL BE SECURED AS FOLLOWS (U.N.O) :
    a. BOLTS TO BE EMBEDDED INTO SINGLE POUR FOUNDATIONS SHALL BE 5/8"ø x10" LONG. BOLTS TO BE EMBEDDED INTO TWO POUR FOUNDATIONS SHALL BE 5/8"ø AND OF SUFFICIENT LENGTH FOR BOLTS TO BE EMBEDDED A MINIMUM OF 7" INTO FIRST POUR.
    b. SPACE BOLTS AT 4'–0" O.C. MAXIMUM (U.N.O.) PROVIDE ONE BOLT WITHIN 12" OF EACH END AND CORNERS OF WALLS. PROVIDE TWO BOLTS MINIMUM PER WALL.
10. ALL UNSUPPORTED PANEL EDGES SHALL BE BLOCKED WITH 2" NOMINAL OR THICKER FRAMING (SEE SCHEDULE ABOVE)
11. ALL NAILS SHALL BE STAGGERED, WHERE THE NAILS ARE SPACED 2" OR 3" ON CENTER.
12. INTERIOR SHEAR WALLS SHALL RUN CONTINUOUSLY UP TO FLOOR OR ROOF FRAMING (U.O.N).
13. ALL STUDS IN SHEAR WALLS SHALL BE FRAMED AT 16" O.C. MAXIMUM.
14. PLATE WASHERS SHALL USED WITH ALL ANCHOR BOLTS.
    5/8" DIA. A.B. = P.L. WASHER 3"x3"x0.229"
    3/4" DIA. A.B. = P.L. WASHER 3"x3"x5/16"
    7/8" DIA. A.B. = P.L. WASHER 3"x3"x3/8"
15. WHERE PANELS ARE APPLIED ON BOTH FACES OF A WALL AND NAIL SPACING IS LESS THAN 6" ON CENTER ON EITHER SIDE, PANEL JOINTS SHALL BE OFFSET TO FALL ON DIFFERENT FRAMING MEMBERS OR FRAMING SHALL BE 3" NOMINAL OR THICKER AND NAILS ON EACH SIDE SHALL BE STAGGERED.

NOTE: Special inspections per Kern County Code of Building Regulations Section 17.08.470 and CBC Sections 1705.5 and 1705.11.2 "Periodic special inspection is required for nailing, bolting, anchoring and other fastening of components within the seismic–force–resisting system, including wood shear walls, wood diaphragms, drag truss, braces, shear panels and hold–downs". In addition, special inspection is required for high load diaphragms and wood trusses spaced more than 60'. Where the structure is less than 3,000 sq. ft., special inspection is not required. Per CBC 1705.5.2 trusses over 60" in height require special inpection. E.O.R. does not require structural observation for this project.

PROJECT ANALYSIS

BUILDING CODE EDITION:
2022 CA BUILDING CODE
2022 CA ELECTRIC CODE
2022 CA PLUMBING CODE
2022 CA ENERGY CODE
2022 CA MECHANICAL CODE
2022 GREEN CODE
2022 RESIDENTIAL CODE

OCCUPANCY CLASSIFICATION: R–3, U
TYPE OF CONSTRUCTION: V–B
MAX HEIGHT OF DWELLING: 14' (ELEV. 2401'±)
NUMBER OF STORIES: 1
FIRE ZONE: 299
WIND DESIGN SPEED: 130 mph
RISK CATEGORY II STRUCTURES
TOPOGRAPHIC EFFECTS: YES
SPECIAL WIND REGION: YES
WINDBORNE DEBRIS ZONE: YES
GROUND SNOW LOAD: 5 psf
ROOF L.L.: 20 psf
ROOF D.L.: 20 psf
SEISMIC DESIGN CATEGORY: D1
SOIL BEARING PRESSURE: 1,500 psf MAX
CLIMATE ZONE: 14
FROST LINE DEPTH: 12"

NEW CONSTRUCTION:

DWELLING	850 S.F.
GARAGE	280 S.F.
PORCH	32 S.F.
	1162 S.F. EACH UNIT

LOT SIZE: ___ AC

VICINITY MAP

NOTE:
FIRE SPRINKLERS ARE REQUIRED THROUGHOUT THE STRUCTURE (INCLUDING GARAGE).
IN ACCORDANCE W/ NFPA 13D
PLANS SHALL BE SUBMITTED UNDER SEPARATE PERMIT.

NOTE:
SOLAR PANELS PLANS TO BE SUBMITTED UNDER SEPARATE PERMIT.

STEPHEN MILLER
CIVIL
STATE OF CALIFORNIA

ENGINEER OF RECORD:
STEPHEN MILLER (661) 472–9575
P.O. BOX 8504, LONG BEACH, CA 90808

PLAN CHECK# COMP–24

YORK DRAFTING & DESIGN
20946 OLD TOWN RD
TEHACHAPI, CA. 93561
ROBIN L. YORK
(661) 406–0699
yorkdrafting@yahoo.com
AUTOCAD DESIGN
Remodeling
New Construction
CIVIL

DUPLEX FOR:

DUPLEX MASTER PLAN
CAL CITY, CA 93505
(818) 493–8144

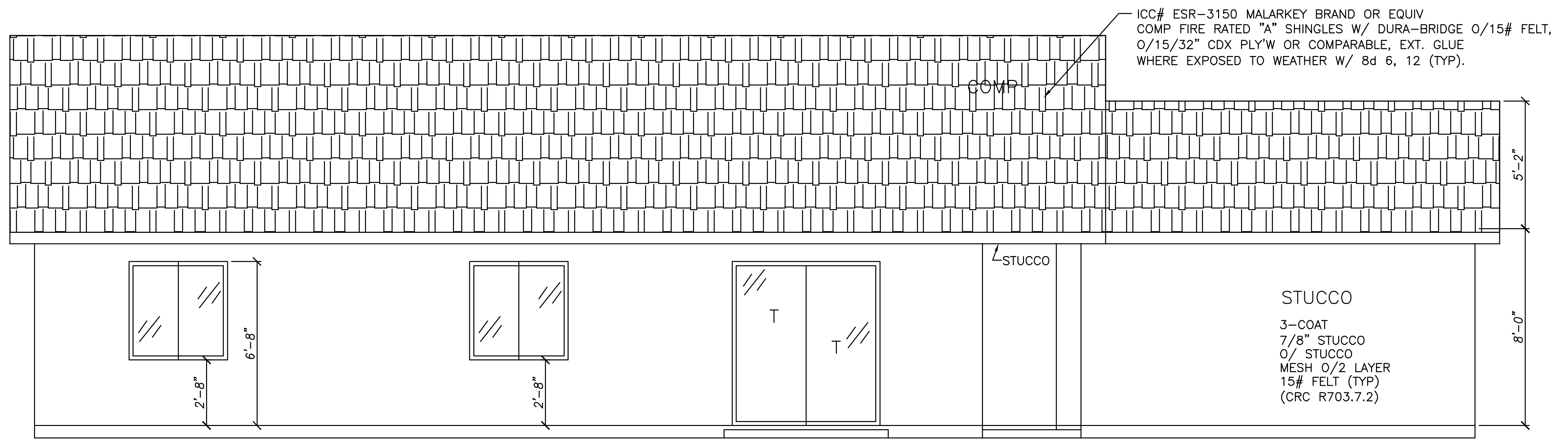
GENERAL NOTES,
VICINITY MAP,
AND SCHEDULES

CAL CITY
MASTER PLAN

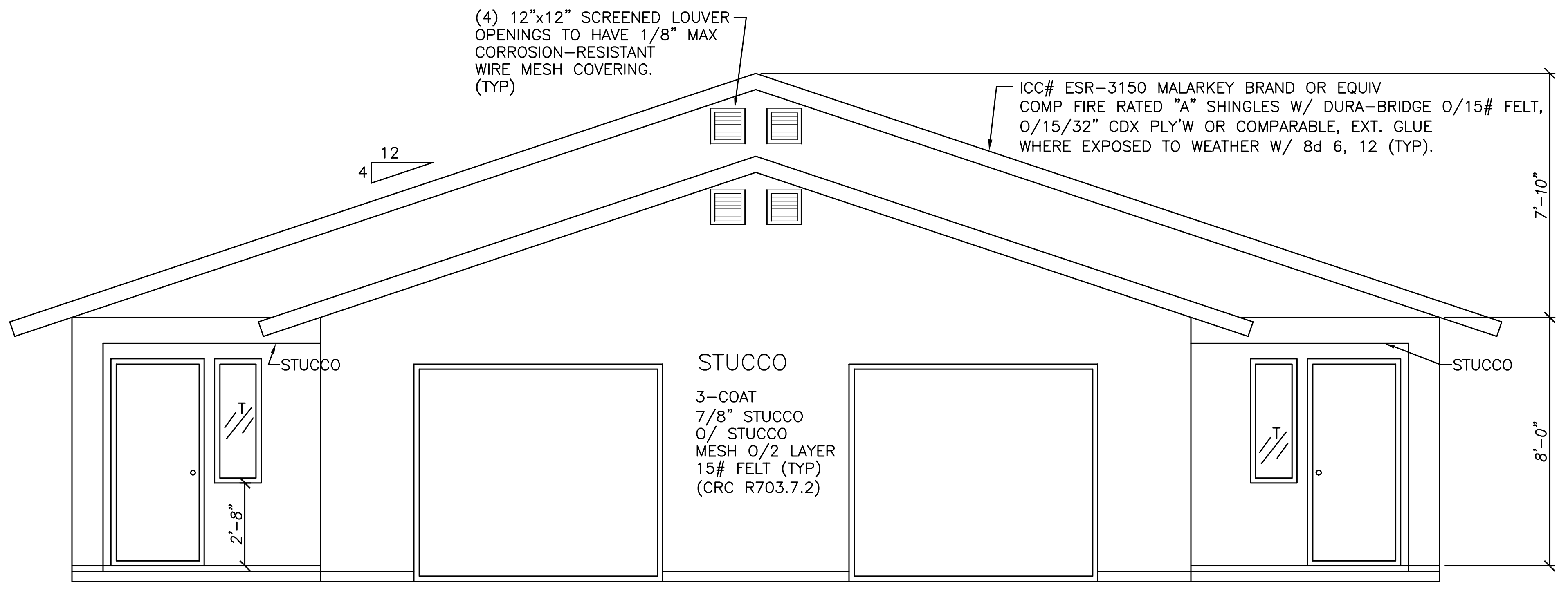
8-7-24

1 OF 9

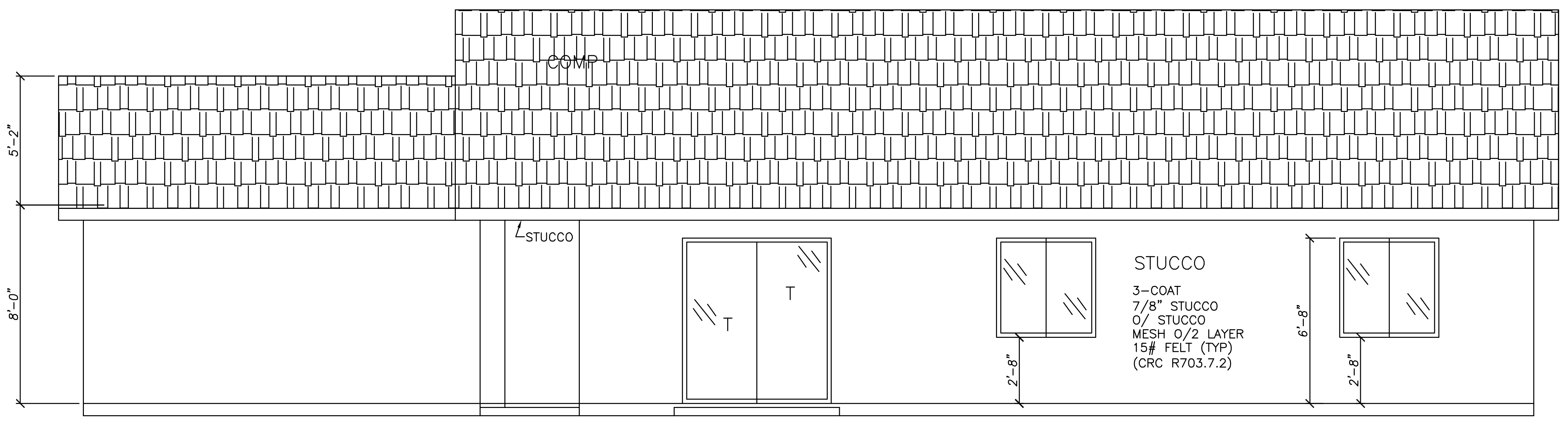
M1–24–DUPLEX



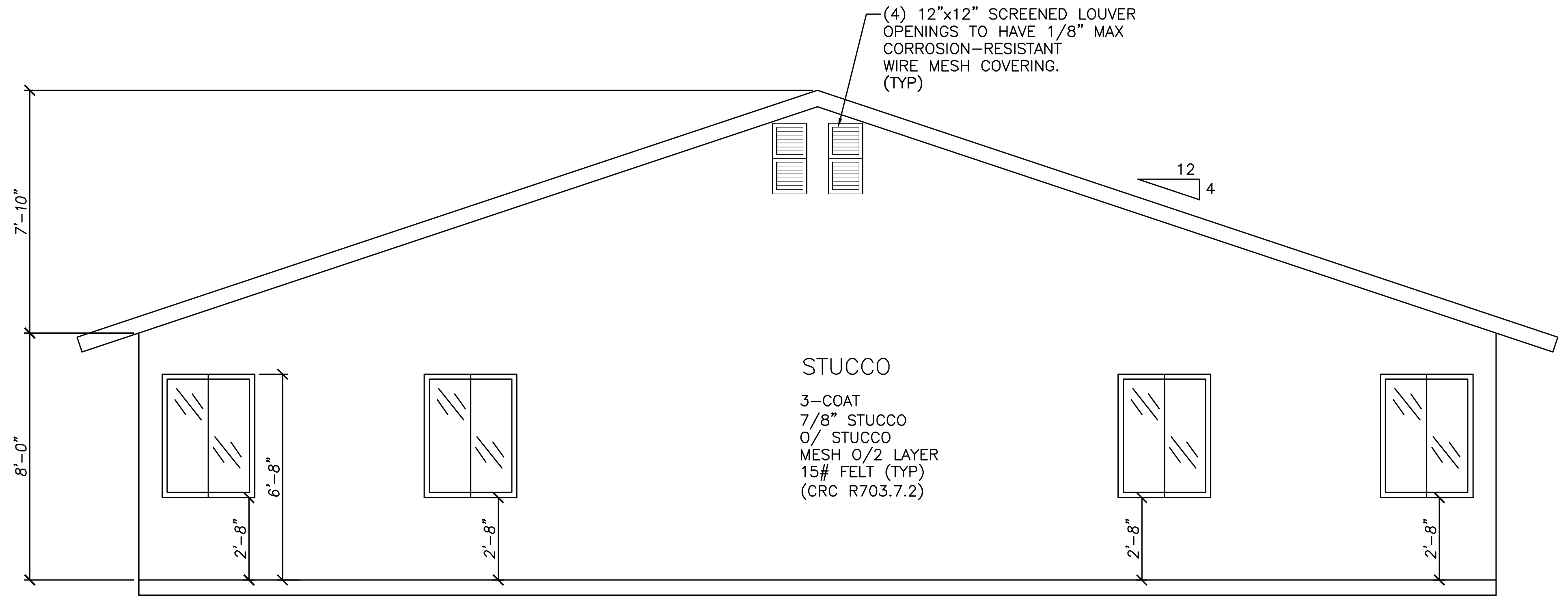
LEFT ELEVATION
1/4" = 1'-0"



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



RIGHT ELEVATION
1/4" = 1'-0"



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

NOTE. A minimum of one layers of No. 15 asphalt felt, free from holes and breaks, complying with ASTM D226 for Type I felt shall be applied over studs or sheathing of all exterior studs, CRC R703.2. Specify that two layers of Grade D or 60 minutes Grade D paper shall be applied over all wood-based sheathing, CRC R703.2.

T = TEMP

NOTE:
ALL EXTERIOR DOORS SHALL BE SOLID-CORE NOT LESS THAN 1-3/8" THICK OR UTILIZE MULTIPLE-GLAZED PANELS CONSISTING OF NOT LESS THAN DUAL PANE GLAZING.

ALL BEDROOMS, BASEMENTS, OR ROOMS USED FOR SLEEPING SHALL HAVE EMERGENCY RESCUE WINDOWS OR DOORS AS FOLLOWS:

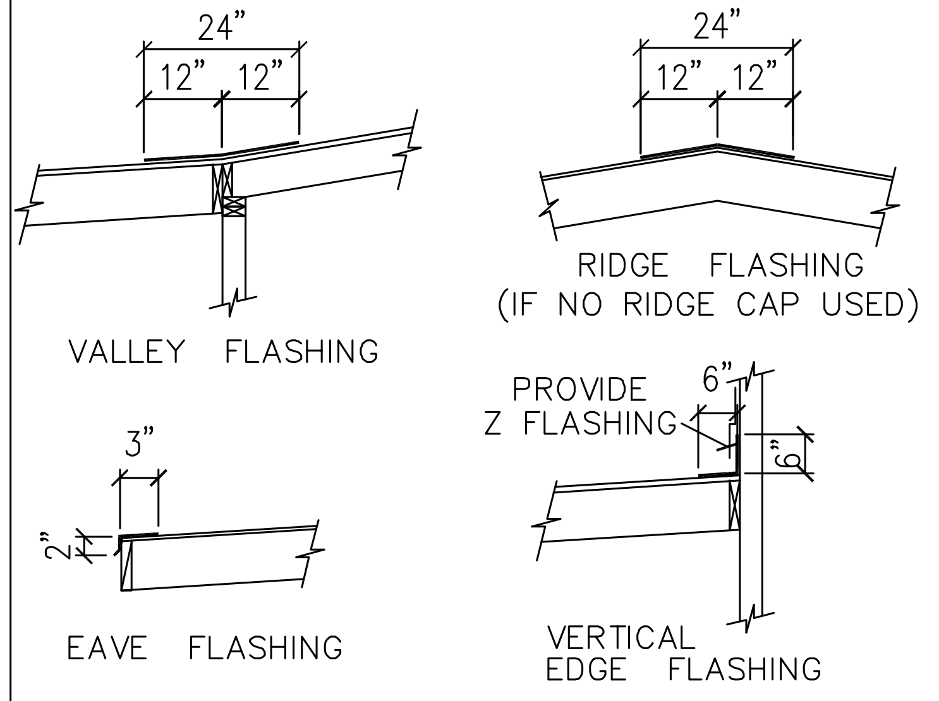
1. MINIMUM NET CLEAR OPENABLE AREA OF 5.7 S.F.
2. MINIMUM NET CLEAR OPENABLE WIDTH 20''.
3. MINIMUM NET CLEAR OPENABLE HEIGHT 24''.
4. WINDOW SILL HEIGHT OF NOT MORE THAN 44'' ABOVE FLOOR.

ROOF VENTILATION
2274 SQ.FT. ÷ 300 = 7.6 SQ.FT.
OF VENTILATION REQ.
8.0 S.F. OF VENTILATION PROVIDED
W/ (8) 12"x12" GABLE VENTS OR EQUIV.

TYPICAL SIMPSON ROOF VENT:
24" DORMER VENT = 1.0 S.F.
12"x12" GABLE VENT = 1.0 S.F.

NOTE
WEEP SCREED
(2" MIN. ABOVE PAVED AREAS
& 4" MIN. ABOVE EARTH)
(TYP) (R703.7.2.1 CRC)

NOTE:
EXTERIOR VENTILATING OPENINGS INTO THE ATTIC SPACE SHALL BE COVERED WITH CORROSION-RESISTANT WIRE MESH, WITH THE LEAST DIMENSION OF 1/16" MIN AND 1/8" MAX (CRC R806.1)



NOTE: ALL FLASHINGS SHALL BE 26 GA. MINIMUM GALVANIZED STEEL AND SHALL BE FORMED TO THE SHAPE OF THE SURFACE IN WHICH IT WILL BE ATTACHED TO AS SHOWN ABOVE.

ROOF FLASHING (TYP)
N.T.S.

REVISIONS	DATE

REGISTERED PROFESSIONAL ENGINEER
STEPHEN MILLER
C50032
CIVIL
STATE OF CALIFORNIA

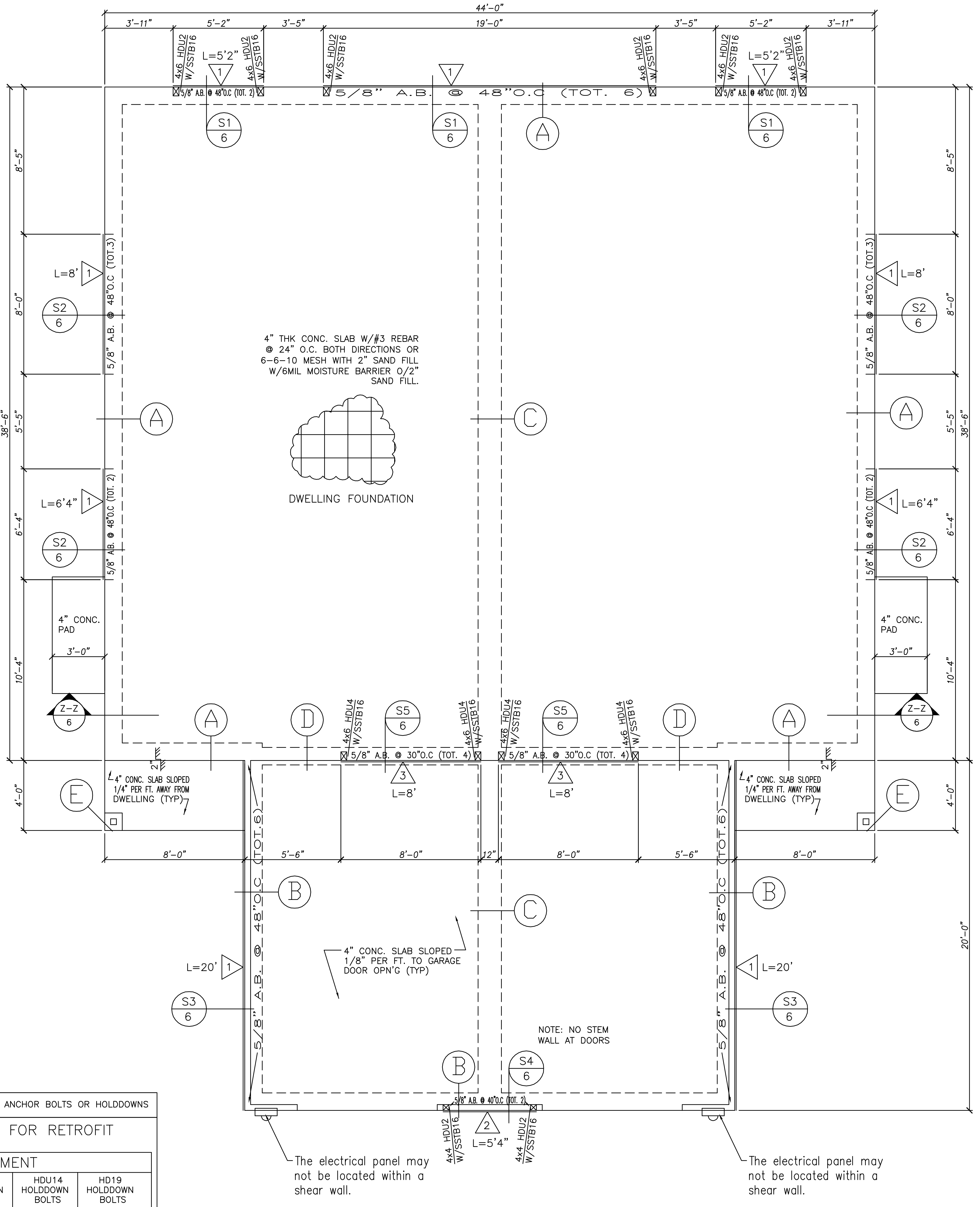
OWNER
ENRIQUE MEZA
9151 GROVE AVE
CALIFORNIA CITY, CA 93505
(818) 493-8144

PROJECT
MEZA DUPLEX
MASTER PLAN
CAL CITY, CA 93505

SHEET TITLE
ELEVATIONS

PLANS DESIGNED BY:
ROBIN L. YORK
PROJECT ENGINEER
YORK DRAFTING & DESIGN
20946 OLD TOWN RD
TEHACHAPI, CA. 93561
(661) 406-0699
yorkdrafting@yahoo.com

DRAWN: RY
DATE: 8/7/24
JOB No.: MEZA1-24-duplex
SHEET: 3
X OF X SHEETS



The electrical panel may not be located within a shear wall.

The electrical panel may not be located within a shear wall.

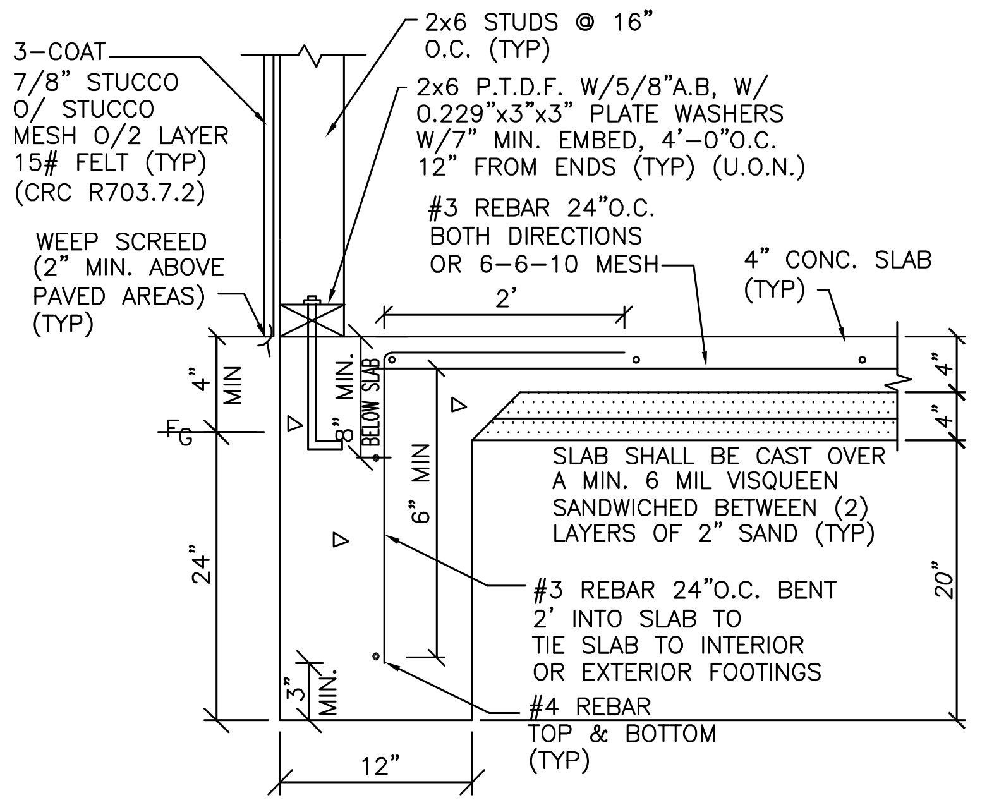
FOUNDATION PLAN

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

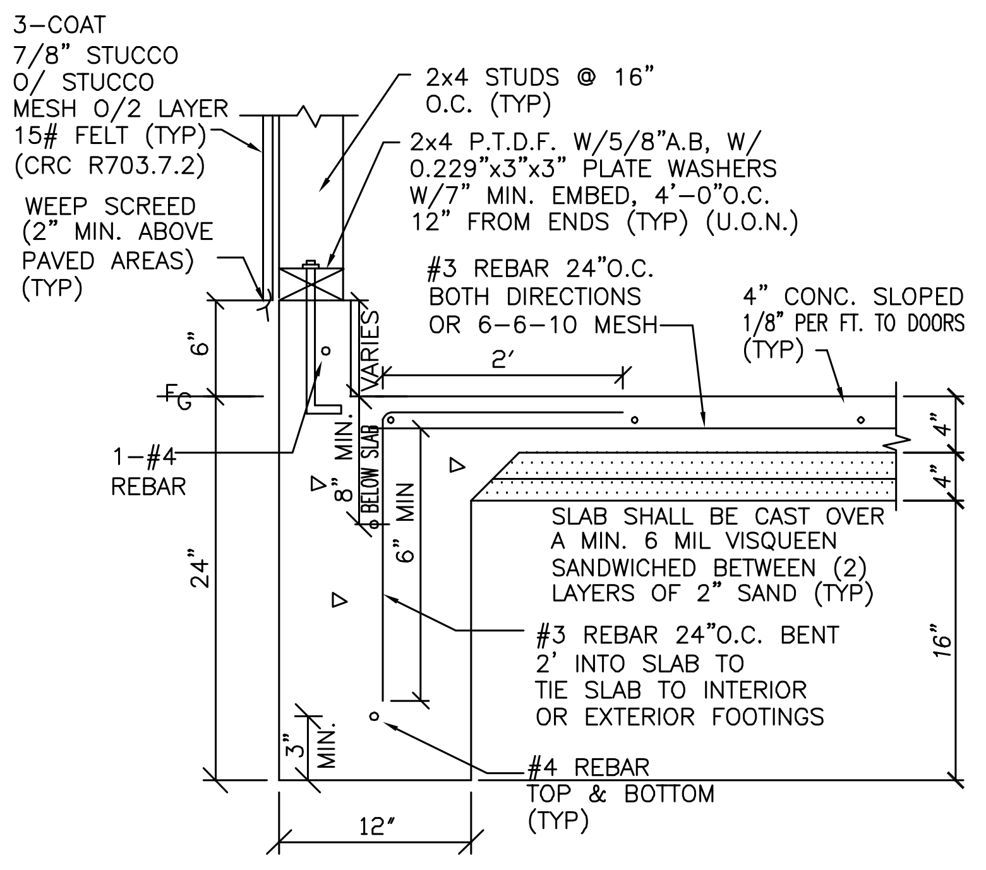
NOTE
WEEP SCREED
(2" MIN. ABOVE PAVED AREAS
& 4" MIN. ABOVE EARTH)
(TYP)

P.T.D.F. = PRESURE TREATED DOUGLAS FIR

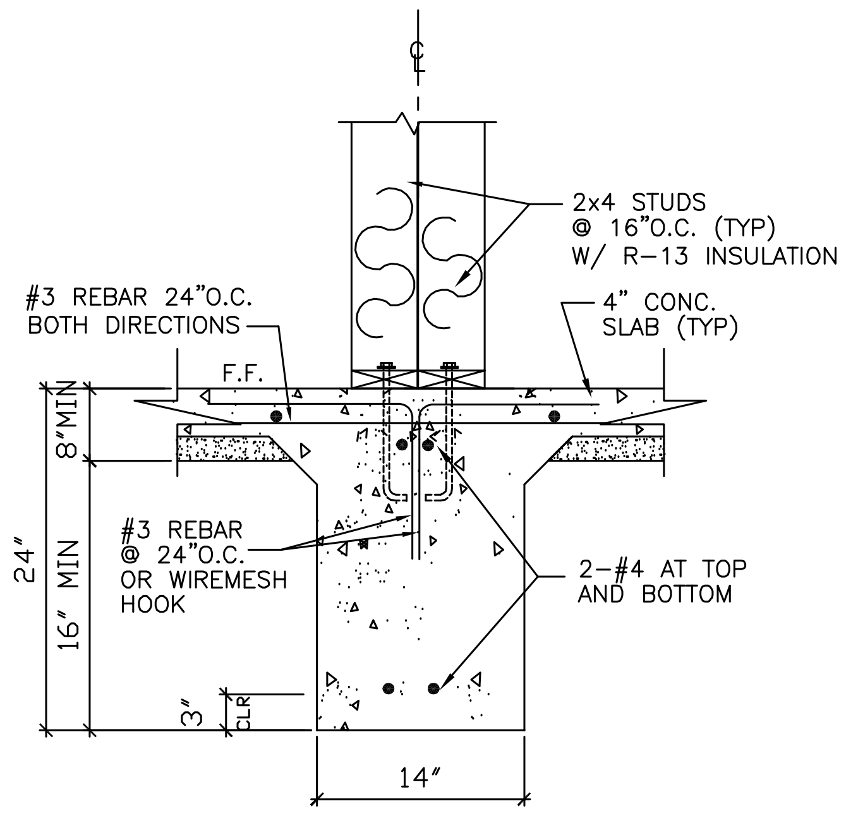
NOTE:
FOUNDATION FOOTINGS ARE TO BE 24" DEEP



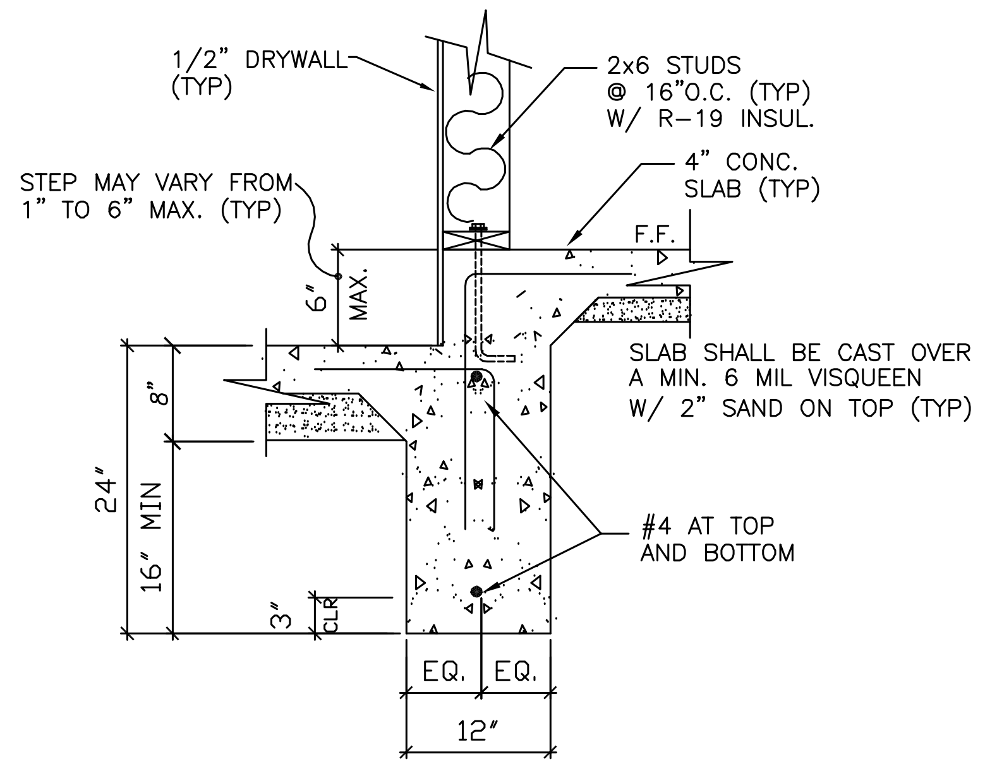
DETAIL A
1" = 1'-0"



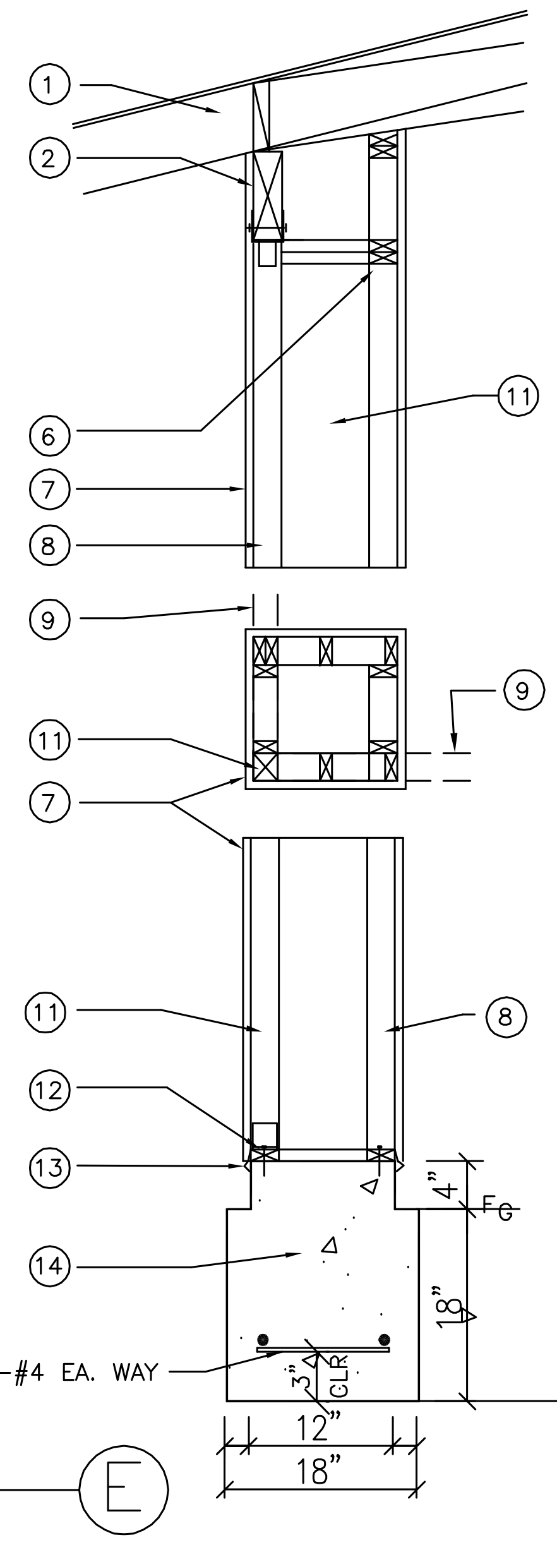
DETAIL B
1" = 1'-0"



DETAIL C
1/2" = 1'-0"



DETAIL D
1/2" = 1'-0"



①	RAFTERS
②	HDR (SEE PLAN) W/ SIMP CC46, USE SIMP ECC46 @ CORNER (TYP)
③	N/A
④	1/2" EXT. GRADE PLYWOOD
⑤	N/A
⑥	(2) 2 X 4 TOP PLATE
⑦	EXTERIOR FINISH 7/8" STUCCO
⑧	2 X 4 STUDS
⑨	BEAM ABOVE
⑩	N/A
⑪	4x4 POST A35 TO SILL PLATE
⑫	2x4 P.T.D.F. SILL W/(2) 3" SHOT PINS PER SILL
⑬	WEEP SCREED
⑭	CONCRETE FTG SEE FOUNDATION PLAN & HARDY FRAME SPECS

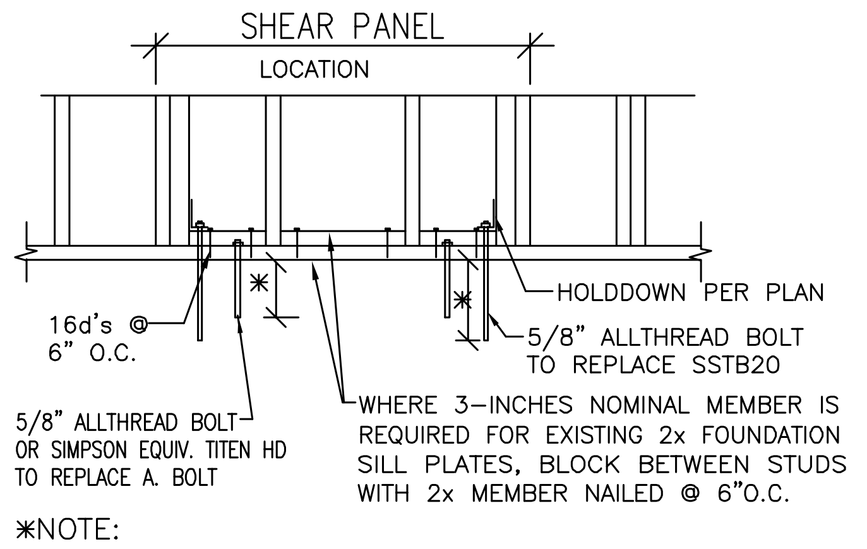
DETAIL E
N.T.S.

USE THIS TO RETROFIT FOR ANY MISSED ANCHOR BOLTS OR HOLDDOWNS

SHEAR WALL SCHEDULE FOR RETROFIT

REPLACEMENT				
5/8"ø x 10" A.B. FOUNDATION BOLTS	HDU2, HDU4, HDU5 HOLDDOWN BOLTS	HDU8 HOLDDOWN BOLTS	HDU14 HOLDDOWN BOLTS	HD19 HOLDDOWN BOLTS
USE: 5/8"ø x 10" ALL THREAD	USE: 5/8"ø x 12" ALL THREAD	USE: 7/8"ø x 12" ALL THREAD	USE: 1"ø x 18" ALL THREAD	USE: 1-1/4"ø x 22" ALL THREAD

EMBEDMENT:
5/8"ø USE 8" EMBEDMENT
7/8"ø USE 8" EMBEDMENT
1"ø USE 15" EMBEDMENT
1-1/4"ø USE 19" EMBEDMENT



*NOTE:
RETROFIT EXISTING WALLS W/ 5/8" ALL THREAD BOLT
PER SHEAR SCHEDULE ON SHEET 1 W/ SET22 (ICC# ESR-1772)
(ANCHOR BOLT SET IN EPOXY 7" MIN EMBEDMENT INTO EXIST CONC.)
(TITEN HD 4" MIN EMBEDMENT INTO EXIST CONC.)
(HOLDDOWN ANCHOR SET IN EPOXY SEE EMBEDMENT ABOVE INTO EXIST CONC.)
SPECIAL INSPECTION REQUIRED WHEN EPOXIED

NOTE:
A-BOLTS @ 4' OC UNLESS
NOTED OTHERWISE ON PLAN

NOTE: A minimum 0.019" (galvanized sheet gage) corrosion resistant or plastic weep screed located below foundation sill plate line and 4 inches above grade on all exterior stud walls or 2 inches above paved areas per CRC R703.7.2.1. (TYP)

NOTE:
HOLD-DOWN HARDWARE MUST BE SECURED IN PLACE PRIOR TO FOUNDATION INSPECTION.

NOTE:
HOLD-DOWN CONNECTOR BOLTS INTO WOOD FRAMING REQUIRE APPROVED PLATE WASHERS; AND HOLD-DOWNS SHALL BE TIGHTENED JUST PRIOR TO COVERING THE WALL FRAMING.

NOTE:
SLAB REINFORCEMENT SHALL BE SUPPORTED AT THE CENTERLINE BY CHAIRS TO OBTAIN THE PROPER EMBEDMENT.

NOTE: △
SEE SHEAR WALL SCHEDULE ON SHEET 1

NOTE: Per CRC Section R403.1.6, Foundation anchorage shall be located in the middle third of the width of the sill plate.

NOTE
WEEP SCREED
(2" MIN. ABOVE PAVED AREAS
& 4" MIN. ABOVE EARTH)
(TYP)

NOTE:
SSTB16 REQUIRES 12-5/8" MIN EMBEDMENT
SSTB20 REQUIRES 16-5/8" MIN EMBEDMENT
SSTB24 REQUIRES 20-7/8" MIN EMBEDMENT
SSTB34 REQUIRES 28-7/8" MIN EMBEDMENT
SB1x30 REQUIRES 24" MIN EMBEDMENT

DEEPEN FOOTING AS NEEDED FOR SSTB WITH 3" MIN CLEAR

SHEAR NOTE:
2-2x MAY BE USE IN PLACE OF 4x POST
or SIMILAR FOR 6x POST AT CORNER
FOR HDU2, HDU4, AND HDU5 ONLY

FOUNDATION NOTES:
1. a. All bolt holes shall be drilled 1/32" to 1/16" oversized. (NDS-05 Section11.1.2.2)
   b. Shear wall anchor bolts and hold-down hardware must be secured in place prior to foundation inspection.
   c. All diaphragm & shear wall nailing shall utilize "common" nails with full heads unless otherwise approved. (CBC 2306.2)
   d. Fasteners in preservative-treated wood (i.e. anchor bolts, nails, screws, etc.) shall be approved silicon bronze or copper, stainless steel, or hot-dipped zinc-coated steel. (CBC 2304.9.5.1)
2. Wood framing members that rest on concrete or masonry exterior foundation walls and are less than 8" from the exposed ground must be pressure treated (CRC R317.1, CBC 2304.12.1.2)

REVISIONS	DATE

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PROJECT
MEZA DUPLEX
MASTER PLAN
CAL CITY, CA 93505

SHEET TITLE
FOUNDATION PLAN

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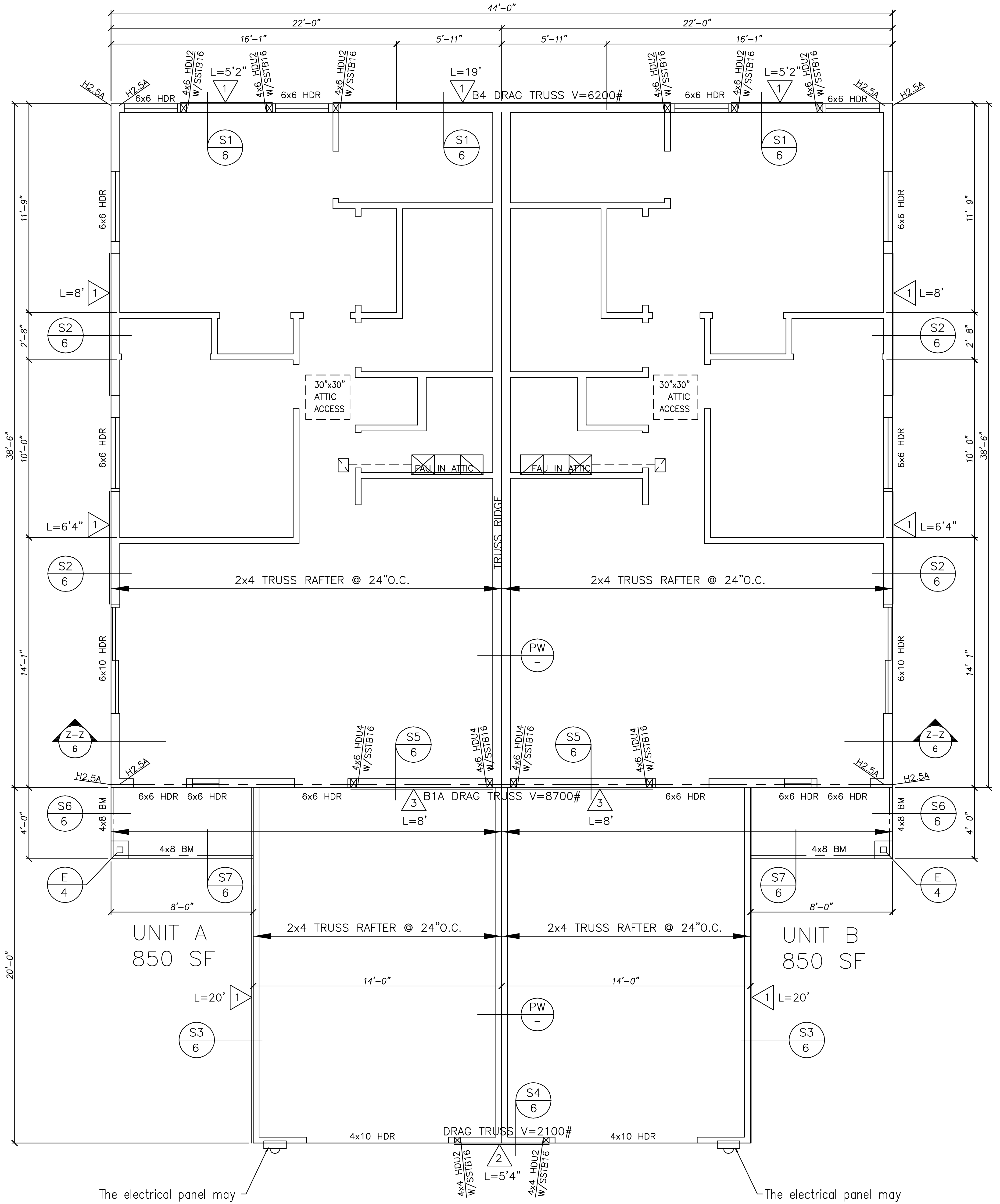
DATE: 8/7/24
JOB No.: MEZA1-24-duplex
SHEET: 4
X OF X SHEETS



The electrical panel may not be located within a shear wall.

The electrical panel may not be located within a shear wall.

ROOF FRAMING PLAN

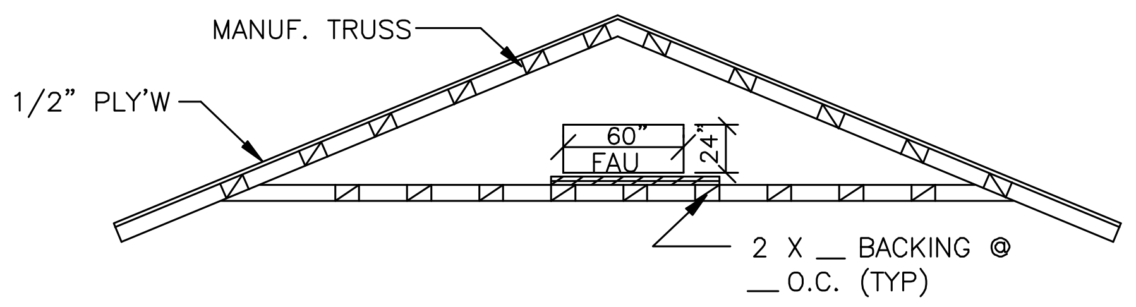
SCALE: 1/4" = 1'-0"

WALL FRAMING NOTES:

1. NOTCHING OF EXTERIOR AND BEARING/NONBEARING WALLS SHALL NOT EXCEED 25%/40% RESPECTIVELY. BORED HOLES IN BEARING/NONBEARING WALLS SHALL NOT EXCEED 40%/60% RESPECTIVELY.
2. FIRE BLOCK STUD WALLS AND PARTITIONS (INCLUDING FURRED SPACES) AT FLOOR, CEILING, SOFFIT, AND AT MID-HEIGHT OF WALLS OVER 10 FEET IN HEIGHT.
3. ALL OPENINGS IN BEARING AND NON-BEARING WALLS SHALL BE PROVIDED WITH HEADERS CONSISTING OF EITHER TWO PIECES OF 2-INCH FRAMING LUMBER PLACED ON EDGE AND SECURELY FASTENED TOGETHER OR 4-INCH LUMBER OF EQUIVALENT CROSS SECTION. ALL OPENING MORE THAN 4 FEET WIDE SHALL BE PROVIDED WITH HEADERS OR LINTELS, WHICH SHALL BE FULL WIDTH OF THE FRAMING, AND APPROPRIATE DEPTH OF THE IMPOSED LOAD. EACH END OF A LINTEL OR HEADER SHALL HAVE A LENGTH OF BEARING OF NOT LESS THAN 1-1/2 INCHES FOR THE FULL WIDTH OF THE LINTEL OR HEADER.
4. WHERE TOP PLATES OR SOLE PLATES ARE CUT FOR PIPES, A METAL TIE MINIMUM OF 0.058" THICK AND 1-1/2 WIDE SHALL BE FASTENED TO EACH PLATE ACROSS AND TO EACH SIDE OF THE OPENING WITH NOT LESS THAN 6-6d NAILS.

FRAMING REQUIREMENTS:

1. Per CRC Section R802.3, the depth of the cut end of the supported rafters shall not be greater than that of all ridge, hip, and valley framing. Ridge boards shall not be less than 1-inch nominal thickness, hips and valleys shall not be less than 2-inch nominal thickness.
2. Per CRC Section R802.5.1, brace ridge, purlins, hips, and valleys to interior bearing walls at a slope not less than 45 degrees from horizontal. Braces shall not be spaced more than 4 feet on center and unbraced lengths of braces shall not exceed 8 feet.
3. Field cutting ends, notches, and drilled holes in preservative-treated wood shall be treated in the field in accordance with AWPA M4.
4. 1/8-inch gap at all plywood panel edges.

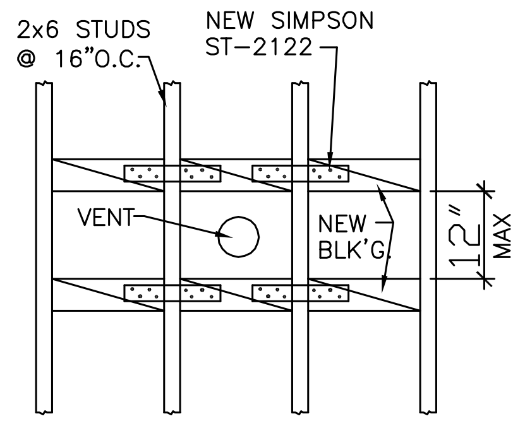


ATTIC MOUNT FURNACE OR COMFORT COOLING EQUIPMENT :

1. A 30" X 30" SCUTTLE HOLE SHALL BE PROVIDED NOT MORE THAN 20 FEET FROM THE EQUIPMENT. (22"x30" MAYBE USED IF SMALLEST PIECE OF UNIT FITS THROUGH.)
2. PASSAGEWAY 24 IN. WIDE OF SOLID CONTINUOUS FLOORING FROM ACCESS TO EQUIPMENT AND IT'S CONTROLS. LENGTH OF THE PASSAGEWAY SHALL NOT EXCEED 20 FT. PER CMC SECTION 304.4.2
3. AN UNOBSTRUCTED WORK SPACE OF 30" MIN. DEPTH SHALL BE PROVIDED IN FRONT OF EQUIPMENT.
4. A LIGHT SHALL BE PROVIDED OVER EQUIPMENT WITH THE SWITCH AT THE SCUTTLE HOLE. A permanent 120-volt receptacle outlet shall be installed near the appliance. Per CMC Section 304.4.4
5. THE VENT SHALL BE THROUGH THE ROOF A MIN. OF 5 FEET ABOVE THE HIGHEST VENT COLLAR WHICH IS SERVED.
6. THE FURNACE SHALL MEET ALL LISTED CLEARANCE. NO LINE CONTACT IS PERMITTED.
7. A CIRCULATING AIR SUPPLY OPENING OR DUCT OF 2 SQ IN PER 1000 BTU IS REQUIRED FOR ATTIC FURNACE OR COMFORT COOLING.
8. Per CMC Section 304.4.3, for attic-installed appliance, an equipment platform required at least 30" in depth and width with increased load capacity for the ceiling framing members (i.e. double joists/trusses under platform).

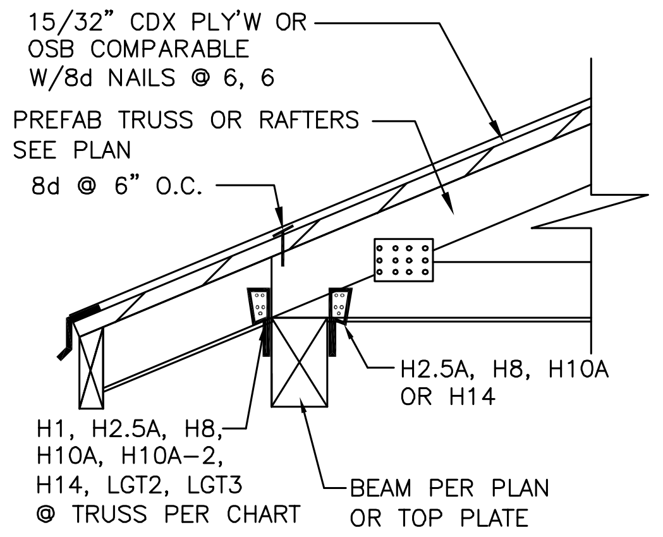
FAU IN ATTIC DETAIL

N.T.S.



BLK & STRAP IN SHEAR WALL FOR VENT DTL (TYP)

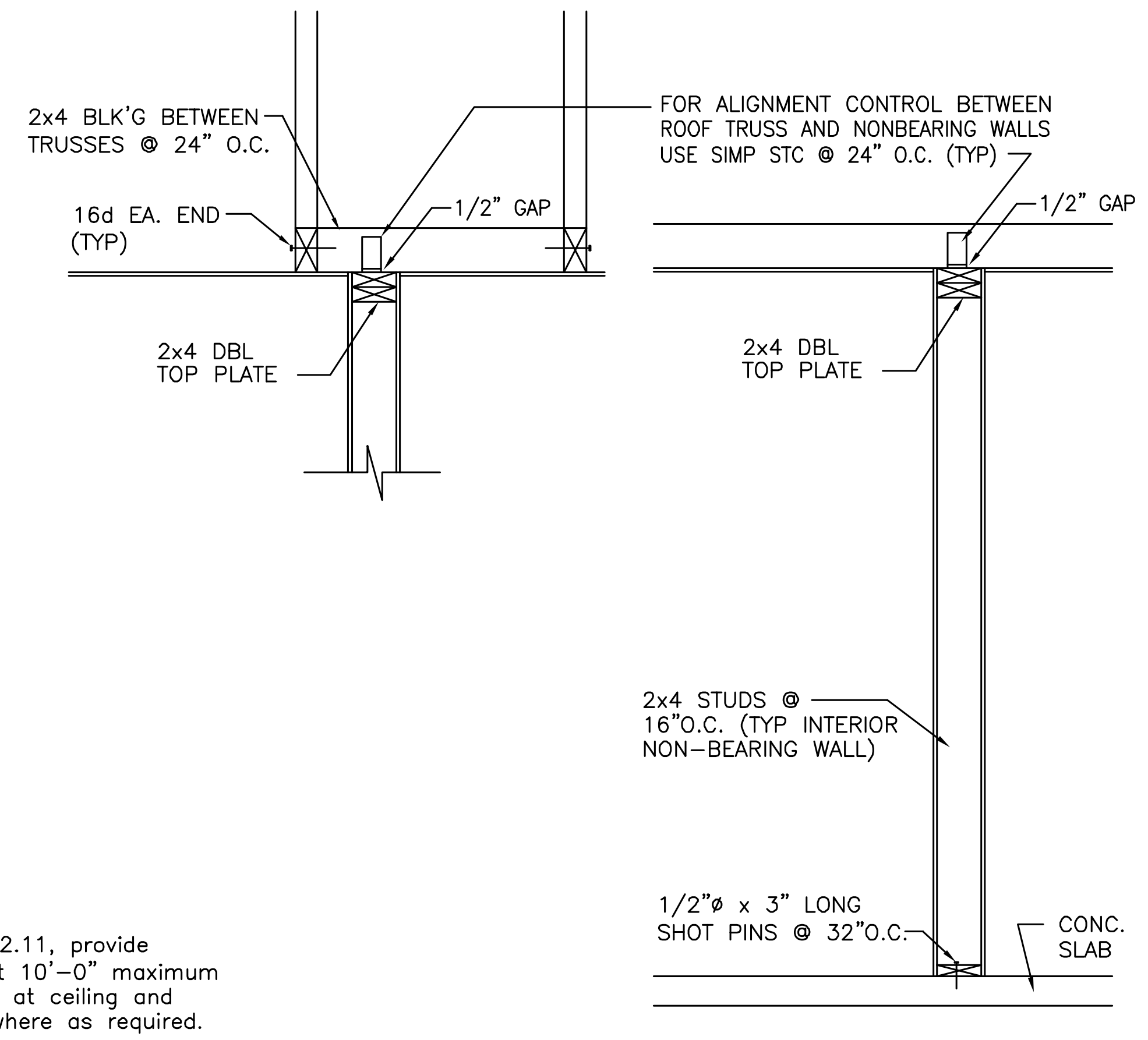
1/2" = 1'-0"



UPLIFT DETAIL 2

SEE TRUSS CALCS

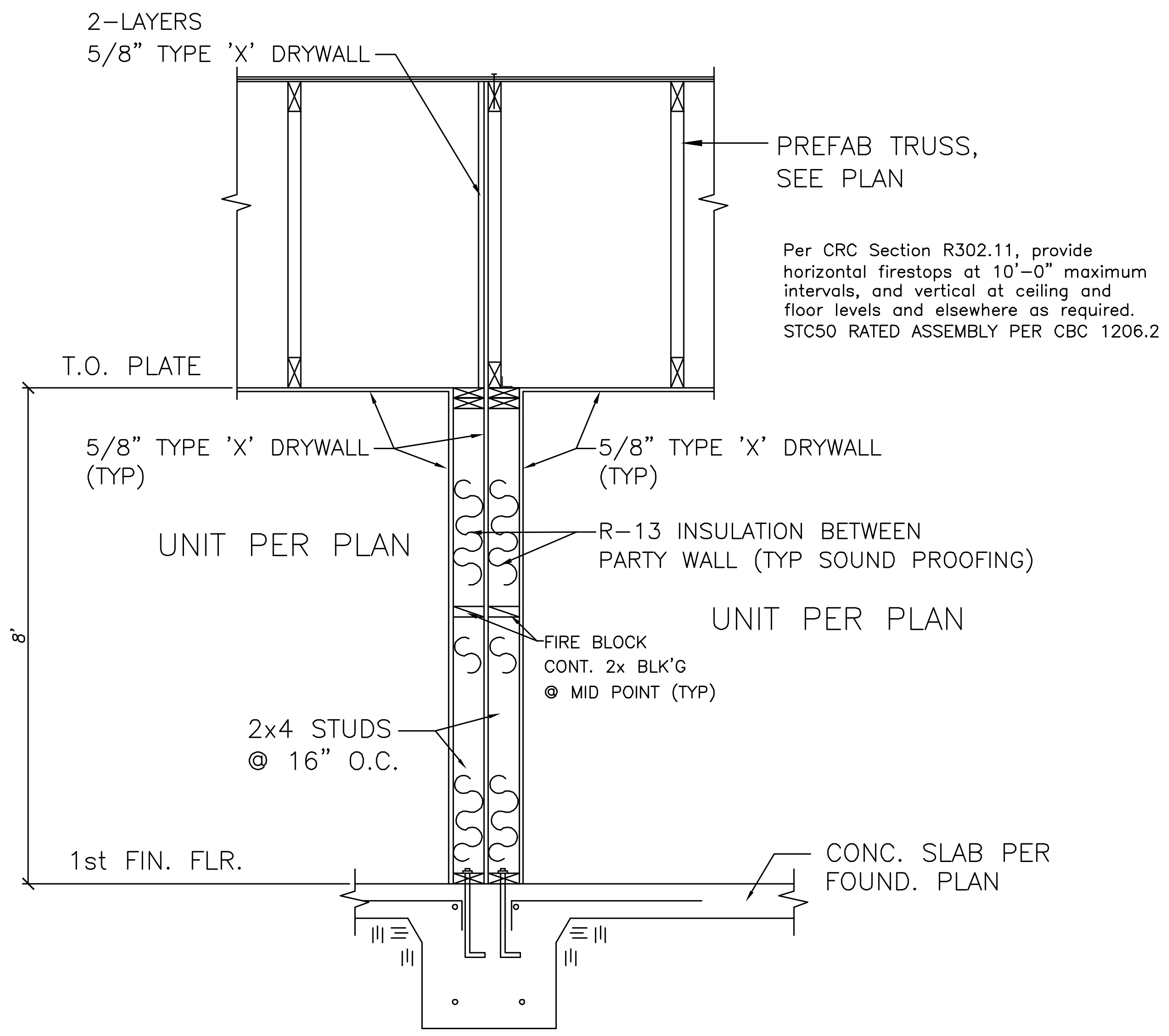
TRUSS	UPLIFT TIE
B1A	H2.5A & H2.5A
B4	H2.5A & H2.5A


TRUSSES PARALLEL

TRUSSES PERPENDICULAR

NON-BEARING WALL DTL (TYP)

1/2" = 1'-0"



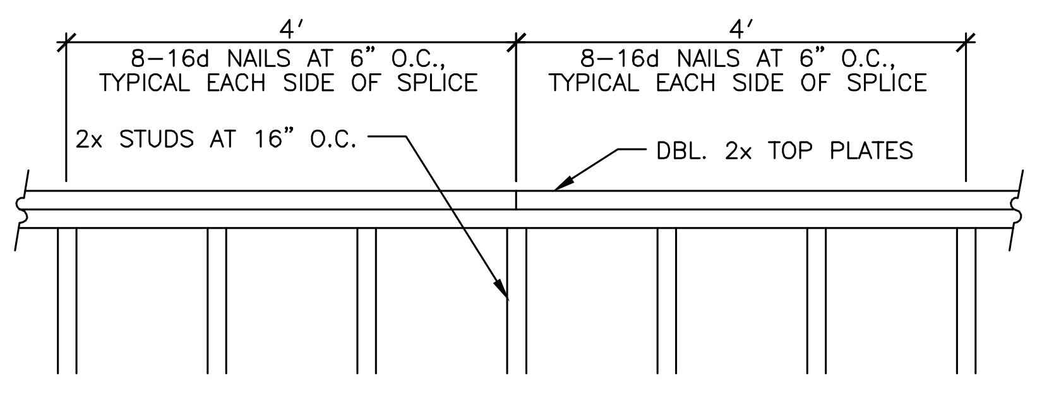
Per CRC Section R302.11, provide horizontal firestops at 10'-0" maximum intervals, and vertical at ceiling and floor levels and elsewhere as required. STC50 RATED ASSEMBLY PER CBC 1206.2

PARTY WALL

TYPICAL BETWEEN UNITS

PW –

SHEARWALL SCHEDULE		
TYPE	DESCRIPTION	CAPACITY
1	15/32" PLYWOOD STRUCT-I W/8d NAILS @ 6" O.C. EDGE, 12" O.C. FIELD.	V=280PLF
2	15/32" PLYWOOD STRUCT-I W/8d NAILS @ 4" O.C. EDGE, 12" O.C. FIELD. 3X FRAMING @ PANEL EDGES, 3X SILL	V=430PLF
3	15/32" PLYWOOD STRUCT-I W/8d NAILS @ 3" O.C. EDGE, 12" O.C. FIELD. 3X FRAMING @ PANEL EDGES, 3X SILL	V=550PLF
4	15/32" PLYWOOD STRUCT-I W/8d NAILS @ 2" O.C. EDGE, 12" O.C. FIELD. 3X FRAMING @ PANEL EDGES, 3X SILL	V=730PLF
6	WSW18x9 W/WSW-TOW FASTENER @ TOP & (2) WSW A.B. @ BOTTOM V=1920#	



N.T.S.

TYPICAL TOP PLATES SPLICE

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ROOF FRAMING PLAN

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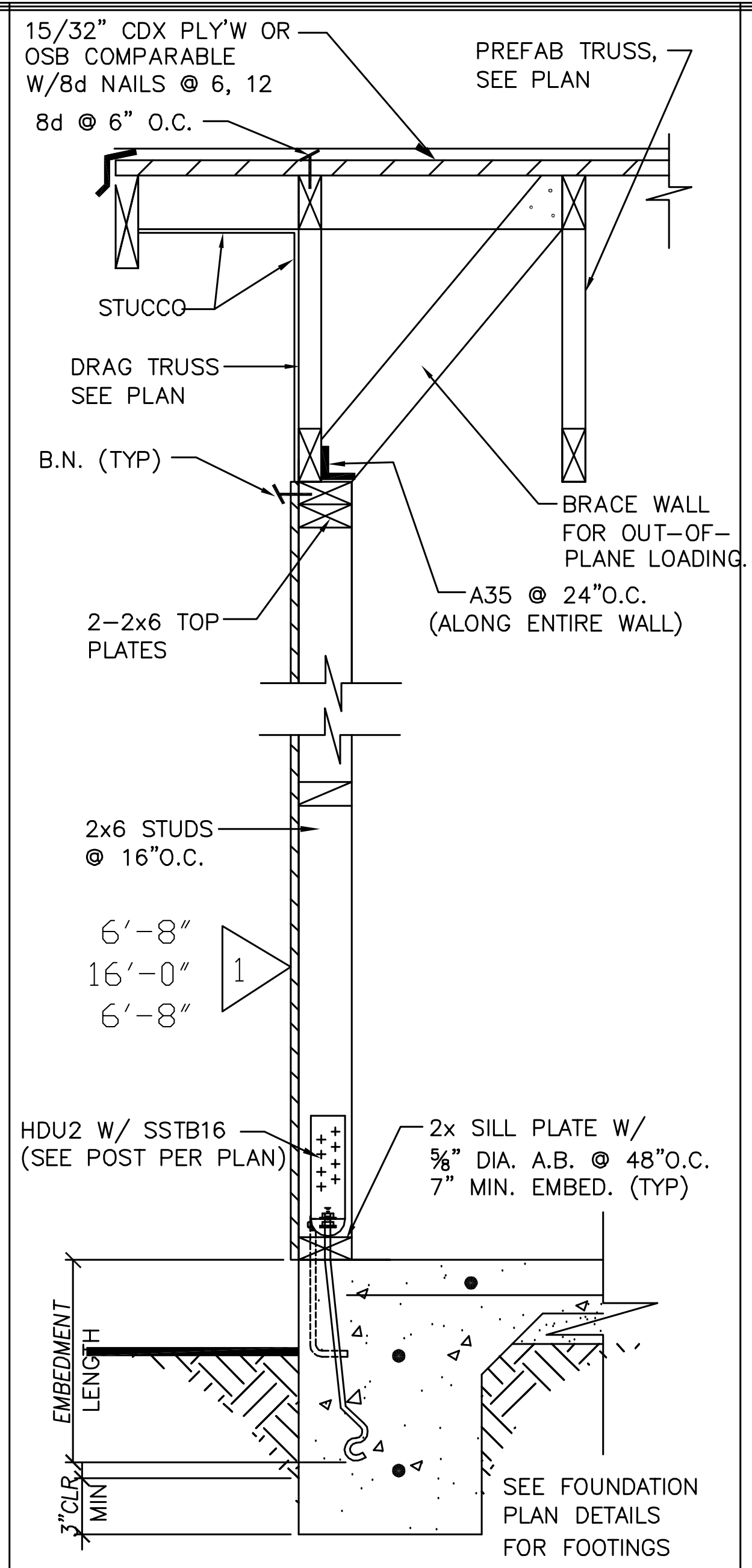
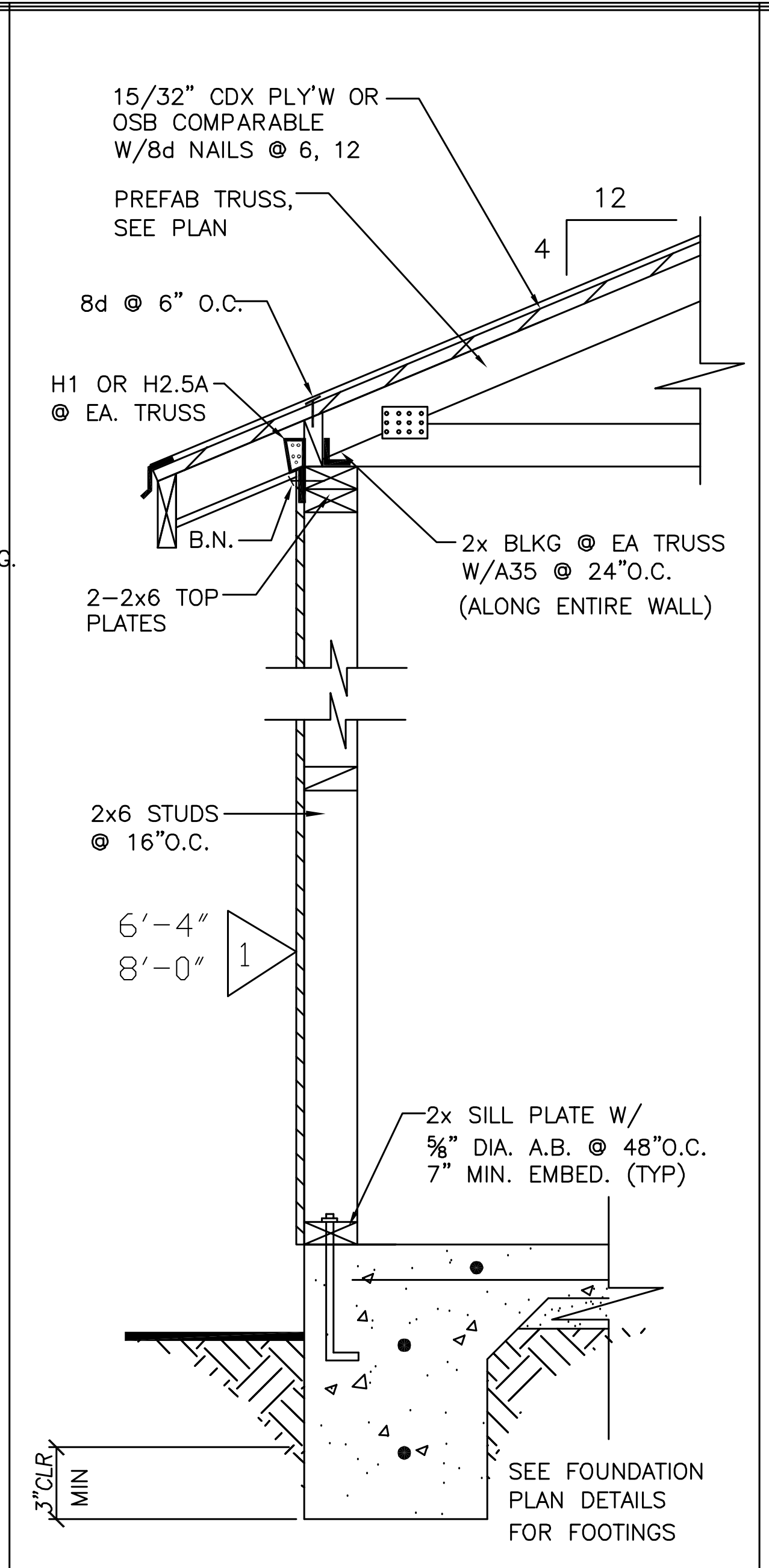
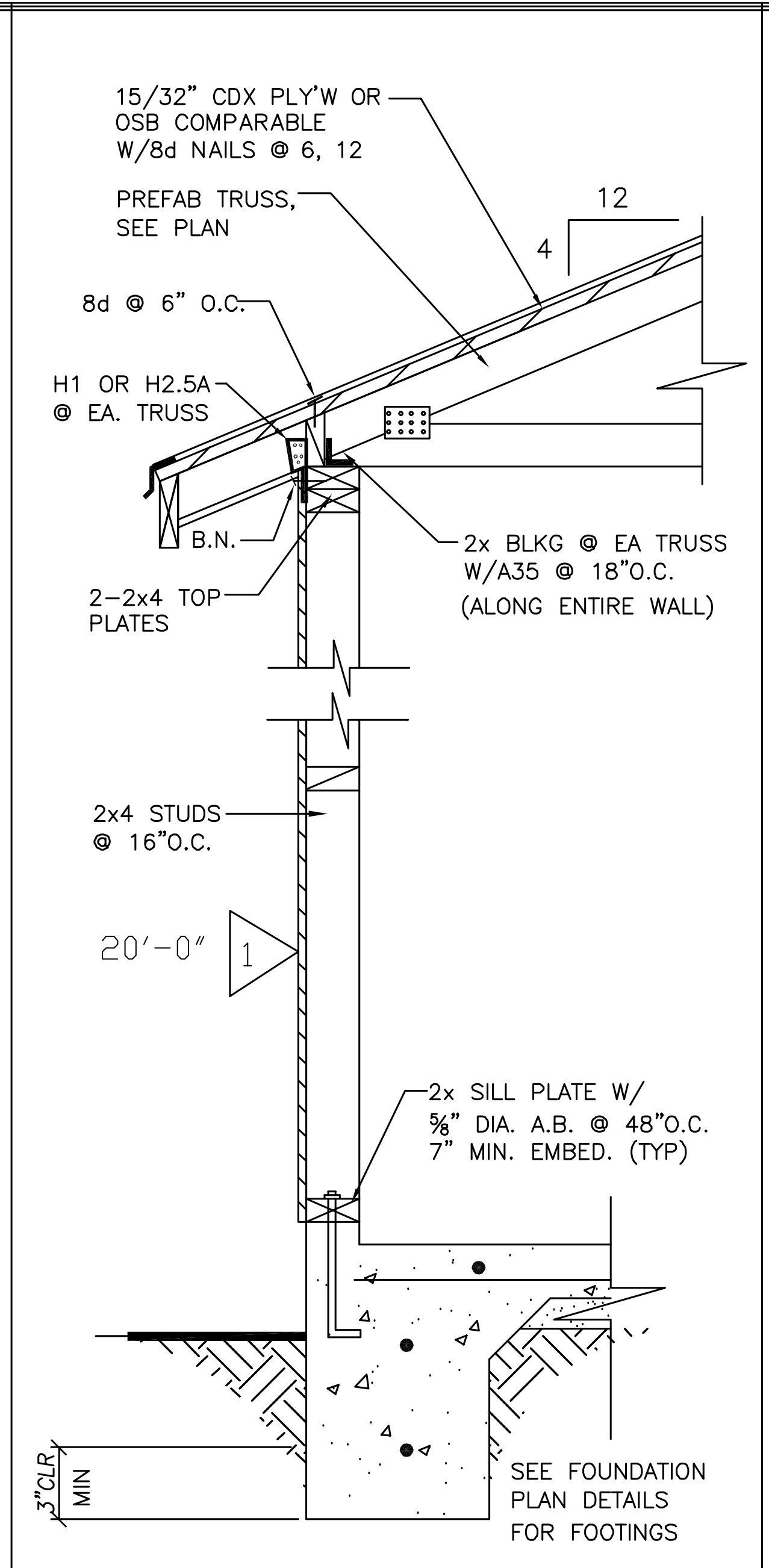
JOB No.: MEZA1-24-duplex
SHEET: 5
X OF X SHEETS



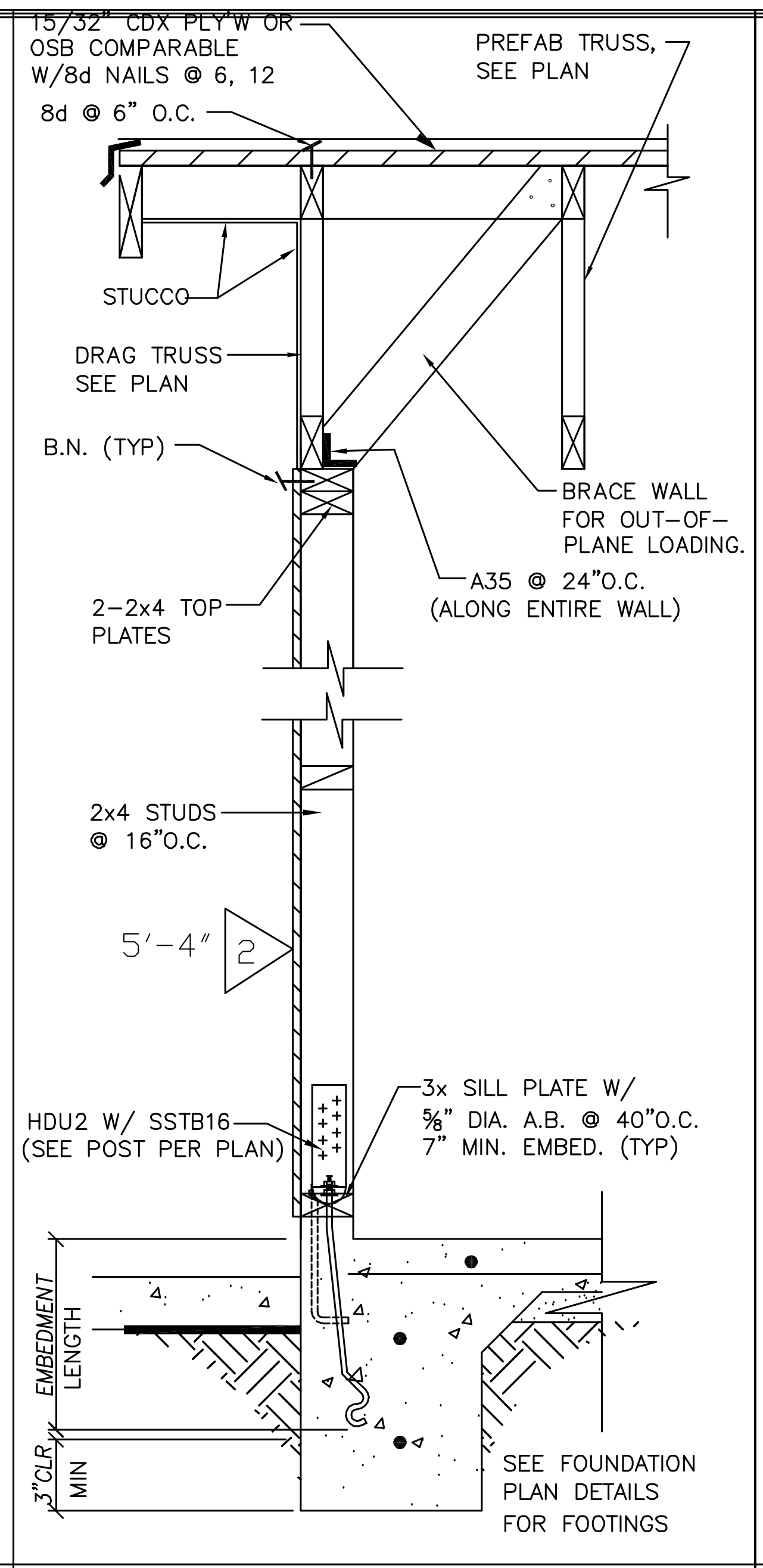
WALL SECTION S1 / –



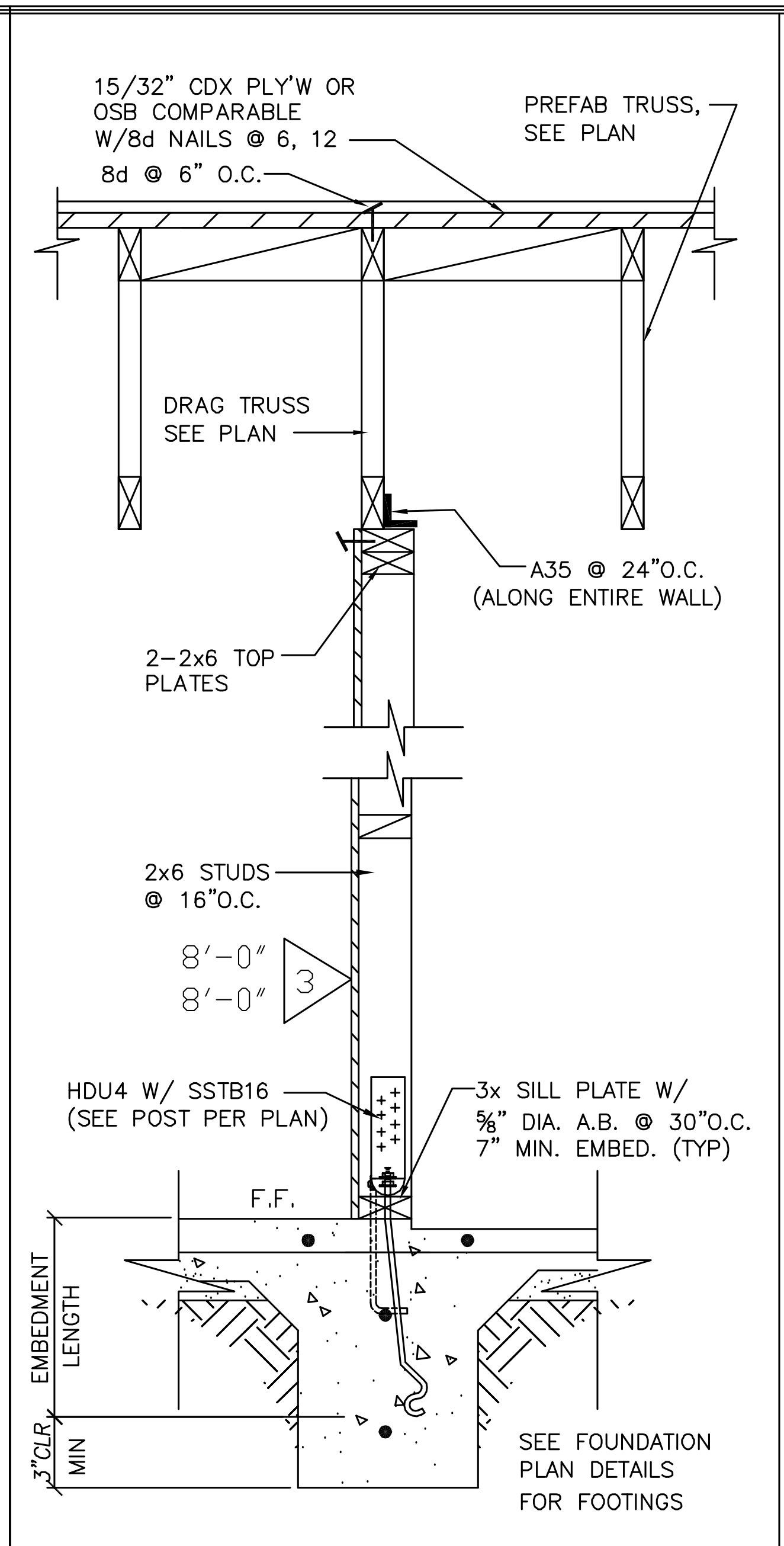
WALL SECTION S2 / –



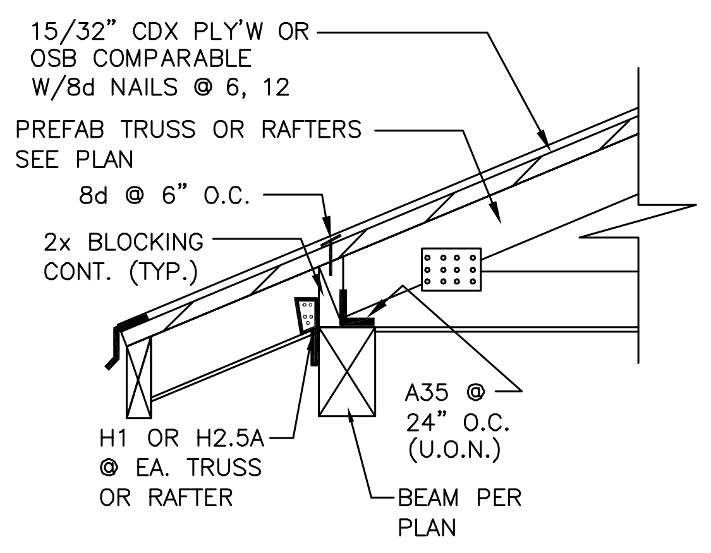
WALL SECTION S3 / –



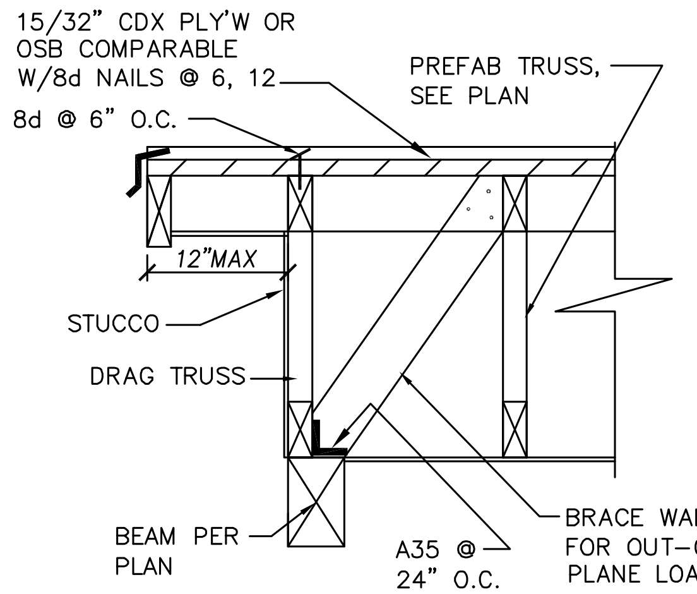
WALL SECTION S4 / –



WALL SECTION S5 / –



DETAIL S6 / –
N.T.S.



DETAIL S7 / –
N.T.S.

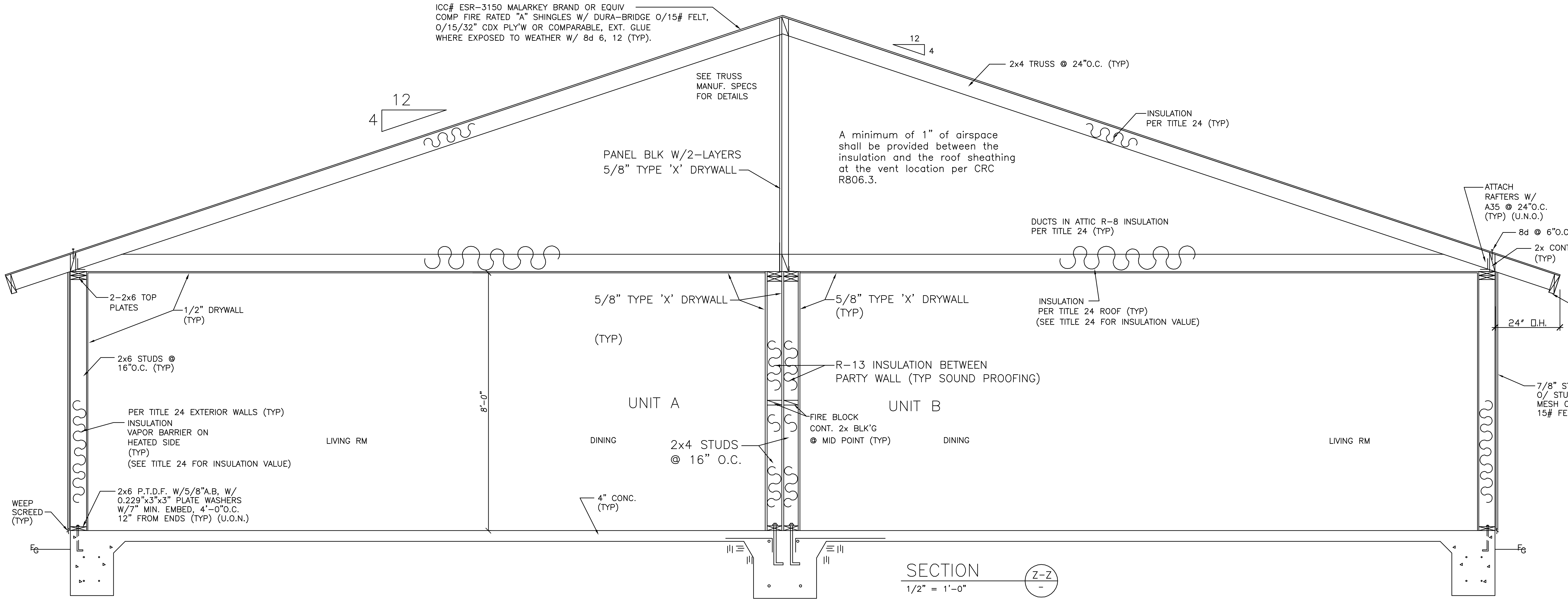
NOTE: HURICANE CLIP FOR UPLIFT RESISTANCE
SIMPSON H1 MAY BE USED IN PLACE OF A35 @ 24"O.C.
WHEN USING A35 PER PLAN WHEN SPACED LESS THAN 24"O.C.,
SIMPSON H1 OR H2.5A TO BE USED WITH THE A35

NOTE:
A CLASS II VAPOR RETARDER SHALL BE INSTALLED ON THE CONDITIONED SPACE SIDE OF ALL INSULATION IN ALL EXTERIOR WALLS, VENTED ATTICS, AND UNVENTED ATTICS WITH AIRPERMEABLE INSULATION.
(CA ENERGY CODE SECTION 150.0(g))

NOTE. A minimum of one layers of No. 15 asphalt felt, free from holes and breaks, complying with ASTM D226 for Type I felt shall be applied over studs or sheathing of all exterior studs, CRC R703.2. Specify that two layers of Grade D or 60 minutes Grade D paper shall be applied over all wood-based sheathing, CRC R703.2.

ROOFING REQUIREMENTS
1. Per CRC Section R905.2.8.5, a drip edge shall be provided at eaves and gables of shingle roofs. Adjacent pieces of drip edge shall be overlapped a minimum of 2 inches.
2. Per CRC Section R903.4, roof drains shall be sized and installed per the California Plumbing Code.

NOTE:
SEE ATTACHED CF1R FOR WALL OR ROOF INSULATION VALUES, WINDOW SHGC AND U-FACTOR, HVAC AFUE AND SEER, ETC.
THIS IS A MASTER PLAN AND IT CAN VARY PER SITE.



A minimum of 1" of airspace shall be provided between the insulation and the roof sheathing at the vent location per CRC R806.3.

SECTION Z-Z / –
1/2" = 1'-0"

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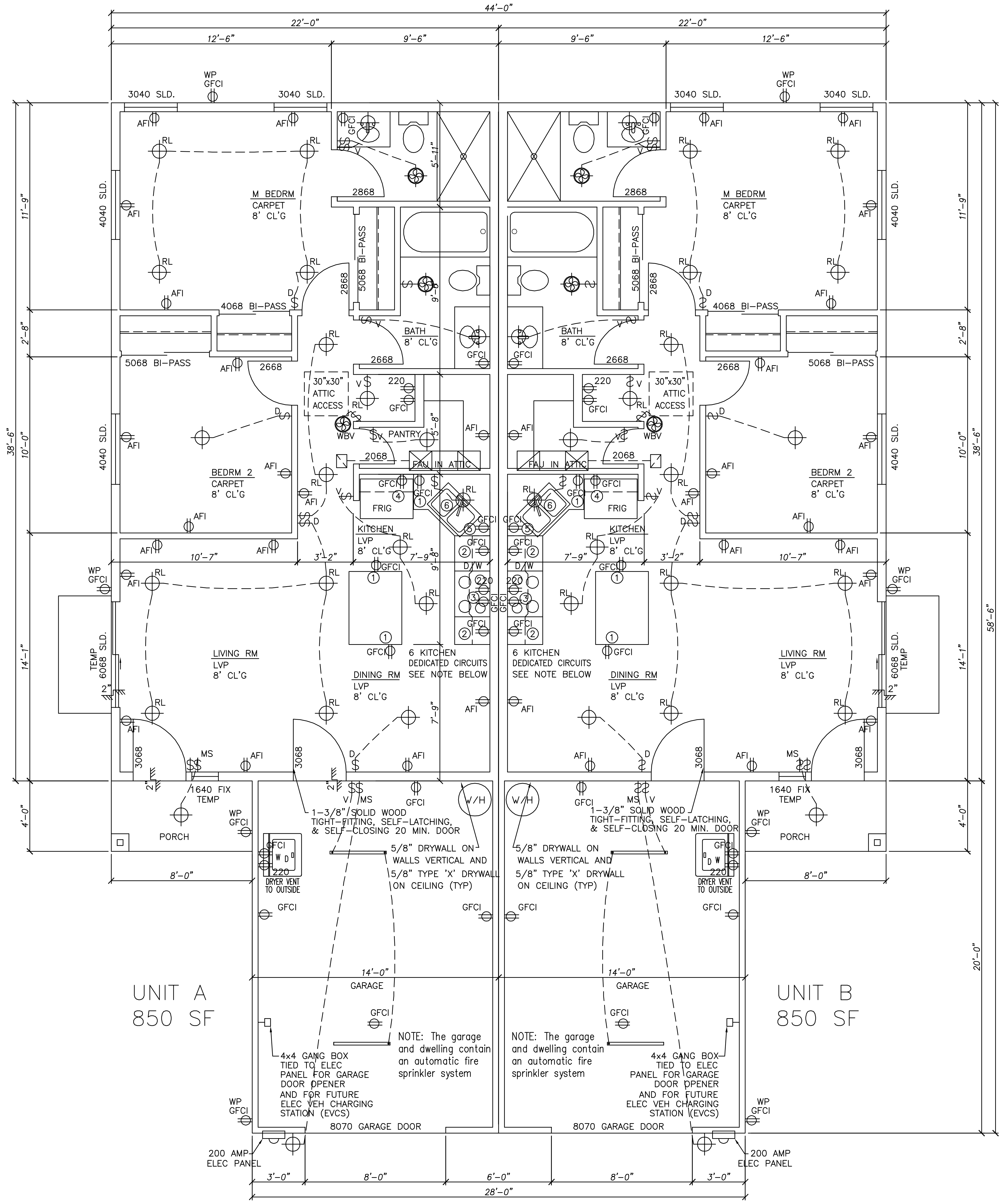
JOB No.: MEZA1-24-duplex
SHEET: 6
X OF X SHEETS



FLOOR PLAN

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

= CEILING FAN W/LED LIGHT

RL = RECESSED LED LIGHT

= SURFACE LED LIGHT

= LED LIGHTS

= FAN
PROVIDE 50 CFM.

WBV = WHOLE BUILDING EXHAUST FAN

Provide placard at the switch that states:
"This fan to remain on during all hours
the house is occupied"

= CONVENIENCE OUTLET DUPLEX

WP = WEATHERPROOF GFI OUTLET DUPLEX

GFCI = GROUND FAULT CIRCUIT-INTERRUPTER

AFI = ARC-FAULT CIRCUIT-INTERRUPTER

AFCI breakers are required for all dwelling unit kitchens, family rooms, dining rooms, living rooms, parlors, libraries, dens, bedrooms, sunrooms, recreation rooms, closets, hallways, laundry areas and similar spaces.

NOTE: TAMPER-RESISTANT RECEPTACLES SHALL BE INSTALLED IN ALL AREAS SPECIFIED IN 210.52,
ALL NONLOCKING-TYPE 12-VOLT, 15- AND 20-AMPERE RECEPTACLES SHALL BE LISTED

$ = SWITCH

D$ = DIMMER SWITCH

V $ = VACANCY SENSOR W/ SWITCH

MS $ = MOTION SENSOR W/ SWITCH

CURCUIT	KITCHEN DEDICATED CIRCUITS
① & ②	2 DEDICATED CIRCUIT COUNTERTOP OUTLETS
③	1 DEDICATED CIRCUIT MICROWAVE
④	1 DEDICATED CIRCUIT REFRIGERATOR
⑤	1 DEDICATED CIRCUIT DISHWASHER
⑥	1 DEDICATED CIRCUIT GARBAGE DISPOSAL
	6 DEDICATED CIRCUITS TOTAL
NOTE: STOVE AND VENT HOOD IN MICROWAVE ARE ON SEPARATE CIRCUITS. STOVE ON 220 CIRCUIT.	

(CM) = CARBON MONOXIDE ALARM
REQ'D OUTSIDE OF EA. SEPARATE SLEEPING AREA IN
THE IMMEDIATE VICINITY OF THE BEDROOMS
INTERCONNECTED HARD-WIRED W/ BATTERY BACK UP

= SMOKE ALARM INTERCONNECTED HARD-WIRED W/ BATTERY BACK UP
NOTE: USE PHOTOELECTRIC SMOKE ALARM WHEN
SMOKE ALARM IS WITHIN 20' OF AN APPLIANCE.

Per CRC Section R314.3.3 Smoke alarms and detectors must be a minimum of 20 feet from cooking appliance, 3 horizontal feet from bathroom door, 3 feet from air supply registers, and 3 feet from the tip of the blade of a ceiling fan.

A smoke detector shall be installed in each sleeping room and at a point centrally located in the corridor or area giving access to each separate sleeping area. When the dwelling unit has more than one story and in dwellings with a basement, a detector shall be installed on each story and in the basement. When sleeping rooms are on an upper level, the detector shall be located on the ceiling of the upper level in close proximity to the stairway. Required smoke detectors shall receive their primary power from the building wiring, and shall be equipped with a battery backup. Detectors shall sound an alarm audible in all sleeping areas of the dwelling unit in which they are located.

NEW CONSTRUCTION:

DWELLING	850 S.F.
GARAGE	280 S.F.
PORCH	32 S.F.
	1162 S.F. EACH UNIT

WATER HEATER SYSTEM:
Isolation valves: Instantaneous water heaters with an input rating greater than 6.8 kBTU/hr. shall have isolation valves on both the cold-water supply and the hot water pipe leaving the water heater, and hose bibs or other fittings on each valve for flushing the water heater when the valves are closed.

PLUMBING NOTES:

P1. All hose bibs must have an approved anti-siphon device. CPC 603.3
P2. Plastic and copper piping run through framing members to within one inch of the exposed framing shall be protected by steel nail plates not less than 18 gauge.
P3. Vent tankless water heater per manuf. specs.

GARAGE NOTE:
Automatic garage door opener requires backup batteries installed per SB 969, effective July 1, 2019.

GLAZING REQUIREMENTS

1. GLAZING IN DOORS AND FIXED GLAZED PANELS SHALL BE TEMPERED GLASS.
2. GLAZING IN DOORS AND ENCLOSURES FOR BATHTUBS AND SHOWERS SHALL BE TEMPERED GLASS.
3. U-FACTOR: SEE TITLE 24
   SHGC: SEE TITLE 24
4. WINDOW COMPLIANCE TO MEET CODE REQUIREMENT:
   HAZARDOUS LOCATIONS:
   A. GLAZING IN INGRESS AND EGRESS DOORS EXCEPT JALOUSIES.
   B. GLAZING IN FIXED AND SLIDING PANELS OF SLIDING DOOR ASSEMBLIES AND PANELS IN SWINGING DOORS OTHER THAN WARDROBE DOORS.
   C. GLAZING IN STORM DOORS.
   D. GLAZING IN UNFRAMED SWINGING DOORS.

WINDOWS ARE VINYL, LOW-E2, 1-3/4" THICK
BUG SCREENS ON OPENABLE WINDOWS
ALL WINDOWS ARE DUAL GLAZED

MECHANICAL & ELECTRICAL NOTES:

1. A domestic clothes dryer moisture-exhaust duct shall be provided. A minimum 4" diameter moisture exhaust duct of approved material shall be installed with a maximum run of 14 feet, including two 90-degree elbows. Specify backdraft damper required at dryer vent termination. Show on the Floor Plan the location of the dryer vent. Specify the routing and termination of the vent. CMC 504.3.1.
2. Per CEC Section 210.52(F): Dedicated 20-amp circuit to Laundry for appliance outlets.
3. CEILING MOUNTED LIGHT FIXTURES IN CLOSETS SHALL BE LOCATED 12" MIN. AWAY FROM SHELVES AND PROVIDE COVER.
4. FIXTURES INSTALLED IN WET OR DAMP LOCATIONS SHALL BE SO INSTALLED THAT WATER CANNOT ENTER OR ACCUMULATE IN WIRING COMPARTMENTS, LAMPHOLDERS, OR OTHER ELECTRICAL PARTS. ALL FIXTURES INSTALLED IN WET OR DAMP LOCATIONS SHALL BE MARKED "SUITABLE FOR WET OR DAMP LOCATIONS."
5. ALL BRANCH CIRCUITS THAT SUPPLY 125-VOLT, SINGLE PHASE, 15- AND 20- AMPERE RECEPTACLE OUTLETS INSTALLED IN DWELLING UNIT BEDROOMS SHALL BE PROTECTED BY AN ARC-FAULT CIRCUIT INTERRUPTER(S).

CALIFORNIA PLUMBING CODE
1. Water Heater located in attic above laundry room.
2. Water closet shall have 15" to any wall or obstruction on each side of its centerline and 24" clear space in front. (402.5 CPC)
3. Shower compartments shall be not less than 1,024 sq. in. and also be capable of encompassing a 30" diameter circle. (408.6 CPC)
4. a. Water piping materials within a building shall be in accordance with Sec. 604.1 of the California Plumbing Code. PEX, CPVC and other plastic water piping systems shall be installed in accordance with the requirements of Sec. 604 of the CPC, Installation Standards of Appendix I of the CPC and manufacturers recommended installation standards. CPVC water piping requires a Certification of Compliance as specified in Sec 604.1.1 of the CPC prior to permit issuance.
b. Water closets = 1.28 GPF
c. Urinals = 0.5 GPF
d. Single showerhead = 1.8 GPF at 80 psi
e. Multiple showerheads = 2.0 GPF at 80 psi for all combined showerheads f. Lavatory faucets = 1.2 GPM at 60 psi
g. Metering faucets = 0.2 gallons per cycle h. Kitchen faucets = 1.8 GPM at 80 psi

CALIFORNIA MECHANICAL CODE
1. Condensate lines from mechanical equipment shall discharge to a plumbing fixture or an approved location by means of an indirect waste pipe. Condensate lines shall not terminate in landscape or yard areas. (310.5 CMC)
2. See plan for location and access for all heating equipment /FAU on the truss layout plan.
3. See FAU in Attic detail (sheet 5) for anchorage details for FAU units. Appliances designed to be fixed in position shall be securely fastened in place in accordance with the manufacturer's installation instructions. CMC 303.4 and 303.5.

CALIFORNIA ELECTRICAL CODE
1. For the Air-Conditioning Condenser, a working space of 30 inches of minimum width and 36 inches of minimum depth is required in front of disconnect per CEC 110.26A.
2. All wall spaces, 2' or more in width, shall have receptacles installed such that no point measured horizontally is more than 6' from a receptacle (12' maximum spacing). See minimum receptacles on the plans. (210.52 (A) (1) & (2) CEC)
3. Receptacles shall be installed in a kitchen such that no spacing is greater than 24 inches from a sink or range. Maximum spacing between receptacles in a kitchen is 4 feet. CEC 210.52(C) (1).
4. Range hoods shall be permitted to be cord-and-plug connect. The receptacle shall be accessible and shall be supplied by an individual branch circuit.
5. In each attached garage and in each detached garage with electrical power, at least one receptacle outlet shall be installed in each vehicle bay and not more than 5 ½ feet above the floor. CEC 210.52(G) (1).
6. All 125v 15-ampere and 20-ampere receptacles in areas specified in article 210.52 (CEC) shall be listed tamper resistant receptacle. (406.12 CEC)
7. The receptacle for a built-in dishwasher shall be located in the space adjacent to the space occupied by the dishwasher per CEC 422.16(B)(2)(6).
8. For a single EV space, a listed raceway shall be installed to accommodate a dedicated 208/204-volt branch circuit. The raceway shall not be less than trade size 1 (nominal 1 inch inside diameter). The raceway shall originate at the main service or subpanel and shall terminate into a listed cabinet, box or other enclosure in close proximity to the proposed location of an EV charger.
The service panel and/or subpanel shall provide capacity to install a 40-ampere minimum dedicated branch circuit and space(s) reserved to permit installation of a branch circuit overcurrent protective device. 2019 CGBSC Section 4.106.4.1.
9. All grounding electrodes as described in CEC 250. 52 (A) (1) through (A) (7) that are present at each building or structure served shall be bonded together to form the grounding electrode system. If multiple rods, pipe, or plate electrodes are installed to meet the requirements of CEC 250.53 (A) (3) they shall not be less than 6 feet apart.
10. Smoke alarms shall be installed in each sleeping room and outside each separate sleeping area in the immediate vicinity of the bedrooms. CRC R314.3 (1) (2).
11. Carbon monoxide alarms in dwelling units shall be installed outside of each separate sleeping area in the immediate vicinity of the bedrooms. CRC R315.3.
12. At least one GFCI outlet to be installed at the front and rear of the dwelling unit. (CEC 210.52(E)(1)).
13. Receptacles shall be installed such that no point measured horizontally along the floor line of any wall space more than 6 feet from a receptacle outlet. CEC 210.52(A) (1).
14. Receptacle outlets are required on walls = 2 ft. wide in habitable rooms. CEC 210.52(A)(2).
15. The receptacle for a built-in dishwasher shall be located in the space adjacent to the space occupied by the dishwasher per CEC 422.16(B)(2)(6).
16. Receptacles shall be installed in a kitchen such that no spacing is greater than 24 inches from a sink or range. Maximum spacing between receptacles in a kitchen is 4 feet. CEC 210.52(C) (1).
17. The receptacle for the dishwasher shall be accessible per CEC 422.16(B)(2)(7).
18. Automatic garage door opener requires backup batteries installed per SB 969, effective July 1, 2019.

WINDOW AND DOOR SCHEDULE

SEE PLAN FOR WINDOW AND DOOR SIZE and operation. Glazing type, U factor, SHGC and window material are per title 24. The bedroom egress windows have a minimum clear opening area of 5.7 SF when above the grade-floor and 5 SF on the grade-floor, a minimum net height of 24", a minimum net width of 20", and a sill height not more than 44" above finish floor. (CRC R310, CBC 1030) Identified egress windows on plan. Glazed door (FR.DR.) is an exterior door having a glazed area . 25% of the area of the door.

FR.DR. = FRENCH DOOR
SLD. = HORIZONTAL SLIDER
S.H. = SINGLE HUNG
EXAMPLE 3068 = 3'0" WIDE BY 6'8" HIGH

NOTE:
ALL EXTERIOR DOORS SHALL BE SOLID-CORE NOT LESS THAN 1-3/8" THICK OR UTILIZE MULTIPLE-GLAZED PANELS CONSISTING OF NOT LESS THAN DUAL PANE GLAZING.

TEMP = 2 PANE TEMPERED GLASS.

The size of the electrical service grounding electrode and water pipe bonding conductors (200 amps – No. 4) [CEC 250].

The working clearances required by CEC 110-26 must be permanently maintained in front of all electrical equipment.

MISC. NOTES:

1. GLASS WINDOWS AND DOORS INCLUDING SHOWER ENCLOSURES SUBJECT TO HUMAN IMPACT MUST HAVE SAFETY GLAZING OR A PROTECTIVE GRILL OR PUSHBAR.
2. ALL METALLIC DOMESTIC WATER PIPING INSTALLED WITHIN A BUILDING AND IN OR UNDER A CONCRETE FLOOR SLAB RESTING ON THE GROUND SHALL BE PROTECTED FROM CORROSION BY AN APPROVED MEANS.
3. INTERIOR FINISH IN GROUP R-3 OCCUPANCIES SHALL HAVE A MINIMUM FLAME SPREAD CLASSIFICATION OF III EXCEPT IN KITCHENS, BATHROOMS, AND GARAGES.

ELECTRICAL NOTES:

E1. Per CEC Section 210.52(C)(1), kitchen countertop outlets shall be installed at a maximum of 4 feet on center.
E2. Per CEC Section 210.12(A), specify on electrical sheet: AFCI breakers are required for all dwelling unit kitchens, family rooms, dining rooms, living rooms, parlors, libraries, dens, bedrooms, sunrooms, recreation rooms, closets, hallways, laundry areas and similar spaces.
E3. Per CALGreen Section 4.106.4, A 1 inch nominal listed raceway shall be provided to accommodate a 208/240-volt branch circuit. The raceway shall originate at the main service or subpanel and terminate into a listed cabinet, box or other enclosure in close proximity to the proposed location of an EV charger. The raceway is to be continuous and enclosed in inaccessible or concealed areas or spaces. The service panel or subpanel shall provide capacity to install a 40 amp minimum dedicated branch circuit and space(s) reserved to permit installation of a branch circuit overcurrent protective device. The overcurrent protective device space(s) shall be identified and clearly labeled as "EV CAPABLE". The raceway termination shall be permanently and visibly marked as "EV CAPABLE".
E4. Per CEC Section 230.79 and 230.79(C), the service panel shall have a rating not less than the calculated load to be carried, determined in accordance with Part III, IV, or V of Article 220 of the CEC and never less than 100-amperes, 3-wire.

MECHANICAL AND ELECTRICAL REQUIREMENTS

1. PER THE ENERGY CODE SECTION 150(o), ALL NEW BUILDINGS AND ADDITIONS TO EXISTING BUILDINGS OVER 1,000 S.F. (ORIGINAL BUILDING MUST COMPLY) ARE REQUIRED TO MEET VENTILATION AND ACCEPTABLE INDOOR AIR QUALITY PER ASHRAE STANDARD 62.2. PLEASE NOTE THAT LOCAL EXHAUST FAN MAY ALSO BE UTILIZED TO FULFILL THE WBV, HOWEVER WHEN THIS IS DONE, THE MOST STRINGENT REQUIREMENTS WILL APPLY.

   AIR MOVING EQUIPMENT USED TO MEET EITHER THE WHOLE BUILDING VENTILATION EXHAUST REQUIREMENTS SHALL BE RATED IN TERMS OF AIRFLOW AND SOUND.

   a. ALL CONTINUOUSLY OPERATION FANS SHALL BE RATED AT A MAXIMUM OF 1.0 SONE.
   b. INTERMITTENTLY OPERATED WHOLE-BUILDING VENTILATION FANS SHALL BE RATED AT A MAXIMUM OF 1.0 SONE.
   c. INTERMITTENTLY OPERATED LOCAL EXHAUST FANS SHALL BE RATED AT A MAXIMUM OF 3.0 SONES.
   d. REMOTELY LOCATED AIR-MOVING EQUIPMENT (MOUNTED OUTSIDE OF HABITABLE SPACES) NEED NOTE MEET SOUNDS REQUIREMENTS IF THERE IS AT LEAST 4' OF DUCTWORK BETWEEN THE FAN AND THE INTAKE GRILL.

WHOLE BUILDING VENTILATION (WBV)

$$Q_{fan} = 0.03(A_{floor}) + 7.5(N_{beds} + 1)$$

$$Q_{fan} = 0.03(850)\text{s.f.} + 7.5(2+1) = 48 \text{ cfm}$$

USE: 50 cfm fan

NOTE: BROAN SSQTXE080 OR EQUIV

THIS FAN IS TO BE USED FOR WHOLE-BUILDING VENTILATION.
MINIMUM 50 cfm FAN TESTED AT A STATIC PRESSURE OF 0.25 wc RATED AT ONE SONE OR LESS REQUIRED TO BE INSTALLED.

FAN MUST BE ATTACHED TO A MINIMUM 5" DUCT AND NO LONGER THAN 70'. SUBTACT 15' OF ALLOWED LENGTH FOR EACH ELBOW.

SWITCH FOR FAN MUST BE LABELED TO INDICATE THE FANS REQUIRED FUNCTION. SUCH AS "FAN IS TO BE LEFT ON TO ENSURE INDOOR AIR QUALITY."

FANS MUST BE ENERGY STAR COMPLIANT W/ HUMIDIDSTAT CONTROL AND DUCTED TO TERMINATE OUTSIDE OF BUILDING.

NOTE of ALL bathroom fans:

THIS FAN IS TO BE USED FOR LOCAL VENTILATION EXHAUST.
MINIMUM 50 cfm FAN TESTED AT A STATIC PRESSURE OF 0.25 wc AND RATED AT 3 SONES OR LESS REQUIRED TO BE INSTALLED.

FAN MUST BE ATTACHED TO A MINIMUM 4" DUCT AND NO LONGER THAN 70'. SUBTACT 15' OF ALLOWED LENGTH FOR EACH ELBOW.

NOTE of ALL kitchen range hoods:

THIS FAN IS TO BE USED FOR LOCAL VENTILATION EXHAUST.
MINIMUM 100 cfm FAN TESTED AT A STATIC PRESSURE OF 0.25 wc AND RATED AT 3 SONES OR LESS REQUIRED TO BE INSTALLED.

FAN MUST BE ATTACHED TO A MINIMUM 5" SMOOTH DUCT AND NO LONGER THAN 85'. SUBTACT 15' OF ALLOWED LENGTH FOR EACH ELBOW.

ENERGY COMPLIANCE COMMENTS:
EN1. All permanently installed lighting fixtures shall be high-efficacy luminaires in accordance with Table 150.0-A of the California Energy Code. Provide a complete luminaire schedule on the Electrical plans for all lighting, which specifies luminaire/fixture type and type of lamps for each luminaire/fixture. 150.0(k)(1)(A)
EN2. Instantaneous water heaters with an input rating greater than 6.8 kBTU/hr. (2 kW) shall have isolation valves on both the cold-water supply and the hot water pipe leaving the water heater, and hose bibbs or other fittings on each valve for flushing the water heater when the valves are closed. 110.3 CEC
EN3. note: all HERS required inspections.
EN4. Attic access doors shall have permanently attached insulation using adhesive or mechanical fasteners. The attic access shall be gasketed to prevent air leakage 150.0(a)2.
EN5. Provide notes on plan: "Registered" copy of the CF-3R form shall be submitted prior to final inspection, signed by certified HERS Rater, for Field Verification and Diagnostic Testing.
EN6. A lighting schedule shall be submitted to homeowners or occupants at the time of occupancy. This lighting schedule should describe all interior luminaires and lamps installed in the home. Note this on the plans. Also, provide a draft lighting schedule included with the plans.
EN7. Provide U value of windows on plans per California Energy Code 150.2.
EN8. All lighting attached to the residence or to other buildings on the same lot must be high efficacy, and must be controlled by a manual ON and OFF switch and one of the following automatic control types:
1. Photocontrol and motion sensor.
2. Photocontrol and automatic time switch control.
3. Astronomical time clock control that automatically turns the outdoor lighting off during daylight hours.
4. EMCS that provides the functionality of an astronomical time clock, does not have an override or bypass switch that allows the luminaire to be always ON, and is programmed to automatically turn the outdoor lighting off during daylight hours
EN9. All Interior Lighting controls shall comply with the following as per section 150.0(k)(2) of the California Energy Code:
a) All interior lighting shall be switched or controlled by a vacancy sensor or dimmer
* Exceptions: (1) Closets less than 70 square feet (2) Hallways
b) Luminaires shall be switched with readily accessible controls that permit luminaires to be switched ON and OFF.
c) Multiple Switches: All 3-way and 4-way switches shall have at least one dimmer
d) No controls shall bypass a dimmer or vacancy sensor function.
e) An energy management control system (EMCS) may be used to comply with dimmer and vacancy sensor requirements in accordance with section 150.0(k)(2)(G & H)
f) In bathrooms, garages, laundry rooms, and utility rooms, at least one luminaire in each of these spaces shall be controlled by a vacancy sensor.
EN10. Luminaires and lamps that are Energy Commission certified must be marked with JA8-2019 or JA8-2019-E.
EN11. All LED luminaires are required to be controlled by a National Electrical Manufacturers Association (NEMA) SSL-7A-compliant dimmer unless they are controlled by a vacancy sensor or an occupancy sensor.
EN12. Luminaires recessed into ceilings shall comply with Section 150.0(k)(1)(C):
i. Be listed, as defined in Section 100.1, for zero clearance insulation contact (IC) by Underwriters Laboratories or other nationally recognized testing/rating laboratory; and
ii. Have a label that certifies the luminaires is airtight with a leakage less than 2.0 CFM at 75 Pascal, be sealed with a gasket or caulk between the luminaire housing and ceiling
iii. Have all air leaks paths between conditioned and unconditioned spaces sealed with a gasket or caulk.
iv. Allow ballast or driver maintenance and replacement to be readily accessible from below the ceiling for luminaires with hardwired ballasts or drivers.
v. Contain light source to comply with JA8.

MECHANICAL, ELEC, PLUMB NOTES:

1. GAS OR PROPANE WATER HEATERS SHALL HAVE.
   a A 120V electrical receptacle that is within 3 feet from the water heater.
   b A Catergory III or IV vent, or Type B vent with straight pipe.
   c Condensate drain that is no more than 2 inches higher than the base.
   d A gas supply line with a capacity of at least 200,000 Btu/hr. CEC 150.0(n)
2. A CIRCULATING AIR SUPPLY OPENING OR DUCT OF 2 sq,in. PER. 1000 BTU IS REQUIRED FOR THE FORCED AIR FURNACE.
3. ALL SHOWERS AND TUB-SHOWERS SHALL HAVE EITHER A PRESSURE BALANCE OR A THERMOSTATIC MIXING VALVE.
4. DUCTS SHALL BE SIZED PER TITLE 24.
5. PROVIDE EXHAUST FAN CAPABLE OF PROVIDING A MINIMUM CAPACITY OF 50 CFM IN BATHROOMS CONTAINING TUBS OR SHOWERS AND SIMILAR ROOM, IF REQUIRED OPENABLE WINDOWS ARE NOT PROVIDED (DUCTLESS FANS ARE NOT ACCEPTABLE IN ROOMS TUBS OR SHOWERS). THE POINT OF DISCHARGE SHALL BE AT LEAST 3 FEET FROM ANY OPENING.
6. WALL COVERING OF SHOWERS OR TUBS WITHIN SHOWERS SHALL BE OF CEMENT PLASTER, TILE, OR APPROVED EQUAL, TO A HEIGHT OF NOT LESS THAN 72 INCHES ABOVE DRAIN INLET. MATERIALS OTHER THAN STRUCTURAL ELEMENTS SHALL BE MOISTURE RESISTANT. GLASS ENCLOSURE DOORS AND PANELS MUST BE LABELED CATEGORY II, SWING DOOR OUTWARD. NET AREA OF SHOWER RECEPTOR SHALL BE NOT LESS THAN 1,024 SQ. IN. OF FLOOR AREA, AND EMCOMPASS 30 INCH DIAMETER CIRCLE.
7. FIBER-CEMENT, FIBER-MAT REINFORCED CEMENT, FIBER-REINFORCED GYPSUM BACKERS, OR GLASS MAT GYPSUM BACKERS ARE TO BE USED AS A BASE FOR WALL TILES IN TUB AND SHOWER AREAS. 'DENSE SHIELD' USED FOR THIS PROJECT.
8. Per CEC Section 410.10(D) No part of a hanging fixture is allowed closer than 8 feet above the tub rim or 3 feet horizontally from the tub rim, unless light fixture(s) in shower enclosure area is listed for damp areas or listed for wet locations.

REVISIONS	DATE

OWNER
ENRIQUE MEZA
9151 GROVE AVE
CALIFORNIA CITY, CA 93505
(818) 493-8144

PROJECT
MEZA DUPLEX
MASTER PLAN
CAL CITY, CA 93505

SHEET TITLE
FLOOR PLAN

PLANS DESIGNED BY:
ROBIN L. YORK
PROJECT ENGINEER
YORK DRAFTING & DESIGN
20946 OLD TOWN RD
TEHACHAPI, CA. 93561
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DRAWN: RY
DATE: 8/7/24
JOB No.: MEZA1-24-duplex
SHEET: 7
X OF X SHEETS

2022 Single-Family Residential Mandatory Requirements Summary

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

Building Envelope:

§ 110.6(a)1:	**Air Leakage.** Manufactured fenestration, exterior doors, and exterior pet doors must limit air leakage to 0.3 CFM per square foot or less when tested per NFRC-400, ASTM E283, or AAMA/WDMA/CSA 101/I.S.2/A440-2011. *
§ 110.6(a)5:	**Labeling.** Fenestration products and exterior doors must have a label meeting the requirements of § 10-111(a).
§ 110.6(b):	**Field fabricated exterior doors and fenestration** products must use U-factors and solar heat gain coefficient (SHGC) values from Tables 110.6-A, 110.6-B, or JA4.5 for exterior doors. They must be caulked and/or weather-stripped. *
§ 110.7:	**Air Leakage.** All joints, penetrations, and other openings in the building envelope that are potential sources of air leakage must be caulked, gasketed, or weather stripped.
§ 110.8(a):	**Insulation Certification by Manufacturers.** Insulation must be certified by the Department of Consumer Affairs, Bureau of Household Goods and Services (BHGS).
§ 110.8(g):	**Insulation Requirements for Heated Slab Floors.** Heated slab floors must be insulated per the requirements of § 110.8(g).
§ 110.8(i):	**Roofing Products Solar Reflectance and Thermal Emittance.** The thermal emittance and aged solar reflectance values of the roofing material must meet the requirements of § 110.8(i) and be labeled per §10-113 when the installation of a cool roof is specified on the CF1R.
§ 110.8(j):	**Radiant Barrier.** When required, radiant barriers must have an emittance of 0.05 or less and be certified to the Department of Consumer Affairs.
§ 150.0(a):	**Roof Deck, Ceiling and Rafter Roof Insulation.** Roof decks in newly constructed attics in climate zones 4 and 8-16 area-weighted average U-factor not exceeding U-0.184. Ceiling and rafter roofs minimum R-22 insulation in wood-frame ceiling; or area-weighted average U-factor must not exceed 0.043. Rafter roof alterations minimum R-19 or area-weighted average U-factor of 0.054 or less. Attic access doors must have permanently attached insulation using adhesive or mechanical fasteners. The attic access must be gasketed to prevent air leakage. Insulation must be installed in direct contact with a roof or ceiling which is sealed to limit infiltration and exfiltration as specified in § 110.7, including but not limited to placing insulation either above or below the roof deck or on top of a drywall ceiling. *
§ 150.0(b):	**Loose-fill Insulation.** Loose fill insulation must meet the manufacturer's required density for the labeled R-value.
§ 150.0(c):	**Wall Insulation.** Minimum R-13 insulation in 2x4 inch wood framing wall or have a U-factor of 0.102 or less, or R-20 in 2x6 inch wood framing or have a U-factor of 0.071 or less. Opaque non-framed assemblies must have an overall assembly U-factor not exceeding 0.102. Masonry walls must meet Tables 150.1-A or B. *
§ 150.0(d):	**Raised-floor Insulation.** Minimum R-19 insulation in raised wood framed floor or 0.037 maximum U-factor. *
§ 150.0(f):	**Slab Edge Insulation.** Slab edge insulation must meet all of the following: have a water absorption rate, for the insulation material alone without facings, no greater than 0.3 percent; have a water vapor permeance no greater than 2.0 perm per inch; be protected from physical damage and UV light deterioration; and, when installed as part of a heated slab floor, meet the requirements of § 110.8(g).
§ 150.0(g)1:	**Vapor Retarder.** In climate zones 1 through 16, the earth floor of unvented crawl space must be covered with a Class I or Class II vapor retarder. This requirement also applies to controlled ventilation crawl space for buildings complying with the exception to §150.0(d).
§ 150.0(g)2:	**Vapor Retarder.** In climate zones 14 and 16, a Class I or Class II vapor retarder must be installed on the conditioned space side of all insulation in all exterior walls, vented attics, and unvented attics with air-permeable insulation.
§ 150.0(q):	**Fenestration Products.** Fenestration, including skylights, separating conditioned space from unconditioned space or outdoors must have a maximum U-factor of 0.45; or area-weighted average U-factor of all fenestration must not exceed 0.45. *

Fireplaces, Decorative Gas Appliances, and Gas Log:

§ 110.5(e)	**Pilot Light.** Continuously burning pilot lights are not allowed for indoor and outdoor fireplaces.
§ 150.0(e)1:	**Closable Doors.** Masonry or factory-built fireplaces must have a closable metal or glass door covering the entire opening of the firebox.
§ 150.0(e)2:	**Combustion Intake.** Masonry or factory-built fireplaces must have a combustion outside air intake, which is at least six square inches in area and is equipped with a readily accessible, operable, and tight-fitting damper or combustion-air control device. *
§ 150.0(e)3:	**Flue Damper.** Masonry or factory-built fireplaces must have a flue damper with a readily accessible control. *

Space Conditioning, Water Heating, and Plumbing System:

§ 110.0-§ 110.3:	**Certification.** Heating, ventilation, and air conditioning (HVAC) equipment, water heaters, showerheads, faucets, and all other regulated appliances must be certified by the manufacturer to the California Energy Commission. *
§ 110.2(a):	**HVAC Efficiency.** Equipment must meet the applicable efficiency requirements in Table 110.2-A through Table 110.2-N. *
§ 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)3:	**Insulation.** Unfired service water heater storage tanks and solar water-heating backup tanks must have adequate insulation, or tank surface heat loss rating.
§ 110.3(c)6:	**Isolation Valves.** Instantaneous water heaters with an input rating greater than 6.8 kBtu per hour (2 kW) must have isolation valves with hose bibbs or other fittings on both cold and hot water lines to allow for flushing the water heater when the valves are closed.

§ 110.5:	**Pilot Lights.** Continuously burning pilot lights are prohibited for natural gas: fan-type central furnaces; household cooking appliances (except appliances without an electrical supply voltage connection with pilot lights that consume less than 150 Btu per hour); and pool and spa heaters. *
§ 150.0(h)1:	**Building Cooling and Heating Loads.** Heating and/or cooling loads are calculated in accordance with the ASHRAE Handbook, Equipment Volume, Applications Volume, and Fundamentals Volume; the SMACNA Residential Comfort System Installation Standards Manual; or the ACCA Manual J using design conditions specified in § 150.0(h)2.
§ 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:	**Water Piping, Solar Water-heating System Piping, and Space Conditioning System Line Insulation.** All domestic hot water piping must be insulated as specified in § 609.11 of the California Plumbing Code. *
§ 150.0(j)2:	**Insulation Protection.** Piping insulation must be protected from damage, including that due to sunlight, moisture, equipment' maintenance, and wind as required by §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 designate a space at least 2.5' x 2.5' x 7' suitable for the future installation of a heat pump water heater, and meet electrical and plumbing requirements, based on the distance between this designated space and the water heater location; and a condensate drain no more than 2" higher than the base of the water heater
§ 150.0(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:

§ 110.8(d)3:	**Ducts.** Insulation installed on an existing space-conditioning duct must comply with § 604.0 of the California Mechanical Code (CMC). If a contractor installs the insulation, the contractor must certify to the customer, in writing, that the insulation meets this requirement.
§ 150.0(m)1:	**CMC Compliance.** All air-distribution system ducts and plenums must meet CMC §§ 601.0-605.0 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 R-6.0 or higher; ducts located entirely in conditioned space as confirmed through field verification and diagnostic testing (RA3.1.4.3.8) do not require insulation. 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 UL requirements, or aerosol sealant that meets UL 723. The combination of mastic and either mesh or tape must be used to seal openings greater than ¼", if mastic or tape is used. Building cavities, air handler support platforms, and plenums designed or constructed with materials other than sealed sheet metal, duct board or flexible duct must not be used to convey conditioned air. Building cavities and support platforms may contain ducts; ducts installed in these spaces must not be compressed. *
§ 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 due tosunlight, moisture, equipment maintenance, and wind. Insulation exposed to weather must be suitable for outdoor service (e.g., protected by aluminum, sheet metal, painted canvas, or plastic cover). Cellular foam insulation must be protected as above or painted with a water retardant and solar radiation-resistant coating.
§ 150.0(m)10:	**Porous Inner Core Flex Duct.** Porous inner cores of flex ducts must have a non-porous layer or air barrier between the inner core and outer 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 Reference Residential Appendix RA3.1.
§ 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. Clean-filter pressure drop and labeling must meet the requirements in §150.0(m)12. Filters must be accessible for regular service. Filter racks or grilles must use gaskets, sealing, or other means to close gaps around the inserted filters to and prevents air from bypassing the filter. *

§ 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. *

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)1B:	**Central Fan Integrated (CFI) Ventilation Systems.** Continuous operation of CFI air handlers is not allowed to provide the whole-dwelling unit ventilation airflow required per §150.0(o)1C. A motorized damper(s) must be installed on the ventilation duct(s) that prevents all airflow through the space conditioning duct system when the damper(s) is closed andcontrolled per §150.0(o)1Biii&iv. CFI ventilation systems must have controls that track outdoor air ventilation run time, and either open or close the motorized damper(s) for compliance with §150.0(o)1C.
§ 150.0(o)1C:	**Whole-Dwelling Unit Mechanical Ventilation for Single-Family Detached and townhouses .** Single-family detached dwelling units, and attached dwelling units not sharing ceilings or floors with other dwelling units, occupiable spaces, public garages, or commercial spaces must have mechanical ventilation airflow specified in § 150.0(o)1Ci-iii.
§ 150.0(o)1G:	**Local Mechanical Exhaust.** Kitchens and bathrooms must have local mechanical exhaust; nonenclosed kitchens must have demand-controlled exhaust system meeting requirements of §150.0(o)1Gii,enclosed kitchens and bathrooms can use demand-controlled or continuous exhaust meeting §150.0(o)1Giii-iv. Airflow must be measured by the installer per §150.0(o)1Gv, and rated for sound per §150.0(o)1Gvi. *
§ 150.0(o)1H&I:	**Airflow Measurement and Sound Ratings of Whole-Dwelling Unit Ventilation Systems.** The airflow required per § 150.0(o)1C must be measured by using a flow hood, flow grid, or other airflow measuring device at the fan's inlet or outlet terminals/grilles per Reference Residential Appendix RA3.7. Whole-Dwelling unit ventilation systems must be rated for sound per ASHRAE 62.2 §7.2 at no less than the minimum airflow rate required by §150.0(o)1C.
§ 150.0(o)2:	**Field Verification and Diagnostic Testing.** Whole-Dwelling Unit ventilation airflow, vented range hood airflow and sound rating, and HRV and ERV fan efficacy must be verified in accordance with Reference Residential Appendix RA3.7. Vented range hoods must be verified per Reference Residential Appendix RA3.7.4.3 to confirm if it is rated by HVI or AHAM to comply with the airflow rates and sound requirements per §150.0(o)1G

Pool and Spa Systems and Equipment:

§ 110.4(a):	**Certification by Manufacturers.** Any pool or spa heating system or equipment must be certified to have all of the following: compliance with the Appliance Efficiency Regulations and listing in MAEDbS; an on-off switch mounted outside of the heater that allows shutting off the heater without adjusting the thermostat setting; a permanent weatherproof plate or card with operating instructions; and must not use electric resistance heating. *
§ 110.4(b)1:	**Piping.** Any pool or spa heating system or equipment must be installed with at least 36 inches of pipe between the filter and the heater, or dedicated suction and return lines, or built-in or built-up connections to allow for future solar heating.
§ 110.4(b)2:	**Covers.** Outdoor pools or spas that have a heat pump or gas heater must have a cover.
§ 110.4(b)3:	**Directional Inlets and Time Switches for Pools.** Pools must have directional inlets that adequately mix the pool water, and a time switch that will allow all pumps to be set or programmed to run only during off-peak electric demand periods.
§ 110.5:	**Pilot Light.** Natural gas pool and spa heaters must not have a continuously burning pilot light.
§ 150.0(p):	**Pool Systems and Equipment Installation.** Residential pool systems or equipment must meet the specified requirements for pump sizing, flow rate, piping, filters, and valves. *

Lighting:

§ 110.9:	**Lighting Controls and Components.** All lighting control devices and systems, ballasts, and luminaires must meet the applicable requirements of § 110.9. *
§ 150.0(k)1A:	**Luminaire Efficacy.** All installed luminaires must meet the requirements in Table 150.0-A, except lighting integral to exhaust fans, kitchen range hoods, bath vanity mirrors, and garage door openers; navigation lighting less than 5 watts; and lighting internal to drawers, cabinets, and linen closets with an efficacy of at least 45 lumens per watt.
§ 150.0(k)1B:	**Screw based luminaires.** Screw based luminaires must contain lamps that comply with Reference Joint Appendix JA8. *
§ 150.0(k)1C:	**Recessed Downlight Luminaires in Ceilings.** Luminaires recessed into ceilings must not contain screw based sockets, must be airtight, and must be sealed with a gasket or caulk. California Electrical Code § 410.116 must also be met.
§ 150.0(k)1D:	**Light Sources in Enclosed or Recessed Luminaires.** Lamps and other separable light sources that are not compliant with the JA8 elevated temperature requirements, including marking requirements, must not be installed in enclosed or recessed luminaires.
§ 150.0(k)1E:	**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 shall be no more than the number of bedrooms. These boxes must be served by a dimmer, vacancy sensor control, low voltage wiring, or fan speed control.
§ 150.0(k)1F:	**Lighting Integral to Exhaust Fans.** Lighting integral to exhaust fans (except when installed by the manufacturer in kitchen exhaust hoods) must meet the applicable requirements of § 150.0(k). *

§ 150.0(k)1G:	**Screw based luminaires.** Screw based luminaires must contain lamps that comply with Reference Joint Appendix JA8. *
§ 150.0(k)1H:	**Light Sources in Enclosed or Recessed Luminaires.** Lamps and other separable light sources that are not compliant with the JA8 elevated temperature requirements, including marking requirements, must not be installed in enclosed or recessed luminaires.
§ 150.0(k)1I:	**Light Sources in Drawers, Cabinets, and Linen Closets.** Light sources internal to drawers, cabinetry or linen closets are not required to comply with Table 150.0-A or be controlled by vacancy sensors provided that they are rated to consume no more than 5 watts of power, emit no more than 150 lumens, and are equipped with controls that automatically turn the lighting off when the drawer, cabinet or linen closet is closed.
§ 150.0(k)2A:	**Interior Switches and Controls.** All forward phase cut dimmers used with LED light sources must comply with NEMA SSL 7A.
§ 150.0(k)2B:	**Interior Switches and Controls.** Exhaust fans must be controlled separately from lighting systems. *
§ 150.0(k)2A:	**Accessible Controls.** Lighting must have readily accessible wall-mounted controls that allow the lighting to be manually turned on and off. *
§ 150.0(k)2B:	**Multiple Controls.** Controls must not bypass a dimmer, occupant sensor, or vacancy sensor function if the dimmer or sensor is installed to comply with § 150.0(k).
§ 150.0(k)2C:	**Mandatory Requirements.** Lighting controls must comply with the applicable requirements of § 110.9.
§ 150.0(k)2D:	**Energy Management Control Systems.** An energy management control system (EMCS) may be used to comply with dimming, occupancy, and control requirements if it provides the functionality of the specified control per § 110.9 and the physical controls specified in § 150.0(k)2A.
§ 150.0(k)2E:	**Automatic Shutoff Controls.** In bathrooms, garages, laundry rooms, utility rooms and walk-in closets, at least one installed luminaire must be controlled by an occupancy or vacancy sensor providing automatic-off functionality. Lighting inside drawers and cabinets with opaque fronts or doors must have controls that turn the light off when the drawer or door is closed.
§ 150.0(k)2F:	**Dimmers.** Lighting in habitable spaces (e.g., living rooms, dining rooms, kitchens, and bedrooms) must have readily accessible wall-mounted dimming controls that allow the lighting to be manually adjusted up and down. Forward phase cut dimmers controlling LED light sources in these spaces must comply with NEMA SSL 7A.
§ 150.0(k)2K:	**Independent controls.** Integrated lighting of exhaust fans shall be controlled independently from the fans. Lighting under cabinets or shelves, lighting in display cabinets, and switched outlets must be controlled separately from ceiling-installed lighting.
§ 150.0(k)3A:	**Residential Outdoor Lighting.** For single-family residential buildings, outdoor lighting permanently mounted to a residential building, or to other buildings on the same lot, must have a manual on/off switch and either a photocell and motion sensor or automatic time switch control) or an astronomical time clock. An energy management control system that provides the specified control functionality and meets all applicable requirements may be used to meet these requirements.
§ 150.0(k)4:	**Internally illuminated address signs.** Internally illuminated address signs must either comply with § 140.8 or consume no more than 5 watts of power.
§ 150.0(k)5:	**Residential Garages for Eight or More Vehicles.** Lighting for residential parking garages for eight or more vehicles must comply with the applicable requirements for nonresidential garages in §§ 110.9, 130.0, 130.1, 130.4, 140.6, and 141.0.

Solar Readiness:

§ 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)-(e).
§110.10(b)1A:	**Minimum Solar Zone Area.** The solar zone must have a minimum total area as described below. The solar zone must comply with access, pathway, smoke ventilation, and spacing requirements as specified in Title 24, Part 9 or other parts of Title 24 or in any requirements adopted by a local jurisdiction. The solar zone total area must be comprised of areas that have no dimension less than 5 feet and are no less than 80 square feet each for buildings with roof areas less than or equal to 10,000 square feet or no less than 160 square feet each for buildings with roof areas greater than 10,000 square feet. For single-family residences, the solar zone must be located on the roof or overhang of the building and have a total area no less than 250 square feet. *
§ 110.10(b)2:	**Azimuth.** All sections of the solar zone located on steep-sloped roofs must have an azimuth between 90-300° of true north.
§ 110.10(b)3A:	**Shading.** The solar zone must not contain any obstructions, including but not limited to: vents, chimneys, architectural features, and roof mounted equipment. *
§ 110.10(b)3B:	**Shading.** Any obstruction located on the roof or any other part of the building that projects above a solar zone must be located at least twice the horizontal distance of the height difference between the highest point of the obstruction and the horizontal projection of the nearest point of the solar zone, measured in the vertical plane. *
§ 110.10(b)4:	**Structural Design Loads on Construction Documents.** For areas of the roof designated as a solar zone, the structural design loads for roof dead load and roof live load must be clearly indicated on the construction documents.
§ 110.10(c):	**Interconnection Pathways.** The construction documents must indicate: a location reserved for inverters and metering equipment and a pathway reserved for routing of conduit from the solar zone to the point of interconnection with the electrical service; and for single-family residences and central water-heating systems, a pathway reserved for routing plumbing from the solar zone to the water-heating system.
§ 110.10(d):	**Documentation.** A copy of the construction documents or a comparable document indicating the information from § 110.10(b)-(c) must be provided to the occupant.
§ 110.10(e)1:	**Main Electrical Service Panel.** The main electrical service panel must have a minimum busbar rating of 200 amps.
§ 110.10(e)2:	**Main Electrical Service Panel.** The main electrical service panel must have a reserved space to allow for the installation of a double pole circuit breaker for a future solar electric installation. The reserved space must be permanently marked as "For Future Solar Electric."

Electric and Energy Storage Ready:

§ 150.0(s)	**Energy Storage System (ESS) Ready.** All single-family residences must meet all of the following: Either ESS-ready interconnection equipment with backed up capacity of 60 amps or more and four or more ESS supplied branch circuits, <u>or</u> a dedicated raceway from the main service to a subpanel that supplies the branch circuits in § 150.0(s); at least four branch circuits must be identified and have their source collocated at a single panelboard suitable to be supplied by the ESS, with one circuit supplying the refrigerator, one lighting circuit near the primary exit, and one circuit supplying a sleeping room receptacle outlet; main panelboard must have a minimum busbar rating of 225 amps; sufficient space must be reserved to allow future installation of a system isolation equipment/transfer switch within 3' of the main panelboard, with raceways installed between the panelboard and the switch location to allow the connection of backup power source.
§ 150.0(t)	**Heat Pump Space Heater Ready.** Systems using gas or propane furnaces to serve individual dwelling units must include: A dedicated unobstructed 240V branch circuit wiring installed within 3' of the furnace with circuit conductors rated at least 30 amps with the blank cover identified as "240V ready;" and a reserved main electrical service panel space to allow for the installation of a double pole circuit breaker permanently marked as "For Future 240V use."
§ 150.0(u)	**Electric Cooktop Ready.** Systems using gas or propane cooktop to serve individual dwelling units must include: A dedicated unobstructed 240V branch circuit wiring installed within 3' of the cooktop with circuit conductors rated at least 50 amps with the blank cover identified as "240V ready;" and a reserved main electrical service panel space to allow for the installation of a double pole circuit breaker permanently marked as "For Future 240V use."
§ 150.0(v)	**Electric Clothes Dryer Ready.** Clothes dryer locations with gas or propane plumbing to serve individual dwelling units must include: A dedicated unobstructed 240V branch circuit wiring installed within 3' of the dryer location with circuit conductors rated at least 30 amps with the blank cover identified as "240V ready;" and a reserved main electrical service panel space to allow for the installation of a double pole circuit breaker permanently marked as "For Future 240V use."

*Exceptions may apply.

IF THIS SHEET IS HARD TO READ,
PLEASE REFER TO BOOKLET FORM
OF RESIDENTIAL MANDATORY
MEASURES FOR CLARITY.

REVISIONS	DATE

OWNER
ENRIQUE MEZA
9151 GROVE AVE
CALIFORNIA CITY, CA 93505
(818) 493-8144

PROJECT
2022 SFR
MANDATORY REQUIREMENTS

SHEET TITLE
TITLE 24
MANDATORY MEASURES

PLANS DESIGNED BY:
ROBIN L. YORK
PROJECT ENGINEER
YORK DRAFTING & DESIGN
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TEHACHAPI, CA. 93561
(661) 406-0699
yorkdrafting@yahoo.com

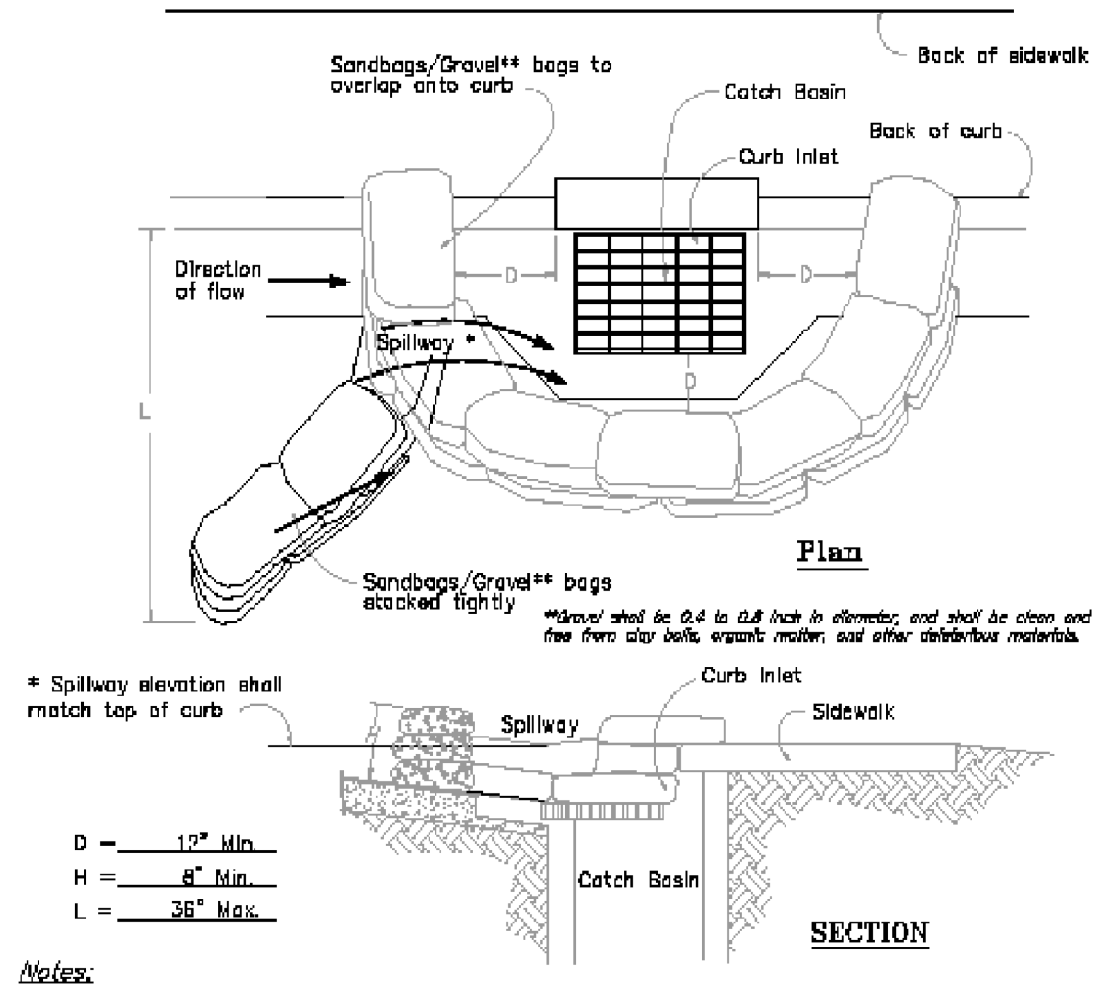
DRAWN: RY
DATE: 2023
JOB No.: MM2023
SHEET: 9
X OF X SHEETS

BEST MANAGEMENT PRACTICES (BMP's)

General Notes

1. Best Management Practices (BMP's) contained herein reflect the minimum requirements. Alternate methods providing equal or greater protection may be utilized. For in depth information on BMP's refer to the California Storm Water BMP Handbooks, available at www.cabmphandbooks.com, California Department of Transportation Construction Site BMP Fact Sheets at www.dot.ca.gov/hq/construc/stormwater/factsheets.htm, and/or USEPA BMP Fact sheet @ http://cfpub.epa.gov/npdes/stormwater.
2. All construction activity shall be performed in accordance with a Stormwater Pollution Prevention Plan (SWPPP) developed and implemented in compliance with the requirements of the National Pollutant Discharge Elimination System (NPDES) Construction General Permit Order No. 2009-009-DWQ and as amended by Order No. 2010-0014-DWQ.
3. The SWPPP shall:
   a. Identify potential pollutant sources and include the design and placement of BMP's to effectively prohibit the entry of pollutants from the construction site onto the street and/or into a storm drain system during construction.
   b. Be kept on site and amended to reflect changing conditions throughout the course of construction.
   c. Be kept up to date. Any additional updates requested by agency representative are to be made immediately.
4. Non-Stormwater discharges are prohibited from entering any storm drain system and/or street.
5. Discharges of pumped ground water require a discharge permit from the State of California Regional Water Quality Control Board (RWQCB).
6. Pollutants shall be removed from stormwater discharges to the Maximum Extent Practicable (MEP) through design & implementation of the SWPPP.
7. A standby crew for emergency work shall be available at all times during the wet weather season, which is typically Oct 1 through May 30. Necessary materials shall be available on site and stockpiled at convenient locations to facilitate rapid construction of emergency devices when rain is imminent.
8. Portable sanitary facilities shall be located on relatively level ground away from traffic areas, drainage courses, and storm drain inlets.
9. Employees, subcontractors and suppliers shall be educated on all BMP's including concrete waste storage and disposal procedures.
10. Sediment control practices shall effectively prevent a net increase of sediment load in stormwater discharge.

Revisions Date Desc 5/12 UPDATE	DATE: 06/18/2003 DESIGNED BY: KH DRAWN BY: BH CHECKED BY: GF	COUNTY OF KERN STATE OF CALIFORNIA DEVELOPMENT STANDARD	NPDES BMP SEDIMENT AND EROSION CONTROL	PLATE NO. BMP 1



Notes:

1. Catch Basin/Inlet protection shall be installed wherever there is a potential of stormwater or non-stormwater being discharged into it.
2. Inlet protection is required along with other pollution prevention measures such as; erosion control, soil stabilization, and measures to prevent tracking onto paved surfaces.
3. Modify inlet protection as needed to avoid creating traffic hazards.
4. Include inlet protection measures at hillside v-ditches and misc. drainage swales.
5. Inlet protection shall be inspected and accumulated sediments removed. Sediment shall be disposed of properly and in a manner that assures that the sediment does not enter the storm drain system
6. Damaged bags shall be replaced immediately.
7. Additional sandbag sediment traps shall be placed at intervals as indicated on site plan.

A CATCH BASIN/INLET PROTECTION

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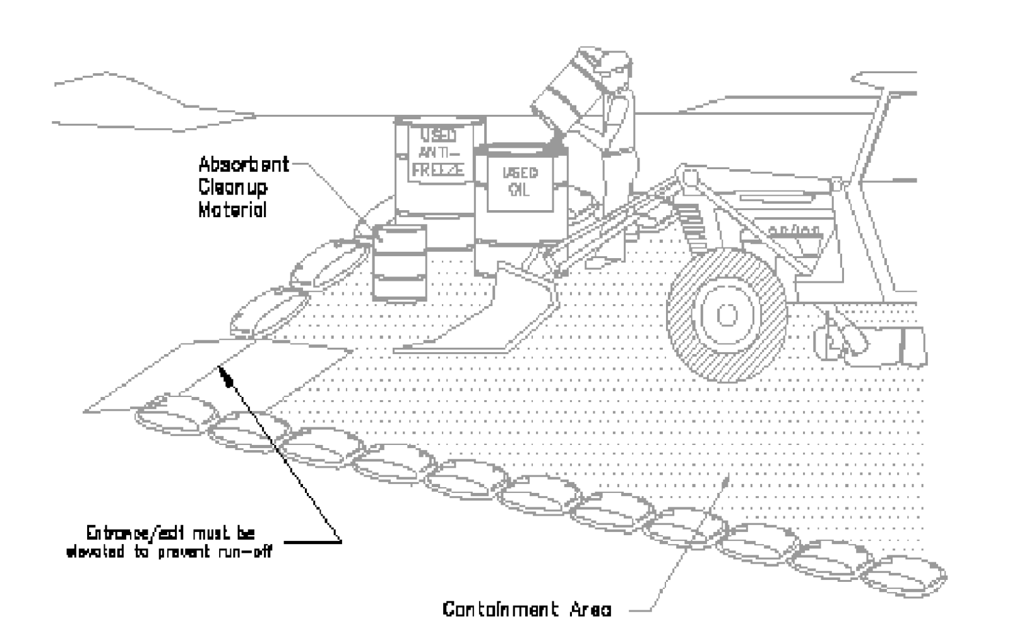
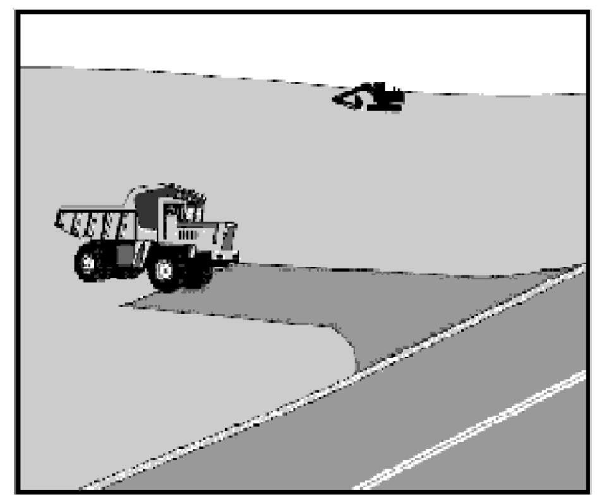


Notes:

1. Leaking vehicles and equipment shall not be allowed onsite. Equipment and vehicles shall be inspected frequently for leaks and shall be repaired immediately. Clean up spills and leaks promptly with absorbent materials; do not flush with water.
2. Vehicles and equipment shall be maintained, and repaired onsite only in designated areas. Prevent run-on and run-off from designated areas. Containment devices shall be provided and areas shall be covered if necessary.
3. Designate onsite vehicle and equipment maintenance areas, away from storm drain inlets and watercourses.
4. Always use secondary containment, such as a drain pan or drop cloth, to catch spills and leaks when removing or changing fluids.
5. Legally dispose of used oils, fluids, lubricants, and batteries.
6. Provide spill containment dikes or secondary containment around stored oil, fuel, and chemical drums.
7. Maintain an adequate supply of absorbent spill cleanup materials in designated area.
8. It is the contractors responsibility to regularly inspect the vehicle and equipment maintenance area(s).

B EQUIPMENT MAINTENANCE AREAS

Revisions Date Desc 5/12 UPDATE	DATE: 06/18/2003 DESIGNED BY: KH DRAWN BY: BH CHECKED BY: GF	COUNTY OF KERN STATE OF CALIFORNIA DEVELOPMENT STANDARD	NPDES BMP SEDIMENT AND EROSION CONTROL	PLATE NO. BMP B



Notes:

1. Sediments and other materials shall not be tracked from the site by vehicle traffic. The construction entrance roadways shall be stabilized so as to prevent sediments from being deposited into the public roads. Sediment deposited on the roadway must be swept up immediately and may not be washed down by rain or other means into the storm drain system. See Type 1 and Type 2 details.
2. Stabilized construction entrance shall be:
   a. Located at any point where traffic will be entering or leaving a construction site to or from a public right of way, street, alley, and sidewalk or parking area.
   b. A series of steel plates with "rumble strips", and/or min >3" to <6" crushed aggregate with length, width & thickness as needed to adequately prevent any tracking onto paved surfaces.
3. Adding a wash rack with a sediment trap large enough to collect all wash water can greatly improve efficiency.
4. All vehicles accessing the construction site shall utilize the stabilized construction entrance sites.
   a. Remove all sediment deposited on paved roadways immediately.
   b. Sweep paved areas that receive construction traffic whenever sediment becomes visible.
   c. <u>Pavement washing with water is prohibited</u> if it results in a discharge to the storm drain system.

C STABILIZED CONSTRUCTION ENTRANCE/EXIT

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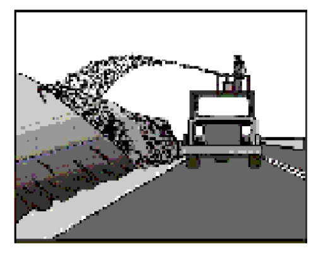
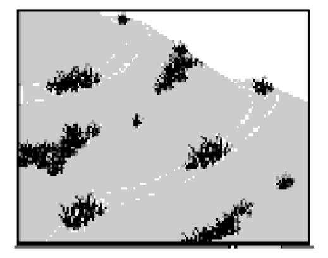
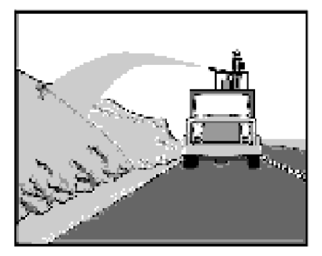


Straw Mulch



Hydroseeding



Hydraulic Mulch

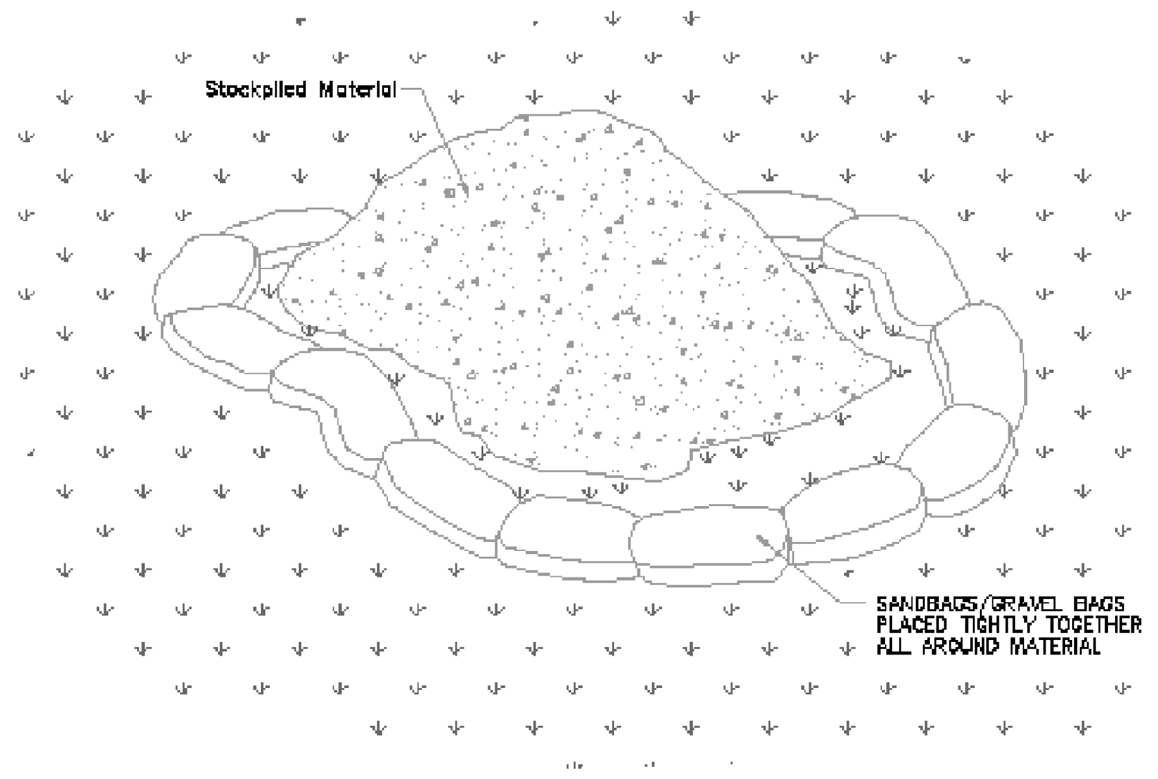
Geotextiles, Mats, Plastic Covers and Erosion Control Blankets

Notes:

1. Soil/Slope stabilization practices shall be designed to preserve existing vegetation where feasible and to revegetate open areas as soon as feasible after grading. These control practices shall include temporary seeding, permanent seeding, mulching, sod stabilization, vegetative buffer strips, protection of trees, or other soil stabilization practices.
2. Soil stabilization shall be implemented on <u>all inactive disturbed areas</u> from October 1 thru May 30 and on <u>all disturbed areas</u> during a rain event or potential rain.
3. Stabilization practices shall control/prevent erosion from the forces of wind and water.
4. Stabilization practices shall be implemented in conjunction with sediment trapping/filtering practices and practices to reduce the tracking of sediment onto paved roads.
5. When using straw mulching, the minimum application shall be 2 tons/acre. Mulch must be anchored immediately to minimize loss by wind or water.
6. When using hydroseeding/mulching, the minimum, application of wood fiber shall be 1,500 lbs/acre, that does not contain more than 50 percent newsprint.
7. For seeding recommendations, contact: USDA, Natural Resources Conservation Service at 5000 California Avenue, Bakersfield, CA 93309-0725. Phone: (661) 336-0967.
8. When using hydraulic mulch, the application shall be between 1 to 2 tons per acre.
9. Geotextiles, mats, plastic covers and erosion control blankets should be considered when disturbed soils may be particularly difficult to stabilize.
10. For geotextiles, mats, and erosion control blankets, installation should be in accordance with manufactures recommendations. Typically overlap of geotextiles/mats edges is 2 to 3 in. and stapled every 6 in. When blankets are to be spliced, place blankets end-over-end (shingle style) with 6 in. overlap and staple through overlapped area, approximately 12 in. apart.

D EROSION CONTROL

Revisions Date Desc 5/12 UPDATE	DATE: 06/18/2003 DESIGNED BY: KH DRAWN BY: BH CHECKED BY: GF	COUNTY OF KERN STATE OF CALIFORNIA DEVELOPMENT STANDARD	NPDES BMP SEDIMENT AND EROSION CONTROL	PLATE NO. BMP D



Notes:

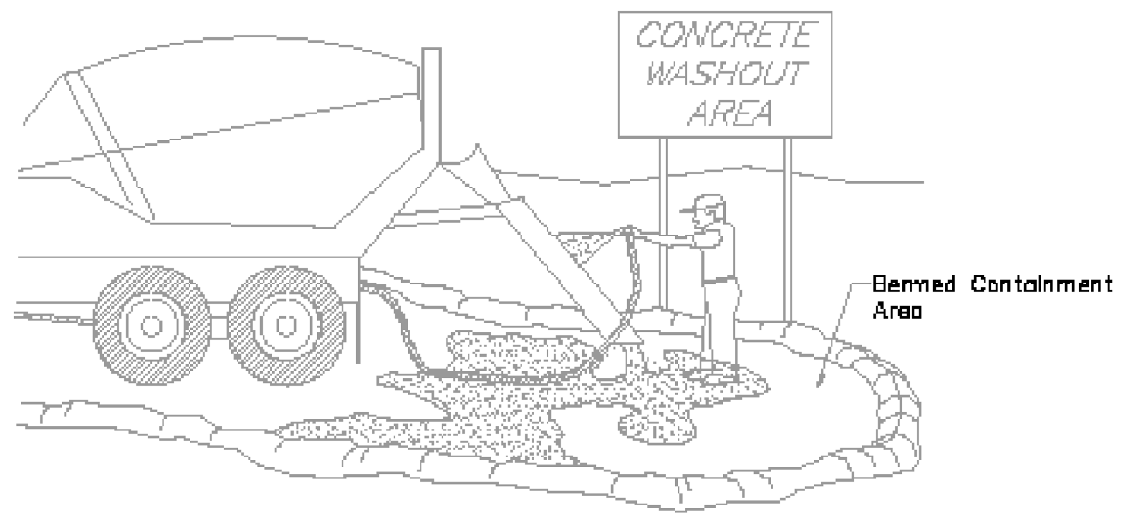
Stockpile management procedures and practices are designed to reduce or eliminate air and storm water pollution from stockpiles of soil, and paving materials such as portland cement concrete (PCC) rubble, asphalt concrete (AC), asphalt concrete rubble, aggregate base, aggregate subbase or pre-mixed aggregate,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

Notes:

1. Protection of stockpiles is a year-round requirement.
2. Locate stockpiles a minimum of 50 feet away from concentrated flows of storm water, drainage courses, and drain inlets.
3. Implement wind erosion/transport control practices as appropriate.
4. All stockpiles shall be covered, stabilized, or protected with a temporary linear barrier (i.e. sandbags, etc.) prior to the onset of precipitation.

E MATERIAL STORAGE

Revisions Date Desc 5/12 UPDATE	DATE: 06/18/2003 DESIGNED BY: KH DRAWN BY: BH CHECKED BY: GF	COUNTY OF KERN STATE OF CALIFORNIA DEVELOPMENT STANDARD	NPDES BMP SEDIMENT AND EROSION CONTROL	PLATE NO. BMP E

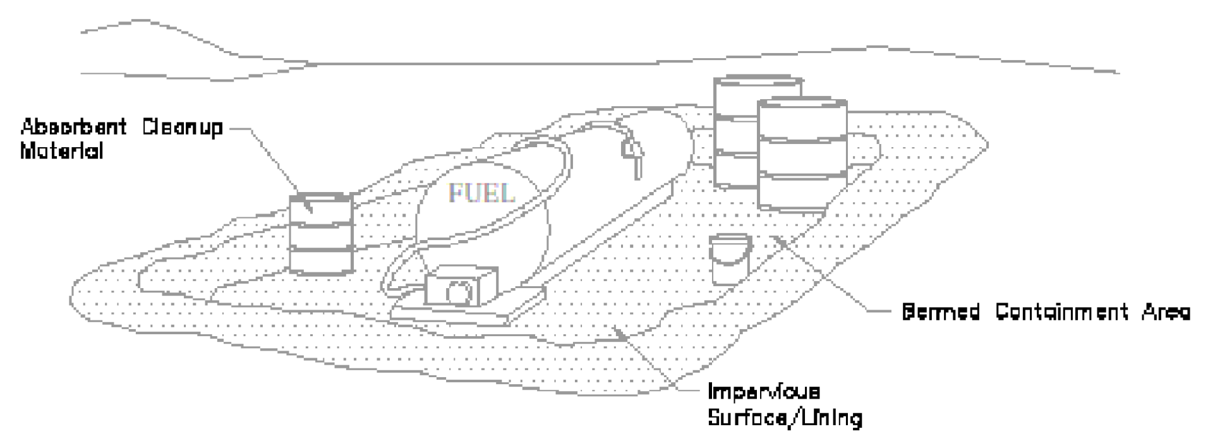


Notes:

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

F CONCRETE WASTE MANAGEMENT

Revisions Date Desc 5/12 UPDATED	DATE: 06/18/2003 DESIGNED BY: KH DRAWN BY: BH CHECKED BY: GF	COUNTY OF KERN STATE OF CALIFORNIA DEVELOPMENT STANDARD	NPDES BMP SEDIMENT AND EROSION CONTROL	PLATE NO. BMP F



Notes:

1. Fueling shall be performed in a designated area, away from drainage courses.
2. Absorbent cleanup material shall be on site and used immediately in the event of a spill.
3. Drip pans or absorbent pads shall be used during vehicle and equipment fueling, unless the fueling is performed over an impermeable surface in a dedicated fueling area.
4. Dedicated fueling areas shall be protected from storm water run-on and runoff, and shall be located at least 50 feet from downstream drainage facilities and watercourses. Fueling must be performed on level-grade areas.
5. Protect fueling areas with berms and/or dikes to prevent run-on, runoff, and to contain spills.

G VEHICLE/ EQUIPMENT FUELING

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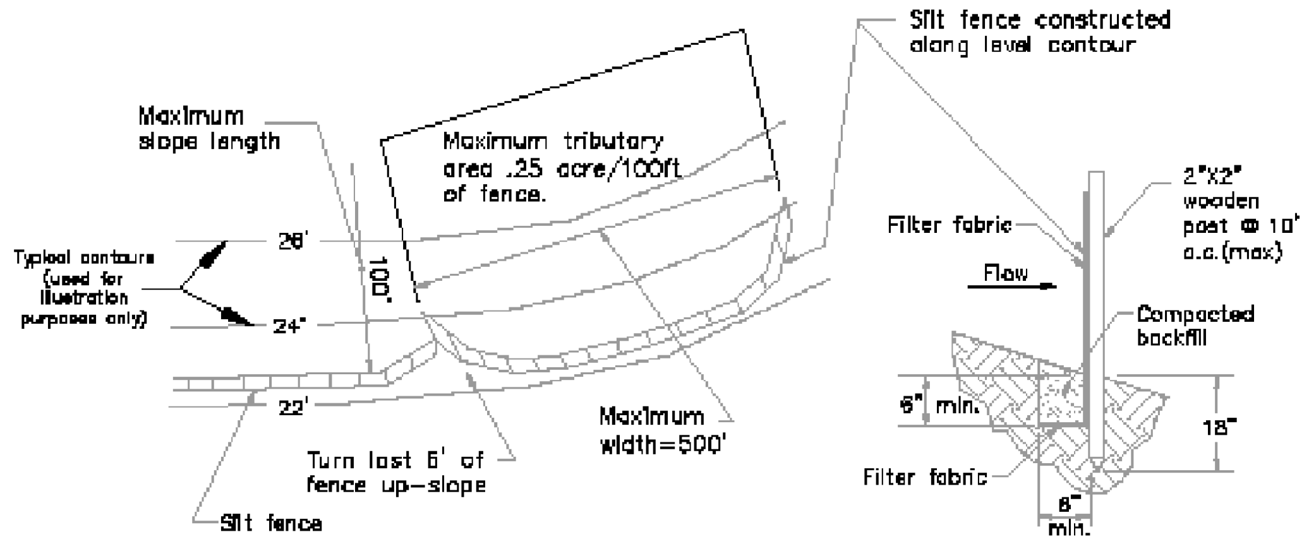

Notes:

1. Construct the silt fence along a level contour.
2. Silt fences shall remain in place until the disturbed area is permanently stabilized.
3. Provide sufficient room for runoff to pond behind the fence and allow sediment removal equipment to pass between the silt fence and toe of slope or other obstructions. About 1200 sq. ft. of ponding area shall be provided for every acre draining to the fence.
4. Turn the ends of the filter fence uphill to prevent stormwater from flowing around the fence.
5. Leave an undisturbed or stabilized area immediately downslope from the fence.
6. Do not place in live stream or intermittently flowing channels.
7. When standard filter fabric is used, a wire mesh support fence shall be fastened securely to the upslope side of the posts using heavy-duty (0.6 inch) wire staples at least 1.75 inches long, tie wires or hog rings.
8. Filter fabric shall be woven polypropylene geotextile with a minimum width of 36 inches and a minimum tensile strength of 100 lb force.
9. Wood stakes shall be commercial quality lumber no less than 2 inch by 2 inch. Wood stakes shall be driven to a depth of no less than 18 inches from surface.

H SILT FENCE

Revisions Date Desc 5/23 UPDATE	DATE: 06/18/2003 DESIGNED BY: KH DRAWN BY: BH CHECKED BY: GF	COUNTY OF KERN STATE OF CALIFORNIA DEVELOPMENT STANDARD	NPDES BMP SEDIMENT AND EROSION CONTROL	PLATE NO. BMP H

PROJECT
KERN COUNTY
BEST MANAGEMENT PRACTICES

SHEET TITLE
BMP

DRAWN:
DATE: 2023
JOB No.: BMP 2023
SHEET: 10
X OF X SHEETS

CHAPTER 1 – ADMINISTRATION

SECTION REQUIREMENTS

Scope

101.3.1 Applies to ALL newly constructed residential buildings: low–rise, high–rise, and hotels/motels.

102.3 Requires a completed Residential Occupancies Application Checklist or alternate method acceptable to the enforcing agency to be used for documentation of conformance.

CHAPTER 3 – GREEN BUILDING

SECTION REQUIREMENTS

Additions and alterations

301.1.1 * Applies to additions or alterations of residential buildings where the addition or alteration increases the building's conditioned area, volume, or size.

* Requirements only apply within the specific area of the addition or alteration.

* Requirements for electric vehicle charging may apply to additions to or alterations of parking facilities for multifamily buildings

Low–rise and high–rise residential buildings

301.2 Banners identify provisions applying to low–rise only [LR] or high–rise only [HR].

Mixed occupancy buildings

302.1 Requires each portion of mixed occupancy buildings to comply with CALGreen measures applicable for the specific occupancy.

Exceptions:

* Accessory structures and accessory occupancies serving residential buildings to comply with Chapter 4 and Appendix A4, as applicable.

* Live/work units complying with the California Building Code Section 508.5 shall not be considered a mixed occupancy. Live/work units are required to comply with Chapter 4 and Appendix A4, as applicable.

CHAPTER 4 – RESIDENTIAL MANDATORY MEASURES
DIVISION 4.1 – PLANNING AND DESIGN

SECTION REQUIREMENTS

Storm water drainage and retention during construction

4.106.2 Projects which disturb less than 1 acre of soil and are not part of a larger common plan of development shall manage storm water drainage during construction.

Grading and paving

4.106.3 Construction plans shall indicate how the site grading or drainage system will manage all surface water flows to keep water from entering buildings.

Exception: Additions and alterations which do not alter the existing drainage path.

Electric vehicle (EV) charging for new construction and existing multifamily parking facilities

4.106.4 * Comply with Section 4.106.4.1 or 4.106.4.2 for installation and use of EV chargers and receptacles.

* Electric vehicle supply equipment (EVSE) shall comply with the California Electrical Code.

Exceptions:

1. On a case–by–case basis where the local enforcing agency has determined EV charging and infrastructure are not feasible based upon one or more of the following:

1.1. Where there is no local utility power supply, or the local utility is unable to supply adequate power.

1.2. Where local enforcing agency determines additional local utility infrastructure design requirements for implementation of Section 4.106.4, may adversely impact the construction cost of the project.

2. Accessory Dwelling Units and Junior Accessory Dwelling Units without additional parking facilities.

EV charging: New 1– & 2–family dwellings/townhouses with attached private garages

4.106.4.1 * Install a listed raceway to accommodate a dedicated 208/240–volt branch circuit for each dwelling unit.

* Raceway shall not be less than trade size 1 (nominal 1–inch inside diameter).

* Raceway shall originate at the main service or subpanel and terminate into a listed cabinet, box or other enclosure in close proximity to the proposed location of an EV charger.

* Raceways are required to be continuous at enclosed, inaccessible, or concealed areas and spaces.

* Service panel and/or subpanel shall provide capacity to install a 40–ampere 208/240–volt minimum dedicated branch circuit and space(s) reserved to permit installation of a branch circuit overcurrent protective device.

Exception: A raceway is not required if a minimum 40–ampere 208/240–volt dedicated EV branch circuit is installed in close proximity to the proposed location of an EV charger at the time of original construction in accordance with the California Electrical Code.

Identification

4.106.4.1.1 Service panel or subpanel circuit directory shall identify the overcurrent protective device space(s) reserved for future EV charging as "EV CAPABLE". The raceway termination location shall be permanently and visibly marked as "EV CAPABLE."

EV charging for new multifamily dwellings, hotels and motels and new residential parking facilities

4.106.4.2 * Applies to all new multifamily dwelling units, hotels and motels and new residential parking facilities.

* Shall meet the requirements of Sections 4.106.4.2.1 or 4.106.4.2.2.

* Calculations for spaces shall be rounded up to the nearest whole number.

* A parking space served by electric vehicle supply equipment (EVSE) or designed as a future EV charging space shall count as at least one standard parking space in order to comply with minimum parking space requirements established by a local jurisdiction. See Vehicle Code Section 22511.2.

Multifamily development projects, hotels, and motels with less than 20 units

4.106.4.2.1 The number of dwelling units, sleeping units or guest rooms shall be based on all building on a project site.

1. EV Capable. 10% of the total number of parking spaces on a building site shall be EV spaces capable of supporting future Level 2 EVSE. Electrical load calculations shall demonstrate electrical panel service capacity, electrical system, and any on–site distribution transformer(s) have sufficient capacity to charge all EVs at a minimum of 40 amps. The service panel/subpanel shall identify overcurrent protective device spaces reserved for future EV charging as "EV CAPABLE."

   Exceptions:

   1. When EV chargers (Level 2 EVSE) are installed in a number equal to or greater than the required number of EV capable spaces.

   2. When EV chargers (Level 2 EVSE) are installed in a number less than the required number of EV capable spaces, the number of EV capable spaces required may be reduced by a number equal to the number of EV chargers installed.

2. EV Ready. 25% of the total number of parking spaces shall be equipped with low power Level 2 EV charging receptacles. For multifamily parking facilities, no more than one receptacle is required per dwelling unit when more than one parking space is provided for use by a single dwelling unit.

   Exception: Areas of parking facilities by parking lifts.

4.106.4.2.2 The number of dwelling units, sleeping units or guest rooms shall be based on all buildings on a project site.

1. EV Capable. 10% of the total number of parking spaces on a building site shall be EV spaces capable of supporting future Level 2 EVSE. Electrical load calculations shall demonstrate electrical panel service capacity, electrical system, and any on–site distribution transformer(s) have sufficient capacity to charge all EVs at a minimum of 40 amperes. The service panel/subpanel shall identify future EV spaces as "EV CAPABLE."

   Exception: When EV chargers (Level 2 EVSE) are installed in a number greater than 5% of parking spaces required by Section 4.106.4.2.2, Item 3, the number of EV capable spaces required may be reduced by a number equal to the number of EV chargers installed over the 5% required.

2. EV Ready. 25% of the total number of parking spaces shall be equipped with low power Level 2 EV charging receptacles. For multifamily parking facilities, no more than one receptacle is required is required per dwelling unit when more than one parking space is provided for use by a single dwelling unit.

   Exception: Areas of parking facilities served by parking lifts.

3. EV Chargers. 5% of the total number of parking spaces shall be equipped with Level 2 EVSE. Where common use parking is provided, at least one EV charger shall be located in the common use parking area and shall be available for use by all residents or guests.

When low power Level 2 EV charging receptacles or EVSE are installed beyond the minimum required, automatic load management systems (ALMS) may be used to reduce electrical capacity to each space served by the ALMS. The electrical system and any on–site distribution transformers shall have sufficient capacity to deliver at least 3.3 kW simultaneously to each EV charging station (EVCS) served by the ALMS. The branch circuit shall have a minimum capacity of 40 amperes and installed EVSE shall have a capacity of not less than 30 amperes. ALMS shall not be used to reduce the minimum required electrical capacity to the required EVCS.

CHAPTER 4 – RESIDENTIAL MANDATORY MEASURES (CONTINUE)
DIVISION 4.1 – PLANNING AND DESIGN

SECTION REQUIREMENTS

EV charging stations (EVCS)

4.106.4.2.2.1 EVCS required by Section 4.106.4.2.2.1.2, Item 3 (1 in 25 EVCS with chargers) shall comply with Section 4.106.4.2.2.1.1.

Exception: EVCS serving public accommodations, public housing motels and hotel shall not be required to comply with this section. See California Building Code, Chapter 11B, for applicable requirements.

Location

4.106.4.2.2.1.1 When EV chargers are installed, EVCS shall comply with at least one of the following options:

1. The EV space shall be located adjacent to an accessible parking space meeting the requirements of the California Building Code, Chapter 11A, to allow use of the EV charger from the accessible parking space.

2. The EV space shall be located on an accessible route to the building, as defined in the California Building Code, Chapter 2.

Exception: EVCS designed and constructed in compliance with the California Building Code, Chapter 11B, are not required to comply with Section 4.106.4.2.1.1 and Section 4.106.4.2.2, Item 3.

EV charging stations (EVCS) dimensions

4.106.4.2.2.1.2 EV charging spaces shall be designed to comply with the following:

* Minimum length of each EV space shall be 18 feet.

* Minimum width of each EV space shall be 9 feet.

* One in every 25 charging spaces, but not less than one, shall have an 8–foot minimum aisle. A 5–foot minimum aisle shall be permitted if the minimum width of the EV space is 12 feet.

  a. Surface slope for this EV space and the aisle shall not exceed 1 unit vertical in 48 units horizontal (2.083% slope) in any direction.

Accessible EV spaces

4.106.4.2.2.1.3 In addition to the requirements in Sections 4.106.4.2.2.1.1 and 4.106.4.2.2.1.2, all EVSE, when installed, shall comply with the accessibility provisions for EV chargers in the California Building Code, Chapter 11B. EV ready spaces and EVCS in multifamily developments shall comply with California Building Code, Chapter 11A, Section 1109A.

EV space requirements

4.106.4.2.3 Single EV space required

* Install a listed raceway capable of accommodating a 208/240–volt dedicated branch circuit.

* Raceway shall not be less than trade size 1 (nominal 1–inch inside diameter).

* Raceway shall originate at the main service or subpanel and shall terminate into a listed cabinet, box or enclosure in close proximity to the proposed location of the EV space.

* Construction documents shall identify the raceway termination point, receptacle or charger location, as applicable.

* Service panel and/or subpanel shall have a 40–ampere minimum dedicated branch circuit including an installed branch circuit overcurrent protective device; or spaces reserved to install a branch circuit overcurrent protective device.

Multiple EV spaces required

* Construction documents shall indicate the raceway termination point and proposed location of future EV spaces and EV chargers. Construction documents shall also provide information on amperage of future EVSE, raceway method(s), wiring schematics and electrical load calculations.

* Plan design shall be based upon a 40–ampere minimum branch circuit.

* Required raceways and related components planned to be installed underground, enclosed, inaccessible or, in concealed areas and spaces shall be installed at the time of original construction.

Exception (applies to both single and multiple EV spaces): A raceway is not required if a minimum 40–ampere 208/240–volt dedicated EV branch circuit is installed in close proximity to the location or the proposed location of the EV space at the time of original construction in accordance with the California Electrical Code.

Identification

4.106.4.2.4 The service panel or subpanel circuit directory shall identify the overcurrent protective device space(s) reserved for future EV charging purposes as "EV CAPABLE" in accordance with the California Electrical Code.

EV ready space signage

4.106.4.2.5 EV ready spaces shall be identified by signage or pavement markings, in compliance with Caltrans Traffic Operations Policy Directive 13–01 (Zero Emission Vehicle Signs and Pavement markings) or its successor.

EV charging for additions and alterations of parking facilities serving existing multifamily buildings

4.106.4.3 When new parking facilities are added, or electrical systems or lighting of existing parking facilities are added or altered and the work requires a building permit, 10% of the total number of parking spaces added or altered shall be EV spaces capable of supporting future Level 2 EVSE.

DIVISION 4.2 – ENERGY EFFICIENCY

SECTION REQUIREMENTS

Scope

4.201.1 & 5.201.1 * Energy efficiency requirements for low–rise residential (single–family) (Section 4.201.1); and high–rise residential (multifamily) and hotels/motels (Section 5.201.1) are now in both residential and nonresidential chapters of CALGreen.

* Standards for residential buildings do not require compliance with levels of minimum energy efficiency beyond those required by the 2022 California Energy Code.

DIVISION 4.3 . WATER EFFICIENCY AND CONSERVATION

SECTION REQUIREMENTS

Water conserving plumbing fixtures and fittings

4.303.1 Plumbing fixtures and fittings shall comply with the following:

4.303.1.1 – Water closets: . 1.28 gal/flush.

4.303.1.2 – Wall mounted urinals: . 0.125 gal/flush; all other urinals . 0.5 gal/flush.

4.303.1.3.1 – Single showerheads: . 1.8 gpm @ 80 psi.

4.303.1.3.2 – Multiple showerheads: combined flow rate of all showerheads controlled by a single valve shall not exceed 1.8 gpm @ 80 psi, or only 1 shower outlet is to be in operation at a time.

4.303.1.4.1 – Residential lavatory faucets: maximum flow rate . 1.2 gpm @ 60 psi; minimum flow rate . 0.8 gpm @ 20 psi.

4.303.1.4.2 . Lavatory faucets in common and public use areas of residential buildings: . 0.5 gpm @ 60 psi.

4.303.1.4.3 – Metering faucets: . 0.2 gallons per cycle.

4.303.1.4.4 – Kitchen faucets: . 1.8 gpm @ 60 psi; temporary increase to 2.2 gpm allowed but shall default to 1.8 gpm.

4.303.1.4.5 – Pre–rinse spray valves: comply with California Code of Regulations (CCR), Title 20, Appliance Efficiency Regulations, Sections 1605.1(h)(4) Table H–2, Section 1605.3(h)(4)(A), and Section 1607(d)(7). Shall be equipped with an integral automatic shutoff.

Submeters for multifamily buildings and dwelling units in mixed–use residential/commercial buildings

4.303.2 Submeters shall be installed to measure water usage on individual dwelling units in accordance with the California Plumbing Code.

Standards for plumbing fixtures and fittings

4.303.3 Plumbing fixtures and fittings shall be installed in accordance with the California Plumbing Code and shall meet applicable standards referenced in Table 1701.1 of the California Plumbing Code.

Outdoor potable water use in landscape areas

4.304.1 New residential developments shall comply with a local water efficient landscape ordinance or the current California Department of Water Resources' Model Water Efficient Landscape Ordinance (MWELO), whichever is more stringent.

DIVISION 4.4 – MATERIAL CONSERVATION & RESOURCE EFFICIENCY

SECTION REQUIREMENTS

Rodent proofing

4.406.1 Annular spaces around pipes, electric cables, conduits or other openings in sole/bottom plates at exterior walls shall be closed with cement mortar, concrete masonry or a similar method acceptable to the enforcing agency to prevent passage of rodents.

Construction waste management

4.408.1 * Recycle and/or salvage for reuse a minimum of 65% of the nonhazardous construction and demolition waste in accordance with either Section 4.408.2, 4.408.3 or 4.408.4, or meet a more stringent local construction and demolition waste management ordinance.

Provide documentation to the enforcing agency per Section 4.408.5.

Exceptions:

1. Excavated soil and land–clearing debris.
2. Alternative waste reduction methods developed by working with local enforcing agencies if diversion or recycle facilities capable of compliance with this item do not exist or are not located reasonably close to the jobsite.
3. The enforcing agency may make exceptions to the requirements of this section when isolated jobsites are located in areas beyond the haul boundaries of the diversion facility.

Construction waste management plan

4.408.2 Submit a construction waste management plan that meets Items 1 through 5.

Waste management company

4.408.3 Utilize a waste management company, approved by the enforcing agency, which can provide verifiable documentation that diverted construction and demolition waste materials meet the requirements in Section 4.408.1.

Waste stream reduction alternative

4.408.4 &
4.408.4.1 * Low–rise residential projects that generate a total combined weight of construction and demolition waste disposed in landfills, which do not exceed 3.4 pounds per square foot of the building area shall meet the minimum 65% construction waste reduction requirement in Section 4.408.1.

* Projects that generate a total combined weight of construction and demolition waste disposed in landfills, which do not exceed 2 pounds per square foot of the building area, shall meet the minimum 65% construction waste reduction requirement in Section 4.408.1.

Operation and maintenance manual

4.410.1 At the time of final inspection, a manual, compact disc, web–based reference, or other media acceptable to the enforcing agency which covers 12 specific subject areas shall be placed in the building.

Recycling by occupants

4.410.2 Where 5 or more multifamily dwelling units are constructed on a building site, provide readily accessible area(s) that serves all buildings on the site and is identified for the depositing, storage, and collection of nonhazardous materials for recycling, including (at minimum) paper, corrugated cardboard, glass, plastics, organic waste, and metals, or meet a lawfully enacted local recycling ordinance, if more restrictive.

Exception: Rural jurisdictions that meet and apply for the exemption in Public Resources Code Section 42649.82 (a)(2)(A) et seq. are not required to comply with the organic waste portion of this section.

DIVISION 4.5 – ENVIRONMENTAL QUALITY

SECTION REQUIREMENTS

Fireplaces – General

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

Protection of mechanical equipment during construction

4.504.1 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 intake and distribution component openings shall be covered. Tape, plastic, Sheetmetal or other methods acceptable to the enforcing agency to reduce the amount of water, dust and debris entering the system may be used.

Adhesives, sealants and caulks

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

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

Paints and coatings

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

Aerosol paints and coatings

4.504.2.3 &
4.504.2.4 * Aerosol paints and coatings shall meet the Product–weighted MIR Limits for ROC in Section 94522(a)(2) and other requirements, including prohibitions on use of certain toxic compounds and ozone depleting substances, in Sections 94522(e)(1) and (f)(1) of CCR, Title 17, commencing with Section 94520; and in areas under the jurisdiction of the Bay Area Air Quality Management District shall additionally comply with the percent VOC by weight of product limits of Regulation 8, Rule 49.

* Documentation is required per Section 4.504.2.4.

Carpet systems

4.504.3 Carpet installed in the building interior shall meet the testing and product requirements of the California Department of Public Health, "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers," Version 1.2, January 2017 (also known as Specification 01350).

Carpet cushion

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

Carpet adhesive

4.504.3.2 Carpet adhesives shall meet the requirements of Table 4.504.1.

Resilient flooring systems

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

DIVISION 4.5 – ENVIRONMENTAL QUALITY (CONTINUE)

SECTION REQUIREMENTS

Composite wood products

4.504.5 &
4.504.5.1 * Hardwood plywood, particleboard and medium density fiberboard composite wood products used on the interior or exterior of the building shall meet the requirements for formaldehyde as specified in the Air Resources Board's Air Toxics Control Measure for Composite Wood (CCR, Title 17, Section 93120 et seq.) as shown in Table 4.504.5.

* Documentation is required per Section 4.504.5.1.

* Definition of Composite Wood Products: Composite wood products include hardwood plywood, particleboard, and medium density fiberboard. "Composite wood products" do not include hardboard, structural plywood, structural panels, structural composite lumber, oriented strand board, glued laminated timber, prefabricated wood I–joists, or finger–joined lumber, all as specified in CCR, Title 17, Section 93120.1(a).

Concrete slab foundations

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

Capillary break

4.505.2.1 A capillary break shall be installed in compliance with at least one of the following:

1. A 4–inch thick base of ½ inch or larger clean aggregate shall be provided with a vapor retarder in direct contact with concrete and a concrete mix design, which will address bleeding, shrinkage, and curling, shall be used. For additional information, see American Concrete Institute, ACI 302.2R–06.
2. Other equivalent methods approved by the enforcing agency.
3. A slab design specified by a licensed design professional.

Moisture content of building materials

4.505.3 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% moisture content. Moisture content shall be verified in compliance with the following:

1. Moisture content shall be determined with either a probe–type or a contact–type moisture meter. Equivalent moisture verification methods may be approved by the enforcing agency and shall satisfy requirements in Section 101.8.
2. Moisture readings shall be taken at a point 2 feet to 4 feet from the grade stamped end of each piece to be verified.
3. At least 3 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. Manufacturers?f drying recommendations shall be followed for wet–applied insulation products prior to enclosure.

Bathroom exhaust fans

4.506.1 Each bathroom shall be mechanically ventilated and shall comply with the following:

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 humidity control.
   a. Humidity controls shall be capable of manual or automatic adjustment between a relative humidity range of . 50% to a maximum of 80%.
   b. A humidity control may be a separate component to the exhaust fan and is not required to be integral or built–in.

Note: For CALGreen, a bathroom is a room which contains a bathtub, shower, or tub/shower combination. Lighting integral to bathroom exhaust fans shall comply with California Energy Code.

Heating and air–conditioning system design

4.507.2 Heating and air–conditioning systems shall be sized, designed and equipment selected using the following methods:

1. The heat loss and heat gain is established according to ANSI/ACCA 2 Manual J – 2016 (Residential Load Calculation), ASHRAE handbooks or other equivalent design software or methods.
2. Duct systems are sized according to ANSI/ACCA 1 Manual D – 2016 (Residential Duct Systems), ASHRAE handbooks or other equivalent design software or methods.
3. Select heating and cooling equipment according to ANSI/ACCA 3 Manual S – 2014 (Residential Equipment Selection) or other equivalent design software or methods.

Exception: Use of alternate design temperatures necessary to ensure the systems function are acceptable.

CHAPTER 7 – INSTALLER & SPECIAL INSPECTOR QUALIFICATIONS

SECTION REQUIREMENTS

Installer training

702.1 Heating, ventilation, and air conditioning (HVAC) system installers shall be trained and certified in the proper installation of HVAC systems including ducts and equipment by a recognized training or certification program. Examples of acceptable HVAC training and certification programs include, but are not limited to, the following:

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

Special inspection

702.2 When required by the enforcing agency, special inspectors must be qualified and able to demonstrate competence to the enforcing agency in the discipline in which they are inspecting.

Documentation

703.1 Documentation of compliance shall include, but is not limited to, construction documents, plans, specifications, builder or installer certification, inspection reports, or other methods acceptable to the local enforcing agency. Other specific documentation or special inspections necessary to verify compliance are specified in appropriate sections of CALGreen.

PROJECT
2022 CALGREEN CODE
RESIDENTIAL
MANDATORY MEASURES

SHEET TITLE
2022 CALGREEN

DRAWN:
DATE: 2023
JOB No.: CALGREEN
SHEET: 11
X OF X SHEETS