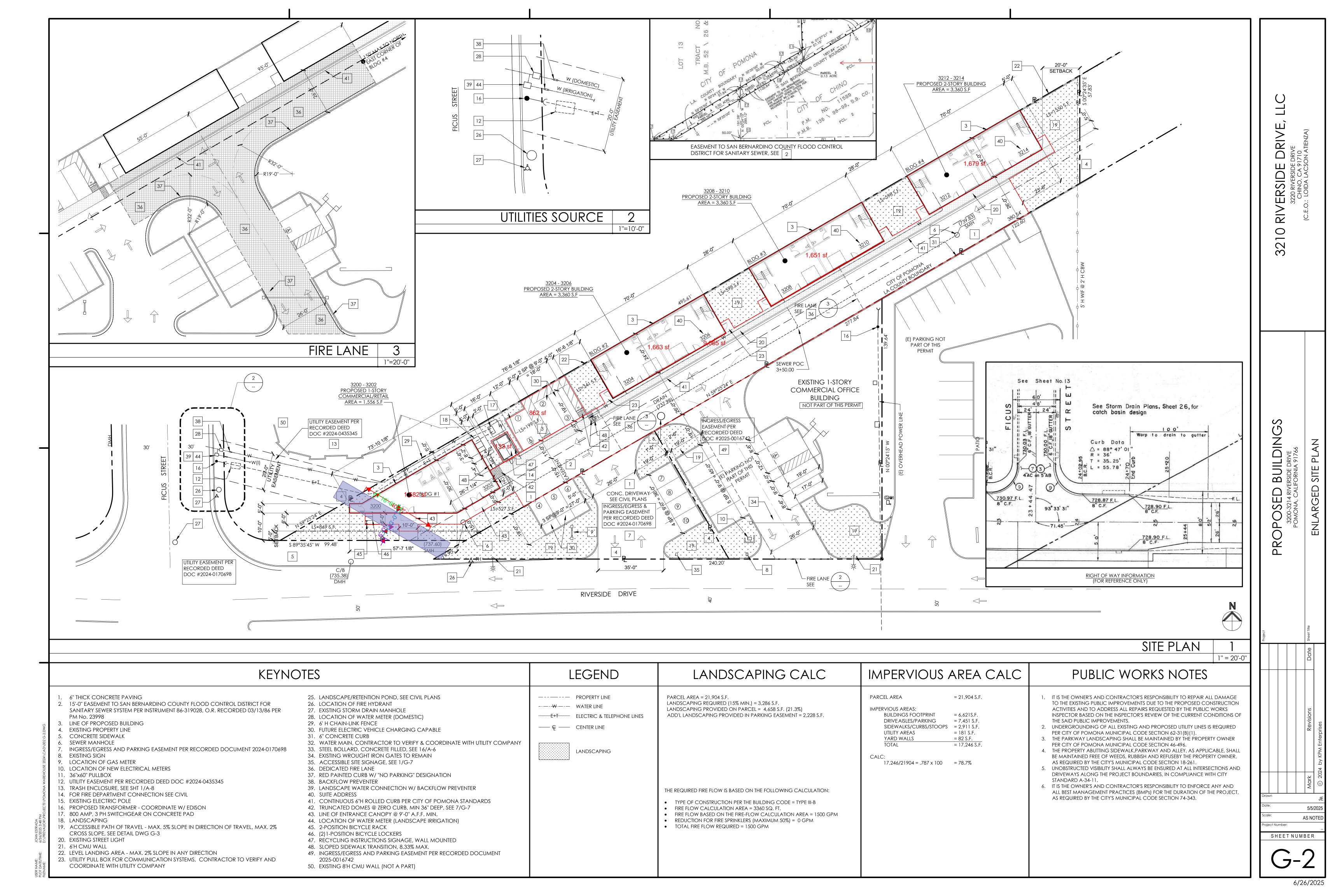
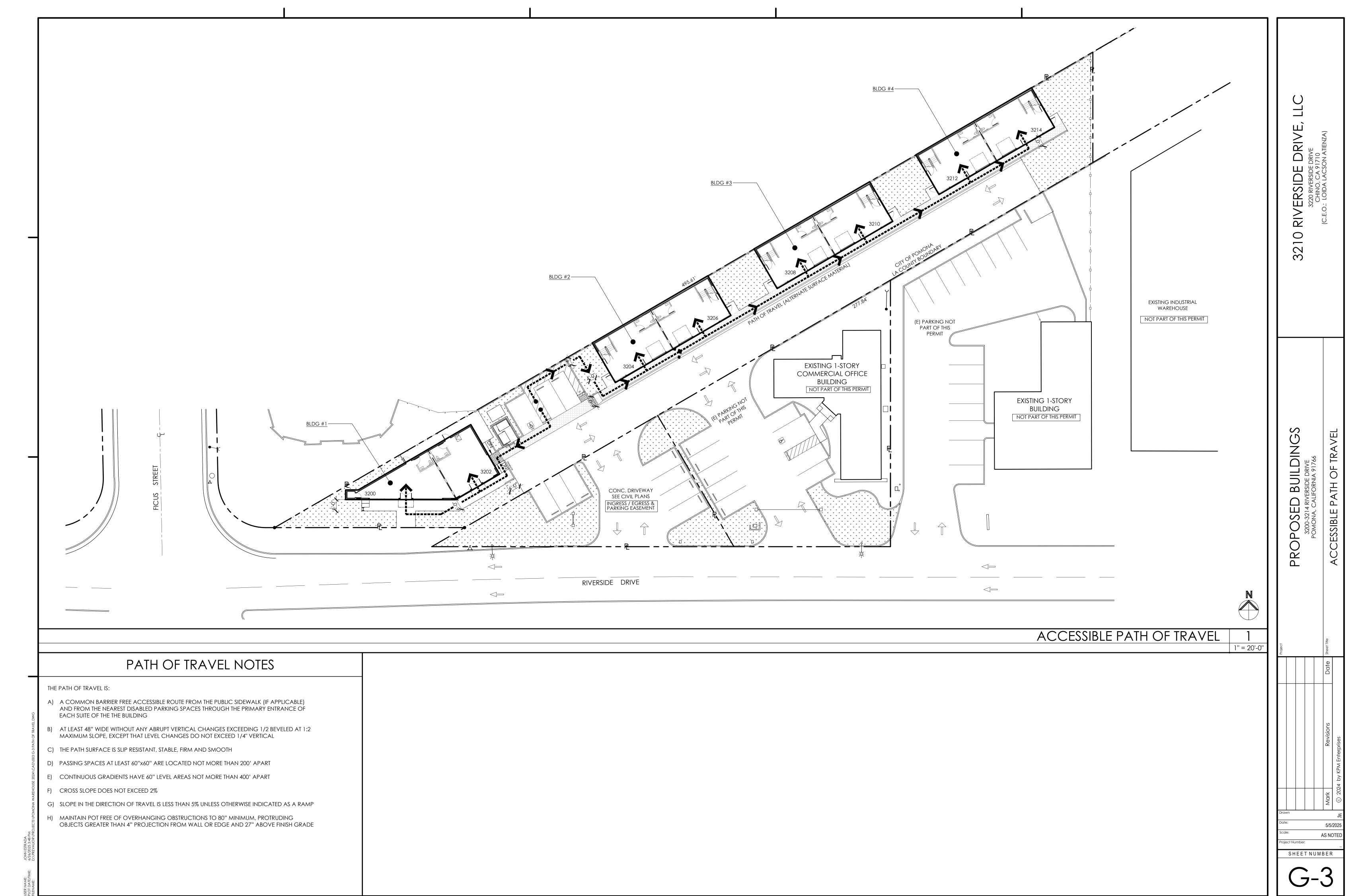
#### GENERAL NOTES FIRE DEPARTMENT NOTES PROJECT DIRECTORY PARCEL MAP **VICINITY MAP** G.C. MUST KEEP THE APPROVED FIRE DEPARTMENT PLANS ALL CONTRACTORS AND SUBCONTRACTORS WILL THOROUGHLY OWNER LAND SURVEYING & ON THE JOB SITE AT ALL TIMES. NO APPROVED SET OF PROPOSED COMMERCIAL BLDGS FAMILIARIZE THEMSELVES WITH THESE CONSTRUCTION DOCUMENTS AND ENGINEERING 3210 RIVERSIDE DRIVE, LLC PLANS ON SITE WILL RESULT IN NO FIRE INSPECTION. WILL VERIFY EXISTING SITE AND CONDITIONS PRIOR TO SUBMITTING A BID 3220 RIVERSIDE DRIVE SUBDIVISION ENGINEERING DESIGN ALL SUBCONTRACTORS WILL PROVIDE ALL LABOR, SUPERVISION, AND THE INSPECTOR MAY REQUIRE ADDITIONAL EXIT SIGNS AND CHINO, CA 91710 MATERIALS OF EVERY TYPE WHICH MAY BE NECESSARY FOR A SUCCESSFUL SURVEY C.E.O.: LOIDA LACSON ATIENZA FIRE EXTINGUISHERS AT THE TIME OF FINAL INSPECTION. 9080 TELSTAR AVE, SUITE 303 COMPLETION. ALL WORK TO BE PERFORMED IN A GOOD AND WORKMANLIKE MANNER ACCORDING TO THE TRUE INTENT AND MEANING EL MONTE, CA 91731 3200-3214 RIVERSIDE DRIVE ARCHITECTURE THE PERSON REQUESTING AN INSPECTION IS RESPONSIBLE OF THE DRAWINGS AND SPECIFICATIONS. (626) 298-9581 FOR MEETING THE INSPECTOR ON TIME, PROVIDING ACCESS JOHN ESTRADA jim@lsurveying.com TO THE AREA REQUIRING INSPECTION AND PROVIDING AN THIS ARCHITECT AND HIS PROFESSIONAL CONSULTANTS WILL NOT HAVE (909) 331-9901 APPROVED SET OF PLANS AND SUPPORTING DOCUMENT. CONTROL, OF AND WILL NOT BE RESPONSIBLE FOR, CONSTRUCTION MEANS john@estrada.net SOIL ENGINEERING METHODS, TECHNIQUES, SEQUENCES, PROCEDURES, OR SAFETY POMONA, CA 91766 GEO ENVIRON, INC. 4. ALL EXTERIOR DOORS MUST BE ACCESSIBLE FOR CIVIL ENGINEERING PRECAUTIONS AND PROGRAMS IN CONNECTION WITH THE WORK ON THIS 4071 E. LA PALMA AVE., STE B EMERGENCY ACCESS FOR THE FIRE DEPARTMENT PER FIRE PROJECT OR FOR THE ACTS OR OMISSIONS OF THE CONTRACTOR, CIVIL TRANS INC ANAHEIM, CA 92807 SUBCONTRACTOR, OR ANY OTHER PERSONS PERFORMING ANY OF THE JAY ASLAM, P.E (714) 632-3190 WORK ON THIS SITE, NOR FOR THE FAILURE OF ANY OF THEM TO CARRY OUT 732 N DIAMOND BAR BLVD, #128, AN APPROVED KEY BOX, LISTED IN ACCORDANCE WITH U THE WORK IN ACCORDANCE WITH THE INTENT OF THE CONTRACT AND OR DIAMOND BAR, CA 91765 **ELECTRICAL** 1037 SHALL BE PROVIDED AS REQUIRED BY FIRE CODE 506 (909) 396-1131 CONSTRUCTION DOCUMENTS. **ELECTRICAL BUILDING SYSTEMS** THE LOCATIONS OF EACH KEY BOX SHALL BE DETERMINED ctrans@verizon.net 15515 SAN FERNANDO MISSION RD BY THE FIRE INSPECTOR. ALL CONTRACTORS WILL PROVIDE ADEQUATE BRACING AND/OR SHORING STRUCTURAL TO INSURE STRUCTURAL STABILITY OF THE BUILDING AND ALL RELATED RSID MISSION HILLS, CA 91345 PROVIDE EMERGENCY RESPONDER COVERAGE IN BUILDING COMPONENTS IE: STRUCTURAL WALLS, INTERIOR WALL STINCHCOMB ENGINEERING (818) 763-9179 ACCORDANCE WITH FIRE CODE. ASSEMBLIES, ETC. DURING THE CONSTRUCTION PHASE OF THIS PROJECT. DRAWING INDEX INGRID STINCHCOMB, P.E. ebsinc@ebs-la.com 5525 GOSS ROAD PHELAN, CA 92371 TACTILE "EXIT" SIGNS SHALL BE REQUIRED AT EACH GRADE WORK WILL BE COORDINATED WITH ALL TRADES IN ORDER TO AVOID (760) 220-7004 LANDSCAPING Ш LEVEL EXTERIOR EXIT DOOR INTERFERENCE, AND AVOID OMISSIONS. ingrid@stinchcombengineering.com GARCIA DESIGN ASSOCIATES $\mathbb{R}$ MECHANICAL/PLUMBING 4200 CHINO HILLS PARKWAY PROVIDE APPROVED SIGNS OR OTHER APPROVED NOTICES 5. ALL MATERIALS USED WILL BE NEW AND BEAR U.L. LABELS WHERE REQUIRED GENERAL NOTES TITLE SHEET & MASTER SITE PLAN **GENERAL NOTES** TITLE SHEET OR MARKINGS THAT INCLUDE THE WORDS "NO PARKING CHINO HILLS, CA 91709 AND MEET APPROPRIATE N.E.M.A. STANDARDS. FIRE LANE". SIGNS SHALL HAVE A MINIMUM DIMENSION OF ENLARGED SITE PLAN **NAILING SCHEDULE** GENERAL NOTES, FIXTURE SCHEDULE **IRRIGATION PLAN** ABI NABIPUR, P.E. 12 INCHES WIDE BY18" HIGH AND HAVE RED LETTERS ON A 6. LAYOUT ALL PARTITIONS BEFORE BEGINNING CONSTRUCTION TO PREVENT carl@gdalandarch.com ACCESSIBLE PATH OF TRAVEL ONE-LINE DIAGRAM 0 **FOUNDATION PLAN** IRRIGATION DETAILS 231 N. LAKE AVE, SUITE 217 WHITE REFLECTIVE BACKGROUND. SIGNS SHALL BE ERRORS BY DISCREPANCY. ALL DRYWALL PARTITIONS WILL BE INSTALLED AS NON-LIVING GROUNDCOVER PLAN CALGREEN BUILDING STANDARDS **FOUNDATION PLAN** E-2.1 PANEL SCHEDULES PASADENA, CA 91101 PROVIDED FOR FIRE APPARATUS ACCESS ROADS, TO NOTED ON THE DRAWINGS. CALGREEN BUILDING STANDARDS STRUCTURAL DETAILS E-2.2 LIGHTING DETAILS PLANTING PLAN (626) 449-2490 CLEARLY INDICATE THE ENTRANCE TO SUCH ROAD, OR abi.nabipur@jaycocal.com CALGREEN STANDARDS STRUCTURAL DETAILS LIGHTING PLAN (BLDG #1) L-5 PLANTING DETAILS PROHIBIT THE OBSTRUCTION THEREOF AND AT INTERVALS, AS 7. EACH SUBCONTRACTOR WILL AMEND AND MAKE GOOD AT HIS OWN ACCESSIBILITY NOTES & DETAILS EMERGENCY PHOTOMETRICS PLAN (BLDG #1) REQUIRED BY THE FIRE INSPECTOR. FIRE CODE 503.3 COST, ANY DEFECTS OR OTHER FAULTS IN HIS WORKMANSHIP AND/OR HIS ACCESSIBILITY DETAILS LIGHTING PLAN (BLDGS #2, 3, 4) SUPPLIED MATERIALS PROJECT SUMMARY MECHANICAL LEGEND, NOTES AND SCHEDULES E-4.1 EMERGENCY PHOTOMETRIC PLANS (BLDGS #2, 3, 4) APPROVED BUILDING ADDRESS NUMBERS, BUILDING FLOOR PLAN, REFLECTED CEILING PLAN, BLDG #1 - MECHANICAL FLOOR AND ROOF PLAN E-5 POWER PLAN (BLDG #1) NUMBERS OR APPROVED BUILDING IDENTIFICATION SHALL 8. VERIFY ALL DIMENSIONS IN THE FIELD PRIOR TO ORDERING, CUTTING BE PROVIDED AND MAINTAINED SO AS TO BE PLAINLY ROOF PLAN (BLDG. #1) BLDGS #2, 3, 4 - MECHANICAL FLOOR PLANS AND/OR INSTALLING MATERIAL, PRODUCT OR EQUIPMENT. IN THE EVENT OF E-6 POWER PLAN (BLDGS #2, 3, 4) VISIBLE AND LEGIBLE FROM THE STREET FRONTING THE ANY DISCREPANCIES, CONTACT THE CONSTRUCTION MANAGER BEFORE FLOOR PLAN, REFLECTED CEILING PLAN, BLDGS #2, 3, 4 - MECHANICAL ROOF PLAN E-7 ROOF POWER PLANS (BLDGS #1, 2, 3, 4) PROPERTY. THE NUMBERS SHALL CONTRAST WITH THEIR PROCEEDING WITH THAT WORK. MECHANICAL DETAILS SCOPE OF WORK ROOF PLAN (BLDGS #2, 3, 4) INDOOR TITLE - 24 BACKGROUND, BE ARABIC NUMERALS OR ALPHABET CONSTRUCTION OF A NEW 1-STORY MERCANTILE (RETAIL) BUILDING 1,581 LIFE SAFETY/EXITING PLANS M-4.00 BLDG #1 TITLE - 24 ENERGY FORMS OUTDOOR TITLE - 24 LETTERS, AND BE A MINIMUM OF 4 INCHES HIGH WITH A CONTRACTORS SHALL NOT SCALE THESE DRAWINGS FOR CONSTRUCTION EXTERIOR ELEVATIONS (BLDG #1) M-4.01 BLDG #1 TITLE - 24 ENERGY FORMS SITE POWER PLAN PURPOSES. IN THE EVENT OF OMISSION OF NECESSARY DIMENSIONS OR MINIMUM STROKE WIDTH OF 0.5 INCH. FIRE CORE 505.1 CONSTRUCTION OF (3) NEW 2-STORY PROFESSIONAL BUSINESS (B) EXTERIOR ELEVATIONS (BLDGS #2, 3, 4) M-4.02 BLDG #1 TITLE - 24 ENERGY FORMS SITE EXTERIOR LIGHTING PHOTOMETRICS PLAN INFORMATION, CONTRACTOR SHALL NOTIFY ARCHITECT. FIGURED AND BUILDINGS 3,360 S.F. EACH, WITH ASSOCIATED SITE IMPROVEMENTS (SITE BUILDING SECTIONS (BLDG #1) M-4.03 BLDG #1 TITLE - 24 ENERGY FORMS AN APPROVED KEY BOX, LISTED IN ACCORDANCE WITH UL CALCULATED DIMENSION TAKES PRECEDENCE OVER SCALED DRAINAGE, UTILITIES & PARKING) BUILDING SECTIONS (BLDGS. #2, 3, 4) M-4.04 BLDG #1 TITLE - 24 ENERGY FORMS MEASUREMENTS. DETAILED DRAWINGS AND LARGER SCALE DRAWINGS 307 SHALL BE PROVIDED AS REQUIRED BY FIRE CODE 506 M-4.05 BLDG #1 TITLE - 24 ENERGY FORMS THE LOCATION OF EACH KEY BOX SHALL BE DETERMINED BY ENLARGED RESTROOM PLANS/INTERIOR PLUMBING LEGEND, NOTES, AND SCHEDULES TAKE PRECEDENCE OVER SMALLER SCALE DRAWINGS. ALL PLAN DETAILS APPLICABLE BUILDING CODES THE FIRE INSPECTOR. ELEVATIONS & DETAILS M-4.06 BLDG #1 TITLE - 24 ENERGY FORMS BUILDING 1- PLUMBING FLOOR PLANS AND WALL SECTIONS ARE ASSUMED TO BE TYPICAL CONDITIONS UNLESS 2022 CALIFORNIA BUILDING CODE (CBC) DETAILED OR NOTED OTHERWISE. STAIRS - PLANS, SECTIONS, DETAILS M-4.07 BLDGS #2, 3, 4 TITLE - 24 ENERGY FORMS P-2.2 BUILDING 1- PLUMBING ROOF PLAN 2022 CALIFORNIA MECHANICAL CODE (CMC) MECHANICAL 11. ALL FIRE HYDRANTS SHALL MEASURE 6"x4"x2-1/2", BRASS OR ARCHITECTURAL DETAILS M-4.08 BLDGS #2, 3, 4 TITLE - 24 ENERGY FORMS P-2.3 BUILDINGS #2, 3, 4 - PLUMBING FLOOR PLANS ELECTRICAL 2022 CALIFORNIA ELECTRICAL CODE (CEC) BRONZE, CONFORMING TO AMERICAN WATER WORKS 10. ADD SUFFICIENT BLOCKING IN STUD WALLS TO SUPPORT ALL ITEMS OR M-4.09 BLDGS #2, 3, 4 TITLE - 24 ENERGY FORMS ARCHITECTURAL DETAILS BUILDINGS #2, 3, 4 - PLUMBING FLOOR PLANS 2022 CALIFORNIA PLUMBING CODE (CPC) PLUMBING ASSOCIATION STANDARD C503, OR APPROVED EQUAL. EQUIPMENT SHOWN OR SPECIFIED TO BE ATTACHED TO THE WALLS. ARCHITECTURAL DETAILS M-4.10 BLDGS #2, 3, 4 TITLE - 24 ENERGY FORMS BUILDINGS #2, 3, 4 - PLUMBING ROOF PLAN GREEN 2022 CALIFORNIA GREEN BUILDING STANDARDS CODE PROVIDE ADDITIONAL STRUCTURAL SUPPORT (ANGLES, CHANNELS, ETC.) **SCHEDULES** M-4.11 BLDGS #2, 3, 4 TITLE - 24 ENERGY FORMS BUILDING #1 - PIPING RISER DIAGRAMS ENERGY 2022 CALIFORNIA ENERGY CODE (CEC) 12. ALL REQUIRED PUBLIC FIRE HYDRANTS SHALL BE INSTALLED WITHIN WALLS WHERE THE WEIGHT OF ATTACHED ITEMS OR EQUIPMENT IS M-4.12 BLDGS #2, 3, 4 TITLE - 24 ENERGY FORMS P-3.2 BUILDING #2, 3, 4 - PIPING RISER DIAGRAMS 2022 CALIFORNIA FIRE CODE (CFC) TESTED AND ACCEPTED PRIOR TO BEGINNING TOO GREAT TO BE SUPPORTED BY METAL STUDS. PROVIDE BLOCKING FOR M-4.13 BLDGS #2, 3, 4 TITLE - 24 ENERGY FORMS ACCESSIBILITY 2022 CALIFORNIA BUILDING CODE (CBC) P-4.1 PLUMBING DETAILS CONSTRUCTION. FIRE CODE 501.4 OWNER FURNISHED OR INSTALLED ITEMS. APPLICABLE CITY OF POMONA MUNICIPAL CODE 13. PORTABLE FIRE EXTINGUISHERS SHALL BE INSTALLED AND 11. ALL FINISHED FLOOR ELEVATIONS REFER TO ARCHITECTURAL DRAWINGS PROJECT DATA MAINTAINED IN ALL OCCUPANCY GROUPS AND AT SUCH ONLY. REFER TO CIVIL DRAWINGS FOR RELATIONSHIP TO PROJECT LOS ANGELES COUNTY APN: 8330-013-045 LOCATIONS AS REQUIRED BY FIRE CODE 906 AND BENCHMARK(S). SAN BERNARDINO COUNTY APN: 1023-051-10 CALIFORNIA CODE OF REGULATIONS, TITLE 19, DIVISION 1 CHAPTER 3. THE FINAL NUMBER AND LOCATION OF ALL **LEGEND** 12. ANY ADDITIONS OR CHANGES TO WORK MUST BE AUTHORIZED IN WRITING ZONING: M-1 (LIGHT INDUSTRIAL) EXTINGUISHERS SHALL BE DETERMINED BY THE LOCAL FIRE 0.5 AC. (21,903 S.F.) BY THE CONSTRUCTION MANAGER. NO ALTERATIONS WILL BE MADE ON THIS RETAIL/BUSINESS PROJECT EXCEPT UPON WRITTEN ORDER BY THE CONSTRUCTION MANAGER. INSPECTOR MAXIMUM BUILDING HEIGHT: ALLOWABLE BUILDING HEIGHT: 14. DUMPSTERS AND CONTAINERS WITH AN INDIVIDUAL 13. WEATHER CONDITIONS: CONTRACTORS WILL PROTECT ALL PARTS OF THEIR PROPOSED BUILDING WORK FROM WEATHER DAMAGE DUE TO FROST, RAIN, HEAT, ETC., AND WILL CAPACITY OF 1.5 CUBIC YARDS OR MORE SHALL NOT BE 1(BLDG #1) & STORED IN BUILDINGS OR PLACED WITHIN 5 FEET OF MAKE GOOD TO THE SATISFACTION OF THE CONSTRUCTION MANAGER 2 (BLDGS #2, 3, 4) NGRESS, EGRESS & PARKING AND/OR GENERAL CONTRACTOR ANY PORTION OF THE WORK WHICH MA EASEMENT BU $(6,621/21,904) = 0.3082 \times 100 = 30.82 \%$ EAVES, UNLESS AREAS CONTAINING DUMPSTER OR HAVE BECOME DAMAGED. CONTAINERS ARE PROTECTED BY AN APPROVED ALLOWABLE AREA (BASIC): 144,000 S.F. **EASEMENT TO** LOS ANGELES COUNTY, SEE G-2 14. SITE SAFETY: EACH CONTRACTOR WILL ABIDE BY LOCAL AREA STANDARDS AUTOMATIC FIRE SPRINKLER SYSTEM. FIRE CODE 304.3.3 **EXTERIOR WALL RATINGS:** AND RELATED OSHA STANDARDS FOR THE PROTECTION AND SAFETY FOR PROTECTED EXTERIOR OPENING: NONE LANDSCAPING 15. THE MEANS OF EGRESS ILLUMINATION SHALL BE NOT LESS SEPARATION REQUIRED: NONE THEIR EMPLOYEES ON SITE. THIS ARCHITECT AND HIS PROFESSIONAL THAN 1 FOOTCANDLE AT THE WALKING SURFACE. ALONG FIRE RESISTANCE RATINGS: NONE CONSULTANTS WILL BE HELD HARMLESS BY THE OWNER, GENERAL S PROPERTY LINE CONTRACTOR AND RELATED AWARDED TRADES ON THIS PROJECT FOR EXIT ACCESS STAIRWAYS, EXIT STAIRWAYS AND AT THE ACCIDENTS OR INJURIES CAUSED OR ACCRUED ON THIS PROPERTY DURING REQUIRED LANDINGS, THE ILLUMINATION LEVEL SHALL BE **BUILDING DATA** THE PRE/ACTUAL/POST CONSTRUCTION PHASES OF THIS PROJECT. NOT LESS THAN 10 FOOTCANDLES AT THE WALKING CONSTRUCTION TYPE: III-B SURFACE WHEN THE STAIRWAY IS IN USE AS REQUIRED BY BUILDING OCCUPANCY: M (BLDG #1) & 15. GENERAL CONTRACTOR WILL BE RESPONSIBLE FOR REMOVAL OF DEBRIS BUILDING CODE 1008.2.1 B (BLDGS #2, 3, 4) REFER TO CIVIL PLANS FOR SITE GRADING AND DRAINAGE ACCUMULATED BY EACH TRADE. HOWEVER, EACH TRADE WILL KEEP THE 1-HR @ DEMISING OCCUPANCY SEPARATION: FOR SITE PLAN KEYNOTES SEE SHEET C-2 JOB SITE CLEAN AND SAFE AT ALL TIMES, ALONG WITH A BROOM FINISH AT 16. IN THE EVENT OF POWER SUPPLY FAILURE IN ROOMS FIRE SPRINKLERS: YES, FULLY THE END OF EACH WORKING DAY. SPACES AND BUILDINGS THAT REQUIRE TWO OR MORE **GROSS BUILDING** EXISTING INDUSTRIAL MEANS OF EGRESS, AN EMERGENCY ELECTRICAL SYSTEM = 1,581 S.F. BLDG #1 (M OCC) 16. TRANSITION OF DIFFERENT FLOORING MATERIALS AT DOORWAYS SHALL WAREHOUSE FOR A DURATION OF NOT LESS THAN 90 MINUTES IN = 3,360 S.F.BLDGS #2, 3, 4 (B OCC) ACCORDANCE WITH THE PROVISIONS SET FORTH IN OCCUR AT CENTERLINE OF DOORS TYPICALLY. = 11,499 S.F. TOTAL NOT PART OF THIS PERMIT BUILDING CODE 1008.3 17. PAINT ALL WALL SURFACES, DOOR FRAMES, BULKHEADS AND CEILINGS IN OCCUPANT LOAD: ROOMS WHERE INDICATED ON ROOM FINISH SCHEDULE. PAINT BEHIND ALL BLDG #1 (SUITE 3200) 708 / 60 = 12 OCC MOVEABLE ITEMS ADJACENT TO WALLS RECEIVING PAINT AND RELOCATE 1 EXIT REQUIRED, 2 EXITS PROVIDED 713 / 60 = 12 OCC(SUITE 3202) 18. ALL WEATHER - EXPOSED SURFACES SHALL HAVE A WEATHER RESISTIVE 1 EXIT REQUIRED, 2 EXITS PROVIDED BARRIER TO PROTECT THE INTERIOR WALL COVERING AND EXTERIOR **EXISTING 1-STORY** OPENINGS SHALL BE FLASHED IN SUCH A MANNER AS TO MAKE THEM BLDGS #2, 3, 4 (PER SUITE) 1,786 / 150 = 12 OCC COMMERCIAL OFFICE 1 EXIT REQUIRED, 2 EXITS PROVIDED BUILDING 19. ALL PLAN DIMENSIONS ARE TO FINISHED FACE OF FINISHED WALLS, FACE OF EXISTING 1-STORY MASONRY, AND CENTERLINE OF COLUMNS, UNLESS NOTED OTHERWISE. PARKING ANALYSIS BUILDING 20. VERIFY ALL ELEVATIONS AND DIMENSIONS OF STRUCTURAL ELEMENTS WITH É SEMENT PER NOT PART OF THIS PERMI ARCHITECTURAL DRAWINGS. IN CASE OF CONFLICT, NOTIFY ARCHITECT. RECORDED DEED THE CONTRACTORS SHALL VERIFY ALL DIMENSIONS AND BE RESPONSIBLE RE DOC #2025-0016742 FOR THEM. ALL DIMENSIONAL DISCREPANCIES ARE TO BE BROUGHT TO THE PARKING PROVIDED: 9 STD (INCLUDES 4 EVCS) ATTENTION OF THE ARCHITECT. ST 1 H/C (VAN) FICUS ARKING EASEMENT TOTAL PLUMBING CALCULATION ER RECORDED DEED ФОС #2024-0170698∕ M (1:500): (SUITE 3200) 708 S.F. = 2 OCCUPANTS (SUITE 3202) 713 S.F. = 2 OCCUPANTS FIXTURES REQ'D/PROVIDED (EACH SUITE): UNISEX = 1 WC, 1 LAV DEFERRED SUBMITTAL B (1:150) ( EACH SUITE) 1st FLOOR, 673 S.F. = 5 OCCUPANTS RIVERSIDE DRIVE 2nd FLOOR, 695 S.F. = 5 OCCUPANTS THE FOLLOWING SYSTEMS SHALL BE DEFERRED SUBMITTALS UNDER A SEPARATE PERMIT: FIXTURES REQ'D/PROVIDED (EACH SUITE) $\Longrightarrow$ 1st FLOOR, UNISEX = 1 WC, 1 LAV 1) FIRE SPRINKLER SYSTEM PER NFPA-13 2nd FLOOR, UNISEX = 1 WC, 1 LAV 2) FENCING/CMU WALLS NOTE: PER CPC SECTION 422.2(2) SEPARATE FACILITIES ARE NOT REQUIRED FOR OCCUPANT LOADS LESS THAN 10 3) FRAMING TRUSS DESIGN 4) STOREFRONT SYSTEM SHEET NUMBER MASTER SITE PLAN 1'' = 30'-0

AS NOTE





6/26/20



g Spill prevention and control.

f. Vehicle and equipment cleaning performed off site.

d. Management of washout areas (concrete, paints, stucco, etc.).

e. Control of vehicle/equipment fueling to contractor's staging area.

h. Other housekeeping BMPs acceptable to the enforcing agency.

# 2022 CALIFORNIA GREEN BUILDING STANDARDS CODE SHEET 1 (January 2023)

One EV charger with multiple connectors capable of charging multiple EVs simultaneously shall be

accumulatively supplied to the EV charger.

service panel or subpanel.

permitted if the electrical load capacity required by Section 5.106.5.3.1 for each EV capable space is

The installation of each DCFC EVSE shall be permitted to reduce the minimum number of required EV

capable spaces without EVSE by five and reduce proportionally the required electrical load capacity to the

AIA	California	NONRESIDENT	<b>IAL</b>	MANDATO	RY MEAS	SURES, S
Y N/A RESPON. PARTY	CHAPTER 3		Y N/A RESPON. PARTY			•
	GREEN BUILDING SECTION 301 GENERAL		GRADING CONTRACTO	5.106.2 STORMWATER POLLUTION PREV LAND. Comply with all lawfully enacted stor more of land, or (2) disturb less than one acr	mwater discharge regulations for projec	cts that (1) disturb one acre or
	301.1 SCOPE. Buildings shall be	designed to include the green building measures specified as mandatory in		<b>Note:</b> Projects that (1) disturb one acre or m larger common plan of development or sale		
	application checklists and may be	ed in this code. Voluntary green building measures are also included in the included in the design and construction of structures covered by this code, ed by a city, county, or city and county as specified in Section 101.7.		applicable National Pollutant Discharge Elim Associated with Construction and Land Dist the Lahontan Regional Water Quality Contro	ination System (NPDES) General perm urbance Activities issued by the State W	it for Stormwater Discharges /ater Resources Control Board or
GENERAL CONTRACTOR	301.3 NONRESIDENTIAL AD	DDITIONS AND ALTERATIONS. [BSC-CG] The provisions apply to newly constructed buildings, building additions of 1,000 square		The NPDES permits require postconstruction	n runoff (post-project hydrology) to mate	ch the preconstruction runoff
	feet or greater, and/or building alto the authority of California Building	erations with a permit valuation of \$200,000 or above (for occupancies within Standards Commission). Code sections relevant to additions and		(pre-project hydrology) with the installation o permits emphasize runoff reduction through through nonstructural controls, such as Low	on-site stormwater use, interception, ev	apotranspiration, and infiltration
	alterations shall only apply to the permitted work.	portions of the building being added or altered within the scope of the		Stormwater volume that cannot be addresse practices and be approved by the enforcing		red to be captured in structural
		by a banner to indicate where the code section only applies to newly ditions and/or alterations [A]. When the code section applies to both, no		Refer to the current applicable permits on the www.waterboards.ca.gov/constructionstorms should be given during the initial design proc	water. Consideration to the stormwater	runoff management measures
	301.3.1 Nonresidential add	ditions and alterations that cause updates to plumbing fixtures only:		5.106.4 BICYCLE PARKING. For buildings specified in Section 103, comply with Section		
	1101.3, shall have its nonco	1, 2014, certain commercial real property, as defined in Civil Code Section ompliant plumbing fixtures replaced with appropriate water-conserving ecific circumstances. See Civil Code Section 1101.1 et seg. for definitions,		Architect pursuant to Section 105, comply w		,
	types of commercial real pro	operty affected, effective dates, circumstances necessitating nt plumbing fixtures, and duties and responsibilities for		applicable local ordinance, whichever		
		The requirements of Section 5.408 shall be required for additions and nit is required for work.		to generate visitor traffic, provid	le permanently anchored bicycle racks vers-by, for 5% of new visitor motorized	within 200 feet of the visitors'
	301.4 PUBLIC SCHOOLS AND COMMI 301.5 HEALTH FACILITIES. (see GBS			Exception: Additions or	alterations which add nine or less visiton parking. For new buildings with tenan	
	SECTION 302 MIXED OCCUR	,		tenant-occupants, provide secu spaces with a minimum of one	re bicycle parking for 5 percent of the te	enant-occupant vehicular parking
•	302.1 MIXED OCCUPANCY E shall comply with the specific gree	<b>BUILDINGS.</b> In mixed occupancy buildings, each portion of a building en building measures applicable to each specific occupancy.			erations that add 10 or more tenant-occions for 5 percent of the tenant vehicular par	
	SECTION 303 PHASED PRO	JECTS		5.106.4.1.4 For new shell buildi	ngs in phased projects provide secure l	
GENERAL CONTRACTOR	303.1 PHASED PROJECTS. only those code measures relevar construction (or newly constructed	For shell buildings and others constructed for future tenant improvements, nt to the building components and systems considered to be new d) shall apply.		5.106.4.1.5 Acceptable bicycle	nicular parking spaces with a minimum parking facility for Sections 5.106.4.1.2, nd shall meet one of the following:	, , ,
		ents. The provisions of this code shall apply only to the initial tenant equent tenant improvements shall comply with the scoping provisions in itions and alterations.		<ol><li>Lockable bicycle roon</li></ol>	closures with permanently anchored rac ns with permanently anchored racks; or y anchored bicycle lockers.	
	ABBREVIATION DEFINITION HCD Department of Housing and				tion on recommended bicycle accommo	odations may be obtained from
	BSC California Building Standard DSA-SS Division of the State Archite OSHPD Office of Statewide Health F	ls Commission ct, Structural Safety		•	For public schools and community co	lleges, comply with Sections
	LR Low Rise HR High Rise	anning and Development		5.106.4.2.1 Student bicycle p	arking. Provide permanently anchored	
	AA Additions and Alterations N New			5.106.4.2.2 Staff bicycle park with a minimum of two staff bicy	ur two-bike capacity racks per new build ing. Provide permanent, secure bicycle ycle parking spaces per new building. A	e parking conveniently accessed cceptable bicycle parking facilities
	CHAPTER 5   NONRESIDENTIAL MAI	NDATORY MEASURES		1. Covered, lockable end	eet or staff parking area and shall meet closures with permanently anchored rac	ks for bicycles;
	DIVISION 5.1 PLANNI	NG AND DESIGN			ns with permanently anchored racks; or y anchored bicycle lockers.	
	SECTION 5.101 GENERAL 5.101.1 SCOPE		GENERAL CONTRACTO	5.106.5.3 Electric vehicle (EV) charging electric vehicle charging shall comply with	Section 5.106.5.3.1 and shall be provide	
	The provisions of this chapter outline plar	nning, design and development methods that include environmentally building siting and development to protect, restore and enhance the		regulations in the California Building Code  Exceptions:	e and the Calliornia Electrical Code.	
	SECTION 5.102 DEFINITION			this section is not fe	basis where the local enforcing agency easible based upon one of the following s no local utility power supply	
	<b>5.102.1 DEFINITIONS</b> The following terms are defined in Chapte	·		b. Where the location of the control	al utility is unable to supply adequate po s evidence suitable to the local enforcen	nent agency substantiating the
		use light distribution is such that the candela per 1000 lamp lumens does not angle of 90 degrees above nadir, and 100 (10 percent) at a vertical angle of all lateral angles around the luminaire.		Section 5.106. 2. Parking spaces acc	astructure design requirements, directly 5.3, may adversely impact the constructessible only by automated mechanical	tion cost of the project.
	LOW-EMITTING AND FUEL EFFICIENT Eligible vehicles are limited to the followin			5.106.5.3.1 EV capable spa		
	emission vehicles (TZEV) regulated unde	anced advanced technology PZEV (enhanced AT ZEV) or transitional zero r CCR, Title 13, Section 1962. d by U.S. EPA, bearing a fuel economy and greenhouse gas rating od 9 oe		requirements: 1. Raceways complyir	be provided in accordance with Table 5	nd no less that 1-inch (25 mm)
	10 as regulated under 40 CFR Section 60			the area, and shall	rovided and shall originate at a service terminate in close proximity to the prop- listed cabinet, box,enclosure or equivale	osed location of the EV capable
		le or in 49CFR571.500 (as it existed on July 1, 2000), and is certified to		2. A service panel or	ple EV charging spaces. subpanel (s) shall be provided with pand cated 208/240 volt, 40-ampere minimum	
		ants who inhabit a building during its normal hours of operation as permanent guished from customers and other transient visitors.		capable space, with 3. The electrical syste	n delivery of 30-ampere minimum to an em and any on-site distribution transforn	installed EVSE at each EVCS.
	designed for carrying more than 10 but no	are limited to any motor vehicle, other than a motortruck or truck tractor, of more than 15 persons including the driver, which is maintained and used an apportation of adults for the purpose of ridesharing.		4. The service panel of protective devices s	amperage at each EV capable space. or subpanel circuit directory shall identify space(s) as "EV CAPABLE". The racew	
	Note: Source: Vehicle Code, Divisi	·		,	sibly marked as "EV CAPABLE."  d by electric vehicle supply equipment o	or designed as a future EV
	<b>ZEV.</b> Any vehicle certified to zero-emissi	on standards.		complying with any applicable	s at least one standard automobile park e minimum parking space requirements ection 22511.2 for further details.	
GENERAL CONTRACTOR		OPMENT REVENTION FOR PROJECTS THAT DISTURB LESS THAN ONE ACRE and additions which disturb less than one acre of land, and are not part of a		TABLE 5.106.5.3.1	ection 22311.2 for further details.	
		ale, shall prevent the pollution of storm water runoff from the construction		TOTAL NUMBER OF ACTUAL	NUMBER OF REQUIRED EV	NUMBER OF EVCS (EV
	<b>5.106.1.1 Local ordinance</b> . Com ordinance.	ply with a lawfully enacted storm water management and/or erosion control		PARKING SPACES	CAPABLE SPACES	CAPABLE SPACES PROVIDED WITH EVSE)^2
		ctices (BMPs). Prevent the loss of soil through wind or water erosion by tion of erosion and sediment control and good housekeeping BMPs.		0-9 10-25	2	0 0
	·	ild be considered for implementation as appropriate for each project include,		26-50 51-75	8 13	2 3
	<ul><li>a. Scheduling constr</li><li>b. Preservation of na</li></ul>	uction activity during dry weather, when possible. tural features, vegetation, soil, and buffers around surface waters.		76-100	17	4
	d. Mulching or hydro e. Erosion control to			101-150 151-200	25 35	6 9
	f. Protection of storn g. Perimeter sedimei	n drain inlets (gravel bags or catch basin inserts). nt control (perimeter silt fence, fiber rolls).		201 AND OVER	20% of total <sup>1</sup>	25% of EV capable spaces <sup>1</sup>
	i. Stabilized construc j. Wind erosion contr	ol.			EVCS (EV capable spaces provided wit	th EVSE) in column 3 count towards
	<ol><li>Good housekeeping BMI</li></ol>	Ps acceptable to the enforcing agency. Ps to manage construction equipment, materials, non-stormwater discharges be considered for implementation as appropriate for each project include, but		the total number of required 5.106.5.3.2 Electric vehicle charg	EV capable spaces shown in column 2	
	are not limited to, the foll a. Dewatering activiti	owing:		EV capable spaces shall be pro 5.106.5.3.1. The EVCS required	vided with EVSE to create EVCS in the by Table 5.106.5.3.1 may be provided	d with EVSE in any combination of
		stockpile management.		Level 2 and Direct Current Fast provided.	Charging (DCFC), except that at least	one Level 2 EVSE shall be

5.106.5.3.3 Use of automatic load management systems (ALMS).
ALMS shall be permitted for EVCS. When ALMS is installed, the required electrical load capacity
specified in Section
5.106.5.3.1 for each EVCS may be reduced when serviced by an EVSE controlled by an ALMS. Each
EVSE controlled by an ALMS shall deliver a minimum 30 amperes to an EV when charging one vehicle
and shall deliver a minimum 3.3 kW while simultaneously charging multiple EVs.

5.106.5.3.4 Accessible EVCS.

Electrical Code and as follows:

When EVSE is installed, accessible EVSC shall be provided in accordance with the California Building Code, Chapter 11B, Section 11B-228.3. Note: For EVCS signs, refer to Caltrans Traffic Operations Policy Directive 13-01 (Zero Emission Vehicle Signs and Pavement Markings) or its successor(s).

5.106.5.4 Electric Vehicle (EV) charging: medium-duty and heavy-duty. [N] Construction shall comply with section 5.106.5.4.1 to facilitate future installation of electric vehicle supply equipment (EVSE). Construction for warehouses, grocery stores and retail stores with planned off-street loading spaces shall also comply with Section 5.106.5.4.1 for future installation of medium- and heavy-duty EVSE.

- 1. On a case-by-case basis where the local enforcing agency has determined compliance with this section is not feasible based upon one of the following conditions:
  - a. Where there is no local utility power supply. b. Where the local utility is unable to supply adequate power.
  - c. Where there is evidence suitable to the local enforcing agency substantiating that additional local utility infrastructure design requirements, directly related to the implementation of Section 5.106.5.3, may adversely impact the construction cost of the project.

5.106.5.4.1 Electric vehicle charging readiness requirements for warehouse, grocery stores and retail stores with planned off-street loading spaces.

When EVSE(s) is/are installed, it shall be in accordance with the California Building Code, the California

[N] In order to avoid future demolition when adding EV charging supply and distribution equipment, spare raceways(s) or busway(s) and adequate capacity for transformers(s), service panels(s) or subpanel(s) shall be installed at the time of construction in accordance with the California Electrical Code. Construction plans and specifications shall include but are not limited to, the following:

1. The transformer, main service equipment and subpanel shall meet the minimum power requirement in Table 5.106.5.4.1 to accommodate the dedicated branch circuits for the future

2. The construction documents shall indicate on or more location(s) convenient to the planned offstreet loading space(s) reserved for medium-and heavy-duty ZEV charging cabinets and charging dispensers, and a pathway reserved for routing of conduit from the termination of the raceway(s) or busway(s) to the charging cabinet(s) and dispenser(s) as shown in Table

3. Raceway(s) or busway(s) originating at a main service panel or a subpanel(s) serving the area where potential future medium-and heavy-duty EVSE will be located and shall terminate in close proximity to the potential future location of the charging equipments for medium- and heavy-duty

4. The raceway(s) or busway(s) shall be sufficient size to carry the minimum additional system load to the future location of the charging for medium- and heavy-duty ZEVs as shown in Table

TABLE 5.106.5.4.1 RACEWAY CONDUIT AND PANEL POWER REQUIREMENTS FOR MEDIUM- AND HEAVY-DUTY EVSE [N]

BUILDING TYPE	BUILDING SIZE (SQ. FT.)	NUMBER OF OFF-STREET LOADING SPACES	ADDITIONAL CAPACITY REQUIRED (KVA) FOR RACEWAY & BUSWAY AND TRANSFORMER & PANEL
	10,000 to 90,000	1 or 2	200
Grocery	10,000 10 70,000	3 or Greater	400
	Greater than 90,000	1 or Greater	400
	10 000 to 125 000	1 or 2	200
Retail	10,000 to 135,000	3 or Greater	400
	Greater than 135,000	1 or Greater	400
		1 or 2	200
Warehouse	20,000 to 256,000	3 or Greater	400
	Greater than 256,000	1 or Greater	400

5.LIGHT POLLUTION REDUCTION. [N]. I Outdoor lighting systems shall be designed and installed to comply with

- 1. The minimum requirements in the California Energy Code for Lighting Zones 0-4 as defined in Chapter 10, Section 10-114 of the California Administrative Code; and
- 2. Backlight (B) ratings as defined in IES TM-15-11 (shown in Table A-1 in Chapter 8);
- 3. Uplight and Glare ratings as defined in California Energy Code (shown in Tables 130.2-A and 130.2-B in
- 4. Allowable BUG ratings not exceeding those shown in Table 5.106.8, [N] or Comply with a local ordinance
- lawfully enacted pursuant to Section 101.7, whichever is more stringent.

- 1. Luminaires that qualify as exceptions in Sections 130.2 (b) and 140.7 of the California Energy Code.
- Building facade meeting the requirements in Table 140.7-B of the California Energy Code, Part 6.
- 4. Custom lighting features as allowed by the local enforcing agency, as permitted by Section 101.8 Alternate materials, designs and methods of construction.
- 5. Luminaires with less than 6,200 initial luminaire lumens.

ALLOWABLE RATING	LIGHTING ZONE LZ0	LIGHTING ZONE LZ1	LIGHTING ZONE LZ2	LIGHTING ZONE LZ3	LIGHTING ZONE LZ4
MAXIMUM ALLOWABLE BACKLIGHT RATING 3					
Luminaire greater than 2 mounting heights (MH) from property line	N/A	No Limit	No Limit	No Limit	No Limit
Luminaire back hemisphere is 1-2 MH from property line	N/A	B2	В3	B4	B4
Luminaire back hemisphere is 0.5-1 MH from property line	N/A	B1	B2	В3	В3
Luminaire back hemisphere is less than 0.5 MH from property line	N/A	ВО	ВО	В1	B2
MAXIMUM ALLOWABLE UPLIGHT RATING (U)					
For area lighting 3	N/A	U0	U0	U0	U0
For all other outdoor lighting,including decorative luminaires	N/A	U1	U2	U3	UR

I.	MAXIMUM ALLOWABLE GLARE RATING 5 (G)					
	MAXIMUM ALLOWABLE GLARE RATING 5 (G)	N/A	G1	G2	G3	G4
	MAXIMUM ALLOWABLE GLARE RATING 5 (G)	N/A	G0	G1	G1	G2
	MAXIMUM ALLOWABLE GLARE RATING 5 (G)	N/A	G0	G0	G1	G1
	MAXIMUM ALLOWABLE GLARE RATING 5 (G)	N/A	G0	G0	G0	G1

NOT APPLICABLE

RESPONSIBLE PARTY (ie: ARCHITECT, ENGINEER, OWNER, CONTRACTOR, INSPECTOR ETC.)

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1. IESNA Lighting Zones 0 and 5 are not applicable; refer to Lighting Zones as defined in the *California* Energy Code and Chapter 10 of the Callifornia Administrative Code.

2. For property lines that abut public walkways, bikeways, plazas and parking lots, the property line may be considered to be 5 feet beyond the actual property line for purpose of determining compliance with this section. For property lines that abut public roadways and public transit corridors, the property line may be considered to be the centerline of the public roadway or public transit corridor for the purpose of determining compliance with this section.

3. General lighting luminaires in areas such as outdoor parking, sales or storage lots shall meet these reduced ratings. Decorative luminaries located in these areas shall meet *U*-value limits for "all other outdoor lighting"

5.106.8.1 Facing- Backlight Luminaries within 2MH of a property line shall be oriented so that the nearest property line is behind the fixture, and shall comply with the backlight rating specified in Table 5.106.8 based on the lighting zone and distance to

the nearest point of that property line. **Exception: Corners.** If two property lines (or two segments of the same property line) have equidistant point to the luminaire, then the luminaire may be oriented so that the intersection of the two lines (the corner) is directly behind the luminaire. The luminaire shall still use the distance to the nearest points(s) on the property lines to determine the required backlight rating.

#### 5.106.8.2 Facing-Glare. For luminaires covered by 5.106.8.1, if a property line also exists within or extends into the front hemisphere within

2MH of the luminaire then the luminaire shall comply with the more stringent glare rating specified in Table 5.106.8 based on the lighting zone and distance to the nearest point on the nearest property line within the front

#### 1.See also California Building Code, Chapter 12, Section 1205.6 for college campus lighting requirements for

- parking facilities and walkways. 2.Refer to Chapter 8 (Compliance Forms, Worksheets and Reference Material) for IES TM-15-11 Table
- A-1, California Energy Code Tables 130.2-A and 130.2-B. 3. Refer to the California Building Code for requirements for additions and alterations.
- **5.106.10 GRADING AND PAVING.** Construction plans shall indicate how site grading or a drainage system will
- manage all surface water flows to keep water from entering buildings. Examples of methods to manage surface water include, but are not limited to, the following:
- 2. Water collection and disposal systems. 3. French drains.
- 4. Water retention gardens.
- 5. Other water measures which keep surface water away from buildings and aid in groundwater recharge. **Exception:** Additions and alterations not altering the drainage path.

**5.106.12 SHADE TREES [DSA-SS].** Shade Trees shall be planted to comply with Sections 5.106.12.1, 5.106.12.2, and 5.106.12.3. Percentages shown shall be measured at noon on the summer solstice. Landscape irrigation necessary to establish and maintain tree health shall comply with Section 5.304.6.

5.106.12.1 Surface parking areas. Shade tree plantings, minimum #10 container size or equal, shall be installed to provide shade over 50 percent of the parking area within 15 years.

**Exceptions:** Surface parking area covered by solar photovoltaic shade structures with roofing materials that comply with Table A5.106.11.2.2 in Appendix A5 shall be permitted in whole or in part in lieu of shade tree planting.

**5.106.12.2 Landscape areas.** Shade tress plantings, minimum #10 container size or equal shall be installed to

provide shade of 20% of the landscape area within 15 years.

**Exceptions:** Playfields for organized sport activity are not included in the total area calculation.

**5.106.12.3.** Hardscape areas. Shade tree plantings, minimum #10 container size or equal shall be installed to

## provide shade over 20 percent of the hardscape area within 15 years.

- Walks, hardscape areas covered by solar photovoltaic shade structures or shade structures with roofing materials that comply with Table A5.106.11.2.2 in Appendix A5 shall be permitted in whole or in part in lieu
- 2. Designated and marked play areas of organized sport activity are not included in the total area calculation.

### DIVISION 5.2 ENERGY EFFICIENCY

#### **SECTION 5.201 GENERAL**

**5.201.1 Scope [BSC-CG].** California Energy Code [DSA-SS]. For the purposes of mandatory energy efficiency standards in this code, the California Energy Commission will continue to adopt mandatory building standards.

#### DIVISION 5.3 WATER EFFICIENCY AND CONSERVATION

#### **SECTION 5.301 GENERAL**

**5.301.1 Scope.** The provisions of this chapter shall establish the means of conserving water use indoors, outdoors and in wastewater conveyance.

#### **SECTION 5.302 DEFINITIONS**

**5.302.1 Definitions.** The following terms are defined in Chapter 2 (and are included here for reference)

EVAPOTRANSPIRATION ADJUSTMENT FACTOR (ETAF) [DSA-SS]. An adjustment factor when applied to reference evapotranspiration that adjusts for plant factors and irrigation efficiency, which ae two major influences on the amount of water that needs to be applied to the landscape.

FOOTPRINT AREA [DSA-SS]. The total area of the furthest exterior wall of the structure projected to natural grade, not including exterior areas such as stairs, covered walkways, patios and decks.

METERING FAUCET. A self-closing faucet that dispenses a specific volume of water for each actuation cycle. The volume or cycle duration can be fixed or adjustable.

GRAYWATER. Pursuant to Health and Safety Code Section 17922.12, "graywater" means untreated wastewater that has not been contaminated by any toilet discharge, has not been affected by infectious, contaminated, or unhealthy bodily wastes, and does not present a threat from contamination by unhealthful processing, manufacturing, or operating wastes. "Graywater" includes, but is not limited to wastewater from bathtubs, showers, bathroom washbasins, clothes washing machines and laundry tubs, but does not include waste water from kitchen sinks or

MODEL WATER EFFICIENT LANDSCAPE ORDINANCE (MWELO). The California ordinance regulating landscape design, installation and maintenance practices that will ensure commercial, multifamily and other developer installed landscapes greater than 2500 square feet meet an irrigation water budget developed based on landscaped area and

(California Code of Regulations, Title 23, Division 2, Chapter 2.7), regulating landscape design, installation and maintenance practices. Local agencies are required to adopt the updated MWELO, or adopt a local ordinance at least as effective as the MWELO.

**POTABLE WATER.** Water that is drinkable and meets the U.S. Environmental Protection Agency (EPA) Drinking Water Standards. See definition in the California Plumbing Code, Part 5.

POTABLE WATER. [HCD] Water that is satisfactory for drinking, culinary, and domestic purposes, and meets the U.S. Environmental Protection Agency (EPA) Drinking Water Standards and the requirements of the Health Authority Having Jurisdiction.

**RECYCLED WATER.** Water which, as a result of treatment of waste, is suitable for a direct beneficial use or a controlled use that would not otherwise occur [Water Code Section 13050 (n)]. Simply put, recycled water is water

MODEL WATER EFFICIENT LANDSCAPE ORDINANCE (MWELO). [HCD] The California model ordinance

treated to remove waste matter attaining a quality that is suitable to use the water again. **SUBMETER.** [HCD 1] A secondary device beyond a meter that measures water consumption of an individual rental unit within a multiunit residential structure or mixed-use residential and commercial structure. (See Civic Code Section 1954.202 (g) and Water code Section 517 for additional details.)

**WATER BUDGET.** Is the estimated total landscape irrigation water use which shall not exceed the maximum applied water allowance calculated in accordance with the Department of Water Resources Model Efficient Landscape Ordinance (MWELO).

SHEET NUMBER

AS NOTE



efficiency through protection of buildings from exterior moisture, construction waste diversion, employment of

techniques to reduce pollution through recycling of materials, and building commissioning or testing and adjusting.

# 2022 CALIFORNIA GREEN BUILDING STANDARDS CODE NONRESIDENTIAL MANDATORY MEASURES, SHEET 2 (January 2023)

5.410.2 COMMISSIONING. [N] New buildings 10,000 square feet and over. For new buildings 10,000 square feet SECTION 5.303 INDOOR WATER USE **5.410.4.4 Reporting.** After completion of testing, adjusting and balancing, provide a final report of testing and over, building commissioning shall be included in the design and construction processes of the building project to **5.303.1 METERS.** Separate submeters or metering devices shall be installed for the uses described in Sections signed by the individual responsible for performing these services. verify that the building systems and components meet the owner's or owner representative's project requirements. Commissioning shall be performed in accordance with this section by trained personnel with experience on projects of **5.410.4.5 Operation and maintenance (O & M) manual.** Provide the building owner or representative with **SECTION 5.402 DEFINITIONS** comparable size and complexity. For I-occupancies that are not regulated by OSHPD or for I-occupancies and **5.303.1.1 Buildings in excess of 50,000 square feet.** Separate submeters shall be installed as follows: detailed operating and maintenance instructions and copies of guaranties/warranties for each system. O & M **5.402.1 DEFINITIONS.** The following terms are defined in Chapter 2 (and are included here for reference) L-occupancies that are not regulated y the California Energy Code Section 100.0 Scope, all requirements in Sections instructions shall be consistent with OSHA requirements in CCR, Title 8, Section 5142, and other related 5.410.2 through 5.410.2.6 shall apply. 1. For each individual leased, rented or other tenant space within the building projected to consume ADJUST. To regulate fluid flow rate and air patterns at the terminal equipment, such as to reduce fan speed or adjust more than 100 gal/day (380 L/day), including, but not limited to, spaces used for laundry or cleaners, Note: For energy-related systems under the scope (Section 100) of the California Energy Code, including heating, restaurant or food service, medical or dental office, laboratory, or beauty salon or barber shop. ventilation, air conditioning (HVAC) systems and controls, indoor lighting systems and controls, as well as water 5.410.4.5.1 Inspections and reports. Include a copy of all inspection verifications and reports required 2. Where separate submeters for individual building tenants are unfeasible, for water supplied to the heating systems and controls, refer to California Energy Code Section 120.8 for commissioning requirements by the enforcing agency. BALANCE. To proportion flows within the distribution system, including sub-mains, branches and terminals, according to design quantities. a. Makeup water for cooling towers where flow through is greater than 500 gpm (30 L/s). Commissioning requirements shall include: DIVISION 5.5 ENVIRONMENTAL QUALITY b. Makeup water for evaporative coolers greater than 6 gpm (0.04 L/s). **BUILDING COMMISSIONING.** A systematic quality assurance process that spans the entire design and construction c. Steam and hot water boilers with energy input more than 500,000 Btu/h (147 kW). process, including verifying and documenting that building systems and components are planned, designed, installed, Owner's or Owner representative's project requirements. . Basis of design. tested, operated and maintained to meet the owner's project requirements. **5.501.1 SCOPE.** The provisions of this chapter shall outline means of reducing the quantity of air contaminants that 5.303.1.2 Excess consumption. A separate submeter or metering device shall be provided for any tenant 3. Commissioning measures shown in the construction documents. are odorous, irritating, and/or harmful to the comfort and well-being of a building's installers, occupants and neighbors. within a new building or within an addition that is projected to consume more than 1,000 gal/day. ORGANIC WASTE. Food waste, green waste, landscape and pruning wste, nonhazardous wood waste, and food 4. Commissioning plan 5. Functional performance testing. soiled paper waste that is mixed in with food waste. 6. Documentation and training. 5.303.3 WATER CONSERVING PLUMBING FIXTURES AND FITTINGS. Plumbing fixtures (water closets and **5.502.1 DEFINITIONS.** The following terms are defined in Chapter 2 (and are included here for reference) **TEST.** A procedure to determine quantitative performance of a system or equipment Commissioning report. urinals) and fittings (faucets and showerheads) shall comply with the following: ARTERIAL HIGHWAY. A general term denoting a highway primarily for through traffic usually on a continuous route SECTION 5.407 WATER RESISTANCE AND MOISTURE MANAGEMENT Exceptions **5.303.3.1 Water Closets.** The effective flush volume of all water closets shall not exceed 1.28 gallons per **5.407.1 WEATHER PROTECTION.** Provide a weather-resistant exterior wall and foundation envelope as required by flush. Tank-type water closets shall be certified to the performance criteria of the U.S. EPA WaterSense A-WEIGHTED SOUND LEVEL (dBA). The sound pressure level in decibels as measured on a sound level meter California Building Code Section 1402.2 (Weather Protection), manufacturer's installation instructions or local 1. Unconditioned warehouses of any size. Specification for Tank-Type toilets. using the internationally standardized A-weighting filter or as computed from sound spectral data to which A-weighting ordinance, whichever is more stringent 2. Areas less than 10,000 square feet used for offices or other conditioned accessory spaces within adjustments have been made. unconditioned warehouses Note: The effective flush volume of dual flush toilets is defined as the composite, average flush volume of **5.407.2 MOISTURE CONTROL.** Employ moisture control measures by the following methods. 3. Tenant improvements less than 10,000 square feet as described in Section 303.1.1. two reduced flushes and one full flush. I BTU/HOUR. British thermal units per hour, also referred to as Btu. The amount of heat required to raise one pound 4. Open parking garages of any size, or open parking garage areas, of any size, within a structure. of water one degree Fahrenheit per hour, a common measure of heat transfer rate. A ton of refrigeration is 12,000 Btu **5.407.2.1 Sprinklers.** Design and maintain landscape irrigation systems to prevent spray on structures. 5.303.3.2 Urinals. the amount of heat required to melt a ton (2,000 pounds) of ice at 32<sup>0</sup> Fahrenheit. Note: For the purposes of this section, unconditioned shall mean a building, area, or room which does not **5.303.3.2.1 Wall-mounted Urinals.** The effective flush volume of wall-mounted urinals shall not exceed 5.407.2.2 Entries and openings. Design exterior entries and/or openings subject to foot traffic or wind-driven provide heating and or air conditioning. 0.125 gallons per flush. COMMUNITY NOISE EQUIVALENT LEVEL (CNEL). A metric similar to the day-night average sound level (Ldn), rain to prevent water intrusion into buildings as follows: except that a 5 decibel adjustment is added to the equivalent continuous sound exposure level for evening hours (7pm **Informational Notes:** 5.303.3.2.2 Floor-mounted Urinals. The effective flush volume of floor-mounted or other urinals shall to 10pm) in addition to the 10 dB nighttime adjustment used in the Ldn. **5.407.2.2.1 Exterior door protection.** Primary exterior entries shall be covered to prevent water not exceed 0.5 gallons per flush. intrusion by using nonabsorbent floor and wall finishes within at least 2 feet around and perpendicular to 1. IAS AC 476 is an accreditation criteria for organizations providing training and/or certification of **COMPOSITE WOOD PRODUCTS.** Composite wood products include hardwood plywood, particleboard and medium such openings plus at least one of the following: commissioning personnel. AC 476 is available to the Authority Having Jurisdiction as a reference for 5.303.3.3 Showerheads. [BSC-CG] density fiberboard. "Composite wood products" does not include hardboard, structural plywood, structural panels, qualifications of commissioning personnel. AC 476 des not certify individuals to conduct functional **5.303.3.3.1 Single showerhead.** Showerheads shall have a maximum flow rate of not more than 1.8 structural composite lumber, oriented strand board, glued laminated timber, timber, prefabricated wood I-joists or 1. An installed awning at least 4 feet in depth. performance tests or to adjust and balance systems. gallons per minute at 80 psi. Showerheads shall be certified to the performance criteria of the U.S. EPA finger-jointed lumber, all as specified in California Code of Regulations (CCR), Title 17, Section 93120.1(a). 2. The door is protected by a roof overhang at least 4 feet in depth. WaterSense Specification for Showerheads. The door is recessed at least 4 feet. 2. Functional performance testing for heating, ventilation, air conditioning systems and lighting controls Note: See CCR, Title 17, Section 93120.1. 4. Other methods which provide equivalent protection. must be performed in compliance with the California Energy Code. **5.303.3.3.2 Multiple showerheads serving one shower.** When a shower is served by more than one showerhead, the combined flow rate of all the showerheads and/or other shower outlets controlled by a DAY-NIGHT AVERAGE SOUND LEVEL (Ldn). The A-weighted equivalent continuous sound exposure level for a **5.407.2.2.2 Flashing.** Install flashings integrated with a drainage plane. single valve shall not exceed 1.8 gallons per minute at 80 psi, or the shower shall be designed to 24-hour period with a 10 dB adjustment added to sound levels occurring during nighttime hours (10p.m. to 7 a.m.). 5.410.2.1 Owner's or Owner Representative's Project Requirements (OPR). [N] The expectations and allow only one shower outlet to be in operation at a time. requirements of the building appropriate to its phase shall be documented before the design phase of the **Note:** A hand-held shower shall be considered a showerhead. **DECIBEL (db).** A measure on a logarithmic scale of the magnitude of a particular quantity (such as sound pressure, project begins. This documentation shall include the following: SECTION 5.408 CONSTRUCTION WASTE REDUCTION, DISPOSAL AND sound power, sound intensity) with respect to a reference quantity. Environmental and sustainability goals. Building sustainable goals. ELECTRIC VEHICLE (EV). An automotive-type vehicle for on-road use, such as passenger automobiles, buses, 5.303.3.4 Faucets and fountains. Indoor environmental quality requirements **5.408.1 CONSTRUCTION WASTE MANAGEMENT.** Recycle and/or salvage for reuse a minimum of 65% of the trucks, vans, neighborhood electric vehicles, electric motorcycles, and the like, primarily powered by an electric motor 4. Project program, including facility functions and hours of operation, and need for after hours non-hazardous construction and demolition waste in accordance with Section 5.408.1.1, 5.408.1.2 or 5.408.1.3; or that draws current from a rechargeable storage battery, fuel cell, photovoltaic array, or other source of electric current. 5.303.3.4.1 Nonresidential Lavatory faucets. Lavatory faucets shall have a maximum flow rate of not meet a local construction and demolition waste management ordinance, whichever is more stringent. Plug-in hybrid electric vehicles (PHEV) are considered electric vehicles. For purposes of the California Electrical Code, more than 0.5 gallons per minute at 60 psi. 5. Equipment and systems expectations. off-road, self-propoelled electric vehicles, such as industrial trucks, hoists, lifts, transports, golf carts, airline ground 6. Building occupant and operation and maintenance (O&M) personnel expectations. 5.408.1.1 Construction waste management plan. Where a local jurisdiction does not have a construction and **5.303.3.4.2 Kitchen faucets.** Kitchen faucets shall have a maximum flow rate of not more than 1.8 support equipment, tractors, boats, and the like, are not included. demolition waste management ordinance, submit a construction waste management plan that: gallons per minute at 60 psi. Kitchen faucets may temporarily increase the flow above the maximum rate, 5.410.2.2 Basis of Design (BOD). [N] A written explanation of how the design of the building systems meets ELECTRIC VEHICLE CHARGING STATION(S) (EVCSj). One or more spaces intended for charging electric vehicles. but not to exceed 2.2 gallons per minute at 60 psi, and must default to a maximum flow rate of 1.8 gallons the OPR shall be completed at the design phase of the building project. The Basis of Design document shall 1. Identifies the construction and demolition waste materials to be diverted from disposal by efficient cover the following systems: usage, recycling, reuse on the project or salvage for future use or sale. **ELECTRIC VEHICLE SUPPLY EQUIPMENT (EVSE).** The conductors, including the ungrounded, grounded, and 2. Determines if construction and demolition waste materials will be sorted on-site (source-separated) or equipment grounding conductors and the electric vehicle connectors, attachment plugs, and all other fittings, devices, **5.303.3.4.3 Wash fountains.** Wash fountains shall have a maximum flow rate of not more than 1.8 Renewable energy systems power outlets, or apparatus installed specifically for the purpose of transferring energy between the premises wiring gallons per minute/20 [rim space (inches) at 60 psi]. 2. Landscape irrigation systems. Identifies diversion facilities where construction and demolition waste material collected will be taken. and the electric vehicle. Water reuse system. 4. Specifies that the amount of construction and demolition waste materials diverted shall be calculated **5.303.3.4.4 Metering faucets.** Metering faucets shall not deliver more than 0.20 gallons per cycle. by weight or volume, but not by both. ENERGY EQUIVALENT (NOISE) LEVEL (Leq). The level of a steady noise which would have the same energy as **5.410.2.3 Commissioning plan. [N]** Prior to permit issuance a commissioning plan shall be completed to **5.303.3.4.5 Metering faucets for wash fountains.** Metering faucets for wash fountains shall have a the fluctuating noise level integrated over the time of period of interest. document how the project will be commissioned. The commissioning plan shall include the following: **5.408.1.2 Waste Management Company.** Utilize a waste management company that can provide verifiable maximum flow rate of not more than 0.20 gallons per minute/20 [rim space (inches) at 60 psi]. General project information. documentation that the percentage of construction and demolition waste material diverted from the landfill **EXPRESSWAY.** An arterial highway for through traffic which may have partial control of access, but which may or may Commissioning goals. complies with this section not be divided or have grade separations at intersections. Note: Where complying faucets are unavailable, aerators or other means may be used to achieve 3. Systems to be commissioned. Plans to test systems and components shall include: a. An explanation of the original design intent. **Note:** The owner or contractor shall make the determination if the construction and demolition waste material FREEWAY. A divided arterial highway with full control of access and with grade separations at intersections. Equipment and systems to be tested, including the extent of tests 5.303.3.4.6 Pre-rinse spray value Functions to be tested. GLOBAL WARMING POTENTIAL (GWP). The radiative forcing impact of one mass-based unit of a given greenhouse When installed, shall meet the requirements in the California Code of Regulations, Title 20 (Appliance d. Conditions under which the test shall be performed. Exceptions to Sections 5.408.1.1 and 5.408.1.2: gas relative to an equivalent unit of carbon dioxide over a given period of time. Carbon dioxide is the reference Efficiency Regulations), Section 1605.1 (h)(4) Table H-2, Section 1605.3 (h)(4)(A), and Section 1607 e. Measurable criteria for acceptable performance. compound with a GWP of one. (d)(7), and shall be equipped with an integral automatic shutoff. 4. Commissioning team information. Excavated soil and land-clearing debris. 5. Commissioning process activities, schedules and responsibilities. Plans for the completion of GLOBAL WARMING POTENTIAL VALUE (GWP VALUE). A 100-year GWP value published by the 2. Alternate waste reduction methods developed by working with local agencies if diversion or recycle FOR REFERENCE ONLY: The following table and code section have been reprinted from the California commissioning shall be included. facilities capable of compliance with this item do not exist. Intergovernmental Panel on Climate Change (IPCC) in either its Second Assessment Report (SAR) (IPCC, 1995); or Code of Regulations, Title 20 (Appliance Efficiency Regulations), Section 1605.1 (h)(4) and Section 3. Demolition waste meeting local ordinance or calculated in consideration of local recycling facilities its Fourth Assessment A-3 Report (AR4) (IPCC, 2007). The SAR GWP values are found in column "SAR (100-yr)" of 5.410.2.4 Functional performance testing. [N] Functional performance tests shall demonstrate the correct Table 2.14.; the AR4 GWP values are found in column "100 yr" of Table 2.14. installation and operation of each component, system and system-to-system interface in accordance with the approved plans and specifications. Functional performance testing reports shall contain information addressing TABLE H-2 **5.408.1.3 Waste stream reduction alternative.** The combined weight of new construction disposal that does HIGH-GWP REFRIGERANT. A compound used as a heat transfer fluid or gas that is: (a) a chlorofluorocarbon, a each of the building components tested, the testing methods utilized, and include any readings and adjustments not exceed two pounds per square foot of building area may be deemed to meet the 65% minimum requirement hdrochlorofluorocarbon, a hydrofluorocarbon, a perfluorocarbon, or any compound or blend of compounds, with a as approved by the enforcing agency. GWP value equal to or greater than 150, or (B) any ozone depleting substance as defined in Title 40 of the Code of STANDARDS FOR COMMERCIAL PRE-RINSE SPRAY VALUES Federal Regulations, Part 82, sec.82.3 (as amended March 10, 2009). 5.410.2.5 Documentation and training. [N] A Systems Manual and Systems Operations Training are required, **5.408.1.4 Documentation.** Documentation shall be provided to the enforcing agency which demonstrates MANUFACTURED ON OR AFTER JANUARY 28, 2019 compliance with Sections 5.408.1.1, through 5.408.1.3. The waste management plan shall be updated as including Occupational Safety and Health Act (OSHA) requirements in California Code of Regulations (CCR), LONG RADIUS ELBOW. Pipe fitting installed between two lengths of pipe or tubing to allow a change of direction, necessary and shall be accessible during construction for examination by the enforcing agency. with a radius 1.5 times the pipe diameter. Title 8, Section 5142, and other related regulations. MAXIMUM FLOW RATE (gpm) [spray force in ounce force (ozf)] **LOW-GWP REFRIGERANT.** A compound used as a heat transfer fluid or gas that: (A) has a GWP value less than **5.410.2.5.1 Systems manual. [N]** Documentation of the operational aspects of the building shall be Product Class 1 ( $\leq$  5.0 ozf) 1.00 150, and (B) is not an ozone depleting substance as defined in Title 40 of the Code of Federal Regulations, Part 82, completed within the systems manual and delivered to the building owner or representative. The 1. Sample forms found in "A Guide to the California Green Building Standards Code (Nonresidential)" sec.82.3 (as amended March 10, 2009). Product Class 2 (> 5.0 ozf and  $\leq$  8.0 ozf) 1.20 systems manual shall include the following: located www.dgs.ca.gov/BSC/Resources/Page-Content/Building-Standards-Commission-1. Site information, including facility description, history and current requirements. Resources-List-Folder/CALGreen may be used to assist in documenting compliance with the waste 1.28 **MERV.** Filter minimum efficiency reporting value, based on ASHRAE 52.2–1999. Product Class 3 (> 8.0 ozf) 2. Site contact information. 3. Basic operations and maintenance, including general site operating procedures, basic 2. Mixed construction and demolition debris processors can be located at the California Department of MAXIMUM INCREMENTAL REACTIVITY (MIR). The maximum change in weight of ozone formed by adding a 5.303.4 COMMERCIAL KITCHEN EQUIPMENT. troubleshooting, recommended maintenance requirements, site events log. Resources Recycling and Recovery (CalRecycle). compound to the "Base REactive Organic Gas (ROG) Mixture" per weight of compound added, expressed to 4. Major systems. hundreths of a gram (g O<sup>3</sup>/g ROC). **5.303.4.1 Food Waste Disposers.** Disposers shall either modulate the use of water to no more than 1 gpm 5. Site equipment inventory and maintenance notes. **5.408.2 UNIVERSAL WASTE. [A]** Additions and alterations to a building or tenant space that meet the scoping when the disposer is not in use (not actively grinding food waste/no-load) or shall automatically shut off after no 6. A copy of verifications required by the enforcing agency or this code. provisions in Section 301.3 for nonresidential additions and alterations, shall require verification that Universal Waste PRODUCT-WEIGHTED MIR (PWMIR). The sum of all weighted-MIR for all ingredients in a product subject to this more than 10 minutes of inactivity. Disposers shall use no more than 8 gpm of water. items such as fluorescent lamps and ballast and mercury containing thermostats as well as other California prohibited 7. Other resources and documentation, if applicable. article. The PWMIR is the total product reactivity expressed to hundredths of a gram of ozone formed per gram of Note: This code section does not affect local jurisdiction authority to prohibit or require disposer Universal Waste materials are disposed of properly and are diverted from landfills. A list of prohibited Universal Waste product (excluding container and packaging). materials shall be included in the construction documents. **5.410.2.5.2 Systems operations training. [N]** A program for training of the appropriate maintenance PSIG. Pounds per square inch, guage. 5.303.5 AREAS OF ADDITION OR ALTERATION. For those occupancies within the authority of the California staff for each equipment type and/or system shall be developed and documented in the commissioning Note: Refer to the Universal Waste Rule link at: http://www.dtsc.ca.gov/universalwaste/ Building Standards Commission as specified in Section 103, the provisions of Section 5.303.3 and 5.303.4 shall apply report and shall include the following: REACTIVE ORGANIC COMPOUND (ROC). Any compound that has the potential, once emitted, to contribute to to new fixtures in additions or areas of alteration to the building. 1. System/equipment overview (what it is, what it does and with what other systems and/or 5.408.3 EXCAVATED SOIL AND LAND CLEARING DEBRIS. 100 percent of trees, stumps, rocks and associated ozone formation in the troposphere. equipment it interfaces). vegetation and soils resulting primarily from land clearing shall be reused or recycled. For a phased project, such 5.303.6 STANDARDS FOR PLUMBING FIXTURES AND FITTINGS. Plumbing fixtures and fittings shall be installed 2. Review and demonstration of servicing/preventive maintenance. material may be stockpiled on site until the storage site is developed. SCHRADER ACCESS VALVES. Access fittings with a valve core installed. in accordance with the California Plumbing Code, and shall meet the applicable standards referenced in Table 1701.1 3. Review of the information in the Systems Manual. of the California Plumbing Code and in Chapter 6 of this code. **Exception:** Reuse, either on or off-site, of vegetation or soil contaminated by disease or pest infestation. 4. Review of the record drawings on the system/equipment. SHORT RADIUS ELBOW. Pipe fitting installed between two lengths of pipe or tubing to allow a change of direction, with a radius 1.0 times the pipe diameter. SECTION 5.304 OUTDOOR WATER USE **5.410.2.6 Commissioning report. [N]** A report of commissioning process activities undertaken through the 5.304.1 OUTDOOR POTABLE WATER USE IN LANDSCAPE AREAS. Nonresidential developments shall comply SUPERMARKET. For the purposes of Section 5.508.2, a supermarket is any retail food facility with 8,000 square feet design and construction phases of the building project shall be completed and provided to the owner or with a local water efficient landscape ordinance or the current California Department of Water Resources' Model Water 1. If contamination by disease or pest infestation is suspected, contact the County Agricultural or more conditioned area, and that utilizes either refrigerated display cases, or walk-in coolers or freezers connected Efficient Landscape Ordinance (MWELO), whichever is more stringent. Commissioner and follow its direction for recycling or disposal of the material. to remote compressor units or condensing units. 2. For a map of know pest and/or disease quarantine zones, consult with the California Department of 5.410.4 TESTING AND ADJUSTING. New buildings less than 10,000 square feet. Testing and adjusting of **VOC.** A volatile organic compound broadly defined as a chemical compound based on carbon chains or rings with Food and Agriculture. (www.cdfa.ca.gov) vapor pressures greater than 0.1 millimeters of mercury at room temperature. These compounds typically contain 1. The Model Water Efficient Landscape Ordinance (MWELO) is located in the California Code of Regulations, systems shall be required for new buildings less than 10,000 square feet or new systems to serve an addition or hydrogen and may contain oxygen, nitrogen and other elements. See CCR Title 17, Section 94508(a) Ilteration subject to Section 303.1. 2. MWELO and supporting documents, including a water budget calculator, are available at: Note: Where specific regulations are cited from different agencies such as SCAQMD, ARB, etc., the VOC definition 5.410.4.2 (Reserved) included in that specific regulation is the one that prevails for the specific measure in question. 5.304.6 OUTDOOR POTABLE WATER USE IN LANDSCAPE AREAS. For public schools and community colleges, Note: For energy-related systems under the scope (Section 100) of the California Energy Code, including SECTION 5.503 FIREPLACES landscape projects as described in Sections 5.304.6.1 and 5.304.6.2 shall comply with the California Department of SECTION 5.410 BUILDING MAINTENANCE AND OPERATIONS heating, ventilation, air conditioning (HVAC) systems and controls, indoor lighting system and controls, as well 5.503.1 FIREPLACES. Install only a direct-vent sealed-combustion gas or sealed wood-burning fireplace, or a sealed Water Resources Model Water Efficient Landscape Ordinance (MWELO) commencing with Section 490 of Chapter **5.410.1 RECYCLING BY OCCUPANTS.** Provide readily accessible areas that serve the entire building and are as water heating systems and controls, refer to California Energy Code Section 120.8 for commissioning 2.7, Division 2, Title 23, California Code of Regulations, except that the evapotranspiration adjustment factor (ETAF) woodstove or pellet stove, and refer to residential requirements in the California Energy Code, Title 24, Part 6, identified for the depositing, storage and collection of non-hazardous materials for recycling, including (at a minimum) requirements and Sections 120.5, 120.6, 130.4, and 140.9(b)3 for additional testing requirements of specific Subchapter 7, Section 150. Woodstoves, pellet stoves and fireplaces shall comply with applicable local ordinances. shall be 0.65 with an additional water allowance for special landscape areas (SLA) of 0.35. paper, corrugated cardboard, glass, plastics, organic waste, and metals or meet a lawfully enacted local recycling ordinance, if more restrictive. 5.503.1.1 Woodstoves. Woodstoves and pellet stoves shall comply with U.S. EPA New Source Performance **Exception**: Any project with an aggregate landscape area of 2,500 square feet or less may comply with the prescriptive measures contained in Appendix D of the MWELO. **5.410.4.2 Systems.** Develop a written plan of procedures for testing and adjusting systems. Systems to be Standards (NSPS) emission limits as applicable, and shall have a permanent label indicating they are certified **Exception**: Rural jurisdictions that meet and apply for the exemption in Public Resources to meet the emission limits. included for testing and adjusting shall include at a minimum, as applicable to the project: Code 42649.82 (a)(2)(A) et seq. shall also be exempt from the organic waste portion of this section. **5.304.6.1 Newly constructed landscapes.** New construction projects with an aggregate landscape area equal to or greater than 500 square feet. 1. Renewable energy systems. **5.410.1.1 Additions.** All additions conducted within a 12-month period under single or multiple permits, **SECTION 5.504 POLLUTANT CONTROL** esulting in an increase of 30% or more in floor area, shall provide recycling areas on site. 2. Landscape irrigation systems. **5.504.1 TEMPORARY VENTILATION.** The permanent HVAC system shall only be used during construction if **5.304.6.2 Rehabilitated landscapes.** Rehabilitated landscape projects with an aggregate 3. Water reuse systems. necessary to condition the building or areas of addition or alteration within the required temperature range for landscape area equal to or greater than 1,200 square feet. Exception: Additions within a tenant space resulting in less than a 30% increase in the tenant space material and equipment installation. If the HVAC system is used during construction, use return air filters with a **5.410.4.3 Procedures.** Perform testing and adjusting procedures in accordance with manufacturer's Minimum Efficiency Reporting Value (MERV) of 8, based on ASHRAE 52.2-1999, or an average efficiency of specifications and applicable standards on each system. DIVISION 5.4 MATERIAL CONSERVATION AND RESOURCE 30% based on ASHRAE 52.1-1992 Replace all filters immediately prior to occupancy, or, if the building is **5.410.1.2 Sample ordinance.** Space allocation for recycling areas shall comply with Chapter 18, Part 3. occupied during alteration, at the conclusion of construction. **EFFICIENCY** Division 30 of the Public Resources Code. Chapter 18 is known as the California Solid Waste Reuse and **5.410.4.3.1 HVAC balancing.** In addition to testing and adjusting, before a new space-conditioning Recycling Access Act of 1991 (Act). system serving a building or space is operated for normal use, the system shall be balanced in 5.504.3 Covering of duct openings and protection of mechanical equipment during construction. At the time of **SECTION 5.401 GENERAL** rough installation and during storage on the construction site until final startup of the heating, cooling and ventilation accordance with the procedures defined by the Testing Adjusting and Balancing Bureau National Note: A sample ordinance for use by local agencies may be found in Appendix A of the document at the 5.401.1 SCOPE. The provisions of this chapter shall outline means of achieving material conservation and resource equipment, all duct and other related air distribution component openings shall be covered with tape, plastic, Standards; the National Environmental Balancing Bureau Procedural Standards; Associated Air Balance CalRecycle's web site.

Council National Standards or as approved by the enforcing agency.

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NOT APPLICABLE

sheetmetal or other methods acceptable to the enforcing agency to reduce the amount of dust, water and debris which



# 2022 CALIFORNIA GREEN BUILDING STANDARDS CODE NONRESIDENTIAL MANDATORY MEASURES, SHEET 3 (January 2023)

Y = YES
N/A = NOT APPLICABLE
RESPON. PARTY = RESPONSIBLE PARTY (ie: ARCHITECT, ENGINEER
OWNER, CONTRACTOR, INSPECTOR ETC.)

Y N/A RESPON.
PARTY 5 504 4 FINISH MATER

**5.504.4 FINISH MATERIAL POLLUTANT CONTROL.** Finish materials shall comply with Sections 5.504.4.1 through 5.504.4.6

5.504.4.1 Adhesives, sealants and caulks. Adhesives, sealants, and caulks used on the project shall meet the requirements of the following standards:
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 Tables 5.504.4.1 and 5.504.4.2. Such products also shall 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, below.

2. Aerosol adhesives, and smaller unit sizes of adhesives, and sealant or caulking compounds (in units of product, less packaging, which do not weigh more than one pound and do not consist of more than 16 fluid ounces) shall comply with statewide VOC standards and other requirements, including prohibitions on use of certain toxic compounds, of *California Code of Regulations*, Title 17, commencing with Section 94507

Less Water and Less Exempt Compounds in Grams per	Liter			
ARCHITECTURAL APPLICATIONS	CURRENT VOC LIMIT			
INDOOR CARPET ADHESIVES	50			
CARPET PAD ADHESIVES	50			
OUTDOOR CARPET ADHESIVES	150			
WOOD FLOORING ADHESIVES	100			
rubber floor adhesives	60			
Subfloor adhesives	50			
CERAMIC TILE ADHESIVES	65			
VCT & ASPHALT TILE ADHESIVES	50			
DRYWALL & PANEL ADHESIVES	50			
COVE BASE ADHESIVES	50			
multipurpose construction adhesives	70			
Structural glazing adhesives	100			
SINGLE-PLY ROOF MEMBRANE ADHESIVES	250			
OTHER ADHESIVES NOT SPECIFICALLY LISTED	50			
SPECIALTY APPLICATIONS				
PVC WELDING	510			
CPVC WELDING	490			
ABS WELDING	325			
PLASTIC CEMENT WELDING	250			
ADHESIVE PRIMER FOR PLASTIC	550			
CONTACT ADHESIVE	80			
SPECIAL PURPOSE CONTACT ADHESIVE	250			
STRUCTURAL WOOD MEMBER ADHESIVE	140			
top & trim adhesive	250			
SUBSTRATE SPECIFIC APPLICATIONS				
METAL TO METAL	30			
PLASTIC FOAMS	50			
POROUS MATERIAL (EXCEPT WOOD)	50			
WOOD	30			
FIBERGLASS	80			

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

2. FOR ADDITIONAL INFORMATION REGARDING METHODS TO MEASURE THE VOC CONTENT SPECIFIED IN THIS TABLE, SEE SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT RULE 1168, www.arb.ca.gov/DRDB/SC/CURHTML/R1168.PDF

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

NOTE: FOR ADDITIONAL INFORMATION REGARDING METHODS TO MEASURE THE VOC CONTENT SPECIFIED IN THESE TABLES, SEE SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

**5.504.4.3 Paints and coatings.** Architectural paints and coatings shall comply with VOC limits in Table 1 of the ARB Architectural Coatings Suggested Control Measure, as shown in Table 5.504.4.3, 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 5.504.4.3 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 5.504.4.3 shall apply.

**5.504.4.3.1 Aerosol Paints and coatings.** Aerosol paints and coatings shall meet the PWMIR Limits for ROC in Section 94522(a)(3) and other requirements, including prohibitions on use of certain toxic compounds and ozone depleting substances, in Sections 94522(c)(2) and (d)(2) of *California Code of Regulations*, Title 17, commencing with Section 94520; and in areas under the jurisdiction of the Bay Area Air Quality Management District additionally comply with the percent VOC by weight of product limits of Regulation 8 Rule 49.

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

HITECTURAL COATINGS SUGGESTED CONTROL MEASURE, FEB. 1, 2008. MORE INFORMATION IS AVAILABLE FROM NIR RESOURCES BOARD.

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

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

5.504.4.4 Carpet Systems

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

See California Department of Public Health's website for certification programs and testing labs. https://www.cdph.ca.gov/Programs/CCDPHP/DEODC/EHLB/IAQ/Pages/VOC.aspx#material

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

See California Department of Public Health's website for certification programs and testing labs. https://www.cdph.ca.gov/Programs/CCDPHP/DEODC/EHLB/IAQ/Pages/VOC.aspx#material

**5.504.4.4.2 Carpet adhesive.** All carpet adhesive shall meet the requirements of Table 5.504.4.1.

**5.504.4.5 Composite wood products.** Hardwood plywood, particleboard and medium density fiberboard composite wood products used on the interior or exterior of the buildings shall meet the requirements for formaldehyde as specified in ARB's Air Toxics Control Measure (ATCM) for Composite Wood (17 CCR 93120 et seq.). Those materials not exempted under the ATCM must meet the specified emission limits, as shown in Table 5.504.4.5.

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

1. Product certifications and specifications.

Chain of custody certifications.
 Product labeled and invoiced as meeting the Composite Wood Products regulation (see

CCR, Title 17, Section 93120, et seq.).

 Exterior grade products marked as meeting the PS-1 or PS-2 standards of the Engineered Wood Association, the Australian AS/NZS 2269 or European 636 3S

Other methods acceptable to the enforcing agency.

TABLE 5.504.4.5 - FORMALDEHYDE LIMITS						
MAXIMUM FORMALDEHYDE EMISSIONS IN PARTS PER MILLIO	N					
PRODUCT	CURRENT LIMIT					
HARDWOOD PLYWOOD VENEER CORE	0.05					
HARDWOOD PLYWOOD COMPOSITE CORE	0.05					
PARTICLE BOARD	0.09					
MEDIUM DENSITY FIBERBOARD	0.11					
THIN MEDIUM DENSITY FIBERBOARD2	0.13					
1. VALUES IN THIS TABLE ARE DERIVED FROM THOSE SPECIFIED BY THE CA	ALIFORNIA AIR RESOURCES BOARD, AIR TOXICS					

1. VALUES IN THIS TABLE ARE DERIVED FROM THOSE SPECIFIED BY THE CALIFORNIA AIR RESOURCES BOARD, AIR TOXICS CONTROL MEASURE FOR COMPOSITE WOOD AS TESTED IN ACCORDANCE WITH ASTM E 1333. FOR ADDITIONAL INFORMATION, SEE CALIFORNIA CODE OF REGULATIONS, TITLE 17, SECTIONS 93120 THROUGH 93120.12.

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

5.504.4.6 Resilient flooring systems. Where resilient flooring is installed, at least 80 percent of floor area receiving resilient flooring shall meet the requirements of the California Department of Public Health, "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers," Version 1.2, January 2017 (Emission testing method for California Specifications

See California Department of Public Health's website for certification programs and testing labs. https://www.cdph.ca.gov/Programs/CCDPHP/DEODC/EHLB/IAQ/Pages/VOC.aspx#material

**5.504.4.6.1 Verification of compliance.** Documentation shall be provided verifying that resilient flooring materials meet the pollutant emission limits.

5.504.4.7 Thermal insulation

Comply with the requirements of the California Department of Public Health, "Standard Method of the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers, "Version 1.2, January 1.2, January 2017 (Emission testing method for California Specification 01350). See California Department of Public Health's website for certification programs and testing labs. https://www.cdph.ca.gov/Programs/CCDPHP/DEODC/EHLB/IAQ/Pages/VOC.aspx#material

5.504.4.7.1 Verification of compliance.

Documentation shall be provided verifying that thermal insulation materials meet the pollutant emission limits.

5.504.4.8 Acoustical ceiling and wall panels.

Comply with the requirements of the California Department of Public Health, "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers, "Version 1.2, January 2017 (Emission testing method for California Specification 01350).

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

**5.504.4.8.1 Verification of compliance.** Documentation shall be provided verifying that acoustical finish materials meet the pollutant emission limits.

5.504.5.3 Filters. In mechanically ventilated buildings, provide regularly occupied areas of the building with air filtration media for outside and return air that provides at least a Minimum Efficiency Reporting Value (MERV) of 13. MERV 13 filters shall be installed prior to occupancy, and recommendations for maintenance with filters of the same value shall be included in the operation and maintenance manual.

Exceptions: Existing mechanical equipment.

**5.504.5.3.1 Labeling.** Installed filters shall be clearly labeled by the manufacturer indicating the MERV

**5.504.7 ENVIRONMENTAL TOBACCO SMOKE (ETS) CONTROL.** Where outdoor areas are provided for smoking, prohibit smoking within 25 feet of building entries, outdoor air intakes and operable windows and within the building as already prohibited by other laws or regulations; or as enforced by ordinances, regulations or policies of any city, county, city and county, California Community College, campus of the California State University, or campus of the University of California, whichever are more stringent. When ordinances, regulations or policies are not in place, post signage to inform building occupants of the prohibitions.

SECTION 5.505 INDOOR MOISTURE CONTROL

**5.505.1 INDOOR MOISTURE CONTROL**. Buildings shall meet or exceed the provisions of California Building Code, CCR, Title 24, Part 2, Sections 1202 (Ventilation) and Chapter 14 (Exterior Walls). For additional measures, see Section 5.407.2 of this code.

SECTION 5.506 INDOOR AIR QUALITY

5.506.1 OUTSIDE AIR DELIVERY. For mechanically or naturally ventilated spaces in buildings, meet the minimum requirements of Section 120.1 (Requirements For Ventilation) of the *California Energy Code*, or the applicable local code, whichever is more stringent, and Division 1, Chapter 4 of CCR, Title 8.

**5.506.2 CARBON DIOXIDE (CO<sub>2</sub>) MONITORING.** For buildings or additions equipped with demand control ventilation, CO<sub>2</sub> sensors and ventilation controls shall be specified and installed in accordance with the requirements of the California Energy Code, Section 120(c)(4).

**5.506.3 Carbon dioxide (CO2) monitoring in classrooms. (DSA-SS)** Each public K-12 school classroom, as listed in Table 120.1-A of the *California Energy Code*, shall be

equipped with a carbon dioxide monitor or sensor that meets the following requirements:

1. The monitor or sensor shall be permanently affixed in a tamper-proof manner in each classroom between 3 and 6 feet (914 mm and 1829 mm) above the floor and at least 5 feet (1524 mm) away from door and operable

windows.

2. When the monitor or sensor is not integral to an Energy Management Control System (EMCS), the monitor or sensor shall display the carbon dioxide readings on the device. When the sensor is integral to an EMCS, the

carbon dioxide readings shall be available to and regularly monitored by facility personnel.

3. A monitor shall provide notification though a visual indicator on the monitor when the carbon dioxide levels in the classroom have exceeded 1,100ppm. A sensor integral to an EMCS shall provide notification to facility personnel through a visual and/or audible indicator when the carbon dioxide levels in the classroom have exceeded 1,100ppm.

The monitor or sensor shall measure carbon dioxide levels at minimum 15- minute intervals and shall maintain a record of previous carbon dioxide measurements of not less than 30 days duration.

record of previous carbon dioxide measurements of not less than 30 days duration.

The monitor or sensor used to measure carbon dioxide levels shall have the capacity to measure carbon dioxide levels with a range of 400ppm to 2000ppm or greater.

The monitor or sensor shall be certified by the manufacturer to be accurate within 75ppm at 1,000ppm carbon dioxide concentration and shall be certified by the manufacturer to require calibration no more frequently than once every 5 years.

SECTION 5.507 ENVIRONMENTAL COMFORT

5.507.4 ACOUSTICAL CONTROL. Employ building assemblies and components with Sound Transmission Class (STC) values determined in accordance with ASTM E 90 and ASTM E 413, or Outdoor-Indoor Sound Transmission Class (OITC) determined in accordance with ASTM E 1332, using either the prescriptive or performance method in Section 5.507.4.1 or 5.507.4.2.

**Exception:** Buildings with few or no occupants or where occupants are not likely to be affected by exterior noise, as determined by the enforcement authority, such as factories, stadiums, storage, enclosed parking structures and utility buildings.

**Exception:** [DSA-SS] For public schools and community colleges, the requirements of this section and all subsections apply only to new construction.

**5.507.4.1 Exterior noise transmission, prescriptive method.** Wall and roof-ceiling assemblies exposed to the noise source making up the building or addition envelope or altered envelope shall meet a composite STC rating of at least 50 or a composite OITC rating of no less than 40, with exterior windows of a minimum STC of 40 or OITC of 30 in the following locations:

1. Within the 65 CNEL noise contour of an airport.

Exceptions:

1. Ldn or CNEL for military airports shall be determined by the facility Air Installation Compatible

Land Use Zone (AICUZ) plan.
Ldn or CNEL for other airports and heliports for which a land use plan has not been developed shall be determined by the local general plan noise element.

2. Within the 65 CNEL or Ldn noise contour of a freeway or expressway, railroad, industrial source or fixed-guideway source as determined by the Noise Element of the General Plan.

**5.507.4.1.1.** Noise exposure where noise contours are not readily available. Buildings exposed to a noise level of 65 dB  $L_{eq}$  - 1-hr during any hour of operation shall have building, addition or alteration exterior wall and roof-ceiling assemblies exposed to the noise source meeting a composite STC rating of at least 45 (or OITC 35), with exterior windows of a minimum STC of 40 (or OITC 30).

**5.507.4.2 Performance Method.** For buildings located as defined in Section 5.507.4.1 or 5.507.4.1.1, wall and roof-ceiling assemblies exposed to the noise source making up the building or addition envelope or altered envelope shall be constructed to provide an interior noise environment attributable to exterior sources that does not exceed an hourly equivalent noise level (Leq-1Hr) of 50 dBA in occupied areas during any hour of operation.

**5.507.4.2.1 Site Features.** Exterior features such as sound walls or earth berms may be utilized as appropriate to the building, addition or alteration project to mitigate sound migration to the interior.

**5.507.4.2.2 Documentation of Compliance.** An acoustical analysis documenting complying interior sound levels shall be prepared by personnel approved by the architect or engineer of record.

**5.507.4.3 Interior sound transmission.** Wall and floor-ceiling assemblies separating tenant spaces and tenant spaces and public places shall have an STC of at least 40.

**Note:** Examples of assemblies and their various STC ratings may be found at the California Office of Noise Control: www.toolbase.org/PDF/CaseStudies/stc\_icc\_ratings.pdf.

SECTION 5.508 OUTDOOR AIR QUALITY
5.508.1 Ozone depletion and greenhouse gas reductions. Installations of HVAC, refrigeration and fire suppression

equipment shall comply with Sections 5.508.1.1 and 5.508.1.2.

**5.508.1.1 Chlorofluorocarbons (CFCs).** Install HVAC, refrigeration and fire suppression equipment that do not contain CFCs.

**5.508.1.2 Halons.** Install HVAC, refrigeration and fire suppression equipment that do not contain Halons.

**5.508.2 Supermarket refrigerant leak reduction.** New commercial refrigeration systems shall comply with the provisions of this section when installed in retail food stores 8,000 square feet or more conditioned area, and that utilize either refrigerated display cases, or walk-in coolers or freezers connected to remote compressor units or condensing units. The leak reduction measures apply to refrigeration systems containing high-global-warming potential (high-GWP) refrigerants with a GWP of 150 or greater. New refrigeration systems include both new facilities and the replacement of existing refrigeration systems in existing facilities.

**Exception:** Refrigeration systems containing low-global warming potential (low-GWP) refrigerant with a GWP value less than 150 are not subject to this section. Low-GWP refrigerants are nonozone-depleting refrigerants that include ammonia, carbon dioxide (CO<sub>2</sub>), and potentially other refrigerants.

**5.508.2.1 Refrigerant piping.** Piping compliant with the California Mechanical Code shall be installed to be accessible for leak protection and repairs. Piping runs using threaded pipe, copper tubing with an outside diameter (OD) less than 1/4 inch, flared tubing connections and short radius elbows shall not be used in refrigerant systems except as noted below.

**5.508.2.1.1 Threaded pipe.** Threaded connections are permitted at the compressor rack.

**5.508.2.1.2 Copper pipe.** Copper tubing with an OD less than 1/4 inch may be used in systems with a refrigerant charge of 5 pounds or less.

**5.508.2.1.2.1 Anchorage.** One-fouth-inch OD tubing shall be securely clamped to a rigid base to keep vibration levels below 8 mils.

**5.508.2.1.3 Flared tubing connections.** Double-flared tubing connections may be used for pressure controls, valve pilot lines and oil

**Exception:** Single-flared tubing connections may be used with a multiring seal coated with industrial sealant suitable for use with refrigerants and tightened in accordance with manufacturer's

**5.508.2.1.4 Elbows.** Short radius elbows are only permitted where space limitations prohibit use of long radius elbows

**5.508.2.2 Valves.** Valves Valves and fittings shall comply with the *California Mechanical Code* and as follows

**5.508.2.2.1 Pressure relief valves.** For vessels containing high-GWP refrigerant, a rupture disc shall be installed between the outlet of the vessel and the inlet of the pressure relief valve.

**5.508.2.2.1.1 Pressure detection.** A pressure gauge, pressure transducer or other device shall be installed in the space between the rupture disc and the relief valve inlet to indicate a disc rupture or discharge of the relief valve.

**5.508.2.2.2 Access valves.** Only Schrader access valves with a brass or steel body are

**5.508.2.2.2.1 Valve caps.** For systems with a refrigerant charge of 5 pounds or more, valve caps shall be brass or steel and not plastic.

**5.508.2.2.2 Seal caps.** If designed for it, the cap shall have a neoprene O-ring in place.

**5.508.2.2.2.1 Chain tethers.** Chain tethers to fit ovr the stem are required for valves designed to have seal caps.

**Exception:** Valves with seal caps that are not removed from the valve during stem

**5.508.2.3 Refrigerated service cases.** Refrigerated service cases holding food products containing vinegar and salt shall have evaporator coils of corrosion-resistant material, such as stainless steel; or be coated to prevent

corrosion from these substances.

5.508.2.3.1 Coil coating. Consideration shall be given to the heat transfer efficiency of coil coating to

**5.508.2.4 Refrigerant receivers.** Refrigerant receivers with capacities greater than 200 pounds shall be fitted with a device tha indicates the level of refrigerant in the receiver.

**5.508.2.5 Pressure testing.** The system shall be pressure tested during installation prior to evacuation and charging.

5.508.2.5.1 Minimum pressure. The system shall be charged with regulated dry nitrogen and

appropriate tracer gas to bring system pressure up to 300 psig minimum.

5.508.2.5.2 Leaks. Check the system for leaks, repair any leaks, and retest for pressure using the same

gauge.

5.508.2.5.3 Allowable pressure change. The system shall stand, unaltered, for 24 hours with no more

than a +/- one pound pressure change from 300 psig, measured with the same gauge.

**5.508.2.6 Evacuation.** The system shall be evacuated after pressure testing and prior to charging.

5.508.2.6.1 First vacuum. Pull a system vacuum down to at least 1000 microns (+/- 50 microns), and

**5.508.2.6.2 Second vacuum.** Pull a second system vacuum to a minimum of 500 microns and hold for 30

**5.508.2.6.3 Third vacuum.** Pull a third vacuum down to a minimum of 300 microns, and hold for 24 hours with a maximum drift of 100 microns over a 24-hour period.

CHAPTER 7

INSTALLER & SPECIAL INSPECTOR QUALIFICATIONS

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

State certified apprenticeship programs.

State certified apprenticeship prog
 Public utility training programs.

Training programs sponsored by trade, labor or statewide energy consulting or verification organizations.
 Programs sponsored by manufacturing organizations.
 Other programs acceptable to the enforcing agency.

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

Certification by a national or regional green building program or standard publisher.
 Certification by a statewide energy consulting or verification organization, such as HERS raters, building

performance contractors, and home energy auditors.

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

Other programs acceptable to the enforcing agency.

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

Notes:

Special inspectors shall be independent entities with no financial interest in the materials or the project they are inspecting for compliance with this code.
 HERS raters are special inspectors certified by the California Energy Commission (CEC) to rate homes in California according to the Home Energy Rating System (HERS).

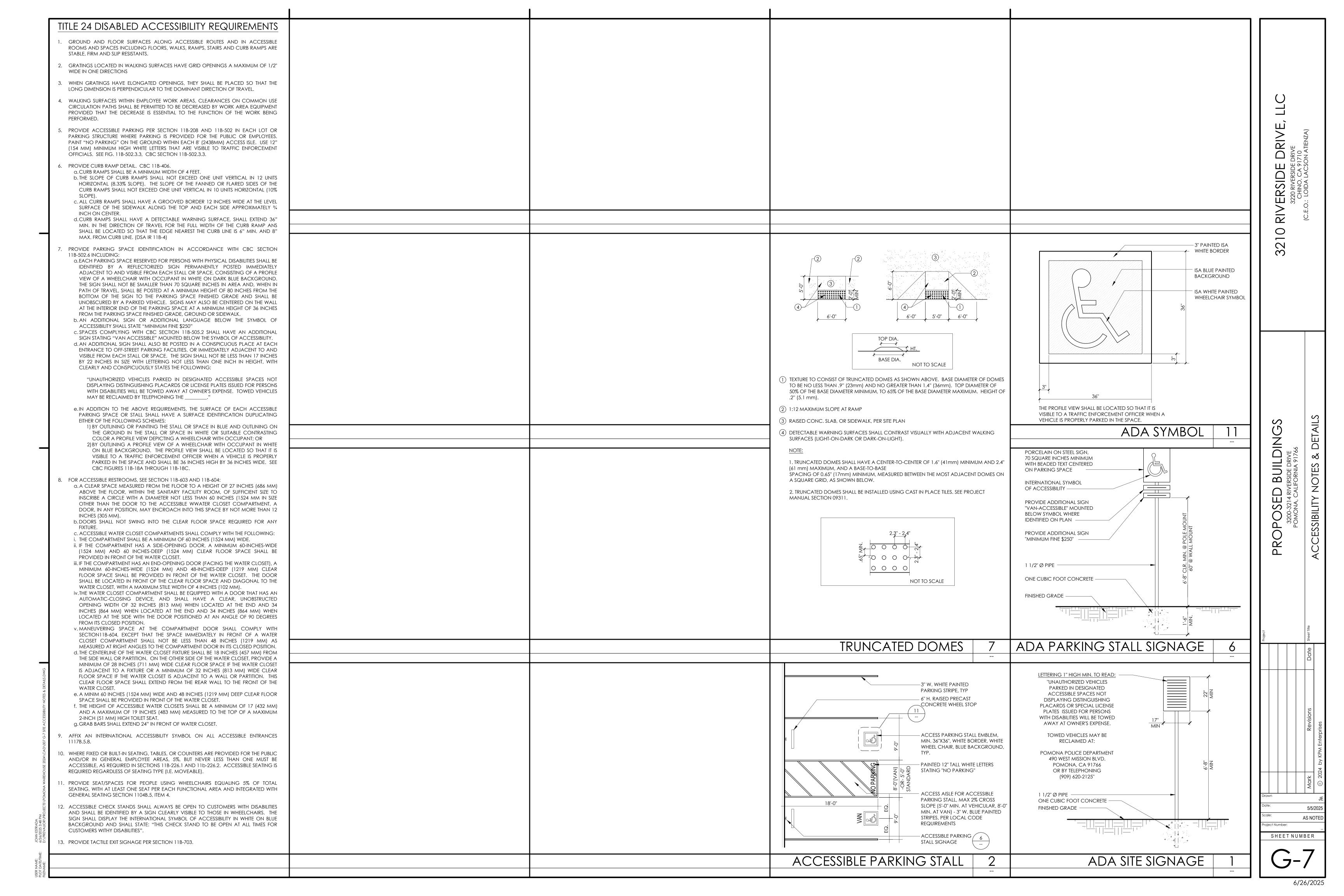
**[BSC-CG]** When required by the enforcing agency, the owner or the responsible entity acting as the owner's agent shall employ one or more special inspectors to provide inspection or other duties necessary to substantiate compliance with this code. Special inspectors shall demonstrate competence to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

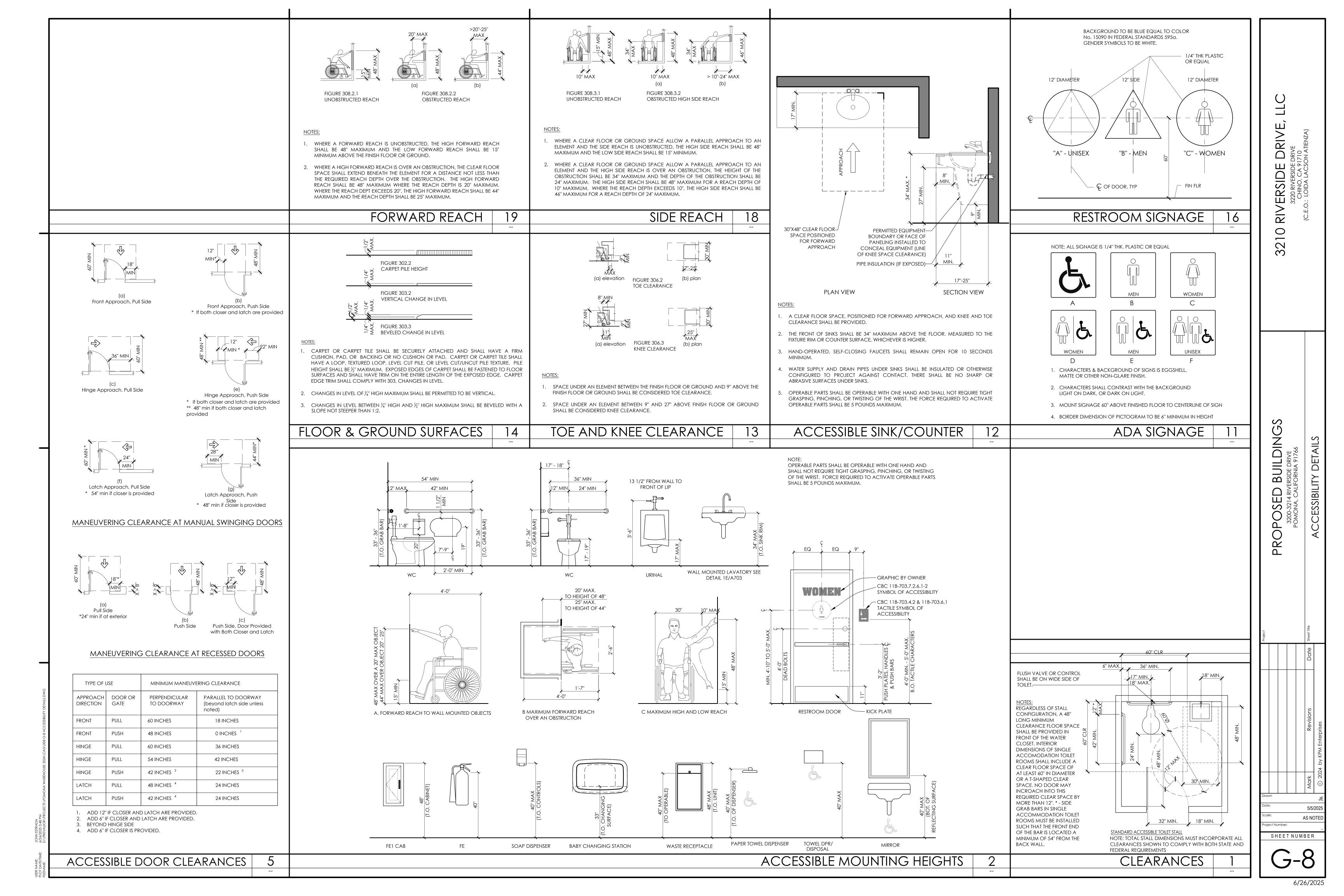
**Note:** Special inspectors shall be independent entities with no financial interest in the materials or the project they are inspecting for compliance with this code.

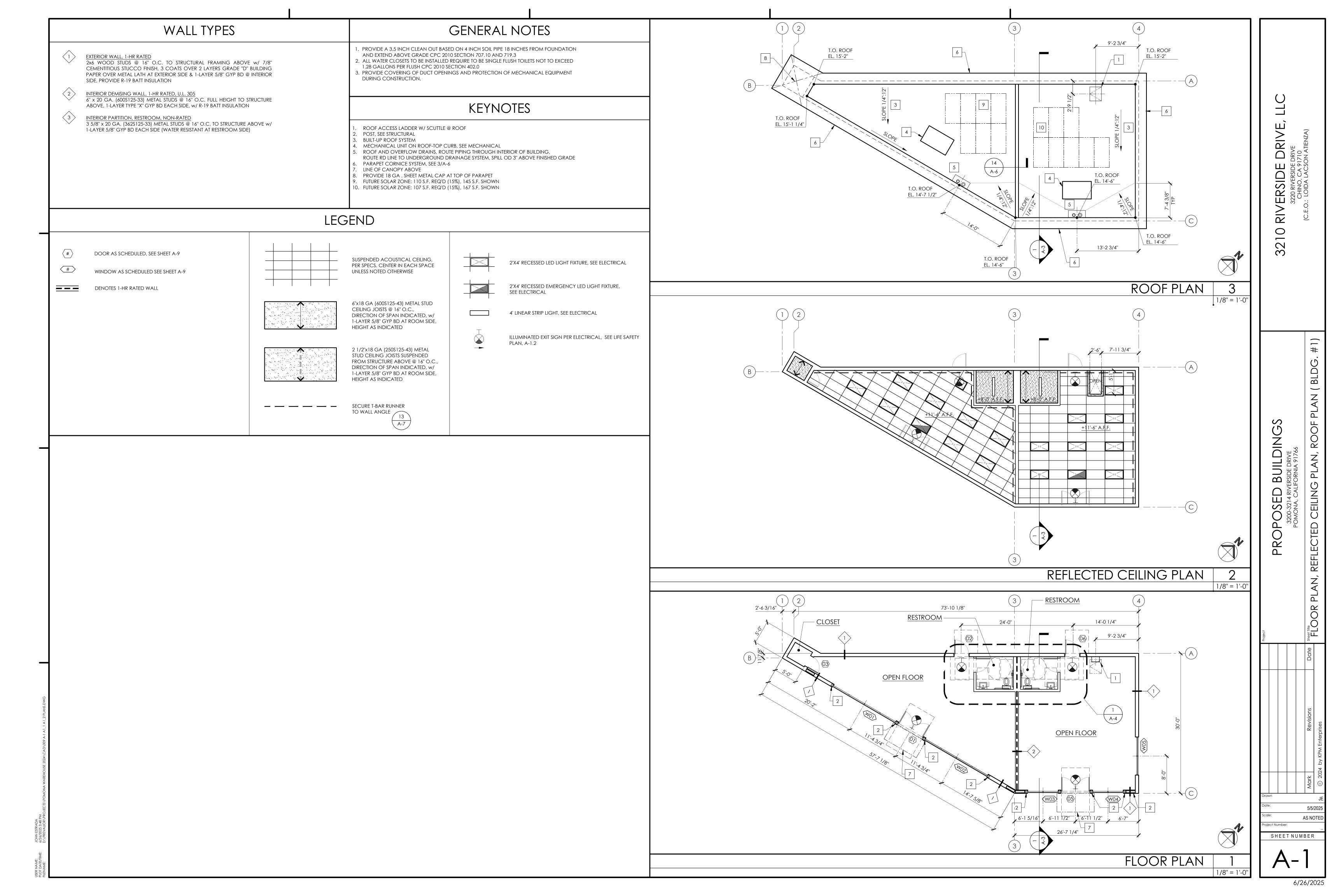
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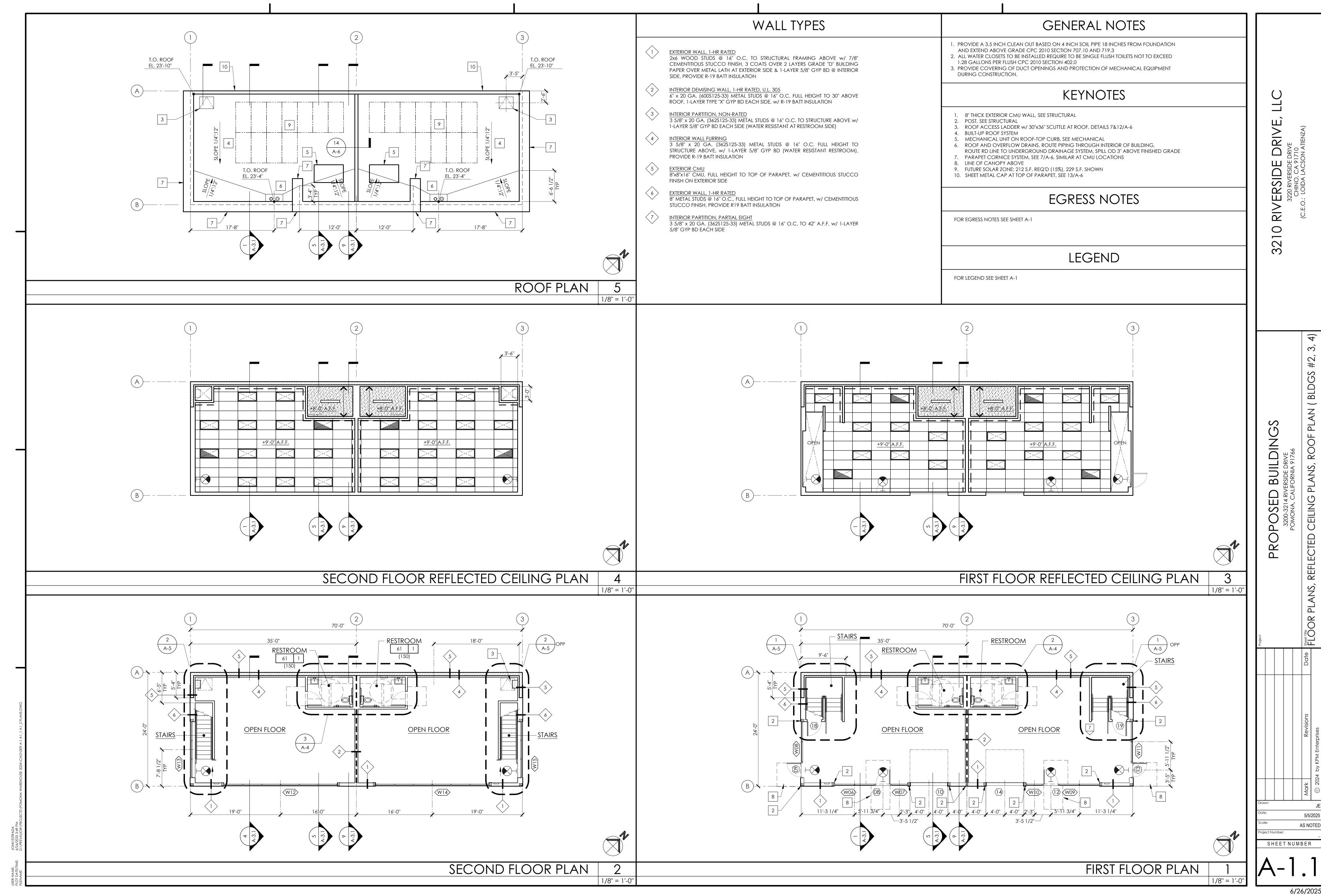
**703.1 DOCUMENTATION.** Documentation used to show compliance with this code shall include but is not limited to, construction documents, plans, specifications, builder or installer certification, inspection reports, or other methods acceptable to the enforcing agency which demonstrate substantial conformance.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

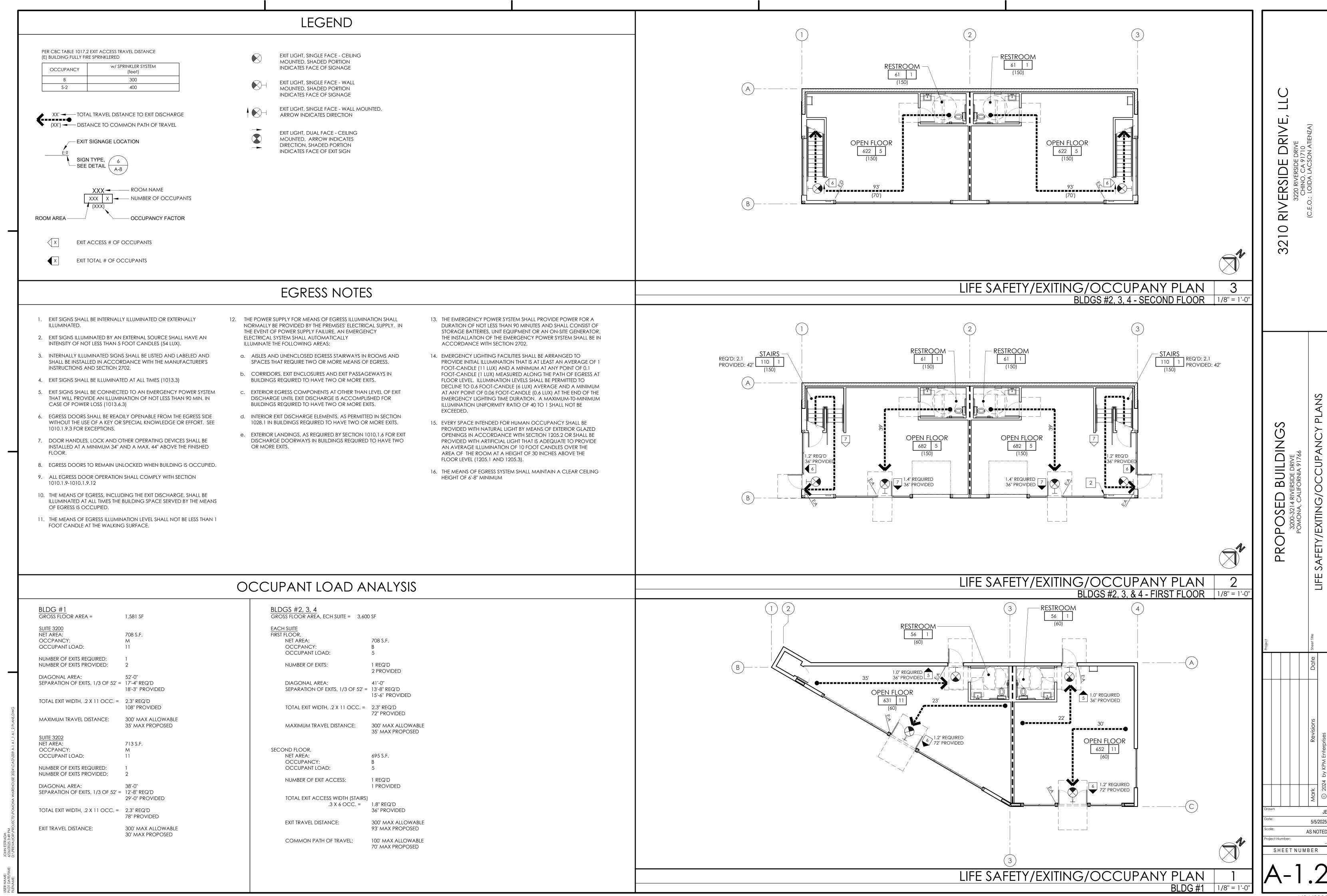
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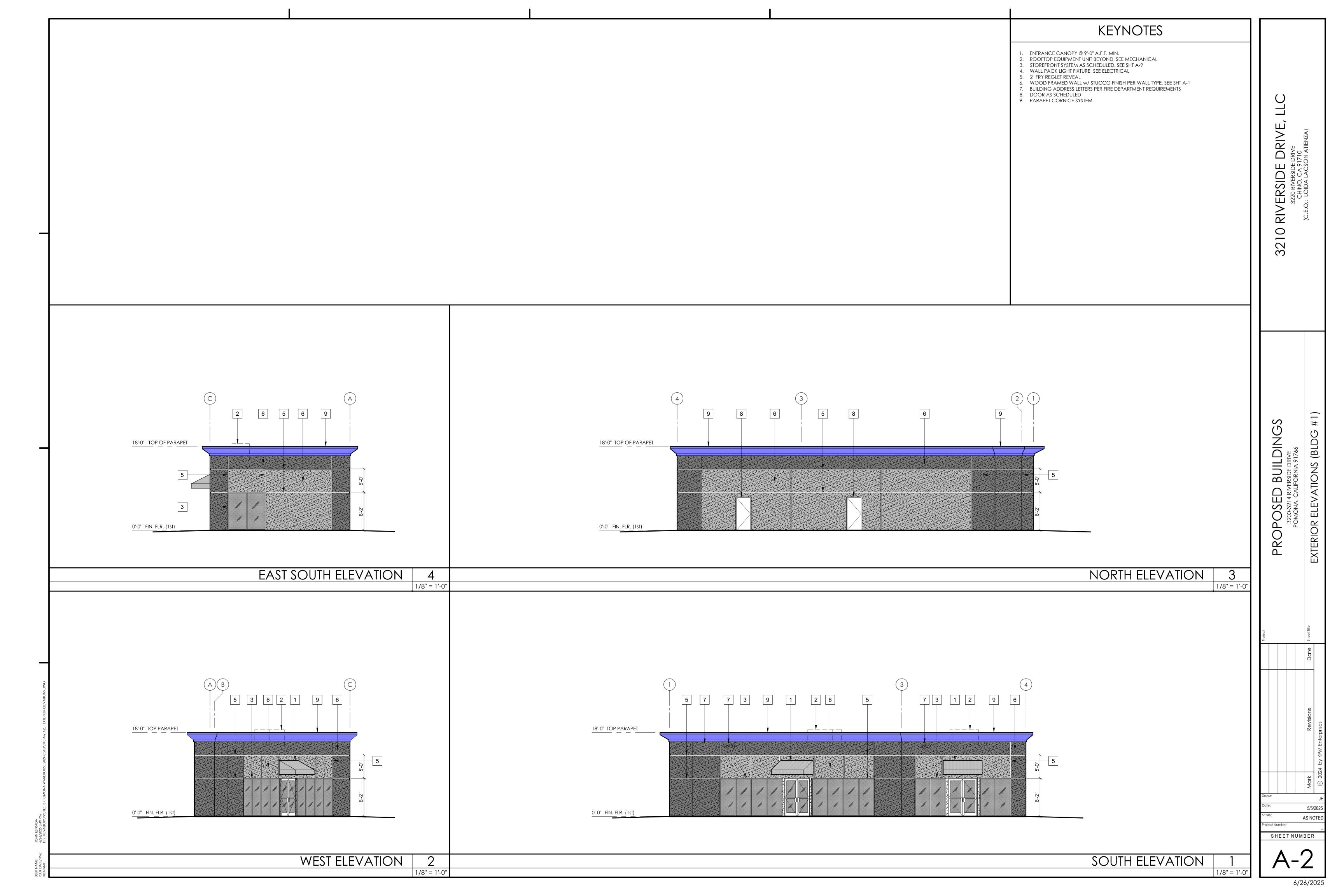


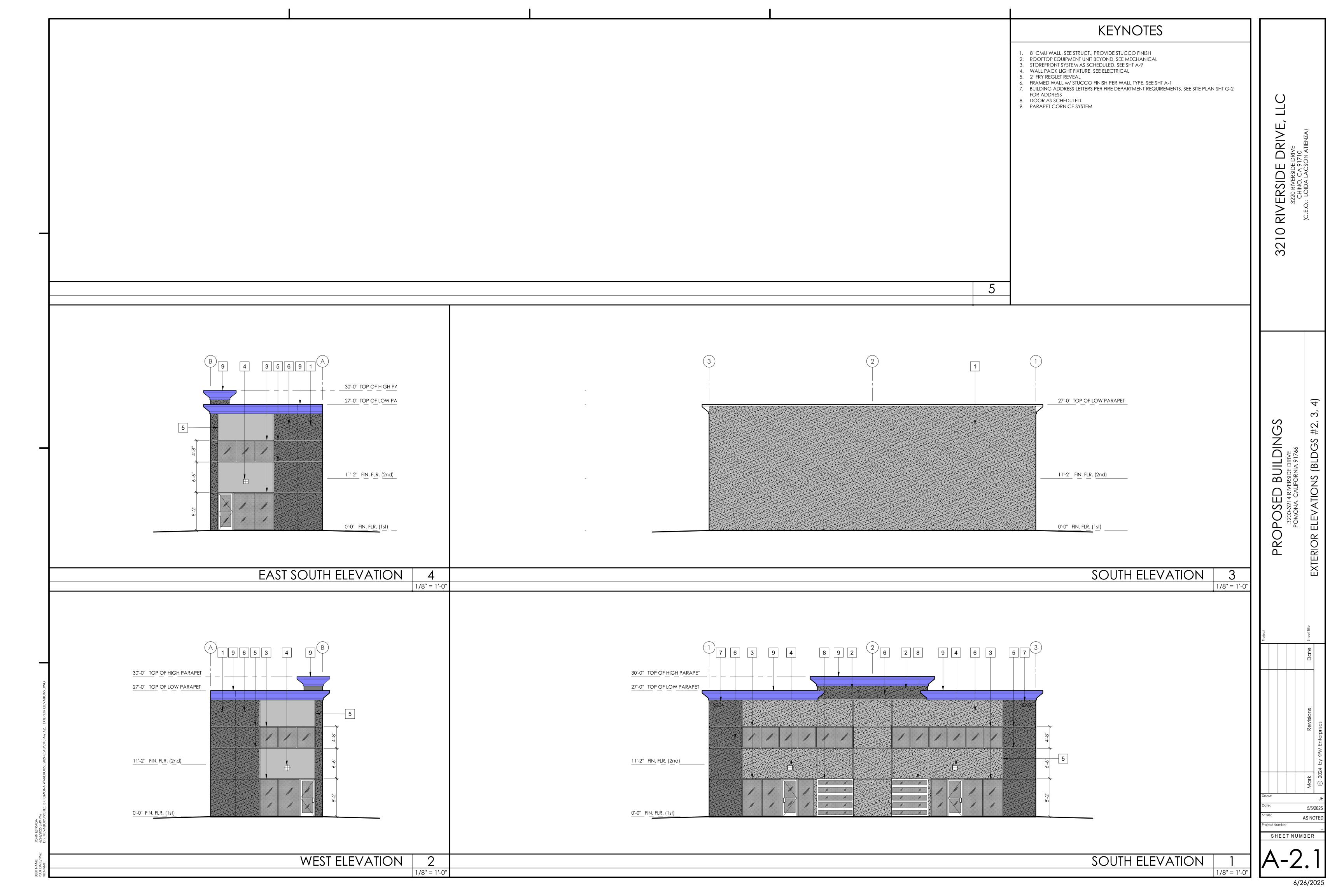












					3210 RIVERSIDE DRIVE, LLC	CHINO, CA 91710 (C.E.O.: LOIDA LACSON ATIENZA)
					ROPOSED BUILDINGS 3200-3214 RIVERSIDE DRIVE POMONA, CALIFORNIA 91766	BUILDING SECTIONS (BLDG #1)
e: John estrada ;time: 6/26/2025 3:49 Pm d:\prevalior\projects\pomona warehouse 2024\Cad\011 A-3 A3_1 building sections.dwg			15'-2"± HIGH PT ROOF	18-0" TOP OF PARAPET 14-6" LOW PT ROOF  19-0" FIN FLR (1st FLOOR)	Drawn Date: Scale: Project Number: SHEET NU	Mark Revisions Date Sheet Title  C 2024 by KPM Enterprises

