COTA VERA Mini Market

1982 La Media Parkway South
Chula Vista CA 91913

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ADDITIONAL NOTES

CVFD Details, Please see Sheet A200–

Premise Identification
Knox–Multi–Tenant with Fire control Room

1. To schedule a fire inspection, contact The Chula Vista Fire Department at (619) 691–5029 and/email fireprevention@chulavistaca.gov.

2. This Project shall fully comply with California Fire Code Chapter 33:, Fire during Construction and demolition. The project's owner and/or owner's authorized agents shall be responsible for the development, implementation, and maintenance of a written chapter 33 complaint Site safety plan establishing a Fire Prevention Program at the project Site throughout all phases of construction work, The Site safety plan shall be prepared by a qualified individual. kept at the project's site at all times, and made available for review.

CODE COMPLIANCE

2022 CALIFORNIA RESIDENTIAL CODE
2022 CALIFORNIA BUILDING CODE
2022 GREEN STANDARDS BUILDING CODE
2022 ELECTRICAL CODE
2022 PLUMBING CODE
2022 MECHANICAL CODE
2022 FIRE CODE
2022 CA BUILDING ENERGY EFFICIENCY STANDARDS
CITY OF CHULA VISTA MUNICIPAL CODE

GENERAL NOTES

1. ALL WORK INCLUDING MATERIALS AND WORKMANSHIP SHALL CONFORM TO THE REQUIREMENTS OF LOCAL CODES, LAWS, ORDINANCES AND THE GOVERNING JURISDICTIONS CURRENT ADOPTED EDITIONS OF THE UNIFORM BUILDING CODE AND MECHANICAL, PLUMBING, FIRE AND ELECTRICAL CODES.
2. THE CONTRACTOR/SUB–CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CONDITIONS AT THE JOB SITE, AND SHALL BE RESPONSIBLE FOR CONDITIONS OF HIS WORK AND MATERIALS, AND IF ANY DISCREPANCIES ARE NOTED, SHALL NOTIFY THE ARCHITECT, OWNER, AND JOB SUPERINTENDENT/MANAGER OF THESE DISCREPANCIES IMMEDIATELY.
3. THE CONTRACT DRAWINGS AND SPECIFICATIONS REPRESENT THE FINISHED STRUCTURE. UNLESS OTHERWISE SHOWN, THEY DO NOT INDICATE THE METHOD OF CONSTRUCTION, THE CONTRACTOR SHALL PROVIDE ALL MEASURES NECESSARY TO PROTECT THE STRUCTURE, WORKERS AND OTHER PERSONS DURING DEMOLITION AND CONSTRUCTION. SUCH MEASURES SHALL INCLUDE BUT NOT BE LIMITED TO BRACING, SHORING, SCAFFOLDING, PLANKING, ETC. SUB–CONTRACTOR, AT HIS OWN EXPENSE SHALL ENGAGE PROPERLY QUALIFIED PERSONS TO DETERMINE WHERE AND HOW TEMPORARY PRECAUTIONARY MEASURES SHALL BE USED AND INSPECT SAME AT THE JOB SITE. OBSERVATION VISITS TO THE SITE BY THE ARCHITECT OR ENGINEER SHALL NOT INCLUDE INSPECTION OF THE ABOVE ITEMS.
4. CONTRACTOR TO SUBMIT ALL PRODUCT INFORMATION, SHOP DRAWINGS, CATALOG CUTS, ETC. TO THE ARCHITECT FOR APPROVAL.
5. STRUCTURAL GENERAL NOTES
6. WRITTEN DIMENSIONS TAKE PRIORITY OVER SCALED DIMENSIONS. CONTRACTOR TO VERIFY ALL LARGER SCALE DETAIL DRAWINGS FOR SEQUENCE, DIMENSIONS AND FINISH MATERIALS AS INDICATED. CONTRACTOR IS RESPONSIBLE FOR THE COORDINATION OF DIMENSIONS BETWEEN SEPARATE TRADES.
7. ALL DIMENSIONS AT EXTERIOR WALLS AND INTERIOR PARTITIONS ARE TO THE FACE OF FINISH UNLESS NOTED OTHERWISE.
8. THESE DRAWINGS DO NOT INCLUDE NECESSARY COMPONENTS FOR CONSTRUCTION SAFETY. SAFETY OF ALL PARTIES ON THE JOB SITE IS THE CONTRACTOR'S RESPONSIBILITY.
9. UNLESS SPECIFICALLY SHOWN OR NOTED ON THE DRAWINGS, NO STRUCTURAL MEMBER SHALL BE CUT, NOTCHED, BORED, OR OTHERWISE WEAKENED WITHOUT THE PERMISSION OF THE STRUCTURAL ENGINEER OR ARCHITECT. GRADE BEAMS, FOOTINGS AND STRUCTURAL SLABS, SHALL NOT BE SLEEVED WITHOUT WRITTEN APPROVAL OF THE STRUCTURAL ENGINEER UNLESS OTHERWISE NOTED ON PLANS.
10. ALL UTILITIES TO BE UNDERGROUND PER UTILITY COMPANY AND LOCAL CODE REQUIREMENTS.
11. BUILDINGS SHALL HAVE APPROVED ADDRESS NUMBERS, BUILDING NUMBERS OR APPROVED BUILDINGS IDENTIFICATION PLACED IN A POSITION THAT IS PLAINLY LEGIBLE AND VISIBLE FROM STREET OR ROAD FRONTING THE PROPERTY. THESE NUMBERS SHALL CONTRAST WITH THEIR BACKGROUND. ADDRESS NUMBERS SHALL BE ARABIC NUMBERS OR ALPHABETICAL LETTERS. NUMBERS SHALL BE MIN. 4 IN HIGH WT A MIN. STROKE WIDTH OF .5 IN FOR RESIDENTIAL BUILDING COMPLYING WITH CRC. ALL OTHER BUILDINGS, NUMBERS SHALL BE MIN. OF 6 IN HIGH WITH A MIN. STROKE WIDTH OF 0.5 IN.
12. ADDRESS IDENTIFICATION SHALL BE PROVIDED FOR ALL NEW AND EXISTING BUILDINGS IN A LOCATION THAT IS PLAINLY VISIBLE AND LEGIBLE FROM THE STREET OR ROAD FRONTING THE PROPERTY. WHERE ACCESS IS BY WAY OF A PRIVATE ROAD AND THE BUILDING ADDRESS CANNOT BE VIEWED FROM THE PUBLIC WAY, AN APPROVED SIGN OR MEANS SHALL BE USED TO IDENTIFY THE STRUCTURE. PREMISES IDENTIFICATION SHALL CONFORM TO CBC SECTION 501.2
13. IT IS UNDERSTOOD THAT PLANS FOR THE PROJECT HAVE, AT THIS TIME, BEEN REVIEWED FOR COMPLIANCE WITH ALL APPLICABLE STATE AND CITY REGULATIONS, AND THAT THE PROJECT AS A WHOLE HAS BEEN APPROVED BY THE CITY, WITH THE EXCEPTION OF THE DEFERRED ITEMS LISTED.
14. A CERTIFICATION COMPLETED AND SIGNED BY EITHER THE GENERAL CONTRACTOR OR SUBCONTRACTOR, O THE BUILDING OWNER CERTIFYING THAT THE PAINT, STAIN, AND ADHESIVES, COMPLIES WITH THE REQUIREMENTS OF THE CALIFORNIA GREEN BUILDING CODE.
15. A CERTIFICATION COMPLETED AND SIGNED BY EITHER THE GENERAL CONTRACTOR OR SUBCONTRACTOR, O THE BUILDING OWNER CERTIFYING THAT THE RESILIENT FLOORING, COMPOSITE WOOD, PLYWOOD, PARTICLE BOARD ETC COMPLY WITH THE VOC LIMITS AND FORMALDEHYDE LIMITS SPECIFIED IN THE NOTES OF CALIFORNIA GREEN BUILDING CODE SHEET.
16. THE CONTRACTOR RESPONSIBLE FOR THE CONSTRUCTION OF THE SEISMIC–FORCE–RESISTING SYSTEM SHALL SUBMIT A WRITTEN STATEMENT OF RESPONSIBILITY TO THE BUILDING OFFICIAL PRIOR TO THE COMMENCEMENT OF WORK ON THE SYSTEM. CBC SEC. 1709 – COPIES OF THE FOLLOWING TITLE–24 ENERGY FORMS WILL BE AVAILABLE FOR BUILDING INSPECTOR USE: CF–1. CF–4R AND CF–6R.
17. NOTICE TO THE CONTRACTOR/BUILDER/INSTALLER/SUB–CONTRACTOR/OWNER–BUILDER: BY USING THESE PERMITTED CONSTRUCTION DRAWINGS FOR CONSTRUCTION/INSTALLATION OF THE WORK SPECIFIED HEREIN, YOU ACKNOWLEDGE AND ARE AWARE OF, THE REQUIREMENTS CONTAINED IN THE STATEMENT OF SPECIAL INSPECTIONS. YOU AGREE TO COMPLY WITH THE REQUIREMENTS OF CITY OF SAN DIEGO FOR SPECIAL INSPECTIONS, STRUCTURAL OBSERVATIONS, CONSTRUCTION MATERIAL TESTING AND OFF–SITE FABRICATION OF BUILDING COMPONENTS, CONTAINED IN THE STATEMENT OF SPECIAL INSPECTIONS AND, AS REQUIRED BY THE CALIFORNIA CONSTRUCTION CODES.
18. NOTICE TO THE APPLICANT/OWNER/OWNER'S AGENT or ENGINEER OF RECORD: BY USING THIS PERMITTED CONSTRUCTION DRAWINGS FOR CONSTRUCTION/INSTALLATION OF THE WORK SPECIFIED HEREIN, YOU AGREE TO COMPLY WITH THE REQUIREMENTS OF CITY OF SAN DIEGO FOR SPECIAL INSPECTION, STRUCTURAL OBSERVATIONS, CONSTRUCTION MATERIAL TESTING AND OFF–SITE FABRICATION OF BUILDING COMPONENTS, CONTAINED IN THE STATEMENT OF SPECIAL INSPECTIONS AND, AS REQUIRED BY THE CALIFORNIA CONSTRUCTION CODES.

SPECIAL INSPECTION NOTES

A CERTIFICATE OF SATISFACTORY COMPLETION OF WORK REGARDING SPECIAL INSPECTION MUST BE COMPLETED AND SUBMITTED TO THE INSPECTION SERVICES DIVISION

FABRICATOR MUST BE APPROVED BY THE CITY OF SAN DIEGO DEVELOPMENT SERVICES FOR THE FABRICATION OF MEMBERS AND ASSEMBLIES ON THE PREMISES OF THE FABRICATOR'S SHOP.

FABRICATOR SHALL SUBMIT AN APPLICATION TO PERFORM OFF–SITE FABRICATION TO THE INSPECTION SERVICES DIVISION FOR APPROVAL PRIOR TO COMMENCEMENT OF FABRICATION AND ERECTION OF PREFABRICATED COMPONENTS..

FABRICATOR SHALL SUBMIT AN CERTIFICATE OF COMPLIANCE FOR OFF–SITE FABRICATION O THE INSPECTION SERVICES DIVISION PRIOR TO ERECTION OF FABRICATED ITEMS AND ASSEMBLIES.

SOILS SPECIAL INSPECTIONS SHALL BE PERFORMED BY THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE (SOILS ENGINEER OR GEOTECHNICAL ENGINEER OF RECORD) WHO HAS PREPARED THE APPROVED GEOTECHNICAL INVESTIGATION REPORT.

THE SPECIAL INSPECTOR MUST BE CERTIFIED BY THE CITY OF SAN DIEGO DEVELOPMENT SERVICES IN CATEGORY OF WORK REQUIRED TO HAVE SPECIAL INSPECTION.

THE CONSTRUCTION MATERIALS TESTING LABORATORY MUST BE APPROVED BY THE CITY OF SAN DIEGO DEVELOPMENT SERVICES FOR TESTING MATERIALS, SYSTEMS, COMPONENTS AND EQUIPMENTS.

A PROPERTY OWNER FINAL REPORT FORM FOR WORK REQUIRED TO HAVE SPECIAL INSPECTION, TESTING AND STRUCTURAL OBSERVATIONS MUST BE COMPLETED BY THE PROPERTY OWNER, PROPERTY OWNER AGENTS OF RECORD, ARCHITECT OF RECORD OR ENGINEER OF RECORD AND SUBMITTED TO THE INSPECTIONS SERVICES DIVISION.

FIRE NOTES

1.WALL, FLOOR AND CEILING FINISHES AND MATERIALS SHALL NOT EXCEED THE INTERIOR FINISH CLASSIFICATIONS IN CBC TABLE 803.9 AND SHALL MEET THE FLAME PROPAGATION PERFORMANCE CRITERIA OF THE CALIFORNIA CODE OF REGULATIONS, TITLE 19, DIVISION 1. DECORATIVE MATERIALS SHALL BE PROPERLY TREATED BY A PRODUCTS OR PROCESS APPROVED BY THE STATE FIRE MARSHAL WITH APPROPRIATE DOCUMENTATION PROVIDED TO THE CITY OF SAN DIEGO.

2.THE EGRESS PATH SHALL REMAIN FREE AND CLEAR OF ALL OBSTRUCTIONS AT ALL TIMES. NO STORAGE IS PERMITTED IN ANY EGRESS PATHS.

3.ALL FIRE ACCESS ROADS WILL BE CAPABLE OF SUPPORTING THE IMPOSED LOAD OF AT LEAST 75,000 LBS AND WILL NOT EXCEED 10% OF GRADE. ALL FEATURES OF THE FIRE ACCESS ROADS INCLUDING TURNING RADIUS AND DEAD END DESIGN WILL BE IN ACCORDANCE WITH CFC 503 AND APPENDIX D.

4.LOCATIONS AND CLASSIFICATIONS OF EXTINGUISHERS SHALL BE IN ACCORDANCE WITH CFC 906 AND CALIFORNIA CODE OF REGULATIONS (CCR), TITLE 19

5.DURING CONSTRUCTION, AT LEAST ONE EXTINGUISHER SHALL BE PROVIDED ON EACH FLOOR LEVEL AT EACH STAIRWAY, IN ALL STORAGE AND CONSTRUCTION SHEDS, IN LOCATIONS WHERE FLAMMABLE OR COMBUSTIBLE LIQUIDS ARE STORED OR USED, AND WHERE OTHER SPECIAL HAZARDS ARE PRESENT PER CC SECTION 3315.1.

6.IN BUILDINGS THAT REQUIRE STANDPIPES, STANDPIPES SHALL BE PROVIDED DURING CONSTRUCTION WHEN THE HEIGHT REACHES 40 FEET ABOVE THE LOWEST LEVEL OF FIRE DEPARTMENT VEHICLE ACCESS. A FIRE DEPARTMENT CONNECTION SHALL BE NO MORE THAN 100 FEET FROM AVAILABLE FIRE DEPARTMENT VEHICLE ACCESS ROADWAYS.

7.BUILDINGS UNDERGOING CONSTRUCTION, ALTERATION, OR DEMOLITION SHALL CONFORM TO CFC CHAPTER 33. WELDING, CUTTING, AND OTHER HOT WORK SHALL BE IN CONFORMANCE WITH CFC CHAPTER 35

8.KEY BOXES SHALL BE PROVIDED FOR ALL HIGH–RISE BUILDINGS, POOL ENCLOSURES, GATES IN THE PATH OF FIREFIGHTER TRAVEL TO STRUCTURES, SECURED PARKING LEVELS, DOORS GIVING ACCESS TO ALARM PANELS AND/OR ANNUNCIATORS, AND ANY OTHER STRUCTURES OR AREAS WHERE ACCESS TO AN AREA IS RESTRICTED AND SHALL BE

9.DUMPSTERS AND TRASH CONTAINERS EXCEEDING 1.5 CUBIC YARDS SHALL NOT BE STORED IN BUILDINGS OR PLACED WITHIN 5 FEET OF COMBUSTIBLE WALLS, OPENINGS OR COMBUSTIBLE ROOF EAVE LINES UNLESS PROTECTED BY AND APPROVED SPRINKLER SYSTEM OR LOCATED IN A TYPE I OR IIA STRUCTURE SEPARATED BY 10 FEET FROM OTHER STRUCTURES. CONTAINERS LARGER THAN 1 CUBIC YARD SHALL BE OF NON– OR LIMITED– COMBUSTIBLE MATERIALS OR SIMILARLY PROTECTED OR SEPARATED. CFC 304.3

10.EXITS, EXIT SIGNS, FIRE ALARM PANELS, HOSE CABINETS, FIRE EXTINGUISHER LOCATIONS, AND STANDPIPE CONNECTIONS SHALL NOT BE CONCEALED BY CURTAINS, MIRRORS, OR OTHER DECORATIVE MATERIAL.

11.OPEN FLAMES, FIRE, AND BURNING ON ALL PREMISES IS PROHIBITED EXCEPT AS SPECIFICALLY PERMITTED BY THE CITY OF SAN DIEGO AND CFC 308

12.COMPLETE PLANS AND SPECIFICATIONS FOR ALL FIRE EXTINGUISHING SYSTEMS, INCLUDING AUTOMATIC SPRINKLERS AND STANDPIPES SYSTEMS AND OTHER SPECIAL FIRE EXTINGUISHING SYSTEMS AND RELATED APPURTENANCES SHALL BE SUBMITTED TO THE CITY OF SAN DIEGO FOR REVIEW AND APPROVAL PRIOR TO INSTALLATION. CFC 901.2

A. TO SCHEDULE A FIRE INSPECTION, CONTACT THE CHULA VISTA FIRE DEPARTMENT AT (619) 691–5029.
B. PROJECT SHALL COMPLY WITH CALIFORNIA FIRE CODE CHAPTER 33, "FIRE SAFETY DURING CONSTRUCTION AND DEMOLITION".

FIRE SPRINKLERS	☒ REQUIRED	NOT REQUIRED

THIS PROJECT IS TO BE PROTECTED THROUGHOUT BY AN APPROVED AUTOMATIC FIRE SPRINKLER SYSTEM IN ACCORDANCE WITH NFPA 13

Deferred Items

Plans for the design and installation of the fire protection systems(s) are to be deferred submittal and shall be submitted and approved, prior to any installation work, to CVFD Fire prevention Division located at 276 Fourth Ave, Bldg. C (619) 691–5029. Submittals required for this project:

–Fire Sprinklers

Health Department approval required

"FOG" Permit Required

SOILS NOTE

THE PLANS AND SPECIFICATIONS ARE IN COMPLIANCE WITH THE GEOTECHNICAL REPORT

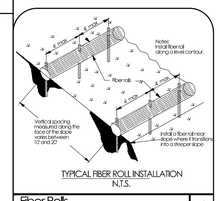
PLEASE REVIEW GEOTECHNICAL INVESTIGATION REPORT FOR FINDINGS, CONCLUSIONS AND RECOMMENDATIONS.

OWNER SIGNATURE: NOT APPLICABLE

STORM WATER QUALITY NOTES CONSTRUCTION BMP'S

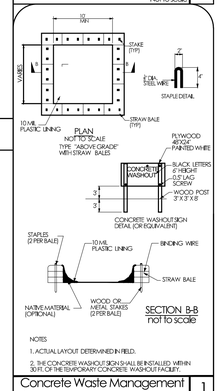
PRIOR TO ANY SOIL DISTURBANCE, TEMPORARY SEDIMENT CONTROLS SHALL BE INSTALLED BY THE CONTRACTOR OR QUALIFIED PERSON(S) AS INDICATED BELOW:

1. ALL REQUIREMENTS OF THE CITY OF SAN DIEGO "STORM WATER STANDARDS MANUAL" MUST BE INCORPORATED INTO THE DESIGN AND CONSTRUCTION OF THE PROPOSED GRADING/IMPROVEMENTS CONSISTENT WITH THE APPROVED STORM WATER POLLUTION PREVENTION PLAN (SWPPP) AND/OR WATER POLLUTION CONTROL PLAN (WPCP) FOR CONSTRUCTION LEVEL BMPS AND, IF APPLICABLE, THE STORM WATER QUALITY MANAGEMENT PLAN (SWQMP) FOR POST–CONSTRUCTION BMPS.
2. THE CONTRACTOR SHALL INSTALL AND MAINTAIN ALL STORM DRAIN INLET PROTECTION. INLET PROTECTION IN THE PUBLIC RIGHT–OF–WAY MUST BE TEMPORARILY REMOVED PRIOR TO A RAIN EVENT TO ENSURE NO FLOODING OCCURS AND REINSTALLED AFTER RAIN IS OVER.
3. ALL CONSTRUCTION BMPS SHALL BE INSTALLED AND PROPERLY MAINTAINED THROUGHOUT THE DURATION OF CONSTRUCTION.
4. THE CONTRACTOR SHALL ONLY GRADE, INCLUDING CLEARING AND GRUBBING, AREAS FOR WHICH THE CONTRACTOR OR QUALIFIED CONTRACTOR CAN PROVIDE EROSION AND SEDIMENT CONTROL MEASURES
5. THE CONTRACTOR IS RESPONSIBLE FOR ENSURING THAT ALL SUB–CONTRACTORS AND SUPPLIERS A;< C: AWARE OF ALL STORM WATER BMPS AND IMPLEMENT SUCH MEASURES. FAILURE TO COMPLY WITH THE APPROVED SWPPP/WPCP WILL RESULT IN THE ISSUANCE OF CORRECTION NOTICES, CITATIONS, CIVIL PENALTIES, AND/ OR STOP WORK NOTICES.
6. THE CONTRACTOR OR QUALIFIED CONTACT PERSON SHALL BE RESPONSIBLE FOR CLEANUP OF ALL SILT, DEBRIS, AND MUD ON AFFECTED AND ADJACENT STREET(S) AND WITHIN STORM DRAIN SYSTEM DUE–TO , CONSTRUCTION VEHICLES/EQUIPMENT AND CONSTRUCTION ACTIVITY AT THE END OF EACH WORK DAY.
7. THE CONTRACTOR SHALL PROTECT NEW AND EXISTING STORM WATER CONVEYANCE SYSTEMS FROM SEDIMENTATION, CONCRETE RINSE, OR OTHER CONSTRUCTION–RELATED DEBRIS AND DISCHARGES WITH THE APPROPRIATE BMPS THAT ARE ACCEPTABLE TO THE CITY RESIDENT ENGINEER AND AS INDICATED IN THE SWPPP/WPCP
8. THE CONTRACTOR OR QUALIFIED CONTACT PERSON SHALL CLEAR DEBRIS, SILT, AND MUD FROM ALL DITCHES AND SWALES PRIOR TO AND WITHIN 3 BUSINESS DAYS AFTER EACH RAIN EVENT OR PRIOR TO THE NEXT RAIN EVENT, WHICHEVER IS SOONER.
9. IF A NON–STORM WATER DISCHARGE LEAVES THE SITE, THE CONTRACTOR SHALL IMMEDIATELY STOP THE ACTIVITY AND REPAIR THE DAMAGES. THE CONTRACTOR SHALL NOTIFY THE CITY RESIDENT ENGINEER OF THE DISCHARGE, PRIOR TO RESUMING CONSTRUCTION ACTIVITY. ANY AND ALL WASTE MATERIAL SEDIMENT, AND DEBRIS FROM EACH NON–STORM WATER DISCHARGE SHALL BE REMOVED FROM. THE STORM DRAIN CONVEYANCE SYSTEM AND PROPERLY DISPOSED OF BY THE CONTRACTOR.
10. EQUIPMENT AND WORKERS FOR EMERGENCY WORK SHALL BE MADE AVAILABLE AT ALL TIMES. ALL NECESSARY MATERIALS SHALL BE STOCKPILED ONSITE AT CONVENIENT LOCATIONS TO FACILITATE RAPID DEPLOYMENT OF CONSTRUCTION BMPS WHEN RAIN IS IMMINENT.
11. THE CONTRACTOR SHALL RESTORE AND MAINTAIN ALL EROSION AND SEDIMENT CONTROL BMPS TO WORKING ORDER YEAR–ROUND.
12. THE CONTRACTOR SHALL INSTALL ADDITIONAL EROSION AND SEDIMENT CONTROL MEASURES DUE TO UNFORESEEN CIRCUMSTANCES TO PREVENT NON–STORM WATER AND SEDIMENT–LADEN DISCHARGES.
13. THE CONTRACTOR SHALL BE RESPONSIBLE AND SHALL TAKE NECESSARY PRECAUTIONS TO PREVENT PUBLIC TRESPASS ONTO AREAS WHERE IMPOUNDED WATERS CREATE A HAZARDOUS CONDITION.
14. ALL EROSION AND SEDIMENT CONTROL MEASURES PROVIDED PER THE APPROVED SWPPP/WPCP SHALL BE INSTALLED AND MAINTAINED. ALL EROSION AND SEDIMENT CONTROLS FOR INTERIM CONDITIONS SHALL BE PROPERLY DOCUMENTED ,AND INSTALLED TO THE SATISFACTION OF HE CITY RESIDENT ENGINEER.
15. AS NECESSARY, THE CITY RESIDENT ENGINEER SHALL SCHEDULE MEETINGS FOR THE PROJECT TEAM (GENERAL CONTRACTOR, QUALIFIED CONTACT PERSON, EROSION CONTROL SUBCONTRACTOR IF ANY, ENGINEER OF WORK, OWNER/DEVELOPER, AND THE CITY RESIDENT ENGINEER) TO EVALUATE THE ADEQUACY OF THE EROSION AND SEDIMENT CONTROL MEASURES AND OTHER BMPS RELATIVE TO ANTICIPATED CONSTRUCTION ACTIVITIES.
16. THE CONTRACTOR OR QUALIFIED CONTACT PERSON SHALL CONDUCT VISU.A.L INSPECTIONS AND MAINTAIN BMPS DAILY AND AS NEEDED, VISUAL INSPECTIONS AND MAINTENANCE OF ALL BMPS SHALL BE CONDUCTED BEFORE, DURING AND AFTER EVERY RAIN EVENT AND EVERY 24 HOURS DURING ANY PROLONGED RAIN EVENT. THE CONTRACTOR SHALL MAINTAIN AND REPAIR ALL BMPS AS SOON AS POSSIBLE AS SAFETY ALLOWS
17. CONSTRUCTION ENTRANCE AND EXIT AREA. TEMPORARY CONSTRUCTION ENTRANCE AND EXITS SHALL BE CONSTRUCTED IN ACCORDANCE WITH CASQA FACT SHEET TC–1OR CAL TRANS FACT SHEET TC–01 PREVENT TRACKING OF SEDIMENT AND OTHER POTENTIAL POLLUTANTS ONTO PAVED SURFACES AND TRAVELED WAYS. WIDTH SHALL BE 10' OR THE MINIMUM NECESSARY TO ACCOMMODATE VEHICLES AND EQUIPMENT WITHOUT BY–PASSING THE ENTRANCE. (a) NON–STORM WATER DISCHARGES SHALL BE EFFECTIVELY MANAGED PER THE SANTEE MUNICIPAL CODE CHAPTER 4, ARTICLE 3, DIVISION 3 "STORM WATER MANAGEMENT AND DISCHARGE CONTROL".



TYPICAL FIBER ROLL INSTALLATION
N.T.S.

Fiber Rolls — Not to scale — 2



Concrete Waste Management — Not to scale — 1

Concrete–Encased Electrode. An electrode encased by at least 2 in. (50.8 mm) of concrete, located within and near the bottom of a concrete foundation or footing that is in direct contact with the earth, consisting of at least 20 ft (6.1 m) of one or more bare or zinc galvanized or other electrically conductive coated steel reinforcing bars or rods of not less than ½–in. (12.7–mm) diameter, or consisting of at least 20 ft (6.1 m) of bare copper conductor not smaller than No. 4. Reinforcing bars shall be permitted to be bonded together by the usual steel tie wires or other effective means.

1.all heating, ventilating, air conditioning, and water heating equipment shall meet all of the requirements of the appliance efficiency standards and shall be certified to the california energy commission.

2.a two stage thermostat, which controls the supplementary heat on its second stage, shall be required for heat pumps.

3.thermostats, except those controlling heat pumps, shall be equipped with an automatic setback, which the building occupant can programn to automatically set back the thermostat. set points for at least 2 periods within 24 hours.

4.equipment which requires preventive maintenance to maintain efficient operation shall be furnished with complete necessary maintenance information.

5.all gas–fired fan type central furnaces, gas–fired fan type wall furnaces, and cooking appliances shall be equipped with an intermittent ignition device.

6.all fan systems exhausting air to the outside shall be provided with backdraft dampers.

7.all transverse duct, plenum, and fitting joints shall be sealed with pressure sensitive tape or mastic to prevent air loss and shall be insulated to conform to the provisions of section 1005 of the current 2022 CMC

8.a vapor barrier is required in climate zone 1, 14 and 16.

9.all manufactured windows and sliding glass doors shall meet the current ansi air infiltration standards and shall be certified and labeled.

10.all swinging doors and windows leading to unconditioned areas shall be fully weather–stripped.

11.storage type water heaters and storage and backup tanks for solar systems shall be externally wrapped with r–12 insulation or greater.

12.the five feet of pipe closest to the water heater, if outside conditioned space, shall be insulated with a minimum of r–3 steam and steam condensation return piping and recirculating hot water piping outside the building envelope shall be insulated in accordance with 120–1405(d).

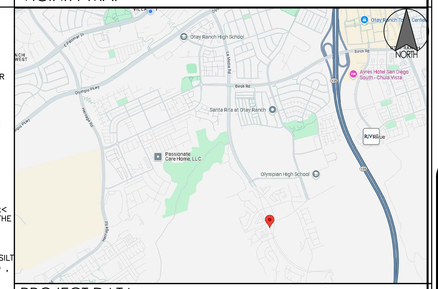
13.showerheads and faucets shall be equipped with flow restrictors as outlined in the appliance efficiency standards and shall be certified to the energy commission.

14.insulation used shall comply with california quality standards. the insulation installer shall post a signed certificate...section 276.

15.for infiltration control all openings and penetrations must be caulked and sealed, such as around windows, at sole plates, and openings for utility pipes and wires.

16.all new glazing (fenestration) will be installed with a certifying label attached, showing the u–value.

VICINITY MAP



PROJECT DATA

APN: 644–071–03–00

LEGAL DESCRIPTION:
TR 16428 LOT 3

ADDRESS: 1982 La media Pkwy South, Chula Vista CA 91913

ZONE: T4–TC–OTAY RANCH Village 8 West

LOT SIZE: 223,8989 SF / 5.140 Acres

LOT STATUS: COMMERCIAL

CONSTRUCTION TYPE: V–A

(E)OCCUPANCY: M/B **PROPOSED:** M

YEAR BUILT: 2023

No. OF STORIES: 4

SPRINKLERS: YES

PROPERTY OWNER: Otay Affordable I V8, LP
11150 West Olympic Blvd Suite 620
Phone: (310)575–3543 Ext 620

ACCOUNT INFO

FINANCIALLY RESPONSIBLE PARTY FOR THE WATER & SEWER FEES ASSOCIATED WITH THIS PROJECT

NAME: NADER HANNA

ADDRESS: 1811 L Ave, National City, CA 91950

PHONE: 619 655–9202

SCOPE OF WORK

PROPOSED TENANT IMPROVEMENT
Proposed Mini Market, with Deli,
New Walk in Cooler, new counter, NO food Preparation

New All gender Bath Rm

BUILDING AREA TABULATION

EXISTING
EXISTING COMMERCIAL SPACE 2,240 sf

PROPOSED/NEW
TENANT IMPROVEMENT: 2,240 sf
TOTAL AREA : 2,240 sf

"Alterations or Improvements to Single Family Residential Real Property.
As of January 1, 2014, Senate Bill 407 requires a building permit applicant to replace all noncompliant plumbing fixtures in properties built and available for use on or before January 1, 1994, with water–conserving plumbing fixtures as a condition for approval of a final building permit for building alterations or improvements.

BUILDING PERMIT NUMBER B25–0397

COMPLIANCE WITH CBC CHAPTER 11B REQUIRED

J Torres Designs

COTA VERA MINI MARKET
1982 LA Media Pkwy South, Chula Vista, CA 91913
TENANT IMPROVEMENT–NEW MINI MARKET–LIQUOR

SHEET CONTENT:

TITLE PAGE

REVISIONS:

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Check: Jose Perez
Date: 12/30/25

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sheet no. P

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2022 CALIFORNIA GREEN BUILDING STANDARDS CODE

NONRESIDENTIAL MANDATORY MEASURES, SHEET 1 (July 2024 Supplement)

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

Y | N/A | RESPON. PARTY

CHAPTER 3
GREEN BUILDING
SECTION 301 GENERAL

301.1 SCOPE. Buildings shall be designed to include the green building measures specified as mandatory in the application checklists contained in this code. Voluntary green building measures are also included in the application checklists and may be included in the design and construction of structures covered by this code, but are not required unless adopted by a city, county, or city and county as specified in Section 101.7.

301.3 NONRESIDENTIAL ADDITIONS AND ALTERATIONS. [BSC-CG] The provisions of individual sections of Chapter 5 apply to newly constructed buildings, building additions of 1,000 square feet or greater, and/or building alterations with a permit valuation of $200,000 or above (for occupancies within the authority of California Building Standards Commission). Code sections relevant to additions and alterations shall only apply to the portions of the building being added or altered within the scope of the permitted work.

A code section will be designated by a banner to indicate where the code section only applies to newly constructed buildings [N] or to additions and/or alterations [A]. When the code section applies to both, no banner will be used.

301.3.1 Nonresidential additions and alterations that cause updates to plumbing fixtures only:

Note: On and after January 1, 2014, certain commercial real property, as defined in Civil Code Section 1101.3, shall have its noncompliant plumbing fixtures replaced with appropriate water-conserving plumbing fixtures under specific circumstances. See Civil Code Section 1101.1 *et seq.* for definitions, types of commercial real property affected, effective dates, circumstances necessitating replacement of noncompliant plumbing fixtures, and duties and responsibilities for ensuring compliance.

301.3.2 Waste Diversion. The requirements of Section 5.408 shall be required for additions and alterations whenever a permit is required for work.

301.4 PUBLIC SCHOOLS AND COMMUNITY COLLEGES. (see GBSC)
301.5 HEALTH FACILITIES. (see GBSC)

SECTION 302 MIXED OCCUPANCY BUILDINGS

302.1 MIXED OCCUPANCY BUILDINGS. In mixed occupancy buildings, each portion of a building shall comply with the specific green building measures applicable to each specific occupancy.

SECTION 303 PHASED PROJECTS

303.1 PHASED PROJECTS. For shell buildings and others constructed for future tenant improvements, only those code measures relevant to the building components and systems considered to be new construction (or newly constructed) shall apply.

303.1.1 Initial Tenant improvements. The provisions of this code shall apply only to the initial tenant improvements to a project. Subsequent tenant improvements shall comply with the scoping provisions in Section 301.3 non-residential additions and alterations.

ABBREVIATION DEFINITIONS:

HCD	Department of Housing and Community Development
BSC	California Building Standards Commission
DSA-SS	Division of the State Architect, Structural Safety
OSHPD	Office of Statewide Health Planning and Development
LR	Low Rise
HR	High Rise
AA	Additions and Alterations
N	New

CHAPTER 5
NONRESIDENTIAL MANDATORY MEASURES

DIVISION 5.1 PLANNING AND DESIGN

SECTION 5.101 GENERAL

5.101.1 SCOPE
The provisions of this chapter outline planning, design and development methods that include environmentally responsible site selection, building design, building siting and development to protect, restore and enhance the environmental quality of the site and respect the integrity of adjacent properties.

SECTION 5.102 DEFINITIONS

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

CUTOFF LUMINAIRES. Luminaires whose light distribution is such that the candela per 1000 lamp lumens does not numerically exceed 25 (2.5 percent) at an angle of 90 degrees above nadir, and 100 (10 percent) at a vertical angle of 80 degrees above nadir. This applies to all lateral angles around the luminaire.

ELECTRIC VEHICLE (EV). [BSC-CG, HCD] An automotive-type vehicle for on-road use, such as passenger automobiles, buses, trucks, vans, neighborhood electric vehicles, electric motorcycles and the like, primarily powered by an electric motor that draws current from a rechargeable storage battery, fuel cell, photovoltaic array or other source of electric current. Plug-in hybrid electric vehicles (PHEV) are considered electric vehicles. For purposes of the California Electrical Code, off-road, self-propelled electric vehicles, such as industrial trucks, hoists, lifts, transports, golf carts, airline ground support equipment, tractors, boats and the like, are not included.

ELECTRIC VEHICLE (EV) CAPABLE SPACE. [BSC-CG, DSA-SS and HCD] A vehicle space with electrical panel space and load capacity to support a branch circuit and necessary raceways, both underground and/or surface mounted, to support EV charging.

ELECTRIC VEHICLE (EV) CHARGER. [BSC-CG, HCD] Off-board charging equipment used to charge an electric vehicle.

ELECTRIC VEHICLE CHARGING SPACE (EV SPACE). [HCD] A space intended for future installation of EV charging equipment and charging of electric vehicles.

ELECTRIC VEHICLE CHARGING STATION (EVCS). [BSC-CG, DSA-SS, HCD] One or more electric vehicle charging spaces served by EVSE or receptacle(s).

ELECTRIC VEHICLE (EV) READY SPACE. [HCD] A vehicle space which is provided with a branch circuit; any necessary raceways, both underground and/or surface mounted; to accommodate EV charging, terminating in a receptacle or a charger.

ELECTRIC VEHICLE SUPPLY EQUIPMENT (EVSE).[BSC-CG, DSA-SS and HCD] The conductors, including the ungrounded, grounded and equipment grounding conductors and the electric vehicle connectors, attachment plugs, personnel protection system, and all other fittings, devices, power outlets or apparatus installed specifically for the purpose of transferring energy between the premises wiring and the electric vehicle.

SECTION 5.105 DECONSTRUCTION AND REUSE OF EXISTING STRUCTURES

5.105.1 Scope. [BSC-CG] Effective July 1, 2024, alteration(s) to existing building(s) where the combined altered floor area is 100,000 square feet or greater shall comply with either Section 5.105.2, 5.409.2, or 5.409.3. Addition(s) to existing building(s) where the total floor area combined with the existing building(s) is 100,000 square feet or greater shall comply with either Section 5.105.2, Section 5.409.2, or Section 5.409.3. Effective January 1, 2026, the combined floor area shall be 50,000 square feet or greater.

[DSA-SS] Alteration(s) to existing building(s) where the combined altered floor area is 50,000 square feet or greater shall comply with either Section 5.105.2, 5.409.2, or 5.409.3. Addition(s) to existing building(s) where the total floor area combined with the existing building(s) is 50,000 square feet or greater shall comply with either Section 5.105.2, Section 5.409.2, or Section 5.409.3.

Exception [BSC-CG, DSA-SS]: Combined addition(s) to existing building(s) of two times the area or more of the existing building(s) is not eligible to meet compliance with Section 5.105.2.

5.105.2 Reuse of existing building. An alteration or addition to an existing building shall maintain at a minimum 45 percent combined of the existing building's primary structural elements (foundations; columns, beams, walls, and floors; and lateral elements) and existing building enclosure (roof framing, wall framing and exterior finishes). Window assemblies, insulation, portions of buildings deemed structurally unsound or hazardous, and hazardous materials that are remediated as part of the project shall not be included in the calculation.

5.105.2.1 Verification of compliance. Documentation shall be provided in the construction documents to demonstrate compliance with Section 5.105.2.

Note: Sample Worksheet WS-3 in Chapter 8 may be used to assist in documenting compliance with this section.

5.105.3 Deconstruction (Reserved).

Y | N/A | RESPON. PARTY

SECTION 5.106 SITE DEVELOPMENT

5.106.1 STORM WATER POLLUTION PREVENTION FOR PROJECTS THAT DISTURB LESS THAN ONE ACRE OF LAND. Newly constructed projects and additions which disturb less than one acre of land, and are not part of a larger common plan of development or sale, shall prevent the pollution of storm water runoff from the construction activities through one or more of the following measures:

5.106.1.1 Local ordinance. Comply with a lawfully enacted storm water management and/or erosion control ordinance.

5.106.1.2 Best Management Practices (BMPs). Prevent the loss of soil through wind or water erosion by implementing an effective combination of erosion and sediment control and good housekeeping BMPs.

1. Soil loss BMPs that should be considered for implementation as appropriate for each project include, but are not limited to, the following:
   a. Scheduling construction activity during dry weather, when possible.
   b. Preservation of natural features, vegetation, soil, and buffers around surface waters.
   c. Drainage swales or lined ditches to control stormwater flow.
   d. Mulching or hydroseeding to stabilize disturbed soils.
   e. Erosion control to protect slopes.
   f. Protection of storm drain inlets (gravel bags or catch basin inserts).
   g. Perimeter sediment control (perimeter silt fence, fiber rolls).
   h. Sediment trap or sediment basin to retain sediment on site.
   i. Stabilized construction exits.
   j. Wind erosion control.
   k. Other soil loss BMPs acceptable to the enforcing agency.
2. Good housekeeping BMPs to manage construction equipment, materials, non-stormwater discharges and wastes that should be considered for implementation as appropriate for each project include, but are not limited to, the following:
   a. Dewatering activities.
   b. Material handling and waste management.
   c. Building materials stockpile management.
   d. Management of washout areas (concrete, paints, stucco, etc.).
   e. Control of vehicle/equipment fueling to contractor's staging area.
   f. Vehicle and equipment cleaning performed off site.
   g Spill prevention and control.
   h. Other housekeeping BMPs acceptable to the enforcing agency.

5.106.2 STORMWATER POLLUTION PREVENTION FOR PROJECTS THAT DISTURB ONE OR MORE ACRES OF LAND. Comply with all lawfully enacted stormwater discharge regulations for projects that (1) disturb one acre or more of land, or (2) disturb less than one acre of land but are part of a larger common plan of development sale.

Note: Projects that (1) disturb one acre or more of land, or (2) disturb less than one acre of land but are part of the larger common plan of development or sale must comply with the post-construction requirements detailed in the applicable National Pollutant Discharge Elimination System (NPDES) General permit for Stormwater Discharges Associated with Construction and Land Disturbance Activities issued by the State Water Resources Control Board or the Lahontan Regional Water Quality Control Board (for projects in the Lake Tahoe Hydrologic Unit).

The NPDES permits require postconstruction runoff (post-project hydrology) to match the preconstruction runoff (pre-project hydrology) with the installation of postconstruction stormwater management measures. The NPDES permits emphasize runoff reduction through on-site stormwater use, interception, evapotranspiration, and infiltration through nonstructural controls, such as Low Impact Development (LID) practices, and conversation design measures. Stormwater volume that cannot be addressed using nonstructural practices is required to be captured in structural practices and be approved by the enforcing agency.

Refer to the current applicable permits on the State Water Resources Control Board website at: www.waterboards.ca.gov/constructionstormwater. Consideration to the stormwater runoff management measures should be given during the initial design process for appropriate integration into site development.

5.106.4 BICYCLE PARKING. For buildings within the authority of California Building Standards Commission as specified in Section 103, comply with Section 5.106.4.1. For buildings within the authority of the Division of the State Architect pursuant to Section 105, comply with Section 5.106.4.2

5.106.4.1 Bicycle parking. [BSC-CG] Comply with Sections 5.106.4.1.1 and 5.106.4.1.2; or meet the applicable local ordinance, whichever is stricter.

5.106.4.1.1 Short-term bicycle parking. If the new project or an addition or alteration is anticipated to generate visitor traffic, provide permanently anchored bicycle racks within 200 feet of the visitors' entrance, readily visible to passers-by, for 5% of new visitor motorized vehicle parking spaces being added, with a minimum of one two-bike capacity rack.
Exception: Additions or alterations which add nine or less visitor vehicular parking spaces.

5.106.4.1.2 Long-term bicycle parking. For new buildings with tenant spaces that have 10 or more tenant-occupants, provide secure bicycle parking for 5 percent of the tenant-occupant vehicular parking spaces with a minimum of one bicycle parking facility.

5.106.4.1.3 For additions or alterations that add 10 or more tenant-occupant vehicular parking spaces, provide secure bicycle parking for 5 percent of the tenant vehicular parking spaces being added, with a minimum of one bicycle parking facility.

5.106.4.1.4 For new shell buildings in phased projects provide secure bicycle parking for 5 percent of the anticipated tenant-occupant vehicular parking spaces with a minimum of one bicycle parking facility.

5.106.4.1.5 Acceptable bicycle parking facility for Sections 5.106.4.1.2, 5.106.4.1.3, and 5.106.4.1.4 shall be convenient from the street and shall meet one of the following:

1. Covered, lockable enclosures with permanently anchored racks for bicycles;
2. Lockable bicycle rooms with permanently anchored racks; or
3. Lockable, permanently anchored bicycle lockers.

Note: Additional information on recommended bicycle accommodations may be obtained from Sacramento Area Bicycle Advocates.

5.106.4.2 Bicycle parking. [DSA-SS] For public schools and community colleges, comply with Sections 5.106.4.2.1 and 5.106.4.2.2

5.106.4.2.1 Student bicycle parking. Provide permanently anchored bicycle racks conveniently accessed with a minimum of four two-bike capacity racks per new building.
5.106.4.2.2 Staff bicycle parking. Provide permanent, secure bicycle parking conveniently accessed with a minimum of two staff bicycle parking spaces per new building. Acceptable bicycle parking facilities shall be convenient from the street or staff parking area and shall meet one of the following:

1. Covered, lockable enclosures with permanently anchored racks for bicycles;
2. Lockable bicycle rooms with permanently anchored racks; or
3. Lockable, permanently anchored bicycle lockers.

5.106.5.3 Electric vehicle (EV) charging. [N] [BSC-CG] Construction to provide electric vehicle infrastructure and facilitate electric vehicle charging shall comply with Section 5.106.5.3.1 EV capable spaces, Section 5.106.5.3.2 Electric vehicle charging stations and associated Table 5.106.5.3.1, or Section 5.106.5.3.6 Electric vehicle charging stations (EVCS)—Power allocation method and associated Table 5.106.5.3.6 and shall be provided in accordance with regulations in the *California Building Code* and the *California Electrical Code*.

Exceptions:
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 enforcement agency substantiating the 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.
2. Parking spaces accessible only by automated mechanical car parking systems are not required to comply with this code section.

5.106.5.3.1 EV capable spaces. [N] EV capable spaces shall be provided in accordance with Table 5.106.5.3.1 and the following requirements:

1. Raceways complying with the California Electrical Code and no less that 1-inch (25 mm) diameter shall be provided and shall originate at a service panel or a subpanel(s) serving the area, and shall terminate in close proximity to the proposed location of the EV capable and into a suitable listed cabinet, box,enclosure or equivalent. A common raceway may be used to serve multiple EV charging spaces.
2. A service panel or subpanel (s) shall be provided with panel space and electrical load capacity for a dedicated 208/240 volt, 40-ampere minimum branch circuit for each EV capable space, with delivery of 30-ampere minimum to an installed EVSE at each EVCS.
3. The electrical system and any on-site distribution transformers shall have sufficient capacity to supply full rated amperage at each EV capable space.
4. The service panel or subpanel circuit directory shall identify the reserved overcurrent protective devices space(s) as "EV CAPABLE". The raceway termination location shall be permanently and visibly marked as "EV CAPABLE."

Note: A parking space served by electric vehicle supply equipment or designed as a future EV charging space shall count as at least one standard automobile parking space only for the purpose of complying with any applicable minimum parking space requirements established by an enforcement agency. See vehicle Code Section 22511.2 for further details.

Y | N/A | RESPON. PARTY

TABLE 5.106.5.3.1		
TOTAL NUMBER OF ACTUAL PARKING SPACES	**NUMBER OF REQUIRED EV CAPABLE SPACES**	**NUMBER OF EVCS (EV CAPABLE SPACES PROVIDED WITH EVSE)[A,2]**
0-9	0	0
10-25	2	0
26-50	8	2
51-75	13	3
76-100	17	4
101-150	25	6
151-200	35	9
201 AND OVER	20 percent of actual parking spaces[1]	25 percent of EV capable spaces[1]

1. Calculation for spaces shall be rounded up to the nearest whole number.
2. The number of required EVCS (EV capable spaces provided with EVSE) in column 3 count toward the total number of required EV capable spaces shown in column 2.
3. At least one Level 2 EVSE shall be provided.

5.106.5.3.2 Electric vehicle charging stations (EVCS) EV capable spaces shall be provided with electric vehicle supply equipment (EVSE) to create EVCS in the number indicated in Table 5.106.5.3.1. The EVCS required by Table 5.106.5.3.1 shall be provided with Level 2 EVSE or DCFC as permitted in Section 5.106.5.3.2.1. At least one Level 2 EVSE shall be provided.

One EV charger with multiple connectors capable of charging multiple EVs simultaneously shall be permitted if the electrical load capacity required by Section 5.106.5.3.1 for each EV capable space is accumulatively supplied to the EV charger.

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 service panel or subpanel.

5.106.5.3.2.1 The installation of each DCFC EVSE shall be permitted to reduce the minimum number of required EV capable spaces without EVSE or EVCS with Level 2 EVSE by five and reduce proportionally the required electrical load capacity to the service panel or subpanel.

5.106.5.3.2.2 The installation of two low power Level 2 EV charging receptacles shall be permitted to reduce the minimum number of required EV capable spaces without EVSE in Table 5.106.5.3.1 by one.

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.
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).

5.106.5.3.4 Accessible electric vehicle charging station (EVCS). When EVSE is installed, accessible EVCS shall be provided in accordance with the *California Building Code*, Chapter 11B, Section 11B-228.3.

5.106.5.3.5 Electric vehicle charging station signage. Electric vehicle charging stations shall be identified by signage or pavement markings in compliance with Caltrans Traffic Operations Policy Directive 13-01 (Zero Emission Vehicle Signs and Pavement Markings) or its successor(s).

Power allocation method shall include the following:
1. Use any kVA combination of EV capable spaces, low power Level 2, Level 2 or DCFC EVSEs.
2. At least one Level 2 EVSE shall be provided.

5.106.5.3.6 Electric vehicle charging stations (EVCS)—power allocation method. The power allocation method may be used as an alternative to the requirements in Section 5.106.5.3.1, Section 5.106.5.3.2 and associated Table 5.106.5.3.1. Use Table 5.106.5.3.6 to determine the total power in kVA required based on the total number of actual parking spaces.

TABLE 5.106.5.3.6		
TOTAL NUMBER OF ACTUAL PARKING SPACES	**MINIMUM TOTAL kVA @ 6.6 kVA**	**TOTAL kVA REQUIRED IN ANY COMBINATION OF EV CAPABLE,3,4 LOW POWER LEVEL 2, LEVEL 2, 1, 2 OR DCFC**
0-9	0	0
10-25	26.4	26.4
26-50	52.8	52.8
51-75	85.8	85.8
76-100	112.2	112.2
101-150	165	165
151-200	231	231
201 AND OVER	20 percent of actual parking spaces x 6.6	Total required kVA = P × .20 × 6.6 Where P = Parking spaces in facility

1. Level 2 EVSE @ 6.6 kVA minimum.
2. At least one Level 2 EVSE shall be provided.
3. Maximum allowed kVA to be utilized for EV capable spaces is 75 percent.
4. If EV capable spaces are utilized, they shall meet the requirements of Section 5.106.5.3.1 EV capable spaces.

5.106.5.4 Additions or alterations to existing buildings or parking facilities [A]. [BSC-CG] Existing buildings or parking facilities being modified by one of the following shall comply with Section 5.106.5.4.1 or 5.106.5.4.2. When EVSE is installed, accessible EVCS shall be provided in accordance with the *California Building Code*, Chapter 11B, Section 11B-228.3.

1. When the scope of construction work includes an increase in power supply to an electric service panel as part of a parking facility addition or alteration.
2. When a new photovoltaic system is installed covering existing parking spaces.
3. When additions or alterations to existing buildings are triggered pursuant to code Section 301.3 and the scope of work includes an increase in power supply to an electric service panel.

Exceptions:
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 enforcement 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.
   d. Where demonstrated as impracticable excluding local utility service or utility infrastructure issues.
2. Remote parking facilities that do not have access to the building service panel.
3. Parking area lighting upgrades where no trenching is part of the scope of work.
4. Emergency repairs, including but not limited to water line break in parking facilities, natural disaster repairs, etc.

5.106.5.4.1 Existing buildings or parking areas without previously installed EV capable infrastructure [A]. When EV capable infrastructure does not exist at an existing parking facility or building, and the parking facility or building undergoes an addition or alteration listed in Section 5.106.5.4, construction shall include electric vehicle charging in compliance with either Section 5.106.5.3 and associated Table 5.106.5.3.1, or Section 5.106.5.3.6 and associated Table 5.106.5.3.6 for the total number of actual parking spaces being added or altered.

5.106.5.4.2 Existing buildings or parking areas with previously installed EV capable infrastructure [A]. When EV capable infrastructure is available at an existing parking facility or building, and the parking facility or building is undergoing an addition or alteration listed in Section 5.106.5.4, construction shall include electric vehicle charging in compliance with either Section 5.106.5.3 and associated Table 5.106.5.3.1, or Section 5.106.5.3.6 and associated Table 5.106.5.3.6 utilizing the existing EV capable allocated power and infrastructure for the total number of actual parking spaces being added or altered. If the area being added or altered exceeds the existing EV capable capacity, allocated power and infrastructure, provide additional EV charging as needed to comply with this section.

Y | N/A | RESPON. PARTY

5.106.5.5 Electric vehicle (EV) charging: medium-duty and heavy-duty. [N] [BSG-CG] Construction shall comply with Section 5.106.5.5.1 to facilitate future installation of electric vehicle supply equipment (EVSE). Construction for warehouses, grocery stores and retail stores, office buildings, and manufacturing facilities with planned off-street loading spaces shall also comply with Section 5.106.5.5.1 for future installation of medium- and heavy-duty EVSE.

Exceptions:
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.

When EVSE(s) is/are installed, it shall be in accordance with the *California Building Code*, the *California Electrical Code* and as follows:

5.106.5.5.1 Electric vehicle charging readiness requirements for warehouses, grocery stores, office buildings, and manufacturing facilities and retail stores with planned off-street loading spaces. [N]

In order to avoid future demolition when adding EV supply and distribution equipment, spare raceway(s) or busway(s) and adequate capacity for transformer(s), service panel(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 subpanels shall meet the minimum power requirement in Table 5.106.5.5.1 to accommodate the dedicated branch circuits for the future installation of EVSE.

2. The construction documents shall indicate one or more location(s) convenient to the planned off-street 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 5.106.5.5.1.

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 equipment for medium- and heavy-duty vehicles.

4. The raceway(s) or busway(s) shall be of 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 5.106.5.5.1.

TABLE 5.106.5.5.1 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**
Grocery	10,000 to 90,000	1 or 2	200
		3 or Greater	400
	Greater than 90,000	1 or Greater	400
Manufacturing Facilities	10,000 to 50,000	1 or 2	200
	10,000 to 50,000	3 or Greater	400
	Greater than 50,000	1 or Greater	400
Office Buildings	10,000 to 135,000	1 or 2	200
	10,000 to 135,000	3 or Greater	400
	Greater than 135,000	1 or Greater	400
Retail	10,000 to 135,000	1 or 2	200
		3 or Greater	400
	Greater than 135,000	1 or Greater	400
Warehouse	20,000 to 256,000	1 or 2	200
		3 or Greater	400
	Greater than 256,000	1 or Greater	400

5.106.5.6 Electric vehicle (EV) charging at public schools and community colleges. [DSA-SS] Electric vehicle infrastructure and electric vehicle charging stations shall comply with Section 5.106.5.6 and shall be provided in accordance with regulations in the California Building Code and the California Electrical Code.

Exceptions:
1. On a case-by-case basis where compliance with this section has been demonstrated to be not feasible based upon one of the following conditions,and with concurrence by the Division of the State Architect (DSA), compliance with Section 5.106.5.6 shall not be required.
   a. Where there is no local utility power supply.
   b. Where the local utility is unable to supply adequate power.
   c. The installation of EVCS is impracticable.
2. Parking spaces accessible only by automated mechanical car parking systems are not required to comply with Section 5.106.5.6.

5.106.5.6.1 EV capable spaces. EV capable spaces shall be provided in accordance with Table 5.106.5.6.1 and the following requirements:

1. Raceways complying with the California Electrical Code and no less than 1-inch (25 mm) diameter shall be provided and shall originate at a service panel or a subpanel(s) serving the area and shall terminate in close proximity to the proposed location of the EV capable space and into a suitable listed cabinet, box, enclosure or equivalent. A common raceway may be used to serve multiple EV capable spaces.

2. A service panel or subpanel(s) shall be provided with panel space and electrical load capacity for a dedicated 208/240 volt, 40-ampere minimum branch circuit for each EV capable space, with delivery of 30-ampere minimum to an installed EVSE at each EVCS.

3. The electrical system and any on-site distribution transformers shall have sufficient capacity to supply full rated amperage at each EV capable space.

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

TABLE 5.106.5.6.1		
TOTAL NUMBER OF ACTUAL PARKING SPACES	**NUMBER OF REQUIRED EV CAPABLE SPACES**	**NUMBER OF REQUIRED EVCS[2]**
0-9	0	0
10-25	4	1
26-50	8	2
51-75	13	3
76-100	17	4
101-150	25	6
151-200	35	9
201 AND OVER	20 percent of total spaces[1]	25 percent of EV capable spaces[1]

1. Calculation for spaces shall be rounded up to the nearest whole number.
2. Each EVCS shall reduce the number of required EV capable spaces by the same number.

5.106.5.6.2 Electric vehicle charging stations (EVCS). EV capable spaces shall be provided with EVSE to create EVCS in the number indicated in Table 5.106.5.6.1 and shall comply with Section 5.106.5.6.2. EVCS shall be serviced by Level 2 or Direct Current Fast Charging (DCFC) EVSE, or with EVSE in any combination of Level 2 and DCFC. Accessible EVCS shall be provided in accordance with *California Building Code* Chapter 11B.

CG-1

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

2022 CALIFORNIA GREEN BUILDING STANDARDS CODE
NONRESIDENTIAL MANDATORY MEASURES, SHEET 2 (July 2024 Supplement)

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

5.106.5.6.2.1 Reduced number of EV capable spaces. The installation of each DCFC EVSE shall be permitted to reduce the minimum number of required EV capable spaces indicated in Table 5.106.5.6.1 by five and reduce proportionally the required electrical load capacity to the service panel or subpanel.

5.106.5.6.2.2 Multiple connectors. EVSE with multiple vehicle connectors capable of charging multiple EVs simultaneously shall be permitted if the electrical load capacity required by Section 5.106.5.6.1 for each EV capable space is accumulatively supplied to the EVSE.

5.106.5.6.2.3 Use of automatic load management systems (ALMS). ALMS shall be permitted for EVCS installed in accordance with Section 5.105.5.6.2. When ALMS is installed, the required electrical load capacity specified in Section 5.106.5.6.1 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.

5.106.5.6.3 EVCS alternative compliance. In lieu of compliance with Section 5.106.5.6.2, EVCS shall be provided with Level 1, low power Level 2, or Level 2, or any combination of Level 1, low power Level 2 or Level 2 EVSE such that the total power supplied by the combination of EVSE meets the minimum power indicated in Table 5.106.5.6.3, based on the total number of actual parking spaces in each parking facility.

TABLE 5.106.5.6.3	
NUMBER OF PARKING SPACES IN A PARKING FACILITY	**MINIMUM TOTAL POWER (KVA) REQUIRED FOR EVCS**
0-9	0
10-25	7
26-50	14
51-75	20
76-100	27
101-150	40
151-200	60
201 AND OVER	Total required KVA = P × .05 × 6.6 Where P = Parking spaces in facility

5.106.5.6.4 EVCS for alterations of or additions to parking facilities. Alterations of or additions to parking facilities shall provide EVCS in compliance with Section 5.106.5.6.4. The installation of infrastructure for EV capable spaces required to be provided without EVSE shall not be required.

5.106.5.6.4.1 Alterations of and additions to parking facilities. EVCS shall be provided in accordance with the number indicated in Table 5.106.5.6.1 or minimum power indicated in Table 5.106.5.6.3 when the scope of work includes an increase in power supply to an electric panel serving light fixtures illuminating the parking area or when area containing parking spaces is added to a parking facility. The number of required EVCS shall be based on the total number of existing and new parking spaces in the parking facility.

5.106.5.6.4.2 Alterations consisting of the installation of photovoltaic systems. EVCS shall be provided in accordance with the number indicated in Table 5.106.5.6.1 or maximum power indicated in Table 5.106.5.6.3 when a new photovoltaic system is installed in an existing parking facility.

5.106.5.6.5 Requirement to install EVSE. Level 2 EVSE shall be provided in all existing EV capable spaces to create EVCS when a project is required by California Administrative Code Section 4-309 to be submitted for plan approval to the Division of the State Architect. When EVSE is installed in existing EV capable spaces, accessible EVCS shall be provided in accordance with *California Building Code* Chapter 11B.

Exception: Projects in which improvements in parking areas consist only of accessibility improvements are not required to comply with Section 5.106.5.6.5.

5.106.8 LIGHT POLLUTION REDUCTION. [N]. I Outdoor lighting systems shall be designed and installed to comply with the following:

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 Chapter 8) and
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.

Exceptions: [N]

1. Luminaires that qualify as exceptions in Sections 130.2 (b) and 140.7 of the California Energy Code.
2. Emergency lighting.
3. 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.

TABLE 5.106.8 [N] MAXIMUM ALLOWABLE BACKLIGHT, UPLIGHT AND GLARE (BUG) RATINGS [1,2]

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	B3	B4	B4
Luminaire back hemisphere is 0.5-1 MH from property line	N/A	B1	B2	B3	B3
Luminaire back hemisphere is less than 0.5 MH from property line	N/A	B0	B0	B1	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
MAXIMUM ALLOWABLE GLARE RATING [3] (G)					
MAXIMUM ALLOWABLE GLARE RATING [3] (G)	N/A	G1	G2	G3	G4
MAXIMUM ALLOWABLE GLARE RATING [3] (G)	N/A	G0	G1	G1	G2
MAXIMUM ALLOWABLE GLARE RATING [3] (G)	N/A	G0	G0	G1	G1
MAXIMUM ALLOWABLE GLARE RATING [3] (G)	N/A	G0	G0	G0	G1

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 *California 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 hemisphere.

Note: [N]
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:

1. Swales.
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 trees 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.

Exceptions:
1. 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 of shade tree planting.
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 dishwashers.

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 climatological parameters.

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

SECTION 5.303 INDOOR WATER USE

5.303.1 METERS. Separate submeters or metering devices shall be installed for the uses described in Sections 503.1.1 and 503.1.2.

5.303.1.1 Buildings in excess of 50,000 square feet. Separate submeters shall be installed as follows:

1. For each individual leased, rented or other tenant space within the building projected to consume more than 100 gal/day (380 L/day), including, but not limited to, spaces used for laundry or cleaners, restaurant or food service, medical or dental office, laboratory, or beauty salon or barber shop.
2. Where separate submeters for individual building tenants are unfeasible, for water supplied to the following subsystems:
   a. Makeup water for cooling towers where flow through is greater than 500 gpm (30 L/s).
   b. Makeup water for evaporative coolers greater than 6 gpm (0.04 L/s).
   c. Steam and hot water boilers with energy input more than 500,000 Btu/h (147 kW).

5.303.1.2 Excess consumption. A separate submeter or metering device shall be provided for any tenant within a new building or within an addition that is projected to consume more than 1,000 gal/day.

5.303.3 WATER CONSERVING PLUMBING FIXTURES AND FITTINGS. Plumbing fixtures (water closets and urinals) and fittings (faucets and showerheads) shall comply with the following:

5.303.3.1 Water Closets. The effective flush volume of all water closets shall not exceed 1.28 gallons per flush. Tank-type water closets shall be certified to the performance criteria of the U.S. EPA WaterSense Specification for Tank-Type toilets.

Note: The effective flush volume of dual flush toilets is defined as the composite, average flush volume of two reduced flushes and one full flush.

5.303.3.2 Urinals.
5.303.3.2.1 Wall-mounted Urinals. The effective flush volume of wall-mounted urinals shall not exceed 0.125 gallons per flush.

5.303.3.2.2 Floor-mounted Urinals. The effective flush volume of floor-mounted or other urinals shall not exceed 0.5 gallons per flush.

5.303.3.3 Showerheads. [BSC-CG]
5.303.3.3.1 Single showerhead. Showerheads shall have a maximum flow rate of not more than 1.8 gallons per minute at 80 psi. Showerheads shall be certified to the performance criteria of the U.S. EPA WaterSense Specification for Showerheads.

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 single valve shall not exceed 1.8 gallons per minute at 80 psi, or the shower shall be designed to allow only one shower outlet to be in operation at a time.
Note: A hand-held shower shall be considered a showerhead.

5.303.3.3 Showerheads. [BSC-CG]
5.303.3.3.1 Single showerhead. Showerheads shall have a maximum flow rate of not more than 1.8 gallons per minute at 80 psi. Showerheads shall be certified to the performance criteria of the U.S. EPA WaterSense Specification for Showerheads.

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 single valve shall not exceed 1.8 gallons per minute at 80 psi, or the shower shall be designed to allow only one shower outlet to be in operation at a time.
Note: A hand-held shower shall be considered a showerhead.

5.303.3.4 Faucets and fountains.
5.303.3.4.1 Nonresidential Lavatory faucets. Lavatory faucets shall have a maximum flow rate of not more than 0.5 gallons per minute at 60 psi.

5.303.3.4.2 Kitchen faucets. Kitchen faucets shall have a maximum flow rate of not more than 1.8 gallons per minute at 60 psi. Kitchen faucets may temporarily increase the flow above the maximum rate, but not to exceed 2.2 gallons per minute at 60 psi, and must default to a maximum flow rate of 1.8 gallons per minute at 60 psi.

5.303.3.4.3 Wash fountains. Wash fountains shall have a maximum flow rate of not more than1.8 gallons per minute/20 [rim space (inches) at 60 psi].

5.303.3.4.4 Metering faucets. Metering faucets shall not deliver more than 0.20 gallons per cycle.

5.303.3.4.5 Metering faucets for wash fountains. Metering faucets for wash fountains shall have a maximum flow rate of not more than 0.20 gallons per minute/20 [rim space (inches) at 60 psi].

Note: Where complying faucets are unavailable, aerators or other means may be used to achieve reduction.

5.303.3.4.6 Pre-rinse spray value
When installed, shall meet the requirements in the *California Code of Regulations*, Title 20 (Appliance Efficiency Regulations), Section 1605.1 (h)(4) Table H-2, Section 1605.3 (h)(4)(A), and Section 1607 (d)(7), and shall be equipped with an integral automatic shutoff.

FOR REFERENCE ONLY: The following table and code section have been reprinted from the *California Code of Regulations*, Title 20 (Appliance Efficiency Regulations), Section 1605.1 (h)(4) and Section 1605.3 (h)(4)(A).

TABLE H-2
STANDARDS FOR COMMERCIAL PRE-RINSE SPRAY VALVES MANUFACTURED ON OR AFTER JANUARY 28, 2019

PRODUCT CLASS [spray force in ounce force (ozf)]	MAXIMUM FLOW RATE (gpm)
Product Class 1 (≤ 5.0 ozf)	1.00
Product Class 2 (> 5.0 ozf and ≤ 8.0 ozf)	1.20
Product Class 3 (> 8.0 ozf)	1.28

5.303.4 COMMERCIAL KITCHEN EQUIPMENT.

5.303.4.1 Food Waste Disposers. Disposers shall either modulate the use of water to no more than 1 gpm when the disposer is not in use (not actively grinding food waste/no-load) or shall automatically shut off after no more than 10 minutes of inactivity. Disposers shall use no more than 8 gpm of water.
Note: This code section does not affect local jurisdiction authority to prohibit or require disposer installation.

5.303.5 AREAS OF ADDITION OR ALTERATION. For those occupancies within the authority of the California Building Standards Commission as specified in Section 103, the provisions of Section 5.303.3 and 5.303.4 shall apply to new fixtures in additions or areas of alteration to the building.

5.303.6 STANDARDS FOR PLUMBING FIXTURES AND FITTINGS. Plumbing fixtures and fittings shall be installed in accordance with the *California Plumbing Code*, and shall meet the applicable standards referenced in Table 1701.1 of the *California Plumbing Code* and in Chapter 6 of this code.

SECTION 5.304 OUTDOOR WATER USE

5.304.1 OUTDOOR POTABLE WATER USE IN LANDSCAPE AREAS. Nonresidential developments shall comply with a local water efficient landscape ordinance or the current California Department of Water Resources' Model Water Efficient Landscape Ordinance (MWELO), whichever is more stringent.

Notes:
1. The Model Water Efficient Landscape Ordinance (MWELO) is located in the California Code of Regulations, Title 23, Chapter 2.7, Division 2.
2. MWELO and supporting documents, including a water budget calculator, are available at: https://www.water.ca.gov/.

5.304.6 OUTDOOR POTABLE WATER USE IN LANDSCAPE AREAS. For public schools and community colleges, landscape projects as described in Sections 5.304.6.1 and 5.304.6.2 shall comply with the California Department of Water Resources Model Water Efficient Landscape Ordinance (MWELO) commencing with Section 490 of Chapter 2.7, Division 2, Title 23, *California Code of Regulations*, except that the evapotranspiration adjustment factor (ETAF) shall be 0.65 with an additional water allowance for special landscape areas (SLA) of 0.35.

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.

5.304.6.1 Newly constructed landscapes. New construction projects with an aggregate landscape area equal to or greater than 500 square feet.

5.304.6.2 Rehabilitated landscapes. Rehabilitated landscape projects with an aggregate landscape area equal to or greater than 1,200 square feet.

DIVISION 5.4 MATERIAL CONSERVATION AND RESOURCE EFFICIENCY

SECTION 5.401 GENERAL

5.401.1 SCOPE. The provisions of this chapter specify the requirements of achieving material conservation, resource efficiency, and greenhouse gas (GHG) emission reduction through protection of buildings from exterior moisture, construction waste diversion, employment of techniques to reduce pollution through recycling of materials, the installation of products with lower GHG emissions and building commissioning or testing and adjusting.

SECTION 5.402 DEFINITIONS

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

ADJUST. To regulate fluid flow rate and air patterns at the terminal equipment, such as to reduce fan speed or adjust a damper.

BALANCE. To proportion flows within the distribution system, including sub-mains, branches and terminals, according to design quantities.

BUILDING COMMISSIONING. A systematic quality assurance process that spans the entire design and construction process, including verifying and documenting that building systems and components are planned, designed, installed, tested, operated and maintained to meet the owner's project requirements.

BUY CLEAN CALIFORNIA ACT (BCCA). The Buy Clean California Act (BCCA) (Public Contract Code Sections 3500-3505) targets carbon emissions associated with the production of structural steel (hot-rolled sections, hollow structural sections, and plate), concrete reinforcing steel, flat glass, and mineral wool board insulation. The maximum acceptable global warming potential (GWP) limits are established by the Department of General Services (DGS), in consultation with the California Air Resources Board (CARB).

CRADLE-TO-GRAVE. Activities associated with a product or building's life cycle from the extraction stage through disposal stage, and covering modules A1 through C4 in accordance with ISO Standards 14025 and 21930.

ORGANIC WASTE. Food waste, green waste, landscape and pruning wste, nonhazardous wood waste, and food soiled paper waste that is mixed in with food waste.

REFERENCE STUDY PERIOD. The period of use for the building, in years, that will be assumed for life cycle assessment.

TEST. A procedure to determine quantitative performance of a system or equipment

TYPE III ENVIRONMENTAL PRODUCT DECLARATION (EPD). A third-party verified report that summarizes how a product impacts the environment. Type III EPDs can be either product-specific, factory-specific, or industry-wide EPDs. See "Cradle-to-Gate."

FACTORY-SPECIFIC EPD. A product-specific Type III EPD in which the environmental impacts can be attributed to a single manufacturer and manufacturing facility.

INDUSTRY-WIDE EPD (IW-EPD). A Type III EPD in which the environmental impacts are an average of the typical manufacturing impacts for a range of products within the same product category for a group of manufacturers.

PRODUCT-SPECIFIC EPD. A Type III EPD in which the environmental impacts can be attributed to a product design and manufacturer across multiple facilities.

SECTION 5.407 WATER RESISTANCE AND MOISTURE MANAGEMENT

5.407.1 WEATHER PROTECTION. Provide a weather-resistant exterior wall and foundation envelope as required by California Building Code Section 1402.2 (Weather Protection), manufacturer's installation instructions or local ordinance, whichever is more stringent.

5.407.2 MOISTURE CONTROL. Employ moisture control measures by the following methods.

5.407.2.1 Sprinklers. Design and maintain landscape irrigation systems to prevent spray on structures.

5.407.2.2 Entries and openings. Design exterior entries and/or openings subject to foot traffic or wind-driven rain to prevent water intrusion into buildings as follows:

5.407.2.2.1 Exterior door protection. Primary exterior entries shall be covered to prevent water intrusion by using nonabsorbent floor and wall finishes within at least 2 feet around and perpendicular to such openings plus at least one of the following:

1. An installed awning at least 4 feet in depth.
2. The door is protected by a roof overhang at least 4 feet in depth.
3. The door is recessed at least 4 feet.
4. Other methods which provide equivalent protection.

5.407.2.2.2 Flashing. Install flashings integrated with a drainage plane.

SECTION 5.408 CONSTRUCTION WASTE REDUCTION, DISPOSAL AND RECYCLING

5.408.1 CONSTRUCTION WASTE MANAGEMENT. Recycle and/or salvage for reuse a minimum of 65% of the non-hazardous construction and demolition waste in accordance with Section 5.408.1.1, 5.408.1.2 or 5.408.1.3; or meet a local construction and demolition waste management ordinance, whichever is more stringent.

5.408.1.1 Construction waste management plan. Where a local jurisdiction does not have a construction and demolition waste management ordinance, submit a construction waste management plan that:

1. Identifies the construction and demolition waste materials to be diverted from disposal by efficient usage, recycling, reuse on the project or salvage for future use or sale.
2. Determines if construction and demolition waste materials will be sorted on-site (source-separated) or bulk mixed (single stream).
3. Identifies diversion facilities where construction and demolition waste material collected will be taken.
4. Specifies that the amount of construction and demolition waste materials diverted shall be calculated by weight or volume, but not by both.

5.408.1.2 Waste Management Company. Utilize a waste management company that can provide verifiable documentation that the percentage of construction and demolition waste material diverted from the landfill complies with this section.

Note: The owner or contractor shall make the determination if the construction and demolition waste material will be diverted by a waste management company.

Exceptions to Sections 5.408.1.1 and 5.408.1.2:

1. Excavated soil and land-clearing debris.
2. Alternate waste reduction methods developed by working with local agencies if diversion or recycle facilities capable of compliance with this item do not exist.
3. Demolition waste meeting local ordinance or calculated in consideration of local recycling facilities and markets.

5.408.1.3 Waste stream reduction alternative. The combined weight of new construction disposal that does not exceed two pounds per square foot of building area may be deemed to meet the 65% minimum requirement as approved by the enforcing agency.

5.408.1.4 Documentation. Documentation shall be provided to the enforcing agency which demonstrates compliance with Sections 5.408.1.1, through 5.408.1.3. The waste management plan shall be updated as necessary and shall be accessible during construction for examination by the enforcing agency.

Notes:

1. Sample forms found in "A Guide to the California Green Building Standards Code (Nonresidential)" located www.dgs.ca.gov/BSC/Resources/Page-Content/Building-Standards-Commission-Resources-List-Folder/CALGreen may be used to assist in documenting compliance with the waste management plan.
2. Mixed construction and demolition debris processors can be located at the California Department of Resources Recycling and Recovery (CalRecycle).

5.408.2 UNIVERSAL WASTE. [A] Additions and alterations to a building or tenant space that meet the scoping provisions in Section 301.3 for nonresidential additions and alterations, shall require verification that Universal Waste items such as fluorescent lamps and ballast and mercury containing thermostats as well as other California prohibited Universal Waste materials are disposed of properly and are diverted from landfills. A list of prohibited Universal Waste materials shall be included in the construction documents.

Note: Refer to the Universal Waste Rule link at: http://www.dtsc.ca.gov/universalwaste/

5.408.3 EXCAVATED SOIL AND LAND CLEARING DEBRIS. 100 percent of trees, stumps, rocks and associated vegetation and soils resulting primarily from land clearing shall be reused or recycled. For a phased project, such material may be stockpiled on site until the storage site is developed.

Exception: Reuse, either on or off-site, of vegetation or soil contaminated by disease or pest infestation.

Notes:

1. If contamination by disease or pest infestation is suspected, contact the County Agricultural Commissioner and follow its direction for recycling or disposal of the material.
2. For a map of know pest and/or disease quarantine zones, consult with the California Department of Food and Agriculture. (www.cdfa.ca.gov)

SECTION 5.409 LIFE CYCLE ASSESSMENT

5.409.1 SCOPE. [BSC-CG] Effective July 1, 2024, projects consisting of newly constructed building(s) with a combined floor area of 100,000 square feet or greater shall comply with either Section 5.409.2 or Section 5.409.3. Alteration(s) to existing building(s) where the combined altered floor area is 100,000 square feet or greater shall comply with either Section 5.105.2, 5.409.2, or 5.409.3. Addition(s) to existing building(s) where the total floor area combined with the existing building(s) is 100,000 square feet or greater shall comply with either Section 5.105.2, Section 5.409.2, or Section 5.409.3. Effective January 1, 2026, the combined floor area shall be 50,000 square feet or greater.

[DSA-SS] Projects consisting of newly constructed building(s) with a combined floor area of 50,000 square feet or greater shall comply with either Section 5.409.2 or Section 5.409.3. Alteration(s) to existing building(s) where the combined altered floor area is 50,000 square feet or greater shall comply with either Section 5.105.2, 5.409.2, or 5.409.3. Addition(s) to existing building(s) where the total floor area combined with the existing building(s) is 50,000 square feet or greater shall comply with either Section 5.105.2, Section 5.409.2, or Section 5.409.3.

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

2022 CALIFORNIA GREEN BUILDING STANDARDS CODE

NONRESIDENTIAL MANDATORY MEASURES, SHEET 3 (July 2024 Supplement)

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

Y	N/A	RESPON. PARTY
☐	☐	

5.409.2 Whole building life cycle assessment. Projects shall conduct a cradle-to-grave whole building life cycle assessment performed in accordance with ISO 14040 and ISO 14044, excluding operating energy, and demonstrating a minimum 10-percent reduction in global warming potential (GWP) as compared to a reference baseline building of similar size, function, complexity, type of construction, material specification, and location that meets the requirements of the California Energy Code currently in effect. Software used to conduct the whole building life cycle assessment, including reference baseline building, shall have a data set compliant with ISO 14044, and ISO 21930 or EN 15804, and the software shall conform to ISO 21931 and/or EN 15978. The software tools and data sets shall be the same for evaluation of both the baseline building and the proposed building.

Notes:
1. Software for calculating whole building life cycle assessment is available for free at Athena Sustainable Materials Institute (https://calculatelca.com/software/impact-estimator/) and OneClick LCA-Planetary (www.oneclicklca.com/planetary). Paid versions include, but are not limited to, Sphera GaBi Solutions (gabi.sphera.com), SimaPro (simapro.com), One-Click LCA (www.oneclicklca.com) and Tally for Revit (apps.autodesk.com).

2. ASTM E2921-22 "Standard Practice for Minimum Criteria for Comparing Whole Building Life Cycle Assessments for Use with Building Codes, Standards, and Rating Systems" may be consulted for the assessment.

3. In addition to the required documentation specified in Section 5.409.2.3, Worksheet WS-9 may be required by the enforcing entity to demonstrate compliance with the requirements.

5.409.2.1 Building components. Building enclosure components included in the assessment shall be limited to glazing assemblies, insulation, and exterior finishes. Primary and secondary structural members included in the assessment shall be limited to footings and foundations, and structural columns, beams, walls, roofs, and floors.

5.409.2.2 Reference study period. The reference study period of the proposed building shall be equal to the reference baseline building and shall be 60 years.

5.409.2.3 Verification of compliance. A summary of the GWP analysis produced by the software and Worksheet WS-4 signed by the design professional of record shall be provided in the construction documents as documentation of compliance. A copy of the whole building life cycle assessment which includes the GWP analysis produced by the software, in addition to maintenance and training information, shall be included in the operation and maintenance manual and shall be provided to the owner at the close of construction. The enforcing agency may require inspection and inspection reports in accordance with Sections 702.2 and 703.1 during and at completion of construction to demonstrate substantial conformance. Inspection shall be performed by the design professional of record or third party acceptable to the enforcing agency.

Y	N/A	RESPON. PARTY
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5.409.3 Product GWP compliance—prescriptive path. Each product that is permanently installed and listed in Table 5.409.3 shall have a Type III environmental product declaration (EPD), either product-specific or factory-specific.

TABLE 5.409.3
PRODUCT GWP LIMITS

BUY CLEAN CALIFORNIA MATERIALS PRODUCT CATEGORY[1]	MAXIMUM ACCEPTABLE GWP VALUE (unfabricated) ($GWP_{allowed}$)	UNIT OF MEASUREMENT
Hot-rolled structural steel sections	1.77	MT CO_2e/MT
Hollow structural sections	3.00	MT CO_2e/MT
Steel plate	2.61	MT CO_2e/MT
Concrete reinforcing steel	1.56	MT CO_2e/MT
Flat glass	2.50	MT CO_2e/MT [4]
Light-density mineral wool board insulation	5.83	kg CO_2e/MT
Heavy-density mineral wool board insulation	14.28	kg CO_2e/MT
Concrete, Ready-Mixed[2, 3]		
CONCRETE PRODUCT CATEGORY	**MAXIMUM GWP ALLOWED VALUE ($GWP_{allowed}$)**	**UNIT OF MEASUREMENT**
up to 2499 psi	450	kg CO_2e/m^3
2500−3499 psi	489	kg CO_2e/m^3
3500−4499 psi	566	kg CO_2e/m^3
4500−5499 psi	661	kg CO_2e/m^3
5500−6499 psi	701	kg CO_2e/m^3
6500 psi and greater	799	kg CO_2e/m^3
Concrete, Lightweight Ready-Mixed[2]		
CONCRETE PRODUCT CATEGORY	**MAXIMUM GWP ALLOWED VALUE ($GWP_{allowed}$)**	**UNIT OF MEASUREMENT**
up to 2499 psi	875	kg CO_2e/m^3
2500−3499 psi	956	kg CO_2e/m^3
3500−4499 psi	1039	kg CO_2e/m^3

1. The GWP values of the products listed in Table 5.409.3 are based on 175 percent of Buy Clean California Act (BCCA) GWP values, except for concrete products which are not included in the BCCA.
2. For concrete, 175 percent of the National Ready Mixed Concrete Association (NRMCA) 2022 version 3 Pacific Southwest regional benchmark values are used for the GWP allowed, except for High Early Strength.
3. Concrete High Early Strength ready-mixed shall be calculated at 130 percent of the ready-mixed concrete GWP allowed values for each product category.
4. The GWP unit for flat glass has been adjusted to correct an error in the express terms. With the revised unit (MT CO2e/MT), reported GWP values will align with industry data as published in the CLF North American Material Baselines (2023).

5.409.3.1 Products shall not exceed the maximum GWP value specified in Table 5.409.3.

Exception: Concrete may be considered one product category to meet compliance with this section. A weighted average of the maximum GWP for all concrete mixes installed in the project shall be less than the weighted average maximum GWP allowed per Table 5.409.3 using Exception Equation 5.409.3.1. Calculations shall be performed with consistent units of measurement for the material quantity and the GWP value.

For the purposes of this exception, industry-wide EPDs are acceptable.

Exception EQUATION 5.409.3.1

$GWP_n < GWP_{allowed}$
where
$GWP_n = \Sigma\ (GWP_n)(v_n)$
and
$GWP_{allowed} = \Sigma\ (GWP_{allowed})(v_n)$
and
$_n$ = each concrete mix installed in the project
GWP_n = the GWP for concrete mix $_n$ per concrete mix EPD, in kg CO2e/m3
$GWP_{allowed}$ = the GWP potential allowed for concrete mix $_n$ per Table 5.409.3
v_n = the volume of concrete mix $_n$ installed in the project, in m3

Y	N/A	RESPON. PARTY
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5.409.3.2 Verification of compliance. Calculations to demonstrate compliance, Type III EPDs for products required to comply, if included in the project, and Worksheet WS-5 signed by the design professional of record shall be provided on the construction documents. Updated EPDs for products used in construction shall be provided to the owner at the close of construction and to the enforcement entity upon request. The enforcing agency may require inspection and inspection reports in accordance with Sections 702.2 and 703.1 during and at completion of construction to demonstrate substantial conformance. Inspection shall be performed by the design professional of record or third party acceptable to the enforcing agency.

SECTION 5.410 BUILDING MAINTENANCE AND OPERATIONS

5.410.1 RECYCLING BY OCCUPANTS. Provide readily accessible areas that serve the entire building and are identified for the depositing, storage and collection of non-hazardous materials for recycling, including (at a minimum) paper, corrugated cardboard, glass, plastics, organic waste, and metals or meet a lawfully enacted local recycling ordinance, if more restrictive.

Exception: Rural jurisdictions that meet and apply for the exemption in Public Resources Code 42649.82 (a)(2)(A) et seq. shall also be exempt from the organic waste portion of this section.

5.410.1.1 Additions. All additions conducted within a 12-month period under single or multiple permits, resulting in an increase of 30% or more in floor area, shall provide recycling areas on site.

Exception: Additions within a tenant space resulting in less than a 30% increase in the tenant space floor area.

5.410.1.2 Sample ordinance. Space allocation for recycling areas shall comply with Chapter 18, Part 3, Division 30 of the *Public Resources Code*. Chapter 18 is known as the California Solid Waste Reuse and Recycling Access Act of 1991 (Act).

Note: A sample ordinance for use by local agencies may be found in Appendix A of the document at the CalRecycle's web site.

5.410.2 COMMISSIONING. [N] New buildings 10,000 square feet and over. For new buildings 10,000 square feet and over, building commissioning shall be included in the design and construction processes of the building project to 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 comparable size and complexity. For I-occupancies that are not regulated by OSHPD or for I-occupancies and L-occupancies that are not regulated y the California Energy Code Section 100.0 Scope, all requirements in Sections 5.410.2 through 5.410.2.6 shall apply.

Note: For energy-related systems under the scope (Section 100) of the California Energy Code, including heating, ventilation, air conditioning (HVAC) systems and controls, indoor lighting systems and controls, as well as water heating systems and controls, refer to California Energy Code Section 120.8 for commissioning requirements

Commissioning requirements shall include:

1. Owner's or Owner representative's project requirements.
2. Basis of design.
3. Commissioning measures shown in the construction documents.
4. Commissioning plan.
5. Functional performance testing.
6. Documentation and training.
7. Commissioning report.

Exceptions:

1. Unconditioned warehouses of any size.
2. Areas less than 10,000 square feet used for offices or other conditioned accessory spaces within unconditioned warehouses.
3. Tenant improvements less than 10,000 square feet as described in Section 303.1.1.
4. Open parking garages of any size, or open parking garage areas, of any size, within a structure.

Note: For the purposes of this section, unconditioned shall mean a building, area or room which does not provide heating and/or air conditioning.

Informational Notes:

1. . Functional performance testing for heating, ventilation, air conditioning systems and lighting controls must be performed in compliance with the *California Energy Code*.

5.410.2.1 Owner's or Owner Representative's Project Requirements (OPR). [N] The expectations and requirements of the building appropriate to its phase shall be documented before the design phase of the project begins. This documentation shall include the following:
1. Environmental and sustainability goals.
2. Building sustainable goals.
3. Indoor environmental quality requirements.
4. Project program, including facility functions and hours of operation, and need for after hours operation.
5. Equipment and systems expectations.
6. Building occupant and operation and maintenance (O&M) personnel expectations.

5.410.2.2 Basis of Design (BOD). [N] A written explanation of how the design of the building systems meets the OPR shall be completed at the design phase of the building project. The Basis of Design document shall cover the following systems:

1. Renewable energy systems.
2. Landscape irrigation systems.
3. Water reuse system.

5.410.2.3 Commissioning plan. [N] Prior to permit issuance a commissioning plan shall be completed to document how the project will be commissioned. The commissioning plan shall include the following:
1. General project information.
2. Commissioning goals.
3. Systems to be commissioned. Plans to test systems and components shall include:
   a. An explanation of the original design intent.
   b. Equipment and systems to be tested, including the extent of tests.
   c. Functions to be tested.
   d. Conditions under which the test shall be performed.
   e. Measurable criteria for acceptable performance.
4. Commissioning team information.
5. Commissioning process activities, schedules and responsibilities. Plans for the completion of commissioning shall be included.

5.410.2.4 Functional performance testing. [N] Functional performance tests shall demonstrate the correct 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 each of the building components tested, the testing methods utilized, and include any readings and adjustments made.

5.410.2.5 Documentation and training. [N] A Systems Manual and Systems Operations Training are required, including Occupational Safety and Health Act (OSHA) requirements in *California Code of Regulations* (CCR), Title 8, Section 5142, and other related regulations.

5.410.2.5.1 Systems manual. [N] Documentation of the operational aspects of the building shall be completed within the systems manual and delivered to the building owner or representative. The systems manual shall include the following:
1. Site information, including facility description, history and current requirements.
2. Site contact information.
3. Basic operations and maintenance, including general site operating procedures, basic troubleshooting, recommended maintenance requirements, site events log.
4. Major systems.
5. Site equipment inventory and maintenance notes.
6. A copy of verifications required by the enforcing agency or this code.
7. Other resources and documentation, if applicable.

5.410.2.5.2 Systems operations training. [N] A program for training of the appropriate maintenance staff for each equipment type and/or system shall be developed and documented in the commissioning report and shall include the following:
1. System/equipment overview (what it is, what it does and with what other systems and/or equipment it interfaces).
2. Review and demonstration of servicing/preventive maintenance.
3. Review of the information in the Systems Manual.
4. Review of the record drawings on the system/equipment.

5.410.2.6 Commissioning report. [N] A report of commissioning process activities undertaken through the design and construction phases of the building project shall be completed and provided to the owner or representative.

5.410.4 TESTING AND ADJUSTING. New buildings less than 10,000 square feet. Testing and adjusting of systems shall be required for new buildings less than 10,000 square feet or new systems to serve an addition or alteration subject to Section 303.1.

Y	N/A	RESPON. PARTY
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5.410.4.2 (Reserved)

Note: For energy-related systems under the scope (Section 100) of the California Energy Code, including heating, ventilation, air conditioning (HVAC) systems and controls, indoor lighting system and controls, as well as water heating systems and controls, refer to California Energy Code Section 120.8 for commissioning requirements and Sections 120.5, 120.6, 130.4, and 140.9(b)3 for additional testing requirements of specific systems.

5.410.4.2 Systems. Develop a written plan of procedures for testing and adjusting systems. Systems to be included for testing and adjusting shall include at a minimum, as applicable to the project:

1. Renewable energy systems.
2. Landscape irrigation systems.
3. Water reuse systems.

5.410.4.3 Procedures. Perform testing and adjusting procedures in accordance with manufacturer's specifications and applicable standards on each system.

5.410.4.3.1 HVAC balancing. In addition to testing and adjusting, before a new space-conditioning system serving a building or space is operated for normal use, the system shall be balanced in accordance with the procedures defined by the Testing Adjusting and Balancing Bureau National Standards; the National Environmental Balancing Bureau Procedural Standards; Associated Air Balance Council National Standards or as approved by the enforcing agency.

5.410.4.4 Reporting. After completion of testing, adjusting and balancing, provide a final report of testing signed by the individual responsible for performing these services.

5.410.4.5 Operation and maintenance (O & M) manual. Provide the building owner or representative with detailed operating and maintenance instructions and copies of guaranties/warranties for each system. O & M instructions shall be consistent with OSHA requirements in CCR, Title 8, Section 5142, and other related regulations.

5.410.4.5.1 Inspections and reports. Include a copy of all inspection verifications and reports required by the enforcing agency.

DIVISION 5.5 ENVIRONMENTAL QUALITY

SECTION 5.501 GENERAL

5.501.1 SCOPE. The provisions of this chapter shall outline means of reducing the quantity of air contaminants that are odorous, irritating, and/or harmful to the comfort and well-being of a building's installers, occupants and neighbors.

SECTION 5.502 DEFINITIONS

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

ARTERIAL HIGHWAY. A general term denoting a highway primarily for through traffic usually on a continuous route.

A-WEIGHTED SOUND LEVEL (dBA). The sound pressure level in decibels as measured on a sound level meter using the internationally standardized A-weighting filter or as computed from sound spectral data to which A-weighting adjustments have been made.

1 BTU/HOUR. British thermal units per hour, also referred to as Btu. The amount of heat required to raise one pound of water one degree Fahrenheit per hour, a common measure of heat transfer rate. A ton of refrigeration is 12,000 Btu, the amount of heat required to melt a ton (2,000 pounds) of ice at 32^0 Fahrenheit.

COMMUNITY NOISE EQUIVALENT LEVEL (CNEL). A metric similar to the day-night average sound level (Ldn), except that a 5 decibel adjustment is added to the equivalent continuous sound exposure level for evening hours (7pm to 10pm) in addition to the 10 dB nighttime adjustment used in the Ldn.

COMPOSITE WOOD PRODUCTS. Composite wood products include hardwood plywood, particleboard and medium density fiberboard. "Composite wood products" does not include hardboard, structural plywood, structural panels, structural composite lumber, oriented strand board, glued laminated timber, timber, prefabricated wood I–joists or finger–jointed lumber, all as specified in California Code of Regulations (CCR), Title 17, Section 93120.1(a).

Note: See CCR, Title 17, Section 93120.1.

DAY-NIGHT AVERAGE SOUND LEVEL (Ldn). The A-weighted equivalent continuous sound exposure level for a 24-hour period with a 10 dB adjustment added to sound levels occurring during nighttime hours (10p.m. to 7 a.m.).

DECIBEL (db). A measure on a logarithmic scale of the magnitude of a particular quantity (such as sound pressure, sound power, sound intensity) with respect to a reference quantity.

ELECTRIC VEHICLE (EV). An automotive-type vehicle for on-road use, such as passenger automobiles, buses, trucks, vans, neighborhood electric vehicles, electric motorcycles, and the like, primarily powered by an electric motor that draws current from a rechargeable storage battery, fuel cell, photovoltaic array, or other source of electric current. Plug-in hybrid electric vehicles (PHEV) are considered electric vehicles. For purposes of the *California Electrical Code*, off-road, self-propoelled electric vehicles, such as industrial trucks, hoists, lifts, transports, golf carts, airline ground support equipment, tractors, boats, and the like, are not included.

ELECTRIC VEHICLE CHARGING STATION(S) (EVCS]). One or more spaces intended for charging electric vehicles.

ELECTRIC VEHICLE SUPPLY EQUIPMENT (EVSE). The conductors, including the ungrounded, grounded, and equipment grounding conductors and the electric vehicle connectors, attachment plugs, and all other fittings, devices, power outlets, or apparatus installed specifically for the purpose of transferring energy between the premises wiring and the electric vehicle.

ENERGY EQUIVALENT (NOISE) LEVEL (Leq). The level of a steady noise which would have the same energy as the fluctuating noise level integrated over the time of period of interest.

EXPRESSWAY. An arterial highway for through traffic which may have partial control of access, but which may or may not be divided or have grade separations at intersections.

FREEWAY. A divided arterial highway with full control of access and with grade separations at intersections.

GLOBAL WARMING POTENTIAL (GWP). The radiative forcing impact of one mass-based unit of a given greenhouse gas relative to an equivalent unit of carbon dioxide over a given period of time. Carbon dioxide is the reference compound with a GWP of one.

GLOBAL WARMING POTENTIAL VALUE (GWP VALUE). A 100-year GWP value published by the Intergovernmental Panel on Climate Change (IPCC) in either its Second Assessment Report (SAR) (IPCC, 1995); or its Fourth Assessment A-3 Report (AR4) (IPCC, 2007). The SAR GWP values are found in column "SAR (100-yr)" of Table 2.14.; the AR4 GWP values are found in column "100 yr" of Table 2.14.

HIGH-GWP REFRIGERANT. A compound used as a heat transfer fluid or gas that is: (a) a chlorofluorocarbon, a hdrochlorofluorocarbon, a hydrofluorocarbon, a perfluorocarbon, or any compound or blend of compounds, with a GWP value equal to or greater than 150, or (B) any ozone depleting substance as defined in Title 40 of the Code of Federal Regulations, Part 82, sec.82.3 (as amended March 10, 2009).

LONG RADIUS ELBOW. Pipe fitting installed between two lengths of pipe or tubing to allow a change of direction, with a radius 1.5 times the pipe diameter.

LOW-GWP REFRIGERANT. A compound used as a heat transfer fluid or gas that: (A) has a GWP value less than 150, and (B) is not an ozone depleting substance as defined in Title 40 of the Code of Federal Regulations, Part 82, sec.82.3 (as amended March 10, 2009).

MERV. Filter minimum efficiency reporting value, based on ASHRAE 52.2–1999.

MAXIMUM INCREMENTAL REACTIVITY (MIR). The maximum change in weight of ozone formed by adding a compound to the "Base REactive Organic Gas (ROG) Mixture" per weight of compound added, expressed to hundreths of a gram (g O^3/g ROC).

PRODUCT-WEIGHTED MIR (PWMIR). The sum of all weighted-MIR for all ingredients in a product subject to this article. The PWMIR is the total product reactivity expressed to hundredths of a gram of ozone formed per gram of product (excluding container and packaging).

PSIG. Pounds per square inch, guage.

REACTIVE ORGANIC COMPOUND (ROC). Any compound that has the potential, once emitted, to contribute to ozone formation in the troposphere.

SCHRADER ACCESS VALVES. Access fittings with a valve core installed.

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.

SUPERMARKET. For the purposes of Section 5.508.2, a supermarket is any retail food facility with 8,000 square feet or more conditioned area, and that utilizes either refrigerated display cases, or walk-in coolers or freezers connected to remote compressor units or condensing units.

VOC. A volatile organic compound broadly defined as a chemical compound based on carbon chains or rings with vapor pressures greater than 0.1 millimeters of mercury at room temperature. These compounds typically contain hydrogen and may contain oxygen, nitrogen and other elements. See CCR Title 17, Section 94508(a).

Note: Where specific regulations are cited from different agencies such as SCAQMD, ARB, etc., the VOC definition included in that specific regulation is the one that prevails for the specific measure in question.

Y	N/A	RESPON. PARTY
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SECTION 5.503 FIREPLACES

5.503.1 FIREPLACES. Install only a direct-vent sealed-combustion gas or sealed wood-burning fireplace, or a sealed woodstove or pellet stove, and refer to residential requirements in the California Energy Code, Title 24, Part 6, Subchapter 7, Section 150. Woodstoves, pellet stoves and fireplaces shall comply with applicable local ordinances.

5.503.1.1 Woodstoves. Woodstoves and pellet stoves shall comply with U.S. EPA New Source Performance Standards (NSPS) emission limits as applicable, and shall have a permanent label indicating they are certified to meet the emission limits.

SECTION 5.504 POLLUTANT CONTROL

5.504.1 TEMPORARY VENTILATION. The permanent HVAC system shall only be used during construction if necessary to condition the building or areas of addition or alteration within the required temperature range for material and equipment installation. If the HVAC system is used during construction, use return air filters with a Minimum Efficiency Reporting Value (MERV) of 8, based on ASHRAE 52.2-1999, or an average efficiency of 30% based on ASHRAE 52.1-1992 Replace all filters immediately prior to occupancy, or, if the building is occupied during alteration, at the conclusion of construction.

5.504.3 Covering of duct openings and protection of mechanical equipment during construction. At the time of rough installation and during storage on the construction site until final startup of the heating, cooling and ventilation equipment, all duct and other related air distribution component openings shall be covered with tape, plastic, sheetmetal or other methods acceptable to the enforcing agency to reduce the amount of dust, water and debris which may enter the system.

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.

TABLE 5.504.4.1 - ADHESIVE VOC LIMIT[1,2]

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

TABLE 5.504.4.2 - SEALANT VOC LIMIT

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 RULE 1168.

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

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.

TABLE 5.504.4.3 - VOC CONTENT LIMITS FOR ARCHITECTURAL COATINGS[2,3]

GRAMS OF VOC PER LITER OF COATING, LESS WATER & LESS EXEMPT COMPOUNDS

COATING CATEGORY	CURRENT VOC LIMIT
FLAT COATINGS	50
NONFLAT COATINGS	100
NONFLAT HIGH GLOSS COATINGS	150
SPECIALTY COATINGS	
ALUMINUM ROOF COATINGS	400
BASEMENT SPECIALTY COATINGS	400
BITUMINOUS ROOF COATINGS	50
BITUMINOUS ROOF PRIMERS	350
BOND BREAKERS	350
CONCRETE CURING COMPOUNDS	350
CONCRETE/MASONRY SEALERS	100
DRIVEWAY SEALERS	50
DRY FOG COATINGS	150
FAUX FINISHING COATINGS	350
FIRE RESISTIVE COATINGS	350
FLOOR COATINGS	100
FORM-RELEASE COMPOUNDS	250
GRAPHIC ARTS COATINGS (SIGN PAINTS)	500
HIGH-TEMPERATURE COATINGS	420
INDUSTRIAL MAINTENANCE COATINGS	250
LOW SOLIDS COATINGS[1]	120
MAGNESITE CEMENT COATINGS	450
MASTIC TEXTURE COATINGS	100
METALLIC PIGMENTED COATINGS	500
MULTICOLOR COATINGS	250
PRETREATMENT WASH PRIMERS	420
PRIMERS, SEALERS, & UNDERCOATERS	100
REACTIVE PENETRATING SEALERS	350
RECYCLED COATINGS	250
ROOF COATINGS	50
RUST PREVENTATIVE COATINGS	250
SHELLACS:	
CLEAR	730
OPAQUE	550
SPECIALTY PRIMERS, SEALERS & UNDERCOATERS	100
STAINS	250
STONE CONSOLIDANTS	450
SWIMMING POOL COATINGS	340
TRAFFIC MARKING COATINGS	100
TUB & TILE REFINISH COATINGS	420
WATERPROOFING MEMBRANES	250
WOOD COATINGS	275
WOOD PRESERVATIVES	350
ZINC-RICH PRIMERS	340

1. GRAMS OF VOC PER LITER OF COATING, INCLUDING WATER & EXEMPT COMPOUNDS
2. THE SPECIFIED LIMITS REMAIN IN EFFECT UNLESS REVISED LIMITS ARE LISTED IN SUBSEQUENT COLUMNS IN THE TABLE.
3. VALUES IN THIS TABLE ARE DERIVED FROM THOSE SPECIFIED BY THE CALIFORNIA AIR RESOURCES BOARD, ARCHITECTURAL COATINGS SUGGESTED CONTROL MEASURE, FEB. 1, 2008. MORE INFORMATION IS AVAILABLE FROM THE AIR 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:

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

TABLE 5.504.4.5 - FORMALDEHYDE LIMITS[1]

MAXIMUM FORMALDEHYDE EMISSIONS IN PARTS PER MILLION

PRODUCT	CURRENT LIMIT
HARDWOOD PLYWOOD VENEER CORE	0.05
HARDWOOD PLYWOOD COMPOSITE CORE	0.05
PARTICLE BOARD	0.09
MEDIUM DENSITY FIBERBOARD	0.11
THIN MEDIUM DENSITY FIBERBOARD[2]	0.13

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 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

5.504.4.6.1 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 rating.

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_2) MONITORING. For buildings or additions equipped with demand control ventilation, CO_2 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.
4. 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.
5. 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.
6. 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. L_{dn} or CNEL for military airports shall be determined by the facility Air Installation Compatible Land Use Zone (AICUZ) plan.
   2. L_{dn} 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 L_{dn} 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_2), 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 recommendations.

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 permitted for use.

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.

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

5.508.2.2.2.2.1 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 operation.

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 maximize energy efficiency.

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 hold for 30 minutes.

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

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 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:

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

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

1. Certification by a national or regional green building program or standard publisher.
2. Certification by a statewide energy consulting or verification organization, such as HERS raters, building performance contractors, and home energy auditors.
3. Successful completion of a third party apprentice training program in the appropriate trade.
4. Other programs acceptable to the enforcing agency.

Notes:

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

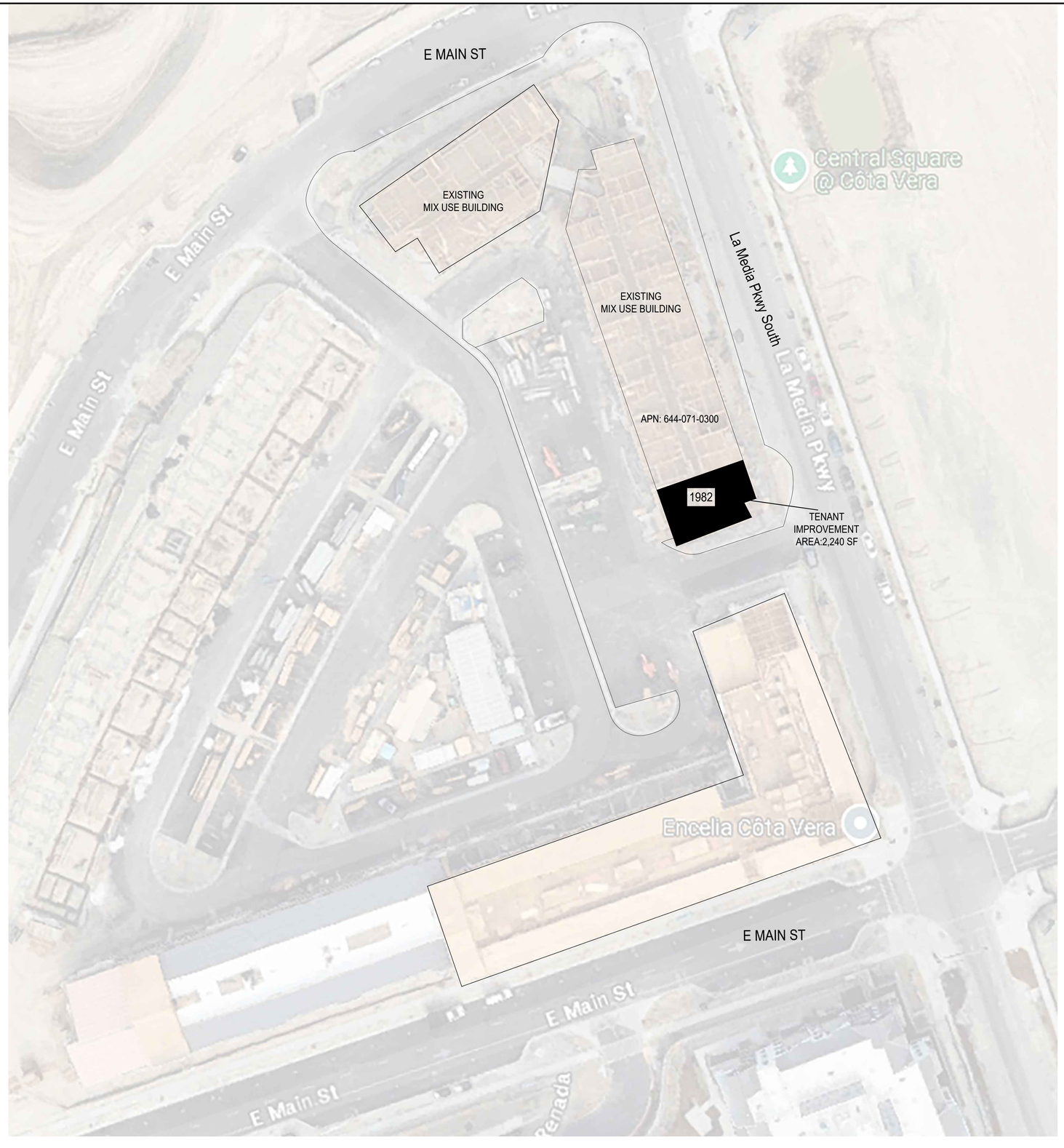
[BSC-CG] When required by the enforcing agency, the owner or the responsible entity acting as the owner's agent shall employ one or more special inspectors to provide inspection or other duties necessary to substantiate compliance with this code. Special inspectors shall demonstrate competence to the 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.

703 VERIFICATIONS

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

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



I am the designer/owner in responsible charge of this tenant improvement project. I have inspected the site/premises and determined that existing conditions are in full compliance with current site accessibility requirements to extent required by law

Print Name: _____

Signature _____ Date: _____

I am the designer/owner in responsible charge of this tenant improvement project. I have inspected the toilet and bathing facilities for men and women, and determined that existing conditions are in full compliance with current accessibility requirements to extent required by law

Print Name: _____

Signature _____ Date: _____

If the City building inspector determines non compliance with any accessibility provisions, a complete and detailed revised plans clearly showing all existing non-complying conditions and the proposed modifications to meet current accessibility requirement (including Site plan, floor plans, details, etc) Will be submitted to the department for review and approval

SITE PLAN

Scale : 1" = 20'

NORTH

JTD Cell (619) 779 3028., 550W B Street 4th Flr. San Diego, CA 92101. e-mail. grkildesigns@gmail.com

J Torres Designs

COTA VERA MINI MARKET

1982 LA Media Pkwy South, Chula Vista, CA 91913

TENANT IMPROVEMENT-NEW MINI MARKET-LIQUOR

SHEET CONTENT:

EXIST.
SITE PLAN

REVISIONS:

Design: Jose Perez

Responsible: **JOSE PEREZ**
550 W B STREET
4th floor
San Diego, CA 92101
Ph(619)- 779-3028

Check: Jose Perez

Date: 10/05/25

sheet type:

A100

CHULA VISTA FIRE DEPARTMENT

FIRE PREVENTION DIVISION

PREMISES IDENTIFICATION

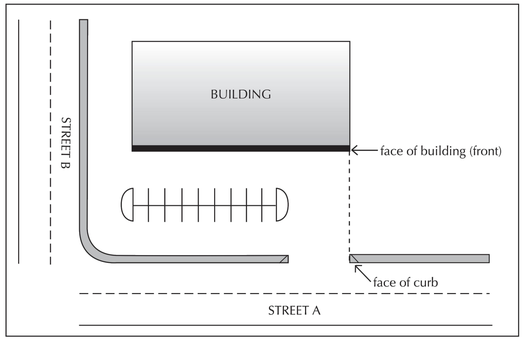
Building Address Numbers:
Address must be plainly visible and legible from the street or main access to the building. Numbers shall contrast with their background and comply with the following:

Distance from Building to Face of Curb	Minimum Height	Minimum Stroke
0 - 50 feet	6 inches	1 inch
51 - 150 feet	10 inches	1 ½ inches
> 151 feet	16 inches	2 inches

Suite Numbers:
Numbers shall contrast with their background and comply with the following:

Minimum Height	Minimum Stroke
4 inches	¾ inch

ADDITIONAL SPECIFICATIONS:
- This policy also applies to monument signs.
- Buildings may be required to have the address posted in multiple locations.



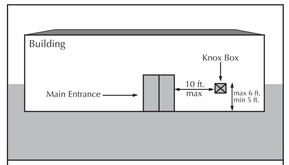
CHULA VISTA FIRE DEPARTMENT • Fire Prevention Division • 276 Fourth Avenue, Building C, Suite B-143 • Chula Vista, CA 91910
(619) 691-5029 • fax (619) 691-5204 • www.chulavistaca.gov/goto/FirePrevention

CHULA VISTA FIRE DEPARTMENT

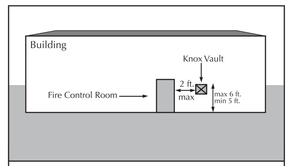
FIRE PREVENTION DIVISION

COMMERCIAL KNOX BOX/VAULT REQUIREMENTS

Single Tenant – *For Buildings Equipped with a Fire Control Room*

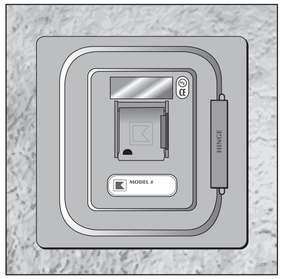


Main Entrance/Street facing
- Located no further than 10 ft. from main entrance
- Minimum height = 5 ft. / Maximum = 6 ft.
- Knox Box 3270 Series* (recessed w/ hinged door)
  *tamper switch is optional



Fire Control Room
- Located no further than 2 ft. from fire control room (at latching side)
- Minimum height = 5 ft. / Maximum = 6 ft.
- Knox Vault 4430 Series* (recessed w/ hinged door)
  *tamper switch is optional

- Each building requires a minimum of <u>two</u> Knox devices (one Knox vault and one Knox box as indicated above). This requirement can only be waived by the Fire Marshal
- Some buildings will require additional Knox devices
- The "Fire Department" Alert Decal is to be mounted on the door or frame of the building's main entrance
- Keys to be placed into the Knox box will be determined by CVFD Fire Prevention Staff (i.e. master key(s), Fire Control Room, FACP, SDG&E, keys for appliance operation, etc.)
- Required keys shall be secured in knox box/vault prior to final occupancy certification
- Knox devices can be ordered and purchased at www.knoxbox.com
- Install per manufacturers instructions



Knox Box/Vault

CHULA VISTA FIRE DEPARTMENT • Fire Prevention Division • 276 Fourth Avenue, Building C, Suite B-143 • Chula Vista, CA 91910
(619) 691-5029 • fax (619) 691-5204 • www.chulavistaca.gov/goto/FirePrevention

JTD Cell (619) /9 3028., 550W B Street 4th Flr. San Diego, CA 92101. e-mail. arkitdesigns@gmail.com

J Torres Designs

COTA VERA MINI MARKET

1982 LA Media PKwy South, Chula Vista, CA 91913

TENANT IMPROVEMENT-NEW MINI MARKET-LIQUOR

SHEET CONTENT:

FIRE NOTES
NOTES

REVISIONS:

Design: Jose Perez

Check: Jose Perez

Date: 10/05/25

Responsible:
JOSE PEREZ
550 W B STREET
4th floor
San Diego, CA 92101
Ph(619)- 779-3028

sheet type:

A200

WALL LEGEND

EXISTING 8'–0" 2X4 STUDS DF#2 AT 16" O.C.
INTERIOR FINISH: ½" DRYWALL U.N.O.
EXTERIOR FINISH: ⅞" STUCCO U.N.O.

EXISTING TO BE DEMOLISHED

NEW 8'–0" 2X4 STUDS DF#2 AT 16" O.C.
INTERIOR FINISH: ½" DRYWALL U.N.O.
EXTERIOR FINISH: ⅞" STUCCO U.N.O.

SHOWER AND TUB/SHOWER WALLS TO BE A SMOOTH, HARD, NON–ABSORBENT SURFACE (E.G. CERAMIC, TILE OR FIBERGLASS) OVER A MOISTURE RESISTANT UNDERLAYMENT (E.G. CEMENT, FIBER OR GLASS MAT GYPSUM BACKER) TO A HEIGHT 72 INCHES ABOVE THE DRAIN INLET. PLEASE NOTE, WTER RESISTANT GYPSUM BACKING BOARD SHALL NOT BE USED OVER A VAPOR RETARDER IN SHOWER OR BATHTUB COMAPRTMENTS. CRC R 307.2 AND R 702.3.7.

SANITARY FACILITIES:

1. THE DOORWAYS LEADING TO SANITARY FACILITIES SHALL BE IDENTIFIED, PER SECTION 11B–703.7.2.6, AS FOLLOWS:

A. AN EQUILATERAL TRIANGLE 1/4" THICK WITH EDGES 12" LONG AND A VORTEX POINTING UPWARD AT MEN'S REST ROOMS.

B. A CIRCLE 1/4" THICK, 12" DIAMETER AT WOMEN'S REST ROOMS.

C. A 12" DIAMETER CIRCLE WITH A TRIANGLE SUPERIMPOSED ON THE CIRCLE AND WITHIN THE 12" DIAMETER UNISEX REST ROOMS.

D. THE REQUIRED SYMBOLS SHALL BE CENTERED ON THE DOOR AT A HEIGHT OF 58"–60".

E. BRAILLE SIGNAGE SHALL ALSO BE LOCATED ON THE WALL ADJACENT TO THE LATCH OUTSIDE OF THE DOORWAYS LEADING TO THE SANITARY FACILITIES.

2. PER SECTION 11B–604.8.1.2, THAT THE DOORS TO ACCESSIBLE WATER CLOSET COMPARTMENT WILL BE EQUIPPED WITH A SELF–CLOSING DEVICE WITH:

A. >32" CLEAR OPENING WIDTH WHEN LOCATED AT THE END OF THE COMPARTMENT.

B. >34" CLEAR OPENING WIDTH WHEN LOCATED AT THE SIDE OF THE COMPARTMENT.

RESTROOM FIXTURES AND ACCESSORIES:

1. THE ACCESSIBLE WATER CLOSETS MEET THE FOLLOWING REQUIREMENTS, PER SECTION 11B–604.4 AND 11B–604.6:

A. THE SEAT IS TO BE >17" BUT <19" IN HEIGHT

B. THE CONTROLS FOR FLUSH VALVES SHALL BE:
I) MOUNTED ON THE SIDE OF THE TOILET AREA
II) BE <44" ABOVE FLOOR.

2. ACCESSIBLE URINALS MEET THE FOLLOWING REQUIREMENTS, PER SECTION 11B–605:

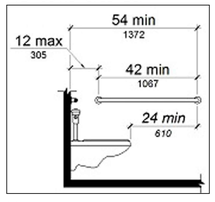
A. THE RIM OF AT LEAST ONE URINAL SHALL:
I)PROJECT AT LEAST 13–1/2" FROM THE WALL.
II)BE <17" ABOVE THE FLOOR.

B. THE CONTROL MECHANISM IS TO BE LOCATED <44" ABOVE THE FLOOR.

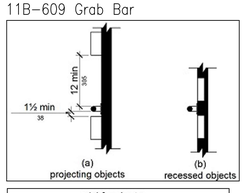
C. >30"x48" CLEAR FLOOR SPACE IS PROVIDED IN FRONT OF THE ACCESSIBLE URINAL.
I) 36"x48" CLEAR FLOOR SPACE WHEN THE URINAL IS LOCATED IN AN ALCOVE THAT EXCEED 24" IN DEPTH, PER SECTION 11B–305.7.1.

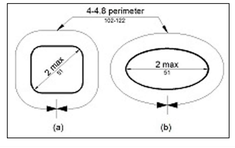
Grab Bar

11B–604.5 Grab Bar



11B–609 Grab Bar





"In alterations, repairs and additions of existing dwellings carbon monoxide alarms are required in the specifically permitted dwellings or sleeping units that have attached garages or fuel–burning appliances. The carbon monoxide alarms may be battery operated and not interconnected". [CRC R 315]. (This correction applies to the existing main house).

" In alterations, repairs and additions smoke alarms are required in each sleeping room, outside each separate sleeping area in the immediate vicinity of the bedrooms, and at each additional floor or basement level. Smoke alarms may be battery operated and not interconnected. [CRC R 314.2.2]. (This correction applies to the existing main house).

DOOR NOTES:

1. THERE IS A LEVEL FLOOR OR LANDING ON EACH SIDE OF ALL DOORS. THE FLOOR OR LANDING IS TO BE <1/2" LOWER THAN THE DOORWAY THRESHOLD, PER SECTION 11B–404.2.5.

2. ALL HAND –ACTIVATED DOOR OPENING HARDWARE MEETS THE FOLLOWING REQUIREMENTS, PER SECTION 11B–404.2.7:

A. LATCHING, OR LOCKING, DOORS IN A PATH OF TRAVEL ARE OPERATED WITH A SINGLE EFFORT BY LEVER TYPE HARDWARE, BY PANIC BARS, PUSH–PULL ACTIVATING BARS, OR OTHER HARDWARE DESIGNED TO PROVIDE PASSAGE WITHOUT REQUIRING THE ABILITY TO GRASP THE OPENING HARDWARE.

B. IS TO BE CENTERED >34" BUT <44" ABOVE FLOOR.

3. THE MAXIMUM EFFORT TO OPERATE DOORS SHALL NOT EXCEED 5 POUNDS, WITH SUCH PULL OR PUSH EFFORT BEING APPLIED AT RIGHT ANGLES TO HINGED DOORS AND AT THE CENTER PLANE OD SLIDING OR FOLDING DOORS. WHEN FIRE DOORS ARE UTILIZED, THE MAXIMUM EFFORT TO OPERATE THE DOOR MAY BE INCREASED TO NOR EXCEED 15 POUNDS. SECTION 11B–404.2.9.

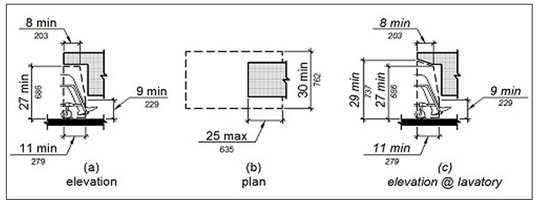
4. THE LOWER 10" OF ALL DOORS COMPLY WITH SECTION 11B–404.2.10 AS FOLLOWS:
A. TO BE SMOOTH AND UNINTERRUPTED, TO ALLOW THE DOOR TO BE OPENED BY A WHEELCHAIR FOOTREST, WITHOUT CREATING A TRA OR HAZARDOUS CONDITION.

B. NARROW FRAME DOORS MAY USE A 10" HIGH SMOOTH PANEL ON THE PUSH SIDE OF THE DOOR.

Provide a statement on the plans indicating that the existing parking, curbs, ramps, walks, entrance, etc., HC Complying, subject to field verification.

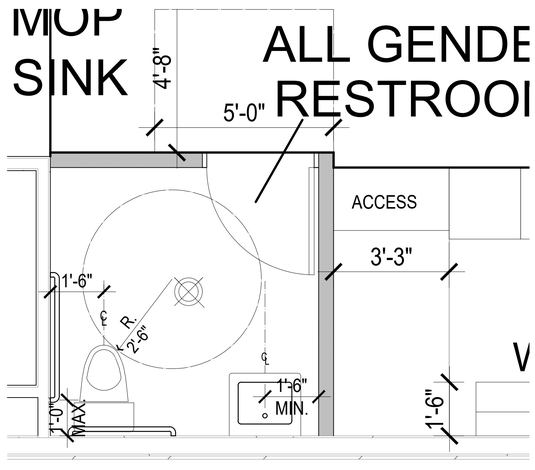
THE INSTALLATION OF SMOKE ALARMS AND SMOKE DETECTOR SHALL COMPLY WITH THE SPECIFIC LOCATION REQUIREMENTS OF CRC R314.3.4

11B–606



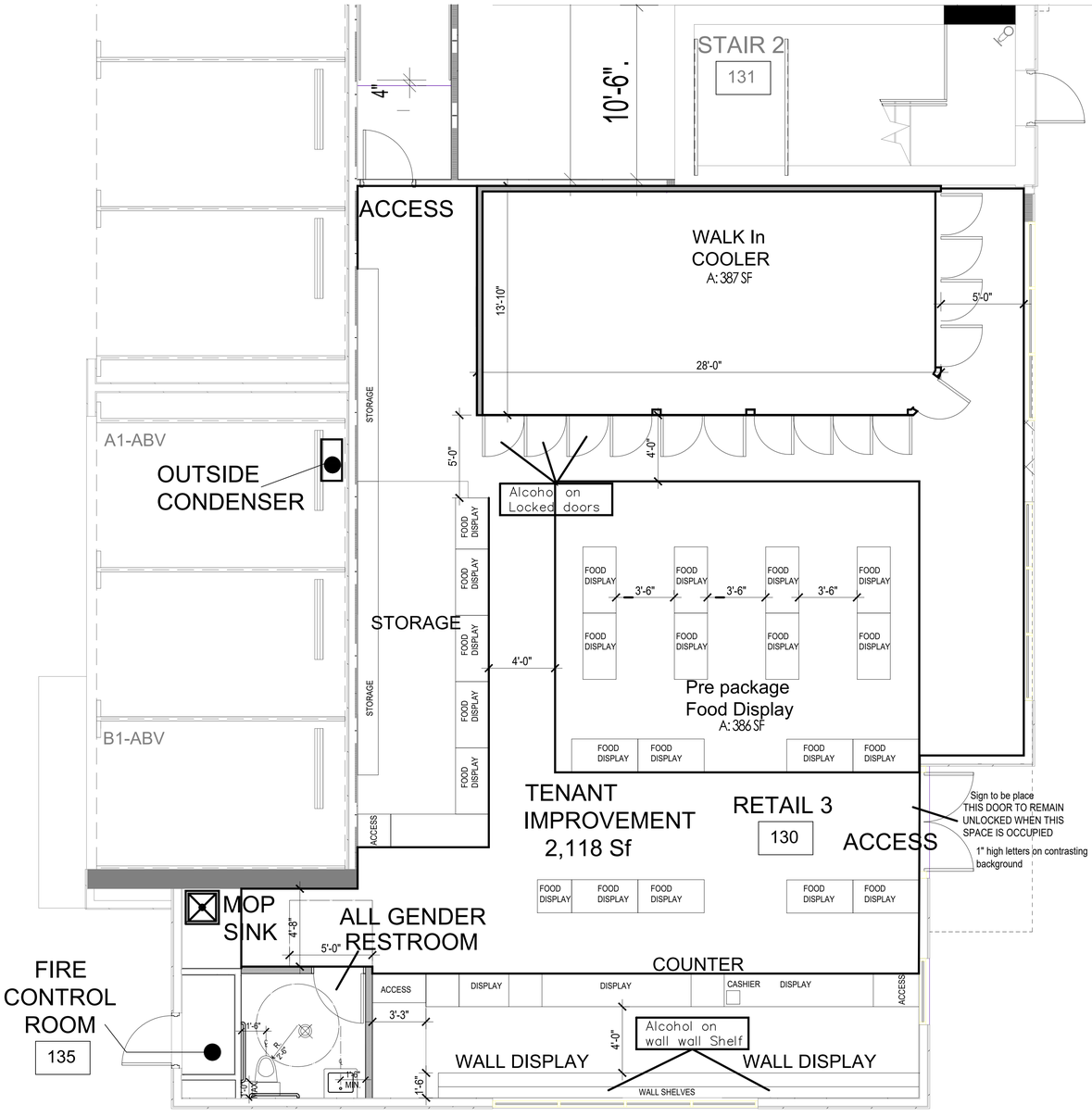
c) The countertop is ≤34" maximum above the floor.
d) ≥29" high, reducing to 27" at a point located 8" back from the front edge.
e) ≥9" high x 30" wide and 17" deep at the bottom.
f) Hot water pipes and drain lines are insulated

DRINKING FOUNTAIN(S) WILL COMPLY WILL ALL APPLICABLE TITLE 24 PROVISIONS (BUBBLER, HEIGHT, ETC)



RESTROOM ZOOM PLAN

ALL DIMENSIONS ARE MEASURED TO THE FINISH



PROPOSED FLOOR PLAN

JTD Cell (619) 779 3028., 550W B Street 4th Flr. San Diego, CA 92101. e–mail. arkitdesigns@gmail.com

JTD
J Torres Designs

COTA VERA MINI MARKET

1982 LA Media Pkwy South, Chula Vista, CA 91913

TENANT IMPROVEMENT-NEW MINI MARKET-LIQUOR

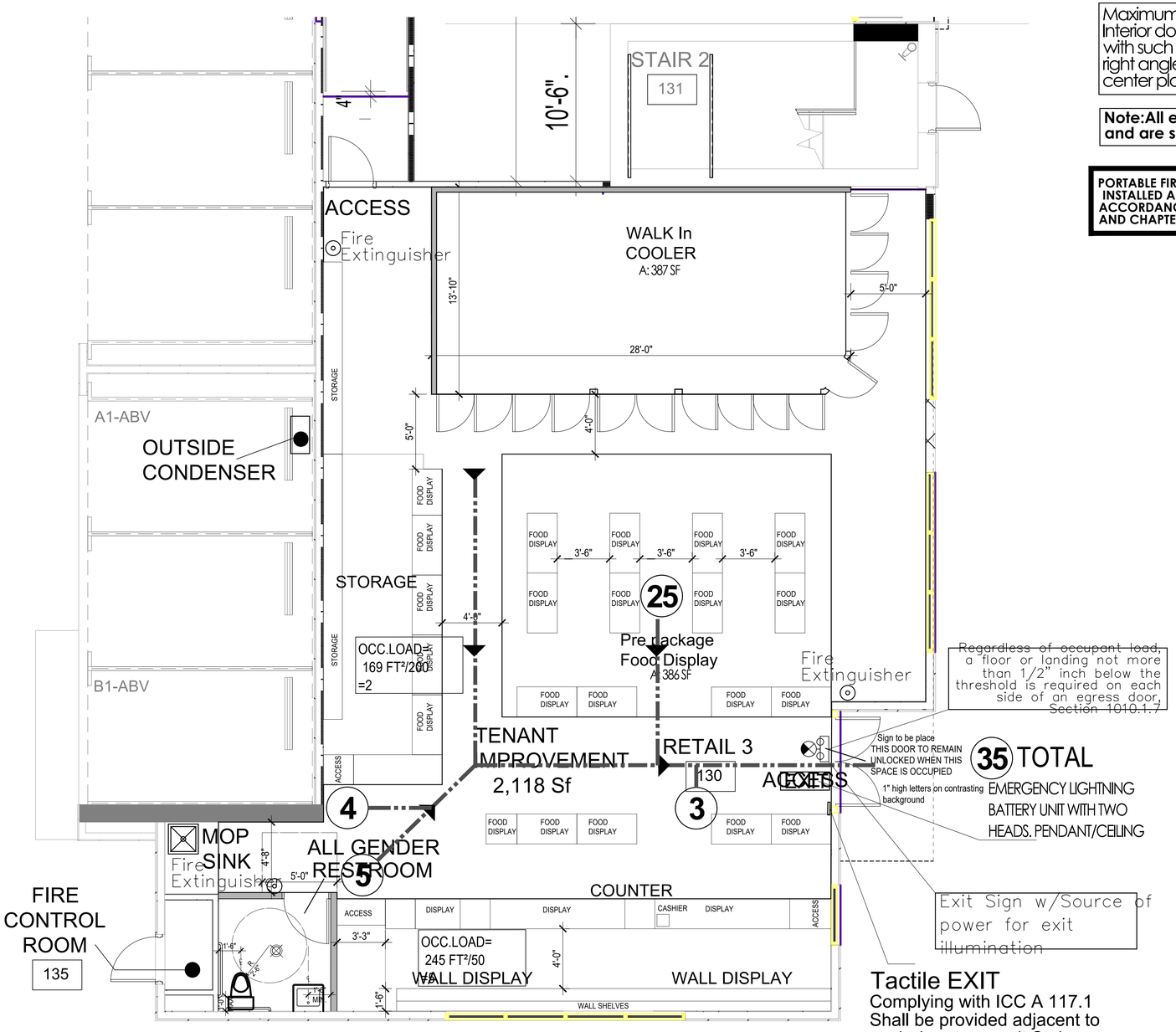
SHEET CONTENT:
PROPOSED FLOOR PLANS

REVISIONS:

Design: Jose Perez
Responsible: JOSE PEREZ
550 W B STREET
4th floor
San Diego, CA 92101
Ph(619)- 779-3028
Check: Jose Perez
Date: 12/30/25

sheet type:

A210



Tactile EXIT
Complying with ICC A 117.1
Shall be provided adjacent to each door to an exit Stairway, an exit passageway and the exit discharge, Section 1013.4

MEANS of EGRESS PLAN

Maximum effort to operate Exterior and Interior doors shall Not exceed 5 pounds, with such pull or effort being applied at right angles to hinged doors and at the center plane of sliding or folding doors.

Note:All exterior doors open outward and are self-closing and tight fitting

PORTABLE FIRE EXTINGUISHER(S) SHALL BE INSTALLED AND MAINTAINED IN ACCORDANCE WITH CFC 906, TABLE 906.3(1) AND CHAPTER 3, TITLE 19 CCR.

IDENTIFICATION OF ALL GENDER SINGLE-USER TOILET FACILITIES Compliant with the California Building Code (CBC) Chapter 11 B

EXHIBIT A - Door Symbol (required by the CBC)
This image represents the door symbol that is required by CBC 11 B-216.8 to identify an all-gender/unisex single-user toilet facility. The symbol must comply with the requirements of CBC 118-703.7.2.6.3. No pictogram, text, or braille is required on the symbol.



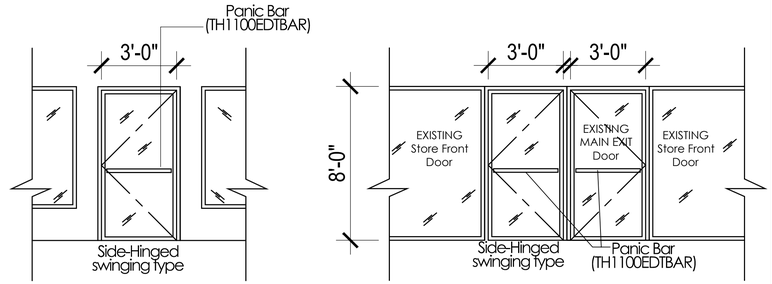
EXHIBIT B - Designation sign on wall
Designation signs are not required to be provided by the CBC or the 2010 ADAS. If provided, a designation sign adjacent to the door must comply with the scoping requirements of CBC 11 B-216.2, and the technical requirements for raised characters (CBC 11 B-703.2), braille (CBC 11 B-703.3), visual characters (CBC 11 B-703.5), and requirements for installation height and location (CBC 11 B-703.4). No pictogram is required. The following signs illustrate acceptable examples for designation sign text:



Note: Braille Translation shown above is not verified by the City

Existing Emergency Photometric lighting

Symbol	Cat #	Description	Lamp
	H5012S	Par 36 glass sealed beam light	Halogen, 50 watt 12 volt



Maximum effort to operate Exterior and Interior doors shall Not exceed 5 pounds, with such pull or effort being applied at right angles to hinged doors and at the center plane of sliding or folding doors.

2,024 sq ft Tenant Improvement
Per table CBC 1004.5

Function of Space	Floor Area in Ft² per Occupant	Area	Occupant Load
COUNTER	50 net	245 ft²	5
PREP AREA	300 net	169 ft²	2
DISPLAY AREA1	15 net	386 ft²	25
DISPLAY AREA	15 net	45 ft²	3

Note Occupant load to be restricted to a total of 50
As Classified as B

Total 35.00

JTD
J Torres Designs

COTA VERA MINI MARKET
1982 LA Media Pkwy South, Chula Vista, CA 91913
TENANT IMPROVEMENT-NEW MINI MARKET-LIQUOR

SHEET CONTENT:
MEANS of EGRESS

REVISIONS:

Design: Jose Perez
Check: Jose Perez
Date: 10/05/25

Responsible:
JOSE PEREZ
550 W B STREET
4th floor
San Diego, CA 92101
PH.(619)- 779-3028

sheet type:
A 215

JTD Cell (619) 779 3028., 550W B Street 4th Flr. San Diego, CA 92101. e-mail. arkitdesigns@gmail.com

ArktDesigns JTD
Jose Torres Designs

A PARKING SPACES

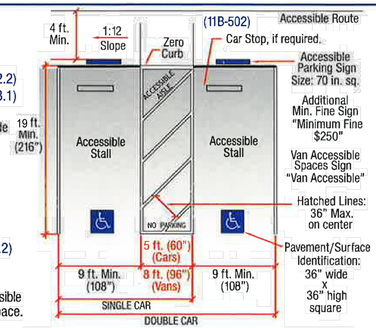
SINGLE PARKING SPACES
- Parking Space Length: 18 ft. Min. (11B-502.2)
- Parking Space Min. Dimensions: 9 ft. wide x 19 ft. long (11B-502.2)
- Access Aisle Min. Dimensions: 5 ft. wide x 19 ft. long (11B-502.3.1)

DOUBLE & DIAGONAL PARKING SPACES
- Two spaces can be provided within a 23 ft. wide area, lined to provide a 9 ft. parking area on each side of a 5 ft. loading access aisle. (11B-502.3)
- Two parking spaces or one parking space and an electrical vehicle charging space are permitted to share a common access aisle. (11B-502.3)

VAN PARKING SPACES
- Parking Space Min. Dimensions: 12 ft. wide x 19 ft. long; or 9 ft. wide where access aisle is a Min. of 8 ft. wide. (11B-502.2)
- Van Parking Spaces may be 9 ft. wide Min. where the access access aisle is a min. of 8' wide. (11B-502.2, Exc.)
- Number of Van Accessible Spaces: For every 6 or fraction of 6 accessible parking spaces at least 1 must be a van accessible parking space. (11B-208.2.4)

PARKING SPACES TABLE (11B-208.2)

Total Number of Parking Spaces in Parking Facility	Min. Number of Required Accessible Parking Spaces
1 to 25	1
26 to 50	2
51 to 75	3
76 to 100	4
101 to 150	5
151 to 200	6
201 to 300	7
301 to 400	8
401 to 500	9
501 to 1,000	2% of total
1,001 and over	20, plus 1 for each 100, or fraction thereof over 1,001



APPLICABLE TO ALL ACCESSIBLE PARKING SPACES
- Surface slope within accessible parking spaces: 2% (1:48) Max. in any direction. (11B-502.4)
- Accessible parking spaces must be located on the shortest route from parking to an accessible entrance. (11B-208.3.1)
- The disabled must not be forced to travel behind parking spaces other than their own. (11B-502.7.1)
- Curb ramps are not permitted to project into access aisles and parking spaces. (11B-502.4)
- A curb or wheel stop must be provided if required to keep vehicles from encroaching over the required clear width of adjacent accessible routes. (11B-502.7.2)
- Parking spaces, access aisles and vehicular routes serving them must provide a vertical clearance of 98" Min.(11B-502.5)
- Accessible signage must be provided at accessible parking spaces. (11B-502.6)
- Detectable Warning surfaces must be provided at curb ramps. (11B-406.5.12)

ACCESS AISLE
- Access aisles must be marked with a blue painted border line around their perimeter; markings may extend beyond the min. required length. (11B-502.3.3)
- The area within the blue borderlines must be marked with hatched lines a max. of 36" on center in a color contrasting with that of the aisle surface, preferably blue or white. (11B-502.3.3)
- The words "NO PARKING" must be painted on the surface within each access aisle in white letters a min. of 12" high and located to be visible from the adjacent vehicular way. (11B-502.3.3)
- Access aisles must be permitted to be placed on either side of the parking space except for van parking spaces which must have access aisles located on the passenger side of the parking spaces. (11B-502.3.4)
- Access aisles must not overlap the vehicular way. (11B-502.3.4)
- Access aisles must adjoin an accessible route. (11B-502.3)
- Parking spaces and access aisles must be placed so that cars and vans, when parked, cannot obstruct the required clear width of adjacent accessible routes. (11B-502.7)

CA T24 11B-502.5



***Note:** For further details and illustrations on parking facilities see 2022 CA Parking Facilities Quick-Card.*

B PARKING SIGNS
- Each parking space for persons with disabilities must be identified by a reflectorized sign permanently posted adjacent to and visible from each parking space, consisting of the International Symbol of Accessibility: a profile view of a wheelchair with an occupant in white on dark blue background. The blue must be Color No. 15090 in Federal Standard 595B. (1143A.8)
- The symbol must consist of a white figure on a blue background. (11B-502.6)



CA T24 11B-502.6-502.8 ; ADA 502.6-502.8

PAVEMENT/SURFACE IDENTIFICATION
Each accessible car and van parking space must have a surface identification complying with either Option 1 or Option 2. (11B-502.6.4)

Option 1: The parking space must be marked with an International Symbol of Accessibility in white on a blue background a min. 36" wide x 36" high.

Option 2: The parking space must be outlined in blue or painted blue and must be marked with the International Symbol of Accessibility a min. 36" wide x 36" high in white or a suitable contrasting color.

Applicable to Option 1 & 2:

The centerline of the International Symbol of Accessibility must be a Max. of 6" from the centerline of the parking space, its sides parallel to the length of the parking space and its lower corner at, or lower side aligned with, the end of the parking space.



PARKING SPACE IDENTIFICATION
- Sign Finish: Reflectorized (11B-502.6.1) • Sign Height: 60" Min. (11B-502.6)
- Sign Size: 70 sq. in. Min. area (11B-502.6.1)
- Sign Height (within circulation paths): 80" Min. (11B-502.6, Exc.)
- Sign height must be measured from the bottom of the sign to the finish floor or ground surface. (11B-502.6)
- Location: Signs must be permanently posted either immediately adjacent to the parking space or within the projected parking space width at the head end of the parking space or centered on the wall at the interior end. (11B-502.6.3)
- Parking space identification sign must be visible from each parking space. (1109A.5)
- Signs must not be obscured by a vehicle parked in the space. (11B-502.6)
- Additional language or an additional sign below the International Symbol of Accessibility must state: 'Minimum Fine $250" (11B-502.6)

UNAUTHORIZED PARKING SIGN (TOW AWAY SIGN) (1109A.8.8.1)
- Location: An additional sign must be posted either in a conspicuous place at each entrance to an off-street parking facility, OR immediately adjacent to on-site accessible parking and visible from each parking space.
- Sign Size: 17" Min. wide x 22" Min. high.
- Sign Content: "Unauthorized vehicles parked in designated accessible spaces not displaying distinguishing placards or special license plates issued for persons with disabilities will be towed away at the owner's expense. Towed vehicles may be reclaimed at: (Insert Address) or by telephoning (Insert Telephone No.)".

(Insert information in the blank spaces as a permanent part of the sign.)

C ENTRY & DIRECTIONAL SIGNS



Accessible signs are required at all accessible entries and exits. *CA T24 11B-216.6; ADA 216.6*

- Directional signs, including the International Symbol of Accessibility indicating the accessible route to the nearest accessible entrance must be provided at junctions when the accessible route diverges from the regular circulation path. (11B-216.6)
- In existing buildings and facilities where not all entrances are accessible, entrances that are accessible must be identified by the International Symbol of Accessibility. (11B-216.6)

D SIGNAGE – VISUAL CHARACTERS

VISUAL CHARACTER HEIGHT TABLE

Height to Finish Floor/Ground	Horizontal Viewing Distance	Minimum Character Height
40" to less than or equal to 70"	less than 72"	5/8"
	72" and greater	5/8" plus 1/8" per foot of viewing distance above 72"
Greater than 70" to less than or equal to 120"	less than 180"	2"
	180" and greater	2" plus 1/8" per foot of viewing distance above 180"
Greater than 120"	less than 21 ft.	3"
	21 ft. and greater	3" plus 1/8" per foot of viewing distance above 21 ft.

- Characters and background must be:
  - Non-glare finish (11B-703.5.1) • Horizontal format (11B-703.5.10)
  - Uppercase, lowercase or a combination of both (11B-703.5.2)
  - Conventional in form (No italic, oblique, script, highly decorative or of other unusual forms). (11B-703.5.3)
- Characters must contrast with their background with either light characters on a dark background or dark on light. (11B-703.5.1)
- Proportions: Width of uppercase letter "O": 60% Min. and 110% max. of the height of the uppercase letter "I". (11B-703.5.4)
- Height: See Visual Character Height Table
- Stroke Thickness of Uppercase Letter "I": 10% Min. and 20% max. of the height of the character. (11B-703.5.7)
- Character Spacing: Measured between the two closest points of adjacent characters. (11B-703.5.8)
- Spacing between individual characters must be 10% Min. and 35% Max. of character height. (11B-703.5.8)
- Line Spacing: Spacing between the baselines of separate lines of characters within a message must be 135% Min. and 170% Max. of the character height. (11B-703.5.9)

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E DOORS

MANUAL DOORS, DOORWAYS & GATES (11B-404.2)
- Manual doors, doorways and manual gates that are part of an accessible route must be accessible.

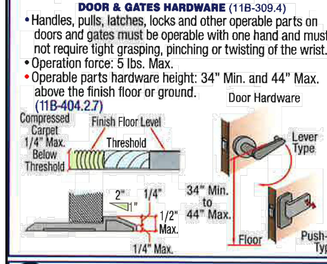
CLEAR WIDTH (11B-404.2.3)
- Clear width of door openings: 32" Min.
- Clear width of door openings greater than 24" deep: 36" Min.
- Clear openings of doorways with swinging doors must be measured between the face of the door and the stop, with the door open 90°.
- There must be no projections into the required clear opening width lower than 34" above the finish floor or ground.
- Projections into the clear opening width between 34" and 80" above the finish floor or ground must not exceed 4".

MANEUVERING CLEARANCES (11B-404.2.4)
- Maneuvering clearances must extend the full width of the doorway and the required latch side or hinge side clearance.
- Maneuvering clearances for swinging doors & gates: see Table 1.
- Maneuvering clearances for doorways less than 36" wide with out doors or gates, sliding doors or folding doors: see Table 2.
- Maneuvering clearances for recessed doors and gates: Maneuvering clearances for forward approach must be provided when any obstruction within 18" of the latch side, at an interior doorway, or within 24" of the latch side of an exterior doorway, projects more than 8" beyond the face of the door, measured perpendicular to the face of the door or gate.

THRESHOLDS (1132A.4.1)
- Thresholds, at primary entry and required exit doors, must be 1/2" high Max.
  - Thresholds at secondary exterior doors, including sliding doors, must be 3/4" high max.
- For thresholds and changes in level at doorways:
  - Changes in level of 1/4" high Max. must be permitted to be vertical and without edge treatment.
  - Changes in level between 1/4" high Min. and 1/2" high Max. must be beveled with a slope not steeper than 1:2.

DOOR & GATES IN SERIES (11B-404.2.6)
- The distance between two hinged or pivoted doors in series and gates in series must be 48" Min. plus the width of doors or gates swinging into the space.

DOOR & GATES HARDWARE (11B-309.4)
- Handles, pulls, latches, locks and other operable parts on doors and gates must be operable with one hand and must not require tight grasping, pinching or twisting of the wrist.
- Operation force: 5 lbs. Max.
- Operable parts hardware height: 34" Min. and 44" Max. above the finish floor or ground. (11B-404.2.7)



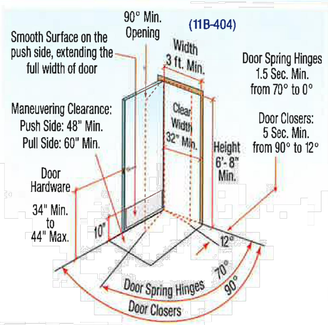


TABLE 1* MANEUVERING CLEARANCES AT MANUAL SWINGING DOORS & GATES

Type of Use		Minimum Maneuvering Clearance	
Approach Direction	Door or Gate Side	Perpendicular to Doorway	Parallel to Doorway (beyond latch side unless noted)
From front	Pull	60 inches	18 inches[5]
From front	Push	48 inches	0 inches[1]
From hinge side	Pull	60 inches	36 inches
From hinge side	Push	44 inches[2]	22 inches[3]
From latch side	Pull	60 inches	24 inches
From latch side	Push	44 inches[4]	24 inches

* CA T24 Table 11B-404.2.4.1; ADA Table 404.2.4.1
[1] Add 12" if closer and latch are provided.
[2] Add 4" if closer and latch are provided.
[3] Beyond hinge side.
[4] Add 4" if closer is provided.
[5] Add 6" at exterior side of exterior doors.

TABLE 2* MANEUVERING CLEARANCES AT DOORWAYS WITHOUT DOORS OR GATES, MANUAL SLIDING DOORS & MANUAL FOLDING DOORS

Approach	Minimum Maneuvering Clearance	
Approach Direction	Perpendicular to Doorway	Parallel to Doorway (beyond stop/latch side unless noted)
From front	48 inches	0 inches
From side[1]	42 inches	0 inches
From pocket/hinge side	42 inches	22 inches[2]
From stop/latch side	42 inches	24 inches

* CA T24 Table 11B-404.2.4.2; ADA Table 404.2.4.2
[1]Doorway with no door only. [2]Beyond pocket/hinge side.

- Where sliding doors are in the fully open position, operating hardware must be exposed and usable from both sides. (11B-404.2.7)

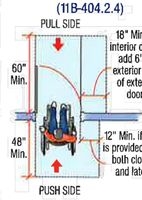
CLOSING SPEED (11B-404.2.8)
- Door closers and gate closers must be adjusted so that from an open position of 90°, the time required to move the door to a position of 12° from the latch is 5 seconds Min.
- Door and gate spring hinges must be adjusted so that from the open position of 70°, the door or gate must move to to the closed position in 1.5 seconds min.

DOOR & GATE OPENING FORCE (11B-404.2.9)
- Interior hinged doors, gates and exterior hinged doors: 5 lbs. Max.
- Sliding or folding doors: 5 lbs. Max. • Fire doors: 15 lbs. Max.
- These forces do not apply to the force required to retract latch bolts or disengage other devices that hold the door or gate in a closed position.

DOOR & GATE SURFACES (11B-404.2.10)
- Swinging door and gate surfaces within 10" of the finish floor or ground measured vertically must have a smooth surface on the push side extending the full width of the door or gate.
- Parts creating horizontal or vertical joints in these surfaces must be within 1/16" of the same plane as the other and be free of sharp or abrasive edges.
- Cavities created by added kick plates must be capped.

VISION LIGHTS (11B-404.2.11)
- Doors, gates and side lights adjacent to doors or gates, containing one or more glazing panels that permit viewing through the panels must have the bottom of at least one glazed panel located 43" Max. above the finish floor.

(11B-404.2.4)



(11B-404.2.7-404.2.8)
(11B-404.2.4)

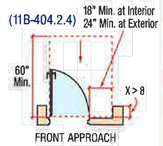


(11B-404.2.11)

(11B-404.2.6)



(11B-404.2.4)



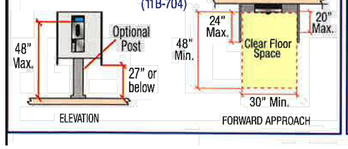
Note: The floor or landing area within the required clearances must be level and clear.

CA T24 11B-404.1, 404.2 - 404.2.11, 309.4; ADA 404.1. 404.2 - 404.2.11, 309.4

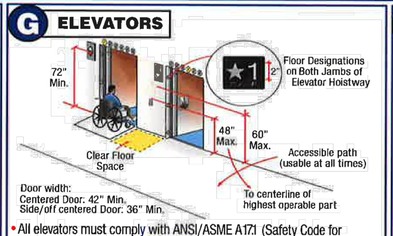
F TELEPHONES
- The clear floor or ground space must not be obstructed by bases, enclosures or seats. (1140A.2)
- Where a parallel approach is provided, the distance from the edge of the telephone enclosure to the face of the telephone unit must be 10" Max. (1140A.5)
- Where a forward approach is provided at a telephone within an enclosure, the counter may extend beyond the face of the telephone 20" into the required clear floor or ground space and the enclosure may extend beyond the face of the telephone 24". (1140A.5)
- Telephones must have push-button controls where such service is available. (1140A.8)
- The cord from the telephone to the handset must be 29" long Min. (1140A.9)

TELEPHONES FOR THE HEARING IMPAIRED (1140A.6)
- Public telephones required to have volume controls must have a receiver volume control that provides a gain adjustable up to 20 dB Min.
- An automatic reset must be provided.
- Volume control telephones must be equipped with a receiver that generates a magnetic field in the area of the receiver cap.
- Public telephones with volume control must be hearing aid compatible.

(11B-704)



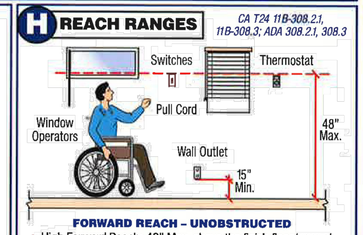
G ELEVATORS



- All elevators must comply with ANSI/ASME A17.1 (Safety Code for Elevators & Escalators). (11B-407.1)
- Elevator call buttons must have square shoulders, a min. of 3/4" in their smallest dimension, & raised 1/8", plus or minus 1/32" above the surrounding surface. (11B-407.2.1.2)
- Hall signals, including car signals, must provide visible & audible signals at each entrance to indicate which car is answering, & which direction (audio 'up' or 'down' or one ring for up & two for down). (11B-407.2.2.1)
- Elevator hall lanterns must be no more than 72" from the centerline to the finish floor or ground surface. (11B-407.2.2.2)
- Signs at elevator hoistways must have floor designations in both raised characters a min. of 2" high & Braille on both jambs of hoistway entrances. (11B-407.2.3.1)
- The sign at the main level must have a raised star a min. of 2" high on it. Raised characters, including the star, must be white on a black background. Braille under the star must read 'MAIN'. (11B-407.2.3.1)
- Elevator emergency controls must be 35" min. centerline from the finish floor of the car. (11B-407.4.6.4)
- Handrails must be provided on at least one wall, between 31" & 33" above the finish floor. The ends of the handrails must be 6" max. from adjacent walls. (11B-407.4.10)

H REACH RANGES

CA T24 11B-308.2.1, 11B-308.3; ADA 308.2.1, 308.3



FORWARD REACH – UNOBSTRUCTED
- High Forward Reach: 48" Max. above the finish floor/ground.
- Low Forward Reach: 15" Min. above the finish floor/ground.

FORWARD REACH – OBSTRUCTED HIGH REACH
- Clear floor space must extend beneath the element for a distance not less than the required reach depth over the obstruction.
- High Forward Reach where Reach Depth is 20" Max.: 48" Max.
- High Forward Reach where Reach Depth Exceeds 20": 44" Max. Note: Reach depth must be 25" Max.

SIDE REACH – UNOBSTRUCTED
- High Side Reach: 48" Max. above the finish floor/ground.
- Low Side Reach: 15" Min. above the finish floor/ground.

SIDE REACH – OBSTRUCTED HIGH REACH
- Height of Obstruction: 34" Max.
- Depth of Obstruction: 24" Max.
- High Side Reach where Reach Depth is 10" Max.: 48" Max.
- High Side Reach where Reach Depth Exceeds 10": 46" Max. Note: Reach depth must be 24" Max.

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sheet type:

sheet no.

A220

I STAIRWAYS

TREADS & RISERS

- All steps on a flight of stairs must have uniform riser heights and uniform tread depths. (11B-504.2)
- Risers Height: 4" Min. and 7" Max. (11B-504.2)
- Treads Depth: 11" Min. (11B-504.2)
- Open risers are not permitted. (11B-504.3)
- Tread Surface must be stable, firm and slip resistant. (11B-302.1)
- Changes in level, slopes over 1:48, & detectable warnings are not permitted. (11B-504.4)

TREAD CONTRASTING STRIPE (11B-504.4.1)

- Interior stairs must have the upper approach and lower tread marked by a stripe providing clear visual contrast.
- Exterior stairs must have the upper approach and all treads marked by a stripe providing clear visual contrast.
- The stripe must be a min. of 2" wide to a Max. of 4" wide placed parallel to, and not more than 1" from, the nose of the step or upper approach.
- The stripe must extend the full width of the step or upper approach and must be of material that is at least as slip resistant as the other treads of the stair.
- A painted stripe must be acceptable.
- Grooves must not be used to satisfy this requirement.

NOSINGS (11B-504.5)

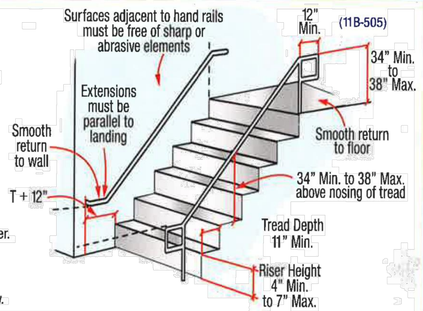
- Nosings that project beyond risers must have the under side of the leading edge curved or beveled.
- Risers must be permitted to slope under the tread at an angle of 30° max. from vertical.
- The permitted projection of the nosing must extend 1¼" Max. over the tread below.

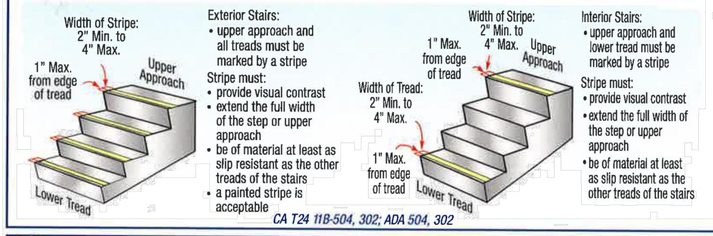
WET CONDITIONS (11B-504.7)

- Stair treads and landings subject to wet conditions must be designed to prevent the accumulation of water.

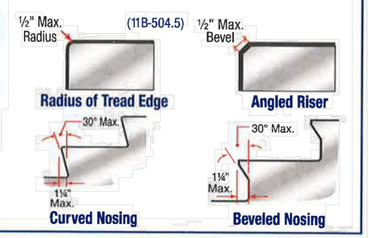
HANDRAILS (11B-505)

- Handrails must be provided on both sides of stairs.
- Handrail Height: 34" Min. and 38" Max.
- Handrails must comply with Section K, Handrails, below.





CA T24 11B-504, 302; ADA 504, 302



J RAMPS

- A walking surface that has a running slope steeper than 1:20 (5% slope) is considered a ramp. (DEFINITIONS)

LANDINGS (11B-405.7)

- Ramps must have landings at the top and the bottom of each ramp run.
- Landings must be stable, firm and slip resistant.
- Changes in level, slopes over 1:48, & detectable warnings are not permitted.
- The landing clear width must be at least as wide as the widest ramp run leading to the landing.
- Top landings must be 60" wide Min.
- The landing clear length must be 60" long Min.
- Bottom landings must extend 72" Min. in the direction of the ramp run.
- Ramps that change direction between runs at landings must have a clear landing 60" Min. x 72" Min. in the direction of downward travel from the upper ramp run.
- Where doorways are located adjacent to a ramp landing, maneuvering clearances are permitted to overlap the required landing area.
- Doors, when fully open, must not reduce the required ramp landing width by more than 3".
- Doors, in any position, must not reduce the minimum dimension of the ramp landing to less than 42".

SLOPE (11B-405.2)

- Ramp runs must have a running slope not steeper than 1:12.

CROSS SLOPE (11B-405.3)

- Cross slope of ramp runs must not be steeper than 1:48.

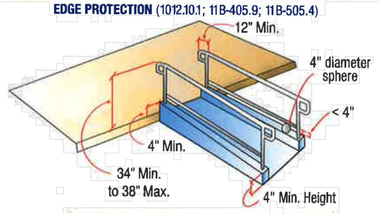
RISE (11B-405.6)

- The rise for any ramp run must be 30" Max.

CLEAR WIDTH (11B-405.5)

- The clear width of a ramp run must be 48" Min.

EDGE PROTECTION (1012.10.1; 11B-405.9; 11B-505.4)



FLOOR OR GROUND SURFACES (11B-405.4)

- Floor or ground surfaces of ramp runs must be stable, firm and slip resistant.
- Changes in level other than the running slope and cross slope are not permitted on ramp runs.

EDGE PROTECTION (11B-405.9)

- Edge protection must be provided on each side of ramp runs and at each side of ramp landings.

CURB OR BARRIER (11B-405.9.2)

- A curb, or barrier must be provided that prevents the passage of a 4" diameter sphere, where any portion of the sphere is within 4" of the finish floor or ground surface.
- To prevent wheel entrapment, the curb or barrier must provide a continuous and uninterrupted barrier along the length of the ramp.
- Curbs must be at least 4" high. (1012.10.1)

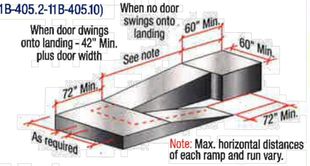
WET CONDITIONS (11B-405.10)

- Landings subject to wet conditions must be designed to prevent the accumulation of water.

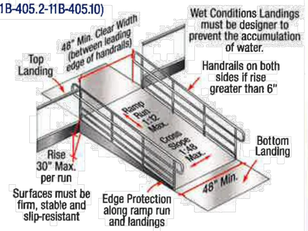
HANDRAILS (11B-405.8)

- Handrails must be provided on both sides of ramps.
- Handrails must comply with Section K, Handrails, below.

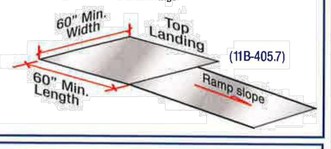
(11B-405.2-11B-405.10)



(11B-405.2-11B-405.10)

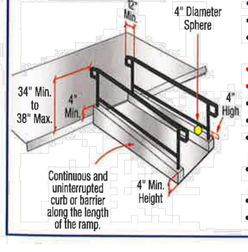


(11B-405.7)

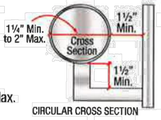


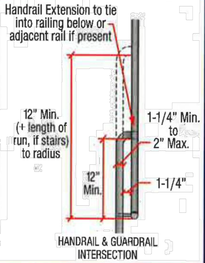
K HANDRAILS

(11B-505); ADA 505



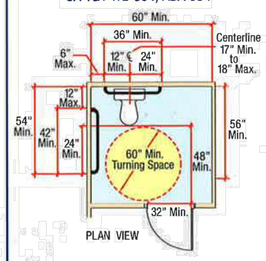
- Handrails must be provided on both sides of stairs and ramps.
- Handrails must be continuous the full length of each stair flight or ramp run.
- Handrail Height: 34" Min. to 38" Max. measured from walking surfaces, stair nosings or ramp surface to top of gripping surface.
- Handrail Gripping Surfaces (Circular Cross Section) Outside Diameter: 1-1/4" Min. to 2" Max.
- Handrail Gripping Surfaces (Non-Circular Cross Section) Perimeter: 4" Min. to 6-1/4" Max.
- Handrail Gripping Surfaces (Non-Circular Cross Section) Dimension: 2-1/4" Max.
- Handrail Clearance: 1-1/2" Min. between handrail gripping surfaces and adjacent surfaces.
- Handrails may be located in a recess if the recess is 3" max. deep and 18" min. clear above the top of the handrail.
- Surfaces: Handrail gripping surfaces and any surfaces adjacent to them must be free of sharp or abrasive elements and must have rounded edges.
- Handrails must not rotate within their fittings.
- Handrails must extend horizontally above the landing for 12" min.

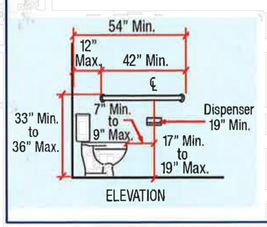




O WATER CLOSETS & TOILET COMPARTMENTS

CA T24 11B-604; ADA 604





LOCATION (11B-604.2)

- The water closet must be positioned with a wall or partition to the rear and to one side.
- Centerline of Water Closet: 17" Min. to 18" Max. from side wall or partition.
- Arrangement: left-hand or right hand approach.

CLEARANCE (11B-604.3)

- Clearance Around Water Closet: 60" Min. measured perpendicular from the side wall and 56" Min. measured perpendicular from the rear wall.
- Maneuvering Space: 60" wide x 48" deep space must be provided in front of the water closet.

OVERLAP (11B-604.3.2)

- The required clearance around the water closet must be permitted to overlap the water closet, associated grab bars, dispensers, sanitary napkin disposal units, coat hooks, shelves, accessible routes, clear floor space and clearances required at other fixtures and the turning space.
- No other fixtures or obstructions must be located within the required water closet clearance.

GRAB BARS (11B-604.5)

- Grab bars must be provided on the side wall closest to the water closet and on the rear wall.
- Where separate grab bars are required on adjacent walls at a common mounting height, an L-shaped grab bar meeting dimensional requirements is permitted.
- Installation Height: 33" Min. to 36" Max.

SEATS (11B-604.4)

- Water closet seat 17-19" from floor.
- Seat Height: 2" Max.

SIDE GRAB BAR (11B-604.5.1)

- Length: 42" Min.
- Location: 12" Max. from the rear wall and extending 54" Min. from the rear wall with the front end positioned 24" Min. in front of the water closet.

REAR GRAB BAR (11B-604.5.2)

- Length: 36" Min.
- Location: must extend from the centerline of the water closet 12" Min. on one side and 24" Min. on other side.

FLUSH CONTROLS (11B-604.6)

- Location: open side of the water closet.
- Installation Height: 44" Max. above the finish floor.
- Controls: hand operated or automatic.
- Hand operated flush controls must be operable with one hand and must not require tight grasping, pinching or twisting of the wrist.
- Operation Force: 5 lbs. max.

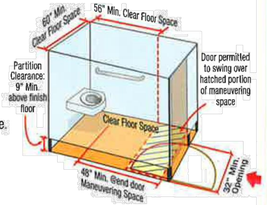
DISPENSERS (11B-604.7)

- Toilet paper dispenser outlet 19" min. above finished floor, below the grab bar Distance from front of water closet 7-9" to centerline of dispenser.
- Toilet paper dispenser must allow free paper flow & not control delivery
- Sanitary napkin disposal unit between rear wall & toilet paper dispenser, 19" min. above finished floor.

P WHEELCHAIR ACCESSIBLE COMPARTMENTS

COMPARTMENT CLEARANCE (11B-604.8)

- Wheelchair accessible compartments must be 60" wide Min. measured perpendicular to the side wall, and 56" deep Min. for wall hung water closets and 59" deep Min. for floor mounted water closets measured perpendicular to the rear wall.
- The required clearance around the water closet may overlap the water closet, associated grab bars, dispensers, sanitary napkin disposal units, coat hooks, shelves, accessible routes, clear floor space and clearances required at other fixtures and the turning space.
- No other fixtures or obstructions must be located within the required water closet clearance. (11B-604.3.2)



MANEUVERING SPACE WITH IN-SWINGING DOOR (11B-604.8.1.1.1)

- In a wheelchair accessible compartment with an in-swinging door, a Min. 60" wide x 36" deep maneuvering space must be provided in front of the clearance required.

MANEUVERING SPACE WITH SIDE-OPENING DOOR (11B-604.8.1.1.2)

- In a wheelchair accessible compartment with a side-opening door, either in-swinging or out-swinging, a Min. 60" wide x 60" deep maneuvering space must be provided in front of the water closet.

MANEUVERING SPACE WITH END-OPENING DOOR (11B-604.8.1.1.3)

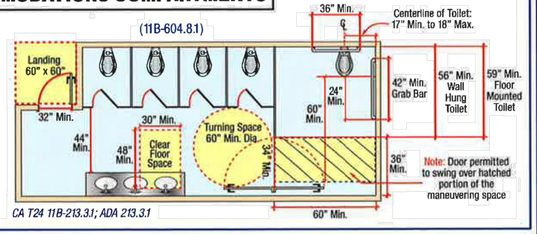
- In a wheelchair accessible compartment with an end-opening door (facing the water closet), either in-swinging or out-swinging, a Min. 60" wide x 48" deep maneuvering space must be provided in front of the water closet.

CA T24 11B-604.8; ADA 604.8

Q MULTIPLE ACCOMMODATIONS COMPARTMENTS

Where toilet compartments are provided, at least 5%, or 5% of both compartments and urinals, but no fewer than 1 toilet compartment must be accessible and comply with Wheelchair Accessible Compartments. Additionally, where 6 or more toilet compartments are provided, or where both urinals and water closets total 6 or more fixtures, toilet compartments complying with Ambulatory Accessible Compartments must be provided in the same quantity as the toilet compartments required to comply with Wheelchair Accessible Compartments.

(11B-604.8.1)

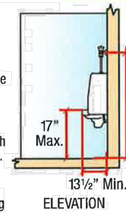


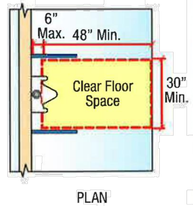
CA T24 11B-213.3.1; ADA 213.3.1

R URINALS

CA T24 11B-605; ADA 605

- Urinal Types: stall-type or the wall-hung type
- Urinal Height: 17" Max. above the finish floor or ground.
- Urinal Depth: 13½" deep Min. measured from the outer face of the urinal rim to the back of the fixture.
- Clear Floor/Ground Space: 30" Min. x 48" Min., positioned for a forward approach.
- Clear Space Extension Under Urinal: 6" Max. under the urinal with a min. of 9" of toe clearance from the floor to the urinal's bottom.
- Flush Controls: hand operated or automatic,
- Flush Controls: must be 44" Max above the finish floor; operable with one hand and not require tight grasping, pinching or twisting of the wrist.
- Flush Control Operation Force: 5 lbs. Max. to activate operable parts.

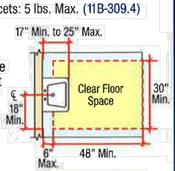




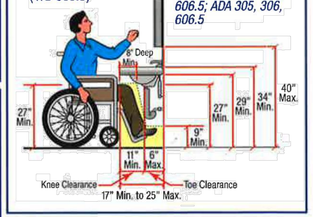
CA T24 11B-605, 305, 306, 309; ADA 605, 305, 306, 309

S LAVATORIES

- Clear Floor Space: 30" Min. x 48" Min., positioned for a forward approach (11B-305.3)
- Toe Clearance: 9" above the finish floor or ground, extending 25" Max. under an element. (11B-306.2.1)
- Knee Clearance: 9" and 27" above the finish floor or ground, extending 25" max. under an element at 9" above the finish floor or ground. (11B-306.3.1)
- Toe and Knee Clearance Width: 30" Min. (11B-306.3.5)
- Horizontal Depth: 17" Min. to 25" Max. (11B-306.2.2-3)
- Lavatory Height: 34" Max. (11B-606.3)
- Centerline of Lavatory if Adjacent to Wall or Partition: 18" Min. (11B-606.6)
- Hand-Operated Metering Faucets Opening Duration: 10 secs. Min. (11B-606.4)
- Force to Operate Faucets: 5 lbs. Max. (11B-309.4)
- Water supply and drain pipes under lavatories must be insulated or otherwise configured to protect against contact. (11B-606.5)
- There must be no sharp or abrasive surfaces under lavatories. (11B-606.5)

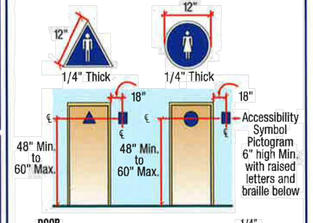


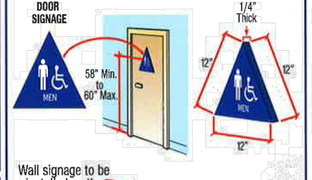
CA T24 11B-305, 306, 606.5; ADA 305, 306, 606.5



T TOILET IDENTIFICATION

CA T24 11B-703.6







- Tactile characters on signs must be located 48" Min. above the finish floor or ground surface, measured from the baseline of the lowest Braille cells and 60" Max. above the finish floor or ground surface, measured from the baseline of the highest line of raised characters.

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ADA DETAILS

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Date: 3/27/25

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sheet type:

sheet no.

A230

ELECTRICAL NOTES:

1. ALL ELECTRICAL OUTLETS AND CONNECTIONS SHOWN ON THIS PLAN ARE FOR EQUIPMENT SHOWN ON FOOD SERVICE EQUIPMENT PLAN ONLY.
2. ELECTRICAL CONTRACTOR TO VERIFY ALL INCOMING SERVICE AND FINAL HOOK-UP TO ALL APPLICABLE EQUIPMENT AND TO PROVIDE ALL SWITCHES, BREAKERS, CONDUIT, STARTERS, ETC., UNLESS SPECIFICALLY STATED OTHERWISE.
3. ELECTRICAL CONTRACTORS SHALL PROVIDE ALL JUNCTION BOXES, OUTLETS, AND RECEPTACLES IN FIXTURES FABRICATOR TO LOCATE ALL RECEPTACLES AND SWITCHES WHEN PART OF FIXTURES INTERNAL WIRING TO BE PROVIDED AND INSTALLED BY ELECTRICAL CONTRACTOR.
4. ALL HORIZONTAL DIMENSIONS SHOWN ARE FROM FINISHED FACE OF WALL TO CENTER LINE OF OUTLET UNLESS OTHERWISE NOTED ON PLANS OR DETAILS.
5. ALL SYMBOLS NOTED +12,+18, ETC.,TO STUB-OUT OF WALL AT HEIGHT INDICATED. HEIGHT IS GIVEN FROM FINISHED FLOOR TO CENTER LINE OF OUTLET NOT FINISHED CURB.
6. ELECTRICAL CONTRACTOR TO PROVIDE 5" PIGTAIL FLEX CONDUIT AT ALL DIRECT CONNECT STUB-OUTS, EXTENDED AND CONNECTED TO FIXTURES.
7. ELECTRICAL CONTRACTOR TO WIRE MAGNETIC CONTACTOR(S) FOR POWER SHUT-OFF FOR ALL ELECTRIC COOKING EQUIPMENT AND ALL ELECTRICAL OUTLETS UNDER HOOD THAT IS PROTECTED BY THE FIRE PROTECTION SYSTEM. CONNECT 115 VOLT CONTROL CIRCUIT FROM MICRO SWITCH SYSTEM ON CYLINDER, MOUNT TO HOLDING COIL OF CONTACTORS.
8. ELECTRICAL CONTRACTOR TO PROVIDE A MINIMUM OF THREE(3) WIRES ON ALL 208 OR 230 VOLT CIRCUITS.
9. ELECTRICAL CONTRACTOR TO PROVIDE AND INSTALL STAINLESS STEEL COVER PLATES FOR ALL RECEPTACLES AND SWITCHES FOR FOOD PREPARATION AREAS UNLESS NOTED OTHERWISE. ALL RECEPTACLES TO BE SET HORIZONTALLY.
10. ELECTRICAL CONTRACTOR TO PROVIDE AND INSTALL ALL GENERAL LIGHTING FIXTURES COMPLETE WITH LAMPS.
11. ELECTRICAL CONTRACTOR TO PROVIDE AND INSTALL LIGHTS MARKED "EXIT" TO MEET CODES, INTERNALLY ILLUMINATED WITH THE WORD "EXIT" IN GREEN LETTERS WITH WHITE BACKGROUND.
12. ELECTRICAL CONTRACTOR TO PROVIDE AND INSTALL(2) SEPARATE CIRCUITS FOR EXIT SIGNS CONFORMING TO CODE SECTIONS AS FOLLOWS: CFC SEC. 12113B(1), SEC. 12114D(1); CBC SEC. 3313B, SEC. 3314D.
13. ELECTRICAL CONTRACTOR TO PROVIDE ALL NECESSARY FORMS REQUIRE FOR TITLE 24 BUILDING DEPARTMENT REQUIREMENTS.
14. ELECTRICAL CONTRACTOR TO PROVIDE NEW ELECTRICAL PANEL, IF NECESSARY AND NOTE ELECTRICAL RUN SIZES, WIRING, ETC., PER BUILDING DEPARTMENT REQUIREMENTS.
15. ELECTRICAL CONTRACTOR TO PROVIDE ELECTRICAL FOR WALK-IN FREEZER AND COOLER. VERIFY LOCATION AND POWER REQUIRED.
16. ELECTRICAL CONTRACTOR TO INSTALL HOOD LIGHTING, INTERCONNECT LIGHTS IF MORE THAN ONE PROVIDED AND MAKE FINAL CONNECTION.
17. ELECTRICAL CONTRACTOR TO PROVIDE CONVENIENT OUTLETS WHERE APPLICABLE PER CODES AND OWNER'S REQUIREMENTS.
18. ELECTRICAL CONTRACTOR TO CONTACT CLIENT ON ELECTRICAL INFORMATION AND LOCATION FOR: SOUND SYSTEMS; CASH REGISTERS; TELEPHONE SYSTEMS; OR ANY OTHER FIXTURES NOT RELATED TO FOOD SERVICE EQUIPMENT PROVIDED.
19. ELECTRICAL CONTRACTOR TO INSTALL ALL KITCHEN EQUIPMENT CONTROL PANELS PROVIDE ALL WIRING CONNECTION BETWEEN EQUIPMENT AND CONTROL PANEL (SEE PLAN FOR ITEMS THAT ARE EQUIP WITH SEPARATE CONTROL PANEL).
20. ELECTRICAL CONTRACTOR TO PROVIDE AND INSTALL ELECTRICAL MAGNETIC CONTACTOR CONNECT TO FIRE PROTECTION SYSTEM TO SHUT-OFF ALL ELECTRICAL COOKING EQUIPMENTS AND ELECTRICAL OUTLETS BELOW EXHAUST HOOD(S).
21. ELECTRICAL CONTRACTOR TO PROVIDE ALL KITCHEN EQUIPMENTS ELECTRICAL HOOD UPS AND FINAL CONNECTIONS.

All installed luminaires shall be high-efficacy in accordance with ES Table 150.0-A

Luminaires must have a label certified for airtight construction.

Light source that are not marked JA8-2019-E shall not installed in enclosed luminaires. ES 150.0(k)

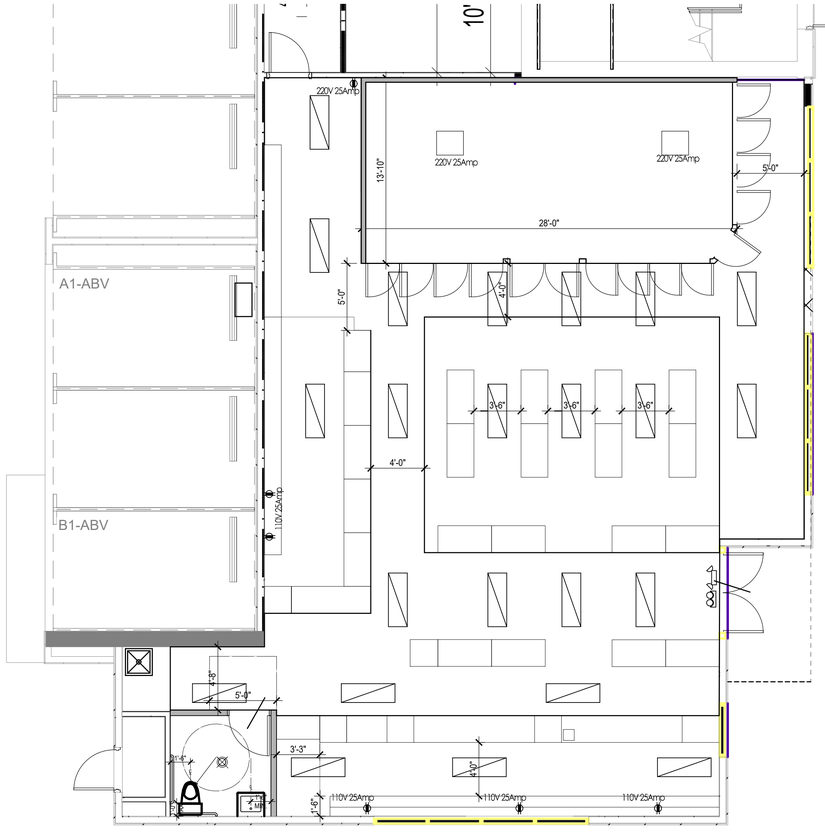
(E) ELECTRICAL RM
(E) METER 200 AMPS
240 VAC-125VDC 3 poles

ELECTRICAL/MECHANICAL LEGEND

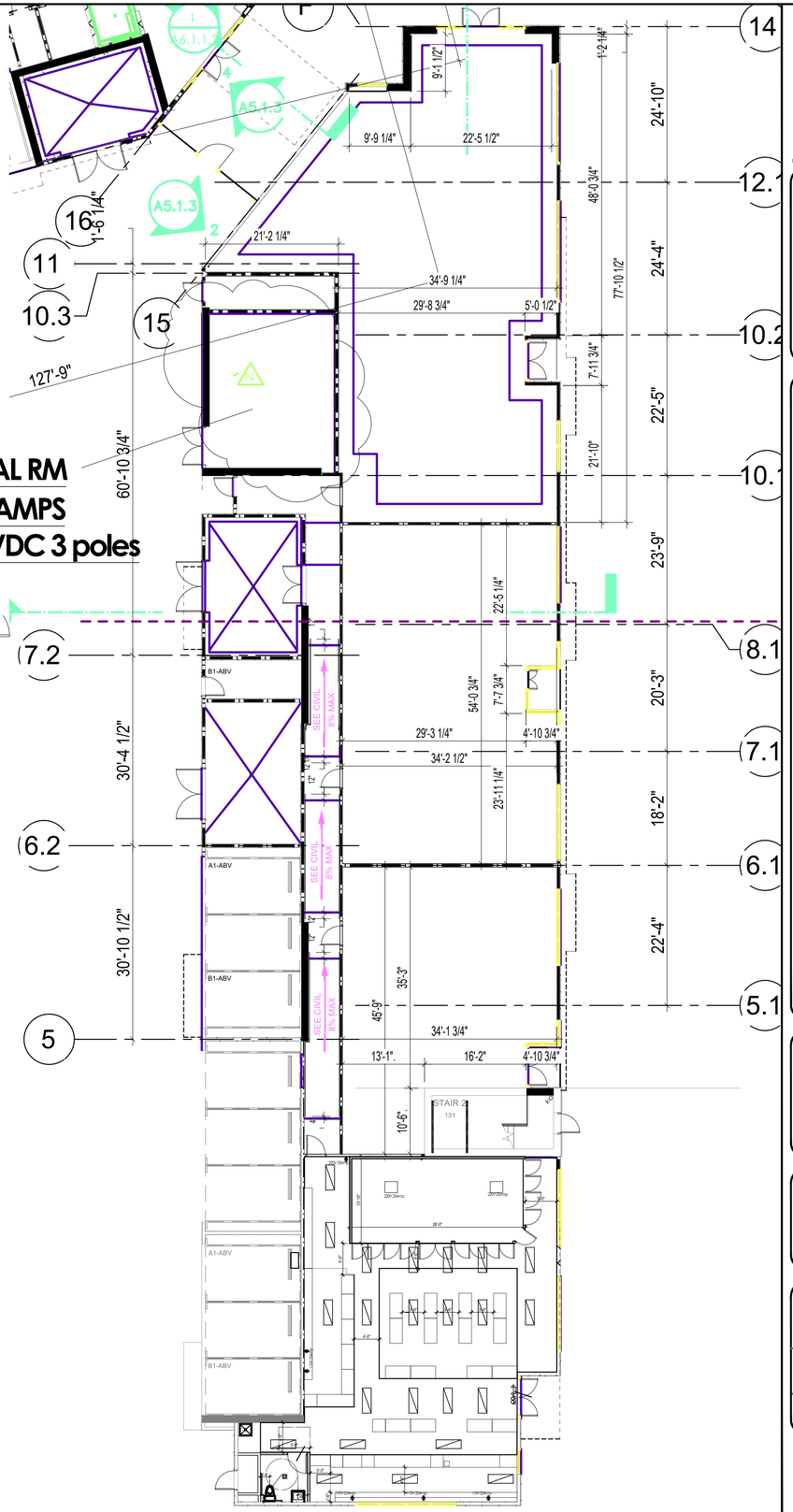
Symbol	Max/Watts	Description
SD	5 Watt	Dual smoke & Carbon monoxide Alarms shall be hardwired with battery back up. [2010 CRC R314-R315]
GFCI AFCI	180 Watt	DUPLEX RECEPT., 20-AMP, GROUND TYPE, HORIZONTAL MOUNT 120-VOLT, Tamper-Resistant Electrical outlet (water proofed)
S	13 Watts	Recessed spot light CANLITE
	120V	Single Pole Wall Switch
	120V	Leviton 180 Degree PIR-Incandescent CFL-LED Occupancy Detector
	120V/220V	General Electric - PowerMark Gold 40 AMP 2-Space 4-Circuit Indoor Single-Phase Main Lug Circuit Breaker Panel
	120V/220V	FEED FROM ELECTRICAL METER
	600 V max	12/3 UF W/G Cable made of 3 Copper conductors that feature PVC jackets. 600-volt maximum
	32 Watts x 2	Flourescent light 12"x 48"
TV		TELEVISION OUTLET
		TELEPHONE OUTLET
		HAMPTON BAY CEILING BATH FAN W/ LIGHT Model # TY-50HL (HD) , 50 CFM, 0.5-1.0 SONES
	15 Watt	Emergency Battery - Exit Sign L.E.D. LITHONIA #LES-W1R-120/277-ELNSD SINGLE FACE
	15 Watt	Emergency Battery Unit with 2 Heads LITHONIA #ELM1272-H1212-SD
	NONE	Automatic timer/ Bi Level Lighting Sensor

NOTE:

-Wiring method thru walls using Flexible Steel Conduit.
-Wiring method thru ceilings using Galvanized Rigid Steel Conduit.



ELECTRICAL PLAN Scale : 3/16" = 1'-0"



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J Torres Designs

COTA VERA MINI MARKET

1982 LA Media Pkwy South, Chula Vista, CA 91913

TENANT IMPROVEMENT-NEW MINI MARKET-LIQUOR

SHEET CONTENT:

Electrical LIGHTING PLANS

REVISIONS:

Design: Jose Perez

Responsible: **JOSE PEREZ**
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4th floor
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Check: Jose Perez

Date: 10/05/2

sheet type: E

sheet no. 2

MECHANICAL SPECIFICATIONS

PART 1-GENERAL

1.01 GENERAL CONDITIONS

A. GENERAL DESCRIPTION:

1. AIR CONDITIONING FOR INDICATED AREA COMPLETE WITH SUPPLY DUCTS, RETURN AIR DUCTS, AIR DISTRIBUTION EQUIPMENT AND CONTROLS.
2. AIR CONDITIONING UNITS COMPLETE WITH REQUIRED SUPPLY FANS, COOLING COILS, FILTERS, DUCTWORK, DIFFUSERS, GRILLES, DAMPERS, CONTROLS AND OTHER ITEMS HEREIN SPECIFIED.
3. VENTILATION OF MISCELLANEOUS ROOMS WITH EXHAUST FANS, DUCTING AND CONTROLS.
4. REMOVAL OF EXISTING DUCTWORK AND PIPING AS INDICATED ON THE DRAWINGS.

1.02 RELATED WORK INCLUDED IN THIS SECTION

A. FURNISH ELECTRICAL DEVICES NECESSARY FOR MECHANICAL WORK, EXCEPT DISCONNECTS UNLESS INDICATED OTHERWISE.

B. LINE AND LOW VOLTAGE WIRING FOR MECHANICAL CONTROLS INCLUDING FINAL CONNECTIONS.

C. CONDUIT FOR LINE AND LOW VOLTAGE WIRING FOR MECHANICAL CONTROLS.

D. RESPONSIBILITY FOR OBTAINING CLARIFICATION OF DISCREPANCIES BETWEEN MECHANICAL AND ELECTRICAL WORK PRIOR TO PROCEEDING WITH THE WORK.

E. RESPONSIBILITY FOR PROPER OPERATION OF AUTOMATIC PNEUMATIC/ELECTRIC CONTROLS AND EQUIPMENT AND OF ELECTRIC POWER DRIVEN EQUIPMENT FURNISHED UNDER THIS SECTION.

F. MISCELLANEOUS STEEL FOR DUCTS AND PIPES HANGERS AND SUPPORTS INCLUDING STRUCTURAL CALCULATIONS PREPARED BY A CALIFORNIA LICENSED STRUCTURAL ENGINEER.

1.03 RELATED WORK SPECIFIED IN OTHER SECTIONS

A. CONCRETE WORK INCLUDING MISCELLANEOUS METAL IN CONNECTION WITH PITS, TRENCHES AND CATCH BASINS WITH FOUNDATIONS OR CONCRETE PADS UNDER ROOFTOP PACKAGE UNITS, BOILER UNITS, PUMP AND OTHER MECHANICAL EQUIPMENT. TEMPLATES FOR SPACING AND SIZES OF CONCRETE PADS AND ANCHOR BOLTS UNDER THIS SECTION.

B. ELECTRICAL WORK AS FOLLOWS WILL BE PROVIDED ELECTRICAL CONTRACT SCOPE:

1. CONDUIT FOR LINE WIRING FOR EQUIPMENT AND DEVICES AS INDICATED OR SPECIFIED EXCEPT CONDUIT FOR LINE AND LOW VOLTAGE WIRING FOR MECHANICAL CONTROLS AS SPECIFIED UNDER DIVISION 15.
2. LINE WIRING FOR EQUIPMENT AND DEVICES AS INDICATED OR SPECIFIED HEREIN EXCEPT LINE AND LOW VOLTAGE WIRING FOR MECHANICAL CONTROLS AS SPECIFIED UNDER DIVISION 15.
3. PROVIDING DISCONNECT SWITCHES.
4. INSTALLING ELECTRICAL DEVICES SUCH AS STARTERS AND DISCONNECTS, AND WHEN INDICATED, FURNISHING ALL SUCH DEVICES.

C. BUILDING MANAGEMENT AND CONTROL SYSTEM TEMPERATURE CONTROLS.

1.04 QUALITY ASSURANCE

A. CODES AND STANDARDS: IN ADDITION TO THE REQUIREMENTS OF ALL GOVERNING CODES, ORDINANCES AND AGENCIES, CONFORM TO THE REQUIREMENTS OF THE FOLLOWING CODES AND STANDARDS:

1. APPLICABLE CITY REGULATIONS AND ORDINANCES
2. CALIFORNIA BUILDING CODE, 2013 EDITION
3. CALIFORNIA MECHANICAL CODE, 2013 EDITION
4. THE CALIFORNIA CODE OF REGULATIONS (CCR) TITLE 24, 2013.
5. HEALTH AND SAFETY CODE, STATE OF CALIFORNIA
6. NATIONAL BOARD OF FIRE UNDERWRITERS PUBLICATIONS:

a. PAMPHLET # 70 NATIONAL ELECTRICAL CODE
b. PAMPHLET # 90A AIR CONDITIONING SYSTEMS

1.05 SUBMITTALS

A. SHOP DRAWINGS: BEFORE ANY OF THE MATERIALS OF THIS SECTION ARE DELIVERED AT THE JOBSITE, SUBMIT COMPLETE SHOP DRAWINGS. SHOW ALL DETAILS OF ALL DUCTWORK, PIPING AND EQUIPMENT PADS. THE SHOP DRAWINGS SHALL REPRESENT A COORDINATED SET OF DRAWINGS WITH OTHER DISCIPLINES.

B. PRODUCT DATA:

1. SUBMIT COPIES OF ALL MANUFACTURERS' PRODUCT DATA SIMULTANEOUSLY WITH ALL SHOP DRAWING SUBMITTALS.
2. PRODUCT DATA TO INCLUDE ALL AIR CONDITIONING EQUIPMENT, HANGERS, FANS, DUCTWORK CONSTRUCTION, PIPING, AND OTHER STANDARD ITEMS AS REQUIRED TO COMPLEMENT SHOP DRAWINGS FOR A SUBMITTAL INDICATING ALL PRODUCTS TO BE USED ON THIS WORK.
3. MANUFACTURERS AND SUPPLIERS OF EQUIPMENT SHALL PROVIDE ALL DATA NECESSARY FOR COMPLIANCE WITH THE STATE OF CALIFORNIA ENERGY EFFICIENCY CODE: COMPLIANCE CERTIFICATION FOR ALL EQUIPMENT SHALL BE INCLUDED IN EQUIPMENT SUBMITTALS.

C. RECORD DRAWINGS: MAINTAIN THROUGHOUT THE PROGRESS OF THE WORK PROJECT RECORD DRAWINGS AND SUBMIT TO THE ARCHITECT AT COMPLETION OF WORK.

D. OPERATING MANUALS AND MAINTENANCE MANUALS:

1. SUBMIT COPIES OF ALL OPERATING INSTRUCTIONS AND MAINTENANCE MANUALS.
2. FULLY INSTRUCT OWNER OPERATING PERSONNEL AND DEMONSTRATE PERFORMANCE, OPERATION AND MAINTENANCE OF EQUIPMENT. AMOUNT OF TIME ALLOCATED FOR SAID INSTRUCTION AND DEMONSTRATIONS OF EQUIPMENT AND SYSTEMS SHALL BE PART OF THESE OBLIGATIONS. SUBMIT A LETTER TO ARCHITECT SIGNED BY OWNER REPRESENTATIVE WHO WILL OPERATE SYSTEM STATING THAT HE IS FULLY INSTRUCTED BY CONTRACTOR ABOUT OPERATION AND MAINTENANCE OF EQUIPMENT AND SYSTEM.
3. SUBMIT ONE ADDITIONAL SET OF APPROVED INSTRUCTIONS AND ONE ADDITIONAL SET OF APPROVED 11 INCH X 17 INCH CONTROL DIAGRAMS SUITABLY FRAMED BEHIND GLASS FOR MOUNTING AS DIRECTED.

1.06 PRODUCT HANDLING

A. PROTECTION: TAKE ALL PRECAUTIONS NECESSARY TO PROTECT THE MATERIALS OF THIS SECTION BEFORE, DURING, AND AFTER INSTALLATION.

B. REPLACEMENTS: IN THE EVENT OF DAMAGE, IMMEDIATELY REPAIR ALL DAMAGED AND DEFECTIVE WORK TO THE APPROVAL OF THE ARCHITECT AT NO ADDITIONAL COST TO OWNER.

1.07 JOB CONDITIONS

A. EXAMINATION OF THE SITE: EXAMINE THE SITE AND INCLUDE ALL CONDITIONS IN BID PROPOSAL UNDER WHICH WORK IS TO BE PERFORMED.

1.08 MISCELLANEOUS

A. LOCATIONS AND ACCESSIBILITY: CONTRACTOR SHALL FULLY INFORM HIMSELF REGARDING PECULIARITIES AND LIMITATIONS OF SPACES AVAILABLE FOR INSTALLATION OF WORK UNDER THIS SECTION. VALVES, MOTORS, CONTROLS AND OTHER DEVICES REQUIRING SERVICE, MAINTENANCE AND ADJUSTMENT SHALL BE PLACED IN FULLY ACCESSIBLE POSITIONS AND LOCATIONS. PROVIDE ACCESS DOORS WHERE REQUIRED IN DUCTWORK OR CONSTRUCTION WHETHER SPECIALLY DETAILED OR NOT, AND RENDER ALL SUCH DEVICES ACCESSIBLE.

B. DRAWINGS INDICATE DESIRED LOCATION AND ARRANGEMENT OF DUCTWORK, PIPING, EQUIPMENT AND OTHER ITEMS, AND ARE TO BE FOLLOWED AS CLOSELY AS POSSIBLE. ALL OFFSETS AND INTERFERENCES MAY NOT BE INDICATED DUE TO THE SCALE OF THE DRAWINGS. CONTRACTOR SHALL ASSUME RESPONSIBILITY FOR COORDINATING WORK WITH ALL OTHER TRADES. WORK SPECIFIED AND NOT CLEARLY DEFINED BY THE DRAWINGS SHALL BE INSTALLED AND ARRANGED IN A MANNER SATISFACTORY TO ARCHITECT. IN THE EVENT CHANGES IN INDICATED LOCATIONS AND ARRANGEMENTS ARE DEEMED NECESSARY BY ARCHITECT, THEY SHALL BE MADE BY CONTRACTOR WITHOUT ADDITIONAL CHARGES PROVIDED THE CHANGE IS ORDERED BEFORE WORK IS INSTALLED AND NO EXTRA MATERIALS ARE REQUIRED.

PART 2-PRODUCTS

2.01 PIPE HANGERS

A. HANGERS SHALL BE COMPLETE WITH THREADED STEEL RODS AND VIBRATION ISOLATORS, SOUND AND ELECTROLYSIS ISOLATORS AS REQUIRED AND HEREINAFTER SPECIFIED. CONCRETE INSERTS SHALL BE FURNISHED AND INSTALLED UNDER THIS SECTION.

B. 2-1/2 INCHES AND SMALLER: GRINNELL 104 OR APPROVED EQUAL.

C. 3 INCHES AND LARGER: GRINNELL 260.

D. CONCRETE INSERTS: GRINNELL 280.

2.02 VIBRATION ISOLATION

A. PROVIDE VIBRATION ISOLATION EQUIPMENT FOR ALL MECHANICAL EQUIPMENT AND PIPING AS SPECIFIED HEREIN AND INDICATED ON THE DRAWINGS. THE VIBRATION ISOLATION SYSTEM SHALL BE INSTALLED IN A MANNER TO PREVENT THE TRANSMISSION OF VIBRATION TO THE STRUCTURE. NO RIGID CONNECTIONS BETWEEN ROTATING OR OSCILLATING EQUIPMENT OR PIPING AND THE BUILDING WILL BE PERMITTED.

B. GENERAL REQUIREMENTS:

1. VIBRATION ISOLATION MANUFACTURER SHALL FURNISH WRITTEN INSTRUCTIONS COVERING THE INSTALLATION AND ADJUSTMENT OF ALL ISOLATORS. THE MANUFACTURER SHALL REPLACE ANY ISOLATION THAT HAS BEEN IMPROPERLY SIZED.
2. MECHANICAL SUBCONTRACTOR SHALL COORDINATE HIS WORK WITH THE OTHER TRADES. CONTRACTOR FOLLOWING HIM, SUCH AS PLASTERING OR ELECTRICAL, SHALL BE NOTIFIED AND INSTRUCTED TO AVOID ANY CONTACT WITH HIS INSTALLATION THAT WOULD REDUCE THE EFFECTIVENESS OF THE SYSTEM.
3. INSPECTIONS: VIBRATION ISOLATION MANUFACTURER SHALL MAKE AN INSPECTION OF THE VIBRATION INSTALLATION, AND INFORM THE CONTRACTOR IN WRITING OF ANY NECESSARY CORRECTIONS AND/OR ADJUSTMENTS.
4. BASES: WHERE CALLED FOR IN THE SPECIFICATIONS AND ON THE DRAWINGS, ALL STRUCTURAL STEEL BASES, INCLUDING CONCRETE POURING FORM BASES, SHALL BE DESIGNED AND FABRICATED BY THE VIBRATION ISOLATION MANUFACTURER. THE CONCRETE FOR THE POURING FORM BASES SHALL BE BY OTHERS.
5. VIBRATION ISOLATION SHALL BE MANUFACTURED BY A SINGLE MANUFACTURER. ALL ISOLATION SHALL BE IN STRICT ACCORDANCE WITH THE FOLLOWING SPECIFICATIONS AND MANUFACTURED BY M.W. SAUSSE AND CO., INC. THE ISOLATION MANUFACTURER SHALL INCLUDE IN THE SUBMITTAL THE FOLLOWING INFORMATION:

a. TYPE OF ISOLATOR.
b. DEFLECTION.
c. FREE OR UNLOADED HEIGHT.
d. ALL PHYSICAL CHARACTERISTICS OF SPRINGS USED.
e. SIZE OF STRUCTURAL MEMBERS.
f. EFFICIENCY CALCULATIONS.
g. ANY OTHER PERTINENT INFORMATION TO MAKE THE SUBMITTAL COMPLETE.

C. TECHNICAL REQUIREMENTS:

1. ISOLATORS SHALL BE DESIGNED OR TREATED FOR RESISTANCE TO CORROSION. STRUCTURAL STEEL BASES SHALL BE CLEANED OF WELDING SLAG AND PAINTED WITH PRIMER AND FINISH COAT. ALL NUTS, BOLTS AND WASHERS SHALL BE ZINC-ELECTROPLATED.
2. ALL EQUIPMENT SHALL BE EQUIPPED WITH SEISMIC RESTRAINTS IN ACCORDANCE WITH THE REQUIREMENTS OF ALL GOVERNING AGENCIES. THESE RESTRAINTS SHALL BE DESIGNED AND SUPPLIED BY THE VIBRATION ISOLATION MANUFACTURER. SUSPENDED EQUIPMENT AND PIPING SHALL BE RESTRAINED BY STEEL CABLE. THIS CABLE AND THE METHOD OF INSTALLATION SHALL BE THE RESPONSIBILITY OF THE MECHANICAL CONTRACTOR. THE CABLE RESTRAINTS SHALL BE INSTALLED IN SUCH A MANNER AS TO NOT SHORT CIRCUIT THE VIBRATION ISOLATION. THE CONTRACTOR SHALL SUBMIT DETAILS FOR APPROVAL.

2.03 INSULATION

A. ALL INSULATION SHALL COMPLY WITH CALIFORNIA CODE OF REGULATIONS, TITLE 24.

B. INSTALL PIPE INSULATION AFTER PIPING IS INSTALLED, TESTED AND APPROVED, AND IS IN CLEAN DRY CONDITION. FIRMLY BUTT INSULATION JOINTS.

C. SPACE HEATING HOT WATER SUPPLY AND RETURN: INSULATE PIPING WITH GLASS FIBER PIPE INSULATION WITH FACTORY APPLIED WHITE JACKET, JOHNS MANVILLE MICRO-LOK AP, 1-1/2 INCH THICK. INSULATE FITTINGS, FLANGES AND VALVES WITH PREFORMED INSULATION WITH PVC PREMOLDED AND PIECE FITTING COVERS, JOHNS MANVILLE, ZESTON 2000. ADHERE LONGITUDINAL LAPS AND BUTT STRIPS OF JACKET WITH FACTORY APPLIED PRESSURE SENSITIVE TAPE SYSTEM, JOHNS MANVILLE AP-T. PROVIDE ALUMINUM JACKET AND ALUMINUM PREFORMED FITTING COVERS, 0.016 INCH THICK ON OUTDOOR PIPING.

D. UNIONS: INSULATE IN SAME MANNER AS FITTINGS, FLANGES AND VALVE BODIES. CONSPICUOUSLY MARK LOCATIONS ON PIPE COVERINGS.

E. SHIELDS: FOR PIPES 4 INCHES AND LARGER, AT EACH HANGER PROTECT INSULATION WITH 12 INCHES LONG 18 GAUGE GALVANIZED METAL SHIELD OVER HEAVY DENSITY CALCIUM SILICATE INSULATION INSERT. FOR PIPES 3 INCHES AND SMALLER, AT EACH HANGER PROTECT INSULATION WITH 4 INCH LONG 18 GAUGE GALVANIZED METAL SHIELD.

F. THERMAL DUCT INSULATION: INSULATE ALL CONCEALED COLD SUPPLY AIR, RETURN AIR AND PLENUMS UNLESS OTHERWISE SPECIFIED. WITH JOHNS MANVILLE MICROLITE FIBERGLASS DUCT INSULATION, WRAPPED ENTIRELY AROUND DUCT WITH JOINTS LAPPED AT LEAST 2 INCHES AND SECURED WITH 16 GAUGE GALVANIZED WIRE ON 12 INCH CENTERS. INSULATION VALUE SHALL COMPLY WITH TITLE 24 REQUIREMENTS. INSULATION SHALL COVER ALL SURFACES INCLUDING STANDING SEAMS.

G. EXPOSED COLD SUPPLY AIR DUCTS: SHALL BE LINED WITH JOHNS MANVILLE COATED FIBERGLASS DUCT LINER COMPLYING WITH NFPA 90-A REQUIREMENTS. THE CUT LINER SHALL HAVE AN AIR FRICTION CORRECTION FACTOR NOT GREATER THAN 1.1 AT A VELOCITY OF 3000 FPM. APPLY INSULATION TO INSIDE OF DUCTS WITH AN APPROVED FIRE RETARDANT ADHESIVE TO PROVIDE 100% COVERAGE AND A SMOOTH SURFACE. IN DUCTS WITH ONE SIDE MORE THAN 12 INCHES, SECURE INSULATION WITH MECHANICAL FASTENERS IN ADDITION TO ADHESIVE, SPACED AT 14 INCH CENTERS IN BOTH DIRECTION.

H. MECHANICAL FASTENERS SHALL BE FLUSH WITH THE LINER SURFACE AND SHALL START WITHIN 2 INCHES OF THE LEADING EDGE OF EACH SECTION AND WITHIN 3 INCHES OF THE LEADING EDGE OF ALL CROSS JOINTS WITHIN THE DUCT SECTION. ALL EXPOSED EDGES AND THE LEADING EDGE OF ALL CROSS JOINTS OF THE LINER SHALL BE HEAVILY COATED WITH AN APPROVED FIRE RESISTANT ADHESIVE. THE DUCT LINER SHALL BE CUT TO ASSURE SNUG CLOSING CORNER JOINTS, THE BLACK SURFACE OF THE LINER SHALL FACE THE AIR STREAM, TRANSVERSE JOINTS SHALL BE NEATLY BUTTED, AND HEAVILY COATED WITH AN APPROVED FIRE RESISTANT ADHESIVE.

I. CONTRACTOR S OPTION: CONCEALED MAIN SUPPLY AIR DUCTS AND PLENUMS MAY BE LINED IN LINED IN LIEU OF EXTERNAL WRAPPING AS HEREINBEFORE SPECIFIED.

J. LINED DUCT: WHERE INDICATED, LINE DUCTS AS HEREINBEFORE SPECIFIED FOR EXPOSED COLD SUPPLY AIR DUCTS.

K. HOT WATER COMPRESSION TANK: INSULATE WITH 1 1/2 INCH THICK HIGH TEMPERATURE SPIN GLASS FIBER BLANKET SECURED BETWEEN OUTER FACINGS OF 1 INCH GALVANIZED WIRE MESH, JOHNS MANVILLE, SPIN-GLAS BLANKET. APPLY 1/4 INCH COAT OF INSULATING FINISHING CEMENT, TROWELED TO A SMOOTH SURFACE. AFTER CEMENT HAS DRIED, APPLY 8 OZ. CANVAS AND FINISH WITH A HEAVY, SMOOTH COAT OF INSULATION COATING.

2.04 VALVES

VALVES SHALL BE OF SAME MANUFACTURER OR EQUIVALENT BY COMPARATOR CHART OF APPROVED MANUFACTURER. PROVIDE ADAPTERS FOR VALVES IN COPPER TUBING WHERE NECESSARY. PROVIDE CHAIN OPERATED VALVES FOR VALVES LOCATED 7 FEET ABOVE FINISHED FLOOR IN EQUIPMENT ROOMS AND EQUIPMENT AREAS.

A. GATE VALVES: 150 LB. SWB, NIBCO F-617-0

B. GLOBE VALVES:

1. 2 INCHES AND SMALLER: 150 LB. SWP, NIBCO T-235Y
2. 2-1/2 INCHES AND LARGER: 125 LB. SWP, IRON BODY, NIBCO F-718-B

C. CHECK VALVES:

1. HORIZONTAL SWING:

a. 2 INCHES AND SMALLER: 125 LB. SWP, SCREWED, NIBCO T-413 SOLDER.
b. 2-1/2 INCHES AND LARGER: 125 LB. SWP, IRON BODY, FLANGED, NIBCO F-918 B.

2. SILENT TYPE (AT PUMP DISCHARGE): ALL SIZES: 125 LB. SWP, IRON BODY (ALL BRONZE IN COPPER PIPE SYSTEM), MILLER 162.

D. BALANCING VALVES:

1. 1-1/4 INCHES THROUGH 2-1/2 INCHES: 125 LB. SWP, BELL & GOSSETT CIRCUIT SETTER, BRONZE, SCREWED.
2. 2-1/2 INCHES AND LARGER: ROCKWELL 175 LB. WWP LUBRICATED SEMI-STEEL PLUG VALVES WITH PLUGS AND BOLTED YOKES, OPERATING WRENCH, WITH ADJUSTABLE LOCKING STEP INDICATOR AND ARC WHEN BALANCING COCK IS USED AS A SHUTOFF VALVE.

E. BUTTERFLY VALVES FOR CONDENSER AND HOT WATER SYSTEMS SHALL BE PROVIDED IN LIEU OF GATE VALVES. CRANE NO. 42F QUARTERMASTER, CAST IRON BODY, LUG WAFER TYPE WITH EPT SEATS AND GEAR OPERATOR WITH POSITION INDICATOR. 200 LB. WWP PRESSURE TIGHT SHUT-OFF AT DIFFERENTIAL PRESSURES UP TO 200 PSI. PROVIDE EXTENDED STEM FOR INSULATED LINES.

F. BALL VALVES: 150 LB. SWP, BRONZE BODY, NIBCO T-585-20.

2.05 STRAINERS

A. Y-TYPE WITH SEMI-STEEL BODY AND STAINLESS STEEL BASKET WITH 1/8 INCH PERFORATIONS AND LINED WITH 20 MESH STAINLESS STEEL SCREEN. STRAINER SHALL BE OF SAME SIZE AS PIPELINE IN WHICH INSTALLED. PROVIDE HOSE GATE VALVE WITH EACH STRAINER BLOWOFF.

1. 2-1/2 INCHES AND SMALLER: ARMSTRONG A/SC SERIES, 125 LB., SCREWED ENDS WITH SCREWED GASKET CAP.
2. 3 INCHES AND LARGER: ARMSTRONG A/FL SERIES, 125 LB., FLANGED ENDS AND BOLTED GASKETED CAP.

2.06 PIPING ACCESSORIES

A. PRESSURE GAUGES: ASHCROFT DURAGAUGE 1379-A, COMPLETE WITH 4-1/4 INCH DIAMETER DIAL AND GAUGE COCK. ONE PRESSURE GAUGE COCK AND GAUGE SHALL BE INSTALLED ON SUCTION AND DISCHARGE SIDE OF EACH PUMP AND ELSEWHERE INDICATED TO ACCEPT A MASTER PRESSURE GAUGE.

B. THERMOMETERS: WEISS 7V5 3-1/2 INCH VARI-ANGLE ADJUSTABLE ANGLE RED MERCURY INDUSTRIAL THERMOMETERS WITH 7 INCH CHROME-PLATED BRONZE CASE, 3-1/2 INCH STEM WITH SWIVEL NUT, 3/4 INCH NPT BRASS SEPARABLE SOCKET AND ETCHED SCALE WITH GRADATIONS AS INDICATED OR REQUIRED.

C. AIR VENT VALVES:

1. WATER: 75 PSI WORKING PRESSURE. HOFFMAN NO. 79
2. WATER: 150 PSI WORKING PRESSURE. HOFFMAN NO. 78

D. TANK FITTINGS: BELL & GOSSETT SERIES ATF OF SIZE CORRESPONDING TO COMPRESSION TANK DIAMETERS.

E. FLEXIBLE PIPE CONNECTIONS: BRAIDED STAINLESS STEEL FOR CONDENSER WATER PIPING AND BRAIDED BRONZE FOR HOT WATER SYSTEMS.

2.07 HYDRONIC PIPING

A. CHILLED, HOT AND CONDENSER WATER PIPING:

1. 2 INCHES AND SMALLER: TYPE L HARD-DRAWN COPPER TUBING, WROUGHT COPPER FITTINGS WITH SOLDERED JOINTS.
2. 2-1/2 INCHES AND ABOVE: SCHEDULE 40 BLACK STEEL PIPE WITH STANDARD WELDED FITTINGS.

B. PIPE INSULATION:

1. ALL INSULATION SHALL COMPLY WITH THE STATE OF CALIFORNIA ENERGY CONSERVATION STANDARDS.
2. CHILLED WATER AND HOT WATER PIPING: INSULATE PIPING WITH GLASS FIBER PIPE INSULATION WITH FACTORY APPLIED WHITE JACKET, JOHNS MANVILLE, MICRO-LOK. INSULATE FITTINGS, FLANGES AND VALVES WITH PRE-FORMED INSULATION WITH PVC PRE-MOLDED ONE PIECE FITTING COVERS, JOHNS MANVILLE ZESTON 2000. ADHERE LONGITUDINAL LAPS AND BUTT STRIPS OF JACKET WITH FACTORY APPLIED PRESSURE SENSITIVE TAPE SYSTEM JOHNS MANVILLE AP-T PLUS. PROVIDE ALUMINUM JACKETING AND ALUMINUM PREFORMED FITTING COVERS, 0.016 IN THICK ON OUTDOOR PIPING.

2.08 UNIONS AND GASKETS

A. 2 INCHES AND UNDER FOR STEEL PIPE: SCREWED MALLEABLE IRON, GROUND JOINT, 300 LB. WOG CLASS WITH BRASS TO IRON SEAT, BLACK.

B. 2-1/2 INCHES AND LARGER FOR STEEL PIPE: CAST IRON FLANGED GASKET TYPE, CONFORMING TO ANSI B16.1, BLACK TO SUIT SERVICE, OR 150 LB. FORGED STEEL SLIP-ON FLANGES.

C. UNIONS FOR COPPER TUBING: ANACONDA 1633 OR 1733.

D. DIELECTRIC UNIONS: EPCO, COMPLETE WITH ISOLATORS AND GASKETS OF SAME SIZE AS PIPE, GALVANIZED OR BLACK TO SUIT SERVICE.

E. DIELECTRIC FLANGES: F.H. MALONEY CO. FLANGES FOR CATHODIC INSULATION.

F. GASKETS: 1/16 INCH GARLOCK 17022.

2.09 REFRIGERANT PIPING

A. REFRIGERANT PIPING SHALL BE COPPER TYPE ACR REFRIGERANT PIPING WITH WROUGHT COPPER FITTINGS.

B. HOT GAS AND SUCTION REFRIGERANT PIPING INSULATION:

1. INSULATE PIPING WITH GLASS FIBER PIPE INSULATION WITH FACTORY APPLIED WHITE JACKET, JOHNS MANVILLE, MICRO-LOK. INSULATE FITTINGS, FLANGES AND VALVES WITH PRE-FORMED INSULATION WITH PVC PRE-MOLDED ONE PIECE FITTING COVERS, JOHNS MANVILLE ZESTON 2000. ADHERE LONGITUDINAL LAPS AND BUTT STRIPS OF JACKET WITH FACTORY APPLIED PRESSURE SENSITIVE TAPE SYSTEM JOHNS MANVILLE AP-T PLUS. PROVIDE ALUMINUM JACKETING AND ALUMINUM PREFORMED FITTING COVERS, 0.016 IN. THICK ON OUTDOOR PIPING.

2.10 GAS-FIRED MAKE-UP AIR UNIT

A. PROVIDE PACKAGED, ROOFTOP HEATING AND MAKEUP AIR, POWER VENTED UNITS BY REZNOR, DESIGNED FOR ROOFTOP OR SLAB MOUNTING.

B. THE UNIT HOUSING SHALL HAVE A FINISH RATED FOR SALT SPRAY AT 1,000 HOURS. CONTROL, BURNER, AND BLOWER SERVICE COMPARTMENT DOORS SHALL BE HINGED. PROVIDE FACTORY ROOF CURB.

C. ALL UNITS SHALL BE EQUIPPED FOR USE WITH NATURAL GAS; WITH A TWO-STAGE GAS FURNACE, UNIT MOUNTED 24-VOLT CONTROL TRANSFORMER; PROTECTIVE AIR PROVING SWITCH; VENT MOTOR; AND A HIGH TEMPERATURE LIMIT CONTROL. OPERATION SHALL BE CONTROLLED THROUGH AN INTEGRATED CIRCUIT BOARD.

D. THE FURNACE SHALL BE EQUIPPED WITH ALL REQUIRED SAFETY ELEMENTS. THE DOUBLE WALL BLOWER SECTION SHALL BE SUPPLIED WITH AN ADJUSTABLE BELT-DRIVEN CENTRIFUGAL BLOWER. UNIT SHALL INCLUDE 1", 1", OR 4" PLEATED FILTERS. PROVIDE 100% O/A WEATHER HOOD WITH RAIN BAFFLES.

2.11 GAS-FIRED MAKE-UP AIR UNIT WITH EVAPORATIVE COOLING

A. PROVIDE PACKAGED, ROOFTOP HEATING AND MAKEUP AIR, POWER VENTED UNITS BY REZNOR, DESIGNED FOR ROOFTOP OR SLAB MOUNTING.

B. THE UNIT HOUSING SHALL HAVE A FINISH RATED FOR SALT SPRAY AT 1,000 HOURS. CONTROL, BURNER, AND BLOWER SERVICE COMPARTMENT DOORS SHALL BE HINGED. PROVIDE FACTORY ROOF CURB.

C. ALL UNITS SHALL BE EQUIPPED FOR USE WITH NATURAL GAS; WITH A TWO-STAGE GAS FURNACE, UNIT MOUNTED 24-VOLT CONTROL TRANSFORMER; PROTECTIVE AIR PROVING SWITCH; VENT MOTOR; AND A HIGH TEMPERATURE LIMIT CONTROL. OPERATION SHALL BE CONTROLLED THROUGH AN INTEGRATED CIRCUIT BOARD.

D. THE FURNACE SHALL BE EQUIPPED WITH ALL REQUIRED SAFETY ELEMENTS. THE DOUBLE WALL BLOWER SECTION SHALL BE SUPPLIED WITH AN ADJUSTABLE BELT-DRIVEN CENTRIFUGAL BLOWER. UNIT SHALL INCLUDE 1", 2", OR 4" PLEATED FILTERS. PROVIDE 100% O/A WEATHER HOOD WITH RAIN BAFFLES.

E. EVAPORATIVE COOLING MODULE. CONSTRUCTION OF EVAPORATIVE COOLING CABINET WILL BE 300 SERIES STAINLESS STEEL WITH 300 SERIES STAINLESS STEEL RESERVOIR 1" ALUMINUM PRE-FILTER. WATER SYSTEM TO INCLUDE RECIRCULATING FLOAT AND PUMP. EVAPORATIVE MEDIA TO CONSIST OF 12" MEDIA.

2.12 ROOFTOP PACKAGED HEAT PUMP UNITS

A. GENERAL: PROVIDE CARRIER OUTDOOR ROOFTOP HEAT PUMP UNIT DISCHARGING VERTICALLY OR HORIZONTALLY AS SHOWN ON CONTRACT DRAWINGS. UNIT SHALL BE RATED IN ACCORDANCE WITH ARI STANDARDS 210/240-94 AND 270-95. UNIT SHALL BE UL LISTED AND C-UL CERTIFIED AS A TOTAL PACKAGE FOR SAFETY REQUIREMENTS. INSULATION AND ADHESIVES SHALL MEET NFPA REQUIREMENTS FOR FLAME SPREAD AND SMOKE GENERATION. CONTAINED WITHIN THE ENCLOSURE SHALL BE ALL FACTORY WIRING, PIPING, CONTROLS, REFRIGERANT CHARGE, AND SPECIAL FEATURES REQUIRED PRIOR TO FIELD START-UP.

B. UNIT CABINET:

1. UNIT CABINET SHALL BE CONSTRUCTED OF PRE-PAINTED STEEL CAPABLE OF WITHSTANDING 500 HRS OF SALT SPRAY.
2. THE UNIT SHALL BE ON A RUST PROOF UNIT BASE THAT HAS AN EXTERNALLY TRAPPED, INTEGRATED SLOPED DRAIN PAN.
3. UNIT SHALL HAVE A FIELD-SUPPLIED CONDENSATE TRAP.

C. FANS:

1. EVAPORATOR FAN:

a. FAN SHALL BE DIRECT OR BELT DRIVEN AS SHOWN ON THE EQUIPMENT DRAWINGS. BELT DRIVE SHALL INCLUDE AN ADJUSTABLE-PITCH MOTOR PULLEY.
b. FAN WHEEL SHALL BE DOUBLE-INLET TYPE WITH FORWARD-CURVED BLADES.
c. BEARINGS SHALL BE SEALED, PERMANENTLY LUBRICATED BALL-BEARING TYPE.
d. EVAPORATOR FAN SHALL BE MADE FROM STEEL WITH A CORROSION-RESISTANT FINISH AND SHALL BE DYNAMICALLY BALANCED.

2. EVAPORATOR FAN SHALL BE STEEL WITH A CORROSION-RESISTANT FINISH AND SHALL BE DYNAMICALLY BALANCED.
3. CONDENSER FAN SHALL BE DIRECT-DRIVE PROPELLER TYPE.

D. COMPRESSOR:

1. FULLY HERMETIC COMPRESSORS WITH FACTORY-INSTALLED VIBRATION ISOLATION.
2. SCROLL COMPRESSORS SHALL BE STANDARD ON ALL UNITS.

E. COILS:

1. INDOOR AND OUTDOOR COILS SHALL HAVE ALUMINUM PLATE FINS MECHANICALLY BONDED TO SEAMLESS COPPER TUBES WITH ALL JOINTS BRAZED.

F. REFRIGERANT METERING DEVICE:

1. REFRIGERANT METERING DEVICE SHALL BE OF THE SINGLE BODY FIXED ORIFICE FEED TYPE (OUTDOOR) AND TXV (INDOOR).

G. FILTERS:

1. FILTER SECTION SHALL CONSIST OF FIELD-INSTALLED, THROW-AWAY, 1-IN. THICK FIBERGLASS FILTERS OF COMMERCIAL AVAILABLE SIZES.

H. CONTROLS AND SAFETIES:

1. UNIT CONTROLS SHALL BE COMPLETE WITH A SELF-CONTAINED LOW VOLTAGE CONTROL CIRCUIT.
2. UNITS SHALL INCORPORATE AN INTERNAL COMPRESSOR PROTECTOR THAT PROVIDES RESET CAPABILITY.
3. UNIT SHALL PROVIDE HIGH AND LOW/LOSS-OF-CHARGE PRESSURE SAFETY PROTECTION.
4. PROVIDE 24 HOUR PROGRAMMABLE THERMOSTAT.

I. OPERATING CHARACTERISTICS:

1. UNIT SHALL BE CAPABLE OF STARTING AND RUNNING AT 125 F AMBIENT OUTDOOR TEMPERATURE, EXCEEDING MAXIMUM LOAD CRITERIA OF ARI STANDARD 240-94
2. COMPRESSOR WITH STANDARD CONTROLS SHALL BE CAPABLE OF OPERATION DOWN TO 55 F AMBIENT OUTDOOR TEMPERATURE IN COOLING AND 10 F IN HEATING.

J. FILTER SECTION:

1. STANDARD FILTER SECTION SHALL CONSIST OF LOW VELOCITY, THROW AWAY 2-IN. THICK.
2. FILTER FACE VELOCITY SHALL NOT EXCEED 320 FPM AT NOMINAL AIRFLOWS.

K. ELECTRICAL REQUIREMENTS:

1. ALL UNIT POWER WIRING SHALL ENTER THE UNIT CABINET AT A SINGLE LOCATION.

L. MOTORS:

1. COMPRESSOR MOTORS SHALL BE OF THE REFRIGERANT-COOLED TYPE WITH LINE-BREAK THERMAL AND CURRENT OVERLOAD PROTECTION.
2. ALL FAN MOTORS SHALL HAVE PERMANENTLY LUBRICATED BEARINGS, AND INHERENT, AUTOMATIC RESET, THERMAL OVERLOAD PROTECTION.
3. OUTDOOR FAN MOTOR SHALL BE TOTALLY ENCLOSED.

M. OPERATING CHARACTERISTICS:

1. UNIT SHALL BE CAPABLE OF STARTING AND RUNNING AT 125 F AMBIENT OUTDOOR TEMPERATURE.
2. COMPRESSOR SHALL BE CAPABLE OF OPERATION DOWN TO 25 F AMBIENT OUTDOOR TEMPERATURE.

N. INCLUDED FEATURES:

1. ELECTRONIC PROGRAMMABLE THERMOSTAT: UNIT SHALL BE CAPABLE OF USING DELUXE FULL FEATURED ELECTRONIC THERMOSTAT. THERMOSTAT SHALL USE BUILT-IN COMPRESSOR CYCLE DELAY CONTROL. THERMOSTAT SHALL BE CAPABLE OF WORKING WITH CARRIER DDC.
2. MANUAL OUTDOOR DAMPER: PACKAGE SHALL CONSIST OF DAMPER, BIRD SCREEN, AND RAIN HOOD WHICH CAN BE PRESET TO ADMIT OUTDOOR AIR FOR YEAR-

MECHANICAL SPECIFICATIONS

2. POWER EXHAUSTER: MODULATING POWER EXHAUST SHALL BE USED IN CONJUNCTION WITH ECONOMIZER TO PROVIDE UP TO 100% EXHAUST OF RETURN AIR. NOTE: HORIZONTAL POWER EXHAUST IS INTENDED TO MOUNT IN RETURN DUCTWORK. THE SET POINT IS SET AT 100% OF OUTDOOR AIR, AND IS FULLY ADJUSTABLE. AN LED LIGHT ON THE CONTROLLER INDICATES THE POWER EXHAUST IS OPERATING. MODULATING POWER EXHAUST SHALL BE PROVIDED WITH SPACE PRESSURE SENSOR AND PRESSURE CONTROL OPERATION.
3. COPPER CONDENSER COIL: OUTDOOR CONDENSER COILS SHALL BE OF COPPER TUBE AND COPPER FIN CONSTRUCTION.
4. FACTORY ROOF CURB: PROVIDE FORMED GALVANIZED STEEL WITH WOOD NAILER STRIP. CURBS SHALL HAVE SEAL STRIP AND A WOOD NAILER FOR FLASHING AND SHALL BE INSTALLED PER MANUFACTURER'S INSTRUCTION. CURB SHALL PERMIT INSTALLATION AND SECURING OF DUCTWORK TO CURB PRIOR TO MOUNTING UNIT.
5. LOW AMBIENT PACKAGE: SHALL CONSIST OF A SOLID-STATE CONTROL AND OUTDOOR COIL TEMPERATURE SENSOR FOR CONTROLLING OUTDOOR FAN MOTOR OPERATION, WHICH SHALL ALLOW UNIT TO OPERATE DOWN TO 0 F OUTDOOR AMBIENT TEMPERATURE IN COOLING.
6. CONVENIENCE OUTLET: OUTLET SHALL BE FACTORY-INSTALLED AND INTERNALLY MOUNTED WITH EASILY ACCESSIBLE 115-V FEMALE RECEPTACLE. SHALL INCLUDE 15 AMP GFI RECEPTACLE WITH INDEPENDENT FUSE PROTECTION. SHALL BE ACCESSIBLE FROM OUTSIDE THE UNIT.
7. CO2 ROOM SENSOR: SENSOR SHALL HAVE THE ABILITY TO PROVIDE DEMAND VENTILATION CONTROL THROUGH THE ECONOMIZER. THE IAQ SENSOR SHALL BE WALL MOUNTED WITH AN LED DISPLAY IN PARTS PER MILLION. THE SET POINT SHALL HAVE ADJUSTMENT CAPABILITY.

2.14 SPLIT SYSTEM HEAT PUMP UNITS

FURNISH AND INSTALL CARRIER OUTDOOR HEATING UNIT AND CARRIER INDOOR FAN COIL UNITS OF SIZES AND CAPACITIES INDICATED. UNITS SHALL BE FIELD CONNECTED AND PROVIDED WITH ADDITIONAL REFRIGERANT CHARGE AS RECOMMENDED BY THE MANUFACTURER. UNITS SHALL BE UL LISTED AND CARRY UL LABELS.

A. OUTDOOR UNITS:

1. THE UNIT SHALL CONTAIN SUFFICIENT CHARGE FOR COMPLETE SYSTEM. BRASS SERVICE VALVES WITH REFRIGERANT LINE FITTINGS AND SERVICE PORTS SHALL BE LOCATED ON EXTERIOR ON UNIT. FLEX CONNECTORS SHALL BE USED TO CONNECT DX PIPING TO OUTDOOR UNIT.
2. OUTDOOR COIL SHALL BE ALUMINUM FINS MECHANICALLY BONDED TO NON-FERROUS TUBING. FACTORY INSTALLED COIL REFRIGERANT METERING DEVICE INTERNAL COMPONENTS SHALL BE REMOVABLE FOR CLEANING OR REPLACEMENT. OUTDOOR UNIT FAN SHALL BE OF PROPELLER TYPE, DIRECT DRIVEN. FAN MOTOR SHALL BE RESILIENTLY MOUNTED.
3. COMPRESSOR SHALL BE WELDED-HERMETIC TYPE WITH INTERNAL VIBRATION ISOLATION. COMPRESSOR MOTOR SHALL HAVE BOTH THERMAL AND CURRENT-SENSITIVE OVERLOAD DEVICE. COMPRESSOR SHALL BE EQUIPPED WITH A CRANKCASE HEATER AND HAVE INTERNAL HIGH-PRESSURE SWITCH OR RELIEF VALVE AND LOW PRESSURE SWITCH.
4. CONTROLS SHALL BE FACTORY WIRED. CONTROLS AND PROTECTIVE DEVICES SHALL INCLUDE A SUCTION LINE LOW-PRESSURE SWITCH, SUCTION LINE ACCUMULATOR AND PRESSURE RELIEF DEVICE.
5. ACCESSORIES SHALL INCLUDE INDOOR ELECTRONIC, PROGRAMMABLE THERMOSTAT, CIRCUIT TO PREVENT COMPRESSOR SHORT CYCLING, START CAPACITOR AND RELAY. LIQUID LINE FILTER DRIER, SUCTION LINE CONNECTION ADAPTER. BI-FLOW SOLENOID IN LIEU OF PISTONS FOR REFRIGERANT METERING.

B. INDOOR UNITS:

1. FURNISH AND INSTALL DIRECT-EXPANSION FAN COILS EQUIPPED WITH COOLING CONTROL KIT IN THE LOCATION AND MANNER SHOWN ON THE PLAN. UNIT SHALL OPERATE PROPERLY IN INDICATED POSITION AND IS TO BE INSTALLED WITH DUCTWORK.
2. UNIT ENCLOSURE SHALL BE INSULATED AND CONSTRUCTED OF COLD-ROLLED STEEL, BONDERIZED AND FINISHED WITH BAKED ENAMEL. LARGE FRONT SERVICE ACCESS PANELS SHALL PROVIDE EASY ACCESS TO ALL COMPONENTS. REVERSIBLE FILTER RACK SHALL HAVE DUCT CONNECTION FLANGES AND BE EQUIPPED WITH PERMANENT TYPE FILTER THAT SLIDES OUT FOR MAINTENANCE.

2.15 DUCTLESS SPLIT SYSTEM HEAT PUMP UNITS

FURNISH AND INSTALL INDOOR, WALL-MOUNTED, DIRECT EXPANSION FAN COIL AND COMMERCIAL CONDENSING OR HEAT PUMP UNITS. UNIT SHALL BE RATED PER ARI STANDARDS 210/240 AND LISTED IN THE ARI DIRECTORY AS A MATCHED SYSTEM

A. OUTDOOR UNITS:

1. THE UNIT SHALL CONTAIN SUFFICIENT CHARGE FOR COMPLETE SYSTEM. BRASS SERVICE VALVES WITH REFRIGERANT LINE FITTINGS AND SERVICE PORTS SHALL BE LOCATED ON EXTERIOR ON UNIT. FLEX CONNECTORS SHALL BE USED TO CONNECT DX PIPING TO OUTDOOR UNIT.
2. OUTDOOR COIL SHALL BE ALUMINUM FINS MECHANICALLY BONDED TO NON-FERROUS TUBING. FACTORY INSTALLED COIL REFRIGERANT METERING DEVICE INTERNAL COMPONENTS SHALL BE REMOVABLE FOR CLEANING OR REPLACEMENT. OUTDOOR UNIT FAN SHALL BE OF PROPELLER TYPE, DIRECT DRIVEN. FAN MOTOR SHALL BE RESILIENTLY MOUNTED.
3. COMPRESSOR SHALL BE WELDED-HERMETIC TYPE WITH INTERNAL VIBRATION ISOLATION. COMPRESSOR MOTOR SHALL HAVE BOTH THERMAL AND CURRENT-SENSITIVE OVERLOAD DEVICE. COMPRESSOR SHALL BE EQUIPPED WITH A CRANKCASE HEATER AND HAVE INTERNAL HIGH-PRESSURE SWITCH OR RELIEF VALVE AND LOW PRESSURE SWITCH.
4. CONTROLS SHALL BE FACTORY WIRED. CONTROLS AND PROTECTIVE DEVICES SHALL INCLUDE A SUCTION LINE LOW-PRESSURE SWITCH, SUCTION LINE ACCUMULATOR AND PRESSURE RELIEF DEVICE.
5. ACCESSORIES SHALL INCLUDE INDOOR ELECTRONIC, PROGRAMMABLE THERMOSTAT, CIRCUIT TO PREVENT COMPRESSOR SHORT CYCLING, START CAPACITOR AND RELAY. LIQUID LINE FILTER DRIER, SUCTION LINE CONNECTION ADAPTER. BI-FLOW SOLENOID IN LIEU OF PISTONS FOR REFRIGERANT METERING.

B. INDOOR UNIT:

1. INDOOR, DIRECT-EXPANSION, WALL-MOUNTED FAN COIL UNIT SHALL BE COMPLETE WITH COOLING/HEATING COIL, FAN, FAN MOTOR, PIPING CONNECTORS, ELECTRICAL CONTROLS, MICROPROCESSOR CONTROL SYSTEM, AND INTEGRAL TEMPERATURE SENSING. FURNISH WITH INTEGRAL WALL-MOUNTING BRACKET AND MOUNTING HARDWARE, AND INTERCONNECTION CABLE.
2. UNIT CABINET: CABINET DISCHARGE AND INLET GRILLES SHALL BE ATTRACTIVELY STYLED, HIGH-IMPACT POLYSTYRENE. CABINET SHALL BE FULLY INSULATED FOR IMPROVED THERMAL AND ACOUSTIC PERFORMANCE.
3. FAN SHALL BE DIRECT-DRIVE WITH AIR INTAKE AT THE UPPER FRONT FACE OF THE UNIT AND DISCHARGE AT THE BOTTOM FRONT. AUTOMATIC, MOTOR-DRIVEN VERTICAL AIR SWEEP SHALL BE PROVIDED STANDARD. AIR SWEEP OPERATION SHALL BE USER SELECTABLE.
4. COIL SHALL BE COPPER TUBE WITH ALUMINUM FINS AND GALVANIZED STEEL TUBE SHEETS. FINS SHALL BE BONDED TO THE TUBES BY MECHANICAL EXPANSION. A DRIP PAN UNDER THE COIL SHALL HAVE A DRAIN CONNECTION FOR REMOVAL OF CONDENSATE. CONDENSATE PAN SHALL HAVE INTERNAL TRAP AND AUXILIARY DRIP PAN UNDER COIL HEADER.
5. MOTORS SHALL BE OPEN DRIP-PROOF, PERMANENTLY LUBRICATED BALL BEARING WITH INHERENT OVERLOAD PROTECTION. FAN MOTORS SHALL BE 3-SPEED.
6. CONTROLS: CONTROLS SHALL CONSIST OF A MICROPROCESSOR-BASED CONTROL SYSTEM WHICH SHALL CONTROL SPACE TEMPERATURE, DETERMINE OPTIMUM FAN SPEED, AND RUN SELF-DIAGNOSTICS. THE TEMPERATURE CONTROL RANGE SHALL BE FROM 64 F TO 84 F. CONTROL FEATURES SHALL INCLUDE: AUTOMATIC RESTART, 24 TIMER FUNCTION, COIL FREEZE PROTECTION, INTEGRAL SETBACK CONTROL, DEHUMIDIFICATION, FAN ONLY OPERATION, FAN SPEED CONTROL AND SHORT CYCLE COMPRESSOR TIMER.
7. UNIT SHALL HAVE FILTER TRACK WITH FACTORY-SUPPLIED CLEANABLE FILTERS.
8. UNITS SHALL HAVE FLARE CONNECTIONS, AND A 90-DEGREE SUCTION ELBOW SHALL BE PROVIDED FOR REAR CONNECTION.

C. SPECIAL FEATURES:

1. CONDENSATE PUMP (FACTORY PROVIDED, FIELD INSTALLED): PUMP SHALL BE DESIGNED FOR QUIET OPERATION AND SHALL CONSIST OF AN INTERNAL RESERVOIR/SENSOR ASSEMBLY, AND A REMOTE PUMP ASSEMBLY. THE CAPABILITY OF THE CONDENSATE PUMP SHALL BE 3 TO 25 FT., AND SHALL BE ACTIVATED BY A LEVEL SENSOR ON THE CONDENSATE PAN.

2.16 DUCTS AND SHEET METAL WORK

PROVIDE DUCTS, PLENUMS, ACCESS DOORS, FRESH AIR INTAKES AND EXHAUSTS AS INDICATED AND REQUIRED. ALL DUCTWORK SHALL BE CONSTRUCTED, ERECTED AND TESTED IN ACCORDANCE WITH THE MOST RESTRICTIVE OF LOCAL REGULATIONS, PROCEDURES DETAILED IN THE ASHRAE HANDBOOK OF FUNDAMENTALS OR THE APPLICABLE STANDARDS ADOPTED BY THE SHEET METAL AND AIR CONDITIONING CONTRACTORS NATIONAL ASSOCIATION. PROVIDE PREFABRICATED SPIRAL LOCKSEAM DUCTS AND FITTINGS AND RECTANGULAR DUCTS OF GALVANIZED STEEL. PRIMARY COLD SUPPLY AIR SHALL BE MEDIUM PRESSURE, 4 INCH S.P. DISTRIBUTION DUCTWORK DOWNSTREAM OF VAV BOXES SHALL BE LOW PRESSURE, 1 INCH S.P. OUTSIDE AIR AND EXHAUST AIR DUCTWORK SHALL BE LOW PRESSURE, 2 INCH S.P.

A. FINAL CONNECTIONS TO CEILING DIFFUSER BOXES AND LINEAR DIFFUSERS SHALL BE MADE WITH FLEXIBLE GLASS FIBER DUCT. CASCO SILENT FLEX-8. CONNECTIONS OF FLEXIBLE DUCT TO ROUND DUCTS SHALL BE MADE WITH ½ INCH WIDE POSITIVE LOCKING STRAPS.

B. ALL CONNECTIONS TO MAIN COLD SUPPLY DUCTS SHALL BE MADE WITH LOW LOSS FITTINGS.

C. FLAT DUCT SURFACES SHALL BE CRIMPED DIAGONALLY REGARDLESS OF SIZE. LONGITUDINAL JOINTS IN ALL DUCT SIZES MAY BE FLAT-LOCK JOINTS. TRANSVERSE JOINTS AND INTERMEDIATE BRACING SHALL BE CONSTRUCTED OF GALVANIZED SHEET METAL OR GALVANIZED STRUCTURAL ANGLES IN ACCORDANCE WITH REQUIREMENTS OF THE ASHRAE GUIDE AND PUBLIC AUTHORITIES HAVING JURISDICTION.

D. LOCK JOINTS SHALL BE HAMMERED TO MAKE THEM AIRTIGHT. INSIDE OF DUCT SHALL PRESENT A SMOOTH SURFACE TO FLOW OF AIR.

E. CHANGES IN SIZE OF DUCTS SHALL INCREASE GRADUALLY WITH A SLOPE OF NOT MORE THAN 12 INCHES IN 5 FEET WHERE POSSIBLE, BUT NOT MORE THAN 12 INCHES IN 3 FEET IN ANY EVENT.

F. TURNS SHALL BE MADE WITH A THROAT RADIUS OF NOT LESS THAN THE DUCT WIDTH.

G. HORIZONTAL DUCTWORK SHALL BE STRONGLY SUPPORTED WITH GALVANIZED HANGERS IN ACCORDANCE WITH THE REQUIREMENTS OF THE ASHRAE GUIDE AND PUBLIC AUTHORITIES HAVING JURISDICTION.

H. PROVIDE DOUBLE THICKNESS TURNING VANES AT ALL SHARP RIGHT ANGLE TURNS.

I. PLENUMS SHALL BE MADE OF 18 GAUGE GALVANIZED SHEET STEEL REINFORCED HORIZONTALLY ON A MAXIMUM OF 48 INCH CENTERS BY 1-1/2 X 1-1/4 X 1/8 INCH GALVANIZED ANGLES AND REINFORCED VERTICALLY BY 1-1/2 INCH STANDING SEAMS.

J. PLENUM ACCESS DOORS 24 X 54 INCH MINIMUM SIZE SHALL BE GALVANIZED SHEET STEEL DOORS AND FRAMES PROPERLY REINFORCED TO PREVENT BREATHING. DOOR SHALL BE OF SAME GAUGE AS THE DUCT OR CASING AND SHALL HAVE 1 INCH INSULATION WITH GALVANIZED SHEET STEEL ON BOTH SIDES. EACH DOOR SHALL BE HUNG ON 5% TEE HINGES WITH ONE OR MORE CATCHES WHICH ARE OPERABLE FROM BOTH SIDES AND SIMILAR TO VENTFABRICS. INC. 260 VENTLOCK HATCH. DOORS SHALL BE HUNG TO OPEN AGAINST PRESSURE AND SHALL BE FITTED WITH FELT TO ENSURE AIRTIGHTNESS.

K. FLEXIBLE CONNECTIONS FOR AIR DUCTS SHALL BE 16 OZ. AIRTIGHT VENTGLASS NONCOMBUSTIBLE FABRIC WITH FIRE RETARDANT NEOPRENE COATING ON OUTSIDE. ATTACH TO DUCTWORK BY LOCK SEAM. INSTALL NOT MORE THAN 6 INCHES LONG. PROVIDE WHERE REQUIRED OR INDICATED.

L. SEAL JOINTS ON MAIN COLD SUPPLY AIR DUCTS AT EACH FLOOR WITH UL CLASSIFIED SEALANT. SEALANT SHALL BE SPECIFICALLY DESIGNED TO SEAL HIGH PRESSURE DUCTWORK.

2.17 GREASE EXHAUST DUCTWORK

A. MATERIAL: STAINLESS STEEL OF THE FOLLOWING GAUGES: DUCT AREA 4 SQ. FT. AND LESS, 16 GAUGE, DUCT AREA OVER 4 SQ. FT., 14 GAUGE.

B. JOINT AND SEAMS SHALL BE MADE OF A CONTINUOUS LIQUID-TIGHT WELD OR BRAZE MADE ON THE EXTERNAL SURFACE OF THE DUCT.

C. CONSTRUCT HORIZONTAL DUCT WITH LONGITUDINAL SEAMS PLACE TOPSIDE.

D. A GREASE DUCT SERVING A TYPE I HOOD WHICH PENETRATES A CEILING, WALL OR FLOOR SHALL BE ENCLOSED IN A RATED DUCT ENCLOSURE OR WRAPPED WITH A FIRE WRAPPING PRODUCT WHICH IS UL LISTED AND APPROVED FOR USE IN GREASE DUCT SYSTEMS FROM THE POINT OF PENETRATION. THE DUCT ENCLOSURE SHALL BE SEALED AROUND THE DUCT AT THE POINT OF PENETRATION AND VENTED TO THE EXTERIOR THROUGH WEATHER-PROTECTED OPENINGS. THE ENCLOSURE SHALL BE SEPARATED FROM THE DUCT BY AT LEAST 3 AND NOT MORE THAN 12 INCHES AND SHALL SERVE A SINGLE GREASE EXHAUST DUCT SYSTEM.

E. PROVIDE CLEANOUT DOORS FOR EVERY 15 FEET OF DUCT RUN, AT EACH CHANGE IN DUCT DIRECTION, ONE PER FLOOR ON VERTICAL SECTIONS, AT TOP OF DUCT RISERS AND WHERE INDICATED ON PLANS. DOORS SHALL BE LARGE ENOUGH TO PERMIT CLEANING AND INSPECTION, MINIMUM OF 24 INCH X 24 INCH. DOORS SHALL BE TIGHT FITTING CONSTRUCTED OF STAINLESS STEEL OF THICKNESS NOT LESS THAN THAT OF THE DUCTS. ACCESS DOORS SHALL BE PROVIDED WITH AN APPROVED NON-COMBUSTIBLE GASKETING MATERIAL FOR AIRTIGHT SEALING AND BE FASTENED WITH CAM TYPE LATCHES. ALL DOORS SHALL BE LOCATED IN THE SIDE OF A HORIZONTAL DUCT WITH THE LOWER EDGE OF A SIDE OPENING NOT LESS THAN 1-1.2 INCHES FROM THE BOTTOM OF THE DUCT. GENERAL CONTRACTOR SHALL COORDINATE ALL ACCESS PANELS REQUIRED IN WALLS, CEILINGS AND RATED ENCLOSURE TO ACCESS CLEANOUTS.
   1. DOOR FRAMES: 1 IN. X 1 IN. X 1/8 IN. STAINLESS STEEL ANGLES, WELDED.-

F. DUCT SYSTEMS SERVING A TYPE I HOOD SHALL BE ISO CONSTRUCTED AND INSTALLED THAT GREASE CANNOT BECOME POCKETED IN ANY PORTION THEREOF, AND THE SYSTEM SHALL SLOPE NOT LESS THAN 1/4 INCH PER LINEAR FOOT TOWARD THE HOOD OR TOWARD AN APPROVED GREASE RESERVOIR.

G. DUCT BRACING AND SUPPORTS SHALL BE OF NONCOMBUSTIBLE MATERIAL ATTACHED TO STRUCTURE. MECHANICAL FASTENERS SHALL NOT PENETRATE DUCT WALLS. SUPPORTS SHALL BE NOT LESS THAN THE GAUGE REQUIRED FOR GREASE DUCT CONSTRUCTION AND DESIGNED TO CARRY GRAVITY AND LATERAL LOADS WITHIN THE STRESS LIMITATIONS OF THE STANDARD BUILDING CODE.

H. WELDING: WELDS TO BE IN ACCORDANCE WITH SMACNA, ASHRAE, UMC AND AWS STANDARDS.

I. ALL DUCTWORK FOR KITCHEN VENTILATION SYSTEMS SHALL BE IN ACCORDANCE WITH REQUIREMENTS OF UMC AND ALL APPLICABLE CODES OR STANDARDS.

J. GENERAL CONTRACTOR SHALL COORDINATE DUCT LOCATIONS AND FINAL CONNECTION TO KITCHEN EQUIPMENT.

K. UNLESS SHOWN OR NOTED OTHERWISE, ALL ELBOWS AND OFFSETS SHALL BE SMOOTH RADIUS WITHOUT TURNING VANES. CENTERLINE RADIUS TO WIDTH RATIO SHALL BE 1.5 MINIMUM.

2.18 TURNING VANES

A. BOTH DIMENSIONS LESS THAN 48 INCHES: SINGLE VANE OR APPROVED DOUBLE THICKNESS AIRFOIL VANES.

B. EITHER DIMENSION GREATER THAN 48 INCHES: DOUBLE THICKNESS AIRFOIL VANES OF APPROVED PATTERN.

C. RECTANGULAR SMOOTH RADIUS ELBOWS: PROVIDE MULTIPLE SPLITTER VANES.

2.19 GREASE DUCT FIRE WRAP

A. PROVIDE 3M FIRE BARRIER DUCT WRAP 15A OR EQUAL. PRODUCT SHALL BE A FIRE RESISTANT WRAP CONSISTING OF A BLANKET ENCAPSULATED WITH A FOIL, DESIGNED AND TESTED FOR APPLICATION ON KITCHEN GREASE EXHAUST DUCTS.

B. BLANKET SHALL BE 1.38 LBS./SQ. FT. DENSITY WITH 0 FLAME SPREAD AND 0 SMOKE DEVELOPED WHEN TESTED IN ACCORDANCE WITH ASTM E 84. BLANKET AND INSTALLATION SHALL BE UL LISTED FOR INSTALLATION AS A TWO-HOUR ENCLOSURE. BLANKET SHALL COMPLY WITH THE REQUIREMENTS OF NFPA 96, 1998 EDITION.

C. ALL DETAILS OF INSTALLATION SHALL BE PROVIDED BY THE MANUFACTURER AND SHALL BE UL LISTED FOR TWO-HOUR APPLICATION ON KITCHEN GREASE EXHAUST DUCTS.

2.20 DAMPERS

A. PROVIDE BALANCING VOLUME DAMPERS IN EACH BRANCH DUCT AND IN EACH MAIN DUCT OF CONSTANT VOLUME SYSTEMS TO PROVIDE FOR COMPLETE AIR BALANCING. FIT EACH MANUAL VOLUME DAMPER WITH BEARINGS AND AN ADJUSTING DEVICE HAVING A LOCKING MECHANISM. PROVIDE ACCESS PANELS IF CONCEALED OR INACCESSIBLE THROUGH CEILING OR WALL.

B. BALANCING DAMPERS WHERE NEITHER DIMENSION OF DUCT EXCEEDS 17 INCHES MAY BE A JOB FABRICATED BUTTERFLY TYPE CONSISTING OF A BLADE CONSTRUCTED OF 18 GAUGE GALVANIZED STEEL SECURELY RIVETED OR WELDED AT ITS CENTER AXIS TO A SQUARE OPERATING ROD.

C. BALANCING DAMPERS WHERE EITHER DIMENSION EXCEEDS 18 INCHES SHALL BE AIR BALANCE AC-116, OPPOSED BLADE TYPE.

D. FIRE DAMPERS: FUSIBLE LINK OUT OF AIRSTREAM TYPE MANUFACTURED IN ACCORDANCE WITH REQUIREMENTS OF STATE FIRE MARSHAL AND PUBLIC AUTHORITIES HAVING JURISDICTION, WITH PERMANENT LABELING IDENTIFICATION. PROVIDE SUITABLE ACCESS FOR SERVICING DAMPERS.

E. COMBINATION SMOKE AND FIRE DAMPERS:

1. GENERAL DESCRIPTION: RUSKIN FSD-36 OR EQUAL BY GREENHECK, LEAKAGE CLASS 2, FOR WALL, FLOOR, GRILLE, OR OUT OF WALL APPLICATION AS INDICATED ON THE PLANS. LABELED ACCORDING TO UL 555S. COMBINATION FIRE AND SMOKE DAMPERS SHALL BE LABELED ACCORDING TO UL 555 FOR 1-1/2 HOUR RATING.
2. FUSIBLE LINKS: RESETTABLE, 165 DEG F RATED
3. FRAME AND BLADES: 0.064-INCH THICK GALVANIZED SHEET STEEL.
4. MOUNTING SLEEVE: FACTORY-INSTALLED, GALVANIZED SHEET STEEL; LENGTH TO SUIT WALL OR FLOOR APPLICATION.
5. DAMPER MOTORS: PROVIDE ACTUATOR BY MANUFACTURER. ELECTRICAL CONNECTION SHALL BE 115 V, SINGLE PHASE, 60 HZ.

F. INSTALL FIRE AND SMOKE DAMPERS ACCORDING TO MANUFACTURER'S UL-APPROVED WRITTEN INSTRUCTIONS.

G. BACKDRAFT DAMPERS: RUSKIN CBO2 AND CBD6 WITH EXTRUDED ALUMINUM FRAMES, ALUMINUM BLADES, AND VINYL EDGE SEALS AND ADJUSTABLE COUNTERWEIGHTS.

2.21 INLINE CEILING FAN

A. COOK, GN OR GC OF SIZES AND CAPACITIES INDICATED ON THE PLANS.

B. FAN SHALL BE CEILING, WALL, OR INLINE MOUNTED, DIRECT DRIVEN, CENTRIFUGAL EXHAUST FAN.

C. FAN SHALL BE MANUFACTURED AT AN ISO 9001 CERTIFIED FACILITY. FAN SHALL BE LISTED BY UNDERWRITERS LABORATORIES (UL 705). FAN SHALL BEAR THE AMCA CERTIFIED RATINGS SEAL FOR SOUND AND AIR PERFORMANCE.

D. CONSTRUCTION: THE FAN HOUSING SHALL BE MINIMUM 20 GAUGE GALVANIZED STEEL AND ACOUSTICALLY INSULATED. BLOWER AND MOTOR ASSEMBLY SHALL BE MOUNTED TO A MINIMUM 14 GAUGE REINFORCING CHANNEL AND SHALL BE EASILY REMOVABLE FROM THE HOUSING. MOTOR SHALL BE MOUNTED ON VIBRATION ISOLATORS. UNIT SHALL BE SUPPLIED WITH INTEGRAL WIRING BOX AND DISCONNECT RECEPTACLE SHALL BE STANDARD. DISCHARGE POSITION SHALL BE CONVERTIBLE FROM RIGHT ANGLE TO STRAIGHT THROUGH BY MOVING INTERCHANGEABLE PANELS. THE OUTLET DUCT COLLAR SHALL INCLUDE A REINFORCED ALUMINUM DAMPER WITH CONTINUOUS ALUMINUM HINGE ROD AND NYLON BUSHINGS. TO ACCOMMODATE DIFFERENT CEILING THICKNESS, AN ADJUSTABLE PREPUNCHED MOUNTING BRACKET SHALL BE PROVIDED. A POWDER PAINTED WHITE STEEL GRILLE SHALL BE PROVIDED AS STANDARD.

E. WHEEL: WHEEL SHALL BE CENTRIFUGAL FORWARD CURVED TYPE, CONSTRUCTED OF GALVANIZED STEEL. WHEEL SHALL BE BALANCED IN ACCORDANCE WITH AMCA STANDARD 204-96, BALANCE QUALITY AND VIBRATION LEVELS FOR FANS.

F. MOTOR: MOTOR SHALL BE OPEN DRIP PROOF TYPE WITH PERMANENTLY LUBRICATED BEARINGS, BUILT-IN THERMAL OVERLOAD PROTECTION AND DISCONNECT PLUG. MOTOR SHALL BE FURNISHED AT THE SPECIFIED VOLTAGE.

2.22 INLINE CENTRIFUGAL FANS

A. COOK MODEL SQN-B. FAN SHALL BE DUCT MOUNTED, BELT DRIVEN CENTRIFUGAL SQUARE INLINE.

B. FAN SHALL BE MANUFACTURED AT AN ISO 9001 CERTIFIED FACILITY. FAN SHALL BE LISTED BY UNDERWRITERS LABORATORIES (UL 705). FAN SHALL BEAR THE AMCA CERTIFIED RATINGS SEAL FOR SOUND AND AIR PERFORMANCE.

C. THE FAN SHALL BE OF BOLTED CONSTRUCTION UTILIZING CORROSION RESISTANT FASTENERS. HOUSING SHALL BE MINIMUM 18 GAUGE GALVANIZED STEEL WITH INTEGRAL DUCT COLLARS. BOLTED ACCESS DOORS SHALL BE PROVIDED ON THREE SIDES, SEALED WITH CLOSED CELL NEOPRENE GASKETING.

D. WHEEL SHALL BE CENTRIFUGAL BACKWARD INCLINED, CONSTRUCTED OF 100% ALUMINUM, INCLUDING A PRECISION MACHINED CAST ALUMINUM HUB. WHEEL SHALL BE BALANCED IN ACCORDANCE WITH AMCA STANDARD 204-96, BALANCE QUALITY AND VIBRATION LEVELS FOR FANS.

E. MOTOR SHALL BE HEAVY DUTY TYPE WITH PERMANENTLY LUBRICATED SEALED BALL BEARINGS AND FURNISHED AT THE SPECIFIED VOLTAGE, PHASE, AND ENCLOSURE.

F. BEARINGS SHALL BE PERMANENTLY LUBRICATED, SEALED BALL BEARINGS AND SELECTED FOR A MINIMUM L50 LIFE IN EXCESS OF 200,000 HOURS AT MAXIMUM CATALOGUED OPERATING SPEED.

G. BELTS SHALL BE OIL AND HEAT RESISTANT, NON-STATIC TYPE. DRIVES SHALL BE PRECISION MACHINED CAST-IRON TYPE, KEYED AND SECURELY ATTACHED TO THE WHEEL AND MOTOR SHAFTS. DRIVES SHALL BE SIZED FOR 150% OF THE INSTALLED MOTOR HORSEPOWER. THE VARIABLE PITCH MOTOR DRIVE MUST BE FACTORY SET TO THE SPECIFIED FAN RPM.

2.23 ROOF MOUNTED FILTERED SUPPLY FANS

A. COOK MODEL ASPT FAN SHALL BE A TIERED ALUMINUM HOOD, ROOF MOUNTED, BELT DRIVEN, BOTTOM DISCHARGE, CENTRIFUGAL FILTERED SUPPLY FAN.

B. FAN SHALL BE LISTED BY UNDERWRITER LABORATORIES (UL 705). FAN SHALL BEAR THE AMCA CERTIFIED RATINGS SEAL FOR SOUND AND AIR PERFORMANCE.

C. THE FAN SHALL BE OF BOLTED CONSTRUCTION UTILIZING CORROSION RESISTANT FASTENERS. HOOD SHALL BE TIERED EXTRUDED ALUMINUM, BOLTED TO A MINIMUM 16 GAUGE STEEL FAN BASE WITH PREPUNCHED MOUNTING HOLES. UNIT SHALL BE PROVIDED WITH AN INSULATED ALUMINUM TOP COVER AND 1 INCH WASHABLE PERMANENT ALUMINUM FILTERS. INTERNAL BLOWER AND MOTOR ASSEMBLY SHALL BE MOUNTED ON RUBBER VIBRATION ISOLATORS.

D. WHEEL SHALL BE DWDI CENTRIFUGAL, FORWARD CURVED TYPE, CONSTRUCTED OF PLATED STEEL. WHEEL SHALL BE BALANCED IN ACCORDANCE WITH AMCA STANDARD 204-96, BALANCE QUALITY AND VIBRATION LEVELS FOR FANS.

E. MOTOR SHALL BE HEAVY DUTY TYPE WITH PERMANENTLY LUBRICATED SEALED BALL BEARINGS AND FURNISHED AT THE SPECIFIED VOLTAGE, PHASE AND ENCLOSURE.

F. BEARINGS SHALL BE PERMANENTLY LUBRICATED, SEALED BALL BEARINGS AND SELECTED FOR A MINIMUM L50 LIFE IN EXCESS OF 200,000 HOURS AT MAXIMUM CATALOGED OPERATING SPEED.

G. BELTS SHALL BE OIL AND HEAT RESISTANT, NON-STATIC TYPE. DRIVES SHALL BE PRECISION-MACHINED CAST-IRON TYPE, KEYED AND SECURELY ATTACHED TO THE WHEEL AND MOTOR SHAFTS. DRIVES SHALL BE SIZED FOR 150 PERCENT OF THE INSTALLED MOTOR HORSEPOWER. THE VARIABLE PITCH MOTOR DRIVE MUST BE FACTORY SET TO THE SPECIFIED FAN RPM.

2.24 UTILITY SET EXHAUST FAN

A. DESCRIPTION: FAN SHALL BE A COOK CPS-A SINGLE WIDTH, SINGLE INLET, AIRFOIL STEEL WHEEL, BELT DRIVEN CENTRIFUGAL VENT SET.

B. CERTIFICATIONS: FAN SHALL BE MANUFACTURED AT AN ISO 9001 CERTIFIED FACILITY. FAN SHALL BE LISTED BY UNDERWRITERS LABORATORIES (UL 705). FAN SHALL BEAR THE AMCA CERTIFIED RATINGS SEAL FOR SOUND AND AIR PERFORMANCE.

C. CONSTRUCTION: THE FAN SHALL BE OF BOLTED AND WELDED CONSTRUCTION. THE ENTIRE FAN HOUSING SHALL HAVE CONTINUOUSLY WELDED SEAMS FOR LEAKPROOF OPERATION. THE FAN HOUSING SHALL BE FIELD ROTATABLE TO ANY ONE OF EIGHT DISCHARGE POSITIONS AND SHALL HAVE A MINIMUM 1-1/2 INCH OUTLET DISCHARGE FLANGE. BEARING SUPPORT SHALL BE MINIMUM 10 GAUGE WELDED STEEL. SIDE ACCESS INSPECTION PORTS SHALL BE PROVIDED WITH QUICK RELEASE LATCHES FOR ACCESS TO THE MOTOR COMPARTMENT WITHOUT REMOVING THE WEATHER COVER.

D. COATING: ALL STEEL FAN COMPONENTS SHALL BE COATED WITH AN ELECTROSTATICALLY APPLIED, BAKED POLYESTER POWDER COATING. PAINT MUST EXCEED 1,000 HOUR SALT SPRAY UNDER ASTM B117 TEST METHOD.

E. WHEEL: WHEEL SHALL BE STEEL CENTRIFUGAL AIRFOIL BLADE TYPE. BLADES SHALL BE CONTINUOUSLY WELDED TO THE BACKPLATE. WHEEL HUB SHALL BE KEYED AND SECURELY ATTACHED TO THE FAN SHAFT. WHEEL SHALL BE BALANCED IN ACCORDANCE WITH AMCA STANDARD 204-96, *BALANCE QUALITY AND VIBRATION LEVELS FOR FANS.*

F. MOTOR: MOTOR SHALL BE HEAVY DUTY TYPE WITH PERMANENTLY LUBRICATED SEALED BALL BEARINGS AND FURNISHED AT THE SPECIFIED VOLTAGE, PHASE AND ENCLOSURE.

G. BEARINGS: BEARINGS SHALL BE HEAVY DUTY REGREASEABLE BALL OR ROLLER TYPE IN A CAST IRON PILLOW BLOCK HOUSING SELECTED FOR A MINIMUM L50 LIFE IN EXCESS OF 200,000 HOURS AT MAXIMUM CATALOGED OPERATING SPEED.

H. BLOWER SHAFT: SHAFTING SHALL BE SIZED FOR A CRITICAL SPEED OF AT LEAST 125% OF MAXIMUM RPM.

I. BELTS AND DRIVES: BELTS SHALL BE OIL AND HEAT RESISTANT, NON-STATIC TYPE. DRIVES SHALL BE SIZED FOR 150% OF THE INSTALLED MOTOR HORSEPOWER. THE VARIABLE PITCH MOTOR DRIVE MUST BE FACTORY SET TO THE SPECIFIED FAN RPM.

2.25 ROOF MOUNTED UPBLAST EXHAUST FANS

A. COOK, ACRU-B OF SIZES AND CAPACITIES INDICATED ON THE PLANS.

B. FAN SHALL BE A SPUN ALUMINUM, ROOF MOUNTED, BELT DRIVEN, UPBLAST CENTRIFUGAL EXHAUST VENTILATOR.

C. FAN SHALL BE MANUFACTURED AT AN ISO 9001 CERTIFIED FACILITY. FAN SHALL BE LISTED BY UNDERWRITERS LABORATORIES (UL 705). FAN SHALL BEAR THE AMCA CERTIFIED RATINGS SEAL FOR SOUND AND PERFORMANCE.

D. THE FAN SHALL BE OF BOLTED AND WELDED CONSTRUCTION UTILIZING CORROSION RESISTANT FASTENERS. THE SPUN ALUMINUM STRUCT

ELECTRICAL/MECHANICAL LEGEND

Symbol	Max/Watts	Description
SD	5 Watt	Dual smoke & Carbon monoxide Alarms shall be hardwired with battery back up.[2010 CRC R314-R315]
GFCI AFCI	180 Watt	DUPLEX RECEPT., 20-AMP, GROUND TYPE, HORIZONTAL MOUNT 120-VOLT, Tamper-Resistant Electrical outlet (water proofed)
S	13 Watts	Recessed spot light CANLITE
	120V	Single Pole Wall Switch
	120V	Leviton 180 Degree PIR-Incandescent CFL-LED Occupancy Detector
	120V/220V	General Electric - PowerMark Gold 40 AMP 2-Space 4-Circuit Indoor Single-Phase Main Lug Circuit Breaker Panel
	120V/220V	FEED FROM ELECTRICAL METER
	600 V max	12/3 UF W/G Cable made of 3 Copper conductors that feature PVC jackets. 600-volt maximum
	32 Watts x 2	Flourescent light 12"x 48"
TV		TELEVISION OUTLET
		TELEPHONE OUTLET
	15 Watt	Emergency Battery - Exit Sign L.E.D. LITHONIA #LES-WHR-120/277-ELNSD SINGLE FACE
	15 Watt	Emergency Battery Unit with 2 Heads LITHONIA #ELM1272-H1212-SD
	NONE	Automatic timer/ Bi Level Lighting Sensor

NOTE:

-Wiring method thru walls using Flexible Steel Conduit.
-Wiring method thru ceilings using Galvanized Rigid Steel Conduit.

VENTILATION FAN SYSTEM SCHEDULE

Mark	Brand	Model	Seer	COOLING TONS	COOLING BTU	HEATING BTU	Refrigerant	CFM	Fan Speed	ELECTRICAL Voltage	ELECTRICAL Phase
EF-1 EF-2	BROAN	L500 LOSONE SELECT 3.3 Sone	–	–	—	—	—	514		120	
			–	–	—	—	—				

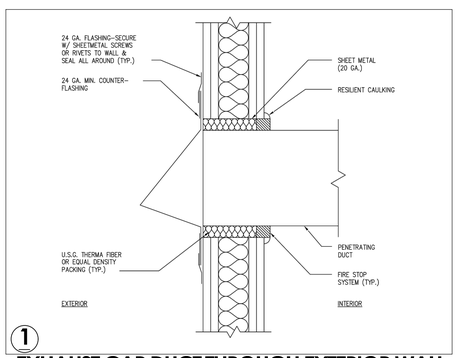
EXISTING UNIT UNAFFECTED

FURNACE SYSTEM SCHEDULE

Mark	Brand	Model	Seer	COOLING TONS	COOLING BTU	HEATING BTU	Refrigerant	CFM	Fan Speed	ELECTRICAL Voltage	ELECTRICAL Phase
1 HP	TRANE	25-225 GAS	–	–	–	225000	R410A	3000	Medium 78 DBA	208 / 230 V	3 Phase 60 Hz

WALK IN COOLER SYSTEM SCHEDULE

Mark	Brand	Model	Seer	COOLING TONS	COOLING BTU	HEATING BTU	Refrigerant	CFM	Fan Speed	ELECTRICAL Voltage	ELECTRICAL Phase
1 CU	CU LCH0050	LCH0050MBA CZA	–	5.0	–	24576	R448A		Medium 78 DBA	208 / 230 V	1 Phase 60 Hz
1 CO	CO LELO	LELO105AS6AMA				12,500	R448A		Medium 78 DBA	115V	1 Phase 60 Hz



1 **EXHAUST CAP DUCT THROUGH EXTERIOR WALL**

NOTES

Heating and air-conditioning system design. heating and air conditioning systems shall be sized, designed and have their equipment selected using the following methods; (Support documentation required at application submittal) 4.507.2

Establish heat loss and heat gain values according to ANSI/ACCA Manual J-2016 ASHRAE Handbooks or other equivalent methods. Size duct systems according to ANSI/ACCA 1 Manual D-2016, ASHRAE Handbooks or other equivalent methods.

Select heating and cooling equipment according to ANSI/ACCA 3 manual S-2014 or equivalent methods

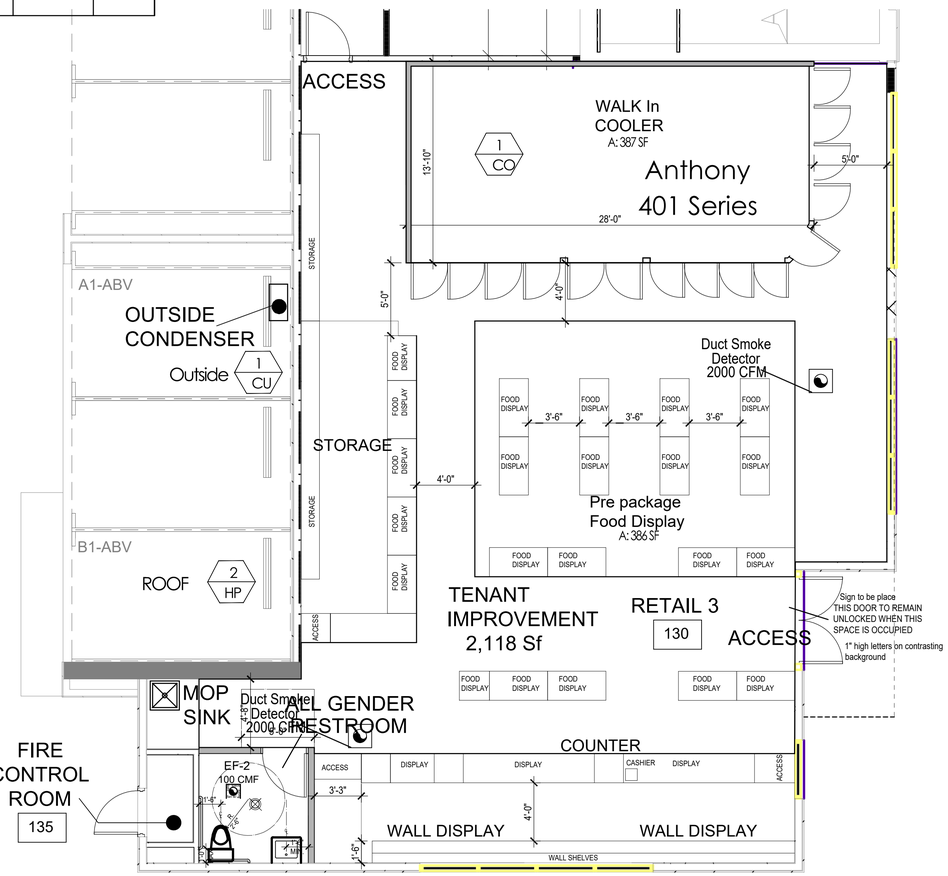
SMOKE DETECTORS NOTES:
Duct Smoke detector activation will result in the immediate loss of power to the air moving equipment. Air moving equipment serving the same space shall be interconnected for global shutdown.

Demand Control Ventilation:
System serve a space with an occupant load of less the 40 sq ft per person.

DUCT LEAKAGE TEST WILL BE CONDUCTED THAT COMPLIES WITH CMC 603.10.1

Exhaust ducts are required to be equipment with backdraft dampers that automatically close upon fan shutdown

Note:: Exhaust termination will be no closer than 3' to the window and no closer than 10' to a forced air inlet. CMC 502.2.1



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

JTD
J Torres Designs
JTD Cell (619) 779 3028., 550W B Street 4th Flr. San Diego, CA 92101. e-mail. arkitdesigns@gmail.com

COTA VERA MINI MARKET
1982 LA Media Pkwy South, Chula Vista, CA 91913
TENANT IMPROVEMENT-NEW MINI MARKET-LIQUOR

SHEET CONTENT:
Mechanical Plan

REVISIONS:

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Responsible: JOSE PEREZ
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4th floor
San Diego, CA 92101
PH(619)- 779-3028
Check: Jose Perez

Date: 10/05/25

sheet type: M
sheet no. 3

Plumbing General Notes

1.- Plumbing drawings shown are diagramatic, contractor shall be responsible to comply with all applicable code regardless of of shown or not shown on these drawings. Contractor shall field verify the locations of all existing utility pipes prior to start work, Point of connection to existing shown is based on available resource provided at the time of design and may be different system on these plans shall be done at no extra cost.

2.-Contractor shall notify all local utility companies including but not limited to the Gas Company, Electric Company, Telephone company, and the water department, about the extent of plumbing work, All excavation work shall be approved by all existing services prior to start of work.

3.- All Plumbing work shall meet or exceed the requirements of the 2022 CPC, CAC, title 24, Americans with disabilities act(ADA), national Fire protection Association (N.F.P.A.) The local City and County codes, and all other codes having jurisdiction, in case of conflict, The more strict regulations shall govern.

4.-All Plumbing work shall be coordinated with the works of other trades prior to start of work, Necessary adjustments shall be made at no extra cost.

5.-For minimum pipe size connections to each plumbing fixture see plumbing fixture schedule. these values are minimum, larger connections may result based on the different manufacturer's recommendations.

6.-Manufacturer's names and model numbers shown for plumbing fixtures and equipment are for reference only, other manufacturer's which can meet the design requirements of the plumbing system may be substituted upon approval from the Architect/designer and the owner.

7.-Provide dielectric fittings for dissmilar metals in contact.

8.-Provide hangers and supports for pipping in accordance with the recommendations of MSS SP-69

9.-Provide valves at the following locations:
A) Water main Shut-off valve in valve box
B) Valve with hose connection on downstream side of the main shut-off valve.
C) Shut-off valve on each supply to each fixture and equipment item not provided with control stop or other auxiliary shut-off valve.

10.-Install shut-off valves so that stems either are vertical with handwheels or operators on top or are horizontal and so that valves are easily accessible for operation, service, removal and replacement.

11.-Provide sleeves for all pipe and tubing passing though floors, roofs, and walls. Pack oakum into the space around the pipe or tubing, provide flashing for all pipes extending through the roof.

12.-All vent terminations at roof shall be at least 10 feet away from outside air intakes, operable windows, and the like.

13.-Fill cracks between fixtures and wall/floors with silicone rubber sealant.

14.-Install fixtures in accordance with the manufacture's recommendations and all applicable codes. Secure floor outlet of floor-mounted fixtures to drainage connections and floor in a rigid manner. Rigidly support wall-hung fixtures by means of metal supporting members. Use Chromium -plated brass bolts, nuts and washers where exposed All connections shall be made gas-tight and water-tight, Use of putty and plastic for gaskets will not be permitted.

15.-Provide all fixture components as indicated on drawings. provide additional components as per manufacture's recommendations for proper operation of the fixtures.

16.-Provide each plumbing fixture (including, hose bibs), with an individual stop or compression valve of polished chrome-plated loose key type.

17.-Where depths or inverts elevations are not indicated, provide minimum coverage (above top of pipes) as follows:

A) Any piping under slab(top of pipe to underside of slab); 18 inches

B) Cast Iron and copper pipes in other locations: 18 inches

18.-Excavate to undisturbed earth: cut level and form true. Removed debris rubbish and soft material(such as mud), where rock is encountered, undercut trenches 6-inches and fill with well tamped neutral sand and pea gravel to propoer pipe elevation. During excavation free of standing water, Undercut trench 6-inches and install pipping in a 6-inch neutral sand envelope.

19.-Back fill to a point 12 inches above top of pipping with earth (Excavated material may be used) free of clay, debris, rubbish, rocks or clods over 4-inches in the greatest dimension. backfill above 12 inches from top of pipping may be with excavated material. Apply backfill by hand in 6-inch deep layers the full width of the trench. Moisten each layer (Do not flood or puddle), and hand tamp to a minimum 90% Compact before proceeding with next layer of backfill.

20.- Do not excavate under foundations or footings except in manner permitted by the Architect/Designer. Do not backfill until installed piping has been successfully tested.

21.-Sewer vent note: Each vent shall rise vertically to a point not less than six inches above flood level rim of the fixture served before offsetting horizontally and before being connected to any other vent.

NOTE: Insulation material shall meet the California quality standard per Section 110.8 Energy Efficiency Standards (E.E.S.).
- All HVAC systems shall meet the control requirements per Section110.2 and 120.2 E.E.S.
- All HVAC equipment and appliances shall met the requirements per section 110.1-110.3, 110.5, 120.1-120.4 Title 24 Energy Standards.
- Builindg drain and vent piping materials shall comply with Section 701.0 and 903.0 of the California Plumbing Code.
- All sanitary systm materials shall be listed by an approved listing agency.
- Each faucet shall not exceed a water flow of 1.8 GPM.

TANK-TYPE WATER HEATER SCHEDULE

MANUFACTURER	SERIES	MODEL	STORAGE CAPACITY (GALLONS)	HEATER ELEMENT WATTAGE	VOLTS/PH/HZ
RHEEM	PROPE55 T2	RH92 CS	55	5500	240

Portable Fire Extinguisher(s) shall be installed and maintained in accordance with CFC 906, Table 906.3 (1) and Chapter 3, Title 19 CCR.

WATER FIXTURE UNITS

Maximum Water Supply Fixture Units (WSFU)

Meter and street service lines (inches)	Building supply and branch lines (inches)	Length of pipe (feet) 40	60	80	100	150	200
3/4	1/2	7	7	6	5	4	3
	3/4	20	20	19	17	14	11
	1	39	39	36	33	28	23
1	1	39	39	39	36	30	25
	1 1/4	78	78	78	67	52	44

Supply pressure over 60 psi

Maximum Water Supply Fixture Units (WSFU)

Meter and street service lines (inches)	Building supply and branch lines (inches)	Length of pipe (feet) 40	60	80	100	150	200
3/4	1/2	7	7	7	6	5	4
	3/4	20	20	20	20	17	13
	1	39	39	39	39	35	30
1	1	39	39	39	39	38	32
	1 1/4	78	78	78	78	74	62

PRESSURE AT METER ..... 80 PSI
TOTAL FIXTURES ..... 18 (37 gpm)
TOTAL DEVELOPMENT LENGHT OF SYSTEM .....(MEASURE FROM REGULATOR)... 150'
PRESSURE AFTER REGULATOR ..... 60 PSI
HEAD PRESSURE LOSS (.5x0) ..... 0 PSI
AVAILABLE PRESSURE ..... 60 PSI
MAIN LINE SIZE ..... 1-1/2'

WATER CALCULATIONS

MIN. RESIDUAL PRESSURE ..... 25 PSI
LOSS IN STATIC PRESSURE ..... 0 PSI
PRESSURE AVAILABLE FOR FRICTION LOSS ..... 60-(25+0)= 35 PSI
AVERAGE PERMISSBLE FRICTION LOSS PER 100' ..... (35/150) x 100 = 23 PSI

MAXIMUM FIXTURE UNITS ALLOWED A-2 OCCUPANCY-

SIZE	FIXTURE UNITS	VELOCITY	GPM
1/2"	6	8	6
3/4"	20	8	14
1"	32	8	21
1-1/4"	56	8	30
1-1/2"	83	6	42

PLUMBING CONNECTION SCHEDULE

A-2 OCCUPANCY-

MARK	FIXTURE	MIN. PIPE SIZES W	V	CW	HW	TRAP	DESCRIPTION
WC-1	HANDICAP WATER CLOSET	3"	2"	1/2"	–	INT.	KOHLER HIGHLINE LITE
~~U-1~~	~~HANDICAP URINAL~~	~~2"~~	~~1-1/2"~~	~~3/4"~~	~~–~~	~~INT.~~	~~KOHLER K-5016, DEXTER LITE~~
L-1	SELF RIMMING LAV	2"	2"	1/2"	1/2"	1-1/2"	BRIGGS 6210-MOEN 882 SELF C
FD-1	FLOOR DRAIN	2"	1-1/2"	–	–	2"	ZURN ZN-415-5 PRIME LAV WASTE
FD-2	FLOOR DRAIN	2"	1-1/2"	–	–	2"	ZURN ZN-415-5 PRIME TRAP Primer
S-1	UTILITY SINK	2"	1-1/2"	1/2"	1/2"	1-1/2"	
S-2	1 COMP. SINK	2"	1-1/2"	1/2"	1/2"	1-1/2"	JUST SL-22125-B-GR, 1 COMPT. SS SINK
FS-1	FLOOR SINK	2"	1-1/2"	–	–	2"	COMMERCIAL ENAMALING-906-2

Metering lavatories faucets cam deliver a max of 0.2 gallons per Cycle

FIXTURE UNIT CALCULATIONS

TAG	DESCRIPTION	HOT & COLD DOMESTIC WATER QUANTITY	UNITS EACH	TOTAL UNITS	SANITARY WASTE QUANTITY	TRAP SIZE	UNITS EACH	TOTAL UNITS
WC-1A	A.D.A. WATER CLOSET Flush tank water	NEW 5	10.0	50	5	4"	6.0	30
L-1A	A.D.A. BATHROOM LAVATORY	4	2.0	8.0	4	1p"	2.0	8
FD-1	FLOOR DRAIN	5	N.A.	N.A.	5	3"	3.0	15
	COLUMN TOTALS ------->	12	N.A.	58	13	N.A.	N.A.	53

1 P-1 **RHEEM UNIVERSAL WATER HEATER**
Model # PROPE55 T2 RH92 CS-**55 gal**
1st rating 74 GPH
NOTE Water Heater to Conform to ASSE 1084

T.I

Fixtures	Fixt. #	Flow Rate
Bathtub (no Shower)	0	5.5
Bidet	0	2
Combination Bath/Shower	0	5.5
Faucet, Lavatory	0	1.5
Shower, per head (no Bathtub)	0	2
Water Closet, Gravity Tank	7	3
Dishwasher	0	1.3
Faucet, Kitchen Sink	7	2.2
Clothes Washer	0	3.5
Faucet, Laundry	0	2
Faucet, Bar Sink	0	1.5
Fixture 1	1	6
Fixture 2	3	6
Fixture 3	0	6
Fixture 4	0	0
Total Number of Fixtures	18	
99th Percentile Demand Flow	14.20	GPM

NOTE: AN APPROVED PRESSURE REGULATOR IS REQUIRED WHERE STATIC WATER PRESSURE FROM THE WATER PIPING EXCEEDS 80 PSI CPC 608.2

NOTE: THE WATER HEATER THERMOSTAT MAY NOT BE USED FOR COMPLIANCE.

Per CPC 906.1 ABS/PVC vent terminations up through the roof exposed to sunlight are required to be protected by water based synthetic latex paints

Per CPC 906.1 ABS/PVC vent terminations up through the roof exposed to sunlight are required to be protected by water based synthetic latex paints

Public lavatories are required to be self-closing or self meter CPC 407.4

NOTE: The Water heater thermostat may not be used for compliance

NOTE: PER CPC 609.10 All water Supply System that have quick closing valves installed therein (washing machines, Flush valve urinals, Flush valve water closets Shall have devices installed as close to fixture as possible to control effects of water mammer

NOTE: ALL Domestic hot water piping will have a minimum insulation for the following pipe sizes: 1/2" pipe(1/2" Insulation); 3/4" Pipe (1" Insulation), 1"-1/2" pipes (1 1/2" Insulation), 2" Pipes are Larger (2" Insulation), CPC 609.1.1 & ES 150.0(j)

Plumbing Mandatory Measures notes

1.- All Plumbing system components shall meet or exceed the requirements of **2022 CBC 2022 CMC, 2022 CPC**, NEC, NFPA, ASTM ANSI and all local and state code requirements.

2.-All plumbing equipment listed in (CCR) Section 2-111 must be certified by the manufacturer to meet or exceed specifications or efficiencies adopted by the CEC.

3.- All heaters for domestic hot water must be certified by the manufacturer to meet the specifications or efficiencies as adopted by the CEC in accordance with Section 10-113 of the CCR and Energy efficiency standards residential and non-residential.

4.-All insulating material installed must be certified by California Energy Commission to meet C.E.C. Energy efficiency standards (E.E.S.) Section 123 and Section 1201.2.1.8 2022 CMC.

5.- All insulation installed shall meet the flame spread and smoke density requirements of Sections 2602 and 707 of 2022 CBC

6.-Servicing water heating systems and equipment shall comply with Energy efficiency standards, Section 113.

7.-Cross connection protection shall be provided at all potable water supplied appliances and equipment

8.-All piping exposed to weather shall be metallic.

9.-All ferrous piping exposed to weather shall be galvanized.

10.-Floor drains or similar traps directly connected to the drainage System and subject to infrequent use shall be provided with an approved automatic means of maintaining their water seals.

11.-Water heater shall be anchored or strapped the resist horizontal displacement due to earthquake motion per Section 508.2 CPC

12.-A water heater pressure and temperature relief drain that terminates outside the building shall comply with Section 608.5 CPC

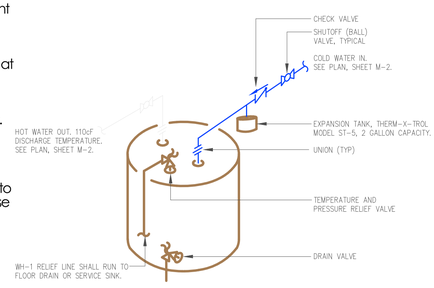
13.-Provide expansion tank ot other approved method of relieving pressure per Section 503

Provide 2 Straps; One strap at top 1/3 pf the tank and one strap at bottom 1/3 of the tank per CPC 507.2

PLUMBING LEGEND

SYMBOL	ABBR.	DESCRIPTION
	S	SEWER CAST IRON PIPING
	CW	COLD WATER PIPING
GAS	G	BLACK STEEL PIPE FOR GAS USE ONLY
S	S.O.V.	SHUT-OFF VALVE
	A.S.V.	ANGEL STOP VALVE
	CV	CHECK VALVE
	FCO/GCO	4" FLOOR OR GRADE CLEAN-OUT
	VTR	VENT THRU ROOF
C	COND.	PVC PIPE Ø 3/4" (For HVAC condensate line)
	C.O.	SEWER CLEANOUT

NOTE:
-All water lines to be copper pipe type "m" unless other noted.
-All gas lines to be black steel pipe unless other noted.



8 Water Heater Piping
SCALE: Not to Scale

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COTA VERA MINI MARKET
1982 LA Media Pkwy South, Chula Vista, CA 91913
TENANT IMPROVEMENT-NEW MINI MARKET-LIQUOR

SHEET CONTENT:
PROPOSED WATER SUPPLY PLAN

REVISIONS:

Design: Jose Perez
Check: Jose Perez
Date: 10/05/25

Responsible:
JOSE PEREZ
550 W B STREET
4th floor
San Diego, CA 92101
Ph:(619)- 779-3028

sheet type: P
sheet no. 1

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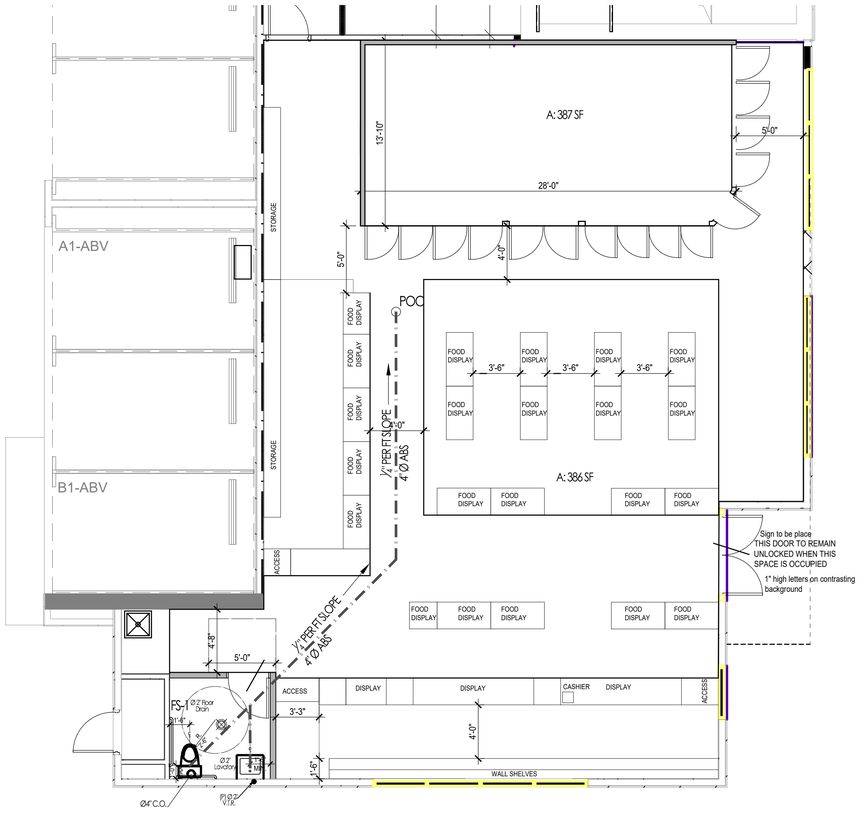
Instantaneous water heaters shall have isolation valves on both the cold and hot water piping leaving the water heater complete with hose bibs or other fittings on each valve for flushing the water heater when the valves are closed. ES 110.3

All domestic hot water piping to have the following minimum insulation installed: 1/2" pipe(1/2" insulation); 3/4" Pipe(1" Insulation); 1" to 1-1/2" pipe(1-1/2" insulation). CPC 609.11 & ES 150.00(j)
Additionally, the 1/2" hot water pipe to the kitchen sink, and the cold-water pipe within 5' of the water heater both require 1" minimum insulation. ES 150.0(j)

Additionally, the 1/2" hot water pipe to kitchen sink, and cold-water pipe within 5' of the water heater both require 1" minim insulation. ES 150.0(i)

NOTE:

- Insulation material shall meet the California quality standard per Section 110.8 Energy Efficiency Standards (E.E.S.).
- All HVAC systems shall meet the control requirements per Section110.2 and 120.2 E.E.S.
- All HVAC equipment and appliances shall met the requirements per section 110.1-110.3, 110.5, 120.1-120.4 Title 24 Energy Standards.
- Builindg drain and vent piping materials shall comply with Section 701.0 and 903.0 of the California Plumbing Code.
- All sanitary systm materials shall be listed by an approved listing agency.
- Each faucet shall not exceed a water flow of 1.8 GPM.



PLUMBING WASTE-VENT

Scale : 3/16" = 1'-0"

Plumbing Mandatory Measures notes

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	VTR	VENT THRU ROOF
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NOTE:

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-All gas lines to be black steel pipe unless other noted.

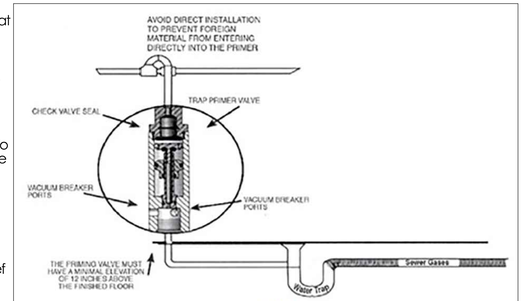


FIGURE 1007.1A
TRAP SEAL PRIMER RECOMMENDED INSTALLATION

NOTE:
INFREQUENT FLOOR DRAINS TO HAVE TRAP PRIMERS PER CPC1007.00

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COTA VERA MINI MARKET

1982 LA Media Pkwy South, Chula Vista, CA 91913

TENANT IMPROVEMENT-NEW MINI MARKET-LIQUOR

SHEET CONTENT:
PROPOSED (Plumbing) PLAN SEWER-WATER

REVISIONS:

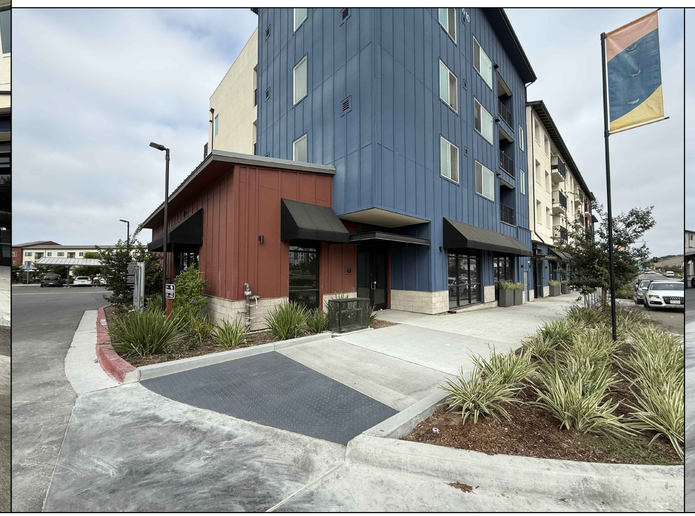
Design: Jose Perez
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Date: 10/05/25
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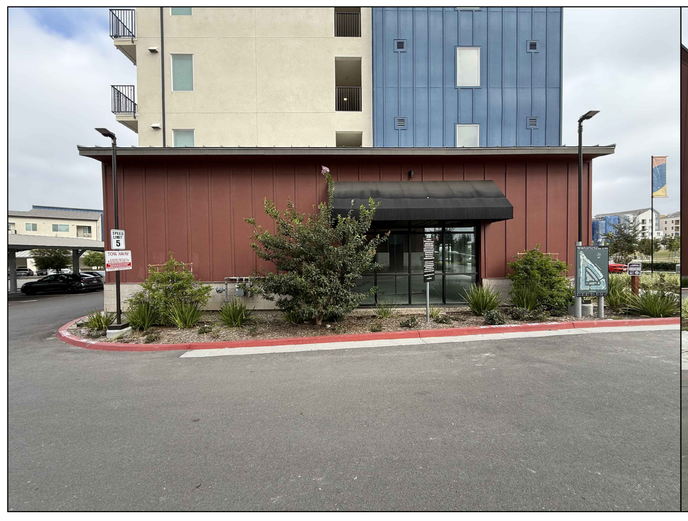
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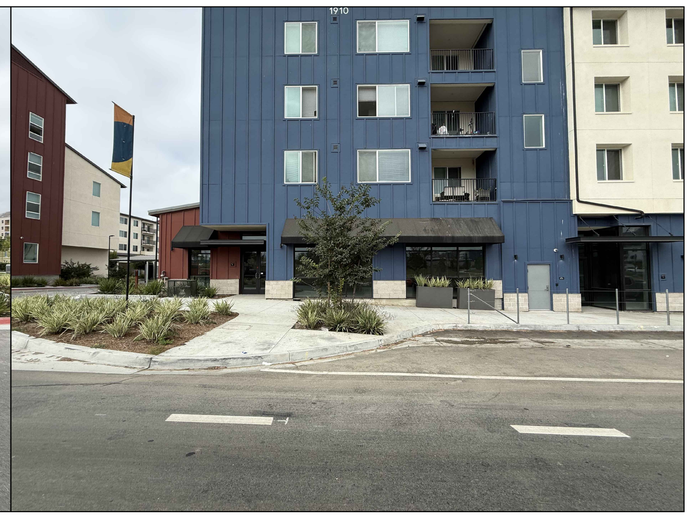


PHOTO SURVEY

NTS

NORTH

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Design: Jose Perez

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