

MECHANICAL SPECIFICATIONS

PROVIDE EQUIPMENT INDICATED ON THE DRAWINGS, AND AS REQUIRED FOR A COMPLETE FUNCTIONING SYSTEM. DEFINITIONS: FURNISH MEANS TO SUPPLY AND DELIVER TO PROJECT SITE, READY FOR INSTALLATION. INSTALL MEANS TO PLACE IN POSITION AND MAKE CONNECTIONS FOR SERVICE OR USE. PROVIDE MEANS TO FURNISH AND INSTALL, COMPLETE AND READY FOR INTENDED USE. WARRANTY: PROVIDE LABOR AND MATERIALS TO REPAIR OR REPLACE DEFECTIVE PARTS AND MATERIALS AS REQUIRED FOR ONE YEAR AFTER SUBSTANTIAL COMPLETION OR OWNER ACCEPTANCE OF THE COMPLETED PROJECT. PROVIDE A SEPARATE LINE ITEM DEDUCT AMOUNT ON THE PROPOSAL FORM TO DELETE WARRANTY SERVICE, AT THE OWNER'S OPTION. PROVIDE OPERATION MANUALS, MAINTENANCE MANUALS AND SCHEMATICS FOR ALL MECHANICAL EQUIPMENT INSTALLED. COORDINATION: COORDINATE WITH THE WORK OF OTHER SECTIONS, EQUIPMENT FURNISHED BY OTHERS, REQUIREMENTS OF THE OWNER, AND WITH THE CONSTRAINTS OF THE EXISTING CONDITIONS OF THE PROJECT SITE. ROOF PENETRATIONS SHALL COMPLY WITH "SMACNA" AND "NRCA" STANDARDS, AND WITH THE REQUIREMENTS OF THE EXISTING ROOFING WARRANTY, IF APPLICABLE. DO NOT PERFORM ROOFING PENETRATIONS IN A MANNER WHICH WOULD VOID OR OTHERWISE LIMIT THE EXISTING ROOF WARRANTY. DUCT DIMENSIONS: UNLESS OTHERWISE NOTED, DUCT DIMENSIONS ON THE DRAWINGS ARE INSIDE CLEAR DIMENSIONS. SHEET METAL DUCTWORK: PROVIDE SHEET METAL DUCTWORK FABRICATED AND INSTALLED IN ACCORDANCE WITH ASHRAE AND SMACNA STANDARDS, FOR 1" W.G. PRESSURE CLASS, SEAL CLASS "A". SHEET METAL SHALL BE GALVANIZED SHEET STEEL OF LOCK FORMING QUALITY, WITH G90 ZINC COATING. SHEET STEEL SHALL COMPLY WITH ASTM A653 STANDARD SPECIFICATION FOR STEEL SHEET METAL, ZINC COATED (GALVANIZED) OR ZINC-IRON ALLOY-COATED (GALVANNEALED) BY THE HOT DIP PROCESS, AND A924 STANDARD SPECIFICATION FOR GENERAL REQUIREMENTS FOR SHEET, METALLIC-COATED BY THE HOT DIP PROCESS. ALL ANGLE IRON USED FOR SUPPORT SHALL BE GALVANIZED. CONNECTIONS TO WALLS OR FLOOR SHALL BE AIR TIGHT WITH ANGLE IRON AND CAULKING. SEAL ALL DUCT SEAMS, TRANSVERSE AND LONGITUDINAL, AIR TIGHT. PROVIDE TURNING VANES AT ALL 90° ELBOWS. TRAPEZE DUCT HANGERS: PROVIDE MINIMUM 1" X 2" X 1" X 18 GAUGE CHANNELS WITH MINIMUM 1" X 18 GAUGE STRAPS TO STRUCTURAL SUPPORT. ROUND SHEET METAL DUCT: PROVIDE SPIRAL SEAM (ALL SIZES) OR SNAP LOCK (DUCT SIZES UP TO 10") GALVANIZED STEEL COMPLYING WITH SMACNA STANDARDS. SPIRAL SEAM DUCTWORK SHALL HAVE SMACNA SEAM TYPE RL-1. FIBER GLASS DUCT BOARD IS AN ACCEPTABLE ALTERNATIVE IF APPROVED BY OWNER AND THE LOCAL BUILDING CODE OFFICIAL. PRODUCT AND INSTALLATION MUST MEET NAIMA STANDARDS AND OTHER APPLICABLE CODES AND REGULATIONS. EXPOSED DUCTWORK: EXPOSED DUCTWORK SHALL BE CLEANED OF DEBRIS AND OIL, THEN WIPED DOWN WITH VINEGAR OR OTHER SURFACE PREPARING CHEMICAL TO PREPARE DUCT FOR PAINT. DUCT SEALANT: PROVIDE POLYMERIC RUBBER TYPE SEALANT FOR USE ON BOTH INTERIOR LOCATED DUCTWORK AND DUCTWORK EXPOSED TO OUTDOOR CONDITIONS. SEALER SHALL HAVE HIGH BONDING STRENGTH FOR SURE, FIRST TIME SEALING OF JOINTS IN LOW, MEDIUM, AND HIGH PRESSURE DUCT SYSTEMS. SEALER SHALL BE HIGH IN SOLID CONTENT. PROVIDE A TWO PART TAPE SEALING SYSTEM, CONSISTING OF WOVEN FIBER TAPE IMPREGNATED WITH A GYPSUM MINERAL COMPOUND, AND A MODIFIED ACRYLIC/SILICONE ACTIVATOR THAT REACTS EXOTHERMICALLY WITH THE TAPE. TWO PART TAPE SEALING SYSTEM MUST BE RATED FOR BOTH INDOOR AND OUTDOOR APPLICATION. TAPE SHALL NOT CONTAIN ASBESTOS. DUCT INSULATION: MATERIAL FOR SUPPLY AND RETURN AIR DUCT ABOVE CEILING INSIDE THE BUILDING SHALL HAVE THE EQUIVALENT THERMAL RESISTANCE OF MINIMUM R-6. THE REQUIRED R VALUES ARE FOR INSTALLED INSULATION WITH 25% COMPRESSION AT THE CORNERS. PROVIDE PINS AND WASHERS IN ACCORDANCE WITH SMACNA REQUIREMENTS AND AS REQUIRED TO PREVENT INSULATION FROM SAGGING. PROVIDE ADEQUATE INSULATION AT THE SUPPLY AIR DIFFUSERS TO PREVENT CONDENSATION. FLEXIBLE DUCT : UL #181 LISTED, CLASS 1, AND CONTAIN A 0.1 PERM RATED POLYETHYLENE INNER LINER, WITH R-8 FIBERGLASS INSULATION. FLEXIBLE DUCTS SHALL BE SECURED TO RIGID SHEET METAL COLLARS AND AIR DIFFUSERS WITH NYLON TIES OR STAINLESS STEEL WORM GEAR STRAPS. SEAL ALL CONNECTIONS AND JOINTS AIRTIGHT. SUPPORT FLEXIBLE DUCTS FROM THE BUILDINGS STRUCTURE WITH MINIMUM 1" WIDE, 18 GAUGE, GALVANIZED STEEL STRAP AT MAXIMUM 4'-0" CENTERS. PROVIDE 4" WIDE SHEET METAL SADDLES AT EACH SUPPORT EACH STRAP. SAG OF FLEXIBLE DUCT BETWEEN HANGERS SHALL NOT EXCEED 1/2" PER FOOT OF SUPPORT SPACING. RADIUS FOR TURNS OF FLEXIBLE DUCTS SHALL BE A MINIMUM OF ONE DUCT DIAMETER. FLEXIBLE DUCT RUNS SHALL NOT EXCEED 10'-0" IN LENGTH AND SHALL BE THE SAME SIZE AS THE DIFFUSER NECK CONNECTION. ROUND VOLUME DAMPERS: PROVIDE MINIMUM 20 GAUGE GALVANIZED STEEL FRAME AND BLADES, MINIMUM 3/8" SQUARE STEEL AXLE, MOLDED SYNTHETIC BEARINGS, WITH LOCKING POSITION REGULATOR. REGULATOR SHALL BE POSITIONED WITH SHEET METAL BRACKET BEYOND DUCT COVERING. WHERE POSITIONING REGULATOR IS NOT ACCESSIBLE, PROVIDE COUPLING AND EXTENSION ROD WITH REGULATOR FOR CEILING OR WALL INSTALLATION, AS REQUIRED. RECTANGULAR VOLUME DAMPERS: PROVIDE MINIMUM 16 GAUGE GALVANIZED STEEL CHANNEL FRAME, 16 GAUGE GALVANIZED STEEL BLADES, MINIMUM ½" HEXAGONAL AXLE, BOLDED SYNTHETIC BEARINGS, WITH 3/8" SQUARE PLATED STEEL CONTROL SHAFT. LINKAGES SHALL BE CONCEALED IN THE FRAME. OPERATING SHAFT SHALL EXTEND BEYOND FRAME AND DUCT TO A LOCKING QUADRANT WITH ADJUSTABLE LEVER. MAXIMUM BLADE WIDTH SHALL NOT EXCEED 6".

HVAC GENERAL NOTES

DUCT TURNING VANES: PROVIDE FABRICATED TURNING VANES AND VANE RUNNERS, CONSTRUCTED IN ACCORDANCE WITH SMACNA "HVAC DUCT CONSTRUCTION STANDARDS". PROVIDE TURNING VANES CONSTRUCTED OF CURVED BLADES, SUPPORTED WITH BARS PERPENDICULAR TO BLADES, AND SET INTO SIDE STRIPS SUITABLE FOR MOUNTING IN DUCTWORK. FOLLOW SMACNA GUIDELINES FOR SPACING SUPPORT, AND CONSTRUCTION. ALL BLADES SHALL BE DOUBLE THICKNESS AIRFOIL TYPE. FLEXIBLE DUCT CONNECTORS: PROVIDE U.L. LABELED 30 OUNCE NEOPRENE COATED FIBERGLASS FABRIC DUCT CONNECTORS. DUCT ACCESS DOORS: PROVIDE HINGED ACCESS DOORS IN DUCTWORK WHERE REQUIRED FOR ACCESS TO EQUIPMENT. PROVIDE INSULATED ACCESS DOORS FOR INSULATED DUCTWORK. CONSTRUCT OF SAME OR THICKER GAUGE SHEET METAL AS DUCT IN WHICH IT IS INSTALLED. PROVIDE FLUSH FRAMES FOR UN-INSULATED DUCTS, AND EXTENDED FRAMES FOR EXTERNALLY INSULATED DUCTS. PROVIDE CONTINUOUS HINGE ON ONE SIDE, WITH ONE HANDLE-TYPE LATCH FOR ACCESS DOORS 12" HIGH AND SMALLER, AND TWO HANDLE-TYPE LATCHES FOR LARGER ACCESS DOORS. HVAC CONTROL SYSTEM: PROVIDE ALL THE NECESSARY CONTROLS AND CONTROL WIRING IN CONDUIT COMPATIBLE TO SYSTEMS SHOWN ON EQUIPMENT SCHEDULE M2.0. PROGRAMMABLE THERMOSTAT FOR EACH SYSTEM SHALL ENABLE THE SUPPLY FAN AND CYCLE THE COOLING AND HEATING STAGES TO MAINTAIN SPACE SET-POINT. SUPPLY FAN RUNS CONTINUOUSLY DURING THE OCCUPIED MODE. EACH THERMOSTAT SHALL HAVE A DEAD BAND OF AT LEAST 5 DEGREES (ADJ.) WITHIN WHICH THE SUPPLY OF HEATING AND COOLING IS SHUT OFF, EACH THERMOSTAT SHALL HAVE SETBACK AND SET-UP CAPABILITY DURING THE UNOCCUPIED MODE. FOR SETBACK, THE HEATING SHALL RESTART AND TEMPORARILY OPERATE ACCORDING TO A SET-POINT ADJUSTABLE DOWN TO 55 DEGREES. FOR SET-UP, THE COOLING SHALL RESTART AND TEMPORARILY OPERATE ACCORDING TO A SET-POINT ADJUSTABLE UP TO 85 DEGREES OR TO PREVENT HIGH SPACE HUMIDITY LEVELS. EACH SYSTEM SHALL BE PROVIDED WITH A MOTORIZED OUTSIDE AIR DAMPER THAT WILL AUTOMATICALLY SHUT WHEN THE SYSTEM OR SPACES SERVED ARE NOT IN USE. VENTILATION OUTSIDE AIR DAMPERS SHALL BE CAPABLE OF AUTOMATICALLY CLOSING DURING PREOCCUPANCY BUILDING WARM-UP, COOL DOWN, AND SETBACK, EXCEPT WHEN VENTILATION REDUCES ENERGY COSTS (e.g., NIGHT PURGE) OR WHEN VENTILATION MUST BE SUPPLIED TO MEET CODE REQUIREMENTS. COMMISSIONING/VERIFICATION: HVAC CONTROL SYSTEM SHALL BE TESTED TO ENSURE THAT CONTROL ELEMENTS ARE CALIBRATED, ADJUSTED, AND IN PROPER WORKING CONDITION, AND THAT THE SYSTEM MEETS THE DESIGN REQUIREMENTS. TEST AND BALANCE: CONTRACT DIRECTLY A THIRD PARTY TO PROVIDE TEST AND BALANCE OF THE HVAC SYSTEM. THE GENERAL CONTRACTOR IS RESPONSIBLE FOR SCHEDULING, TEST AND ADJUST ALL MECHANICAL SYSTEM AND EQUIPMENT TO ASSURE PROPER BALANCE AND OPERATION. PERFORM TESTS IN ACCORDANCE WITH NEBB PROCEDURAL STANDARDS-1999 OR AABC 2002, AND ASHRAE STANDARD 111. ELIMINATE NOISE AND VIBRATION, AND ASSURE PROPER FUNCTION OF CONTROLS. SUBMIT COMPLETED TEST AND BALANCE REPORT TO OWNER'S REPRESENTATIVE. BALANCING CONTRACTOR SHALL BE INDEPENDENT AND CERTIFIED WITH NEBB OR AABC. BALANCE ALL SYSTEMS WITHIN 5% OF AIR FLOW INDICATED ON DRAWINGS, AND REPORT ALL DISCREPANCIES TO THE HVAC CONTRACTOR FOR CORRECTION. MARK FINAL BALANCE POSITIONS ON DAMPERS WITH PERMANENT MARKER. COMPLETION REQUIREMENTS: THE CONTRACTOR SHALL PROVIDE, WITHIN 90 DAYS AFTER THE DATE OF SYSTEM ACCEPTANCE, RECORD DRAWINGS AND AN OPERATING AND MAINTENANCE MANUAL TO THE BUILDING OWNER OR THE DESIGNATED REPRESENTATIVE OF THE OWNER. THE RECORD DRAWING SHALL BE OF THE ACTUAL INSTALLATION AND INCLUDE AS A MINIMUM THE LOCATION AND PERFORMANCE DATA ON EACH PIECE OF EQUIPMENT, GENERAL CONFIGURATION OF DUCT AND PIPE DISTRIBUTION SYSTEM INCLUDING SIZES, AND THE TERMINAL AIR OR WATER DESIGN FLOW RATES. THE OPERATING AND MAINTENANCE MANUALS SHALL BE IN ACCORDANCE WITH INDUSTRY-ACCEPTED STANDARDS AND SHALL INCLUDE, AT A MINIMUM, THE FOLLOWING: (A) SUBMITTAL DATA STATING EQUIPMENT SIZE AND SELECTED OPTIONS FOR EACH PIECE OF EQUIPMENT REQUIRING MAINTENANCE; (B) OPERATION MANUALS AND MAINTENANCE MANUALS FOR EACH PIECE OF EQUIPMENT REQUIRING MAINTENANCE, EXCEPT EQUIPMENT NOT FURNISHED AS PART OF THE PROJECT. REQUIRED ROUTINE MAINTENANCE ACTIONS SHALL BE CLEARLY IDENTIFIED; (C) NAMES AND ADDRESSES OF AT LEAST ONE SERVICE AGENCY; (D) HVAC CONTROLS SYSTEMS MAINTENANCE AND CALIBRATION INFORMATION, INCLUDING WIRING DIAGRAMS, SCHEMATICS, AND CONTROL SYSTEM SEQUENCE DESCRIPTIONS. DESIRED OR FIELD-DETERMINED SET-POINTS SHALL BE PERMANENTLY RECORDED ON CONTROL DRAWINGS AT CONTROL DEVICES OR, FOR DIGITAL CONTROL SYSTEMS, IN PROGRAMMING COMMENTS; (E) A COMPLETE NARRATIVE OF HOW EACH SYSTEM EACH SYSTEM IS INTENDED TO OPERATE, INCLUDING SET-POINTS.

HVAC GENERAL NOTES

1. THE INTENT OF THESE PLANS AND SPECIFICATIONS IS TO INCLUDE ALL LABOR, EQUIPMENT, MATERIALS, AND SERVICES NECESSARY TO FURNISH, INSTALL, TEST, AND ADJUST A COMPLETE WORKABLE HEATING, VENTILATION, AND AIR CONDITIONING SYSTEM AS SHOWN, PRESCRIBED, OR REASONABLY IMPLIED BUT NOT LIMITED TO THAT EXPLICITLY INDICATED IN THE CONTRACT DOCUMENTS, BUT NECESSARY FOR THE PROPER EXECUTION AND COMPLETION OF THE INTENT THEREOF.

2. THE ENTIRE INSTALLATION SHALL CONFORM TO THE APPLICABLE CODES AND REGULATIONS REQUIRED BY AUTHORITIES HAVING JURISDICTION. IN THE EVENT OF CONFLICT BETWEEN SPECIFICATIONS, CODES, AND REGULATIONS, THE MORE RESTRICTIVE SHALL APPLY.

3. DRAWINGS FOR HVAC WORK ARE DIAGRAMATIC SHOWING THE GENERAL LOCATION, TYPE, LAYOUT, AND EQUIPMENT REQUIRED. THE DRAWINGS SHALL NOT BE SCALED FOR EXACT MEASUREMENT. REFER TO ARCHITECTURAL DRAWINGS FOR DIMENSIONS. PROVIDE ALL DUCTWORK, MATERIALS, CONNECTIONS, ACCESSORIES, FITTINGS, OFFSETS, TRANSITIONS, DAMPERS AS REQUIRED FOR A COMPLETE WORKABLE SYSTEM.

4. ALL EQUIPMENT SHALL BE INSTALLED IN STRICT ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS AND APPROVED LISTING. ALL EQUIPMENT, PIPING AND SUPPORTS SHALL BE RESTRAINED IN ACCORDANCE WITH THE LATEST EDITION OF THE "GUIDLINES FOR SEISMIC RESTRAINTS OF MECHANICAL SYSTEMS AND PLUMBING PIPING SYSTEMS" BY THE SHEET METAL AND AIR CONDITIONING CONTRACTORS NATIONAL ASSOCIATION (SMACNA). ALL EQUIPMENT SHALL BE ANCHORED TO RESIST THE LATERAL FORCE REQUIREMENTS OF CHAPTER 16 OF THE 2019 CALIFORNIA BUILDING CODE.

5. COORDINATE THE INSTALLATION OF THE HVAC SYSTEM WITH ALL OTHER TRADES PRIOR TO FABRICATION OR INSTALLATION. COORDINATE THE LOCATIONS OF PENETRATIONS AND FINAL LOCATION OF ALL EQUIPMENT WITH THE GENERAL CONTRACTOR. PROVIDE EQUIPMENT WEIGHTS, EQUIPMENT DIMENSIONS, PLATFORM SIZES & LOCATIONS, CURB SIZES & LOCATIONS, CONCRETE PAD SIZES AND LOCATIONS AS REQUIRED. COORDINATE LOCATIONS OF GAS & CONDENSATE LINES WITH PLUMBING CONTRACTOR. COORDINATE LOCATIONS OF POWER, DISCONNECTS, AND CONTROL CONDUIT WITH THE ELECTRICAL CONTRACTOR. COORDINATE LOCATIONS OF ALL DIFFUSERS, REGISTERS, AND GRILLES WITH ARCHITECTURAL PLANS, ELECTRICAL LIGHTING PLANS AND ARCHITECTURAL ELEVATIONS.

6. DETAILS FOR EQUIPMENT PADS, PLATFORMS, AND FLASHINGS SHALL BE AS INDICATED BY THE ARCHITECTURAL/STRUCTURAL/CIVIL DRAWINGS, UNLESS NOTED OTHERWISE.

7. ALL EQUIPMENT, DUCTS, PIPING, SUPPORTS, AND OTHER DEVICES OUTSIDE OF THE BUILDING OR EXPOSED TO WEATHER, SHALL BE COMPLETELY WEATHER-PROOFED.

8. OUTSIDE AIR INTAKES SHALL BE AT LEAST 10 FT. AWAY OR 3 FT. BELOW ANY VENT OR EXHAUST DISCHARGE.

9. ALL DUCT SIZES ARE CLEAR INSIDE DIMENSIONS. DUCTWORK SHALL BE CONSTRUCTED, ERECTED, INSULATED AND TESTED IN ACCORDANCE CHAPTER 6 OF THE 2019 CALIFORNIA MECHANICAL CODE.

10. ALL EXHAUST FANS SHALL BE EQUIPED WITH A BACK DRAFT DAMPER.

11. DUCT AND AIR TRANSFER PENETRATIONS THRU BUILDING ASSEMBLIES REQUIRING PROTECTION SHALL BE PROTECTED WITH FIRE DAMPERS, SMOKE DAMPERS, COMBINATION SMOKE/FIRE DAMPERS AND CEILING RADIATION DAMPERS IN ACCORDANCE WITH SECTION 607 OF THE CALIFORNIA MECHANICAL CODE. DUCTS NOT REQUIRING DAMPERS SHALL COMPLY WITH SECTION 714 & 717 OF THE 2019 CALIFORNIA BUILDING CODE.

12. INSTALL SMOKED DETECTORS AND PROVIDE FOR SMOKE DETECTION AND AUTOMATIC SHUT-OFF OF ALL AIR HANDLING EQUIPMENT IN ACCORDANCE WITH SECTION 606 OF THE 2019 CALIFORNIA MECHANICAL CODE.

13. UNLESS NOTED OTHERWISE, ALL LINE VOLTAGE WIRING, CONDUIT, FINAL CONNECTIONS, DISCONNECTS, STARTERS, AND OVER CURRENT PROTECTION DEVICES SHALL BE FURNISHED AND INSTALLED BY THE ELECTRICAL CONTRACTOR AS INDICATED ON THESE MECHANICAL DRAWINGS AND/OR ELECTRICAL DRAWINGS AND/OR ELECTRICAL SECTION OF THE SPECIFICATIONS.

14. INSTALL ALL LOW VOLTAGE HVAC CONTROL WIRE AND DEVICES PER PLAN. ALL WIRE SHALL BE IN CONDUIT PROVIDED AND INSTALLED BY THE ELECTRICAL CONTRACTOR UNLESS NOTED OTHERWISE.

15. PROVIDE OWNER WITH THREE COPIES OF A CERTIFIED AIR BALANCE REPORT PREPARED IN BY A THIRD PARTY CERTIFIED BY THE AABC OR NEBB. TEST, ADJUST AND BALANCE THE HVAC SYSTEM IN ACCORDANCE WITH AABC OR NEBB PROCEDURES. PROVIDE START-UP/TEST REPORTS FOR ALL AIR HANDLING EQUIPMENT, FANS, AND REFRIGERATION EQUIPMENT. TEST AND VERIFY PROPER OPERATION OF ALL MAKE-UP AIR/EXHAUST AIR INTERLOCK SYSTEMS AND THEIR SEQUENCES OF OPERATION. BALANCE ALL AIR FLOWS WITHIN 5% OF DESIGN VALUES. PERMANENTLY MARK BALANCE POSITION OF ALL REGULATING DEVICES.

16. PROVIDE OWNER WITH THREE SETS OF AS-BUILT PLANS AND OPERATIONS AND MAINTENANCE MANUALS. CLEARLY IDENTIFY ALL EQUIPMENT WITH PERMANENT PLASTIC OR METAL LABELS/TAGS (PEN MARKING NOT ACCEPTABLE).

17. PROVIDE ONE YEAR WARRANTY ON ALL LABOR, PARTS AND MATERIALS.

18. ANY CHANGE OR DEVIATION FROM THESE PLANS OR SPECIFICATIONS SHALL REQUIRE THE WRITTEN APPROVAL OF THE ENGINEER PRIOR TO COMMENCEMENT OF SUCH WORK.

19.0

a) DUCTS FOR DEMAND CONTROLLED VENTILATION SYSTEMS SHALL BE INSTALLED IN ACCORDANCE WITH THE FAN MANUFACTURER'S INSTALLATION INSTRUCTIONS, THE PROVISIONS ASHRAE 62.2, TABLE 5.3, OR THE AIRFLOW SHALL BE MEASURED AS REQUIRED BY AND IN COMPLIANCE WITH ASHRAE 62.2, 5.4.

1) DUCTS FOR KITCHEN COOKTOPS OR RANGES SHALL BE SHOWN OF METAL WITH A SMOOTH INTERIOR.

a) DUCTS FOR DOMESTIC CLOTHES DRYERS SHALL BE INSTALLED IN ACCORDANCE WITH CPC 504.0.

b) DUCTS FOR DOMESTIC CLOTHES DRYERS SHALL BE RIGID METALLIC DUCTS WITH A MINIMUM MILL THICKNESS OF 16 (0.016-INCH), SHALL HAVE A MINIMUM 4-INCH DIAMETER AND A SMOOTH INTERIOR. THE COMBINED HORIZONTAL AND VERTICAL LENGTH OF THE DUCTS OF THE DUCTS SHALL BE 14-FEET, WHICH SHALL BE REDUCED BY 2-FEET FOR EVERY 90-DEGREE ELBOW IN EXCESS OF TWO ELBOWS.

c) LISTED CLOTHES DRYER TRANSITION DUCTS NOT MORE THAN 6-FEET IN LENGTH SHALL BE PERMITTED TO CONNECT THE DRYER TO THE EXHAUST DUCTS AS LONG AS THEY ARE NOT CONCEALED WITHIN CONSTRUCTION, AND THEY ARE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S INSTALLATION INSTRUCTIONS.

LEGEND

		DUCT WORK (WIDTHxDEPTH)
		LINED DUCT WORK (WIDTHxDEPTH DIMENSIONS ARE FOR I.D.)
		SUPPLY DUCT, SECTION
		RETURN DUCT, SECTION
		EXHAUST DUCT, SECTION
		RISE OR DROP IN DIRECTION OF AIR FLOW
	FLEX. CONN.	FLEXIBLE CONNECTION
		DUCT TRANSITION, ROUND AND RECTANGULAR
		SPLITTER DAMPER
		EXTRACTOR AT BRANCH DUCT
		TURNING VANES
		FLEXIBLE DUCT
		SINGLE LINE DUCT WORK
	AVD	AUTOMATIC VOLUME DAMPER
	MVD	MANUAL VOLUME DAMPER
	BDD	BACKDRAFT DAMPER
	MD	MODULATING DAMPER
	AFD	AUTOMATIC FIRE DAMPER
	AD	ACCESS DOOR
	SD	SUPPLY DIFFUSER
	RR	RETURN REGISTER
	ER	EXHAUST REGISTER
	SWR	SIDE WALL SUPPLY REGISTER
	SWE	SIDE WALL RETURN OR EXHAUST
	LD	LINEAR DIFFUSER
	DL	DOOR LOUVER
	UC	UNDER CUT DOOR
	VAV	VARIABLE AIR VOLUME
		THERMOSTAT
		DUCT SMOKE DETECTOR
	T/B	TO BELOW
	F/B	FROM BELOW
	T/A	TO ABOVE
	F/A	FROM ABOVE

SPECIAL NOTICE TO CONTRACTORS

1. ALL CONTRACTORS (GENERAL CONTRACTOR AND SUB-CONTRACTORS) BIDDING THIS PROJECT ARE REQUIRED TO VISIT THE JOB SITE AND VERIFY THE EXISTING CONDITIONS PRIOR TO SUBMITTING THEIR BID. CONTRACTORS ARE TO CAREFULLY REVIEW ALL CONSTRUCTION DOCUMENTS AND NOTE ANY DISCREPANCIES BETWEEN THE CONSTRUCTION DOCUMENTS AND THE CONDITIONS OBSERVED AT THE JOB SITE PRIOR TO SUBMISSION OF ANY BID. THE BUILDING OWNER REPRESENTATIVE LISTED BELOW MAY BE CONTACTED FOR ACCESS TO THE JOB SITE.

2. CONTRACTORS ARE RESPONSIBLE FOR VERIFYING THE LOCATION AND CONDITION OF ALL POINTS OF CONNECTION, LOCATION AND CONDITION OF ALL BUILDING (ROOF/FLOOR/CEILING) PENETRATIONS, LOCATION AND CONDITION OF ALL UTILITIES AND BUILDING SYSTEMS INCLUDING, BUT NOT LIMITED TO, GAS, WATER, SEWER, VENT, ELECTRICAL, BUILDING MECHANICAL SYSTEMS, DUCT CONNECTIONS, EXHAUST/OUTSIDE AIR CONNECTIONS, SECURITY, FIRE ALARM, DATA, AND PHONE PRIOR TO SUBMISSION OF THEIR BID.

3. ANY DISCREPANCIES BETWEEN THE CONSTRUCTION DOCUMENTS AND THE CONDITIONS OBSERVED SHALL BE BROUGHT TO THE ATTENTION, IN WRITING, TO THE ARCHITECT AND/OR ENGINEER PRIOR TO PROCEEDING WITH CONSTRUCTION.

4. NO WORK SHALL BE DONE ON ANY PART OF THE BUILDING BEYOND THE POINT INDICATED IN EACH SUCCESSIVE INSPECTION WITHOUT FIRST OBTAINING THE WRITTEN APPROVAL OF THE CODE OFFICIAL. NO CONSTRUCTION SHALL BE CONCEALED WITHOUT BEING INSPECTED AND APPROVED.

CLIENT:

ADDRESS:

929 18TH ST
BAKERSFIELD, CA 93301

CONFIDENTIALITY STATEMENT:

ALL DRAWINGS AND WRITTEN MATERIALS APPEARING HEREIN CONSTITUTE THE ORIGINAL AND UNPUBLISHED WORK OF THE DESIGNER AND THE SAME MAY NOT BE DUPLICATED, USED OR DISCLOSED WITHOUT CONSENT OF THE DESIGNER.

NOTES:

1. ALL DIMENSIONS HEREIN ARE IN IMPERIAL UNITS UNLESS STATED OTHERWISE.

2. THESE DRAWINGS ARE TO BE READ IN CONJUNCTION WITH ALL RELEVANT DESIGNER, ENGINEER OR SPECIALIST DRAWINGS AND SPECIFICATIONS.

3. THE CONTRACTOR MUST CHECK ALL DIMENSION AT SITE BEFORE COMMENCING WORK.

4. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING ALL NECESSARY TEMPORARY SUPPORT TO THE BUILDING AND ANY ADJACENT STRUCTURES.

REV. NO	DESCRIPTION	DATE	BY
0	PERMIT SET	12.29.22	MM

PROJECT:

CLEO

TITLE:
104 M0.00 MECH. SPECS AND NOTES

PROJ. NO.

SCALE @ 24X36:
NTS

DRAWING NO.

REV.

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CALIFORNIA MECHANICAL CODE CHECKING:

DUCT SIZING, THICKNESS & INSULATION

PLEASE REFER TO TABLE 506.2(1) FOR MINIMUM SHEET METAL THICKNESS FOR ROUND DUCTS

604.0 Insulation of Ducts.

604.1 General. Air ducts conveying air at temperatures exceeding 140°F (60°C) shall be insulated to maintain an insulation surface temperature of not more than 140°F (60°C). Factory-made air ducts and insulations intended for installation on the exterior of ducts shall be legibly printed with the name of the manufacturer, the thermal resistance (R) value at installed thickness, flame-spread index, and smoke developed index of the composite material. Internal duct liners and insulation shall be installed in accordance with SMACNA HVAC Duct Construction standards – Metal and Flexible. **[OSHPD 1, 1R, 2, 3, 4 & 5]** Cold air ducts shall be insulated wherever necessary or to prevent condensation.

Exceptions:

- (1) Factory-installed plenums, casings, or ductwork furnished as part of HVAC equipment tested and rated in accordance with approved energy efficiency standards.
- (2) Ducts or plenums located in conditioned spaces where heat gain or heat loss will not increase energy use.
- (3) For runouts less than 10 feet (3048 mm) in length to air terminals or air outlets, the rated R-value of insulation need not exceed R-3.5.
- (4) Backs of air outlets and outlet plenums exposed to unconditioned or indirectly conditioned spaces with face areas exceeding 5 square feet (0.5m²) need not exceed R-2; those 5 square feet (0.5m²) or smaller need to be insulated.
- (5) Ducts and plenums used exclusively for evaporative cooling systems.

E 502.4 Ducts. Ducts shall be sized, installed, and tested in accordance with Section E 502.4.1 though Section E 502.4.4.

E 502.4.1 Insulation and Ducts. Portions of the air distribution system installed in or on buildings for heating and cooling shall be R-8. Where the mean outdoor dew-point temperature in a month exceeds 60°F (16°C), vapor retarders shall be installed on conditioned-air supply ducts. Vapor retarders shall have a water vapor permeance not exceeding 0.5 perm [2.87 E-11 kg/(Pa.s.m²)] where tested in accordance with Procedure A in ASTM E96.

Insulation shall not be required where the ducts are within the conditioned space. [ASHRAE 90.2:6.4]

E 502.4.4 Duct Sizing. Duct systems shall be sized in accordance with ACCA Manual D or other methods approved by the Authority Having Jurisdiction with the velocity in the main duct not exceed 1000 feet per minute (ft/min) (5.08m/s) and the velocity in the secondary branch duct not to exceed 600 ft/min (3.048 m/s).

CONDENSATE DRAIN:

310.0 Condensate Wastes and Control.
310.1 Condensate Disposal. Condensate from air washers, air-cooling coils, condensing appliances, and the overflow from evaporative coolers and similar water-supplied equipment or similar air-conditioning equipment shall be collected and discharged to an approved plumbing fixture or disposal area. Where discharged into the drain system, equipment shall drain by means of an indirect waste pipe. The Waste pipe shall have a slope of not less than 1/8 inch per foot (10.4 mm/m) or 1 percent slope and shall be of approved corrosion-resistant material not smaller than the outlet size in accordance with Section 310.3 or Section 310.4 for air-cooling coils or condensing appliances, respectively. Condensate or wastewater shall not drain over a public way.

310.3 Condensate Waste Pipe Material and Sizing. Condensate waste pipes from air-cooling coils shall be sized in accordance with the equipment capacity as specified in Table 310.3. The material of the piping shall comply with the pressure and temperature rating of the appliance or equipment, and shall be approved for use with the liquid being discharged.

TABLE 310.3 MINIMUM CONDENSATE WASTE PIPE SIZE	
EQUIPMENT CAPACITY IN TONS OF REFRIGERATION	MINIMUM CONDENSATE PIPE DIAMETER (inches)
Up to 20	3/4
21 – 40	1
41 – 90	1 1/4
91 – 125	1 1/2
126 – 250	2

For SI units: 1 ton of refrigeration = 3.52 kW, 1 inch = 25 mm

310.3.1 Cleanouts. Condensate drain lines shall be configured or provided with a cleanout to permit the clearing of blockages and for maintenance without requiring the drain line to be cut.

310.5 Point of Discharge. Air conditioning condensate waste pipes shall connect indirectly, except where permitted in Section 310.6, to the drainage system through an air gap or air break to trapped and vented receptors, dry wells, leach pits, or the tailpiece of plumbing fixtures. A condensate drain shall be trapped in accordance with the appliance manufacturer's instructions or as approved.

310.6 Condensate Waste from Air-Conditioning Coils. Where the condensate waste from air-conditioning coils discharges by direct connection to a lavatory tailpiece or to an approved accessible inlet on a bathtub overflow, the connection shall be located in the area controlled by the same person controlling the air-conditioned space.

AIR INTAKE AND EXHAUST:

402.4 Outdoor Air Intake Protection. Required outdoor-air intakes shall be covered with a screen having not less than 1/4 of an inch (6.4 mm) openings, and shall have not more than 1/2 of an inch (12.7 mm) openings.

402.4.1 Weather Protections. Outdoor air intakes that are part of the mechanical ventilation system shall be designed to manage rain entrainment, to prevent rain intrusion, and manage water from snow in accordance with ASHRAE 62.1.

402.5 Bathroom Exhaust Fans. [HCD 1 & HCD 2] Each bathroom shall be mechanically ventilated in accordance with Division 4.5 of the California Green Building Standards Code (CALGreen).

407.2.2 Exhaust Outlets. Exhaust outlets shall be located a minimum of 10 feet (3048 mm) above adjoining grade and 10 feet (3048 mm) from doors, occupied areas, and operable windows.

Exception: Airborne infection isolation rooms shall comply with Section 414.1.

701.10.1 Minimum Screen Mesh Size. Screens shall be not less than 1/4 of an inch (6.4 mm) mesh. [NFPA 54:9.3.7.2]

311.3 Prohibited Source. Outside or return air for a heating or cooling air system shall not be taken from the following locations:

- (1) Less than 10 feet (3048 mm) in distance from an appliance vent outlet, a vent opening of a plumbing drainage system, or the discharge outlet of an exhaust fan, unless the outlet is 3 feet (914 mm) above the outside-air inlet.
- (2) Less than 10 feet (3048 mm) above the surface of an abutting public way, sidewalk, street, alley, or driveway.

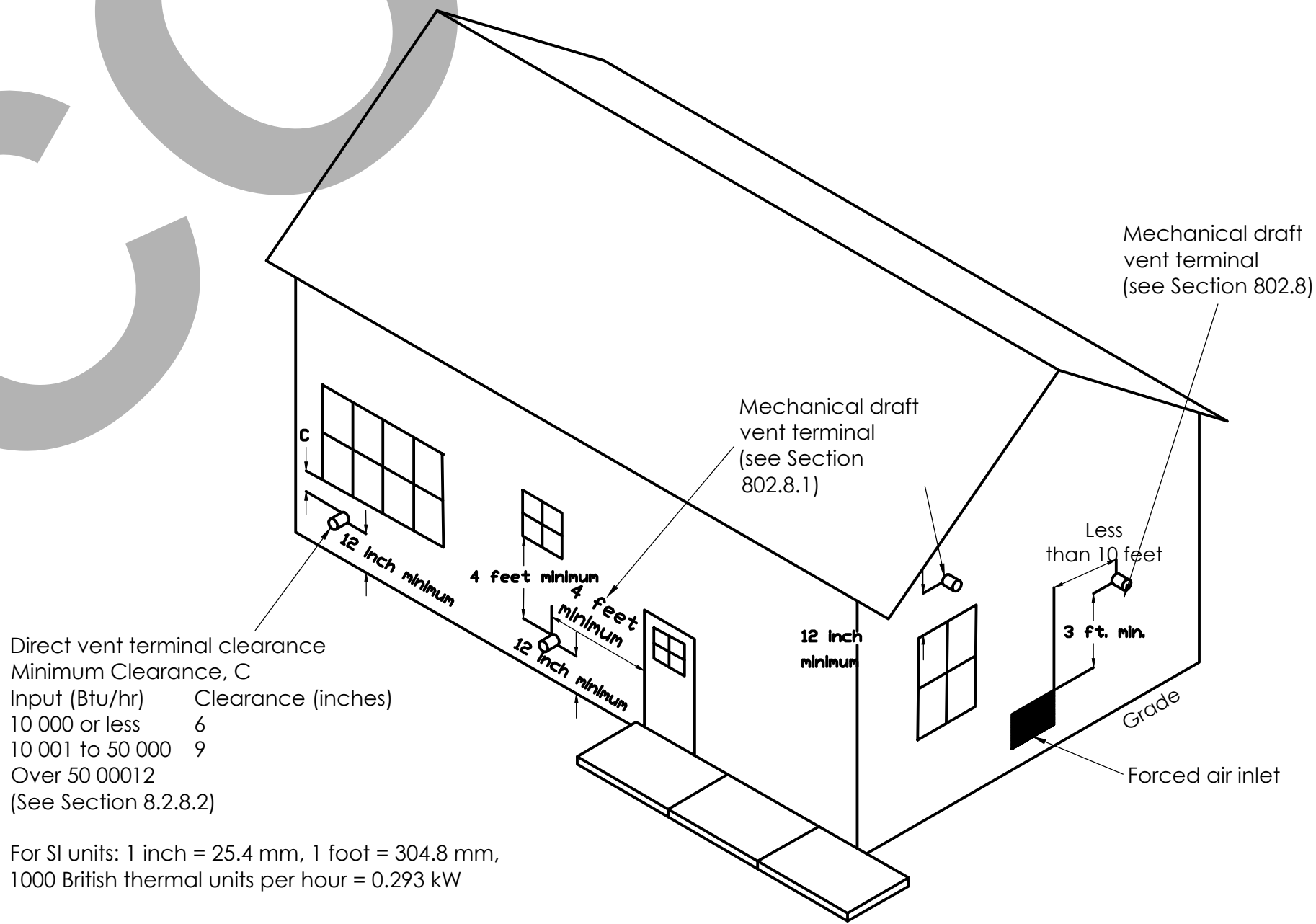


FIGURE 802.8
EXIT TERMINALS OF MECHANICAL DRAFT AND DIRECT-VENT VENTING SYSTEMS
[NFPA 54: FIGURE A.12.9]

GAS CLOTHES DRYER:

502.1 Exhaust Opening Protection. Exhaust openings terminating to the outdoors shall be covered with a corrosion-resistant screen having not less than 1/4 of an inch (6.4 mm) openings, and shall have not more than 1/2 of an inch (12.7 mm) openings.
Exception: Clothes dryers.

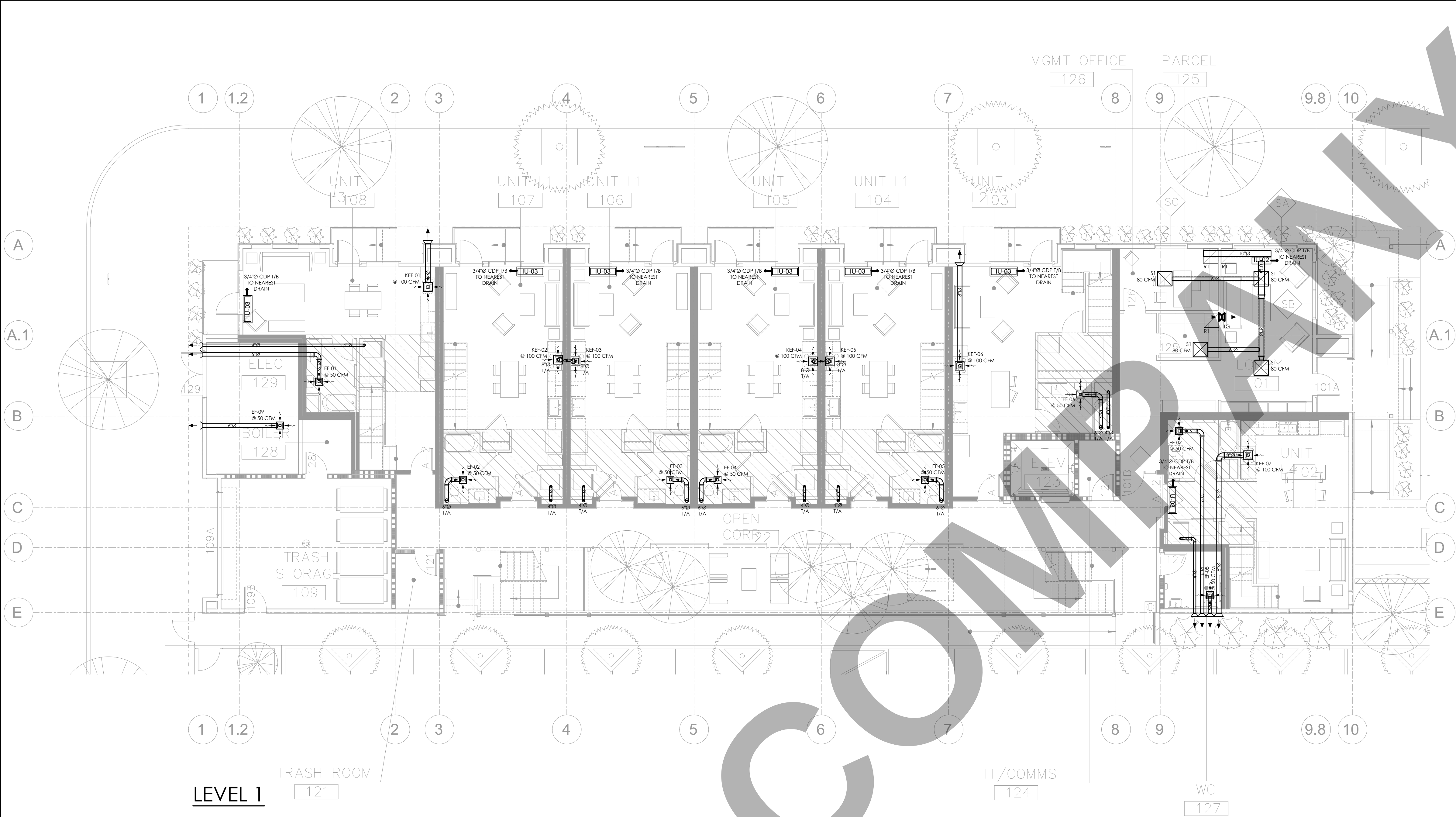
504.4 Clothes Dryers. A clothes dryer exhaust duct shall not be connected to a vent connector, gas vent, chimney, and shall not terminate into a crawl space, attic, or other concealed space. Exhaust ducts shall not be assembled with screws or other fastening means that extend into the duct and that are capable of catching lint, and that reduce the efficiency of the exhaust system.

504.4.1 Provisions for Makeup Air. Make up air shall be provided in accordance with the following:
(1) Makeup air shall be provided for Type 1 clothes dryers in accordance with the manufacturer's instructions. [NFPA 54: 10.4.3.1] Where a closet is designed for the installation of a clothes dryer, an opening of not less than 100 square inches (0.065 m²) for makeup air shall be provided in the door or by other approved means.
(2) Provision for makeup air shall be provided for Type 2 clothes dryers, with a free area of not less than 1 square inch (0.0006 m²) for each 1000 British thermal units per hour (Btu/g) (0.293 kW) total input rating of the dryer(s) installed [NFPA 54:10.4.3.2].

504.4.2.1 Length Limitation
Unless otherwise permitted or required by the dryer manufacturer's instructions and approved by the Authority Having Jurisdiction, domestic dryer moisture exhaust ducts shall not exceed a total combined horizontal and vertical length of 14 feet (4267 mm), including two 90 degree (1.57 rad) elbows. A length of 2 feet (610 mm) shall be deducted for each 90 degree (1.57 rad) elbow in excess of two

504.4.3.1 Exhaust Ducts for Type 2 Clothes Dryers. Exhaust ducts for Type 2 clothes dryers shall comply with the following:
(1) Exhaust ducts for Type 2 clothes dryers shall comply with Section 504.4. [NFPA 54:10.4.5.1]
(2) Exhaust ducts for Type 2 clothes dryers shall be constructed of sheet metal or other noncombustible material. Such ducts shall be equivalent in strength and corrosion resistance to ducts 0.0195 of an inch (0.4953 mm) thick. [NFPA 54:10.4.5.2]
(3) Type 2 clothes dryers shall be equipped or installed with lint-controlling means. [NFPA 54:10.4.5.3]
(4) Exhaust ducts for Type 2 clothes dryers shall be installed with a clearance of not less than 6 inches (152 mm) from adjacent combustible material. Where exhaust ducts for Type 2 clothes dryers are installed with reduced clearances, the adjacent combustible material shall be protected in accordance with Table 303.10.1. [NFPA 54:10.4.5.4]
(5) Where ducts pass through walls, floors, or partitions, the space around the duct shall be sealed with noncombustible material. [NFPA 54:10.4.5.4]

FACTORY-MADE AIR DUCTS	RECTANGULAR DUCTS	COMBUSTIBLES WITHIN DUCTS OR PLENUMS	NOTES ON DUCTS MATERIAL & CONSTRUCTION: FLEXIBLE AIR DUCTS
FACTORY-MADE AIR DUCTS SHALL BE LISTED AND LABELED IN ACCORDANCE WITH UL 181 AND INSTALLED IN ACCORDANCE WITH THE TERMS OF THEIR LISTING. THE MANUFACTURER'S INSTALLATION INSTRUCTIONS, AND SMACNA HVAC DUCT CONSTRUCTION STANDARDS-METAL AND FLEXIBLE.	SUPPORTS FOR RECTANGULAR DUCTS SHALL BE INSTALLED ON TWO OPPOSITE SIDES OF EACH DUCT AND SHALL BE RIVETED, BOLTED, OR METAL SCREWED TO EACH SIDE OF THE DUCT AT INTERVALS SPECIFIED.	MATERIALS EXPOSED WITHIN DUCTS OR PLENUMS SHALL BE NONCOMBUSTIBLE OR SHALL HAVE A FLAME SPREAD INDEX NOT TO EXCEED 25 AND A SMOKE-DEVELOPED INDEX NOT TO EXCEED 50, WHERE TESTED AS A COMPOSITE PRODUCT IN ACCORDANCE WITH ASTM E84 OR UL 723.	FLEXIBLE AIR DUCTS SHALL COMPLY WITH UL 181, AND SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S INSTALLATION INSTRUCTIONS AND SMACNA HVAC DUCT CONSTRUCTION STANDARDS-METAL AND FLEXIBLE.
FACTORY-MADE AIR DUCTS SHALL NOT BE USED FOR VERTICAL RISERS IN AIR-DUCT SYSTEMS SERVING MORE THAN TWO STORIES AND SHALL NOT PENETRATE A FIRE-RESISTANCE-RATED ASSEMBLY OR CONSTRUCTION.	METAL DUCTS	EXCEPTIONS: 1. RETURN-AIR AND OUTSIDE-AIR DUCTS, PLENUMS, OR CONCEALED SPACES THAT SERVE A DWELLING UNIT. 2. AIR FILTERS IN ACCORDANCE WITH THE REQUIREMENTS OF SECTION 311.2. 3. WATER EVAPORATION MEDIA IN AN EVAPORATIVE COOLER. 4. CHARCOAL FILTERS WHERE PROTECTED WITH AN APPROVED FIRE SUPPRESSION SYSTEM. 5. PRODUCTS LISTED AND LABELED FOR INSTALLATION WITHIN PLENUMS IN ACCORDANCE WITH SECTION 602.2.4 THROUGH SECTION 602.2.3. 6. SMOKE DETECTORS. 7. DUCT INSULATION, COVERINGS, AND LININGS AND OTHER SUPPLEMENTARY MATERIALS INSTALLED IN ACCORDANCE WITH SECTION 604.0. 8. MATERIALS IN A HAZARDOUS FABRICATION AREA INCLUDING THE AREAS ABOVE AND BELOW THE FABRICATION AREA SHARING A COMMON AIR RECIRCULATION PATH WITH THE FABRICATION AREA.	FLEXIBLE AIR DUCT INSTALLATIONS SHALL COMPLY WITH THE FOLLOWING: 1. DUCTS SHALL BE INSTALLED USING THE MINIMUM REQUIRED LENGTH TO MAKE THE CONNECTION. 2. HORIZONTAL DUCT RUNS SHALL BE SUPPORTED AT NOT MORE THAN 4 FEET (1219 MM) INTERVALS. 3. VERTICAL RISERS SHALL BE SUPPORTED AT NOT MORE THAN 6 FEET (1829 MM) INTERVALS. 4. SAG BETWEEN SUPPORT HANGERS SHALL NOT EXCEED 1/2 INCH (12.7 MM) PER FOOT (305 MM) OF SUPPORT SPACING. 5. SUPPORTS SHALL BE RIGID AND SHALL BE NOT LESS THAN 1 1/2 INCHES (38 MM) WIDE AT POINT OF CONTACT WITH THE DUCT SURFACE. 6. DUCT BENDS SHALL BE NOT LESS THAN ONE DUCT DIAMETER BEND RADIUS. 7. SCREWS SHALL NOT PENETRATE THE INNER LINER OF NON-METALLIC FLEXIBLE DUCTS UNLESS PERMITTED IN ACCORDANCE WITH THE MANUFACTURER'S INSTALLATION INSTRUCTIONS. 8. FITTINGS FOR ATTACHING NON-METALLIC DUCTS SHALL BE BEADED AND HAVE A COLLAR LENGTH OF NOT LESS THAN 2 INCHES (51 MM) FOR ATTACHING THE DUCT. EXCEPTION: A BEAD SHALL NOT BE REQUIRED WHERE METAL WORM-GEAR CLAMPS ARE USED OR WHERE ATTACHING METALLIC DUCTS USING SCREWS IN ACCORDANCE WITH THE MANUFACTURER'S INSTALLATION INSTRUCTIONS. 9. DUCT INNER LINER SHALL BE INSTALLED AT NOT LESS THAN 1 INCH (25.4 MM) ON THE COLLAR AND PAST THE BEAD PRIOR TO THE APPLICATION OF THE TAPE AND MECHANICAL FASTENER. WHERE MASTIC IS USED INSTEAD OF TAPE, THE MASTIC SHALL BE APPLIED IN ACCORDANCE WITH THE MASTIC MANUFACTURER'S INSTRUCTIONS. 10. DUCT OUTER VAPOR BARRIERS SHALL BE SECURED USING TWO WRAPS OF APPROVED TAPE. A MECHANICAL FASTENER SHALL BE PERMITTED TO BE USED IN PLACE OF, OR IN COMBINATION WITH, THE TAPE. 11. FLEXIBLE AIR DUCTS SHALL NOT PENETRATE A FIRE-RESISTANCE-RATED ASSEMBLY OR CONSTRUCTION. 12. THE TEMPERATURE OF THE AIR TO BE CONVEYED IN A FLEXIBLE AIR DUCT SHALL NOT EXCEED 260°F (121 °C). 13. FLEXIBLE AIR DUCTS SHALL BE SEALED IN ACCORDANCE WITH SECTION 603.10.
FACTORY-MADE AIR DUCTS SHALL BE INSTALLED WITH NOT LESS THAN 4 INCHES (102 MM) OF SEPARATION FROM EARTH, EXCEPT WHERE INSTALLED AS A LINER INSIDE OF CONCRETE, TILE, OR METAL PIPE AND SHALL BE PROTECTED FROM PHYSICAL DAMAGE.	DUCTS SHALL BE SUPPORTED AT EACH CHANGE OF DIRECTION AND IN ACCORDANCE WITH SMACNA HVAC DUCT CONSTRUCTION STANDARDS-METAL AND FLEXIBLE. RISER DUCTS SHALL BE HELD IN PLACE BY MEANS OF METAL STRAPS OR ANGLES AND CHANNELS TO SECURE THE RISER TO THE STRUCTURE.		
THE TEMPERATURE OF THE AIR TO BE CONVEYED IN A DUCT SHALL NOT EXCEED 250°F (121 °C). FLEXIBLE AIR CONNECTORS SHALL NOT BE PERMITTED.	METAL DUCTS SHALL BE INSTALLED WITH NOT LESS THAN 4 INCHES (102 MM) SEPARATION FROM EARTH. DUCTS SHALL BE INSTALLED IN A BUILDING WITH CLEARANCES THAT WILL RETAIN THE FULL THICKNESS OF FIRE-PROOFING ON STRUCTURAL MEMBERS.		



GENERAL NOTES:

- MECHANICAL CONTRACTOR TO COORDINATE ROUTING AND LOCATION OF MECHANICAL COMPONENTS AND EQUIPMENT WITH ALL OTHER TRADES AND EXISTING FIELD CONDITIONS PRIOR TO PERFORMING WORK.
- CONTRACTOR TO CUT AND PATCH AS REQUIRED TO PERFORM THE WORK.
- ACCESS DOORS ARE REQUIRED FOR ANY COMPONENT REQUIRING ACCESS ABOVE HARD LID CEILINGS. COORDINATE SIZE, LOCATION AND FINISH WITH ARCHITECT PRIOR TO PERFORMING WORK.
- REFER TO THE DIAGRAMS THAT APPLY TO THIS SHEET WHICH PROVIDE GENERAL GUIDANCE FOR INSTALLATION THOUGH NOT ALL COMPONENTS AND ACCESSORIES MAY BE SHOWN.
- PRIOR TO INSTALLATION, CONFIRM SPECIFIC LOCATION FOR ALL THERMOSTATS / SENSORS WITH ARCHITECT. MOUNT AT 48" A.F.F. OR IN ACCORDANCE WITH ADA REQUIREMENTS. PROVIDE LOCKING COVERS.
- COORDINATE AND CONFIRM BORDER, FRAME, FINISH, AND LOCATION WITH ARCHITECT PRIOR TO ORDERING.
- ANY PENETRATIONS THROUGH WALL STUDS, FLOOR JOISTS, OR ROOF TO BE IN ACCORDANCE WITH THE LATEST ADOPTED BUILDING CODE.
- DUCT DIMENSIONS SHOWN ARE CLEAR INSIDE DIMENSIONS.
- CONTRACTOR TO CONFIRM ADEQUATE RETURN AIR PATH BACK TO MAIN AIR HANDLING UNIT.

SCHEDULE No. 1
HEAT PUMP - INDOOR & OUTDOOR UNIT

TAG	IU-01, OU-01	IU-02, OU-02	IU-03, OU-03
SERVING	APARTMENT	APARTMENT	APARTMENT
MANUFACTURER	MITSUBISHI	MITSUBISHI	MITSUBISHI
INDOOR MODEL	MSZ-FS06NA	SEZ-KD12NA4R1	MSZ-FS12NA
POWER SUPPLY	208-230/1/60	208-230/1/60	208-230/1/60
POWER INPUT (W) (INDOOR UNIT)	315	930	870
AIR FLOW (CFM) - MEDIUM SPEED	221	221	221
EXTERNAL STATIC PRESSURE (INCHES OF WATER)	-	-	-
COOLING CAPACITY (BTU/H)	6,000	9,000	12,000
HEATING CAPACITY (BTU/H)	8,700	9,600	12,300
OUTDOOR MODEL	MUZ-JP12WA	SUZ-KA12NA2	MXZ-3C24NA2
POWER SUPPLY	208-230/1/60	208-230/1/60	208-230/1/60
MINIMUM CIRCUIT AMPACITY	14.0	9.0	22.1
MAX OVERCURRENT DEVICE	15.0	16.0	25.0

- NOTES:
- PROVIDE CONDENSATE PUMP, IF REQUIRED.
 - PROVIDE DISCONNECT SWITCH.
 - PROVIDE 2" MERV 8 THROWAWAY FILTER.
 - PROVIDE VIBRATION ISOLATION.
 - PROVIDE FREEZE THERMOSTAT.

SCHEDULE No. 2
FAN SCHEDULE

TAG	EF-01 TO 36/ KEF-01 TO 34
LOCATION	BATH / KITCHEN
SELECT SUPPLY VOLUME (CFM)	50 / 100
SELECTED PRESSURE DROP (in. w.g)	0.25"
ELECTRICAL (V / PH / HZ)	115/ 1 / 60
POWER (W)	25 W / 40W
MOTOR SPEED (RPS)	MULTI SPEED
FAN TYPE	CEILING FANS
MANUFACTURER	PANASONIC
MODEL	WHISPER FV-0511VKS2

- NOTES:
- PROVIDE UL LISTING.
 - PROVIDE ENERGY STAR COMPLIANCE.
 - INTERLOCK WITH WALL SWITCH.
 - PROVIDE MOTOR WITH THERMAL OVERLOADS.

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CLIENT:

ADDRESS:

929 18TH ST
BAKERSFIELD, CA 93301

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REV. NO	DESCRIPTION	DATE	BY
0	PERMIT SET	12.29.22	MN

PROJECT:

CLEO

TITLE:
**106 M1.01 MECH. LAYOUT
LEVEL 01**

PROJ. NO.

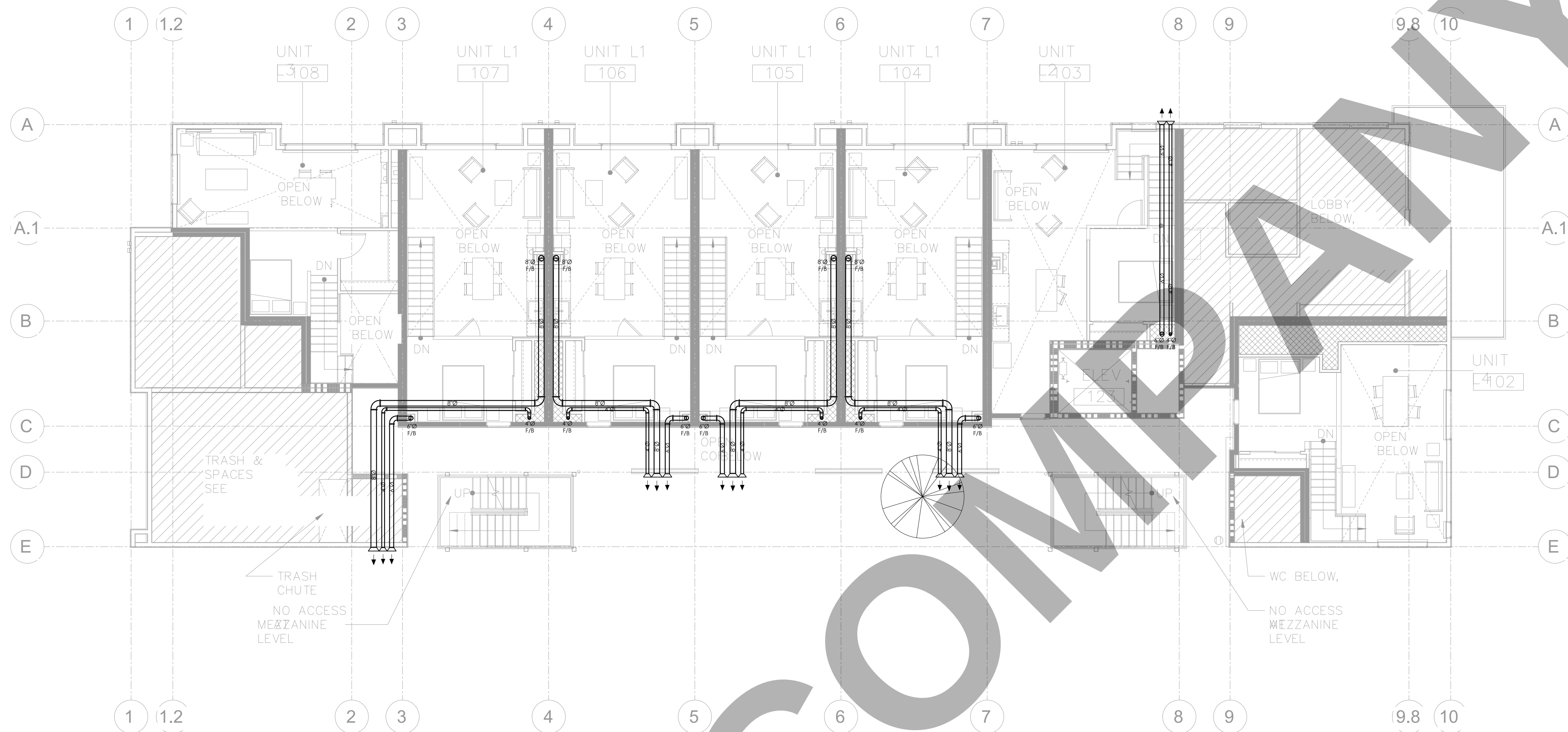
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1/8"=1'-0"

DRAWING NO.

M 1 . 0 1

REV.



MEZZANINE

GENERAL NOTES:

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- CONTRACTOR TO CONFIRM ADEQUATE RETURN AIR PATH BACK TO MAIN AIR HANDLING UNIT.

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REV. NO	DESCRIPTION	DATE	BY
0	PERMIT SET	12.29.22	MN

PROJECT:

CLEO

TITLE:

107 M1.02 MECH. LAYOUT
MEZZ LEVEL

PROJ. NO.

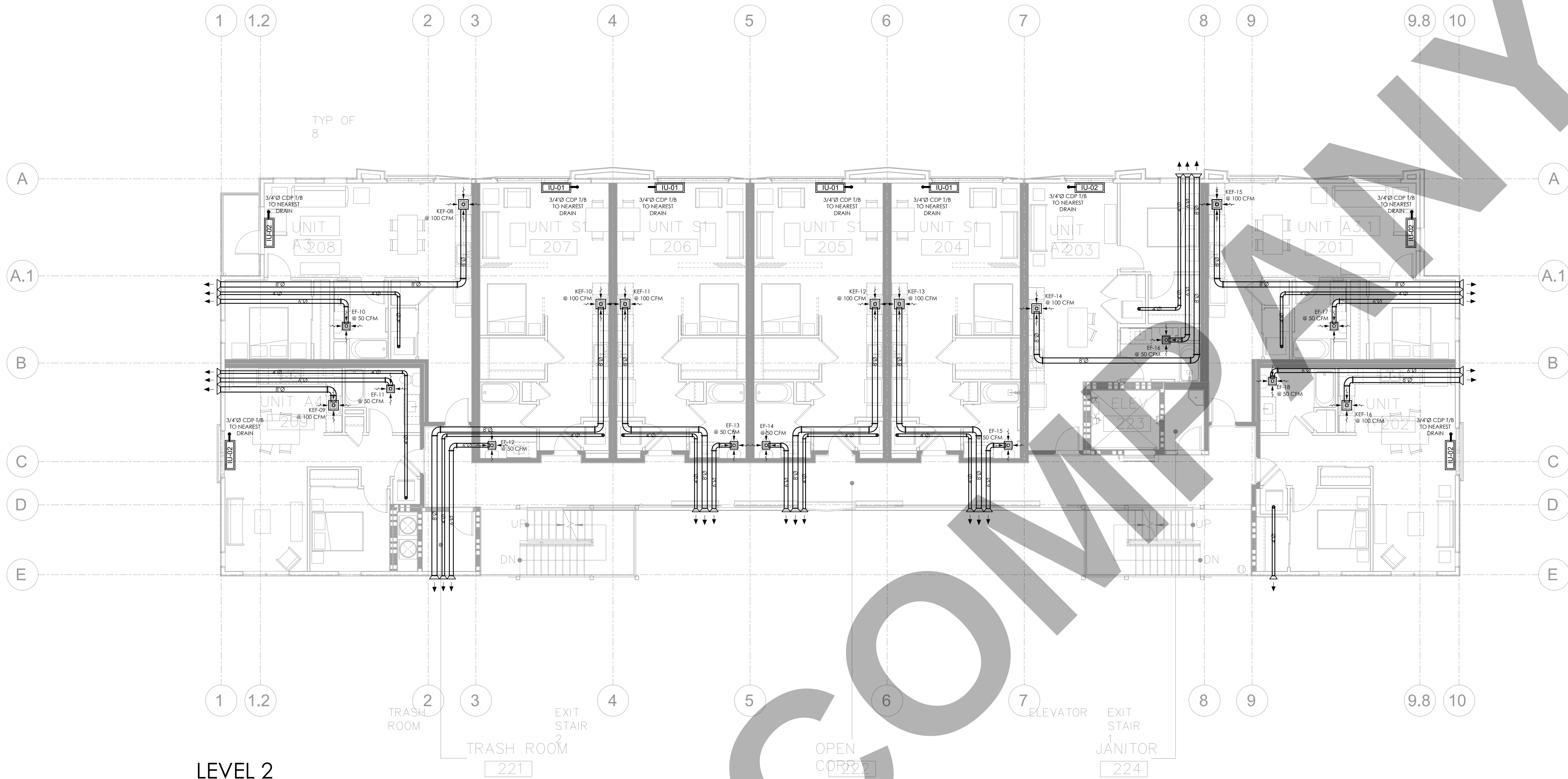
SCALE @ 24X36:

1/8"=1'-0"

DRAWING NO.

REV.

M 1 . 0 2



LEVEL 2

GENERAL NOTES:

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- COORDINATE AND CONFIRM BORDER, FRAME, FINISH, AND LOCATION WITH ARCHITECT PRIOR TO ORDERING.
- ANY PENETRATIONS THROUGH WALL STUDS, FLOOR JOISTS, OR ROOF TO BE IN ACCORDANCE WITH THE LATEST ADOPTED BUILDING CODE.
- DUCT DIMENSIONS SHOWN ARE CLEAR INSIDE DIMENSIONS.
- CONTRACTOR TO CONFIRM ADEQUATE RETURN AIR PATH BACK TO MAIN AIR HANDLING UNIT.

310.1 Condensate Disposal:
Condensate from air washers, air-cooling coils, condensing appliances, and the overflow from evaporative coolers and similar water-supplied equipment or similar air-conditioning equipment shall be collected and discharged to an approved plumbing fixture or disposal area. Where discharged into the drainage system, equipment shall drain by means of an indirect waste pipe. The waste pipe shall have a slope of not less than 1/8 inch per foot (10.4 mm/m) or 1 percent slope and shall be of approved corrosion-resistant material not smaller than the outlet size in accordance with Section 310.3 or Section 310.4 for air-cooling coils or condensing appliances, respectively. Condensate or wastewater shall not drain over a public way.

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REV. NO	DESCRIPTION	DATE	BY
0	PERMIT SET	12.29.22	MN

PROJECT:

CLEO

TITLE:

108 M1.03 MECH. LAYOUT
LEVEL 02

PROJ. NO.

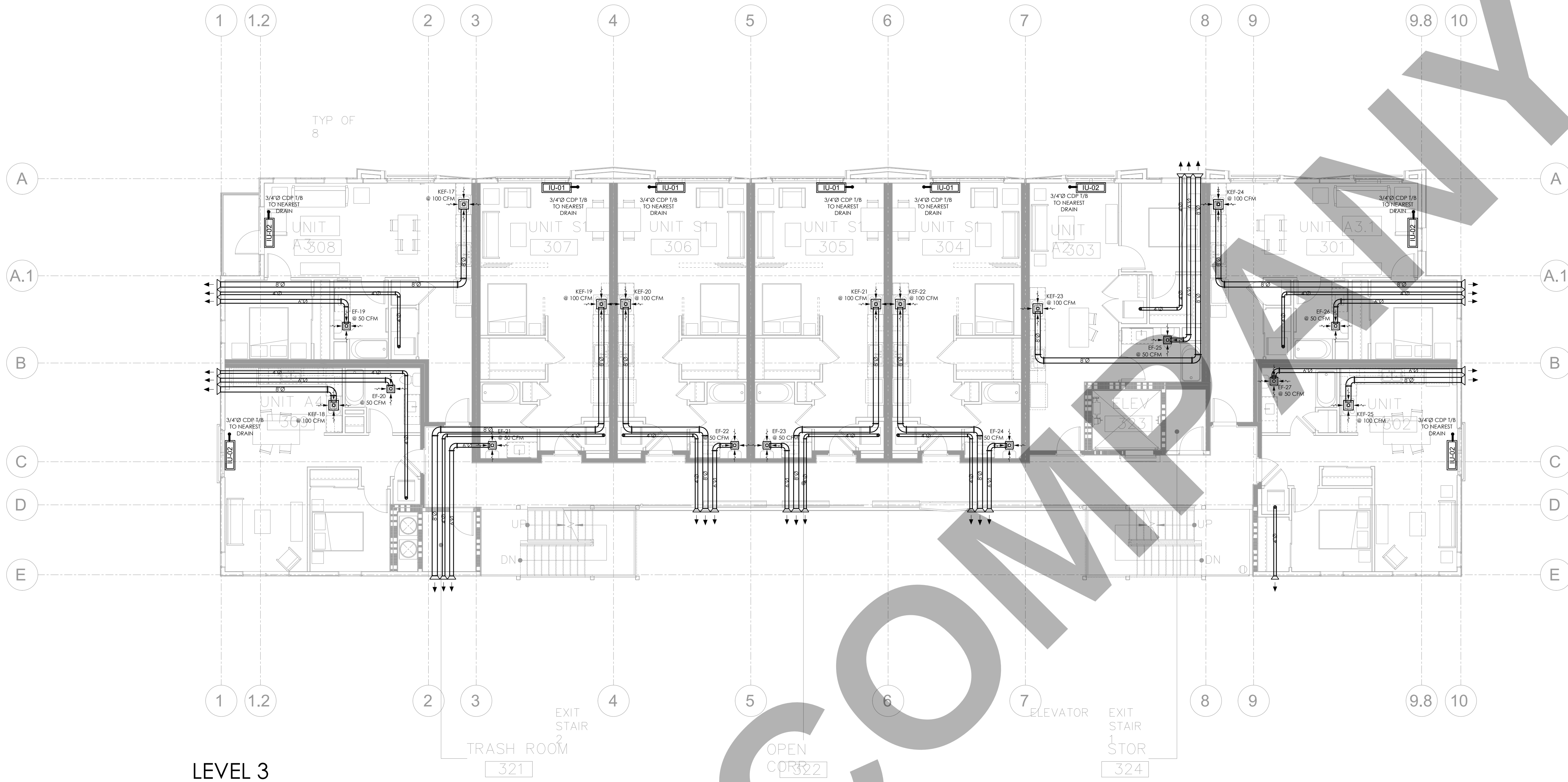
SCALE @ 24X36:

1/8"=1'-0"

DRAWING NO.

REV.

M 1 . 0 3



LEVEL 3

GENERAL NOTES:

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6. COORDINATE AND CONFIRM BORDER, FRAME, FINISH, AND LOCATION WITH ARCHITECT PRIOR TO ORDERING.
7. ANY PENETRATIONS THROUGH WALL STUDS, FLOOR JOISTS, OR ROOF TO BE IN ACCORDANCE WITH THE LATEST ADOPTED BUILDING CODE.
8. DUCT DIMENSIONS SHOWN ARE CLEAR INSIDE DIMENSIONS.
9. CONTRACTOR TO CONFIRM ADEQUATE RETURN AIR PATH BACK TO MAIN AIR HANDLING UNIT.

310.1 Condensate Disposal:
Condensate from air washers, air-cooling coils, condensing appliances, and the overflow from evaporative coolers and similar water-supplied equipment or similar air-conditioning equipment shall be collected and discharged to an approved plumbing fixture or disposal area. Where discharged into the drainage system, equipment shall drain by means of an indirect waste pipe. The waste pipe shall have a slope of not less than 1/8 inch per foot (10.4 mm/m) or 1 percent slope and shall be of approved corrosion-resistant material not smaller than the outlet size in accordance with Section 310.3 or Section 310.4 for air-cooling coils or condensing appliances, respectively. Condensate or wastewater shall not drain over a public way.

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REV. NO	DESCRIPTION	DATE	BY
0	PERMIT SET	12.29.22	MN

PROJECT:

CLEO

TITLE:

109 M1.04 MECH. LAYOUT
LEVEL 03

PROJ. NO.

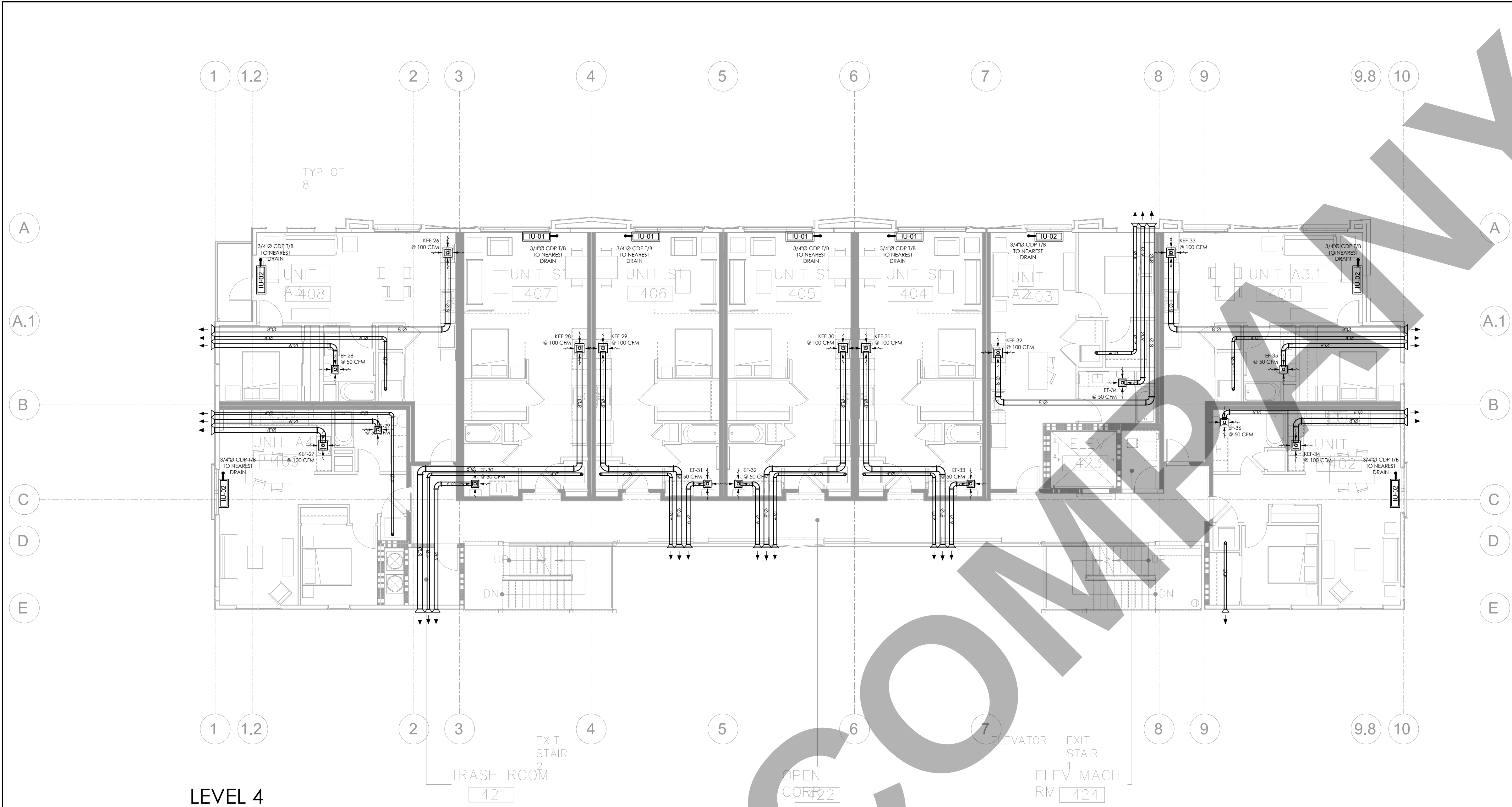
SCALE @ 24X36:

1/8"=1'-0"

DRAWING NO.

REV.

M 1 . 0 4



GENERAL NOTES:

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- DUCT DIMENSIONS SHOWN ARE CLEAR INSIDE DIMENSIONS.
- CONTRACTOR TO CONFIRM ADEQUATE RETURN AIR PATH BACK TO MAIN AIR HANDLING UNIT.

310.1 Condensate Disposal:
Condensate from air washers, air-cooling coils, condensing appliances, and the overflow from evaporative coolers and similar water-supplied equipment or similar air-conditioning equipment shall be collected and discharged to an approved plumbing fixture or disposal area. Where discharged into the drainage system, equipment shall drain by means of an indirect waste pipe. The waste pipe shall have a slope of not less than 1/8 inch per foot (10.4 mm/m) or 1 percent slope and shall be of approved corrosion-resistant material not smaller than the outlet size in accordance with Section 310.3 or Section 310.4 for air-cooling coils or condensing appliances, respectively. Condensate or wastewater shall not drain over a public way.

CLIENT:

ADDRESS:

929 18TH ST
BAKERSFIELD, CA 93301

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NOTES:

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- THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING ALL NECESSARY TEMPORARY SUPPORT TO THE BUILDING AND ANY ADJACENT STRUCTURES.

REV. NO	DESCRIPTION	DATE	BY
0	PERMIT SET	12.29.22	MN

PROJECT:

CLEO

TITLE:

110 M1.05 MECH. LAYOUT
LEVEL 04

PROJ. NO.

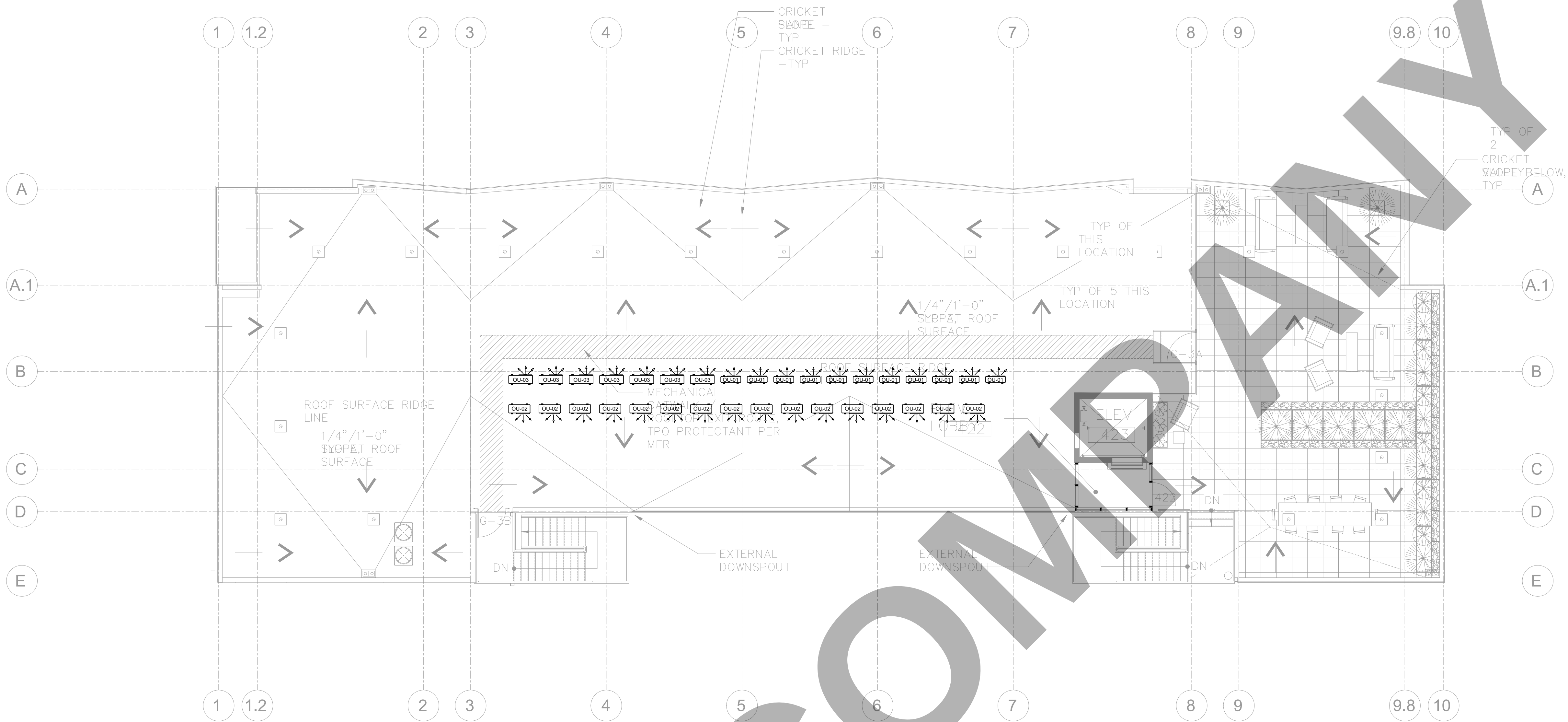
SCALE @ 24X36:

1/8"=1'-0"

DRAWING NO.

REV.

M 1 . 0 5



ROOF

GENERAL NOTES:

- MECHANICAL CONTRACTOR TO COORDINATE ROUTING AND LOCATION OF MECHANICAL COMPONENTS AND EQUIPMENT WITH ALL OTHER TRADES AND EXISTING FIELD CONDITIONS PRIOR TO PERFORMING WORK.
- CONTRACTOR TO CUT AND PATCH AS REQUIRED TO PERFORM THE WORK.
- ACCESS DOORS ARE REQUIRED FOR ANY COMPONENT REQUIRING ACCESS ABOVE HARD LID CEILINGS. COORDINATE SIZE, LOCATION AND FINISH WITH ARCHITECT PRIOR TO PERFORMING WORK.
- REFER TO THE DIAGRAMS THAT APPLY TO THIS SHEET WHICH PROVIDE GENERAL GUIDANCE FOR INSTALLATION THOUGH NOT ALL COMPONENTS AND ACCESSORIES MAY BE SHOWN.
- PRIOR TO INSTALLATION, CONFIRM SPECIFIC LOCATION FOR ALL THERMOSTATS / SENSORS WITH ARCHITECT. MOUNT AT 48" A.F.F. OR IN ACCORDANCE WITH ADA REQUIREMENTS. PROVIDE LOCKING COVERS.
- COORDINATE AND CONFIRM BORDER, FRAME, FINISH, AND LOCATION WITH ARCHITECT PRIOR TO ORDERING.
- ANY PENETRATIONS THROUGH WALL STUDS, FLOOR JOISTS, OR ROOF TO BE IN ACCORDANCE WITH THE LATEST ADOPTED BUILDING CODE.
- DUCT DIMENSIONS SHOWN ARE CLEAR INSIDE DIMENSIONS.
- CONTRACTOR TO CONFIRM ADEQUATE RETURN AIR PATH BACK TO MAIN AIR HANDLING UNIT.

310.1 Condensate Disposal:

Condensate from air washers, air-cooling coils, condensing appliances, and the overflow from evaporative coolers and similar water-supplied equipment or similar air-conditioning equipment shall be collected and discharged to an approved plumbing fixture or disposal area. Where discharged into the drainage system, equipment shall drain by means of an indirect waste pipe. The waste pipe shall have a slope of not less than 1/8 inch per foot (10.4 mm/m) or 1 percent slope and shall be of approved corrosion-resistant material not smaller than the outlet size in accordance with Section 310.3 or Section 310.4 for air-cooling coils or condensing appliances, respectively. Condensate or wastewater shall not drain over a public way.

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REV. NO	DESCRIPTION	DATE	BY
0	PERMIT SET	12.29.22	MN

PROJECT:

CLEO

TITLE:

111 M1.06 MECH. LAYOUT
ROOF LEVEL

PROJ. NO.

SCALE @ 24X36:

1/8"=1'-0"

DRAWING NO.

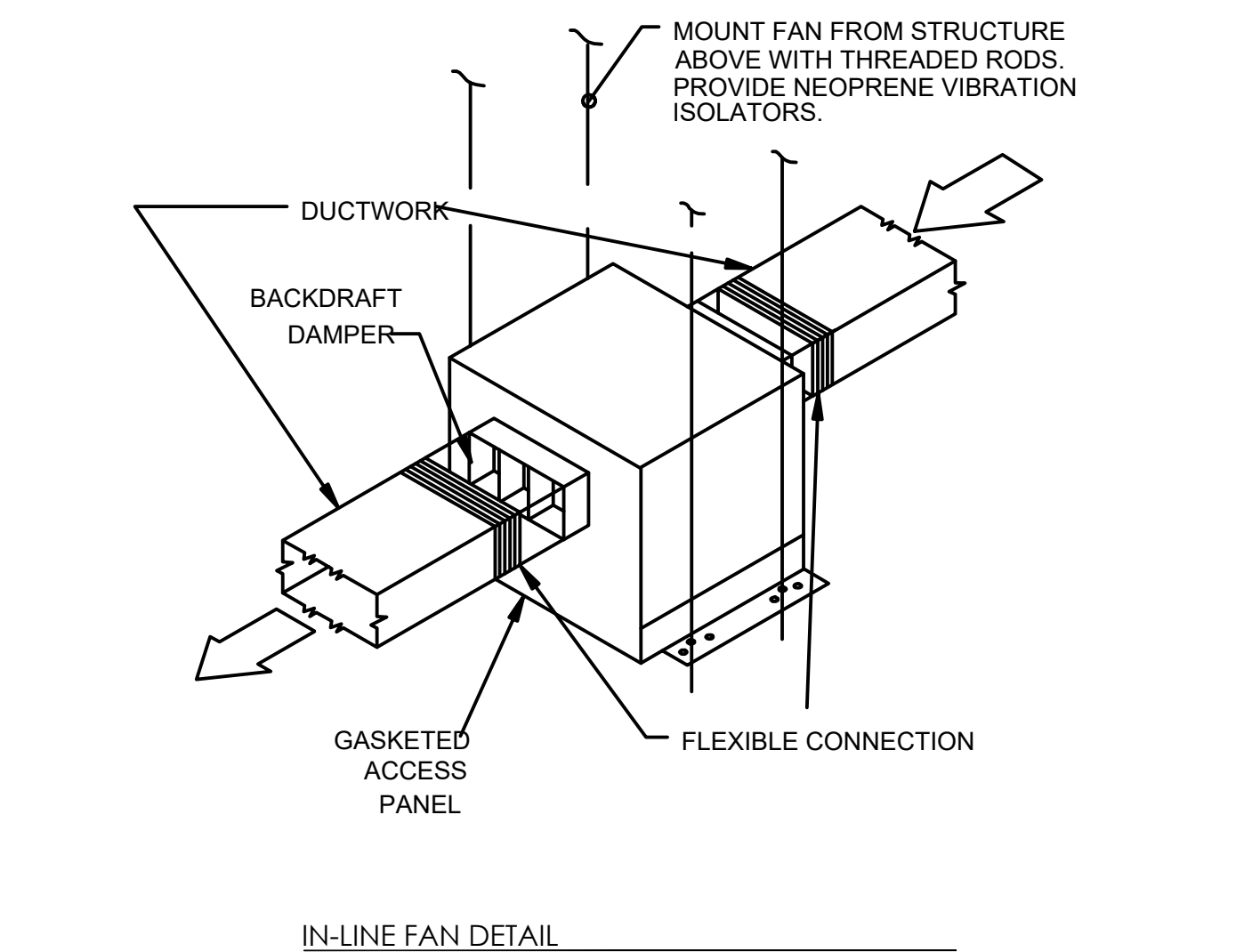
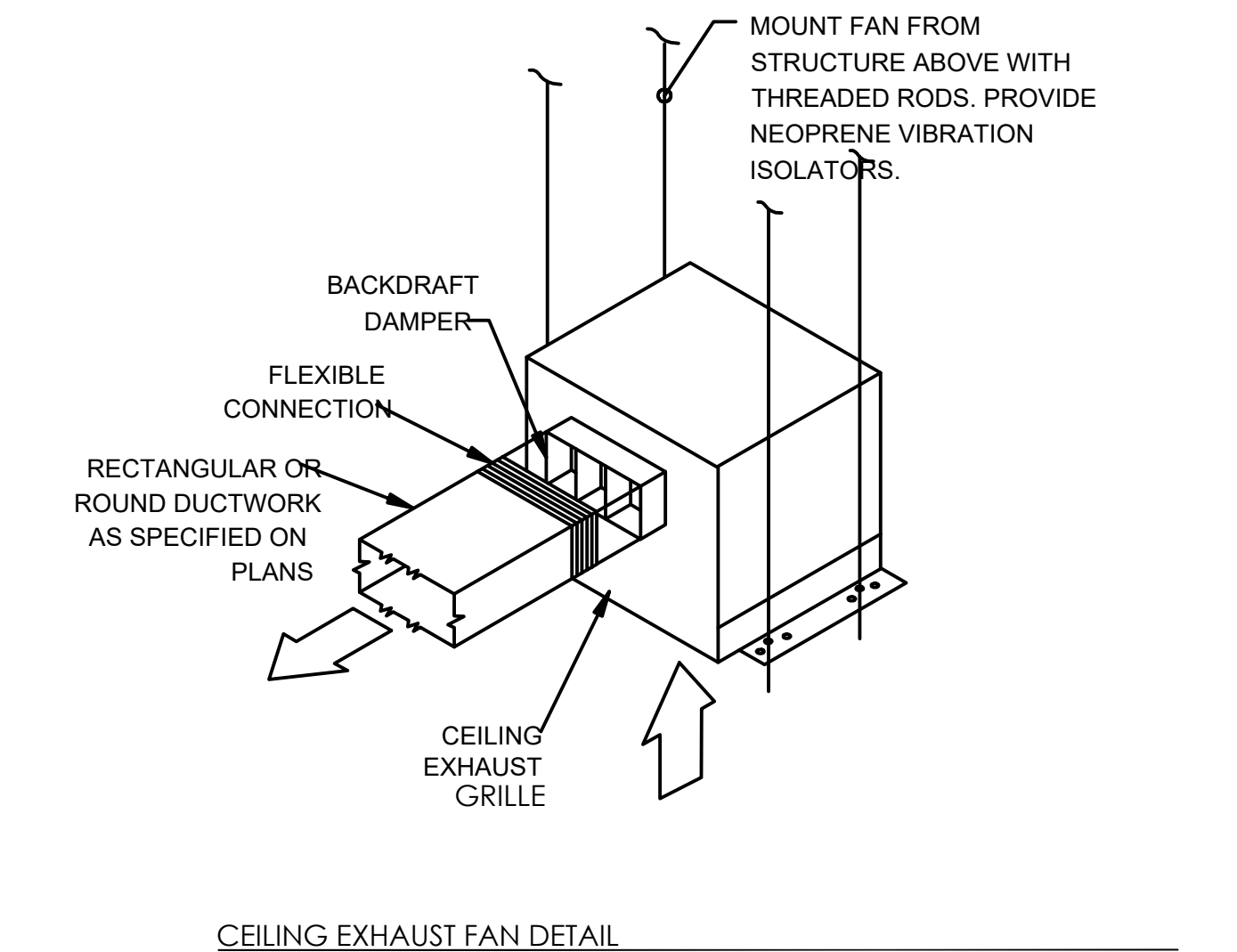
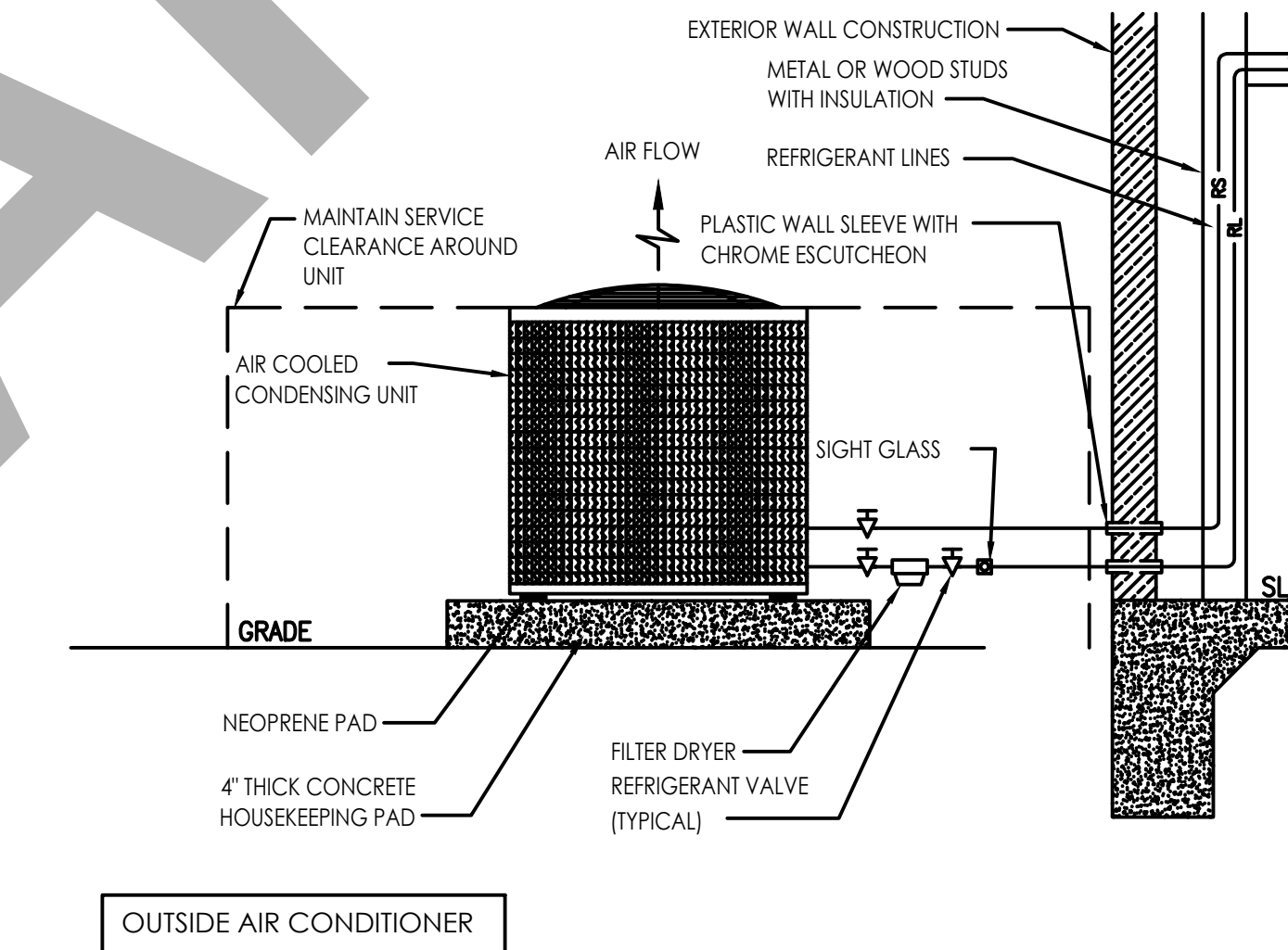
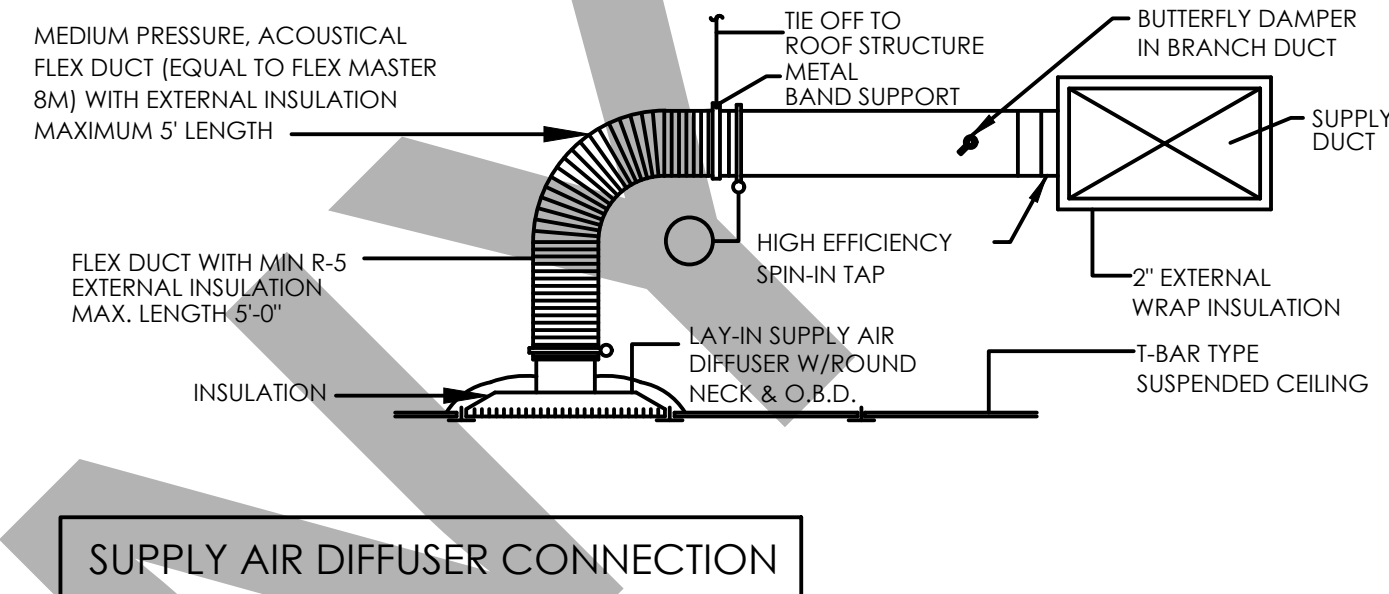
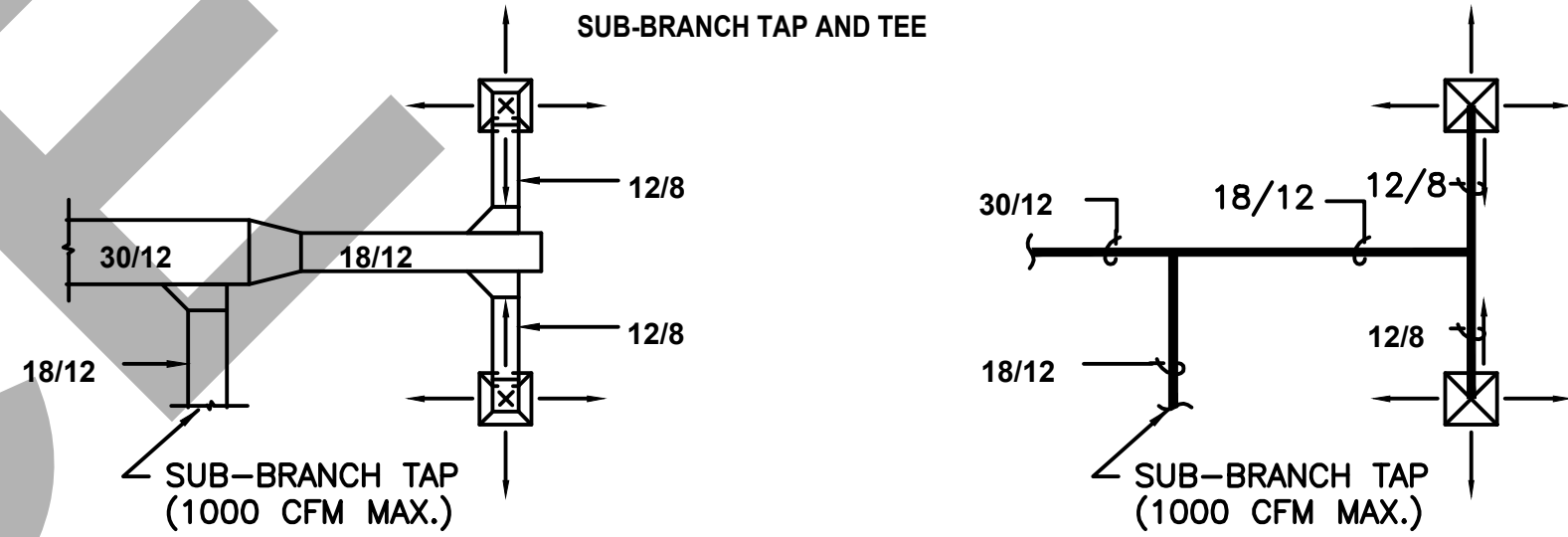
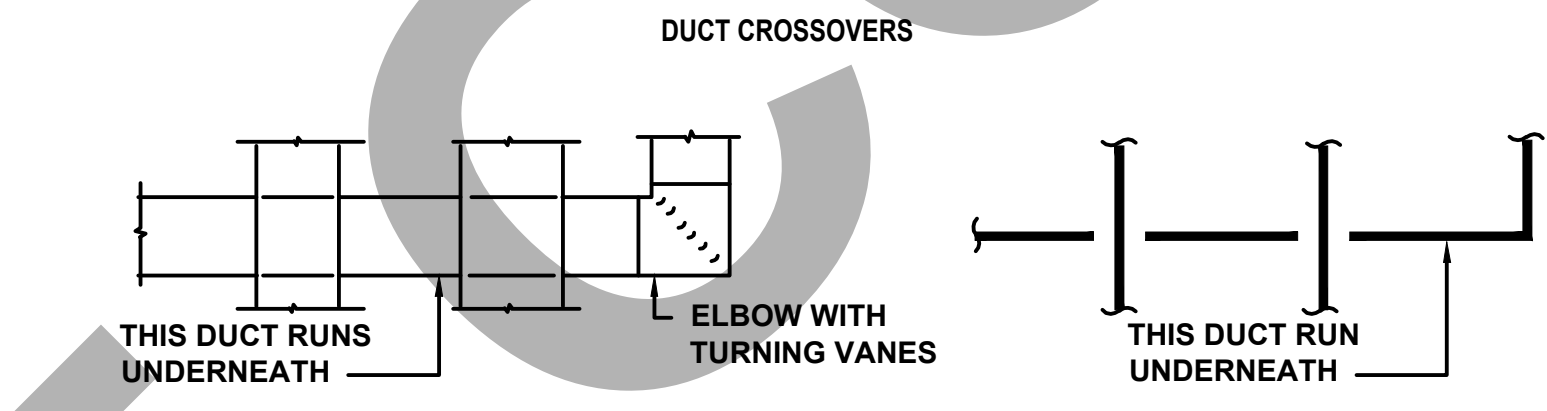
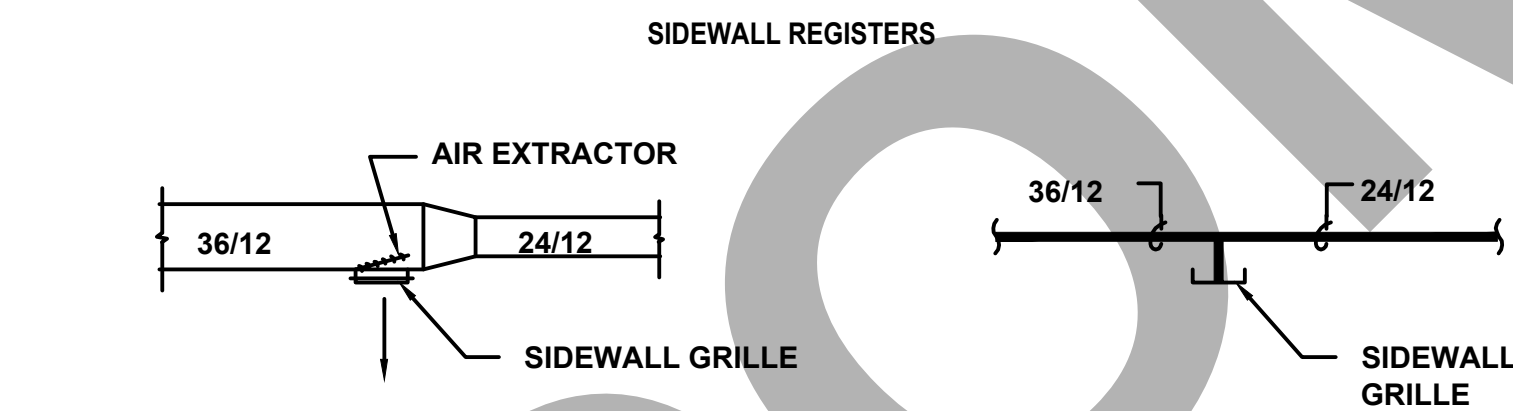
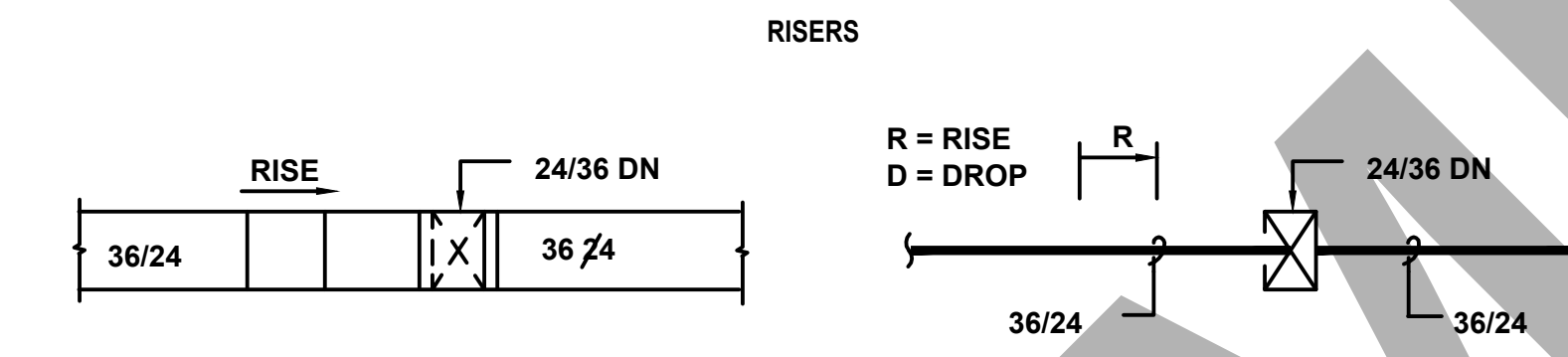
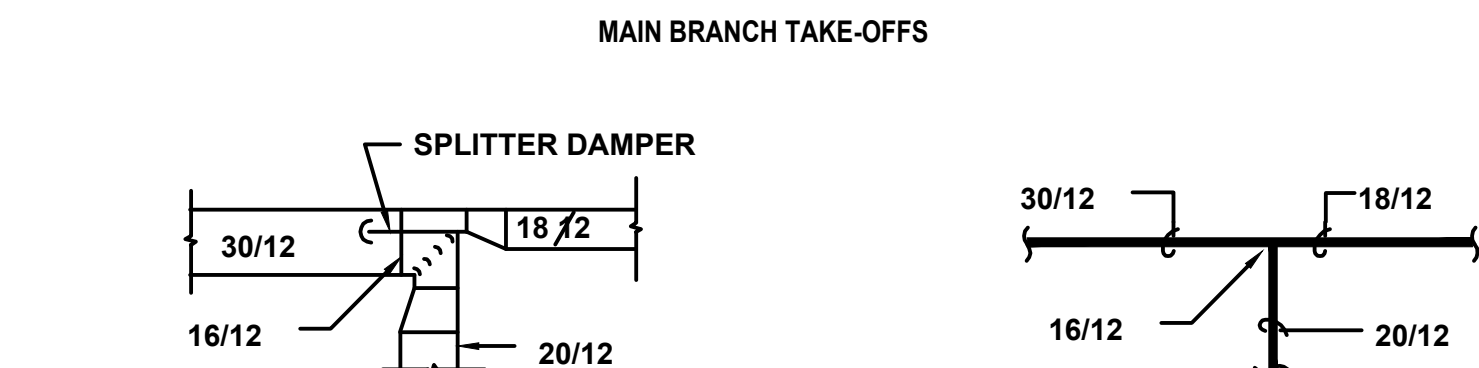
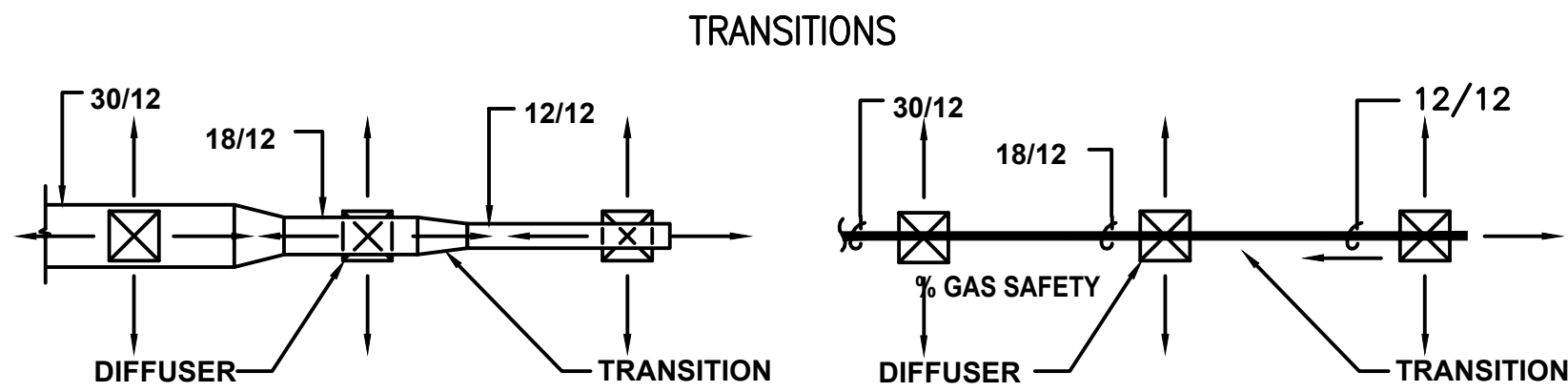
REV.

M 1 . 0 6

GENERAL NOTES

- MECHANICAL CONTRACTOR SHALL EXAMINE ALL OTHER SPECIFICATIONS, DRAWINGS AND ALL FEATURES OF BUILDING CONSTRUCTION WHICH MAY AFFECT HIS WORK AND SHALL BE GOVERNED BY THESE AND OTHER SPECIFICATIONS, INCLUDING THE GENERAL CONDITIONS AND PARTICULAR INSTRUCTIONS TO ALL BIDDER AND SUPPLIERS .
- ALL WORK SHALL BE EXECUTED AND INSPECTED IN STRICT ACCORDANCE WITH ALL LOCAL CODES AND/OR STATE CODES, LAWS, ORDINANCES, RULES AND REGULATIONS APPLICABLE TO THIS PARTICULAR CLASS OF WORK, AND EACH CONTRACTOR SHALL INCLUDE IN HIS PRICE ALL APPLICABLE SERVICE CHARGES, FEES, PERMITS, TAXES, AND OTHER SIMILAR COSTS IN CONNECTION THEREWITH .
- PRIOR TO FABRICATION OF DUCTWORK, THE MECHANICAL CONTRACTOR SHALL EXAMINE AND VERIFY ALL CONDITIONS ABOVE AND BELOW THE CEILING WHICH MAY INTERFERE WITH THE DUCT SYSTEM AND NOTIFY THE ARCHITECT OF ANY CONFLICT ENCOUNTERED. CONTRACTOR SHALL PROVIDE ALL OFFSETS, ETC. WHICH MAY BE REQUIRED, WITHOUT ADDITIONAL COST TO THE OWNER
- ALL SHEET METAL DUCT CONSTRUCTION SHALL BE IN STRICT ACCORDANCE WITH "SMACNA" LOW PRESSURE DUCT CONSTRUCTION STANDARD
- TURNING VANES SHALL BE INSTALLED IN ALL BENDS IN RECTANGULAR DUCT EXCEEDING 30"
- ALL DUCTS SHALL BE SUPPORTED WITH 1" WIDE, 16 GAUGE, GALVANIZED STEEL BANDS .
- ALL RECTANGULAR DUCT SHALL BE INSULATED WITH A MIN. OF 1" INTERNAL LINER, 2 LBS. DENSITY R-60. ALL ROUND DUCTS AND DIFFUSER TOPS SHALL HAVE A MIN. 2" THICK OF FOIL BACKED BLANKET TYPE INSULATION R=4-4.2, WITH ALL JOINTS BUTTED AND TAPED .
- ALL DUCT DIMENSIONS SHOWN ON PLANS ARE INTERNAL
- THE MECHANICAL CONTRACTOR SHALL COORDINATE THE LOCATION OF SUPPLY AND RETURN AIR REGISTERS, DUCTS, GRILLES AND DIFFUSERS WITH LIGHTING AND CEILING PATTERNS
- PROVIDE LATERAL BRACING OF ALL DUCTS AND PIPES AS REQUIRED BY CODE .
- INSULATE AND SEAL ALL DUCTWORK PER CHAPTER 10 OF THE STATE MECHANICAL CODE (T-24, PART 4)
- MOUNT ALL THERMOSTATS AT 48" ABOVE FINISHED FLOOR
- ALL BRACING OF DUCTS AND PIPING SHALL BE INSTALLED IN ACCORDANCE WITH SMACNA GUIDELINES
- WHERE BRACING DETAILS ARE NOT SHOWN ON THE DRAWINGS OR IN THE GUIDELINES, THE FIELD INSTALLATION SHALL BE SUBJECT TO THE APPROVAL OF THE ARCHITECT AND THE MECHANICAL ENGINEER
- DUCT SMOKE DETECTOR SHALL BE INSTALLED BELOW THE ROOF
- ALL MECHANICAL EQUIPMENT AND SYSTEMS INSTALLED AS PART OF PROJECT SHALL COMPLY WITH ALL REQUIREMENTS OF THE 2013 CALIFORNIA MECHANICAL CODE AND THE 2013 CALIFORNIA BUILDING CODE AND THE 2013 CALIFORNIA BUILDING ENERGY EFFICIENCY STANDARDS.
- OUTSIDE AIR FOR A HEATING OR COOLING SYSTEM SHALL NOT BE TAKEN FROM CLOSER THAN 10 FEET FROM AN APPLIANCE VENT OUTLET, VENT OPENING OF A PLUMBING SYSTEM, OR THE DISCHARGE OUTLET OF EXHAUST FAN, UNLESS THE OUTLET IS 3 FT. ABOVE THE OUTSIDE AIR INLET (CMC 314.3)
- PROVIDE 120 VOLT ELECTRICAL OUTLETS WITHIN 25 FT. OF ALL MECH. EQUIPT. (CMC 309)
- HEATING, VENTILATING, AND AIR CONDITIONING SYSTEMS SHALL BE BALANCED IN ACCORDANCE WITH ONE OF THE FOLLOWING METHODS IN ACCORDANCE WITH CMC 317.1 REQUIREMENTS .
 - AABC NATIONAL STANDARDS FOR TOTAL SYSTEM BALANCE
 - ACCA MANUAL B
 - ASHRAE 111
 - NEBB PROCEDURAL STANDARDS FOR TESTING, ADJUSTING, AND BALANCING OF ENVIRONMENTAL SYSTEMS
 - SMACNA HVAC TESTING, ADJUSTING, AND BALANCING
- MATERIALS EXPOSED WITHIN DUCTS OR PLENUMS SHALL BE NON COMBUSTIBLE OR SHALL HAVE A FLAME SPREAD INDEX NOT TO EXCEED 25 AND A SMOKE DEVELOPED INDEX NOT TO EXCEED 50 WHERE TESTED AS A COMPOSITE PRODUCT IN ACCORDANCE WITH ASTM E84 OR UL 723 .

DUCTWORK SYMBOLS LEGEND



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REV. NO	DESCRIPTION	DATE	BY
0	PERMIT SET	12.29.22	MN

PROJECT:

CLEO

TITLE:

113 M3.01 MECH. GENERAL
DETAILS

PROJ. NO.

SCALE @ 24X36:

NTS

DRAWING NO.

REV.

M 3 . 0 1

ELECTRICAL SPECIFICATIONS

1.ELECTRICAL GENERAL NOTES

- A. GC SHALL VERIFY ANY THIRD PARTY INSPECTIONS REQUIRED BY LOCAL AUTHORITY HAVING JURISDICTION PRIOR TO BIDDING THIS PROJECT.
- B. ALL LOW VOLTAGE WIRING TO BE IN CONDUIT UNLESS APPROVED OTHERWISE BY AUTHORITY HAVING JURISDICTION.
- C. ALL EMERGENCY LIGHTS & EXIT SIGNS ARE TO BE CONNECTED TO THE UNSWITCHED PORTION OF THE ADJACENT LIGHTING CIRCUIT. ALL EMERGENCY FIXTURES TO REMAIN ACTIVE FOR 90 MINUTE MINIMUM.
- D. ALL ELECTRICAL MATERIALS, DEVICES, APPLIANCES, AND EQUIPMENT SHALL BE LABELED AND LISTED BY A CERTIFIED TESTING LABORATORY OR AGENCY.
- E. ALL LIGHTING, DUCTWORK, SOFFITS, AND CEILING COMPONENT HEIGHTS ARE TO BE COORDINATED WITH THE ARCHITECT.
- F. ATTENTION LIGHTING SUPPLIER AND CONTRACTOR: ENSURE ALL LIGHTING EXPOSED TO PLENUM IS PLENUM RATED.
- G. COORDINATE THE MOUNTING OF ALL HIGH-BAY FIXTURES AND CEILING FANS WITH ARCHITECT PRIOR TO INSTALLATION.
- H. . VERIFY MOUNTING HEIGHTS OF ALL FIXTURES WITH ARCHITECTURAL ELEVATIONS PRIOR TO ROUGH-IN.
- I. FIRE ALARM CONTRACTOR SHALL VERIFY ALL BUILDING AND FIRE DEPARTMENT REQUIREMENTS REGARDING SHUT OFF OF ANY NECESSARY COMPONENTS UPON ACTIVATION OF THE FIRE ALARM. THIS INCLUDES, BUT IS NOT LIMITED TO:
- a. AUDIO/MUSIC SYSTEM(S)
 - b. ROOFTOP UNITS
 - c. TANNING EQUIPMENT
 - d. EXERCISE FANS
- J. PROVIDE A SEPARATE EQUIPMENT GROUNDING CONDUCTOR (SIZE PER NEC) IN PVC TYPE CONDUIT, POWER CIRCUITS, ISOLATED GROUND CIRCUITS, OR AS SHOWN ON PLANS. CONDUIT SHALL BE SIZED PER NEC BASED ON THIN 600 VOLT COPPER SINGLE CONDUCTORS, PLUS THE EQUIPMENT GROUNDING CONDUCTOR.
- K. WIRING SHALL INCLUDE FINAL CONNECTION TO ALL EQUIPMENT IN CONFORMANCE WITH EQUIPMENT SUPPLIER WIRING DIAGRAMS.
- L. CONTRACTOR IS RESPONSIBLE FOR PROVIDING COMPLETE PANELBOARD IDENTIFICATION SCHEDULES.
- M. BRANCH CIRCUIT CONDUCTORS SHALL BE MINIMUM #12 AWG UNLESS NOTED OTHERWISE IN SCHEDULES. WHERE 20A BRANCH CIRCUITS HAVE #8 AND LARGER WIRE SPECIFIED, #10 AWG WIRE SHALL BE USED FOR THE FINAL CONNECTION (15 FOOT MAXIMUM).
- N. WHERE BRANCH CIRCUITS ARE GROUPED, SIZE CONDUIT AND DERATE CURRENT CARRYING CONDUCTORS PER NEC.
- O. PROVIDE HANDLE TIES ON ALL MULTIWIRE BRANCH CIRCUITS TO MEET NEC REQUIREMENTS.
- P. SUPPORT FROM STRUCTURE: NO ATTACHMENT OF ANY TYPE SHALL BE MADE TO BRIDGING OR JOIST WEB MEMBERS. UTILIZE ONLY THE TOP AND BOTTOM CHORDS FOR SUPPORTING THE ELECTRICAL SYSTEM INSTALLATIONS. REFER TO STRUCTURAL PLANS.
- Q. WHERE GROUPED CONDUITS ARE INSTALLED WITHIN THE JOIST SPACE, COORDINATE WITH SPRINKLER CONTRACTOR PRIOR TO INSTALLATION IN ORDER TO MAINTAIN REQUIRED CLEARANCES FROM SPRINKLERS.
- R. SEAL PENETRATIONS IN FIRE RATED WALLS PER NEC 300.21.
- S. ELECTRICAL EQUIPMENT, FIXTURES, DEVICES, AND OTHER ITEMS SHOWN IN THESE PLANS IN GREY HALFTONE ARE EITHER EXISTING TO REMAIN OR PART OF LANDLORD SHELL PACKAGE.
- T. PROVIDE ARC-FLASH COORDINATION STUDY PER NEC.
- U. PROVIDE (1) 1/2" CONDUIT AND (1) 4" SQUARE BOX WITH SINGLE GANG DEVICE RING FOR ALL THERMOSTAT LOCATIONS INDICATED ON MECHANICAL DRAWINGS. ROUTE CONDUIT FROM BOX TO ACCESSIBLE CEILING CAVITY. PROVIDE PLASTIC BUSHING ON EXPOSED CONDUIT ENDS. PROVIDE PULL STRING IN ALL EMPTY CONDUIT SYSTEMS. COORDINATE EXACT LOCATIONS AND MOUNTING HEIGHTS WITH MECHANICAL CONTRACTOR PRIOR TO ROUGH-IN.
- V. ELECTRICAL CONTRACTOR SHALL COORDINATE WITH THE LOW VOLTAGE CONTRACTOR TO CLARIFY SCOPE OF WORK BEFORE BID OR INSTALLATION
- W. WIRING DEVICES: DEVICE MOUNTING HEIGHTS ARE FROM FINISHED FLOOR TO CENTER OF OUTLET BOX UNLESS NOTED OTHERWISE ON PLANS. COORDINATE THE STANDARD MOUNTING HEIGHTS WITH MASONRY:
- a. SWITCHES 48" AFF
 - b. RECEPTACLES 18" AFF
 - c. VOICE/DATA 18" AFF

2. ELECTRICAL POWER NOTES

- A. ALL REQUIRED DOCUMENTATION REGARDING THE DESIGN OF FIRE DETECTION, ALARM, AND COMMUNICATIONS SYSTEMS AND THE PROCEDURES FOR MAINTENANCE, INSPECTION, AND TESTING OF FIRE DETECTION, ALARM, AND COMMUNICATIONS SYSTEMS SHALL BE MAINTAINED AT AN APPROVED, SECURED LOCATION FOR THE LIFE OF THE SYSTEM PER IFC 901.6.2.1.
- B. THE FIRE ALARM CONTROL PANEL DISCONNECTING MEANS SHALL HAVE A RED MARKING, SHALL ONLY BE ACCESSIBLE TO AUTHORIZED PERSONNEL, AND SHALL BE IDENTIFIED AS "FIRE ALARM CIRCUIT". THE LOCATION OF THE CIRCUIT DISCONNECTING MEANS SHALL BE IDENTIFIED AT THE FIRE ALARM CONTROL UNIT PER NFPA 72 4.4.1.4.2.2 AND 4.4.1.4.2.3.
- C. ROUTE ALL CONDUIT TIGHT TO DECK IN ACCORDANCE TO NEC 300.4(E)
- D. FIRE ALARM SYSTEM SHALL BE INSTALLED PER CURRENT NFPA STANDARDS.
- E. ALL ELECTRICAL THAT MAY NEED TO BE MAINTAINED WHILE ENERGIZED SHALL BE FIELD MARKED WITH ARC FLASH LABELING AND BE FULLY VISIBLE TO QUALIFIED PERSONNEL PRIOR TO EXAMINATION, ADJUSTMENT, SERVICING, OR MAINTENANCE OF EQUIPMENT.
- F. SERVICE EQUIPMENT SHALL BE LEGIBLY MARKED IN THE FIELD WITH THE MAXIMUM AVAILABLE FAULT CURRENT. THE FIELD MARKINGS SHALL INCLUDE THE DATE THE FAULT CURRENT CALCULATIONS WERE PERFORMED AND BE OF SUFFICIENT DURABILITY TO WITHSTAND THE ENVIRONMENT INVOLVED.
- G. FIRE ALARM DEVICE LOCATIONS ARE SHOWN FOR REFERENCE ONLY. THE ELECTRICAL CONTRACTOR SHALL INCLUDE A PRICE IN THE ELECTRICAL BID FOR A LANDLORD APPROVED FIRE ALARM SYSTEM, INCLUDING PLANS AND ALL ASSOCIATED DOCUMENTATION REQUIRED. THESE PLANS SHALL BE SUBMITTED TO THE LOCAL AUTHORITIES HAVING JURISDICTION BY A QUALIFIED AND LICENSED DESIGN-BUILD FIRE ALARM CONTRACTOR FOR A COMPLETE AND APPROVED FIRE ALARM SYSTEM. THE PLANS SHALL BE SIGNED AND SEALED BY THEIR LOCAL DESIGN ENGINEER AND SUBMITTED FOR PLAN REVIEW PRIOR TO RECEIVING SPECIFIC PERMITS FOR THIS WORK. THE FIRE ALARM CONTRACTOR SHALL ALSO SUBMIT ALL SHOP DRAWINGS, BATTERY CALCULATIONS, SPECIFICATION SHEETS, ETC. AS REQUIRED BY THE AUTHORITY HAVING JURISDICTION TO THEIR LOCAL DESIGN ENGINEER FOR REVIEW AND APPROVAL.
- H. COORDINATE WITH MECHANICAL INSTALLER TO PROVIDE AND INSTALL CONDUIT AND JUNCTION BOXES FOR MECHANICAL THERMOSTATS.

3. NETWORK CABLING REQUIREMENTS

- A. EACH CAT 5 CABLE RUN MUST BE KEPT TO A MAXIMUM OF 295 FEET (90 METERS). INCLUDING PATCH CORDS, ENTIRE CHANNEL MAXIMUM LENGTH NOT TO EXCEED 328 FEET (100 METERS).
- B. MAINTAIN PAIR TWISTING AS CLOSE AS POSSIBLE TO FINAL TERMINATION POINTS WITH MAXIMUM UNTWISTED SEGMENT OF 1/2".
- C. WHERE NECESSARY, GRADUALLY BEND CABLE TO MAINTAIN THE MINIMUM BEND RADIUS OF 4 TIMES THE CABLE DIAMETER (APPROX. 1").
- D. USE LOW TO MODERATE PRESSURE TO DRESS CABLES NEATLY WITH CABLE TIES.
- E. USE LOW TO MODERATE FORCE WHEN PULLING CABLE. DO NOT EXCEED MAXIMUM OF 25 POUNDS OF FORCE.
- F. USE CABLE PULLING LUBRICANT FOR CABLE RUNS THAT MAY EXCEED 25 POUNDS OF FORCE WHEN PULLING.
- G. MAINTAIN 12" OF SEPARATION FROM POWER CABLES THAT MAY BE SOURCES OF EMI (ELECTRICAL CABLES, TRANSFORMERS, LIGHT FIXTURES, ETC.)
- H. INSTALL PROPER CABLE SUPPORTS WITH MAXIMUM OF 5 FEET OF SEPARATION.
- I. LEAVE EXCESS WIRE COILED IN THE CEILING OR NEAREST CONCEALED SPACE, MAINTAIN 5 FEET OF SLACK AT WORK OUTLET AND 10 FEET OF SLACK AT PATCH PANEL END.
- J. FURNISH AND INSTALL GROMMETS WHEN PASSING THROUGH METAL STUDS AND OTHER POTENTIAL HAZARDS.
- K. CONTRACTOR IS RESPONSIBLE FOR MEETING BOTH NATIONAL FIRE AND BUILDING CODES AND ANY LOCAL AMENDMENTS BY THE AUTHORITIES HAVING JURISDICTION AND MAINTAIN FIRESTOPS AT ALL CABLES THAT PENETRATE FIREWALLS. PLENUM RATED CABLES SHALL BE INSTALLED WHERE REQUIRED.
- L. DO NOT SPLICE OR BRIDGE CABLE AT ANY POINT.
- M. DO NOT INSTALL CABLE SUPPORTED FROM CEILING TILES.
- N. DO NOT OVER TIGHTEN (25 POUNDS PER SQUARE INCH MAXIMUM) WITH USING CABLE OR PLASTIC TIES.
- O. DO NOT USE OIL OR OTHER LUBRICANT NOT SPECIFICALLY DESIGNED FOR NETWORK CABLE PULLING.
- P. DO NOT SUPPORT CABLES DIRECTLY FROM ELECTRICAL CONDUITS OR FIXTURES

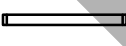
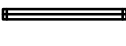
4. GENERAL FIRE ALARM NOTES

- A. THE INTENT OF THE FIRE ALARM SYSTEM DEVICES INDICATED ON THIS DRAWING ARE FOR PERFORMANCE SPECIFICATIONS AND LOCATIONS ONLY. THE SUCCESSFUL FIRE ALARM SYSTEM CONTRACTOR SHALL PROVIDE COMPLETE PERMIT DRAWINGS, INCLUDING WIRING MEANS AND METHODS, BATTERY CALCULATIONS, DEVICE CUT SHEETS, ETC. FOR THE EQUIPMENT THEY SHALL PROVIDE. PROVIDE 15% SPARE CAPACITY FOR NEW SYSTEMS. COORDINATE FINAL REQUIREMENTS WITH ALL AUTHORITIES HAVING JURISDICTION.
- B. THE FIRE ALARM SYSTEM SHALL BE MONITORED BY A UL LISTED CENTRAL STATION.
- C. FIRE ALARM CONTRACTOR SHALL SUBMIT FIRE ALARM SUBMITTALS TO THE OWNER'S REPRESENTATIVE WITHIN 30 DAYS AFTER CONTRACT IS AWARDED.
- D. WALL MOUNTED DEVICES SHALL BE 80" AFF TO BOTTOM OF DEVICE UNLESS NOTED OTHERWISE.
- E. SURFACE MOUNTING OF FIRE ALARM CONDUIT IS NOT PERMITTED IN FINISHED AREAS.
- F. BUILDING IS EQUIPPED WITH A FULLY AUTOMATIC SPRINKLER SYSTEM.
- G. REMOVE ALL EXISTING FIRE ALARM SYSTEMS FROM PREVIOUS TENANTS PRIOR TO INSTALLING NEW EQUIPMENT.
- H. ALL REQUIRED DOCUMENTATION REGARDING THE DESIGN OF FIRE DETECTION, ALARM, AND COMMUNICATIONS SYSTEMS SHALL BE MAINTAINED AT AN APPROVED, SECURED LOCATION FOR THE LIFE OF THE SYSTEM PER IFC 901.6.2.1.
- I. THE FIRE ALARM CONTROL PANEL DISCONNECTING MEANS SHALL HAVE A RED MARKING, SHALL ONLY BE ACCESSIBLE TO AUTHORIZED PERSONNEL, AND SHALL BE IDENTIFIED AS "FIRE ALARM CIRCUIT". THE LOCATION OF THE CIRCUIT DISCONNECTING MEANS SHALL BE IDENTIFIED AT THE FIRE ALARM CONTROL UNIT PER NFPA 72 4.4.1.4.2.2 AND 4.4.1.4.2.3.
- J. ROUTE ALL CONDUIT TIGHT TO DECK IN ACCORDANCE WITH NEC 300.4(E).
- K. FIRE ALARM SYSTEMS SHALL BE INSTALLED PER CURRENT NFPA STANDARDS.FIRE ALARM DEVICE LOCATIONS ARE SHOWN FOR REFERENCE ONLY. THE ELECTRICAL CONTRACTOR SHALL INCLUDE A PRICE IN THE ELECTRICAL BID FOR A LANDLORD APPROVED FIRE ALARM SYSTEM, INCLUDING PLANS AND ALL ASSOCIATED DOCUMENTATION REQUIRED. THESE PLANS SHALL BE SUBMITTED TO THE LOCAL AUTHORITIES HAVING JURISDICTION BY A QUALIFIED AND LICENSED DESIGN-BUILD FIRE ALARM CONTRACTOR FOR A COMPLETE AND APPROVED FIRE ALARM SYSTEM. THE PLANS SHALL BE SIGNED AND SEALED BY THEIR LOCAL DESIGN ENGINEER AND SUBMITTED FOR PLAN REVIEW PRIOR TO RECEIVING SPECIFIC PERMITS FOR THIS WORK. THE FIRE ALARM CONTRACTOR SHALL ALSO SUBMIT ALL SHOP DRAWINGS, BATTERY CALCULATIONS, SPECIFICATION SHEETS, ETC. AS REQUIRED BY THE AUTHORITY HAVING JURISDICTION TO THEIR LOCAL DESIGN ENGINEER FOR REVIEW AND APPROVAL.

5.ELECTRICAL ABBREVIATIONS:

ABC ABOVE COUNTER
AFF ABOVE FINISHED FLOOR
CF CEILING FAN
CP CIRCULATING PUMP
EC ELECTRICAL CONTRACTOR
ECB ENCLOSED CIRCUIT BREAKER
EDF ELECTRIC DRINKING FOUNTAIN
EF EXHAUST FAN
GC GENERAL CONTRACTOR
GFCI GROUND FAULT CIRCUIT INTERRUPT
GR GROUND
HC HVAC CONTRACTOR
JB JUNCTION BOX
PC PLUMBING CONTRACTOR
TTB TELEPHONE TERMINATION BOARD
UC UNDERCOUNTER
UH UNIT HEATER
UNO UNLESS NOTED OTHERWISE
VIF VERIFY IN FIELD
WH WATER HEATER
WP WEATHER PROOF DEVICE
WR WEATHER RESISTANT DEVICE
GFCI GROUND FAULT CIRCUIT INTERRUPTER

ELECTRICAL LEGEND

-  CEILING MOUNTED PENDANT LIGHTING FIXTURE
-  WALL MOUNTED LIGHTING FIXTURE IN BATHROOMS
-  1'X4' SURFACE MOUNTED LIGHTING FIXTURE for TECHNICAL AREAS 40Watt
-  1'X4' SURFACE MOUNTED LIGHTING FIXTURE OF PARKING 70 Watt
-  WALL MOUNTED OUTDOOR FLOOD LIGHT EQUIPPED WITH PHOTOCELL IP67
-  SELF CONTAINED SMOKE/CARBON MONOXIDE (120 W/BATTERY BACKUP) - CEILING MOUNTED
-  DUPLEX OUTLET
-  NON-FUSED DISCONNECT SWITCH - SIZE AS INDICATED
-  MOTION DETECTOR
-  WALL MOUNTED EXIT SIGN WITH 90 MINUTES BACK UP BATTERY
-  SURFACE MOUNTED PANEL BOARD
-  S ONE WAY LIGHTING SWITCH
-  S₂ TWO WAYS LIGHTING SWITCH
-  S_M SWITCH WITH OCCUPANCY SENSOR
-  S_T SWITCH WITH TIMER
-  S_D SWITCH WITH DIMMER
-  26FEET HEIGHT LED LIGHTING POLE 73Watt
-  JUNCTION BOX
-  SELF CONTAINED CEILING MOUNTED EMERGENCY LIGHT WITH BACK UP BATTERY OF 90 MINUTES AUTONOMY

CLIENT:

ADDRESS:

929 18TH ST
BAKERSFIELD, CA 93301

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REV. NO	DESCRIPTION	DATE	BY
0	PERMIT SET	12.29.22	MM

PROJECT:

CLEO

TITLE:
114 E0.01 ELEC. NOTES

PROJ. NO.

SCALE @ 24X36:

NTS

DRAWING NO.

REV.

E 0 . 0 1

ELECTRICAL SPECIFICATIONS

1. ~~DO NOT SCALE DRAWINGS~~. VERIFY DIMENSIONS IN FIELD PRIOR TO COMMENCEMENT OF WORK.
2. WHEREVER THE WORD "PROVIDE" IS USED, IT SHALL MEAN TO "PROVIDE AND INSTALL".
3. FINAL CONNECTIONS TO EQUIPMENT SHALL BE PER MANUFACTURER'S APPROVED WIRING DIAGRAMS, DETAILS AND INSTRUCTIONS. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO PROVIDE MATERIALS AND EQUIPMENT COMPATIBLE WITH EQUIPMENT ACTUALLY SUPPLIED.
4. IT IS THE INTENT OF THESE DRAWINGS AND SPECIFICATIONS TO ESTABLISH A STANDARD OF QUALITY. THE ENGINEER RESERVES THE RIGHT TO APPROVE METHODS AND MATERIALS NOT REFLECTED HEREIN.
5. CONTRACTOR SHALL REVIEW ARCHITECTURAL, STRUCTURAL, MECHANICAL, AND OTHER RELATED DRAWINGS PRIOR TO BID.
6. CONTRACTOR SHALL VISIT SITE PRIOR TO BID AND VERIFY THAT CONDITIONS ARE AS INDICATED IN THE CONTRACT DOCUMENTS. CONTRACTOR SHALL INCLUDE IN HIS BID, ANY COSTS REQUIRED TO MAKE HIS WORK MEET THE CONTRACT SCOPE UTILIZING EXISTING CONDITIONS.
7. WORK SHALL BE PERFORMED IN A WORKMANLIKE MANNER TO THE SATISFACTION OF THE ARCHITECT.
8. WORK, MATERIALS AND EQUIPMENT SHALL CONFORM TO THE LATEST EDITIONS OF LOCAL, STATE AND NATIONAL CODES AND ORDINANCES.
9. PROVIDE PERMITS AND INSPECTIONS REQUIRED.
10. GUARANTEE THE INSTALLATION AGAINST DEFECTS IN MATERIALS AND WORKMANSHIP WHICH MAY OCCUR UNDER NORMAL USAGE FOR A PERIOD OF ONE YEAR AFTER OWNER'S ACCEPTANCE. DEFECTS SHALL BE PROMPTLY REMEDIED WITHOUT COST TO THE OWNER.
11. PROVIDE RECORD DRAWINGS TO ENGINEER. DRAWINGS SHALL INCLUDE ALL ADDENDUM ITEMS, CHANGE ORDERS, ALTERATIONS, REROUTINGS, ETC.
12. VERIFY SPECIFIC LOCATION OF EQUIPMENT TO BE FURNISHED BY OTHERS PRIOR TO ROUGH-IN.
13. ELECTRICAL SYSTEMS SHALL BE TESTED FOR PROPER OPERATION. IF TESTS SHOW THAT WORK IS DEFECTIVE, CONTRACTOR SHALL MAKE CORRECTIONS NECESSARY AT NO COST TO OWNER.
14. RECESSED LIGHT FIXTURES INSTALLED IN GYP. BOARD OR PLASTER CEILINGS SHALL HAVE PLASTER FRAMES INSTALLED PRIOR TO CEILING MATERIAL.
15. RECESSED FIXTURES INSTALLED INDOORS SHALL BE THERMALLY PROTECTED.
16. SEE DIVISION 15 DRAWINGS FOR LOCATION OF MECHANICAL EQUIPMENT. PROVIDE SERVICE TO AND CONNECT EQUIPMENT AS REQUIRED.
17. PROVIDE EQUIPMENT GROUNDING CONDUCTOR IN ALL CONDUITS.
18. ALL ELECTRICAL SYSTEMS COMPONENTS SHALL BE LISTED OR LABELED BY U.L. OR OTHER RECOGNIZED TESTING FACILITY.
19. WIRE TERMINATION PROVISIONS FOR PANELBOARDS, CIRCUIT BREAKERS, SAFETY SWITCHES, AND ALL OTHER ELECTRICAL APPARATUS SHALL BE LISTED AS SUITABLE FOR 75 DEGREE C.
20. THE FOLLOWING CONDUCTOR SIZES SHALL BE UTILIZED FOR 20 AMP CIRCUITS PERTAINING TO DISTANCES (IN FEET) INDICATED:

120VOLT, 1PH	CONDUCTOR	240 VOLT, 1PH
0-64	#12AWG	0-129
65-106	#10AWG	130-212
107-160	#8AWG	213-321

NOTE: BASED ON 75°c COPPER CONDUCTORS INSTALLED IN EMT WITH 16AMP LOAD @ 85% P.F.
21. CONTRACTOR SHALL REVIEW ARCHITECTURAL, STRUCTURAL AND MECHANICAL DRAWINGS AND SHALL PROVIDE LIGHTS, SWITCHES, RECEPTACLES, EQUIPMENT CONNECTIONS, ETC., AND ASSOCIATED CIRCUITING IN NEW AND REMODELED AREAS. EVEN IF SUCH AREAS ARE NOT SHOWN ON ELECTRICAL DRAWINGS, LAYOUTS, FIXTURE TYPES, QUANTITIES AND SPACING SHALL BE IN ACCORDANCE WITH SIMILAR AREAS ON THIS PROJECT. CONTRACTOR SHALL INCLUDE COSTS FOR THE ABOVE IN HIS BID. IN ADDITION, CONTRACTOR SHALL PROVIDE LAYOUT DRAWINGS FOR WORK IN SUCH AREAS AND SUBMIT FOR APPROVAL PRIOR TO ROUGH-IN.
22. WIRE SHALL BE COPPER, 75 DEGREES C RATED FOR GENERAL USE. FOR WIRING WITHIN 3 INCHES OF FLUORESCENT BALLASTS WIRE SHALL BE COPPER, MINIMUM 90 DEGREES C RATED. SIZES INDICATED ARE FOR INSTALLATION IN A MAXIMUM 30 DEGREES C AMBIENT. CONDUCTOR AMPACITY SHALL BE DERATED FOR HIGHER AMBIENT INSTALLATIONS. 600 VOLT COMPACT ALUMINUM WIRE AND CABLE IN SIZES 1/0 AND LARGER MAY BE SUBSTITUTED FOR COPPER ON SERVICES AND FEEDERS IF AMPACITY IS EQUIVALENT TO OR GREATER
23. CONTRACTOR SHALL BE RESPONSIBLE FOR REPLACING EQUIPMENT WHICH IS DAMAGED DUE TO INCORRECT FIELD WIRING PROVIDED UNDER THIS SECTION OR FACTORY WIRING IN EQUIPMENT PROVIDED UNDER THIS SECTION.
24. CONTRACTOR'S FAILURE TO ORDER OR RELEASE ORDER FOR MATERIALS AND/OR EQUIPMENT WILL NOT BE ACCEPTED AS A REASON TO SUBSTITUTE ALTERNATE MATERIALS, EQUIPMENT OR INSTALLATION METHODS.
25. ELECTRICAL SYSTEMS SHALL BE COMPLETE, OPERABLE AND READY FOR CONTINUOUS OPERATION AT COMPLETION OF PROJECT.
26. RECEPTACLES WHICH ARE SHOWN WALL MOUNTED ON THE ELECTRICAL DRAWINGS ON WALLS WHICH, ON THE ARCHITECTURAL DRAWINGS AND ELEVATIONS ARE SHOWN AS GLASS OR PARTITIONS, SHALL BE FLUSH FLOOR DUPLEX RECEPTACLES MOUNTED ADJACENT TO BAS OR WALLS.
27. RECEPTACLES AT COUNTER SHALL BE MOUNTED WITH THEIR LONG AXIS HORIZONTAL AT +46" UNLESS NOTED.
28. FLUSH FLOOR RECEPTACLE OUTLETS SHALL BE WIREMOLD 862 SERIES. PROVIDE CARPET OR TILE FLANGE TO MATCH FLOOR FINISH.
29. THE COLOR OF THE DEVICES AND COVER PLATES SHALL BE AS DIRECTED BY ARCHITECT. IN DAMP OR WET LOCATIONS COVER PLATES SHALL BE STAINLESS STEEL. IN DRY LOCATIONS COVER PLATES SHALL BE SMOOTH HIGH ABUSE NYLON OR EQUIVALENT. PROVIDE COVER PLATES FOR SWITCHES, RECEPTACLES, TELEPHONE, TELEVISION, COMPUTER AND J-BOX OUTLETS AS REQUIRED.
30. ROMEX CABLE WITH A GROUNDING CONDUCTOR MAY BE USED WHERE PERMITTED BY BOTH THE N.E.C. AND LOCAL ORDINANCES.
31. DISCONNECT SWITCHES SHALL BE GENERAL DUTY TYPE, FUSIBLE SWITCHES SHALL ACCEPT CLASS 'R' FUSES ONLY AND REJECT ALL OTHERS.
32. FINAL CONNECTIONS TO VIBRATING EQUIPMENT SHALL BE WITH FLEX (LIQUIDTIGHT FOR EXTERIOR APPLICATIONS) AND APPROVED FITTINGS. DO NOT SECURE CONDUITS, DISCONNECTS OR DEVICES TO DUCTWORK OR MECHANICAL EQUIPMENT.
33. THE ENGINEER OF RECORD HAS PERFORMED SHORT CIRCUIT CALCULATIONS AND THE AIC RATINGS INDICATED FOR EACH DEVICE IS ADEQUATE TO PROTECT THE EQUIPMENT AND THE ELECTRICAL SYSTEM.
34. THE ENGINEER OF RECORD HAS PERFORMED VOLTAGE DROP CALCULATIONS AND ALL BRANCH CIRCUITS AND FEEDERS COMPLY WITH NEC 210-19(A) FPN NO.4.
35. THE CONTRACTOR SHALL PROVIDE 120V CONNECTION TO NEAREST MAINTENANCE RECEPTACLE WHERE REQUIRED FOR CONDENSATE PUMPS ASSOCIATED WITH FAN COIL UNITS. COORDINATE WITH MECHANICAL CONTRACTOR.
36. THE CONTRACTOR SHALL COORDINATE THE SPECIFIC LOCATION, MOUNTING HEIGHT, ROTATION, TYPE, COLOR, ETC. OF ALL DEVICES PRIOR TO INSTALLATION.
37. CONNECTIONS TO HYDROMASSAGE BATHTUBS, JACUZZI TUBS OR SIMILAR EQUIPMENT SHALL BE MADE IN ACCORDANCE WITH ARTICLE 680.70 OF THE NEC. PROVIDE BONDING AS REQUIRED BY ARTICLE 680.74 OF THE NEC.
38. ALL INDOOR FLUORESCENT FIXTURES THAT UTILIZE DOUBLE-ENDED LAMPS AND CONTAIN BALLAST(S) THAT CAN BE SERVICED IN PLACE OR BALLASTED LUMINAIRES THAT ARE SUPPLIED FROM MULTIWIRE BRANCH CIRCUITS AND CONTAIN BALLAST(S) THAT CAN BE SERVICED IN PLACE SHALL COMPLY WITH 410.73 (G) OF THE NEC.
39. CEILING MOUNTED SMOKE AND CARBON MONOXIDE DETECTORS PER NFPA 72, SECTION R31.4 MUST COMPLY WITH U.L. 2075 AND SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURERS SPECIFICATIONS.
40. ALL SMOKE DETECTORS AND COMBINATION SMOKE/CARBON MONOXIDE DETECTORS SHALL BE HARDWIRED ON SAME CIRCUIT AND HAVE A BATTERY BACKUP SYSTEM.
41. WHEN MORE THAN EITHER ONE (1) SMOKE ALARM OR MORE THAN ONE (1) CARBON MONOXIDE ALARM IS REQUIRED TO BE INSTALLED WITHIN AN INDIVIDUAL DWELLING UNIT, ALL ALARM DEVICES SHALL BE INTERCONNECTED IN SUCH A MANNER THAT THE ACTUATION OF ONE ALARM WITH ACTIVATE ALL OF THE ALARMS IN THE INDIVIDUAL UNIT. SMOKE AND CARBON MONOXIDE ALARMS SHALL BE INSTALLED IN THE FOLLOWING LOCATIONS. (IRC SECTION R31.43 AS AMENDED)

A. SMOKE ALARMS IN EACH SLEEPING ROOM.

B. SMOKE ALARMS OUTSIDE OF EACH SEPARATE SLEEPING AREA IN THE IMMEDIATE VICINITY OF THE BEDROOMS.

C. SMOKE ALARMS ON EACH ADDITIONAL STORY OF THE DWELLING INCLUDING BASEMENTS BUT NOT INCLUDING CRAWL SPACE AND UNINHABITABLE ATTICS. IN DWELLINGS OR DWELLING UNITS WITH SPLIT LEVELS AND WITHOUT AN INTERVENING DOOR BETWEEN THE ADJACENT LEVELS, A SMOKE ALARM INSTALLED ON THE UPPER LEVEL SHALL SUFFICE FOR THE ADJACENT LOWER LEVEL PROVIDED THAT THE LOWER LEVEL IS LESS THAN ONE FULL STORY BELOW THE UPPER LEVEL.

D. CARBON MONOXIDE ALARMS OUTSIDE OF SLEEPING AREAS IN THE IMMEDIATE VICINITY OF THE BEDROOMS IN DWELLING UNITS WITHIN WHICH FUEL-FIRED APPLIANCES ARE INSTALLED AND IN DWELLING UNITS THAT HAVE ATTACHED GARAGES.

E. CARBON MONOXIDE ALARMS WITHIN EACH BEDROOM WHICH CONTAINS A FUEL-FIRED APPLIANCE.
43. ALL BRANCH CIRCUITS THAT SUPPLY 125-VOLT, SINGLE PHASE, 16 AND 20 AMP BRANCH CIRCUITS SUPPLYING OUTLETS INSTALLED IN DWELLING UNIT FAMILY ROOMS, DINING ROOMS, LIVING ROOMS, PARLORS, LIBRARIES, DENS, BEDROOMS, SUNROOMS, RECREATION ROOMS, CLOSETS, HALLWAYS, OR SIMILAR ROOMS OR AREAS SHALL BE PROTECTED BY A LISTED ARC-FAULT CIRCUIT INTERRUPTER, COMBINATION-TYPE, INSTALLED TO PROVIDE PROTECTION OF THE BRANCH CIRCUIT. NEC ARTICLE 210.12 (A).
44. ALL ATTIC ACCESSES SHALL BE PROVIDED WITH A SWITCHED LIGHT AND 120 VOLT GFI OUTLET AT OR NEAR THE FORCED AIR UNIT. LOCATE LIGHT SWITCH AT THE ATTIC ACCESS OPENING.

- NOTES:
1. FIXTURES SHALL HAVE APPROPRIATE U.L. LABEL (i.e., DAMP OR WET) AS REQUIRED BY CODES AND ORDINANCES.
2. FIXTURES SHALL INCLUDE ALL ACCESSORIES NECESSARY FOR INSTALLATION ACCORDING TO MANUFACTURER'S SHOP DRAWINGS AND AS REQUIRED BY CODES AND LOCAL ORDINANCES.
3. PRIOR TO ORDERING ANY LIGHTING EQUIPMENT, THE CONTRACTOR SHALL COORDINATE ALL FIXTURE LOCATIONS WITH ARCHITECTURAL REFLECTED CEILING PLANS AND CEILING CAVITY DEPTHS.
4. ALL LAMPS SHALL BE PROVIDED AND INSTALLED ACCORDING TO THE ATTACHED FIXTURE SCHEDULE AND SPECIFICATIONS ENSURE COMPATIBILITY BETWEEN FIXTURE, LAMP(S) AND BALLAST(S). (OSRAM SYLVANIA SERIES)
5. CONTRACTOR SHALL VERIFY FIXTURE VOLTAGES AND CEILING TRIM COMPATIBILITY PRIOR TO ORDERING FIXTURE.
6. PROVIDE APPROVED FIRE-RATED ENCLOSURES FOR ALL LIGHTING FIXTURES LOCATED IN FIRE-RATED CEILINGS.
7. LIGHTING FIXTURE CATALOG NUMBERS ARE SERIES TYPE ONLY. PROVIDE ALL NECESSARY HARDWARE AS REQUIRED BY THE SPECIFICATIONS, DRAWINGS, AND PROJECT CONDITIONS FOR A COMPLETE INSTALLATION.
8. ALL FIXTURES SHALL BE ORDERED WITH APPROPRIATE BALLAST(S) THAT HAVE U.L. AND CB. LABELS. ALL BALLASTS MUST CONFORM TO TITLE 24 AND/OR IECC REQUIREMENTS FOR PERFORMANCE. PROVIDE MULTIPLE BALLASTS FOR DUAL LEVEL SWITCHING AND WIRING (i.e., TANDEM) AS INDICATED ON THE PLANS.
9. UPON INITIAL ENERGIZING OF ALL NEW FLUORESCENT LAMPS, A CONTINUOUS PERIOD OF 30 HOURS SHALL OCCUR PRIOR TO DE-ENERGIZING OF LAMPS FOR MANUFACTURER REQUIRED
10. ALL FLUORESCENT BALLASTS SHALL BE ELECTRONIC TYPE, PROVIDE END OF LIFE (EOL) SHUT-DOWN PROTECTION FOR COMPACT FLUORESCENT LAMPS.
11. ENSURE COMPATIBILITY OF ALL LIGHTING SYSTEM COMPONENTS, ESPECIALLY DIMMED SYSTEMS, FIXTURES, LAMPS, BALLAST(S), AND DIMMING SYSTEMS/INDIVIDUAL CONTROLS MUST BE FACTORY CERTIFIED
12. COMPATIBLE FOR FULL RANGE OF DIMMING COMPATIBILITY.
13. PROVIDE CLEARANCES FROM COMBUSTIBLES, A MINIMUM OF 3/4" (OTHER THAN AT POINTS OF SUPPORT) AND 3" FROM INSULATION FOR RECESSED LIGHTING FIXTURES WHICH ARE NON-IC RATED.
14. FIXTURES WITH EMERGENCY BATTERY BACKUP SHALL BE WIRED AHEAD OF ANY LOCAL SWITCHING IN COMPLIANCE WITH NEC ARTICLE 700.
15. EMERGENCY LIGHTING UNITS SHALL BE EQUIPPED WITH FACTORY-INSTALLED INTEGRAL TEST SWITCHES.
16. PROVIDE DOOR-TO-FRAME AND LENS-TO-DOOR GASKETING, INVERTED LENS, AND FOOD SERVICE RATING FOR ALL FIXTURES LOCATED IN FOOD SERVICE AREAS.
17. FLUORESCENT LUMINAIRES THAT UTILIZE DOUBLE-ENDED LAMPS AND CONTAIN BALLAST(S) THAT CAN BE SERVICED IN PLACE, OR BALLASTED LUMINAIRES THAT ARE SUPPLIED FROM MULTI-WIRE BRANCH CIRCUITS AND CONTAIN BALLAST(S) THAT CAN BE SERVICED IN PLACE, SHALL HAVE DISCONNECTING MEANS EITHER INTERNAL OR EXTERNAL TO EACH LUMINAIRE SO TO DISCONNECT SIMULTANEOUSLY FROM THE SOURCE OF SUPPLY ALL CONDUCTORS OF THE BALLAST (INCLUDING THE GROUNDED CONDUCTOR IF ANY). IN ACCORDANCE WITH NEC ARTICLE 410, THE LINE-SIDE TERMINALS OF THE DISCONNECTING MEANS SHALL BE LOCATED SO AS TO BE ACCESSIBLE TO QUALIFIED PERSONS BEFORE SERVICING OR MAINTAINING THE BALLAST.
18. ALL FLUORESCENT LAMPS SHALL BE OF A LOW MERCURY DESIGN, HAVE A MINIMUM CRI RATING OF 85 AND 3500K COLOR TEMPERATURE UNLESS NOTED OTHERWISE.

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REV. NO	DESCRIPTION	DATE	BY
0	PERMIT SET	12.29.22	MN

PROJECT:

CLEO

TITLE:

115 E1.01 ELEC. SPECS

PROJ. NO.

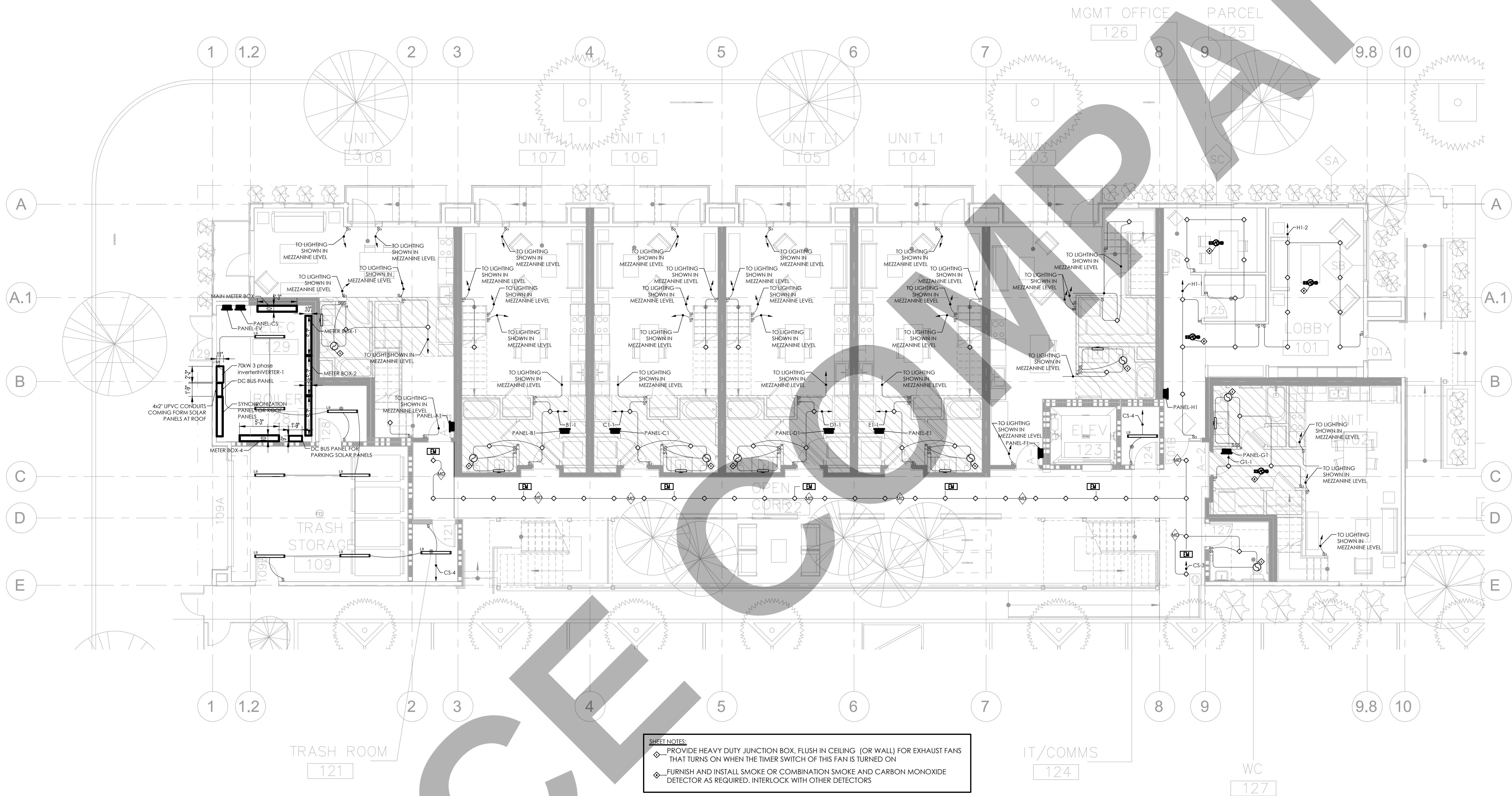
SCALE @ 24X36:

NTS

DRAWING NO.

REV.

E 1 . 0 1



NOTES:
◆ PROVIDE HEAVY DUTY JUNCTION BOX, FLUSH IN CEILING (OR WALL) FOR EXHAUST FANS THAT TURNS ON WHEN THE TIMER SWITCH OF THIS FAN IS TURNED ON.
◆ FURNISH AND INSTALL SMOKE OR COMBINATION SMOKE AND CARBON MONOXIDE DETECTOR AS REQUIRED. INTERLOCK WITH OTHER DETECTORS

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REV. NO	DESCRIPTION	DATE	BY
0	PERMIT SET	12.29.22	MN

PROJECT:

CLEO

TITLE:
117 E2.01 LIGHTING LAYOUT
LEVEL 01

PROJ. NO.

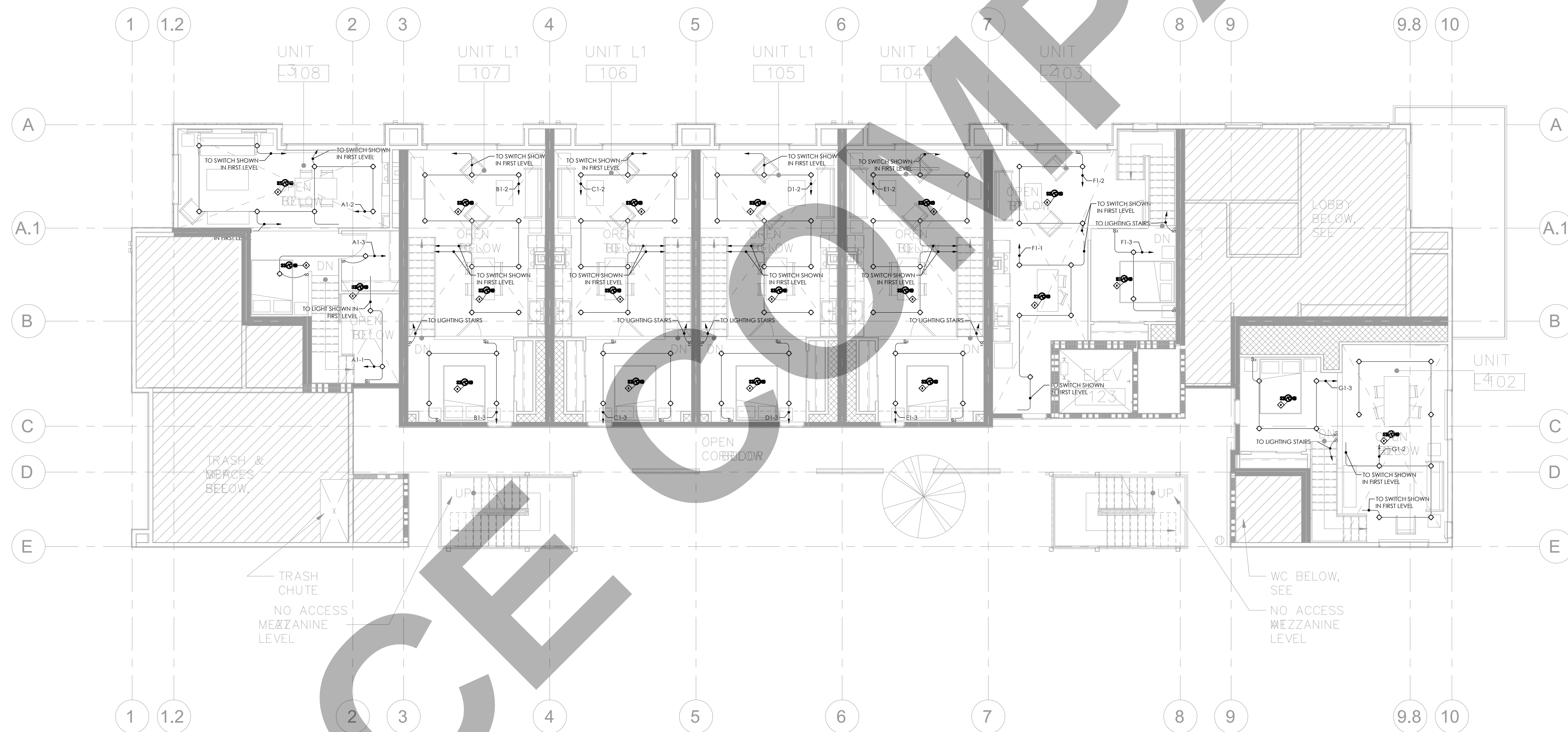
SCALE @ 24X36:

1/8"=1'-0"

DRAWING NO.

REV.

E 2 . 0 1



SHEET NOTES:

- PROVIDE HEAVY DUTY JUNCTION BOX, FLUSH IN CEILING (OR WALL) FOR EXHAUST FANS THAT TURNS ON WHEN THE TIMER SWITCH OF THIS FAN IS TURNED ON
- FURNISH AND INSTALL SMOKE OR COMBINATION SMOKE AND CARBON MONOXIDE DETECTOR AS REQUIRED, INTERLOCK WITH OTHER DETECTORS

CLIENT:

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REV. NO	DESCRIPTION	DATE	BY
0	PERMIT SET	12.29.22	MN

PROJECT:

CLEO

TITLE:

118 E2.02 LIGHTING
LAYOUT MEZZ

PROJ. NO.

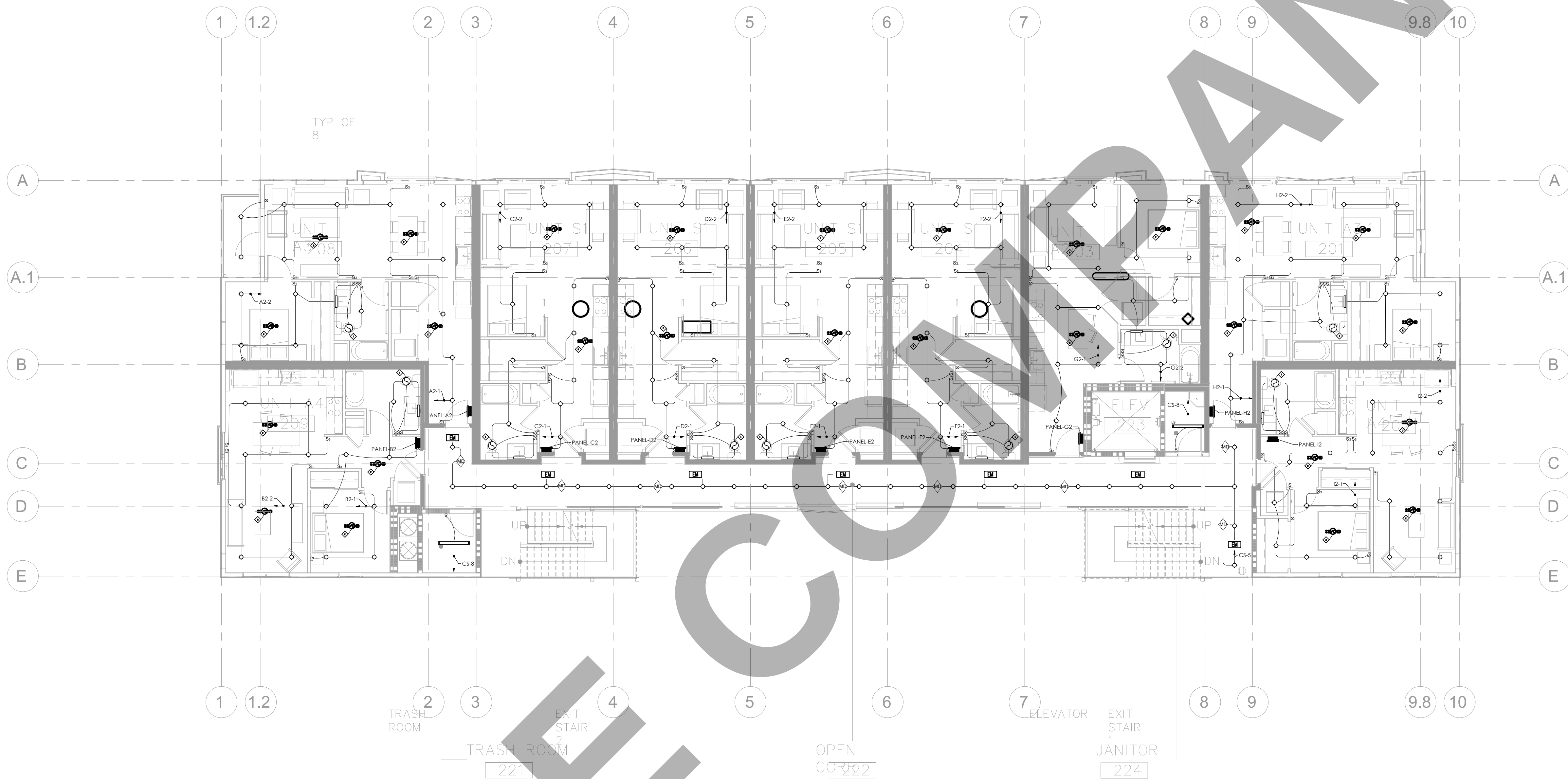
SCALE @ 24X36:

1/8"=1'-0"

DRAWING NO.

E 2 . 0 2

REV.



SHEET NOTES:
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REV. NO	DESCRIPTION	DATE	BY
0	PERMIT SET	12.29.22	MN

PROJECT:

CLEO

TITLE:

119 E2.03 LIGHTING LAYOUT
LEVEL 02

PROJ. NO.

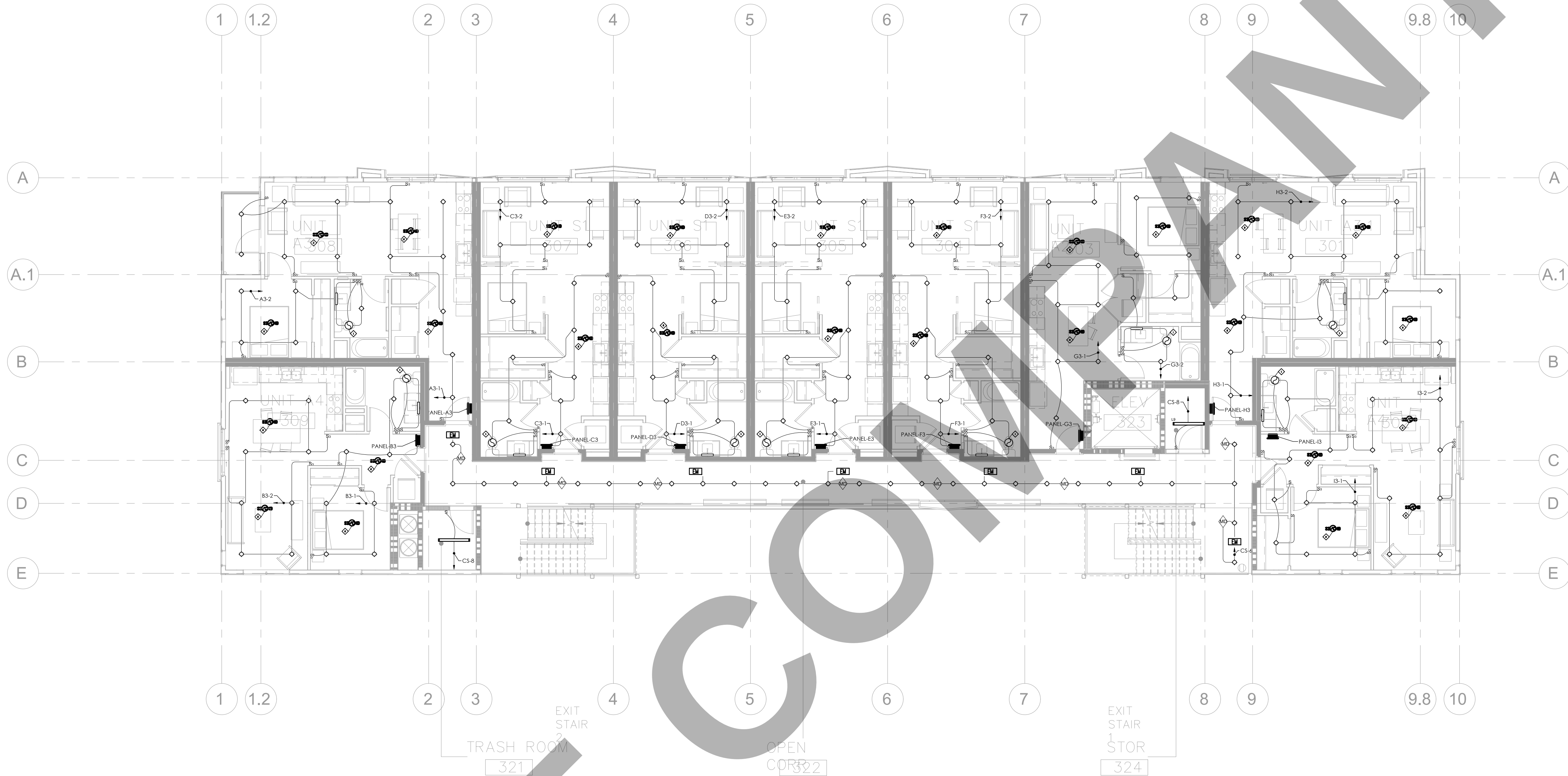
SCALE @ 24X36:

1/8"=1'-0"

DRAWING NO.

REV.

E 2 . 0 3



SHEET NOTES:

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- ◆ FURNISH AND INSTALL SMOKE OR COMBINATION SMOKE AND CARBON MONOXIDE DETECTOR AS REQUIRED, INTERLOCK WITH OTHER DETECTORS

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REV. NO	DESCRIPTION	DATE	BY
0	PERMIT SET	12.29.22	MN

PROJECT:

CLEO

TITLE:
120 E2.04 LIGHTING LAYOUT
LEVEL 03

PROJ. NO.

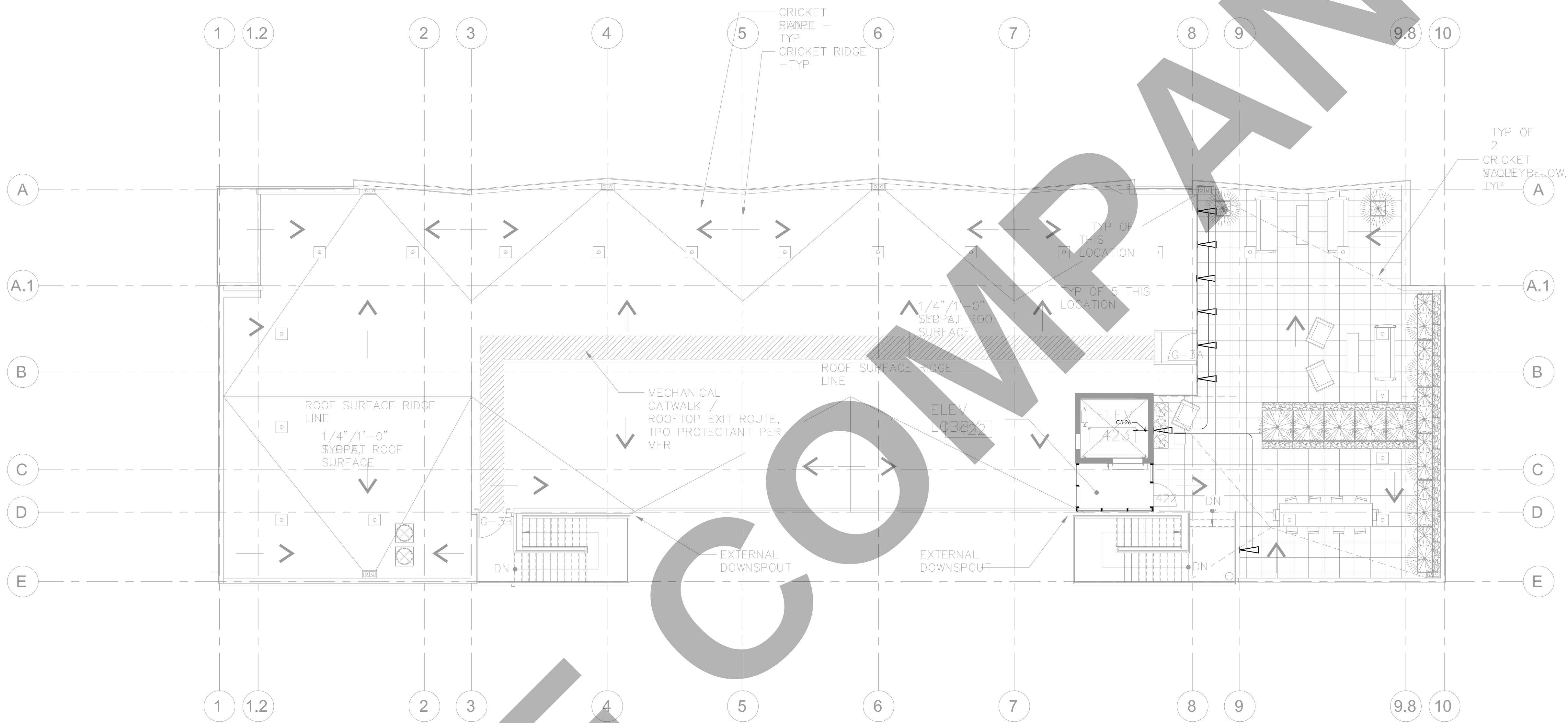
SCALE @ 24X36:

1/8"=1'-0"

DRAWING NO.

REV.

E 2 . 0 4



CLIENT:

ADDRESS:

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REV. NO.	DESCRIPTION	DATE	BY
0	PERMIT SET	12.29.22	MN

PROJECT:

CLEO

TITLE:
122 E2.06 LIGHTING
LAYOUT ROOF

PROJ. NO.

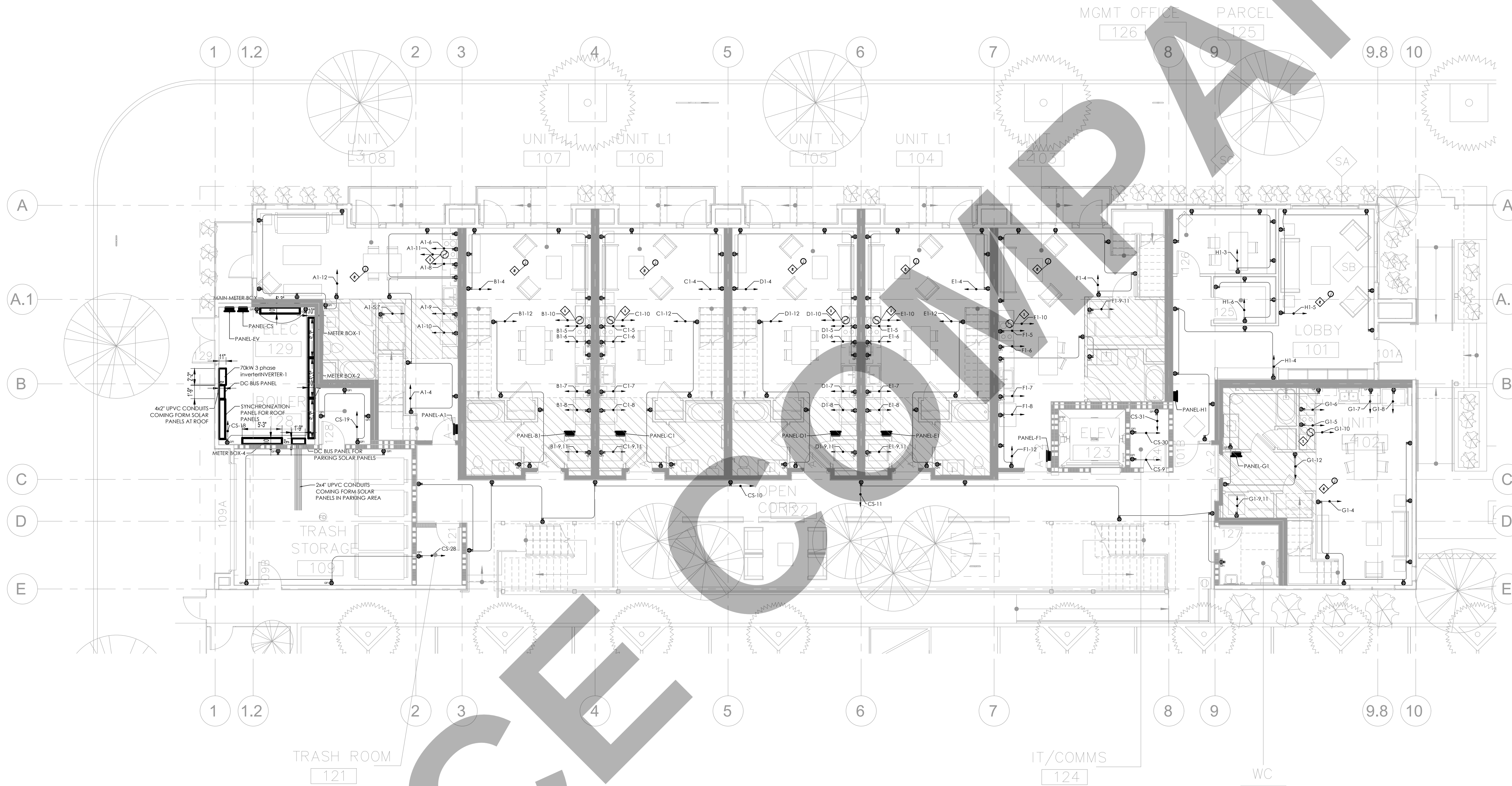
SCALE @ 24X36:

1/8"=1'-0"

DRAWING NO.

REV.

E 2 . 0 6



SHEET NOTES:

- ◇ PROVIDE HEAVY DUTY JUNCTION BOX, FLUSH IN CEILING (OR WALL) FOR KEF THAT TURNS ON WHEN THE TIMER SWITCH OF THIS FAN IS TURNED ON.
- ◇ PROVIDE HEAVY DUTY JUNCTION BOX, FLUSH IN CEILING FOR INDOOR UNITS CONNECTED TO OUTDOOR UNITS.

GENERAL NOTES:

1. AFCI" (Arc-Fault Circuit Interrupter) to be provided at ALL OUTLETS (receptacles, lights, etc.) in kitchens, family rooms, dining rooms, living rooms, parlors, libraries, dens, bedrooms, sunrooms, recreation rooms, closets, hallways, laundry areas, or similar rooms or areas. (CEC section 210.12)
2. All dwelling unit receptacle outlets shall be listed "Tamper-resistant" receptacles.

CLIENT:

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REV. NO	DESCRIPTION	DATE	BY
0	PERMIT SET	12.29.22	MN

PROJECT:

CLEO

TITLE:

123 E3.00 POWER LAYOUT
LEVEL 01

PROJ. NO.

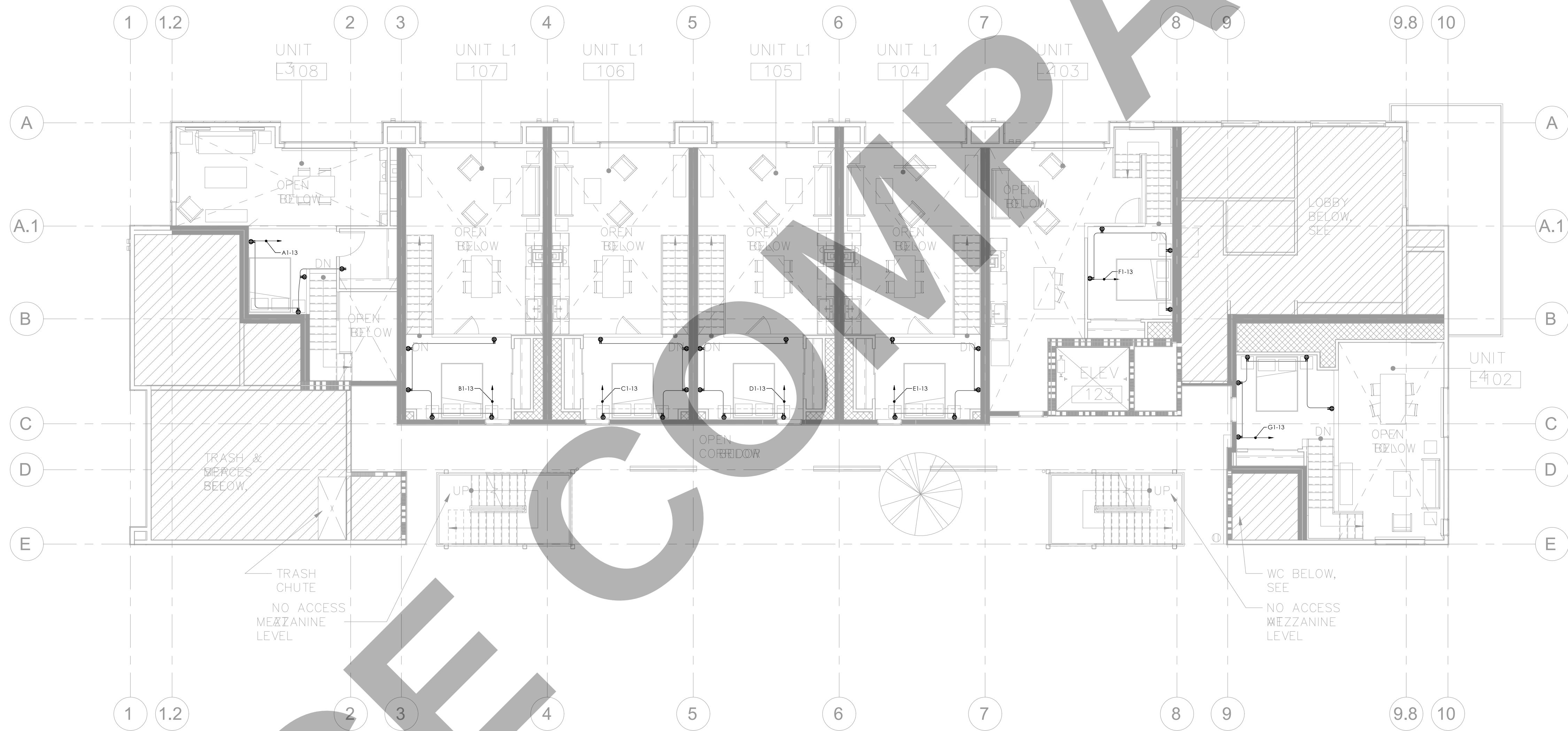
SCALE @ 24X36:

1/8"=1'-0"

DRAWING NO.

E 3 . 0 0

REV.



GENERAL NOTES:

1. AFCI" (Arc-Fault Circuit Interrupter) to be provided at ALL OUTLETS (receptacles, lights, etc.) in kitchens, family rooms, dining rooms, living rooms, parlors, libraries, dens, bedrooms, sunrooms, recreation rooms, closets, hallways, laundry areas, or similar rooms or areas. (CEC section 210.12)
2. All dwelling unit receptacle outlets shall be listed "Tamper-resistant" receptacles.

CLIENT:

ADDRESS:

929 18TH ST
BAKERSFIELD, CA 93301

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REV. NO.	DESCRIPTION	DATE	BY
0	PERMIT SET	12.29.22	MN

PROJECT:

CLEO

TITLE:

124 E3.01 POWER LAYOUT MEZZ

PROJ. NO.

SCALE @ 24X36:

1/8"=1'-0"

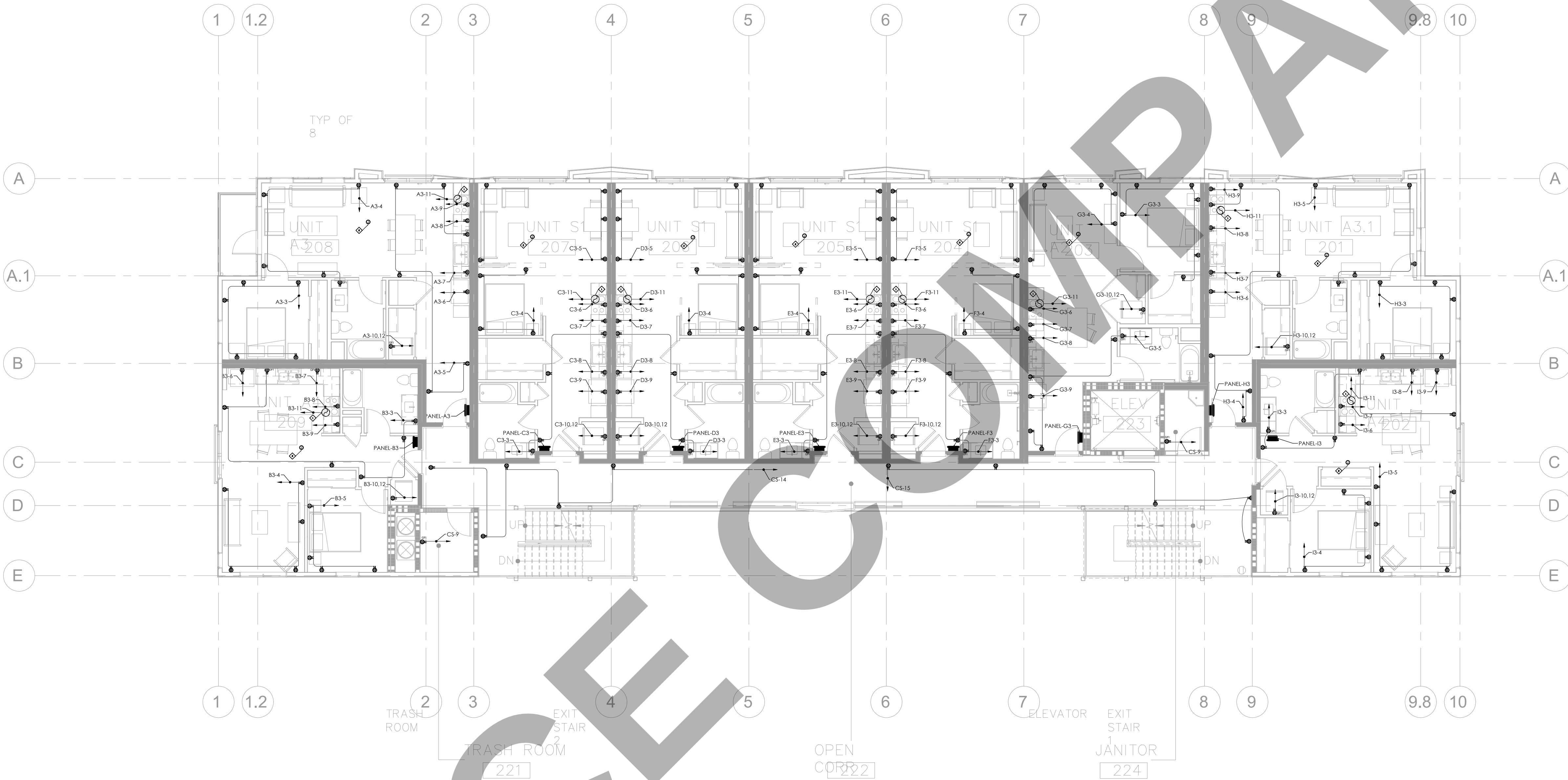
DRAWING NO.

REV.

E 3 . 0 1

GENERAL NOTES:

1. AFCI" (Arc-Fault Circuit Interrupter) to be provided at ALL OUTLETS (receptacles, lights, etc.) in kitchens, family rooms, dining rooms, living rooms, parlors, libraries, dens, bedrooms, sunrooms, recreation rooms, closets, hallways, laundry areas, or similar rooms or areas. (CEC section 210.12)
- 2.All dwelling unit receptacle outlets shall be listed "Tamper-resistant" receptacles.



SHEET NOTES:

- ◇ PROVIDE HEAVY DUTY JUNCTION BOX, FLUSH IN CEILING (OR WALL) FOR KEF THAT TURNS ON WHEN THE TIMER SWITCH OF THIS FAN IS TURNED ON.
- ◇ PROVIDE HEAVY DUTY JUNCTION BOX, FLUSH IN CEILING FOR INDOOR UNITS CONNECTED TO OUTDOOR UNITS

CLIENT:

ADDRESS:

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BAKERSFIELD, CA 93301

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REV. NO	DESCRIPTION	DATE	BY
0	PERMIT SET	12.29.22	MN

PROJECT:

CLEO

TITLE:

125 E3.02 POWER LAYOUT
LEVEL 02

PROJ. NO.

SCALE @ 24X36:

1/8"=1'-0"

DRAWING NO.

E 3 . 0 2

REV.

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Architectural floor plan of a building floor, showing units 301 through 308, elevators, stairs, and various rooms. The plan includes a grid system with columns 1 through 10 and rows A through E. Units are labeled with their respective numbers and room layouts. Common areas include a trash room, open corridor, and exit stairs. The plan is overlaid with a large 'COPY' watermark.

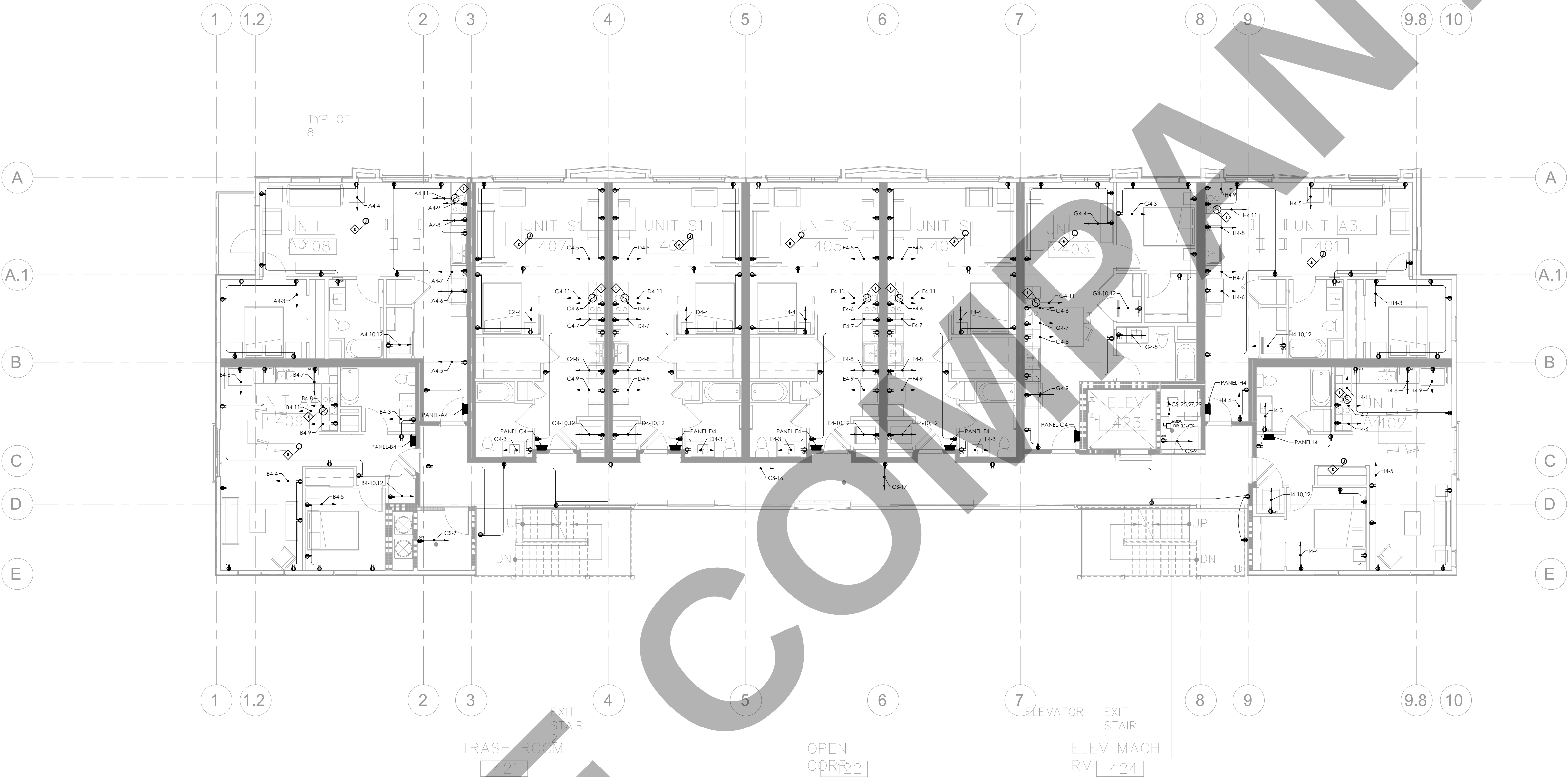
- ① PROVIDE HEAVY DUTY JUNCTION BOX, FLUSH IN CEILING (OR WALL) FOR KEF THAT TURNS ON WHEN THE TIMER SWITCH OF THIS FAN IS TURNED ON
- ② PROVIDE HEAVY DUTY JUNCTION BOX, FLUSH IN CEILING FOR INDOOR UNITS CONNECTED TO OUTDOOR UNITS

E 3 . 0 3

GENERAL NOTES:

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2.All dwelling unit receptacle outlets shall be listed "Tamper-resistant" receptacles.



- SHEET NOTES:
- ◇ PROVIDE HEAVY DUTY JUNCTION BOX, FLUSH IN CEILING (OR WALL) FOR KEF THAT TURNS ON WHEN THE TIMER SWITCH OF THIS FAN IS TURNED ON
 - ◇ PROVIDE HEAVY DUTY JUNCTION BOX, FLUSH IN CEILING FOR INDOOR UNITS CONNECTED TO OUTDOOR UNITS

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REV. NO	DESCRIPTION	DATE	BY
0	PERMIT SET	12.29.22	MN

PROJECT:

CLEO

TITLE:

127 E3.04 POWER LAYOUT
LEVEL 04

PROJ. NO.

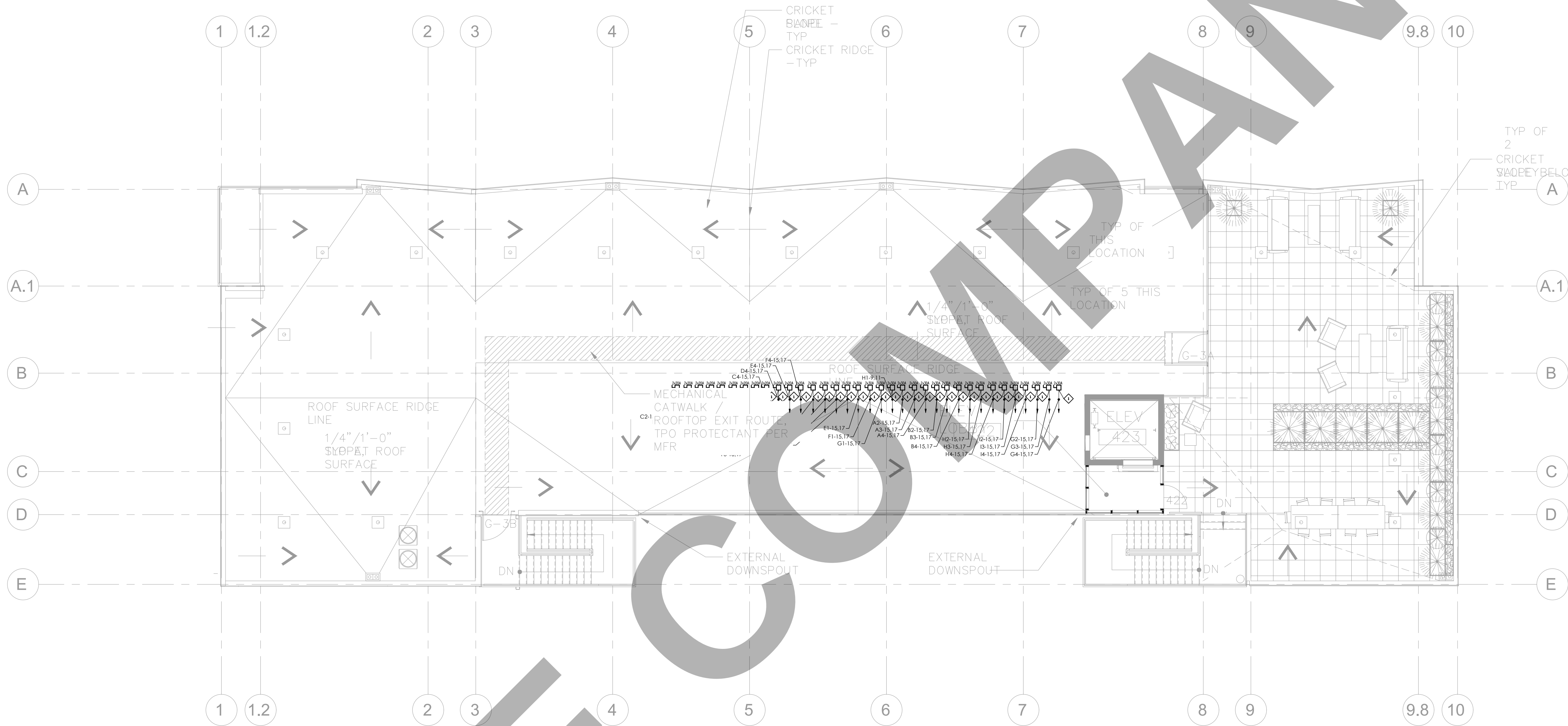
SCALE @ 24X36:

1/8"=1'-0"

DRAWING NO.

E 3 . 0 4

REV.



SHEET NOTES:
◇ PROVIDE NEMA 3R DISCONNECT SWITCH FOR OUTDOOR UNITS PLACED ON ROOF

CLIENT:

ADDRESS:

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REV. NO	DESCRIPTION	DATE	BY
0	PERMIT SET	12.29.22	MN

PROJECT:

CLEO

TITLE:
128 E3.05 POWER LAYOUT ROOF

PROJ. NO.

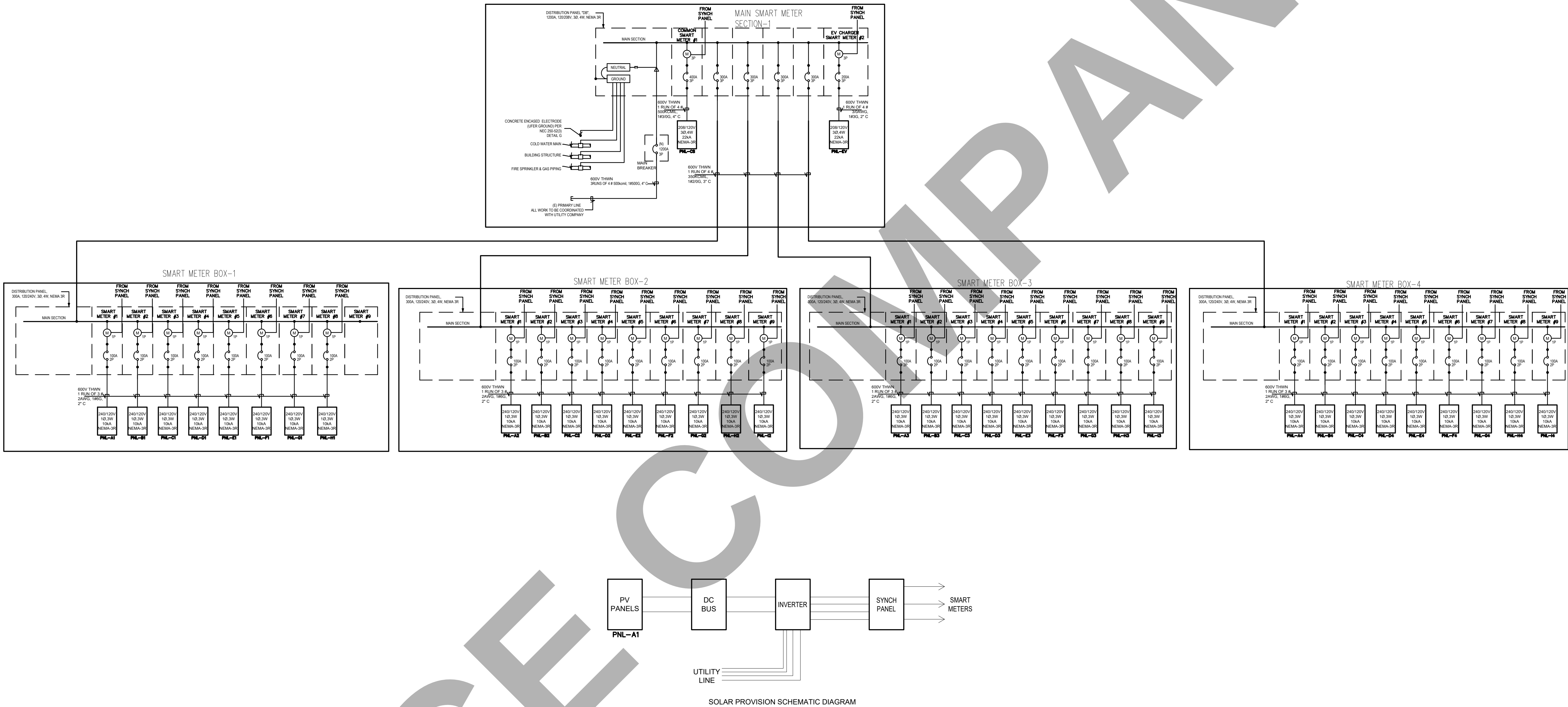
SCALE @ 24X36:

1/8"=1'-0"

DRAWING NO.

REV.

E 3 . 0 5



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REV. NO	DESCRIPTION	DATE	BY
0	PERMIT SET	12.29.22	MN

PROJECT:

CLEO

TITLE:
129 E4.00 SINGLE LINE DIAGRAM

PROJ. NO.

SCALE @ 24X36:

NTS

DRAWING NO.

REV.

E 4 . 0 0

PANEL E1 PANELBOARD DESIGNATION			
SYSTEM VOLTAGE		240/120V, 1ø, 3W	
BUS SIZE		100A	
SYSTEM TYPE		NORMAL	
FEEDER PROT		100A-1P C/B Bus Plug	
CONDUCTOR SIZE		2 AWG - #6G CU	
CONDUCTOR/PHASE		1	
MAINS		100A MCB	
SCOR		FULLY RATED	
IMB RATING		80%	
GROUND FAULT		NO	
FEEDER LENGTH (FT)		100	
FEEDER V. DROP (%)		1.620	
FAULT CURRENT			
KAIC RATING		10	
ENCLOSURE		TYPE 1	

PANEL F1			
PANELBOARD DESIGNATION			
SYSTEM VOLTAGE		240/120V, 1ϕ, 3W	
BUS SIZE		100A	
SYSTEM TYPE		NORMAL	
FEEDER PROT		100A-1P C/B Bus Plug	
CONDUCTOR SIZE		2 AWG - #6G CU	
CONDUCTOR/PHASE		1	
MAINS		100A MCB	
SCCR		FULLY RATED	
MCB RATING		80%	
GROUND FAULT		NO	
FEEDER LENGTH (Ft)		100	
FEEDER V. DROP (%)		1.620	
FAULT CURRENT			
KAIC RATING		10	
ENCLOSURE		TYPE 1	

A	CB	DESCRIPTION	*
	15A-1P	LIGHTING LIVING - STAIRS	L 2
	20A-1P	RECEPTACLES LIVING	R 4
	20A-1P	MICROWAVE	K 6
	20A-1P	FRIDGE	K 8
	20A-1P	KEF	A 10
	20A-1P	RECEPTACLES ENTRANCE - BATHROOM - KITCHEN	R 12
		SPACE	14
		SPACE	16
		SPACE	18

Updated	
---------	--

CLIENT:

ADDRESS:

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REV. NO	DESCRIPTION	DATE	BY
0	PERMIT SET	12.29.22	MN

PROJECT:

CLEO

TITLE:
**130 E5.00 PANEL BOARD
SCHEDULE 01**

PROJ. NO.

SCALE @ 24X36:

NTS

DRAWING NO

REV.

E 5 . 0 0

PANEL G1 PANELBOARD DESIGNATION	
SYSTEM VOLTAGE	240/120V, 1 ϕ , 3W
BUS SIZE	100A
SYSTEM TYPE	NORMAL
FEEDER PROT	100A-1/2 C/B Bus Plug
CONDUCTOR SIZE	2 AWG - #6G CU
CONDUCTOR/PHASE	1
MAINS	100A MCB
SCCR	FULLY RATED
MCB RATING	80%
GROUND FAULT	NO
FEEDER LENGTH (FT)	100
FEEDER V. DROP (%)	1.620
FAULT CURRENT	
KAIC RATING	10
ENCLOSURE	TYPE 1

Updated

DESCRIPTION		*	CB	KVA	A	B	KVA	CB	DESCRIPTION	*
1	LIGHTING ENTRANCE - LIVING - DINING	L	15A-1P	0.23	0.40		0.18	15A-1P	LIGHTING BEDROOM - BATHROOM	L
3	RECEPTACLES BEDROOM	R	20A-1P	0.90		1.80	0.90	20A-1P	RECEPTACLES LIVING - BATHROOM	R
5	RECEPTACLES ENTRANCE - KITCHEN - DINING	R	20A-1P	1.08	1.58		0.50	20A-1P	FRIDGE	K
7	DISHWASHER	K	20A-1P	0.50		1.00	0.50	20A-1P	MICROWAVE	K
9	OVEN	K	40A-1P	4.00	5.60		1.80	20A-2P	LAUNDRY	K
11	KEF	A	20A-1P	0.03		1.63	1.60			K
13	SPARE		20A-1P						SPACE	14
15	OU - 1.5 TON	A		2.06		2.06			SPACE	16
17			30A-2P	2.06	2.06				SPACE	18
				(KVA)				Updated		
Total Connected Load				9.64	6.49					

	DESCRIPTION	#	CB	KVA	A	B	KVA	CB	DESCRIPTION	#
1	LIGHTING ENTRANCE - KITCHEN - BATHROOM	L	15A-1P	0.23	0.40		0.18	15A-1P	LIGHTING LIVING - BEDROOM	L 2
3	RECEPTACLES BATHROOM - KITCHEN	R	20A-1P	0.72		1.44	0.72	20A-1P	RECEPTACLES BEDROOM	R 4
5	RECEPTACLES LIVING	R	20A-1P	0.90	4.90		4.00	40A-1P	OVEN	K 6
7	MICROWAVE	K	20A-1P	0.50		1.00	0.50	20A-1P	DISHWASHER	K 8
9	FRIDGE	K	20A-1P	0.50	2.10		1.60	20A-2P	LAUNDRY	K 10
11	KEF	A	20A-1P	0.03		1.63	1.60			K 12
13		R	20A-1P						SPACE	14
15	OU - 1 TON	A		1.68		1.68			SPACE	16
17		A	20A-2P	1.68	1.68				SPACE	18
	(KVA)								Updated	
	Total Connected Load			9.06	5.78					



				CB	KVA	A	B	KVA	CB	DESCRIPTION	L	2
1	LIGHTING ENTRANCE - BATHROOM - BEDROOM	L	15A-1P	0.25	0.45			0.20	15A-1P	LIGHTING LIVING - DINING	L	2
3	RECEPTACLES BEDROOM	R	20A-1P	0.90		1.98	1.08	20A-1P		RECEPTACLES ENTRANCE - DINING	R	4
6	RECEPTACLES LIVING - BATHROOM	R	20A-1P	0.90	1.40		0.50	20A-1P		FRIDGE	K	6
7	DISHWASHER	K	20A-1P	0.50		1.00	0.50	20A-1P		MICROWAVE	K	8
9	OVEN	K	40A-1P	4.00	5.60		1.60	20A-2P			K	10
11	KEF	A	20A-1P	0.03		1.63	1.60			LAUNDRY	K	12
13			20A-1P							SPACE		14
16		A		2.00		2.00				SPACE		16
17	OU - 1.5 TON	A	30A-2P	2.00	2.00					SPACE		18
			(KVA)							Updated		
			Total Connected Load	9.51	6.67							

PANEL H1 PANELBOARD DESIGNATION	
SYSTEM VOLTAGE	240/120V, 1ø, 3W
BUS SIZE	100A
SYSTEM TYPE	NORMAL
FEEDER PROT	100A-1P C/B Bus Plug
CONDUCTOR SIZE	2 AWG - #86 CU
INDUCTOR/PHASE	1
MAINS	100A MCB
SCCR	FULLY RATED
MCB RATING	80%
GROUND FAULT	NO
FEEDER LENGTH (FT)	100
FEEDER V. DROP (%)	1.620
FAULT CURRENT	
KAIC RATING	10
ENCLOSURE	TYPE 1

Updated

	DESCRIPTION	*	CB	KVA	A	B	KVA	CB	DESCRIPTION
1	LIGHTING BEDROOM - BATHROOM	L	15A-1P	0.25	0.29		0.04	15A-1P	LIGHTING LIVING - DINING
3	RECEPTACLES BATHROOM - DINING	R	20A-1P	1.08		1.08	0.90	20A-1P	RECEPTACLES LIVING
5	RECEPTACLES BEDROOM	R	20A-1P	0.72	1.22		0.50	20A-1P	FRIDGE
7	DISHWASHER	K	20A-1P	0.50		1.00	0.50	20A-1P	OVEN
9	MICROWAVE	K	20A-1P	0.50	2.10		1.60		
11	KEF	A	20A-1P	0.03		1.63	1.60	20A-2P	LAUNDRY
13	SPARE		20A-1P						SPACE
15	OU - 1.5 TON	A	30A-2P	2.06		2.06			SPACE
17		A		2.06	2.06				SPACE
			(KVA)						Updated
			Total Connected Load	5.67	6.67				

		DESCRIPTION	* CB	KVA	A	B	KVA	CB	DESCRIPTION
L	2	1 LIGHTING ENTRANCE - DINING - LIVING	L 15A-1P	0.23	0.45		0.23	15A-1P	LIGHTING BEDROOM - BATHROOM
R	4	3 RECEPTACLES BEDROOM	R 20A-1P	1.08		1.98	0.90	20A-1P	RECEPTACLES LIVING
K	6	5 RECEPTACLES ENTRANCE - BATHROOM	R 20A-1P	0.90	4.90		4.00	40A-1P	OVEN
K	8	7 MICROWAVE	K 20A-1P	0.50		1.00	0.50	20A-1P	DISHWASHER
K	10	9 FRIDGE	K 20A-1P	0.50	2.10		1.60		
K	12	11 KEF	A 20A-1P	0.03		1.63	1.60	20A-2P	LAUNDRY
	14	13 SPARE	20A-1P						SPACE
	16	15 OU - 1.5 TON	A 30A-2P	2.06		2.06			SPACE
	18	17	A	2.06	2.06				SPACE
		(KVA)							Updated
		Total Connected Load		9.51	6.67				

		DESCRIPTION			* CB	KVA	A	B	KVA	CB	DESCRIPTION			*
L	2	1	LIGHTING ENTRANCE - BATHROOM - BEDROOM	L	15A-1P	0.28	0.48		0.20	15A-1P	LIGHTING LIVING - DINING	L	2	
R	4	3	RECEPTACLES BATHROOM - DINING	R	20A-1P	0.90		1.62	0.72	20A-1P	RECEPTACLES BEDROOM	R	4	
K	6	5	RECEPTACLES LIVING	R	20A-1P	0.90	1.40		0.50	20A-1P	MICROWAVE	K	6	
K	8	7	OVEN	K	40A-1P	4.00		4.50	0.50	20A-1P	DISHWASHER	K	8	
K	10	9	FRIDGE	K	20A-1P	0.50	2.10		1.60			K	10	
K	12	11	KEF	A	20A-1P	0.03		1.63	1.60	20A-2P	LAUNDRY	K	12	
	14	13	SPARE		20A-1P						SPACE		14	
	16	15	OU - 1.5 TON	A	30A-2P	2.06		2.06			SPACE		16	
	18	17		A		2.06	2.06				SPACE		18	
				(KVA)				Updated						
Total Connected Load						6.04	9.81							

Update

E 5 . 0 1

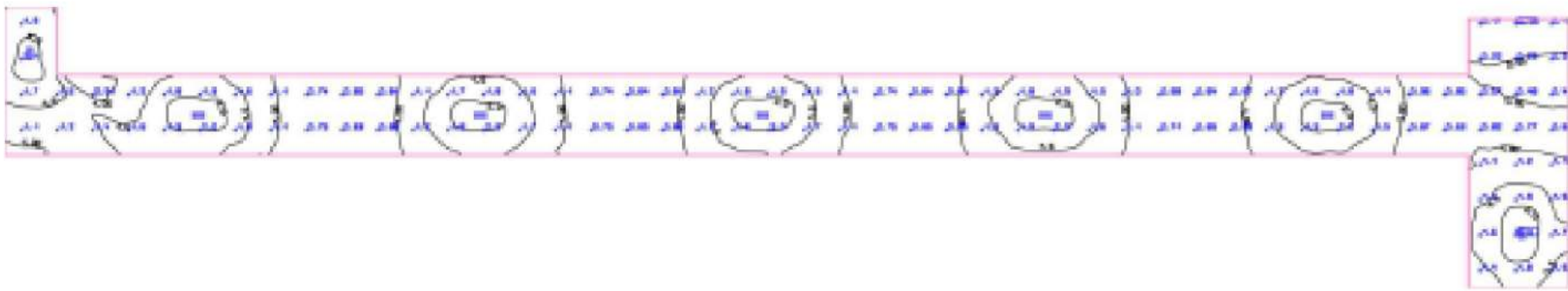
PROJECT:	
CLEO	
TITLE: 132 E5.02 MAIN PANEL BOARD SCHEDULE	
PROJ. NO.	SCALE @ 24X36: NTS
DRAWING NO. E 5 . 0 2	REV.

Emergency Lighting Calculation-Cleo

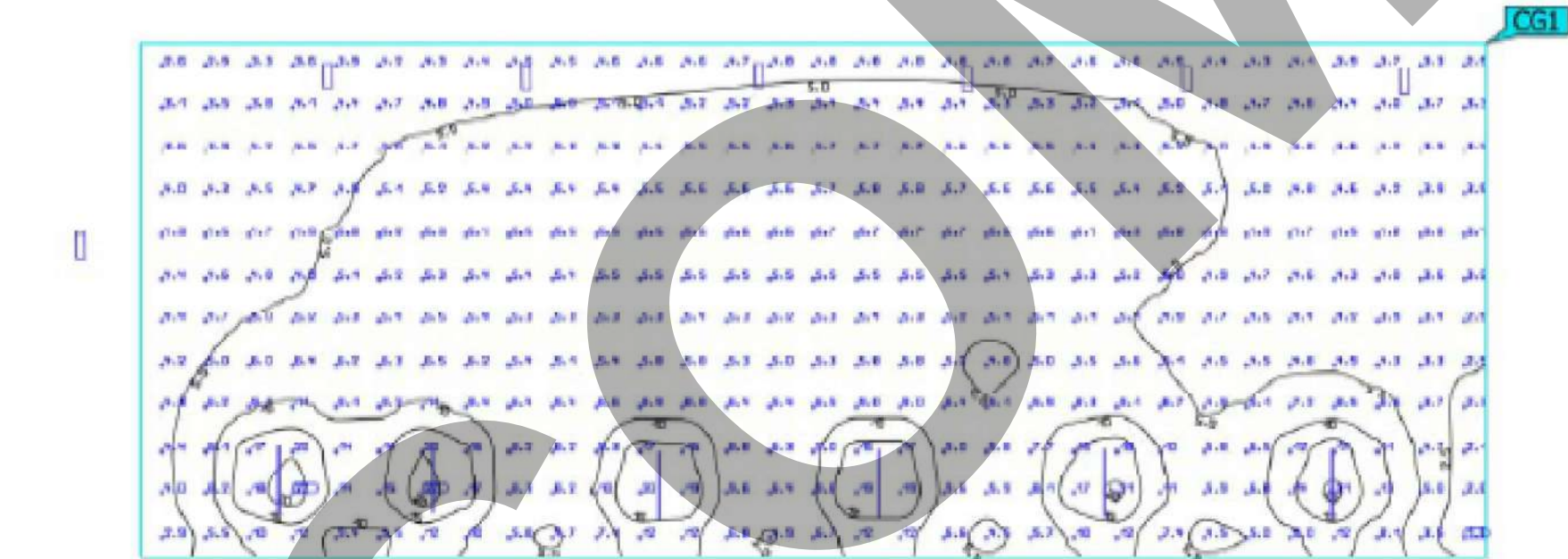
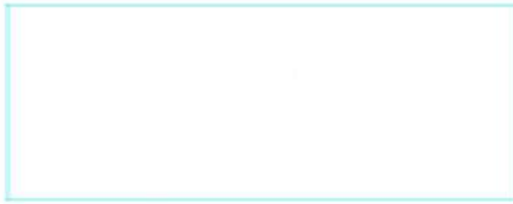
DIALux

CLEO

Building 1 · Story 1 · Room 1 (Emergency light scene)
Working plane (Room 1)



Site (Normal Light Scene)
Calculation surface 19



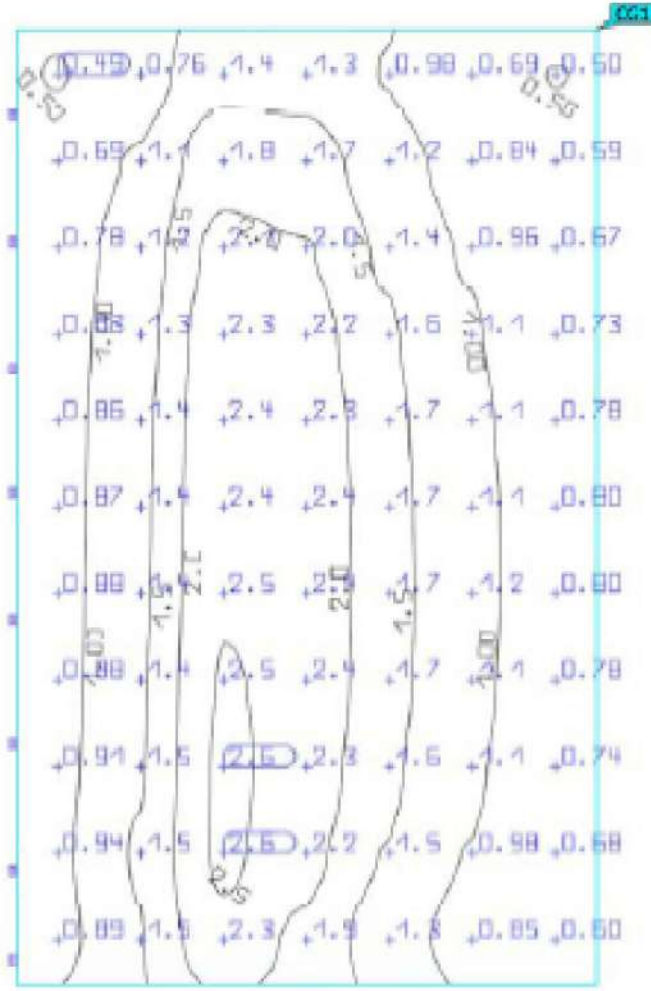
Properties	E	E _{min}	E _{max}	E/E _{min}	E _{max} /E _{min}	Index
Calculation surface 19 Perpendicular illuminance Height: 0.020 ft	6.51 fc	1.58 fc	21.8 fc	4.11	13.8	CG1

Utilization profile: DIALux preset, Default (Drive Aisles/Parking Areas)
Notes on planning:
The results were calculated without consideration of objects and furniture. No results were determined on their surfaces.

DIALux

CLEO Roof

Site 1 (Light scene 1)
Calculation surface 1



Properties	E	E _{min}	E _{max}	E/E _{min}	E _{max} /E _{min}	Index
Calculation surface 1 Perpendicular illuminance Height: 0.500 ft	1.38 fc	0.49 fc	2.57 fc	2.85	5.29	CG1

Utilization profile: DIALux preset, Default (Drive Aisles/Parking Areas)

DIALux

CLIENT:

ADDRESS:

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BAKERSFIELD, CA 93301

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REV. NO	DESCRIPTION	DATE	BY
0	PERMIT SET	12.29.22	MN

PROJECT:

CLEO

TITLE:
133 E6.00 PHOTOMETRIC
CALCULATION

PROJ. NO.

SCALE @ 24X36:

NTS

DRAWING NO.

REV.

E 6 . 0 0

PLUMBING SPECIFICATIONS

THE WORK INCLUDES MODIFICATION TO THE EXISTING PLUMBING SYSTEM AND PROVIDING NEW MATERIALS, FITTINGS AND ACCESSORIES NECESSARY FOR A COMPLETE FUNCTIONING PLUMBING SYSTEM. THE WORK ALSO INCLUDES ROUGH-IN AND FINAL CONNECTIONS TO FOOD SERVICE EQUIPMENT AND BEVERAGE DISPENSING EQUIPMENT PROVIDED BY OTHERS. ALL WORK SHALL BE IN ACCORDANCE WITH LOCAL CODES AND/OR ORDINANCES AND IS SUBJECT TO INSPECTION. HOOK-UP CHARGES, PERMITS AND ALL OTHER EXPENSES RELATED TO A COMPLETE AND FUNCTIONING PLUMBING SYSTEM ARE INCLUDED AS A PART OF THIS SECTION. WARRANTY: PROVIDE LABOR AND MATERIALS TO REPAIR OR REPLACE DEFECTIVE PARTS AND MATERIALS AS REQUIRED FOR ONE YEAR AFTER SUBSTANTIAL COMPLETION OR OWNER ACCEPTANCE OF THE COMPLETED PROJECT. PROVIDE A SEPARATE LINE ITEM DEDUCT AMOUNT ON THE PROPOSAL FORM TO DELETE WARRANTY SERVICE, AT THE OWNER'S OPTION. THE INTENT OF THE DRAWINGS IS TO INDICATE THE GENERAL EXTENT OF WORK REQUIRED FOR THE PROJECT. THE DRAWINGS FOR PLUMBING WORK ARE DIAGRAMMATIC, SHOWING THE GENERAL LOCATION, TYPE, FIXTURES AND EQUIPMENT REQUIRED. THE DRAWINGS SHALL NOT BE SCALED FOR EXACT MEASUREMENTS. REFER TO MANUFACTURER'S STANDARD ROUGH-IN DRAWINGS FOR PLUMBING FIXTURE INSTALLATION REQUIREMENTS. COMPLY WITH ALL APPLICABLE ADA INSTALLATION REQUIREMENTS. COORDINATE WITH THE WORK OF OTHER SECTIONS, EQUIPMENT FURNISHED BY OTHERS, AND WITH THE CONSTRAINTS OF THE EXISTING CONDITIONS OF THE PROJECT SITE. PIPING SYSTEMS - GENERAL: ALL PIPING SHALL BE RUN PARALLEL TO BUILDING LINES AND SUPPORTED AND ANCHORED AS REQUIRED TO FACILITATE EXPANSION AND CONTRACTION. ALL PIPING SHALL BE CONCEALED EXCEPT IN UNFINISHED SPACES. INSTALL AS REQUIRED TO MEET ALL CONSTRUCTION CONDITIONS AND TO ALLOW FOR INSTALLATION OF OTHER WORK SUCH AS DUCTS AND ELECTRICAL CONDUIT. AT ALL CONNECTIONS BETWEEN FERROUS PIPING AND NONFERROUS PIPING, PROVIDE AN ISOLATING DIALECTIC UNION. ALL HANGERS SHALL BE COMPATIBLE WITH PIPING MATERIAL TO PREVENT CORROSION. PROVIDE ALL FITTINGS, ACCESSORIES, OFFSETS, AND MATERIALS NECESSARY TO FACILITATE THE PLUMBING SYSTEM'S FUNCTIONING AS INDICATED BY THE DESIGN AND THE EQUIPMENT INDICATED. FIXTURES/EQUIPMENT FURNISHED BY OTHERS: PLUMBING CONTRACTOR SHALL PROVIDE UTILITY CONNECTIONS REQUIRED SUCH AS WATER, GAS, AIR, SUPPLIES, WASTE OUTLET, TRAPS, ETC. AT ALL PLUMBING TYPE FIXTURES OR EQUIPMENT FURNISHED BY OWNER, GENERAL CONTRACTOR, FOOD SERVICE CONTRACTOR, EQUIPMENT SUPPLIER, ETC. INCLUDED ARE STOP VALVES, ESCUTCHEONS, AND CHROME PLATED BRASS TUBING WITH COMPRESSION FITTINGS. SEWER AND WASTE PIPING: PROVIDE ALL DRAINS AND SEWERS WITHIN THE SPACE WITH CONNECTION TO THE EXISTING DRAINAGE SYSTEMS ON-SITE. SANITARY DRAINAGE PIPING ABOVE FLOOR SHALL BE CO-EXTRUDED PVC DWV (SCHEDULE 40) PIPE, FITTINGS AND CONNECTIONS. SANITARY DRAINAGE PIPING BELOW GRADE SHALL BE CO-EXTRUDED PVC DWV (SCHEDULE 40) PIPE WITH SOLVENT WELD FITTINGS MAY BE USED (WHERE PERMITTED BY CODE/LOCAL AUTHORITIES). ALL DRAINAGE PIPING SHALL BE UNIFORMLY PITCHED, 1/4" PER FOOT UNLESS OTHERWISE REQUIRED BY EXISTING CONDITIONS, OR INDICATED ON THE DRAWINGS. VENTS: PROVIDE A COMPLETE SYSTEM OF STANDARD WEIGHT CAST IRON NO-HUB VENT RISERS WHERE THE CEILING SPACE IS USED AS A RETURN AIR PLENUM OR USE CO-EXTRUDED PVC DWV (SCHEDULE 40) PIPE (WHERE PERMITTED BY CODE/LOCAL AUTHORITIES) WHERE THERE IS A DUCTED RETURN AIR SYSTEM. DO NOT USE PVC PIPE IN RETURN AIR PLENUM SPACES. THE VENT SYSTEM SHALL BE CARRIED THROUGH THE ROOF WITH APPROPRIATE FLASHING. CONDENSATE AND INDIRECT DRAIN PIPING: PIPING ABOVE FLOOR SHALL BE CO-EXTRUDED PVC DWV (SCHEDULE 40) PIPE, FITTINGS AND CONNECTIONS. PIPING BELOW GRADE SHALL BE CO-EXTRUDED PVC DWV (SCHEDULE 40) PIPE WITH SOLVENT WELD FITTINGS. CLEANOUTS: PROVIDE CLEANOUTS AT THE END OF EACH HORIZONTAL RUN, AND AT THE BASE OF ALL VERTICAL WASTE AND DRAIN PIPES. CLEANOUTS SHALL BE OF THE SAME SIZE AS THE PIPES THEY SERVE, CONFORMING TO CODE REQUIREMENTS. PROVIDE SUITABLE WALL OR FLOOR CLEANOUTS WITH ACCESSORIES TO OBSCURE FROM VIEW. WATER DISTRIBUTION PIPING: LAYOUT WATER PIPING SO THAT THE ENTIRE SYSTEM CAN BE DRAINED. HOT AND COLD WATER PIPING SHALL BE 1/2" MIN. CPVC PIPE WITH SOLVENT FITTING. PROVIDE WATER HAMMER ARRESTERS AT EACH FIXTURE OR GROUP OF FIXTURES AS REQUIRED. INSTALL CHROME PLATED BRASS ESCUTCHEON PLATES AT ALL PENETRATIONS THROUGH FINISHED SURFACES (INCLUDING CABINET INTERIORS). PIPE INSULATION: INSULATE (AS ALLOWED BY CODE) ALL LISTED SERVICE PIPING AS FOLLOWS. DOMESTIC COLD/HOT WATER, HOT WATER RETURN, STORM WATER PIPING. PROVIDE 1" PREFORMED FIBERGLASS, ASJ/SS-11, FLAME SPREAD 25, SMOKE DEVELOPED 50, ASTM C-547. FOR CONDENSATE PIPING PROVIDE 1/2" THICK INSULATION OF SAME CHARACTERISTICS AS LISTED FOR 1" ABOVE. WHERE PERMITTED BY LOCAL CODES, PROVIDE 1/2" SELF-ADHESIVE UNICELLULAR FOAM PIPE INSULATION WITH PRE-FORMED PVC FITTING COVERS - EQUAL TO SELF-ADHESIVE ARMSTRONG 2000 WITH K FACTOR OF 0.27 AT 75 DEGREES MEAN TEMPERATURE. INSULATE ANY EXPOSED CONDENSATE PIPING WITH WASTE TEMPERATURE BELOW 60 DEGREES F. SHUTOFF VALVES, WITH UNIONS SHALL BE PROVIDED FOR SERVICE TO EACH PLUMBING FIXTURE. FOOD SERVICE EQUIPMENT ITEM OR OTHER EQUIPMENT ITEM, TO FACILITATE ISOLATION FOR REPAIR OR REPLACEMENT. VALVES SHALL BE EQUAL TO JENKINS #902-T BALL VALVE, CHROME-FINISHED BRONZE, TEFLON SEATS AND PACKING, 400 LB. W.O.G., SOLDER END. ACCESS PANELS SHALL BE PROVIDED WHERE CONCEALED CONTROL DEVICES, VALVES, ETC. ARE CONCEALED WITHIN WALLS. WHERE ACCESS FOR ADJUSTMENT AND MAINTENANCE IS POSSIBLE THROUGH LAY-IN SUSPENDED CEILINGS, ACCESS PANELS ARE NOT REQUIRED. PIPING SYSTEM- PVC SCHEDULE 40, SCHEDULE 80 AND CPVC PIPE WITH SOLVENT FITTINGS SHALL BE USED WHERE PERMITTED BY CODE/LOCAL AUTHORITIES. INSTALLATION: THOROUGHLY CLEAN ITEMS BEFORE INSTALLATION. CAP PIPE OPENINGS TO EXCLUDE DIRT UNTIL FIXTURES ARE INSTALLED AND FINAL CONNECTIONS HAVE BEEN MADE. PROCEED AS RAPIDLY AS CONSTRUCTION WILL PERMIT. SET FIXTURES LEVEL AND IN PROPER ALIGNMENT. INSTALL SUPPLIES IN PROPER ALIGNMENT WITH FIXTURES. INSTALL SILICONE SEALANT BETWEEN FIXTURES AND ADJACENT MATERIAL, FOR SANITARY JOINT, AND OMIT ESCUTCHEONS. REPAIR EXISTING PLUMBING SYSTEM COMPONENTS DAMAGED BY CONSTRUCTION OPERATIONS AND RESTORE TO ORIGINAL CONDITIONS. TEST WATER SYSTEM UNDER 150 PSIG HYDROSTATIC PRESSURE, FOR FOUR (4) HOURS MINIMUM. WHEN TESTING INDICATES MATERIALS OR WORKMANSHIP IS DEFICIENT, REPLACE OR REPAIR AS REQUIRED, AND REPEAT TEST UNTIL STANDARDS ARE ACHIEVED. ROOF PENETRATIONS SHALL COMPLY WITH "SMACNA" AND "NRCA" STANDARDS, AND WITH THE REQUIREMENTS OF THE EXISTING ROOFING WARRANTY, IF APPLICABLE. DO NOT PERFORM ROOFING PENETRATIONS IN A MANNER WHICH WOULD VOID OR OTHERWISE LIMIT THE EXISTING ROOFING WARRANTY.

GENERAL NOTES

1.

THE INTENT OF THESE PLANS AND SPECIFICATIONS IS TO INCLUDE ALL LABOR, EQUIPMENT, MATERIALS, AND SERVICES NECESSARY TO FURNISH, INSTALL, TEST, AND ADJUST A COMPLETE WORKABLE PLUMBING INSTALLATION AS SHOWN, PRESCRIBED, OR REASONABLY IMPLIED BUT NOT LIMITED TO THAT EXPLICITLY INDICATED IN THE CONTRACT DOCUMENTS, BUT NECESSARY FOR THE PROPER EXECUTION AND COMPLETION OF THE INTENT THEREOF.
2.

THE ENTIRE INSTALLATION SHALL CONFORM TO THE REQUIREMENTS OF THE 2019 CALIFORNIA PLUMBING CODE, 2019 CALIFORNIA BUILDING CODE, 2019 CALIFORNIA ENERGY CONSERVATION CODE AND ALL OTHER APPLICABLE CODES AND REGULATIONS REQUIRED BY AUTHORITIES HAVING JURISDICTION. IN THE EVENT OF CONFLICT BETWEEN SPECIFICATIONS, CODES, AND REGULATIONS, THE MORE RESTRICTIVE SHALL APPLY.
3.

COORDINATE ENTIRE INSTALLATION OF THE PLUMBING SYSTEM WITH THE WORK OF OTHER TRADES PRIOR TO ANY FABRICATION OR INSTALLATION. FIELD VERIFY ALL DIMENSIONS AND CONDITIONS. REPORT ANY DISCREPANCIES, IN WRITING, TO THE ENGINEER PRIOR TO COMMENCEMENT OF WORK.
4.

CONTRACTOR SHALL PROVIDE AS-BUILT DRAWINGS WITH ALL CHANGES NOTED THEREON AT THE COMPLETION OF THE PROJECT IN ACCORDANCE WITH THE SPECIFICATIONS. PROVIDE ONE YEAR WARRANTY ON ALL PARTS AND LABOR.
6.

THE DRAWINGS ARE DIAGRAMMATIC AND INTENDED TO SHOW SCOPE. CONTRACTOR SHALL COORDINATE HIS WORK WITH OTHER TRADES TO PROVIDE THE BEST ARRANGEMENT OF ALL DUCT, PIPE, CONDUIT, ETC. ALL CUTTING AND PATCHING OF THE EXISTING STRUCTURE SHALL BE PROVIDED UNDER OTHER SECTIONS OF THE WORK. PROVIDE NECESSARY REQUIREMENTS TO THE PROJECT SUPERINTENDENT.
8.

ALL HOT WATER PIPING AND RECIRCULATION PIPING (EXCEPT RUNOUTS 12 FT. OR SHORTER TO INDIVIDUAL FIXTURES) SHALL BE INSULATED TO MEET THE REQUIREMENTS OF THE 2019 CALIFORNIA ENERGY CONSERVATION CODE
9.

CONDENSATE DRAINS SHALL BE PROVIDED FOR EACH AIR CONDITIONING UNIT. HORIZONTAL CONDENSATE DRAINS ABOVE ANY CEILING SHALL BE INSULATED WITH MIN. 3/8" THICK CLOSED CELL INSULATION.
10.

PIPING:

A.

WASTE, VENT, AND STORM DRAIN PIPING SHALL BE CO-EXTRUDED PVC SCHEDULE 40) PIPE

B.

WATER PIPE SHALL BE CPVC PIPE

C.

CONDENSATE PIPING SHALL BE CO-EXTRUDED PVC (SCHEDULE 40) PIPE

D.

INSIDE GAS PIPING SHALL BE BLACK IRON SCHEDULE 40 WITH MALLEABLE IRON FITTINGS. OUTSIDE SHALL BE GALVANIZED IRON SCHEDULE 40 WITH GALVANIZED FITTINGS. GAS LINE TO BE PAINTED GRAY IN COLOR. A 24 HOUR METERED GAS TEST SHALL BE REQUIRED.

E.

ALL PIPING NOT ENCLOSED IN CONDITION SPACE OR AT EXTERIOR WALLS SHALL BE INSULATED.

F.

PIPING: PVC SCHEDULE 40, SCHEDULE 80 AND CPVC PIPING WITH SOLVENT WELD FITTINGS SHALL BE USED WHERE PERMITTED BY CODE/LOCAL AUTHORITIES
11.

ALL VENTS OR EXHAUSTS SHALL BE AT LEAST 10 FT. AWAY OR 3 FT. ABOVE ANY WINDOW, DOOR, OPENING, OR AIR INTAKE.
12.

CLEANOUTS SHALL BE INSTALLED PER THE CALIFORNIA PLUMBING CODE.
13.

PROVIDE WATER TIGHT FLASHINGS WHEREVER PIPES PASS THROUGH EXTERIOR WALLS, ROOFS, OR FLOORS.
14.

PROVIDE ISOLATION FOR ALL PIPES THAT COME IN CONTACT WITH THE STRUCTURE.
15.

LOCATION OF EXISTING UTILITIES AND POINTS OF CONNECTION ARE APPROXIMATE. CONTRACTOR SHALL VERIFY EXACT LOCATIONS AND DEPTHS OF EXISTING UTILITIES AND SERVICES PRIOR TO STARTING WORK OF THIS SECTION. IF INDICATED POINTS OF CONNECTION CANNOT BE MADE TO EXISTING UTILITIES AS FOUND, THE CONTRACTOR SHALL NOTIFY THE ENGINEER PRIOR TO INSTALLING ANY WORK WHICH MAY BE AFFECTED.
16.

VALVES SHALL BE NIBCO, JENKINS, HAMMOND, RED & WHITE OR APPROVED EQUAL. SERVICE PRESSURE SHALL BE SUITABLE FOR SERVICE INTENDED. THE MAIN WATER SHUT OF VALVE SHALL BE A FULL PORT BALL TYPE AND APPROVED FOR SERVICE INTENDED.
17.

CONTRACTOR SHALL PROVIDE ALL SHUT OFF VALVES AS NECESSARY TO ISOLATE ANY EQUIPMENT, PLUMBING ITEMS, OR FIXTURES, THAT MAY NEED SERVICING OR ARE SUBJECT TO FAILURE WHETHER OR NOT SUCH VALVES ARE SHOWN ON THE DRAWINGS.
18.

PROVIDE HANGERS AND SUPPORTS AS REQUIRED. PLUMBERS TAPE AND WIRE ARE NOT ACCEPTABLE.
19.

CONTRACTOR IS RESPONSIBLE FOR HIS OWN TRENCHING, BACKFILL, AND COMPACTION OF TRENCHES NECESSARY TO COMPLETE HIS SCOPE OF WORK. BACKFILLED TRENCHES SHALL BE RETURNED TO THEIR ORIGINAL GRADE UNLESS NOTED OTHERWISE.
20.

CONTRACTOR SHALL AFFIX A MAINTENANCE LABEL TO ALL EQUIPMENT REQUIRING ROUTINE MAINTENANCE AND SHALL PROVIDE MAINTENANCE AND OPERATIONAL MANUALS IN ACCORDANCE WITH THE SPECIFICATIONS.
21.

ALL EQUIPMENT THAT REQUIRES KEYS OR SPECIAL TOOLS TO OPERATE SHALL SUPPLY THE OWNER WITH TWO OF ANY SUCH KEYS OR TOOLS FOR EACH PIECE OF EQUIPMENT THAT REQUIRE THE SAME.
25.

ANY CHANGE OR DEVIATION FROM THESE PLANS OR SPECIFICATIONS SHALL REQUIRE THE APPROVAL, IN WRITING, OF THE ENGINEER PRIOR TO COMMENCEMENT OF SUCH WORK.
26.

ALL PLUMBING, ELECTRICAL, AND GAS LINES SHALL BE CONCEALED WITHIN THE BUILDING STRUCTURE TO AS GREAT EXTENT AS POSSIBLE. ALL LINES NOT CONCEALED SHALL BE SECURED 6" OFF THE FLOOR AND 3/4" FROM THE WALLS USING STANDOFF BRACKETS
27.

AN APPROVED BACKFLOW PREVENTOR SHALL BE PROPERLY INSTALLED UPSTREAM OF ANY POTENTIAL HAZARD BETWEEN THE POTABLE WATER SUPPLY AND SOURCE OF COMTAMINATION.
28.

WATER SUPPLY CARBONATORS SHALL BE PROTECTED BY AN APPROVED REDUCED PRESSURE PRINCIPLE BACKFLOW PREVENTOR. THE RELIEF VALVE SHALL DRAIN IN-DIRECTLY TO A FLOOR SINK WITH A 1" MIN. AIR GAP.

PLUMBING LEGEND		
SYMBOL	ABBRV	DESCRIPTION
	SS or W	NEW SEWER OR WASTE
	V	NEW VENT
	CW	NEW COLD WATER
	HW	NEW HOT WATER
	G	NEW GAS
	CD	NEW CONDENSATE DRAIN
CA	CA	COMPRESSED AIR
FCO	FCO	FLOOR CLEANOUT
WCO	WCO	WALL CLEANOUT
FD	FD	FLOOR DRAIN
FS	FS	FLOOR SINK
TP	TP	TRAP PRIMER & TRAP PRIMER PIPING
SOV	SOV	SHUT-OFF VALVE
CV	CV	CHECK VALVE
PRV	PRV	BACKFLOW PREVENTER W SOV'S
T & P	T & P	
DN	DN	PIPE DOWN
UP	UP	PIPE UP
POC	POC	POINT OF CONNECTION
-	-	PLUMBING NOTE CALL-OUT
ABV	ABV	ABOVE
AFF	AFF	ABOVE FINISH FLOOR
AP	AP	ACCESS PANEL
BEL	BEL	BELOW
BLDG	BLDG	BUILDING
CLG	CLG	CEILING
CONT	CONT	CONTINUATION
EL	EL	ELEVATION
FIN	FIN	FINISH
FL	FL	FLOOR
GR	GR	GRADE
NTS	NTS	NOT TO SCALE
OC	OC	ON CENTER
S %	S %	SLOPE AT A PERCENTAGE
SHT	SHT	SHEET
TYP	TYP	TYPICAL
VTR	VTR	VENT THRU ROOF

PLUMBING / GENERAL NOTES

BATHTUBS AND WHIRLPOOL BATHTUBS, THE MAX. HOT WATER TEMPERATURE DISCHARGING SHALL BE LIMITED TO 120 DEGREES.

BATHTUBS WASTE OPENING IN FLOOR OVER CRAWL SPACES SHALL BE PROTECTED BY A METAL SCREEN NOT EXCEEDING 12" OR SOLID COVER.

SHOWERS AND TUB-SHOWERS COMBINATIONS IN ALL BUILDINGS SHALL BE PROVIDED WITH INDIVIDUAL CONTROL VALVES OF THE PRESSURE BALANCE, THERMOSTATIC, OR COMBINATION OF BOTH THAT PROVIDE SCALD AND THERMAL SHOCK PROTECTION. VALVES SHALL BE ADJUSTED TO DELIVER A MAXIMUM MIXED WATER SETTING OF 120 DEGREES FAHRENHEIT. THE WATER HEATER THERMOSTAT SHALL NOT BE CONSIDERED A SUITABLE CONTROL FOR MEETING THIS PROVISION. VERIFY AND WHERE WATER PRESSURE EXCEEDS 80 PSI AN APPROVED PRESSURE REGULATOR PRECEDED BY AN ADEQUATE STRAINER SHALL BE INSTALLED
1-INSTALL TEMPERATURE AND PRESSURE RELIEF VALVE WITH MINIMUM 3/4" DRAIN PIPE AND TERMINATE TO THE EXTERIOR OF THE BUILDING OVER WINDOW, DOOR OR VISIBLE LOCATION. DISCHARGE FROM A RELIEF VALVE INTO A WATER HEATER PAN SHALL BE PROHIBITED
.
2-PROVIDE (ON THE PLANS) A GAS PIPING DIAGRAM OF THE GAS PIPING SYSTEM THAT INCLUDES ALL PIPE SIZES, PIPE LENGTHS AND BTU RATINGS.

3-SUBMIT GAS LOAD CALCULATIONS IN ACCORDANCE WITH IPC TABLE 12-8 TO VERIFY THE PIPE SIZES ARE ADEQUATE FOR THE MAXIMUM DELIVERY CAPACITY OF CUBIC FEET OF GAS PER HOUR.
4- A WHOLE HOUSE GAS TEST IS REQUIRED UPON COMPLETION OF THE INSTALLATION, ALTERATION, OR REPAIR OF ANY GAS PIPING. THE CITY SHALL BE NOTIFIED WHEN GAS PIPING IS READY FOR INSPECTION.
5- 2 GPM SHOWER FIXTURE, MAX.1.5 GPM BATHROOM FAUCET, MAX. 2 GPM KITCHEN FAUCET, AND MAX 1.28 WATER CLOSET TO CONFORM TO CITY GREEN REQUIREMENTS.
BATHROOMS: PROVIDE AN EXHAUST FAN (AT LEAST 50 CFM) DUCTED TO THE OUTSIDE (MINIMUM 4" DIAMETER FLEX DUCT WITH A MAXIMUM LENGTH OF 70')WITH A MINIMUM VENTILATION RATE OF 100 CFM. IDENTIFY THE REQUIREMENT FOR A BACKDRAFT DAMPER ON THE DUCT, AN ENERGY STAR COMPLIANT EXHAUST FAN THAT IS CONTROLLED BY A HUMIDITY SENSOR THAT IS CAPABLE OF BEING ADJUSTED BETWEEN ≤ 50-PERCENT TO 80-PERCENT HUMIDITY; AND A SEPARATE SWITCH FROM THE LIGHT UNLESS THE FAN IS ALLOWED TO OPERATE WITH THE LIGHT SWITCHED OFF.
6-NOTE THAT ALL PLUMBING VENTS SHALL TERMINATE NOT LESS THAN 6" ABOVE ROOF NOR LESS THAN 1' FROM ANY VERTICAL SURFACE. VENTS SHALL TERMINATE NOT LESS THAN 10" FROM OR 3' ABOVE ANY WINDOW, DOOR OPENING AIR INTAKE, OR VENT SHAFT NOR 3' FROM LOT LINE. IF WATER PRESSURE EXCEEDS 80 PSI, AND EXPANSION TANK AND AN APPROVED PRESSURE REGULATOR SHALL BE INSTALLED.
NON-REMOVABLE BACK FLOW PRE-VENTER OR BIBB-TYPE VACUUM BREAKER WILL BE INSTALLED ON ALL EXTERIOR HOSE BIBS. HOT WATER RE-CIRCULATING SYSTEM IS INSTALLED, THE ENTIRE LENGTH OF HOT WATER PIPES SHALL BE INSULATED.

NOTES:
1-Projects which disturb less than one acre of soil shall manage storm water drainage during construction by one of the following: A. Retention basins. B. Where storm water is conveyed to a public drainage system, water shall be filtered by use of a barrier system, wattle or other approved method.
2-Site grading or drainage system will manage all surface water flows to keep water from entering buildings (swales, water collection, French drains, etc.). CGC Section 4.106.3. Exception: Additions not altering the drainage path.
3-When a shower is provided with multiple shower heads, the sum of flow to all the heads shall not exceed 1.8 gpm @ 80 psi, or the shower shall be designed so that only one head is on at a time. CGC Section 4.303.1.3.2.
4-Landscape irrigation water use shall have weather or soil based controllers. CGC Section 4.304.1.
5-The plans that a minimum of 65% of construction waste is to be recycled. CGC Section 4.408.1.
6-The contractor shall submit a Construction Waste Management Plan, per CGC Section 4.408.2.
7-The builder is to provide an operation manual (containing information for maintaining appliances, etc.) for the owner at the time of final inspection. CGC Section 4.410.1.
8-The gas (re)place(s) shall be a direct-vent sealed- combustion type. Woodstove or pellet stoves must be US EPA Phase II rated appliances. CGC Section 4.503.1.

WATER SAVING STANDARDS.

THE WATER SAVING PERFORMANCE STANDARDS FOR A PLUMBING FIXTURE ARE THOSE ESTABLISHED BY THE AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI), CURRENT REVISION, OR THE FOLLOWING STANDARDS, WHICHEVER ARE THE MORE RESTRICTIVE
1-THE MAXIMUM FLOW FROM A SINK OR LAVATORY FAUCET OR A FAUCET AERATOR SHALL NOT EXCEED 0.5 GALLONS OF WATER PER MINUTE AT A PRESSURE OF 60 POUNDS PER SQUARE INCH WHEN TESTED IN ACCORDANCE WITH ANSI TESTING PROCEDURES. 2- THE MAXIMUM VOLUME OF WATER PER FLUSH FROM A TOILET SHALL NOT EXCEED AN AVERAGE OF 1.28 GALLONS WHEN TESTED IN ACCORDANCE WITH ANSI TESTING PROCEDURES
3- THE MAXIMUM VOLUME OF WATER PER FLUSH FROM A URINAL AND THE ASSOCIATED FLUSH VALVE, IF ANY, SHALL NOT EXCEED AN AVERAGE OF ONE GALLON WHEN TESTED IN ACCORDANCE WITH ANSI TESTING PROCEDURES

SPECIAL NOTICE TO CONTRACTORS

1.

ALL CONTRACTORS (GENERAL CONTRACTOR AND SUB-CONTRACTORS) BIDDING THIS PROJECT ARE REQUIRED TO VISIT THE JOB SITE AND VERIFY THE EXISTING CONDITIONS PRIOR TO SUBMITTING THEIR BID. CONTRACTORS ARE TO CAREFULLY REVIEW ALL CONSTRUCTION DOCUMENTS AND NOTE ANY DISCREPANCIES BETWEEN THE CONSTRUCTION DOCUMENTS AND THE CONDITIONS OBSERVED AT THE JOB SITE PRIOR TO SUBMISSION OF ANY BID. THE BUILDING OWNER REPRESENTATIVE LISTED BELOW MAY BE CONTACTED FOR ACCESS TO THE JOB SITE.
2.

CONTRACTORS ARE RESPONSIBLE FOR VERIFYING THE LOCATION AND CONDITION OF ALL POINTS OF CONNECTION, LOCATION AND CONDITION OF ALL BUILDING (ROOF/FLOOR/CEILING) PENETRATIONS, LOCATION AND CONDITION OF ALL UTILITIES AND BUILDING SYSTEMS INCLUDING, BUT NOT LIMITED TO, GAS, WATER, SEWER, VENT, ELECTRICAL, BUILDING MECHANICAL SYSTEMS, DUCT CONNECTIONS, EXHAUST/OUTSIDE AIR CONNECTIONS, SECURITY, FIRE ALARM, DATA, AND PHONE PRIOR TO SUBMISSION OF THEIR BID.
3.

ANY DISCREPANCIES BETWEEN THE CONSTRUCTION DOCUMENTS AND THE CONDITIONS OBSERVED SHALL BE BROUGHT TO THE ATTENTION, IN WRITING, TO THE ARCHITECT AND/OR ENGINEER PRIOR TO PROCEEDING WITH CONSTRUCTION.

REV. NO	DESCRIPTION	DATE	BY
0	PERMIT SET	12.29.22	MM

PROJECT:

CLEO

TITLE: 134 P.00.00 PLUM. SPECS AND NOTES	
PROJ. NO.	SCALE @ 24X36: NTS
DRAWING NO. P 0 . 0 0	REV.

CALIFORNIA PLUMBING CODE CHECKING:

PIPE SUPPORTS:

TABLE 313.3
HANGERS AND SUPPORTS

MATERIALS	TYPES OF JOINTS	HORIZONTAL	VERTICAL
Cast	Lead and Oakum	5 feet, except 10 feet where 10 foot lengths are installed ^{1,2,3}	Base and each floor, not to exceed 15 feet
	Compression Gasket	Every other joint, unless over 4 feet then support each joint ^{1,2,3}	Base and each floor, not to exceed 15 feet
Cast-iron Hubless	Shielded Coupling	Every other joint, unless over 4 feet then support each joint ^{1,2,3,4}	Base and each floor, not to exceed 15 feet
Copper & Copper Alloys	Soldered, Brazed, Threaded, or Mechanical	1 1/2 inches and smaller, 6 feet; 2 inches and larger, 10 feet	Each floor, not to exceed 10 feet ⁵
Steel Pipe for Water or DWV	Threaded or Welded	3/4 inch and smaller, 10 feet; 1 inch and smaller, 12 feet	Every floor, not to exceed 25 feet ⁶
Steel Pipe for Gas	Threaded or Welded	3/4 inch, 6 feet; 1/2 inch and 1 inch, 8 feet; 1 1/2 inches and larger, 10 feet	3/4 inch, 6 feet; 1/2 inch and 1 inch, 8 feet; 1 1/2 inches every floor level
Schedule 40 PVC and ABS DWV	Solvent Cemented	All sizes, 4 feet; allow for expansion every 30 feet ⁸	Base and each floor; provide mid-story guides; provide for expansion every 30 feet
CPVC	Solvent Cemented	1 inch and smaller, 3 feet; 1 1/2 inches and larger, 4 feet	Base and each floor; provide mid-story guides
CPVC-AL-CPVC	Solvent Cemented	3/4 inch, 5 feet; 1/2 inch, 65 inches; 1 inch, 6 feet	Base and each floor; provide mid-story guides
Lead	Wiped or burned	Continuous Support	Not to exceed 4 feet
Steel	Mechanical	In accordance with standards acceptable to the Authority Having Jurisdiction	
PEX	Cold Expansion, Insert and Compression	1 inch and smaller, 32 inches; 1 1/2 inches and larger, 4 feet	Base and each floor; provide mid-story guides
PEX-AL-PEX	Metal Insert and Metal compression	3/4 inch 1 inch } All sizes 98 inches	Base and each floor; provide mid-story guides
PE-AL-PE	Metal Insert and Metal compression	3/4 inch 1 inch } All sizes 98 inches	Base and each floor; provide mid-story guides
PE-RT	Insert and Compression	1 inch and smaller, 32 inches; 1 1/2 inches and larger, 4 feet	Base and each floor; provide mid-story guides
Polypropylene (PP)	Fusion weld (socket, butt, saddle, electrofusion), threaded (metal threads only), or mechanical	1 inch and smaller, 32 inches; 1 1/2 inches and larger, 4 feet	Base and each floor; provide mid-story guides

For SI units: 1 inch = 25.4 mm, 1 foot = 304.8 mm

Notes:

¹ Support adjacent to joint, not to exceed 18 inches (457 mm)

² Brace not to exceed 40 feet (12 192 mm) intervals to prevent horizontal movement.

³ Support at each horizontal branch connection.

⁴ Hangers shall not be placed on the coupling.

⁵ Vertical water lines shall be permitted to be supported in accordance with recognized engineering principles with regard to expansion and contraction, where first approved by the Authority Having Jurisdiction.

DRAINAGE:

719.0 Cleanouts.
719.1 Locations. Cleanouts shall be placed inside the build ing near the connection between the building drain and the building sewer or installed outside the building at the lower end of the building drain and extended to grade.

Additional building sewer cleanouts shall be installed at intervals not to exceed 100 feet (30 480 mm) in straight runs and for each aggregate horizontal change in direction exceeding 135 degrees (2.36 rad)

719.2 No additional Cleanouts. Where a building sewer or a branch thereof does not exceed 10 feet (3048 mm) in length and is a straight-line projection from a building drain that is provided with a cleanout, no cleanout will be required at its point of connection to the building drain.

721.0 Location.
721.1 Building Sewer. Except as provided in Section 721.2, no building sewer shall be located in a lot other than the lot that is the site of the building or structure served by such sewer nor shall a building sewer be located at a point having less than the minimum distances referenced in Table 721.1.1.

706.0 Changes in Direction of Drainage Flow.
706.1 Approved Fittings. Changes in the direction of drainage piping shall be made by the approximate use of approved fittings and shall be of the angles presented by a one-sixteenth bend, one-eighth bend, or one-sixth bend, or other approved fittings of equivalent sweep.
706.2 Horizontal to Vertical. Horizontal drainage lines, connecting with a vertical stack, shall enter through 45 degree (0.79 rad) wye branch, 60 degree (1.05 rad) wye branches, combination wye and one-eighth bend branches, sanitary tee or sanitary tapped tee branches, or other approved fittings of equivalent sweep.

706.4 Vertical to Horizontal. Vertical drainage lines con necting with horizontal drainage lines shall enter through 45 degree (0.79 rad) wye branches, combination wye and one-eighth bend branches, or other approved fittings of equivalent sweep. Branches, or other approved fittings of equivalent sweep. Branches or offsets of 60 degrees (1.05 rad) shall be permitted to be used where installed in a true vertical posi- tion.

707.4 Location. Each horizontal drainage pipe shall be provided with a cleanout at its upper terminal, and each run of piping, that is more than 100 feet (30 480 mm) in total developed length, shall be provided with a cleanout for each 100 feet (30 480 mm), or fraction thereof, in length of such piping. An additional cleanout shall be provided in a drainage line for each aggregate horizontal change in direction exceeding 135 degrees (2.36 rad). A cleanout shall be installed above the fixture connecting fitting, serving each urinal, regardless of the location of the urinal in the building.
Exceptions
(1) Cleanouts shall be permitted to be omitted on a horizontal drain line less than 5 feet (1524 mm) in length unless such line is serving sinks or urinals

TABLE 703.2: MAXIMUM UNIT LOADING AND MAXIMUM LENGTH OF DRAINAGE AND VENT PIPING

SIZE OF PIPE (inches)	1 1/4	1 1/2	2	3	4	5	6	8	10	12
Maximum Units										
Drainage Piping ¹										
Vertical	1	2 ²	16 ³	48 ⁴	256	600	1380	3600	5600	8400
Horizontal	1	1	8 ³	35 ⁴	216 ⁵	428 ⁵	720 ⁵	2640 ⁵	4680 ⁵	8200 ⁵
Maximum Length										
Drainage Piping										
Vertical	45	65	85	212	300	390	510	750	—	—
Horizontal										
Vent Piping										
Horizontal and Vertical ⁶										
Maximum Units	1	8 ³	24	84	256	600	1380	3600	—	—
Maximum Lengths, (feet)	45	60	120	212	300	390	510	750		

For SI units: 1 inch = 25 mm, 1 foot = 304.8 mm

Notes:

¹ Excluding trap arm.

² Except for sinks, urinals, and dishwashers – exceeding 1 fixture unit.

³ Except for six-unit traps or water closets.

⁴ Only four water closets or six-unit traps allowed on a vertical pipe or stack, and not to exceed three water closets or six-unit traps on a horizontal branch or drain.

⁵ Based on 3/4 inch per foot (20.8 mm/m) slope. For 1/2 of an inch per foot (10.4 mm/m) slope, multiply horizontal fixture units by a factor of 0.8.

⁶ The diameter of an individual vent shall be not less than 1 1/4 inches (32 mm) nor less than one-half the diameter of the drain to which it is connected. Fixture unit load values for drainage and vent piping shall be computed from Table 702.1 and Table 702.2(2). Not to exceed one third of the total permitted length of a vent shall be permitted to be installed in a horizontal position. Where vents are increased one pipe size for their entire length, the maximum length limitations specified in this table do not apply. This table is in accordance with the requirements of Section 901.3.

707.5 Cleaning. Each cleanout shall be installed so that it opens to allow cleaning in the direction of flow of the soil or waste or at right angles thereto and, except in the case of wye branch and end-of-line cleanouts, shall be installed vertically above the flow line of the pipe.

708.0 Grade of Horizontal Drainage Piping.
708.1 General. Horizontal drainage piping shall be run in practical alignment and a uniform slope of not less than 1/4 inch per foot (20.8 mm/m) or 2 percent toward the point of disposal provided that, where it is impractical due to the depth of the street sewer, to the structural features, or to the arrangement of a building or structure to obtain a slope of 1/4 inch per foot (20.8 mm/m) or 2 percent, such pipe or piping 4 inches (100 mm) or larger in diameter shall be permitted to have a slope of not less than 1/8 inch per foot (10.4 mm/m) or 1 percent, where first approved by the Authority Having Jurisdiction.

TABLE 721.1
MINIMUM HORIZONTAL DISTANCE REQUIRED FROM BUILDING SEWER (feet)

Buildings or structures ¹	2
Property line adjoining private property	Clear ²
Water supply wells	50 ³
Streams	50
On-site domestic water service line	1 ⁴
Public water main	10 ^{5,6}

WATER CONVERSION & WATER CONSUMPTION:

WATER CONSERVING PLUMBING FIXTURES AND FITTINGS	
Plumbing fixtures and fittings shall comply with the following: (2019 CGBSC, California Plumbing Code (CPC) and Table 1401.1 of the CPC)	
4303.1.1	All Water closets: <1.28 gal/flush Tank type water closet shall be certified to the performance criteria of the U.S. EPA WaterSense Specification for Tank-type Toilets.
4303.1.2	Urinals: <0.5 gal/flush
4303.1.3.1	Single showerheads: <1.8 gpm @ 80 psi
4303.1.3.2	Multiple showerheads: combined flow rate of all showerheads and/or other shower outlets controlled by a single valve shall not exceed 1.8 gpm @ 80 psi or only one shower outlet is to be in operation at a time.
4303.1.4.1	Residential Lavatory Faucets: 0.8 gpm @ 20 psi < Flow Rate <1.2 gpm @ 60 psi
4303.1.4.2	Lavatory Faucets in common and Public Use Areas (outside of dwellings or sleeping units) in residential buildings: <0.5 gpm @ 60 psi
4303.1.4.3	Metering Faucets: <0.25 gallons per cycle
4303.1.4.4	Kitchen Faucets: <1.8 gpm @ 60 psi; Maximum Flow Rate of 1.8 gpm
PLUMBING FIXTURE CERTIFICATION REQUIRED: A plumbing fixture certification must be completed and signed by either a licensed general contractor, or a plumbing subcontractor, or the building owner certifying the flow rate of the fixtures installed. A copy of the certification can be obtained from the development services department.	

407.3 Limitation of Hot water Temperature for Public Lavatories.
Hot water delivered from public-use lavatories shall be limited to a maximum temperature of 120°F (49°C) by a device that complies with ASSE 1070/ASME A112.1070/CSA B125.70. The water heater thermostat shall not be considered a control for meeting this provision.
407.5 Waste Outlet. Lavatories shall have a waste outlet and fixtures tailpiece not less than 1 1/4 inches (32 mm) in diameter.

409.4 Limitation of Hot Water in Bathtubs and Whirlpool Bathtubs. The maximum hot water temperature discharging from the bathtub and whirlpool bathtub filler shall be limited to 120°F (49°C) by a device that complies with ASSE 1070/ASME A112.1070/CSA B125.70. The water heater thermostat shall not be considered a control for meeting this provision.

WATER HEATER:

501.1 Applicability.
The minimum capacity for storage water heaters shall be in accordance with the first-hour rating listed in Table 501.1 (2).

Number of Bathrooms	1 to 1.5			2 to 2.5				3 to 3.5			
Number of Bedrooms	1	2	3	2	3	4	5	3	4	5	6
First hour rating, ² Gallons	38	49	49	49	62	62	74	62	74	74	74

For SI units: 1 gallon = 3.785 L.

Notes:

¹ The first-hour rating is found on the “Energy Guide” label.

² Solar water heaters shall be sized to meet the appropriate first-hour rating as shown in the table.

504.0 Water Heater Requirements.

504.1 Location. Water heater installations in bedrooms and bathrooms shall comply with one of the following [NFPA54:10.27.1]:

- (1) Fuel-burning water heaters shall be permitted to be installed in a closet located in the bedroom or bathroom provided the closet is equipped with a listed, gasketed door assembly and a listed self-closing device. The self- closing door assembly shall meet the requirements of Section 504.1.1. The door assembly shall meet the requirements of Section 504.1.2. Combustion air for such installations shall be obtained from the outdoors in accordance with Section 506.4. The closet shall be for the exclusive use of the water heater.
- (2) Water heater shall be of the direct vent type. [NFPA 54: 10.27.1 (2)]

504.2 Vent. Water heaters of other than the direct-vent type shall be located as close as practical to the chimney or gas vent.

507.2 Seismic provisions. Water heaters shall be anchored or strapped to resist horizontal displacement due to earthquake motion. Strapping shall be at points within the upper one-third (1/3) and lower one-third (1/3) of its vertical dimensions. At the lower point, a minimum distance of four (4) inches (102 mm) shall be maintained above the controls with the strapping.

507.4 Ground Support. A water heater supported from the earth shall rest on level concrete or other approved base extending not less than 3 inches (76 mm) above the adjoining ground level.

507.5 Drainage Pan. Where a water heater is located in an attic, in or on an attic ceiling assembly, floor-ceiling assembly, or floor-slab/ceiling assembly where damage results from a leaking water heater, a watertight pan of corrosion-resistant materials shall be installed beneath the water heater with not less than 3/4 of an inch (20 mm) diameter drain to an approved location. Such pan shall be not less than 1 1/2 (38 mm) in depth.

507.13 Installation in Residential Garages. Appliances in residential garages and in adjacent spaces that open to the garage and are not part of the living space of a dwelling unit shall be installed so that all burners and burner-ignition devices are located not less than 18 inches (457 mm) above the floor unless listed as flammable vapor ignition resistant. [NFPA 54:9.1.10.1]

508.4.4 Lighting and Convenience Outlet. A permanent 120 V receptacle outlet and a lighting fixture shall be installed near the appliance. The switch controlling the lighting fixture shall be located at the entrance to the passageway. [NFPA 54:9.5.3]

508.2.1 Installation at roof: Clearance. Appliances shall be installed on a well-drained surface of the roof. At least 6 feet (1829 mm) of clearance shall be available between any part of the appliance, and the edge of a roof or similar hazard; or rigidly fixed rails, guards, parapets, or other building structures at least 42 inches (1067 mm) in height shall be provided on the exposed side. [NFPA 54:9.4.2.2]

VENT:

906.0 Vent Termination.

906.1 Roof Termination. Each vent pipe or stack shall extend through its flashing and shall terminate vertically not less than 6 inches (152 mm) above the roof nor less than 1 foot (305 mm) from a vertical surface. ABS and PVC piping exposed to sunlight shall be protected by water based synthetic latex paints.

906.2 Clearance. Each vent shall terminate not less than 10 feet (3048 mm) from, or not less than 3 feet (914 mm) above, an openable window, door, opening, air intake, or vent shaft, or not less than 3 feet (914 mm) in every direction from a hot line, alley and street excepted.

909.0 Special Venting for Island Fixtures.
909.1 General. Traps for island sinks and similar equipment shall be roughed in above the floor and shall be permitted to be vented by extending the vent as high as possible, but not less than the drainboard height and then returning it down- ward and connecting it to the horizontal sink drain immediately downstream from the vertical fixture drain. The return vent shall be connected to the horizontal drain through a wye-branch fitting and shall, in addition, be provided with a foot vent taken off the vertical fixture vent by means of a wye branch immediately below the floor and extending to the nearest partition and then through the roof to the open air, or shall be permitted to be connected to other vents at a point not less than 6 inches (152 mm) above the flood-level rim of the fixtures served. Drainage fittings shall be used on the vent below the floor level, and a slope of not less than 1/4 inch per foot (20.8 mm/m) back to the drain shall be maintained. The return bend used under the drainboard shall be a one-piece fitting or an assembly of a 45 degree (0.79 rad), a 90 degree (1.57 rad), and a 45 degree (0.79 rad) elbow in the order named. Pipe sizing shall be as elsewhere required in this code.

The island sink drain, upstream of the returned vent, shall serve no other fixtures. An accessible cleanout shall be installed in the vertical portion of the foot vent.

WATER SUPPLY:

TABLE 611.4 SIZING OF RESIDENTIAL WATER SOFTENERS ⁴	
REQUIRED SIZE OF SOFTENER CONNECTION (inches)	NUMBER OF BATHROOM GROUPS SERVED ¹
3/4	up to 2 ²
1	up to 4 ³

For SI units: 1 inch = 25 mm

Notes:

¹ Installation of a kitchen sink and dishwasher, laundry tray, and automatic clothes washer permitted without additional size increase.

² An additional water closet and lavatory permitted.

³ Over four bathroom groups, the softener size shall be engineered for the specific installation.

⁴ See also Appendix A, Recommended Rules for Sizing the Water Supply Systems, and Appendix C, Alternate Plumbing Systems, for alternate methods of sizing water supply systems.

A backflow preventer shall not be required to separate a stand-alone sprinkler syste from the water distribution system where the sprinkler system material is in accordance with the requirements of Section 604.0.

606.1 General. Valves up to and including 2 inches (50 mm) in size shall be copper alloy or other approved material. Sizes exceeding 2 inches (50 mm) shall be permitted to have cast iron or copper alloy bodies. Each gate or ball valve shall be a fullway or full-port type with working parts of the non-corrosive material. Valves carrying water used in potable water systems intended to supply drinking water shall comply with the requirements of NSF 61 and ASME A112.4.14, ASME B16.34, ASTM F1970, ASTM F2389 AWWA C500, AWWA C504, AWWA C507, IAPMO Z1157, MSS SP-67, MSS SP- 70, MSS SP-71, MSS SP-72, MSS SP-78, MSS SP-80, MSS SP-110, MSS SP-122, or NSF 359.

608.4 Pressure Relief Valves. Each pressure relief valve shall be an approved automatic type with drain, and each such relief valve shall be set at a pressure of not more than 150 psi (1034 kPa). No shutoff valve shall be installed between the relief valve and the system.

FIRESTOP PROTECTION

1404.0 Combustible Piping Installations.

1404.2 Fire-Resistance Rating. Where penetrating a fire-resistance-rated wall, partition, floor, floor-ceiling assembly, roof-ceiling assembly, or shaft enclosure, the fire-resistance rating of the assembly shall be restored to its original rating.

1404.3 Firestop Systems. Penetrations shall be protected by an approved penetration firestop system installed as tested in accordance with ASTM E119, ASTM E814, UL 263, or UL 1479 with a positive pressure differential of not less than 0.01 of an inch of water (0.002 kPa). Systems shall have and F rating of not less than 1 hour but not less than the required fire-resistance rating of the assembly being penetrated. Systems protecting floor penetrations shall have a T rating of not less than 1 hour but not less than the required fire-resistance rating of the floor penetrations shall have a T rating of not less than 1 hour but not less than the required fire-resistance rating of the floor being penetrated. Floor penetrations contained within the cavity of a wall at the location of the floor penetration do not require a T rating. No T rating shall be required for floor penetrations by piping that is not in direct contact with combustible material.

1404.6 Sleeves. Where sleeves are used, the sleeves shall be securely fastened to the fire-resistance-rated assembly. The (inside) annular space between the sleeve and the fire-resistance-rated assembly shall be firestopped in accordance with this chapter.

1405.0 Noncombustible Piping Installations.

1405.3 Firestop Systems. Penetrations shall be protected by an approved penetration firestop system installed as tested in accordance with ASTM E119, ASTM E814, UL 263, or UL 1479 with a positive pressure differential of not less than 0.01 of an inch of water (0.002 kPa). Systems shall have an F rating of not less than 1 hour but not less than the required fire-resistance rating of the assembly being penetrated. Systems protecting floor penetrations shall have a T rating of not less than 1 hour but not less than the required fire-resistance rating of the floor being penetrated. Floor penetrations contained within the cavity of a wall at a location of the floor penetration do not require a T rating. No T rating shall be required for floor penetrations by piping that is not in direct contact with combustible material.

1405.6 Sleeves. Where sleeves are used, the sleeves shall be securely fastened to the fire-resistance-rated assembly. The (inside) annular space between the sleeve and the penetrating item and the (outside) annular space between the sleeve and the fire-resistance-rated assembly shall be firestopped in accordance with this chapter.

CLIENT:

ADDRESS:

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REV. NO	DESCRIPTION	DATE	BY
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PROJECT:

CLEO

TITLE:

135 P0.01 PLUM. CODE CHECKING

PROJ. NO.

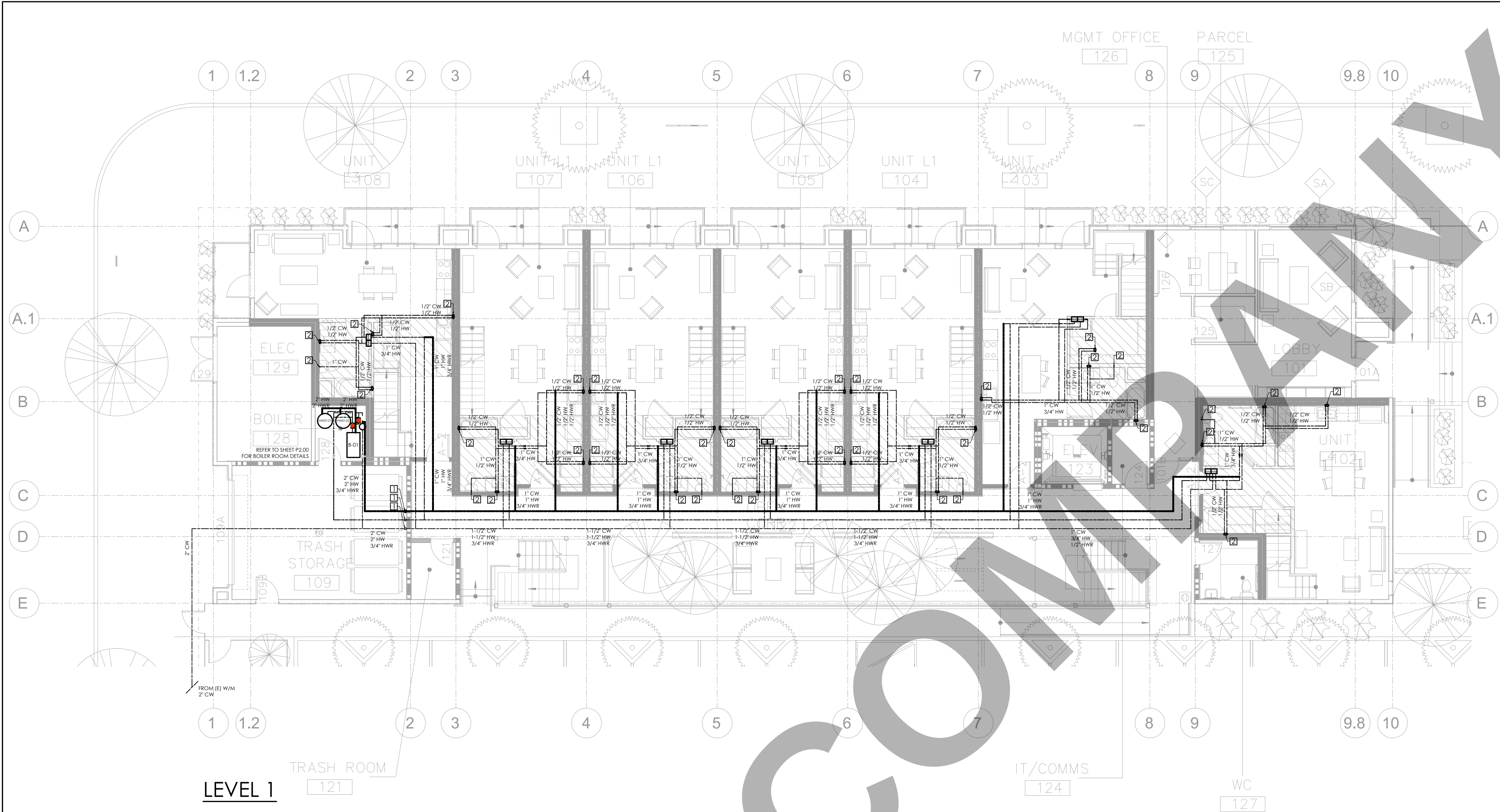
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REV.

P 0 . 0 1



LEVEL 1

GENERAL NOTES:

- PRIOR TO PERFORMING WORK, CONTRACTOR TO COORDINATE EXACT PIPE SIZES, INVERT ELEVATIONS, PRESSURES FOR LOCATIONS OF ANY SEWER, WATER PIPING AND WATER METER WITH CIVIL UTILITIES DRAWINGS, AND ANY OTHER ENGINEER AS APPLICABLE.
- PRIOR TO PERFORMING WORK, CONTRACTOR TO COORDINATE PIPE ROUTING WITH ALL OTHER TRADES AND EXISTING FIELD CONDITIONS.
- REFER TO MECHANICAL PLANS FOR PLUMBING SPECIFICATION OF MATERIAL, INSULATION AND INSTALLATION REQUIREMENTS.
- CONTRACTOR IS RESPONSIBLE FOR ROUGH-IN COORDINATION AND LOCATIONS. REFER TO ARCHITECTURAL PLANS FOR LOCATIONS AND FIXTURES.
- CONTRACTOR IS RESPONSIBLE FOR ANY REQUIRED CUTTING AND PATCHING.
- ALL NOTCHING, BORING, AND CUTTING OF HOLES IN WALL STUDS AND FLOOR JOISTS SHALL BE PERFORMED BASED ON THE LATEST ADOPTED AND APPROVED EDITION OF THE BUILDING CODE.
- ALL PLUMBING FIXTURES SHALL BE OF WATER CONSERVATION TYPE AS REQUIRED BY LOCAL AUTHORITY HAVING JURISDICTION.
- ALL WATER PIPING SHALL BE INSTALLED ON INTERIOR SIDE OF THE BUILDING WALL INSULATION.
- CONTRACTOR SHALL PROVIDE VALVES LOCATED ABOVE LAY-IN CEILING OR 24"x24" CEILING ACCESS PANEL COORDINATE FINAL LOCATION AND SIZE WITH ARCHITECT. PROVIDE BALANCING VALVES FOR HOT WATER RETURN SYSTEM AS REQUIRED.
- ALL SANITARY DRAINAGE PIPING 3" AND SMALLER SHALL BE SLOPED AT $\frac{1}{4}$ " PER FOOT. PIPING 4" AND LARGER SHALL BE SLOPED AT $\frac{1}{8}$ " PER FOOT.
- ALL CONDENSATE DRAIN PIPING SHALL BE SLOPED AT $\frac{1}{8}$ " PER FOOT AND PROVIDE ACCESSIBLE CLEANOUTS AT ALL CHANGES OF DIRECTION.
- VENTS THAT TERMINATE AT THE ROOF SHALL BE A MINIMUM OF 10' FROM ANY FRESH AIR INTAKE.
- REFER TO THE PLUMBING DIAGRAMS FOR GUIDANCE OF INSTALLATION INTENT. CONTRACTOR IS TO PROVIDE ALL COMPONENTS NECESSARY TO MEET THE DESIGN INTENT, WHETHER SHOWN IN DIAGRAM OR NOT.

MINIMUM PIPE SIZE PER FIXTURE

FIXTURE UNIT	CWP (INCH)	HWP (INCH)
SHOWER	1/2	1/2
URINAL	3/4	-
WATER CLOSET	1	-
LAVATORY	1/2	1/2
KITCHEN SINK	3/4	3/4
DISHWASHER	-	3/4
BATHTUB	1/2	1/2
LAUNDRY MACHINE	1/2	1/2

PLUMBING PIPING MATERIAL SCHEDULE

PIPING SYSTEM	LOCATION	ACCEPTABLE PIPING MATERIAL
DOMESTIC WATER	BELOW GRADE	ASTM B 88 TYPE K SOLDERED COPPER
	ABOVE GRADE	PEX A COMPRESSION JOINT

PLUMBING SHEET NOTES

SHEET NOTES:

- DCW/DHW/DHWR TO ABOVE FLOOR.
- DCW & DHW DROP IN WALL.
- DCW/DHW/DHWR FROM BELOW FLOOR.

FROM 2019 CPC - TABLE 610.3:
WATER SUPPLY FIXTURE UNITS LOADS PER UNIT:

FIXTURE	W.S.F.U	QTY.	TOTAL W.S.F.U
KITCHEN SINK	1.5	1	1.5
BATHTUB	2.0	1	2.0
WATER CLOSET	2.5	1	2.5
LAVATORY	1.0	1	1.0
WASHING MACHINE	1.5	1	1.5
TOTAL =			8.5

AS PER 2019 CPC - TABE 610.4:
THE LONGEST RUN IS APPROX. 250 FT. AT 289 W.S.F.U
AND FOR W/M PRESSURE RANGE 46-60 PSI,
THE W/M SIZE NOT LESS THAN 2"
AND MAIN CWP TO NOT LESS THAN 2"

TOTAL BUILDING WATER LOAD PER UNIT		
DESCRIPTION	LOAD WSFU	PIPE SIZE PEX
DCW	7.0	1"
DHW	4.5	1"
TOT. COMBINED	10.5	1"

CLIENT:

ADDRESS:

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BAKERSFIELD, CA 93301

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REV. NO	DESCRIPTION	DATE	BY
0	PERMIT SET	12.29.22	MN

PROJECT:

CLEO

TITLE:
136 P1.01 WS LAYOUT LEVEL 01

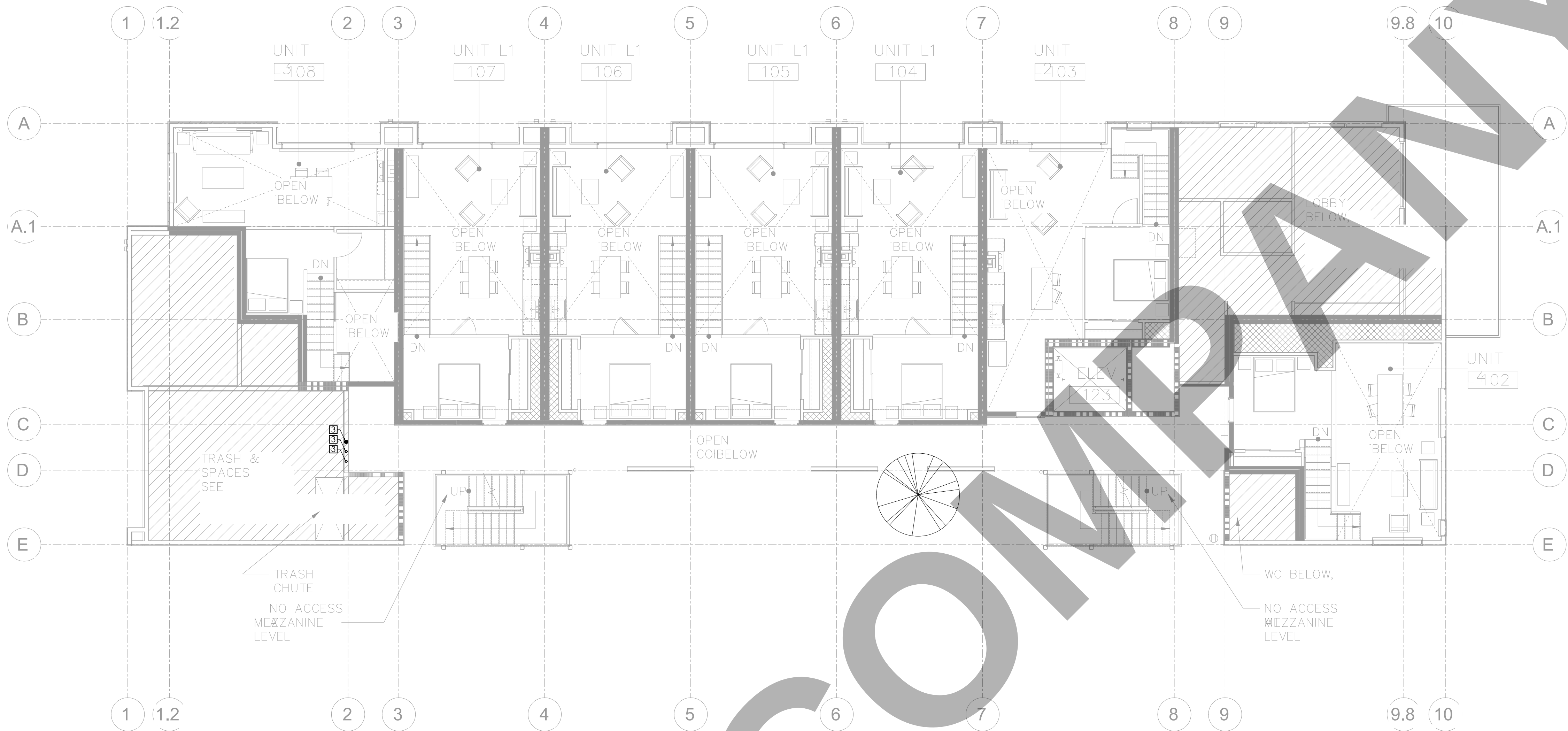
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1/8"=1'-0"

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P 1 . 0 1



MEZZANINE

GENERAL NOTES:

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7. ALL PLUMBING FIXTURES SHALL BE OF WATER CONSERVATION TYPE AS REQUIRED BY LOCAL AUTHORITY HAVING JURISDICTION.
8. ALL WATER PIPING SHALL BE INSTALLED ON INTERIOR SIDE OF THE BUILDING WALL INSULATION.
9. CONTRACTOR SHALL PROVIDE VALVES LOCATED ABOVE LAY-IN CEILING OR 24"x24" CEILING ACCESS PANEL COORDINATE FINAL LOCATION AND SIZE WITH ARCHITECT. PROVIDE BALANCING VALVES FOR HOT WATER RETURN SYSTEM AS REQUIRED.
10. ALL SANITARY DRAINAGE PIPING 3" AND SMALLER SHALL BE SLOPED AT $\frac{1}{4}$ " PER FOOT. PIPING 4" AND LARGER SHALL BE SLOPED AT $\frac{1}{8}$ " PER FOOT.
11. ALL CONDENSATE DRAIN PIPING SHALL BE SLOPED AT $\frac{1}{8}$ " PER FOOT AND PROVIDE ACCESSIBLE CLEANOUTS AT ALL CHANGES OF DIRECTION.
12. VENTS THAT TERMINATE AT THE ROOF SHALL BE A MINIMUM OF 10' FROM ANY FRESH AIR INTAKE.
13. REFER TO THE PLUMBING DIAGRAMS FOR GUIDANCE OF INSTALLATION INTENT. CONTRACTOR IS TO PROVIDE ALL COMPONENTS NECESSARY TO MEET THE DESIGN INTENT, WHETHER SHOWN IN DIAGRAM OR NOT.

MINIMUM PIPE SIZE PER FIXTURE

FIXTURE UNIT	CWP (INCH)	HWP (INCH)
SHOWER	1/2	1/2
URINAL	3/4	-
WATER CLOSET	1	-
LAVATORY	1/2	1/2
KITCHEN SINK	3/4	3/4
DISHWASHER	-	3/4
BATHTUB	1/2	1/2
LAUNDRY MACHINE	1/2	1/2

PLUMBING PIPING MATERIAL SCHEDULE

PIPING SYSTEM	LOCATION	ACCEPTABLE PIPING MATERIAL
DOMESTIC WATER	BELOW GRADE	ASTM B 88 TYPE K SOLDERED COPPER
	ABOVE GRADE	PEX A COMPRESSION JOINT

PLUMBING SHEET NOTES

SHEET NOTES:

- ①—DCW/DHW/DHWR TO ABOVE FLOOR.
- ②—DCW & DHW DROP IN WALL.
- ③—DCW/DHW/DHWR FROM BELOW FLOOR.

FROM 2019 CPC - TABLE 610.3:
WATER SUPPLY FIXTURE UNITS LOADS PER UNIT:

FIXTURE	W.S.F.U	QTY.	TOTAL W.S.F.U
KITCHEN SINK	1.5	1	1.5
BATHTUB	2.0	1	2.0
WATER CLOSET	2.5	1	2.5
LAVATORY	1.0	1	1.0
WASHING MACHINE	1.5	1	1.5
TOTAL =			8.5

AS PER 2019 CPC - TABE 610.4:
THE LONGEST RUN IS APPROX. 250 FT. AT 289 W.S.F.U
AND FOR W/M PRESSURE RANGE 46-60 PSI,
THE W/M SIZE NOT LESS THAN 2"
AND MAIN CWP TO NOT LESS THAN 2"

TOTAL BUILDING WATER LOAD PER UNIT		
DESCRIPTION	LOAD WSFU	PIPE SIZE PEX
DCW	7.0	1"
DHW	4.5	1"
TOT. COMBINED	10.5	1"

CLIENT:

ADDRESS:

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PROJECT:

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TITLE:

137 P1.02 WS LAYOUT MEZZ LEVEL

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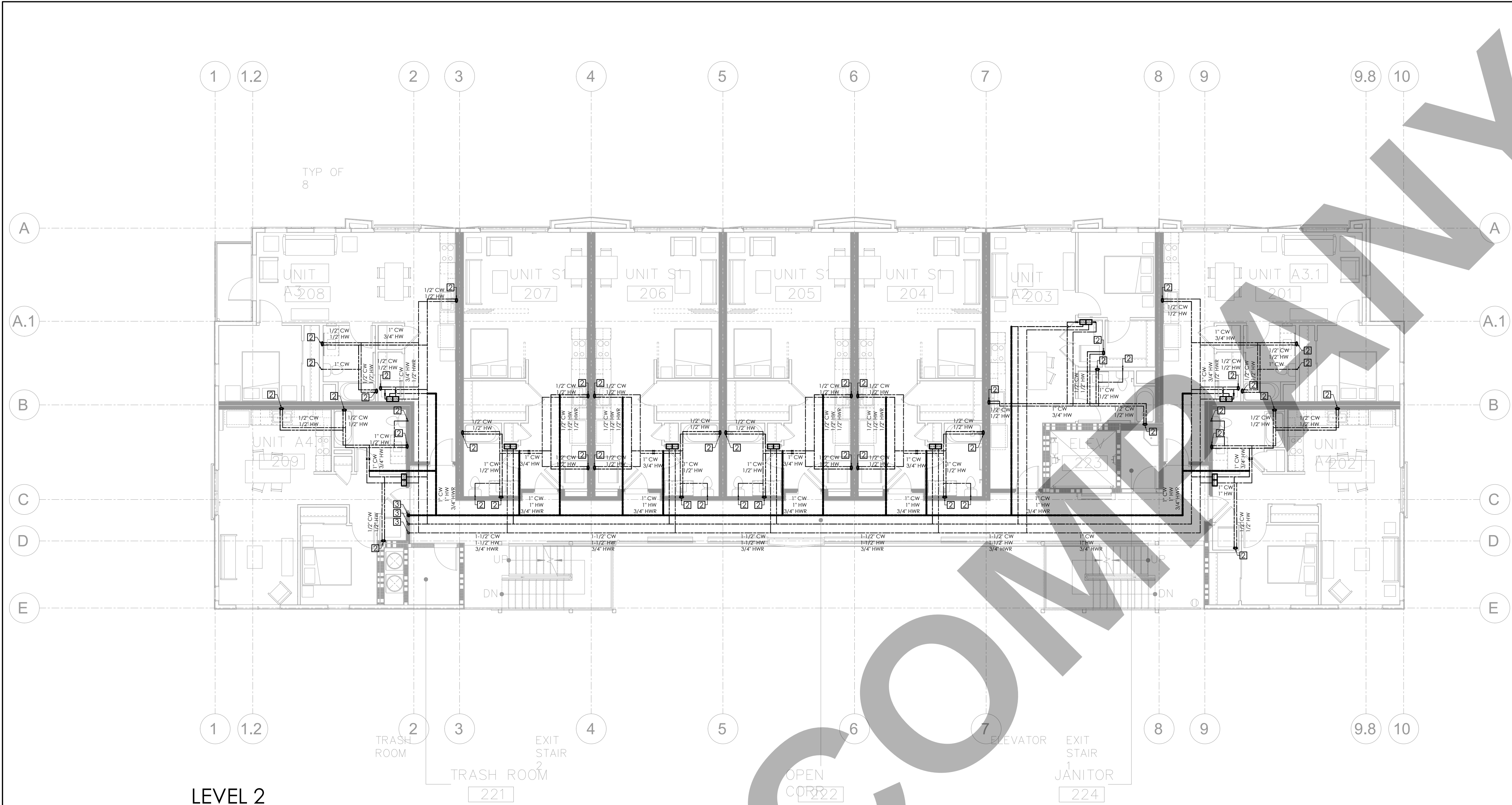
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LEVEL 2

GENERAL NOTES:

- 1. PRIOR TO PERFORMING WORK, CONTRACTOR TO COORDINATE EXACT PIPE SIZES, INVERT ELEVATIONS, PRESSURES FOR LOCATIONS OF ANY SEWER, WATER PIPING AND WATER METER WITH CIVIL UTILITIES DRAWINGS, AND ANY OTHER ENGINEER AS APPLICABLE.
- 2. PRIOR TO PERFORMING WORK, CONTRACTOR TO COORDINATE PIPE ROUTING WITH ALL OTHER TRADES AND EXISTING FIELD CONDITIONS.
- 3. REFER TO MECHANICAL PLANS FOR PLUMBING SPECIFICATION OF MATERIAL, INSULATION AND INSTALLATION REQUIREMENTS.
- 4. CONTRACTOR IS RESPONSIBLE FOR ROUGH-IN COORDINATION AND LOCATIONS. REFER TO ARCHITECTURAL PLANS FOR LOCATIONS AND FIXTURES.
- 5. CONTRACTOR IS RESPONSIBLE FOR ANY REQUIRED CUTTING AND PATCHING.
- 6. ALL NOTCHING, BORING, AND CUTTING OF HOLES IN WALL STUDS AND FLOOR JOISTS SHALL BE PERFORMED BASED ON THE LATEST ADOPTED AND APPROVED EDITION OF THE BUILDING CODE.
- 7. ALL PLUMBING FIXTURES SHALL BE OF WATER CONSERVATION TYPE AS REQUIRED BY LOCAL AUTHORITY HAVING JURISDICTION.
- 8. ALL WATER PIPING SHALL BE INSTALLED ON INTERIOR SIDE OF THE BUILDING WALL INSULATION.
- 9. CONTRACTOR SHALL PROVIDE VALVES LOCATED ABOVE LAY-IN CEILING OR 24"x24" CEILING ACCESS PANEL COORDINATE FINAL LOCATION AND SIZE WITH ARCHITECT. PROVIDE BALANCING VALVES FOR HOT WATER RETURN SYSTEM AS REQUIRED.
- 10. ALL SANITARY DRAINAGE PIPING 3" AND SMALLER SHALL BE SLOPED AT 1/4" PER FOOT. PIPING 4" AND LARGER SHALL BE SLOPED AT 1/8" PER FOOT.
- 11. ALL CONDENSATE DRAIN PIPING SHALL BE SLOPED AT 1/8" PER FOOT AND PROVIDE ACCESSIBLE CLEANOUTS AT ALL CHANGES OF DIRECTION.
- 12. VENTS THAT TERMINATE AT THE ROOF SHALL BE A MINIMUM OF 10' FROM ANY FRESH AIR INTAKE.
- 13. REFER TO THE PLUMBING DIAGRAMS FOR GUIDANCE OF INSTALLATION INTENT. CONTRACTOR IS TO PROVIDE ALL COMPONENTS NECESSARY TO MEET THE DESIGN INTENT, WHETHER SHOWN IN DIAGRAM OR NOT.

MINIMUM PIPE SIZE PER FIXTURE

FIXTURE UNIT	CWP (INCH)	HWP (INCH)
SHOWER	1/2	1/2
URINAL	3/4	-
WATER CLOSET	1	-
LAVATORY	1/2	1/2
KITCHEN SINK	3/4	3/4
DISHWASHER	-	3/4
BATHTUB	1/2	1/2
LAUNDRY MACHINE	1/2	1/2

PLUMBING PIPING MATERIAL SCHEDULE		
PIPING SYSTEM	LOCATION	ACCEPTABLE PIPING MATERIAL
DOMESTIC WATER	BELOW GRADE	ASTM B 88 TYPE K SOLDERED COPPER
	ABOVE GRADE	PEX A COMPRESSION JOINT

PLUMBING SHEET NOTES

SHEET NOTES:

- ①—DCW/DHW/DHWR TO ABOVE FLOOR.
- ②—DCW & DHW DROP IN WALL.
- ③—DCW/DHW/DHWR FROM BELOW FLOOR.

FROM 2019 CPC - TABLE 610.3:
WATER SUPPLY FIXTURE UNITS LOADS PER UNIT:

FIXTURE	W.S.F.U	QTY.	TOTAL W.S.F.U
KITCHEN SINK	1.5	1	1.5
BATHTUB	2.0	1	2.0
WATER CLOSET	2.5	1	2.5
LAVATORY	1.0	1	1.0
WASHING MACHINE	1.5	1	1.5
TOTAL =			8.5

AS PER 2019 CPC - TABE 610.4:
THE LONGEST RUN IS APPROX. 250 FT. AT 289 W.S.F.U
AND FOR W/M PRESSURE RANGE 46-60 PSI,
THE W/M SIZE NOT LESS THAN 2"
AND MAIN CWP TO NOT LESS THAN 2"

TOTAL BUILDING WATER LOAD PER UNIT		
DESCRIPTION	LOAD WSFU	PIPE SIZE PEX
DCW	7.0	1"
DHW	4.5	1"
TOT. COMBINED	10.5	1"

CLIENT:

ADDRESS:

929 18TH ST
BAKERSFIELD, CA 93301

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REV. NO	DESCRIPTION	DATE	BY
0	PERMIT SET	12.29.22	MN

PROJECT:

CLEO

TITLE:

138 P1.03 WS LAYOUT
LEVEL 02

PROJ. NO.

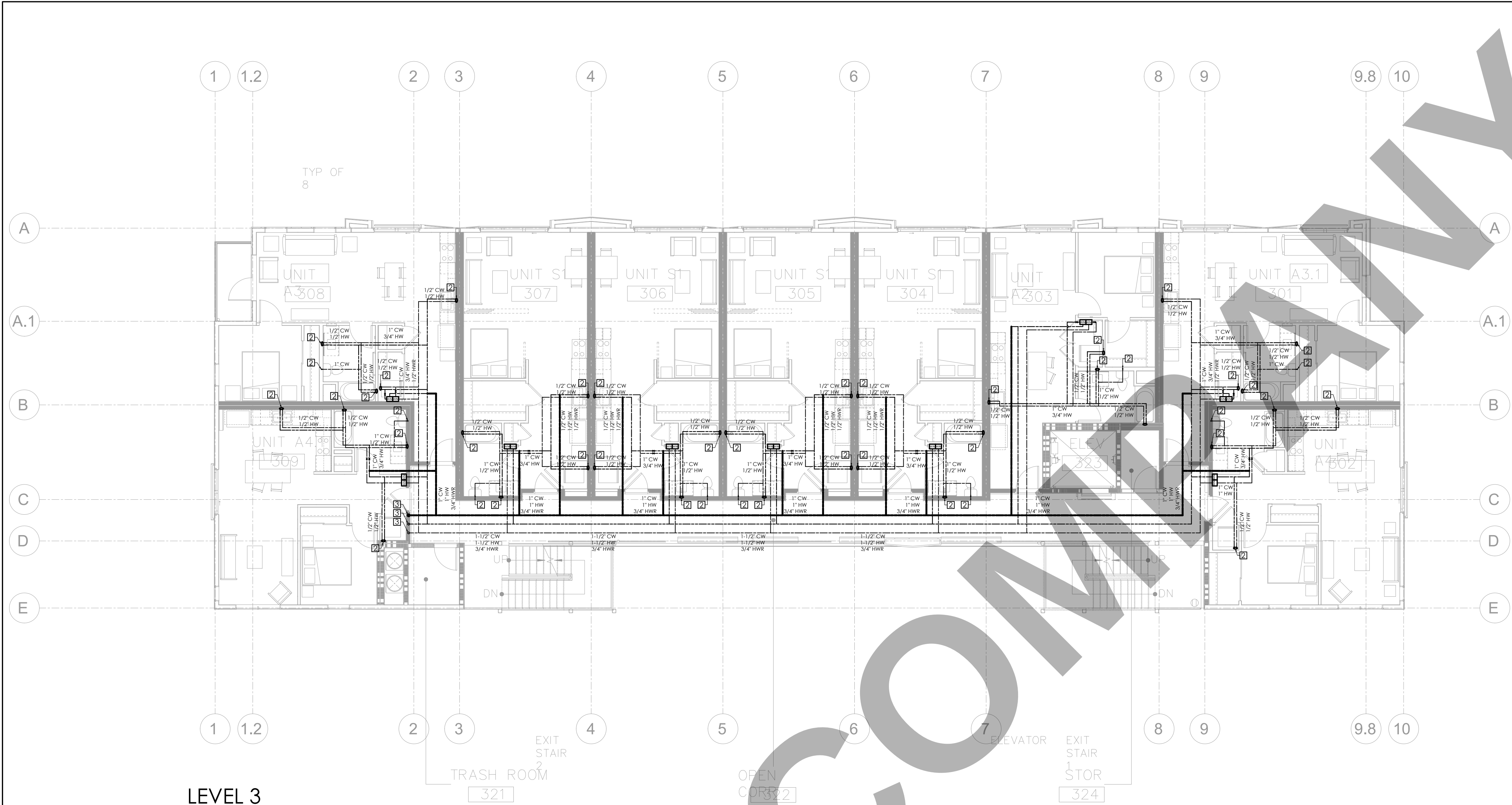
SCALE @ 24X36:

1/8"=1'-0"

DRAWING NO.

REV.

P 1 . 0 3



LEVEL 3

GENERAL NOTES:

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MINIMUM PIPE SIZE PER FIXTURE

FIXTURE UNIT	CWP (INCH)	HWP (INCH)
SHOWER	1/2	1/2
URINAL	3/4	-
WATER CLOSET	1	-
LAVATORY	1/2	1/2
KITCHEN SINK	3/4	3/4
DISHWASHER	-	3/4
BATHTUB	1/2	1/2
LAUNDRY MACHINE	1/2	1/2

PLUMBING PIPING MATERIAL SCHEDULE

PIPING SYSTEM	LOCATION	ACCEPTABLE PIPING MATERIAL
DOMESTIC WATER	BELOW GRADE	ASTM B 88 TYPE K SOLDERED COPPER
	ABOVE GRADE	PEX A COMPRESSION JOINT

PLUMBING SHEET NOTES

SHEET NOTES:

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DESCRIPTION	LOAD WSFU	PIPE SIZE PEX
DCW	7.0	1"
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TOT. COMBINED	10.5	1"

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REV. NO	DESCRIPTION	DATE	BY
0	PERMIT SET	12.29.22	MN

PROJECT:

CLEO

TITLE:

139 P1.04 WS LAYOUT
LEVEL 03

PROJ. NO.

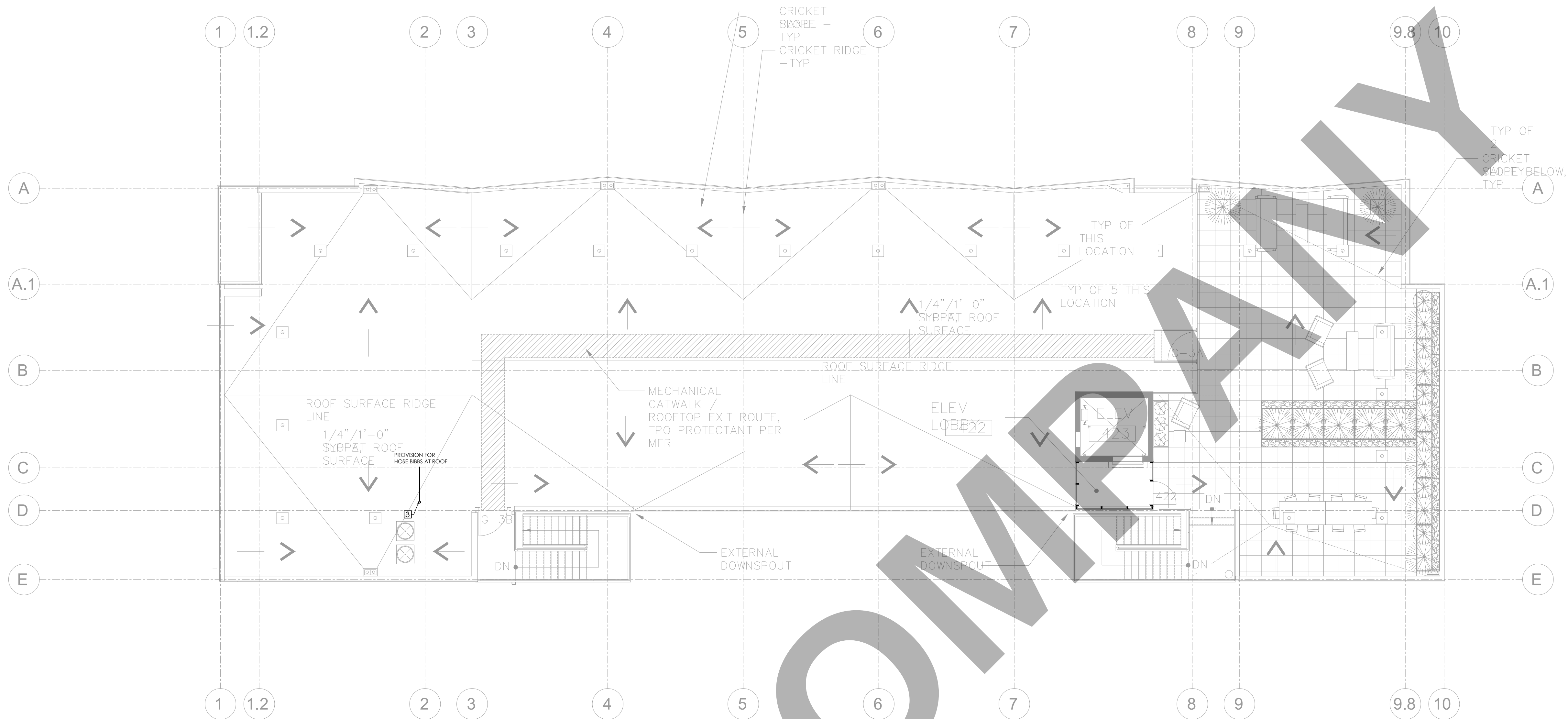
SCALE @ 24X36:

1/8"=1'-0"

DRAWING NO.

REV.

P 1 . 0 4

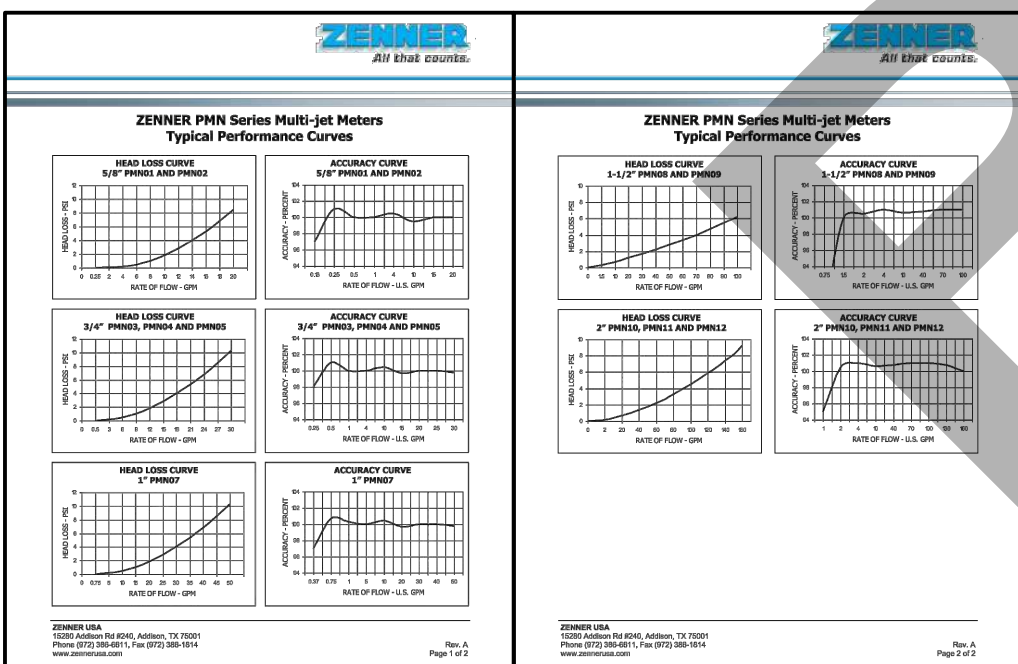


ROOF

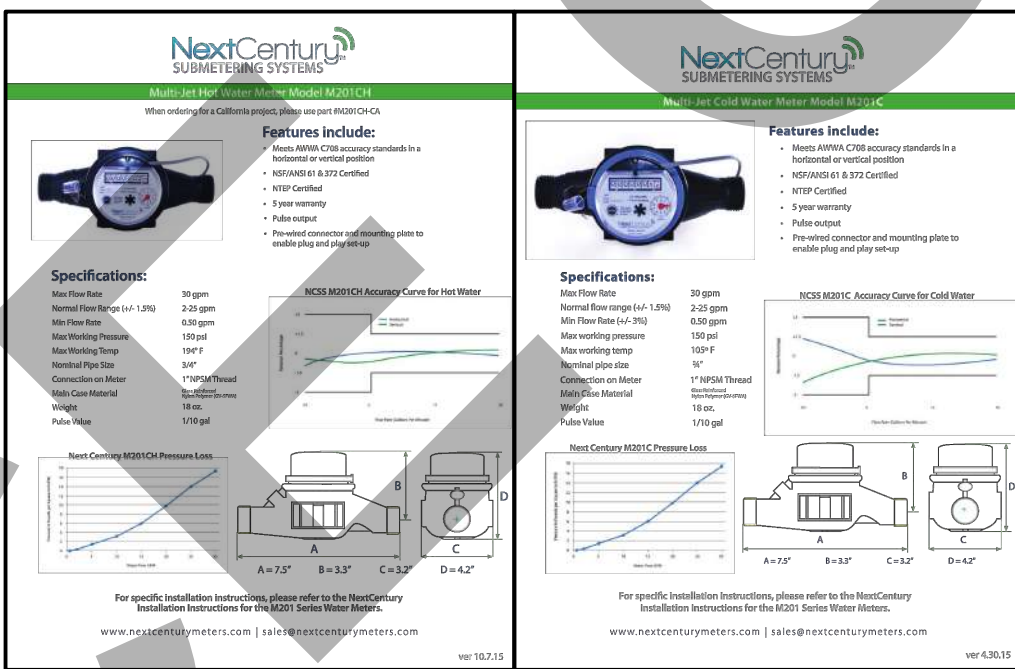
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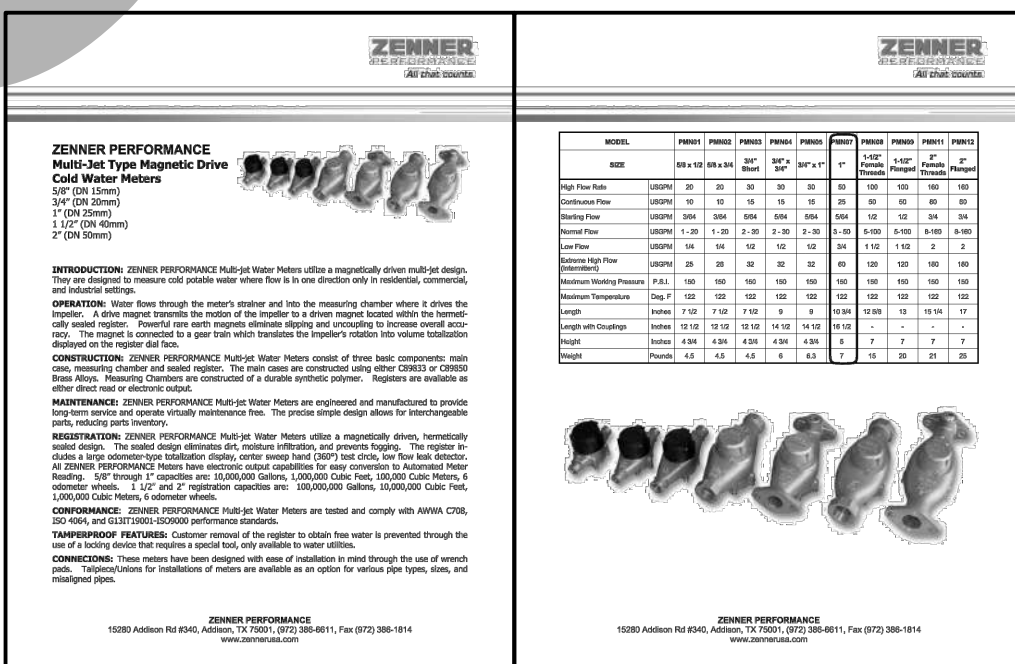
APPROVED EQUAL



APPROVED EQUAL



APPROVED EQUAL



PLUMBING FIXTURE SCHEDULE							
FIXT.	DESCRIPTION	MANUFACTURER	MODEL	ROUGH-IN			
				W	V	CW	HW
WC	WATER CLOSET	ALTO	ALTO-1.28: 137-3173	3"	2"	1/2"	-
SEAT	TOILET SEAT	EZ-FLO	65907	-	-	-	-
SEAT	TOILET SEAT	BEMIS	1955CT	-	-	-	-
LAV. BASN	LAVATORY BASIN	VTRIPOLI	TRIPOLI 3368	1-3/4"	-	-	-
LAV. FAUCET	LAVATORY FAUCET	MOEN	6145 SERIES	-	-	3/8"	3/8"
BATH SINK	WALL MOUNT BATH SINK	KOHLER, KINGSTON	K-2007	2"	1-1/2"	3/4"	3/4"
ELEC. FAUCET	ELECTRONIC FAUCET	CHICAGO FAUCETS	116.606 AB.1	-	-	3/8"	3/8"
SINK	SINGLE BOWL RADIUS SINK	MR	2905S	1-1/2"	-	-	-
FAUCET	KITCHEN FAUCET	MOEN	7565 SERIES	-	-	3/8"	3/8"
DISPOSAL	DISPOSAL	MOEN THE LITE	2905S	1-1/2"	-	-	-
BT	BATHTUB	PACE SUPPLY	2603SMT	2"	-	-	-
BT MIXER	BATHTUB FAUCET MIXER	MOEN	82876 SERIES	-	-	1/2"	1/2"
CAP	CAP	RAPID FIT	REVOLVER	-	-	-	-
MOP	MOP SINK	KOHLER	WHITBY K-6710	3"	-	-	-
MOP ST	MOP SINK STRAINER	KOHLER	K-9146	3-3/4"	-	-	-
MECH FAUCET	MECHANICAL FAUCET	CHICAGO FAUCETS	897-RCP	-	-	1/2"	1/2"
WASHER	CLOTHES WASHER	WHIRLPOOL	WFW5620HW	2"	-	3/4"	3/4"
DRYER	CLOTHES DRYER	WHIRLPOOL	WED5620HW	4" VENT	-	-	-

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REV. NO	DESCRIPTION	DATE	BY
0	PERMIT SET	12.29.22	MM

PROJECT:

CLEO

TITLE:

141 P1.06 WS LAYOUT
ROOF LEVEL

PROJ. NO.

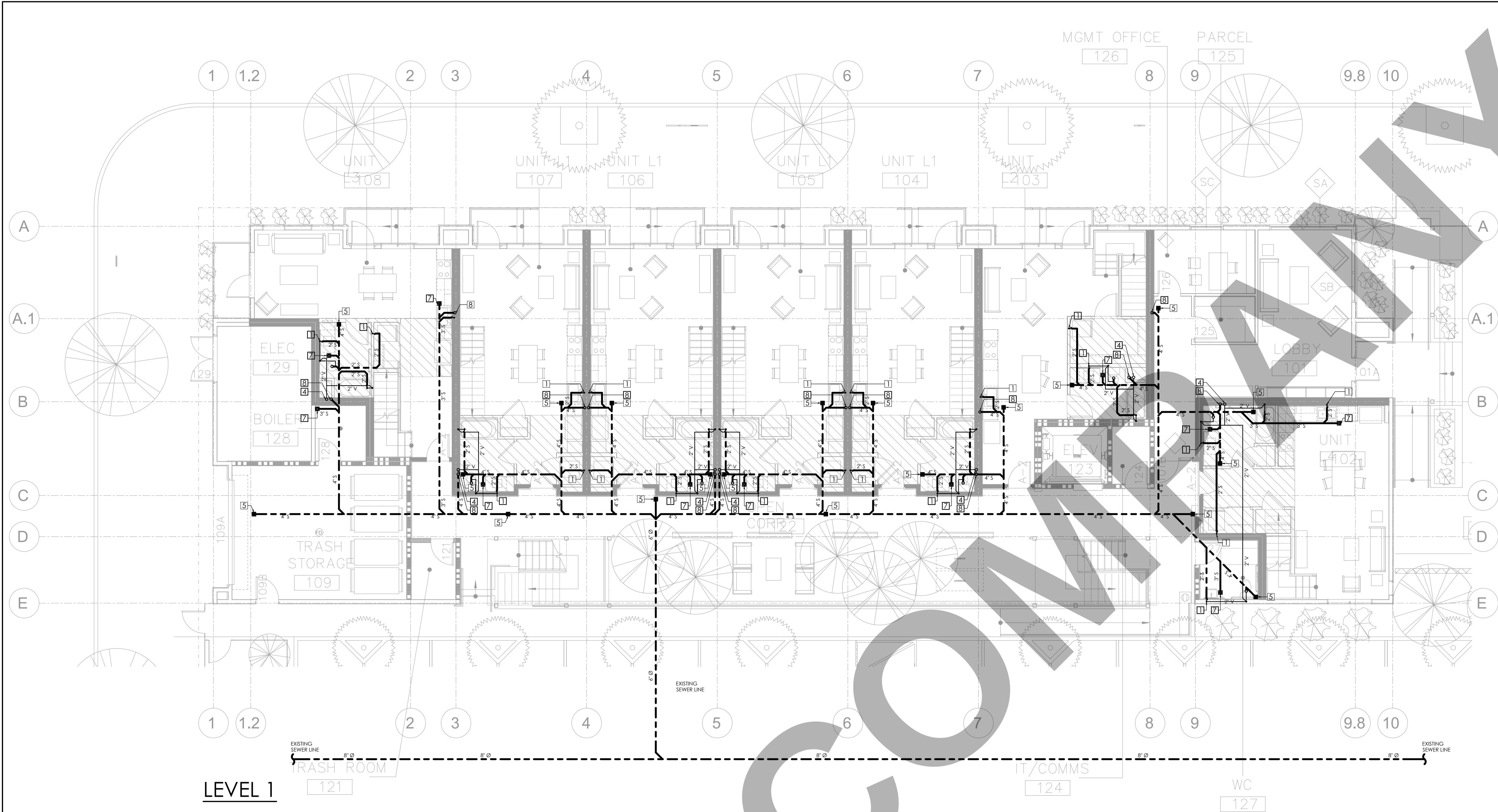
SCALE @ 24X36:

1/8"=1'-0"

DRAWING NO.

REV.

P 1 . 0 6



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PLUMBING PIPING MATERIAL SCHEDULE

PIPING SYSTEM	LOCATION	ACCEPTABLE PIPING MATERIAL
DOMESTIC WATER	BELOW GRADE	ASTM B 88 TYPE K SOLDERED COPPER
	ABOVE GRADE	PEX A COMPRESSION JOINT

REFERRING TO 2019 CALIFORNIA PLUMBING CODE CODE (IPC), TABLE 709.1:
DRAINAGE FIXTURE UNITS FOR FIXTURES AND GROUPS

FIXTURE TYPE	DRAINAGE FIXTURE UNIT VALUE AS LOAD FACTORS
LAVATORY	1
TOILET, PRIVATE	3
BATHTUB	2
LAUNDRY TRAY	2
FLOOR DRAIN 3 INCH TRAP SIZE	3
KITCHEN SINK, DOMESTIC	2

MINIMUM PIPE SIZE PER FIXTURE

FIXTURE UNIT	DR (INCH)	VENT (INCH)
SHOWER	3	2
WATER CLOSET	4	2
LAVATORY	1-1/2	2
KITCHEN SINK	2	2
HAND SINK	2	2
MOP SINK	2	2
DISHWASHER	1-1/2	2
BATHTUB	3	2
LAUNDRY MACHINE	1-1/2	2

FIXTURE TYPE	MAXIMUM FLOW RATE
Water closets	1.28 gallons/flush
Urinals (wall mounted)	0.125 gallons/flush
Showers	1.8 gpm @ 80 psi
Lavatory faucets-nonresidential	0.5 gpm @60 psi
Kitchen faucets	1.8 gpm @ 60 psi
Metering faucets	gallons/cycle

ALL PIPE BELOW 4"Ø PIPE SIZE TO BE SLOPED 2%.
ALL PIPES GREATER THAN 4"Ø PIPE SIZE SHALL BE SLOPED 1%.

REFERRING TO 2019 CALIFORNIA PLUMBING CODE CODE (IPC), TABLE 710.1(1) BUILDING DRAINS AND SEWERS

Dia of Pipe (Inches)	MAXIMUM NUMBER OF DRAINAGE FIXTURE UNITS (dfu)			
	Total for Horizontal Branch	Total Discharge into one branch interval	Total for stack of three branch Intervals or less	Total for stack greater than three branch intervals
1 1/2	3	2	4	8
2	6	6	10	24
2 1/2	12	9	20	42
3	20	20	48	72
4	160	90	240	500
5	360	200	540	1,100
6	620	350	960	1,900

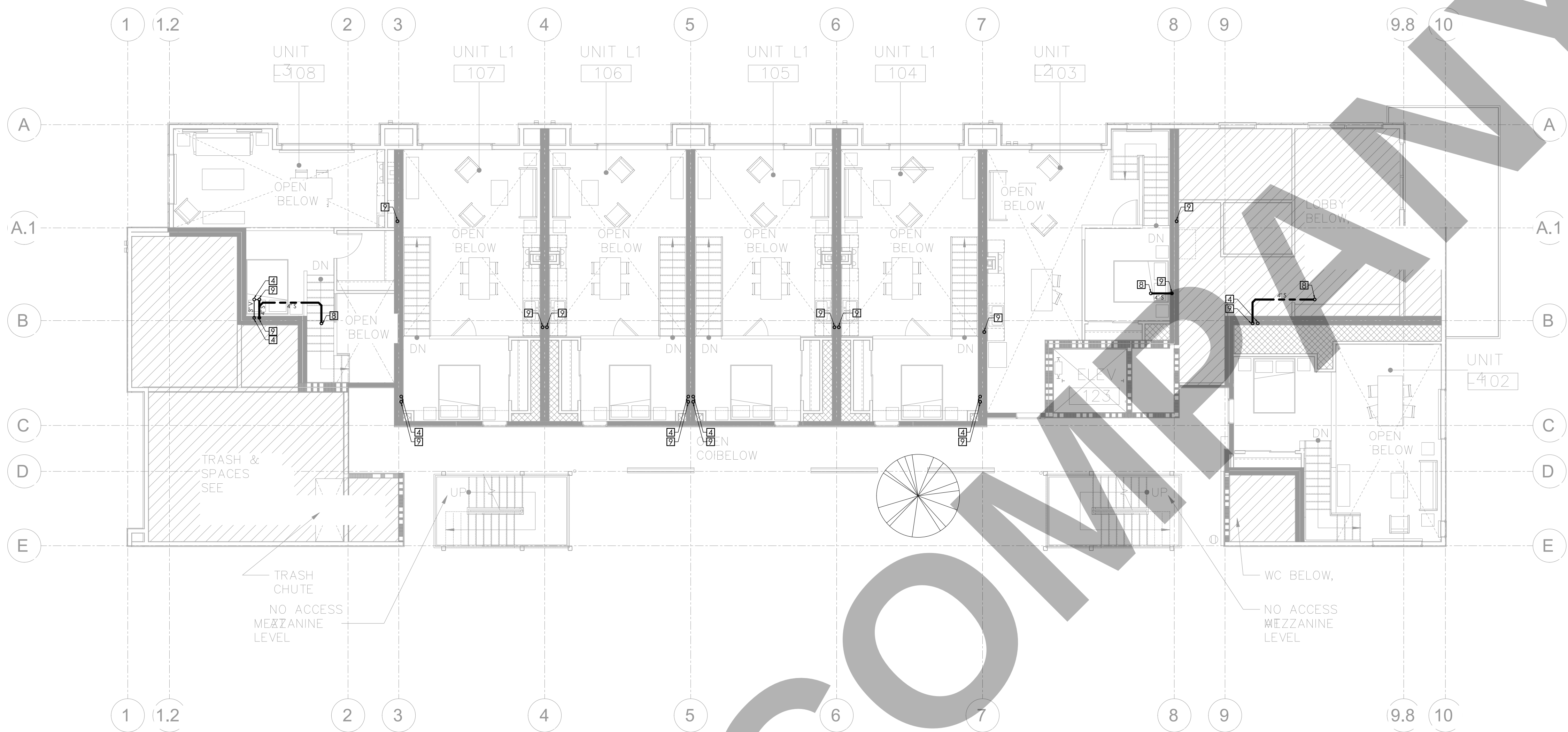
Cleanouts are required at the upper most terminals of all horizontal waste lines. Please provide cleanouts location within the floor plan.

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

PLUMBING SHEET NOTES

SHEET NOTES:

- 1— WASTE DROP AND 2" VENT RISE.
- 2— 2" VENT RISE TO HIGH LEVEL.
- 3— 1-1/2" VENT RISE TO HIGH LEVEL.
- 4— 3" VENT STACK TO ABOVE TERMINATED NOT LESS THAN 6 INCHES ABOVE THE ROOF NOR LESS THAN 1 FOOT FROM A VERTICAL SURFACE.
- 5— 4" FLOOR CLEAN-OUT.
- 6— OUTDOOR FLOOR CLEAN-OUT. REFER TO DWG FOR PIPE SIZE.
- 7— 3" FLOOR DRAIN.
- 8— 4" WASTE DROP FROM FLOOR ABOVE
- 9— 4" WASTE DROP TO FLOOR BELOW
- 10— 3" ROOF VENT CAP
- 11— 2" FROM FLOOR SINK
- 12— 2" WASTE DROP



MEZZANINE

- GENERAL NOTES:
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PLUMBING PIPING MATERIAL SCHEDULE

PIPING SYSTEM	LOCATION	ACCEPTABLE PIPING MATERIAL
WASTE & VENT	BELOW AND ABOVE GRADE	ASTM D 2665 PVC SCHEDULE 40, SOCKET FITTINGS DWV
	FROM SECOND TO FIRST FLOOR	ASTM A 888 CAST IRON, NO HUB SYSTEM

REFERRING TO 2019 CALIFORNIA PLUMBING CODE CODE (IPC), TABLE 709.1:
DRAINAGE FIXTURE UNITS FOR FIXTURES AND GROUPS

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MOP SINK	2	2
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2 1/2	12	9	20	42
3	20	20	48	72
4	160	90	240	500
5	360	200	540	1,100
6	620	350	960	1,900

Cleanouts are required at the upper most terminals of all horizontal waste lines. Please provide cleanouts location within the floor plan.

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

PLUMBING SHEET NOTES

SHEET NOTES:

- WASTE DROP AND 2" VENT RISE.
- 2" VENT RISE TO HIGH LEVEL.
- 1-1/2" VENT RISE TO HIGH LEVEL.
- 3" VENT STACK TO ABOVE TERMINATED NOT LESS THAN 6 INCHES ABOVE THE ROOF NOR LESS THAN 1 FOOT FROM A VERTICAL SURFACE.
- 4" FLOOR CLEAN-OUT.
- OUTDOOR FLOOR CLEAN-OUT. REFER TO DWG FOR PIPE SIZE.
- 3" FLOOR DRAIN.
- 4" WASTE DROP FROM FLOOR ABOVE
- 4" WASTE DROP TO FLOOR BELOW
- 3" ROOF VENT CAP
- 2" FROM FLOOR SINK
- 2" WASTE DROP

REV. NO	DESCRIPTION	DATE	BY
0	PERMIT SET	12.29.22	MN

PROJECT:

CLEO

TITLE:

144 P3.01 SAN. LAYOUT MEZZ LEVEL

PROJ. NO.

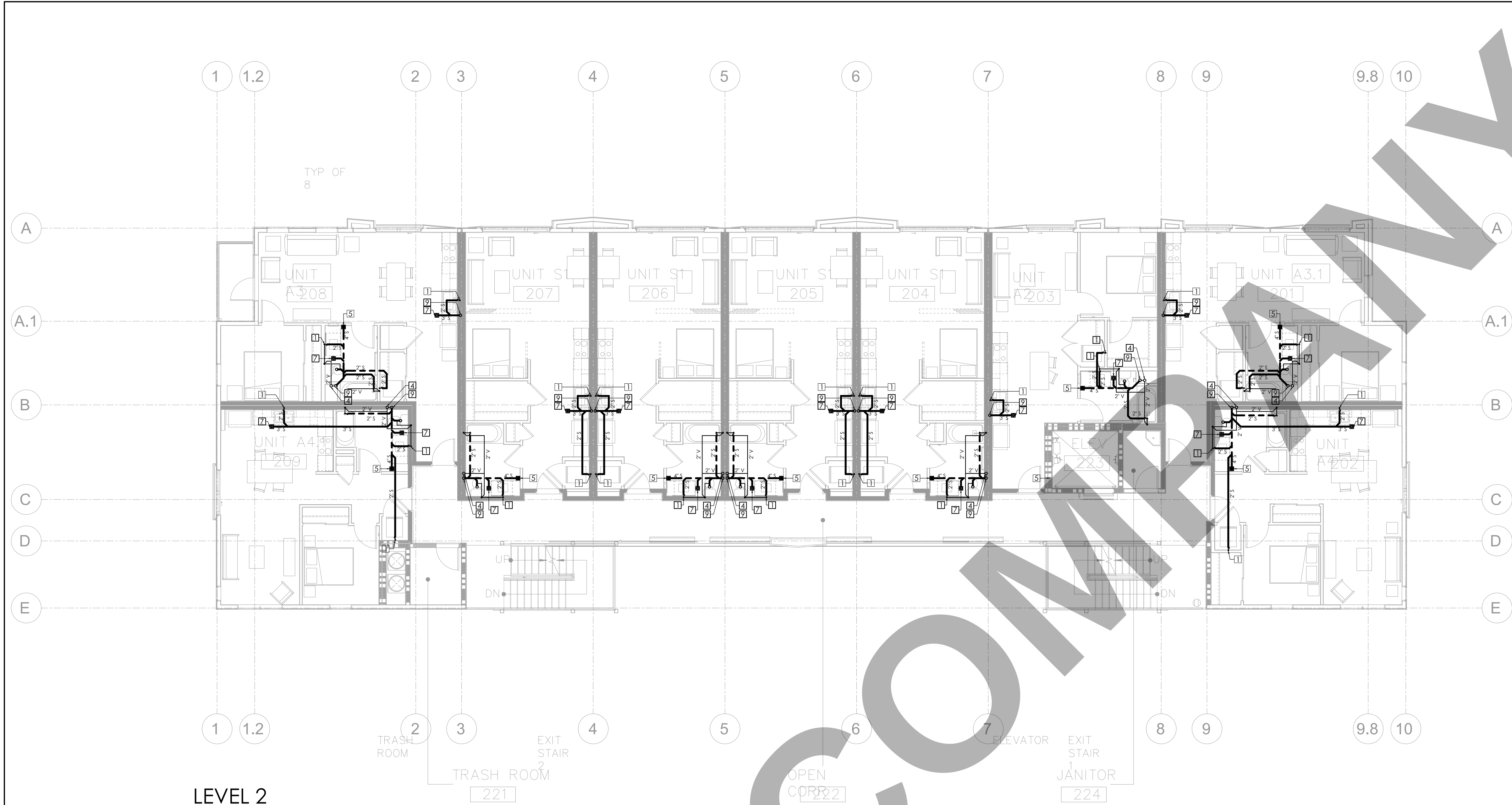
SCALE @ 24X36:

1/8"=1'-0"

DRAWING NO.

REV.

P 3 . 0 1



LEVEL 2

- GENERAL NOTES:**
- PRIOR TO PERFORMING WORK, CONTRACTOR TO COORDINATE EXACT PIPE SIZES, INVERT ELEVATIONS, PRESSURES FOR LOCATIONS OF ANY SEWER, WATER PIPING AND WATER METER WITH CIVIL UTILITIES DRAWINGS, AND ANY OTHER ENGINEER AS APPLICABLE.
 - PRIOR TO PERFORMING WORK, CONTRACTOR TO COORDINATE PIPE ROUTING WITH ALL OTHER TRADES AND EXISTING FIELD CONDITIONS.
 - REFER TO MECHANICAL PLANS FOR PLUMBING SPECIFICATION OF MATERIAL, INSULATION AND INSTALLATION REQUIREMENTS.
 - CONTRACTOR IS RESPONSIBLE FOR ROUGH-IN COORDINATION AND LOCATIONS. REFER TO ARCHITECTURAL PLANS FOR LOCATIONS AND FIXTURES.
 - CONTRACTOR IS RESPONSIBLE FOR ANY REQUIRED CUTTING AND PATCHING.
 - ALL NOTCHING, BORING, AND CUTTING OF HOLES IN WALL STUDS AND FLOOR JOISTS SHALL BE PERFORMED BASED ON THE LATEST ADOPTED AND APPROVED EDITION OF THE BUILDING CODE.
 - ALL PLUMBING FIXTURES SHALL BE OF WATER CONSERVATION TYPE AS REQUIRED BY LOCAL AUTHORITY HAVING JURISDICTION.
 - ALL WATER PIPING SHALL BE INSTALLED ON INTERIOR SIDE OF THE BUILDING WALL INSULATION.
 - CONTRACTOR SHALL PROVIDE VALVES LOCATED ABOVE LAY-IN CEILING OR 24"x24" CEILING ACCESS PANEL COORDINATE FINAL LOCATION AND SIZE WITH ARCHITECT. PROVIDE BALANCING VALVES FOR HOT WATER RETURN SYSTEM AS REQUIRED.
 - ALL SANITARY DRAINAGE PIPING 3" AND SMALLER SHALL BE SLOPED AT $\frac{1}{8}$ " PER FOOT. PIPING 4" AND LARGER SHALL BE SLOPED AT $\frac{1}{8}$ " PER FOOT.
 - ALL CONDENSATE DRAIN PIPING SHALL BE SLOPED AT $\frac{1}{8}$ " PER FOOT AND PROVIDE ACCESSIBLE CLEANOUTS AT ALL CHANGES OF DIRECTION.
 - VENTS THAT TERMINATE AT THE ROOF SHALL BE A MINIMUM OF 10' FROM ANY FRESH AIR INTAKE.
 - REFER TO THE PLUMBING DIAGRAMS FOR GUIDANCE OF INSTALLATION INTENT. CONTRACTOR IS TO PROVIDE ALL COMPONENTS NECESSARY TO MEET THE DESIGN INTENT, WHETHER SHOWN IN DIAGRAM OR NOT.

CLIENT:

ADDRESS:

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PLUMBING PIPING MATERIAL SCHEDULE

PIPING SYSTEM	LOCATION	ACCEPTABLE PIPING MATERIAL
WASTE & VENT	BELOW AND ABOVE GRADE	ASTM D 2665 PVC SCHEDULE 40, SOCKET FITTINGS DWV
	FROM SECOND TO FIRST FLOOR	ASTM A 888 CAST IRON, NO HUB SYSTEM

REFERRING TO 2019 CALIFORNIA PLUMBING CODE CODE (IPC), TABLE 709.1:
DRAINAGE FIXTURE UNITS FOR FIXTURES AND GROUPS

FIXTURE TYPE	DRAINAGE FIXTURE UNIT VALUE AS LOAD FACTORS
LAVATORY	1
TOILET, PRIVATE	3
BATHTUB	2
LAUNDRY TRAY	2
FLOOR DRAIN 3 INCH TRAP SIZE	3
KITCHEN SINK, DOMESTIC	2

MINIMUM PIPE SIZE PER FIXTURE

FIXTURE UNIT	DR (INCH)	VENT (INCH)
SHOWER	3	2
WATER CLOSET	4	2
LAVATORY	1-1/2	2
KITCHEN SINK	2	2
HAND SINK	2	2
MOP SINK	2	2
DISHWASHER	1-1/2	2
BATHTUB	3	2
LAUNDRY MACHINE	1-1/2	2

FIXTURE TYPE	MAXIMUM FLOW RATE
Water closets	1.28 gallons/flush
Urinals (wall mounted)	0.125 gallons/flush
Showers	1.8 gpm @ 80 psi
Lavatory faucets-nonresidential	0.5 gpm @60 psi
Kitchen faucets	1.8 gpm @ 60 psi
Metering faucets	gallons/cycle

ALL PIPE BELOW 4"Ø PIPE SIZE TO BE SLOPED 2%.
ALL PIPES GREATER THAN 4"Ø PIPE SIZE SHALL BE SLOPED 1%.

REFERRING TO 2019 CALIFORNIA PLUMBING CODE CODE (IPC), TABLE 710.1(1) BUILDING DRAINS AND SEWERS

Dia of Pipe (Inches)	MAXIMUM NUMBER OF DRAINAGE FIXTURE UNITS (dfu)			
	Total for Horizontal Branch	Total Discharge into one branch interval	Total for stack of three branch Intervals or less	Total for stack greater than three branch intervals
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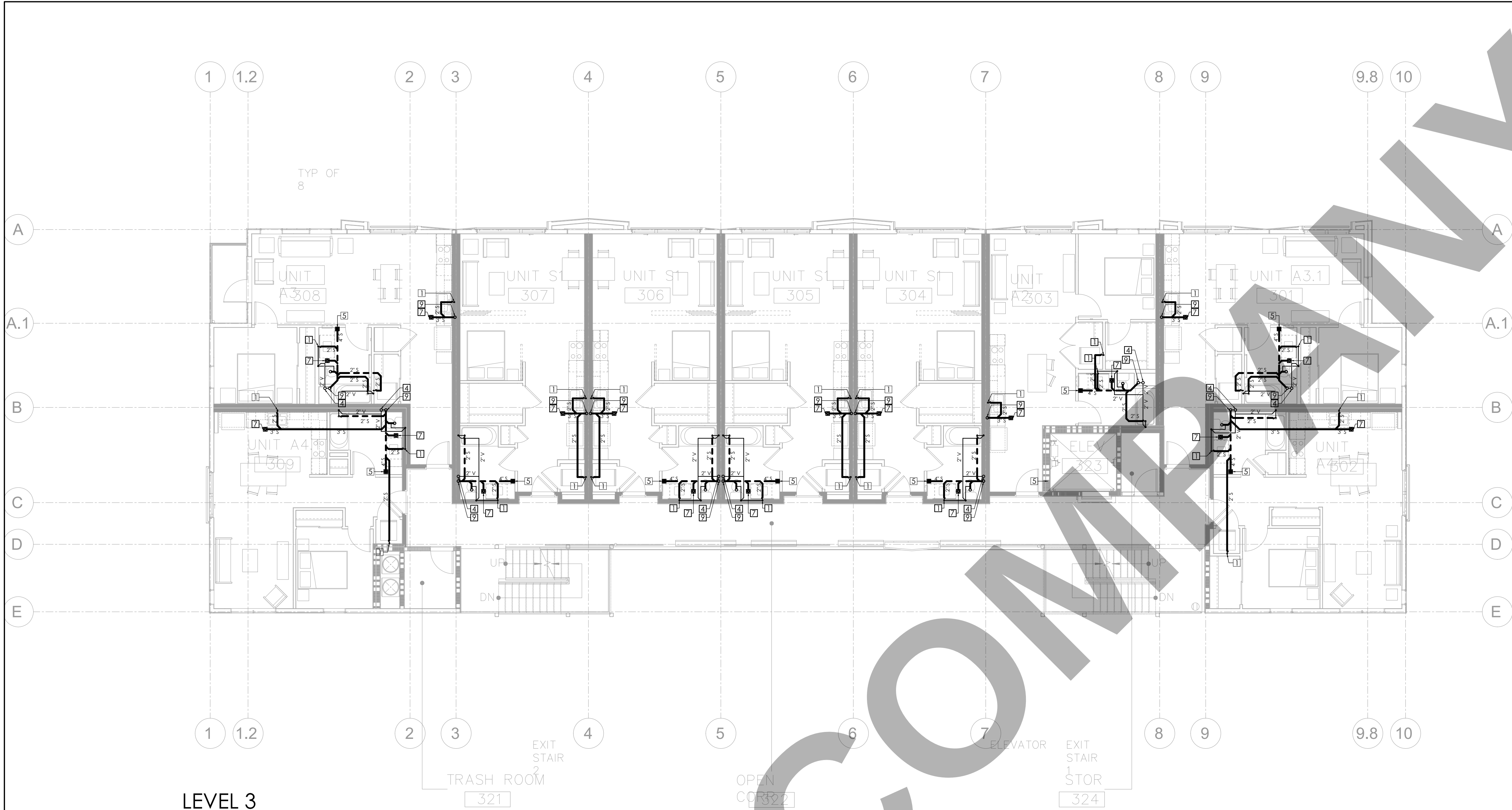
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PLUMBING SHEET NOTES

SHEET NOTES:

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- 2" VENT RISE TO HIGH LEVEL.
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- 3" FLOOR DRAIN.
- 4" WASTE DROP FROM FLOOR ABOVE
- 4" WASTE DROP TO FLOOR BELOW
- 3" ROOF VENT CAP
- 2" FROM FLOOR SINK
- 2" WASTE DROP



- GENERAL NOTES:**
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PLUMBING PIPING MATERIAL SCHEDULE

PIPING SYSTEM	LOCATION	ACCEPTABLE PIPING MATERIAL
WASTE & VENT	BELOW AND ABOVE GRADE	ASTM D 2665 PVC SCHEDULE 40, SOCKET FITTINGS DWV
	FROM SECOND TO FIRST FLOOR	ASTM A 888 CAST IRON, NO HUB SYSTEM

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BATHTUB	2
LAUNDRY TRAY	2
FLOOR DRAIN 3 INCH TRAP SIZE	3
KITCHEN SINK, DOMESTIC	2

MINIMUM PIPE SIZE PER FIXTURE

FIXTURE UNIT	DR (INCH)	VENT (INCH)
SHOWER	3	2
WATER CLOSET	4	2
LAVATORY	1-1/2	2
KITCHEN SINK	2	2
HAND SINK	2	2
MOP SINK	2	2
DISHWASHER	1-1/2	2
BATHTUB	3	2
LAUNDRY MACHINE	1-1/2	2

FIXTURE TYPE	MAXIMUM FLOW RATE
Water closets	1.28 gallons/flush
Urinals (wall mounted)	0.125 gallons/flush
Showers	1.8 gpm @ 80 psi
Lavatory faucets-nonresidential	0.5 gpm @60 psi
Kitchen faucets	1.8 gpm @ 60 psi
Metering faucets	gallons/cycle

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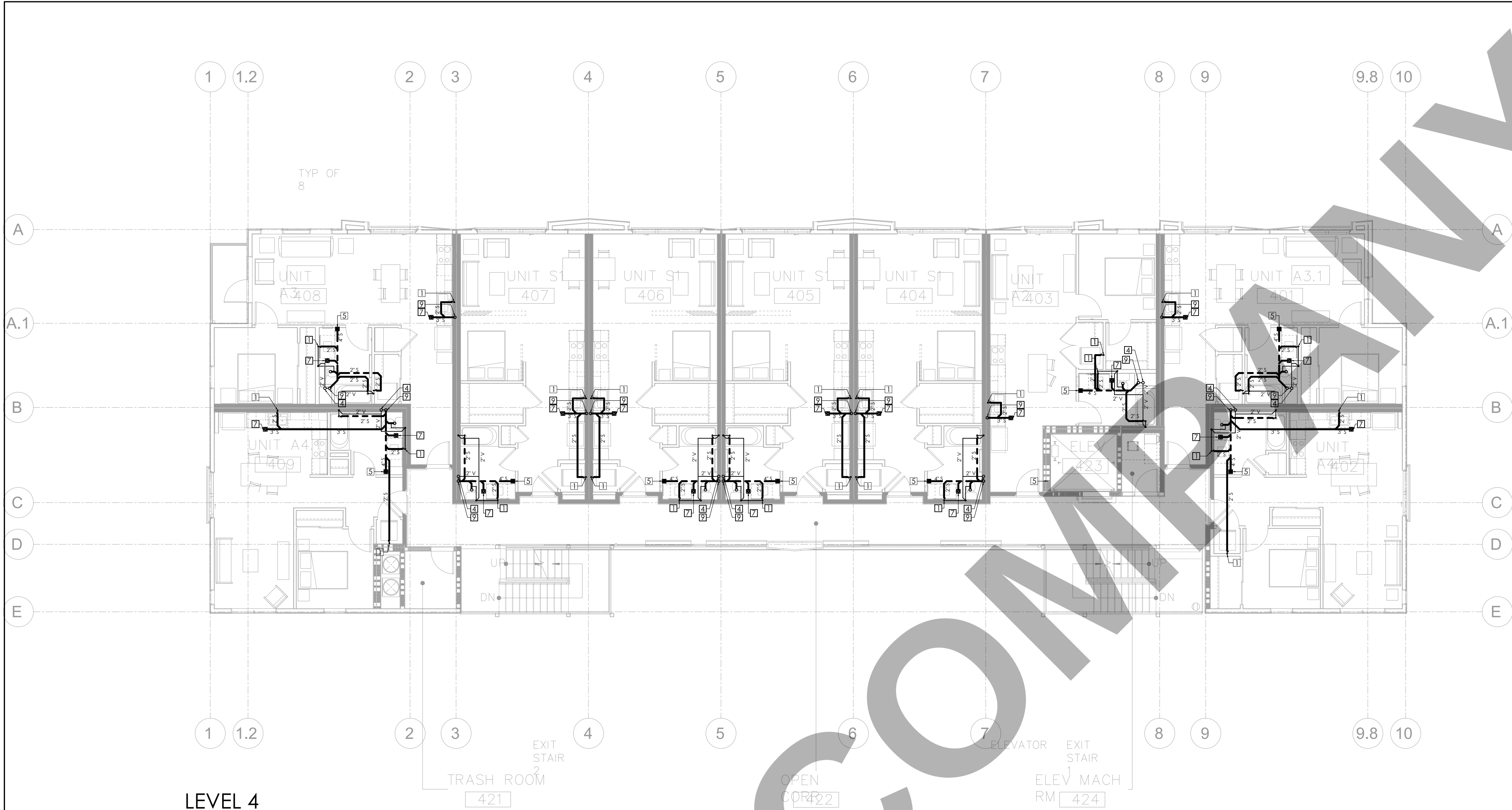
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PLUMBING SHEET NOTES

SHEET NOTES:

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- 6 — OUTDOOR FLOOR CLEAN-OUT. REFER TO DWG FOR PIPE SIZE.
- 7 — 3" FLOOR DRAIN.
- 8 — 4" WASTE DROP FROM FLOOR ABOVE
- 9 — 4" WASTE DROP TO FLOOR BELOW
- 10 — 3" ROOF VENT CAP
- 11 — 2" FROM FLOOR SINK
- 12 — 2" WASTE DROP



LEVEL 4

GENERAL NOTES:

1. PRIOR TO PERFORMING WORK, CONTRACTOR TO COORDINATE EXACT PIPE SIZES, INVERT ELEVATIONS, PRESSURES FOR LOCATIONS OF ANY SEWER, WATER PIPING AND WATER METER WITH CIVIL UTILITIES DRAWINGS, AND ANY OTHER ENGINEER AS APPLICABLE.
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10. ALL SANITARY DRAINAGE PIPING 3" AND SMALLER SHALL BE SLOPED AT $\frac{1}{4}$ " PER FOOT. PIPING 4" AND LARGER SHALL BE SLOPED AT $\frac{1}{8}$ " PER FOOT.
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MINIMUM PIPE SIZE PER FIXTURE

FIXTURE UNIT	DR (INCH)	VENT (INCH)
SHOWER	3	2
WATER CLOSET	4	2
LAVATORY	1-1/2	2
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HAND SINK	2	2
MOP SINK	2	2
DISHWASHER	1-1/2	2
BATHTUB	3	2
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FIXTURE TYPE	MAXIMUM FLOW RATE
Water closets	1.28 gallons/flush
Urinals (wall mounted)	0.125 gallons/flush
Showers	1.8 gpm @ 80 psi
Lavatory faucets-nonresidential	0.5 gpm @60 psi
Kitchen faucets	1.8 gpm @ 60 psi
Metering faucets	gallons/cycle

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- 12 — 2" WASTE DROP

REV. NO	DESCRIPTION	DATE	BY
0	PERMIT SET	12.29.22	MN

PROJECT:

CLEO

TITLE:
**147 P3.04 SANITARY LAYOUT
LEVEL 04**

PROJ. NO.

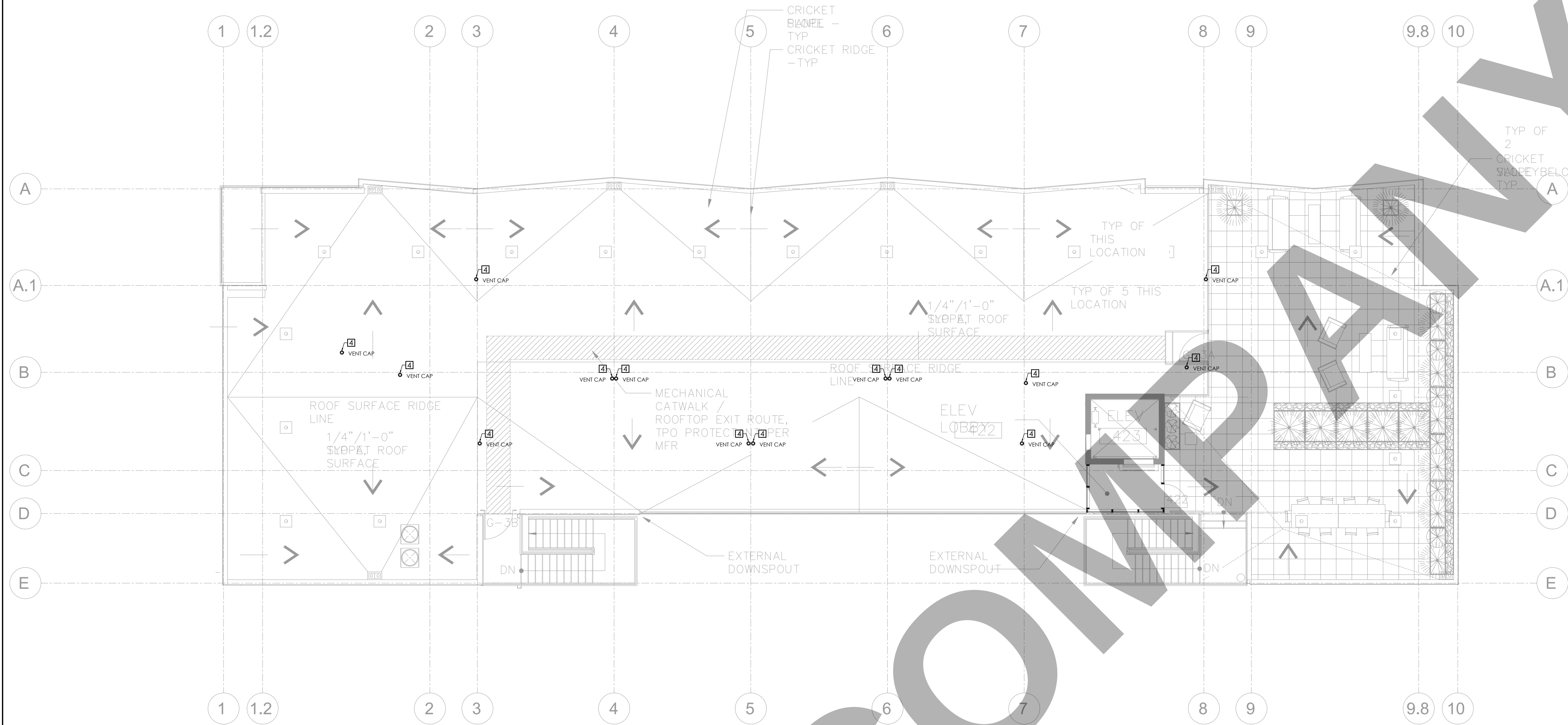
SCALE @ 24X36:

1/8"=1'-0"

DRAWING NO.

REV.

P 3 . 0 4



ROOF

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MOP SINK	2	2
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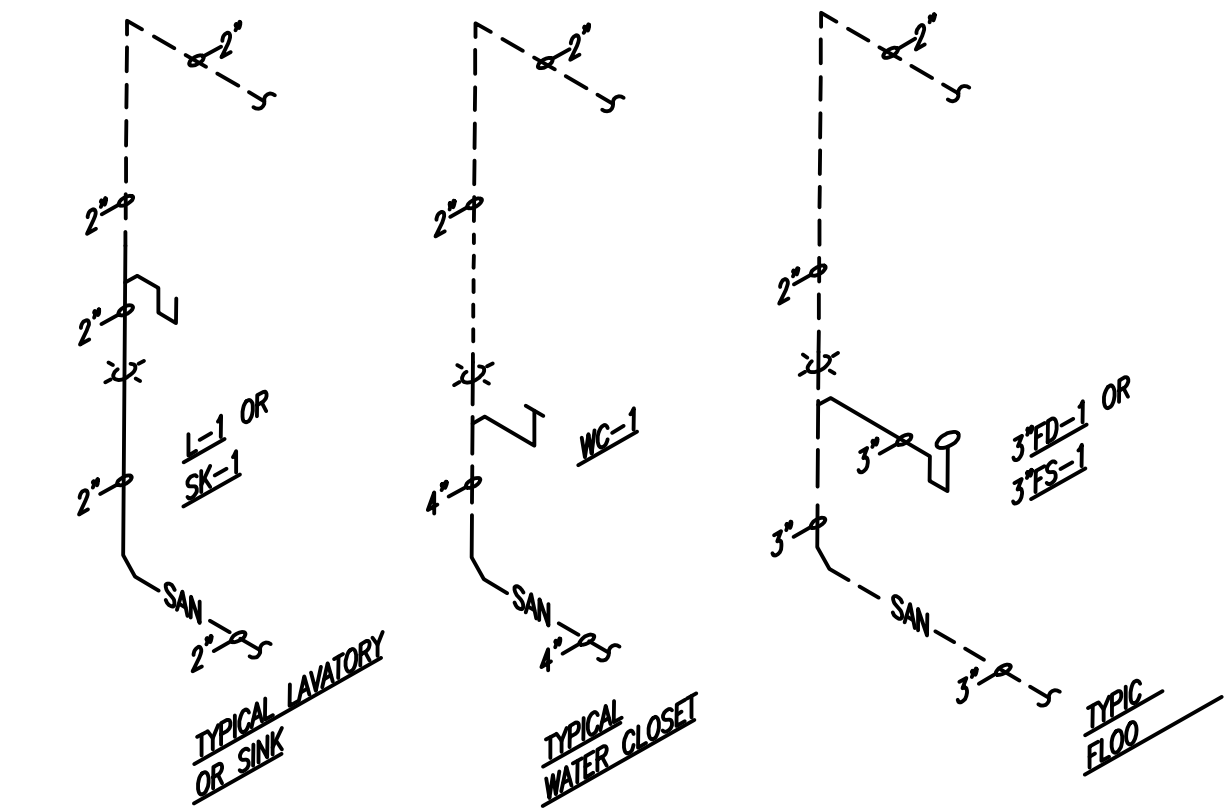
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4	160	90	240	500
5	360	200	540	1,100
6	620	350	960	1,900

Cleanouts are required at the upper most terminals of all horizontal waste lines. Please provide cleanouts location within the floor plan.

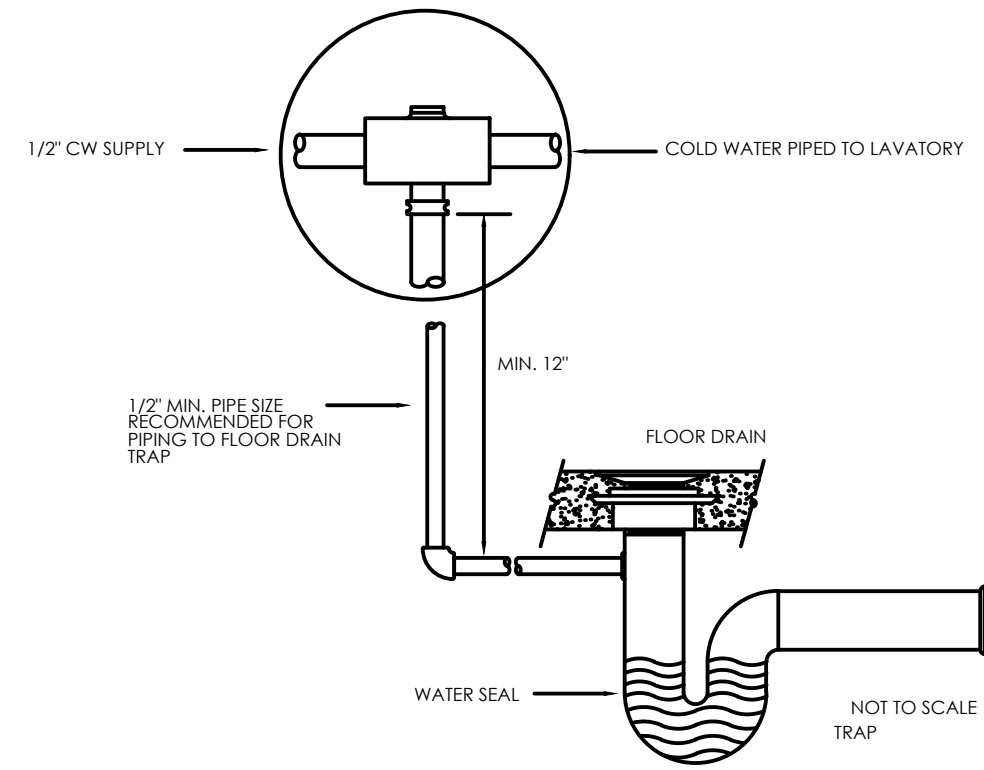
ABS/PVC vent terminations up through the roof exposed to sunlight are required to be protected by water based synthetic latex paints." 906.1

PLUMBING SHEET NOTES
SHEET NOTES:

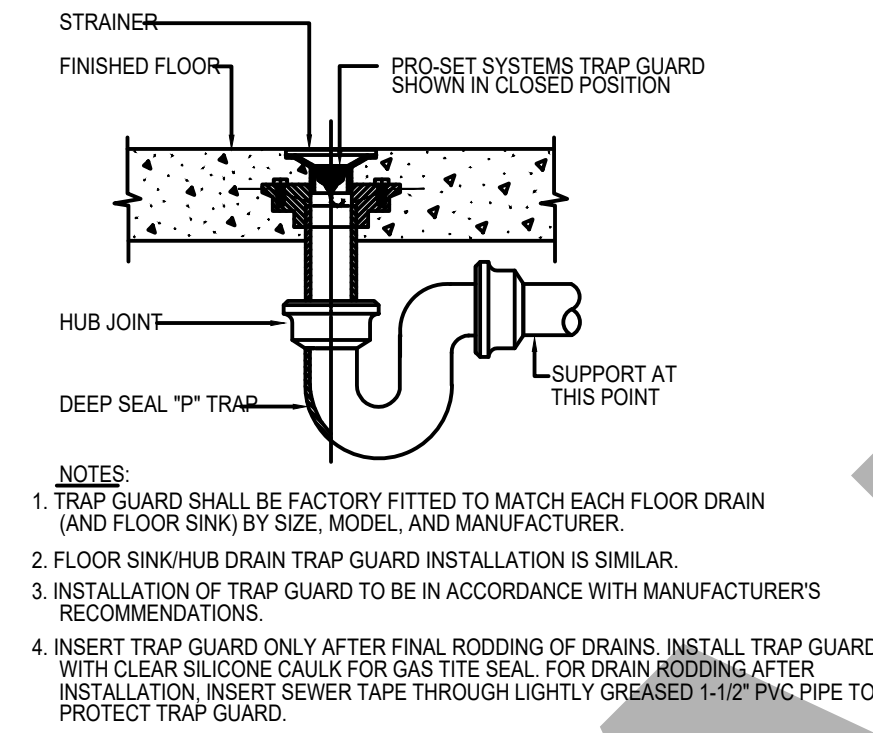
- 1 — WASTE DROP AND 2" VENT RISE.
- 2 — 2" VENT RISE TO HIGH LEVEL.
- 3 — 1-1/2" VENT RISE TO HIGH LEVEL.
- 4 — 3" VENT STACK TO ABOVE TERMINATED NOT LESS THAN 6 INCHES ABOVE THE ROOF NOR LESS THAN 1 FOOT FROM A VERTICAL SURFACE.
- 5 — 4" FLOOR CLEAN-OUT.
- 6 — OUTDOOR FLOOR CLEAN-OUT. REFER TO DWG FOR PIPE SIZE.
- 7 — 3" FLOOR DRAIN.
- 8 — 4" WASTE DROP FROM FLOOR ABOVE
- 9 — 4" WASTE DROP TO FLOOR BELOW
- 10 — 3" ROOF VENT CAP
- 11 — 2" FROM FLOOR SINK
- 12 — 2" WASTE DROP



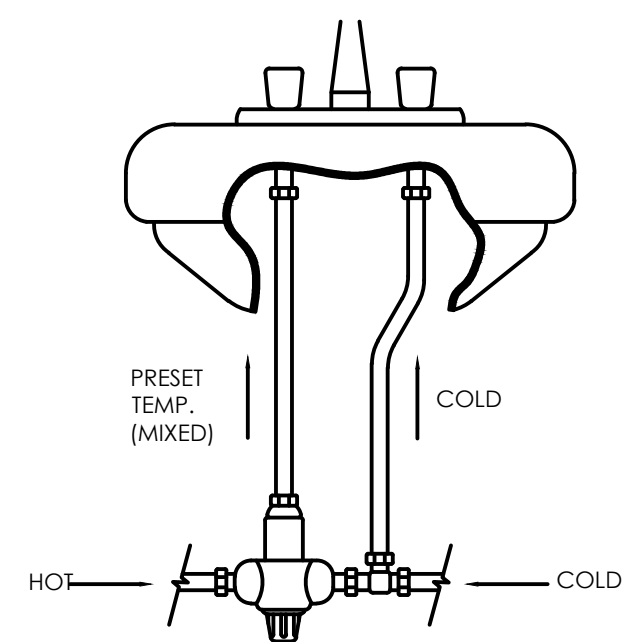
1 **TYPICAL WASTE AND VENT RISERS**
SCALE: NONE



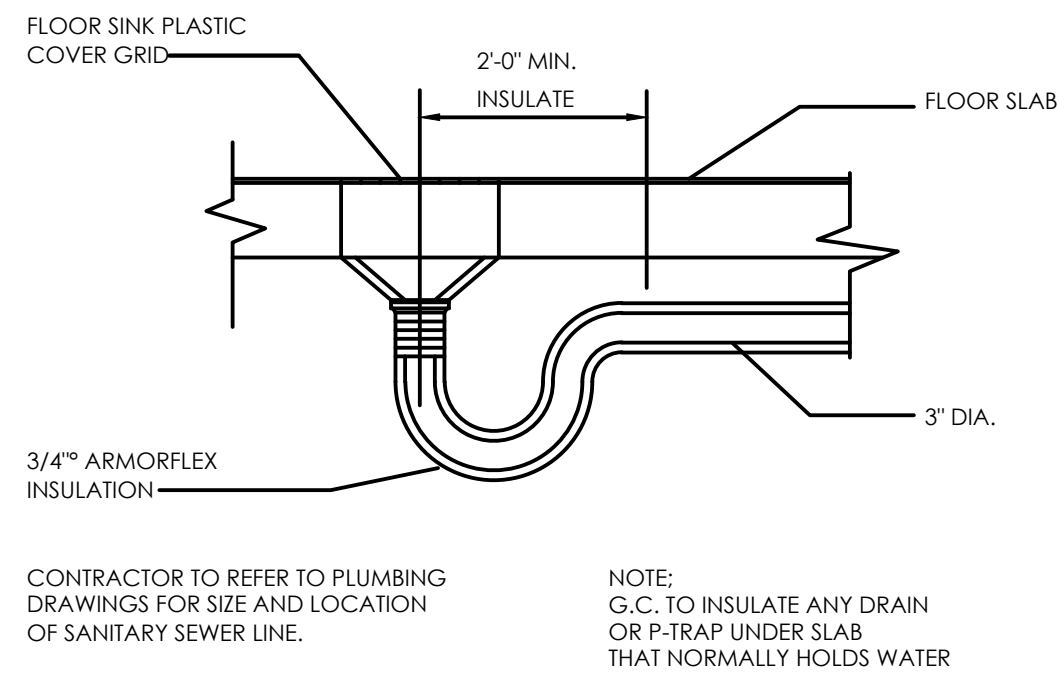
2 **TRAP PRIMER**
SCALE: NONE



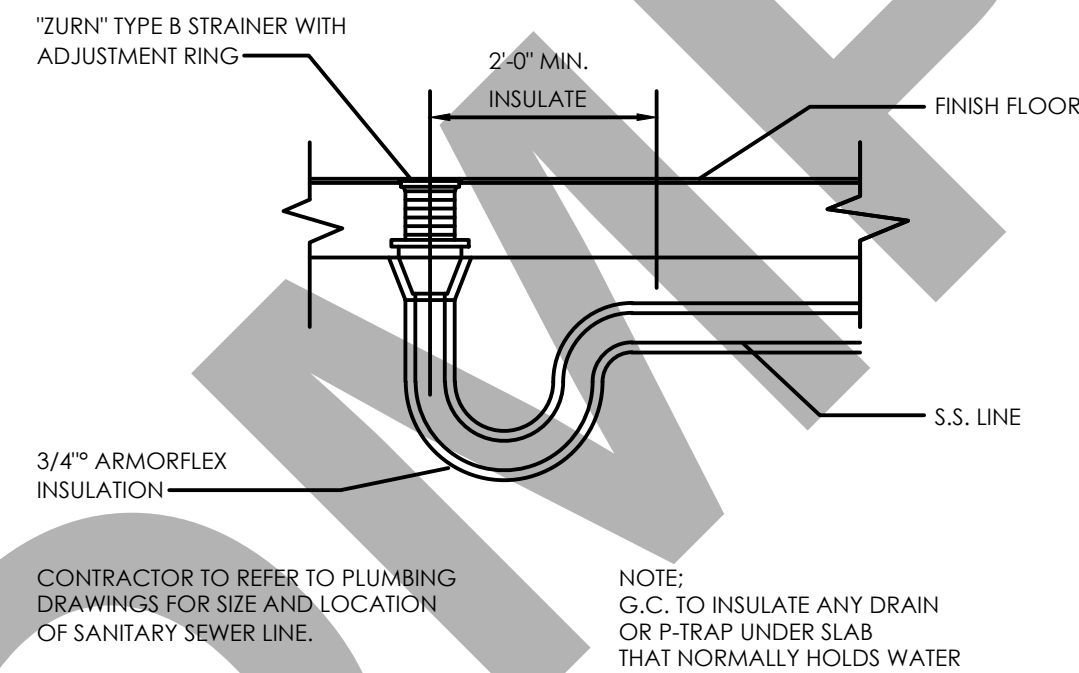
3 **FLOOR DRAIN WITH TRAP SEAL PROTECTION**
SCALE: NONE



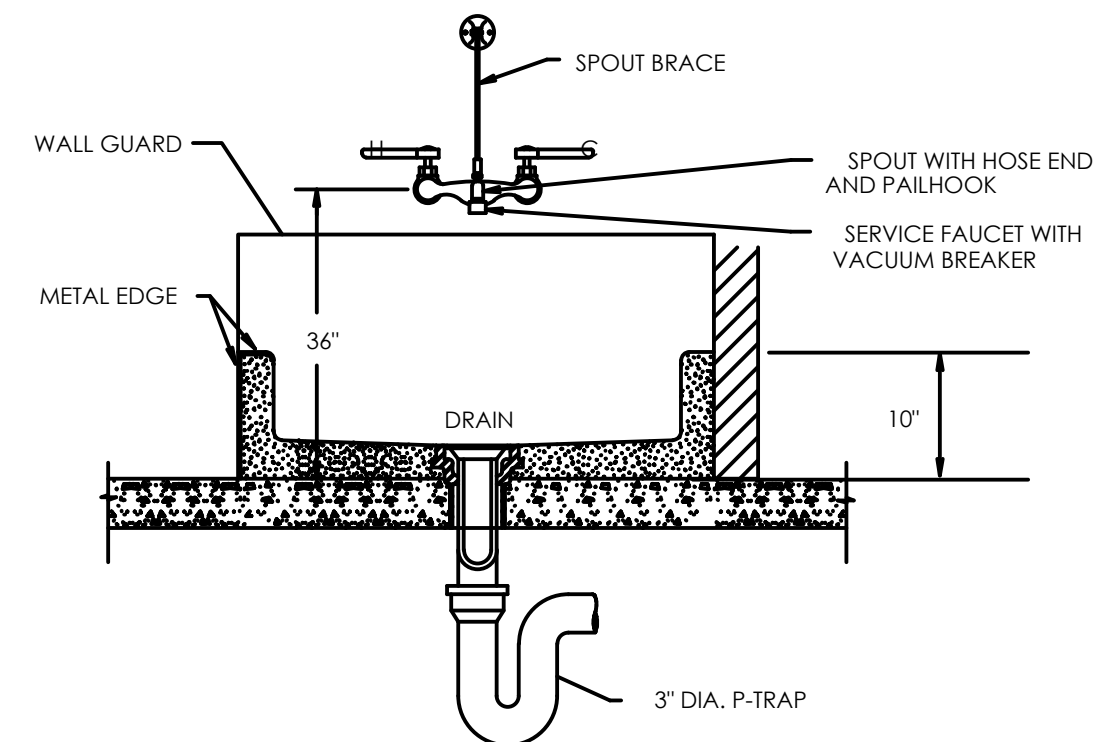
ANTI-SCALD MIXING VALVE
NO SCALE



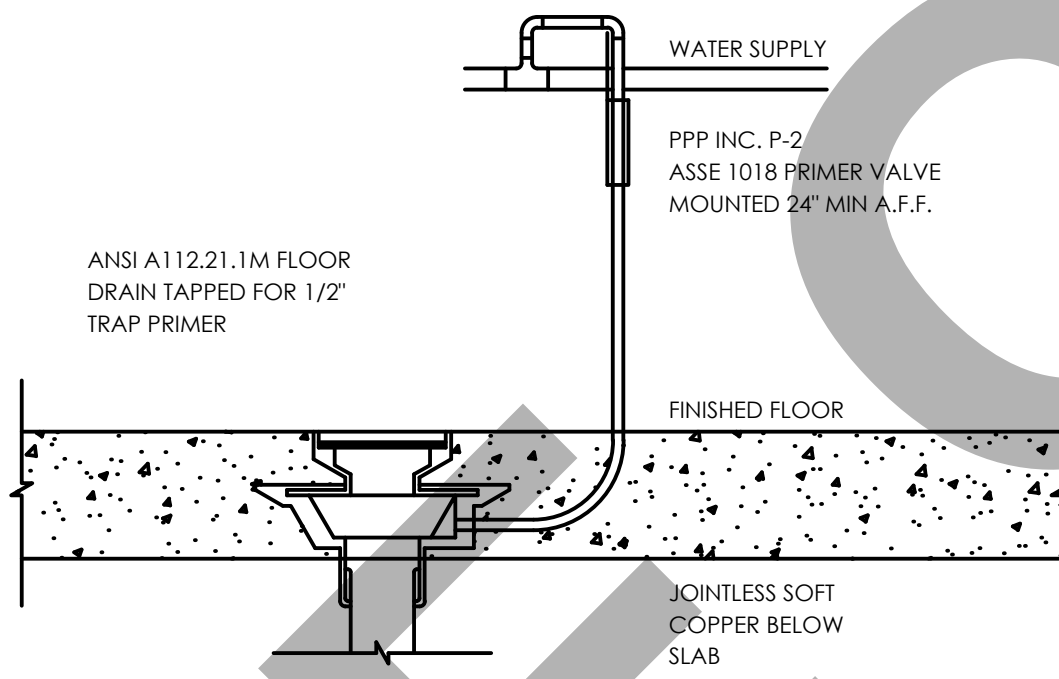
FLOOR SINK DETAIL
NO SCALE



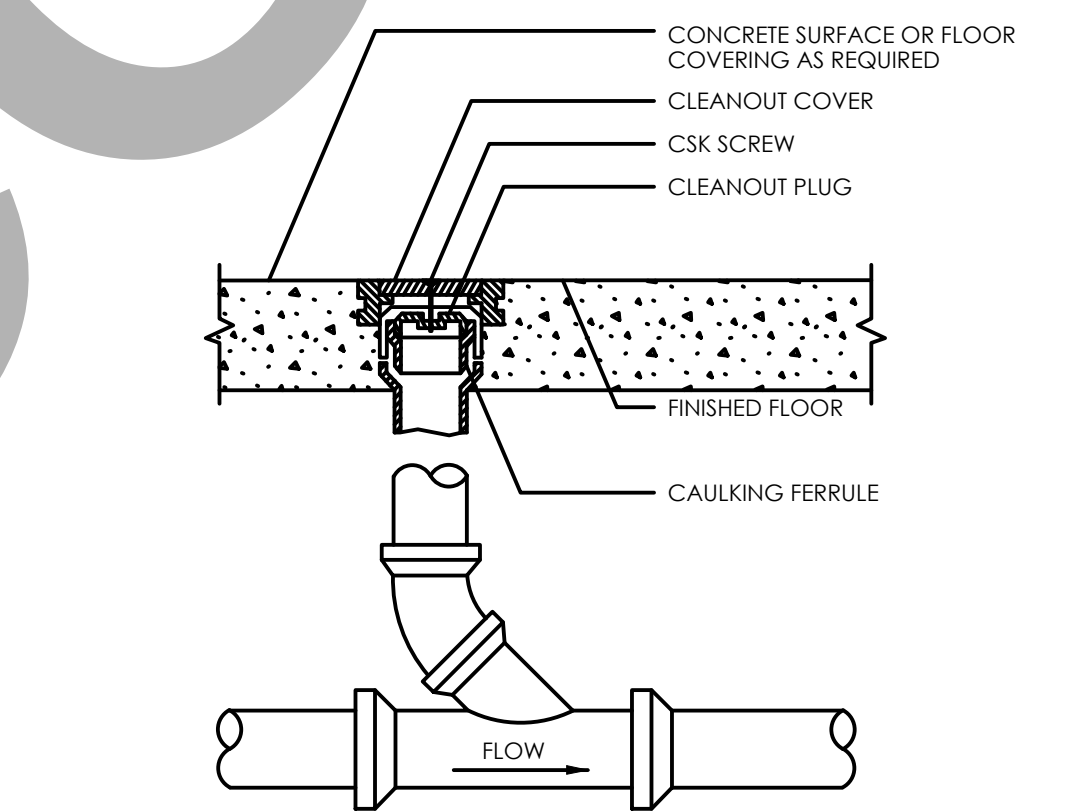
FLOOR DRAIN DETAIL
NO SCALE



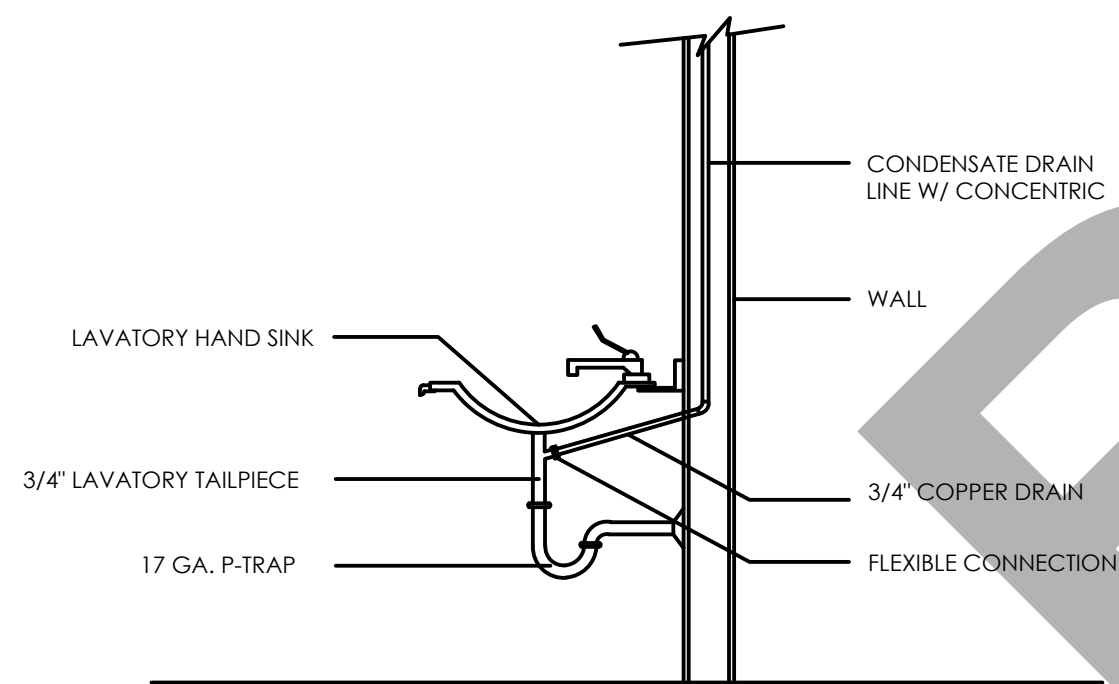
MOP SINK DETAIL
NO SCALE



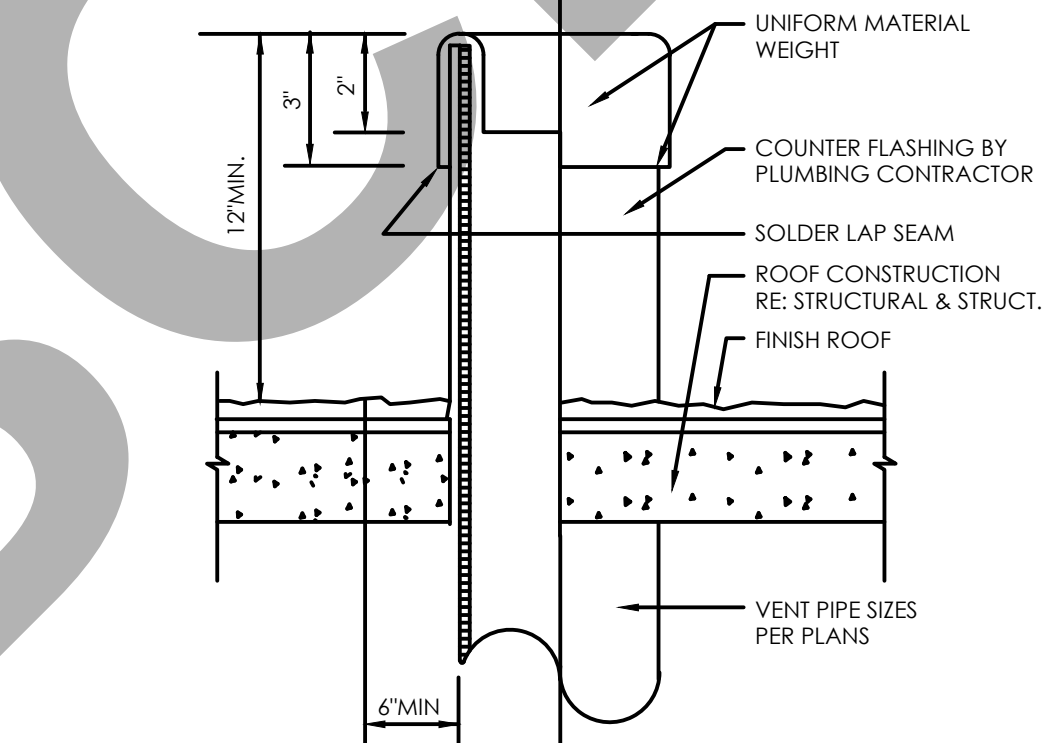
TRAP PRIMER DETAIL
NO SCALE



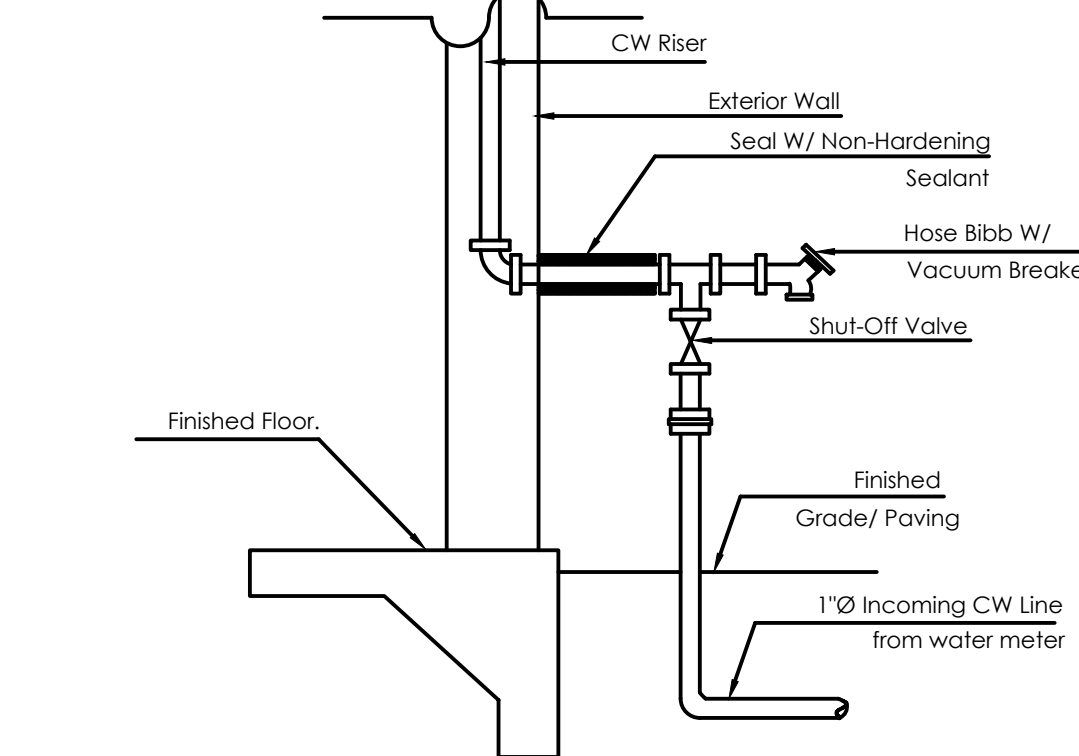
FLOOR CLEANOUT DETAIL
NO SCALE



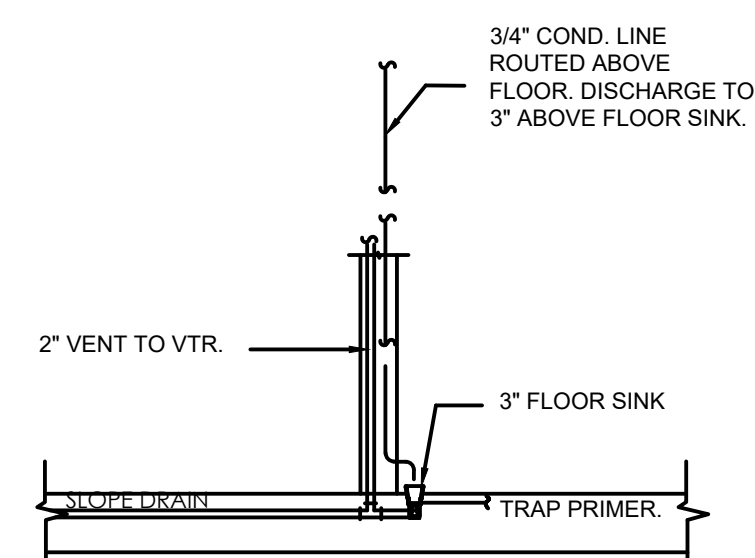
CONDENSATE DETAIL
NO SCALE



VENT THRU ROOF DETAIL
NO SCALE



WATER ENTRY DETAIL
NO SCALE



COND. ON FLOOR SINK DETAIL
NO SCALE

CLIENT:

ADDRESS:
929 18TH ST
BAKERSFIELD, CA 93301

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NOTES:
1. ALL DIMENSIONS HEREIN ARE IN IMPERIAL UNITS UNLESS STATED OTHERWISE.
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3. THE CONTRACTOR MUST CHECK ALL DIMENSION AT SITE BEFORE COMMENCING WORK.
4. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING ALL NECESSARY TEMPORARY SUPPORT TO THE BUILDING AND ANY ADJACENT STRUCTURES.

REV. NO	DESCRIPTION	DATE	BY
0	PERMIT SET	12.29.22	MN

PROJECT:
CLEO

TITLE:
149 P4.00 PLUM. GENERAL DETAILS

PROJ. NO. SCALE @ 24X36:
NTS

DRAWING NO. REV.
P 4 . 0 0

CALIFORNIA GAS CODE CHECKING:

GAS:

1208.7 Gas Meters. Gas meters shall be selected for the maximum expected pressure and permissible pressure drop. [NFPA 54:5.7.1]

1208.7.1 Location. Gas meters shall be located in ventilated spaces readily accessible for examination, reading, replacement, or necessary maintenance. [NFPA54:5.7.2.1]

1208.7.1.1 Subject to Damage. Gas meters shall not be placed where they will be subjected to damage, such as adjacent to a driveway; under a fire escape; n public passages, halls, or where they will be subject to excessive corrosion or vibration. [NFPA 54:5.7.2.2]

1208.7.1.2 Extreme Temperatures. Gas meters shall not be located where they will be subjected to extreme temperatures or sudden extreme changes in temperature or in areas where they are subjected to temperatures beyond those recommended by the manufacturer. [NFPA 54:5.7.2.3]

1208.7.2 Supports. Gas meters shall be supported or connected to rigid piping so as not to exert a strain n the meters. Where flexible connectors are used to connect a gas meter to downstream piping at mobile homes in mobile home parks, the meter shall be supported by a post or bracket placed in a firm footing or by other means providing equivalent support. [NFPA 54:5.7.3]

1208.7.3 Meter Protection. Meters shall be protected against overpressure, backpressure, and vacuum. [NFPA54:5.7.4]

1208.7.4 Identification. Gas piping at multiple meter installations shall be marked by a metal tag or other permanent means designating the building or the part of the building being supplied and attached by the installing agency. [NFPA 54:5.7.5]

1208.8 Gas Pressure Regulators. A line pressure regulator or gas appliance pressure regulator, as applicable, shall be installed where the gas supply pressure exceeds that at which the branch supply line or appliances are designed to operate or vary beyond design pressure limits. [NFPA 54:5.8.1]

1210.0 Gas Piping Installation.

1210.1 Piping Underground. Underground gas piping shall be installed with sufficient clearance from any other underground structure to avoid contact therewith, to allow maintenance, and to protect against damage from proximity to other structures. In addition, underground plastic piping shall be installed with sufficient clearance or shall be insulated from sources of heat to prevent the heat from impairing the serviceability of the pipe. [NFPA 54:7.1.1]

1212.6 Appliance Shutoff Valves and Connections.

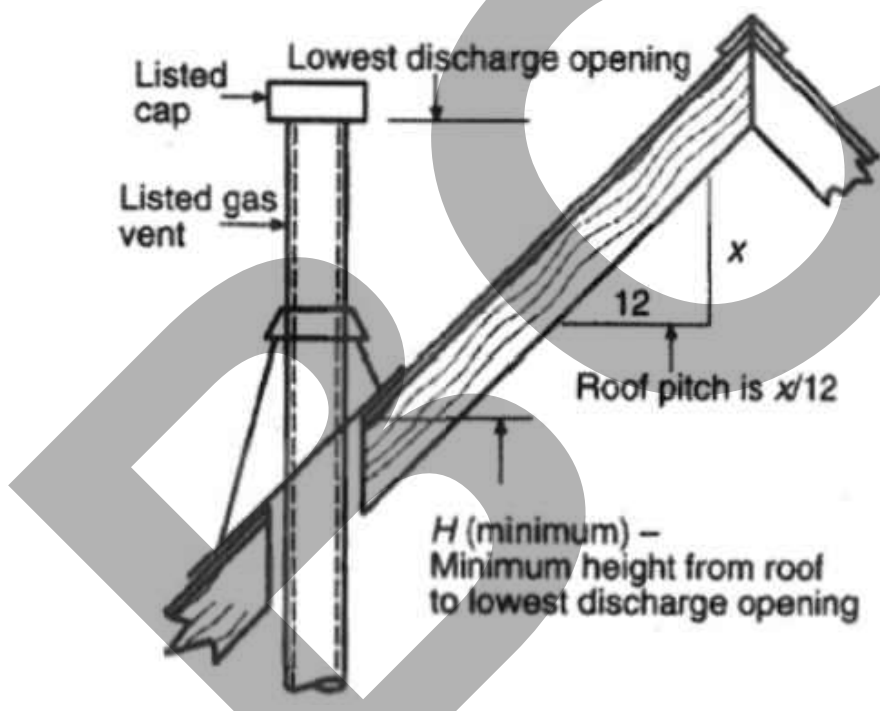
Each appliance connected to a piping system shall have an accessible, approved manual shutoff valve with a non-displaceable valve member or a listed gas convenience outlet. Appliance shutoff valves and convenience outlets shall serve a single appliance only. The shutoff valve shall be located within 6 feet (1829 mm) of the appliance it serves. Where a connector is used, the valve shall be installed upstream of the connector. A union or flanged connection shall be provided downstream from the valve to permit removal of appliance controls. Shutoff valves serving decorative appliances shall be permitted to be installed in fireplaces if listed for such use. [NFPA 54:9.6.5, 9.6.5.1(A)(B)]

Exceptions:

- (1) Shutoff valves shall be permitted to be accessible located inside or under an appliance where such appliance is removed without removal of the shutoff valve.
- (2) Shutoff valves shall be permitted to be accessibly located inside wall heaters and wall furnaces listed for recessed installation where necessary maintenance is performed without removal of the shutoff valve.

TABLE 1208.4.1
APPROXIMATE GAS INPUT FOR TYPICAL APPLIANCES [NFPA 54: TABLE A.5.4.2.1]

APPLIANCE	INPUT (Btu/h approx.)
Space Heating Units	
Warm air furnace	
Single family	100 000
Multifamily, per unit	60 000
Hydronic boiler	
Single family	100 000
Multifamily, per unit	60 000
Space and Water Heating Units	
Hydronic boiler	
Single family	120 000
Multifamily, per unit	75 000
Water Heating Appliances	
Water heater, automatic storage	
30 to 40 gallon tank	35 000
Water heater, automatic storage	
50 gallon tank	50 000
Water heater, automatic instantaneous	
Capacity at 2 gallons per minute	142 800
Capacity at 4 gallons per minute	285 000
Capacity at 6 gallons per minute	428 400
Water heater, domestic, circulating or side-arm	
	35 000
Cooking Appliances	
Range, freestanding, domestic	
	65 000
Built-in oven or broiler unit, domestic	25 000
Built-in top unit, domestic	40 000
Other Appliances	
Refrigerator	
	3000
Clothes dryer, Type I (domestic)	35 000
Gas fireplace direct vent	40 000
Gas log	80 000
Barbecue	40 000
Gaslight	2500



TERMINATION LOCATIONS FOR GAS VENTS
WITH LISTED CAPS 12 INCHES OR LESS IN SIZE
AT LEAST 8 FEET FROM A VERTICAL WALL

ROOF PITCH	H (minimum) (feet)
Flat to 6/12	1.0
Over 6/12 to 7/12	1.25
Over 7/12 to 8/12	1.5
Over 8/12 to 9/12	2.0
Over 9/12 to 10/12	2.5
Over 10/12 to 11/12	3.25
Over 11/12 to 12/12	4.0
Over 12/12 to 14/12	5.0
Over 14/12 to 16/12	6.0
Over 16/12 to 18/12	7.0
Over 18/12 to 20/12	7.5
Over 20/12 to 21/12	8.0

ROOF SLOPE HEIGHTS

5/18/22, 4:08 PM

1215.2 Tables for Sizing Gas Piping Systems

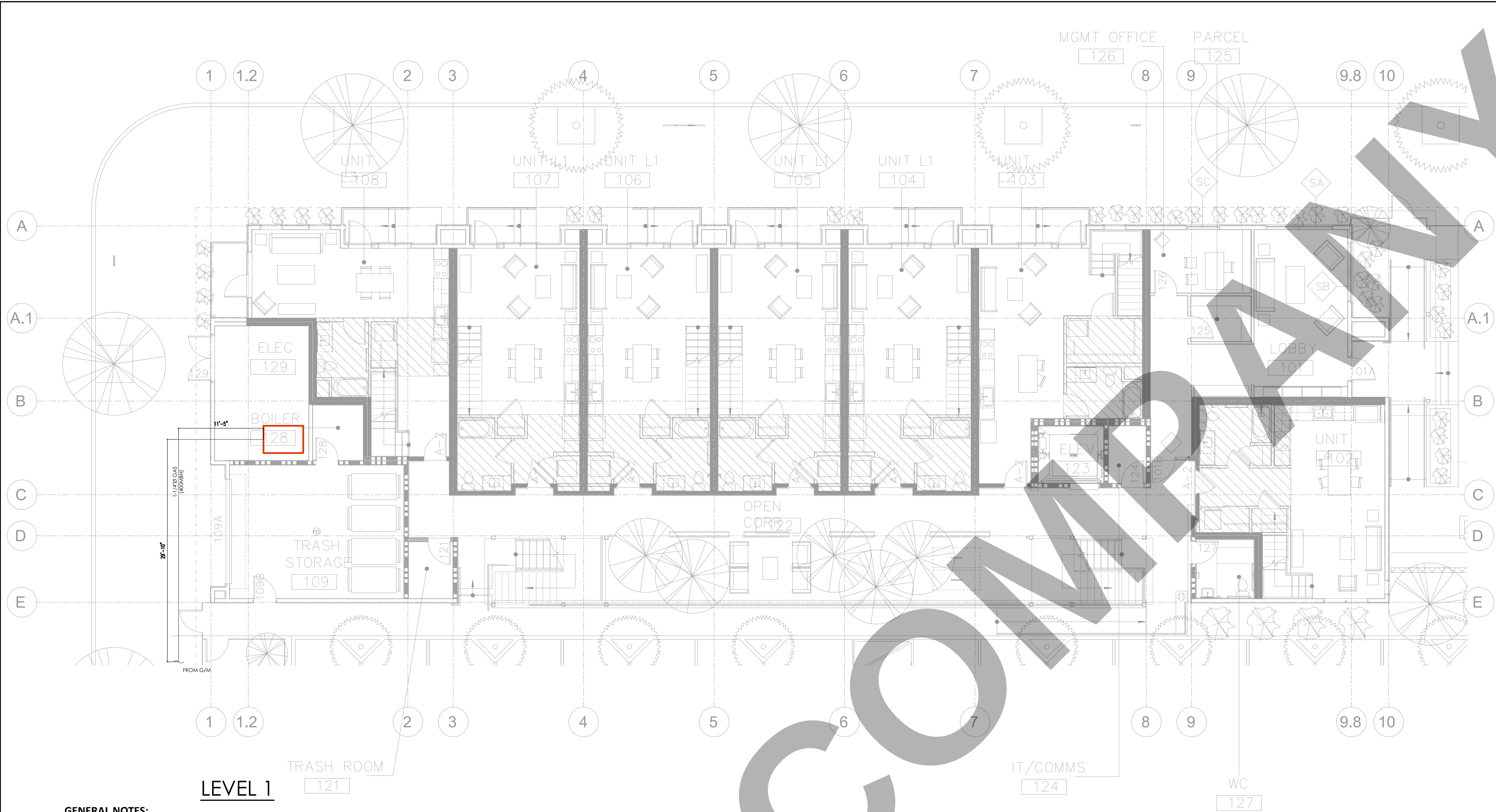
1215.2 Tables for Sizing Gas Piping Systems

Table 1215.2(1) through Table 1215.2(36) shall be used to size gas piping in conjunction with one of the methods described in Section 1215.1.1 through Section 1215.1.3. [NFPA 54:6.2]

TABLE 1215.2(1)
SCHEDULE 40 METALLIC PIPE [NFPA 54:TABLE 6.2(b)]^{1,2}

									GAS:		NATURAL			
									INLET PRESSURE:		LESS THAN 2 psi			
									PRESSURE DROP:		0.5 in. w.c.			
									SPECIFIC GRAVITY:		0.60			
				PIPE SIZE (inch)										
NOMINAL:	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	4	5	6	8	10	12
ACTUAL ID:	0.622	0.824	1.049	1.380	1.610	2.067	2.469	3.068	4.026	5.047	6.065	7.981	10.020	11.938
LENGTH (feet)	CAPACITY IN CUBIC FEET OF GAS PER HOUR													
10	172	360	678	1390	2090	4020	6400	11 300	23 100	41 800	67 600	139 000	252 000	399 000
20	118	247	466	957	1430	2760	4400	7780	15 900	28 700	46 500	95 500	173 000	275 000
30	95	199	374	768	1150	2220	3530	6250	12 700	23 000	37 300	76 700	139 000	220 000
40	81	170	320	657	985	1900	3020	5350	10 900	19 700	31 900	65 600	119 000	189 000
50	72	151	284	583	873	1680	2680	4740	9660	17 500	28 300	58 200	106 000	167 000
60	65	137	257	528	791	1520	2430	4290	8760	15 800	25 600	52 700	95 700	152 000
70	60	126	237	486	728	1400	2230	3950	8050	14 600	23 600	48 500	88 100	139 000
80	56	117	220	452	677	1300	2080	3670	7490	13 600	22 000	45 100	81 900	130 000
90	52	110	207	424	635	1220	1950	3450	7030	12 700	20 600	42 300	76 900	122 000
100	50	104	195	400	600	1160	1840	3260	6640	12 000	19 500	40 000	72 600	115 000
125	44	92	173	355	532	1020	1630	2890	5890	10 600	17 200	35 400	64 300	102 000
150	40	83	157	322	482	928	1480	2610	5330	9650	15 600	32 100	58 300	92 300
175	37	77	144	296	443	854	1360	2410	4910	8880	14 400	29 500	53 600	84 900
200	34	71	134	275	412	794	1270	2240	4560	8260	13 400	27 500	49 900	79 000
250	30	63	119	244	366	704	1120	1980	4050	7320	11 900	24 300	44200	70 000
300	27	57	108	221	331	638	1020	1800	3670	6630	10 700	22 100	40 100	63 400
350	25	53	99	203	305	587	935	1650	3370	6100	9880	20 300	36 900	58 400
400	23	49	92	189	283	546	870	1540	3140	5680	9190	18 900	34 300	54 300
450	22	46	86	177	266	512	816	1440	2940	5330	8620	17 700	32 200	50 900
500	21	43	82	168	251	484	771	1360	2780	5030	8150	16 700	30 400	48 100
550	20	41	78	159	239	459	732	1290	2640	4780	7740	15 900	28 900	45 700
600	19	39	74	152	228	438	699	1240	2520	4560	7380	15 200	27 500	43 600
650	18	38	71	145	218	420	669	1180	2410	4360	7070	14 500	26 400	41 800
700	17	36	68	140	209	403	643	1140	2320	4190	6790	14 000	25 300	40 100
750	17	35	66	135	202	389	619	1090	2230	4040	6540	13 400	24400	38 600
800	16	34	63	130	195	375	598	1060	2160	3900	6320	13 000	23 600	37 300
850	16	33	61	126	189	363	579	1020	2090	3780	6110	12 600	22 800	36 100
900	15	32	59	122	183	352	561	992	2020	3660	5930	12 200	22 100	35 000
950	15	31	58	118	178	342	545	963	1960	3550	5760	11 800	21 500	34 000
1000	14	30	56	115	173	333	530	937	1910	3460	5600	11 500	20 900	33 100
1100	14	28	53	109	164	316	503	890	1810	3280	5320	10 900	19 800	31 400
1200	13	27	51	104	156	301	480	849	1730	3130	5070	10 400	18 900	30 000
1300	12	26	49	100	150	289	460	813	1660	3000	4860	9980	18 100	28 700
1400	12	25	47	96	144	277	442	781	1590	2880	4670	9590	17 400	27 600
1500	11	24	45	93	139	267	426	752	1530	2780	4500	9240	16 800	26 600
1600	11	23	44	89	134	258	411	727	1480	2680	4340	8920	16 200	25 600
1700	11	22	42	86	130	250	398	703	1430	2590	4200	8630	15 700	24 800
1800	10	22	41	84	126	242	386	682	1390	2520	4070	8370	15 200	24 100
1900	10	21	40	81	122	235	375	662	1350	2440	3960	8130	14 800	23 400
2000	NA	20	39	79	119	229	364	644	1310	2380	3850	7910	14 400	22 700

https://up.codes/viewer_export/juris_key/california/pub/california_plumbing_code_2019/ref/1215.2



LEVEL 1

GENERAL NOTES:

- PRIOR TO PERFORMING WORK, CONTRACTOR TO COORDINATE EXACT PIPE SIZES, INVERT ELEVATIONS, PRESSURES FOR LOCATIONS OF ANY SEWER, WATER PIPING AND WATER METER WITH CIVIL UTILITIES DRAWINGS, AND ANY OTHER ENGINEER AS APPLICABLE.
- PRIOR TO PERFORMING WORK, CONTRACTOR TO COORDINATE PIPE ROUTING WITH ALL OTHER TRADES AND EXISTING FIELD CONDITIONS.
- REFER TO MECHANICAL PLANS FOR PLUMBING SPECIFICATION OF MATERIAL, INSULATION AND INSTALLATION REQUIREMENTS.
- CONTRACTOR IS RESPONSIBLE FOR ROUGH-IN COORDINATION AND LOCATIONS. REFER TO ARCHITECTURAL PLANS FOR LOCATIONS AND FIXTURES.
- CONTRACTOR IS RESPONSIBLE FOR ANY REQUIRED CUTTING AND PATCHING.
- ALL NOTCHING, BORING, AND CUTTING OF HOLES IN WALL STUDS AND FLOOR JOISTS SHALL BE PERFORMED BASED ON THE LATEST ADOPTED AND APPROVED EDITION OF THE BUILDING CODE.
- ALL PLUMBING FIXTURES SHALL BE OF WATER CONSERVATION TYPE AS REQUIRED BY LOCAL AUTHORITY HAVING JURISDICTION.
- ALL WATER PIPING SHALL BE INSTALLED ON INTERIOR SIDE OF THE BUILDING WALL INSULATION.
- CONTRACTOR SHALL PROVIDE VALVES LOCATED ABOVE LAY-IN CEILING OR 24"x24" CEILING ACCESS PANEL COORDINATE FINAL LOCATION AND SIZE WITH ARCHITECT. PROVIDE BALANCING VALVES FOR HOT WATER RETURN SYSTEM AS REQUIRED.
- ALL SANITARY DRAINAGE PIPING 3" AND SMALLER SHALL BE SLOPED AT $\frac{1}{4}$ " PER FOOT. PIPING 4" AND LARGER SHALL BE SLOPED AT $\frac{1}{8}$ " PER FOOT.
- ALL CONDENSATE DRAIN PIPING SHALL BE SLOPED AT $\frac{1}{8}$ " PER FOOT AND PROVIDE ACCESSIBLE CLEANOUTS AT ALL CHANGES OF DIRECTION.
- VENTS THAT TERMINATE AT THE ROOF SHALL BE A MINIMUM OF 10' FROM ANY FRESH AIR INTAKE.
- REFER TO THE PLUMBING DIAGRAMS FOR GUIDANCE OF INSTALLATION INTENT. CONTRACTOR IS TO PROVIDE ALL COMPONENTS NECESSARY TO MEET THE DESIGN INTENT, WHETHER SHOWN IN DIAGRAM OR NOT.
- EACH VENT PIPE OR STACK SHALL EXTEND THROUGH ITS FLASHING AND SHALL TERMINATE VERTICALLY NOT LESS THAN 6 INCHES (152 MM) ABOVE THE ROOF NOR LESS THAN 1 FOOT (305 MM) FROM A VERTICAL SURFACE.
- EACH VENT SHALL TERMINATE NOT LESS THAN 10 FEET (3048 MM) FROM, OR NOT LESS THAN 3 FEET (914 MM) ABOVE, AN OPENABLE WINDOW, DOOR, OPENING, AIR INTAKE, OR VENT SHAFT, OR NOT LESS THAN 3 FEET (914 MM) IN EVERY DIRECTION FROM A LOT LINE, ALLEY AND STREET EXCEPTED.

ALL GAS PIPES ARE METALLIC SHCD. 40
THE TOTAL GAS PIPE LENGTH FROM PROPANE TANK TO THE FARTHEST EQUIPMENT IS APPRX. 100 FEET.

GAS UNITS AND MBH :

ITEM	MBH
BOILER	400
TOTAL =	400

CLIENT:

ADDRESS:

929 18TH ST
BAKERSFIELD, CA 93301

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REV. NO	DESCRIPTION	DATE	BY
0	PERMIT SET	12.29.22	MN

PROJECT:

CLEO

TITLE:

151 P6.00 GAS LAYOUT
LEVEL 01

PROJ. NO.

SCALE @ 24X36:

1/8"=1'0"

DRAWING NO.

REV.

P 6 . 0 0

DEPT OF CALIFORNIA		CALIFORNIA ENERGY COMMISSION		
Electrical Power Distribution				
CERTIFICATE OF COMPLIANCE This document is used to demonstrate compliance with mandatory requirements in §12501, for electrical systems in newly constructed nonresidential, high-rise residential and hotel/convention facilities. Additions and alterations to existing electrical systems in these occupancies will also be required to demonstrate compliance per §124502(c) or §124502(d), for alterations.				
Project Name:		ELECTRO Page:	Page 3 of 5	
Project Address:		323 S. BAYVIEW DRIVE		
A. GENERAL INFORMATION				
01 Project Location (City)	Bakersfield	02 Occupancy Type Within Project:		
• High-Rise Building				
B. PROJECT SCOPE The following describe electrical systems that are within the scope of the permit application.				
01	02	03	04	05
Electrical System/Description	Scope of Work ¹	Rating	Utility Provided Metering System Exception is §124502(c)	System Related to C&E Code Article 97.1 Exception is §124502(b)(3)
No new electrical service and meter		50	Exception	
Where required, detailed response criteria must be specified which are capable of rendering and automatically responding to at least one standard based messaging protocol which enables demand control after receiving a demand response signal. Sections 12420, §12421, and §12422, and compliance documents NEMC-MCC II and NEMC-C III must be included where applicable and as required by the utility.				
06 Demand Response Capability	Add any other new devices and branch circuits which are outside the scope of the project.			
A complete electrical plan is providing a monitoring system that includes instrumentation R/W defined and lists to be installed on the load side.				
C. COMPLIANCE RESULTS Results in this table are automatically calculated from data input and calculations in Tables F through I. Only "Y" on the table says "COMPLIES with Exceptional Conditions" refer to Table E. Exceptional Conditions are indicated and/or see applicable Table referenced below.				
Service Electrical Materials and Equipment (See Table G)	Separation for Monitoring (See Table H)	Voltage Drop (See Table J)	Controlled Receptacles (See Table K)	OS
YES NO	YES NO	YES YES	YES YES	
				COMPLIES
Registration Number:		Registration Date/Time:	Registration Report: Energsoft	
CA Building Energy Efficiency Standards - 2019 Nonsimulated Compliance		Report Version: 2019_1.003	Date Generated: 2023-12-06 09:21 AM	

STATE OF CALIFORNIA Industrial Power Distribution MODULE 5		CALIFORNIA ENERGY COMMISSION INMC-CL-24-01 Page 2 of 2 12/24/2022		
CERTIFICATE OF COMPLIANCE Project Name: _____ Project Address: _____		C/E (Report Page) 529 18th Street 92342-0222		
D. EXCEPTIONAL CONDITIONS This table is extra-filled with <u>unrelated</u> information because of selections made or data entered in tables throughout the form.				
E. ADDITIONAL REMARKS This table includes remarks made by the permit applicant to the Authority Having Jurisdiction.				
F. SERVICE ELECTRICAL METERING This table includes one or more equipment electrical service gear(s) designed to demonstrate compliance with <u>248.502</u>				
01	02	03	04	05
Electrical Service Designation(s)/Description	Rating (kVA) Demand (kW) Demand (kVA)	Required Metering Capabilities per Table 318.5.4 International Working (kW) or Demand (kW) or Demand (kVA) or Demand (kVA)	Location of Requirements in Construction Documents	Field Inspector Pass Fail
□	□	□	□	□
G. SEPARATION OF ELECTRICAL CIRCUITS FOR ENERGY MONITORING This table includes entries only for complete independent power distribution groups to demonstrate compliance with <u>118.5.10</u> . Any load types that are not included in the list of items need not be used in this table.				
01	02	03	04	05
Load Type per Table 318.5.1	Minimum Required Separation per Table 318.5.4	Compliance Method(s)	Location of Requirements in Construction Documents	Field Inspector Pass Fail
□	□	□	□	□
FOOTNOTES: 1. "Other" means all systems not listed here, up to the 10% of the connected load that is not in any type. 2. Method 1: Substantially lower current density (ampere) loads designated for each type. Method 2: Substantially lower current density (ampere) loads require additional separation equipment with loads designated for each load type. Method 3: Dedicated monitoring system requires and supports loads by type. Method 4: Dedicated monitoring system requires and supports loads by type. See Chapter 9 of the International Code Book for more detail on Compliance Methods.				

STATE OF CALIFORNIA Power Distribution MODULE 1 CALIFORNIA ENERGY COMMISSION		MODULE 1-01 Page 1 of 2 12/01/2022 12/01/2022	
CERTIFICATE OF COMPLIANCE Project Name: _____ Project Address: _____ CEC/Report Page: 1201-0101 Report			
III. VOLTAGE DROP This table includes entirely new or complete replacement electrical power distribution systems, or alterations that add, modify or replace both feeders and branch circuits to downstream loads and/or ALL SD. For alterations, only the altered circuit(s) must demonstrate compliance with ALL SD.			
		Q4	Q4
(Electrical Service Designation/Description)	Combined Voltage Drop Initial Feeder/Branch Circuit Conductor Compliance Method	Location of Voltage Drop Calculations	Sheet Number for Voltage Drop Calculations in Construction Documents
	% Voltage drop less than 5%	Permitted by CEC Code Calculations to 5% SD	Attached
	% Voltage drop less than 5%	Permitted by CEC Code Calculations to 5% SD	Attached
*NOTES: If "Permitted by CEC Code" is "if attached under Compliance Method above, please indicate whether the exception applies to the sheet provided below." FOOTNOTES: Voltage drop calculations may be performed in the permit applications if followed by the Authority having jurisdiction. See "attached" if applicable. If Calculations will be the responsibility of the installing contractor, check "Contractor Responsible".			
C. CIRCUIT CALCULATIONS FOR 120-VOLT RECEPTACLES AND CONDUITED RECEPTACLES This table includes entirely new or complete replacement electrical power distribution systems to demonstrate compliance with ALL SD. Both controlled and uncontrolled receptacles must be included in this table. Office, stores, conference rooms, kitchen areas in office spaces, shop spaces and front-end guest space.			
		Q4	Q4
Room or Area Designation/Description	Location(s) Type of Controlled Receptacles	Show Calculations	Permanent Durable Marking Will be Used
	Location(s)	Show Calculations	Permanent Durable Marking Will be Used
	Location(s)	Show Calculations	Permanent Durable Marking Will be Used
	Location(s)	Show Calculations	Permanent Durable Marking Will be Used
*NOTES: If "Permitted by CEC Code" is "if attached under Compliance Method above, please indicate whether the exception applies to the sheet provided below."			
III. DECLARATION OF REQUIRED COMPLIANCE OR INSTALLATION Selections here must be based on information provided in this document. If any selection has been achieved by permit application, an explanation should be included in Table A. Additional Remarks. These documents must be provided to the building jurisdiction during construction and can be found online at http://www.energy.ca.gov/12010101/2018_compliance_documents_additional_documents.html			
Form Title		Field Inspection	
		☐ Pass	☐ Fail
NR10-CEC-01.0 - Must be submitted for all buildings		☐	☐

STATE OF CALIFORNIA Electrical Power Distribution		CALIFORNIA ENERGY COMMISSION	
MODULE 5		NRC05CLCA	
CERTIFICATE OF COMPLIANCE		Page 4 of 6	
Project Name:		CLC (Report Page)	
Project Address:		529 18TH ST (Date Prepared)	
		12/14/2022	
II. DECLARATION OF REQUIRED CERTIFICATES OF ACCEPTANCE There are no Certificates of Acceptance applicable to electrical power distribution requirements.			

[illegible][illegible]

TITLE OF CAUTIONER Envelope Component Approach										CALIFORNIA ENERGY COMMISSION	
PROJECT OF COMPLIANCE Project Name: <u>5120 Report Paper</u>										MID-ANALYSIS Page 12 of 18	
Project Address: 520 14TH STREET, Suite 100, Fremont, CA 94536										DATE OF SUBMITTAL 12/24/2024	
C. COMPLIANCE RESULTS Results in this table are automatically calculated from data input and calculations in Tables 1 through 7. Note: If any cell on this table says "COMPLIES with Exceptional Conditions" refer to Table 1. Exceptional Conditions (or additional or no applicable table) referenced below.											
Classic Envelope Components											
Roof Assembly	Roofing Materials	Walls	Floors	Doors	Windows	Ventilating Spaces > 1,000ft ³	Compliance Results				
(See Table 7)	(See Table 1)	(See Table 1b)	(See Table 1a)	(See Table 1a)	(See Table 6)	(See Table 1)	(See Table 1)	(See Table 1)			
Yes	No	Yes	Yes	Yes	Yes	Yes	COMPLIES				
D. EXCEPTIONAL CONDITIONS This table is used to fill with unverifiable comments because of selections made or data entered in this table through the form.											
E. ADDITIONAL REMARKS This table includes remarks made by the permit applicant at the Authority Having Jurisdiction.											
F. ROOF ASSEMBLY SCHEDULE The table demonstrates compliance for prescriptive and assembly requirements in Table 6.10.1 for new construction or additions, or Table 6.10.1.1 for alterations, including but not limited to the following: ☐ Insulate and Vapor Control in the Assembly ☐ R-15 Floor Slab & Concrete ☐ Dual Panel Doors ☐ R-19 Floor Joists											
Formed Roof Assemblies											
01	02	Include Formed Roof Assemblies in Area-Weighted Average U-factor Calculations						06			
Type/Insulation R-Value	Name/Description	Type	Description	Type	Description	Type	Description	Type			
R-5.00 Roof No Adic	Roof	New					High-capacity Insulation Model				

[illegible]

ENVELOPE COMPONENT APPROACH ENVELOPE COMPONENT APPROACH										CALIFORNIA ENERGY COMMISSION REC-400	
IDENTIFICATION OF COMPONENT REPORT NUMBER										PAGE 1 OF 2 12/24/2021	
Project Address: 525 14TH ST 525 14TH ST (City/Street)										 12/24/2021	
U-FACTOR RATING METHOD (ECON. ROOF) (All tables demonstrate compliance with prescriptive roof material requirements in U-FACTOR RATING for new construction or additions, or U-FACTOR RATING for alterations.											
Table 1: U-FACTOR RATING METHOD (ECON. ROOF) (All tables demonstrate compliance with prescriptive roof material requirements in U-FACTOR RATING for new construction or additions, or U-FACTOR RATING for alterations.											
Table ID	Component	Occupancy Type	U-FACTOR	Roof Material	Compliance Method	Requirement Minimum Material Performance	Designated Material Performance	U-FACTOR	U-FACTOR	U-FACTOR	U-FACTOR
1	Non-Overhangs	Residential	0.15	Asph/Flt	Asph/Flt	0.15	0.15	0.15	0.15	0.15	0.15
2	Overhangs	Residential	0.15	Asph/Flt	Asph/Flt	0.15	0.15	0.15	0.15	0.15	0.15
3	Non-Overhangs	Commercial	0.15	Asph/Flt	Asph/Flt	0.15	0.15	0.15	0.15	0.15	0.15
4	Overhangs	Commercial	0.15	Asph/Flt	Asph/Flt	0.15	0.15	0.15	0.15	0.15	0.15
5	Non-Overhangs	Industrial	0.15	Asph/Flt	Asph/Flt	0.15	0.15	0.15	0.15	0.15	0.15
6	Overhangs	Industrial	0.15	Asph/Flt	Asph/Flt	0.15	0.15	0.15	0.15	0.15	0.15
7	Non-Overhangs	Government	0.15	Asph/Flt	Asph/Flt	0.15	0.15	0.15	0.15	0.15	0.15
8	Overhangs	Government	0.15	Asph/Flt	Asph/Flt	0.15	0.15	0.15	0.15	0.15	0.15
9	Non-Overhangs	Healthcare	0.15	Asph/Flt	Asph/Flt	0.15	0.15	0.15	0.15	0.15	0.15
10	Overhangs	Healthcare	0.15	Asph/Flt	Asph/Flt	0.15	0.15	0.15	0.15	0.15	0.15
11	Non-Overhangs	Education	0.15	Asph/Flt	Asph/Flt	0.15	0.15	0.15	0.15	0.15	0.15
12	Overhangs	Education	0.15	Asph/Flt	Asph/Flt	0.15	0.15	0.15	0.15	0.15	0.15
13	Non-Overhangs	Religious	0.15	Asph/Flt	Asph/Flt	0.15	0.15	0.15	0.15	0.15	0.15
14	Overhangs	Religious	0.15	Asph/Flt	Asph/Flt	0.15	0.15	0.15	0.15	0.15	0.15
15	Non-Overhangs	Other	0.15	Asph/Flt	Asph/Flt	0.15	0.15	0.15	0.15	0.15	0.15
16	Overhangs	Other	0.15	Asph/Flt	Asph/Flt	0.15	0.15	0.15	0.15	0.15	0.15
17	Non-Overhangs	Other	0.15	Asph/Flt	Asph/Flt	0.15	0.15	0.15	0.15	0.15	0.15
18	Overhangs	Other	0.15	Asph/Flt	Asph/Flt	0.15	0.15	0.15	0.15	0.15	0.15
19	Non-Overhangs	Other	0.15	Asph/Flt	Asph/Flt	0.15	0.15	0.15	0.15	0.15	0.15
20	Overhangs	Other	0.15	Asph/Flt	Asph/Flt	0.15	0.15	0.15	0.15	0.15	0.15
21	Non-Overhangs	Other	0.15	Asph/Flt	Asph/Flt	0.15	0.15	0.15	0.15	0.15	0.15
22	Overhangs	Other	0.15	Asph/Flt	Asph/Flt	0.15	0.15	0.15	0.15	0.15	0.15
23	Non-Overhangs	Other	0.15	Asph/Flt	Asph/Flt	0.15	0.15	0.15	0.15	0.15	0.15
24	Overhangs	Other	0.15	Asph/Flt	Asph/Flt	0.15	0.15	0.15	0.15	0.15	0.15
25	Non-Overhangs	Other	0.15	Asph/Flt	Asph/Flt	0.15	0.15	0.15	0.15	0.15	0.15
26	Overhangs	Other	0.15	Asph/Flt	Asph/Flt	0.15	0.15	0.15	0.15	0.15	0.15
27	Non-Overhangs	Other	0.15	Asph/Flt	Asph/Flt	0.15	0.15	0.15</			

STATE OF CALIFORNIA Envelope Component Approach MECC-001 CALIFORNIA ENERGY COMMISSION										MECC-001 Page 12 of 43	
CERTIFICATE OF COMPLIANCE C/E Report Page: Project Name: 620 18111 12-04 Prepared:										MECC-001 Page 12 of 43	
II. WALL ASSEMBLY SCHEDULE											
OS	OE	OS	OE	OS	OE	OS	OE	OS	OE	OS	OE
Tag/Item Detail	Orientation & Factor was determined	Location	Frame Material, Spacing & Depth	Cavity Insulation per Design	Continuous Insulation per Design	Thermal Performance Limit	Required Thermal Performance	U-factor per Design	U-factor per Design	U-factor per Design	U-factor per Design
South Walls	High-rise Res./Mixed Asset New	JAM Tables	Exterior wall	Wood 1/2" gyp 15" OC DAB	20	4	U-factor	0.059	per ASHRAE 90.1-2013 Table 6.1-1	0.057	1888
West Walls	High-rise Res./Mixed Asset New	JAM Tables	Exterior wall	Wood 1/2" gyp 15" OC DAB	20	4	U-factor	0.059	per ASHRAE 90.1-2013 Table 6.1-1	0.057	1843
East Walls	High-rise Res./Mixed Asset New	JAM Tables	Exterior wall	Wood 1/2" gyp 15" OC DAB	20	4	U-factor	0.059	per ASHRAE 90.1-2013 Table 6.1-1	0.057	1834
North Walls	High-rise Res./Mixed Asset New	JAM Tables	Exterior wall	Wood 1/2" gyp 15" OC DAB	20	4	U-factor	0.059	per ASHRAE 90.1-2013 Table 6.1-1	0.057	1375
South Walls	High-rise Res./Mixed Asset New	JAM Tables	Exterior wall	Wood 1/2" gyp 15" OC DAB	20	4	U-factor	0.059	per ASHRAE 90.1-2013 Table 6.1-1	0.057	1847
West Walls	High-rise Res./Mixed Asset New	JAM Tables	Exterior wall	Wood 1/2" gyp 15" OC DAB	20	4	U-factor	0.059	per ASHRAE 90.1-2013 Table 6.1-1	0.057	1812

Registration Number:
Registration Date/Time:
Registration Period End Date/Time:

CA Building Energy Efficiency Standards - 2019 Nonresidential Compliance
Report Version: 2019-10-03
Schema Version: 00000001
Report Generated: 12-12-2023 10:06:41

STATE OF CALIFORNIA Envelope Component Approach MEC-0017 CERTIFICATE OF COMPLIANCE Project Name: _____ Project Address: _____										CALIFORNIA ENERGY COMMISSION MEC-0017 Page 4 of 20 3/27/2010		
CDD Report Page: 0101 EPP1 10 Date Prepared												
PL WALL ASSEMBLY SCHEDULE												
01	02	03	04	05	06	07	08	09	10	11	12	13
Tag/Plan Detail ID	Occurrence & Status	How Envelope U-Value was determined	Location	Frame Material, Spacing & Depth	Carry Insulation per Design	Combustion Insulation per Design	Thermal Performance U-Value	Regulated Thermal Performance	Unregulated Thermal Performance	per ASHRAE 90.1-2001	per ASHRAE 90.1-2001	Net Envelope U-Value
East Walls	High-rise Res./Hotel/Ancient: None	AS4 Tables	Exterior wall	Wood 1/2" gip 16" OC 3x6	20	4	U-factor	0.029	per ASHRAE 90.1-2001	0.057		369
North Walls	High-rise Res./Hotel/Ancient: None	AS4 Tables	Exterior wall	Wood 1/2" gip 16" OC 3x6	20	4	U-factor	0.039	per ASHRAE 90.1-2001	0.057		3275
South Walls	High-rise Res./Hotel/Ancient: None	AS4 Tables	Exterior wall	Wood 1/2" gip 16" OC 3x6	20	4	U-factor	0.059	per ASHRAE 90.1-2001	0.057		1647
West Walls	High-rise Res./Hotel/Ancient: None	AS4 Tables	Exterior wall	Wood 1/2" gip 16" OC 3x6	20	4	U-factor	0.059	per ASHRAE 90.1-2001	0.057		312
East Walls	High-rise Res./Hotel/Ancient: None	AS4 Tables	Exterior wall	Wood 1/2" gip 16" OC 3x6	20	4	U-factor	0.039	per ASHRAE 90.1-2001	0.057		369
North Walls	High-rise Res./Hotel/Ancient: None	AS4 Tables	Exterior wall	Wood 1/2" gip 16" OC 3x6	20	4	U-factor	0.039	per ASHRAE 90.1-2001	0.057		3275

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GOVERNMENT OF CALIFORNIA
Energy Envelope Component Analysis
 DIVISION OF CALIFORNIA
 DEPARTMENT OF COMMERCE
 PROJECT NAME: **_____**
 PROJECT ADDRESS: **_____**
 500 N. L STREET, SUITE 100
 SACRAMENTO, CA 95833

CALIFORNIA ENERGY COMMISSION
ENERGY EFFICIENCY
 DIVISION OF CALIFORNIA
 DEPARTMENT OF COMMERCE
 PROJECT NAME: **_____**
 PROJECT ADDRESS: **_____**
 500 N. L STREET, SUITE 100
 SACRAMENTO, CA 95833

1. FLOOR ASSEMBLY SCHEDULE
 This section describes the floor assembly for this project.

2. EXTERIOR DOOR SCHEDULE
 This table describes the exterior door assembly with prescriptive performance requirements in [L560.2.10.1](#). For exterior doors, all openings which are labeled "informational" do not need to be documented in this table because there are no Title 24 Part 6 requirements that apply. Exterior doors require coordinated space from unventilated space or from outside air to be supplied to the space. 25% glass area in exterior glazed doors should also be documented in Table 4 with prescriptive requirements in Table A.

Table Entry ID	Name/Description	Occupying Type	Door Type	Door Insulation	Maximum Allowed U-factor	U-factor per Design
01	Wood Door	Unventilated / Inhabitable	1	Swinging	0.7	0.7
02	Wood Door	Unventilated / Inhabitable	1	Swinging	0.7	0.7
03	Wood Door	Unventilated / Inhabitable	1	Swinging	0.7	0.7
04	Wood Door	Unventilated / Inhabitable	1	Swinging	0.7	0.7
05	Wood Door	Unventilated / Inhabitable	1	Swinging	0.7	0.7
06	Wood Door	Unventilated / Inhabitable	1	Swinging	0.7	0.7
07	Wood Door	Unventilated / Inhabitable	1	Swinging	0.7	0.7
08	Wood Door	Unventilated / Inhabitable	1	Swinging	0.7	0.7
09	Wood Door	Unventilated / Inhabitable	1	Swinging	0.7	0.7
10	Wood Door	Unventilated / Inhabitable	1	Swinging	0.7	0.7
11	Wood Door	Unventilated / Inhabitable	1	Swinging	0.7	0.7
12	Wood Door	Unventilated / Inhabitable	1	Swinging	0.7	0.7
13	Wood Door	Unventilated / Inhabitable	1	Swinging	0.7	0.7
14	Wood Door	Unventilated / Inhabitable	1	Swinging	0.7	0.7
15	Wood Door	Unventilated / Inhabitable	1	Swinging	0.7	0.7
16	Wood Door	Unventilated / Inhabitable	1	Swinging	0.7	0.7
17	Wood Door	Unventilated / Inhabitable	1	Swinging	0.7	0.7
18	Wood Door	Unventilated / Inhabitable	1	Swinging	0.7	0.7
19	Wood Door	Unventilated / Inhabitable	1	Swinging	0.7	0.7
20	Wood Door	Unventilated / Inhabitable	1	Swinging	0.7	0.7
21	Wood Door	Unventilated / Inhabitable	1	Swinging	0.7	0.7
22	Wood Door	Unventilated / Inhabitable	1	Swinging	0.7	0.7
23	Wood Door	Unventilated / Inhabitable	1	Swinging	0.7	0.7
24	Wood Door	Unventilated / Inhabitable	1	Swinging	0.7	0.7
25	Wood Door	Unventilated / Inhabitable	1	Swinging	0.7	0.7
26	Wood Door	Unventilated / Inhabitable	1	Swinging	0.7	0.7
27	Wood Door	Unventilated / Inhabitable	1	Swinging	0.7	0.7
28	Wood Door	Unventilated / Inhabitable	1	Swinging	0.7	0.7
29	Wood Door	Unventilated / Inhabitable	1	Swinging	0.7	0.7
30	Wood Door	Unventilated / Inhabitable	1	Swinging	0.7	0.7
31	Wood Door	Unventilated / Inhabitable	1	Swinging	0.7	0.7
32	Wood Door	Unventilated / Inhabitable	1	Swinging	0.7	0.7
33	Wood Door	Unventilated / Inhabitable	1	Swinging	0.7	0.7
34	Wood Door	Unventilated / Inhabitable	1	Swinging	0.7	0.7
35	Wood Door	Unventilated / Inhabitable	1	Swinging	0.7	0.7
36	Wood Door	Unventilated / Inhabitable	1	Swinging	0.7	0.7
37	Wood Door	Unventilated / Inhabitable	1	Swinging	0.7	0.7
38	Wood Door	Unventilated / Inhabitable	1	Swinging	0.7	0.7
39	Wood Door	Unventilated / Inhabitable	1	Swinging	0.7	0.7
40	Wood Door	Unventilated / Inhabitable	1	Swinging	0.7	0.7
41	Wood Door	Unventilated / Inhabitable	1	Swinging	0.7	0.7
42	Wood Door	Unventilated / Inhabitable	1	Swinging	0.7	0.7
43	Wood Door	Unventilated / Inhabitable	1	Swinging	0.7	0.7
44	Wood Door	Unventilated / Inhabitable	1	Swinging	0.7	0.7
45	Wood Door	Unventilated / Inhabitable	1	Swinging	0.7	0.7
46	Wood Door	Unventilated / Inhabitable	1	Swinging	0.7	0.7
47	Wood Door	Unventilated / Inhabitable	1	Swinging	0.7	0.7
48	Wood Door	Unventilated / Inhabitable	1	Swinging	0.7	0.7
49	Wood Door	Unventilated / Inhabitable	1	Swinging	0.7	0.7
50	Wood Door	Unventilated / Inhabitable	1	Swinging	0.7	0.7
51	Wood Door	Unventilated / Inhabitable</				

[illegible]

State of California Envelope Component Approach (ICC-700) OFFICE OF COMPLIANCE Enforcement of the California Building Energy Efficiency Standards Project Address: _____ CIC/Report Page: (Page 10 of 10) 520 18TH STREET, Suite 200 (Date Prepared) CALIFORNIA ENERGY COMMISSION MCEC-14-01 (Project ID)									
3. PENETRATION AND GLAZED DOOR DETAILS Minimum Penetration and Glazed Doors: U-factor, Solar Heat Gain Coefficient (SHGC), Visible Transmittance (VT)									
Tag/Item ID	Penetration Type	Occupancy & Use	RFGSC Compliance Method	VT Compliance Method	Calculation Method for Performance Value and Range*	I0	I1	I2	I3
82	Fixed window	High-rise Res/Hotels/ Motel / New	RFGSC Compliance Method	VT Compliance Method	NRC Certified U-factor (I-factor) USRC (I-factor)	0.36 0.35 0.42	0.36 0.35 0.42	0.3 0.3 0.3	105
83	Fixed window	High-rise Res/Hotels/ Motel / New	RFGSC Compliance Method	VT Compliance Method	NRC Certified U-factor (I-factor) USRC (I-factor)	0.36 0.35 0.42	0.36 0.35 0.42	0.3 0.3 0.3	105
84	Fixed window	High-rise Res/Hotels/ Motel / New	RFGSC Compliance Method	VT Compliance Method	NRC Certified U-factor (I-factor) USRC (I-factor)	0.36 0.35 0.42	0.36 0.35 0.42	0.3 0.3 0.3	105
85	Fixed window	High-rise Res/Hotels/ Motel / New	RFGSC Compliance Method	VT Compliance Method	NRC Certified U-factor (I-factor) USRC (I-factor)	0.36 0.35 0.42	0.36 0.35 0.42	0.3 0.3 0.3	105
86	Fixed window	High-rise Res/Hotels/ Motel / New	RFGSC Compliance Method	VT Compliance Method	NRC Certified U-factor (I-factor) USRC (I-factor)	0.36 0.35 0.42	0.36 0.35 0.42	0.3 0.3 0.3	105
87	Fixed window	High-rise Res/Hotels/ Motel / New	RFGSC Compliance Method	VT Compliance Method	NRC Certified U-factor (I-factor) USRC (I-factor)	0.36 0.35 0.42	0.36 0.35 0.42	0.3 0.3 0.3	105
88	Fixed window	High-rise Res/Hotels/ Motel / New	RFGSC Compliance Method	VT Compliance Method	NRC Certified U-factor (I-factor) USRC (I-factor)	0.36 0.35 0.42	0.36 0.35 0.42	0.3 0.3 0.3	105

STATE OF CALIFORNIA Envelope Component Approach ASCE 901-2010				CALIFORNIA ENERGY COMMISSION NREL/CESG-2010-01 June 2010				
CERTIFICATE OF COMPLIANCE Project Name: _____ Project Address: _____ City/Zip: _____				CDD Report Page: DSR EPRM 10-04a Prepared: _____ Date: _____				
IX. FENESTRATION AND GLAZED DOOR SCHEDULE								
Window Fenestration and Glazed Doors - U-Factor, Solar Heat Gain Coefficient [SHGC], Visible Transmittance [VT]								
Ug/Fen Detail ID	Fenestration Type	Occupancy & Status	NBSHGC Compliance Method	VT Compliance Method	Calculation Method for Performance Value per Design*	Product Performance Unit	Required Performance per Design	Product Performance per Design
B6	Faced windows	High-rise Res/Hotels/ Multi-/New			NFRC Certified ☐ Overaching used for RSGHC VF (ENR)	U-factor (ENR) RSGHC (ENR) VF (ENR)	0.36 0.25 0.42	0.3 0.23 0.28
B6	Faced windows	High-rise Res/Hotels/ Multi-/New			NFRC Certified ☐ Overaching used for RSGHC VF (ENR)	U-factor (ENR) RSGHC (ENR) VF (ENR)	0.36 0.25 0.42	0.3 0.23 0.28
B6	Faced windows	High-rise Res/Hotels/ Multi-/New			NFRC Certified ☐ Overaching used for RSGHC VF (ENR)	U-factor (ENR) RSGHC (ENR) VF (ENR)	0.36 0.25 0.42	0.3 0.23 0.28
C2	Faced windows	High-rise Res/Hotels/ Multi-/New			NFRC Certified ☐ Overaching used for RSGHC VF (ENR)	U-factor (ENR) RSGHC (ENR) VF (ENR)	0.36 0.25 0.42	0.3 0.23 0.25
C3	Faced windows	High-rise Res/Hotels/ Multi-/New			NFRC Certified ☐ Overaching used for RSGHC VF (ENR)	U-factor (ENR) RSGHC (ENR) VF (ENR)	0.36 0.25 0.42	0.3 0.23 0.26
C3	Faced windows	High-rise Res/Hotels/ Multi-/New			NFRC Certified ☐ Overaching used for RSGHC VF (ENR)	U-factor (ENR) RSGHC (ENR) VF (ENR)	0.36 0.25 0.42	0.3 0.23 0.25

Registration Number: _____ Registration Date/Time: _____ Registration Period: 2023-10-26 to Enr213
 CA Building Energy Efficiency Standards - 2020 Residential Compliance Report Version: 2023.10.08
 Report Generated: 2023-10-26 09:42:13

STATE OF CALIFORNIA Envelope Component Approach (2019-2021)		CALIFORNIA ENERGY COMMISSION ENERGY EFFICIENCY Page 12 of 20							
CERTIFICATE OF COMPLIANCE Project Name: _____ Project Address: _____		CED/Report Form 525 (SFY) (2019) Preparation: _____							
10. VERIFICATION TESTED GLAZED DOOR SCHEDULE									
Minimum Verification and Glazed Doors: U-factor, Solar Heat Gain Coefficient (RHSGC/SHGC), Visible Transmittance (VT)									
Tag/Item ID	Fenestration Type	Occupancy & Status	BTU/HR Compliance Method	VT Compliance Method	Calculation Method for Performance Values per Design	U-factor Product Performance Required	SHGC Product Performance Required	VT Product Performance Required	Pass/Fail
C1	Fixed window	High-rise Res/Hotel/ Motel - New	BTU/HR	U-factor	U-factor Certified	U-factor	SHGC	VT	22.5
					U-factor Certified for RHSGC	BTU/HR	0.35	0.23	
					U-factor	0.42	0.25		
C2	Fixed window	High-rise Res/Hotel/ Motel - New	BTU/HR	U-factor	U-factor Certified	U-factor	SHGC	VT	22.5
					U-factor Certified for RHSGC	BTU/HR	0.35	0.23	
					U-factor	0.42	0.25		
C3	Fixed window	High-rise Res/Hotel/ Motel - New	BTU/HR	U-factor	U-factor Certified	U-factor	SHGC	VT	22.5
					U-factor Certified for RHSGC	BTU/HR	0.35	0.23	
					U-factor	0.42	0.25		
C4	Fixed window	High-rise Res/Hotel/ Motel - New	BTU/HR	U-factor	U-factor Certified	U-factor	SHGC	VT	18
					U-factor Certified for RHSGC	BTU/HR	0.25	0.23	
					U-factor	0.42	0.25		
C5	Fixed window	High-rise Res/Hotel/ Motel - New	BTU/HR	U-factor	U-factor Certified	U-factor	SHGC	VT	18
					U-factor Certified for RHSGC	BTU/HR	0.25	0.23	
					U-factor	0.42	0.25		
E1	Fixed window	High-rise Res/Hotel/ Motel - New	BTU/HR	U-factor	U-factor Certified	U-factor	SHGC	VT	18
					U-factor Certified for RHSGC	BTU/HR	0.26	0.23	
					U-factor	0.42	0.25		

STATE OF CALIFORNIA Envelope Component Approach CERTIFICATE OF COMPLIANCE Project Name: _____ Project Address: _____		CITY OF CALIFORNIA CLCD/Report Page: _____ 502 15TH AVENUE, PREPARED: _____		CALIFORNIA ENERGY COMMISSION NRC-ENR-17-001 Page 15 of 38 3/23/2022					
15. VERIFICATION AND GLAZED DOOR SCHEDULE Minimum Permeation and Glazed Doors: U Factor, Solar Heat Gain Coefficient (SHGC), Visible Transmittance (VT)									
Tag/Plan Detail ID	Fenestration Type	Occupancy & Sizing	FEDSPEC Compliance Method	VT Compliance Method	Calculation Method for Performance Values per Design?	10 Product Performance Required	11 U-factor Permitted	12 SHGC Permitted	13 Product per Design
E1	Fixed windows	High-rise Res/Nept/ Motel: New	FEDSPEC	U-factor	NFRC Certified	U-factor	0.36	0.3	18
					Overaching for RSHGC:	FEDSPEC	0.55	0.33	
E1	Fixed windows	High-rise Res/Nept/ Motel: New	FEDSPEC	U-factor	NFRC Certified	U-factor	0.36	0.3	18
					Overaching for RSHGC:	FEDSPEC	0.55	0.33	
E1	Fixed windows	High-rise Res/Nept/ Motel: New	FEDSPEC	U-factor	NFRC Certified	U-factor	0.36	0.3	18
					Overaching for RSHGC:	FEDSPEC	0.55	0.33	
SA	Fixed windows	High-rise Res/Nept/ Motel: New	FEDSPEC	U-factor	NFRC Certified	U-factor	0.36	0.3	10.5
					Overaching for RSHGC:	FEDSPEC	0.55	0.33	
SC	Fixed windows	High-rise Res/Nept/ Motel: New	FEDSPEC	U-factor	NFRC Certified	U-factor	0.36	0.3	31.8
					Overaching for RSHGC:	FEDSPEC	0.55	0.33	
A2	Fixed windows	High-rise Res/Nept/ Motel: New	FEDSPEC	U-factor	NFRC Certified	U-factor	0.36	0.3	15
					Overaching for RSHGC:	FEDSPEC	0.55	0.33	

STATE OF CALIFORNIA Envelope Component Approach (Section 150205)		CALIFORNIA ENERGY COMMISSION NRC Approved	
CERTIFICATE OF COMPLIANCE Project Name: _____ Project Address: _____		CEC Report Page: _____ Date of Use Preparation: _____ 1/22/2023	

N Penetration and Glazed Door Schedule																				
IC FENESTRATION AND GLAZED DOORS: U-Value, Solar Heat Gain Coefficient (SHGC), Visible Transmittance (VT)																				
Tag/Item ID	Fenestration Type	Occupancy & Status	FENESTRUC Compliance Method	VT Compliance Method	Calculation Method for Performance Values per Design?															
					<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th style="width: 10%;">Product Name</th> <th style="width: 10%;">Product U-Value</th> <th style="width: 10%;">Required Product U-Value</th> <th style="width: 10%;">Product SHGC per Design</th> <th style="width: 10%;">Product VT per Design</th> </tr> </table>	Product Name	Product U-Value	Required Product U-Value	Product SHGC per Design	Product VT per Design										
Product Name	Product U-Value	Required Product U-Value	Product SHGC per Design	Product VT per Design																
A2	Faced window	High-rise Res/Hotel / Motel / New			<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td>NRC Certified</td> <td>U-factor (W/m²K)</td> <td>0.36</td> <td>0.3</td> <td></td> </tr> <tr> <td></td> <td>FENESTRUC</td> <td>0.35</td> <td>0.33</td> <td></td> </tr> <tr> <td></td> <td>U-factor (W/m²K)</td> <td>0.42</td> <td>0.5</td> <td>15</td> </tr> </table>	NRC Certified	U-factor (W/m ² K)	0.36	0.3			FENESTRUC	0.35	0.33			U-factor (W/m ² K)	0.42	0.5	15
NRC Certified	U-factor (W/m ² K)	0.36	0.3																	
	FENESTRUC	0.35	0.33																	
	U-factor (W/m ² K)	0.42	0.5	15																
A2	Faced window	High-rise Res/Hotel / Motel / New			<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td>NRC Certified</td> <td>U-factor (W/m²K)</td> <td>0.36</td> <td>0.3</td> <td></td> </tr> <tr> <td></td> <td>FENESTRUC</td> <td>0.35</td> <td>0.33</td> <td></td> </tr> <tr> <td></td> <td>U-factor (W/m²K)</td> <td>0.42</td> <td>0.5</td> <td>15</td> </tr> </table>	NRC Certified	U-factor (W/m ² K)	0.36	0.3			FENESTRUC	0.35	0.33			U-factor (W/m ² K)	0.42	0.5	15
NRC Certified	U-factor (W/m ² K)	0.36	0.3																	
	FENESTRUC	0.35	0.33																	
	U-factor (W/m ² K)	0.42	0.5	15																
A2	Faced window	High-rise Res/Hotel / Motel / New			<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td>NRC Certified</td> <td>U-factor (W/m²K)</td> <td>0.36</td> <td>0.3</td> <td></td> </tr> <tr> <td></td> <td>FENESTRUC</td> <td>0.35</td> <td>0.33</td> <td></td> </tr> <tr> <td></td> <td>U-factor (W/m²K)</td> <td>0.42</td> <td>0.5</td> <td>15</td> </tr> </table>	NRC Certified	U-factor (W/m ² K)	0.36	0.3			FENESTRUC	0.35	0.33			U-factor (W/m ² K)	0.42	0.5	15
NRC Certified	U-factor (W/m ² K)	0.36	0.3																	
	FENESTRUC	0.35	0.33																	
	U-factor (W/m ² K)	0.42	0.5	15																
A2	Faced window	High-rise Res/Hotel / Motel / New			<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td>NRC Certified</td> <td>U-factor (W/m²K)</td> <td>0.36</td> <td>0.3</td> <td></td> </tr> <tr> <td></td> <td>FENESTRUC</td> <td>0.35</td> <td>0.33</td> <td></td> </tr> <tr> <td></td> <td>U-factor (W/m²K)</td> <td>0.42</td> <td>0.5</td> <td>15</td> </tr> </table>	NRC Certified	U-factor (W/m ² K)	0.36	0.3			FENESTRUC	0.35	0.33			U-factor (W/m ² K)	0.42	0.5	15
NRC Certified	U-factor (W/m ² K)	0.36	0.3																	
	FENESTRUC	0.35	0.33																	
	U-factor (W/m ² K)	0.42	0.5	15																
B5	Faced window	High-rise Res/Hotel / Motel / New			<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td>NRC Certified</td> <td>U-factor (W/m²K)</td> <td>0.36</td> <td>0.3</td> <td></td> </tr> <tr> <td></td> <td>FENESTRUC</td> <td>0.35</td> <td>0.33</td> <td></td> </tr> <tr> <td></td> <td>U-factor (W/m²K)</td> <td>0.42</td> <td>0.5</td> <td>21</td> </tr> </table>	NRC Certified	U-factor (W/m ² K)	0.36	0.3			FENESTRUC	0.35	0.33			U-factor (W/m ² K)	0.42	0.5	21
NRC Certified	U-factor (W/m ² K)	0.36	0.3																	
	FENESTRUC	0.35	0.33																	
	U-factor (W/m ² K)	0.42	0.5	21																
S8	Faced window	High-rise Res/Hotel / Motel / New			<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td>NRC Certified</td> <td>U-factor (W/m²K)</td> <td>0.36</td> <td>0.3</td> <td></td> </tr> <tr> <td></td> <td>FENESTRUC</td> <td>0.35</td> <td>0.33</td> <td></td> </tr> <tr> <td></td> <td>U-factor (W/m²K)</td> <td>0.42</td> <td>0.5</td> <td>92</td> </tr> </table>	NRC Certified	U-factor (W/m ² K)	0.36	0.3			FENESTRUC	0.35	0.33			U-factor (W/m ² K)	0.42	0.5	92
NRC Certified	U-factor (W/m ² K)	0.36	0.3																	
	FENESTRUC	0.35	0.33																	
	U-factor (W/m ² K)	0.42	0.5	92																

Registration Number: _____	Registration Date/Time: _____	Registration Version: 2.0 (Amendment 1)
CA Building Energy Efficiency Standards – 2019 Nonresidential Report Version: 2023.1.0.0.03 Software Version: 2023.0001		Report Generated: 2023-01-26 14:06

STATE OF CALIFORNIA Envelope Component Approach (ICC-700)		CALIFORNIA ENERGY COMMISSION MEC-ENVC	
CERTIFICATE OF COMPLIANCE Project Name: _____		CEC/Report Page: _____ (Page 12 of 26)	
Project Address: _____		S29 (ENVC) (Date Prepared): _____ 12/24/2022	

K. FENESTRATION AND GLAZED DOOR SCHEDULE									
Vertical Projection and Glazed Doors: U-factor, Solar Heat Gain Coefficient (SHGC), Visible Transmittance (VT)									
Detail ID	Fenestration Type	Occupancy & Sizing	FPGS/C Compliance Method	VT Compliance Method	Calculation Method for Performance Values and Design?	Product U-factor (SHGC)	Required Performance (U-factor)	Product Visible Transmittance (VT)	Area (ft²)
C2	Fixed window	High-rise Res/Instl/ Model: /New			☒ NFRC Certified ☐ U-factor method for RSGICC ☐ U-factor method for RSGICC	0.36 0.25 0.42	0.3 0.3 0.3	0.3 0.3 0.3	30
C2	Fixed window	High-rise Res/Instl/ Model: /New			☐ NFRC Certified ☐ U-factor method for RSGICC ☐ U-factor method for RSGICC	0.36 0.25 0.42	0.3 0.3 0.3	0.3 0.3 0.3	21
E2	Fixed window	High-rise Res/Instl/ Model: /New			☐ NFRC Certified ☐ U-factor method for RSGICC ☐ U-factor method for RSGICC	0.36 0.25 0.42	0.3 0.3 0.3	0.3 0.3 0.3	48
B4	Fixed window	High-rise Res/Instl/ Model: /New			☐ NFRC Certified ☐ U-factor method for RSGICC ☐ U-factor method for RSGICC	0.36 0.25 0.42	0.3 0.3 0.3	0.3 0.3 0.3	7
B5	Fixed window	High-rise Res/Instl/ Model: /New			☐ NFRC Certified ☐ U-factor method for RSGICC ☐ U-factor method for RSGICC	0.36 0.25 0.42	0.3 0.3 0.3	0.3 0.3 0.3	21
E1	Fixed window	High-rise Res/Instl/ Model: /New			☐ NFRC Certified ☐ U-factor method for RSGICC ☐ U-factor method for RSGICC	0.36 0.25 0.42	0.3 0.3 0.3	0.3 0.3 0.3	18

Registration Number: _____
 CA Building Energy Efficiency Standards - 2019 Modelcode Compliance
 Report Version: 2023.1.08
 (Signed Version: ENVC-20230108)

Registration Period: 2023-06-01 to 2024-06-01
 Report Generated: 2023-12-04 09:47

CLIENT:

ADDRESS:

929 18TH ST
BAKERSFIELD, CA 93301

CONFIDENTIALITY STATEMENT:
ALL DRAWINGS AND WRITTEN MATERIALS
APPEARING HEREIN CONSTITUTE THE
ORIGINAL AND UNPUBLISHED WORK OF THE
DESIGNER AND THE SAME MAY NOT BE
DUPLICATED, USED OR DISCLOSED WITHOUT
CONSENT OF THE DESIGNER.

NOTES:

1. ALL DIMENSIONS HEREIN ARE IN IMPERIAL UNITS UNLESS STATED OTHERWISE.
2. THESE DRAWINGS ARE TO BE READ IN CONJUNCTION WITH ALL RELEVANT DESIGNER, ENGINEER OR SPECIALIST DRAWINGS AND SPECIFICATIONS.
3. THE CONTRACTOR MUST CHECK ALL DIMENSION AT SITE BEFORE COMMENCING WORK.
4. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING ALL NECESSARY TEMPORARY SUPPORT TO THE BUILDING AND ANY ADJACENT STRUCTURES.

REV. NO.	DESCRIPTION	DATE	BY
0	PERMIT SET	12.29.22	MN

PROJECT: CLEO

TITLE: 152 T1.01 T24 LAYOUT 01

PROJ. NO.	SCALE @ 24X36: NTS
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DRAWING NO.	REV.
T 1 . 0 1	

ENVELOPE COMPONENT APPROACH NET STRA										CALIFORNIA ENERGY COMMISSION	
CERTIFICATE OF COMPLIANCE										NCC ENR 2	
Project Name: _____										Page 14 of 14	
Project Address: _____										Date: 02/24/2023	
529 1511 0104 Required										02/24/2023	

6. VENTILATION AND GLAZED DOOR SCHEDULE									
Ventilation and Glazed Doors: U-factor, Solar Heat Gain Coefficient (SHGC) & Visible Transmittance (VT)									
Ug1	Ug2	Ug3	Ug4	Ug5	Ug6	Ug7	Ug8	Ug9	Ug10
Insulation Detail ID	Insulation Type	Occupancy & Status	U-factor (W/m²K)	SHGC (%)	VT (%)	U-factor (W/m²K)	SHGC (%)	VT (%)	U-factor (W/m²K)
						CRITICAL MECHANICAL PERFORMANCE			
						Performance Values per Design*			
						Product Performance	Required Product Performance	Product Performance	Area R1
						U-factor (W/m²K)	0.36	0.3	
						SHGC (%)	0.25	0.23	
						VT (%)	0.42	0.5	
A1	Faced window	High-rise/Residential				U-factor (W/m²K)	0.36	0.3	15
		High-rise/Residential				SHGC (%)	0.25	0.23	
		High-rise/Residential				VT (%)	0.42	0.5	
		High-rise/Residential				U-factor (W/m²K)	0.36	0.3	15
		High-rise/Residential				SHGC (%)	0.25	0.23	
		High-rise/Residential				VT (%)	0.42	0.5	
A1	Faced window	High-rise/Residential				U-factor (W/m²K)	0.36	0.3	15
		High-rise/Residential				SHGC (%)	0.25	0.23	
		High-rise/Residential				VT (%)	0.42	0.5	
		High-rise/Residential				U-factor (W/m²K)	0.36	0.3	15
		High-rise/Residential				SHGC (%)	0.25	0.23	
		High-rise/Residential				VT (%)	0.42	0.5	
		High-rise/Residential				U-factor (W/m²K)	0.36	0.3	15
		High-rise/Residential				SHGC (%)	0.25	0.23	
		High-rise/Residential				VT (%)	0.42	0.5	
		High-rise/Residential				U-factor (W/m²K)	0.36	0.3	15
		High-rise/Residential				SHGC (%)	0.25	0.23	
		High-rise/Residential				VT (%)	0.42	0.5	
		High-rise/Residential				U-factor (W/m²K)	0.36	0.3	15
		High-rise/Residential				SHGC (%)	0.25	0.23	
		High-rise/Residential				VT (%)	0.42	0.5	
		High-rise/Residential				U-factor (W/m²K)	0.36	0.3	15
		High-rise/Residential				SHGC (%)	0.25	0.23	
		High-rise/Residential				VT (%)	0.42	0.5	
		High-rise/Residential				U-factor (W/m²K)	0.36	0.3	15
		High-rise/Residential				SHGC (%)	0.25	0.23	
		High-rise/Residential				VT (%)	0.42	0.5	
		High-rise/Residential				U-factor (W/m²K)	0.36	0.3	15
		High-rise/Residential				SHGC (%)	0.25	0.23	
		High-rise/Residential				VT (%)	0.42	0.5	
		High-rise/Residential				U-factor (W/m²K)	0.36	0.3	15
		High-rise/Residential				SHGC (%)	0.25	0.23	
		High-rise/Residential				VT (%)	0.42	0.5	
		High-rise/Residential				U-factor (W/m²K)	0.36	0.3	15
		High-rise/Residential				SHGC (%)	0.25	0.23	
		High-rise/Residential				VT (%)	0.42	0.5	
		High-rise/Residential				U-factor (W/m²K)	0.36	0.3	15
		High-rise/Residential				SHGC (%)	0.25	0.23	

[illegible][illegible][illegible]

ENVELOPE COMPONENT APPROACH										CALIFORNIA ENERGY EFFICIENCY		NRC VENTILATION	
CERTIFICATE OF COMPLIANCE										Page # of # of Pages		Page # of # of Pages	
Project Name:										C:\Program Files\Autodesk\Revit\Projects\2023\2023-24-06-01\2023-24-06-01.rvt		2023-24-06-01.rvt	
Project Address:										1001 1st Street, Suite 100		1001 1st Street, Suite 100	
V. FENESTRATION AND GLAZED DOOR MEASUREMENTS													
Typical Rectangular Area Glazed Doors, Windows, Sliding Glass Doors, and Glass Partitions (RSHG) and Glass Partitions (VT)													
Item ID	Item Description	Material	U-Value	U-Value	U-Value	U-Value	U-Value	U-Value	U-Value	U-Value	U-Value	U-Value	U-Value
01	02	03	04	05	06	07	08	09	10	11	12	13	14
Item ID	Item Description	Material	U-Value	U-Value	U-Value	U-Value	U-Value	U-Value	U-Value	U-Value	U-Value	U-Value	U-Value
A1	Fixed window	High-Emissivity Insulated Glass Unit (IGU) with Low-E Coating	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25
A1	Fixed window	High-Emissivity Insulated Glass Unit (IGU) with Low-E Coating	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25
E1	Fixed window	High-Emissivity Insulated Glass Unit (IGU) with Low-E Coating	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25
E2	Fixed window	High-Emissivity Insulated Glass Unit (IGU) with Low-E Coating	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25
E3	Fixed window	High-Emissivity Insulated Glass Unit (IGU) with Low-E Coating	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25
E4	Fixed window	High-Emissivity Insulated Glass Unit (IGU) with Low-E Coating	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25
E5	Fixed window	High-Emissivity Insulated Glass Unit (IGU) with Low-E Coating	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25
E6	Fixed window	High-Emissivity Insulated Glass Unit (IGU) with Low-E Coating	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25
E7	Fixed window	High-Emissivity Insulated Glass Unit (IGU) with Low-E Coating	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25
E8	Fixed window	High-Emissivity Insulated Glass Unit (IGU) with Low-E Coating	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25
E9	Fixed window	High-Emissivity Insulated Glass Unit (IGU) with Low-E Coating	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25
E10	Fixed window	High-Emissivity Insulated Glass Unit (IGU) with Low-E Coating	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25
E11	Fixed window	High-Emissivity Insulated Glass Unit (IGU) with Low-E Coating	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25
E12	Fixed window	High-Emissivity Insulated Glass Unit (IGU) with Low-E Coating	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25
E13	Fixed window	High-Emissivity Insulated Glass Unit (IGU) with Low-E Coating	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25
E14	Fixed window	High-Emissivity Insulated Glass Unit (IGU) with Low-E Coating	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25
E15	Fixed window	High-Emissivity Insulated Glass Unit (IGU) with Low-E Coating	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25
E16	Fixed window	High-Emissivity Insulated Glass Unit (IGU) with Low-E Coating	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25
E17	Fixed window	High-Emissivity Insulated Glass Unit (IGU) with Low-E Coating	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25
E18	Fixed window	High-Emissivity Insulated Glass Unit (IGU) with Low-E Coating	0.25	0									

STATE OF CALIFORNIA Envelope Component Approach MECC-001-4		CALIFORNIA ENERGY EFFICIENCY MECC-001-4
CERTIFICATE OF COMPLIANCE Project Name: _____ Project Address: _____		(Page 12 of 48) Date: _____
C101 Report Page: _____ 12/9/18/19 Update Required: _____		

6. VENTILATION AND GLAZED DOOR SCHEDULE					
Typical Ventilation and Glazed Doors U-factor, Solar Heat Gain Coefficient (SHGC)/VLT, Visible Transmittance (VT)					
U-factor	SHGC	VLT	IRSHGC	Compliance Method	VT Compliance Method
Calculation Method for Performance Values per Design*					
U-factor (Detail ID)	Ventilation Type	Occupancy & Status	IRSHGC Compliance Method	VT Compliance Method	Product Performance Value per Design*
E3	Fasad window	High-rise /Residential/ Motel / New	☐	NFRC Certified	U-factor (max) 0.36 0.3
			☐	Overheating used for IRSHGC	U-factor (max) 0.25 0.3
			☐	VT (min)	0.42 0.5
E3	Fasad window	High-rise /Residential/ Motel / New	☐	NFRC Certified	U-factor (max) 0.36 0.3
			☐	Overheating used for IRSHGC	U-factor (max) 0.25 0.3
			☐	VT (min)	0.42 0.5
E3	Fasad window	High-rise /Residential/ Motel / New	☐	NFRC Certified	U-factor (max) 0.36 0.3
			☐	Overheating used for IRSHGC	U-factor (max) 0.25 0.3
			☐	VT (min)	0.42 0.5
E4	Fasad window	High-rise /Residential/ Motel / New	☐	NFRC Certified	U-factor (max) 0.36 0.3
			☐	Overheating used for IRSHGC	U-factor (max) 0.25 0.3
			☐	VT (min)	0.42 0.5
A1	Fasad window	High-rise /Residential/ Motel / New	☐	NFRC Certified	U-factor (max) 0.36 0.3
			☐	Overheating used for IRSHGC	U-factor (max) 0.25 0.3
			☐	VT (min)	0.42 0.5
A1	Fasad window	High-rise /Residential/ Motel / New	☐	NFRC Certified	U-factor (max) 0.36 0.3
			☐	Overheating used for IRSHGC	U-factor (max) 0.25 0.3
			☐	VT (min)	0.42 0.5

Registration Number: _____ CA Building Energy Efficiency Standards - 2020 Residential Compliance	Registration Date/Time: _____ Report Version: 2018.0.13 Schema Version: 20200001
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Registration Provider: Envergent
 Report Generated: 2020-12-04 06:00:00

TYPE OF CALCIUM Envelope Component Approach				CALIFORNIA ENERGY COMMISSION				
CERTIFICATE OF COMPLIANCE Project Name: _____ Project Address: _____				MCC Number: _____ Sheet # of # of Sheets: _____				
GEO/Report Page: _____ S01 15TH / 16TH Page Prepared: _____								
1. PENETRATION AND GLAZED DOOR SCHEDULE								
Penetration: Weatherstripped and Glazed Doors - U-factor, Solar Heat Gain Coefficient (SHGC)/ U-value, Visible Transmittance (VT)								
U0				U1	U2	U3		
Tag/Item Detail ID	Penetration Type	Occupancy & Schedule	PERMITS Compliance Method	VT Compliance Method	Calculation Method for Performance Values per Design?	Product Performance Unit	Required Performance	Product Performance per Design
C2	Fixed window	High-Rise/Res/Hotel - Motel			NFRC Certified	U-Value (Ht)	0.36	0.3
					U-factor meeting for SHGC:	SHGC (Ht)	0.35	0.33
					U-factor meeting for SHGC:	U-Value (Ht)	0.42	0.5
C2	Fixed window	High-Rise/Res/Hotel - Motel			NFRC Certified	U-Value (Ht)	0.36	0.3
					U-factor meeting for SHGC:	SHGC (Ht)	0.35	0.33
					U-factor meeting for SHGC:	U-Value (Ht)	0.42	0.5
A1	Fixed window	High-Rise/Res/Hotel - Motel			NFRC Certified	U-Value (Ht)	0.36	0.3
					U-factor meeting for SHGC:	SHGC (Ht)	0.35	0.33
					U-factor meeting for SHGC:	U-Value (Ht)	0.42	0.5
B3	Fixed window	High-Rise/Res/Hotel - Motel			NFRC Certified	U-Value (Ht)	0.36	0.3
					U-factor meeting for SHGC:	SHGC (Ht)	0.35	0.33
					U-factor meeting for SHGC:	U-Value (Ht)	0.42	0.5
D2	Fixed window	High-Rise/Res/Hotel - Motel			NFRC Certified	U-Value (Ht)	0.36	0.3
					U-factor meeting for SHGC:	SHGC (Ht)	0.35	0.33
					U-factor meeting for SHGC:	U-Value (Ht)	0.42	0.5
E2	Fixed window	High-Rise/Res/Hotel - Motel			NFRC Certified	U-Value (Ht)	0.36	0.3
					U-factor meeting for SHGC:	SHGC (Ht)	0.35	0.33
					U-factor meeting for SHGC:	U-Value (Ht)	0.42	0.5

[illegible][illegible]

TYPE OF CALIFORNIA Envelope Component Approach				CALIFORNIA ENERGY COMMISSION						
PROJECT OF COMPLIANCE				NRC v.4.0						
Project Name				Page 25 of 47						
Project Address				12/1/2020						
CITY/Report Type:				NRC v.4.0						
SDD Title/DOE Prepared:				12/1/2020						
6. PENETRATION AND GLAZED DOOR SCHEDULE										
Window Replacement And Glazed Doors: U-Value, Solar Heat Gain Coefficient (SHGC), Visible Transmittance (VT)										
Tag/Item ID	Penetration Type	Occupancy & Status	IRSHGC Compliance Method	VT Compliance Method	Calculation Method for Performance Value per Design	Product Performance U-Value	Required Performance U-Value	Product Performance Visible Transmittance (VT)	Required Performance Visible Transmittance (VT)	Key to Legend
E3	Fixed window	High-rise/Resch/Hotel/ New	IRSHGC Compliant	VT Compliant	NFRC Certified	U-Value (HSPG) 0.36	0.33	0.5	0.5	72
					U-Value (HSPG) 0.36	0.33	0.5	0.5		
E3	Fixed window	High-rise/Resch/Hotel/ New	IRSHGC Compliant	VT Compliant	NFRC Certified	U-Value (HSPG) 0.36	0.33	0.5	0.5	72
					U-Value (HSPG) 0.36	0.33	0.5	0.5		
E4	Fixed window	High-rise/Resch/Hotel/ New	IRSHGC Compliant	VT Compliant	NFRC Certified	U-Value (HSPG) 0.36	0.33	0.5	0.5	48
					U-Value (HSPG) 0.36	0.33	0.5	0.5		
A1	Fixed window	High-rise/Resch/Hotel/ New	IRSHGC Compliant	VT Compliant	NFRC Certified	U-Value (HSPG) 0.36	0.33	0.5	0.5	15
					U-Value (HSPG) 0.36	0.33	0.5	0.5		
A1	Fixed window	High-rise/Resch/Hotel/ New	IRSHGC Compliant	VT Compliant	NFRC Certified	U-Value (HSPG) 0.36	0.33	0.5	0.5	15
					U-Value (HSPG) 0.36	0.33	0.5	0.5		
C2	Fixed window	High-rise/Resch/Hotel/ New	IRSHGC Compliant	VT Compliant	NFRC Certified	U-Value (HSPG) 0.36	0.33	0.5	0.5	30
					U-Value (HSPG) 0.36	0.33	0.5	0.5		

STATE OF CALIFORNIA Envelope Component Approach MCC-001		CALIFORNIA ENERGY COMMISSION MCC-001-CA							
CERTIFICATE OF COMPLIANCE Project Name: _____ Project Address: _____		C112 Report Page: _____ 100 LEED v4.0 Date Prepared: _____							
		12/04/2023							
6. PENETRATION AND GLAZED DOOR SCHEDULE									
Typical Penetration And Glazed Doors U-factor, Solar Heat Gain Coefficient (SHGC)/ U-value, Visible Transmittance (VT)									
U-factor	SHGC	U-value	VT						
U-factor (Detail ID)	Penetration Type	Occupancy & Status	IR/SHGC Compliance Method	VT Compliance Method	Calculation Method for Performance Values per Design	Product Performance per Design	Required Product Performance	Product Performance	Notes
C2	Fa	High-rise Residential/ Motel / New	NRC Certified	NRC Certified	NRC Certified	U-factor (max)	0.95	0.9	10
			VT (min)	0.25	0.9	0.9			
			VT (min)	0.4	0.5				
A1	Fa	High-rise Residential/ Motel / New	NRC Certified	NRC Certified	NRC Certified	U-factor (max)	0.95	0.9	15
			VT (min)	0.25	0.9	0.9			
			VT (min)	0.4	0.5				
B3	Fa	High-rise Residential/ Motel / New	NRC Certified	NRC Certified	NRC Certified	U-factor (max)	0.95	0.9	10
			VT (min)	0.25	0.9	0.9			
			VT (min)	0.4	0.5				
D4	Fa	High-rise Residential/ Motel / New	NRC Certified	NRC Certified	NRC Certified	U-factor (max)	0.95	0.9	48
			VT (min)	0.25	0.9	0.9			
			VT (min)	0.4	0.5				
E2	Fa	High-rise Residential/ Motel / New	NRC Certified	NRC Certified	NRC Certified	U-factor (max)	0.95	0.9	48
			VT (min)	0.25	0.9	0.9			
			VT (min)	0.4	0.5				
06.05.00.02	Fa	High-rise Residential/ Motel / New	NRC Certified	NRC Certified	NRC Certified	U-factor (max)	0.95	0.9	21
			VT (min)	0.25	0.9	0.9			
			VT (min)	0.4	0.5				

State of California Energy Component Approach HCULES California Energy Commission				12/22/2022 12/22/2022					
CERTIFICATE OF COMPLIANCE Project Name: _____ Project Address: _____ City/Zip/County: _____ Date: _____				12/22/2022 12/22/2022 12/22/2022 12/22/2022					
VI. FENESTRATION AND GLAZED DOOR SCHEDULE									
Non-Fenestration And Glazed Doors: U-Value, Solar Heat Gain Coefficient (SHGC)/ UHVCs, Visible Transmittance (VT)									
Tag/Item No.	Fenestration Type	Occupancy & Status	FENESTRAC Compliance Method	VT Compliance Method	Calculation Method for Performance Values per Design?	U ⁰	U ¹	U ²	U ³
A1	Fixed window	High-Rise/Residential - New			☐ NFRC Certified ☐ Overhanging value for RSHGC: _____ ☐ Overhanging value for RSHGC: _____ ☐ Overhanging value for RSHGC: _____	U-Value (J/m ² ·K)	0.36	0.3	15
B3	Fixed window	High-Rise/Residential - New			☐ NFRC Certified ☐ Overhanging value for RSHGC: _____ ☐ Overhanging value for RSHGC: _____ ☐ Overhanging value for RSHGC: _____	U-Value (J/m ² ·K)	0.36	0.3	10
D1	Fixed window	High-Rise/Residential - New			☐ NFRC Certified ☐ Overhanging value for RSHGC: _____ ☐ Overhanging value for RSHGC: _____ ☐ Overhanging value for RSHGC: _____	U-Value (J/m ² ·K)	0.36	0.3	18

Notes: **U-Value:** If any individual fenestration product is non-compliant, products may show compliance and/or area-weighted calculations. Overhanging glazing is not included in area-weighted calculations. Area-weighted calculations shown in separate area-weighted table below.

SHGC: SHGC is the ratio of solar radiation admitted through a window, curtain wall or skylight compared to total incident solar radiation. It is a dimensionless number ranging from 0 to 1.0. A lower SHGC indicates that less solar heat is gained through the window.

Visible Transmittance (VT): Visible Transmittance is the ratio of visible light transmitted through a window, curtain wall or skylight compared to total incident visible light. It is a dimensionless number ranging from 0 to 1.0. A higher VT indicates that more visible light is transmitted through the window.

Overhanging value for RSHGC: Overhanging value for RSHGC is the ratio of solar radiation admitted through a window, curtain wall or skylight compared to total incident solar radiation. It is a dimensionless number ranging from 0 to 1.0. A lower overhanging value for RSHGC indicates that less solar heat is gained through the window.

Overhanging value for RSHGC: Overhanging value for RSHGC is the ratio of solar radiation admitted through a window, curtain wall or skylight compared to total incident solar radiation. It is a dimensionless number ranging from 0 to 1.0. A lower overhanging value for RSHGC indicates that less solar heat is gained through the window.

Overhanging value for RSHGC: Overhanging value for RSHGC is the ratio of solar radiation admitted through a window, curtain wall or skylight compared to total incident solar radiation. It is a dimensionless number ranging from 0 to 1.0. A lower overhanging value for RSHGC indicates that less solar heat is gained through the window.

STATE OF CALIFORNIA Energy Enforcement Approach NRC-EN-24		CALIFORNIA ENERGY COMMISSION 1501 CALIFORNIA STREET, SUITE 1400 SACRAMENTO, CA 95833	
CERTIFICATE OF COMPLIANCE Project Name: _____ Project Address: _____		CEC/Report Page: _____ 552 34TH STREET, SUITE 1400 SACRAMENTO, CA 95833	
RE. PENETRATION AND GLAZED DOOR SCHEDULE Area-Weighted Average U-Value, VT, Compliance Calculation for Vertical Penetration and Glazed Doors		NRC-EN-24 Page 34 of 34	
Product Performance Data Product Performance Unit Total Area of Penetration (sq ft)	Area-Weighted Calculation for Penetration Area-Weighted Required Designed	Compliance Results Using Area-Weighted Calculation Compliance Calculation Results	
12" x 6" (W) 3362.2	0.28 0.28	COMPLIES	
36" x 6" (W) 3362.2	0.29 0.23	COMPLIES	
36" x 6" (W) 3362.2	0.41 0.5	COMPLIES	
OVERLIGHT IS LARGER INDICATES This section does not apply to this project.			
6. DECLARATION OF REQUIRED CERTIFICATES OF INSTALLATION Sections have been made based on information provided by the applicant. If any section has been changed by the permit applicant, an explanation should be included in Table 2 Additional Remarks. These documents must be provided to the building department and can be found at the following URL: www.energy.ca.gov/2013/01/01/2013compliance_documents			
Form/Title	Field Inspector	Pass Fail	Pass Fail
7. DECLARATION OF REQUIRED CERTIFICATES OF ACCEPTANCE Sections have been made based on information provided by the applicant, if any section needs to be changed, then you must perform the compliance in Table 2 Additional Remarks. These documents must be provided to the building inspector during construction and can be found at the following URL: www.energy.ca.gov/2013/01/01/2013compliance_documents . Individuals who perform the field testing and verification work, and provide the information required for compliance of the Declaration Acceptance documents are not required to be Licensed Professional Engineers or Licensed Professional Architects under the Certificate of Acceptance. The Declaration Acceptance documents must be formatted as specified in Section 2.5.555 and 2.5.555.5			
Form/Title	System/Systems to be Field Verified	Pass Fail	Pass Fail
NRC-EN-24-2 must be submitted for a new, added or altered foundation.			
Signature Date/Time		Generation Procedure: EnergyFlow	
CA Building Energy Efficiency Standards - 2013 Nonresidential Compliance California Energy Commission (CEC) 1501 California Street, Suite 1400 Sacramento, CA 95833 (916) 227-9900		Report Generated: 2022-12-04 08:52	

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PROJECT OR CHAIRMAN Indoor Lighting		CALIFORNIA ENERGY COMMISSION MISC-0114	
CERTIFICATE OF COMPLIANCE (LIC) Report Page:		Page 4 of 4 12/10/2007	
Project Name: Project Address:		520 15th Street 95811-0001	
C. COMPLIANCE RESULTS			
(Controls Compliance (See Table H for Details))		COMPLIANT	
Rated Power Reduction Compliance (See Table Q for Details)			
D. EXCEPTIONAL CONDITIONS This table is only filled out with verifiable comments because of selections made or data entered in tables throughout the form.			
E. ADDITIONAL REMARKS This table includes remarks made by the permit applicant to the Authority Having Jurisdiction.			
F. INDOOR LIGHTING FIXTURE SCHEDULE This section does not apply to this project.			
G. MODULAR LIGHTING SYSTEMS This section does not apply to this project.			
H. INDOOR LIGHTING CONTROLS (See Lighting PLAN) This table includes lighting controls for conditioned and unconditioned spaces. When a control having "N" is shown, the notes section of this table provides more detail on how compliance is achieved. The lighting controls section of the Compliance Summary Table on the first page will show "DOES NOT COMPLY" if the notes are left blank.			

Building Level Controls		Whole Building Auto Time Switch	
CS1	CS2	Foot Candles	On
Mandatory Demand Response 1.10.1.3.1(a)	Shut-off controls 1.10.3.1(a)	Pass	Fail
Required > 20,000 SF		☐	☐

NEW OR EXISTING		CALIFORNIA ENERGY COMMISSION							
Indoor Lighting									
(CERTIFICATE OF COMPLIANCE)		NCC-078							
Project Name:		Page # of _____							
Project Address:		Page # of _____							
City/County/Zip:		NCC-078-01							
SOS (E) Report Fee:		\$20 (E) (Fees Proposed)							
H. INDOOR LIGHTING CONTROLS (Not Including PMFs)									
All Level Controls									
04	05	06	07	08	09	10	11	12	
Area Description	Complete Building or Main Campus Primary Function Area	Area Cost (\$)	Multi-Level Control Cost (\$)	Shut-Off Control Cost (\$)	Primary/Daylighting Control Cost (\$)	Sensory/Relay Control Cost (\$)	Info-Signage System Cost (\$)	Field Inspector	
		\$139,130	\$139,130	\$139,130	\$139,130	\$139,130	\$139,130		
								Pass Fail	
*NOTES: Control with "x" means a response in the space below explaining how compliance is achieved. Example: x Primary/Daylighting Relays: Sensor device uses min. 2.0 watts per general lighting fixture. IFCX0012.1 is \$139,130.								13	
								Plan Sheet Showing Detail Zones:	
I. LIGHTING POWER ALLOWANCE: COMPLETE BUILDING OR AREA CATEGORY METHODS All zones complying with the Complete Building or Area Category Methods per §166.02 are included in the table. Column 06 indicates if additional lighting power allowances per §166.02(e), or adjustment per §166.02(f) has been used.									
J. ADDITIONAL LIGHTING ALLOWANCE: CATEGORY METHOD QUALIFYING SYSTEM This section does not apply to this project.									
K. TAILORED METHOD GENERAL LIGHTING POWER ALLOWANCE This section does not apply to this project.									
L. ADDITIONAL LIGHTING ALLOWANCE: TAILORED WALL DISPLAY This section does not apply to this project.									
M. ADDITIONAL LIGHTING ALLOWANCE: TAILORED FLOOR AND TASK LIGHTING This section does not apply to this project.									
N. ADDITIONAL LIGHTING ALLOWANCE: TAILORED ORNAMENTAL/SPECIAL EFFECTS No section does not apply to this project.									
Registration Number:					Registration Date/Time:				
CA Building Energy Efficiency Standards - 2019 Nonresidential Compliance					Report Version: 2023.1.03 Scheme Version: 00-000005				
					Registration Period: 2023.12.04 08:47Z				

Indoor Lighting ADDENDUM		CALIFORNIA ENERGY CONSERVATION NRCC 411	
CERTIFICATE OF COMPLIANCE Project Name: _____ Project Address: _____ Project Number: 522 (111) _____ Date Prepared: 1/15/2025		Project Information Project Name: _____ Project Address: _____ Project Number: 522 (111) _____ Date Prepared: 1/15/2025	
A. ADDITIONAL LIGHTING ALLOWANCE VALUED VERY VALUABLE MERCHANDISE This section does not apply to this project.			
B. POWER ADJUSTMENT: LIGHTING CREDIT (POWER ADJUSTMENT FACTOR (PAF)) This section does not apply to this project.			
C. RATED POWER REDUCTION COMPLIANCE FOR ALTERATIONS This section does not apply to this project.			
D. MIN. LIGHTING POWER FOR ALL ALTERATIONS - CONTROLS - EXCEPTIONS This section does not apply to this project.			
E. DELIGHT DESIGN POWER ADJUSTMENT FACTOR (PAF) This section does not apply to this project.			
F. DECLARATION OF REQUIRED CERTIFICATES OF INSTALLATION I/We have been made aware of information provided in this document. If my selection from been changed by permit application, or explanation should be included in table E. Additional Remarks: These documents must be provided to the building inspector during construction and can be found online at: http://www.energy.ca.gov/public/Permitting/2015_compliance_documents/Nonresidential_Declarations/411			
Name/Title		Field Inspector	
		Pass	Fail
NRCC 411 51 - E must be submitted for all buildings			

STATE OF CALIFORNIA

INDOOR LEAKING

NECIS-01

CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE

NECIS-01

Project Name:

Project Address:

City/County/Zip:

Sheet Page

Sheet 1 of 1

12/24/2020

DECLARATION OF REQUIRED CERTIFICATES OF ACCEPTANCE

Selections here must be made based on information provided in this document. If any selection has been changed by the permit applicant, an explanation should be included in Table E. Additional Remarks. These documents must be provided to the building inspector during construction and any with "a" in the form name must be completed through an Acceptance Test Technician Certification Program (ATCTP). For more information visit: <http://www.energy.ca.gov/916244/attm/providers.html>

Form/Title	Separate Forms to Be Filled		Field Inspector
	Verified	Not Verified	
NRCA 01-02-A: Must be submitted for occupancy sensors and automatic time switch controls.	☐	☐	
NRCA 01-04-A: Must be submitted for demand responsive lighting controls.	☐	☐	

Registration Number:

Registration Date/Time:

CA Building Energy Efficiency Standards - 2019 Nonresidential Compliance

Report Version: 2013.1.003
Software Version: 10-2020-002

Registration Provider: CEE/EPRI

Report Generated: 2023-12-24 06:40:43

DEPT. OF COMMERCE Indoor Lighting MS-032		CALIFORNIA ENERGY COMMISSION MS-032-11	
CERTIFICATE OF COMPLIANCE			
Project Name: _____		(C) Report Page: _____	
Project Address: _____		Project No.: _____	
625 0111 (C) Report Page: _____		Project No.: _____	
DOCUMENTATION AUTHOR'S DECLARATION STATEMENT I certify that this Certificate of Compliance document is accurate and complete.			
Documentation Author Name: _____ David F. Allen Company: _____ Lincroft, Inc. 726 Piedmont Dr. Piedmont, CA 94635 Phone: _____ Fax: _____ E-mail: _____		Documentation Author Signature: _____ David Allen Date: _____ 2023-10-24 CEA 4000 Certification Identifier (if applicable): _____ P1803311752	
RESPONSIBLE PERSON'S DECLARATION STATEMENT I certify that the following items are true and correct to the best of my knowledge:			
I am a registered owner of the building and have been assigned the responsibility for the building design or system (identified on the Certificate of Compliance document).			
I have reviewed the building design and system (identified on the Certificate of Compliance document) and have determined that it complies with the requirements of the Title 24, Part 6 of the California Code of Regulations.			
The building design and system (identified on the Certificate of Compliance document) are consistent with the information provided on other applicable compliance documents, worksheets, calculations, and other documents.			
I will ensure that a completed copy of this Certificate of Compliance and the items available to the building authority (based on the building and system available to the enforcement agency for applicable building and system) are provided to the building authority for their review and approval.			
I will ensure that a completed copy of this Certificate of Compliance is provided to the documentation and the building products to the building owner or occupancy.			
Responsible Design Name: _____ David Allen Company: _____ Lincroft, Inc. 726 Piedmont Dr. Piedmont, CA 94635		Responsible Design Signature: _____ David Allen Date: _____ 2023-10-24 P1803311752 P1803311752 P1803311752	

CLIENT:

ADDRESS:

929 18TH ST
BAKERSFIELD, CA 93301

CONFIDENTIALITY STATEMENT:

ALL DRAWINGS AND WRITTEN MATERIALS APPEARING HEREIN CONSTITUTE THE ORIGINAL AND UNPUBLISHED WORK OF THE DESIGNER AND THE SAME MAY NOT BE DUPLICATED, USED OR DISCLOSED WITHOUT CONSENT OF THE DESIGNER.

NOTES:

1. ALL DIMENSIONS HEREIN ARE IN IMPERIAL UNITS UNLESS STATED OTHERWISE.
2. THESE DRAWINGS ARE TO BE READ IN CONJUNCTION WITH ALL RELEVANT DESIGNER, ENGINEER OR SPECIALIST DRAWINGS AND SPECIFICATIONS.
3. THE CONTRACTOR MUST CHECK ALL DIMENSION AT SITE BEFORE COMMENCING WORK.
4. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING ALL NECESSARY TEMPORARY SUPPORT TO THE BUILDING AND ANY ADJACENT STRUCTURES.

The first two columns of the table are the same as in the previous table. The third column is the number of observations in the sample. The fourth column is the number of observations in the sample that are classified as "high" or "low" by the model. The fifth column is the number of observations in the sample that are classified as "high" or "low" by the model, but are not in the sample. The sixth column is the number of observations in the sample that are classified as "high" or "low" by the model, but are not in the sample. The seventh column is the number of observations in the sample that are classified as "high" or "low" by the model, but are not in the sample. The eighth column is the number of observations in the sample that are classified as "high" or "low" by the model, but are not in the sample.

[illegible]

PROJECT:	
CLEO	
TITLE:	
153 T1.02 T24 LAYOUT 02	
PROJ. NO.	SCALE @ 24X36: NTS
DRAWING NO.	REV.
T 1 . 0 2	

STATE OF CALIFORNIA Mechanical Systems NON-RESIDENTIAL		CALIFORNIA ENERGY COMMISSION	
CERTIFICATE OF COMPLIANCE Project Name: _____		REC-MCH-4 Page 1 of 10	
Project Address: _____		CDD 12711 (Date Prepared) 12/24/2003	
K. TERMINAL BOX CONTROLS This section does not apply to this project.			
L. DISTRIBUTION (DUCTWORK AND PIPING) This section does not apply to this project.			
M. COOLING TOWERS This section does not apply to this project.			
III. DECLARATION OF REQUIRED CERTIFICATES OF INSTALLATION Selections have been made based on information provided in previous tables of this document. If any selection needs to be changed, please explain why in Table C Additional Remarks. These documents must be provided to the building inspector during construction and can be found online at: http://www.energy.ca.gov/titles/241031standards/241031_compliance_documents/Nonresidential_Documents/NRCC/			
Form/Title		Field Inspector	
NEC-MCH-G-1. Must be submitted for all buildings		☐ Yes	☐ No

[illegible]

City of Duluth Mechanical Systems 601-541-2121 CERTIFICATE OF COMPLIANCE Project Name: _____ Project Address: _____	CEC Report Pages: 529 531 532 534 535 536 537 538 539 540 541 542 543 544 545 546 547 548 549 550 551 552 553 554 555 556 557 558 559 560 561 562 563 564 565 566 567 568 569 570 571 572 573 574 575 576 577 578 579 580 581 582 583 584 585 586 587 588 589 590 591 592 593 594 595 596 597 598 599 600 601 602 603 604 605 606 607 608 609 610 611 612 613 614 615 616 617 618 619 620 621 622 623 624 625 626 627 628 629 630 631 632 633 634 635 636 637 638 639 640 641 642 643 644 645 646 647 648 649 650 651 652 653 654 655 656 657 658 659 660 661 662 663 664 665 666 667 668 669 670 671 672 673 674 675 676 677 678 679 680 681 682 683 684 685 686 687 688 689 690 691 692 693 694 695 696 697 698 699 700 701 702 703 704 705 706 707 708 709 710 711 712 713 714 715 716 717 718 719 720 721 722 723 724 725 726 727 728 729 730 731 732 733 734 735 736 737 738 739 740 741 742 743 744 745 746 747 748 749 750 751 752 753 754 755 756 757 758 759 760 761 762 763 764 765 766 767 768 769 770 771 772 773 774 775 776 777 778 779 780 781 782 783 784 785 786 787 788 789 790 791 792 793 794 795 796 797 798 799 800 801 802 803 804 805 806 807 808 809 810 811 812 813 814 815 816 817 818 819 820 821 822 823 824 825 826 827 828 829 830 831 832 833 834 835 836 837 838 839 840 841 842 843 844 845 846 847 848 849 850 851 852 853 854 855 856 857 858 859 860 861 862 863 864 865 866 867 868 869 870 871 872 873 874 875 876 877 878 879 880 881 882 883 884 885 886 887 888 889 890 891 892 893 894 895 896 897 898 899 900 901 902 903 904 905 906 907 908 909 910 911 912 913 914 915 916 917 918 919 920 921 922 923 924 925 926 927 928 929 930 931 932 933 934 935 936 937 938 939 940 941 942 943 944 945 946 947 948 949 950 951 952 953 954 955 956 957 958 959 960 961 962 963 964 965 966 967 968 969 970 971 972 973 974 975 976 977 978 979 980 981 982 983 984 985 986 987 988 989 990 991 992 993 994 995 996 997 998 999 1000 1001 1002 1003 1004 1005 1006 1007 1008 1009 1010 1011 1012 1013 1014 1015 1016 1017 1018 1019 1020 1021 1022 1023 1024 1025 1026 1027 1028 1029 1030 1031 1032 1033 1034 1035 1036 1037 1038 1039 1040 1041 1042 1043 1044 1045 1046 1047 1048 1049 1050 1051 1052 1053 1054 1055 1056 1057 1058 1059 1060 1061 1062 1063 1064 1065 1066 1067 1068 1069 1070 1071 1072 1073 1074 1075 1076 1077 1078 1079 1080 1081 1082 1083 1084 1085 1086 1087 1088 1089 1090 1091 1092 1093 1094 1095 1096 1097 1098 1099 1100 1101 1102 1103 1104 1105 1106 1107 1108 1109 1110 1111 1112 1113 1114 1115 1116 1117 1118 1119 1120 1121 1122 1123 1124 1125 1126 1127 1128 1129 1130 1131 1132 1133 1134 1135 1136 1137 1138 1139 1140 1141 1142 1143 1144 1145 1146 1147 1148 1149 1150 1151 1152 1153 1154 1155 1156 1157 1158 1159 1160 1161 1162 1163 1164 1165 1166 1167 1168 1169 1170 1171 1172 1173 1174 1175 1176 1177 1178 1179 1180 1181 1182 1183 1184 1185 1186 1187 1188 1189 1190 1191 1192 1193 1194 1195 1196 1197 1198 1199 1200 1201 1202 1203 1204 1205 1206 1207 1208 1209 1210 1211 1212 1213 1214 1215 1216 1217 1218 1219 1220 1221 1222 1223 1224 1225 1226 1227 1228 1229 1230 1231 1232 1233 1234 1235 1236 1237 1238 1239 1240 1241 1242 1243 1244 1245 1246 1247 1248 1249 1250 1251 1252 1253 1254 1255 1256 1257 1258 1259 1260 1261 1262 1263 1264 1265 1266 1267 1268 1269 1270 1271 1272 1273 1274 1275 1276 1277 1278 1279 1280 1281 1282 1283 1284 1285 1286 1287 1288 1289 1290 1291 1292 1293 1294 1295 1296 1297 1298 1299 1300 1301 1302 1303 1304 1305 1306 1307 1308 1309 1310 1311 1312 1313 1314 1315 1316 1317 1318 1319 1320 1321 1322 1323 1324 1325 1326 1327 1328 1329 1330 1331 1332 1333 1334 1335 1336 1337 1338 1339 1340 1341 1342 1343 1344 1345 1346 1347 1348 1349 1350 1351 1352 1353 1354 1355 1356 1357 1358 1359 1360 1361 1362 1363 1364 1365 1366 1367 1368 1369 1370 1371 1372 1373 1374 1375 1376 1377 1378 1379 1380 1381 1382 1383 1384 1385 1386 1387 1388 1389 1390 1391 1392 1393 1394 1395 1396 1397 1398 1399 1400 1401 1402 1403 1404 1405 1406 1407 1408 14
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STATE OF CALIFORNIA Mechanical Systems and SERVICE		CALIFORNIA ENERGY COMMISSION	
CERTIFICATE OF COMPLIANCE		NCEC 440	
Project Name:	C-120 Project Page:	Building Name:	Page: 15 of 17
Project Address:	029 551 01 Date Prepared:	Project Number:	12/24/2023
DOCUMENTATION AUTHORITY'S DECLARATION STATEMENT			
I certify that this Certificate of Compliance documentation is accurate and complete.			
Documentation Author Name: Sayed R. Alaim		Documentation Author Signature: Sayed Alaim	
Company Name: ImmoChil, Inc.		Building Name: 2023-12-24	
Address: 7758 Fairwinds pl		Project Number: 029 551 01	
City/County: Pasadena CA 91066		Certificate Expiration Date (if applicable): 01/01/2025	
Phone: 9168821752		Certificate Identification Number (if applicable): 9168821752	
RESPONSIBLE PERSON'S DECLARATION STATEMENT			
I certify that I have taken every step of responsibility under the laws of the State of California. The information provided on this Certificate of Compliance is true and accurate. I am eligible under Article 12 of the Business and Professions Code to accept responsibility for the building design or system design identified on this Certificate of Compliance prepared for this building. I am a duly licensed and authorized professional engineer, mechanical, electrical, and/or mechanical engineer as identified on this Certificate of Compliance under the requirements of Article 12, Part 1 of title 15 of the California Code of Regulations. The building design, however, is not an eligible building system identified on this Certificate of Compliance as associated with the building design. I will ensure that a completed signed copy of this Certificate of Compliance shall be made available with the building authority issued for the building, and made available to the enforcement agency at all applicable times, as required by the enforcement agency of the State of California, and made available to the building owner or its emergency.			
Responsible Designer Name: Sayed R. Alaim		Responsible Designer Signature: Sayed Alaim	
Company Name: ImmoChil		Date Signed: 2023-12-24	
Address: 7758 Fairwinds Pl		License: 00000	
City/County: Pasadena CA 91066		Phone: 916 882 1752	
Registration Number:		Registration Expiration:	
CA Building Energy Efficiency Standards - 2019/2024 Compliance		Report Version: 2023.029	
		Report Date: 2023-12-24	
		Report Generated: 2023-12-24 04:41:41	

NOTES:

1. ALL DIMENSIONS HEREIN ARE IN IMPERIAL UNITS UNLESS STATED OTHERWISE.
2. THESE DRAWINGS ARE TO BE READ IN CONJUNCTION WITH ALL RELEVANT DESIGNER, ENGINEER OR SPECIALIST DRAWINGS AND SPECIFICATIONS.
3. THE CONTRACTOR MUST CHECK ALL DIMENSION AT SITE BEFORE COMMENCING WORK.
4. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING ALL NECESSARY TEMPORARY SUPPORT TO THE BUILDING AND ANY ADJACENT STRUCTURES.

PROJECT:	
CLEO	
TITLE: 154 T1.03 T24 LAYOUT 03	
PROJ. NO.	SCALE @ 24X36: NTS
DRAWING NO. T 1 . 0 3	REV.

[illegible]

HVAC SYSTEM HEATING AND COOLING LOADS SUMMARY									
Project Name CLEO				ISSUE CLEO		Date 12/20/2022			
Main Floor Heat Pump				Room Area 6,520		System Ground Floor / 1st Floor			
ENGINEERING CHECKS		SYSTEM LOAD		COOL COOLING PEAK		COLM HTLS PEAK		HEATING SYSTEM	
Number of Systems Heating Systems		Total Room Loads Return Ventilated Loading Return Air Loads Return Air Loads Ventilation Total Outdoor (Btu/h) Total Outdoor (Btu/h) Total Outdoor (Btu/h) Total Outdoor (Btu/h)		CFM Sensible CFM Latent CFM Sensible CFM Latent CFM Sensible CFM Latent CFM Sensible CFM Latent		CFM HTLS Sensible CFM HTLS Latent CFM HTLS Sensible CFM HTLS Latent CFM HTLS Sensible CFM HTLS Latent CFM HTLS Sensible CFM HTLS Latent		Number of Systems Heating System Outdoor Air Flow Total Outdoor (Btu/h) Outdoor (Btu/h) System Outdoor Outdoor Air Flow Total Outdoor (Btu/h) Total Outdoor (Btu/h) Total Outdoor (Btu/h)	
1 1 1 1 1 1 1 1		31,100 188,000 150,000 12,000 12,000 22,000 22,000 22,000		4350 32,880 3,475 3,475 525 3,390 3,475 3,475		32,880 30 1,425 1,425 23,290 2,394 1,023 1,023		1 1 1 1 1 1 1 1	
Total Outdoor (Btu/h) Air System CFM Air System Airflow (inches/sq) Airflow (inches/sq) Airflow (inches/sq) Outdoor Air Flow Outdoor Air (inches/sq) Outdoor Air (inches/sq)		22,000 22,000 22,000 22,000 22,000 22,000 22,000 22,000		31,100 31,100 31,100 31,100 31,100 31,100 31,100 31,100		31,100 31,100 31,100 31,100 31,100 31,100 31,100		31,100 31,100 31,100 31,100 31,100 31,100 31,100	
Total Outdoor (Btu/h) Air System CFM Air System Airflow (inches/sq) Airflow (inches/sq) Airflow (inches/sq) Outdoor Air Flow Outdoor Air (inches/sq) Outdoor Air (inches/sq)		22,000 22,000 22,000 22,000 22,000 22,000 22,000 22,000		31,100 31,100 31,100 31,100 31,100 31,100 31,100 31,100		31,100 31,100 31,100 31,100 31,100 31,100 31,100		31,100 31,100 31,100 31,100 31,100 31,100 31,100	
Total Outdoor (Btu/h) Air System CFM Air System Airflow (inches/sq) Airflow (inches/sq) Airflow (inches/sq) Outdoor Air Flow Outdoor Air (inches/sq) Outdoor Air (inches/sq)		22,000 22,000 22,000 22,000 22,000 22,000 22,000 22,000		31,100 31,100 31,100 31,100 31,100 31,100 31,100 31,100		31,100 31,100 31,100 31,100 31,100 31,100 31,100		31,100 31,100 31,100 31,100 31,100 31,100 31,100	
Total Outdoor (Btu/h) Air System CFM Air System Airflow (inches/sq) Airflow (inches/sq) Airflow (inches/sq) Outdoor Air Flow Outdoor Air (inches/sq) Outdoor Air (inches/sq)		22,000 22,000 22,000 22,000 22,000 22,000 22,000 22,000		31,100 31,100 31,100 31,100 31,100 31,100 31,100 31,100		31,100 31,100 31,100 31,100 31,100 31,100 31,100		31,100 31,100 31,100 31,100 31,100 31,100 31,100	
Total Outdoor (Btu/h) Air System CFM Air System Airflow (inches/sq) Airflow (inches/sq) Airflow (inches/sq) Outdoor Air Flow Outdoor Air (inches/sq) Outdoor Air (inches/sq)		22,000 22,000 22,000 22,000 22,000 22,000 22,000 22,000		31,100 31,100 31,100 31,100 31,100 31,100 31,100 31,100		31,100 31,100 31,100 31,100 31,100 31,100 31,100		31,100 31,100 31,100 31,100 31,100 31,100 31,100	
Total Outdoor (Btu/h) Air System CFM Air System Airflow (inches/sq) Airflow (inches/sq) Airflow (inches/sq) Outdoor Air Flow Outdoor Air (inches/sq) Outdoor Air (inches/sq)		22,000 22,000 22,000 22,000 22,000 22,000 22,000 22,000		31,100 31,100 31,100 31,100 31,100 31,100 31,100 31,100		31,100 31,100 31,100 31,100 31,100 31,100 31,100		31,100 31,100 31,100 31,100 31,100 31,100 31,100	
Total Outdoor (Btu/h) Air System CFM Air System Airflow (inches/sq) Airflow (inches/sq) Airflow (inches/sq) Outdoor Air Flow Outdoor Air (inches/sq) Outdoor Air (inches/sq)		22,000 22,000 22,000 22							

HEATING AND COOLING LOADS SUMMARY

SYSTEM LOAD		COOL COILING PEAK		COOL INTX. PEAK	
	CFM	Sensible	Latent	CFM	Sensible
Total Room Loads	13,122	32,826	25,910	16,120	0
Return Vented Exhaust	25.4	2,910	0	0	0
Return Air Ducts	18,500	675	21,500	4,177	675
Return Fan	14,122	4,400	0	4,400	0
Ventilation	19,500	675	21,500	4,177	675
Supply Air Ducts	16,120	0	0	0	0
Supply Air Fan	13,122	32,826	25,910	16,120	0
TOTAL SYSTEM LOAD		38,821	21,911	45,604	

FORM EQUIPMENT

	CFM	Sensible	Latent
4.0000 Standard Heat/Pump 1.0 Ton	107,180	24,362	101,181
5.0000	0	0	0
6.0000	0	0	0
7.0000	0	0	0
8.0000	0	0	0
9.0000	0	0	0
10.0000	0	0	0
11.0000	0	0	0
12.0000	0	0	0
13.0000	0	0	0
14.0000	0	0	0
15.0000	0	0	0
16.0000	0	0	0
17.0000	0	0	0
18.0000	0	0	0
19.0000	0	0	0
20.0000	0	0	0
21.0000	0	0	0
22.0000	0	0	0
23.0000	0	0	0
24.0000	0	0	0
25.0000	0	0	0
26.0000	0	0	0
27.0000	0	0	0
28.0000	0	0	0
29.0000	0	0	0
30.0000	0	0	0
31.0000	0	0	0
32.0000	0	0	0
33.0000	0	0	0
34.0000	0	0	0
35.0000	0	0	0
36.0000	0	0	0
37.0000	0	0	0
38.0000	0	0	0
39.0000	0	0	0
40.0000	0	0	0
41.0000	0	0	0
42.0000	0	0	0
43.0000	0	0	0
44.0000	0	0	0
45.0000	0	0	0
46.0000	0	0	0
47.0000	0	0	0
48.0000	0	0	0
49.0000	0	0	0
50.0000	0	0	0
51.0000	0	0	0
52.0000	0	0	0
53.0000	0	0	0
54.0000	0	0	0
55.0000	0	0	0
56.0000	0	0	0
57.0000	0	0	0
58.0000	0	0	0
59.0000	0	0	0
60.0000	0	0	0
61.0000	0	0	0
62.0000	0	0	0
63.0000	0	0	0
64.0000	0	0	0
65.0000	0	0	0
66.0000	0	0	0
67.0000	0	0	0
68.0000	0	0	0
69.0000	0	0	0
70.0000	0	0	0
71.0000	0	0	0
72.0000	0	0	0
73.0000	0	0	0
74.0000	0	0	0
75.0000	0	0	0
76.0000	0	0	0
77.0000	0	0	0
78.0000	0	0	0
79.0000	0	0	0
80.0000	0	0	0
81.0000	0	0	0
82.0000	0	0	0
83.0000	0	0	0

[illegible]

Unit	12/24/2022
Flux Area	0.097
DOI, HTS, PEAK, CFM, Sens80s	
625	25.072
	1.294
	6
676	26.917
	-4.824
	1.294
	62.698
CFM	
	103.181
	103.181
Sum 1.424	
↓ 103.181 COM  6.91	

PROJECT:	
CLEO	
TITLE:	
155 T1.04 T24 LAYOUT 04	
PROJ. NO.	SCALE @ 24X36: NTS
DRAWING NO.	REV.
T 1 . 0 4	