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".

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 MAHUALS 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-PIONTS 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 "GUIDELINES 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 2012 INTERNATIONAL 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 AST REQUIRED. COORDINATE LOCATIONS OF GAS & CONDENSATE LINES WITH PLUMBING CONTRACTOR. COORDINTAE LOCATIONS OF POWER, DISCONNECTS, AND CONTROL CONDUIT WITH THE ELECTICAL 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 2012 INTERNATIONAL 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 INTERNATIONAL MECHANICIAL 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 ELECTICAL CONTRACTOR UNLESS NOTEDED 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 THIER 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.

b) DUCTS FOR KITCHEN COOKTOPS OR RANGES SHALL BE SHOWN OF METAL WITH A SMOOTH INTERIOR. [CMC 504.3].

1) IDENTIFY THE DETAILED REQUIREMENTS OF CMC DRYER DUCTS. SPECIFY--

a) DUCTS FOR DOMESTIC CLOTHES DRYERS SHALL BE INSTALLED IN ACCORDANCE WITH CMC 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

AXB		DUCT WORK (WIDTHxDEPTH)
AXB		LINED DUCT WORK (WIDTHxDEPTH DIMENSIONS ARE FOR I.D.)
		SUPPLY DUCT, SECTION
		RETURN DUCT, SECTION
		EXHAUST DUCT, SECTION
R OR D		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
D.L.	DL	DOOR LOUVER
U.C.	UC	UNDER CUT DOOR
	VAV	VARIABLE AIR VOLUME
T		THERMOSTAT
S		DUCT SMOKE DECTECTOR

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 REPRESNENTATIVE 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:
4688 E. KINGS CANYON RD.,
FRESNO CA. 93702

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
00	FOR APPROVAL	04/22	A.B

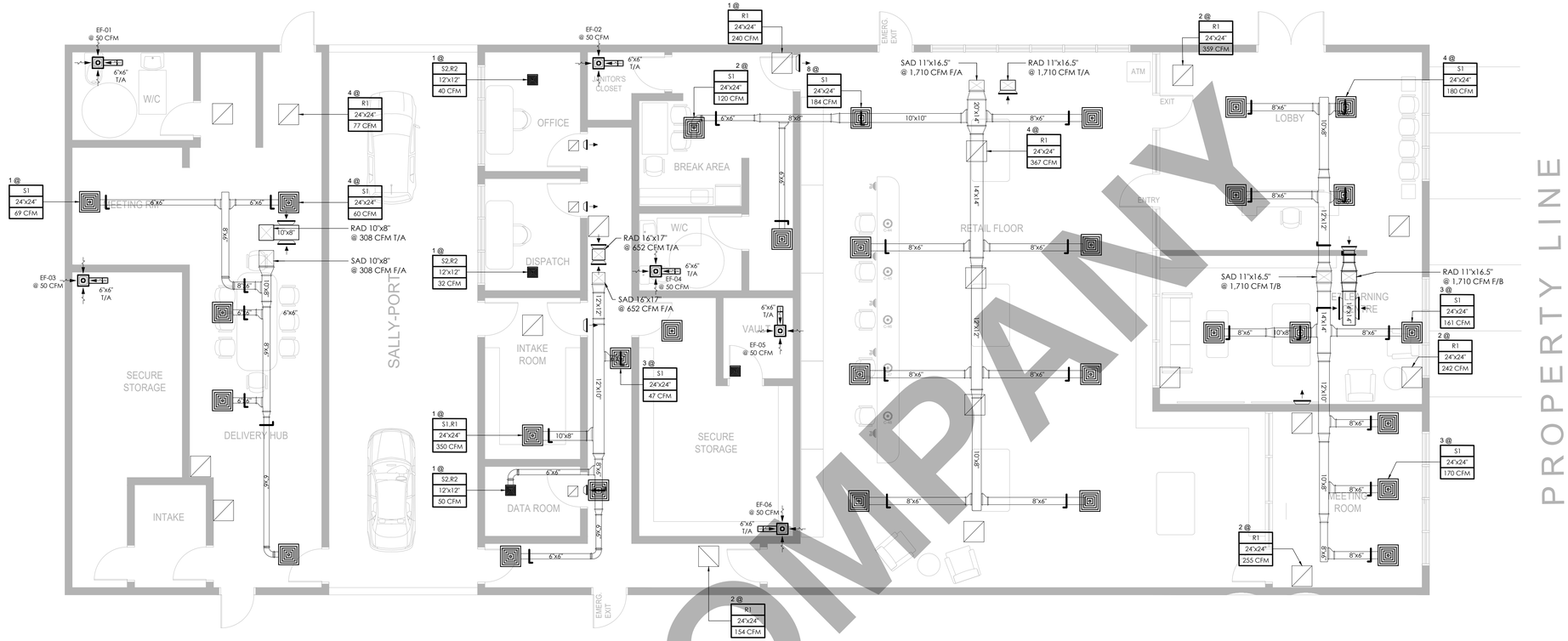
PROJECT:
4868 E. KINGS CANYON
FRESNO.

TITLE:
MECHANICAL LIST OF SYMBOLS AND GENERAL NOTES.

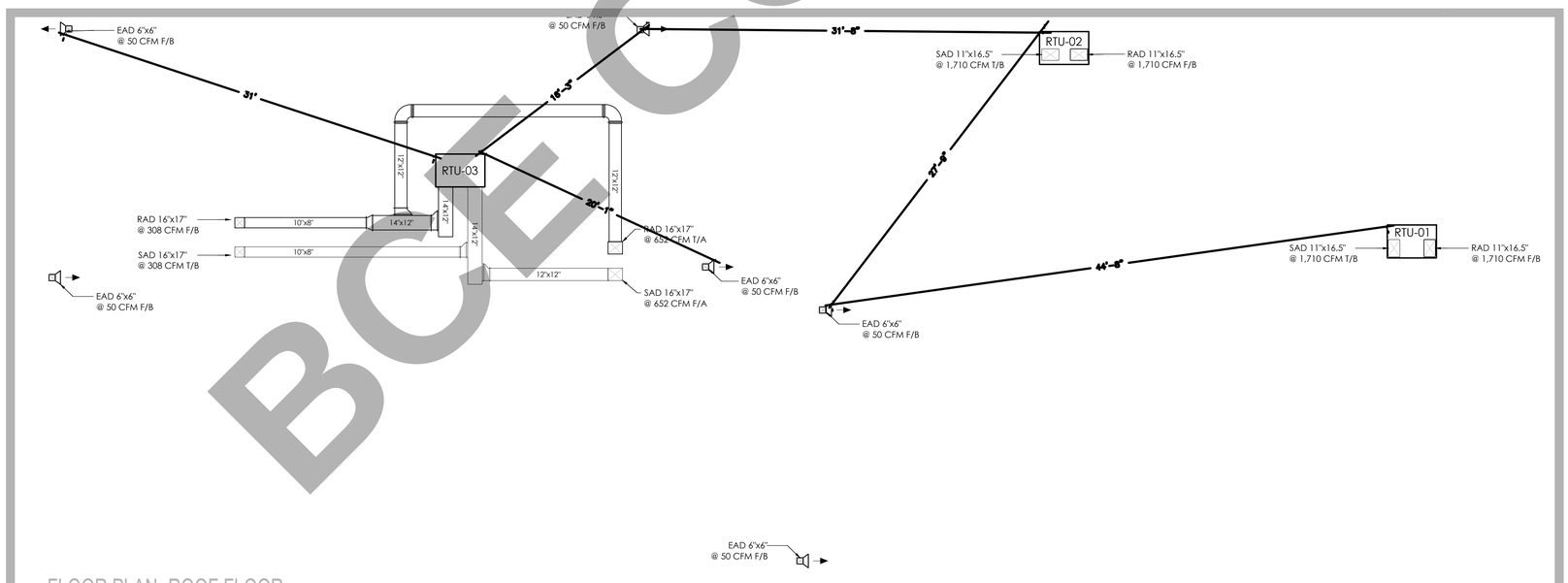
PROJ. NO	PROJ. ENGR.	SCALE @ 24X36
		NTS

DRAWING NO.
M0.0

REV.



FLOOR PLAN -MAIN FLOOR



FLOOR PLAN -ROOF FLOOR

CLIENT:

ADDRESS:
4688 E. KINGS CANYON RD.,
FRESNO CA. 93702

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
00	FOR APPROVAL	04/22	A.B

PROJECT:
4868 E. KINGS CANYON
FRESNO.

TITLE:
MECHANICAL LAYOUTS

PROJ. NO	PROJ. ENGR.	SCALE @ 24X36
		3/16"=1'-0"

DRAWING NO.
M1.0

REV.

SCHEDULE No. 1

ROOF TOP UNITS

TAG	RTU-01	(E) RTU-02	RTU-03
SERVING	ZONE1	ZONE 2	ZONE 3
MANUFACTURER	CARRIER	CARRIER	CARRIER
MODEL	XP-06090	XP-06090	XP-03040
NOM. CAPACITY (TR)	5.0	5.0	2.5
HEATING (kW)	4.0	4.0	4.0
AIR FLOW (CFM) - MAX. / MIN.	1,710	1,710	960
POWER SUPPLY	230/1/60	230/1/60	230/1/60
MCA (A)	43.1	43.1	22.8
MOCP (A)	60.0	60.0	35.0
OA RATE (%)	35%	35%	35%

SCHEDULE No. 2

FAN SCHEDULE

TAG	EF-01 TO 06
LOCATION	TOILETS, STORAGES
SELECT SUPPLY VOLUME (CFM)	50
SELECTED PRESSURE DROP (INCH W.C.)	0.1
ELECTRICAL (V / PH / HZ)	120 / 1 / 60
MAX Amps	0.2
WATTS	3.1
MOTOR SPEED (RPM)	722
FAN TYPE	CEILING-MOUNT FAN
MANUFACTURER	PANASONIC
MODEL	WHISPERFAN 511VK2

NOTES

1. PROVIDE UL LISTING.
2. PROVIDE ENERGY STAR COMPLIANCE.
3. INTERLOCK WITH WALL SWITCH.
4. PROVIDE MOTOR WITH THERMAL OVERLOADS.

VENTILATION AIR RATE REQUIRED FROM TABLE 402.1 - CMC CODE 2019

(N) RTU-01:

S.N.	Space	Area (ft2)	Occ./1000 ft2	CFM/ft2	CFM-A	No. of Occupacies	CFM/Pers.	CFM-B	TOTAL CFM
1	Lobby	429	150	0.06	**25.7**	64	5.0	**320.0**	**345.7**
2	E7 Learning Center	322	65	0.06	**19.3**	21	7.5	**157.5**	**176.8**
3	Meeting Room	218	50	0.06	**13.1**	11	5.0	**55.0**	**68.1**
4	**TOTAL =**	**969**	-	-	**58.1**	96	-	**532.5**	**590.6**

(E) RTU-02:

S.N.	Space	Area (ft2)	Occ./1000 ft2	CFM/ft2	CFM-A	# of Occupacies	CFM/Pers.	CFM-B	TOTAL CFM
1	Retail	1733	15	0.12	**208.0**	26	7.5	**195.0**	**403.0**
2	Break Area	213	50	0.12	**25.6**	11	5.0	**55.0**	**80.6**
3	**TOTAL =**	**1946**	-	-	**233.5**	37	-	**250.0**	**483.5**

(N) RTU-03:

S.N.	Space	Area (ft2)	Occ./1000 ft2	CFM/ft2	CFM-A	# of Occupacies	CFM/Pers.	CFM-B	TOTAL CFM
1	Data Room	55	60	0.06	**3.3**	3	5.0	**15.0**	**18.3**
2	Intake Room	2127	5	0.06	**127.6**	11	5.0	**55.0**	**182.6**
3	Dispatch	88	2	0.12	**10.6**	0	10.0	**0.0**	**10.6**
4	Office	94	5	0.06	**5.6**	0	5.0	**0.0**	**5.6**
5	Dlivery Hub	554	2	0.12	**66.5**	1	10.0	**10.0**	**76.5**
6	Intake	61	0	0.06	**3.7**	0	0.0	**0.0**	**3.7**
7	Meeting Room	107	50	0.06	**6.4**	5	5.0	**25.0**	**31.4**
8	Corridor	251	0	0.06	**15.1**	0	0.0	**0.0**	**15.1**
9	**TOTAL =**	**3337**	-	-	**238.7**	20	-	**105.0**	**343.7**

CLIENT:

ADDRESS:
4688 E. KINGS CANYON RD.,
FRESNO CA. 93702

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REV. NO.	DESCRIPTION	DATE	BY
00	FOR APPROVAL	04/22	A.B

PROJECT:
4868 E. KINGS CANYON
FRESNO.

TITLE:
MECHANICAL CALCULATIONS AND EQUIPMENT SCHEDULE

PROJ. NO.	PROJ. ENGR.	SCALE @ 24X36
		NTS

DRAWING NO.
M 2 . 0

REV.

Design Weather Parameters & MSHGs

4686 E. Kings Canyon Fresno — 04/09/2022 04:39PM

Design Parameters:

City Name	Fresno	
Location	California	
Latitude	36.8	Deg.
Longitude	119.7	Deg.
Elevation	328.0	ft
Summer Design Dry-Bulb	103.0	°F
Summer Coincident Wet-Bulb	71.0	°F
Summer Daily Range	30.9	°F
Winter Design Dry-Bulb	30.0	°F
Winter Design Wet-Bulb	25.3	°F
Atmospheric Clearness Number	1.05	
Average Ground Reflectance	0.20	
Soil Conductivity	0.800	BTU/(hr·ft·°F)
Local Time Zone (GMT +/- N hours)	8.0	hours
Consider Daylight Savings Time	No	
Simulation Weather Data	N/A	
Current Data Is	2001 ASHRAE Handbook	
Design Cooling Months	January to December	

Design Day Maximum Solar Heat Gains

(The MSHG values are expressed in BTU/(hr·ft²))

Month	N	NNE	NE	ENE	E	ESE	SE	SSE	S
January	22.2	22.2	22.2	98.5	164.7	228.2	255.6	265.9	264.3
February	26.6	26.6	55.9	143.4	208.9	246.1	262.7	253.9	244.8
March	31.3	31.3	112.9	177.0	232.0	253.1	244.2	219.5	203.3
April	36.1	75.7	151.4	207.8	232.5	234.0	204.2	165.9	144.2
May	39.4	110.8	173.2	218.4	231.1	213.4	174.4	123.4	100.1
June	49.4	121.5	181.1	219.9	225.9	203.7	159.3	106.0	82.7
July	40.3	106.9	173.2	214.5	223.8	209.9	168.4	120.8	97.1
August	37.8	71.5	148.3	199.9	223.2	226.2	197.3	160.8	139.2
September	32.5	32.5	105.1	171.6	217.0	242.0	232.8	211.4	197.9
October	27.5	27.5	60.7	132.9	199.2	240.9	252.4	245.0	238.1
November	22.6	22.6	22.6	92.4	169.4	218.2	254.9	262.6	260.7
December	20.1	20.1	20.1	79.4	147.3	214.4	249.1	265.4	265.1
Month	**SSW**	**SW**	**WSW**	**W**	**WNW**	**NW**	**NNW**	**HOR**	**Mult**
January	266.9	259.1	223.3	172.0	95.4	22.2	22.2	157.3	1.00
February	253.0	261.5	250.1	207.7	137.8	63.3	26.6	204.2	1.00
March	218.4	242.0	253.6	228.0	182.7	111.9	31.3	245.3	1.00
April	166.5	204.2	234.4	230.6	207.3	152.3	73.3	271.1	1.00
May	124.4	173.0	214.7	229.0	218.6	175.3	108.0	282.6	1.00
June	106.0	159.4	203.6	226.0	219.9	181.0	121.7	283.4	1.00
July	119.7	169.8	208.7	226.0	214.6	171.4	110.0	279.1	1.00
August	160.5	196.7	226.0	222.6	200.4	148.0	73.1	265.9	1.00
September	212.7	235.2	240.2	221.1	168.4	104.6	32.5	237.4	1.00
October	245.7	253.0	239.0	198.6	138.5	52.1	27.5	200.9	1.00
November	261.0	250.6	224.5	164.2	96.0	22.6	22.6	156.9	1.00
December	265.0	247.8	214.9	147.7	79.3	20.1	20.1	136.0	1.00

Mult. = User-defined solar multiplier factor.

Air System Sizing Summary for RTU-01 (New)

Project Name: 4686 E. Kings Canyon Fresno — 04/09/2022
Prepared by: — 06:49PM

Air System Information

Air System Name	RTU-01 (New)	Number of zones	1
Equipment Class	PKG ROOF	Floor Area	969.0 ft²
Air System Type	SZCAV	Location	Fresno, California

Sizing Calculation Information

Calculation Months	Jan to Dec	Zone CFM Sizing	Sum of space airflow rates
Sizing Data	Calculated	Space CFM Sizing	Individual peak space loads

Central Cooling Coil Sizing Data

Total coil load	2.5 Tons	Load occurs at	Jul 1500
Total coil load	30.2 MBH	OA DB / WB	103.0 / 71.0 °F
Sensible coil load	26.1 MBH	Entering DB / WB	79.7 / 62.7 °F
Coil CFM at Jul 1500	868 CFM	Leaving DB / WB	51.6 / 50.1 °F
Max block CFM	868 CFM	Coil ADP	48.4 °F
Sum of peak zone CFM	868 CFM	Bypass Factor	0.100
Sensible heat ratio	0.865	Resulting RH	44 %
CFM/Ton	345.3	Design supply temp.	58.0 °F
ft²/Ton	385.6	Zone T-stat Check	1 of 1 OK
BTU/(hr·ft²)	31.1	Max zone temperature deviation	0.0 °F
Water flow @ 10.0 °F rise	N/A		

Central Heating Coil Sizing Data

Max coil load	5.9 MBH	Load occurs at	Des Htg
Coil CFM at Des Htg	868 CFM	BTU/(hr·ft²)	6.0
Max coil CFM	868 CFM	Ent. DB / Lvg DB	63.2 / 69.5 °F
Water flow @ 20.0 °F drop	N/A		

Supply Fan Sizing Data

Actual max CFM	868 CFM	Fan motor BHP	2.00 BHP
Standard CFM	858 CFM	Fan motor kW	1.66 kW
Actual max CFM/ft²	0.90 CFM/ft²		

Outdoor Ventilation Air Data

Design airflow CFM	148 CFM	CFM/person	9.14 CFM/person
CFM/ft²	0.15 CFM/ft²		

Air System Sizing Summary for RTU-02 (Existing)

Project Name: 4686 E. Kings Canyon Fresno — 04/09/2022
Prepared by: — 06:50PM

Air System Information

Air System Name	RTU-02 (Existing)	Number of zones	1
Equipment Class	PKG ROOF	Floor Area	1946.0 ft²
Air System Type	SZCAV	Location	Fresno, California

Sizing Calculation Information

Calculation Months	Jan to Dec	Zone CFM Sizing	Sum of space airflow rates
Sizing Data	Calculated	Space CFM Sizing	Individual peak space loads

Central Cooling Coil Sizing Data

Total coil load	4.6 Tons	Load occurs at	Jul 1400
Total coil load	54.9 MBH	OA DB / WB	102.1 / 70.7 °F
Sensible coil load	49.5 MBH	Entering DB / WB	81.4 / 64.4 °F
Coil CFM at Jul 1400	1776 CFM	Leaving DB / WB	55.3 / 53.8 °F
Max block CFM	1776 CFM	Coil ADP	52.4 °F
Sum of peak zone CFM	1776 CFM	Bypass Factor	0.100
Sensible heat ratio	0.901	Resulting RH	49 %
CFM/Ton	388.1	Design supply temp.	58.0 °F
ft²/Ton	425.2	Zone T-stat Check	1 of 1 OK
BTU/(hr·ft²)	28.2	Max zone temperature deviation	0.0 °F
Water flow @ 10.0 °F rise	N/A		

Central Heating Coil Sizing Data

Max coil load	30.7 MBH	Load occurs at	Des Htg
Coil CFM at Des Htg	1776 CFM	BTU/(hr·ft²)	15.8
Max coil CFM	1776 CFM	Ent. DB / Lvg DB	60.2 / 76.4 °F
Water flow @ 20.0 °F drop	N/A		

Supply Fan Sizing Data

Actual max CFM	1776 CFM	Fan motor BHP	2.00 BHP
Standard CFM	1755 CFM	Fan motor kW	1.66 kW
Actual max CFM/ft²	0.91 CFM/ft²		

Outdoor Ventilation Air Data

Design airflow CFM	431 CFM	CFM/person	16.50 CFM/person
CFM/ft²	0.22 CFM/ft²		

Air System Sizing Summary for RTU-03 (New)

Project Name: 4686 E. Kings Canyon Fresno — 04/09/2022
Prepared by: — 06:51PM

Air System Information

Air System Name	RTU-03 (New)	Number of zones	1
Equipment Class	PKG ROOF	Floor Area	3337.0 ft²
Air System Type	SZCAV	Location	Fresno, California

Sizing Calculation Information

Calculation Months	Jan to Dec	Zone CFM Sizing	Sum of space airflow rates
Sizing Data	Calculated	Space CFM Sizing	Individual peak space loads

Central Cooling Coil Sizing Data

Total coil load	4.9 Tons	Load occurs at	Jul 1400
Total coil load	58.9 MBH	OA DB / WB	102.1 / 70.7 °F
Sensible coil load	55.7 MBH	Entering DB / WB	77.9 / 63.9 °F
Coil CFM at Jul 1400	2538 CFM	Leaving DB / WB	57.3 / 56.0 °F
Max block CFM	2538 CFM	Coil ADP	55.0 °F
Sum of peak zone CFM	2538 CFM	Bypass Factor	0.100
Sensible heat ratio	0.947	Resulting RH	51 %
CFM/Ton	517.5	Design supply temp.	58.0 °F
ft²/Ton	680.4	Zone T-stat Check	1 of 1 OK
BTU/(hr·ft²)	17.6	Max zone temperature deviation	0.0 °F
Water flow @ 10.0 °F rise	N/A		

Central Heating Coil Sizing Data

Max coil load	35.6 MBH	Load occurs at	Des Htg
Coil CFM at Des Htg	2538 CFM	BTU/(hr·ft²)	10.7
Max coil CFM	2538 CFM	Ent. DB / Lvg DB	65.0 / 78.1 °F
Water flow @ 20.0 °F drop	N/A		

Supply Fan Sizing Data

Actual max CFM	2538 CFM	Fan motor BHP	2.00 BHP
Standard CFM	2500 CFM	Fan motor kW	1.66 kW
Actual max CFM/ft²	0.76 CFM/ft²		

Outdoor Ventilation Air Data

Design airflow CFM	292 CFM	CFM/person	16.22 CFM/person
CFM/ft²	0.09 CFM/ft²		

48XP(N)
Performance™ 13 SEER Single Packaged Air Conditioner and Gas Furnace System with Puron® (R–410A) Refrigerant Single and Three Phase 2–5 Nominal Tons (Sizes 024–060)

Carrier — Turn to the Experts

Installation Instructions

NOTE: Read the entire instruction manual before starting the installation.

NOTE: Installer: Make sure the Owner's Manual and Service Instructions are left with the unit after installation.

TABLE OF CONTENTS

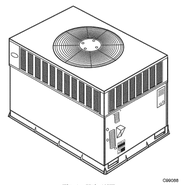

Fig. 1 - Unit 48XP

SAFETY CONSIDERATIONS

Improper installation, adjustment, alteration, service, maintenance, or use can cause explosion, fire, electrical shock, or other conditions which may cause death, personal injury, or property damage. Consult a qualified installer, service agency, or your distributor or branch for information or assistance. The qualified installer or agency must use factory–authorized kits or accessories when modifying this product. Refer to the individual instructions packaged with the kits or accessories when installing.

Follow all safety codes. Wear safety glasses, protective clothing, and work gloves. Have a fire extinguisher available. Read these instructions thoroughly and follow all warnings or cautions included in literature and attached to the unit. consult local building codes, the current editions of the National Fuel Gas Code

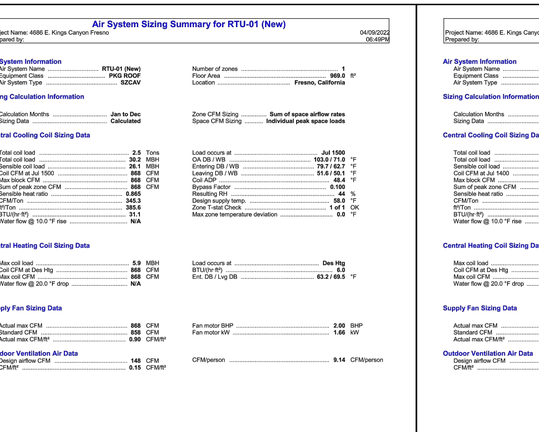

Fig. 2 - 48XP024-060 Unit Dimensions

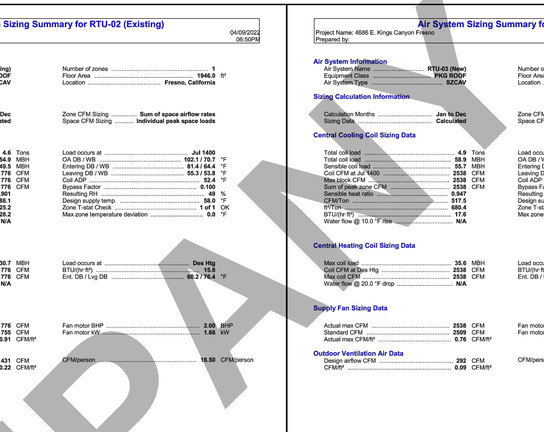

Fig. 3 - 48XP042-060 Unit Dimensions

48XP

Table 1 – Physical Data – Unit 48XP

UNIT SIZE 48XP	024042	024060	030042	030060	036060	042060	042090
NOMINAL CAPACITY (ton)	2	2	2–1/2	2–1/2	3	3–1/2	3–1/2
SHIPPING WEIGHT (lb)	368	368	392	392	416	416	464	464
(kg)	176	176	179	179	189	189	210	210
COMPRESSORS	Scroll							
Quantity	1							
REFRIGERANT (R–410A)								
Quantity (lb)	7.9	7.9	8.0	8.0	9.5	9.5	10.7	10.7
(kg)	3.5	3.5	3.6	3.6	4.3	4.3	4.9	4.9
REFRIGERANT METERING DEVICE	TXV							
CONDENSER COIL								
Rows...Fins/in.	2...21	2...21	2...21	2...21	2...21	2...21	2...21	2...21
Face Area (sq ft)	11.95	11.95	11.95	11.95	13.7	13.7	15.4	15.4
CONDENSER FAN								
Nominal Cfm	2350	2350	2350	2350	2800	2800	2800	2800
Diameter (in.)	22	22	22	22	22	22	22	22
(mm)	559	559	559	559	559	559	559	559
Motor Hp (Rpm)	1/8 (825)	1/8 (825)	1/8 (825)	1/8 (825)	1/8 (825)	1/8 (825)	1/8 (825)	1/8 (825)
EVAPORATOR COIL								
Rows...Fins/in.	3...15	3...15	3...15	3...15	4...15	4...15	3...15	5...18
Face Area (sq ft)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
EVAPORATOR BLOWER								
Nominal Airflow (Cfm)	770	770	960	960	1150	1150	1400	1400
Size (in.)	10x10	10x10	10x10	10x10	11x10	11x10	11x10	11x10
(mm)	254x254	254x254	254x254	254x254	279x254	279x254	279x254	279x254
Motor (hp)	1/2	1/2	1/2	1/2	3/4	3/4	3/4	3/4
FURNACE SECTION*								
Burner Orifice No. (Qty...Drill Size) Natural Gas	2...44	2...44	2...44	2...44	2...38	2...38	2...38	2...38
Burner Orifice No. (Qty...Drill Size) Propane Gas	2...50	2...46	2...50	2...46	2...46	3...46	2...46	2...46
HIGH–PRESSURE SWITCH (psig)	650 +/–15							
Cut–out	420 +/–25							
Reset (Auto)								
LOSS–OF–CHARGE / LOW–PRESSURE SWITCH (Liquid Line) (psig)	20 +/–5							
Cut–out	45 +/–10							
Reset (auto)								
RETURN–AIR FILTERS Throwaway† (in.)	20x24x1						24x30x1	
(mm)	508x610x25						610x762x25	

*Based on altitude of 0 to 2000 ft (0–610 m).
†Required filter sizes shown are based on the larger of the ARI (Air Conditioning and Refrigeration Institute) rated cooling airflow or the heating airflow velocity of 300 ft/minute for high–capacity type. Air filter pressure drop for non–standard filters must not exceed 0.08 IN. W.C.

Table 1 – Physical Data – Unit 48XP (Continued)

UNIT SIZE 48XP	048060	048115	048130	060090	060115	060130
NOMINAL CAPACITY (ton)	4	4	4	5	5	5
SHIPPING WEIGHT (lb)	512	512	512	559	559	559
(kg)	232	232	232	254	254	254
COMPRESSORS	Scroll					
Quantity	1					
REFRIGERANT (R–410A) Quantity (lb)	11.25	11.25	11.25	13.2	13.2	13.2
(kg)	5.1	5.1	5.1	6.0	6.0	6.0
REFRIGERANT METERING DEVICE	TXV					
CONDENSER COIL Rows...Fins/in.	2...21	2...21	2...21	2...21	2...21	2...21
Face Area (sq ft)	17.4	17.4	17.4	19.3	19.3	19.3
CONDENSER FAN						
Nominal Cfm	3300	3300	3300	3300	3300	3300
Diameter (in.)	22	22	22	22	22	22
(mm)	559	559	559	559	559	559
Motor Hp (Rpm)	1/4 (1100)	1/4 (1100)	1/4 (1100)	1/4 (1100)	1/4 (1100)	1/4 (1100)
EVAPORATOR COIL						
Rows...Fins/in.	4...15	4...15	4...15	4...17	4...17	4...17
Face Area (sq ft)	4.7	4.7	4.7	5.7	5.7	5.7
EVAPORATOR BLOWER						
Nominal Airflow (Cfm)	1400	1400	1400	1710	1710	1710
Size (in.)	11x10	11x10	11x10	11x10	11x10	11x10
(mm)	279x254	279x254	279x254	279x254	279x254	279x254
Motor (hp)	3/4 (1075)	3/4 (1075)	3/4 (1075)	1.0 (1040)	1.0 (1040)	1.0 (1040)
FURNACE SECTION*						
Burner Orifice No. (Qty...Drill Size) Natural Gas	3...38	3...39	3...31	3...38	3...39	3...31
Burner Orifice No. (Qty...Drill Size) Propane Gas	3...46	3...42	3...41	3...46	3...42	3...41
HIGH–PRESSURE SWITCH (psig)	650 +/–15					
Cut–out	420 +/–25					
Reset (Auto)						
LOSS–OF–CHARGE / LOW–PRESSURE SWITCH (Liquid Line) (psig)	20 +/–5					
Cut–out Reset (auto)	45 +/–10					
RETURN–AIR FILTERS Throwaway† (in.)	24x30x1					
(mm)	610x762x25					

*Based on altitude of 0 to 2000 ft (0–610 m).
†Required filter sizes shown are based on the larger of the ARI (Air Conditioning and Refrigeration Institute) rated cooling airflow or the heating airflow velocity of 300 ft/minute for high–capacity type. Air filter pressure drop for non–standard filters must not exceed 0.08 IN. W.C.

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REV. NO.	DESCRIPTION	DATE	BY
00	FOR APPROVAL	04/22	A.B

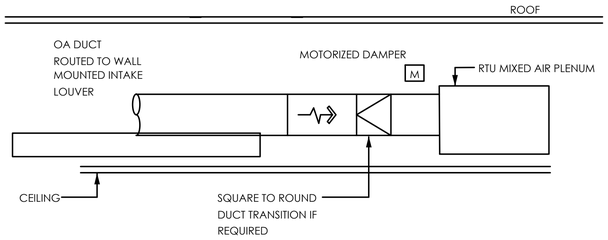
PROJECT:
4868 E. KINGS CANYON FRESNO.

TITLE:
MECHANICAL CALCULATION & CATALOGS

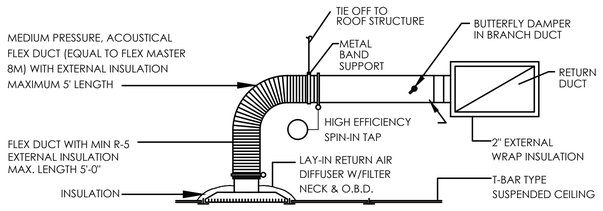
PROJ. NO.	PROJ. ENGR.	SCALE @ 24X36
		NTS

DRAWING NO.: M3.1

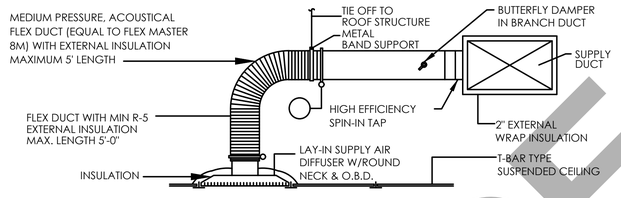
REV.:



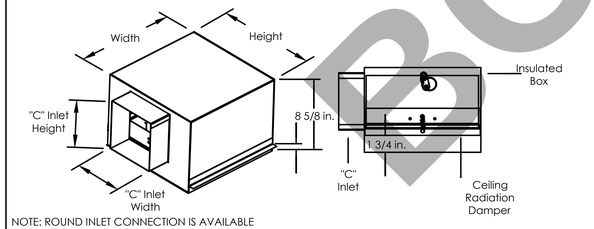
OUTSIDE AIR CONNECTION



RETURN AIR GRILLE BOX CONNECTION

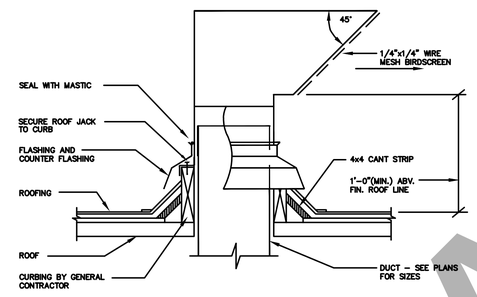


SUPPLY AIR DIFFUSER CONNECTION

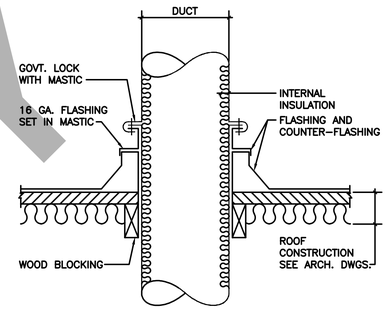


NOTE: ROUND INLET CONNECTION IS AVAILABLE

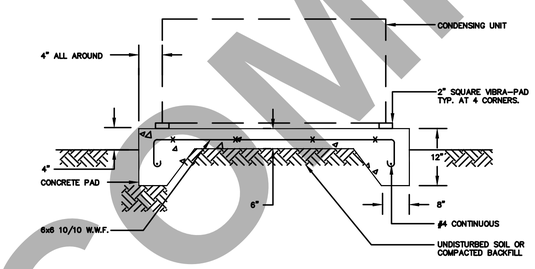
CEILING RADIATION DAMPER



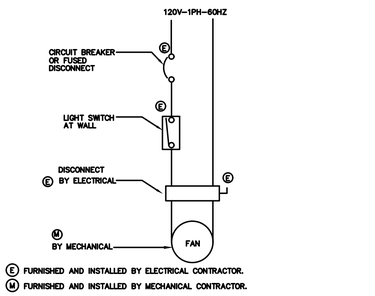
ROOF JACK DETAIL — SCALE NONE — 4



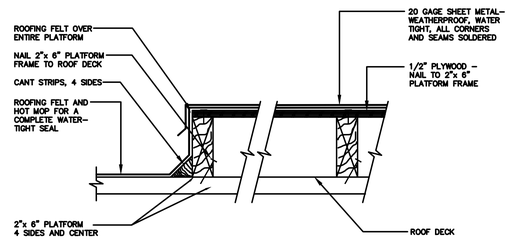
DUCT ROOF PENETRATION — SCALE NONE — 1



HEAT PUMP/CONDENSING UNIT MOUNTING DETAIL — SCALE NONE — 5

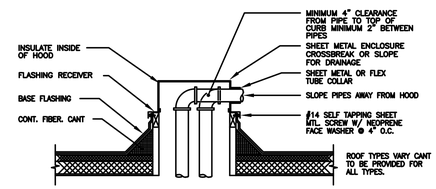


TOILET EXHAUST FAN DIAGRAM — SCALE NONE — 2



NOTE: COORDINATE INSTALLATION WITH ARCHITECTURAL DRAWINGS AND DETAILS.

SECTION PLATFORM DETAIL — SCALE NONE — 6



CLIENT:

ADDRESS:
4688 E. KINGS CANYON RD.,
FRESNO CA. 93702

NOTES:
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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
00	FOR APPROVAL	04/22	A.B

PROJECT:
4868 E. KINGS CANYON
FRESNO.

TITLE:
MECHANICAL GENERAL
DETAILS-2

PROJ. NO	PROJ. ENGR.	SCALE @ 24X36
		NTS

DRAWING NO.
M 3 . 2

REV.

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/SSL-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 PEMITTED 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 2006 UNIFORM PLUMBING CODE, 2006 INTERNATIONAL BUILDING CODE, 2006 INTERNATIONAL 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.

5 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.

7. 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 2006 INTERNATIONAL 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 UNIFORM 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 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	ABBREV	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	FLOOR CLEANOUT
	WCO	WALL CLEANOUT
	FD	FLOOR DRAIN
	FS	FLOOR SINK
	TP	TRAP PRIMER & TRAP PRIMER PIPING
	SOV	SHUT-OFF VALVE
	CV	CHECK VALVE
	PRV	BACKFLOW PREVENTER W SOV'S
	T & P	
	DN	PIPE DOWN
	UP	PIPE UP
	POC	POINT OF CONNECTION
7	-	PLUMBING NOTE CALL-OUT
	ABV	ABOVE
	AFF	ABOVE FINISH FLOOR
	AP	ACCESS PANEL
	BEL	BELOW
	BLDG	BUILDING
	CLG	CEILING
	CONT	CONTINUATION
	EL	ELEVATION
	FIN	FINISH
	FL	FLOOR
	GR	GRADE
	NTS	NOT TO SCALE
	OC	ON CENTER
	S= %	SLOPE AT A PERCENTAGE
	SHT	SHEET
	TYP	TYPICAL
	VTR	VENT THRU ROOF

PLUMBING / GENERAL NOTES

BATHTUBS AND WHIRLPOOL BATHTUBS. THE MAX. HOT WATER TEMPERATURE DISCHARGING SHALL BE LIMITED TO 120 DEGREES. CPC 414/2019
BATHTUBS WASTE OPENING IN FLOOR OVER CRAWL SPACES SHALL BE PROTECTED BY A METAL SCREEN NOT EXCEEDING 12" OR SOLID COVER. CPC 313.12.4 2019
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. 418.0 CPC/2019
VERIFY AND WHERE WATER PRESSURE EXCEEDS 80 PSI AN APPROVED PRESSURE REGULATOR PRECEDED BY AN ADEQUATE STRAINER SHALL BE INSTALLED 608.2 CJC / 2019
1-INSTALL TEMPERATURE AND PRESSURE RELIEF VALVE WITH MINIMUM 34" 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 CPC 608.5, 510.8.
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 CPC TABLE 12-B TO VERIFY THE PIPE SIZES ARE ADEQUATE FOR THE MAXIMUM DELIVERY CAPACITY OF CUBIC FEET OF GAS PER HOUR.
4- A WHOLE HOUSE HAS 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.
(2019 CPC 906) IF WATER PRESSURE EXCEEDS 80 PSI, AND EXPANSION TANK AND AN APPROVED PRESSURE REGULATOR SHALL BE INSTALLED. (2019 CPC608.2)
NON-REMOVABLE BACK FLOW PRE-VENTER OR BIBB-TYPE VACUUM BREAKER WILL BE INSTALLED ON ALL EXTERIOR HOSE BIBS. (2019 CPC603.4.7)
HOT WATER RE-CIRCULATING SYSTEM IS INSTALLED, THE ENTIRE LENGTH OF HOT WATER PIPES SHALL BE INSULATED. (2008 CALIFORNIA ENERGY REGULATIONS 150 (J))
HOT WATER PIPE FROM THE WATER HEATER TO THE KITCHEN WILL BE INSULATED. (2008 CALIFORNIA ENERGY REGULATIONS 151(F)8 D)

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 FIREPLACE(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.

CLIENT:

ADDRESS:
4688 E. KINGS CANYON RD.,
FRESNO CA. 93702

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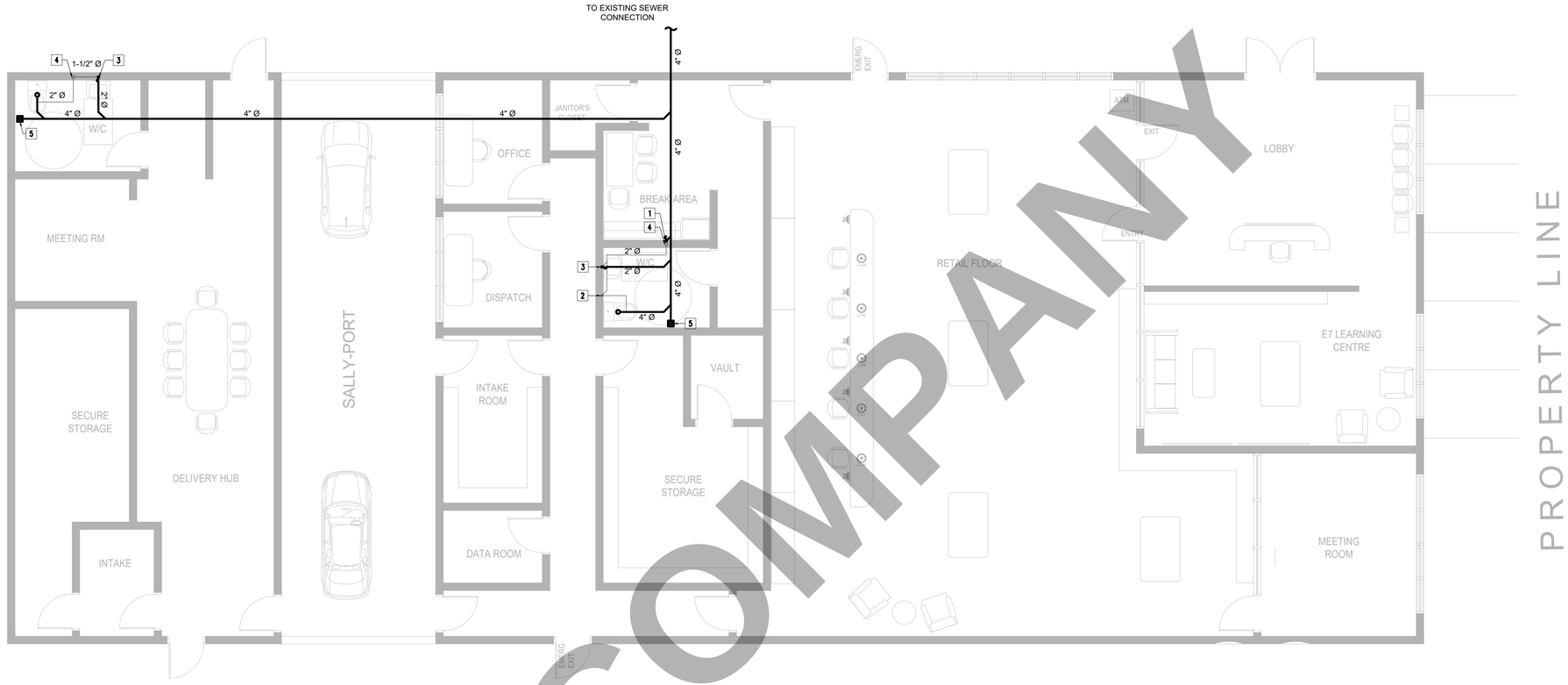
REV. NO	DESCRIPTION	DATE	BY
00	FOR APPROVAL	04/22	A.B

PROJECT:
4868 E. KINGS CANYON
FRESNO.

TITLE:
PLUMBING LIST OF SYMBOLS AND GENERAL NOTES.

PROJ. NO	PROJ. ENGR.	SCALE @ 24X36
		NTS

DRAWING NO.: P0.0
REV.:



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PLUMBING PIPING MATERIAL SCHEDULE

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

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
DISHWASHER	1-1/2	2
BATHTUB	3	2
LAUNDRY MACHINE	1-1/2	2

PLUMBING 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.
5 — 4" FLOOR CLEAN-OUT.
6 — OUTDOOR CLEAN-OUT.
7 — 3" FLOOR DRAIN.

CLIENT:

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FRESNO CA. 93702

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REV. NO.	DESCRIPTION	DATE	BY
00	FOR APPROVAL	04/22	A.B

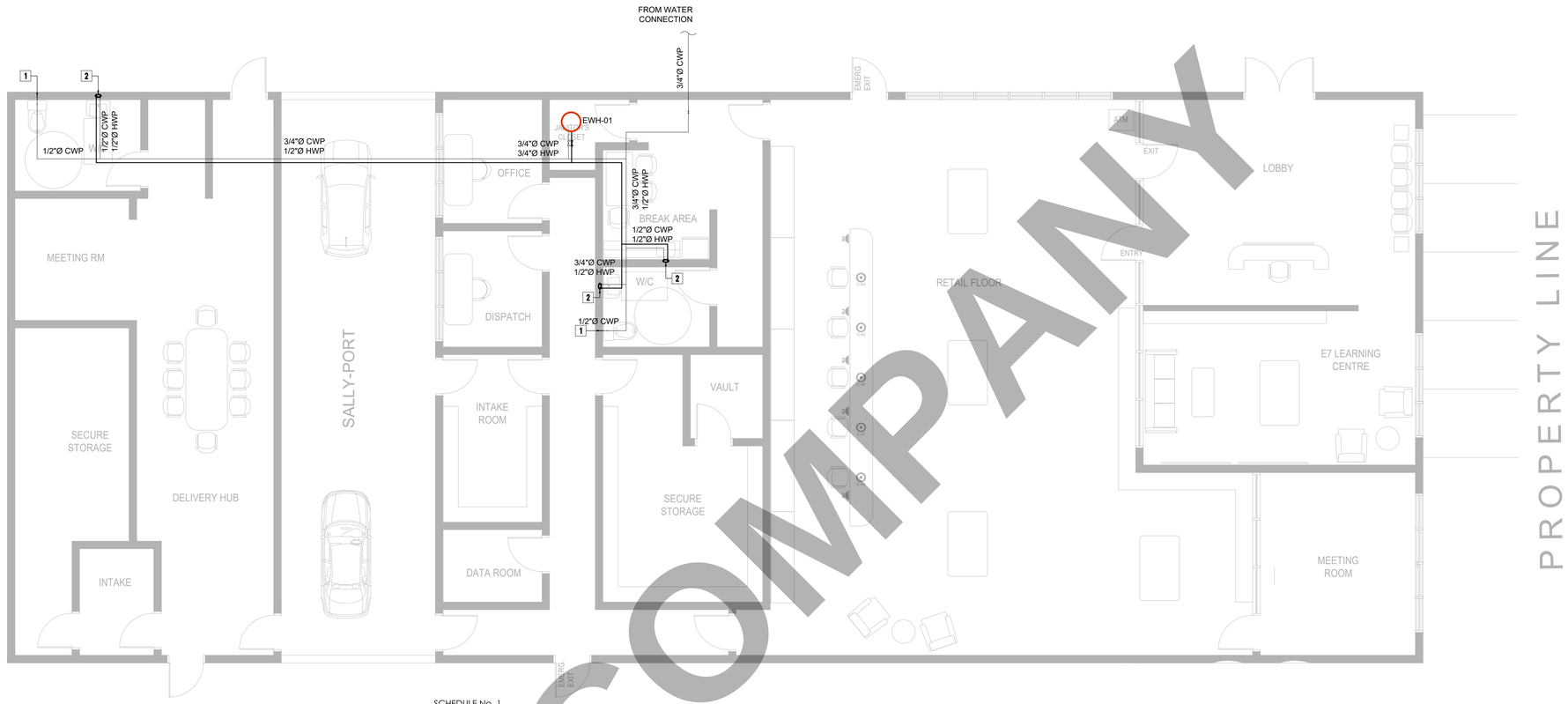
PROJECT:
4868 E. KINGS CANYON
FRESNO.

TITLE:
SANITARY LAYOUTS

PROJ. NO | PROJ. ENGR. | SCALE @ 24X36: 3/16"=1'-0"

DRAWING NO.: P1.0

REV.:



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PLUMBING SHEET NOTES

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

SCHEDULE No. 1
ELECTRIC WATER HEATER SCHEDULE

TAG	EWH-01
LOCATION	JANITOR'S CL.
MANUFACTURER	AO SMITH
MODEL	ENSB-30*
TYPE	ELECTRIC
RATED STORAGE (gal.)	30
RECOVERY (GPH @90°F)	21
STANDARD ELEMENT WATTAGE (W)	4500
WATER CONNECTION (.IN)	3/4
APPROX. WEIGHT (lbs)	95

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

BUILDING WATER LOAD

DESCRIPTION	LOAD		PIPE SIZE
	FU	GPM	PEX
DCW	9.5	7.9	3/4"
DHW	3.5	3.6	1/2"
TOT. COMBINED	9.5	7.9	3/4"

DOMESTIC WATER PIPE SIZING TABLE

8C PLUMBING CODE (2018) SECTION 2.6.3.1
DOMESTIC WATER PIPE SIZING IN ACCORDANCE WITH ASPE PLUMBING ENGINEERING DESIGN HANDBOOK VOL. 2.
8C PLUMBING CODE (2018) SECTION 2.6.3.2.
THIS TABLE IS TO BE USED IN CONJUNCTION WITH THE HYDRAULIC LOAD REQUIREMENTS FOR EACH FIXTURE.
8C PLUMBING CODE (2018) SECTION 2.6.3.5.
DOMESTIC WATER PIPE SIZING IN ACCORDANCE WITH THE MAXIMUM PERMITTED WATER VELOCITIES AS RECOMMENDED BY THE PIPE AND FITTING MANUFACTURER.
* PEX VALUES ARE BASED UPON UPONOR AQUAPEX.

PIPE MATERIAL		PEX*		PEX*	DUCTILE IRON & STAINLESS STEEL		COPPER (TYPE L)			COPPER (TYPE K)			COPPER (TYPE K)	
POTABLE WATER SYSTEM		DCW / DHW		DHWR	DCW / DHW		DCW			DHW			DHWR	
MAXIMUM ALLOWABLE VELOCITY		2.4 m/s (8 ft/s)		0.6 m/s (8 ft/s)	2.4 m/s (8 ft/s)		1.5 m/s (5 ft/s)			1.2 m/s (4 ft/s)			0.9 m/s (3 ft/s)	
[MM]	[INCH]	L/S	GPM	FU	L/S	GPM	L/S	GPM	FU	L/S	GPM	FU	L/S	GPM
15 MM	1/2"	0.25	4.4	4.5	0.07	1.1	0.86	8.7	7	0.25	3.6	3.5	0.15	2.4
20 MM	3/4"	0.55	8.8	11.5	0.14	2.2	0.77	12.2	17	0.48	7.6	9	0.38	6.0
25 MM	1"	0.92	14.5	20.5	0.23	3.6	1.26	20.0	30	0.81	12.8	18	0.65	10.3
32 MM	1-1/4"	1.36	21.5	34	0.34	5.4	1.80	28.5	54	1.24	19.7	29	0.99	15.7
40 MM	1-1/2"	1.91	30.3	55	0.48	7.5	2.80	44.4	102	1.75	27.7	46	1.40	22.2
50 MM	2"	3.27	51.9	155	0.82	12.9	4.92	78.0	288	3.04	48.3	120	2.45	38.9

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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.

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REV. NO.	DESCRIPTION	DATE	BY
00	FOR APPROVAL	04/22	A.B

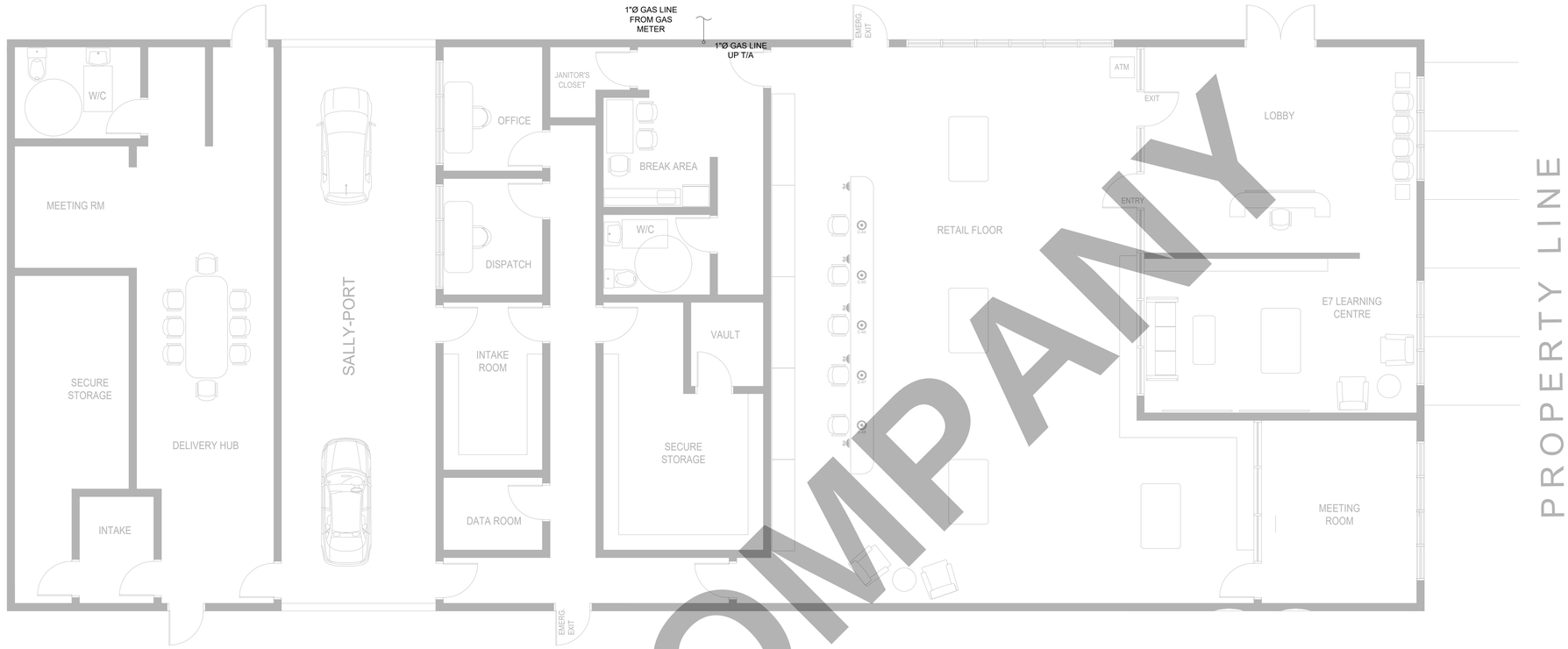
PROJECT:
4868 E. KINGS CANYON
FRESNO.

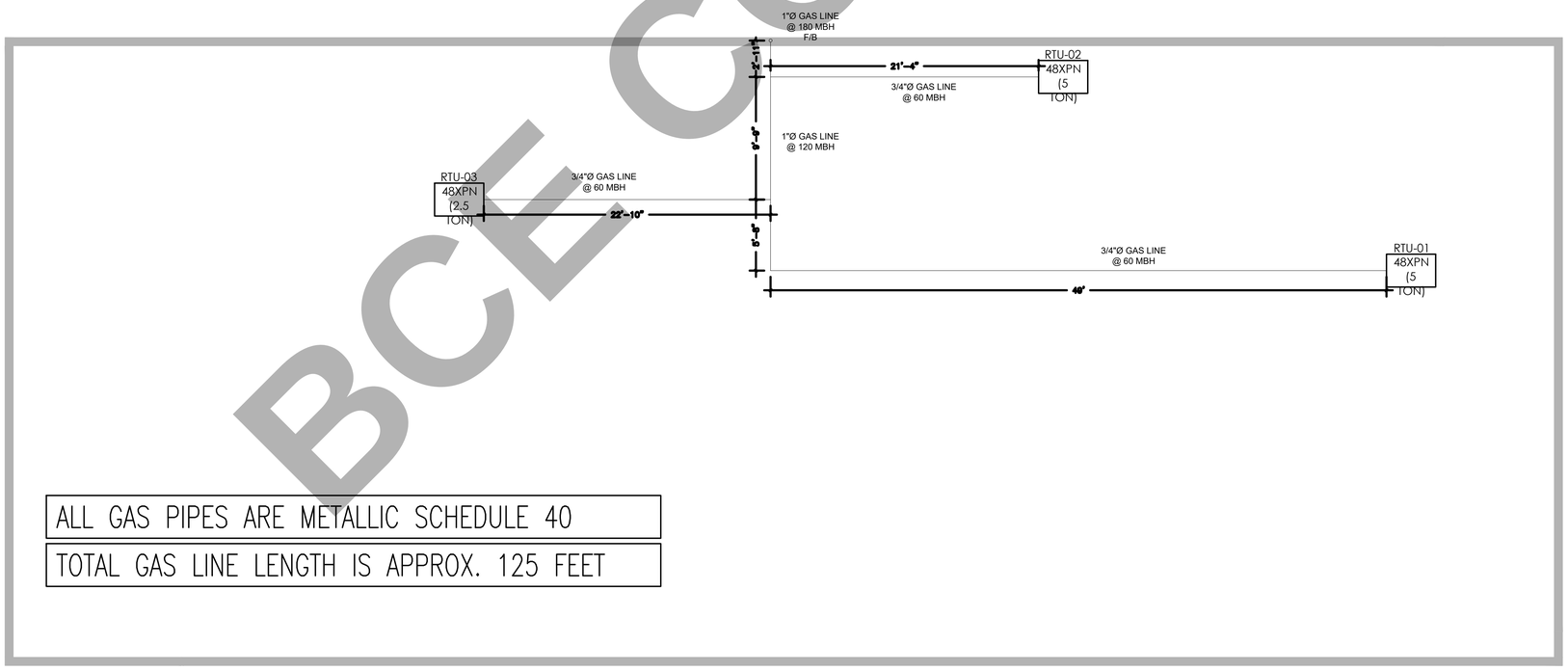
TITLE:
WATER SUPPLY LAYOUTS.

PROJ. NO. | PROJ. ENGR. | SCALE @ 24X36: 3/16"=1'-0"

DRAWING NO.: P 2.0

REV.:





ALL GAS PIPES ARE METALLIC SCHEDULE 40

TOTAL GAS LINE LENGTH IS APPROX. 125 FEET

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PROJ. NO.	PROJ. ENGR.	SCALE @ 24X36
		3/16"=1'-0"

DRAWING NO.: P 3 . 0

REV.:

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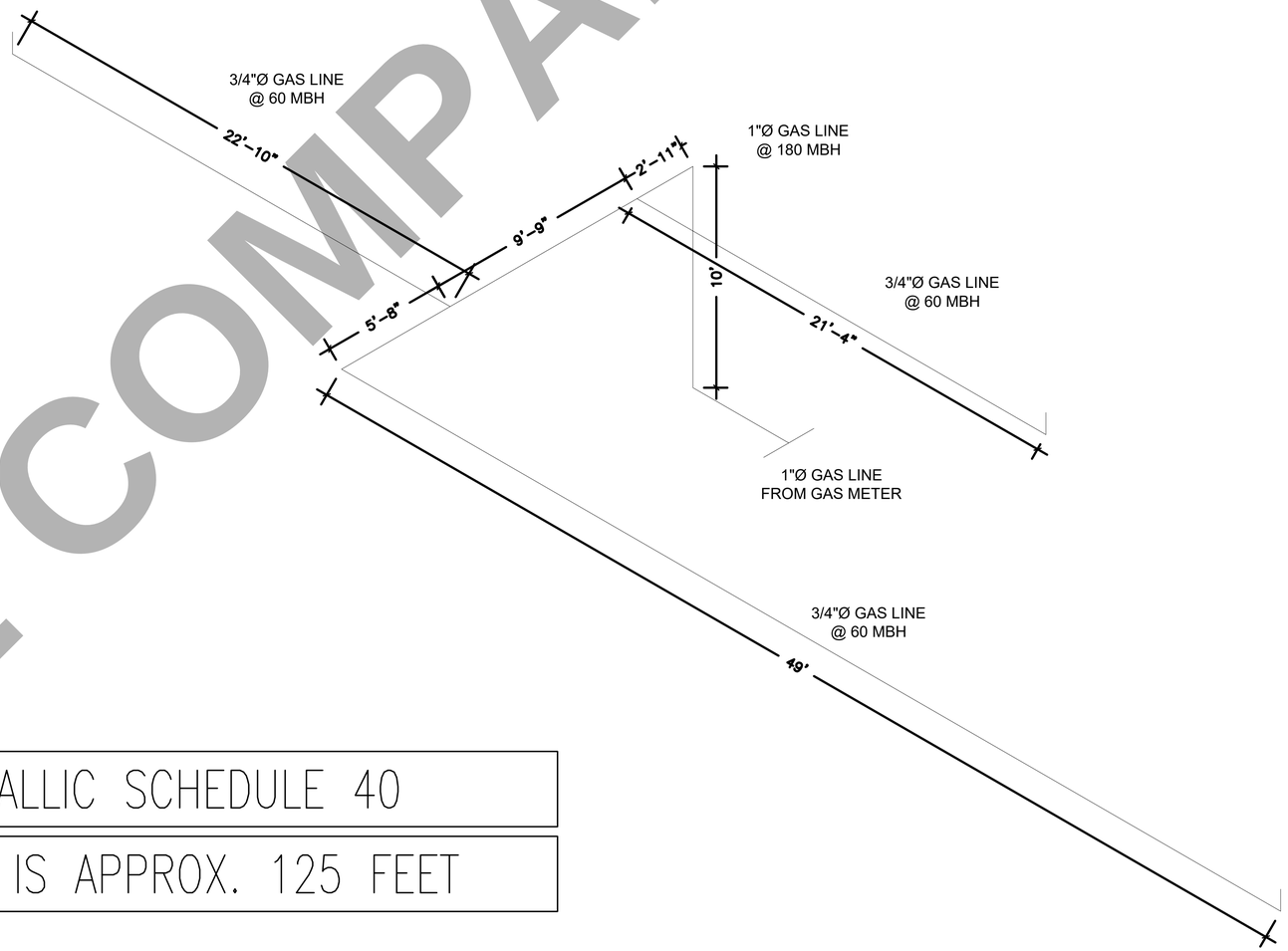

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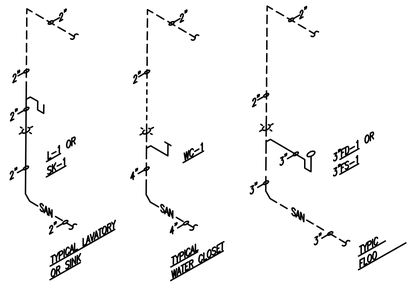
4868 E. KINGS CANYON
FRESNO.

TITLE:
WATER SUPPLY LAYOUTS.

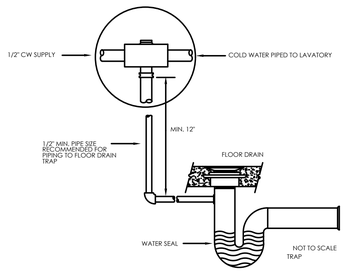
PROJ. NO.	PROJ. ENGR.	SCALE @ 24X36
		3/16"=1'-0"

DRAWING NO.
P 3 . 1

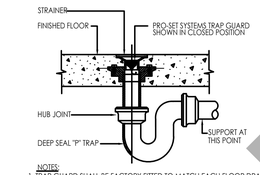
REV.



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

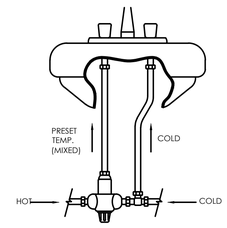


2 TRAP PRIMER

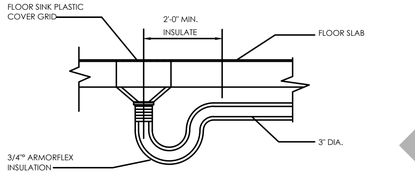


NOTES:
1. TRAP GUARD SHALL BE FACTORY FITTED TO MATCH EACH FLOOR DRAIN (AND FLOOR SINK) BY SIZE, MODEL, AND MANUFACTURER.
2. FLOOR SINK/HUB DRAIN TRAP GUARD INSTALLATION IS SIMILAR.
3. INSTALLATION OF TRAP GUARD TO BE IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
4. INSERT TRAP GUARD ONLY AFTER FINAL ROOFING OF DRAINS. INSTALL TRAP GUARD WITH CLEAR SILICONE CAULK FOR GAS TITE SEAL. FOR DRAIN FLOODING AFTER INSTALLATION, INSERT SEWER TAPE THROUGH LIGHTLY GREASED 1-1/2" PVC PIPE TO PROTECT TRAP GUARD.

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



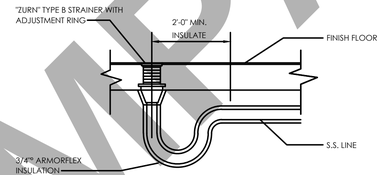
ANTI-SCALD MIXING VALVE
NO SCALE



CONTRACTOR TO REFER TO PLUMBING DRAWINGS FOR SIZE AND LOCATION OF SANITARY SEWER LINE.

NOTE:
G.C. TO INSULATE ANY DRAIN OR P-TRAP UNDER SLAB THAT NORMALLY HOLDS WATER

FLOOR SINK DETAIL
NO SCALE



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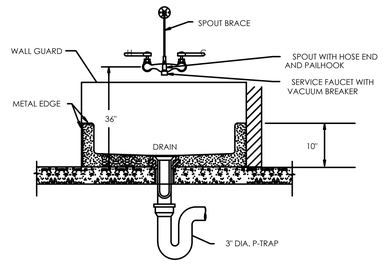
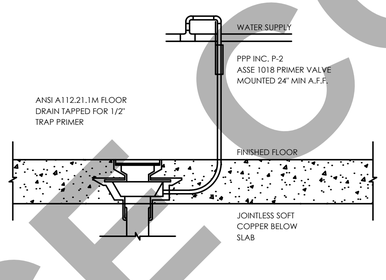
NO SCALE



MOP SINK DETAIL
NO SCALE



TRAP PRIMER DETAIL
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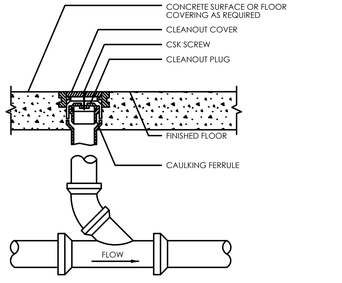
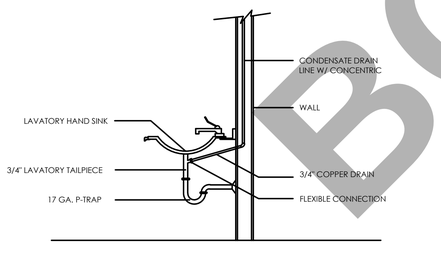
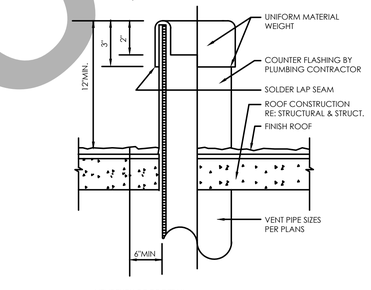


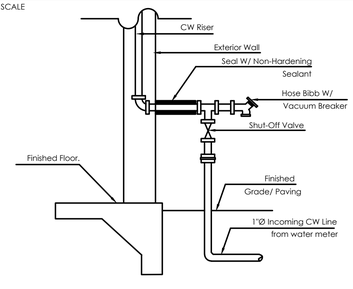
FLOOR CLEANOUT DETAIL
NO SCALE



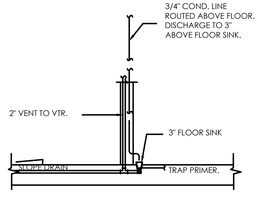
CONDENSATE DETAIL
NO SCALE



VENT THRU ROOF DETAIL
NO SCALE



WATER ENTRY DETAIL
NO SCALE



COND. ON FLOOR SINK DETAIL
NO SCALE

CLIENT:

ADDRESS:
4688 E. KINGS CANYON RD.,
FRESNO CA. 93702

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

REV. NO.	DESCRIPTION	DATE	BY
00	FOR APPROVAL	04/22	A.B

PROJECT:
4868 E. KINGS CANYON
FRESNO.

TITLE:
WATER SUPPLY LAYOUTS.

PROJ. NO	PROJ. ENGR.	SCALE @ 24X36
		NTS

DRAWING NO.
P 4.0

REV.

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 42 " 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 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.
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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

NEW SURFACE MOUNTED 3" DEEP LOW PROFILE WRAPAROUND 10"X48" LED LIGHT FIXTURE MODEL: LITHONIA FML4W

NEW 4'-0" L SURFACE MOUNTED LINKABLE LED STRIP LIGHT FIXTURE LITHONIA MODEL: RLNK

EXISTING LED TRACK LIGHTING

NEW MEDIUM SPOT LED TRACK HEAD LIGHTING FIXTURE 120V AC, 14W, ELV DIMMABLE. 40 DEGREE BEAM SPREAD MODEL: LUMENTURE TSO-30H-1100-22-W-J CONTECH TRACKS LT-P

NEW 3" RECESSED POTLIGHTS

NEW 6" RECESSED LED DIMMABLE DOWNLIGHT FIXTURE 120V LITHONIA LDN6 35/15 (3500 K/1500 LUMENS) GZ10 STANDARD DRIVER DIMS TO 10% APERTURE - L06 DOWNLIGHT / TRIM - AR CLEAR FINISH - LSS SEMI-SPECULAR

NEW LED WALL LIGHT FIXTURE W/ EMERGENCY BATTERY BACKUP ELED-EM-BZ-MB

EXISTING CEILING / WALL MOUNTED ILLUMINATED EXIT SIGN ON 90 MIN BATTERY

EXISTING CEILING / WALL MOUNTED ILLUMINATED EXIT SIGN W/EMERGENCY BUGEYE LIGHT FIXTURE ON 90 MIN BATTERY

NEW CEILING / WALL MOUNTED ILLUMINATED EXIT SIGN W/EMERGENCY BUGEYE LIGHT FIXTURE ON 90 MIN BATTERY

NEW EMERGENCY BUGEYE LIGHT FIXTURE W/ 90 MIN BATTERY

EXISTING EMERGENCY BUGEYE LIGHT FIXTURE W/ 90 MIN BATTERY

NEW CEILING/WALL MOUNTED ILLUMINATED EXIT SIGN - CBC/CFC SEC.1011 ON 90 MIN BATTERY

WALL SCONCE FIXTURE EQUIPPED WITH PHOTOCELL

HEAVY DUTY JUNCTION BOX, FLUSH IN CEILING FOR EXHAUST FANS

S — ONE WAY LIGHTING SWITCH

S_2 — TWO WAYS LIGHTING SWITCH

CHANDLIER OUTLET

SELF CONTAINED SMOKE/CARBON MONOXIDE (120 W/BATTERY BACKUP) - CEILING MOUNTED

DUPLEX RECEPTACLE - WALL MOUNTED @ +18" AFF UNLESS NOTED GFCI DENOTES: GROUD FAULT PROTECTION

YxXA — NON-FUSED DISCONNECT SWITCH - SIZE AS INDICATED

CLIENT:

ADDRESS:
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FRESNO CA. 93702

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REV. NO.	DESCRIPTION	DATE	BY
00	FOR APPROVAL	04/22	A.B

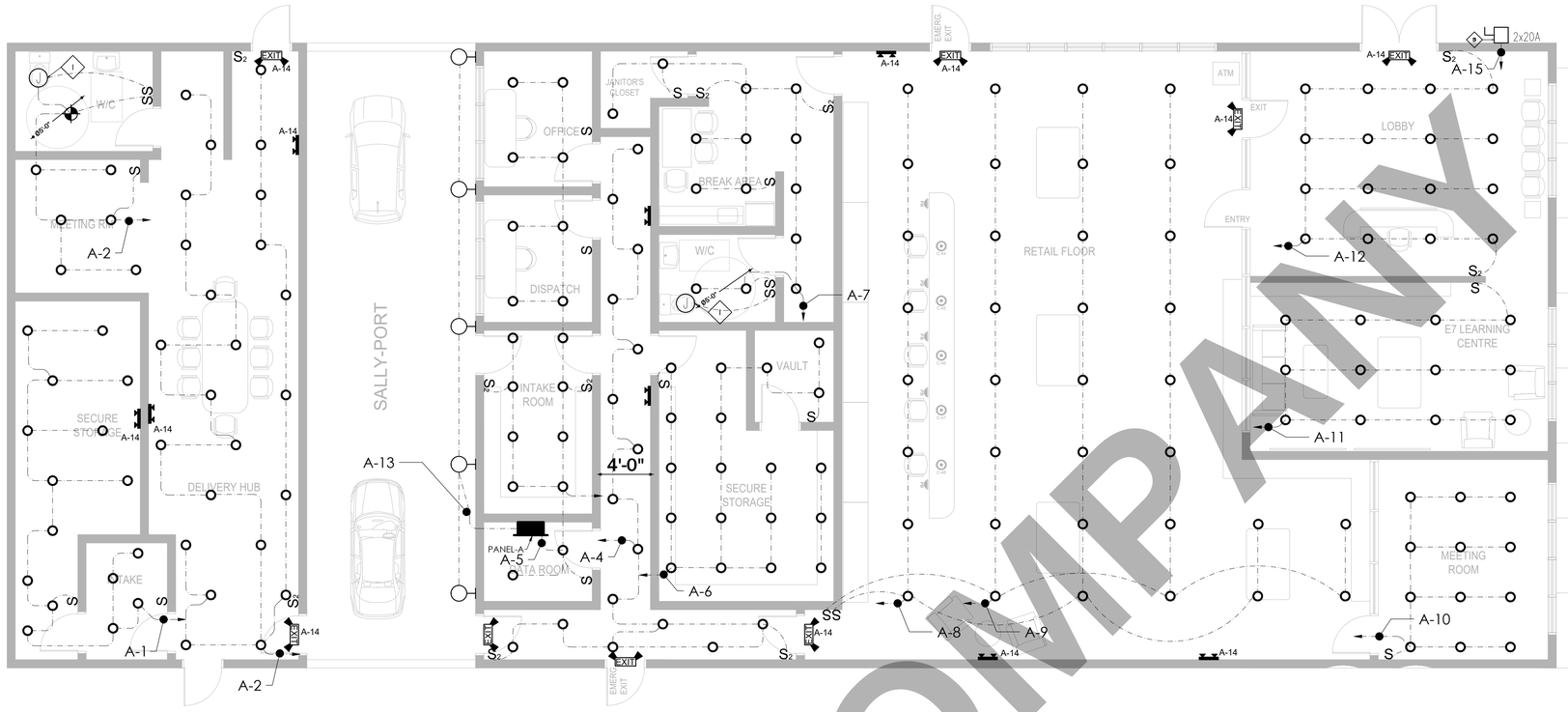
PROJECT: 4686 E. Kings Canyon Fresno

TITLE: ELECTRICAL SYMBOLS AND GENERAL NOTES

PROJ. NO.	PROJ. ENGR.	SCALE @ 24X36
		NTS

DRAWING NO. E.01

REV.



SHEET NOTES:

1. PROVIDE HEAVY DUTY JUNCTION BOX, FLUSH IN CEILING FOR EXHAUST FANS
2. FURNISH AND INSTALL SMOKE OR COMBINATION SMOKE AND CARBON MONOXIDE DETECTOR AS REQUIRED. INTERLOCK WITH OTHER DETECTORS
3. PROVIDE DISCONNECT SWITCH AS SIZE INDICATED FOR SIGNAGE LIGHTING

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 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.
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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.

LIGHTING GENERAL NOTES

I. ALL JUNCTION BOXES, CONDUITS, AND AIRES SHALL BE SIZED PER NEC.
2. CONNECT ALL EXIT LIGHTS AHEAD OF ANY LOCAL OR AUTOMATIC SWITCHING DEVICE.
3. PROVIDE A CONSTANT HOT FROM PANEL BOARD DIRECTLY TO ALL EMERGENCY BATTERY PACKS/BALLASTS IN EMERGENCY LIGHTING FIXTURES AND EXIT SIGNS. EMERGENCY LIGHTING FIXTURES SHALL TURN ON TO FULL BRIGHTNESS IN CASE OF POWER LOSS.
4. REFER TO ARCHITECTURAL DRAWINGS FOR EXACT LOCATION & MOONING HEIGHTS OF ALL LIGHTING FIXTURES SHOWN ON THIS DRAWING.
5. REFER TO DETAIL SHEET FOR SYMBOLS, SPECIFICATIONS, ABBREVIATIONS, AND LIGHTING FIXTURE SCHEDULE.
6. ALL DEVICES AND EQUIPMENT OUTSIDE THE SCOPE OF WORK ARE EXISTING TO REMAIN U.O.N.
7. CONTRACTOR SHALL PROVIDE AN ACCURATELY TYPED PANEL BOARD SCHEDULE FOR EACH PANEL BOARD.
8. ELECTRICAL CONTRACTOR SHALL NOTIFY THE ENGINEER OF ANY PROBLEMS PERTAINING TO CIRCUIT AVAILABILITY OR LOAD CAPACITY PRIOR TO INSTALLATION.
9. ALL EXTERIOR LUMINARIES AND ELECTRICAL DEVICES SHALL BE USED AS WEATHERPROOF TYPE.
10. ALL NEW CEILING OCCUPANCY SENSORS SHALL BE DUAL-TECHNOLOGY WITH 1000 SQFT COVERAGE AT 360 DEGREES U.O.N. ON THE DRAWING. COORDINATE EXACT LOCATION AND REQUIREMENTS OF ALL OCCUPANCY SENSORS SHOWN ON THIS DRAWING WITH MANUFACTURER REPRESENTATIVE PRIOR TO COMMENCEMENT OF WORK. CONTRACTOR TO PROVIDE POWER PACKS AS REQUIRED.
11. CONTRACTOR SHALL CONFIRM COMPATIBILITY OF ALL LIGHTING CONTROL DEVICES/SWITCHES/DIMMERS WITH LIGHTING FIXTURES AND BALLASTS/DRIVERS PRIOR TO SUBMITTAL.
12. FIXTURE MARKED WITH SUBSCRIPT "(E)" IS EXISTING TO REMAIN, CONTRACTOR TO MAINTAIN CONTINUITY OF BRANCH CIRCUITS.
13. ALL CONDUIT RUNS IN OPEN PLENUM SPACE SHALL BE INSTALLED IN A NEAT MANNER PERPENDICULAR OR PARALLEL TO WALLS AND PAINTED AS DIRECTED BY OWNER.

CLIENT:

ADDRESS:

4688 E. KINGS CANYON RD.,
FRESNO CA. 93702

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:

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

REV. NO.	DESCRIPTION	DATE	BY
00	FOR APPROVAL	04/22	A.B

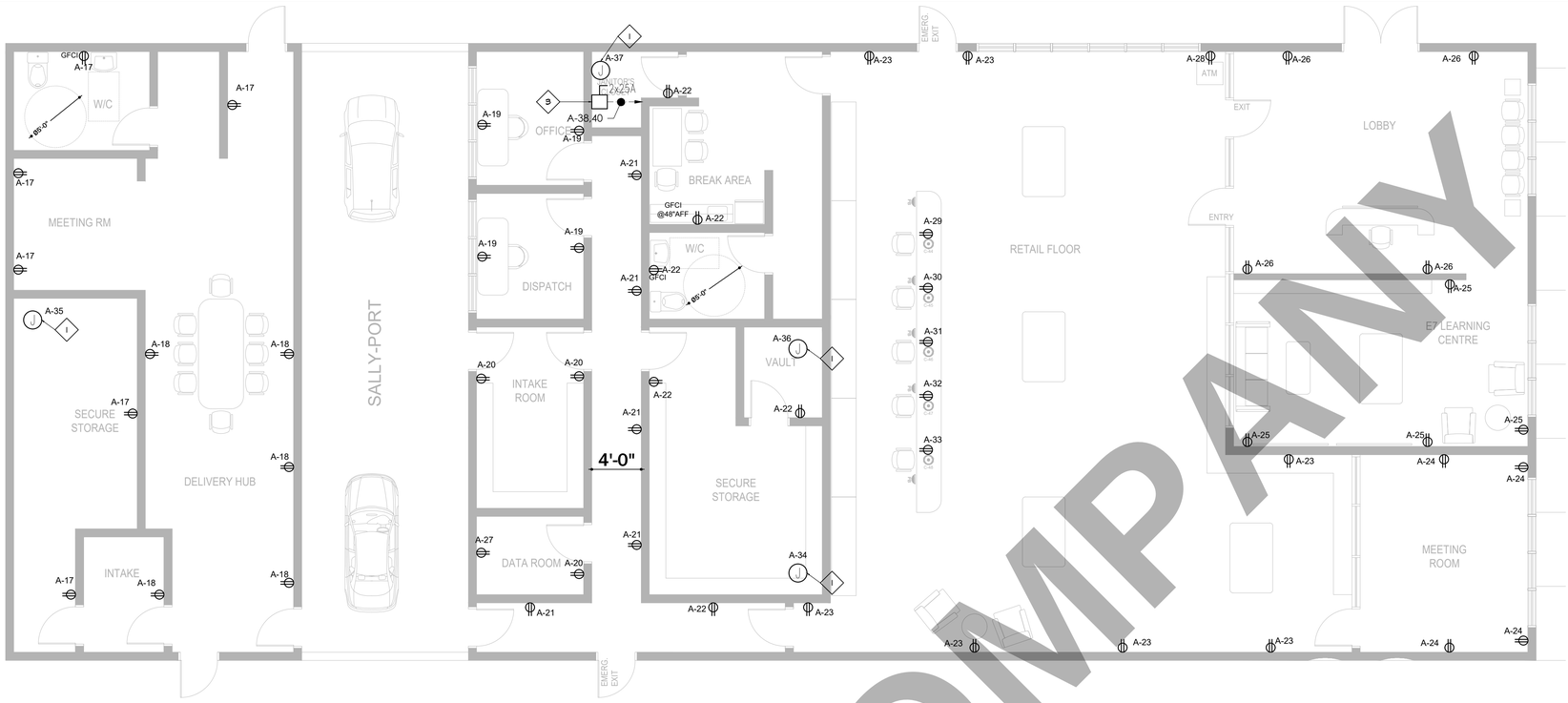
PROJECT: 4686 E. Kings Canyon Fresno

TITLE: LIGHTING PLAN

PROJ. NO.	PROJ. ENGR.	SCALE @ 24X36
		3/16"=1'

DRAWING NO. E.02

REV.



SHEET NOTES:

1 — PROVIDE HEAVY DUTY JUNCTION BOX, FLUSH IN CEILING FOR EXHAUST FANS

2 — PROVIDE FUSED DISCONNECT SWITCH FOR RTU

3 — PROVIDE FUSED DISCONNECT SWITCH FOR ELECTRIC WATER HEATER

POWER GENERAL NOTES

1. PROVIDE PULL STRINGS IN ALL EMPTY CONDUITS.
2. ALL JUNCTION BOXES, CONDUITS, AND WIRES SHALL BE SIZED PER NEC.
3. REFER TO ARCHITECTURAL DRAWINGS FOR EXACT LOCATION AND MOUNTING HEIGHTS OF ALL DEVICES SHOWN ON THE DRAWING. COORDINATE WITH OWNER FOR EXACT LOCATION AND OTHER REQUIREMENTS PRIOR TO ROUGH-IN.
4. ALL HOME RUNS SHALL BE 2#12+1#12 GND IN 3 4" CONDUIT U.O.N.
5. CIRCUIT NUMBERS INDICATED ARE FOR DESIGN PURPOSES ONLY. CONTRACTOR SHALL COORDINATE ACTUAL CIRCUIT NUMBERS AT THE TIME OF INSTALLATION AND TO PROVIDE AN ACCURATELY TYPED PANEL BOARD SCHEDULE FOR EACH PANEL BOARD.
6. ALL DEVICES AND EQUIPMENT OUTSIDE THE SCOPE OF WORK ARE EXISTING TO REMAIN U.O.N.
7. CONTRACTOR SHALL PROVIDE AN ACCURATELY TYPED PANEL BOARD SCHEDULE FOR EACH PANEL BOARD.
8. ELECTRICAL CONTRACTOR SHALL NOTIFY THE ENGINEER OF ANY PROBLEMS PERTAINING TO CIRCUIT AVAILABILITY OR LOAD CAPACITY PRIOR TO INSTALLATION.
9. CONTRACTOR SHALL REFER TO MECHANICAL/PLUMBING DRAWINGS FOR EXACT LOCATION OF EQUIPMENT AND SCHEDULES. CONTRACTOR SHALL PROVIDE ALL ELECTRICAL DISCONNECTS. BRANCH CIRCUITRY,CIRCUIT BREAKERS AND CONNECTIONS REQUIRED TO POWER EQUIPMENT.
10. CONTRACTOR TO COORDINATE EXACT LOCATION OF DISCONNECT SWITCHES, JUNCTION BOXES AND SINGLE POLE TOGGLE SWITCHES WITH MECHANICAL/PLUMBING CONTRACTORS PRIOR TO INSTALLATION.
11. ALL CONDUIT RUNS IN OPEN PLENUM SPACE SHALL BE INSTALLED IN A NEAT MANNER PERPENDICULAR OR PARALLEL TO WALLS AND PAINTED AS DIRECTED BY OWNER.

POWER KEY NOTES

1. PROVIDE (2) 2" EMPTY CONDUITS WITH PULL STRINGS FROM EXISTING TELEPHONE UTILITY SERVICE CABINET/BOARD TO NEW TELEPHONE BOARD LOCATION AS SHOWN. COORDINATE EXACT LOCATION WITH TENANT/ARCHITECT PRIOR TO COMMENCEMENT OF WORK.
2. ABOVE FRONT WINDOW RECEPTACLE. CONTRACTOR TO COORDINATE EXACT LOCATION AND OTHER REQUIREMENTS WITH ARCHITECT/OWNER PRIOR TO INSTALLATION.
3. CONTRACTOR TO PROVIDE WIREMOLD CONCRETE WEATHERPROOF FLUSH FLOOR BOX RFB4 SERIES OR APPROVED EQUAL WITH (1) DUPLEX RECEPTACLES AND TELE/DATA CONNECTIVITY. COORDINATE WITH ARCHITECT/ OWNER/IT CONSULTANT FOR EXACT TYPE OF DEVICE AND OTHER REQUIREMENTS PRIOR TO PURCHASE AND INSTALLATION.
4. PROVIDE (1) 3/4" CONDUIT FOR POWER WIRING AND (2) 1-1/4" FOR LOW VOLTAGE CABLING WITH RING AND STRING FROM FLOOR BOX TO CLOSEST WALL AS SHOWN. COORDINATE EXACT LOCATION AND TERMINATION OF CONDUIT WITH ARCHITECT/IT CONSULTANT PRIOR TO COMMENCEMENT OF WORK.
5. JUNCTION BOX WITH 120v. BRANCH CIRCUIT FOR SECURITY PANEL/DOOR STRIKE AND ACCESS CONTROL, PROVIDE A JUNCTION BOX ABOVE CEIUNG IN AN ACCESSIBLE AREA, COORDINATE EXACT LOCATION, TERMINATION POINTS AND ALL REQUIREMENTS WITH OWNER/ARCHITECT/SECURITY ALARM VENDOR PRIOR TO INSTALLATION. CONNECT TO CIRCUIT B-27. MAKE FINAL CONNECTIONS AS REQUIRED. (TYPICAL)
6. CONTRACTOR TO PROVIDE 120V. 20A BRANCH CIRCUIT AND 2 PHONE LINES TO POWER FIRE ALARM CONTROL PANEL FROM NEW PANEL "B", COORDINATE EXACT LOCATION AND OTHER REQUIREMENTS WITH OWNER/FIRE ALARM CONTRACTOR PRIOR TO INSTALLATION.
7. CONTRACTOR TO PROVIDE A DUPLEX RECEPTACLE AND L5-20R RECEPTACLE FOR IT EQUIPMENT POWER, COORDINATE EXACT LOCATION, ELECTRICAL CHARACTERISTICS OF EQUIPMENT, BREAKER/WIRING AND RECEPTACLE NEMA CONFIGURATION WITH OWNER PRIOR TO INSTALLATION.
8. CONTRACTOR TO PROVIDE 120V. 20A BRANCH CIRCUIT AND TELE/DATA OUTLET FOR ATM MACHINE, COORDINATE EXACT LOCATION, ELECTRICAL CHARACTERISTICS OF EQUIPMENT, BREAKER/WIRING AND RECEPTACLE NEMA CONFIGURATION WITH OWNER/VENDOR PRIOR TO INSTALLATION.
9. PROVIDE POWER AND TV/DATA OUTLET FOR TV/MENU SCREEN, COORDINATE EXACT LOCATION AND ALL REQUIREMENTS WITH ARCHITECT/TECHNOLOGY DRAWINGS PRIOR TO INSTALLATION. TV OUTLET AND RECEPTACLE TO BE MOUNTED AT 60" A.F.F.
10. CONTRACTOR TO PROVIDE 120V. 20A RECEPTACLE IN AN ACCESSIBLE LOCATION FOR DISHWASHER POWER, PROVIDE 1P-20A TOGGLE SWITCH ABOVE COUNTER FOR CONTROL, COORDINATE SWITCH EXACT LOCATION AND OTHER REQUIREMENTS WITH OWNER/ARCHITECT PRIOR TO INSTALLATION.
11. CONTRACTOR TO PROVIDE JUNCTION BOX WITH 120V. BRANCH CIRCUIT FOR THREAT DETECTION SYSTEM, COORDINATE EXACT LOCATION AND ALL REQUIREMENTS WITH OWNER/VENDOR PRIOR TO INSTALLATION, PROVIDE TRANSFORMER AS NEEDED.
12. CONTRACTOR TO PROVIDE DISCONNECT SWITCH FOR RECEIVING AREA OVERHEAD DOOR, COORDINATE EXACT LOCATION, CONTROL, ELECTRICAL CHARACTERISTICS AND OTHER REQUIREMENTS WITH OWNER/VENDOR PRIOR TO INSTALLATION.
13. PROVIDE DEDICATED BRANCH CIRCUIT FOR PRINTER. EXACT LOCATION, NEMA CONFIGURATION OF RECEPTACLE, WIRING AND BREAKER CHARACTERISTICS FOR EQUIPMENT TO BE VERIFIED WITH OWNER/ MANUFACTURER PRIOR TO ROUGH IN.
14. CONTRACTOR TO PROVIDE (2) 3" EMPTY CONDUITS WITH PULL STRING FROM IT ROOM HA A , (1) 3/4 E C D I I H I G F SECURITY ROOM TO HALLWAY, (1) 3" EMPTY CONDUIT WITH PULL STRING FROM IT ROOM TO SECURITY ROOM, AND (1) 3/4" EMPTY CONDUIT WITH PULL STRING FROM VAULT TO HALLWAY, COORDINATE TERMINATION POINTS AND OTHER REQUIREMENTS WITH OWNER PRIOR TO INSTALLATION.
15. CONTRACTOR TO COORDINATE EXACT LOCATION. MOUNTING HEIGHT AND OTHER REQUIREMENTS OF ELECTRICAL OUTLETS/DEVICES IN VAULT WITH OWNER/ARCHITECT PRIOR TO INSTALLATION.
16. JUNCTION BOX FOR CONNECTION TO ELECTRIC HAND DRYER. COORDINATE CONNECTION REQUIREMENTS PRIOR TO INSTALLATION.

CLIENT:

ADDRESS:

4688 E. KINGS CANYON RD.,
FRESNO CA. 93702

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

REV. NO.	DESCRIPTION	DATE	BY
00	FOR APPROVAL	04/22	A.B

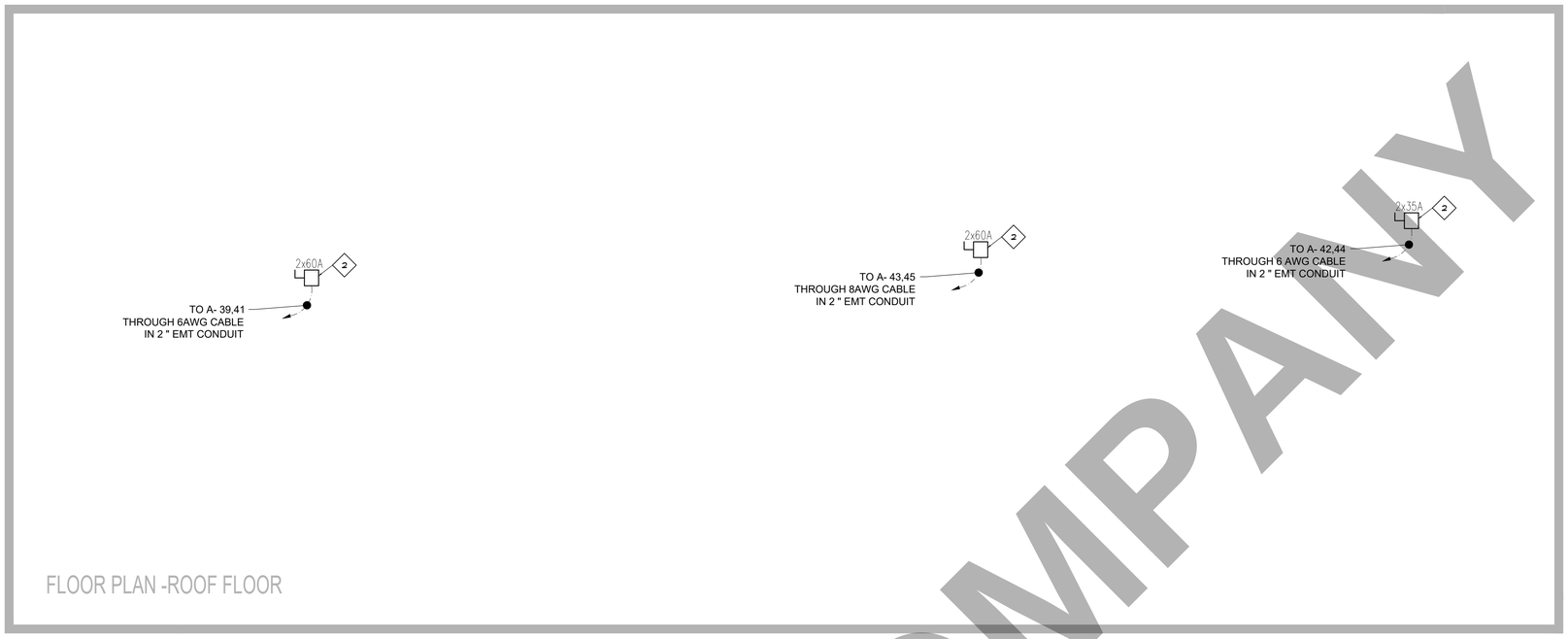
PROJECT: 4686 E. Kings Canyon Fresno

TITLE: **POWER PLAN GROUND FLOOR**

PROJ. NO.	PROJ. ENGR.	SCALE @ 24X36:
		3/16"=1'

DRAWING NO. **E.03**

REV.



FLOOR PLAN -ROOF FLOOR

SHEET NOTES:

1 — PROVIDE HEAVY DUTY JUNCTION BOX, FLUSH IN CEILING FOR EXHAUST FANS

2 — PROVIDE FUSED DISCONNECT SWITCH FOR RTU

3 — PROVIDE FUSED DISCONNECT SWITCH FOR ELECTRIC WATER HEATER

POWER GENERAL NOTES

1. PROVIDE PULL STRINGS IN ALL EMPTY CONDUITS.
2. ALL JUNCTION BOXES, CONDUITS, AND WIRES SHALL BE SIZED PER NEC.
3. REFER TO ARCHITECTURAL DRAWINGS FOR EXACT LOCATION AND MOUNTING HEIGHTS OF ALL DEVICES SHOWN ON THE DRAWING. COORDINATE WITH OWNER FOR EXACT LOCATION AND OTHER REQUIREMENTS PRIOR TO ROUGH-IN.
4. ALL HOME RUNS SHALL BE 2#12+1#12 GND IN 3 4" CONDUIT U.O.N.
5. CIRCUIT NUMBERS INDICATED ARE FOR DESIGN PURPOSES ONLY. CONTRACTOR SHALL COORDINATE ACTUAL CIRCUIT NUMBERS AT THE TIME OF INSTALLATION AND TO PROVIDE AN ACCURATELY TYPED PANEL BOARD SCHEDULE FOR EACH PANEL BOARD.
6. ALL DEVICES AND EQUIPMENT OUTSIDE THE SCOPE OF WORK ARE EXISTING TO REMAIN U.O.N.
7. CONTRACTOR SHALL PROVIDE AN ACCURATELY TYPED PANEL BOARD SCHEDULE FOR EACH PANEL BOARD.
8. ELECTRICAL CONTRACTOR SHALL NOTIFY THE ENGINEER OF ANY PROBLEMS PERTAINING TO CIRCUIT AVAILABILITY OR LOAD CAPACITY PRIOR TO INSTALLATION.
9. CONTRACTOR SHALL REFER TO MECHANICAL/PLUMBING DRAWINGS FOR EXACT LOCATION OF EQUIPMENT AND SCHEDULES. CONTRACTOR SHALL PROVIDE ALL ELECTRICAL DISCONNECTS. BRANCH CIRCUITRY,CIRCUIT BREAKERS AND CONNECTIONS REQUIRED TO POWER EQUIPMENT.
10. CONTRACTOR TO COORDINATE EXACT LOCATION OF DISCONNECT SWITCHES, JUNCTION BOXES AND SINGLE POLE TOGGLE SWITCHES WITH MECHANICAL/PLUMBING CONTRACTORS PRIOR TO INSTALLATION.
11. ALL CONDUIT RUNS IN OPEN PLENUM SPACE SHALL BE INSTALLED IN A NEAT MANNER PERPENDICULAR OR PARALLEL TO WALLS AND PAINTED AS DIRECTED BY OWNER.

POWER KEY NOTES

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12.CONTRACTOR TO PROVIDE DISCONNECT SWITCH FOR RECEIVING AREA OVERHEAD DOOR, COORDINATE EXACT LOCATION, CONTROL, ELECTRICAL CHARACTERISTICS AND OTHER REQUIREMENTS WITH OWNER/VENDOR PRIOR TO INSTALLATION.
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CLIENT:

ADDRESS:

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REV. NO.	DESCRIPTION	DATE	BY
00	FOR APPROVAL	04/22	A.B

PROJECT:
4686 E. Kings Canyon
Fresno

TITLE: POWER PLAN
ROOF FLOOR

PROJ. NO.	PROJ. ENGR.	SCALE @ 24X36
		3/16"=1'

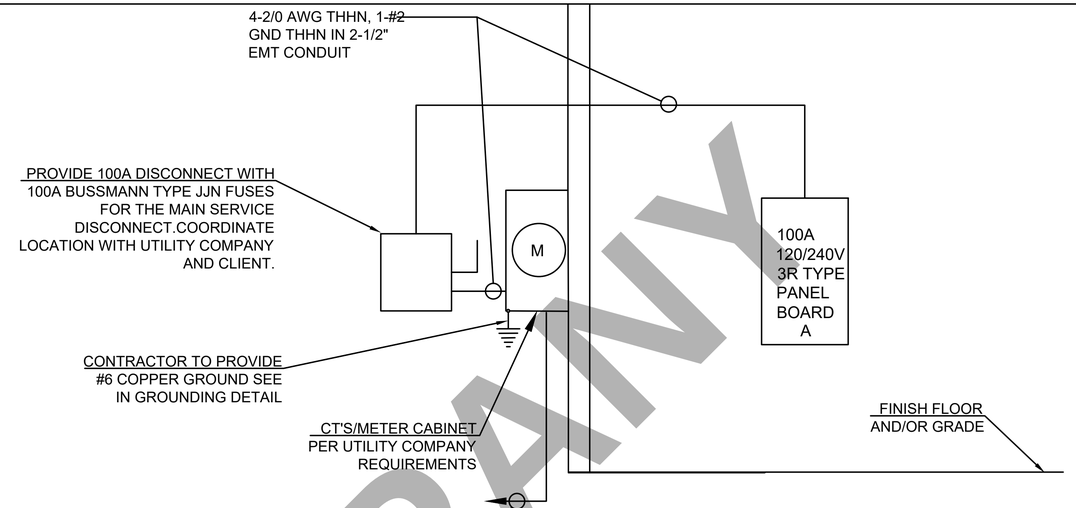
DRAWING NO.
E.04

REV.

GENERAL NOTES

A. ALL EXISTING COMPONENTS OF THIS ELECTRICAL DIAGRAM ARE TO REMAIN AS INSTALLED AND ARE SHOWN FOR REFERENCE ONLY.
B. ALL WORK SHALL CONFORM TO THE LATEST EDITION OF THE NATIONAL FIRE PROTECTION
C. ASSOCIATION (NFPA) 70, NATIONAL ELECTRICAL CODE. ALL ITEMS ARE ON AN OR EQUAL BASIS.
D. ALL SINGLE PHASE BRANCH CIRCUITS (RECEPTACLES, LIGHTING, ETC.; ARE 1/2" CONDUIT OR EMT WITH THIN, 90C WIRING, UNLESS NOTED OTHERWISE. ALL OTHER CONDUIT AND WIRING SHALL BE AS INDICATED ON THE PLANS. ACTUAL ROUTING AND HOME RUN GROUPINGS ARE TO BE DETERMINED IN THE FIELD.
E. ELECTRICAL DRAWINGS ARE DIAGRAMMATIC EXCEPT FOR DETAILS AND ELEVATIONS. DO NOT SCALE FROM DIAGRAMMATIC DRAWINGS. EXACT LOCATIONS OF DEVICES AND PANELS ARE TO BE DETERMINED AND ROUGHED-IN DURING CONSTRUCTION TO AVOID INTERFERENCE, TO MEET USER REQUIREMENTS, TO PROVIDE ADEQUATE MOUNTING, AND TO MEET NEC LINEAR ACCESS AND CLEARANCE REQUIREMENTS.
F. BACK TO BACK MOUNTING OF RECEPTACLES IS NOT PERMITTED.
G. IN ADDITION TO THE NEC REQUIREMENTS FOR GFCI PROTECTION FOR RECEPTACLES, THE FOLLOWING RECEPTACLES SHALL ALSO HAVE GFCI PROTECTION: (1)-ALL RECEPTACLES LOCATED WITHIN 8 FEET OF A SINK, (2)-ALL RECEPTACLES WHICH ARE PROVIDED FOR CONVENIENCE IN SERVICING HVAC EQUIPMENT REGARDLESS OF LOCATION.AS REQUIRED TO ACCOMMODATE CONDUCTOR PULLING EASE, FIELD LIFE SAFETY.
H. PROVIDE A LAMICOID NAMEPLATE (WHITE LETTERS ON BLACK BACKGROUND; ON EACH PANELBOARD, MOTOR STARTER,CONTACTOR, TRANSFORMER, ETC. LETTERS SHALL BE 0.75 INCH MAINIMUM.
I. CONTRACTOR SHALL CUT AS REQUIRED TO INSTALL ELECTRICAL EQUIPMENT REPAIR OF FLOOR OR WALLS SHALL BE COORDINATED WITH GENERAL CONTRACTOR CONTRACTOR SHALL ALSO REPAIR ALL OPENINGS LEFT DUE TO EQUIPMENT REMOVAL.
J. CONDUCTORS ARE COPPER UNLESS OTHERWISE SHOWN. ALL CONDUCTORS LARGER THAN #10 SHALL BE STRANDED.
K. PANELBOARDS SHALL CONTAIN A TYPEWRITTEN DIRECTORY WITH A PLASTIC COVER AFFIXED TO THE INSIDE DOOR.

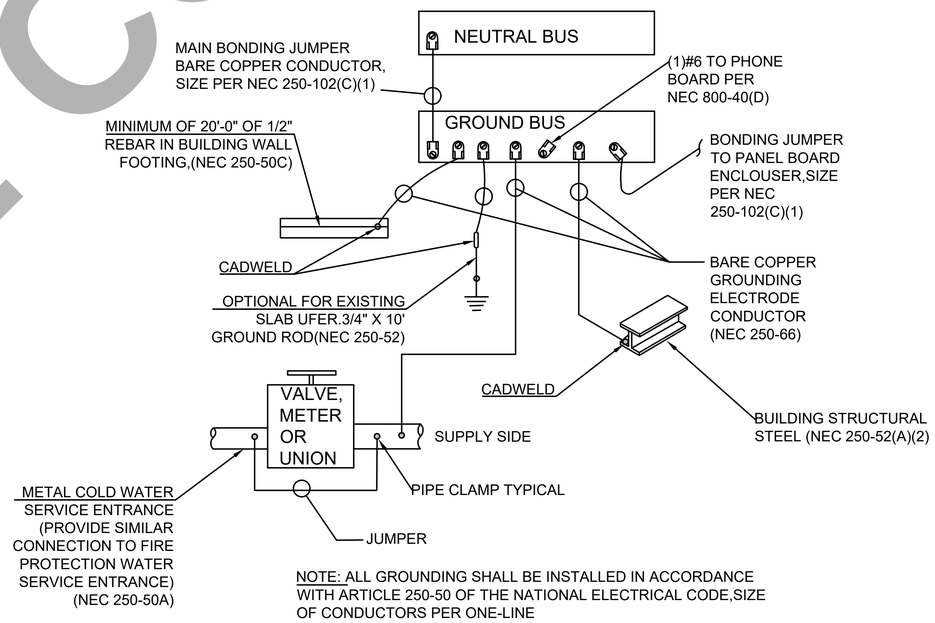
L. ALL FIXTURES, DEVICES, CONDUIT, AND EQUIPMENT SHALL BE SECURED WITH APPROVED HANGERS AND ANCHORS AND IN ACCORDANCE WITH APPROVED STANDARDS OF INSTALLATION.
M. ALL BREAKERS SHOWN IN THE PANELBOARD SCHEDULE SHALL BE RATED AS SHOWN FOR BOTH CIRCUIT CAPACITY AND FAULT CURRENT INTERRUPTING CAPACITY.
N. ALL PANELBOARDS, DISCONNECT SWITCHES, MOTOR STARTERS, AND CONTACTORS SHALL BE NEMA 1, UNLESS OTHERWISE NOTED.
O. ELECTRICAL CONTRACTOR MUST BE AVAILABLE AT TIME OF DBS INSPECTION. COORDINATE WITH GENERAL CONTRACTON.
P. FIELD VERIFY THE AVAILABLE FAULT CURRENT AT THE LANDLORD'S EXISTING PANEL AND PROVIDE A NEW, FULLY RATED, PANEL TO MATCH EXISTING.
Q. CONTRACTOR TO MAKE FINAL CONNECTIONS IN EMS PANEL FOR LANDLORD PROVIDED LIGHTING CIRCUITS. 50% OF THE GENERAL LIGHTING CIRCUITS SHOULD BE ROUTED THROUGH THE CUSTOMER CONTROL ZONE .



NOTES

1. CONTRACTOR TO INCLUDE IN THE CONTRACT ALL ONE TAP CHARGERS AI FEES FROM THE POWER COMPANY,AND COORDINATE WITH THE POWER COMPANY.
2. PROVIDE PLAQUE STATING LOCATION OF DISCONNECTING MEANS.
3. PANEL BOARD TO HAVE FULLY RATED BREAKERS UNLESS NOTED OTHERWISE.

ONE LINE DIAGRAM



NOTE: ALL GROUNDING SHALL BE INSTALLED IN ACCORDANCE WITH ARTICLE 250-50 OF THE NATIONAL ELECTRICAL CODE,SIZE OF CONDUCTORS PER ONE-LINE

GROUNDING DETAIL

CLIENT:

ADDRESS:
4688 E. KINGS CANYON RD.,
FRESNO CA. 93702

CONFIDENTIALITY STATEMENT:

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REV. NO.	DESCRIPTION	DATE	BY
00	FOR APPROVAL	04/22	A.B

PROJECT: 4686 E. Kings Canyon Fresno

TITLE: ONE LINE DIAGRAM AND GROUNDING

PROJ. NO.	PROJ. ENGR.	SCALE @ 24X36
		NTS

DRAWING NO. E.05

REV.

Branch Panel: A
Location: DATA
Supply From: Utility Meter
Mounting:SURFACE

Volts: 120/240 Three
Phases: 3
Wires: 3+1

A.I.C Rating: 10kA
Mains Type: MCCB
Mains Rating: 100A

Enclosure Type 1

4-2/0 AWG THHN, 1-#2 GND THHN IN 2-1/2" EMT CONDUIT

CKT	CIRCUIT DESCIRPTION	TRIP	POLES	A		B		C		POLES	TRIP	CIRCUIT DESRIPTION	CKT
1	LIGHTING INTAKE+SECURE STORAGE	15A	1	210	150					1	15A	LIGHTING WC+MEETING	2
3	LIGHTING DELIVERY HUB+MEETING ROOM	15A	1			370	210			1	15A	LIGHTING CORRIDOR	4
5	LIGHTING OFFICE+DISPATCH+INTAKE+DATA	15A	1					210	210	1	15A	LIGHTING SECURE STORAGE	6
7	LIGHTING WC+BREAK AREA	15A	1	190	210					1	15A	LIGHTING RETAIL	8
9	LIGHTING RETAIL	15A	1			210	160			1	15A	LIGHTING MEETING ROOM	10
11	LIGHTING LEARNING CENTRE	15A	1					160	208	1	15A	LIGHTING LOBBY	12
13	LIGHTING OUTDOOR	15A	1	200	200					1	15A	EMERGENCY & EXIT LIGHTS	14
15	SIGNAGE	15A	1			300	-			1	15A	SPARE	16
17	RECEPTACLES WC+SECURE STORAGE+MEETING ROOM	20A	1					900	1080	1	20A	RECEPTACLES DELIVERY HUB+INTAKE	18
19	RECEPTACLES OFFICE+DISPATCH	20A	1	720	540					1	20A	RECEPTACLES DATA ROOM+INTAKE ROOM	20
21	RECEPTACLES CORRIDOR	20A	1			900	1080			1	20A	RECEPTACLES BREAK+SECURE TORAGE	22
23	RECEPTACLES RETAIL AREA	20A	1					1080	720	1	20A	RECEPTACLES MEETING ROOM	24
25	RECEPTACLES E7 LEARNING CENTRE	20A	1	720	720					1	20A	RECEPTACLES LOBBY	26
27	SERVER	20A	1			500	500			1	20A	ATM	28
29	POS WORKSTATION 1	20A	1					400	400	1	20A	POS WORKSTATION 2	30
31	POS WORKSTATION 3	20A	1	400	400					1	20A	POS WORKSTATION 4	32
33	POS WORKSTATION 5	20A	1			400	100			1	20A	EF-06	34
35	EF-03	20A	1					100	100	1	20A	EF-05	36
37	EF-02	20A	1	100	2250					2	25A	EWH-01	38
39	RTU-01	60A	2			2600	2250						40
41								2600	1368	2	35A	RTU-03	42
43	RTU-02	60A	2	2600	1368								44
45						2600	-			1	20A	SPARE	46
47	SPARE	20A	1					-	-	1	20A	SPARE	48
	TOTAL CONNECTED LOAD (VA)			10978		12180		9536					
	TOTAL CONNECTED CURRENT (A)			91		102		79					

Legend:

Load Classification	Connected Load (VA)	Demand Factor	Estimated Demand (VA)	Panels Totals	
Lighting	3198	125.00%	3998		
Receptacle	11460	60.00%	6876	**Total Conn. Load (kVA):**	32.694
Kitchen Equipment Non Dwelling Unit	0	65.00%	0	**Total Est. Demand (kVA):**	28.9095
Mechanical Equipment	18036	100.00%	18036	**Total Conn. Current (A) Per 1 Phase:**	90.81667
PANELS	0	65.00%	0	**Total Est. Demand Current (A) Per 1 Phase:**	80.30417

Notes

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REV. NO.	DESCRIPTION	DATE	BY
00	FOR APPROVAL	04/22	A.B

PROJECT:
4686 E. Kings Canyon
Fresno

TITLE:
LOAD SCHEDULE

PROJ. NO.	PROJ. ENGR.	SCALE @ 24X36
		NTS

DRAWING NO.
E.06

REV.

A. GENERAL INFORMATION

1	Project Location (city)	FRESNO	8	Standards Version	Compliance2019
2	CA Zip Code	93702	9	Compliance Software (version)	EnergyPro 8.2
3	Climate Zone	13	10	Weather File	FRESNO_723890_CZ2010.epw
4	Total Conditioned Floor Area in Scope	4,942 ft²	11	Building Orientation (deg)	(N) 0 deg
5	Total Unconditioned Floor Area	0 ft²	12	Permitted Scope of Work	ExistingAlteration
6	Total # of Stories (Habitable Above Grade)	1	13	Building Type(s)	Nonresidential
7	Total # of dwelling units	0	14	Gas Type	NaturalGas

B. PROJECT SUMMARY

Table Instructions: Table B shows which building components are included in the performance calculation. If indicated as not included, the project must show compliance prescriptively if within permit application.

Building Components Complying via Performance				Building Components Complying Prescriptively	
☐ Performance			☐ Performance		
Envelope (see Table G)	☒ Not Included	Covered Process: Commercial Kitchens	☒ Not Included	*The following building components are ONLY eligible for prescriptive compliance and should be documented on the NRCC form listed if within the scope of the permit application (i.e. compliance will not be shown on the NRCC-PRF-E).*	
☒ Performance		Covered Process: Computer Rooms	☐ Performance	Indoor Lighting (Unconditioned)§140.6	*NRCC-LTI-E*
Mechanical (see Table H)	☐ Not Included		☒ Not Included	Outdoor Lighting §140.7	*NRCC-LTO-E*
☒ Performance		Covered Process: Laboratory Exhaust	☐ Performance	Sign Lighting §140.8	*NRCC -LTS-E*
Domestic Hot Water (see Table I)	☐ Not Included		☒ Not Included	Mandatory Measures	
Lighting (Indoor Conditioned, see Table K)	☒ Performance			*Electrical power systems, commissioning, solar ready, elevator and escalator requirements are mandatory and should on the NRCC form listed if applicable (i.e. compliance will not be shown on the NRCC-PRF-E.)*	
☐ Not Included				Electrical Power Distribution §110.11	*NRCC-ELC-E*
Solar Thermal Water Heating (see Table I)	☐ Performance			Commissioning §120.8	*NRCC-COR-E*
☒ Not Included				Solar Ready §110.10	*NRCC-SRA-E*

C1. COMPLIANCE RESULTS FOR PERFORMANCE COMPONENTS (Annual TDV Energy Use, kBtu/ft ²-yr)

COMPLIES

Energy Component	Standard Design (TDV)	Proposed Design (TDV)	Compliance Margin (TDV)[1]
Space Heating	62.58	52.36	10.22
Space Cooling	213.76	219.28	-5.52
Indoor Fans	110.94	116.16	-5.22
Heat Rejection	--	--	--
Pumps & Misc.	--	--	--
Domestic Hot Water	15.87	15.41	0.46
Indoor Lighting	79.62	41.71	37.91
ENERGY STANDARDS COMPLIANCE TOTAL	**482.77**	**444.92**	**37.85 (7.8%)**

[1] Notes: The number in parenthesis following the Compliance Margin in column 4. represents the Percent Better than Standard.

C2. RESULTS FOR 'ABOVE CODE' QUALIFICATIONS[1]

☐ This project is pursuing CalGreen Tier 1 ☐ This project is pursuing CalGreen Tier 2

Miscellaneous Energy Component	Standard Design (TDV)	Proposed Design (TDV)	Compliance Margin (TDV)[1]
Receptacle	78.61	78.61	--
Process	--	--	--
Other Ltg	--	--	--
Process Motors	--	--	--
COMPLIANCE TOTAL PLUS MISCELLANEOUS COMPONENTS	**561.38**	**523.53**	**37.9 (6.7%)**

[1] Notes: This table is used to document compliance with programs OTHER THAN Title 24 Part 6, if applicable.

C3. ENERGY USE SUMMARY

Energy Component	Standard Design Site (MWh)	Proposed Design Site (MWh)	Margin (MWh)	Standard Design Site (MBtu)	Proposed Design Site (MBtu)	Margin (MBtu)
Space Heating	--	0.0	--	150.8	126.0	24.8
Space Cooling	24.7	26.0	-1.3	--	--	--
Indoor Fans	15.2	19.5	-4.3	--	--	--
Heat Rejection	--	--	--	--	--	--
Pumps & Misc.	--	--	--	--	--	--
Domestic Hot Water	2.2	2.6	-0.4	8.9	--	--
Indoor Lighting	13.5	7.1	6.4	--	--	--
Compliance Total	**55.6**	**55.2**	**0.4**	**159.7**	**126.0**	**33.7**
Receptacle	13.2	13.2	0.0	1.9	1.9	0.0
Process	--	--	--	--	--	--
Other Ltg	--	--	--	--	--	--
Process Motors	--	--	--	--	--	--
TOTAL	**68.8**	**68.4**	**0.4**	**161.6**	**127.9**	**33.7**

C4. UNMET LOAD HOURS

Thermal Zone Name	Cooling Unmet Load Hour Limit for Thermal Zone	Proposed Cooling Unmet Load Hours	Heating Unmet Load Hour Limit for Thermal Zone	Proposed Heating Unmet Load Hours
2-Retails	150	939.75	150	0.5
3-Data Room	150	0	150	234

D. EXCEPTIONAL CONDITIONS

The user model includes space(s) that are designed to be served by mechanical cooling systems, but the cooling systems were not included in the simulation model. A cooling system has been modeled for both the proposed and standard cases.

The user model includes space(s) without sufficient cooling equipment. Cooling equipment has been added to the model to meet cooling loads.

E. HERS VERIFICATION

This Section Does Not Apply

H1. DRY SYSTEM EQUIPMENT (furnaces, air handling units, heat pumps, VRF, economizers etc.)

1	2	3	4	5	6	7	8	9	10
			Heating				Cooling		
Equipment Name	Equipment Type	Qty	Total Heating Output (kBtu/h)	Supp Heat Output (kBtuh)	Efficiency Unit	Efficiency	Total Cooling Output (kBtu/h)	Efficiency Unit	Efficiency
(N) HVAC System 1	SZAC (Packaged3Phase)	1	60	0	AFUE	80.0	58	SEER EER	14.00 12.20
HVAC System 2	SZAC (Packaged3Phase)	1	60	0	AFUE	80.0	58	SEER EER	14.00 12.20
HVAC System 3	SZAC (Packaged3Phase)	1	30	0	AFUE	80.0	29	SEER EER	14.00 12.20

Status: N - New, A — Altered, E – Existing

H2. FAN SYSTEMS SUMMARY[1]

1	2	3	4	5	6	7	8	9	10	11
	System Type	Design OA	Supply Fan				Return Fan			
Name or Item Tag	packaged, DOAS, etc.	CFM	CFM	BHP	Watts	Control	CFM	BHP	Watts	Control
(N) HVAC System 1	SZAC	372	1710	1.000	862.0	ConstantVolume	NA	NA	NA	NA
HVAC System 2	SZAC	540	1710	1.000	862.0	ConstantVolume	NA	NA	NA	NA
HVAC System 3	SZAC	319	960	2.000	1666.1	ConstantVolume	NA	NA	NA	NA

Status: N - New, A — Altered, E – Existing

H3. EXHAUST FAN SUMMARY

This Section Does Not Apply

H4. Wet System Equipment (boilers, chillers, cooling towers, etc.)

1	2	3	4	5	6	7	8	9	10	11	12
								Pumps			
Name or Item Tag	Equipment Type	Qty	Vol (gal)	Rated Capacity (kBtu/h)	Efficiency	Standby Loss	Qty	GPM	HP	VSD (Y/N)	Shared?

Status: N - New, A — Altered, E – Existing

H5. SYSTEM SPECIAL FEATURES

1	2	3	4	5	6
System Name	Optimum Start	Window interlocks per §140.4(n)	Evaporative Cooling	Heat Recovery	Other Controls
(N) HVAC System 1	No Optimum Start	NA	No Evaporative Cooler	No Heat Recovery	No DCV Controls, No DDC No Economizer No Supply Air Temp. Control
HVAC System 2	No Optimum Start	NA	No Evaporative Cooler	No Heat Recovery	No DCV Controls, No DDC No Economizer No Supply Air Temp. Control
HVAC System 3	No Optimum Start	NA	No Evaporative Cooler	No Heat Recovery	No DCV Controls, No DDC No Economizer No Supply Air Temp. Control
(N) Water Heater1 - SHW	NA	NA	NA	NA	Fixed Temperature Control, No DDC

Notes: This table includes controls related to the performance path only. For projects using the prescriptive path, mandatory and prescriptive controls requirements are documented on the NRCC-MCH-E.

H6. MECHANICAL VENTILATION

1	2	3	4	5	6	7	8	9
	Mechanical Ventilation							
Zone Name	Ventilation Function	# hotel rooms	# of people	# of bedrooms	Supply OA CFM	Exhaust CFM	Conditioned Area (sf)	DCV or Occupant Sensor Controls, or Both
1-Lobby	Lodging - Lobbies/gyre-function Misc - All others General - Conference/meeting	0	11.02	0	372	0	969	NA
2-Retails	Retail - Sales General - Break rooms Exhaust - Toilets, private	0	21.87	0	540	0	2011	NA
3-Data Room	Misc - All others Misc - Shipping/receiving Office - Office space General - Conferenco/meeting General - Corridors Misc - Warehouses Exhaust - Toilets, private	0	9.09	0	319	0	1962	NA

Multifamily or Hotel/Motel Occupancy? (If "Yes", see DOMESTIC/SERVICE HOT WATER SYSTEM SUMMARY)	No
Does the Project include Zonal Systems?	Yes

H7. ZONAL SYSTEM AND TERMINAL UNIT SUMMARY

1	2	3	4	5	6	7		8	9	10	11	12
			Rated Capacity (kBtuh)		Airflow (cfm)				Fan			
System ID	Zone Name	System Type	Heating	Cooling	Design	Min.		Min. Ratio	BHP	Watts	Cycles	ECM Motor
1-Lobby-Trm	1-Lobby	Uncontrolled	NA	NA	1710	NA		0.00	NA	NA	NA	☐
2-Retails-Trm	2-Retails	Uncontrolled	NA	NA	1710	NA		0.00	NA	NA	NA	☐
3-Data Room-Trm	3-Data Room	Uncontrolled	NA	NA	960	NA		0.00	NA	NA	NA	☐

H8. EVAPORATIVE COOLER SUMMARY

This Section Does Not Apply

I1. WATER HEATER EQUIPMENT SUMMARY

1	2	3	4	5	6	7	8	9	10	11	12	13	14
Name	Heater Element Type	Tank Type	Qty	Tank Vol (gal)	Rated Input	Rated Input Unit	Efficiency	Efficiency Unit	Tank Insulation R-value (Int/Ext)	Standby Loss Fraction	Heat Pump Type	1st Hour Rating or Flow Rate (gal)	Tank Location or Ambient Condition
A. O. SMITH ENSB-302	Electricity	Instantaneous	1	30.00	879.0	kW	0.90	Thrml. Eff.	NA	NA	NA	NA	NA

K1. INDOOR CONDITIONED LIGHTING GENERAL INFO

1	2	3	4	5	6
				Additional (Custom) Allowance	
Occupancy Type [3]	Conditioned Floor Area [2] (ft²)	Installed Lighting Power (Watts)	Lighting Control Credits (Watts)	Area Category Footnotes (Watts)	Tailored Method (Watts)
Corridor Area	680	393	0	0	0
Healthcare Facility, and Hospitals (Exam/Treatment Room)[1]	449	240	0	0	0
Convention, Conference, Multipurpose and Meeting Area	325	216	0	0	0
Retail-Sales Area (Retail Merchandise Sales)	1,733	453	0	0	0
Lounge, Breakroom, or Waiting Area	213	144	0	0	0
Restrooms	153	42	0	0	0
All other	116	72	0	0	0
Commercial/Industrial Storage (Shipping & Handling)	642	62	0	0	0
Office Area (>250 square feet)	94	48	0	0	0
Commercial/Industrial Storage (Warehouse)	537	376	0	0	0
Building Totals:	**4,942**	**2,046**	**0**	**0**	**0**

[1] See table 140.6-C
[2] See NRCC-LTI-01-E for unconditioned spaces
[3] Lighting information for existing spaces modeled is not included in the table

K2. INDOOR CONDITIONED LIGHTING SCHEDULE

Luminaire Schedule (includes all permanent installed lighting in conditioned space, and portable lighting over 0.3 w/ft² in offices)

1	2	3	4	5	6
		Installed Watts (Conditioned)			
Name or Item Tag	Complete Luminaire Description (i.e., 3-lamp fluorescent troffer, F32T8, one dimmable electronic ballast)	Watts per luminaire	How Wattage is Determined	Total Number Luminaires	Installed Watts
A	3" Recessed Potlight 12 W	12	According to §130.0(c)	166	1,992
B	Exit Light 3W	3	According to §130.0(c)	10	30
E	Emergency BUGEYE Light 4W	4	According to §130.0(c)	6	24

K3. INDOOR CONDITIONED LIGHTING CONTROL CREDITS

Lighting Control Credits Schedule (includes all lighting controls installed in conditioned space for compliance credit per §140.6(a)2 and Table 140.6-A)

1	2	3	4	5	6	7	8	9
Area Description	Primary Function Area (must meet requirements of Table 140.6-A)	Type of Lighting Control	Power Adjustment Factor (PAF)	Luminaire Name or Item Tag	Watts per Luminaires	# of Luminaires	Lighting Controlled (Watts)	Control Credit (Watts)
5-1-Lobby	Corridor Area	NA	0.00 0.00 0.00 0.00 0.00	A	192.0	16	192	0
5-1-Lobby	Corridor Area	NA	0.00 0.00 0.00 0.00 0.00	B	3.0	1	3	0
5-2-E7 Learing Center	Healthcare Facility and Hospitals (Exam/Treatment Room)	NA	0.00 0.00 0.00 0.00 0.00	A	144.0	12	144	0

K3. INDOOR CONDITIONED LIGHTING CONTROL CREDITS

Lighting Control Credits Schedule (includes all lighting controls installed in conditioned space for compliance credit per §140.6(a)2 and Table 140.6-A)

1	2	3	4	5	6	7	8	9
Area Description	Primary Function Area (must meet requirements of Table 140.6-A)	Type of Lighting Control	Power Adjustment Factor (PAF)	Luminaire Name or Item Tag	Watts per Luminaires	# of Luminaires	Lighting Controlled (Watts)	Control Credit (Watts)
5-3-Meeting Room 1	Convention, Conference, Multipurpose and Meeting Area	NA	0.00 0.00 0.00 0.00 0.00	A	144.0	12	144	0
5-4-Retails	Retail Sales Area (Retail Merchandise Sales)	NA	0.00 0.00 0.00 0.00 0.00	A	432.0	36	432	0
5-4-Retails	Retail Sales Area (Retail Merchandise Sales)	NA	0.00 0.00 0.00 0.00 0.00	B	9.0	3	9	0
5-4-Retails	Retail Sales Area (Retail Merchandise Sales)	NA	0.00 0.00 0.00 0.00 0.00	E	12.0	3	12	0
5-5-Break Room	Lounge, Breakroom, or Waiting Area	NA	0.00 0.00 0.00 0.00 0.00	A	144.0	12	144	0
5-6-Break Room WC	Restrooms	NA	0.00 0.00 0.00 0.00 0.00	A	24.0	2	24	0
5-7-Data Room	All other	NA	0.00 0.00	A	24.0	2	24	0

K3. INDOOR CONDITIONED LIGHTING CONTROL CREDITS

Lighting Control Credits Schedule (includes all lighting controls installed in conditioned space for compliance credit per §140.6(a)2 and Table 140.6-A)

1	2	3	4	5	6	7	8	9
Area Description	Primary Function Area (must meet requirements of Table 140.6-A)	Type of Lighting Control	Power Adjustment Factor (PAF)	Luminaire Name or Item Tag	Watts per Luminaires	# of Luminaires	Lighting Controlled (Watts)	Control Credit (Watts)
			0.00 0.00 0.00 0.00 0.00					
5-8-Intake Room 1	Healthcare Facility and Hospitals (Exam/Treatment Room)	NA	0.00 0.00 0.00 0.00 0.00	A	96.0	8	96	0
5-9-Dispatch	Commercial/Industrial Storage (Shipping & Handling)	NA	0.00 0.00 0.00 0.00 0.00	A	48.0	4	48	0
5-10-Office	Office Area (>250 square feet)	NA	0.00 0.00 0.00 0.00 0.00	A	48.0	4	48	0
5-11-Delivery Hub	Commercial/Industrial Storage (Shipping & Handling)	NA	0.00 0.00 0.00 0.00 0.00	B	6.0	2	6	0
5-11-Delivery Hub	Commercial/Industrial Storage (Shipping & Handling)	NA	0.00 0.00 0.00 0.00 0.00	E	8.0	2	8	0
5-12-Intake Room 2	All other	NA	0.00 0.00 0.00 0.00 0.00	A	48.0	4	48	0

K3. INDOOR CONDITIONED LIGHTING CONTROL CREDITS

Lighting Control Credits Schedule (includes all lighting controls installed in conditioned space for compliance credit per §140.6(a)2 and Table 140.6-A)

1	2	3	4	5	6	7	8	9
Area Description	Primary Function Area (must meet requirements of Table 140.6-A)	Type of Lighting Control	Power Adjustment Factor (PAF)	Luminaire Name or Item Tag	Watts per Luminaires	# of Luminaires	Lighting Controlled (Watts)	Control Credit (Watts)
			0.00					
S-13-Meeting Room 2	Convention, Conference, Multipurpose and Meeting Area	NA	0.00 0.00 0.00 0.00 0.00	A	72.0	6	72	0
S-14-Corridor	Corridor Area	NA	0.00 0.00 0.00 0.00 0.00	A	192.0	16	192	0
S-14-Corridor	Corridor Area	NA	0.00 0.00 0.00 0.00 0.00	B	6.0	2	6	0
S-15-Secure Storage	Commercial/Industrial Storage (Warehouse)	NA	0.00 0.00 0.00 0.00 0.00	A	228.0	19	228	0
S-15-Secure Storage	Commercial/Industrial Storage (Warehouse)	NA	0.00 0.00 0.00 0.00 0.00	A	144.0	12	144	0
S-15-Secure Storage	Commercial/Industrial Storage (Warehouse)	NA	0.00 0.00 0.00 0.00 0.00	E	4.0	1	4	0

K3. INDOOR CONDITIONED LIGHTING CONTROL CREDITS

Lighting Control Credits Schedule (includes all lighting controls installed in conditioned space for compliance credit per §140.6(a)2 and Table 140.6-A)

1	2	3	4	5	6	7
Area Description	Primary Function Area (must meet requirements of Table 140.6-A)	Type of Lighting Control	Power Adjustment Factor (PAF)	Luminaire Name or Item Tag	Watts per Luminaires	# of Luminaires
S-16-Delivery Hub WIC	Restrooms	NA	0.00 0.00 0.00 0.00 0.00	B	6.0	2
S-16-Delivery Hub WIC	Restrooms	NA	0.00 0.00 0.00 0.00 0.00	A	12.0	1

T24 I
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TITLE 24 ENERGY COMPLIANCE REPORT
SHEET 1 OF 3

4686 E. Kings Canyon Rd. TI
ADDRESS: 4686 E. Kings Canyon Rd.
Fresno, CA 93702

T24-1

Project Name:	4686 E. KINGS CANYON RD. TI	NRCC-PRF-01-E	Page 13 of 16
Project Address:	4686 E. KINGS CANYON RD. FRESNO 93702	Calculation Date/Time:	09:13, Fri, Apr 15, 2022
Input File Name:	2848_4686 E. KINGS CANYON RD. DISPENSARY_Energy Analysis_V8.cibd19x		

K4. INDOOR CONDITIONED LIGHTING MANDATORY LIGHTING CONTROLS

Building Level Controls

1	2
Mandatory Demand Response §110.12(c)	Shut-Off Controls §130.1(c)
NA	NA

Area Level Controls (includes all lighting controls installed in conditioned space to meet mandatory requirements per §130.1)

4	5	6	7	8	9	10
Area Description	Area Category Primary Function Area	Area Controls 130.1(a)	Multi-Level Controls 130.1(b)	Shut-Off Controls 130.1(c)	Primary Daylighting 130.1(d)	Secondary Daylighting 140.5(d)
Lobby	Corridor Area	Required	Exempt	Required	NA	NA
E7 Learing Center	Healthcare Facility and Hospitals (Exam/Treatment Room)	Required	Exempt	Required	NA	NA
Meeting Room 1	Convention, Conference, Multipurpose and Meeting Area	Required	Required	Required	NA	NA
Retails	Retail Sales Area (Retail Merchandise Sales)	Required	Exempt	Required	NA	NA
Break Room	Lounge, Breakroom, or Waiting Area	Required	Required	Required	NA	NA
Break Room WIC	Restrooms	Required	Exempt	Required	NA	NA
Data Room	All other	Required	Exempt	Required	NA	NA
Intake Room 1	Healthcare Facility and Hospitals (Exam/Treatment Room)	Required	Exempt	Required	NA	NA
Dispatch	Commercial/Industrial Storage (Shipping & Handling)	Required	Exempt	Required	NA	NA

Project Name:	4686 E. KINGS CANYON RD. TI	NRCC-PRF-01-E	Page 14 of 16
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L. DECLARATION OF REQUIRED CERTIFICATES OF INSTALLATION

Table Instructions: Selections shall be made by Documentation Author to indicate which Certificates of Installation must be submitted for the features to be recognized for compliance. These documents bust be retained and provided to the building inspector during construction and can be found online at: https://www.energy.ca.gov/title24/2019standards/2019_compliance_documents/Nonresidential_Documents/NRCI/

Building Component	Form/Title
Mechanical	NRCI-MCH-01-E - Must be submitted for all buildings
Plumbing	NRCI-PLB-01-E - Must be submitted for all buildings
Indoor Lighting	NRCI-LTI-01-E - Must be submitted for all buildings

Project Name:	4686 E. KINGS CANYON RD. TI	NRCC-PRF-01-E	Page 15 of 16
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Input File Name:	2848_4686 E. KINGS CANYON RD. DISPENSARY_Energy Analysis_V8.cibd19x		

M. DECLARATION OF REQUIRED CERTIFICATES OF ACCEPTANCE

Table Instructions: Selections shall be made by Documentation Author to indicate which Certificates of Acceptance must be submitted for the features to be recognized for compliance. These documents must be provided to the building inspector during construction and must be completed through an Acceptance Test Technician Certification Provider (ATTCP). For more information visit:https://www.energy.ca.gov/title24/2019standards/2019_compliance_documents/Nonresidential_Documents/NRCA/

Building Component	Form/Title
Indoor Lighting	NRCA-LTI-02-A - Occupancy Sensors and Automatic Time Switch Controls
Mechanical	NRCA-MCH-02-A Outdoor Air must be submitted for all newly installed HVAC units. Note: MCH02-A can be performed in conjunction with MCH-07-A Supply Fan VFD Acceptance (if applicable) since testing activities overlap
	NRCA-MCH-03-A Constant Volume Single Zone HVAC

Project Name:	4686 E. KINGS CANYON RD. TI	NRCC-PRF-01-E	Page 16 of 16
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Input File Name:	2848_4686 E. KINGS CANYON RD. DISPENSARY_Energy Analysis_V8.cibd19x		

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT

I certify that this Certificate of Compliance documentation is accurate and complete.

Documentation Author Name: Viranchi Shah	Signature: Viranchi Shah
Company: www.gettitle24.com	
Address: 14730 Beach Blvd.	Signature Date: 2022-04-15
City/State/Zip: La Mirada CA 90638	CEA/ HERS Certification Identification (if applicable):
Phone: 7148884736	

RESPONSIBLE PERSON'S DECLARATION STATEMENT

I certify the following under penalty of perjury, under the laws of the State of California:

1. The information provided on this Certificate of Compliance is true and correct.
2. I am eligible under Division 3 of the Business and Professions Code to accept responsibility for the building design or system design identified on this Certificate of Compliance (responsil
3. The energy features and performance specifications, materials, components, and manufactured devices for the building design or system design identified on this Certificate of Complia of Title 24, Part 1 and Part 6 of the California Code of Regulations.
4. The building design features or system design features identified on this Certificate of Compliance are consistent with the information provided on other applicable compliance docume plans and specifications submitted to the enforcement agency for approval with this building permit application.
5. I will ensure that a completed signed copy of this Certificate of Compliance shall be made available with the building permit(s) issued for the building, and made available to the enforce inspections. I understand that a completed signed copy of this Certificate of Compliance is required to be included with the documentation the builder provides to the building owner at o

Responsible Envelope Designer Name:	Signature: NOT IN SCOPE	
Company: InnoDez		
Address: 726 Foxbrough Pl	Date Signed:	
City/State/Zip: Pleasanton CA 94566		
Phone:	Title:	License #:

STATE OF CALIFORNIA

Indoor Lighting

NRCC-LTI-E   CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE			NRCC-LTI-E
This document is used to demonstrate compliance with requirements in §110.9, §110.12(c), §130.0, §130.1, §140.6 and §141.0(b)2 for indoor lighting scopes using the prescriptive path.			
Project Name:	4686 E. KINGS CANYON RD. TI	Report Page:	(Page 1 of 12)
Project Address:	4686 E. KINGS CANYON RD.	Date Prepared:	4/15/2022

A. GENERAL INFORMATION

01	Project Location (city)	FRESNO	04	Total Conditioned Floor Area (ft²)	4,942
02	Climate Zone	13	05	Total Unconditioned Floor Area (ft²)	0
03	Occupancy Types Within Project (select all that apply):		06	# of Stories (Habitable Above Grade)	1

☒ Office	☒ Retail	☒ Warehouse	☐ Hotel/Motel	☐ School	☒ Support Areas
☐ Parking Garage	☐ High-Rise Residential	☐ Relocatable	☒ Healthcare	☒ Other (Write in)	See Table I

B. PROJECT SCOPE

This table includes any lighting systems that are within the scope of the permit application and are demonstrating compliance using the prescriptive path outlined in §140.6 or §141.0(b)2 for alterations.

Scope of Work	Conditioned Spaces		Unconditioned Spaces	
01	02	03	04	05
My Project Consists of (check all that apply):	Calculation Method	Area (ft²)	Calculation Method	Area (ft²)
☐ New Lighting System				
☐ New Lighting System - Parking Garage				
☒ Altered Lighting System	Area Category Method	4942	Area Category Method	0
Total Area of Work (ft²)	4942		0	

STATE OF CALIFORNIA

Indoor Lighting

NRCC-LTI-E   CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE			NRCC-LTI-E
Project Name:	4686 E. KINGS CANYON RD. TI	Report Page:	(Page 2 of 12)
Project Address:	4686 E. KINGS CANYON RD.	Date Prepared:	4/15/2022

C. COMPLIANCE RESULTS

If any cell on this table says "DOES NOT COMPLY" or "COMPLIES with Exceptional Conditions" refer to Table D. for guidance.

Lighting in conditioned and unconditioned spaces must not be combined for compliance per §140.6(b)1	Allowed Lighting Power per §140.6(b) (Watts)							Adjusted Lighting Power per §140.6(a) (Watts)					Compliance Results
	01	02	03	04		05		06	07		08		09
	Complete Building §140.6(c)1 (See Table I)	Area Category §140.6(c)2 (See Table J)	Area Category Additional §140.6(c)2G (+) (See Table J)	Tailored §140.6(c)3 (+) (See Table K)	=	Total Allowed (Watts)	≥	Total Designed (Watts) (See Table F)	Adjustments PAF Lighting Control Credits §140.6(a)2 (-) (See Table F)	=	Total Adjusted (Watts) *Includes Adjustments		05 must be >= 08 §140.6
Conditioned		3,905.8	0		=	3,906	≥	2,046	0	=	2046		COMPLIES
Unconditioned					=		≥			=			
Controls Compliance (See Table H for Details)													COMPLIES
Rated Power Reduction Compliance (See Table G for Details)													

D. EXCEPTIONAL CONDITIONS

This table is auto-filled with uneditable 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 table includes all permanent designed lighting and all portable lighting in offices.

Designed Wattage: Conditioned Spaces

01	02	03	04	05	06	07	08	09	10	
Name or Item Tag	Complete Luminaire Description	Modular (Track) Fixture	Small Aperture & Color Change[1]	Watts per Luminaire[2]	How is Wattage determined	Total Number of Luminaires	Excluded per §140.6(a)3	Design Watts	Field Inspector Pass	Fail
A	3" Recessed Potlight 12 W	No	No	12	Mfr. Spec	166	No	1,992	☐	☐
B	Exit Light 3W	No	No	3	Mfr. Spec	10	No	30	☐	☐

STATE OF CALIFORNIA

Indoor Lighting

NRCC-LTI-E   CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE			NRCC-LTI-E
Project Name:	4686 E. KINGS CANYON RD. TI	Report Page:	(Page 3 of 12)
Project Address:	4686 E. KINGS CANYON RD.	Date Prepared:	4/15/2022

F. INDOOR LIGHTING FIXTURE SCHEDULE

E	Emergency BUGEYE Light 4W	No	No	4	Mfr. Spec	6	No	24	☐	☐
							Total Designed Watts: CONDITIONED SPACES	2,046		

[1]*FOOTNOTE: Design Watts for small aperture and color changing luminaires which qualify per §140.6(a)4B is adjusted to be 75% of their rated wattage. Table F automatically makes this adjustment, the permit applicant should enter full rated wattage in column 05.*

[2]*Authority Having Jurisdiction may ask for Luminaire cut sheets to confirm wattage used for compliance per §130.0(c) Wattage used must be the maximum rated for the luminaire, not the lamp.*

G. MODULAR LIGHTING SYSTEMS

This section does not apply to this project.

H. INDOOR LIGHTING CONTROLS (Not including PAFs)

*This table includes lighting controls for conditioned and unconditioned spaces. When a control having a * 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

01	02	03	
Mandatory Demand Response §110.12(c)	Shut-off controls §130.1(c)	Field Inspector Pass	Fail
Not Required <= 10,000 SF	See Area/Space Level Controls	☐	☐

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H. INDOOR LIGHTING CONTROLS (Not including PAFs)

Area Level Controls

04	05	06	07	08	09	10	11	12	
Area Description	Complete Building or Area Category Primary Function Area	Area Controls §130.1(a)	Multi-Level Controls §130.1(b)	Shut-Off Controls §130.1(c)	Primary/Sky lit Daylighting §130.1(d)	Secondary Daylighting §140.6(d)	Interlocked Systems §140.6(a)1	Field Inspector Pass	Fail
Lobby	Corridor Area	Manual ON/OFF	Exempt*	Other	N/A	N/A	No	☐	☐
E7 Learing Center	Exam/Treatment Room	Manual ON/OFF	Exempt*	Other	N/A	N/A	No	☐	☐
Meeting Room 1	Convention, Conference, Multipurpose and Meeting Center Areas	Manual ON/OFF	Dimmer	Other	N/A	N/A	No	☐	☐
Retails	Retail Merchandise Sales	Manual ON/OFF	Exempt*	Other	N/A	N/A	No	☐	☐
Break Room	Lounge Breakroom or Waiting Area	Manual ON/OFF	Dimmer	Other	N/A	N/A	No	☐	☐
Break Room WIC	Restrooms	Manual ON/OFF	Exempt*	Occupancy Sensor	N/A	N/A	No	☐	☐
Data Room	All Other Space Types	Manual ON/OFF	Exempt*	Other	N/A	N/A	No	☐	☐
Intake Room 1	Exam/Treatment Room	Manual ON/OFF	Exempt*	Other	N/A	N/A	No	☐	☐
Dispatch	Warehouse	Manual ON/OFF	Exempt*	Other	N/A	N/A	No	☐	☐
Office	Office greater than 250 square feet	Manual ON/OFF	Exempt*	Other	N/A	N/A	No	☐	☐
Intake Room 2	All Other Space Types	Manual ON/OFF	Exempt*	Other	N/A	N/A	No	☐	☐

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H. INDOOR LIGHTING CONTROLS (Not including PAFs)

Meeting Room 2	Convention, Conference, Multipurpose and Meeting Center Areas	Manual ON/OFF	Exempt*	Other	N/A	N/A	No	☐	☐
Corridor	Corridor Area	Manual ON/OFF	Dimmer	Other	N/A	N/A	No	☐	☐
Secure Storage	Warehouse	Manual ON/OFF	Dimmer	Other	N/A	N/A	No	☐	☐
Delivery Hub WIC	Restrooms	Manual ON/OFF	Exempt*	Occupancy Sensor	N/A	N/A	No	☐	☐

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H. INDOOR LIGHTING CONTROLS (Not including PAFs)

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H. INDOOR LIGHTING CONTROLS (Not including PAFs)

*NOTES: Controls with a * require a note in the space below explaining how compliance is achieved. *EX: Conference 1: Primary/Skylight Daylighting: Exempt because less than 120 watts of general lighting; EXCEPTION 1 to §130.1(d)2*	Plan Sheet Showing Daylit Zones:

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H. INDOOR LIGHTING CONTROLS (Not including PAFs)

Lobby	connected load<0.5W
E7 Learing Center	connected load<0.5W
Meeting Room 1	
Retails	connected load<0.5W
Break Room	
Break Room WIC	connected load<0.5W
Data Room	connected load<0.5W
Intake Room 1	Area<150 sq.ft
Dispatch	Area<150 sq.ft
Office	connected load<0.5W
Intake Room 2	Area<150 sq.ft
Meeting Room 2	Area<150 sq.ft
Corridor	
Secure Storage	

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TITLE 24 ENERGY COMPLIANCE REPORT
SHEET 2 OF 3

4686 E. Kings Canyon Rd. TI
ADDRESS: 4686 E. Kings Canyon Rd.
Fresno, CA 93702

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H. INDOOR LIGHTING CONTROLS (Not including PARs)

Delivery Hub WIC connected load<0.5W

I. LIGHTING POWER ALLOWANCE: COMPLETE BUILDING OR AREA CATEGORY METHODS

Each area complying using the Complete Building or Area Category Methods per §140.6(b) are included in this table. Column 06 indicates if additional lighting power allowances per §140.6(c) or adjustments per §140.6(a) are being used .

Conditioned Spaces

01	02	03	04	05	06	
Area Description	Complete Building or Area Category Primary Function Area	Allowed Density (W/ft^2)	Area (ft^2)	Allowed Wattage (Watts)	Additional Allowance / Adjustment Area Category	PAF
Lobby	Corridor Area	0.6	429	257.4	No	No
E7 Learing Center	Exam/Treatment Room	1.15	322	370.3	No	No
Meeting Room 1	Convention, Conference, Multipurpose and Meeting Center Areas	0.85	218	185.3	No	No
Retails	Retail Merchandise Sales	1	1,733	1,733	No	No
Break Room	Lounge Breakroom or Waiting Area	0.65	213	138.5	No	No
Break Room WIC	Restrooms	0.65	65	42.2	No	No
Data Room	All Other Space Types	0.4	55	22	No	No
Intake Room 1	Exam/Treatment Room	1.15	127	146	No	No
Dispatch	Warehouse	0.6	88	52.8	No	No
Office	Office greater than 250 square feet	0.65	94	61.1	No	No
Delivery Hub	Warehouse	0.6	554	332.4	No	No
Intake Room 2	All Other Space Types	0.4	61	24.4	No	No
Meeting Room 2	Convention, Conference, Multipurpose and Meeting Center Areas	0.85	107	91	No	No
Corridor	Corridor Area	0.6	251	150.6	No	No
Secure Storage	Commercial Industrial Storage Area	0.45	537	241.6	No	No
Delivery Hub WIC	Restrooms	0.65	88	57.2	No	No
	TOTALS:	4,942	3,905.8	See Tables J, or P for detail		

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J. ADDITIONAL ALLOWANCE: AREA CATEGORY METHOD QUALIFYING LIGHTING 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

This section does not apply to this project.

O. ADDITIONAL LIGHTING ALLOWANCE: TAILORED VERY VALUABLE MERCHANDISE

This section does not apply to this project.

P. POWER ADJUSTMENT: LIGHTING CONTROL CREDIT (POWER ADJUSTMENT FACTOR (PAF))

This section does not apply to this project.

Q. RATED POWER REDUCTION COMPLIANCE FOR ALTERATIONS

This section does not apply to this project.

R. 80% LIGHTING POWER FOR ALL ALTERATIONS - CONTROLS EXCEPTIONS

This section does not apply to this project.

S. DAYLIGHT DESIGN POWER ADJUSTMENT FACTOR (PAF)

This section does not apply to this project.

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T. DECLARATION OF REQUIRED CERTIFICATES OF INSTALLATION

Selections have been made based on information provided in this document. If any selection have been changed by permit applicant, an 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 https://www.energy.ca.gov/title24/2019standards/2019_compliance_documents/Nonresidential_Documents/NRCI/

Yes	No	Form/Title	Field Inspector Pass	Field Inspector Fail
◉	○	NRCI-LTI-01-E - Must be submitted for all buildings	☐	☐
○	◉	NRCI-LTI-02-E - Must be submitted for a lighting control system, or for an Energy Management Control System (EMCS), to be recognized for compliance.	☐	☐
○	◉	NRCI-LTI-04-E - Must be submitted for two interlocked systems serving an auditorium, a convention center, a conference room, a multipurpose room or a theater to be recognized for compliance.	☐	☐
○	◉	NRCI-LTI-05-E- Must be submitted for a Power Adjustment Factor (PAF) to be recognized for compliance.	☐	☐
○	◉	NRCI-LTI-06-E- Must be submitted for additional wattage installed in a video conferencing studio to be recognized for compliance.	☐	☐

U. DECLARATION OF REQUIRED CERTIFICATES OF ACCEPTANCE

Selections have been made based on information provided in this document. If any selection have 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 Provider (ATTCP). For more information visit: http://www.energy.ca.gov/title24/attcp/providers.html

Yes	No	Form/Title	Field Inspector Pass	Field Inspector Fail
◉	○	NRCA-LTI-02-A - Must be submitted for occupancy sensors and automatic time switch controls.	☐	☐
○	◉	NRCA-LTI-03-A - Must be submitted for automatic daylight controls.	☐	☐
○	◉	NRCA-LTI-04-A - Must be submitted for demand responsive lighting controls.	☐	☐
○	◉	NRCA-LTI-05-A. - Must be submitted for institutional tuning power adjustment factor (PAF)	☐	☐

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DOCUMENTATION AUTHOR'S DECLARATION STATEMENT

I certify that this Certificate of Compliance documentation is accurate and complete.

Documentation Author Name: Viranchi Shah	Documentation Author Signature: Viranchi Shah
Company: www.gettitle24.com	Signature Date: 4/15/2022
Address: 14730 Beach Blvd.	CEA/ HERS Certification Identification (if applicable):
City/State/Zip: La Mirada CA 90638	Phone: 7148884736

RESPONSIBLE PERSON'S DECLARATION STATEMENT

I certify the following under penalty of perjury, under the laws of the State of California:

1. The information provided on this Certificate of Compliance is true and correct.
2. I am eligible under Division 3 of the Business and Professions Code to accept responsibility for the building design or system design identified on this Certificate of Compliance (respo
3. The energy features and performance specifications, materials, components, and manufactured devices for the building design or system design identified on this Certificate of Com of Title 24, Part 1 and Part 6 of the California Code of Regulations.
4. The building design features or system design features identified on this Certificate of Compliance are consistent with the information provided on other applicable compliance doc plans and specifications submitted to the enforcement agency for approval with this building permit application.
5. I will ensure that a completed signed copy of this Certificate of Compliance shall be made available with the building permit(s) issued for the building, and made available to the enf Inspections. I understand that a completed signed copy of this Certificate of Compliance is required to be included with the documentation the builder provides to the building own

Responsible Designer Name:	Responsible Designer Signature:
Company:	Date Signed:
Address: 726 Roxborough Pl	License:
City/State/Zip: Pleasanton CA 94588	Phone:

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A. GENERAL INFORMATION

01	Project Location (city)	FRESNO	04	Total Illuminated Hardscape Area (ft^2)	0
02	Climate Zone	13			
03	Outdoor Lighting Zone per Title 24 Part 1 §10-114 or as designated by Authority Having Jurisdiction (AHJ):				
☐	LZ-0: Very Low - Undeveloped Parkland	☐ LZ-2: Moderate - Rural Areas	☐ LZ-4: High - Must be reviewed by CA Energy Commission for Approval		
☐	LZ-1: Low - Developed Parkland	☒ LZ-3: Moderately High - Urban Areas			

B. PROJECT SCOPE

This table includes outdoor lighting systems that are within the scope of the permit application and are demonstrating compliance using the prescriptive path outlined in §140.7 or §141.0(b)2I. for alterations.

My Project Consists of:

01		02	
☐	New Lighting System	Must Comply with Allowances from §140.7	
☒	Altered Lighting System	Is your alteration increasing the connected lighting load (Watts)?	◉ Yes ○ No
03		04	05
% of Existing Luminaires Being Altered[1]		Sum Total of Luminaires Being Added or Altered	Calculation Method
☐ < 10% ☐ >= 10% and < 50% ☐ >= 90%			

Please proceed to Table F. Outdoor Lighting Fixture Schedule to define the project's luminaires.

[1] FOOTNOTES: % of Existing Luminaires Being Altered = (Sum Total of Luminaires Being Added or Altered / Existing Luminaires within the Scope of the Permit Application) x 100.

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C. COMPLIANCE RESULTS

Results in this table are automatically calculated from data input and calculations in Tables F through I. Note: If any cell on this table says "COMPLIES with Exceptional Conditions" refer to Table D. Exceptional Conditions for guidance or see applicable Table referenced below.

Calculations of Total Allowed Lighting Power (Watts) §140.7 or §141.0(b)2I									Compliance Results		
01		02		03		04		05		06	07		08	09
General Hardscape Allowance (§140.7(d)) (See Table I)	+	Per Application (§140.7(d)2) (See Table J)	+	Sales Frontage (§140.7(d)3 (See Table K)	+	Ornamental (§140.7(d)4 (See Table L)	+	Per Specific Area (§140.7(d)5 (See Table M)	OR	Existing Power Allowance (§141.0(b)2L. (See Table N)	=	Total Allowed (Watts)	≥	Total Actual (Watts)	EF must be >= 68
0	+	—	+	—	+	—	+	90	OR	—	=	90	≥	90	COMPLIES
Cutoff Compliance (See Table G for Details)															N/A
Controls Compliance (See Table H for Details)															COMPLIES

D. EXCEPTIONAL CONDITIONS

This table is auto-filled with uneditable 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.

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F. OUTDOOR LIGHTING FIXTURE SCHEDULE

For new or altered lighting systems demonstrating compliance with §140.7, all new luminaires being installed and any existing luminaires remaining or being moved within the spaces covered by the permit application are included in the Table below. For altered lighting systems using the Existing Power method per §141.0(b)2I, only new luminaires being installed and replacement luminaires being installed as part of the project scope are included (ie, existing luminaires remaining or existing luminaires being moved are not included).

Designed Wattage:

01	02	03	04	05	06	07	08	09	10	
Name or Area Tag	Complete Luminaire Description		Watts per luminaire[1]	How is Wattage determined	Total number luminaires[2]	Luminaire Status[3]	Excluded per §140.7(a)	Design Watts	Cutoff Req. = 6,200 initial lumen output §130.2(b)[4]	Field Inspector
										Pass / Fail
C	Wall Sconce 18 W	☐ Linear	18	Mfr. Spec	5	New	☐	90	NA: < 6200 lumens	☐ ☐
						Total Design Watts:		90		

NOTES: Luminaires with a "" require a note in the space provided per explaining how compliance is achieved.*
NA: Luminaire is partially or entirely EXEMPT from §130.2(b)

[1] FOOTNOTES: Authority Having Jurisdiction may ask for Luminaire cut sheets to confirm wattage used for compliance per §130.0(c)
[2] For linear luminaires, wattage should be indicated as W/ft instead of Watts/luminaire. Total linear feet should be indicated in column 05 instead of number of luminaires.
[3] Select "New" for new luminaires in a new outdoor lighting project, or for added luminaires in an alteration. Select "Altered" for replacement luminaires in an alteration. Select "Existing to Remain" for existing luminaires within the project scope that are not being altered and are remaining. Select "Existing Reinstalled" for existing luminaires which are being removed and reinstalled as part of the project scope.
[4] compliance with mandatory cutoff requirements is required for luminaires with initial lumen output >= 6,200 unless exempted by §130.2(b)

G. CUTOFF REQUIREMENTS (BUG)

This section does not apply to this project.

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H. OUTDOOR LIGHTING CONTROLS

This table demonstrates compliance with controls requirements for all new or altered luminaires installed as part of the permit application. For alteration projects, luminaires which are existing to remain (ie untouched) and luminaires which are removed and reinstalled (wiring only) do not need to be included in this table even if they are within the spaces covered by the permit application.
*When an option having a * is selected, the notes section of this table must be completed. The lighting controls section of the Compliance Summary Table on the first page will show "DOES NOT COMPLY" if the notes are left blank.*

Mandatory Controls

01	02	03	04	05	
Area Description	Shut Off §130.2(b)1i	Auto-Schedule §130.2(c)1E	Motion Sensor §130.2(c)1F	Field Inspector	
				Pass	Fail
Building Facade	Photocontrol	Yes	Yes	☐	☐

*NOTES: Controls with a * require a note in the space below explaining how compliance is achieved.*
NA: Not permitted by health & safety or by exception (ie §130.2b)

I. LIGHTING POWER ALLOWANCE (per §140.7)

This table includes areas using allowance calculations per §140.7. General Hardscape Allowance is per Table 140.7-A while "Use it or lose it" Allowances are per Table 140.7-B . Indicate which allowances are being used to expand sections for user input. Luminaires that qualify for one of the "Use it or lose it" allowances shall not qualify for another "Use it or lose it" allowance.

	01				
	☐ General Hardscape Allowance Table I (below)	"Use it or lose it" Allowance (select all that apply) (select all that apply)			
		☐ Per Application Table J	☐ Sales Frontage Table K	☐ Ornamental Table L	☒ Per Specific Area Table M
Calculated General Hardscape Lighting Power Allowance per Table 140.7-A (L2 0, 1 & 4)					
This section does not apply to this project.					
Calculated General Hardscape Lighting Power Allowance per Table 140.7-A (L2 2 & 3)					
This section does not apply to this project.					

J. LIGHTING ALLOWANCE: PER APPLICATION

This section does not apply to this project.

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K. LIGHTING ALLOWANCE: SALES FRONTAGE

This section does not apply to this project.

L. LIGHTING ALLOWANCE: ORNAMENTAL

This section does not apply to this project.

M. LIGHTING ALLOWANCE: PER SPECIFIC AREA

This table includes areas using the wattage allowance per specific area from Table 140.7-B - More than one specific area allowance may be taken in a single project, if applicable. However, multiple specific area allowances may not be taken for the exact same area on the site.

01	02	03	04	05	06	07	08	09	10
		CALCULATED ALLOWANCE (Watts)			DESIGN WATTS				
Area Description	Specific Area Type per Table 140.7-B	Specific Area (W/ft^2)	Allowed Density (W/ft^2)	Extra Allowance (Watts)	Luminaire Name or Item Tag	Watts per luminaire	# of luminaires	Design Watts	Additional Allowance (Watts)
Building Facade	BuildingFacade	800	0.17	136	C	18	5	90	90
						Total Design Watts for this Area:		90	
								Total Allowance (Watts) All Areas:	90

[1] FOOTNOTES: See Table 140.7-B for rules for calculating the specific areas (ft^2 for these additional lighting allowances.
[2] For luminaires indicated in Table F as linear, wattage in column 07 is W/ft instead of Watts/luminaire. Total linear feet should be indicated in column 08 instead of number of luminaires.

N. EXISTING CONDITIONS POWER ALLOWANCE (alterations only)

This section does not apply to this project.

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O. DECLARATION OF REQUIRED CERTIFICATES OF INSTALLATION

Selections have been made based on information provided in this document. If any selection have been changed by permit applicant, an 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 https://www.energy.ca.gov/title24/2019standards/2019_compliance_documents/Nonresidential_Documents/NRCI/

Yes	No	Form/Title	Field Inspector Pass	Field Inspector Fail
◉	○	NRCI-LTO-01-E - Must be submitted for all buildings	☐	☐
◉	○	NRCI-LTO-02-E - Must be submitted for a lighting control system, or for an Energy Management Control System (EMCS), to be recognized for compliance.	☐	☐

P. DECLARATION OF REQUIRED CERTIFICATES OF ACCEPTANCE

Selections have been made based on information provided in this document. If any selection have been changed by permit applicant, an explanation should be included in Table E. Additional Remarks. These documents must be provided to the building inspector during construction and must be completed through an Acceptance Test Technician Certification Provider (ATTCP). For more information visit: http://www.energy.ca.gov/title24/attcp/providers.html

Yes	No	Form/Title	Field Inspector Pass	Field Inspector Fail
◉	○	NRCA-LTO-02-A - Must be submitted for all outdoor lighting controls except for alterations where controls are added to <= 20 luminaires.	☐	☐

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DOCUMENTATION AUTHOR'S DECLARATION STATEMENT

I certify that this Certificate of Compliance documentation is accurate and complete.

Documentation Author Name: Viranchi Shah	Documentation Author Signature: Viranchi Shah
Company: www.gettitle24.com	Signature Date: 4/15/2022
Address: 14730 Beach Blvd.	CEA/ HERS Certification Identification (if applicable):
City/State/Zip: La Mirada CA 90638	Phone: 7148884736

RESPONSIBLE PERSON'S DECLARATION STATEMENT

I certify the following under penalty of perjury, under the laws of the State of California:

1. The information provided on this Certificate of Compliance is true and correct.
2. I am eligible under Division 3 of the Business and Professions Code to accept responsibility for the building design or system design identified on this Certificate of Compliance (responsible designer)
3. The energy features and performance specifications, materials, components, and manufactured devices for the building design or system design identified on this Certificate of Compliance conform to the requirements of Title 24, Part 1 and Part 6 of the California Code of Regulations.
4. The building design features or system design features identified on this Certificate of Compliance are consistent with the information provided on other applicable compliance documents, worksheets, calculations, plans and specifications submitted to the enforcement agency for approval with this building permit application.
5. I will ensure that a completed signed copy of this Certificate of Compliance shall be made available with the building permit(s) issued for the building, and made available to the enforcement agency for all applicable inspections. I understand that a completed signed copy of this Certificate of Compliance is required to be included with the documentation the builder provides to the building owner at occupancy.

Responsible Designer Name:	Responsible Designer Signature:
Company:	Date Signed:
Address: 726 Roxborough Pl	License:
City/State/Zip: Pleasanton CA 94588	Phone:

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TITLE 24 ENERGY COMPLIANCE REPORT
SHEET 3 OF 3

4686 E. Kings Canyon Rd. TI
ADDRESS: 4686 E. Kings Canyon Rd.
Fresno, CA 93702

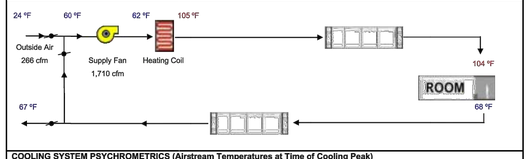
T24-3

HVAC SYSTEM HEATING AND COOLING LOADS SUMMARY

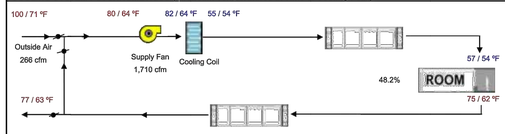
Project Name: 4686 E. KINGS CANYON RD. TI — Date: 4/15/2022
System Name: (N) HVAC System 1 — Floor Area: 969

ENGINEERING CHECKS		SYSTEM LOAD	COIL COOLING PEAK			COIL HTG. PEAK	
Number of Systems	1		CFM	Sensible	Latent	CFM	Sensible
Heating System							
Output per System	60,000	**Total Room Loads**	3,498	67,722	4,881	1,121	42,868
Total Output (Btuh)	60,000	**Return Vented Lighting**		0			
Output (Btuh/sqft)	61.9	**Return Air Ducts**		3,386			2,143
Cooling System		**Return Fan**		0			0
Output per System	60,000	**Ventilation**	266	6,553	549	266	12,136
Total Output (Btuh)	60,000	**Supply Fan**		3,035			-3,035
Total Output (Tons)	5.0	**Supply Air Ducts**		3,386			2,143
Total Output (Btuh/sqft)	61.9						
Total Output (sqft/Ton)	193.8	**TOTAL SYSTEM LOAD**		84,082	5,430		56,256
Air System							
CFM per System	1,710	**HVAC EQUIPMENT SELECTION**					
Airflow (cfm)	1,710	Carrier XP-06090		56,136	0		60,000
Airflow (cfm/sqft)	1.76						
Airflow (cfm/Ton)	342.0						
Outside Air (%)	15.5%	**Total Adjusted System Output** (Adjusted for Peak Design conditions)		56,136	0		60,000
Outside Air (cfm/sqft)	0.27						
Note: values above given at ARI conditions		**TIME OF SYSTEM PEAK**			Jul 4 PM		Jan 1 AM

HEATING SYSTEM PSYCHROMETRICS (Airstream Temperatures at Time of Heating Peak)



COOLING SYSTEM PSYCHROMETRICS (Airstream Temperatures at Time of Cooling Peak)

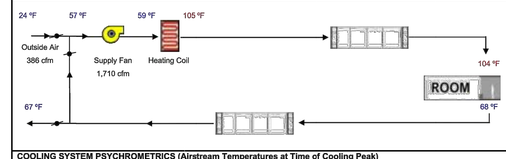


HVAC SYSTEM HEATING AND COOLING LOADS SUMMARY

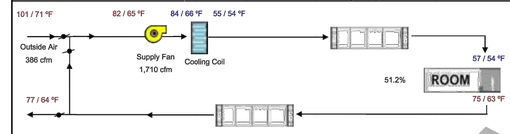
Project Name: 4686 E. KINGS CANYON RD. TI — Date: 4/15/2022
System Name: HVAC System 2 — Floor Area: 2,011

ENGINEERING CHECKS		SYSTEM LOAD	COIL COOLING PEAK			COIL HTG. PEAK	
Number of Systems	1		CFM	Sensible	Latent	CFM	Sensible
Heating System							
Output per System	60,000	**Total Room Loads**	4,250	81,622	9,684	1,147	43,827
Total Output (Btuh)	60,000	**Return Vented Lighting**		0			
Output (Btuh/sqft)	29.8	**Return Air Ducts**		4,081			2,191
Cooling System		**Return Fan**		0			0
Output per System	60,000	**Ventilation**	386	9,874	-280	386	17,609
Total Output (Btuh)	60,000	**Supply Fan**		3,035			-3,035
Total Output (Tons)	5.0	**Supply Air Ducts**		4,081			2,191
Total Output (Btuh/sqft)	29.8						
Total Output (sqft/Ton)	402.2	**TOTAL SYSTEM LOAD**		102,693	9,404		62,784
Air System							
CFM per System	1,710	**HVAC EQUIPMENT SELECTION**					
Airflow (cfm)	1,710	Carrier XP-06090		56,834	190		60,000
Airflow (cfm/sqft)	0.85						
Airflow (cfm/Ton)	342.0						
Outside Air (%)	22.5%	**Total Adjusted System Output** (Adjusted for Peak Design conditions)		56,834	190		60,000
Outside Air (cfm/sqft)	0.19						
Note: values above given at ARI conditions		**TIME OF SYSTEM PEAK**			Jul 3 PM		Jan 1 AM

HEATING SYSTEM PSYCHROMETRICS (Airstream Temperatures at Time of Heating Peak)



COOLING SYSTEM PSYCHROMETRICS (Airstream Temperatures at Time of Cooling Peak)

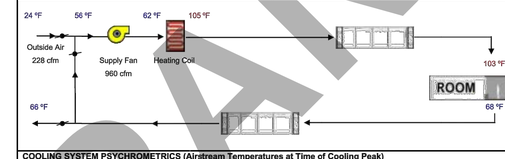


HVAC SYSTEM HEATING AND COOLING LOADS SUMMARY

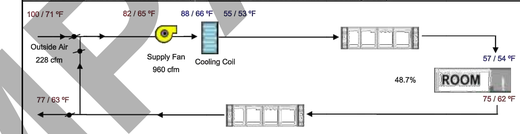
Project Name: 4686 E. KINGS CANYON RD. TI — Date: 4/15/2022
System Name: HVAC System 3 — Floor Area: 1,962

ENGINEERING CHECKS		SYSTEM LOAD	COIL COOLING PEAK			COIL HTG. PEAK	
Number of Systems	1		CFM	Sensible	Latent	CFM	Sensible
Heating System							
Output per System	30,000	**Total Room Loads**	4,463	85,719	4,025	1,679	62,692
Total Output (Btuh)	30,000	**Return Vented Lighting**		0			
Output (Btuh/sqft)	15.3	**Return Air Ducts**		4,286			3,135
Cooling System		**Return Fan**		0			0
Output per System	30,000	**Ventilation**	228	5,581	356	228	10,200
Total Output (Btuh)	30,000	**Supply Fan**		5,866			-5,866
Total Output (Tons)	2.5	**Supply Air Ducts**		4,286			3,135
Total Output (Btuh/sqft)	15.3						
Total Output (sqft/Ton)	784.8	**TOTAL SYSTEM LOAD**		105,738	4,381		73,296
Air System							
CFM per System	960	**HVAC EQUIPMENT SELECTION**					
Airflow (cfm)	960	Carrier XP-03040		29,019	0		30,000
Airflow (cfm/sqft)	0.49						
Airflow (cfm/Ton)	384.0						
Outside Air (%)	23.7%	**Total Adjusted System Output** (Adjusted for Peak Design conditions)		29,019	0		30,000
Outside Air (cfm/sqft)	0.12						
Note: values above given at ARI conditions		**TIME OF SYSTEM PEAK**			Aug 2 PM		Jan 1 AM

HEATING SYSTEM PSYCHROMETRICS (Airstream Temperatures at Time of Heating Peak)



COOLING SYSTEM PSYCHROMETRICS (Airstream Temperatures at Time of Cooling Peak)



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TITLE 24 MANDATORY MEASURES
SHEET 1 OF 1

4686 E. Kings Canyon Rd. TI
ADDRESS: 4686 E. Kings Canyon Rd.
Fresno, CA 93702

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