NARRATIVE OF REVISION

May 6, 2026

Project: Irvine Field House
Project Address: 17300 Red Hill Ave. Irvine, California 92614

Subject: Narrative of Revisions
Delta 7 – 04/30/2026

DELTA 7:

Electrical:

Sheet: ET101
- Relocate Electrical Equipment to the west at the corner of the 'STORAGE 118'
- Add Receptacles to SERVER ROOM 124'

Sheet: ET102
- Add power to CU-1 on ROOF

Sheet: ET201
- Add Lighting to SERVER ROOM 124'
- Delete (1) Lighting fixture in 'STORAGE 118'

Sheet: ET301
- Add 'F-14E' specifications to the Lighting Fixture Schedule

Sheet: ET302
- Update 'P1L' schedule

Mechanical:

Sheet MT202
- Added Mini-Split (MS-1) to server room. Added condensate to nearest lavatory.
- Removed additional supply ducts and adjusted remaining supply ducts to kitchen hood to 30"x12".

Sheet MT204
- Added CU-1 to roof.

Sheet MT300
- Added MS-1 & CU-1 schedules.

Plumbing:

Sheet PT202
- Please see clouded CU-1 to roof.

CAUTION: IF THIS SHEET IS NOT 30"x42" IT IS A REDUCED PRINT

PHASE 2 MECHANICAL SCOPE OF WORK:

THE CONSTRUCTION OF THIS PROJECT IS PLANNED TO BE COMPLETED IN TWO PHASES. PHASE 1 WILL BE COMPLETED BY THE DEVELOPER (LINCOLN PROPERTIES), AND PHASE 2 WILL BE COMPLETED BY THE CITY OF IRVINE TO COMPLETE THE BUILDOUT. THE BUILDING IS NOT PLANNED TO RECIEVE A CERTIFICATE OF OCCUPANCY UNTIL PHASE 2 CONSTRUCTION IS COMPLETED. TITLE 24 DOCUMENTATION HAS BEEN DEFERRED AND PROVIDED IN THIS PHASE 2 PERMIT/CONSTRUCTION DOCUMENTATION PACKAGE. MECHANICAL AND PLUMBING EQUIPMENT T24 DOCUMENTATION PROVIDED IN THIS PHASE 2 PACKAGE ENCOMPASSES ALL PHASE 1 & PHASE 2 EQUIPMENT.

PHASE 2 MECHANICAL SCOPE INCLUDES:

1. FULL MECHANICAL INSTALL IN LOCATIONS SHOWN PER THESE PHASE 2 DRAWINGS.
2. COMMISSIONING AND STARTUP OF ALL MECHANICAL EQUIPMENT, PHASE 1 & PHASE 2.

DUCT SYSTEMS:

- BD-# — BACKDRAFT DAMPER
- FD-# — FIRE DAMPER
- SD-# — SMOKE DAMPER
- FSD-# — COMBINATION FIRE SMOKE DAMPER
- MD-# — MOTORIZED DAMPER
- VOLUME DAMPER
- SIDEWALL GRILLE
- CEILING DIFFUSER, SUPPLY 4-WAY BLOW PATTERN
- CEILING DIFFUSER, SUPPLY 3-WAY BLOW PATTERN
- CEILING DIFFUSER, SUPPLY 2-WAY BLOW PATTERN
- CEILING DIFFUSER, SUPPLY 1-WAY BLOW PATTERN
- CEILING DIFFUSER, RETURN
- CEILING DIFFUSER, EXHAUST
- UC — DOOR UNDERCUT
- DUCT SECTION, SUPPLY
- DUCT SECTION, RETURN
- DUCT SECTION, EXHAUST
- FLEXIBLE DUCT
- DIRECTION OF AIR FLOW
- DUCT SIZE TRANSITION
- RECTANGULAR ELBOW DOWN - SINGLE LINE
- ROUND ELBOW DOWN - SINGLE LINE
- RECTANGULAR ELBOW UP - SUPPLY
- RECTANGULAR ELBOW DOWN - SUPPLY
- ROUND ELBOW UP - SUPPLY
- ROUND ELBOW DOWN - SUPPLY
- RECTANGULAR ELBOW UP - RETURN
- RECTANGULAR ELBOW DOWN - RETURN
- ROUND ELBOW UP - RETURN
- ROUND ELBOW DOWN - RETURN
- RECTANGULAR ELBOW UP - EXHAUST
- RECTANGULAR ELBOW DOWN - EXHAUST
- ROUND ELBOW UP - EXHAUST
- ROUND ELBOW DOWN - EXHAUST
- MITERED ELBOW
- MITERED ELBOW WITH TURNING VANES
- ACCESS DOOR - TOP/SIDE
- AIR FLOW MEASURING STATION
- SOUND ATTENUATOR
- FLEXIBLE CONNECTION

HYDRONIC VALVES:

- TWO-POSITION 2-WAY VALVE
- MODULATING 2-WAY VALVE
- TWO-POSITION 3-WAY VALVE
- MODULATING 3-WAY VALVE
- BALANCING VALVE
- BALL VALVE
- BUTTERFLY VALVE
- CHECK VALVE
- DIFFERENTIAL PRESSURE VALVE
- FLOAT OPERATED VALVE
- GATE VALVE
- GLOBE VALVE
- PLUG VALVE
- PRESSURE INDEPENDENT VALVE
- PRESSURE REDUCING VALVE
- PRESSURE RELIEF VALVE
- TRIPLE DUTY VALVE
- BACKFLOW PREVENTER

MECHANICAL EQUIPMENT:

PLAN	SYMBOL	
		AIR SEPARATOR
		BASKET STRAINER
		EXPANSION TANK, FREE STANDING
		EXPANSION TANK, HANGING
		SIDE STREAM FILTER
		LOUVER
		HEAT EXCHANGER, PLATE AND FRAME
		HEAT EXCHANGER, SHELL AND TUBE
	T	STEAM TRAP
	VFD	VARIABLE FREQUENCY DRIVE
	CB	CONTROL BOX
	M	ENERGY METER
	GM	NATURAL GAS METER
		PUMP (SEE SCHEDULE FOR TYPE)
		VARIABLE AIR VOLUME BOX
		VAV BOX WITH ELECTRIC REHEAT
		VAV BOX WITH HYDRONIC REHEAT
		ROUND IN / ROUND OUT VAV BOX
		FAN POWERED BOX

HVAC SENSORS:

- CO2 — CARBON DIOXIDE
- CO — CARBON MONOXIDE
- DS — DEWPOINT
- ES — EMERGENCY SHUT OFF
- FC — FAN CONTROLLER
- G — GAS
- H — HUMIDITY
- NO — NITROGEN OXIDE
- P — RELATIVE PRESSURE MONITOR
- R — REFRIGERANT MONITOR
- SD — SMOKE DETECTOR
- SP — STATIC PRESSURE
- TC2 — COMBINATION TEMPERATURE AND CARBON MONOXIDE
- T — THERMOSTAT
- TS — TEMPERATURE

HYDRONIC SPECIALTIES:

- FS — FLOW SWITCH
- AUTOMATIC AIR VENT
- MANUAL AIR VENT
- PRESSURE GAUGE
- PS — PRESSURE SWITCH
- PSD — PUMP SUCTION DIFFUSER
- THERMOMETER
- STRAINER, BLOW DOWN
- STRAINER, HOSE CONNECTION
- STRAINER
- ANCHOR
- PIPING GUIDE
- EXPANSION LOOP
- EXPANSION JOINT
- FM — FLOW METER

RENOVATION LEGEND:

(E)	EXISTING TO REMAIN
(ED)	EXISTING LOCATION, NEW DEVICE OR EQUIPMENT TO BE INSTALLED IN PLACE
(ER)	EXISTING TO BE RELOCATED
(EO)	EXISTING TO BE REMOVED
(EN)	EXISTING IN NEW LOCATION
(RAI)	REMAIN AS IS

HYDRONIC FITTINGS:

- 45° ELBOW
- CAP
- 90° ELBOW
- ELBOW DOWN
- ELBOW UP
- TEE
- TEE DOWN
- TEE UP
- UNION
- FLEXIBLE CONNECTION
- PIPE CONTINUATION
- FLANGE

HYDRONIC SYSTEM ABBREVIATIONS:

— — — —	PIPE TO BE DEMOLISHED
—— D ——	DRAIN
—— NG ——	NATURAL GAS
—— LP ——	LIQUEFIED PETROLEUM
— — — V — — —	VENT
—— CHWS ——	CHILLED WATER SUPPLY
— — CHWR — —	CHILLED WATER RETURN
—— CWS ——	CONDENSER WATER SUPPLY
— — CWR — —	CONDENSER WATER RETURN
— — — CD — — —	CONDENSATE DRAIN
—— HWS ——	HEATING HOT WATER SUPPLY
— — HWR — —	HEATING HOT WATER RETURN
—— GS ——	GLYCOL SUPPLY
— — — GR — — —	GLYCOL RETURN
—— MU ——	MAKEUP WATER
—— HPWS ——	HEAT PUMP WATER SUPPLY
— — HPWR — —	HEAT PUMP WATER RETURN
—— GWS ——	GEOTHERMAL WATER SUPPLY
— — GWR — —	GEOTHERMAL WATER RETURN
— — RHG — —	REFRIGERANT HOT GAS
—— RL ——	REFRIGERANT LIQUID
—— RS ——	REFRIGERANT SUCTION
—— HPS ——	HIGH PRESSURE STEAM
—— MPS ——	MEDIUM PRESSURE STEAM
—— LPS ——	LOW PRESSURE STEAM
— — HPC — —	HIGH PRESSURE STEAM CONDENSATE
— — MPC — —	MEDIUM PRESSURE STEAM CONDENSATE
— — LPC — —	LOW PRESSURE STEAM CONDENSATE
— — CR — —	CONDENSATE RETURN
— — — PC — — —	PUMPED CONDENSATE
—— VPD ——	VACUUM PUMP DISCHARGE
—— BBD ——	BOILER BLOWDOWN
—— FWS ——	BOILER FEEDWATER SUPPLY
—— H ——	HUMIDIFICATION LINE
—— FOF ——	FUEL OIL FILL
— — FOR — —	FUEL OIL RETURN
—— FOS ——	FUEL OIL SUPPLY
— — FOV — —	FUEL OIL VENT
—— A ——	COMPRESSED AIR
—— VAC ——	VACUUM AIR

MECHANICAL TAGS:

- ## x ## XX — VISIBLE DIMENSION; DUCT DIMENSIONS (CLEAR, INTERNAL); SYSTEM ABBREVIATION
- SYSTEM: SA - SUPPLY, RA - RETURN, EA - EXHAUST, TA - TRANSFER; X-###-X ### — CONNECTION SIZE; DIFFUSER TYPE; DIFFUSER TAG; AIR FLOW RATE
- MARK X / NUMBER X — MECHANICAL EQUIPMENT TAG
- RISER X / NUMBER — RISER TAG
- PIPE SIZE; ##" XX / SYSTEM ABBREVIATION — PIPE DIMENSION TAG
- POINT OF NEW CONNECTION
- POINT OF DISCONNECTION

GENERAL:

- ## — DRAWING KEYNOTE SYMBOL
- DETAIL NUMBER / SHEET NUMBER — BUILDING SECTION
- DETAIL NUMBER / SHEET NUMBER — BUILDING ELEVATION
- DETAIL NUMBER / SHEET NUMBER — CALLOUT BOUNDARY
- DETAIL NUMBER / SHEET NUMBER — VIEW REFERENCE CALLOUT
- +X' - X" — MOUNTING HEIGHT DESIGNATION

MECHANICAL ABBREVIATIONS:

AC	AIR CONDITIONER
ACH	AIR CHANGES PER HOUR
AF	AIR FILTER
AHU	AIR HANDLING UNIT
APD	AIR PRESSURE DROP
BAS	BUILDING AUTOMATION SYSTEM
BHP	BRAKE HORSEPOWER
BTU	BRITISH THERMAL UNIT
BTUH	BTU PER HOUR
CC	COOLING COIL
CF	CUBIC FEET
CFH	CUBIC FEET PER HOUR
CFM	CUBIC FEET PER MINUTE
CH	CHILLER
CO	CLEANOUT
CT	COOLING TOWER
CU	CONDENSING UNIT
CUH	CABINET UNIT HEATER
CV	CONSTANT AIR VOLUME
DAT	DISCHARGE AIR TEMPERATURE
DB	DECIBEL OR DRY BULB TEMPERATURE
DDC	DIRECT DIGITAL CONTROL
DH	DUCT HEATER
DX	DIRECT EXPANSION
EAT	ENTERING AIR TEMPERATURE
EER	ENERGY EFFICIENCY RATIO
EF	EXHAUST FAN
ESP	EXTERNAL STATIC PRESSURE
ET	EXPANSION TANK
EWT	ENTERING WATER TEMPERATURE
FA	FREE AREA
FC	FAN COIL
FD	FIRE DAMPER
FH	FUME HOOD
FPB	FAN POWERED BOX
FPM	FEET PER MINUTE
FPS	FEET PER SECOND
FS	FREEZE STAT
FSD	COMBINATION FIRE/SMOKE DAMPER
GA	GAUGE
GAL	GALLON
GPH	GALLONS PER HOUR
GPM	GALLONS PER MINUTE
H	HUMIDISTAT
HC	HEATING COIL
HD	HOOD OR HEAT DETECTOR
HEPA	HIGH EFFICIENCY PARTICULATE AIR FILTER
HP	HORSEPOWER OR HEAT PUMP
HR	HOUR
HUM	HUMIDIFIER
HX	HEAT EXCHANGER
HZ	HERTZ
IN W.C.	INCHES WATER COLUMN
IN W.G.	INCHES WATER GAUGE
KW	KILOWATT
KWH	KILOWATT HOUR
LAT	LEAVING AIR TEMPERATURE
LBS	POUNDS
LWT	LEAVING WATER TEMPERATURE
MBH	THOUSAND BTUH
NC	NORMALLY CLOSED
NK	NECK
NO	NORMALLY OPEN
P	PUMP
PA	PASCAL
PH	PHASE
PRV	PRESSURE REDUCING VALVE
PSIA	POUNDS PER SQUARE INCH ABSOLUTE
PSIG	POUNDS PER SQAURE INCH GAUGE
RF	RETURN FAN
RH	RELATIVE HUMIDITY
RHC	REHEAT COIL
RO	RELIEF OPENING
RPM	REVOLUTIONS PER MINUTE
SAT	SUPPLY AIR TEMPERATURE
SD	SMOKE DAMPER OR SMOKE DETECTOR
SF	SQUARE FEET OR SUPPLY FAN
SP	STATIC PRESSURE SENSOR
T	THERMOSTAT
TD	TEMPERATURE DIFFERENCE
TO	TRANSFER OPENING
TYP	TYPICAL
UC	UNDERCUT (DOOR)
UH	UNIT HEATER
VAV	VARIABLE AIR VOLUME
VD	VOLUME DAMPER
VFD	VARIABLE FREQUENCY DRIVE
VSD	VARIABLE SPEED DRIVE
VTR	VENT THROUGH ROOF
W	WATT
WB	WET BULB TEMPERATURE
WC	WATER COLUMN
WPD	WATER PRESSURE DROP

GENERAL ABBREVIATIONS:

A/E	ARCHITECT/ENGINEER
ABV	ABOVE
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
ALT	ALTERNATE
ARCH	ARCHITECT
BFG	BELOW FINAL GRADE
BLDG	BUILDING
CLG	CEILING
DIR	DIRECT
DISC	DISCONNECT
DN	DOWN
EC	ELECTRICAL CONTRACTOR
ELEV	ELEVATION REFERENCE
EM	EMERGENCY
EP	EXPLOSION PROOF
EWC	ELECTRIC WATER COOLER
F	FLUSH
FBO	FURNISHED BY OTHERS
FIXT	FIXTURE
FLA	FULL LOAD AMPS
FLR	FLOOR
FS	FLOW SWITCH
GC	GENERAL CONTRACTOR
GRD	GROUND
GYP	GYPSUM BOARD
HC	HEATING CONTRACTOR
HVAC	HEATING & VENTILATING - AIR CONDITIONING
HW	HEAVYWALL
ID	INDIRECT
IL	INTERLOCK
IU	IN UNIT
J-BOX	JUNCTION BOX
LG	LAY-IN GRID
LTG	LIGHTING
LV	LOW VOLTAGE
LVT	LINE VOLTAGE THERMOSTAT
MC	MECHANICAL CONTRACTOR
MCA	MINIMUM CIRCUIT AMPS
MOCP	MAXIMUM OVERCURRENT PROTECTION
MTD	MOUNTED
NIC	NOT IN CONTRACT
NTS	NOT TO SCALE
PLBG	PLUMBING CONTRACTOR
RM	ROOM
SURF	SURFACE
TS	TAMPER SWITCH
TYP	TYPICAL
UG	UNDERGROUND
VC	VENTILATION CONTRACTOR

DUCT SYSTEM ABBREVIATIONS:

CA	COMBUSTION AIR
CV	COMBUSTION VENT
EA-AII	EXHAUST AIR - AIRBORNE INFECTIOUS ISOLATION
EA-CH	EXHAUST AIR - CHEMICAL
EA-D	EXHAUST AIR - DRYER
EA	EXHAUST AIR - ENVIRONMENTAL
EA-K1	TYPE 1 - KITCHEN EXHAUST
EA-K2	TYPE 2 - KITCHEN EXHAUST
OA	OUTDOOR AIR
RA	RETURN AIR
SA	SUPPLY AIR
TR	TRANSFER AIR

GENERAL NOTES:

1. CONTRACTOR SHALL PROVIDE ALL MATERIALS AND EQUIPMENT AND PERFORM ALL LABOR AS REQUIRED TO INSTALL A COMPLETE AND OPERABLE HVAC SYSTEM PER THE NEW ARCHITECTURAL LAYOUT AND AS TO COMPLY WITH THE SPECIFICATION, DETAILS, THIS SCOPE OF WORK AND ALL APPLICABLE CODES.
2. ALL WORK PERFORMED SHALL CONFORM TO ALL APPLICABLE STATE AND LOCAL CODES.
3. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO FIELD VERIFY ALL EXISTING CONDITIONS AND COORDINATE ALL NEW WORK WITH ALL TRADES PRIOR TO ANY WORK BEING DONE TO ENSURE CONFLICTS DO NOT OCCUR.
4. DISRUPTION OF ANY EXISTING SERVICE SHALL BE CLEARED WITH THE OWNER AND SHALL BE PERFORMED AT A TIME AND IN A MANNER SO AS TO CAUSE THE OWNER A MINIMUM OF INCONVENIENCE.
5. ALL DUCT SIZES INDICATED ON PLANS AND RISERS ARE CLEAR INSIDE DIMENSIONS. DUCT SIZES NOT SHOWN SHALL BE SIZED TO VELOCITIES NO GREATER THAN UPSTREAM SECTION USING SIMILAR ASPECT RATIOS.
6. DIFFUSER BRANCHES AND TAKE-OFFS SHALL BE SIZED TO NECK SIZE OF DIFFUSER UNLESS OTHERWISE NOTED.
7. ALL SUPPLY AIR TAKEOFFS FROM MAIN TRUNK DUCTS ARE TO BE INSTALLED WITH BELL MOUTH FITTINGS OR 45 DEGREE ENTRY TO PROVIDE THE SMOOTHEST AIR FLOW POSSIBLE.
8. PROVIDE TURNING VANES IN ALL LOW-PRESSURE 90 DEGREE DUCT TURNS.
9. ALL THERMOSTAT LOCATIONS SHALL BE APPROVED BY THE ARCHITECT.
10. ALL DUCTS LOCATED ABOVE INACCESSIBLE CEILINGS ARE TO BE BALANCED PRIOR TO CEILING INSTALLATIONS.
11. CONTRACTOR SHALL PROVIDE ACCESS DOORS FOR SERVICE AND MAINTENANCE OF ALL EQUIPMENT LOCATED ABOVE INACCESSIBLE CEILINGS.
12. PROVIDE GUIDES, HANGERS, EXPANSION LOOPS AND SUPPLEMENTARY STEEL SUPPORT WHERE REQUIRED FOR ALL PIPING.
13. ALL ROOF TOP UNITS TO HAVE 14" ROOF CURB.
14. PVC PIPE NOT ALLOWED TO BE INSTALLED WITHIN PLENUM SPACES.
15. ALL ACCESS PANELS LOCATED IN FINISHED CONSTRUCTION MUST BE COORDINATED WITH THE ARCHITECT AND NO ACCESS PANELS WILL BE PERMITTED IN THE CONFERENCE ROOM CEILING.
16. FLEX DUCT LENGTH SHALL NOT EXCEED 5'. FLEX DUCT SIZE SHALL MATCH RIGID DIFFUSER BRANCH SIZE.
17. WHERE EQUIPMENT OR ACCESSORIES ARE USED WHICH DIFFER IN ARRANGEMENT, CONFIGURATION, DIMENSIONS, RATINGS, OR ENGINEERING PARAMETERS FROM THOSE INDICATED ON THE CONTRACT DOCUMENTS, THE CONTRACTOR IS RESPONSIBLE FOR ALL COSTS, INCLUDING ARCHITECTURAL/ENGINEERING DESIGN AND CONSTRUCTION COSTS, INVOLVED IN INTEGRATING THE EQUIPMENT OR ACCESSORIES INTO THE SYSTEM AND THE ASSIGNED SPACE AND FOR OBTAINING THE PERFORMANCE FROM THE SYSTEM INTO WHICH THESE ITEMS ARE PLACED.
18. ALL SUBSTITUTION REVIEW COSTS SHALL BE REIMBURSED TO THE ENGINEER BY THE CONTRACTOR OR THEIR SUPPLIERS ON A TIME/MATERIAL BASES. THIS COST SHALL BE PAID ON APPROVAL OR DISPROVAL OF THE SUBSTITUTION MATERIAL, EQUIPMENT OR DESIGN.

DESIGN CRITERIA:

BASED ON 2022 T24 APPENDIX JA2 TABLE 2-3
IRVINE, CA

OUTDOOR DESIGN CONDITION
1% COOLING: 86°F/68°F DB/WB
DESIGN DRYBULB (0.2%): 37°F DB

INDOOR DESIGN CONDITIONS
CONDITIONED SPACES:
75°F DB COOLING
72°F DB HEATING

APPLICABLE CODES / STANDARDS AS AMENDED BY AUTHORITY HAVING JURISDICTION

- 2022 CALIFORNIA BUILDING CODE
- 2022 CALIFORNIA PLUMBING CODE
- 2022 CALIFORNIA MECHANICAL CODE
- 2022 CALIFORNIA ELECTRIC CODE
- 2022 CALIFORNIA ENERGY CODE
- 2022 CALIFORNIA FIRE CODE

MECHANICAL SHEET INDEX

SHEET NO.	SHEET NAME
MT000	MECHANICAL LEGEND
MT001	MECHANICAL NOTES
MT002	MECHANICAL SPECIFICATIONS
MT201	OVERALL MECHANICAL PLAN
MT202	ENLARGED MECHANICAL PLAN
MT204	MECHANICAL ROOF PLAN
MT300	MECHANICAL SCHEDULES
MT400	MECHANICAL DETAILS
MT500	RESTAURANT EQUIPMENT
MT501	RESTAURANT EQUIPMENT
MT600	T24 COMPLIANCE DOCS
MT601	T24 COMPLIANCE DOCS
MT602	T24 COMPLIANCE DOCS
MT603	T24 COMPLIANCE DOCS
MT701	MECHANICAL CONTROLS & SEQUENCE OF OPERATIONS
MT702	MECHANICAL CONTROLS & SEQUENCE OF OPERATIONS
MT703	MECHANICAL CONTROLS & SEQUENCE OF OPERATIONS

INSULATION SCHEDULE

ALL EXPOSED DUCTWORK IN CONDITIONED SPACES OR SPIRAL DUCT MAINS	1" LINED
	1" LINED
ALL EXTERIOR DUCTWORK	MIN. R-12
ALL CONCEALED SUPPLY AND RETURN DUCT	MIN. R-6
ALL EXHAUST UP TO 10'-0" FROM DISCHARGE	MIN. R-6
ALL HEATING AND COOLING HYDRONIC PIPING	MIN. 2"
CONDENSATE PIPING	MIN. 1"

NOTE:

ROUND MEDIUM PRESSURE DUCT TO BE LINED FOR ACOUSTICS. ALL DUCT SIZES SHOWN ARE CLEAR DIMENSIONS NOT INCLUDING INSULATION OR LINING. CONTRACTOR TO ACCOUNT FOR LINER/INSULATION ACCORDINGLY WHEN INSTALLING DUCTWORK.

ALL SUPPLY AND RETURN AIR DUCTS AND PLENUMS SHALL BE INSULATED WITH A MINIMUM OF R-6 INSULATION WHEN LOCATED IN UNCONDITIONED SPACES AND WITH A MINIMUM OF R-12 INSULATION WHEN LOCATED OUTSIDE THE BUILDING ENVELOPE. WHEN LOCATED WITHIN A BUILDING ENVELOPE ASSEMBLY, THE DUCT OR PLENUM SHALL BE SEPARATED FROM THE BUILDING EXTERIOR OR UNCONDITIONED OR EXEMPT SPACES BY A MINIMUM OF R-12 INSULATION. ALL JOINTS, LONGITUDINAL AND TRANSVERSE SEAMS, AND CONNECTIONS IN DUCTWORK SHALL BE SECURELY FASTENED AND SEALED WITH WELDS, GASKETS, MASTICS, MASTIC-PLUS-EMBEDDED-FABRIC SYSTEMS OR TAPES. TAPES AND MASTICS SHALL BE LISTED AND LABELED IN ACCORDANCE WITH UL 181A OR UL 181B. DUCT CONNECTIONS TO FLANGES OF AIR DISTRIBUTION SYSTEM EQUIPMENT SHALL BE SEALED AND MECHANICALLY FASTENED. DUCT TAPE IS NOT PERMITTED AS A SEALANT ON ANY METAL DUCTS. ALL INSULATING MATERIAL SHALL BE INSTALLED IN COMPLIANCE WITH THE FLAME-SPREAD RATING AND SMOKE DENSITY REQUIREMENTS OF THE APPLICABLE BUILDING CODE.

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MECHANICAL LEGEND

	DATE	REMARKS
1	07/09/2025	ISSUE FOR PLAN CHECK
2	09/22/2025	PLAN CHECK CORRECTIONS
3	10/15/2025	PLAN CHECK CORRECTIONS 2
4	12/19/2025	PLAN CHECK CORRECTIONS 3
5	01/26/2026	OC HEALTH DEPT
6	04/30/2026	BID ADDENDUM 2
7		

PA/PM:	BL
DRAWN BY.:	DG
JOB NO.:	LAX21-0174-02

SHEET
MT000

06/06/2025

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CAUTION: IF THIS SHEET IS NOT 30"x42" IT IS A REDUCED PRINT

CALGREEN NOTES

1. PER SECTION 4.504.1 & SECTION 5.504.3, COVERING OF DUCT OPENINGS AND PROTECTION OF MECHANICAL EQUIPMENT DURING CONSTRUCTION. AT THE TIME OF ROUGH INSTALLATION, DURING STORAGE ON THE CONSTRUCTION SITE AND UNTIL FINAL STARTUP OF THE HEATING, COOLING AND VENTILATING EQUIPMENT, ALL DUCT AND OTHER RELATED AIR DISTRIBUTION COMPONENT OPENINGS SHALL BE COVERED WITH TAPE, PLASTIC, SHEETMETAL OR OTHER METHODS ACCEPTABLE TO THE ENFORCING AGENCY TO REDUCE THE AMOUNT OF WATER, DUST AND DEBRIS, WHICH MAY ENTER THE SYSTEM.
2. HEATING AND AIR CONDITIONING SYSTEMS HAVE BEEN SIZED ACCORDING TO SECTION 4.507.2
3. PER SECTION 5.504.1.3, TEMPORARY VENTILATION. THE PERMANENT HVAC SYSTEM SHALL ONLY BE USED DURING CONSTRUCTION IF NECESSARY TO CONDITION THE BUILDING WITHIN THE REQUIRED TEMPERATURE RANGE FOR MATERIAL AND EQUIPMENT INSTALLATION. IF THE HVAC SYSTEM IS USED DURING CONSTRUCTION, USE RETURN AIR FILTERS WITH A MINIMUM EFFICIENCY REPORTING VALUE (MERV) OF 8, BASED ON ASHRAE 52.2-1999, OR AN AVERAGE EFFICIENCY OF 30 PERCENT BASED ON ASHRAE 52.1-1992. REPLACE ALL FILTERS IMMEDIATELY PRIOR TO OCCUPANCY.
4. PER SECTION 5.504.5.3 FILTERS. IN MECHANICALLY VENTILATED BUILDINGS, PROVIDE REGULARLY OCCUPIED AREAS OF THE BUILDING WITH AIR FILTRATION MEDIA FOR OUTSIDE AND RETURN AIR THAT PROVIDES AT LEAST A MINIMUM EFFICIENCY REPORTING VALUE (MERV) OF 13. MERV 13 FILTERS SHALL BE INSTALLED PRIOR TO OCCUPANCY, AND RECOMMENDATIONS FOR MAINTENANCE WITH FILTERS OF THE SAME VALUE SHALL BE INCLUDED IN THE OPERATION AND MAINTENANCE MANUAL.
5. MINIMUM OUTSIDE AIR HAS BEEN PROVIDED FOR NON-RESIDENTIAL AREAS BASED ON TABLE 4-3 OF THE 2022 NON-RESIDENTAL TITLE-24 COMPLIANCE MANUAL.
6. BATHROOM EXHAUST FANS SHALL BE ENERGY STAR COMPLAINT AND DUCTED TO TERMINATE OUTSIDE THE BUILDING.
7. UNLESS FUNCTIONING AS A COMPONENT OF A WHOLE HOUSE VENTILATION SYSTEM, BATHROOM EXHAUST FANS MUST BE CONTROLLED BY A HUMIDITY CONTROL, WHICH SHALL BE CAPABLE OF ADJUSTMENT BETWEEN A RELATIVE HUMIDITY RANGE OF 50 TO 80% SEC. 4.506.1.
8. EXCEPTION TO CALGREEN SECTION: 5.504.5.3:- AN ASHRAE 10% TO 15% EFFICIENCY FILTER SHALL BE PERMITTED FOR AN HVAC UNIT MEETING THE 2022 CALIFORNIA ENERGY CODE HAVING 60000 BTU/H OR LESS CAPACITY PER FAN COIL, IF THE ENERGY USE OF THE AIR DELIVERY SYSTEM IS 0.4 W/CFM OR LESS AT DESIGN AIR FLOW.
9. INSTALLATION OF HVAC, REFRIGERATION, AND FIRE SUPPRESSION EQUIPMENT SHALL COMPLY WITH SECTIONS 5.508.1.1 AND 5.508.1.2. HVAC, REFRIGERATION, AND FIRE SUPPRESSION EQUIPMENT SHALL NOT CONTAIN CHLOROFLUOROCARBONS (CFCs) AND SHALL NOT CONTAIN HALONS (SECTION: 5.508.1).
10. FIREPLACES ARE DIRECT-VENT SEALED COMBUSTION PER CALGREEN 5.503.1
11. ADHESIVES, SEALANTS, AND CAULKS USED ON THE PROJECT SHALL MEET THE REQUIREMENTS OF SECTION 5.504.4.1.
12. 5.508.2.1 REFRIGERANT PIPING. PIPING COMPLIANT WITH THE CALIFORNIA MECHANICAL CODE SHALL BE INSTALLED TO BE ACCESSIBLE FOR LEAK PROTECTION AND REPAIRS. PIPING RUNS USING THREADED PIPE, COPPER TUBING WITH AN OUTSIDE DIAMETER (OD) LESS THAN 1/4 INCH, FLARED TUBING CONNECTIONS AND SHORT RADIUS ELBOWS SHALL NOT BE USED IN REFRIGERANT SYSTEMS EXCEPT AS NOTED BELOW:

    5.508.2.1.1 THREADED PIPE. THREADED CONNECTIONS ARE PERMITTED AT THE COMPRESSOR RACK.

    5.508.2.12 COPPER PIPE. COPPER TUBING WITH AN OD LESS THAN 1/4 INCH MAY BE USED IN SYSTEMS WITH A REFRIGERANT CHARGE OF 5 POUNDS OR LESS.

    5.508.2.1.2.1 ANCHORAGE. ONE-FOURTH-INCH OD TUBING SHALL BE SECURELY CLAMPED TO A RIGID BASE TO KEEP VIBRATION LEVELS BELOW 8 MILS.

    5.508.2.1.3 FLARED TUBING CONNECTIONS. DOUBLE-FLARED TUBING CONNECTIONS MAY BE USED FOR PRESSURE CONTROLS, VALVE PILOT LINES AND OIL.

    5.508.2.1.4 ELBOWS. SHORT RADIUS ELBOWS ARE ONLY PERMITTED WHERE SPACE LIMITATIONS PROHIBITED USE OF LONG RADIUS ELBOWS.
13. 5.508.2.5 PRESSURE TESTING. THE SYSTEM SHALL BE PRESSURE TESTED DURING INSTALLATION PRIOR TO EVACUATION AND CHARGING.

    5.508.2.5.1 MINIMUM PRESSURE. THE SYSTEM SHALL BE CHARGED WITH REGULATED DRY NITROGEN AND APPROPRIATE TRACER GAS TO BRING SYSTEM PRESSURE UP TO 300 PSIG MINIMUM.

    5.508.2.5.2 LEAKS. CHECK THE SYSTEM FOR LEAKS, REPAIR ANY LEAKS, AND RETEST FOR PRESSURE USING THE SAME GAUGE.

    5.508.2.5.3 ALLOWABLE PRESSURE CHANGE. THE SYSTEM SHALL STAND, UNALTERED, FOR 24 HOURS WITH NO MORE THAN A +/- ONE POUND PRESSURE CHANGE FROM 300 PSIG, MEASURED WITH THE SAME GAUGE. 5.508.2.6 EVACUATION. THE SYSTEM SHALL BE EVACUATED AFTER PRESSURE TESTING AND PRIOR TO CHARGING.

    5.508.2.6.1 FIRST VACUUM. PULL A SYSTEM VACUUM DOWN TO AT LEAST 1,000 MICRONS (+/- 50 MICRONS), HOLD FOR 30 MINUTES. 5.508.2.6.2 SECOND VACUUM. PULL SECOND SYSTEM VACUUM TO A MINIMUM OF 500 MICRONS AND HOLD FOR 30 MINUTES.

    5.508.2.6.3 THIRD VACUUM. PULL A THIRD VACUUM DOWN TO A MINIMUM OF 300 MICRONS, AND HOLD FOR 24 HOURS WITH A MAXIMUM DRIFT OF 100 MICRONS OVER A 24-HOUR PERIOD.
14. THIRD PARTY INSPECTION REQUIRED TO CERTIFY THE CALGREEN MEASURES.
15. THE HVAC SYSTEM SHALL BE BALANCED IN ACCORDANCE WITH APPROVED NATIONAL STANDARD PER 5.410.4.3.1

COMMISSIONING NOTES:

1. 5.410.2 COMMISSIONING. [N] FOR NEW BUILDINGS 10,000 SQUARE FEET AND OVER, BUILDING COMMISSIONING SHALL BE INCLUDED IN THE DESIGN AND CONSTRUCTION PROCESSES OF THE BUILDING PROJECT TO VERIFY THAT THE BUILDING SYSTEMS AND COMPONENTS MEET THE OWNER'S OR OWNER REPRESENTATIVE'S PROJECT REQUIREMENTS. COMMISSIONING SHALL BE PERFORMED IN ACCORDANCE WITH THIS SECTION BY TRAINED PERSONNEL WITH EXPERIENCE ON PROJECTS OF COMPARABLE SIZE AND COMPLEXITY. COMMISSIONING REQUIREMENTS SHALL INCLUDE:
    - A. OWNER'S OR OWNER REPRESENTATIVE'S PROJECT REQUIREMENTS.
    - B. BASIS OF DESIGN.
    - C. COMMISSIONING MEASURES SHOWN IN THE CONSTRUCTION DOCUMENTS.
    - D. COMMISSIONING PLAN.
    - E. FUNCTIONAL PERFORMANCE TESTING.
    - G. DOCUMENTATION AND TRAINING.
    - H. COMMISSIONING REPORT.

BLDG. DEPT. NOTES

1. SUPPLY AIR, RETURN AIR, AND OUTSIDE AIR FOR HEATING, COOLING OR EVAPORATIVE COOLING SYSTEMS SHALL BE CONDUCTED THROUGH DUCT SYSTEMS CONSTRUCTED OF METAL AS SET FORTH IN THE LATEST ANSI/SMACNA HVAC DUCT CONSTRUCTION STANDARDS-METAL AND FLEXIBLE, OR ANOTHER APPROVED DUCT CONSTRUCTION STANDARD.
2. AIR MOVING SYSTEMS SUPPLYING AIR IN EXCESS OF 2000 CFM SHALL BE EQUIPPED WITH AN AUTOMATIC SHUTOFF ACTIVATED BY A SMOKE DETECTOR LOCATED IN THE MAIN SUPPLY-AIR DUCT. A SYSTEM MAY INCLUDE MORE THAN ONE PIECE OF AC UNIT WHICH SERVES A COMMON SPACE WITH AGGREGATE SUPPLY AIR OF MORE THAN 2000 CFM.
3. WHEN FIRE DETECTION ALARM SYSTEMS ARE PROVIDED FOR THE BUILDING, ANY REQUIRED SMOKE DETECTORS SHALL BE SUPERVISED BY SUCH SYSTEMS AND SHALL BE CAPABLE OF ACTIVATING THE FIRE ALARM SYSTEM.
4. ALL APPLIANCES DESIGNED TO BE FIXED IN POSITION SHALL BE SECURELY FASTENED IN PLACE IN ACCORDANCE WITH MANUFACTURER INSTALLATION REQUIREMENTS AND THE BUILDING CODE.
5. ALL APPLIANCES AND PLUMBING VENTS AND THE DISCHARGE OUTLET OF EXHAUST FANS SHALL BE AT LEAST TEN (10) FEET IN A HORIZONTAL DIRECTION, OR THREE (3) FEET ABOVE THE OUTSIDE – AIR INTAKES FOR HVAC UNITS.
6. ENVIRONMENTAL AIR DUCTS ARE SHALL TERMINATE A MINIMUM OF THREE FEET FROM PROPERTY LINE AND OPENINGS INTO THE BUILDING PER SECTION 504.5 OF THE CALIFORNIA MECHANICAL CODE.
7. OVERFLOW DRAINS FROM AC UNITS PLACATED IN AN ATTIC OR FURRED SPACE SHALL DISCHARGE AT A POINT THAT IS READILY OBSERVED.
8. HEATING, VENTILATING AND AIR CONDITIONING SYSTEMS (INCLUDING HYDRONIC SYSTEMS) SHALL BE BALANCED IN ACCORDANCE WITH AN APPROVED METHODS PER SECTION 317.1 OF THE CALIFORNIA MECHANICAL CODE.
9. AT THE TIME OF ROUGH INSTALLATION OR DURING STORAGE ON THE CONSTRUCTION SITE AND UNTIL FINAL STARTUP OF THE HEATING, COOLING AND VENTILATION EQUIPMENT, ALL DUCT AND OTHER RELATED AIR DISTRIBUTION COMPONENT OPENINGS SHALL BE COVERED WITH TAPE, PLASTIC, SHEET METAL OR OTHER ACCEPTABLE METHODS TO REDUCE THE AMOUNT OF DUST, WATER AND DEBRIS WHICH MAY ENTER THE SYSTEM.
10. PRIOR TO PERMIT BEING FINALIZED, A COMPLETE TESTING, ADJUSTING, AND BALANCING REPORT SHALL BE PROVIDED TO THE OWNER OR OWNER'S REPRESENTATIVE AND FORM 5.410 – TESTING AND ADJUSTING SHALL BE COMPLETED AND PROVIDED TO THE INSPECTOR.
11. PRIOR TO PERMIT BEING FINALIZED, A COMPLETE REPORT OF THE COMMISSIONING PROCESS SHALL BE PROVIDED TO THE OWNER OR OWNER'S REPRESENTATIVE AND FORM 5.410 – VERIFICATION SHALL BE COMPLETED AND PROVIDED TO THE INSPECTOR.
12. THE PERSON RESPONSIBLE FOR CONSTRUCTION OR THE PERSON RESPONSIBLE FOR THE INSTALLATION OF REGULATED FEATURES, MATERIALS, COMPONENTS OR MANUFACTURED DEVICES SHALL POST, OR MAKE AVAILABLE WITH THE BUILDING PERMIT(S) ISSUED FOR THE BUILDING, THE REQUIRED INSTALLATION CERTIFICATES(S) FOR THE FEATURES, MATERIALS, COMPONENTS, OR MANUFACTURED DEVICES REGULATED BY THE APPLIANCE EFFICIENCY REGULATIONS OR PART 6. SUCH INSTALLATION CERTIFICATES(S) SHALL BE MADE AVAILABLE TO THE ENFORCEMENT AGENCY FOR ALL APPROPRIATE INSPECTIONS. THESE CERTIFICATES SHALL:
    - A. IDENTIFY FEATURES, MATERIALS, COMPONENTS, OR MANUFACTURED DEVICES REQUIRED TO VERIFY COMPLIANCE WITH THE APPLIANCE EFFICIENCY REGULATIONS AND PART 6.
    - B. INCLUDE A STATEMENT INDICATING THAT THE FEATURES, MATERIALS, COMPONENTS, OR MANUFACTURED DEVICE CONFORM TO THE APPLIANCE EFFICIENCY REGULATIONS AND PART 6 AND THE REQUIREMENTS FOR SUCH FEATURES, MATERIALS, COMPONENTS OR MANUFACTURED DEVICES GIVEN IN THE PLANS AND SPECIFICATIONS APPROVED BY THE LOCAL ENFORCEMENT AGENCY.
    - C. STATE THE NUMBER OF THE BUILDING PERMIT UNDER WHICH THE CONSTRUCTION INSTALLATION WAS PERFORMED.
13. WITH IN 90 DAYS OF ISSUANCE OF CERTIFICATE OF OCCUPANCY RECORD DRAWINGS SHALL BE PROVIDED TO THE OWNER. IF A BUILDING DESIGN FEATURE, MATERIAL, COMPONENT OR MANUFACTURED DEVICE IS CHANGED BEFORE FINAL CONSTRUCTION AND INSTALLATION, SUCH THAT THE BUILDING MAY NO LONGER COMPLY WITH PART 6, THE BUILDING MUST BE BROUGHT INTO COMPLIANCE, AND SO INDICATED ON AMENDED PLANS AND CERTIFICATE OF COMPLIANCE(S) THAT SHALL BE SUBMITTED FOR APPROVAL.
14. THE BUILDER SHALL PROVIDE THE OWNER OR THE PERSON(S) RESPONSIBLE FOR BUILDING MAINTENANCE (IN CASE OF MULTI-TENANT) OR CENTRALLY OPERATED BUILDINGS) AT OCCUPANCY THE FOLLOWING:
    - A. OPERATING INFORMATION: THE APPROPRIATE CERTIFICATE(S) OF COMPLIANCE AND A LIST OF THE FEATURES, MATERIALS, COMPONENTS, AND MECHANICAL DEVICES INSTALLED IN THE BUILDING AND INSTRUCTIONS ON HOW TO OPERATE THEM EFFICIENTLY.
    - B. MAINTENANCE INFORMATION: REQUIRED ROUTINE MAINTENANCE ACTIONS SHALL BE STATED AND INCORPORATED ON A READILY ACCESSIBLE LABEL, THE LABEL MAY BE LIMITED TO IDENTIFYING THE OPERATION AND MAINTENANCE MANUAL.
    - C. VENTILATION INFORMATION: A DESCRIPTION OF THE QUANTITIES OF OUTDOOR AND RETICULATED AIR THAT THE VENTILATION SYSTEMS ARE DESIGNED TO PROVIDE TO EACH AREA.
15. ALL EQUIPMENT SHALL BE LISTED/APPROVED BY A THIRD-PARTY AGENCY.

TEMPERATURE CONTROL NOTES

1.1 SUMMARY

- A. THIS SECTION INCLUDES CONTROL EQUIPMENT FOR HVAC SYSTEMS AND COMPONENTS, INCLUDING CONTROL COMPONENTS FOR HEATING AND COOLING UNITS NOT SUPPLIED WITH FACTORY-WIRED CONTROLS.
- B. ALL LABOR, MATERIAL, EQUIPMENT AND SOFTWARE NOT SPECIFICALLY REFERRED TO HEREIN OR ON THE PLANS, THAT IS REQUIRED TO MEET THE FUNCTIONAL INTENT OF THIS SPECIFICATION, SHALL BE PROVIDED WITHOUT ADDITIONAL COST TO THE OWNER.
- C. ALL LINE VOLTAGE AND LOW VOLTAGE ELECTRICAL WORK ASSOCIATED WITH TEMPERATURE CONTROLS SHALL BE INSTALLED IN ACCORDANCE WITH THE LOCAL CODE REQUIREMENTS. ALL WIRING SHALL BE ROUTED IN CONDUIT.

1.2 COORDINATION

COORDINATE LOCATION OF THERMOSTATS AND OTHER EXPOSED CONTROL SENSORS WITH PLANS AND ROOM DETAILS BEFORE INSTALLATION.

1.3 HVAC SYSTEMS CONTROLS AND SEQUENCE OF OPERATION

- A. COMPONENTS REQUIRED
    - a. STARTER DISCONNECT SWITCHES FOR ALL FANS.
    - b. CONTROL PANEL FOR INTEGRATION OF ALL EQUIPMENT AND OPERATIONS.
    - c. PROGRAMMABLE THERMOSTATS.
    - d. DAMPERS AND ACTUATORS AS INDICATED ON PLANS.
    - e. SENSORS AS REQUIRED BY SEQUENCE OF OPERATION.
- B. SEQUENCE OF OPERATION

    FAN COIL UNITS:
    - a. OUTSIDE AIR DAMPER SHALL BE OPEN AND FAN SHALL OPERATE CONTINUOUSLY DURING OCCUPIED TIMES AS SCHEDULED BY A TIME CLOCK.
    - b. DURING UNOCCUPIED TIMES, FAN COIL UNITS SHALL REMAIN OFF UNLESS SPACE TEMPERATURE DROPS BELOW PRESET LOWER LIMIT IN WHICH CASE UNIT FAN AND HEATING SECTION SHALL CYCLE AND MODULATE TO MAINTAIN UNOCCUPIED SPACE TEMPERATURE VIA SAME OCCUPIED SEQUENCE AS DESCRIBED ABOVE.

1.4 THERMOSTATS

ELECTRIC, SOLID-STATE, MICROCOMPUTER-BASED ROOM THERMOSTAT WITH REMOTE SENSOR.

- A. PROGRAMMING BASED ON WEEKDAY, SATURDAY, AND SUNDAY.
- B. SELECTION FEATURES INCLUDE DEGREE F OR DEGREE C DISPLAY, 12- OR 24-HOUR CLOCK, KEYBOARD DISABLE, REMOTE SENSOR, AND FAN ON-AUTO.
- C. BATTERY REPLACEMENT WITHOUT PROGRAM LOSS.
- D. THERMOSTAT DISPLAY FEATURES INCLUDE THE FOLLOWING:
    - a. TIME OF DAY.
    - b. ACTUAL ROOM TEMPERATURE.
    - c. PROGRAMMED TEMPERATURE.
    - d. PROGRAMMED TIME.
    - e. DURATION OF TIMED OVERRIDE.
    - f. DAY OF WEEK.

1.5 ACTUATORS

ELECTRONIC ACTUATORS: DIRECT-COUPLED TYPE DESIGNED FOR MINIMUM 60,000 FULL-STROKE CYCLES AT RATED TORQUE.

- A. COUPLING: V-BOLT AND V-SHAPED, TOOTHED CRADLE.
- B. OVERLOAD PROTECTION: ELECTRONIC OVERLOAD OR DIGITAL ROTATION-SENSING CIRCUITRY.
- C. FAIL-SAFE OPERATION: MECHANICAL, SPRING-RETURN MECHANISM. PROVIDE EXTERNAL, MANUAL GEAR RELEASE ON NONSPRING-RETURN ACTUATORS.
- D. POWER REQUIREMENTS (TWO-POSITION SPRING RETURN): 120-V AC.
- E. POWER REQUIREMENTS (MODULATING): MAXIMUM 10 VA AT 120-V AC OR 8 W AT 120-V DC.
- F. TEMPERATURE RATING: MINUS 22 TO PLUS 122 DEG F (MINUS 30 TO PLUS 50 DEG C).
- G. RUN TIME: 30 SECONDS.

1.6 EXAMINATION

- A. THE PROJECT PLANS SHALL BE THOROUGHLY EXAMINED FOR CONTROL DEVICE AND EQUIPMENT LOCATIONS. ANY DISCREPANCIES, CONFLICTS, OR OMISSIONS SHALL BE REPORTED TO THE ARCHITECT/ENGINEER FOR RESOLUTION BEFORE ROUGH-IN WORK IS STARTED.
- B. THE CONTRACTOR SHALL INSPECT THE SITE TO VERIFY THAT EQUIPMENT MAY BE INSTALLED AS SHOWN. ANY DISCREPANCIES, CONFLICTS, OR OMISSIONS SHALL BE REPORTED TO THE ENGINEER FOR RESOLUTION BEFORE ROUGH-IN WORK IS STARTED.
- C. THE CONTRACTOR SHALL EXAMINE THE DRAWINGS AND SPECIFICATIONS FOR OTHER PARTS OF THE WORK. IF HEAD ROOM OR SPACE CONDITIONS APPEAR INADEQUATE OR IF ANY DISCREPANCIES OCCUR BETWEEN THE PLANS AND THE CONTRACTOR'S WORK AND THE PLANS AND THE WORK OF OTHERS THE CONTRACTOR SHALL REPORT THESE DISCREPANCIES TO THE ARCHITECT/ENGINEER AND SHALL OBTAIN WRITTEN INSTRUCTIONS FOR ANY CHANGES NECESSARY TO ACCOMMODATE THE CONTRACTOR'S WORK WITH THE WORK OF OTHERS. ANY CHANGES IN THE WORK COVERED BY THIS SPECIFICATION MADE NECESSARY BY THE FAILURE OR NEGLECT OF THE CONTRACTOR TO REPORT SUCH DISCREPANCIES SHALL BE MADE BY AND AT THE EXPENSE OF THIS CONTRACTOR.
- D. VERIFY THAT POWER SUPPLY IS AVAILABLE TO CONTROL UNITS.
- E. VERIFY THAT PIPE- AND EQUIPMENT-MOUNTED DEVICES ARE INSTALLED BEFORE PROCEEDING WITH INSTALLATION.

1.7 INSTALLATION

- A. INSTALL SYSTEM AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
- B. LINE AND LOW VOLTAGE ELECTRICAL CONNECTIONS TO HVAC EQUIPMENT SHOWN SPECIFIED OR SHOWN ON THE CONTROL DIAGRAMS SHALL BE FURNISHED AND INSTALLED BY THE TEMPERATURE CONTROL SUB-CONTRACTOR.
- C. CONNECT AND CONFIGURE EQUIPMENT AND SOFTWARE TO ACHIEVE SEQUENCE OF OPERATION SPECIFIED.
- D. INSTALL DAMPER MOTORS ON OUTSIDE OF DUCT IN WARM AREAS, NOT IN LOCATIONS EXPOSED TO OUTDOOR TEMPERATURES.

1.8 ELECTRICAL WIRING AND CONNECTION INSTALLATION

- A. INSTALL RACEWAYS, BOXES, AND CABINETS ACCORDING TO THE ELECTRICAL SPECIFICATIONS.
- B. INSTALL BUILDING WIRE AND CABLE ACCORDING TO THE ELECTRICAL SPECIFICATIONS.
- C. ALL ELECTRICAL CONTROL WIRING AND POWER WIRING TO THE BAS, NETWORK COMPONENTS AND CONTROL DEVICES SHALL BE THE RESPONSIBILITY OF THE MECHANICAL CONTRACTOR AND TEMPERATURE CONTROL SUB-CONTRACTOR.

1.9 INSTALLATION OF SENSORS

- A. INSTALL SENSORS IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
- B. MOUNT SENSORS RIGIDLY AND ADEQUATELY FOR THE ENVIRONMENT WITHIN WHICH THE SENSOR OPERATES.
- C. ROOM TEMPERATURE SENSORS SHALL BE INSTALLED ON CONCEALED JUNCTION BOXES PROPERLY SUPPORTED BY THE WALL FRAMING.
- D. ALL WIRES ATTACHED TO SENSORS SHALL BE AIR SEALED IN THEIR RACEWAYS OR IN THE WALL TO STOP AIR TRANSMITTED FROM OTHER AREAS AFFECTING SENSOR READINGS.

1.10 CONTROL DAMPER INSTALLATION

- A. DAMPER SUBMITTALS SHALL BE COORDINATED FOR TYPE, QUANTITY, AND SIZE TO ENSURE COMPATIBILITY WITH SHEET METAL DESIGN.
- B. DUCT OPENINGS SHALL BE FREE OF ANY OBSTRUCTION OR IRREGULARITIES THAT MIGHT INTERFERE WITH BLADE OR LINKAGE ROTATION OR ACTUATOR MOUNTING. DUCT OPENINGS SHALL MEASURE ¼ IN. LARGER THAN DAMPER DIMENSIONS AND SHALL BE SQUARE, STRAIGHT, AND LEVEL.
- C. INDIVIDUAL DAMPER SECTIONS, AS WELL AS ENTIRE MULTIPLE SECTION ASSEMBLIES, MUST BE COMPLETELY SQUARE AND FREE FROM RACKING, TWISTING, OR BENDING. MEASURE DIAGONALLY FROM UPPER CORNERS TO OPPOSITE LOWER CORNERS OF EACH DAMPER SECTION. BOTH DIMENSIONS MUST BE WITHIN 0.3 CM (1/8 IN.) OF EACH OTHER.
- D. FOLLOW THE MANUFACTURER'S INSTRUCTIONS FOR FIELD INSTALLATION OF CONTROL DAMPERS. UNLESS SPECIFICALLY DESIGNED FOR VERTICAL BLADE APPLICATION, DAMPERS MUST BE MOUNTED WITH BLADE AXIS HORIZONTAL.
- E. INSTALL EXTENDED SHAFT OR JACKSHAFT ACCORDING TO MANUFACTURER'S INSTRUCTIONS. (TYPICALLY, A STICKER ON THE DAMPER FACE SHOWS RECOMMENDED EXTENDED SHAFT LOCATION. ATTACH SHAFT ON LABELED SIDE OF DAMPER TO THAT BLADE.) USE LINE SHAFTING OR SHAFT COUPLINGS (JACKSHAFTING) IN LIEU OF BLADE-TO-BLADE LINKAGES OR SHAFT COUPLING WHEN DRIVING AXIALLY ALIGNED DAMPER SECTIONS.
- F. DAMPER BLADES, AXLES, AND LINKAGE MUST OPERATE WITHOUT BINDING. BEFORE SYSTEM OPERATION, CYCLE DAMPER AFTER INSTALLATION TO ENSURE PROPER OPERATION. ON MULTIPLE SECTION ASSEMBLIES, ALL SECTIONS MUST OPEN AND CLOSE SIMULTANEOUSLY.
- G. PROVIDE A VISIBLE AND ACCESSIBLE INDICATION OF DAMPER POSITION ON THE DRIVE SHAFT END.
- H. SUPPORT DUCTWORK IN AREA OF DAMPER WHEN REQUIRED TO PREVENT SAGGING DUE TO DAMPER WEIGHT.
- I. AFTER INSTALLATION OF LOW-LEAKAGE DAMPERS WITH SEALS, CAULK BETWEEN FRAME AND DUCT OR OPENING TO PREVENT LEAKAGE AROUND PERIMETER OF DAMPER.
- J. MOUNT AND LINK CONTROL DAMPER ACTUATORS ACCORDING TO MANUFACTURER'S INSTRUCTIONS.
- K. TO COMPRESS SEALS WHEN SPRING-RETURN ACTUATORS ARE USED ON NORMALLY CLOSED DAMPERS, POWER ACTUATOR TO APPROXIMATELY 5° OPEN POSITION, MANUALLY CLOSE THE DAMPER, AND THEN TIGHTEN THE LINKAGE.
- L. CHECK OPERATION OF DAMPER/ACTUATOR COMBINATION TO CONFIRM THAT ACTUATOR MODULATES DAMPER SMOOTHLY THROUGHOUT STROKE TO BOTH OPEN AND CLOSED POSITIONS.
- M. PROVIDE ALL MOUNTING HARDWARE AND LINKAGES FOR ACTUATOR INSTALLATION.
- N. THE TOTAL DAMPER AREA OPERATED BY AN ACTUATOR SHALL NOT EXCEED 80% OF THE MANUFACTURER'S MAXIMUM AREA RATING. PROVIDE AT LEAST ONE ACTUATOR FOR EACH DAMPER SECTION. EACH DAMPER ACTUATOR SHALL NOT POWER MORE THAN 20 SQUARE FEET OF DAMPER.
    - a. THE CONTRACTOR SHALL CLEAN UP ALL DEBRIS RESULTING FROM THEIR ACTIVITIES DAILY. THE CONTRACTOR SHALL REMOVE ALL CARTONS, CONTAINERS, CRATES, ETC., UNDER THEIR CONTROL AS SOON AS THEIR CONTENTS HAVE BEEN REMOVED. WASTE SHALL BE COLLECTED AND PLACED IN A DESIGNATED LOCATION.
    - b. AT THE COMPLETION OF WORK IN ANY AREA, THE CONTRACTOR SHALL CLEAN ALL WORK, EQUIPMENT, ETC., KEEPING IT FREE FROM DUST, DIRT, AND DEBRIS, ETC.
    - c. AT THE COMPLETION OF WORK, ALL EQUIPMENT FURNISHED UNDER THIS SECTION SHALL BE CHECKED FOR PAINT DAMAGE, AND ANY FACTORY-FINISHED PAINT THAT HAS BEEN DAMAGED SHALL BE REPAIRED TO MATCH THE ADJACENT AREAS. ANY CABINET OR ENCLOSURE THAT HAS BEEN DEFORMED SHALL BE REPLACED WITH NEW MATERIAL AND REPAINTED TO MATCH THE ADJACENT AREAS.

DUCT SMOKE DETECTORS

ALL AIR SAMPLING STYLE SMOKE DETECTORS MUST BE TESTED FOR PROPER INSTALLATION AND AIR FLOW BY A TECHNICIAN USING AN HVAC MANOMETER TO MEASURE PRESSURE DIFFERENTIAL ACROSS THE DETECTOR SAMPLING TUBE. THIS TESTING MUST BE WITNESSED BY THE FIRE DEPARTMENT AND IS TO BE COMPLETED AT THE EXPENSE OF THE INSTALLING CONTRACTOR. UPON SMOKE DETECTION, AIR HANDLING UNIT TO SHUTDOWN. DUCT SMOKE DETECTORS TO BE CONNECTED TO AND MONITORED BY THE BUILDING FIRE ALARM SYSTEM AS A SUPERVISORY ALARM.

FIRE AND SMOKE DAMPERS

COMBINATION FIRE/SMOKE DAMPERS MUST HAVE THE MINIMUM FIRE PROTECTION RATING SPECIFIED IN CBC TABLE 717.3.2.1 FOR THE TYPE OF PENETRATION.

UNLESS SPECIFICALLY SHOWN ON THE MECHANICAL PLANS, DUCT SMOKE DETECTORS SHALL NOT BE THE METHOD FOR ACTUATION FIRE ALARM CONTRACTOR SHALL PROVIDE ACTUATION DEVICE FOR COMBINATION FIRE SMOKE DAMPERS PER SECTION 717.3.3.1 OF 2022 CBC

1. WHERE A SMOKE DAMPER IS INSTALLED WITHIN A DUCT, A SMOKE DETECTOR SHALL BE INSTALLED INSIDE THE DUCT OR OUTSIDE THE DUCT WITH SAMPLING TUBES PROTRUDING INTO THE DUCT. THE DETECTOR OR TUBES WITHIN THE DUCT SHALL BE WITHIN 5 FEET (1524 MM) OF THE DAMPER. AIR OUTLETS AND INLETS SHALL NOT BE LOCATED BETWEEN THE DETECTOR OR TUBES AND THE DAMPER. THE DETECTOR SHALL BE LISTED FOR THE AIR VELOCITY, TEMPERATURE AND HUMIDITY ANTICIPATED AT THE POINT WHERE IT IS INSTALLED. OTHER THAN IN MECHANICAL SMOKE CONTROL SYSTEMS, DAMPERS SHALL BE CLOSED UPON FAN SHUTDOWN WHERE LOCAL SMOKE DETECTORS REQUIRE A MINIMUM VELOCITY TO OPERATE.

2. WHERE A SMOKE DAMPER IS INSTALLED ABOVE SMOKE BARRIER DOORS IN A SMOKE BARRIER, A SPOT-TYPE DETECTOR SHALL BE INSTALLED ON EITHER SIDE OF THE SMOKE BARRIER DOOR OPENING. THE DETECTOR SHALL BE LISTED FOR RELEASING SERVICE IF USED FOR DIRECT INTERFACE WITH THE DAMPER.

3. WHERE A SMOKE DAMPER IS INSTALLED WITHIN AN AIR TRANSFER OPENING IN A WALL, A SPOT-TYPE DETECTOR SHALL BE INSTALLED WITHIN 5 FEET (1524 MM) HORIZONTALLY OF THE DAMPER. THE DETECTOR SHALL BE LISTED FOR RELEASING SERVICE IF USED FOR DIRECT INTERFACE WITH THE DAMPER.

4. WHERE A SMOKE DAMPER IS INSTALLED IN A CORRIDOR WALL OR CEILING, THE DAMPER SHALL BE PERMITTED TO BE CONTROLLED BY A SMOKE DETECTION SYSTEM INSTALLED IN THE CORRIDOR.

5. WHERE A SMOKE DETECTION SYSTEM IS INSTALLED IN ALL AREAS SERVED BY THE DUCT IN WHICH THE DAMPER WILL BE LOCATED, THE SMOKE DAMPERS SHALL BE PERMITTED TO BE CONTROLLED BY THE SMOKE DETECTION SYSTEM.

THERMOSTATS

FOR ALL SINGLE ZONE, AIR CONDITIONERS AND HEAT PUMPS ALL THERMOSTATS SHALL HAVE SETBACK CAPABILITIES WITH A MINIMUM OF FOUR SEPARATE SET POINTS PER 24-HOUR PERIOD. ALSO THE THERMOSTAT MUST COMPLY WITH THE OCCUPANT CONTROLLED SMART THERMOSTAT REQUIREMENTS IN 2022 CALIFORNIA ENERGY CODE SECTION 110.12(A), WHICH IS CAPABLE OF RESPONDING TO DEMAND RESPONSE SIGNALS IN THE EVENT OF GRID CONGESTION AND SHORTAGES DURING HIGH ELECTRICAL DEMAND PERIODS.

THERMOSTAT MUST BE LISTED ON CALIFORNIA'S ENERGY COMMISSION CERTIFICATION LIST OF APPROVED OCCUPANT CONTROLLED SMART THERMOSTATS.

THERMOSTATS SHALL BE FURNISHED BY MECHANICAL CONTRACTOR, INSTALLED BY ELECTRICAL CONTRACTOR, AND PROGRAMMED BY MECHANICAL CONTRACTOR.

PROVIDE LOCKABLE SECURITY BOX IN STORAGE BUILDINGS AND OFFICE BUILDING. MOUNT ALL THERMOSTATS WITH TOP OF THERMOSTAT AT 48"ABOVE FINISHED FLOOR.

VOLUME DAMPERS

PROVIDE AN ACCESSIBLE MANUAL VOLUME DAMPER FOR EACH SUPPLY, RETURN, OSA AND EXHAUST OPENING, LOCATED AS FAR UPSTREAM AS POSSIBLE FROM THE OPENING UNLESS SPECIFIED. PROVIDE A MANUAL VOLUME DAMPER FOR BRANCH MAINS SERVING MORE THAN ONE OPENING. VOLUME DAMPERS IN NON-ACCESSIBLE CEILING SHALL HAVE A CONTROL ARM EXTENDED TO AN ACCESSIBLE LOCATION. PROVIDE "YOUNG" REGULATOR OR EQUAL. EXACT LOCATION OF CONTROL DEVICES VISIBLE IN FINISHED SPACES SHALL BE COORDINATED WITH THE ARCHITECT.

ACCEPTANCE TESTING

MANDATORY ACCEPTANCE TESTING PER TITLE 24, PART 6 SHALL BE AS FOLLOWS:

AN ACCEPTANCE TEST TECHNICIAN (ATT) SHALL ACT AS THE ACCEPTANCE AGENT AND PERFORM WORK REQUIRED IN THE FOLLOWING ACCEPTANCE TESTS AS DESCRIBED IN CHAPTER 13 OF THE 2022 NONRESIDENTIAL COMPLIANCE MANUAL. THIS SHALL INCLUDE FILLING OUT, SIGNING, AND SUBMITTING APPLICABLE FORMS

SPECIFIC REQUIREMENTS AND ACCEPTANCE TESTING FORMS ARE AVAILABLE IN THE 2022 NONRESIDENTIAL COMPLIANCE MANUAL WHICH CAN BE DOWNLOADED FROM: WWW.ENERGY.CA.GOV/PROGRAMS-AND-TOPICS/PROGRAMS/BUILDING-ENERGY-EFFICIENCY-STANDARDS

DUCT INSULATION

ALL DUCTWORK SHALL BE INSULATED PER THE MINIMUM REQUIREMENTS OF 2022 CALIFORNIA ENERGY CODE.

CONTROL NOTES

MOTOR FEEDERS, WIRING BETWEEN MOTORS, MOTOR CONTROLLERS, FEEDER PANELS, FUSES, CIRCUIT BREAKERS, AND BUS BARS SHALL BE THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR. ALL AUTOMATIC TEMPERATURE CONTROL SYSTEMS, INTERLOCK SYSTEMS,TIME SWITCHES, ELECTRIC RELAYS, INTERCONNECTING WIRING, AND CONDUIT, ETC. SHALL BE RESPONSIBILITY OF HVAC CONTRACTOR. ALL WORK SHALL BE IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS AND THE CALIFORNIA ELECTRICAL CODE.

MECHANICAL MANDATORY MEASURES

EQUIPMENT AND SYSTEMS EFFICIENCY

- ANY APPLIANCE FOR WHICH THERE IS A CALIFORNIA STANDARD ESTABLISHED IN THE APPLIANCE EFFICIENCY STANDARDS SHALL COMPLY WITH THAT STANDARD.
- ANY SPACE-CONDITIONING EQUIPMENT LISTED IN STD. 110.2 MAY BE INSTALLED ONLY IF THE MANUFACTURER HAS CERTIFIED TO THE CALIFORNIA ENERGY COMMISSION THAT THE EQUIPMENT COMPLIES WITH THE APPLICABLE REQUIREMENTS OF STD. 110.2.
- PIPING, EXCEPT THOSE CONVEYING LIQUIDS WITH A DESIGN OPERATING TEMPERATURE BETWEEN 60 DEG F AND 105 DEG F, OR WITHIN SPACE CONDITIONING EQUIPMENT CERTIFIED UNDER STD. 110.1 OR STD. 110.2, SHALL BE INSTALLED IN ACCORDANCE WITH STD. 120.3.
- ALL AIR DISTRIBUTION SYSTEM DUCTS AND PLENUMS ARE REQUIRED TO BE INSTALLED, SEALED, AND INSULATED IN ACCORDANCE WITH THE CALIFORNIA MECHANICAL CODE (CMC) SECTIONS 601, 602, 603, 604, 605, AND ANSI/SMACNA 006 2006 HVAC DUCT CONSTRUCTION STANDARDS METAL AND FLEXIBLE 3RD EDITION.

VENTILATION

- CONTROLS SHALL BE PROVIDED TO ALLOW OUTSIDE AIR DAMPERS OR DEVICES TO BE OPERATED AT THE VENTILATION RATES AS SPECIFIED IN THESE PLANS.
- ALL GRAVITY VENTILATING SYSTEMS SHALL BE PROVIDED WITH AUTOMATIC OR READILY ACCESSIBLE MANUALLY OPERATED DAMPERS IN ALL OPENINGS TO THE OUTSIDE, EXCEPT FOR COMBUSTION AIR OPENINGS.
- AIR BALANCING: ALL SPACE CONDITIONING AND VENTILATION SYSTEMS SHALL BE BALANCED TO THE QUANTITIES SPECIFIED IN THESE PLANS, IN ACCORDANCE WITH THE ASSOCIATED AIR BALANCE COUNCIL (AABC) NATIONAL STANDARDS OR THE NATIONAL ENVIRONMENTAL BALANCING BUREAU (NEBB) PROCEDURAL STANDARDS.
- GRAVITY OR AUTOMATIC DAMPERS INTERLOCKED AND CLOSED ON FAN SHUTDOWN SHALL BE PROVIDED ON THE OUTSIDE AIR INTAKES AND DISCHARGES OF ALL SPACE CONDITIONING AND EXHAUST SYSTEMS.
- FANS USED FOR VENTILATION SHALL OPERATE CONTINUOUSLY DURING OCCUPIED HOURS.
- THE MINIMUM OUTDOOR AIR LISTED OR THREE COMPLETE AIR CHANGES SHALL BE SUPPLIED TO THE ENTIRE BUILDING DURING THE ONE HOUR PERIOD IMMEDIATELY BEFORE THE BUILDING IS NORMALLY OCCUPIED.

CONTROLS

- EACH SPACE CONDITIONING ZONE SHALL BE CONTROLLED BY AN INDIVIDUAL THERMOSTATIC CONTROL THAT RESPONDS TO THE SUPPLY OF HEATING AND COOLING ENERGY WITHIN THAT ZONE [STD. 120.2 (A)]. WHEN USED TO CONTROL HEATING, THE THERMOSTATIC CONTROL MUST BE ADJUSTABLE DOWN TO 55 DEG F OR LOWER. FOR COOLING, THE THERMOSTATIC CONTROL MUST BE ADJUSTABLE UP TO 85 DEG F OR HIGHER. WHEN USED TO CONTROL BOTH HEATING AND COOLING, THE THERMOSTATIC CONTROL MUST BE ADJUSTABLE FROM 55 DEG F TO 85 DEG F AND ALSO PROVIDE A DEAD BAND OF AT LEAST 5 DEG F WITHIN WHICH THE SUPPLY OF HEATING AND COOLING IS SHUT OFF OR REDUCED TO A MINIMUM.
- EACH SPACE CONDITIONING SYSTEM SERVING BUILDING TYPES SUCH AS OFFICES AND MANUFACTURING FACILITIES [AND ALL OTHERS NOT EXPLICITLY EXEMPT FROM THE REQUIREMENTS OF STD. 120.2(E)] SHALL BE INSTALLED WITH AN AUTOMATIC TIME SWITCH WITH AN ACCESSIBLE OVERRIDE THAT ALLOWS OPERATION OF THE SYSTEM DURING OFF-HOURS FOR UP TO 4 HOURS. THE TIME SWITCH SHALL BE CAPABLE OF PROGRAMMING DIFFERENT SCHEDULES FOR WEEKDAYS OR WEEKENDS; INCORPORATE AN AUTOMATIC HOLIDAY "SHUTOFF' FEATURE THAT TURNS OFF ALL LOADS FOR AT LEAST 24 HOURS, THEN RESUMES THE NORMALLY SCHEDULED OPERATION; AND HAS PROGRAM BACKUP CAPABILITIES THAT PREVENT THE LOSS OF THE DEVICES PROGRAM AND TIME SETTING FOR AT LEAST 10 HOURS IF POWER IS INTERRUPTED.
- SYSTEMS WITH DDC TO THE STD 110.2(C) ARE ALSO REQUIRED TO HAVE AUTOMATIC DEMAND SHED CONTROLS.
- EACH SPACE CONDITIONING SYSTEM MUST BE PROVIDED WITH CONTROLS THAT CAN AUTOMATICALLY SHUT OFF THE EQUIPMENT DURING UNOCCUPIED HOURS. WHEN SHUT DOWN, THE CONTROLS SHALL AUTOMATICALLY RESTART THE SYSTEM TO MAINTAIN A SETBACK HEATING THERMOSTAT SETPOINT IF THE SYSTEM PROVIDES MECHANICAL HEATING, AND A SETUP COOLING THERMOSTAT SETPOINT, IF THE SYSTEM PROVIDES MECHANICAL COOLING.
- THERMOSTATS SHALL HAVE NUMERIC SETPOINTS IN DEGREES FAHRENHEIT (°F) AND ADJUSTABLE STOPS ACCESSIBLE ONLY BY AUTHORIZED PERSONNEL.

THESE DRAWINGS AND SPECIFICATIONS ARE THE PROPERTY AND COPYRIGHT OF WARE MALCOMB AND SHALL NOT BE USED ON ANY OTHER WORK EXCEPT BY AGREEMENT WITH WARE MALCOMB. WRITTEN DIMENSIONS SHALL TAKE PRECEDENCE OVER SCALED DIMENSIONS AND SHALL BE VERIFIED ON THE JOB SITE. ANY DISCREPANCY SHALL BE BROUGHT TO THE NOTICE OF WARE MALCOMB PRIOR TO THE COMMENCEMENT OF ANY WORK

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MECHANICAL NOTES

	DATE	REMARKS
	07/09/2025	ISSUE FOR PLAN CHECK
1	09/22/2025	PLAN CHECK CORRECTIONS
2	10/15/2025	PLAN CHECK CORRECTIONS 2
3	02/04/2026	PLAN CHECK CORRECTIONS 3
4	01/26/2025	OC HEALTH DEPT
7	04/30/2026	BID ADDENDUM 2

PA/PM:	BL
DRAWN BY.:	DG
JOB NO.:	LAX21-0174-02

06/06/2025

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5/6/2026 8:02:28 AM

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CAUTION: IF THIS SHEET IS NOT 30"x42" IT IS A REDUCED PRINT

MECHANICAL SPECIFICATIONS

1.0 GENERAL REQUIREMENTS

1.01 SCOPE OF WORK

A. THE GENERAL REQUIREMENTS OF THE ARCHITECTURAL SPECIFICATIONS ARE PART OF THESE SPECIFICATIONS. WHERE AN INCONSISTENCY EXISTS BETWEEN THE WORDING OR INTENT, THIS DIVISION SHALL TAKE PRECEDENCE.

B. THE STANDARD FORM OF GENERAL CONDITIONS ISSUED BY THE AMERICAN INSTITUTE OF ARCHITECTS DOCUMENT A201, LATEST EDITION, SHALL FORM A PART OF THIS CONTRACT.

C. ALL CONTRACTORS FOR THIS WORK SHALL VERIFY EQUIPMENT LOCATIONS, WEIGHTS AND CLEARANCES IN THE FIELD PRIOR TO SUBMITTING BIDS TO VERIFY CONDITIONS, INTERFERENCES WITH OTHER TRADES, AND DIMENSIONS. NO ALLOWANCES WILL BE MADE AFTER ACCEPTANCE OF BIDS FOR FAILURE TO COMPLY.

D. PROVIDE ALL LABOR AND MATERIALS, EQUIPMENT, FACILITIES, TRANSPORTATION AND SERVICES NECESSARY TO FURNISH, INSTALL AND COMPLETE THE HEATING, VENTILATING AND AIR CONDITIONING WORK AS INDICATED ON THE DRAWINGS AND SPECIFIED HEREIN. THE WORKMANSHIP SHALL BE COMPLETE IN EVERY RESPECT, BE TESTED AND APPROVED, AND BE SATISFACTORY TO THE ARCHITECT/ENGINEER AND IN ACCORDANCE WITH THE LOCAL, COUNTY AND STATE LAWS GOVERNING THIS INSTALLATION, INCLUDING THE FIRE MARSHAL.

E. THE DRAWINGS INDICATE DIAGRAMMATICALLY THE EXTENT AND LOCATION OF THE WORK INCLUDED. WORK INDICATED, BUT HAVING MINOR DETAILS OBVIOUSLY OMITTED, SHALL BE PROVIDED, INCLUDING THESE DETAILS, WITHOUT EXTRA COST.

F. IT IS THE DECLARED AND ACKNOWLEDGED INTENT OF THESE SPECIFICATIONS TO PROVIDE THE HEATING, VENTILATING AND AIR CONDITIONING SYSTEMS, INCLUSIVE OF ALL REQUIRED PARTS, ACCESSORIES AND CONTROLS COMPLETE AND READY FOR USE AS INDICATED ON THE ACCOMPANYING DRAWINGS. WORK INDICATED ON THE DRAWINGS, BUT NOT NECESSARILY INDICATED IN THESE SPECIFICATIONS SHALL BE PROVIDED AS REQUIRED.

1.02 RELATED WORK

POWER WIRING (IE FEEDERS) TO MOTORS, INCLUDING FINAL CONNECTIONS TO EQUIPMENT, SHALL BE PROVIDED BY THE DIVISION 16 - ELECTRICAL CONTRACTOR.

1.03 VISITING THE SITE

THE CONTRACTOR SHALL, PRIOR TO SUBMITTING HIS BID FOR DOING WORK AS DESCRIBED IN THIS SPECIFICATION AND ON THE ACCOMPANYING DRAWINGS, VISIT THE SITE AND COMPLETELY FAMILIARIZE HIMSELF WITH THE DIFFICULTIES AND FACILITIES THAT WILL BE INVOLVED FOR THE PROPER EXECUTION OF THE CONTRACT. NO EXTRA COMPENSATION SHALL BE ALLOWED FOR THE CONTRACTOR FAILING TO DO SO OR NOT TO FULLY APPRECIATE THE DIFFICULTIES AT HAND.

1.04 FEES AND INSPECTIONS

ALL OF THE CONTRACTORS SHALL APPLY, PROCURE AND PAY FEES FOR ALL PERMITS AND INSPECTIONS OR OTHER OBLIGATIONS THAT THE CITY, COUNTY, STATE OR UTILITIES MAY REQUIRE IN ORDER FOR HIM TO DO HIS WORK ACCORDING TO THE PLANS AND SPECIFICATIONS, UNLESS OTHERWISE NOTED.

1.05 LAWS AND ORDINANCES

THE CONTRACTOR SHALL GIVE ALL NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES AND REGULATIONS BEARING ON THE CONDUCT OF WORK AS DRAWN AND SPECIFIED. IF THE CONTRACTOR OBSERVES THAT THE DRAWINGS AND SPECIFICATIONS ARE AT VARIANCE THEREWITH, HE SHALL PROMPTLY NOTIFY THE ENGINEER IN WRITING WHEN SUBMITTING HIS BID AND ANY NECESSARY CHANGES SHALL BE ADJUSTED AS PROVIDED IN THE CONTRACT FOR SUCH CHANGES IN WORK. IF THE CONTRACTOR PERFORMS ANY WORK CONTRARY TO SUCH LAWS, ORDINANCES, RULES AND REGULATIONS, HE SHALL BEAR ALL COSTS FOR CORRECTING THE WORK.

1.06 TRADE JURISDICTION

WHEN IT BECOMES NECESSARY FOR THE COMPLETE FULFILLMENT OF THIS WORK, FOR THE CONTRACTOR TO FURNISH LABOR OR MATERIALS OTHER THAN WHICH IS GENERALLY ACCEPTED BY HIS TRADE OR BRANCH OF WORK, THE CONTRACTOR SHALL SUBLET SAME TO A CONTRACTOR NORMALLY ENGAGED IN THE TRADE OR BRANCH OF WORK, INVOLVED TO THE END, SO THAT THERE IS NO DELAY TO OR STOPPAGE OF WORK DUE TO THE INFRINGEMENT OR ALLEGED INFRINGEMENT TO TRADE AGREEMENTS AS TO THE JURISDICTION.

1.07 SUBMITTALS

THIS CONTRACTOR SHALL SUBMIT TO THE ENGINEER FOR APPROVAL, COMPLETE LISTS INCLUDING CATALOG CUTS, ETC., AND WHERE APPLICABLE DIMENSIONED SHOP DRAWINGS OF ALL MATERIALS, FIXTURES AND EQUIPMENT TO BE FURNISHED AND INSTALLED UNDER THIS CONTRACT. INCLUDE SHEETMETAL DUCT LAYOUTS AND PIPING PLAN LAYOUTS. REFER TO THE ARCHITECT'S GENERAL CONDITIONS FOR NUMBER OF COPIES TO BE SUBMITTED. DO NOT ORDER EQUIPMENT, FABRICATE DUCTWORK, OR INSTALL EQUIPMENT, DUCTWORK OR PIPING BEFORE RECEIVING SHOP DRAWINGS WHICH HAVE BEEN REVIEWED AND APPROVED BY THE ENGINEER.

REQUIRED ITEMS TO BE SUBMITTED SHALL INCLUDE, BUT NOT BE LIMITED TO, THE FOLLOWING:

DIFFUSERS, GRILLES AND REGISTERS
ACCESS PANELS
LOUVERS
MOTORIZED DAMPERS
FIRE DAMPERS
EQUIPMENT
ROOF CURBS
INSULATION
CONTROLS
SPECIALTIES

1.08 RECORD DRAWING SUBMITTAL

AT PROJECT CLOSEOUT, THE CONTRACTOR SHALL SUBMIT RECORD "AS-BUILT" DRAWINGS OF INSTALLED DUCTWORK, PIPING AND EQUIPMENT AS IT WAS ACTUALLY INSTALLED SO AS TO MAKE A PERMANENT RECORD. REFER TO THE ARCHITECTS GENERAL CONDITIONS FOR NUMBER OF COPIES TO BE SUBMITTED.

1.09 WORKMANSHIP AND MATERIALS

ALL MATERIALS SHALL BE NEW AND OF FIRST QUALITY. ALL LABOR SHALL BE EXECUTED IN A NEAT WORKMANLIKE MANNER AND SHALL BE PERFORMED BY MECHANICS SKILLED IN THEIR RESPECTIVE TRADES. THE ENGINEER SHALL DECIDE ALL MATTERS PERTAINING TO THE QUALITY OF WORKMANSHIP AND MATERIALS.

ALL DUCTWORK BEING STORED ON SITE AWAITING INSTALLATION AND ALL INSTALLED DUCTWORK WITH OPEN ENDS SHALL BE COVERED TO REDUCE THE CLEANING EFFORT ONCE THE SYSTEM IS PUT INTO OPERATION.

1.10 SPECIFICATIONS AND DRAWINGS

SPECIFICATIONS AND DRAWINGS ARE INTENDED TO BE COOPERATIVE. WHAT IS CALLED FOR BY EITHER SHALL BE AS BINDING AS IF CALLED FOR BY BOTH. ANY WORK OR MATERIALS NOT SPECIFICALLY MENTIONED, THOUGH REQUIRED TO MAKE THE JOB COMPLETE, SHALL BE FURNISHED BY THE CONTRACTOR AT HIS EXPENSE.

1.11 OPERATING INSTRUCTIONS

THIS CONTRACTOR SHALL PREPARE A TYPEWRITTEN LIST OF OPERATING INSTRUCTIONS FOR ALL THE EQUIPMENT INSTALLED UNDER THIS CONTRACT, AND SHALL INSTRUCT THE OWNER IN ITS OPERATION. INDIVIDUAL MANUALS PROVIDED BY THE EQUIPMENT MANUFACTURERS SHALL BE INCLUDED.

1.12 EQUIPMENT SCHEDULE

THIS CONTRACTOR SHALL PREPARE AND FURNISH TO THE OWNER, TWO (2) BOUND BOOKLETS, EACH CONTAINING A COMPLETE LIST OF ALL EQUIPMENT AND VALVES INSTALLED UNDER THIS CONTRACT. EACH PIECE OF EQUIPMENT AND VALVE LISTED SHALL INCLUDE ITS TAG NUMBER, MANUFACTURERS MODEL NUMBER AND COMPONENTS THEREIN WHICH MAKE UP THE SPARE PARTS LIST.

1.13 GUARANTEE

THIS CONTRACTOR SHALL GUARANTEE HIS WORK TO BE FREE FROM DEFECTIVE WORKMANSHIP AND MATERIALS FOR A PERIOD OF ONE (1) YEAR FROM DATE OF FINAL CERTIFICATE. ANY REPAIRS OR REPLACEMENT DURING THE PERIOD SHALL BE MADE WITHOUT COST TO THE OWNER, UPON HIS OR HER REQUEST.

1.14 COORDINATION OF WORK

THE CONTRACTOR SHALL CONFER WITH OTHER TRADES WHOSE WORK MAY AFFECT HIS INSTALLATION TO AVOID INTERFERENCE BEFORE STARTING THE INSTALLATION. ALL CHANGES IN THE WORK OF THIS CONTRACTOR CAUSED BY HIS NEGLECT TO COMPARE AND CONFER WITH OTHER TRADES SHALL BE MADE BY HIM AT HIS OWN EXPENSE.

1.15 CUTTING AND PATCHING

EACH CONTRACTOR SHALL DO HIS OWN CUTTING AND PATCHING. IF STRUCTURALLY REQUIRED, HE SHALL PROVIDE AND INSTALL THE NECESSARY STEEL WHEN GOING THROUGH A LOAD BEARING WALL. THIS CONTRACTOR SHALL NOT ENDANGER ANY WORK BY CUTTING, DIGGING OR OTHERWISE AND SHALL NOT CUT OR ALTER THE WORK OF OTHER TRADES WITHOUT CONSENT OF THE ARCHITECT/ENGINEER.

1.16 DEMOLITION

A. PIPING, VALVES, DUCTWORK, EQUIPMENT, ETC., WHICH IS REQUIRED TO BE REMOVED TO PERFORM WORK UNDER THIS SPECIFICATION WILL BE PERFORMED BY THIS CONTRACTOR AND TURNED OVER AND DELIVERED TO THE BUILDING MAINTENANCE DEPARTMENT OR DISPOSED OF AS DIRECTED.

B. ANY HOLES OR OPENINGS LEFT IN WALLS, ROOFS, FLOORS, CEILINGS, ETC., AFTER REQUIRED DEMOLITION WORK, SHALL BE FILLED IN AND PATCHED BY THIS CONTRACTOR IN A MANNER APPROVED BY THE ARCHITECT AND ENGINEER. FAILURE ON THIS CONTRACTOR'S PART TO COMPLY WITH ABOVE SHALL MAKE HIM RESPONSIBLE FOR ANY EXTRA EXPENSE INVOLVED.

C. ANY EQUIPMENT OR ARCHITECTURAL ELEMENTS DAMAGED OR DESTROYED IN THE DEMOLITION WORK SHALL BE REPAIRED, REPLACED AND/OR BROUGHT BACK TO GOOD WORKING ORDER TO THE SATISFACTION OF THE ARCHITECT AND ENGINEER.

1.17 MECHANICAL IDENTIFICATION

A. GENERAL: PROVIDE MECHANICAL IDENTIFICATION FOR ALL MECHANICAL EQUIPMENT, PIPING AND DUCT SYSTEMS. COMPLY WITH ANSI A13.1 FOR LETTERING SIZE, LENGTH OF COLOR FIELD, COLORS AND VIEWING ANGLES OF IDENTIFICATION DEVICES.

B. EQUIPMENT: PROVIDE EQUIPMENT SYSTEM NUMBER, CAPACITY, FLOW RATE, STATIC PRESSURE, PUMP HEAD, HORSEPOWER AND VOLTAGE. PROVIDE SETON MODEL 'VENTMARK" MARKERS.

C. PIPING: PROVIDE SYSTEM DESIGNATION NAME AND DIRECTION OF FLOW. PROVIDE SETON MODEL "SETMARK" PIPE MARKERS.

D. DUCTS: PROVIDE SYSTEM DESIGNATION NAME AND DIRECTION OF FLOW. PROVIDE SETON MODEL "VENTMARK" MARKERS.

E. VALVES: PROVIDE BRASS VALVE TAGS AND BRASS "S" HOOK FASTENERS WITH VALVE NUMBER AND TYPE OF SERVICE NOTED ON THE TAG. PROVIDE DUPLICATE VALVE CHARTS. THE CHART SHALL BE FOR ALL VALVES AND SHALL INDICATE VALVE IDENTIFICATION NUMBER, LOCATION AND PURPOSE. PROVIDE SETON BRASS VALVE TAGS AND VALVE CHARTS.

1.18 TESTING AND BALANCING

THIS CONTRACTOR SHALL NEGOTIATE A CONTRACT WITH AN INDEPENDENT, QUALIFIED AND CERTIFIED MEMEBER OF NEBB OR AABC TO COMPLETELY BALANCE THE AIR AND HYDRONIC SYSTEMS INCLUDED IN THIS SPECIFICATION AND ACCOMPANYING DRAWINGS, AS REQUIRED. THE CONTRACTOR SHALL SUBMIT A PROJECT CERTIFICATION GUARANTEE AND CERTIFIED BALANCE REPORT TO THE ARCHITECT/ENGINEER FOR REVIEW AND APPROVAL PRIOR TO FINAL ACCEPTANCE OF THE SYSTEMS BY THE OWNER.

1.19 NOISE AND VIBRATION CONTROL

THIS CONTRACTOR SHALL PROVIDE ACCOUSTICAL AND VIBRATION TREATMENT FOR ALL EQUIPMENT WITH MOVING PARTS TO MEET CODE AND MAINTAIN THE FOLLOWING NOISE CRITERIA:

LOBBIES, TOILETS AND CORRIDORS	NC 30
SPACE ADJACENT TO FAN ROOMS	NC 35
OFFICES, CONFERENCE ROOM, ETC.	NC 20

VIBRATION ISOLATORS AND FLEXIBLE CONNECTIONS SHALL BE USED AT EACH PIECE OF EQUIPMENT WITH MOVING PARTS.

1.20 BUILDING STANDARDS

IF BUILDING HAS STANDARDS FOR PIPING, DUCTWORK, DIFFUSERS, GRILLES, REGISTERS, TEMPERATURE CONTROLS, OTHER EQUIPMENT, ETC., PROVIDE SAME UNLESS OTHERWISE NOTED.

2.0 PRODUCTS, MATERIALS AND CONTROLS

2.01 HANGERS AND SUPPORTS

A. PIPING HANGERS AND SUPPORTS SHALL COMPLY WITH MSS SP-58. PROVIDE ONLY ONE TYPE OF HANGER/SUPPORT, BY ONE MANUFACTURER, FOR EACH PIPING SERVICE.

B. DUCT HANGERS AND SUPPORTS SHALL BE IN ACCORDANCE WITH SMACNA DUCT CONSTRUCTION STANDARDS.

C. EQUIPMENT HANGERS AND SUPPORTS SHALL BE PROVIDED AND INSTALLED PER THE EQUIPMENT MANUFACTURER'S REQUIREMENTS.

2.02 ACCESS DOORS

ACCESS DOORS SHALL BE INSTALLED FOR ALL NON-ACCESSIBLE EQUIPMENT, VALVES, OPERATIONS, CONTROLS, OR OTHER WORKING PARTS REQUIRING MAINTENANCE OR ADJUSTMENT. THIS CONTRACTOR SHALL FURNISH ALL SUCH ACCESS DOORS AND ADVISE GENERAL CONTRACTOR OF THE LOCATION OF ALL ACCESS DOORS REQUIRED THROUGHOUT THE PROJECT. ACCESS DOOR MANUFACTURER'S DATA SHALL BE SUBMITTED FOR REVIEW AND APPROVAL BY THE ARCHITECT AND ENGINEER. COLOR OF ACCESS DOORS SHALL BE APPROVED BY THE ARCHITECT.

2.03 EQUIPMENT

A. PROVIDE AND INSTALL ALL EQUIPMENT AS SHOWN IN THE EQUIPMENT SCHEDULES.

B. ALL EQUIPMENT DATA SHALL BE SUBMITTED FOR REVIEW AND APPROVAL BY THE ARCHITECT AND ENGINEER.

C. COLOR OF ALL DIFFUSERS, GRILLES AND REGISTERS SHALL BE APPROVED BY THE ARCHITECT.

D. COORDINATE FINAL LOCATION OF ALL THERMOSTATS, DIFFUSERS, GRILLES AND REGISTERS WITH THE ARCHITECT'S REFLECTED CEILING PLAN.

2.04 DUCTWORK AND ACCESSORIES

A. ALL DUCTWORK SHALL BE PRIME GALVANIZED SHEET STEEL, LOCK FORMING, FIRST QUALITY, FABRICATED IN ACCORDANCE WITH THE LATEST EDITION OF THE ASHRAE GUIDE, EXCEPT AS NOTED OTHERWISE.

B. ROUND SPIRAL DUCTWORK SHALL BE UNITED SHEET METAL TYPE DUCT FITTINGS, OR APPROVED EQUAL, INSTALLED AND SUSPENDED AS PER MANUFACTURER'S RECOMMENDATIONS.

C. ALL DUCTS ARE TO HAVE GALVANIZED STIFFENERS IN THE FORM OF SEAMS INVOLVING AT LEAST THREE FOLDS OF SHEET METAL (POCKET LOCKS, STANDING SEAMS, STANDING S-SLIPS, ETC.).

D. VENTILATION CONSTRUCTION NOT COVERED BY THE ASHRAE GUIDE AND/OR GOVERNING AUTHORITIES SHALL BE IN ACCORDANCE WITH THE MAXIMUM STANDARDS AND TRADE PRACTICES AS SET FORTH BY THE SHEET METAL AND AIR CONDITIONING CONTRACTORS NATIONAL ASSOCIATION (SMACNA) INCLUDING THEIR MOST CURRENT DUCT MANUAL.

E. DUCT DIMENSIONS SHOWN ON THE DRAWINGS INDICATE INSIDE DIMENSIONS. INCREASE DUCT SIZE WHEN LINING IS UTILIZED.

F. LOW PRESSURE DUCTWORK SHALL BE CONSIDERED AS ALL DUCTWORK NOT DEFINED AS MEDIUM PRESSURE DUCTWORK, UNLESS NOTED OTHERWISE. PROVIDE 2" SP DUCT CONSTRUCTION FOR SUPPLY AIR DUCTS AND 1" SP CONSTRUCTION FOR RETURN AND EXHAUST AIR DUCTS, UNLESS OTHERWISE NOTED.

G. MEDIUM PRESSURE DUCTWORK SHALL BE CONSIDERED AS ALL DUCTWORK UPSTREAM OF VAV BOXES AND FAN-POWERED BOXES. PROVIDE 3" SP DUCT CONSTRUCTION UNLESS NOTED OTHERWISE. ROUND SINGLE WALL MEDIUM PRESSURE DUCTWORK IN SOUND-LINED SYSTEMS WILL NOT BE PERMITTED IN LENGTHS GREATER THAN FIVE FEET.

H. ALL LOW AND MEDIUM PRESSURE DUCTWORK SHALL BE SEALED WITH AN APPROVED MASTIC.

I. ALL DUCT SYSTEMS ARE TO BE TESTED FOR LEAKAGE. MAXIMUM ALLOWABLE LEAKAGE FOR ANY SYSTEM WILL BE 5% OF TOTAL AIR QUANTITY. SUBMIT TEST DATA SHEET(S) TO ARCHITECT/ENGINEER FOR APPROVAL.

J. A 5'-0" MAXIMUM LENGTH OF INSULATED FLEXIBLE DUCT WILL BE PROVIDED TO EACH SUPPLY OUTLET AND RETURN INLET AS REQUIRED.

K. DIFFUSER TAKE-OFF WHERE DIFFUSER IS LOCATED BELOW THE MAIN TRUNK, AND WHERE INDICATED. DEVICE SHALL BE COMPLETE WITH WORM GEAR MECHANISM FOR OPERATION OR ADJUSTMENTS THRU THE FACE OF THE DIFFUSER. IF TURNING DEVICE IS LOCATED REMOTELY FROM GRILLE, REGISTER OR DIFFUSER, PROVIDE EXTENSION ROD ON ADJUSTING DEVICE. TITTLE AND BAILEY, "VENTROL NLC" OR APPROVED EQUAL.

L. PROVIDE FACTORY-FABRICATED TURNING VANES IN ALL SQUARE ELBOWS. VANES SHALL BE BARBER-COLEMAN "AIRTURNS" OR APPROVED EQUAL.

M. TAPERED SPIN-IN FITTING, WITH LOCK-IN QUADRANT AND VOLUME DAMPER SHALL BE PROVIDED FROM BRANCHES TO DIFFUSERS, FOR LOW PRESSURE DUCTWORK.

N. ALL BRANCH DUCT TAKE-OFFS SHALL BE EQUIPPED WITH TAPERED FITTINGS.

O. ALL FULL RADIUS ELBOWS SHALL HAVE A CENTERLINE RADIUS OF 1.5 TIMES THE DUCT WIDTH. ELBOWS WITH A CENTERLINE RADIUS LESS THAN 1.5 TIMES THE DUCT WIDTH SHALL HAVE TURNING VANES.

P. VOLUME DAMPERS SHALL BE PROVIDED FOR AIR BALANCE PURPOSES. PROVIDE MANUAL VOLUME DAMPERS ON ALL LOW PRESSURE SUPPLY, RETURN AND EXHAUST DUCT BRANCHES AND TO AIR DIFFUSERS, REGISTERS AND GRILLES, UNLESS NOTED OTHERWISE. DAMPERS SHALL BE OPPOSED BLADE TYPE UNLESS NOTED OTHERWISE.

1. FOR VOLUME DAMPERS ABOVE DRYWALL CEILINGS AND OTHER INACCESSIBLE LOCATIONS, PROVIDE LEVER, POSITION INDICATOR AND LOCK NUT, ENCLOSED IN A DEEP DIE-CAST BOX WITH ADJUSTABLE 2-5/8" DIAMETER COVER. YOUNG REGULATOR SERIES 315 OR VENTLOCK SERIES 677 AND/OR PROVIDE ACCESS PANEL, SIZED AS REQUIRED (12" X 12" MINIMUM).

2. FOR VOLUME DAMPERS ABOVE ACCESSIBLE CEILINGS, PROVIDE LOCKING TYPE WITH LEVER HANDLE, POSITION INDICATOR AND LOCK NUT. YOUNG REGULATOR SERIES 400 OR VENTLOCK SERIES 600.

Q. DYNAMIC RATED FIRE DAMPERS SHALL BE PROVIDED PER CODE REQUIREMENTS. PROVIDE TYPE "B" FIRE DAMPERS FOR LOW PRESSURE DUCTWORK AND TYPE "C" FIRE DAMPERS FOR MEDIUM PRESSURE DUCTWORK. PROVIDE A DUCT ACCESS DOOR FOR EACH FIRE DAMPER.

R. ROOFTOP UNIT LEVELING CURBS SHALL BE PROVIDED BY THE GENERAL CONTRACTOR. THE MECHANICAL CONTRACTOR IS TO INSTALL FACTORY PROVIDED CURBS ON TOP OF LEVELING CURB SO THAT THE ROOFTOP EQUIPMENT IS INSTALLED PLUM AND LEVEL, UNLESS OTHERWISE NOTED.

S. PROVIDE RIGID LINED CONNECTIONS AT THE INLET AND OUTLET OF EACH VAV BOX AND INLET OF EACH FAN-POWERED BOX. FLEXIBLE CONNECTIONS ARE ONLY PERMITTED ON THE DISCHARGE OF FAN-POWERED BOXES.

T. ALL UNINSULATED EXTERIOR DUCTWORK WHICH IS EXPOSED TO THE OUTDOOR ELEMENTS SHALL BE GALVANIZED OR BLACK IRON AND OF CONSTRUCTION TO COMPLY WITH SMACNA STANDARDS. PROVIDE WATER-PROOF SEAMS AND TWO COATS OF TAR-BASED PAINT OVER ALL DUCTWORK EXPOSED TO THE OUTDOOR ELEMENTS. PROVIDE "PATE CO." TYPE ROOF SUPPORTS WITH ALL NECESSARY ANGLE IRON SUPPORT LEGS AND CROSSES. WHEREVER THIS DUCTWORK PENETRATES THE BUILDING ENVELOPE, THE PENETRATION SHALL BE MADE WATER-PROOF.

U. ALL KITCHEN HOOD EXHAUST DUCTWORK SHALL BE 14 GAUGE BLACK IRON OR 18 GAUGE 303 STAINLESS STEEL WITH CONTINUOUSLY WELDED SEAMS. ACCESS DOORS SHALL BE PROVIDED EVERY 20 FEET AND AT EVERY CHANGE IN DIRECTION.

V. ALL DISHWASHER EXHAUST DUCTWORK SHALL BE ALUMINUM OF WATERTIGHT CONSTRUCTION. DUCTWORK SHALL BE PITCHED AT ¼" PER FOOT TO ENSURE THAT ANY DEVELOPED CONDENSATION TRAVELS BACK TO THE DISHWASHER EQUIPMENT.

2.05 PIPING

A. ALL PIPING FOR WORK CONTAINED IN THIS SPECIFICATION AND ACCOMPANYING DRAWINGS SHALL BE IN CONFORMANCE WITH ASTM STANDARDS. ALL CHANGES IN DIRECTION WILL BE MADE WITH FITTINGS. REAM ALL PIPING AND CLEAN OUT SAME BEFORE ASSEMBLY. PROVIDE VALVES OF SIMILAR MATERIAL AS THE PIPING MATERIAL THEY ARE INSTALLED IN. FERROUS BODY VALVES WITH STEEL PIPING. BRASS AND BRONZE VALVES WITH COPPER PIPING. PROVIDE DIELECTRIC FITTINGS, UNIONS, ETC. WHERE PIPING, VALVES, FITTINGS, EQUIPMENT, ETC. OF DISSIMILAR METALS ARE JOINED. COVER OPEN PIPING DURING CONSTRUCTION. FLUSH OUT AND CLEAN PIPING IN A MANNER THAT IS APPROVED BY THE ENGINEER. FOR EACH BRANCH TAKE-OFF, PROVIDE A 3-ELBOW "Z" SHAPE CONNECTION TO PROVIDE PIPING FLEXIBILITY FOR EXPANSION. PROVIDE GUIDES, ANCHORS, EXPANSION LOOPS, SUPPORTS, VENTS, DRAINS, MAKE-UP WATER, ETC., AS REQUIRED.

B. COPPER PIPING SHALL HAVE SOCKET FITTINGS FOR SOLDER OR BRAZING CONNECTIONS.

C. STEEL PIPING SHALL BE SCHEDULE 40, ASTM A120 OR A53, UNLESS OTHERWISE NOTED. THE FITTINGS IN PIPE 2" AND SMALLER SHALL BE CAST IRON OR MALLEABLE, UNLESS OTHERWISE NOTED. ALL PIPING 2-1/2" AND LARGER SHALL BE BUTT WELDED. WELDING SHALL BE DONE ONLY BY WELDERS CERTIFIED FOR THIS TYPE OF WORK. ALL FITTINGS SHALL BE AS MANUFACTURED BY STOCKHOLM, BONNEY FORGE, WALWORTH, GRINNEL OR TUBE TURNS. PAINT ALL EXPOSED THREADS AFTER ASSEMBLY. FOR ALL PIPING EXPOSED TO THE OUTSIDE AIR, PAINT PIPING WITH ONE COAT OF RUST INHIBITING PRIMER AND ONE COAT OF BLACK FINISH PAINT.

D. PIPING SYSTEMS AND MATERIALS

1. REFRIGERANT PIPING: TYPE K DRAWN COPPER. PROVIDE SHUTOFF VALVES, FILTER DRIERS, SOLENOID VALVES, THERMAL EXPANSION VALVES, SIGHT GLASSES, PRESSURE GAUGES, OIL TRAPS, ETC., AS REQUIRED. PROVIDE REFRIGERANT VENT PIPING TO THE OUTDOORS AS REQUIRED.

2. HVAC DRAIN PIPING: TYPE L DRAWN COPPER FOR INDOOR DRAINS FROM COPPER PIPING SYSTEM. SCHEDULE 40, ASTM A120 OR A53 STEEL FOR INDOOR DRAINS FROM STEEL PIPING SYSTEMS, STEEL PIPES TO BE CORROSION RESISTANT. SCHEDULE 40 PVC PLASTIC FOR OUTDOOR DRAINS, PVC DRAINS TO BE PROVIDED WITH PROTECTION FROM SUNLIGHT AND UV DAMAGE.. INSTALL A TRAP IN THE DRAIN PIPE. PROVIDE A CONCRETE SPLASH BLOCK FOR DRAIN TERMINATIONS FROM ROOFTOP HVAC UNITS.

3. GAS PIPING: PROVIDE SCHEDULE 40 STEEL PIPE OR CORRUGATED STAINLESS STEEL TUBING (CSST). PROVIDE VENTED ENCLOSURES FOR RISERS AND HORIZONTAL RUNS (IN PLENUM CEILINGS, ETC.). FOR SCHEDULE 40 PIPE SIZES 2" AND SMALLER, PROVIDE ALL WELDED OR ALL SCREWED FITTINGS. FOR SCHEDULE 40 PIPE SIZES 2-1/2" AND LARGER, PROVIDE ALL WELDED FITTINGS. ALL CSST SHALL MEET THE DESIGN AND INSTALLATION REQUIREMENTS SET FORTH IN ANSI/AGA LC 1-1993. GROUND ALL GAS PIPING. INSTALL DIRT LEGS IN ALL PIPING IMMEDIATELY BEFORE CONNECTION TO EACH PIECE OF EQUIPMENT. INSTALL VENT PIPING FROM VALVES, IF REQUIRED, TO THE OUTDOORS WITH WEATHER-PROOF AND INSECT-PROOF OUTDOOR TERMINATION DEVICES.

2.06 INSULATION

A. FURNISH AND INSTALL INSULATION AS SPECIFIED.

B. DUCT INSULATION

1. ALL SUPPLY, RETURN, AND EXHAUST AIR DUCTWORK IN UNCONDITIONED SPACES: 1-1/2" FLEXIBLE GLASS FIBER WITH FACTORY APPLIED ALUMINUM FOIL VAPOR BARRIER. 3/4 LBS. PER CUBIC FOOT DENSITY. FLAME SPREAD RATING OF NOT GREATER THAN 25 AND A SMOKE DEVELOPED RATING OF NOT GREATER THAN 50.

2. ALL OUTSIDE AIR DUCTWORK AND DUCTWORK IN MECHANICAL ROOMS: 2" SEMI-RIGID GLASS FIBER WITH FACTORY APPLIED, WHITE, ALL SERVICE, VAPOR BARRIER JACKET. 3 LBS. PER CUBIC FOOT DENSITY. FLAME SPREAD RATING OF NOT GREATER THAN 25 AND A SMOKE DEVELOPED RATING OF NOT GREATER THAN 50.

3. ALL KITCHEN HOOD EXHAUST DUCTWORK: 2" THICK MINERAL WOOL WITH CANVAS COVERING JACKET OVER INSULATION. COVERING OVER ACCESS PANEL SHALL BE REMOVABLE.

C. INSULATED FLEXIBLE DUCT

ALL SUPPLY AND RETURN/EXHAUST AIR CONNECTIONS TO EACH DIFFUSER: POLYETHYLENE CORE LAMINATED TO A GALVANIZED STEEL WIRE HELIX; 1" THICK, 1 LB. PER CUBIC FOOT DENSITY GLASS FIBER INSULATION; FIBERGLASS REINFORCED, METALIZED, VAPOR BARRIER.

D. PIPE INSULATION

1. REFRIGERATION PIPING: 1" THICK, FLEXIBLE, CLOSED CELL, FOAMED ELASTOMER; FACTORY APPLIED ADHESIVE ALONG PRESLIT JOINT; FIELD APPLIED WEATHER RESISTANT PROTECTIVE FINISH AS RECOMMENDED BY THE MANUFACTURER. K-VALUE OF 0.27 AT 75 DEGREES F.

2. CHILLED WATER SUPPLY AND RETURN, HEATING HOT WATER SUPPLY AND RETURN, LOW PRESSURE STEAM AND CONDENSATE, AND COOLING COIL INTERIOR CONDENSATE DRAIN PIPING: HEAVY DUTY, MOLDED GLASS FIBER WITH FACTORY APPLIED ALL SERVICE VAPOR BARRIER JACKET AND SELF-SEALING JOINTS. 1" THICK FOR PIPE SIZES 2" AND SMALLER. 1-1/2" THICK FOR PIPE SIZES 2-1/2" AND LARGER. K-VALUE OF 0.24 AT 75 DEGREES F.

2.07 CONTROLS

A. INTERLOCKED WITH MANUFACTURER PROVIDED THERMOSTATS. INTERLOCK AS NOTED/SHOWN ON PLANS.

B. TYPICAL EXHAUST FAN CONTROL: THE FANS SHALL BE CONTROLLED AS NOTED ON THE EQUIPMENT SCHEDULE.

3.0 EXECUTION

3.01 INSPECTION

PRIOR TO BEGINNING ANY WORK, CAREFULLY COORDINATE WITH THE WORK OF OTHER TRADES AND AT TIMES CONFIRM THAT THE WORK OF OTHERS IS COMPLETE TO THE POINT WHERE THIS INSTALLATION CAN PROPERLY COMMENCE.

3.02 GENERAL INSTALLATION REQUIREMENTS

VERIFY QUANTITIES, CAPACITIES, PERFORMANCE CHARACTERISTICS, OPERATING REQUIREMENTS AND CURRENT CHARACTERISTICS OF ALL EQUIPMENT PRIOR TO ITS INSTALLATION. VERIFY THAT SPACE ALLOTTED FOR EQUIPMENT IS SUFFICIENT FOR ENTRANCE AND INSTALLATION, MAINTENANCE AND SERVICE, AND REMOVAL AND REPLACEMENT.

3.03 COORDINATION OF INSTALLATION

A. INSTALL WORK IN SUCH A MANNER THAT IT WILL CONFORM TO THE STRUCTURE, AVOID OBSTRUCTIONS, MAINTAIN HEADROOM AND KEEP OPENINGS AND PASSAGEWAYS CLEAR. GENERALLY, KEEP HORIZONTAL LINES AS HIGH AS POSSIBLE. MAKE LOCAL PROVISIONS FOR THE SERVICING AND REMOVAL OF EQUIPMENT.

B. ANY INTERFERENCE WITH WORK OF OTHER TRADES ARISING FROM FAILURE TO COORDINATE THE WORK AND LACK OF COOPERATION HEREUNDER, SHALL REQUIRE THE REMOVAL AND REINSTALLATION OF ALL INTERFERING WORK WITHOUT ADDITIONAL COST TO THE OWNER.

3.04 IDENTIFICATION OF EQUIPMENT

EACH PIECE OF EQUIPMENT SHALL DISPLAY A PERMANENT METAL OR PLASTIC NAMEPLATE WHICH SHALL BE LOCATED SO AS TO BE FULLY VISIBLE AFTER THE EQUIPMENT HAS BEEN INSTALLED. THE NAMEPLATE SHALL SHOW THE EQUIPMENT NUMBER AND OTHER PERTINENT INFORMATION.

3.05 CLEAN UP

A. UPON COMPLETION OF THE INSTALLATION OF DUCTWORK, CLEAN THE ENTIRE SYSTEM OF RUBBISH, PLASTER, DIRT, ETC., BEFORE INSTALLING THE DIFFUSERS, REGISTERS AND GRILLES.

B. REMOVE TEMPORARY FILTERS FROM RETURN INLETS.

C. OPERATE AND MAKE ANY REQUIRED ADJUSTMENT TO EQUIPMENT, DUCTWORK, PIPING, ETC., AS MAY BE NECESSARY TO PUT THE SYSTEMS IN PROPER OPERATING CONDITION.

D. REMOVE ALL LABELS, TAGS, ETC., FROM ANY SPECIALTIES, EQUIPMENT, ETC., AND REMOVE ALL GREASE OR OTHER PROTECTIVE COATING FROM ALL EQUIPMENT, PIPING, ETC., AND LEAVE WORK IN A MANNER THAT IS ACCEPTABLE TO THE ARCHITECT/ENGINEER.

3.06 OPERATING AND MAINTENANCE INSTRUCTIONS

AFTER HAVING COMPLETELY INSTALLED ALL SYSTEMS AND ALL NECESSARY TESTS ARE COMPLETED, THIS CONTRACTOR SHALL MAKE ARRANGEMENTS TO OPERATE ALL THE SYSTEMS FOR A PERIOD OF NOT LESS THAN FIVE (5) DAYS AT NO EXPENSE TO THE OWNER. A WRITTEN NOTIFICATION OF THIS TRIAL OPERATING PERIOD SHALL BE PRESENTED TO THE ARCHITECT/ENGINEER, TEN (10) DAYS IN ADVANCE, FOR APPROVAL. DURING THIS TRIAL OPERATING PERIOD, THE CONTRACTOR MAY MAKE NECESSARY MINOR, BUT NON-INTERUPTIVE ADJUSTMENTS, AND ALSO SHALL GIVE INSTRUCTIONS TO THE OWNER'S OPERATING PERSONNEL OR REPRESENTATIVES, ON THE OPERATION AND MAINTENANCE OF THE VARIOUS ITEMS OF EQUIPMENT AND SYSTEMS.

3.07 INSPECTION

A. VISUALLY INSPECT ALL EQUIPMENT FOR COMPLETENESS AND FUNCTIONAL READINESS.

B. LUBRICATE ALL FAN AND MOTOR BEARINGS.

C. CHECK ALL FANS FOR ALIGNMENT AND CLEARANCE.

D. INSPECT ALL DAMPERS FOR PROPER LINKAGE AND SETTING FOR OPERATION.

E. CONFIRM THAT THE CONTROL SYSTEM HAS BEEN COMPLETED, CALIBRATED AND IS IN OPERATION.

3.08 ELECTRICAL

A. INSPECT THE MOTOR CONTROL CENTERS, DISCONNECT SWITCHES, OVERLOAD PROTECTION AND WIRING FOR THE HVAC EQUIPMENT PRIOR TO STARTUP OF THE EQUIPMENT.

B. COORDINATE THE STARTUP OF EQUIPMENT WITH THE ELECTRICAL CONTRACTOR.

3.09 CLOSING IN WORK

WORK SHALL BE INSPECTED AND THEN APPROVED BY THE ARCHITECT/ENGINEER AND/OR AUTHORITIES HAVING JURISDICTION. ANY WORK COVERED PRIOR TO SUCH INSPECTION, TEST AND APPROVAL SHALL BE UNCOVERED, IF SO REQUESTED, AND AFTER APPROVAL, COVERED AGAIN WITHOUT COST TO THE OWNER.

3.10 TESTING, ADJUSTING AND BALANCING

A. THE HVAC CONTRACTOR SHALL HIRE AN INDEPENDENT, QUALIFIED AND CERTIFIED MEMBER OF NEBB OR AABC TO COMPLETELY BALANCE THE AIR AND HYDRONIC SYSTEMS, AS REQUIRED. THE TEST AND BALANCE CONTRACTOR SHALL SUBMIT A PROJECT CERTIFICATION GUARANTEE AND CERTIFIED BALANCE REPORT TO THE ENGINEER FOR APPROVAL BEFORE FINAL ACCEPTANCE.

B. ADJUST ALL SUPPLY, RETURN AND EXHAUST DEVICES TO PLUS OR MINUS 5 PERCENT OF THE DESIGN AIRFLOW QUANTITIES.

C. ADJUST HYDRONIC FLOW QUANTITIES TO PLUS OR MINUS 10 PERCENT OF INDICATED DESIGN FLOWS.

D. THE BALANCING CONTRACTOR SHALL REPORT ANY DEFICIENCIES TO THE ENGINEER AND MECHANICAL CONTRACTOR. THE BALANCING CONTRACTOR SHALL ALSO RECOMMEND POSSIBLE ACTIONS TO REMEDY THE DEFICIENCIES.

E. IN GENERAL, THE MECHANICAL CONTRACTOR SHALL CHANGE FAN SHIEVES, PUMP IMPELLERS, DRIVES, ETC., TO REMEDY THE DEFICIENCIES AT NO ADDITIONAL COST TO THE OWNER.

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MECHANICAL SPECIFICATIONS

	DATE	REMARKS
1	07/09/2025	ISSUE FOR PLAN CHECK
2	09/22/2025	PLAN CHECK CORRECTIONS
3	10/15/2025	PLAN CHECK CORRECTIONS 2
3	02/04/2026	PLAN CHECK CORRECTIONS 3
4	01/26/2025	OC HEALTH DEPT
7	04/30/2026	BID ADDENDUM 2

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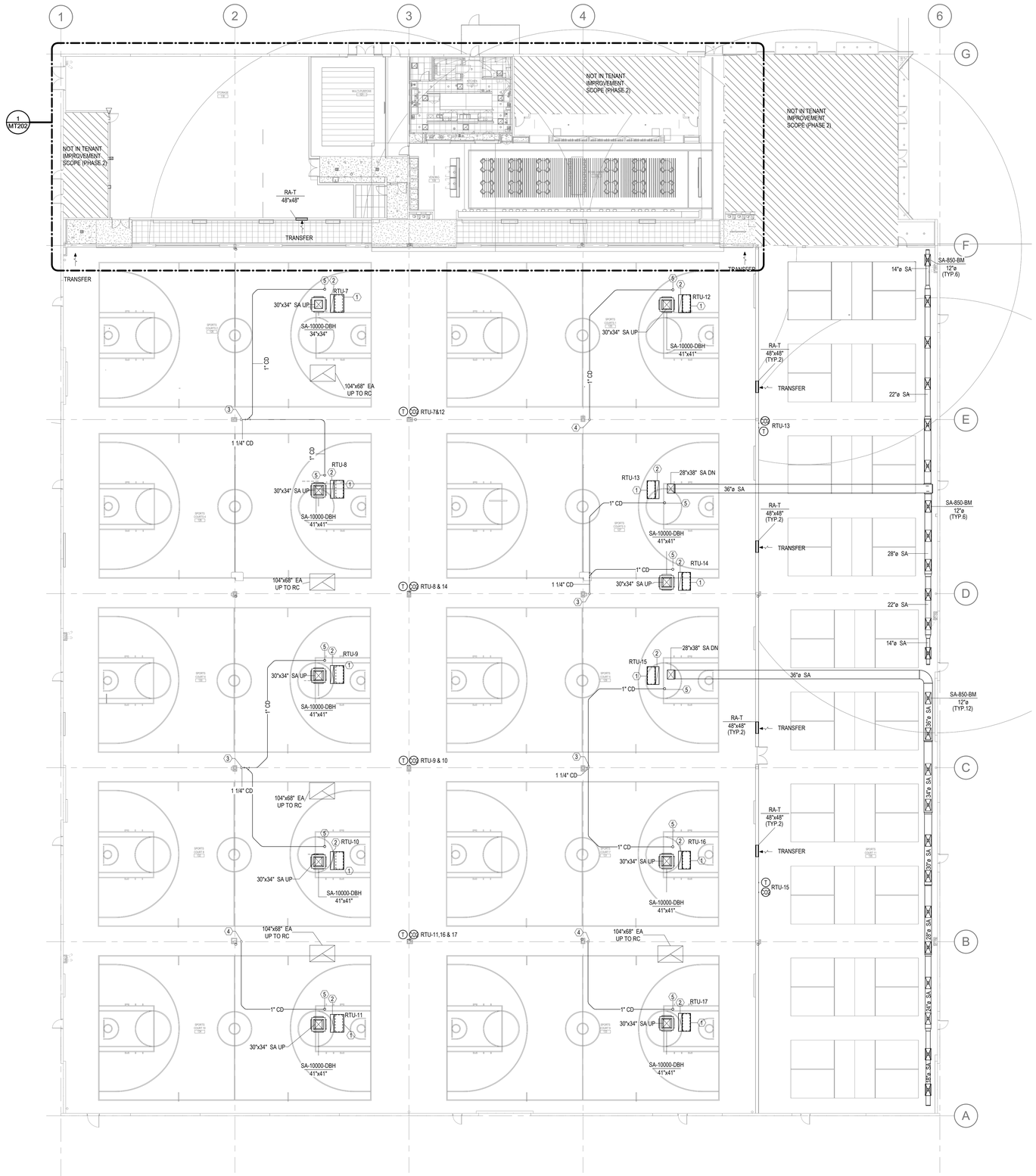

1 MECHANICAL FLOOR PLAN
1/16" = 1'-0"

GENERAL NOTES:

1. SIZE, INSULATE, AND PROVIDE REFRIGERANT LINE PER MANUFACTURER'S REQUIREMENTS.
2. PLENUM: THE SPACE ABOVE THE CEILING IS BEING UTILIZED AS A RETURN AIR PLENUM. ALL PIPING, WIRING AND DEVICES INSTALLED WITHIN THE PLENUM SHALL BE U.L. LISTED PLENUM RATED AND COMPLY WITH CURRENT SHALL BE NONCOMBUSTIBLE OR SHALL HAVE A FLAME SPREAD INDEX OF NOT MORE THAN 25 AND A SMOKE DEVELOPMENT INDEX OF NOT MORE THAN 50 WHEN TESTED IN ACCORDANCE WITH ASTM E 84.

   PLENUM SPACE ONLY OCCURS WHERE THERE IS A SUSPENDED OR JOIST SUPPORTED CEILING AREA BELOW ROOF STRUCTURE BOUNDED BY FULL HEIGHT WALLS (FLOOR TO ROOF DECK).
3. ALL HVAC SENSORS WITHIN THE PLAYCOURT AREA SHALL BE CONTAINED IN SCHNEIDER ELECTRIC WIRE GUARD, AT-1103/1163 OR EQUIVALENT. BOTTOM OF SENSOR TO BE RIGHT ABOVE TOP OF MAT (~10' AFF).

KEYNOTES

1. 72"X36" OPENING CUT ON TOP OF 74"X15" RA DUCT. OPENING SHALL BE COVERED WITH WIRE MESH COVER.
2. BOOTED RETURN UP TO RTU, SIZED TO RTU RETURN OPENING. PROVIDE TRANSITION.
3. 1 1/4" CONDENSATE DOWN TO HUB DRAIN (HB-1). SEE PLUMBING DRAWINGS.
4. 1" CONDENSATE DOWN TO HUB DRAIN (HB-1). SEE PLUMBING DRAWINGS.
5. CONDENSATE DOWN FROM RTU ON ROOF.

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OVERALL MECHANICAL PLAN

	DATE	REMARKS
1	07/09/2025	ISSUE FOR PLAN CHECK
2	09/22/2025	PLAN CHECK CORRECTIONS
3	10/15/2025	PLAN CHECK CORRECTIONS 2
4	12/04/2025	PLAN CHECK CORRECTIONS 3
5	01/26/2026	OC HEALTH DEPT
6	04/30/2026	BID ADDENDUM 2
7		

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GENERAL NOTES:

1. PLENUM: THE SPACE ABOVE THE CEILING IS BEING UTILIZED AS A RETURN AIR PLENUM. ALL PIPING, WIRING AND DEVICES INSTALLED WITHIN THE PLENUM SHALL BE U.L. LISTED PLENUM RATED AND COMPLY WITH CURRENT SHALL BE NONCOMBUSTIBLE OR SHALL HAVE A FLAME SPREAD INDEX OF NOT MORE THAN 25 AND A SMOKE DEVELOPMENT INDEX OF NOT MORE THAN 50 WHEN TESTED IN ACCORDANCE WITH ASTM E 84.

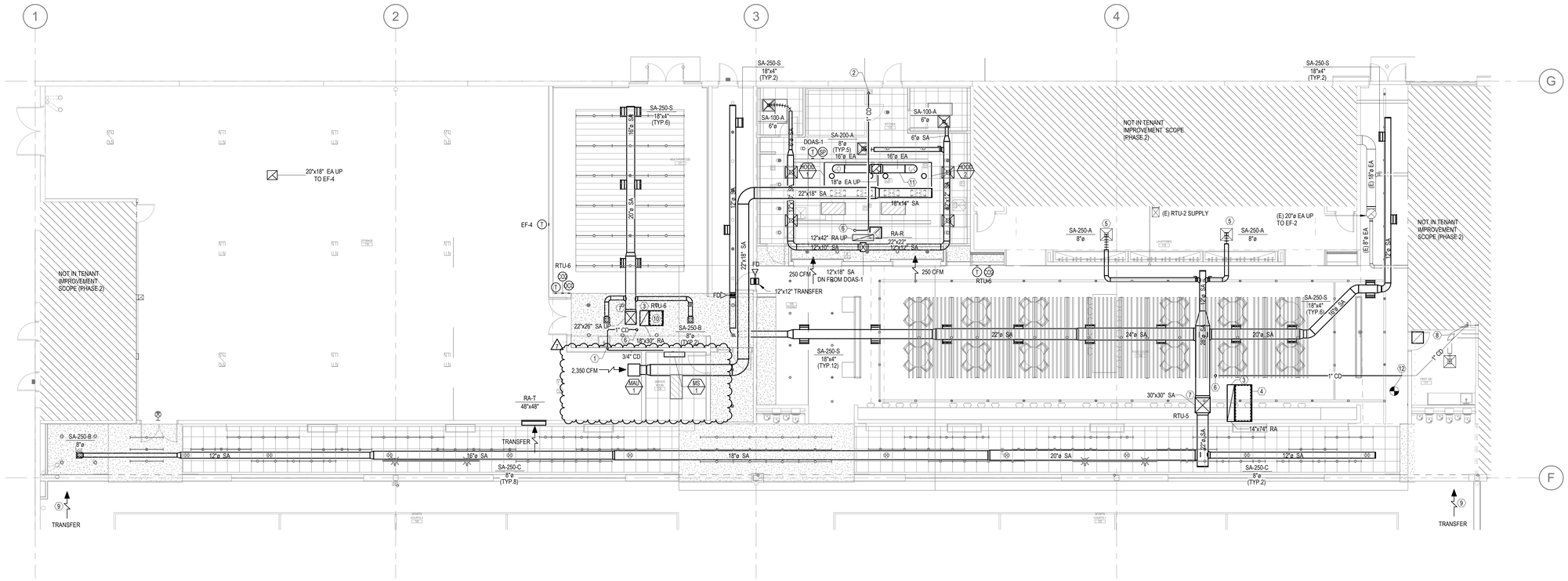
   PLENUM SPACE ONLY OCCURS WHERE THERE IS A SUSPENDED OR JOIST SUPPORTED CEILING AREA BELOW ROOF STRUCTURE BOUNDED BY FULL HEIGHT WALLS (FLOOR TO ROOF DECK).

2. PROVIDE SOUND ATTENUATING RETURN BOOT ON ALL RETURNS, SEE DETAIL.

3. ALL DIFFUSERS IN HALLWAY SHALL BE MOUNTED WITH FACES @ 6" ABOVE OPEN CEILING COMPONENTS (METAL OR WOOD FRAMES).

KEYNOTES

#	
1	CONDENSATE DOWN AND SHALL TIE IN TO SINK TAILPIECE.
2	CONDENSATE DOWN TO DRAIN TO FLOOR SINK WITH AIR GAP.
3	BOOTED RETURN UP TO RTU, SIZED TO RTU RETURN OPENING. PROVIDE TRANSITION.
4	72"X36" OPENING CUT ON TOP OF 74"X15" RA DUCT. OPENING SHALL BE COVERED WITH WIRE MESH COVER.
5	CONNECT DUCTWORK TO EXISTING DIFFUSER INSTALLED IN CEILING DURING PHASE 1.
6	CONDENSATE DOWN FROM RTU ON ROOF.
7	SUPPLY DUCT DN FROM RTU. PROVIDE TRANSITION AS NECESSARY TO CONNECT TO UNIT THROUGH CURB.
8	CONDENSATE TO CONNECT TO EXISTING 1-1/4" DOWN TO DRAIN TO MOP BASIN WITH AIR GAP.
9	AIR TRANSFER PATH THROUGH WALL OPENING.
10	28"X22" OPENING CUT ON TOP OF 18"X30" RA DUCT.
11	EA DUCTING SHALL BE PREMANUFACTURED GREASE DUCT. SEE MT501.
12	CONNECT CD FROM RTU-5 TO EXISTING STUB INSTALLED DURING PHASE 1.



1 ENLARGED MECHANICAL PLAN
1/8" = 1'-0"

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ENLARGED MECHANICAL PLAN

REMARKS

	DATE	
	07/09/2025	ISSUE FOR PLAN CHECK
1	09/22/2025	PLAN CHECK CORRECTIONS
2	10/15/2025	PLAN CHECK CORRECTIONS 2
3	01/09/2026	PLANNING CORRECTIONS 3
4	01/26/2026	OC HEALTH DEPT
7	04/30/2026	BID ADDENDUM 2
8	05/08/2026	OC HEALTH DEPT 3

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MECHANICAL ROOF PLAN

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1	07/09/2025	ISSUE FOR PLAN CHECK
2	09/22/2025	PLAN CHECK CORRECTIONS
3	10/15/2025	PLAN CHECK CORRECTIONS 2
4	02/04/2026	PLAN CHECK CORRECTIONS 3
7	01/26/2025	OC HEALTH DEPT
	04/30/2026	BID ADDENDUM 2

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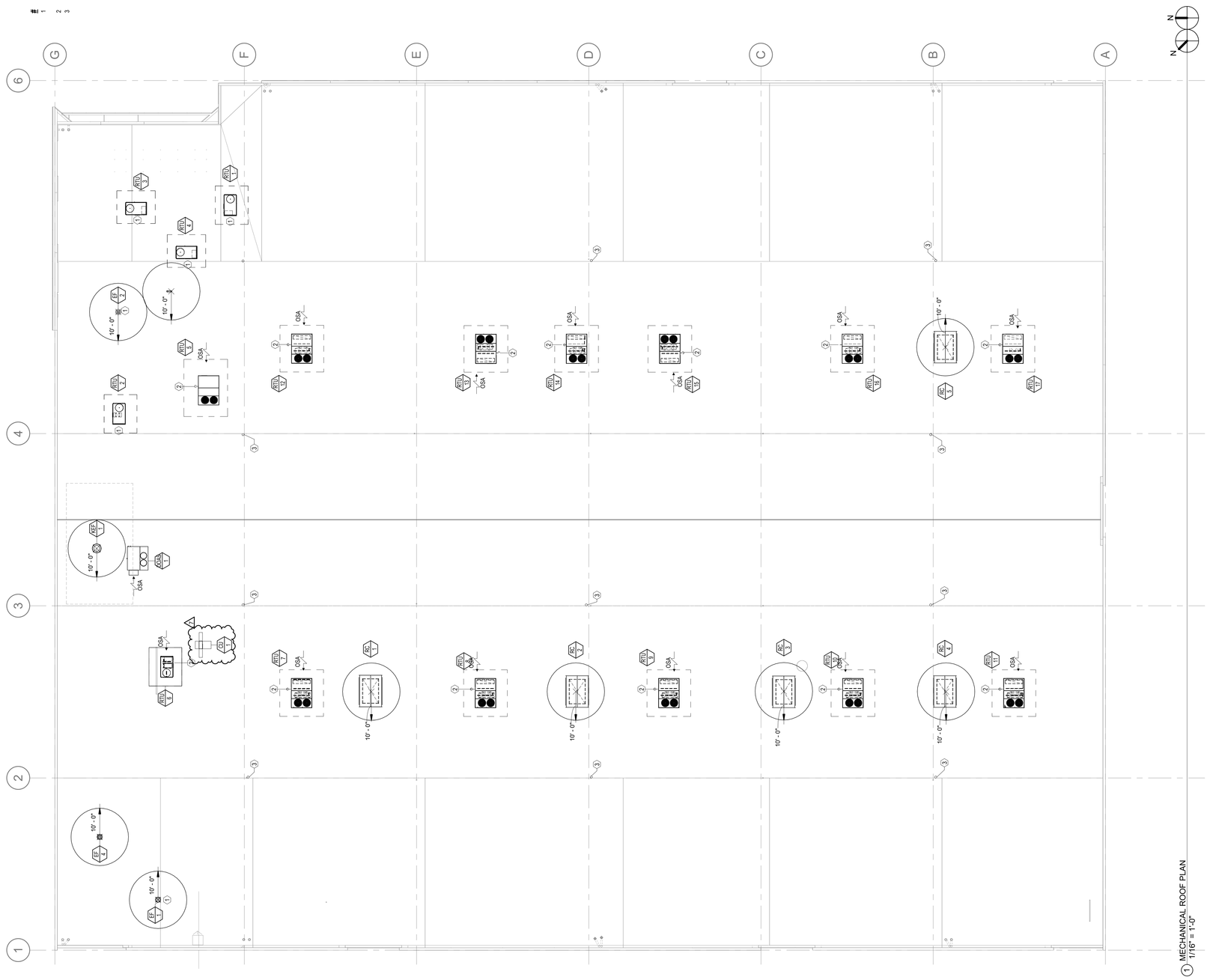
GENERAL NOTES:

1. AIR INTAKE AND EXHAUST POINTS SHALL BE SEPARATED BY 10' MIN.
2. PROVIDE MANUFACTURER'S REQUIRE CLEARANCES AROUND ALL ROOFTOP EQUIPMENT.

 # KEYNOTES

1 EXISTING EQUIPMENT INSTALLED PREVIOUSLY DURING PHASE 1, SHOWN FOR COORDINATION PURPOSES.
2 CONDENSATE DOWN TO INDIRECT DRAIN.
3 EXISTING VIMS VENT.



1 MECHANICAL ROOF PLAN
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VENTILATION SCHEDULE

ROOM NAME	OCCUPANCY CLASSIFICATION	Az, FLOOR AREA FT2	EXPECTED NUMBER OF PEOPLE/UNITS, Pz	2022 TITLE 24 REQUIREMENTS, SECTION 120.1								ACTUAL			EQUIPMENT	
				Rp, PEOPLE OUTDOOR AIRFLOW RATE (CFM/PERSON)	AREA OUTDOOR AIRFLOW RATE (CFM/SF)	AREA DCV AIRFLOW RATE (CFM/SF)	TOTAL OCCUPANT OA CFM	TOTAL AREA OA CFM	TOTAL OA CFM REQ'D (VZ)	DCV MIN REQUIRED	TOTAL EA REQUIRED CFM	SUPPLY CFM	OA CFM	EXHAUST CFM	SUPPLY FAN	EXHAUST FAN
115-FOOD COURT	CAFETERIA, FAST FOOD	2,252	48	15	0.5	0.15	720	1126	1126	338	0	4,000	1,126	0	RTU-5	
119-LAVATORIES	-NO REQUIREMENTS-	570	0	0	0	0	0	0	0	0	0	500	0	0	RTU-5	
119-VENDING	CAFETERIA, FAST FOOD	463	5	15	0.5	0.15	75	232	232	69	0	1,500	232	0	RTU-5	
CORRIDOR	CORRIDORS	2,771	5	15	0.15	N/A	75	416	416	N/A	0	2,500	416	0	RTU-5	
TOTALS		**5,056**									**TOTALS**	**8,500**	**1,773**	**0**	**RTU-5**	
121-MULTI-PURPOSE	MULTIPURPOSE ASSEMBLY	1,200	32	15	0.5	0	473	600	600	0	0	2,000	600	0	RTU-6	
TOTALS		**1,200**									**TOTALS**	**2,000**	**600**	**0**	**RTU-6**	
125-134 SPORTS COURTS (BASKETBALL & VOLLEYBALL)	HEALTH CLUB/AEROBICS ROOM	72,000	1800	15	0.15	N/A	27000	10800	27000	N/A	0	90,000	27,000	RELIEF	RTU'S 7-12, 14, 16-17	RC-1-5
TOTALS		**72,000**									**TOTALS**	**90,000**	**27,000**	**RELIEF**	**RTU'S 7-12, 14, 16-17**	**RC-1**
136 - SPORTS COURT 11 (BADMINTON)	HEALTH CLUB/AEROBICS ROOM	18,145	80	15	0.15	N/A	1200	2722	2722	N/A	0	20,400	2,722	RELIEF	RTU'S 13&15	RC-1
TOTALS		**18,145**									**TOTALS**	**20,400**	**2,722**	**RELIEF**	**RTU'S 13&15**	**RC-1**
118-KITCHEN	KITCHENS (COOKING)	821	N/A	0	0	0	0	0	0	0	4050	2,700	2,700	4050	DOAS-1	KEF-1
TOTALS		**821**									**TOTALS**	**2,700**	**2,700**	**4050**	**DOAS-1**	**KEF-1**
120-STORAGE	STORAGE ROOMS	4,975	0	0	0.15	N/A	0	746	746	N/A	0	TRANSFER	746	2500	TRANSFER	EF-4
TOTALS		**4,975**									**TOTALS**	**0**	**746**	**2500**	**TRANSFER**	**EF-4**

PACKAGED HEAT PUMP / DX COOLING ROOFTOP UNIT SCHEDULE

TAG	AREA SERVED	MANUFACTURER AND MODEL	HEATING			COOLING						FAN/MOTOR DATA						WEIGHT (LBS)	REMARKS
			OUTPUT (MBH)	EAT DB°F	LAT DB°F	EER/IEER/SEER	GROSS (MBH)	SENSIBLE (MBH)	EAT DB°F	LAT DB°F	# OF COMP.	REF/RIG. TYPE	CFM	OA CFM	ESP (IN. W.C.)	HP	MCA (AMPS)	M.O.C.P. (AMPS)	V/PH/Hz		
RTU-5	FOOD COURT/VENDING	TRANE / WHK240A4S00	189.0	60	85	10.90/16.90/-	251	219.0	80.0	55	2	R-454B	8,500	1,775	1.00	2.90	55	70	460/3/60	2,148	1-14,16
RTU-6	MULTIPURPOSE	TRANE / WHK060A4S00	47.0	55	85	13.50/-/16.40	63	52.0	80.0	55	1	R-454B	2,000	600	0.75	3.00	16	20	460/3/60	1,055	1-14,16
RTU-7	PLAYCOURTS	TRANE / WHK300A4S00	193.5	60	85	10.10/16.00/-	270	227.0	77.0	64	2	R-454B	10,000	3,000	0.75	4.20	61	80	460/3/60	2,610	1-11, 13-16
RTU-8	PLAYCOURTS	TRANE / WHK300A4S00	193.5	60	85	10.10/16.00/-	270	227.0	77.0	64	2	R-454B	10,000	3,000	0.75	4.20	61	80	460/3/60	2,610	1-11, 13-16
RTU-9	PLAYCOURTS	TRANE / WHK300A4S00	193.5	60	85	10.10/16.00/-	270	227.0	77.0	64	2	R-454B	10,000	3,000	0.75	4.20	61	80	460/3/60	2,610	1-11, 13-16
RTU-10	PLAYCOURTS	TRANE / WHK300A4S00	193.5	60	85	10.10/16.00/-	270	227.0	77.0	64	2	R-454B	10,000	3,000	0.75	4.20	61	80	460/3/60	2,610	1-11, 13-16
RTU-11	PLAYCOURTS	TRANE / WHK300A4S00	193.5	60	85	10.10/16.00/-	270	227.0	77.0	64	2	R-454B	10,000	3,000	0.75	4.20	61	80	460/3/60	2,610	1-11, 13-16
RTU-12	PLAYCOURTS	TRANE / WHK300A4S00	193.5	60	85	10.10/16.00/-	270	227.0	77.0	64	2	R-454B	10,000	3,000	0.75	4.20	61	80	460/3/60	2,610	1-11, 13-16
RTU-13	BADMINTON	TRANE / WHK300A4S00	193.5	60	85	10.10/16.00/-	270	227.0	77.0	64	2	R-454B	10,200	1,375	0.75	4.20	61	80	460/3/60	2,610	1-11, 13-16
RTU-14	PLAYCOURTS	TRANE / WHK300A4S00	193.5	60	85	10.10/16.00/-	270	227.0	77.0	64	2	R-454B	10,000	3,000	0.75	4.20	61	80	460/3/60	2,610	1-11, 13-16
RTU-16	PLAYCOURTS	TRANE / WHK300A4S00	193.5	60	85	10.10/16.00/-	270	227.0	77.0	64	2	R-454B	10,000	3,000	0.75	4.20	61	80	460/3/60	2,610	1-11, 13-16
RTU-15	BADMINTON	TRANE / WHK300A4S00	193.5	60	85	10.10/16.00/-	270	227.0	77.0	64	2	R-454B	10,200	1,375	0.75	4.20	61	80	460/3/60	2,610	1-11, 13-16
RTU-17	PLAYCOURTS	TRANE / WHK300A4S00	193.5	60	85	10.10/16.00/-	270	227.0	77.0	64	2	R-454B	10,000	3,000	0.75	4.20	61	80	460/3/60	2,610	1-11, 13-16

REMARKS:
1. 1 YEAR PARTS WARRANTY.
2. 5 YEAR TOTAL COMPRESSOR WARRANTY.
3. PROVIDE WITH HOT GAS REHEAT.
4. PROVIDE WITH SINGLE POINT POWER CONNECTION. PROVIDE WITH THRU-THE-BASE ELECTRICAL CONNECTIONS.
5. PROVIDE WITH SUPPLY FAN VFD. ALL FANS TO BE DIRECT DRIVE, NO BELTS.
6. PROVIDE UNIT WITH FACTORY WIRED POWERED OUTLET.
7. PROVIDE WITH UNIT MOUNTED DUCT SMOKE DETECTORS ON SUPPLY SIDE OF UNITS SUPPLYING GREATER THAN 2000 CFM.
8. PROVIDE WITH HINGED ACCESS PANELS.
9. MANUFACTURER PROVIDED ROOF CURB TO BE A MINIMUM OF 14" HEIGHT.
10. PROVIDE HAIL GUARDS FOR CONDENSER COIL.
11. PROVIDE WITH 1 YEAR QUARTERLY MAINTENANCE AGREEMENT.
12. 0-100% DRY BULB ECONOMIZER WITH POWER EXHAUST. POWER EXHAUST REQUIRES SEPARATE 460V/3 ELECTRICAL CONNECTION AND DISCONNECT @ 10A MOP.
13. PROVIDE WITH MERV-13 FILTRATION FOR RA/OA.
14. PROVIDE CONTROLS PACKAGE TO OPERATE INDEPENDENTLY AS SINGLE ZONE VAV OR INTERFACE WITH BAS.
15. 0-100% DRY BULB ECONOMIZER WITH BAROMETRIC RELIEF. RELIEF DURING ECONOMIZING BY BAROMETRIC RELIEF ROOF HOOD.
16. PROVIDE WITH SEISMIC RATED ANCHORAGE AS REQUIRED PER ASCE 13 OR AS OTHERWISE REQUIRED BY THE MANUFACTURER.

EXHAUST FAN SCHEDULE

TAG	QUANTITY	SERVICE	CFM	E.S.P. (IN. W.C.)	MOTOR DATA					WEIGHT (LBS)	MANUFACTURER	MODEL NO.	REMARKS
					HP	RPM	V	PH	HZ				
EF 4	1	STORAGE	2500	0.50	0.75	1518	120	1	60	95	GREENHECK	G-140-VG	1-6

REMARKS:
1. INTEGRAL GRAVITY BACKDRAFT DAMPER & 1/4" GALV. MESH BIRD SCREEN.
2. FACTORY VIBRATION ISOLATORS.
3. MIN 14" FACTORY ROOF CURB.
4. ECM OR SPEED CONTROLLER.
5. MANUFACTURER PROVIDED DISCONNECT.
6. FAN TO RUN CONTINUOUSLY DURING OCCUPIED HOURS.

ROOF HOODS - BAROMETRIC RELIEF

TAG	LOCATION	SYSTEM	MAX CFM	CURB CAP SIZE	MANUFACTURER	CURB CAP MODEL	CURB MODEL	WEIGHT (CURB+CAP)	REMARKS
RC-1 THRU 5	ROOF	BAROMETRIC RELIEF	22,000	70"W X 106"L	GREENHECK	FGR-64X100	GPI-70X106-G12	591	ALL

REMARKS:
1. PROVIDE WITH GREENHECK CONTROL DAMPER, 24V AC LINE POWER. CONTROLS CONTRACTOR TO INTERLOCK TO OPEN DURING OCCUPIED HOURS AND CLOSE DURING UNNOCUPIED HOURS.
2. PROVIDE WITH GRAVITY BACKDRAFT DAMPER, SET TO RELIEVE BUILDING PRESSURE AT +0.03" WG.

GRILLE, REGISTERS, AND DIFFUSER SCHEDULE

TAG	AIR STREAM	MOUNTING TYPE	FRAME SIZE		MANUFACTURER	MODEL NO.	REMARKS
			HEIGHT	WIDTH / LENGTH			
A	SUPPLY	CEILING	2' - 0"	2' - 0"	TITUS	TMS-AA	ALL
B	SUPPLY	CEILING	1' - 0"	1' - 0"	TITUS	TMS-AA	ALL
BM	SUPPLY	CEILING	4' - 0"	2' - 0"	TITUS	RADIATEC-AL 1 WAY PATTERN,AIR FLOW TOWARDS EXTERIOR WALL	ALL
C	SUPPLY	DUCT MOUNTED	1' - 0"	1' - 0"	TITUS	TMR	ALL
DBH	SUPPLY	DUCT MOUNTED	1' - 3"	3' - 4"	PRICE	DBH-30T	ALL
R	RETURN	CEILING	2' - 0"	2' - 0"	TITUS	PAR	1-4
S	SUPPLY	DUCT MOUNTED	0' - 5 1/2"	1' - 7 1/2"	TITUS	DL	ALL
T	RETURN	WALL MOUNTED	4' - 1 1/2"	4' - 1 1/2"	TITUS	30R	1-4

REMARKS:
1. 4-WAY THROW UNLESS OTHERWISE NOTED.
2. PROVIDE ADAPTOR BOOTS AS REQUIRED.
3. COORDINATE FRAME STYLES WITH ARCHITECTURAL PLANS.
4. SEE PLANS FOR CONNECTION SIZES. TYPICAL ALL.
5. PROVIDE WITH MANUAL VOLUME BALANCE DAMPER.

1

MINI SPLIT INDOOR UNIT SCHEDULE

TAG	ASSOCIATED OUTDOOR UNIT	LOCATION	COOLING CAP.	FAN/MOTOR DATA	ELECTRICAL DATA				WEIGHT (LBS)	MANUFACTURER	MODEL NO.	REMARKS
			GROSS (MBH)	SUPPLY SA (CFM)	MCA	VOLTS	PH	HZ				
MS 1	CU-1	SERVER ROOM 124	24	720	1.0	208	1	60	0	MITSUBISHI	MSZ-FX24NL	ALL

REMARKS:
1. PROVIDE LOW AMBIENT ACCESSORY ON AIR COOLED CONDENSER.
2. MECHANICAL CONTRACTOR TO PROVIDE NEMA RATED SERVICE DISCONNECT SWITCH.
3. MOUNT OUTDOOR UNIT PER MANUFACTURER'S INSTRUCTION. PROVIDE MOUNTING PAD, RAILS, OR CURB.
4. MAINTAIN MANUFACTURER'S MINIMUM CLEARANCES.
5. PROVIDE LIQUID AND GAS SIDE PIPING PER MANUFACTURER'S RECOMMENDATIONS WITH 1/2" FOAM INSULATION.
6. INDOOR UNIT POWERED BY OUTDOOR UNIT.

MINI SPLIT CONDENSING UNIT

TAG	LOCATION	REFRIGERANT DATA		SEER2	COOLING DATA		ELECTRICAL DATA					WEIGHT (LBS)	MANUFACTURER	MODEL NO.	REMARKS
		CHARGE (LBS)	TYPE		OA (DB°F)	CAPACITY (MBH)	MCA	MOCP	VOLTS	PH	HZ				
CU 1	ROOF	8	R454B	21.1	95	24	22.0	37.0	208	1	60	155	MITSUBISHI	PUY-AH24	ALL

REMARKS:
1. MOUNT INDOOR UNIT 12" BELOW CEILING STRUCTURE WITH CEILING EXPOSED KIT MATCHING UNIT COLOR. PROVIDE WITH MOUNTING BRACKETS/SUPPORTS AS NEEDED. PROVIDE WITH INTEGRAL CONDENSATE PUMP IF NECESSARY. DRAIN CONDENSATE BY GRAVITY WHEREVER POSSIBLE.
2. MECHANICAL CONTRACTOR TO PROVIDE DISCONNECT SWITCH.
3. PROVIDE LIQUID AND GAS SIDE PIPING PER MANUFACTURER'S RECOMMENDATIONS WITH 1/2" FOAM INSULATION.
4. INDOOR UNIT POWERED BY OUTDOOR UNIT.

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MECHANICAL SCHEDULES

	DATE	REMARKS
1	07/09/2025	ISSUE FOR PLAN CHECK
2	09/22/2025	PLAN CHECK CORRECTIONS
3	10/15/2025	PLAN CHECK CORRECTIONS 2
4	01/16/2026	BID ADDENDUM 1
5	01/26/2026	OC HEALTH DEPT
7	04/30/2026	BID ADDENDUM 2

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DRAWN BY.:	DG
JOB NO.:	LAX21-0174-02

06/06/2025

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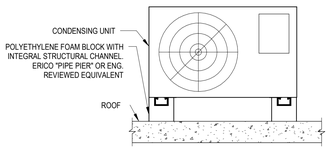

4 CONDENSING UNIT DETAIL
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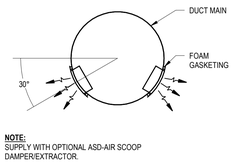

3 SPIRAL MOUNTED SUPPLY GRILLE
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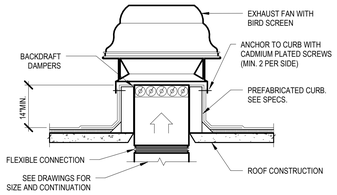

2 EXHAUST FAN DETAIL
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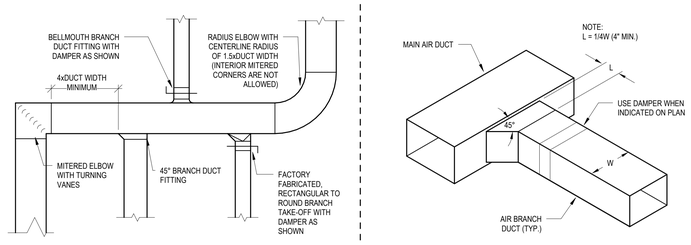

1 DUCTWORK CONSTRUCTION DETAIL
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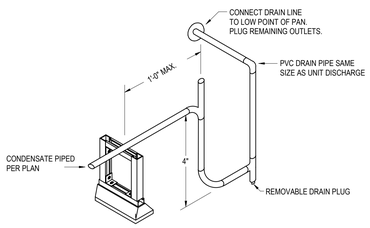

8 CONDENSATE DRAIN FROM RTU DETAIL
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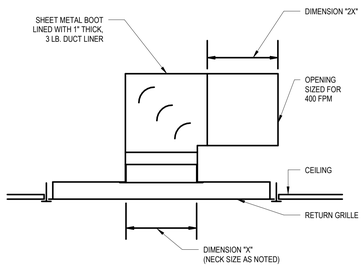

7 SOUND ATTENUATING RETURN BOOT DETAIL
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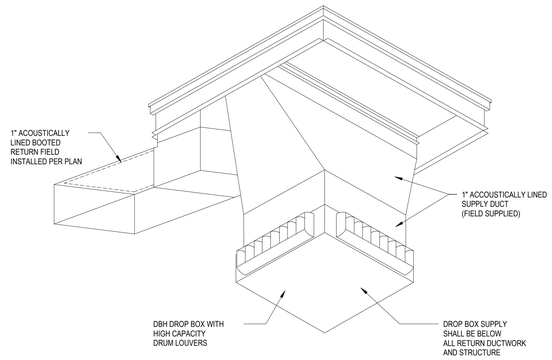

6 DROP BOX WITH DRUM LOUVERS TYPICAL INSTALLATION DETAIL
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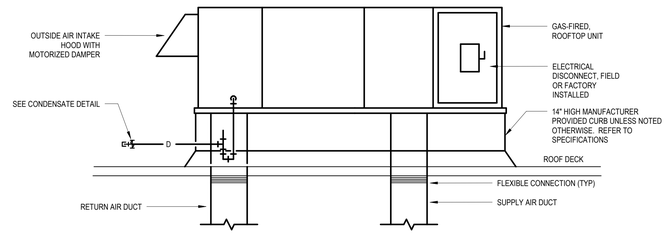
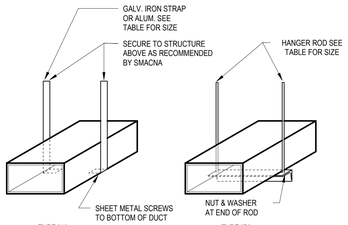


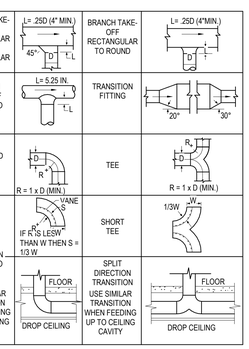
5 ROOFTOP UNIT DETAIL
SCALE: N.T.S.



DUCT HANGER SCHEDULE					
DUCT SIZE (INCH)	TYPE OF HANGER	HANGER SPACING (FT)	STRAP SIZE	ROD SIZE (INCH)	ANGLE FOR BRACING
UP TO 12	A	8'-0"	1"x16GA	N.A.	N.A.
13 TO 18	A	8'-0"	1"x16GA	N.A.	N.A.
19 TO 30	A/B	8'-0"	1"x16GA	1/4"	1-1/2"x1-1/2"x1/8"
31 TO 42	B	8'-0"	N.A.	1/4"	1-1/2"x1-1/2"x1/8"
43 TO 54	B	8'-0"	N.A.	1/4"	1-1/2"x1-1/2"x1/8"
55 TO 60	B	8'-0"	N.A.	1/4"	1-1/2"x1-1/2"x1/8"
61 TO 84	B	8'-0"	N.A.	1/4"	1-1/2"x1-1/2"x3/16"
85 TO 96	B	8'-0"	N.A.	1/4"	1-1/2"x1-1/2"x3/16"
OVER 96	B	8'-0"		3/8"	2"x2"x1/4"

NOTES:
1. FOR SEVERAL DUCTS ON ONE HANGER, TYPE "B" MAY BE USED. SIZE OF HANGER WILL BE SELECTED ON THE SUM OF DUCT WIDTHS EQUAL TO MAX WIDTH OF DUCT SCHEDULE.
2. ON TYPE "A" HANGER, PROVIDE 3 HANGERS AT EACH TAKE-OFF OR BRANCH.

12 RECTANGULAR DUCT SUPPORT DETAIL
SCALE: N.T.S.



11 TYPICAL DUCT TAKE-OFFS
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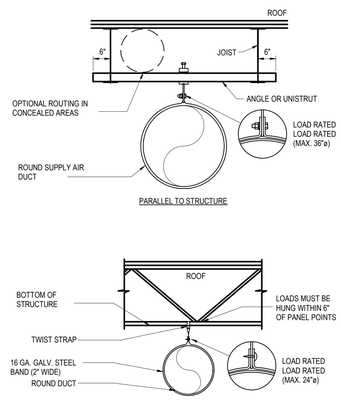
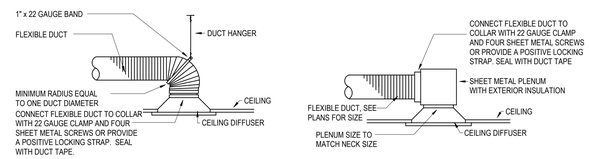


NOTE:
FOR DUCTS LARGER THAN 36"ø, USE TWO HANGER RODS, WIRES OR STRAPS TO SUPPORT DUCT FROM EACH SIDE.

10 SPIRAL DUCT HANGER DETAIL
SCALE: N.T.S.



NOTE:
NORMALLY USED WHEN FULL RADIUS ELBOW IN FLEX DUCT CAN BE ACHIEVED.

NOTE:
USED WHEN NORMAL RADIUS ELBOW CAN'T BE ATTACHED AS SHOWN IN OPTION #1.

9 TYPICAL DIFFUSER AND GRILLE CONNECTIONS
SCALE: N.T.S.

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MECHANICAL DETAILS

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4	12/19/2025	PLAN CHECK CORRECTIONS 3
5	01/26/2026	OC HEALTH DEPT
6	04/30/2026	BID ADDENDUM 2
7		

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HOOD INFORMATION

HOOD NO.	MARK	MODEL	HOOD DIMENSIONS (IN.) LENGTH	WIDTH	HEIGHT	HOOD CONSTR.	COOKING LOAD / DUTY RATING	EXHAUST TOTAL CFM	COLLAR(S) WIDTH	LENGTH	DIA.	CFM	S.P.	SUPPLY MUA CFM	AC CFM	HANGING WEIGHT LBS.	SECTION LOCATION
1	HOOD #1	XXEW-107-S	107	54	24	430 SS WHERE EXPOSED	HEAVY	2200	10	21		2200	0.603	1175		351	LEFT
2	HOOD #1	XXEW-107-S	107	54	24	430 SS WHERE EXPOSED	HEAVY	1850	10	18		1850	0.496	1175		351	RIGHT

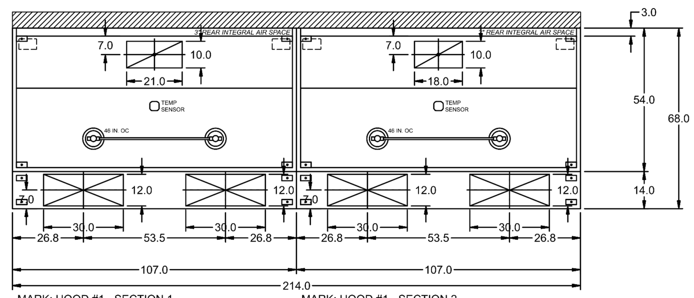
HOOD INFORMATION

HOOD NO.	MARK	LIGHTING DETAILS FIXTURE TYPE BULB / LAMP INFO	QTY	FOOT CANDLES	GREASE FILTRATION DETAILS TYPE / MODEL MATERIAL	QTY	SIZE (IN.) L	H	UTILITY CABINET(S) LOCATION	FIRE SYSTEM TYPE	SIZE	CONTROLS MODEL	INTERFACE
1	HOOD #1	ROUND LED	2	63.1	X-TRACTOR (SPARK ARRESTOR INCL.) STAINLESS STEEL	4 2	16 20	20					
2	HOOD #1	ROUND LED	2	63.1	X-TRACTOR (SPARK ARRESTOR INCL.) STAINLESS STEEL	4 2	16 20	20					

SUPPLY PLENUM INFORMATION

HOOD NO.	MARK	POS.	TYPE	SIZE (IN.) L	W	H	INSULATED	DAMPER(S)	LED LIGHT(S) SUPPLIED	QTY	TOTAL CFM	TOTAL S.P.	COLLARS TYPE	MOUNTING	QTY	W	L	DIA.	CFM	VEL.
1	HOOD #1	FRONT	ASP	107	14	4	NO	YES	NO		1175	0.01	MUA	FACTORY	2	12	30		588	235
2	HOOD #1	FRONT	ASP	107	14	4	NO	YES	NO		1175	0.01	MUA	FACTORY	2	12	30		588	235

HOOD OPTIONS
- UL 710 LISTED W/ OUT EXHAUST FIRE DAMPER - UL #R25625
- BACK INTEGRAL AIR SPACE - 3 IN WIDE
- CONTINUOUS CAPTURE
- FACTORY MOUNTED EXHAUST COLLAR(S)
- PERFORMANCE ENHANCING LIP (PEL) TECHNOLOGY
- STANDING SEAM CONSTRUCTION FOR SUPERIOR STRENGTH



MARK: HOOD #1 - SECTION 1
PLAN VIEW

MARK: HOOD #1 - SECTION 2
PLAN VIEW

FIRE (PIPING/DROPS/NOZZLES/ETC.) SUBJECT TO CHANGE. AS-BUILT DRAWINGS CAN BE PROVIDED AT TIME OF ORDER AND INCLUDED WITH PRODUCT SHIPMENT

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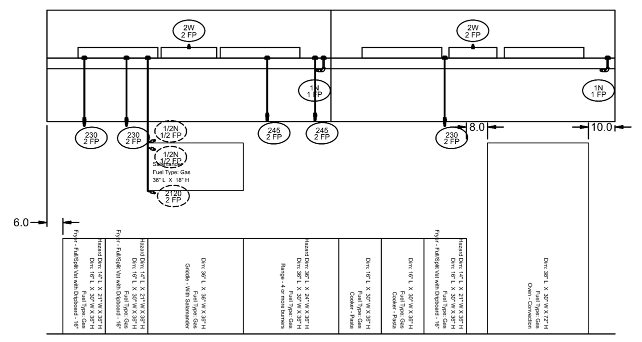
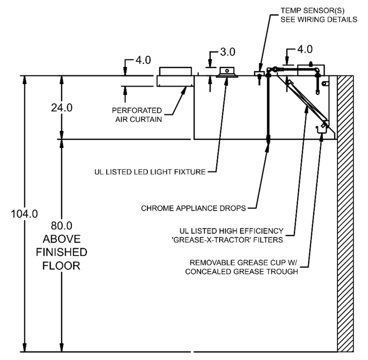
FIRE SYSTEM MARK: FIRE
PIPE & CONDUIT BY ANSUL DISTRIBUTOR

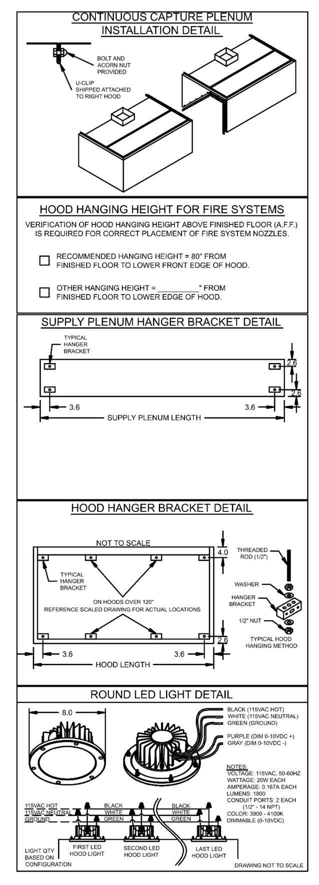


MARK: HOOD #1 - SECTION 1
ELEVATION VIEW

MARK: HOOD #1 - SECTION 2
ELEVATION VIEW



MARK: HOOD #1 (LAST HOOD IN ROW)
SECTION VIEW



CITY OF IRVINE RECREATIONAL — PROJECT 2/4/2025 — MARK: HOOD #1

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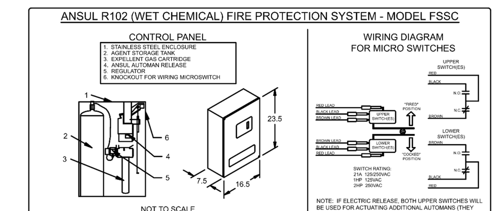
FIRE SYSTEM INFORMATION

MARK	MODEL	LOCATION	FLOW POINTS HOODS	PCU	SUPPLY LINE	DETECTION	MARK(S) PROTECTED BY FIRE SYSTEM
FIRE	ANSUL R-102 WET CHEMICAL	REMOTE MOUNTED	19 UTILIZED 22 AVAILABLE		CONTINUOUS	FUSIBLE LINK	HOOD #1 SECTION 1 HOOD #1 SECTION 2

FIRE SYSTEM OPTIONS AND ACCESSORIES
- FULL INSTALLATION (INCLUDES PRE-PIPED HOOD(S) WITH DETECTION AND FACTORY COORDINATED INSTALL)
- CHROME SLEEVES FOR FACTORY PROVIDED APPLIANCES DROPS - INCLUDED
- METAL BLOW-OFF CAPS - INCLUDED
- GAS VALVE - INCLUDED - MECHANICAL SHUTOFF VALVE, 2", (ANSUL) - PART# 468817
- HOOD SUPPRESSION TANK - INCLUDED - 6 GAL. - [(2) 3.0 TANK(S)]
- REMOTE PULL STATION - STANDARD - FIELD INSTALLATION AT SINGLE POINT OF EGRESS

ANSUL R102 (WET CHEMICAL) FIRE PROTECTION SYSTEM - MODEL FSSC



NOTES:
WET CHEMICAL FIRE PROTECTION SYSTEM TO BE ANSUL R-102, DESIGNED IN COMPLIANCE WITH UL 300 REQUIREMENTS.
-VERIFICATION OF ALL COOKING EQUIPMENT MAKE, MODEL AND LOCATION REQUIRED FOR ALL FIRE PROTECTION SYSTEMS.
-ALL FIRE SYSTEM PIPING IS STANDARDLY TO THE RIGHT END OF THE HOOD UNLESS A WALL IS LOCATED ON THE RIGHT END.
-ANSUL AUTOMAN RELEASE TO BE LOCATED WITHIN 60" OF HOOD.

THE BASIC FIRE SYSTEM WILL INCLUDE THE FOLLOWING:
-GAS SHUT-OFF VALVE, IF REQUIRED, TO BE SUPPLIED BY MANUFACTURER (UP TO 2" DIAMETER AS STANDARD), AND INSTALLED BY A LICENSED PLUMBER.
-MICRO SWITCH TO BE SUPPLIED BY MANUFACTURER FOR CONNECTION TO, BUT NOT LIMITED TO, BUILDING ALARM SYSTEM(S), EXHAUST AND SUPPLY FANS AND ELECTRICAL POWER SHUT DOWN. FIELD WIRING AND CONNECTIONS TO BE PERFORMED BY A LICENSED ELECTRICIAN.

THE BASIC FIRE SYSTEM DOES NOT INCLUDE THE FOLLOWING:
-FULL DUMP TEST OTHER THAN WHT IS SPECIFIED PER THE INSTALLATION MANUAL, OR TO SATISFY A STATE OR LOCAL CODE. PERMIT AND TESTING FEES ARE NOT INCLUDED UNLESS NOTED UNDER THE EQUIPMENT SCHEDULE FOR THE FIRE SYSTEM.
-MORE THEN TWO TRIPS TO THE JOBSITE OR SPECIAL TRANSPORTATION, OR OVERNIGHT LODGING REQUIREMENTS IN REMOTE AREAS. NORMAL TRAVEL DISTANCE IS FIRST 50 MI. (80.5 KM) FROM OFFICE.
- SPECIAL CLASSES OR ADDITIONAL LABOR FOR ACCESS TO SECURITY SENSITIVE AREAS.
-INSTALLATION OF GAS SHUT-OFF VALVE.
-SPECIAL DRAWINGS REQUIRED TO SATISFY STATE OR LOCAL CODE. PLAN EXAMINATION FEES, PE OR FS APPROVAL STAMP.
-UNION LABOR, GOVERNMENT LABOR, OR PREVAILING WAGES REQUIRED FOR FINAL FIELD HOOK-UP.
-ANY AND ALL ELECTRICAL COMPONENTS/CONNECTIONS REQUIRED TO SHUT DOWN FANS, SHUT OFF DEVICE FOR ELECTRIC COOKING EQUIPMENT (SHUNT TRIP BREAKER), OR ACTIVATE AN ALARM SYSTEM, ETC.
-ANY DISMANTLING OR REASSEMBLY REQUIRED TO GAIN ACCESS TO THE FIRE SUPPRESSION PIPING LOCATED ON THE TOP OF THE HOOD.
-ROUGH-IN HIDDEN CONDUIT FOR REMOTE PULL STATION OR GAS VALVE (FLUSH MOUNTED PULL STATION).
-INSTALLATION OF MORE THAN (1) REMOTE PULL STATIONS OR DISTANCES GREATER THAN 20 FT (6.1M.)
-PARTS OR LABOR REQUIRED TO CORRECT PIPING DUE TO COOKING EQUIPMENT CHANGES OR DEVIATION FROM PLANS. OR ANY CHARGES FOR MISSING OR ADDITIONAL PARTS OTHER THEN THOSE INDICATED ON THE FIRE SUPPRESSION DETAIL.

NOTES:
1 ------- DENOTES FIELD INSTALLATION.
2 ——— DENOTES FACTORY INSTALLATION.

CITY OF IRVINE RECREATIONAL — PROJECT 2/4/2025 — MARK: FIRE

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CONTROL INFORMATION

MARK	ELECTRICAL CONTROL PACKAGE MODEL	LOCATION	USER INTERFACE TYPE	LOCATION	FAN #	TYPE	FAN	FAN MARK	ZONE	CFM	MOTOR HP	MOTOR VOLT	CYCLE	MOTOR PHASE	MOTOR STARTER IN PANEL	VFD IN PANEL
CONTROLS	XKC-CV-S-11-2-1-0	SHIP LOOSE ENCLOSURE	FULL COLOR TOUCHSCREEN	SHIP LOOSE	1	EXHAUST	E1	KEF-1	1	4050	3	460	60	3	NO	YES
					2	SUPPLY	S1	MAU-1	1	2350	1	460	73	3	NO	YES

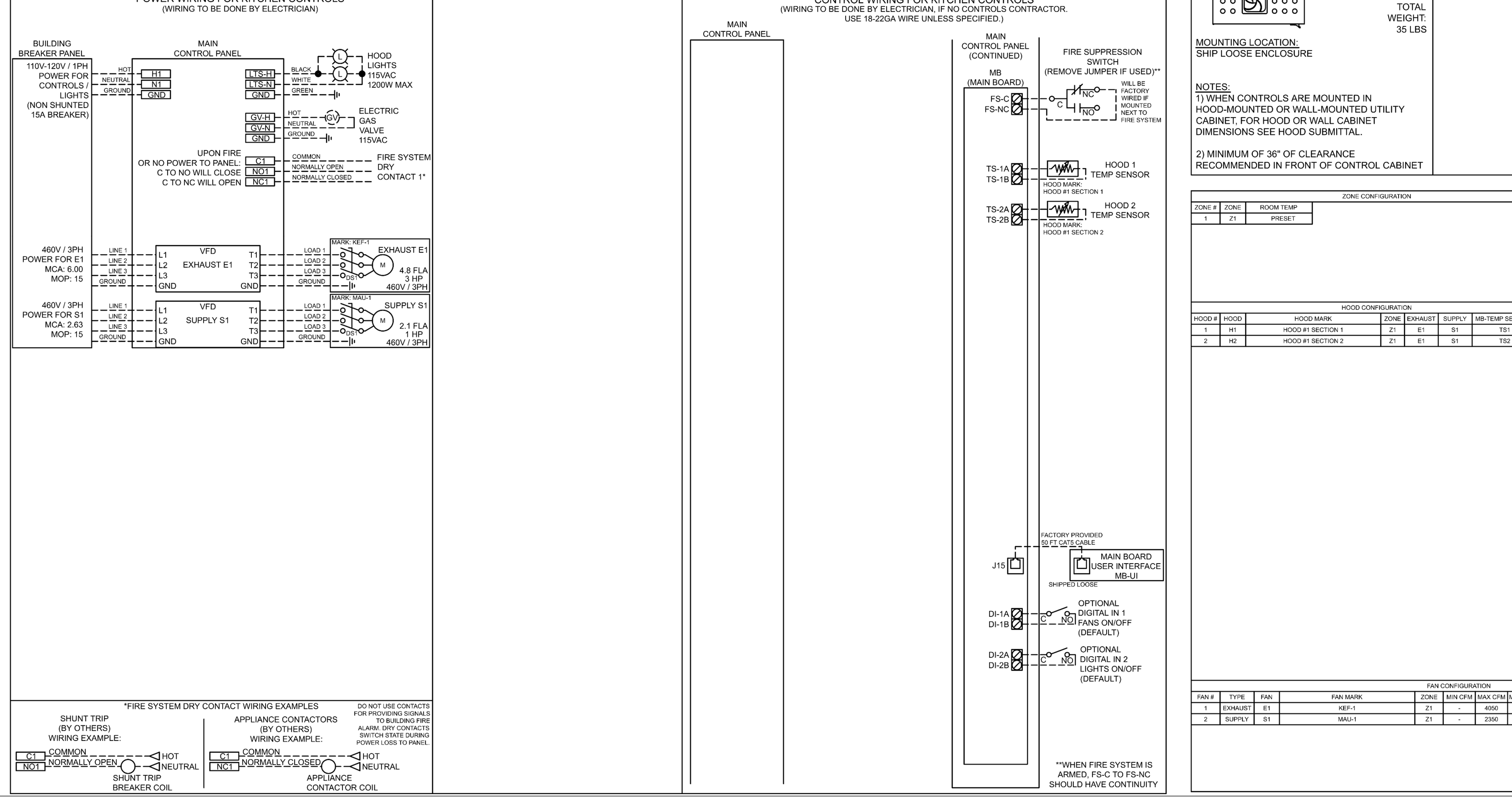
CONTROL FEATURES
- HOOD LIGHT CONTROL
- TEMP SENSORS (FACTORY INSTALLED) - QTY. 2
- DRY FIRE CONTACTS - QTY. 1
- LIGHTS OFF DURING FIRE
- EXHAUST MAX DURING FIRE
- SUPPLY OFF DURING FIRE
- GAS RESET
- VFD(S) IN CONTROL PANEL PROVIDED FOR BALANCING

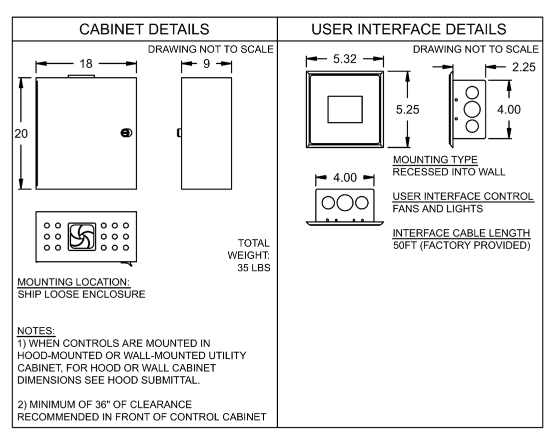
ACCUREX — DOC NUMBER: ---- REV: ----
CAUTION: UNIT MUST BE GROUNDED IN ACCORDANCE WITH N.E.C. POWER MUST BE OFF WHILE SERVICING.
ATTENTION: L'APPAREIL DOIT ÊTRE MIS À LA TERRE CONFORMÉMENT AU CODE C.E. L'ALIMENTATION DOIT ÊTRE COUPÉE DURANT L'ENTRETIEN.
COMMERCIAL APPLIANCE OUTLET CENTER
ELECTRICAL RATINGS: 110-240V,1PHASE, 50 -60HZ,15A
BASE FILE #E200616, ML FILE #E313951

WIRING DIAGRAM CODE: WDC#
JOB NAME: CITY OF IRVINE RECREATIONAL
MODEL: XKC-CV-S-11-2-1-0
SERIAL NUMBER: WDSN#
MARK: CONTROLS

POWER WIRING FOR KITCHEN CONTROLS (WIRING TO BE DONE BY ELECTRICIAN)

CONTROL WIRING FOR KITCHEN CONTROLS (WIRING TO BE DONE BY ELECTRICIAN, IF NO CONTROLS CONTRACTOR. USE 18-22GA WIRE UNLESS SPECIFIED.)





MOUNTING LOCATION: SHIP LOOSE ENCLOSURE

NOTES:
1) WHEN CONTROLS ARE MOUNTED IN HOOD-MOUNTED OR WALL-MOUNTED UTILITY CABINET, FOR HOOD OR WALL CABINET DIMENSIONS SEE HOOD SUBMITTAL.

2) MINIMUM OF 36" OF CLEARANCE RECOMMENDED IN FRONT OF CONTROL CABINET

ZONE CONFIGURATION

ZONE #	ZONE	ROOM TEMP
1	Z1	PRESET

HOOD CONFIGURATION

HOOD #	HOOD	HOOD MARK	ZONE	EXHAUST	SUPPLY	MB-TEMP SENSORS	HCB
1	H1	HOOD #1 SECTION 1	Z1	E1	S1	TS1	NO
2	H2	HOOD #1 SECTION 2	Z1	E1	S1	TS2	NO

FAN CONFIGURATION

FAN #	TYPE	FAN	FAN MARK	ZONE	MIN CFM	MAX CFM	MODBUS VFD	VFD ADDRESS	MIN FREQ.	MAX FREQ.	MIN VDC	MAX VDC
1	EXHAUST	E1	KEF-1	Z1	-	4050	YES	1	-	60	-	-
2	SUPPLY	S1	MAU-1	Z1	-	2350	YES	2	-	73	-	-

WIRING DIAGRAM CODE: WDC#
JOB NAME: CITY OF IRVINE RECREATIONAL
MODEL: XKC-CV-S-11-2-1-0
SERIAL NUMBER: WDSN#
MARK: CONTROLS
DOC NUMBER: ---- REV: ----

DEFAULT SETTINGS / PARAMÈTRES PAR DÉFAUT

FACTORY SETTINGS
TYPE: CV
CONFIGURATION: STANDARD
ZONES: 1
HOODS: 2
SUMPS: 0
EXHAUST FANS: 1
SUPPLY FANS: 1
MB ROOM SENSOR: NO
MB TEMP SENSORS: 2
HIGH TEMP FAULT: NO
FREEZE PROTECTION: YES
GAS RESET: YES
FAN PROVING: NO
BMS: NONE

ZONE SETTINGS
SEE ZONE CONFIGURATION IN TABLE ON LEFT

HOOD SETTINGS
SEE HOOD CONFIGURATION IN TABLE ON LEFT

EXHAUST FAN SETTINGS
SEE FAN CONFIGURATION IN TABLE ON LEFT

SUPPLY FAN SETTINGS
SEE FAN CONFIGURATION IN TABLE ON LEFT

SENSOR SETTINGS
SEE HOOD CONFIGURATION IN TABLE ON LEFT

USER INTERFACE SETTINGS (MB)
FAN & LIGHT BUTTONS: SHOW BOTH (SEPERATE)

USER INTERFACE SETTINGS (HCB)
NA

GENERAL SETTINGS
TIME ZONE: CENTRAL DAYLIGHT (DEFAULT)

FIRE/FAULT SETTINGS
EXHAUST DURING FIRE: MAX
SUPPLY DURING FIRE: OFF
LIGHTS DURING FIRE: OFF

BMS SETTINGS
NA

PRG VERSION: V4

CITY OF IRVINE RECREATIONAL — PROJECT 2/4/2025 — MARK: CONTROLS

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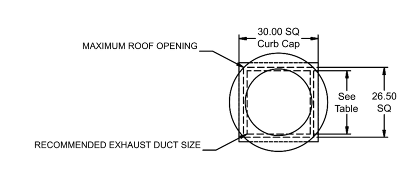
Belt Drive Upblast Centrifugal Roof Exhaust Fan

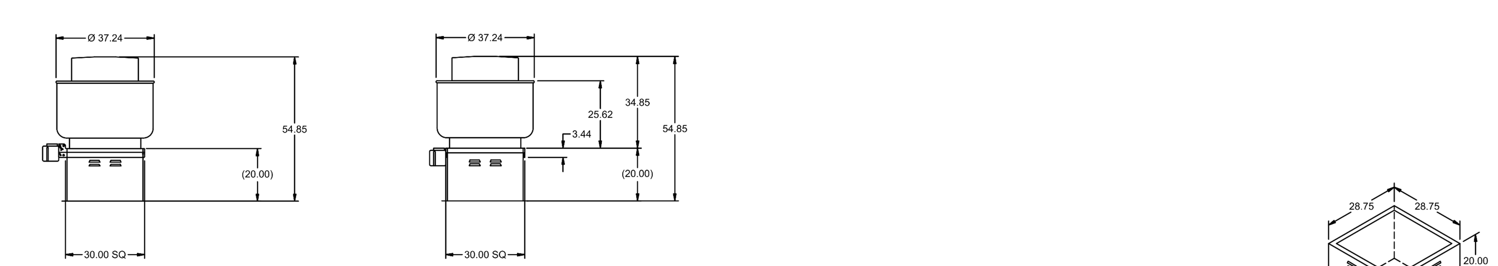
MARK	QTY	MODEL	DRIVE TYPE	VOLUME (CFM)	EXTERNAL SP (IN. WG)	TOTAL EXTERNAL SP (IN. WG)	FAN SPEED (RPM)	OUTLET VELOCITY (FT/MIN)	FEI	TOTAL WEIGHT (LB)	INLET dBA	INLET SONES	INLET SONES (SPHERICAL)	OUTLET dBA	OUTLET SONES	OPERATING POWER (HP)	MOTOR SIZE (HP)	FEP INPUT POWER (KW)	ENCLOSURE	VOLTAGE	CYCLE	PHASE	EC MOTOR	NEC FLA*
KEF-1	1	XCUBE-200HP-30	Belt	4,050	1.25	1.25	1,325	1,386.99	1.08	176	72.38	21.12	0	0	0	1.83	3	1.63	OP	460	60	3	No	4.8

NEC FLA - Based on table 430.250 or 430.248 of National Electrical Code 2020. Actual motor FLA may vary for sizing thermal overload, consult factory

KEF-1 : SELECTED OPTIONS AND ACCESSORIES
- One piece fully welded windband
- Tapered bushing wheel hub
- Breather tube outlet area min. 4.4 sq. in. (sizes 99-480)
- Min. windband material thickness: 0.051" aluminum (060-240), 0.064" aluminum (240HP, 240XP), 0.080" aluminum (sizes 300-480)
- Standard Curb Cap Size - 30 Square
- UL/cUL 705 Listed - Supplement SC - "Power Ventilators for Restaurant Exh. Appliances" (Formerly UL 762)
- Switch, NEMA-3R, Toggle,
- Hinge, Factory Installed
- High Temp Curb Seal Rated for Continuous Duty at 1500 F (Factory Attached)
- Grease Trap (PN 475538)
- Heat Baffle (Attached)
- Bearings with Grease Fittings, L10 life of 100,000 hrs (L50 avg. life 500,000 hrs)



DUCT TYPE	SIZE
STANDARD	24 SQ
FIRE-WRAPPED	16 SQ



DUCT DIMENSIONS ARE LARGEST POSSIBLE DUCT TO FIT THROUGH CURB.
CONSULT SYSTEM DESIGN ENGINEER FOR RECOMMENDED DUCT SIZE.

OVERALL HEIGHT MAY BE GREATER DEPENDING ON MOTOR, ADAPTER, AND/OR HINGE BASE.

CITY OF IRVINE RECREATIONAL — PROJECT 2/4/2025 — MARK: KEF-1

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LICENSED PROFESSIONAL ENGINEER BENJAMIN LIEBERMAN M 42166 MECHANICAL STATE OF CALIFORNIA
EXPIRES 12-31-26

rtm engineering consultants
9035 Wadsworth Parkway | Suite 3200 | Westminster, CO 80021
T:303.297.1038 : www.rtmec.com

IRVINE FIELDHOUSE
17300 RED HILL AVE.
IRVINE, CALIFORNIA 92614

RESTAURANT EQUIPMENT

	DATE	REMARKS
1	07/09/2025	ISSUE FOR PLAN CHECK
2	09/22/2025	PLAN CHECK CORRECTIONS
3	10/15/2025	PLAN CHECK CORRECTIONS 2
3	02/04/2026	PLAN CHECK CORRECTIONS 3
4	01/26/2025	OC HEALTH DEPT
7	04/30/2026	BID ADDENDUM 2

PA/PM:	BL
DRAWN BY.:	DG
JOB NO.:	LAX21-0174-02

06/06/2025

SHEET
MT500

5/6/2026 8:03:54 AM

Autodesk Docs://LAX21-0174-02_17300 Red Hill - Rec Center/RTM-MEP-Red Hill Rec Center_R22.rvt

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Direct Drive Mixed Flow Inline Fan

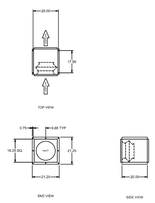
MARK INFORMATION				FAN INFORMATION								SOUND INFORMATION					MOTOR INFORMATION								
MARK	QTY	MODEL	DRIVE TYPE	VOLUME (CFM)	EXTERNAL SP (IN. WG)	TOTAL EXTERNAL SP (IN. WG)	FAN SPEED (RPM)	OUTLET VELOCITY (FT/MIN)	H.P.	TOTAL WEIGHT (LB)	INLET dBA	INLET SONES	INLET SONES (SPHERICAL)	OUTLET dBA	OUTLET SONES	OPERATING POWER (HP)	MOTOR SIZE (HP)	FEP INPUT POWER (KW)	ENCLOSURE	VOLTAGE	CYCLE	PHASE	EC MOTOR
MAU-1	1	XIB-12	Direct	1	1	1	2,118	1,017.02	12.67	106	68.31	17.95	6	69.92	18.33	9.69	1	9	TF	460	60	3	No

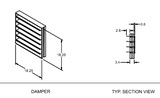
MAU-1 : SELECTED OPTIONS AND ACCESSORIES

UL/cUL 705 Listed - "Power Ventilators"
Junction Box Mounted and Wired
Switch, NEMA-3R, Toggle, Shipped Separate
Damper: Shipped Loose, Inline, WD-330-PB-18.25X18.25, Not Coated
Galvanized Housing
Aluminum Mixed Flow Wheel
Composite Inlet Cone
Fan: Spring, Hanging, 1 Inch Isolator PN: 850343, Incl. 4 isolators and 4 brackets
Square Duct Mounting Collar, Shipped Separate

23
50

CAPRIL NOTES:
1. MAU VERIFIER WILL BE CAPRILLO OR ACCUREX PROVIDED CONTROLLER & DISCON.





CITY OF IRVINE RECREATIONAL
PROJECT NUMBER
MARK: MAU-1
ACCUREX CO.WY
AMBER.TILLMAN@ACCUREX.COM
(309)430-5326
ACCUREX

EQUIPMENT SCHEDULE

Packaged Ventilator								
Mark Name	Qty	Model	Mounting Location	Weight	Outdoor Air Volume	Recirc Air Volume	Economizer Outdoor Air Volume	Economizer Exhaust Air Volume
DOAS-1	1	XRV-25-06-0-02	Outdoor	2,367 lb	1,250 CFM	0 CFM	NA	NA

Supply Fan						Electrical			
Supply Air Volume	Supply ESP	Supply TSP	FRPM	Supply BHP	Supply Motor	Voltage	Frequency	Phase	MCA	MOP
1,250 CFM	1.in. wg	2.007 in. wg	1,024	0.756	1.5 / 1.5	460	60	3	15.5	20

Air-Source Heat Pump Indoor Coil					
Coil Face Velocity	Coil Pressure Drop	Rows Deep	Fins Per Inch	Compressor Type	Compressor Qty
97 ft/min	0.930 in. wg	4	16	Inverter Scroll	1

Air-Source Heat Pump Cooling										Hot Gas Reheat		Air-Source Heat Pump Heating			
Entering DB	Entering WB	Leaving DB	Leaving WB	Sensible Heat Ratio	Total Capacity	Sensible Capacity	Refrigerant Type	AHRI Net Total Cooling Capacity	AHRI Net Sensible Cooling Capacity	Hot Gas Reheat Capacity	Leaving DB	Entering DB	Leaving DB	Capacity	AHRI Net Heating Capacity	AHRI 340/360 Combined COP @ 17°F
80.0 F	70.0 F	51.0 F	50.8 F	0.5 Unit	69.8 MBH	35.0 MBH	35.0 MBH	12.2	25.3	40.0 MBH	84.0 F	47.0 F	43.0 F	36.0 MBH	2.28	3.04

NOTES

Rooftop mounted with ESP% of 90 and by OPAs.
Fields with 2" FG exterior insulation installed.
Unit shipped with factory installed Hot Gas Reheat (HGRH) coil.
Compressors mounted on a shelf behind an insulated door for vertical cover removed and transported sound.
Unit shipped with Factory Installed Smoke Detector.
Contractor must have adequate access, on a ladder or lift, and change out operation, and parts, about twice a week of trending data.

OWNER NOTES:
1. CUSTOM AIR AND RECIRC AIR DAMPERS TO MODULATE TO MAXIMUM 2.5" FOR AS REQUIRED BY STATE PRESSURE SENSOR (CUSTOM OPTIMIZATION).

OPTIONS AND ACCESSORIES

Convertible Top, Smoke Scoop
Economizer Dry Bulb
Economizer Dry Bulb 2-Stage
ECI Outdoor Fan
Economizer Spec Exhaust
Refrigerant
R-410A/R454B
Factory Installed Overhead Hail
Roughing Filter (Factory Installed)
Factory Installed Pre-Filters MERV 11 (Installed 2-Stroke)
Factory Installed Pre-Filters MERV 14
Factory Installed Pre-Filters MERV 14 (Installed 2-Stroke)

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Space Conditioning Mandatory Measures:

110.2 CERTIFICATION BY MANUFACTURERS
ANY SPACE CONDITIONING EQUIPMENT LISTED IN §110.2 SHALL ONLY BE INSTALLED IF CERTIFIED TO THE ENERGY COMMISSION TO MEET ALL APPLICABLE §110.2 REQUIREMENTS.

110.2(a) SPACE CONDITIONING EQUIPMENT EFFICIENCY
EQUIPMENT SHALL MEET APPLICABLE EFFICIENCY REQUIREMENTS IN TABLE 110.2-A THROUGH TABLE 110.2-N.

110.2(b) HEAT PUMPS WITH SUPPLEMENTARY ELECTRIC RESISTANCE HEAT
HEAT PUMPS WITH SUPPLEMENTARY ELECTRIC RESISTANCE HEATERS SHALL HAVE CONTROLS THAT PREVENT SUPPLEMENTARY HEATER OPERATION WHEN THE HEATING LOAD CAN BE MET BY THE HEAT PUMP ALONE. CUT-ON TEMPERATURE FOR COMPRESSION HEATING SHALL BE HIGHER THAN THAT FOR SUPPLEMENTARY HEATING. CUT-OFF TEMPERATURE FOR COMPRESSION HEATING SHALL BE HIGHER THAN THAT FOR SUPPLEMENTARY HEATING.

110.5 PILOT LIGHTS PROHIBITED FOR NATURAL GAS EQUIPMENT
PILOT LIGHTS ARE PROHIBITED ON NATURAL GAS FAN-TYPE CENTRAL FURNACES, POOL HEATERS, SPA HEATERS, AND FIREPLACES.

110.8(a) INSULATION CERTIFICATION
INSTALLED INSULATION SHALL BE CERTIFIED BY THE DEPARTMENT OF CONSUMER AFFAIRS PER TITLE 24, PART 12, CHAPTERS 12-13, ARTICLE 3 "STANDARDS FOR INSULATING MATERIAL."

110.8(b) UREA FORMALDEHYDE INSULATION
UREA FORMALDEHYDE INSULATION SHALL NOT BE INSTALLED UNLESS IN EXTERIOR SIDE WALLS WITH A FOUR-MIL-THICK PLASTIC POLYETHYLENE VAPOR RETARDER OR EQUIVALENT PLASTIC SHEATHING VAPOR RETARDER INSTALLED BETWEEN THE UREA FORMALDEHYDE FOAM INSULATION AND THE INTERIOR SPACE.

110.8(c) INSULATING MATERIAL
ALL INSULATING MATERIALS SHALL BE INSTALLED IN COMPLIANCE WITH THE FLAME SPREAD RATING AND SMOKE DENSITY REQUIREMENTS OF THE CALIFORNIA BUILDING CODE.

110.8(d) DUCTS
IF INSULATION IS INSTALLED ON AN EXISTING SPACE-CONDITIONING DUCT, IT SHALL COMPLY WITH SECTION 604.0 OF THE CMC.

120.1(a) GENERAL VENTILATION AND INDOOR AIR QUALITY REQUIREMENTS
ALL OCCUPIABLE SPACES IN HOTEL/MOTEL AND NONRESIDENTIAL BUILDINGS OTHER THAN HEALTHCARE SHALL COMPLY WITH APPLICABLE REQUIREMENTS OF §120.1(a) THROUGH (g). THE REQUIRED OUTDOOR AIR VENTILATION RATE AND AIR-DISTRIBUTION SYSTEM DESIGN SHALL BE CLEARLY IDENTIFIED ON THE PLANS.

120.1(c)2 NATURAL VENTILATION
NATURALLY VENTILATED SPACES SHALL BE DESIGNED IN ACCORDANCE WITH 120.1(c)2A THROUGH 120.1(c)2C AND INCLUDE A MECHANICAL VENTILATION SYSTEMS DESIGNED IN ACCORDANCE WITH 120.1(c)3.

120.1(c)3 MECHANICAL VENTILATION
OCCUPIABLE SPACES SHALL BE VENTILATED WITH A MECHANICAL VENTILATION SYSTEM CAPABLE OF PROVIDING AN OUTDOOR AIRFLOW RATE (V_Z) TO THE ZONE NO LESS THAN EQUATION 120.1-F.

120.1(d) TIMES OF OCCUPANCY
MINIMUM OUTDOOR AIR RATE SHALL BE MET AT TIMES WHEN THE SPACE IS USUALLY OCCUPIED IN ACCORDANCE WITH 120.1(c).

Space Conditioning Mandatory Measures:

120.1(d)2 PRE-OCCUPANCY
THE LESSER OF THE MINIMUM RATE OF OUTDOOR AIR REQUIRED BY SECTION 120.1(c) OR THREE COMPLETE AIR CHANGES SHALL BE SUPPLIED TO THE ENTIRE BUILDING DURING THE 1-HOUR PERIOD IMMEDIATELY BEFORE THE BUILDING IS NORMALLY OCCUPIED.

120.1(d)3 REQUIRED DEMAND CONTROL VENTILATION
DCV CONTROLS ARE REQUIRED FOR A SPACE WITH A DESIGN OCCUPANCY DENSITY >= 25 PEOPLE/1,000 FT2 IF THE SYSTEM SERVING THE SPACE HAS ONE OR MORE OF THE FOLLOWING
- AN AIR ECONOMIZER
- MODULATING OUTSIDE AIR CONTROL
- DESIGN OUTDOOR AIRFLOW RATE > 3,000 CFM

120.1(f) DESIGN AND CONTROL REQUIREMENTS FOR QUANTITIES OF OUTDOOR AIR

120.1(f)1 ALL MECHANICAL VENTILATION AND SPACE-CONDITIONING SYSTEMS SHALL BE DESIGNED WITH AND HAVE INSTALLED DUCTWORK, DAMPERS, AND CONTROLS TO ALLOW OA RATES TO BE OPERATED AT NO LESS THAN THE LARGER OF: 120.1(c)3 MINIMUMS OR THE RATE REQUIRED FOR MAKE-UP OF EXHAUST SYSTEMS FOR AN EXEMPT OR COVERED PROCESS, CONTROL OF ODORS, OR CONTAMINANT REMOVAL IN A SPACE.

120.1(f)3 MEASURED OA RATES OF CONSTANT VOLUME SYSTEMS SHALL BE TESTED TO CONFIRM THEIR ABILITY TO OPERATE WITHIN 10% OF THE DESIGN MINIMUM OUTSIDE AIR RATE.

120.1(g) AIR CLASSIFICATION AND RECIRCULATION LIMITATIONS
AIR CLASSIFICATION AND RECIRCULATION LIMITATIONS OF AIR SHALL BE BASED ON TABLE 120.1-A OR TABLE 120.1-C, AND IN ACCORDANCE WITH 120.1(g)1 THROUGH 4.

120.2(a) THERMOSTAT CONTROLS
HEATING AND COOLING SUPPLY TO EACH SPACE-CONDITIONING ZONE OR DWELLING UNIT SHALL BE CONTROLLED BY AN INDIVIDUAL THERMOSTATIC CONTROL THAT RESPONDS TO TEMPERATURE IN THE ZONE AND MEETS 120.2(b) REQUIREMENTS.

120.2(b) ZONAL THERMOSTAT CONTROLS

120.2(b)4 THERMOSTATIC CONTROLS FOR ALL SINGLE ZONE AIR CONDITIONERS AND HEAT PUMPS SHALL COMPLY WITH THE REQUIREMENTS OF 110.2(c) AND 110.12(a) AND, IF EQUIPPED WITH DDC TO THE ZONE LEVEL WITH THE AUTOMATIC DEMAND SHED CONTROLS OF 110.12(b).

120.2(d) HEAT PUMP CONTROLS
ALL HEAT PUMPS WITH SUPPLEMENTAL ELECTRIC RESISTANCE HEATERS SHALL BE INSTALLED WITH CONTROLS THAT MEET 110.2(b) REQUIREMENTS.

120.2(e)1 AUTOMATIC SHUT-OFF FOR SPACE-CONDITIONING SYSTEMS
EACH SPACE-CONDITIONING SYSTEM SHALL BE INSTALLED WITH ONE OF THE FOLLOWING CONTROLS CAPABLE OF AUTOMATICALLY SHUTTING OFF THE SYSTEM DURING PERIODS OF NONUSE:
- AUTOMATIC TIME SWITCH CONTROL PER 110.9, WITH ACCESSIBLE MANUAL OVERRIDE ALLOWING SYSTEM OPERATION FOR UP TO 4 HOURS, OR
- AN OCCUPANCY SENSOR, OR
- A 4-HOUR TIMER THAT CAN BE MANUALLY OPERATED.

120.2(f) DAMPERS FOR AIR SUPPLY AND EXHAUST EQUIPMENT
OUTDOOR AIR SUPPLY AND EXHAUST EQUIPMENT SHALL BE INSTALLED WITH DAMPERS THAT AUTOMATICALLY CLOSE UPON FAN SHUTDOWN.

Space Conditioning Mandatory Measures:

120.2(h) AUTOMATIC DEMAND SHED CONTROLS
SHALL MEET REQUIREMENTS IN 110.12
110.12(a) DEMAND RESPONSIVE (DR) CONTROL REQUIREMENTS:
1. EITHER CERTIFIED OPENADR 2.0a, OPENADR 2.0b VIRTUAL END NODE (VEN); OR CERTIFIED BY THE MANUFACTURER AS BEING CAPABLE OF RESPONDING TO A DR SIGNAL FROM A CERTIFIED OPENADR 2.0b VIRTUAL END NODE BY AUTOMATICALLY IMPLEMENTING THE CONTROL FUNCTIONS REQUESTED BY THE VIRTUAL END NODE FOR THE EQUIPMENT IT CONTROLS.
2. CAPABLE OF COMMUNICATING USING WI-FI, ZIGBEE, BACNET, ETHERNET, AND/OR HARD-WIRING.
3. MAY INCORPORATE AND USE ADDITIONAL PROTOCOLS BEYOND THOSE SPECIFIED IN 110.12(a)1 AND 2.
4. SHALL CONTINUE TO PERFORM ALL OTHER CONTROL FUNCTIONS PROVIDED BY THE CONTROL WHEN COMMUNICATIONS ARE DISABLED.
5. THERMOSTATS SHALL COMPLY WITH REFERENCE JOINT APPENDIX 5 (JA5)

110.12(b) NONRESIDENTIAL HVAC SYSTEMS WITH DDC TO THE ZONE LEVEL SHALL BE PROGRAMMED TO ALLOW CENTRALIZED DEMAND SHED FOR NON-CRITICAL ZONES. CONTROLS SHALL BE CAPABLE OF:
1. REMOTELY INCREASING THE OPERATING COOLING TEMPERATURE SETPOINTS BY 4 DEGREES OR MORE IN ALL NON-CRITICAL ZONES ON SIGNAL FROM A CENTRALIZED CONTACT OR SOFTWARE POINT WITHIN AN EMCS
2. REMOTELY DECREASING THE OPERATING HEATING TEMPERATURE SETPOINTS BY 4 DEGREES OR MORE IN ALL NON-CRITICAL ZONES ON SIGNAL FROM A CENTRALIZED CONTACT OR SOFTWARE POINT WITHIN AN EMCS
3. REMOTELY RESETTING THE TEMPERATURES IN ALL NON-CRITICAL ZONES TO ORIGINAL OPERATING LEVELS ON SIGNAL FROM A CENTRALIZED CONTACT OR SOFTWARE POINT WITHIN AN EMCS
4. PROVIDING AN ADJUSTABLE RATE OF CHANGE FOR THE TEMPERATURE INCREASE, DECREASE, AND RESET
5. THE FOLLOWING FEATURES:
   A. DISABLED BY AUTHORIZED FACILITY OPERATORS
   B. MANUAL CONTROL BY AUTHORIZED FACILITY OPERATORS
   C. UPON RECEIPT OF A DR SIGNAL, SPACE-CONDITIONING SYSTEMS SHALL CONDUCT A CENTRALIZED DEMAND SHED, AS SPECIFIED IN 110.12(b)1 AND 110.12(b)2, FOR NON-CRITICAL ZONES DURING THE DR PERIOD

120.2(j) DIRECT DIGITAL CONTROLS (DDC)
DDC TO THE ZONE SHALL BE PROVIDED AS SPECIFIED BY TABLE 120.2-A. THE DDC SYSTEM SHALL MEET CONTROL LOGIC REQUIREMENTS OF 120.1(D), 110.12(a) AND 110.12(b) AND BE CAPABLE OF ALL OF THE FOLLOWING:
1. MONITORING ZONE AND SYSTEM DEMAND FOR FAN PRESSURE, PUMP PRESSURE, HEATING AND COOLING
2. TRANSFERRING ZONE AND SYSTEM DEMAND INFORMATION FROM ZONES TO AIR DISTRIBUTION SYSTEM CONTROLLERS AND FROM AIR DISTRIBUTION SYSTEMS TO HEATING AND COOLING PLANT CONTROLLERS
3. AUTOMATICALLY DETECTING THE ZONES AND SYSTEMS THAT MAY BE EXCESSIVELY DRIVING THE RESET LOGIC AND GENERATE AN ALARM OR OTHER INDICATION TO THE SYSTEM OPERATOR
4. READILY ALLOW OPERATOR REMOVAL OF ZONE(S) FROM THE RESET ALGORITHM
5. FOR NEW BUILDINGS, TRENDING AND GRAPHICALLY DISPLAYING INPUT AND OUTPUT POINTS
6. RESETTING HEATING AND COOLING SETPOINTS IN ALL NON-CRITICAL ZONES UPON RECEIPT OF A SIGNAL FROM A CENTRALIZED CONTACT OR SOFTWARE POINT AS DESCRIBED IN 110.12(b).

Space Conditioning Mandatory Measures:

120.4 AIR DISTRIBUTION SYSTEM DUCTS AND PLENUMS
PORTIONS OF SUPPLY- AND RETURN-AIR DUCTS CONVEYING HEATED OR COOLED AIR LOCATED IN ONE OR MORE OF THE FOLLOWING SPACES SHALL BE INSULATED TO A MINIMUM INSTALLED LEVEL OF R-8:
- OUTDOORS
- IN A SPACE BETWEEN THE ROOF AND AN INSULATING CEILING
- IN A SPACE DIRECTLY UNDER A ROOF WITH FIXED VENTS OR OPENINGS TO THE OUTSIDE OR UNCONDITIONED SPACES
- UNCONDITIONED SPACES, SUCH AS UNCONDITIONED CRAWLSPACE

PORTIONS OF SUPPLY-AIR DUCTS THAT ARE NOT IN ONE OF THESE SPACES, INCLUDING DUCTS BURIED IN CONCRETE SLAB, SHALL BE INSULATED TO A MINIMUM INSTALLED LEVEL OF R-4.2 (OR ANY HIGHER LEVEL REQUIRED BY CMC 605.0), OR BE ENCLOSED IN DIRECTLY CONDITIONED SPACE.

120.4(b) DUCT AND PLENUM MATERIALS
120.4(b) FACTORY-FABRICATED DUCT SYSTEMS MUST:
- COMPLY WITH UL 181 FOR DUCTS AND CLOSURE SYSTEMS AND BE LABELED AS COMPLYING WITH UL 181
- ALL PRESSURE SENSITIVE TAPES, HEAT ACTIVATED TAPES, AND MASTICS USED IN MANUFACTURE OF RIGID FIBERGLASS DUCTS SHALL COMPLY WITH UL 181 AND UL 181A
- ALL PRESSURE SENSITIVE TAPES, AND MASTICS USED IN MANUFACTURE OF FLEXIBLE DUCTS SHALL COMPLY WITH UL 181 AND L 181B
- JOINTS AND SEAMS SHALL NOT BE SEALED WITH CLOTH BACK RUBBER ADHESIVE DUCT TAPES UNLESS COMBINED WITH MASTICS AND DRAWBANDS.

FIELD-FABRICATED DUCT SYSTEMS:
- FACTORY-MADE RIGID FIBERGLASS AND FLEXIBLE DUCTS FOR FIELD-FABRICATED DUCT SYSTEMS SHALL COMPLY WITH UL 181. ALL CLOSURE SYSTEMS, INCLUDING PRESSURE SENSITIVE TAPES, MASTICS, AND AEROSOL SEALANTS, SHALL MEET THE APPLICABLE REQUIREMENTS OF UL 181, UL 181A AND UL 181B.
- MASTIC SEALANTS SHALL:
  - COMPLY WITH APPLICABLE REQUIREMENTS OF UL 181, UL 181A, AND UL 181B AND BE NONTOXIC AND WATER RESISTANT.
  - PASS ASTM C731 AND D2202, IF USED IN BUILDING INTERIOR,
  - PASS ASTM C731, C732, AND D2202, IF USED ON EXTERIOR.
  - SEALANTS AND MESHES SHALL BE RATED FOR EXTERIOR USE.
- PRESSURE SENSITIVE TAPES SHALL COMPLY WITH APPLICABLE REQUIREMENTS IN UL 181, UL 181A, AND UL 181B.
- JOINTS AND SEAMS SHALL NOT BE SEALED WITH CLOTH BACK RUBBER ADHESIVE DUCT TAPES UNLESS COMBINED WITH MASTICS AND DRAWBANDS.
- DRAWBANDS USED WITH FLEXIBLE DUCTS SHALL:
  - BE EITHER STAINLESS STEEL WORM-DRIVE HOSE CLAMPS OR UV-RESISTANT NYLON DUCT TIES
  - HAVE A MINIMUM TENSILE STRENGTH RATING OF 150 LBS.
  - BE TIGHTENED AS RECOMMENDED BY THE MANUFACTURER
- AEROSOL SEALANT CLOSURES SHALL:
  - MEET REQUIREMENTS OF UL 723 AND BE APPLIED ACCORDING TO MANUFACTURER SPECIFICATIONS
  - TAPES OR MASTICS USED IN COMBINATION WITH AEROSOL SEALING SHALL COMPLY WITH APPLICABLE REQUIREMENTS OF UL 181, UL 181A, AND UL 181B, ASTM C731, C732 AND D2202.

120.4(c)
ALL DUCT INSULATION PRODUCT R-VALUES SHALL BE BASED ON INSULATION ONLY AND TESTED IN ACCORDANCE WITH ASTM C518 OR ASTM C177 AND CERTIFIED PER §110.8.

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T24 COMPLIANCE DOCS

	DATE	REMARKS
1	07/09/2025	ISSUE FOR PLAN CHECK
2	09/22/2025	PLAN CHECK CORRECTIONS
3	10/15/2025	PLAN CHECK CORRECTIONS 2
3	02/04/2026	PLAN CHECK CORRECTIONS 3
4	01/26/2025	OC HEALTH DEPT
7	04/30/2026	BID ADDENDUM 2

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STATE OF CALIFORNIA

Mechanical Systems

CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE		NRCC-MCH-E
This document is used to demonstrate compliance for mechanical systems that are within the scope of the permit application and are demonstrating compliance using the prescriptive path outlined in 140.4, or 141.0(b)2 for alterations.		
Project Name: Red Hill Rec Center C&S	**Report Page:**	**(Page 1 of 11)**
Project Address:	**Date Prepared:**	2025-05-12T17:17:24-04:00

A. GENERAL INFORMATION

01	Project Location (city)	Irvine	04	Total Conditioned Floor Area	98070
02	Climate Zone	8	05	Total Unconditioned Floor Area	98070
03	Occupancy Types Within Project:		06	# of Stories (Habitable Above Grade)	1

- Gymnasium

B. PROJECT SCOPE

This table Includes mechanical systems or components that are within the scope of the permit application and are demonstrating compliance using the prescriptive path outlined in 140.4, 170.2(b) or 141.0(b)2 and 180.2(b)2 for alterations.

01		02		03	
Air System(s)		Wet System Components		Dry System Components	
☒	Heating Air System	☐	Water Economizer	☒	Air Economizer
☒	Cooling Air System	☐	Pumps	☐	Electric Resistance Heat
	Mechanical Controls	☐	System Piping	☒	Fan Systems
☒	Mechanical Controls (existing to remain, altered or new)	☐	Cooling Towers	☒	Ductwork (existing to remain, altered or new)
		☐	Chillers	☒	Ventilation
		☐	Boilers	☐	Zonal Systems/ Terminal Boxes

Space Conditioning Mandatory Measures:

120.4(d)

INSTALLED THICKNESS OF DUCT INSULATION USED TO DETERMINE ITS R-VALUE SHALL BE DETERMINED AS FOLLOWS:

- DUCT BOARD, LINER, AND FACTORY-MADE RIGIDS: USE NOMINAL INSULATION THICKNESS
- DUCT WRAP: USE 75% (25% COMPRESSION) OF NOMINAL THICKNESS
- FACTORY-MADE FLEXIBLE AIR DUCTS: DIVIDE THE DIFFERENCE BETWEEN THE ACTUAL OUTSIDE DIAMETER AND NOMINAL INSIDE DIAMETER BY TWO.

120.4(e)

INSULATED FLEXIBLE DUCT PRODUCTS INSTALLED TO MEET THIS REQUIREMENT MUST INCLUDE LABELS (MAX INTERVALS OF 3 FT) SHOWING THERMAL RESISTANCE PERFORMANCE R-VALUE FOR THE DUCT INSULATION ITSELF BASED ON TESTS IN 120.4(c). AND INSTALLED THICKNESS DETERMINED BY 120.4(d)3.

120.4(f) PROTECTION OF INSULATION

INSULATION SHALL BE PROTECTED FROM DAMAGE BY SUNLIGHT, MOISTURE, EQUIPMENT MAINTENANCE AND WIND. CELLULAR FOAM INSULATION SHALL BE PROTECTED, OR BE PAINTED WITH A WATER RETARDANT COATING THAT PROVIDES SHIELDING FROM SOLAR RADIATION.

STATE OF CALIFORNIA

Mechanical Systems

CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE		NRCC-MCH-E
Project Name: Red Hill Rec Center C&S	**Report Page:**	**(Page 2 of 11)**
	Date Prepared:	2025-05-12T17:17:24-04:00

C. COMPLIANCE RESULTS

Table C will indicate if the project data input into the compliance document is compliant with mechanical requirements. This table is not editable by the user. If this table says "DOES NOT COMPLY" or "COMPLIES with Exceptional Conditions" refer to Table D., or the table indicated as not compliant for guidance.

01		02		03		04		05		06		07		08	09
System Summary 110.1, 110.2, 140.4, 170.2(c)	AND	Pumps 140.4(k), 170.2(c)4I	AND	Fans/ Economizers 140.4(c), 140.4(e), 170.2(c)	AND	System Controls 110.2, 120.2, 140.4(f), 170.2(c)	AND	Ventilation 120.1, 160.2	AND	Terminal Box Controls 140.4(d), 170.2(c)4B	AND	Distribution 120.3, 140.4(l), 160.2, 160.3	AND	Cooling Towers 110.2(e)2	Compliance Results
(See Table F)		(See Table G)		(See Table H)		(See Table I)		(See Table J)		(See Table K)		(See Table L)		(See Table M)	
Yes	AND		AND	Yes	AND	Yes	AND	Yes	AND		AND	Yes	AND		COMPLIES with Exceptional Conditions
Mandatory Measures Compliance (See Table Q 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.

The permit applicant has indicated on Table J that ventilation calculations have been attached or included elsewhere on the plans.

E. ADDITIONAL REMARKS

This table includes remarks made by the permit applicant to the Authority Having Jurisdiction.

F. HVAC SYSTEM SUMMARY (DRY & WET SYSTEMS)

Space Conditioning System Information

01	02	03	04	05	06
System Name	Quantity	System Serving	System Status	Space Type	Utilizing Recovered Heat
RTU-1	1	Single zone	New/ Addition	All Other Occupancies	☐

STATE OF CALIFORNIA

Mechanical Systems

CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE		NRCC-MCH-E
Project Name: Red Hill Rec Center C&S	**Report Page:**	**(Page 3 of 11)**
	Date Prepared:	2025-05-12T17:17:24-04:00

F. HVAC SYSTEM SUMMARY (DRY & WET SYSTEMS)

Space Conditioning System Information

01	02	03	04	05	06
System Name	Quantity	System Serving	System Status	Space Type	Utilizing Recovered Heat
RTU-2	1	Single zone	New/ Addition	All Other Occupancies	☐
RTU-3,4	2	Single zone	New/ Addition	All Other Occupancies	☐
CU-1	1	Single zone	New/ Addition	All Other Occupancies	☐
RTU-5	1	Single zone	New/ Addition	All Other Occupancies	☐
RTU-6	1	Single zone	New/ Addition	All Other Occupancies	☐
RTU-7,...,17	1	Single zone	New/ Addition	All Other Occupancies	☐

Dry System Equipment Sizing (includes air conditioners, condensers, heat pumps, VRF, furnaces and unit heaters and DOAS systems)

01	02	03	04	05	06	07	08	09	10	11
Name or Item Tag	Equipment Category per Tables 110.2, 140.4(a)2 and 170.2(c)3aii	Equipment Type per Tables 110.2 and Title 20	Smallest Size Available[1] 140.4(a) and 170.2(c)1	Equipment Sizing per Mechanical Schedule (kBtu/h) 140.4(a&b), 170.2(c)1 & 170.2(c)2						
				Heating Output[2,3]			Cooling Output[2,3]		Load Calculations[3,4]	
				Per Design (kBtu/h)	Rated (kBtu/h)	Supp. Heating Output (kBtu/h)	Sensible Per Design (kBtu/h)	Rated (kBtu/h)	Total Heating Load (kBtu/h)	Total Sensible Cooling Load (kBtu/h)
RTU-1	Unitary Heat Pumps	Air-cooled, pkg (3 phase)	Yes	80	85	0	82	105	85	105
RTU-2	Unitary Heat Pumps	Air-cooled, pkg (3 phase)	Yes	95	99	0	85	96	99	96
RTU-3,4	Unitary Heat Pumps	Air-cooled, pkg (3 phase)	Yes	18	20	0	25	27	20	27
CU-1	Unitary AC/ Condensers	AC, air cooled, split (1 phase)	Yes				15	18		15
RTU-5	Unitary Heat Pumps (no elec. resistance)	Air-cooled, pkg (3 phase)	Yes	175	189	0	219	251	189	219
RTU-6	Unitary Heat Pumps (no elec. resistance)	Air-cooled, pkg (3 phase)	Yes	40	47	0	52	270	47	52
RTU-7,...,17	Unitary Heat Pumps (no elec. resistance)	Air-cooled, pkg (3 phase)	Yes	180	193.5	0	227	270	193.5	227

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STATE OF CALIFORNIA

Mechanical Systems

CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE		NRCC-MCH-E
Project Name: Red Hill Rec Center C&S	**Report Page:**	**(Page 4 of 11)**
	Date Prepared:	2025-05-12T17:17:24-04:00

F. HVAC SYSTEM SUMMARY (DRY & WET SYSTEMS)

Dry System Equipment Sizing (includes air conditioners, condensers, heat pumps, VRF, furnaces and unit heaters and DOAS systems)

01	02	03	04	05	06	07	08	09	10	11

[1]FOOTNOTES: Equipment shall be the smallest size, within the available options of the desired equipment line, necessary to meet the design heating and cooling loads of the building per 140.4(a) and 170.2(c)1. Healthcare facilities are excepted.
[2]It is common practice to show rated output capacity on the equipment schedule. Sensible cooling output comes from specification sheet tables.
[3] If equipment is heating only, leave cooling output and load blank. If equipment is cooling only, leave heating output and load blank.
[4] Authority Having Jurisdiction may ask for load calculations used for compliance per 140.4(b) and 170.2(c).

Dry System Equipment Efficiency (other than Package Terminal Air Conditioners (PTAC) and Package Terminal Heat Pumps (PTHP), DX-DOAS and Dual Fuel Heat Pumps)

01	02	03	04	05	06	07	08	09
		Heating Mode				Cooling Mode		
Name or Item Tag	Size Category (Btu/h)	Rating Condition (°F)	Efficiency Unit	Minimum Efficiency Required per Tables 110.2 / Title 20	Design Efficiency	Efficiency Unit	Minimum Efficiency Required per Tables 110.2 / Title 20	Design Efficiency
RTU-1	>=65,000 and <135,000	47 °Fdb/ 43 °Fwb OSA	COP	3.4	3.74	EER IEER	11 14.1	12.1 17.5
RTU-2	>=65,000 and <135,000	47 °Fdb/ 43 °Fwb OSA	COP	3.4	3.5	EER IEER	11 14.1	11 16.9
RTU-3,4	<65,000		HSPF	8	12	SEER	14	17.5
CU-1	<45,000					EER2 SEER2	9.8 14.3	16.5 19.6
RTU-5	>=240,000	17 °Fdb/ 15 °Fwb OSA	COP	2.05	2.25	EER IEER	9.3 10.4	10.9 16.9
RTU-6	<65,000		HSPF	8	8	SEER	14	16.4
RTU-7,...,17	>=240,000	17 °Fdb/ 15 °Fwb OSA	COP	2.05	2.46	EER IEER	9.3 10.4	10.1 16

STATE OF CALIFORNIA

Mechanical Systems

CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE		NRCC-MCH-E
Project Name: Red Hill Rec Center C&S	**Report Page:**	**(Page 5 of 11)**
	Date Prepared:	2025-05-12T17:17:24-04:00

G. PUMPS

This section does not apply to this project.

H. FAN SYSTEMS & AIR ECONOMIZERS

This table is used to demonstrate compliance with prescriptive requirements found in 140.4(c), 140.4(e), 140.4(m), 170.2(c)3, and 170.2(c)4A for fan systems. Fan systems serving only process loads are exempt from these requirements and do not need to be included in Table H.

System Name	EF	Quantity	1	Fan System Status	New	System Zoning	all other systems	Serving Dwelling Units	Not Serving Dwelling Units	Fan System Airflow (cfm)	5,300	Site Elevation	60	Economizer	NA: Efficiency per Table 140.4-F
01	02	03	04			05		06	07	08	09			10	11
									Allowance		Design				
Fan Name or Item Tag	Fan Type	Qty	Component			Airflow through Component (%)		Water Gauge (w.g)	Component Allowance (watt/cfm)	Fan Allowance (watt/cfm)[3]	Design Electrical Input Power Method			Motor Nameplate Horsepower	Fan Electrical Input Power (kW)
EF-1	Exhaust	1	Airflow control devices required for space pressurization control			14			0.102	0.0143	Manufacturer provided				0.12
EF-2	Exhaust	1	Airflow control devices required for space pressurization control			37			0.102	0.0377	Manufacturer provided				0.56
EF-3	Exhaust	1	Airflow control devices required for space pressurization control			2			0.102	0.002	Manufacturer provided				0.01
EF-4	Exhaust	1	Airflow control devices required for space pressurization control			47			0.102	0.0479	Manufacturer provided				0.75
Supply Fan Base Allowance (watt/cfm)		0	Exhaust/Return/Relief/Transfer Fan Base Allowance(watt/cfm)					0.18	Fan System Allowance (kW)[3]		1.51		Fan System Electrical Input Power (kW)		1.44

[1] FOOTNOTES: Fans serving spaces with design background noise goals below NC35

STATE OF CALIFORNIA

Mechanical Systems

CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE		NRCC-MCH-E
Project Name: Red Hill Rec Center C&S	**Report Page:**	**(Page 5 of 11)**
	Date Prepared:	2025-05-12T17:17:24-04:00

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H. FAN SYSTEMS & AIR ECONOMIZERS

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System Name	EF	Quantity	1	Fan System Status	New	System Zoning	all other systems	Serving Dwelling Units	Not Serving Dwelling Units	Fan System Airflow (cfm)	5,300	Site Elevation	60	Economizer	NA: Efficiency per Table 140.4-F
01	02	03	04			05		06	07	08	09			10	11
									Allowance		Design				
Fan Name or Item Tag	Fan Type	Qty	Component			Airflow through Component (%)		Water Gauge (w.g)	Component Allowance (watt/cfm)	Fan Allowance (watt/cfm)[3]	Design Electrical Input Power Method			Motor Nameplate Horsepower	Fan Electrical Input Power (kW)
EF-1	Exhaust	1	Airflow control devices required for space pressurization control			14			0.102	0.0143	Manufacturer provided				0.12
EF-2	Exhaust	1	Airflow control devices required for space pressurization control			37			0.102	0.0377	Manufacturer provided				0.56
EF-3	Exhaust	1	Airflow control devices required for space pressurization control			2			0.102	0.002	Manufacturer provided				0.01
EF-4	Exhaust	1	Airflow control devices required for space pressurization control			47			0.102	0.0479	Manufacturer provided				0.75
Supply Fan Base Allowance (watt/cfm)		0	Exhaust/Return/Relief/Transfer Fan Base Allowance(watt/cfm)					0.18	Fan System Allowance (kW)[3]		1.51		Fan System Electrical Input Power (kW)		1.44

[1] FOOTNOTES: Fans serving spaces with design background noise goals below NC35

Generated Date/Time: Documentation Software: Energy Code Ace
CA Building Energy Efficiency Standards - 2022 Nonresidential Compliance Report Version: 2022.0.000 Schema Version: rev 20220101 Compliance ID: 239917-0525-0013 Report Generated: 2025-05-12 14:17:29

STATE OF CALIFORNIA

Mechanical Systems

CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE		NRCC-MCH-E
Project Name: Red Hill Rec Center C&S	**Report Page:**	**(Page 7 of 11)**
	Date Prepared:	2025-05-12T17:17:24-04:00

I. SYSTEM CONTROLS

This table is used to demonstrate compliance with mandatory controls in 110.2 and 120.2 and prescriptive controls in 140.4(f) and (n), 170.2(c)4D 170.2(c)4L or requirements in 141.0(b)2E 180.2(b)2 for altered space conditioning systems.

01	02	03	04	05	06	07	08	09	10
System Name	System Zoning	Conditioned Floor Area Being Served (ft^2)	Thermostats 110.2(b) & (c)[1], 120.2(a) 160.3(a)2A or 141.0(b)2E & 180.2(b)2	Shut-Off Controls 120.2(e) & 160.3(a)2D	Isolation Zone Controls 120.2(g) & 160.3(a)2F	Demand Response 110.12 120.2(b) & 160.3(a)2B	Supply Air Temp. Reset 140.4(f) & 170.2(c)4D	Window Interlocks per 140.4(n) & 170.2(c)4D	Direct Digital Control (DDC) per 120.2
SC	Single zone	> 25,000 ft^2	Setback + DR Tstat per 110.12	NA: 7 day per 120.2(e)1	NA: Single Zone	DR Tstat per 110.12	NA: Single Zone	NA: No operable windows	NA: Single Zone

[1]FOOTNOTES: Gravity gas wall heaters, gravity floor heaters, gravity room heaters, non-central electric heaters, fireplaces or decorative gas appliances, wood stoves are not required to have setback thermostats.

J. VENTILATION AND INDOOR AIR QUALITY

This table is used to demonstrate compliance with mandatory ventilation requirements in 120.1 120.2(e)3B 140.4(p) and 140.4(q) for all nonresidential and hotel/motel and d:t24refnolink/]160.2, 160.3(a)3D, 170.2(a)4N, 170.2(a)4O for high-rise residential occupancies. For alterations, only ventilation systems being altered within the scope of the permit application need to be documented in this table. In lieu of this table, the required outdoor ventilation rates and airflows may be shown on the plans or the calculations can be presented in a spreadsheet.

01	☒	Check the box if the project is showing ventilation calculations on the plans, or attaching the calculations instead of completing this table.
02	☐	Check this box if the project included Nonresidential, Hotel/Motel Spaces or Multifamily Common Use Spaces
	☐	
03	☐	Check the box if the project is using natural ventilation in any nonresidential or hotel/motel spaces to meet required ventilation rates per 120.1(c)2.

K. TERMINAL BOX CONTROLS

This section does not apply to this project.

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IRVINE, CALIFORNIA 92614

T24 COMPLIANCE DOCS

	DATE	REMARKS
1	07/09/2025	ISSUE FOR PLAN CHECK
2	09/22/2025	PLAN CHECK CORRECTIONS
3	10/15/2025	PLAN CHECK CORRECTIONS 2
3	02/04/2026	PLAN CHECK CORRECTIONS 3
4	01/26/2025	OC HEALTH DEPT
7	04/30/2026	BID ADDENDUM 2

PA/PM:	BL
DRAWN BY.:	DG
JOB NO.:	LAX21-0174-02

06/06/2025

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L. DISTRIBUTION (DUCTWORK and PIPING)

This table is used to show compliance with mandatory pipe insulation requirements found in 120.3 and mandatory requirements found in 120.4(g) for duct sealing.

01	☐	Insulation shall be protected from damage, including that due to sunlight, moisture, equipment maintenance, and wind. Insulation exposed to weather shall be installed with a cover suitable for outdoor service. Insulation covering chilled water piping and refrigerant suction piping located outside the conditioned space shall have a Class I or Class II vapor retarder. All penetrations and joints of which shall be sealed.

Duct Leakage Testing

The answers to the questions below apply to the following duct systems:	DS	**NR/ Common Use:** Duct leakage testing shall not exceed 6% per NA7.5.3 required for these systems?	No
		Dwelling Units: Total duct leakage of duct system shall not exceed 12% or duct system to outside shall not exceed 6% per RA3.1.4 required for systems?	---
		Duct leakage testing per CMC Section 603.9.2 required for these systems?	Yes

11	No	The scope of the project includes only duct systems serving healthcare facilities
12	Yes	Duct system provides conditioned air to an occupiable space for a constant volume, single zone, space-conditioning system.
13	No	The space conditioning system serves less than 5,000 ft^2 of conditioned floor area.
14	No	The combined surface area of the ducts is more than 25% of the total surface area of the entire duct system:
15	No	The scope of the project includes extending an existing duct system, which is constructed, insulated or sealed with asbestos.
16	No	The scope of the project includes an existing duct system that is documented to have been previously sealed as confirmed through field verification and diagnostic testing in accordance with procedures in the Reference Nonresidential Appendix NA2.
17	Yes	All Ductwork and plenums with pressure class ratings shall be constructed to Seal Class A
18	No	All ductwork is an extension of an existing duct system
19	No	Ductwork serving individual dwelling unit
20		< 25 ft of new or replacement space conditioning ducts installed
21	R-6	Duct Insulation R-value
22	No	Ductwork Existing To Remain
23	No	Duct System Connected To Altered Space Conditioning System

M. COOLING TOWERS

This section does not apply to this project.

N. DECLARATION OF REQUIRED CERTIFICATES OF INSTALLATION

Selections have been made based on information provided in previous tables of this document. If any selection needs to be changed, please explain why in Table 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/programs-and-topics/programs/building-energy-efficiency-standards/2022-building-energy-efficiency-4

Form/Title
NRCI-MCH-01-E - Must be submitted for all buildings

O. DECLARATION OF REQUIRED CERTIFICATES OF ACCEPTANCE

Selections have been made based on information provided in previous tables of this document. If any selection needs to be changed, please explain why in Table 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/programs-and-topics/programs/building-energy-efficiency-standards/2022-building-energy-efficiency-4

Form/Title	Systems/Spaces To Be Field Verified
NRCA-MCH-02-A - Outdoor Air must be submitted for all newly installed HVAC units. Note: MCH-02-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 NOTE: This form does not automatically move to "Yes'. If Constant Volume Single Zone HVAC Systems are included in the scope, permit applicant should move this form to "Yes".	SC

P. DECLARATION OF REQUIRED CERTIFICATES OF VERIFICATION

There are no NRCV forms required for this project.

Q. MANDATORY MEASURES DOCUMENTATION LOCATION

This table is used to indicate where mandatory measures are documented in the plan set or construction documentation.

01		02
Compliance with Mandatory Measures documented through MCH Mandatory Measures Note Block	Yes	Plan sheet or construction document location
		MXXX

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT

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

Documentation Author Name: Ben Lieberman	Documentation Author Signature:
Company: RTM Engineering Consulting	Signature Date: 5-19-25
Address: 9035 Wadsworth Pkwy	CEA/ HERS Certification Identification (if applicable): N/A
City/State/Zip: Westminster, CO 80021	Phone: 720-588-1514

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 [illegible] to the building owner at occupancy.

Responsible Designer Name: Ben Lieberman	Responsible Designer Signature:
Company: RTM Engineering Consultants	Date Signed: 5-19-25
Address: 9035 Wadsworth Pkwy	License: PE M42166
City/State/Zip: Westminster, CO 80021	Phone: 720-588-1514

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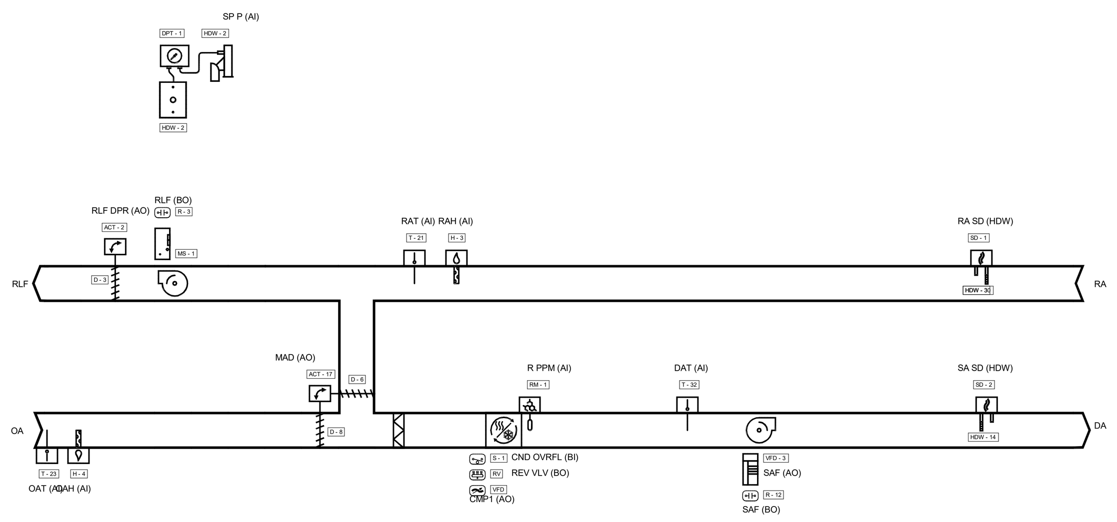
Flow Diagram: PACKAGED RTU-1,3,4,5,6 [QTY: 5]



Sequence of Operation: PACKAGED RTU-1,3,4,5,6 [QTY: 5]

General Note:

A Building Automation System (BAS) is specified / installed for phase 2. The phase 2 contractor shall coordinate with the phase 1 contractor to coordinate equipment installed during phase 1. All mechanical equipment shall be comissioned and put in service in phase 2.

Building Automation System Interface:

The Building Automation System (BAS) shall send the controller Occupied Bypass, Pre-Cool, Occupied/Unoccupied and Heat/Cool modes. If a BAS is not present, or communication is lost with the BAS the controller shall operate using default modes and setpoints.

Occupied:

During occupied periods, the supply fan shall run continuously and the mixed air dampers shall open to maintain minimum ventilation requirements. If economizing is enabled, the outdoor air or mixed air dampers shall modulate to maintain the discharge air temperature setpoint and the relief air damper shall track the mixed air dampers.

Optimal Start:

The BAS shall monitor the scheduled occupied time, occupied space setpoints and space temperature to calculate when the optimal start occurs.

Optimal Stop:

The BAS shall monitor the scheduled unoccupied time, occupied setpoints and space temperature to calculate when the optimal stop occurs. When the optimal stop mode is active the unit controller shall maintain the space temperature to the space temperature offset setpoint. Outside air damper shall remain enabled to provide minimum ventilation.

Pre-Cool Mode:

During optimal start, if the space temperature is above the occupied cooling setpoint, pre-cool mode shall be activated. When pre-cool is initiated the unit shall enable the fan and cooling or economizer. The outside air damper shall remain closed, unless economizing. When the space temperature reaches occupied cooling setpoint (adj.), the unit shall transition to the occupied mode.

Occupied Bypass:

The BAS shall monitor the status of the ON and CANCEL buttons of the space temperature sensor. When an occupied bypass request is received from a space sensor, the unit shall transition from its current occupancy mode to occupied bypass mode and the unit shall maintain the space temperature to the occupied setpoints (adj.).

Heat/Cool Mode:

When the space temperature rises above the occupied cooling setpoint the mode shall transition to cooling. When the space temperature falls below the occupied heating setpoint the mode shall transition to heating. When the space temperature is above the occupied cooling setpoint or below the occupied heating setpoint the mode shall remain in its last state. If the space temperature sensor fails the mode shall remain in its last state and an alarm shall annunciate at the BAS. If the local and communicated setpoints fail the controller shall disable the supply fan and an alarm shall annunciate at the BAS.

Economizer:

ENABLE (Comparative Enthalpy): Outside air (OA) enthalpy shall be compared with Return air (RA) enthalpy point. The economizer shall enable when OA enthalpy is less than RA enthalpy - 2.0 BTU/LB. The economizer shall disable when OA enthalpy is greater than RA enthalpy.

OPERATION: The supply air sensor shall measure the dry bulb temperature of the air leaving the evaporator coil while economizing. When economizing is enabled and the unit is operating in the cooling mode, the economizer damper shall modulate between its minimum position and 100% to maintain the space temperature setpoint. Minimum position shall be calculated based on supply fan speed. If the supply air temperature starts to fall below supply air temperature setpoint, the outdoor damper shall be at minimum position. Compressors shall be delayed from operating until the economizer has opened to 100% for 5 minutes.

Supply Fan:

The unit controller shall vary the supply fan speed to optimize minimum fan speed in all cooling and heating modes.

Relief Air and Building Pressure Control:

A differential pressure transducer shall actively monitor the difference in pressure between the building (indoors) and outdoors. If the building pressure increases above the differential pressure setpoint, the unit controller shall open the relief air damper, turn on the relief fan and modulate the relief air damper to control building pressure to the differential pressure setpoint. If the building pressure decreases below the differential pressure setpoint, the associated controller shall deactivate the relief fan and close the relief air damper.

Condensate Overflow Shutdown:

The unit shall shut down in response to a signal from the condensate overflow sensor. The sensor shall be interlocked to the unit cooling controller for immediate shutdown of cooling.

Refrigerant Mitigation Mode:

The unit controller will monitor the leak detection system, when a leak is detected, an alarm will promptly alert the BAS via BACnet Change-of-Value (COV) and mitigation will be activated.

In occupied mode, the supply fan will remain operational, and the compressor(s), electric heating, fuel-fired heating, electrostatic devices, and any other ignition device starters shall be disabled, and activate mechanical ventilation (if it's required by Section 7.6.4 of the ASRAE standard). for the duration of the mitigation process plus an additional 5 minutes.

In unoccupied mode, the supply fan will remain operational, and the compressor(s), electric heating, fuel-fired heating, electrostatic devices, and any other ignition device starters shall be disabled, and activate mechanical ventilation (if it's required by Section 7.6.4 of the ASRAE standard). for the duration of the mitigation process plus an additional 5 minutes.

Points List: PACKAGED RTU-1,3,4,5,6 [QTY: 5]

System Point Description	POINTS									ALARMS					
	GRAPHIC	ANALOG HARDWARE INPUT (AI)	BINARY HARDWARE INPUT (BI)	ANALOG HARDWARE OUTPUT (AO)	BINARY HARDWARE OUTPUT (BO)	SOFTWARE POINT (SFT)	HARDWARE INTERLOCK (HDW)	WIRELESS (WLS)	NETWORK (NET)	HIGH ANALOG LIMIT	LOW ANALOG LIMIT	BINARY	LATCH DIAGNOSTIC	SENSOR FAIL	COMMUNICATION FAIL
BUILDING STATIC PRESSURE LOCAL SP P	X	X								X	X			X	
COMPRESSOR 1 MODULATION COMMAND CMP1	X			X											
CONDENSATE OVERFLOW DETECTION LOCAL CND OVRFL	X		X									X			
COOLING OUTPUT COMMAND CLG	X			X											
DISCHARGE AIR TEMPERATURE DAT	X	X												X	
MIXED AIR DAMPER MAD	X			X											
OUTSIDE AIR DAMPER COMMAND OAD	X			X											
OUTSIDE AIR HUMIDITY LOCAL OAH	X	X												X	
OUTSIDE AIR TEMPERATURE LOCAL OAT	X	X												X	
PRIMARY FILTER STATUS LOCAL FIL	X		X									X			
REFRIGERANT LFL CONCENTRATION ALARM THRESHOLD SENSOR A R ALM A		X													
REFRIGERANT LFL CONCENTRATION ALARM THRESHOLD SENSOR B R ALM B		X													
REFRIGERANT LFL CONCENTRATION ALARM THRESHOLD SENSOR C R ALM C		X													
REFRIGERANT LFL CONCENTRATION ALARM THRESHOLD SENSOR D R ALM D		X													
REFRIGERANT CONCENTRATION BAS R PPM				X											
REFRIGERANT HIGH SIDE PRESSURE (63HS1) R HI		X													
REFRIGERANT LOW SIDE PRESSURE (63LS) R LO		X													
DUCT REFRIGERANT MONITOR R PPM		X													
REFRIGERANT LEAK DETECTION SYSTEM INPUT R IN			X												
REFRIGERANT LEAK SENSOR COMMUNICATION STATUS SENSOR A R STS A						X									
REFRIGERANT LFL CONCENTRATION SENSOR A R PPM A		X													
REFRIGERANT LFL CONCENTRATION SENSOR B R PPM B		X													
REFRIGERANT LFL CONCENTRATION SENSOR C R PPM C		X													
REFRIGERANT LFL CONCENTRATION SENSOR D R PPM D		X													
REFRIGERANT MITIGATION ACTIVE R MGT			X												
REFRIGERANT TYPE R TYPE						X									
RELIEF AIR DAMPER COMMAND RLF DPR	X			X											
RELIEF AIR FAN START/STOP RLF	X				X										
RETURN AIR HUMIDITY LOCAL RAH	X	X												X	
RETURN AIR SMOKE DETECTION LOCAL RA SD							X								
RETURN AIR TEMPERATURE LOCAL RAT	X	X												X	
REVERSING VALVE REV VLV	X				X										
SPACE HUMIDITY LOCAL (WIRELESS) SPH	X							X							
SPACE TEMPERATURE LOCAL (WIRELESS) SPT	X							X		X	X				
SPACE TEMPERATURE SETPOINT LOCAL (WIRELESS) SPT SP	X							X							
SUPPLY AIR SMOKE DETECTION LOCAL SA SD							X								
SUPPLY FAN SPEED SAF				X											
SUPPLY FAN START/STOP SAF	X				X										
SUPPLY FAN STATUS LOCAL SAF	X		X												
APPLICATION MODE APP MODE						X									
BAS COMMUNICATION STATE BAS COM						X									X
COMPRESSOR ENABLE CMP ENA	X					X									
COMPRESSOR LOCKOUT STATUS CMP LCK						X									
COOL OUTPUT CLG						X									
DISCHARGE AIR STATIC PRESSURE SETPOINT DA SP SPT	X					X									
ECONOMIZER ENABLE ECON ENA						X									
ECONOMIZER MINIMUM POSITION SETPOINT ECON MIN POS SP	X					X									
FAN MODE COMMAND FAN MODE						X									
FILTER TIMER HOURS FIL HRS						X									
HEAT / COOL MODE REQUEST H/C REQ	X					X									
OCCUPANCY OCC	X					X									
OCCUPIED COOLING SETPOINT OCC CLG SP	X					X									
SPACE TEMPERATURE SETPOINT ACTIVE SPT SP ACT	X					X									
TIMED OVERRIDE STATUS TOV						X									
UNOCCUPIED COOLING SETPOINT UNOCC CLG SP	X					X									

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MECHANICAL CONTROLS & SEQUENCE OF OPERATIONS

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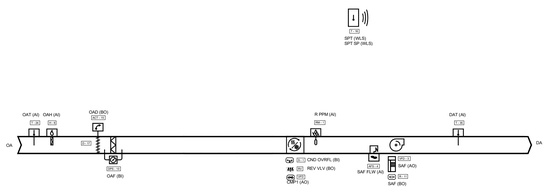
Flow Diagram: PACKAGED RTU-2



Sequence of Operation: PACKAGED RTU-2

DOAU Building Automation System Interface:

The Building Automation System (BAS) shall send the controller Occupied Bypass, Morning Warm-up/Pre-Cool, Occupied/Unoccupied and Heat/Cool modes. The BAS shall also send the discharge air temperature setpoint and the duct static pressure setpoint. If a BAS is not present, or communication is lost with the BAS the controller shall operate using default modes and setpoints.

DOAU Occupied:

The unit controller shall control the supply fan speed to maintain a constant volume (adj.).

DOAU Unoccupied:

Space conditions shall be communicated via BAS or a hardwire space/temperature humidity sensor. Space conditions shall be communicated via BAS or a hardwire space/temperature humidity sensor. The outdoor air damper shall be commanded to close, and the return air damper shall open. If the unit is under Economizer conditions, the Outdoor Air Damper Position Command shall open to the Outdoor Air Damper Maximum Position Setpoint. Unoccupied Heating Mode shall be enabled when the Space Temperature falls below the Unoccupied Heating Enable Setpoint. During Unoccupied Heating Mode the unit shall run the heat to maintain 90°F (adj.) for the discharge air temperature. Unoccupied Heating Mode shall be disabled when the Space Temperature rises 2 deg. F above the Unoccupied Heating Setpoint. When there is no call for Unoccupied Heating Mode or Unoccupied Dehumid Mode, Unoccupied Cooling Mode shall be enabled when the Space Temperature rises above the Unoccupied Cooling Enable Setpoint. During Unoccupied Cooling Mode the unit shall run the cooling to maintain 50 deg. F for the discharge air temperature. Unoccupied Cooling Mode shall be disabled when the Space Temperature rises 2 deg. F above the Unoccupied Cooling Enable Setpoint.

DOAU Pre-Cool Mode:

During optimal start, if the space temperature is above the occupied cooling setpoint, pre-cool mode shall be activated. During optimal start, if the average space temperature is above the occupied cooling setpoint, pre-cool mode shall be activated. When pre-cool is initiated the unit shall enable the fan and cooling. When the space temperature reaches occupied cooling setpoint (adj.), the unit shall transition to the occupied mode.

DOAU Occupied Bypass:

The BAS shall monitor the status of the ON and CANCEL buttons of the space temperature sensor. When an occupied bypass request is received from a space sensor, the unit shall transition from its current occupancy mode to occupied bypass mode and the unit shall maintain the space temperature to the occupied setpoints (adj.).

DOAU Heat/Cool Mode:

When the space temperature rises above the occupied cooling setpoint the mode shall transition to cooling. When the space temperature falls below the occupied heating setpoint the mode shall transition to heating. When the space temperature is above the occupied cooling setpoint or below the occupied heating setpoint the mode shall remain in its last state. If the space temperature sensor fails the mode shall remain in its last state and an alarm shall annunciate at the BAS. If the local and communicated setpoints fail the controller shall disable the supply fan and an alarm shall annunciate at the BAS.

DOAU Cooling:

Cooling Mode shall be enabled whenever the Outdoor Air Temperature rises above the Outdoor Air Cooling Enable Setpoint. When this occurs, heating shall not be allowed, regardless of space conditions. On units without head pressure control, the compressors shall be locked out if the Outdoor Air Temperature falls below the Compressor Low Ambient Lockout Setpoint and there is a demand for cooling. When this occurs, the unit shall display Compressor Low Ambient Lockout Active as an informational diagnostic.

DOAU Primary Heating:

Heating Mode shall be enabled whenever the Outdoor Air Temperature falls below the Outdoor Air Heating Enable Setpoint. When this occurs, cooling and dehumidification shall not be allowed, regardless of space conditions. During Heating Mode, Heat Capacity shall be adjusted to maintain the Discharge Air Temperature to Discharge Air Temperature Setpoint. The unit controller shall monitor the status of the heater using Heat On Off Status Local. In the event of ignition failure, the unit shall make three ignition attempts before displaying Diagnostic: Heat Failure. The unit shall shut down when a heat failure occurs and shall a reset four hours later to re-attempt ignition.

DOAU Ventilation:

Ventilation Mode shall be enabled when the Outdoor Air Temperature and the Space Temperature is within two degrees of the Space Temperature Setpoint. During Ventilation Mode, heating and cooling shall be locked out and the unit shall supply un-conditioned air.

DOAU Supply Fan Operation:

When the unit becomes occupied, the outdoor air damper shall open. When the outdoor air damper is completely open the damper end switch shall close indicating the damper is fully open and the supply fan sequence can begin. When the fan start sequence has begun, the unit controller shall command the variable speed drive for the supply fan to 50%. A supply fan status switch shall prove fan status. If after 2 minutes (adj.) the fan does not have a proven signal, the Supply Fan Failure alarm shall be displayed and the unit shall shutdown requiring a manual reset. Supply and relief fans are interlocked via software; a failure of either shall disable both.

Refrigerant Mitigation Mode:

The unit controller will monitor the leak detection system, when a leak is detected, an alarm will promptly alert the BAS via BACnet Change-of-Value (COV) and mitigation will be activated.

In occupied mode, the supply fan will remain operational, and the compressor(s), electric heating, fuel-fired heating, electrostatic devices, and any other ignition device starters shall be disabled, and activate mechanical ventilation (if it's required by Section 7.6.4 of the ASRAE standard). for the duration of the mitigation process plus an additional 5 minutes.

In unoccupied mode, the supply fan will remain operational, and the compressor(s), electric heating, fuel-fired heating, electrostatic devices, and any other ignition device starters shall be disabled, and activate mechanical ventilation (if it's required by Section 7.6.4 of the ASRAE standard). for the duration of the mitigation process plus an additional 5 minutes.

Points List: PACKAGED RTU-2

System Point Description	POINTS									ALARMS				
	GRAPHIC	ANALOG HARDWARE INPUT (AI)	BINARY HARDWARE INPUT (BI)	ANALOG HARDWARE OUTPUT (AO)	BINARY HARDWARE OUTPUT (BO)	SOFTWARE POINT (SPT)	HARDWARE INTERLOCK (HDW)	WIRELESS (WLS)	NETWORK (NET)	HIGH ANALOG LIMIT	LOW ANALOG LIMIT	BINARY	LATCH DIAGNOSTIC	SENSOR FAIL	COMMUNICATION FAIL
COMPRESSOR 1 COMMAND CMP1	X				X										
CONDENSATE OVERFLOW DETECTION LOCAL CND OVRFL	X		X									X			
DISCHARGE AIR TEMPERATURE DAT	X	X												X	
DX COIL LEAVING AIR TEMPERATURE LOCAL DX LAT	X	X								X	X			X	
OUTDOOR AIR DAMPER COMMAND OAD	X				X										
OUTDOOR AIR DAMPER END SWITCH OAD	X		X												
OUTSIDE AIR FILTER STATUS OAF	X		X												
OUTSIDE AIR HUMIDITY LOCAL OAH	X	X												X	
OUTSIDE AIR TEMPERATURE LOCAL OAT	X	X												X	
PRIMARY FILTER STATUS LOCAL FIL	X		X									X			
REFRIGERANT LFL CONCENTRATION ALARM THRESHOLD SENSOR A R ALM A		X													
REFRIGERANT LFL CONCENTRATION ALARM THRESHOLD SENSOR B R ALM B		X													
REFRIGERANT LFL CONCENTRATION ALARM THRESHOLD SENSOR C R ALM C		X													
REFRIGERANT LFL CONCENTRATION ALARM THRESHOLD SENSOR D R ALM D		X													
REFRIGERANT CONCENTRATION BAS R PPM				X											
REFRIGERANT HIGH SIDE PRESSURE (63HS1) R HI		X													
REFRIGERANT LOW SIDE PRESSURE (63LS) R LO		X													
DUCT REFRIGERANT MONITOR R PPM		X													
REFRIGERANT LEAK DETECTION SYSTEM INPUT R IN			X												
REFRIGERANT LEAK SENSOR COMMUNICATION STATUS SENSOR A R STS A						X									
REFRIGERANT LFL CONCENTRATION SENSOR A R PPM A		X													
REFRIGERANT LFL CONCENTRATION SENSOR B R PPM B		X													
REFRIGERANT LFL CONCENTRATION SENSOR C R PPM C		X													
REFRIGERANT LFL CONCENTRATION SENSOR D R PPM D		X													
REFRIGERANT MITIGATION ACTIVE R MGT			X												
REFRIGERANT TYPE R TYPE						X									
REVERSING VALVE REV VLV	X				X										
SPACE TEMPERATURE LOCAL (WIRELESS) SPT	X							X			X	X			
SPACE TEMPERATURE SETPOINT LOCAL (WIRELESS) SPT SP	X							X							
SUPPLY FAN AIR FLOW SAF FLW	X	X									X	X			X
SUPPLY FAN SPEED SAF				X											
SUPPLY FAN START/STOP SAF	X				X										
COMPRESSOR ENABLE CMP ENA	X					X									
COMPRESSOR LOCKOUT STATUS CMP LOK						X									
COOL OUTPUT CLG						X									
HEAT / COOL MODE REQUEST H/C REQ	X					X									
OCCUPANCY OCC	X					X									
OCCUPIED COOLING SETPOINT OCC CLG SP	X					X									
UNOCCUPIED COOLING SETPOINT UNOCC CLG SP	X					X									
UNOCCUPIED HEATING SETPOINT UNOCC HTG SP	X					X									
SUPPLY FAN AIR FLOW SETPOINT SAF FLW SP						X									

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MECHANICAL CONTROLS & SEQUENCE OF OPERATIONS

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2	09/22/2025	PLAN CHECK CORRECTIONS
3	10/15/2025	PLAN CHECK CORRECTIONS 2
4	01/09/2026	PLAN CHECK CORRECTIONS 3
5	01/26/2026	OC HEALTH DEPT
7	04/30/2026	BID ADDENDUM 2

PA/PM:	BL
DRAWN BY.:	DG
JOB NO.:	LAX21-0174-02

06/06/2025

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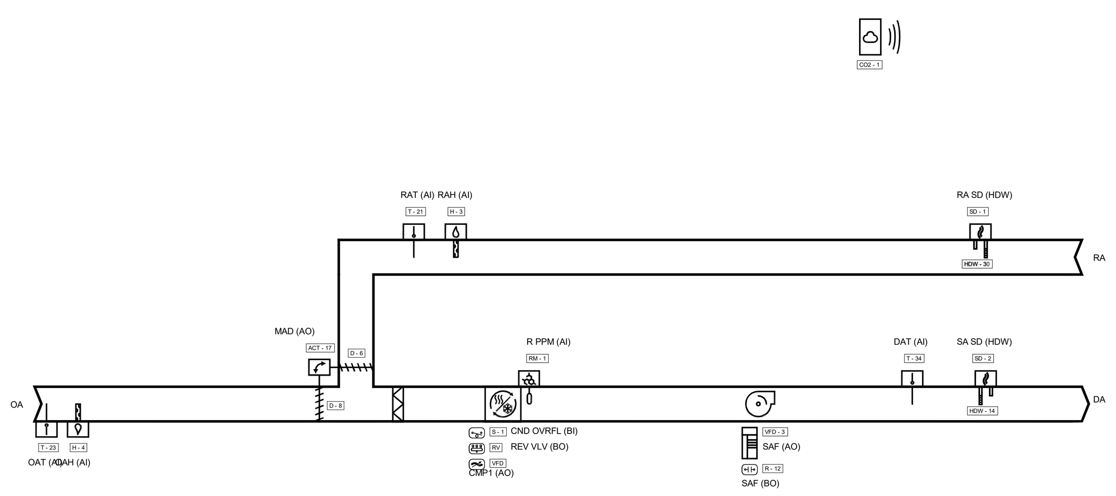
Flow Diagram: PACKAGED RTU-7-17 [QTY: 11]



Sequence of Operation: PACKAGED RTU-7-17 [QTY: 11]

Building Automation System Interface:

The Building Automation System (BAS) shall send the controller Occupied Bypass, Morning Warm-up/Pre-Cool, Occupied/Unoccupied and Heat/Cool modes. If a BAS is not present, or communication is lost with the BAS the controller shall operate using default modes and setpoints.

Occupied:

During occupied periods, the supply fan shall run continuously and the mixed air dampers shall open to maintain minimum ventilation requirements. If economizing is enabled, the outdoor air or mixed air dampers shall modulate to maintain the discharge air temperature setpoint and the relief air damper shall track the mixed air dampers.

Unoccupied:

When the space temperature is below the unoccupied heating setpoint of 60.0 deg. F (adj.) the supply fan shall be commanded on, the outside air damper shall remain closed and the gas heat shall be enabled. When the space temperature rises above the unoccupied heating setpoint of 60.0 deg. F (adj.) plus the unoccupied differential of 4.0 deg. F (adj.) the supply fan shall stop and the gas heat shall be disabled.

Optimal Start:

The BAS shall monitor the scheduled occupied time, occupied space setpoints and space temperature to calculate when the optimal start occurs.

Optimal Stop:

The BAS shall monitor the scheduled unoccupied time, occupied setpoints and space temperature to calculate when the optimal stop occurs. When the optimal stop mode is active the unit controller shall maintain the space temperature to the space temperature offset setpoint. Outside air damper shall remain enabled to provide minimum ventilation.

Morning Warm-Up Mode:

During optimal start, if the space temperature is below the occupied heating setpoint a morning warm-up mode shall be activated. When morning warm-up is initiated the unit shall enable the heating and fan(s). The outside air damper shall remain closed. When the space temperature reaches the occupied heating setpoint (adj.), the unit shall transition to the occupied mode.

Pre-Cool Mode:

During optimal start, if the space temperature is above the occupied cooling setpoint, pre-cool mode shall be activated. When pre-cool is initiated the unit shall enable the fan and cooling or economizer. The outside air damper shall remain closed, unless economizing. When the space temperature reaches occupied cooling setpoint (adj.), the unit shall transition to the occupied mode.

Occupied Bypass:

The BAS shall monitor the status of the ON and CANCEL buttons of the space temperature sensor. When an occupied bypass request is received from a space sensor, the unit shall transition from its current occupancy mode to occupied bypass mode and the unit shall maintain the space temperature to the occupied setpoints (adj.).

Heat/Cool Mode:

When the space temperature rises above the occupied cooling setpoint the mode shall transition to cooling. When the space temperature falls below the occupied heating setpoint the mode shall transition to heating. When the space temperature is above the occupied cooling setpoint or below the occupied heating setpoint the mode shall remain in its last state. If the space temperature sensor fails the mode shall remain in its last state and an alarm shall annunciate at the BAS. If the local and communicated setpoints fail the controller shall disable the supply fan and an alarm shall annunciate at the BAS.

Economizer:

ENABLE (Comparative Enthalpy): Outside air (OA) enthalpy shall be compared with Return air (RA) enthalpy point. The economizer shall enable when OA enthalpy is less than RA enthalpy - 2.0 BTU/LB. The economizer shall disable when OA enthalpy is greater than RA enthalpy.

OPERATION: The supply air sensor shall measure the dry bulb temperature of the air leaving the evaporator coil while economizing. When economizing is enabled and the unit is operating in the cooling mode, the economizer damper shall modulate between its minimum position and 100% to maintain the space temperature setpoint. Minimum position shall be calculated based on supply fan speed. If the supply air temperature starts to fall below supply air temperature setpoint, the outdoor damper shall be at minimum position. Compressors shall be delayed from operating until the economizer has opened to 100% for 5 minutes.

Demand Control Ventilation (DCV):

If the space CO2 level is greater than or equal to the Design Minimum CO2 Setpoint, the outdoor air damper shall open to the Design Minimum Outdoor Air Damper Setpoint. If there is a call for economizer cooling, the damper may be opened further to satisfy the cooling request.

If the space CO2 level is less than or equal to the DCV Minimum CO2 Setpoint, the outdoor air damper shall close to the DCV Minimum Outdoor Air Damper Setpoint. If there is a call for economizer cooling, the damper may be opened further to satisfy the cooling request.

If the space CO2 level is greater than the DCV Minimum CO2 Setpoint and less than the Design Minimum CO2 Setpoint, the outdoor air damper position shall be modulated proportionally to the space CO2 level relative to a target position between the DCV Minimum CO2 Setpoint and the Design Minimum CO2 Setpoint. If there is a call for economizer cooling, the damper may be opened further to satisfy the cooling request.

Supply Fan:

The unit controller shall vary the supply fan speed to optimize minimum fan speed in all cooling and heating modes.

Condensate Overflow Shutdown:

The unit shall shut down in response to a signal from the condensate overflow sensor. The sensor shall be interlocked to the unit cooling controller for immediate shutdown of cooling.

Refrigerant Mitigation Mode:

The unit controller will monitor the leak detection system, when a leak is detected, an alarm will promptly alert the BAS via BACnet Change-of-Value (COV) and mitigation will be activated.

In occupied mode, the supply fan will remain operational, and the compressor(s), electric heating, fuel-fired heating, electrostatic devices, and any other ignition device starters shall be disabled, and activate mechanical ventilation (if it's required by Section 7.6.4 of the ASRAE standard). for the duration of the mitigation process plus an additional 5 minutes.

In unoccupied mode, the supply fan will remain operational, and the compressor(s), electric heating, fuel-fired heating, electrostatic devices, and any other ignition device starters shall be disabled, and activate mechanical ventilation (if it's required by Section 7.6.4 of the ASRAE standard). for the duration of the mitigation process plus an additional 5 minutes.

Points List: PACKAGED RTU-7-17 [QTY: 11]

System Point Description	POINTS									ALARMS					
	GRAPHIC	ANALOG HARDWARE INPUT (AI)	BINARY HARDWARE INPUT (BI)	ANALOG HARDWARE OUTPUT (AO)	BINARY HARDWARE OUTPUT (BO)	SOFTWARE POINT (SFT)	HARDWARE INTERLOCK (HDW)	WIRELESS (WLS)	NETWORK (NET)	HIGH ANALOG LIMIT	LOW ANALOG LIMIT	BINARY	LATCH DIAGNOSTIC	SENSOR FAIL	COMMUNICATION FAIL
COMPRESSOR 1 MODULATION COMMAND CMP1	X			X											
CONDENSATE OVERFLOW DETECTION LOCAL CND OVRFL	X		X									X			
COOLING OUTPUT COMMAND CLG	X			X											
DISCHARGE AIR TEMPERATURE DAT	X	X												X	
HEATING OUTPUT COMMAND HTG	X			X											
MIXED AIR DAMPER MAD	X			X											
OUTSIDE AIR DAMPER COMMAND OAD	X			X											
OUTSIDE AIR HUMIDITY LOCAL OAH	X	X												X	
OUTSIDE AIR TEMPERATURE LOCAL OAT	X	X												X	
PRIMARY FILTER STATUS LOCAL FIL	X		X									X			
REFRIGERANT LFL CONCENTRATION ALARM THRESHOLD SENSOR A R ALM A		X													
REFRIGERANT LFL CONCENTRATION ALARM THRESHOLD SENSOR B R ALM B		X													
REFRIGERANT LFL CONCENTRATION ALARM THRESHOLD SENSOR C R ALM C		X													
REFRIGERANT LFL CONCENTRATION ALARM THRESHOLD SENSOR D R ALM D		X													
REFRIGERANT CONCENTRATION BAS R PPM				X											
REFRIGERANT HIGH SIDE PRESSURE (63HS1) R HI		X													
REFRIGERANT LOW SIDE PRESSURE (63LS) R LO		X													
DUCT REFRIGERANT MONITOR R PPM		X													
REFRIGERANT LEAK DETECTION SYSTEM INPUT R IN			X												
REFRIGERANT LEAK SENSOR COMMUNICATION STATUS SENSOR A R STS A						X									
REFRIGERANT LFL CONCENTRATION SENSOR A R PPM A		X													
REFRIGERANT LFL CONCENTRATION SENSOR B R PPM B		X													
REFRIGERANT LFL CONCENTRATION SENSOR C R PPM C		X													
REFRIGERANT LFL CONCENTRATION SENSOR D R PPM D		X													
REFRIGERANT MITIGATION ACTIVE R MGT			X												
REFRIGERANT TYPE R TYPE						X									
RETURN AIR HUMIDITY LOCAL RAH	X	X												X	
RETURN AIR SMOKE DETECTION LOCAL RA SD							X								
RETURN AIR TEMPERATURE LOCAL RAT	X	X												X	
REVERSING VALVE REV VLV	X				X										
SPACE HUMIDITY LOCAL (WIRELESS) SPH	X							X							
SPACE TEMPERATURE LOCAL (WIRELESS) SPT	X							X		X	X				
SPACE TEMPERATURE SETPOINT LOCAL (WIRELESS) SPT SP	X							X							
SUPPLY AIR SMOKE DETECTION LOCAL SA SD							X								
SUPPLY FAN SPEED SAF				X											
SUPPLY FAN START/STOP SAF	X				X										
SUPPLY FAN STATUS LOCAL SAF	X		X												
APPLICATION MODE APP MODE						X									
BAS COMMUNICATION STATE BAS COM						X									X
COMPRESSOR ENABLE CMP ENA	X					X									
COMPRESSOR LOCKOUT STATUS CMP LCK						X									
COOL OUTPUT CLG						X									
DISCHARGE AIR STATIC PRESSURE SETPOINT DA SP SPT	X					X									
ECONOMIZER ENABLE ECON ENA						X									
ECONOMIZER MINIMUM POSITION SETPOINT ECON MIN POS SP	X					X									
FAN MODE COMMAND FAN MODE						X									
FILTER TIMER HOURS FIL HRS						X									
HEAT / COOL MODE REQUEST H/C REQ	X					X									
HEAT OUTPUT HTG						X									
OCCUPANCY OCC	X					X									
OCCUPIED COOLING SETPOINT OCC CLG SP	X					X									
SPACE CO2 HIGH LIMIT SP CO2 HL						X									
SPACE TEMPERATURE SETPOINT ACTIVE SPT SP ACT	X					X									
TIMED OVERRIDE STATUS TOV						X									
UNOCCUPIED COOLING SETPOINT UNOCC CLG SP	X					X									
UNOCCUPIED HEATING SETPOINT UNOCC HTG SP	X					X									

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MECHANICAL CONTROLS & SEQUENCE OF OPERATIONS

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1	07/09/2025	ISSUE FOR PLAN CHECK
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4	02/04/2026	PLAN CHECK CORRECTIONS 3
7	01/26/2025	OC HEALTH DEPT
	04/30/2026	BID ADDENDUM 2

PA/PM:	BL
DRAWN BY.:	DG
JOB NO.:	LAX21-0174-02

06/06/2025

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PLUMBING ENERGY NOTES:

1. PROVIDE HEAT TRAPS ON COLD WATER SUPPLY TO WATER HEATERS (HEAT TRAP NIPPLE, U-FLEX CONNECTOR & FABRICATED RETURN BEND).
2. PROVIDE AUTOMATIC TIME SWITCHES TO TURN HOT WATER RECIRCULATION PUMPS OFF WHEN IT IS NOT IN USE. FOR AUTOMATIC-CIRCULATING HOT WATER SYSTEM, HWS AND HWR PIPING SHALL BE INSULATED WITH 1" OF INSULATION HAVING A CONDUCTIVITY NOT EXCEEDING 0.27 (BTU PER INCH/H X FT2 X F).
3. PROVIDE AUTOMATIC VENT OR FLUE DAMPERS FOR ALL FUEL FIRED WATER HEATERS.
4. ALL WATER HEATERS TO BE ENERGY EFFICENT (STAND-BY HEAT LOSS & FUEL EFFICENCY).
5. INSULATE ALL HOT WATER PIPING WITH MINIMUM INSULATION AS REQURED TO MEET ENERGY EFFICIENCY STANDARDS.

PLUMBING EQUIPMENT:

- SEWAGE EJECTOR (SE)
- BOOSTER PUMP (BP)
- GAS FIRED WATER HEATER - EXTERNAL STORAGE (GWH)
- GAS FIRED WATER HEATER - INTERNAL STORAGE (GWH)
- ELECTRIC WATER HEATER - INTERNAL STORAGE (EWH)
- GAS FIRED WATER HEATER - TANKLESS (GWH)
- WATER METER
- SEPARATOR/ INTERCEPTOR (SEE SCHEDULE FOR ABBREVIATION)
- RECIRCULATION PUMP
- EXPANSION TANK (ET)
- SUMP PUMP (SP)
- BACK WATER VALVE (BW)

PIPE MATERIAL SCHEDULE

APPLICATION	LOCATION	SIZE	MATERIALS
SANITARY WASTE / VENT	BELOW GRADE	ALL	SCHEDULE 40 PVC, SOLID CORE. PVC SHALL BE INSTALLED IN ACCORDANCE WITH ASTM D2321. -OR- CAST IRON PIPE CONFORMING TO REQUIREMENTS OF CISPI STANDARD 301, ASTM A888, OR ASTM A74. CAST IRON PIPE AND FITTINGS SHALL BE MARKED WITH THE COLLECTIVE TRADEMARK OF THE CAST IRON SOIL PIPE INSTITUTE OR RECEIVE PRIOR APPROVAL OF THE ENGINEER.
	ABOVE GRADE	ALL	SCHEDULE 40 PVC, SOLID CORE. -OR- CAST IRON PIPE CONFORMING TO REQUIREMENTS OF CISPI STANDARD 301, ASTM A888, OR ASTM A74. CAST IRON PIPE AND FITTINGS SHALL BE MARKED WITH THE COLLECTIVE TRADEMARK OF THE CAST IRON SOIL PIPE INSTITUTE OR RECEIVE PRIOR APPROVAL OF THE ENGINEER.
	PLENUM RETURN	ALL	CAST IRON PIPE CONFORMING TO REQUIREMENTS OF CISPI STANDARD 301, ASTM A888, OR ASTM A74. CAST IRON PIPE AND FITTINGS SHALL BE MARKED WITH THE COLLECTIVE TRADEMARK OF THE CAST IRON SOIL PIPE INSTITUTE OR RECEIVE PRIOR APPROVAL OF THE ENGINEER. -OR- A MATERIAL THAT SHALL BE NONCOMBUSTIBLE OR SHALL BE LISTED AND LABELED AS HAVING A FLAME SPREAD INDEX OF NOT MORE THAN 25 AND A SMOKE-DEVELOPED INDEX OF NOT MORE THAN 50 WHEN TESTED IN ACCORDANCE WITH ASTM E 84 OR UL 723.
	DISCHARGE ABOVE 120⁰F		CAST IRON PIPE CONFORMING TO REQUIREMENTS OF CISPI STANDARD 301, ASTM A888, OR ASTM A74. CAST IRON PIPE AND FITTINGS SHALL BE MARKED WITH THE COLLECTIVE TRADEMARK OF THE CAST IRON SOIL PIPE INSTITUTE OR RECEIVE PRIOR APPROVAL OF THE ENGINEER.
	DISCHARGE WITH A PH BELOW 4 OR ABOVE 7		CAST IRON PIPE CONFORMING TO REQUIREMENTS OF CISPI STANDARD 301, ASTM A888, OR ASTM A74 AND SHALL BE COATED INSIDE AND OUT WITH A SUITABLE EPOXY COATING. CAST IRON PIPE AND FITTINGS SHALL BE MARKED WITH THE COLLECTIVE TRADEMARK OF THE CAST IRON SOIL PIPE INSTITUTE OR RECEIVE PRIOR APPROVAL OF THE ENGINEER.
WATER HEATER FLUE	ABOVE GRADE	ALL	DURAVENT POLYPROPYLENE OR AL29-4C
	PLENUM RETURN	ALL	PLENUM WRAPPED DURAVENT POLYPROPYLENE OR AL29-4C OR A MATERIAL THAT SHALL BE NONCOMBUSTIBLE OR SHALL BE LISTED AND LABELED AS HAVING A FLAME SPREAD INDEX OF NOT MORE THAN 25 AND A SMOKE-DEVELOPED INDEX OF NOT MORE THAN 50 WHEN TESTED IN ACCORDANCE WITH ASTME E 84 OR UL 723.
STORM	BELOW GRADE	ALL	SCHEDULE 40 PVC, SOLID CORE. PVC SHALL BE INSTALLED IN ACCORDANCE WITH ASTM D2321. -OR- CAST IRON PIPE CONFORMING TO REQUIREMENTS OF CISPI STANDARD 301, ASTM A888, OR ASTM A74. CAST IRON PIPE AND FITTINGS SHALL BE MARKED WITH THE COLLECTIVE TRADEMARK OF THE CAST IRON SOIL PIPE INSTITUTE OR RECEIVE PRIOR APPROVAL OF THE ENGINEER.
	ABOVE GRADE	ALL	SCHEDULE 40 PVC, SOLID CORE. -OR- CAST IRON PIPE CONFORMING TO REQUIREMENTS OF CISPI STANDARD 301, ASTM A888, OR ASTM A74. CAST IRON PIPE AND FITTINGS SHALL BE MARKED WITH THE COLLECTIVE TRADEMARK OF THE CAST IRON SOIL PIPE INSTITUTE OR RECEIVE PRIOR APPROVAL OF THE ENGINEER.
	PLENUM RETURN	ALL	CAST IRON PIPE CONFORMING TO REQUIREMENTS OF CISPI STANDARD 301, ASTM A888, OR ASTM A74. CAST IRON PIPE AND FITTINGS SHALL BE MARKED WITH THE COLLECTIVE TRADEMARK OF THE CAST IRON SOIL PIPE INSTITUTE OR RECEIVE PRIOR APPROVAL OF THE ENGINEER. -OR- A MATERIAL THAT SHALL BE NONCOMBUSTIBLE OR SHALL BE LISTED AND LABELED AS HAVING A FLAME SPREAD INDEX OF NOT MORE THAN 25 AND A SMOKE-DEVELOPED INDEX OF NOT MORE THAN 50 WHEN TESTED IN ACCORDANCE WITH ASTM E 84 OR UL 723.
T&P RELIEF	ALL	ALL	COPPER (TYPE M)
DOMESTIC WATER IN OR WITHIN 5' OF BUILDING	BELOW GRADE	ALL	COPPER (TYPE K) W/CORROSION RESISTANT TAPE
	ABOVE GRADE	ALL	COPPER (TYPE L OR K)
CONDENSATE	PLENUM RETURN	ALL	COPPER (TYPE M) OR A MATERIAL THAT SHALL BE NONCOMBUSTIBLE OR SHALL BE LISTED AND LABELED AS HAVING A FLAME SPREAD INDEX OF NOT MORE THAN 25 AND A SMOKE-DEVELOPED INDEX OF NOT MORE THAN 50 WHEN TESTED IN ACCORDANCE WITH ASTME E 84 OR UL 723.
	DUCTED RETURN	ALL	SCHEDULE 40 PVC, SOLID CORE
PUMP DISCHARGE/FORCE MAIN	ALL	ALL	SOLVENT CEMENTED SCHEDULE 40 PVC, SOLID CORE. PIPE SHALL BE SLOPED CONTINUOUSLY BACK TO PIT EVENLY, WITH NO LOW OR HIGH POINTS.
NOTES:	1. ALL PIPING MATERIAL AND JOINING METHODS CONTINGENT ON AUTHORITY HAVING JURISDICTION APPROVAL. 2. ALL ABS AND PVC PIPING EXPOSED TO SUNLIGHT SHALL BE PROTECTED BY WATER-BASED LATEX PAINT. 3. ALL BLACK STEEL PIPING EXPOSED TO MOISTURE SHALL BE PROTECTED BY RUST-PREVENTATIVE PAINT. 4. LEGEND PRESS OR PROPRESS FITTINGS ALLOWABLE PENDING AHJ APPROVAL.		

PLUMBING FITTINGS:

- 45° ELBOW
- CAP
- 90° ELBOW
- ELBOW DOWN
- ELBOW UP
- TEE
- TEE DOWN
- TEE UP
- LATERAL
- UNION
- FLEXIBLE CONNECTION
- PIPE CONTINUATION
- CLEANOUT (CO)
- FLOOR CLEANOUT (FCO)
- WALL CLEANOUT (WCO)
- FLOOR SINK
- XX DRAIN

XX DENOTES THE FOLLOWING
(AD) AREA DRAIN
(FD) FLOOR DRAIN
(HD) HUB DRAIN
(RD) ROOF DRAIN

PLUMBING VALVES:

- SOLENOID VALVE
- MODULATING 2-WAY VALVE
- MODULATING 3-WAY VALVE
- BALANCING VALVE
- BALL VALVE
- BUTTERFLY VALVE
- CHECK VALVE
- MIXING VALVE
- FLOAT OPERATED VALVE
- GATE VALVE
- GLOBE VALVE
- PLUG VALVE
- PRESSURE REDUCING VALVE
- SAFETY RELIEF VALVE
- DOUBLE CHECK VALVE ASSEMBLY
- RP REDUCED PRESSURE ZONE VALVE (RPZ)
- DUAL CHECK VALVE WITH INTERMEDIATE ATMOSPHERIC VENT

PLUMBING SPECIALTIES:

- AUTOMATIC AIR VENT
- MANUAL AIR VENT
- PRESSURE GAUGE
- PS PRESSURE SWITCH
- THERMOMETER
- STRAINER, BLOW DOWN
- STRAINER
- EXPANSION LOOP
- EXPANSION JOINT
- WATER HAMMER ARRESTER
- AQUASTAT
- HOSE BIBB/ WALL HYDRANT
- TRAP PRIMER
- VB VACUUM BREAKER
- SPV SPILL PROOF VACUUM BREAKER

PIPE SYSTEM LINETYPES:

LINETYPE	DESCRIPTION
(dashed)	PIPING OR EQUIPMENT TO BE REMOVED
(thin solid)	PIPING OR EQUIPMENT TO REMAIN
IWP	INDIRECT WASTE PIPE (IWP)
GRS	GREY WASTE (GRS)
GR	GREASE WASTE (GR)
CV	CLEAR WATER VENT (CV)
AV	ACID VENT (AV)
AW	ACID WASTE (AW)
DT	SUB-SOIL DRAINAGE (DT)
IRRG	IRRIGATION (IRRIG)
GRW	GREY WATER (GRW)
CA	COMPRESSED AIR (CA)
CW(CITY)	CITY COLD WATER (CW(CITY))
(dash-dot)	COLD WATER DOMESTIC (CW)
CWR	COLD WATER RETURN (CWR)
SCW	SOFT COLD WATER (SCW)
GW	GARAGE WASTE (GW)
(dash-dot-dot)	HOT WATER DOMESTIC (HW)
(dash-dot-dot-dot)	HOT WATER DOMESTIC RETURN (HWR)
NG	NATURAL GAS (NG)
NPCW	NON-POTABLE COLD WATER (NPCW)
OV	OIL VENT (OV)
PD	PUMP DISCHARGE (PD)
PW	PURE WATER (PW)
SAN	SANITARY (SAN)
ST	STORM (ST)
STO	STORM OVERFLOW (STO)
(heavy dashed)	UNDERGROUND PIPING
V	VENT (V)

PLUMBING TAGS:

- MARK / NUMBER — PLUMBING EQUIPMENT TAG
- RISER X / NUMBER — RISER TAG
- PIPE SIZE ##" XX SYSTEM ABBREVIATION — PIPE DIMENSION TAG
- POINT OF NEW CONNECTION
- POINT OF DISCONNECTION
- VIEW NUMBER REFERENCE X | X SHEET NUMBER — REFERENCE TAG
- # — KITCHEN EQUIPMENT TAG

GENERAL:

- ## — DRAWING KEYNOTE SYMBOL
- DETAIL NUMBER / SHEET NUMBER — BUILDING SECTION
- DETAIL NUMBER / SHEET NUMBER — BUILDING ELEVATION
- DETAIL NUMBER / SHEET NUMBER — CALLOUT BOUNDARY
- DETAIL NUMBER - / --- SHEET NUMBER — VIEW REFERENCE CALLOUT
- +X' - X" — MOUNTING HEIGHT DESIGNATION

RENOVATION LEGEND:

(E)	EXISTING TO REMAIN
(ED)	EXISTING LOCATION, NEW DEVICE OR EQUIPMENT TO BE INSTALLED IN PLACE
(ER)	EXISTING TO BE RELOCATED
(EO)	EXISTING TO BE REMOVED
(EN)	EXISTING IN NEW LOCATION
(RAI)	REMAIN AS IS

PHASE 2 PLUMBING SCOPE OF WORK:

THE CONSTRUCTION OF THIS PROJECT IS PLANNED TO BE COMPLETED IN TWO PHASES. PHASE 1 WILL BE COMPLETED BY THE DEVELOPER (LINCOLN PROPERTIES), AND PHASE 2 WILL BE COMPLETED BY THE CITY OF IRVINE TO COMPLETE THE BUILDOUT. THE BUILDING IS NOT PLANNED TO RECIEVE A CERTIFICATE OF OCCUPANCY UNTIL PHASE 2 CONSTRUCTION IS COMPLETED. TITLE 24 DOCUMENTATION HAS BEEN DEFERRED AND PROVIDED IN THIS PHASE 2 PERMIT/CONSTRUCTION DOCUMENTATION PACKAGE. MECHANICAL AND PLUMBING EQUIPMENT T24 DOCUMENTATION PROVIDED IN THIS PHASE 2 PACKAGE ENCOMPASSES ALL PHASE 1 & PHASE 2 EQUIPMENT.

PHASE 2 PLUMBING SCOPE INCLUDES:

1. ALL UNDERGROUND PIPING FOR THE KITCHEN AREA WITHIN THE SLAB LEAVOUT.
2. GREASE INTERCEPTOR INSTALLATION.
3. INSTLLATION OF PHASE 2 PLUMBING FIXTURES AND CONNECTION TO EXISTING UNDERGROUND SANITARY AND OVERHEAD DOMESTIC WATER AS SHOWN IN THIS PLAN SET.
4. COMMISSIONING AND STARTUP OF ALL PLUMBING EQUIPMENT AND FIXTURES, PHASE 1 & PHASE 2.

PLUMBING ABBREVIATIONS:

AD	AREA DRAIN
BFP	BACKFLOW PREVENTER
BP	BOOSTER PUMP
BTU	BRITISH THERMAL UNIT
BTUH	BTU(S) PER HOUR
CO	CLEANOUT
CO2	CARBON DIOXIDE
CPVC	CHLORINATED PVC
CW	COLD WATER
CWR	COLD WATER RETURN
CWFU	COLD WATER FIXTURE UNITS
DF	DRINKING FOUNTAIN
DFU	DRAINAGE FIXTURE UNITS
DIA	DIAMETER
DS	DOWNSPOUT
DW	DISH WASHER
ES	EMERGENCY SHOWER
ET	EXPANSION TANK
EVAC	WASTE ANESTHETIC GAS DISPOSAL
EW	EMERGENCY EYE WASH
EWC	ELECTRIC WATER COOLER
EWH	ELECTRIC WATER HEATER
FCO	FLOOR CLEANOUT
FD	FLOOR DRAIN
FRS	FLUSHING RIM SINK
FS	FLOOR SINK
GPM	GALLONS PER MINUTE
GWH	GAS WATER HEATER
HB	HOSE BIBB
HD	HUB DRAIN
HS	HAND SINK
HW	HOT WATER
HWR	HOT WATER RETURN
HWFU	HOT WATER FIXTURE UNITS
IWP	INDIRECT WASTE PIPE
KS	KITCHEN SINK
KW	KILOWATT
LA	LAB AIR
LAV	LAVATORY
LV	LABATORY VACUUM
MB	MOP BASIN
MBH	BTU PER HOUR (THOUSAND
MV	MIXING VALVE
N	NITROGEN
NCP	NITROGEN CONTROL PANEL
ND	NOZZLE DRAIN
NG	NATURAL GAS
NO	NITROUS OXIDE
NPT	NATIONAL PIPE THREAD TAPERED
O	OXYGEN
PEX	CROSS LINKED POLYETHYLENE
POC	POINT OF CONNECTION
PSI	POUNDS PER SQUARE INCH
PSIG	PSI GAUGE
PVC	POLYVINYL CHLORIDE
PW	PURE WATER
RD	ROOF DRAIN
RDO	ROOF DRAIN OVERFLOW
RPM	REVOLUTIONS PER MINUTE
S	SINK
SD	SHOWER DRAIN
SE	SEWAGE EJECTOR
SFU	SUPPLY FIXTURE UNIT
SH	SHOWER
SP	SUMP PUMP
SPR	STANDPIPE RECEPTOR
SS	SERVICE SINK
TD	TRENCH DRAIN
TEMP	TEMPERATURE
TMV	THERMOSTATIC MIXING VALVE
UR	URINAL
VA	VACUUM
VTR	VENT THROUGH ROOF
W	WASTE PIPE
WC	WATER CLOSET
WCO	WALL CLEANOUT
WH	WATER HEATER
WS	WATER SOFTENER
YCO	YARD CLEANOUT

GENERAL ABBREVIATIONS:

A/E	ARCHITECT/ENGINEER
ABV	ABOVE
AFF	ABOVE FINISH FLOOR
AFG	ABOVE FINISHED GRADE
AFG	ABOVE FINISHED GRADE
ALT	ALTERNATE
APPROX	APPROXIMATELY
ARCH	ARCHITECT
AVG	AVERAGE
BFG	BELOW FINAL GRADE
BLDG	BUILDING
CLG	CEILING
DEG-F, °F	DEGREES FAHRENHEIT
DIR	DIRECT
DISC	DISCONNECT
DN	DOWN
EC	ELECTRICAL CONTRACTOR
ELEV	ELEVATION REFERENCE
EM	EMERGENCY
EP	EXPLOSION PROOF
F	FLUSH
FBO	FURNISHED BY OTHERS
FIXT	FIXTURE
FLA	FULL LOAD AMPS
FLR	FLOOR
FP	FIRE PROTECTION
FS	FLOW SWITCH
GC	GENERAL CONTRACTOR
GRD	GROUND
GYP	GYPSUM BOARD
HVAC	HEATING & VENTILATING - AIR CONDITIONING
HVC	HEATING VENTILATING CONTRACTOR
HW	HEAVYWALL
ID	INDIRECT
IE	INVERT ELEVATION
IL	INTERLOCK
IU	IN UNIT
J-BOX	JUNCTION BOX
LG	LAY-IN GRID
LTG	LIGHTING
LV	LOW VOLTAGE
LVT	LINE VOLTAGE THERMOSTAT
MAX	MAXIMUM
MIN	MINIMUM
MISC	MISCELLANEOUS
MTD	MOUNTED
N/A	NOT APPLICABLE
NIC	NOT IN CONTRACT
NTS	NOT TO SCALE
PC	PLUMBING CONTRACTOR
PLBG	PLUMBING
RM	ROOM
RQD	REQUIRED
SF	SQUARE FEET
SPEC	SPECIFICATION(S)
SURF	SURFACE
TS	TAMPER SWITCH
TYP	TYPICAL
UG	UNDERGROUND
UNO	UNLESS NOTED OTHERWISE

GENERAL NOTES:

1. THE FOLLOWING NOTES APPLY TO THE FULL SET OF PLUMBING DRAWINGS AND SPECIFICATIONS INCLUDING ADDENDA, CHANGE ORDERS, BULLETINS AND ARCHITECTURAL SUPPLEMENTARY INSTRUCTIONS.
2. THE DRAWINGS INDICATE DIAGRAMMATICALLY THE EXTENT AND LOCATION OF THE WORK. FURTHER DETAIL OF THE WORK THAT IS REQUIRED FOR A COMPLETE INSTALLATION, WHICH IS NOT SHOWN BECAUSE OF DRAWING SCALE, SHALL BE INCLUDED IN BASE BID.
3. FOR ADDITIONAL DETAILS, CONSULT THE ARCHITECTURAL DRAWINGS, OTHER ENGINEERING DRAWINGS, OWNER FURNISHED DRAWINGS AND OTHER OWNER FURNISHED DOCUMENTATION.
4. ALL PERMITS, LICENSES, APPROVALS AND OTHER ARRANGEMENTS FOR THE WORK SHALL BE INCLUDED WITH THE BASE BID. THIS INCLUDES PLAN REVIEW FEE FOR ALL BACKFLOW PREVENTERS.
5. TRADES AND OWNER-VENDORS SHALL BE RESPONSIBLE FOR COORDINATING PLUMBING WORK WITH THE WORK OF OTHER TRADES. PROVIDE OFFSETS TO ALL PIPING AS REQUIRED WHETHER SHOWN OR NOT.
6. ALL WORK SHALL BE IN ACCORDANCE WITH LOCAL CODES. THESE CODES SHALL BE FOLLOWED AS A MINIMUM. HIGHER GRADES OF MATERIAL AND WORKMANSHIP SHALL BE PROVIDED WHERE REQUIRED.
7. PROVIDE HOLES, SLEEVES, FIRE STOPPING AND PATCHING FOR THE INSTALLATION OF THE PLUMBING WORK.
8. MANUFACTURER AND PRODUCT SELECTION: THE DRAWINGS AND SPECIFICATIONS INDICATE SIZES, PROFILES, AND DIMENSIONAL REQUIREMENTS OF MATERIAL AND SPECIFIC PRODUCTS. MANUFACTURERS OF PRODUCTS HAVING EQUIVALENT PERFORMANCE CHARACTERISTICS HAVE BEEN LISTED IN THE SPECIFICATION. THE USE OF ANY OF THESE EQUIVALENT PRODUCTS SHALL REQUIRE THAT THE TRADES AND OWNER-VENDORS IDENTIFY MODIFICATIONS TO ACCOMMODATE VARIATIONS IN CHARACTERISTICS, SUCH AS WEIGHTS, CONNECTIONS, SIZES, AND DIMENSIONS. THE RESPONSIBILITY FOR MODIFICATIONS TO MECHANICAL, STRUCTURAL, ELECTRICAL, OR OTHER PLUMBING SYSTEMS, OR TO ACCOMMODATE CODES SHALL BE WITH THE TRADES AND OWNER-VENDORS. COSTS RESULTING FROM THE USE OF THESE EQUIVALENT PRODUCTS SHALL BE INCLUDED WITH THE BASE BID.
9. RETURN AIR PLENUM IN USE FOR SOME AREAS, PIPING MUST BE PLENUM-RATED OR FIRE WRAPPED.
10. HW PIPING TO LAVATORIES AND HANDSINKS SHALL COMPLY WITH IECC SECTION C404.5 " EFFICIENT HEATED WATER SUPPLY PIPING".
11. PVC IS PROHIBITED TO BE INSTALLED WITHIN PLENUM SPACES.
12. BUILDING SEWER SYSTEM TO BE A MINIMUM OF 12" BELOW FINISH FLOOR.
13. VENT PIPING TO EXTEND THROUGH THE ROOF AND TERMINATE A MINIMUM OF 12" ABOVE ROOF.

PLUMBING EXECUTION:

1. PROVIDE ISOLATION VALVES ON ALL CW/HW BRANCHES AND AT THE BASE OF ALL RISERS WHETHER SHOWN OR NOT.
2. PROVIDE BALANCING VALVES ON ALL HWR BRANCHES AND ON MAIN WHETHER SHOWN OR NOT.
3. PROVIDE SWING JOINTS ON ALL SUPPLY BRANCHES. TOP OR BOTTOM PIPE CONNECTIONS ARE AT THE PLUMBING CONTRACTOR'S DISCRETION.
4. UNLESS NOTED OTHERWISE, HWR PIPES SHALL BE ½" AND BALANCING VALVES SHALL BE SET TO 1/4 GPM.
5. UNLESS NOTED OTHERWISE, HOT WATER RETURN (HWR) SHALL BE PROVIDED TO WITHIN 2' OF HANDWASHING SINKS AND LAVATORIES. PROVIDE IECC TABLE C404.5.1 COMPLIANT HWR TO ALL OTHER FIXTURES AND APPLIANCES.
6. A STACK IS REFERRED TO AS WASTE PIPE UP/DN. OR VENT PIPE UP/DN. SIMILARLY, A VERTICAL STORM DRAIN IS REFERRED TO AS STORM UP/DN. A SUPPLY RISER IS REFERRED TO AS CW UP/DN., HW UP/DN. OR HWR UP/DN.
7. PLAN VIEWS GENERALLY SHOW PIPING ABOVE CEILINGS OR BELOW LOWEST FLOOR. SEE RISER DIAGRAMS FOR CLARITY OF HORIZONTAL PIPING AT OTHER ELEVATIONS.
8. SEE MINIMUM FIXTURE CONNECTION SCHEDULE FOR WASTE, VENT AND SUPPLY PIPE SIZES AND FOR FIXTURE UNITS.
9. SEE WATER HAMMER ARRESTERS SECTION IN THE SPECIFICATION FOR REQUIRED SIZE, MODEL, AND LOCATION OF WATER HAMMER ARRESTERS.
10. PITCH STORM DRAINS 1/8" PER FOOT UNLESS NOTED OTHERWISE.
11. UNLESS NOTED OTHERWISE, ALL WASTE PIPES 2" OR SMALLER SHALL BE PITCHED AT A MINIMUM ¼" PER FOOT, ALL 3" WASTE PIPES FOR WATER CLOSETS SHALL BE PITCHED AT A MINIMUM ¼" PER FOOT, AND ALL OTHER WASTE PIPES 3" OR LARGER SHALL BE PITCHED AT MINIMUM 1/8" PER FOOT.
12. VENTS MUST CONNECT TO EACH OTHER AT A MINIMUM OF 38 INCHES ABOVE FLOOR.
13. PROVIDE THERMOSTATIC MIXING VALVES (TMV) ON ALL PUBLIC LAVATORIES, PUBLIC SINKS, AND PUBLIC SHOWERS.

DESIGN CRITERIA:

APPLICABLE CODES / STANDARDS AS AMENDED BY AUTHORITY HAVING JURISDICTION

- 2022 CALIFORNIA BUILDING CODE
- 2022 CALIFORNIA PLUMBING CODE
- 2022 CALIFORNIA MECHANICAL CODE
- 2022 CALIFORNIA ELECTRIC CODE
- 2022 CALIFORNIA ENERGY CODE
- 2022 CALIFORNIA FIRE CODE

PLUMBING SHEET INDEX

SHEET NO.	SHEET NAME
PT000	PLUMBING LEGEND
PT001	PLUMBING SPECIFICATIONS
PT201	PLUMBING FLOOR PLAN
PT202	PLUMBING ROOF PLAN
PT301	ENLARGED PLUMBING PLANS
PT302	SANITARY RISER DIAGRAM
PT303	DOMESTIC WATER SUPPLY RISER DIAGRAM
PT400	PLUMBING SCHEDULES AND DETAILS
PT500	T24 COMPLIANCE DOCS

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PLUMBING LEGEND

	DATE	REMARKS
1	09/22/2025	PLAN CHECK CORRECTIONS
2	10/15/2025	PLAN CHECK CORRECTIONS 2
3	02/04/2026	PLAN CHECK CORRECTIONS 3
4	01/26/2025	OC HEALTH DEPT
5	03/06/2026	PLAN CHECK CORRECTIONS 4
6	03/06/2026	OC HEALTH DEPT 2
7	04/30/2026	BID ADDENDUM 2

PA/PM:	BL
DRAWN BY.:	DG
JOB NO.:	LAX21-0174-02

06/06/2025

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Autodesk Docs://LAX21-0174-02_17300 Red Hill - Rec Center/RTM-MEP-Red Hill Rec Center_R22.rvt

CAUTION: IF THIS SHEET IS NOT 30"x42" IT IS A REDUCED PRINT

PLUMBING AND FIRE PROTECTION

1 GENERAL REQUIREMENTS

1.1 RELATED DOCUMENTS
1.1.1 DRAWINGS AND GENERAL PROVISIONS OF CONTRACT, INCLUDING GENERAL AND SUPPLEMENTARY CONDITIONS AND DIVISION 1 SPECIFICATIONS IF APPLICABLE, APPLY TO WORK SPECIFIED HEREIN.

1.2 GENERAL
1.2.1 CONTRACTOR SHALL PROVIDE A COMPLETE OPERATING SYSTEM IN ACCORDANCE WITH DRAWINGS AND OTHER CONSTRUCTION DOCUMENTS. ALL NECESSARY EQUIPMENT, LABOR AND MATERIALS NOT SPECIFICALLY INDICATED OR SPECIFIED, BUT NECESSARY TO COMPLETE THE WORK, SHALL BE PROVIDED AS PART OF THE WORK.
1.2.2 CONTRACTOR SHALL COOPERATE WITH THE OTHER CONTRACTORS SO THAT CONSTRUCTION MAY PROCEED WITHOUT HINDRANCE. CONFER WITH OTHER CONTRACTORS REGARDING ANY WORK THAT MAY AFFECT THIS WORK AND ARRANGE SCHEDULE SO THAT COMPONENTS SHALL BE INSTALLED IN A NATURAL SEQUENCE.
1.2.3 PIPING SHOWN ON PLAN VIEWS SHALL BE INSTALLED ABOVE FINISHED CEILINGS OF ROOMS SHOWN UNLESS OTHERWISE SPECIFIED. IN MECHANICAL SPACES AND SIMILAR UNFINISHED AREAS, INSTALL PIPES AS HIGH AS POSSIBLE UNLESS OTHERWISE SPECIFIED.
1.2.4 PIPES ON FOUNDATION PLUMPING PLANS SHALL BE INSTALLED BELOW FINISHED FLOOR OF ROOMS SHOWN UNLESS OTHERWISE SPECIFIED.
1.2.5 PIPING INSTALLED AT SPECIFIED PITCH SHALL GENERALLY TAKE PRECEDENCE OF OTHER PIPING.
1.2.6 OPERATION OF DOORS, WINDOWS, LIGHTING, OWNER'S EQUIPMENT OR FIXTURES SHALL NOT BE HINDERED BY POSITION OF PIPING.

1.3 QUALITY ASSURANCE
1.3.1 SECURE PERMITS AND PAY PERMIT FEES AS REQUIRED FOR PLUMBING, FIRE PROTECTION, UTILITIES AND ALL AUTHORITIES HAVING JURISDICTION.
1.3.2 CONFIRM ELECTRICAL VOLTAGES, PHASE AND OTHER CHARACTERISTICS. DO NOT ORDER MOTORS, MOTOR CONTROLLERS AND OTHER EQUIPMENT WITH LINE VOLTAGE CONNECTIONS UNTIL ELECTRICAL CHARACTERISTICS ARE VERIFIED.
1.3.3 INSTALLER SHALL HAVE MINIMUM OF FIVE YEARS OF EXPERIENCE WITH ITS NATURE AND SIZE OF WORK SIMILAR TO AS SHOWN HEREIN.
1.3.4 SANITIZE DOMESTIC WATER SUPPLY PIPING AND PRESSURE-TEST PLUMBING PIPING PRIOR TO INSTALLING FIXTURES, EQUIPMENT AND INSULATION.
1.3.5 EXAMINE INSTALLATION FOR WORKMANSHIP, IDENTITY, LABELS AND FUNCTION. CORRECT DEFECTS PRIOR TO SUBSTANTIAL COMPLETION.
1.3.6 FURNISH TEST RESULTS TO AUTHORITIES HAVING JURISDICTION.

1.4 SUBSTITUTION OF EQUIPMENT
1.4.1 THE DRAWINGS AND SPECIFICATIONS INDICATE SIZES, PROFILES, AND DIMENSIONAL REQUIREMENTS OF SPECIFIC PRODUCTS AND MATERIAL. PRODUCTS AND MATERIAL HAVING EQUAL PERFORMANCE CHARACTERISTICS MAY BE REVIEWED BY THE ENGINEER FOR CONSIDERATION. HOWEVER, THE USE OF THESE PRODUCTS OR MATERIALS SHALL REQUIRE THE CONTRACTOR TO CONSIDER ALL MODIFICATIONS TO ACCOMMODATE VARIATIONS IN WEIGHTS, CONNECTIONS, SIZES, AND SIMILAR PARAMETERS AS COMPARED TO THE PRODUCTS SHOWN. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL MODIFICATIONS OF OTHER MECHANICAL, STRUCTURAL, ELECTRICAL, AND PLUMBING SYSTEMS REQUIRED TO ACCOMMODATE SUCH PRODUCTS AND MATERIALS.

1.5 JOB CONDITIONS
1.5.1 PROVIDE WORK INCLUDING COORDINATION WITH OTHER TRADES, CUTTING AND PATCHING, CHANGE ORDERS AND OTHER PROJECT CHANGES. EXISTING CONDITIONS HAVE BEEN SHOWN BASED ON AVAILABLE RECORDS AND FIELD WORK BUT ARE NOT IMPLIED TO BE COMPLETE, CORRECT OR REPRESENTATIVE OF THOSE ACTUALLY EXISTING. CONTRACTOR SHALL MAKE FIELD OBSERVATIONS DURING BIDDING PERIOD AND REPORT ERRORS, INCONSISTENCIES AND OMISSIONS IN DRAWINGS.
1.5.2 VERIFY THAT WORK MAY BE INSTALLED IN COMPLIANCE WITH THE DESIGN INTENT.
1.5.3 THEREAFTER, CONTRACTOR SHALL ASSUME RESPONSIBILITY FOR DEFICIENCIES, ERRORS, INCONSISTENCIES AND OMISSIONS IN THE CONSTRUCTION DOCUMENTS THAT THEY RECOGNIZED BUT KNOWINGLY FAILED TO REPORT TO THE ARCHITECT. DEFICIENCIES MAY INCLUDE OFFSETTING EXISTING PLUMBING OR OTHER WORK.
1.5.4 CONTRACTOR SHALL REPORT TO ARCHITECT DEFECTIVE EXISTING PLUMBING WITHIN OR NEAR THE LIMITS OF CONSTRUCTION INCLUDING LEAKS, DAMAGED SUPPORTS AND PIPE INSULATION, AND CROSS CONNECTIONS AND OTHER PUBLIC HEALTH HAZARDS.

1.6 DEMOLITION
1.6.1 DEMOLISH EQUIPMENT, FIXTURES, PIPING, AND SUPPORT HARDWARE AS INDICATED ON DRAWINGS WITHIN LIMITS OF CONTRACT OR AS REQUIRED TO COMPLETE WORK.
1.6.2 MAINTAIN THE CONDITION OF WORK NOT REMOVED OR DESIGNATED AS SALVAGEABLE.
1.6.3 DISPOSE ALL MATERIAL OFF SITE UNLESS OTHERWISE INSTRUCTED.
1.6.4 MINIMIZE LENGTHS OF DEAD ENDS WHEN CAPPING REMOVED SUPPLY AND DRAIN BRANCHES.
1.6.5 NOTE PIPING THAT IS DISCONNECTED AND ABANDONED ON RECORD DRAWINGS.

1.7 SUPERVISION
1.7.1 ONTRACTOR SHALL HAVE A FULL-TIME EXPERIENCED SUPERVISOR IN THE FIELD FOR THE DURATION OF THE WORK.

1.8 SUBMITTALS
1.8.1 SUBMIT PRODUCT DOCUMENTATION AND WARRANTY TO ARCHITECT FOR REVIEW.
1.8.2 DOCUMENTATION SHALL INCLUDE PRODUCT SIZES, CAPACITIES, DIMENSIONS, STANDARDS, PRODUCT MODEL NUMBERS AND OTHER INFORMATION TO IDENTIFY CONFORMANCE WITH BIDDING DOCUMENTS AND CHANGE ORDERS FOR MATERIAL INCLUDING PIPING, FIXTURES, EQUIPMENT, APPURTENANCES, PENETRATION MATERIAL, SUPPORTS AND RELATED PRODUCTS.
1.8.3 SUBMIT O&M MANUALS, TEST RESULTS, VALVE SCHEDULE, RECORD (AS-BUILT) DRAWINGS AND APPROVED SHOP DRAWINGS TO ARCHITECT AT PROJECT CLOSURE.
1.8.4 MAINTENANCE
1.8.4.1 FURNISH A SET OF THE FOLLOWING SPARE PARTS TO THE OWNER AT THE CLOSE OF THE PROJECT:
1.8.4.1.1 FAUCET RENEWABLE PARTS: FOR EACH TYPE FURNISHED IN THE WORK, FURNISH A SPARE SET.
1.8.4.1.2 SET OF BATTERIES FOR SENSOR FAUCETS.
1.8.4.2 LABEL EACH PACKAGE OF SPARES TO INDICATE WHICH EQUIPMENT ITEM IS USED ON.
1.8.4.3 PROVIDE ADDRESS AND OTHER INFORMATION TO RENEW SUPPLY OF SPARES.
1.8.4.4 A SET SHALL MEAN THE QUANTITY USED ON THAT EQUIPMENT.
1.8.5 RECORD (AS-BUILT) DRAWINGS: MAINTAIN UP-TO-DATE RECORD DRAWINGS ON-SITE AT ALL TIMES INCLUDING ABANDON PIPING AND OTHER RELEVANT ORIGINAL CONDITIONS COVERED BY FINISHES.

1.9 WARRANTIES
1.9.1 ADJUST, REPAIR OR REPLACE ITS WORK THAT FAILS IN MATERIAL OR WORKMANSHIP WITHIN THE SPECIFIED WARRANTY PERIOD
1.9.2 WARRANTY PERIOD SHALL BE ONE YEAR AFTER DATE OF SUBSTANTIAL COMPLETION OF WORK. WARRANTY PERIOD SHALL BE LONGER WHERE INDICATED.

2 BASIC MATERIALS

2.1 ACCESS PANELS
2.1.1 INLAND STEEL PRODUCTS MILCOR, 18X18 INCH MINIMUM, CAM LOCK WITH SCREWDRIVER. SPECIFIC PRODUCT SHALL MATCH MANUFACTURER'S REGOMMENDATIONS FOR WALL AND CEILING TYPES.
2.1.2 UL LISTED FOR FIRE-RATED WALLS AND CEILINGS
2.1.3 INSTALL FOR ACCESS TO VALVES, CLEANOUTS AND OTHER AREAS REQUIRING PERIODIC ACCESS.

2.2 ELECTRICAL COORDINATION
2.2.1 CONTRACTOR SHALL BE RESPONSIBLE FOR FURNISHING AND INSTALLING LOW VOLTAGE WIRING AND CONNECTIONS FOR EQUIPMENT INCLUDED IN THIS DIVISION.

2.3 HANGERS AND SUPPORT
2.3.1 PAINTED, GALVANIZED OR SIMILARLY PROTECTED STEEL PRODUCT COMPLYING WITH SIZES, SPACING AND INSTALLATION IN CONFORMANCE WITH MSS SP 58 AND RELATED DOCUMENTS.
2.3.2 AT ROD SUPPORT, PROVIDE SWIVEL-TYPE OR SIMILAR JOINT AND LISTED ANCHOR.
2.3.3 PROVIDE SADDLE BENEATH INSULATED PIPE. DO NOT DIRECTLY SUPPORT PIPE.
2.3.4 PROVIDE COPPER-PLATED SUPPORT OF BARE COPPER PIPE.

2.4 HOUSEKEEPING PADS
2.4.1 CONCRETE PAD, 3-1/2" HIGH, BELOW ALL FLOOR-SUPPORTED EQUIPMENT TO ADJACENT WALLS OR 6 INCHES FROM EQUIPMENT EDGE.

2.5 IDENTIFICATION
2.5.1 ANSI A31.1 COMPLYING PIPE LABELS; BRASS VALVE TAGS AND VALVE SCHEDULE FOR VALVE NUMBERING

2.6 PIPE PENETRATIONS
2.6.1 FIRE-SAFING
2.6.1.1 LISTED BY AN APPROVED AGENCY
2.6.1.2 HILTI, 3M, RECTOSEAL
2.6.2 SLEEVING AND CORING
2.6.2.1 COORDINATE SLEEVING AND CORING WITH OTHER CONTRACTORS
2.6.2.2 ONE-INCH LARGER THAN PIPE OUTSIDE DIAMETER OR PIPE JACKET OUTSIDE DIAMETER
2.6.2.3 SLEEVE MATERIAL: STEEL WITH ANCHORING FLANGE, PROTRUDE ABOVE FLOOR OR FROM WALL BY 1-INCH
2.6.3 SEAL AT EXTERIOR INCLUDING AGAINST SOIL
2.6.3.1 THUNDERLINE LINK-SEAL MODEL C
2.6.4 ESCUTCHEONS
2.6.4.1 METAL AND CHROME-PLATED
2.6.4.2 COVER PENETRATION SLEEVE OR OPENING AND SNUG AROUND PIPE OR PIPE JACKET
2.6.4.3 FURNISH FOR ALL PIPES PASSING THROUGH FINISHED SPACES

2.7 MOTOR CONTROL
2.7.1 MANUAL TYPE (HALF HP OR LESS): ALLEN BRADLEY BULLETIN 600 COMPLETE WITH ENCLOSURE, PILOT LIGHT, OVER-CURRENT PROTECTION AND LOCK-OUT PROVISIONS. MATCH HEATER ELEMENT TO MOTOR REQUIREMENT.

3 FIRE SPRINKLER SYSTEM

3.1 GENERAL
3.1.1 PROVIDE A FULLY SPRINKLERED BUILDING IN ACCORDANCE WITH REQUIREMENTS, REGULATORY STANDARDS AND THE AUTHORITY HAVING JURISDICTION.
3.1.2 PROVIDE ENGINEERING DESIGN SERVICES WITH INSTALLATION AS A DESIGN-BUILD CONTRACT. THE SPRINKLER CONTRACTOR SHALL BE THE ENGINEER-OF-RECORD.
3.1.3 VERIFY ADEQUACY OF AVAILABLE WATER SUPPLY.

3.2 CODES AND STANDARDS
3.2.1 CALIFORNIA BUILDING CODE 2022
3.2.2 NFPA 13
3.2.3 ASSE 1015

3.3 PIPING
3.3.1 THREADED STEEL BLACK PIPE FOR 2" OR SMALLER: SCHEDULE 40, ASTM A53, A135 OR A795
3.3.2 2-1/2" OR LARGER: ROLL-GROOVED STEEL, SCHEDULE 10 OR LISTED SIMILAR MATERIAL.
3.3.3 FITTINGS: LISTED FOR 175 PSI
3.3.4 VALVES: LISTED-INDICATING AND SUPERVISED ON WATER SUPPLY

3.4 SPRINKLERS
3.4.1 FINISHED SPACES: LISTED QUICK-RESPONSE PENDANT WITH SEMI-RECESSED ESCUTCHEON, FACTORY-PAINTED WHITE FINISH
3.4.2 UNFINISHED SPACES: EXPOSED, QUICK-RESPONSE BRASS UPRIGHT

3.5 TESTING
3.5.1 PROVIDE TESTING IN THE PRESENCE OF THE AUTHORITY HAVING JURISDICTION, THE ARCHITECT OR THE ARCHITECT'S REPRESENTATIVE.
3.5.1.1 FLUSH WATER SERVICE OF ALL DEBRIS
3.5.1.2 PRESSURE TEST ALL PIPING
3.5.1.3 TEST ALARMING COMPONENTS
3.5.1.4 BACKFLOW PREVENTER FORWARD-FLOW TEST

4 PLUMBING

4.1 CODES AND STANDARDS
4.1.1 STATE OF CALIFORNIA, CALIFORNIA PLUMBING CODE 2022
4.1.2 ANSI A117.1 ACCESSIBILITY, ADA GUIDELINES
4.1.3 ASHRAE 90.1 ENERGY CONSERVATION IN NEW BUILDING DESIGN
4.1.4 MANUFACTURER'S STANDARDIZATION SOCIETY OF THE VALVE AND FITTINGS INDUSTRY, INC. (MSS)
4.1.5 LEAD-FREE REQUIREMENT: ALL MATERIALS IN CONTACT WITH POTABLE WATER, INCLUDING SOLDER JOINTS, FAUCETS, SUPPLIES, FITTINGS, GENERAL AND SPECIALTY VALVES, WATER TREATMENT DEVICES AND PUMP MATERIALS, SHALL BE LEAD-FREE IN CONFORMANCE WITH FEDERAL REGULATIONS. THE LEAD-FREE DESIGNATION SHALL BE INDICATED ON MATERIAL BY INDELIBLE MEANS.

4.2 EQUIPMENT CONNECTIONS
4.2.1 CONNECT WATER AND INDIRECT WASTE PIPES TO MEDICAL, FIRE SPRINKLER, VENDING, ICE, BEVERAGE, HVAC AND LAUNDRY EQUIPMENT AS REQUIRED.
4.2.2 LOCATE FLOOR DRAINS AND INDIRECT WASTE RECEPTORS AS REQUIRED FOR EQUIPMENT AS REQUIRED.
4.2.3 PROVIDE WATER CONNECTION THROUGH APPROVED CROSS CONNECTION CONTROLS. VERIFY WHETHER APPROVED AIR GAPS OR VACUUM BREAKERS ARE PROVIDED WITHIN EQUIPMENT. IF REQUIRED, PROVIDE CODE-REQUIRED BACKFLOW PREVENTERS.

4.3 PIPING
4.3.1 STORM / SANITARY DRAIN AND VENT: HUBLESS CAST IRON PIPE AND FITTINGS: LATEST EDITION OF ASTM A888 WITH SLEEVE GASKET JOINTS ASTM C564, AND COUPLINGS C1540. PVC ASTM D1785 SCHEDULE 40
4.3.2 WATER SUPPLY: COPPER ASTM B88, TYPE L HARD DRAWN COPPER, WITH WROUGHT COPPER SOLDER JOINT FITTINGS, ANSI B16.22, OR CAST BRONZE SOLDER JOINT FITTINGS, ANSI B16.18.
4.3.2.1 SOLDER JOINTS: ASTM B32 95/5 TIN-ANTIMONY SOLDER AND NSF-APPROVED FLUX FOR DOMESTIC WATER PIPING. SOLDER SHALL BE LEAD FREE FOR DOMESTIC WATER PIPING, MEANING A CHEMICAL COMPOSITION OF 0.2 PERCENT LEAD OR LESS. JOINING METHOD SHALL COMPLY WITH ASTM B828.
4.3.2.2 ALTERNATIVE COPPER PRESS FITTINGS: HYDRAULICALLY PRESSED IN ACCORDANCE WITH INSTRUCTIONS OF VIEGA OR RIDGE TOOL CO.
4.3.3 NATURAL GAS
4.3.3.1 THREADED STEEL BLACK PIPE SCHEDULE 40, ASTM A53
4.3.3.2 ALTERNATIVE GASTITE OR TRACPIPE, CSA INTERNATIONAL AND ANSI LC1 COMPLYING
4.3.4 VALVES
4.3.4.1 BALL VALVES: NIBCO T580-70-EL-LF: TWO PIECE, END ENTRY, CONVENTIONAL PORT, BRONZE THREADED, 600 PSIG AT 150° F, 150 PSIG AT 350° F.
4.3.4.2 CHECK VALVES: NIBCO T433-Y, HORIZONTAL SWING, ANSI CLASS 150, 300 PSIG AT 150° F, 150 PSIG AT 350° F.
4.3.4.3 BALANCING VALVES: BELL & GOSSETT MODELS CB AND RF, CIRCUIT SETTER.
4.3.4.4 GAS: NIBCO 585-70-UL
4.3.4.5 EFFLUENT VALVES: TRUE UNION BALL VALVE, PVC BODY; NON-SLAM CHECK VALVE; GEORGE FISHER SIGNET.

4.4 PIPE INSULATION
4.4.1 OWENS-CORNING FIBERGLAS SSL-II PIPE INSULATION WITH ALL-SERVICE VAPOR BARRIER JACKETING SEALED BY ADHESIVE LAP-JOINTS. MASTIC OR PVC COVERS ON ALL FITTINGS.
4.4.1.1 HOT WATER: <1" WILL BE COVERED WITH 1" INSULATION
HOT WATER: >1" TO 1.5" WILL BE COVERED WITH 1.5" INSULATION
HOT WATER: >2" WILL BE COVERED WITH 2" INSULATION
HOT WATER RETURN: 1" THICK
4.4.1.2 COLD WATER: 1" THICK
4.4.1.3 HORIZONTAL STORM PIPES AND ROOF DRAIN BODIES: 1" THICK
4.4.2 PIPE WRAP FOR EXPOSED SPACES
4.4.2.1 PROVIDE MATERIAL MEETING UL 910 FLAMMABILITY TEST.
4.4.2.2 PROVIDE 3M FIRE BARRIER PLENUM WRAP 5A OR REVIEWED EQUIVALENT.

4.5 PLUMBING SPECIALTIES
4.5.1 AIR VENT
4.5.1.1 BRASS BODY, NON-FERROUS INTERNAL WORKING PARTS, FLOAT TYPE; AMTROL
4.5.2 CENTRAL MIXING VALVE
4.5.2.1 PROVIDE SIZE AND CAPACITY AS SCHEDULED.
4.5.2.2 THERMOSTATIC, ASSE 1017 COMPLYING, CAPACITY AS SCHEDULED AND MINIMUM FLOW RATING NOT LESS THAN 2 GPM, CAST BRASS BODY.
4.5.3 CROSS-CONNECTION CONTROL
4.5.3.1 AIR GAPS
4.5.3.2 REDUCED PRESSURE PRINCIPLE BACKFLOW PREVENTER, ASSE 1013
4.5.3.3 ASSE COMPLYING VACUUM BREAKERS
4.5.4 EXPANSION TANK
4.5.4.1 PROVIDE SIZE AND CAPACITY AS SCHEDULED.
4.5.4.2 PRE-CHARGED STEEL THERMAL EXPANSION TANK WITH BUTYL DIAPHRAGM, WELDED CARBON STEEL CONSTRUCTION, THREADED WATER CONNECTION;
4.5.5 THERMOMETER
4.5.5.1 BI-METAL, DIAL TYPE, 5" DIAL
4.5.6 TRAP PRIMERS
4.5.6.1 ASSE 1018 COMPLYING, 125 PSI RATING, WATTS A200, WATTS T20 WITH D20
4.5.6.2 LOCATE ON LAVATORY BRANCH LINE CLOSE TO ANGLE SUPPLY
4.5.6.3 PROVIDE ACCESS PANEL
4.5.7 WATER HAMMER ARRESTORS
4.5.7.1 ASSE 1010 OR ANSI A112.26.1 COMPLYING, J.R. SMITH 5000 SERIES, SIZE AS RECOMMENDED BY MANUFACTURER
4.5.7.2 LOCATE ON BRANCH LINE BETWEEN LAST TWO FIXTURES

4.6 DRAINAGE MATERIAL
4.6.1 FURNISH WITH TRAP AND VENT.
4.6.2 SET RIM OF FLOOR DRAINS AND FLOOR SINKS FLUSH WITH FLOOR
4.6.3 CLEANOUTS:
4.6.3.1 FURNISH FLOOR CLEANOUT WITH NICKEL BRONZE CAP AND RIM, J.R. SMITH 4021.
4.6.3.2 FURNISH WALL CLEANOUT WITH STAINLESS STEEL COVER, J.R. SMITH 4422.
4.6.3.3 FURNISH YARD CLEANOUT WITH FROST SLEEVE, J.R. SMITH 4250.
4.6.4 FLOOR DRAINS AND FLOOR SINKS
4.6.4.1 PROVIDE FLOOR SAFING.
4.6.4.2 SEE FIXTURE SCHEDULE FOR DRAIN PIPE SIZE.
4.6.4.3 FURNISH FLOOR DRAIN WITH ADJUSTABLE TOP, FLASHING COLLAR, CAST IRON BODY AND NICKEL BRONZE RIM AND STRAINER, J.R. SMITH 2005-A.
4.6.4.4 FURNISH HEAVY-DUTY FLOOR DRAIN WITH FLASHING COLLAR, CAST IRON BODY AND TRACTOR GRATE, J.R. SMITH 2120-Y.
4.6.4.5 FURNISH FLOOR SINK WITH FLASHING COLLAR, CAST IRON BODY, INTERIOR ENAMEL COATING, ALUMINUM DOME BOTTOM STRAINER AND NICKEL BRONZE TOP STRAINER WITH CENTER HOLE, J.R. SMITH 3020Y-C-14
4.6.5 ROOF DRAINS
4.6.5.1 FURNISH GENERAL PURPOSE ROOF DRAIN WITH FLASHING RING, GRAVEL STOP, UNDERDECK CLAMP, CAST IRON DOME AND SUMP RECEIVER, J.R. SMITH 1010-C-R-CID.
4.6.5.2 FURNISH STAINLESS STEEL MESH IF BALLAST SIZE IS LESS THAN OPENINGS IN DOME.
4.6.6 STANDPIPE RECEPTORS
4.6.6.1 SEE FIXTURE SCHEDULE FOR DRAIN PIPE SIZE AND HEIGHT.
4.6.6.2 LOCATE SMALL RECEPTORS BENEATH COUNTERS NEAR OTHER FIXTURES.

4.7 WATER CIRCULATION PUMP
4.7.1 PROVIDE SIZE AND CAPACITY AS SCHEDULED.
4.7.2 IN-LINE, WET ROTOR, ISOLATED STATOR THROUGH STAINLESS STEEL CAN, LEAD-FREE BRONZE BODY, POLYPROPYLENE IMPELLER, CERAMIC SHAFT, CARBON BEARINGS, WATER LUBRICATED, RATED FOR 150 PSIG WORKING PRESSURE. BUILT-IN MOTOR OVERLOAD PROTECTION.

4.8 WATER HEATER
4.8.1 NATURAL GAS, SEALED-COMBUSTION AUTOMATIC STORAGE TYPE.
4.8.2 QUANTITY, STORAGE VOLUME, RECOVERY AND ENERGY INPUT AS SCHEDULED.
4.8.3 MINIMUM FIVE YEAR WARRANTY, LABOR AND MATERIAL INCLUDING TANK.
4.8.4 ASHRAE 90.1, ANSI Z21.22 AND STATE OF WISCONSIN COMMERCE 84 COMPLYING FOR CONDENSING SEALED- COMBUSTION INCLUDING UL LISTING, T&P VALVE RATING, GLASS TANK LINING AND COMBUSTION LINING, HEATER CONTROL, ANODE RODS, EFFICIENCY RATING, PRESSURE VESSEL RATING AND DIRECT VENT PIPING. INSTALL WATER HEATERS AS DETAILED ON DRAWINGS INCLUDING VALVING, TEMPERATURE MAINTENANCE SYSTEM, MIXING VALVE, HEAT TRAPS, WATER EXPANSION CONTROL, VENTS AND NATURAL GAS CONNECTIONS.

4.9 SUMP PUMPS AND SEWAGE EJECTORS
4.9.1 PROVIDE SIZE AND CAPACITY AS SCHEDULED. PROVIDE DIAMETER, DEPTH AND RIM ELEVATION AS INDICATED ON DRAWINGS
4.9.2 SUBMERSIBLE PUMP AND MOTOR WITH CAST IRON BODY, MECHANICAL SHAFT SEAL, STAINLESS STEEL FASTENERS
4.9.3 FIBERGLASS BASIN AND COVER WITH NOT LESS THAN ¼-INCH WALL THICKNESS, COLLAR AT BASE, STAINLESS STEEL FASTENERS (AIR-TIGHT COVER GASKET AND PENETRATION SEALS ON SEWAGE EJECTORS) FURNISH PERFORATED STEEL COVER IN ELEVATOR PITS.
4.9.4 AUTOMATIC CONTROL WITH NEMA 6 FLOAT SWITCHES, SJOW/A JACKETED CABLES, NEMA 6 JUNCTION BOXES
4.9.5 HIGH-WATER ALARM WITH AUDIO-ALARM SILENCING SWITCH AND DRY AUXILIARY CONTACTS FOR REMOTE ALARM

4.10 PLUMBING FIXTURES
4.10.1 PROVIDE PRODUCTS IN COMPLIANCE WITH ADA GUIDELINES WHERE REQUIRED, INCLUDING COMPLYING FAUCETS AND FLUSH LEVERS, TRAP AND SUPPLY WRAPS, KNEE SPACES, RIM HEIGHTS, FLUSH HANDLE LOCATIONS AND OTHER DIMENSIONAL REQUIREMENTS.

4.11 TESTING
4.11.1 ALL TESTS SHALL BE MADE IN THE PRESENCE AND SATISFACTION OF THE ARCHITECT'S REPRESENTATIVE OR OWNER AND THE LOCAL PLUMBING INSPECTOR.
4.11.2 NATURAL GAS PIPING: TEST TO A PRESSURE OF 50 PSI IN ACCORDANCE WITH THE ESTABLISHED POLICIES OF THE LOCAL GAS COMPANY.
4.11.3 WATER PIPING: TEST TO A PRESSURE OF 150 PSI.
4.11.4 HOT WATER: VERIFY DELIVERY OF HOT WATER WITHIN 10 SECONDS FROM MOST REMOTE FIXTURE.
4.11.5 STORM, SANITARY WASTE AND VENT: INITIALLY TEST PIPING IN SECTIONS OR IN ITS ENTIRETY, APPLY PRESSURE EQUIVALENT TO NOT LESS THAN 10 FEET OF WATER, AND VERIFY LEAK-TIGHT AFTER 15-MINUTE DWELL TIME. FINALLY TEST WASTE AND VENT WITH SMOKE OR AIR AT NOT LESS THAN 1-INCH WATER COLUMN.

END OF SECTION

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PLUMBING SPECIFICATIONS

	DATE	REMARKS
1	09/22/2025	PLAN CHECK CORRECTIONS
2	10/15/2025	PLAN CHECK CORRECTIONS 2
3	02/04/2026	PLAN CHECK CORRECTIONS 3
4	02/05/2026	OC HEALTH DEPT
5	03/05/2026	PLAN CHECK CORRECTIONS 4
6	03/06/2026	OC HEALTH DEPT 2
7	04/30/2026	BID ADDENDUM 2

PA/PM:	BL
DRAWN BY.:	DG
JOB NO.:	LAX21-0174-02

06/06/2025

SHEET
PT001

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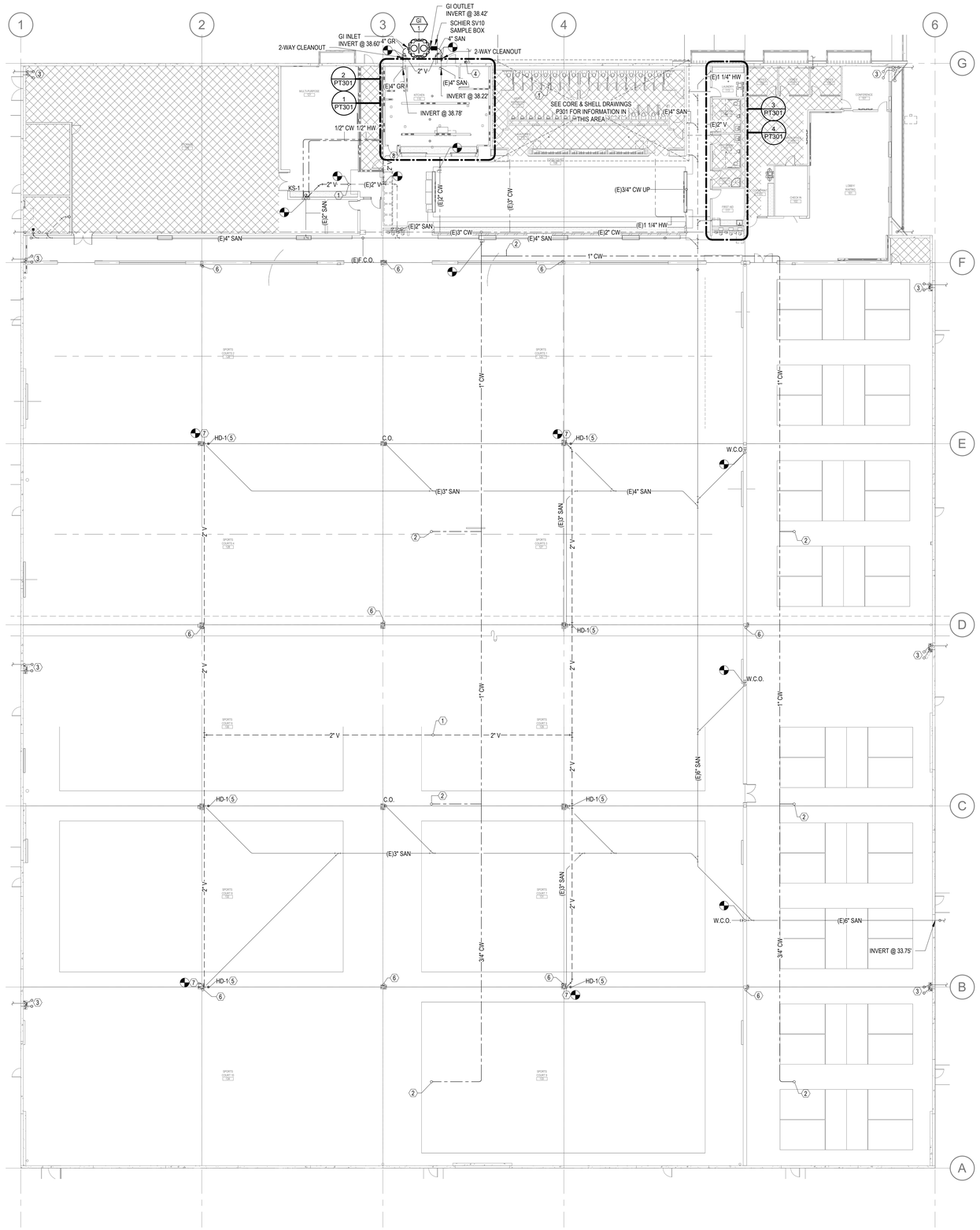

1 TI PLUMBING FLOOR PLAN
1/16" = 1'-0"

GENERAL NOTES:

1. REFERENCE PT000 FOR ADDITIONAL PROJECT PLUMBING NOTES, SYMBOLS AND ABBREVIATIONS.
2. ALL PIPING SHOWN LIGHT IS EXISTING TO REMAIN, UNLESS NOTED OTHERWISE.
3. CONTRACTOR SHALL USE EXTREME CAUTION WHEN INSTALLING SANITARY WASTE PIPING BELOW SLAB TO MAINTAIN SLOPE AND ENSURE NO SWALES OCCUR IN PIPE.
4. ALL EXISTING SANITARY AND VENT PIPING WHICH HAS BEEN DISCONNECTED AND IS NOT BEING CONNECTED TO NEW PIPING SHALL BE CAPPED/PLUGGED BELOW SLAB OR BEHIND WALL.
5. REFERENCE RISER DIAGRAMS FOR ADDITIONAL INFORMATION.
6. ASSE 1010 WATER HAMMER ARRESTORS SHALL BE INSTALLED AT ALL QUICKCLOSING VALVES.
7. REFER TO PLUMBING FIXTURE SCHEDULE FOR ALL FIXTURE BRANCH PIPING SIZES.
8. ROUTE NEW CW PIPING MAINS FROM EXISTING TIGHT TO BOTTOM OF JOISTS. COORDINATE WITH EXISTING CONDITIONS INCLUDING ALL DROP LOCATIONS TO NEW FIXTURES.
9. ALL VALVES SHALL BE LOCATED ABOVE ACCESSIBLE CEILING. IF REQUIRED, COORDINATE ACCESS PANEL SIZES AND LOCATIONS WITH ARCHITECT REQUIRED TO ACCESS ANY HIDDEN SHUT-OFF VALVES AND WATER HAMMER ARRESTORS.
10. ALL SANITARY PIPES 4" OR GREATER IN DIAMETER SHALL BE SLOPED AT 1/8" PER LF.

KEYNOTES

1 2" VENT UP TO 3" VENT THRU ROOF.
2 3/4" COLD WATER UP TO RH-1.
3 EXISTING STORM AND OVERFLOW DRAINS AND PIPING. INSTALLED IN CORE & SHELL.
4 EXISTING GAS LINE & METER. INSTALLED IN CORE & SHELL.
5 MOUNT HUB DRAIN A MINIMUM OF 20'-0" ABOVE AFF ON STRUCTURAL COLUMN.
6 EXISTING VIMS VENT.
7 NEW VENT AND SANITARY FROM HUB DRAIN TO CONNECT TO EXISTING SANITARY.
8 SEE SHEET PT301 FOR CONTINUATION.

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PLUMBING FLOOR PLAN

	DATE	REMARKS
1	09/22/2025	PLAN CHECK CORRECTIONS
2	10/15/2025	PLAN CHECK CORRECTIONS 2
3	02/04/2026	PLAN CHECK CORRECTIONS 3
4	03/04/2026	OC HEALTH DEPT 1
5	03/06/2026	PLAN CHECK CORRECTIONS 4
6	03/06/2026	OC HEALTH DEPT 2
7	04/30/2026	BID ADDENDUM 2

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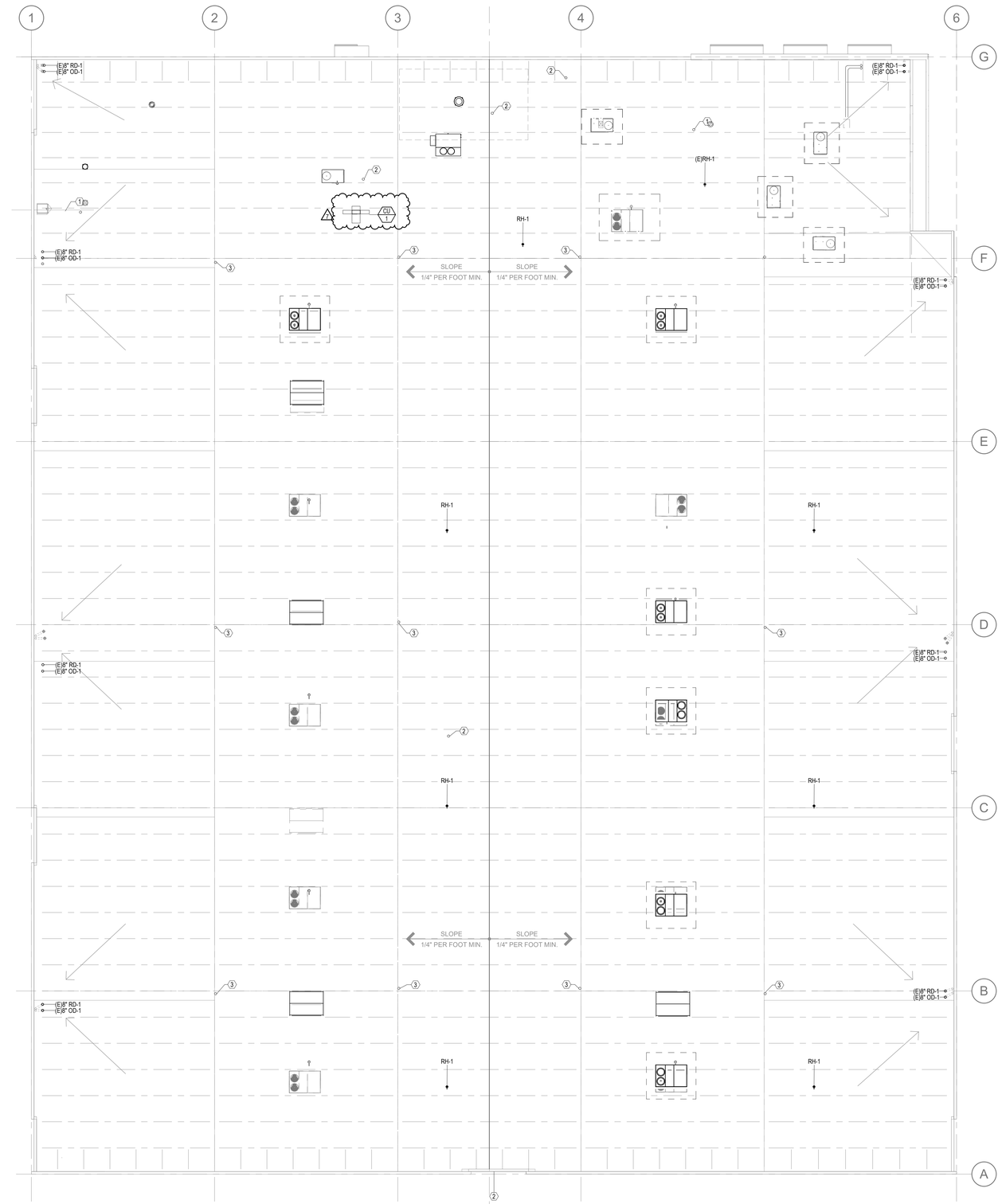

1 PLUMBING ROOF PLAN
1/16" = 1'-0"

GENERAL NOTES:

1. ALL PLUMBING VENTS TO MAINTAIN 10 FEET MINIMUM FROM MECHANICAL FRESH AIR INTAKE OPENINGS.
2. PROVIDE MANUFACTURER'S REQUIRE CLEARANCES AROUND ALL ROOFTOP EQUIPMENT.

#	KEYNOTES
1	(E)3" VTR.
2	3" VTR.
3	EXISTING VIMS VENT.

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PLUMBING ROOF PLAN

	DATE	REMARKS
1	09/22/2025	PLAN CHECK CORRECTIONS
2	10/15/2025	PLAN CHECK CORRECTIONS 2
3	02/04/2026	PLAN CHECK CORRECTIONS 3
4	03/06/2026	OC HEALTH DEPT
5	03/06/2026	PLAN CHECK CORRECTIONS 4
6	03/06/2026	OC HEALTH DEPT 2
7	04/30/2026	IBD ADDENDUM 2

PA/PM:	BL
DRAWN BY.:	DG
JOB NO.:	LAX21-0174-02

06/06/2025

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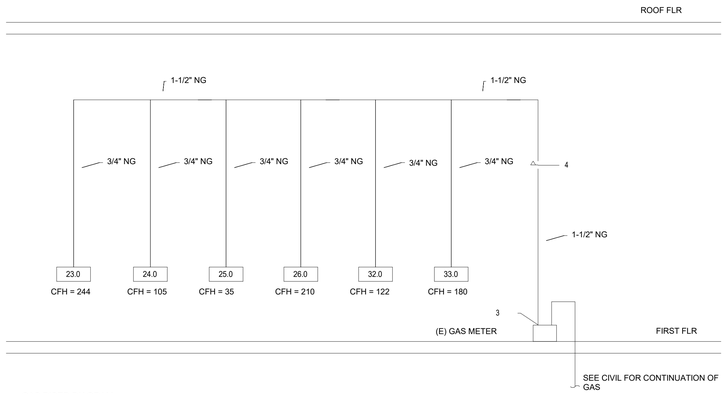
GENERAL NOTES:

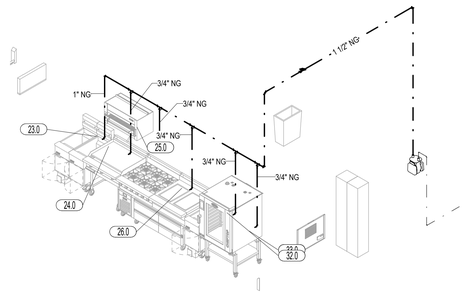
1. REFERENCE PT400 FOR KITCHEN EQUIPMENT SCHEDULE.
2. PROVIDE BACKFLOW PREVENTER, PER 602.3 & 603.2, IN BETWEEN SODA WATER FILTER(37.1), ICE MACHINE WATER FILTER(38.1), COMBI WATER FILTER(33.1), AND COFFEE WATER FILTER(48.2).
3. EXHAUST FAN FOR EMPLOYEE RESTROOMS HAS BEEN DESIGNED IN PHASE 1 TO OPERATE CONTINUOUSLY DURING OCCUPIED HOURS.

KEYNOTES

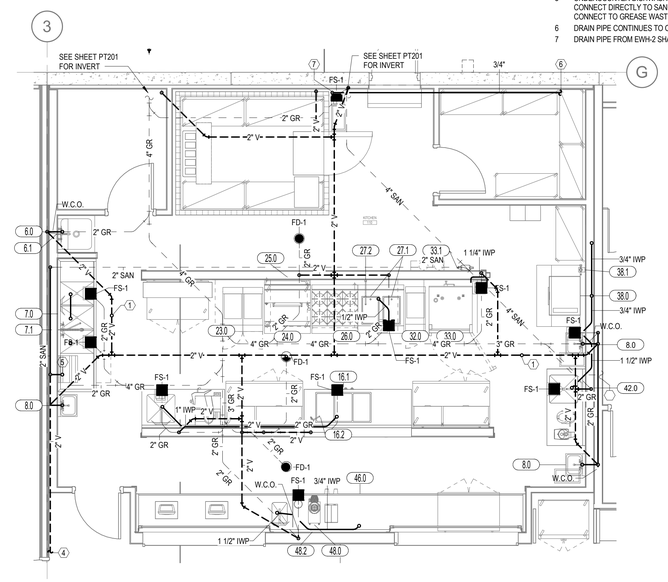
SANITARY CONTINUES TO CONNECT TO CAPPED SANITARY FROM PHASE 1.
1 2" VENT UP TO 3" VENT THRU ROOF.
2 GAS TO CONNECT TO EXISTING GAS METER FROM PHASE 1.
3 GAS PRESSURE REGULATOR SHALL BE PROVIDED. VENT TO OUTSIDE. SET TO 7" W.C.
4 SEE SHEET PT201 FOR CONTINUATION.
5 UNDERCOUNTER DISHWASHER CONNECTION. DISHWASHER WASTE SHALL CONNECT DIRECTLY TO SANITARY. DISHWASHER WASTE SHALL NOT CONNECT TO GREASE WASTE.
6 DRAIN PIPE CONTINUES TO CONNECT TO DRIP PAN OF EWH-2.
7 DRAIN PIPE FROM EWH-2 SHALL INDIRECTLY DRAIN TO FS-1.



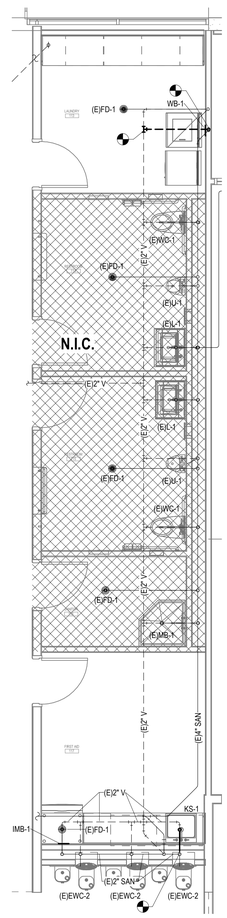
6 GAS RISER DIAGRAM
SCALE: N.T.S.



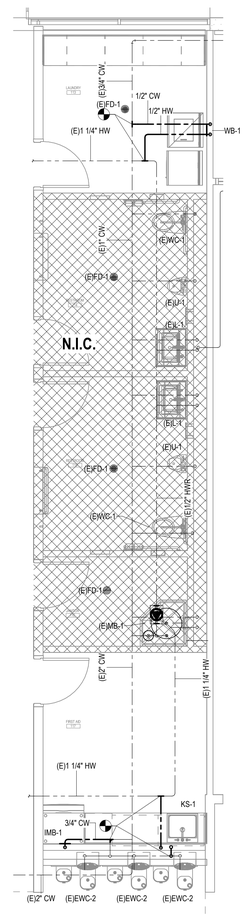
5 GAS RISER - KITCHEN
SCALE: N.T.S.



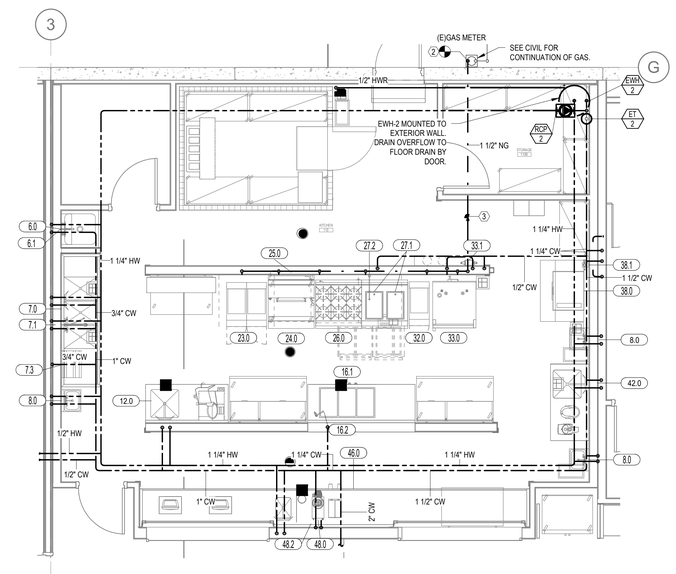
2 KITCHEN SANITARY & VENT PLAN
1/4" = 1'-0"



4 ENLARGED PLUMBING PLAN - SANITARY & VENT
1/4" = 1'-0"



3 ENLARGED PLUMBING PLAN - DOMESTIC WATER
1/4" = 1'-0"



1 KITCHEN DOMESTIC WATER PLAN
1/4" = 1'-0"

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9035 Wadsworth Parkway | Suite 3200 | Westminster, CO 80021
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IRVINE FIELDHOUSE

17300 RED HILL AVE.
IRVINE, CALIFORNIA 92614

ENLARGED PLUMBING PLANS

REMARKS

	DATE	REMARKS
1	09/22/2025	PLAN CHECK CORRECTIONS
2	10/15/2025	PLAN CHECK CORRECTIONS 2
3	02/04/2026	PLAN CHECK CORRECTIONS 3
4	03/06/2026	OC HEALTH DEPT
5	03/06/2026	PLAN CHECK CORRECTIONS 4
6	03/06/2026	OC HEALTH DEPT 2
7	04/30/2026	BID ADDENDUM 2

PA/PM:	BL
DRAWN BY.:	DG
JOB NO.:	LAX21-0174-02

SHEET
PT301

06/06/2025

5/8/2026 10:10:23 AM

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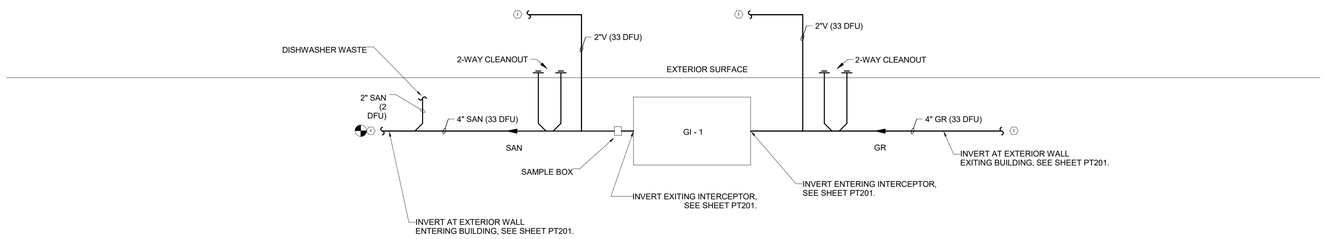
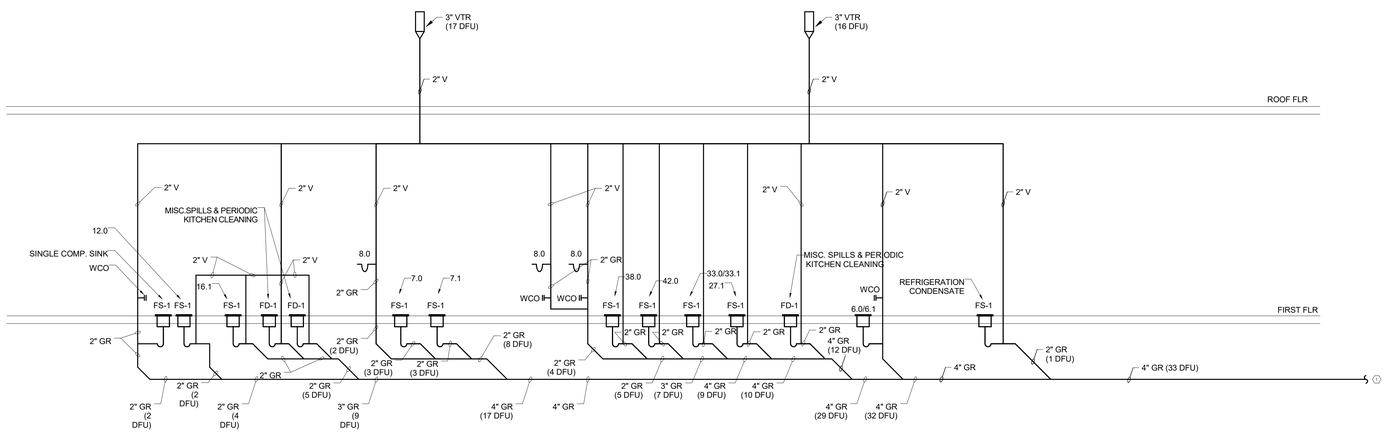
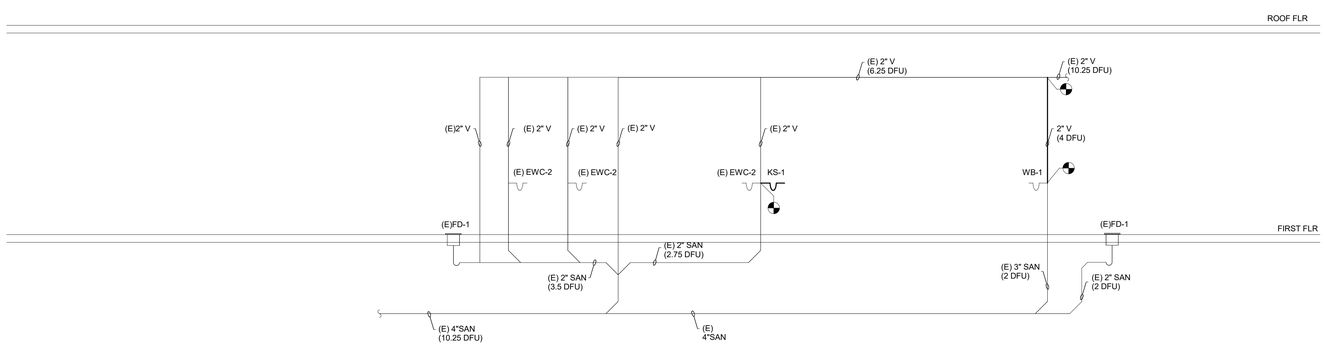
KEYNOTES

1. GREASE WASTE CONTINUES OUTSIDE OF BUILDING. SEE SHEET PT201 FOR CONTINUATION.
2. GREASE WASTE FROM KITCHEN. SEE SHEET PT301 FOR CONTINUATION.
3. VENT LOCATED ON EXTERIOR OF BUILDING FROM GI-1 CONTINUES TO INTERIOR OF BUILDING.
4. SANITARY CONTINUES TO INTERIOR OF BUILDING. SEE SHEET PT301 FOR CONTINUATION.



2 GI SANITARY RISER DIAGRAM
SCALE: N.T.S.





1 SANITARY RISER DIAGRAM
SCALE: N.T.S.

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WARE MALCOMB
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ARCHITECTURE CIVIL ENGINEERING
PLANNING BRANDING
INTERIORS BUILDING MEASUREMENT

LICENSED PROFESSIONAL ENGINEER BENJAMIN LIEBERMAN M 42166 MECHANICAL STATE OF CALIFORNIA
EXPIRES 12-31-26

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IRVINE FIELDHOUSE

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IRVINE, CALIFORNIA 92614

SANITARY RISER DIAGRAM

	DATE	REMARKS
1	09/22/2025	PLAN CHECK CORRECTIONS
2	10/15/2025	PLAN CHECK CORRECTIONS 2
3	02/04/2026	PLAN CHECK CORRECTIONS 3
4	02/05/2026	OCHD SET TO OWNER
5	03/06/2026	PLAN CHECK CORRECTIONS 4
6	03/06/2026	OC HEALTH DEPT 2
7	04/30/2026	ISD ADDENDUM 2

PA/PM:	BL
DRAWN BY.:	DG
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06/06/2025

SHEET
PT302

5/8/2026 10:10:21 AM

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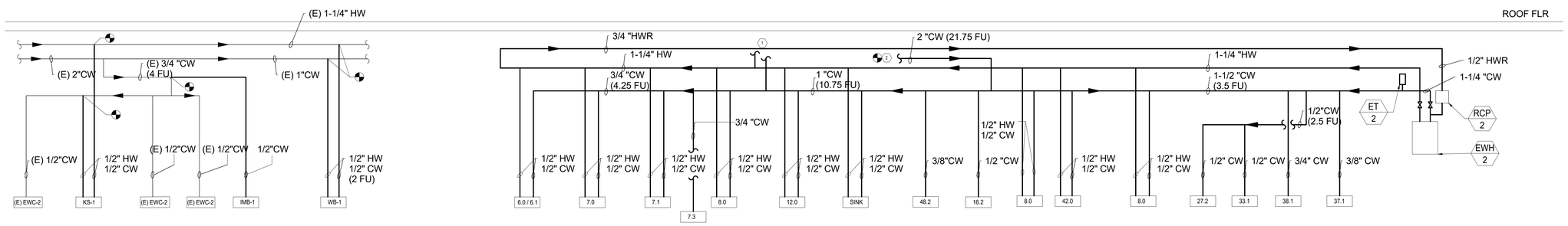
KEYNOTES

1. 1/2" CW & HW CONTINUES TO CONNECT TO KS-1 IN MULTI PURPOSE ROOM.
2. CW CONTINUES TO CONNECT TO EXISTING CW.



1 DOMESTIC WATER RISER
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DOMESTIC WATER SUPPLY RISER DIAGRAM

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1	09/22/2025	PLAN CHECK CORRECTIONS
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3	02/04/2026	PLAN CHECK CORRECTIONS 3
4	01/06/2026	OC HEALTH DEPT
5	03/06/2026	PLAN CHECK CORRECTIONS 4
6	03/06/2026	OC HEALTH DEPT 2
7	04/30/2026	ISD ADDENDUM 2

PA/PM:	BL
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06/06/2025

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PT303

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GREASE INTERCEPTOR CALCULATIONS

Quote: F1E7FA23

Reference No. 75599 — Project Name: Red Hill Rec Center

Step 1: Liquid Holding Capacity to grease interceptor

Fixture DFU to Liquid Holding Capacity per UPC Table 1014.3.6

NAME	TYPE	DIMENSIONS	DFU	QTY	TOTAL DFU
3 Compartment Sink	3 Compartment Sink	21" x 21" x 14" (3)	6	1	6
Floor Drain	Floor Drain	N/A	2	3	6
Floor Sink	Floor Sink	N/A	2	3	6
Hand Sink	Hand Sink	10" x 14" x 5"	2	3	6
Mop Basin	Mop Basin	24" x 24" x 10"	3	1	3
Prep Sink One Bowl	Prep Sink One Bowl	21" x 21" x 14"	2	3	6
Total					33

Liquid Holding Capacity used to size interceptor — **1,000 Gal**

Step 2: Grease Production

Total square feet x 60% = Dining area

Dining area / 14 Sq ft per seat x 4 turns per seat per day x [Grease Production Value] x [Days between pump-out] = Grease output

Amount of square feet in facility: 1296
Grease production value: 0.0455 lbs per serving (Fried Chicken: High / Flatware)
Days between pump-outs: 90 days

(1296 x .6) / 14 x 4 x 0.0455 x 90 = 909.792 lbs of FOG

SCHIER MODEL	
GB-1000	**Description:** GREASE INTERCEPTOR 100 GPM / 200 GPM, 4" PLAIN/FPT CONNECTIONS **Dimensions:** Length: 92", Width: 73.75", Height: 71.25" **Flow Rate/Grease Capacity:** 100 GPM / 5495 lbs **Liquid Capacity:** 1000 gal

Specification Note: This Great Basin model has been sized to the flow rate and grease production requirements of the application and may not be substituted by liquid capacity alone. Any substitution requests must be approved by the specifying engineer and the authority having jurisdiction.

Please contact support@schierproducts.com for technical and procurement support for the specified Great Basin model.

FIXTURE UNIT SCHEDULE

TAG	DESCRIPTION	QTY.	CONNECTION SIZE (IN) WASTE	VENT	CW	HW	DFU FIXTURE	DFU TOTAL	CWFU FIXTURE	HWFU FIXTURE	TOTAL WSFU FIXTURE	TOTAL WSFU TOTAL	MANUFACTURER	MODEL NO.	REMARKS
FD-1	DRAIN	3	2"	2"	0"	0"	2	6	0	0	0	0	MIFAB	F1000-C	CAST IRON BODY WITH DOUBLE DRAINAGE FLANGE AND WEEP HOLES, ROUND HEAVY DUTY SS STRAINER, ASSE 1072 TRAP SEAL
FS-1	FLOOR SINK	10	2"	1 1/2"	0"	0"	1	10	0	0	0	0	MIFAB	FS1720	DEEP CAST IRON FLOOR AREA AND INDIRECT SANITARY WASTE DRAIN COMPLETE WITH WHITE ACID RESISTANT PORCELAIN ENAMEL COATED INTERIOR AND LOOSE SET GRATE, ANTI-SPLASH ALUMINUM DOME STRAINER
HD-1	FLOOR HUB DRAIN	7	3"	2"	0"	0"	6	42	0	0	0	0	MIFAB	F1000-C	CAST IRON BODY WITH DOUBLE DRAINAGE FLANGE AND WEEP HOLES, ROUND HEAVY DUTY SS STRAINER, ASSE 1072 TRAP SEAL
IMB-1	ICE MAKER WALL BOX	1			1/2"	0"	0	0	0.5	0	0	0	OATEY	CENTRO II	POLYSTYRENE HOUSING, HAMMER ARRESTOR, LEAD FREE VALVE.
KS-1	SINK	2	1 1/2"	1 1/2"	1/2"	1/2"	2	4	1.5	1.5	2	4	SLOAN	SEE REMARKS	ADA COMPLIANT UNDERMOUNT LAVATORY; GRID STRAINER, CP BRASS TRAP, ANGLE SUPPLY WITH LOOSE KEY STOPS; WATTS #LFE480 THERMOSTATIC MIXING VALVE; IN-WALL CARRIER; FAUCET: OPTIMA SENSOR FAUCET MODEL #ETF-410-PLG-TEE-SF-0.5GPM-MLM-BAA-FCT, INFRARED SENSOR, HARD-WIRED WITH POWER CONVERTER, 0.5 GPM; SOAP DISPENSER: S LOAN MODEL #ESD-410-SF, INFRARED SENSOR, HARD-WIRED WITH POWER CONVERTER; HAND DRYER: OPTIMA MODEL #EHD-420-SF-HEPA, HARD-WIRED WITH POWER CONVERTER
RH-1	EXTERIOR HOSE BIBB, WITH VACUUM BREAKER, FREEZELESS, ROOF MOUNT	7	0"	0"	3/4"	0"	0	0	4	0	4	28	WOODFORD	SRH-MS	SELF-DRAINING, CAST IRON HYDRANT SUPPORT, BACKFLOW PREVENTER, 3/4" HOSE CONNECTION. NO DRAIN LINE REQUIRED.
WB-1	WASHER WALL BOX	1			1/2"	1/2"	2	2	0.5	0.5	2	2	OATEY	CNTRO II	POLYSTYRENE HOUSING, HAMMER ARRESTOR, LEAD FREE VALVE
		31						64				34			

INTERCEPTOR DFUS SCHEDULE

ITEM #	DESCRIPTION	QTY.	GPM	DFU	DFU TOTAL
FS-1	FLOOR SINK (3-COMP)	2	7.5~15	3	6
FS-1	FLOOR SINK	8	≤7.5	1	12
FD-2	FLOOR DRAIN	3	-	2	6
8.0	HAND SINK	3	-	2	6
6.0 & 6.1	MOP SINK	1	-	3	3
	TOTAL:	17			33
	VOLUME PER CPC 2022 TABLE 1014.3.6 (GALS.):				1000

GAS CONNECTED LOAD TABLE

EQUIPMENT	INPUT (MBH)
FRYER WITH FILTER	244
GRIDDLE	105
SALAMANDER	35
COUNTERTOP OPEN BURNER RANGE	210
FRYER WITH FLITER	122
GAS COMBI OVEN	180

BUILDING TOTAL:
896 MBH AT 2 PSI SERVICE PRESSURE
TOTAL DEVELOPED LENGTH: 30 FT
1 MBH = 1 CFH

ELECTRIC WATER HEATER SCHEDULE

TAG	LOCATION	DESCRIPTION	STORAGE (GAL)	RECOVERY CAP. (100°F RISE)	ELECTRICAL DATA AMPS	KW	V	PH	HZ	TEMP. SET POINT (°F)	WEIGHT (LBS)	MANUFACTURER	MODEL NO.	REMARKS
EWH-2	ABOVE CEILING STORAGE 110 B	ELECTRIC WATER HEATER	50.0	98.0	67	24.0	208	3	60	140	260	A.O. Smith	DRE-52-24	ALL

REMARKS
1. ELECTRICAL CONTRACTOR TO PROVIDE DISCONNECT SWITCH.
2. PROVIDE A CSA CERTIFIED AND ASME TESTED T&P RELIEF VALVE.
3. 197 GPH @ 50°F TEMPERATURE RISE.

KITCHEN EQUIPMENT SCHEDULE

ITEM #	DESCRIPTION	CONECTION SIZE (IN.) WASTE	INDIRECT WASTE	VENT	CW	HW	FILTERED CW	GAS	MBH
6.0 & 6.1	MOP SINK	2"		2"	1/2"	1/2"			
7.0	3-COMPARTMENT SINK		(3)1-1/2"		1/2"	1/2"			
7.1	PRE-RINSE W/FAUCET				1/2"	1/2"			
7.3	UNDERCOUNTER DISHWASHER	5/8"			3/4"				
8.0	HAND SINK	1 1/2"		1 1/2"	1/2"	1/2"			
12.0	WORKTABLE W/SINK		1 1/2"		1/2"	1/2"			
16.1	HOT FOOD WELL UNIT, DROP-IN		1"						
16.2	FILL FAUCET				1/2"				
23.0	FRYER WITH FILTER							1"	244
24.0	GRIDDLE							3/4"	105
25.0	SALAMANDER							3/4"	35
26.0	OPEN RANGE BURNER, COUNTERTOP							3/4"	210
27.1	HOT FOOD WELL		1/2"						
27.2	POT FILLER FAUCET				1/2"				
32.0	FRYER WITH FILTER							3/4"	122
33.0	COMBI-OVEN, GAS		1 1/8"				3/4"	3/4"	180
33.1	WATER FILTER, COMBI-OVEN				1/2"				
37.0	CARBONATOR						1/2"		
37.1	WATER FILTER, SODA				3/8"				
38.0	ICE MACHINE		3/4"				3/8"		
38.1	WATER FILTER, ICE				3/4"				
39.0	ICE BIN		3/4"						
42.0	WORKTABLE W/SINK		1 1/2"		1/2"	1/2"			
46.0	BACK COUNTER W/DUMP SINK		1 1/2"		1/2"	1/2"			
48.0	COFFEE BREWER		3/8"				3/8"		
48.2	WATER FILTER, COFFEE				3/8"				

REMARKS:
1. REFER TO FOOD SERVICE DRAWINS.

EXPANSION TANK SCHEDULE

TAG	LOCATION	PRE-CHARGE PRESSURE (PSI)	FILL PRESSURE (PSI)	OPERATING PRESSURE (PSI)	ACCEPTANCE VOLUME (GAL)	CAPACITY (GAL)	WEIGHT (LBS)	MANUFACTURER	MODEL NO.
ET-2	KITCHEN	45.00	60.00	60.00	0.7	4.4	9	AMTROL	ST-12

PUMP SCHEDULE

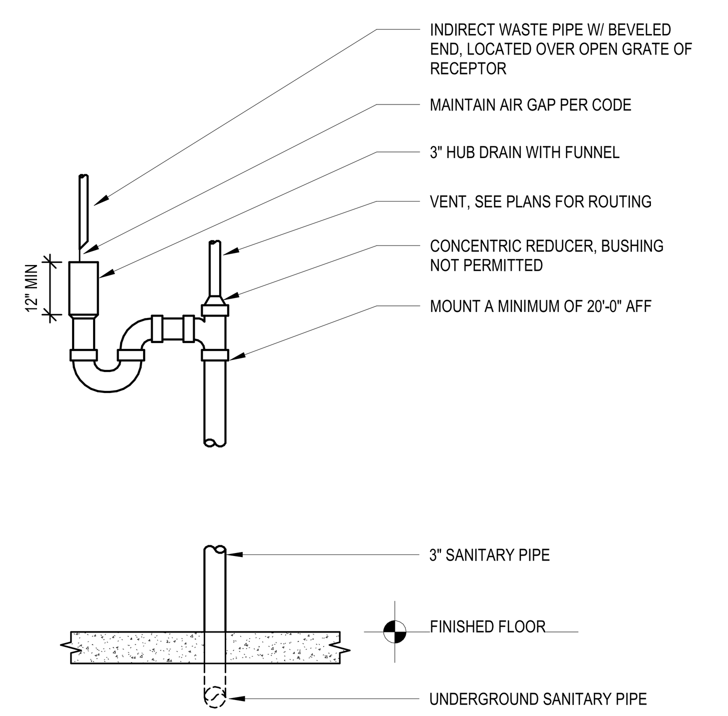
TAG	CAPACITY (GPM)	PUMP HEAD (FT)	ELECTRICAL DATA RPM	HP	V	PH	HZ	WEIGHT (LBS)	MANUFACTURER	MODEL NO.	REMARKS
RCP-2	3	9	3250	0.02	120	1	60	15	TACO	T006	ALL

REMARKS
1. LABEL ALL PUMPS.
2. INLINE PUMPS TO BE SUPPORTED BY PIPING, AND/OR HUNG FROM UNSTRUCT WITH VIBRATION HANGING RODS.
3. CONTRACTOR TO VERIFY FINAL HEAD PRESSURE AND PUMP SELECTION WITH ACTUAL FIELD CONDITIONS.
4. POTABLE WATER RATED, CIRCULATOR PUMP, WITH AQUASTAT & PROGRAMMABLE TIMER.

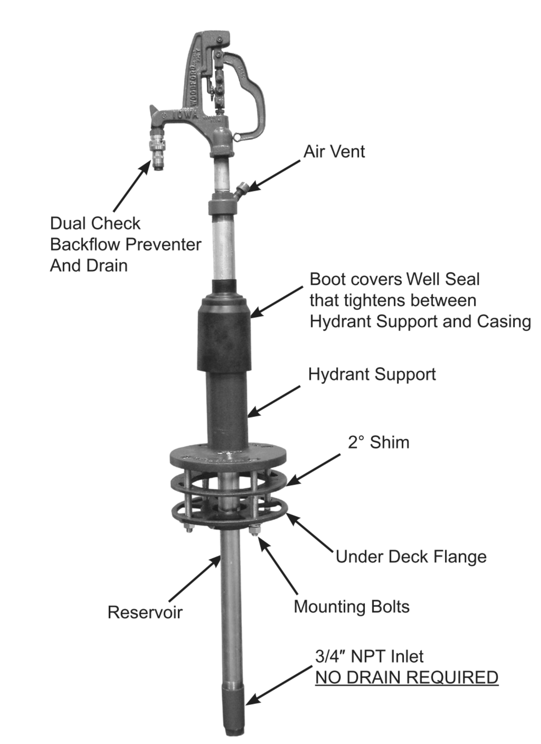
INTERCEPTOR SCHEDULE

TAG	LOCATION	SERVICE	CAPACITY LIQUID (GAL)	WEIGHT (LBS)	MANUFACTURER / MODEL	REMARKS
GI-1	OUTSIDE KITCHEN	GREASE WASTE	1000.0	824	SCHIER / GB-1000	ALL

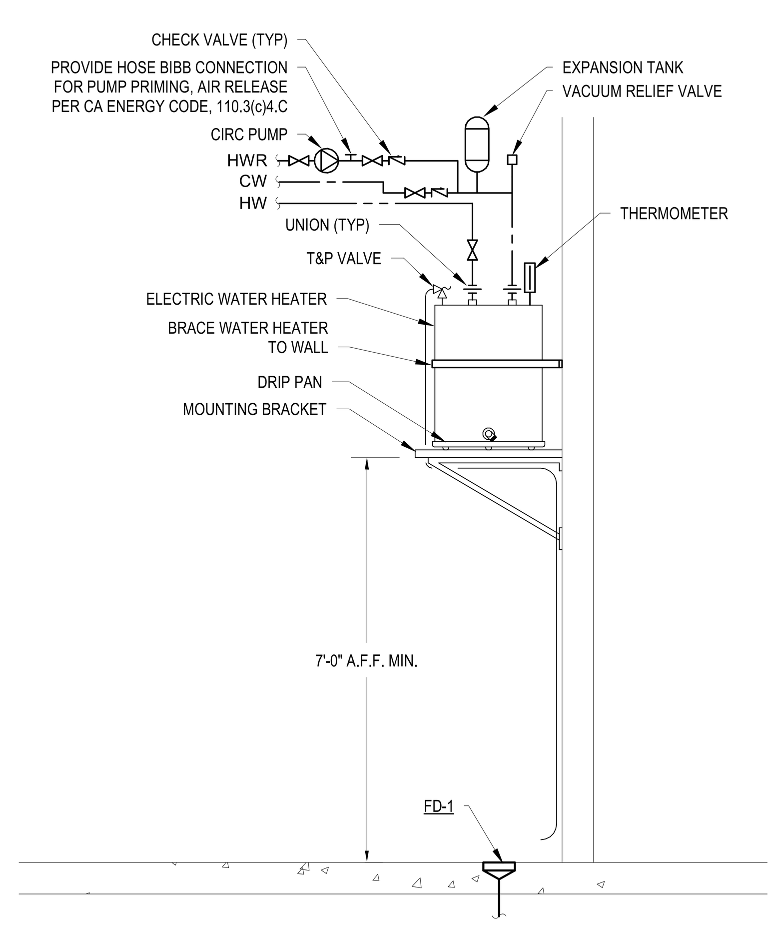
REMARKS
1. COORDINATE WITH CIVIL FOR EXACT LOCATION AND INVERT.
2. PROVIDE WITH SCHIER SV10 VIEWER SAMPLING PORT DOWNSTREAM OF UNIT AS SHOWN ON PLAN.



3 HUB DRAIN - EXPOSED TRAP
SCALE: N.T.S.



2 ROOF HYDRANT DETAIL
SCALE: N.T.S.



1 WATER HEATER HEATER - ELECTRIC - ELEVATED
SCALE: N.T.S.

SPECIFICATIONS

Notes:
1. 6" plain end inlet/outlet
2. Unit weight - w/ cast iron covers: 824 lbs. (for wet weight add 8,413 lbs.)
3. Maximum operating temperature: 150º F continuous
4. Capacities - Liquid: 1,000 gal.; Grease: 5,495 lbs. (753 gal.) @100GPM; Grease: 4,959 lbs (679 gal.) @200GPM; Solids: 211 gal.
5. Satisfies Miami DERM 99% efficiency requirements; retaining the following capacities at 99.0% efficiency: 5,272 lbs. (722 gal.) @100GPM; 3,127 lbs. (428 gal.) @200GPM
6. For gravity drainage applications only.
7. Do not use for pressure applications.
8. Cover placement allows full access to tank for proper maintenance.
9. Vent not required unless per local code.
10. Engineered inlet and outlet diffusers with inspection ports are removable to inspect / clean piping.
11. Integral air relief / Anti-siphon / Sampling access.
12. Adjustable cover adapters provide up to 4" of additional height.
13. Designed for below-grade, above-grade, indoor or outdoor installations.
14. Safety Star®, access restrictor built into each cover adapter, prevents accidental entry to tanks (450 lb rating).

ENGINEER SPECIFICATION GUIDE

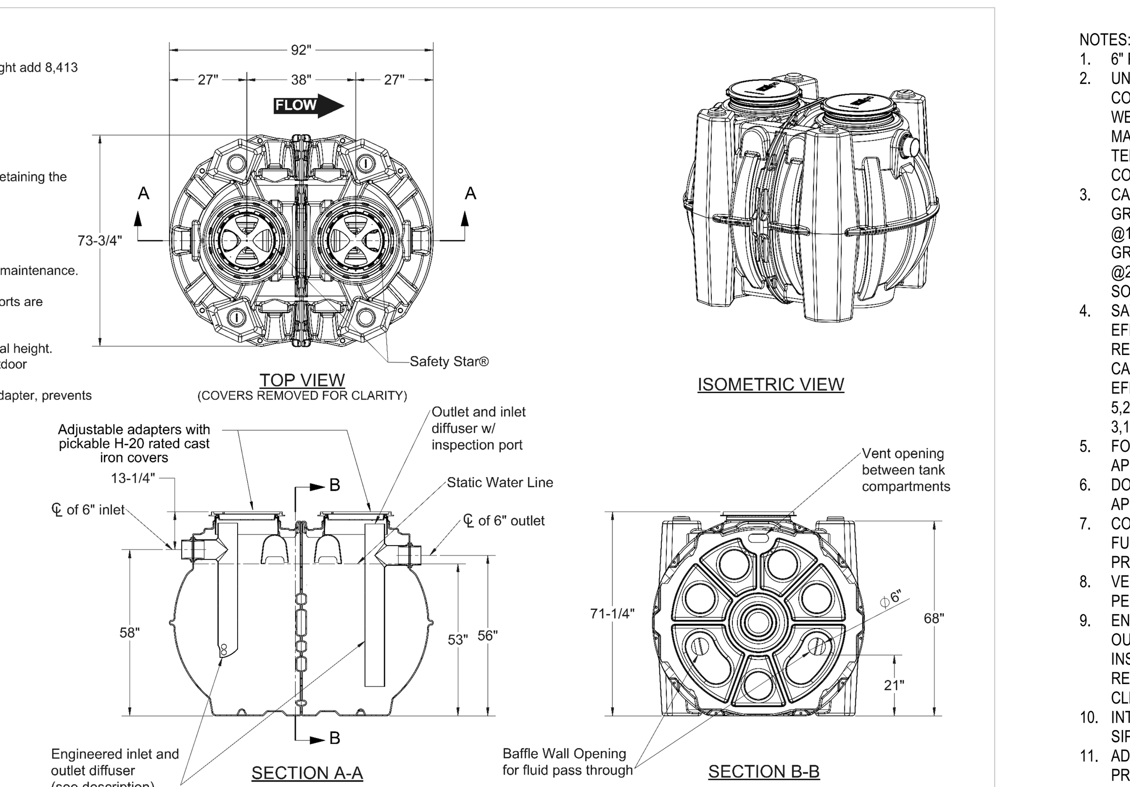
Schier Great Basin™ grease interceptor model # GB-1000 shall be lifetime guaranteed and made in USA of seamless, molded polyethylene with minimum 7/16" uniform wall thickness. Interceptor shall be furnished for above or below-grade installation with adjustable cover adapter and Safety Star® access restrictor built into each cover adapter. Interceptor shall be certified to ASME A112.14.3 (Type D) and CSA B481.1 as well as certified to IAPMO/ANSI Z1001-2021. Interceptor flow rate shall be 100 GPM or 200GPM. Interceptor grease capacity shall be 5,495 lbs. Cover shall provide water/gas-tight seal and have minimum 16,000 lbs. load capacity.

CERTIFIED PERFORMANCE

Great Basin™ hydromechanical grease interceptors are third party performance-tested and listed by IAPMO to ASME #A112.14.3 and CSA B481.1 grease interceptor standards and greatly exceed requirements for grease separation and storage. They are compliant to the Uniform Plumbing Code and the International Plumbing Code.

Type D certification does not require a flow control

MIAMI-DADE COUNTY — Satisfies Miami DERM 99% efficiency requirements. Product labels are permanently attached to inside and outside of unit for easy viewing.



SPECIFICATION SHEET

MODEL NUMBER:	PART NUMBER: 4080-002-01
GB-1000	DESCRIPTION: GB-1000 GREASE INTERCEPTOR 100 GPM/ 200 GPM 6" INLET/OUTLET, H-20 RATED CAST IRON COVER
PROPRIETARY AND CONFIDENTIAL	DWG BY: B.BROWN — DATE: 10/18/2021 — REV: 02 — ECO: 032822TA

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UPC — C UPC

SCHIER
6455 Woodland Dr
Shawnee, KS 66218
Tel: 913-951-3300
Fax: 913-951-3399
schierproducts.com

NOTES:
1. 6" PLAIN END INLET/OUTLET.
2. UNIT WEIGHT - W/ CAST IRON COVERS: 824 LBS. (FOR WET WEIGHT ADD 8,413 LBS.) MAXIMUM OPERATING TEMPERATURE: 150º F CONTINUOUS
3. CAPACITIES - LIQUID: 1,000 GAL. GREASE: 5,495 LBS. (753 GAL.) @100GPM GREASE: 4,959 LBS (679 GAL.) @200GPM SOLIDS: 211 GAL.
4. SATISFIES MIAMI DERM 99% EFFICIENCY REQUIREMENTS; RETAINING THE; FOLLOWING CAPACITIES AT 99.0% EFFICIENCY: 5,272 LBS. (722 GAL.) @100GPM 3,127 LBS. (428 GAL.) @200GPM
5. FOR GRAVITY DRAINAGE APPLICATIONS ONLY.
6. DO NOT USE FOR PRESSURE APPLICATIONS.
7. COVER PLACEMENT ALLOWS FULL ACCESS TO TANK FOR PROPER MAINTENANCE.
8. VENT NOT REQUIRED UNLESS PER LOCAL CODE.
9. ENGINEERED INLET AND OUTLET DIFFUSERS WITH INSPECTION PORTS ARE REMOVABLE TO INSPECT / CLEAN PIPING.
10. INTEGRAL AIR RELIEF / ANTI-SIPHON / SAMPLING ACCESS.
11. ADJUSTABLE COVER ADAPTERS PROVIDE UP TO 4" OF ADDITIONAL HEIGHT.
12. DESIGNED FOR BELOW-GRADE, ABOVE-GRADE, INDOOR OR OUTDOOR INSTALLATIONS.
13. SAFETY STAR®, ACCESS RESTRICTOR BUILT INTO EACH COVER ADAPTER, PREVENTS ACCIDENTAL ENTRY TO TANKS (450 LB RATING).
14. INTERCEPTOR SHALL BE LOCATED OUTSIDE OF BUILDING. SEE SHEET PT201.

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PLUMBING SCHEDULES AND DETAILS

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SHEET
PT400

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STATE OF CALIFORNIA
Domestic Water Heating System
CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE			NRCC-PLB-E
This document is used to demonstrate compliance for nonresidential occupancies with requirements in 110.1, 110.3, 120.3, and 140.5, and with requirements in 141.0 for additions and alterations, for domestic water heating scopes using the prescriptive path. For high-rise residential and hotel/motel occupancies compliance is demonstrated with requirements in 110.1, 110.3, 160.4 and 170.2(d), and with requirements 180.1 for additions and 180.2 for alterations.			
Project Name:	Red Hill Rec Center C&S	**Report Page:**	**(Page 1 of 8)**
Project Address:		**Date Prepared:**	2025-05-12T17:17:58-04:00

A. GENERAL INFORMATION

01	Project Location (city)	Irvine	02	Climate Zone	8
03	Occupancy Types Within Project (select all that apply):				
● Gymnasium					

B. PROJECT SCOPE

This table includes domestic water heating systems that are within the scope of the permit application and are demonstrating compliance using the prescriptive paths outlined in 140.5/ 170.2(d) and 141.0(a)/ 180.1, or 141.0(b)2N / 180.2 for additions or alterations. Solar water heating systems are documented on the NRCC-SAB compliance document. Combined hydronic water heating systems are documented on the NRCC-MCH compliance document.

01	02	03		
My project consists of (check all that apply):	System Type[1,2]	System Components		
☒ New system (DHW system being installed for the first time)	Central System (serving nonresidential spaces)	☒ Equipment	☒ Distribution	☒ Controls
☐ System Alteration (equipment, distribution or controls)		☐ Equipment	☐ Distribution	☐ Controls

[1]FOOTNOTES: Point of use water heaters, or other non-central systems used to serve nonresidential spaces, are considered individual systems.
[2] Dwelling units refers to hotel/motel guest rooms and units in a multifamily residential occupancy.
[3] DHW systems serving 2 or more dwelling units are considered "Central Systems" for multifamily occupancies

C. COMPLIANCE RESULTS

Table C will indicate if the project data input into the compliance document is compliant with water heating requirements. If this table says "DOES NOT COMPLY" or "COMPLIES with Exceptional Conditions" refer to Table D. or the table indicated as not compliant for guidance.

01	02	03	04
Domestic Hot Water Equipment	Distribution Systems	Controls	**Compliance Results**
Table F	Table G	Table H	
Yes	Yes	Yes	COMPLIES

D. EXCEPTIONAL CONDITIONS

This table is auto-filled with uneditable comments because of selections made or data entered in tables throughout the form.

STATE OF CALIFORNIA
Domestic Water Heating System
CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE			NRCC-PLB-E
Project Name:	Red Hill Rec Center C&S	**Report Page:**	**(Page 2 of 8)**
		Date Prepared:	2025-05-12T17:17:58-04:00

E. ADDITIONAL REMARKS

This table includes remarks made by the permit applicant to the Authority Having Jurisdiction.

STATE OF CALIFORNIA
Domestic Water Heating System
CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE			NRCC-PLB-E
Project Name:	Red Hill Rec Center C&S	**Report Page:**	**(Page 3 of 8)**
		Date Prepared:	2025-05-12T17:17:58-04:00

F. DOMESTIC HOT WATER EQUIPMENT

This table is used to demonstrate compliance with mandatory equipment requirements in 110.1 and 110.3. Compliance with prescriptive requirements in 140.5(c) / 170.2(d) must also be demonstrated and with 141.0 / 180.1/ 180.2 for addition and alteration scopes.

Equipment Schedule: Water Heating Efficiency and Standby Loss

03		04		05		06
System Name	EWH-1	Exception to 140.5(c)/ 170.2(d)3	Exceptions Do Not Apply	☐	Gas Service Water Heating System >= 1MMBtu/h[1]	Capacity-weighted Average Efficiency %

07	08	09	10		11	12	13	14	15
Name or Item Tag	Equipment Type	Volume (gal)	Rated Input Capacity (Btu/h)	Max GPM/ First Hour Rating (FHR)	Rated Efficiency	Minimum Efficiency Required	Efficiency Unit	Designed Standby Loss	Maximum Standby Loss
EWH-1	Commercial Electric Storage Water Heater	55						0.79	0.79
EWH-2	Commercial Electric Storage Water Heater	50						0.79	0.84

[1]FOOTNOTE: In systems >= 1MMBtu/h with multiple units, gas water heaters with input capacity > 100,000 Btu/h may meet 90% Et requirements via an input capacity-weighted average.
[2]FOOTNOTE: Compliant equipment may be found in the Modernized Appliance Efficiency Database System (MAEDBS) on the Energy Commission website: https://cacertappliances.energy.ca.gov/Pages/Search/AdvancedSearch.aspx

Water Heating Equipment All Occupancies

	Yes	No	Not Applicable	Requirement
18	☐	☐	☒	Unfired storage tank insulation shall have Internal + External >=R-16 OR External >=R-3.5. Label required per 110.3(c)3
19	☐	☐	☒	New state buildings 60% of energy for service water heating from site solar energy or recovered energy per 110.3(c)5
20	☐	☐	☒	Isolation valves for instantaneous water heater with input rating >6.8 kBTUH or 2 kW has been specified per 110.3(c)6
21	☐	☐	☒	School buildings < 25,000 ft² and < 4 stories must install a heat pump water heating system per 140.5(a)1. Water heating systems serving an individual bathroom space may be an instantaneous electric water heater.

STATE OF CALIFORNIA
Domestic Water Heating System
CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE			NRCC-PLB-E
Project Name:	Red Hill Rec Center C&S	**Report Page:**	**(Page 4 of 8)**
		Date Prepared:	2025-05-12T17:17:58-04:00

G. DOMESTIC HOT WATER DISTRIBUTION SYSTEM

This table is used to demonstrate compliance for nonresidential occupancies with distribution requirements in 120.3 and 140.5. For multifamily and hotel/motel occupancies, compliance is demonstrated with requirements 110.3(c), 160.4, 170.2(d).

Recirculation Loops in Central Systems Serving Dwelling Units or Nonresidential Spaces

	Yes	No	Not Applicable	Requirement
01	●	○	○	Air release valve or vertical pump installation per 110.3(c)4A
02	●	○	○	Check valve or similar located between recirculation pump and water heating equipment to prevent backflow per 110.3(c)4B
03	●	○	○	Hose bibb installed between pump and equipment and isolation valve between hose bibb and equipment per 110.3(c)4C
04	●	○	○	Isolation valves on both sides of the pump per 110.3(c)4D
05	●	○	○	Cold water and recirculation loop piping shall not be connected to the hot water storage tank drain port per 110.3(c)4E
06	●	○	○	Check valve installed on cold water supply between hot water system and next closest tee on cold water supply per 110.3(c)4F
07	○	○	●	DWELLING UNITS ONLY: For central systems serving multiple dwelling units, design includes a recirculation system serving separate dwelling units per 170.2(d) unless building has <=8 dwelling units.
08	○	○	●	DWELLING UNITS ONLY: For heat pump water heating systems, the hot water return from the recirculation loop shall connect to a recirculation loop tank and shall not directly connect to the primary heat pump water heater inlet or the primary thermal storage tanks per 170.2(d)2A.
09	○	○	●	DWELLING UNITS ONLY: For heat pump water heating systems, the fuel source for the recirculation loop tank shall be electricity if auxiliary heating is needed. The recirculation loop heater shall be capable of multi-pass water heating operation per 170.2(d)2B.

STATE OF CALIFORNIA
Domestic Water Heating System
CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE			NRCC-PLB-E
Project Name:	Red Hill Rec Center C&S	**Report Page:**	**(Page 5 of 8)**
		Date Prepared:	2025-05-12T17:17:58-04:00

G. DOMESTIC HOT WATER DISTRIBUTION SYSTEM

Mandatory Pipe Insulation All Occupancies

13	☐	For systems serving dwelling units, pipe insulation must meet the minimum insulation requirements in Table 160.4-A (see blow) except: • Piping that penetrates framing members shall not be required to have pipe insulation for the distance of the framing penetration. Piping that penetrates metal framing shall use grommets, plugs, wrapping or other insulating material to assure that no contact is made with the metal framing. Insulation shall abut securely against all framing members • Piping installed in interior or exterior walls shall not be required to have pipe insulation if all of the requirements are met for compliance with Quality Insulation Installation (QII) as specified in the Reference Residential Appendix RA3.5. • Piping surrounded with a minimum of 1 inch of wall insulation, 2 inches of crawlspace insulation, or 4 inches of attic insulation, shall not be required to have pipe insulation.
14	☐	For systems serving nonresidential spaces, pipe insulation for the following applications is specified to comply with Table 120.3-A (see below) per 120.3: • Recirculating system piping, including supply and return piping of the water heater • The first 8 ft of hot and cold outlet piping, including between storage tank and heat trap, for a nonrecirculating storage system • Pipes that are externally heated
15	☒	Insulation shall be protected from damage, including that due to sunlight, moisture, equipment maintenance, and wind. Insulation exposed to weather shall be installed with a cover suitable for outdoor service per 120.3(b) / 160.4(f). Pipe insulation buried below grade must be installed in a water proof and non-crushable casing or sleeve.

TABLE 120.3-A / 160.4-A PIPE INSULATION THICKNESS

Fluid Temperature Range (°F)	Conductivity Range (Btu-in per hour per ft² per °F)	Insulation Mean Rating Temp (°F)	Nominal Pipe Diameter (in)			
			< 1	1 to < 1.5	1.5 to < 4	1.5 to < 4 Multifamily & Hotel/Motel
			Minimum Insulation Required			
105-140	0.22 - 0.28	100	1.0 in or R-7.7	1.5 in or R-12.5	1.5 in or R-11	2.0 in or R-16

STATE OF CALIFORNIA
Domestic Water Heating System
CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE			NRCC-PLB-E
Project Name:	Red Hill Rec Center C&S	**Report Page:**	**(Page 6 of 8)**
		Date Prepared:	2025-05-12T17:17:58-04:00

H. DOMESTIC HOT WATER CONTROLS

This table is used to demonstrate compliance with control requirements in 110.3 for all occupancies. For multifamily residential and hotel/motel occupancies, compliance is also demonstrated with requirements in 160.4(e) / 170.2(d).

	Yes	No	Not Applicable	Requirement
01	☒	☐	☐	Construction documents require manufacturer certification that service water-heating systems are equipped with automatic temperature controls capable of adjusting temperature settings per 110.3(a).
02	☐	☐	☒	Systems with capacity > 167,000 BTUH equipped with outlet temperature controls per 110.3(c)1 unless covered by California Plumbing Code 613.0.
03	☒	☐	☐	Controls for circulating pumps or electrical heat trace systems are capable of automatically turning off the system per §110.3(c)2 unless systems serves healthcare facility.
04	☐	☐	☒	For recirculation systems serving multiple dwelling units, design includes automatic pump controls per 170.2(d) or 180.1(b)3 for additions.
05	☐	☐	☒	For recirculation systems serving individual dwelling units, design includes manual on/off controls as specified in Reference Appendix RA4.4.9 per 170.2(d).
06	☐	☐	☒	Combustion air positive shut-off shall be provided per 160.4(3).on all newly installed commercial boilers as follows: • Boilers with input capacity >= 2.5 MMBtu/h, in which the boiler is designed to operate with a nonpositive vent static pressure • Boilers where one stack serves two or more boilers with a total combined input capacity per stack of 2.5 MMBtu/h.
07	☐	☐	☒	Boiler combustion air fans with motor >= 10 hp shall meet one of the following • The fan motor shall be driven by a variable speed drive OR • The fan motor shall include controls that limit the fan motor demand to <=30% of the total design wattage at 50% of the design air volume.
08	☐	☐	☒	Newly installed boilers with an input capacity {d:gte/] 5MMBtu/h and a steady state full-load combustion efficiency < 90% shall maintain excess (stack-gas) oxygen concentrations <= 5% by volume on a dry basis over firing rates of 20-100%. Combustion air volume shall be controlled with respect to firing rate or flue gas oxygen concentration. Use of a common gas and combustion air control linkage or jack shaft is prohibited.

STATE OF CALIFORNIA
Domestic Water Heating System
CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE			NRCC-PLB-E
Project Name:	Red Hill Rec Center C&S	**Report Page:**	**(Page 7 of 8)**
		Date Prepared:	2025-05-12T17:17:58-04:00

I. 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

Form/Title
NRCI-PLB-E - Must be submitted for all buildings

J. DECLARATION OF REQUIRED CERTIFICATES OF ACCEPTANCE

There are no forms required for this project.

K. DECLARATION OF REQUIRED CERTIFICATES OF VERIFICATION

There are no forms required for this project.

STATE OF CALIFORNIA
Domestic Water Heating System
CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE			NRCC-PLB-E
Project Name:	Red Hill Rec Center C&S	**Report Page:**	**(Page 8 of 8)**
Project Address:		**Date Prepared:**	2025-05-12T17:17:58-04:00

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT

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

Documentation Author Name: Ben Lieberman	Documentation Author Signature:
Company: RTM Engineering Consulting	Signature Date: 5-19-25
Address: 9035 Wadsworth Pkwy	CEA/ HERS Certification Identification (if applicable): N/A
City/State/Zip: Westminster, CO 80021	Phone: 720-588-1514

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 documentatic [illegible] s to the building owner at occupancy.

Responsible Designer Name: Ben Lieberman	Responsible Designer Signature:
Company: RTM Engineering Consultants	Date Signed: 5-19-25
Address: 9035 Wadsworth Pkwy	License: PE M42166
City/State/Zip: Westminster, CO 80021	Phone: 720-588-1514

Service Water Heating Mandatory Measures:

110.3(a) CERTIFICATION BY MANUFACTURERS
ANY SERVICE WATER HEATING SYSTEM OR EQUIPMENT MAY BE INSTALLED ONLY IF CERTIFIED TO THE ENERGY COMMISSION TO MEET ALL APPLICABLE 110.3 REQUIREMENTS

110.3(a)1 TEMPERATURE CONTROLS
SERVICE WATER HEATING SYSTEMS SHALL BE EQUIPPED WITH AUTOMATIC TEMPERATURE CONTROLS CAPABLE OF BEING ADJUSTED FROM LOWEST TO HIGHEST ACCEPTABLE TEMPERATURES FOR THE INTENDED USE AS LISTED IN TABLE 3, CHAPTER 50 OF THE ASHRAE HANDBOOK, HVAC APPLICATIONS VOLUME, OR TABLE 613.1 OF THE CALIFORNIA PLUMBING CODE FOR HEALTHCARE FACILITIES. RESIDENTIAL OCCUPANCIES ARE EXEMPT FROM TEMPERATURE CONTROL REQUIREMENTS

110.3(b) EFFICIENCY
EQUIPMENT SHALL MEET THE APPLICABLE REQUIREMENTS OF THE APPLIANCE EFFICIENCY REGULATIONS AS REQUIRED BY 110.1.

110.3(c)2 CONTROLS FOR HOT WATER DISTRIBUTION SYSTEMS
SERVICE HOT WATER SYSTEMS WITH CIRCULATING PUMPS OR WITH ELECTRICAL HEAT TRACE SYSTEMS SHALL BE CAPABLE OF AUTOMATICALLY TURNING OFF THE SYSTEM.

110.3(c)4 WATER HEATER RECIRCULATION LOOPS
WATER HEATING RECIRCULATION LOOPS SERVING MULTIPLE DWELLING UNITS, HIGH-RISE RESIDENTIAL, HOTEL/MOTEL AND NONRESIDENTIAL OCCUPANCIES SHALL HAVE:

A. AIR RELEASE VALVE OR VERTICAL PUMP INSTALLATION
B. RECIRCULATION LOOP BACKFLOW PREVENTION
C. EQUIPMENT FOR PUMP PRIMING
D. PUMP ISOLATION VALVES
E. COLD WATER SUPPLY AND RECIRCULATION LOOP CONNECTION TO HOT WATER STORAGE TANK
F. COLD WATER SUPPLY BACKFLOW PREVENTION

110.8(a) INSULATION CERTIFICATION
INSTALLED INSULATION SHALL BE CERTIFIED BY THE DEPARTMENT OF CONSUMER AFFAIRS PER TITLE 24, PART 12, CHAPTERS 12-13, ARTICLE 3 "STANDARDS FOR INSULATING MATERIAL."

110.8(b) UREA FORMALDEHYDE INSULATION
UREA FORMALDEHYDE INSULATION SHALL NOT BE INSTALLED UNLESS IN EXTERIOR SIDE WALLS WITH A FOUR-MIL-THICK PLASTIC POLYETHYLENE VAPOR RETARDER OR EQUIVALENT PLASTIC SHEATHING VAPOR RETARDER IS INSTALLED BETWEEN THE UREA FORMALDEHYDE FOAM INSULATION AND THE INTERIOR SPACE.

110.8(c) INSULATING MATERIAL
ALL INSULATING MATERIALS SHALL BE INSTALLED IN COMPLIANCE WITH THE FLAME SPREAD RATING AND SMOKE DENSITY REQUIREMENTS OF THE CALIFORNIA BUILDING CODE.

THESE DRAWINGS AND SPECIFICATIONS ARE THE PROPERTY AND COPYRIGHT OF WARE MALCOMB AND SHALL NOT BE USED ON ANY OTHER WORK EXCEPT BY AGREEMENT WITH WARE MALCOMB. WRITTEN DIMENSIONS SHALL TAKE PRECEDENCE OVER SCALED DIMENSIONS AND SHALL BE VERIFIED ON THE JOB SITE. ANY DISCREPANCY SHALL BE BROUGHT TO THE NOTICE OF WARE MALCOMB PRIOR TO THE COMMENCEMENT OF ANY WORK

WARE MALCOMB
ARCHITECTURE PLANNING INTERIORS
CIVIL ENGINEERING BRANDING BUILDING MEASUREMENT
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EXPIRES 12-31-26

rtm engineering consultants
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IRVINE FIELDHOUSE
17300 RED HILL AVE.
IRVINE, CALIFORNIA 92614

T24 COMPLIANCE DOCS

	DATE	REMARKS
1	09/22/2025	PLAN CHECK CORRECTIONS
2	10/15/2025	PLAN CHECK CORRECTIONS 2
3	02/04/2026	PLAN CHECK CORRECTIONS 3
4	01/26/2026	OC HEALTH DEPT
5	03/06/2026	PLAN CHECK CORRECTIONS 4
6	03/06/2026	OC HEALTH DEPT 2
7	04/30/2026	BID ADDENDUM 2

PA/PM:	BL
DRAWN BY.:	DG
JOB NO.:	LAX21-0174-02

06/06/2025

SHEET
PT500

5/6/2026 10:10:55 AM

Autodesk Docs://LAX21-0174-02_17300 Red Hill - Rec Center/RTM-MEP-Red Hill Rec Center_R22.rvt

CAUTION: IF THIS SHEET IS NOT 30"x42" IT IS A REDUCED PRINT

SYMBOL LIST NOTE:

MOUNTING HEIGHTS FOR DEVICES AND EQUIPMENT TO BE MEASURED FROM FLOOR TO CENTERLINE OF DEVICE. DEVICES EXTENDING GREATER THAN 4" FROM THE WALL SHALL HAVE A MINIMUM MOUNTING HEIGHT OF 80" AFF TO BOTTOM OF DEVICE.

PANELS:

'XXX' 'XXX' — ELECTRICAL PANEL - SURFACE / RECESSED

EQUIPMENT CABINETS:

WITHOUT DOOR - SURFACE / RECESSED
WITH DOOR - SURFACE / RECESSED
'XXX' 'XXX'

DENOTES THE FOLLOWING
(FAAP) FIRE ALARM ANNUNCIATOR PANEL
(FACP) FIRE ALARM CONTROL PANEL
(LCP) LIGHTING CONTROL PANEL
(SACP) SECURITY ACCESS CONTROL PANEL

POWER:

SIMPLEX RECEPTACLE - MOUNTED 18" AFF UNLESS NOTED OTHERWISE
X XXX — DUPLEX RECEPTACLE - MOUNTED 18" AFF UNLESS NOTED OTHERWISE
XXX DENOTES THE RECEPTACLE TYPE OR EQUIPMENT SERVED
(WP) WEATHERPROOF WITH GFI RECEPTACLE
X DENOTES CIRCUIT NUMBER
DUPLEX RECEPTACLE - ISOLATED GROUND - MOUNTED AT 18" AFF UNLESS NOTED OTHERWISE
DUPLEX RECEPTACLE - GFCI (INDICATED BY CENTER HATCH) - MOUNTED 18" AFF UNLESS NOTED OTHERWISE
DUPLEX RECEPTACLE - GFCI - MOUNTED 4" ABOVE COUNTERTOP OR COUNTER BACKSPLASH WHERE PRESENT
DUPLEX RECEPTACLE - SWITCHED TOP HALF - MOUNTED 18" AFF UNLESS NOTED OTHERWISE
DUPLEX RECEPTACLE - MOUNTED 4" ABOVE COUNTERTOP OR COUNTER BACKSPLASH WHERE PRESENT
DUPLEX RECEPTACLE - CEILING MOUNTED
DUPLEX RECEPTACLE - FURNITURE MOUNT
NON NEMA 5-20R RECEPTACLE
QUADRUPLEX RECEPTACLE - MOUNTED 18" AFF UNLESS NOTED OTHERWISE
QUADRUPLEX RECEPTACLE - GFCI (INDICATED BY CENTER HATCH) - MOUNTED 18" AFF UNLESS NOTED OTHERWISE
QUADRUPLEX RECEPTACLE - SWITCHED TOP HALF - MOUNTED 18" AFF UNLESS NOTED OTHERWISE
QUADRUPLEX RECEPTACLE - MOUNTED 4" ABOVE COUNTERTOP OR COUNTER BACKSPLASH WHERE PRESENT
QUADRUPLEX RECEPTACLE - CEILING MOUNTED
QUADRUPLEX RECEPTACLE - FURNITURE MOUNT
QUADRUPLEX RECEPTACLE - ISOLATED GROUND
FLOOR MOUNTED ELECTRICAL BOX
X PP — POWER POLE. X DENOTES DEVICE TYPE AND INCLUDED RECEPTACLES.
DISCONNECT SWITCH
FUSED DISCONNECT SWITCH
MOTOR STARTER
METER SOCKET
T-XX T-XX — TRANSFORMER. WALL / FLOOR MOUNTED
INDICATES TRANSFORMER MOUNTED ON EQUIPMENT PAD
J — JUNCTION BOX WITH WHIP FOR FURNITURE FEED
J — JUNCTION BOX
PULL BOX
XXX — PUSHBUTTON SWITCH - MOUNT AT 44" AFF UNLESS NOTED OTHERWISE
XXX DENOTES THE FOLLOWING
(CD) COMPUTER DROP OUT
(D) DOOR BELL STATION
(EPO) EMERGENCY - POWER OFF STATION
(ES) EQUIPMENT SHUTDOWN
(F) FAN SHUTDOWN
AD — AUTOMATIC DOOR OPERATOR (SEE ARCHITECTURAL ELEVATIONS FOR MOUNTING HEIGHT)
GM — GROUND MODULE
GROUND ROD
MARK / NUMBER — EQUIPMENT TAG
— MOTOR CONNECTION
CONDUCTOR QUANTITY IN RACEWAY. NUMBERS INDICATE WIRE SIZES (AWG).
INDICATES PHASE CONDUCTOR
INDICATES NEUTRAL CONDUCTOR
INDICATES GREEN GROUND CONDUCTOR

TECHNOLOGY:

#X — # DENOTES QUANTITY
X DENOTES DEVICE TYPE
TECHNOLOGY OUTLET WITH BACKBOX, CONDUIT, AND INDICATED DEVICES AND CABLES. 4" ABOVE COUNTER/COUNTER BACKSPLASH WHERE PRESENT.
TECHNOLOGY OUTLET WITH BACKBOX, CONDUIT, AND INDICATED DEVICES AND CABLES. 18" AFF UNLESS NOTED OTHERWISE.
TECHNOLOGY OUTLET WITH BACKBOX, CONDUIT, AND INDICATED DEVICES AND CABLES. FURNITURE MOUNTED.
FLOOR MOUNTED DATA BOX
CEILING MOUNTED DATA BOX
WAP WAP — WIRELESS ACCESS POINT
SLEEVE THROUGH WALL
FIRE RATED SLEEVE THROUGH FLOOR
CONDUIT SLEEVE THROUGH FLOOR
FREE STANDING OPEN FRAME DATA CABINET. (HEAVY LINE INDICATES FRONT OF CABINET)
FREE STANDING ENCLOSED FRAME DATA CABINET. FLOOR MOUNTED / WALL MOUNTED. (HEAVY LINE INDICATES FRONT OF CABINET)
GROUND BUS BAR

LIGHTING:

NOTE: SHADING ANY OF THE LIGHTING FIXTURE INDICATES UNIT IS WIRED TO AN EMERGENCY OR NIGHT LIGHTING CIRCUIT.

CEILING MOUNTED FIXTURE - SURFACE / RECESSED
1a A
FIXTURE DESIGNATION (SEE SCHEDULE)
SWITCH LEG. NO DESIGNATION INDICATES PORTION OF CIRCUIT SWITCHED FROM LOCAL SWITCH AND/OR OCCUPANCY SENSOR
CIRCUIT NUMBER (SEE PANEL BOUNDARIES)
ILLUMINATED DOME FIXTURE - RECESSED
STRIP LIGHT FIXTURE
LINEAR WALL MOUNTED FIXTURE
TRACK LIGHT FIXTURE - SPOT LIGHT / PENDANT
CEILING MOUNTED DOWNLIGHT FIXTURE - SURFACE / RECESSED
CEILING MOUNTED DOWNLIGHT FIXTURE - WALL WASH - SURFACE / RECESSED
POLE MOUNTED FIXTURE
WALL MOUNTED FIXTURE - SURFACE / RECESSED
GROUND MOUNTED FIXTURE - BOLLARD / FLOOD OR ACCENT
EXIT LIGHT - WALL MOUNTED / CEILING MOUNTED
PROVIDE DIRECTIONAL ARROWS AS INDICATED ON PLAN
EMERGENCY BATTERY POWER SPOT ILLUMINATION UNIT - DUAL HEAD LIGHT - WALL MOUNT 12" BELOW CEILING UNLESS NOTED OTHERWISE.
BATTERY PACK REMOTE HEAD SPOT ILLUMINATION UNIT

SWITCHING DEVICES:

NOTE: ALL SWITCHING DEVICES SHALL BE MOUNTED AT 44" AFF, UNLESS OTHERWISE NOTED.

X XX — SINGLE POLE TOGGLE SWITCH
XX DENOTES THE FOLLOWING
(2) DOUBLE POLE
(3W) 3 WAY
(4W) 4 WAY
(DLS) DUAL LEVEL SWITCHING
(K) KEY OPERATED
(P) WITH PILOT LIGHT INDICATION
(T) TIMER SWITCH
X DENOTES SWITCH DESIGNATION (LOWER CASE)
DIMMER SWITCH
DS — DAYLIGHT SENSOR.
MD — MOTION DETECTOR.
OS — OCCUPANCY SENSOR.
VS — VACANCY SENSOR.
C — CONTACTOR.
D — DIMMING SYSTEM CONTROL STATION.
L — LOW VOLTAGE SWITCH STATION.
PC — PHOTO-CONTROL.
T — TIME CLOCK.
PW — POWER PACK

SYSTEMS:

P P XX/XX XX/XX — PAGING AND SOUND SYSTEM - CEILING / WALL

XX DENOTES THE FOLLOWING
(DP) COMBINATION HOUSE PAGING & WIRED RADIO
(DP) DEPARTMENTAL PAGING
(HP) HOUSE PAGING
(LM) LOCAL MUSIC
(TS) TELEVISION SOUND REINFORCEMENT SYSTEM WIRED
(WR) RADIO

XX DENOTES THE FOLLOWING
(CR) CEILING MOUNTED RECESSED SPEAKER
(CS) CEILING MOUNTED SURFACE SPEAKER
(FS) FOOT SWITCH
(MC) MICROPHONE JACK - CEILING MOUNTED
(MD) MICROPHONE JACK - DESK MOUNTED
(MF) MICROPHONE JACK - FLOOR MOUNTED
(MW) MICROPHONE JACK - WALL MOUNTED
(RE) RE - ENTRANT TYPE HORN
(VC) VOLUME CONTROL
(VS) VOLUME CONTROL WITH 6 POSITION STATION SELECTOR
(WR) WALL MOUNTED RECESSED SPEAKER
(WS) WALL MOUNTED SURFACE SPEAKER

SECURITY:

D D XX XX — DOOR HARDWARE INSTALLATION - CEILING / WALL (SEE DETAILS, ARCHITECTURAL PLANS AND SPECIFICATIONS)

XX DENOTES THE FOLLOWING
(AA) AUTODOOR ACTUATOR (PUSH PLATE)
(AM) AUTODOOR ACTUATOR (MOTION SENSOR)
(AO) AUTODOOR OPERATOR
(ED) ELECTRICAL EXITING DEVICE
(DE) DELAYED EGRESS MODULE
(EL) ELECTROMAGNETIC LOCK
(ES) ELECTRICAL STRIKE
(KS) KEY SWITCH
(PS) POWER SUPPLY
(PT) POWER TRANSFER HINGE
(RL) RELAY MODULE
(RM) SEPARATELY MOUNTED REQUEST TO EXIT MOTION SENSOR NOT ASSOCIATED WITH SECURITY SYSTEM

S S XX XX — SECURITY, ACCESS CONTROL AND DOOR MOUNTING - CEILING / WALL

XX DENOTES THE FOLLOWING
(BIO) BIOMETRIC READER
(CR) CARD READER
(DB) DURESS - PUSHBUTTON
(DC) DOOR CONTACT
(DP) DOOR POSITION INDICATOR SWITCH
(DR) DOOR RELEASE - PUSHBUTTON
(EL) ELECTROMAGNETIC LOCK
(ES) ELECTRIC STRIKE
(GB) GLASS BREAK DETECTOR
(KE) KEYLESS ENTRY
(KP) KEYPAD - SECURITY SYSTEM
(KS) KEEPER SWITCH
(MD) MOTION SENSOR - DUAL TECHNOLOGY
(MI) MOTION SENSOR - INFRARED
(MU) MOTION SENSOR - ULTRASONIC
(PB) PANIC BUTTON
(RM) REQUEST FOR EXIT - MOTION
(RP) REQUEST FOR EXIT - PUSH BUTTON

GENERAL:

— DRAWING KEYNOTE SYMBOL
DETAIL NUMBER / SHEET NUMBER — BUILDING SECTION
DETAIL NUMBER / SHEET NUMBER — BUILDING ELEVATION
DETAIL NUMBER / SHEET NUMBER — CALLOUT BOUNDARY
DETAIL NUMBER / SHEET NUMBER — VIEW REFERENCE CALLOUT
+X' - X" — MOUNTING HEIGHT DESIGNATION

RENOVATION LEGEND:

(E)	EXISTING TO REMAIN
(ED)	EXISTING LOCATION, NEW DEVICE OR EQUIPMENT TO BE INSTALLED IN PLACE
(ER)	EXISTING TO BE RELOCATED
(EO)	EXISTING TO BE REMOVED
(EN)	EXISTING IN NEW LOCATION
(RAI)	REMAIN AS IS

ELECTRICAL SHEET INDEX

SHEET NO.	SHEET NAME
ET000	ELECTRICAL LEGEND AND GENERAL NOTES
ET001	ELECTRICAL SPECIFICATIONS
ET100	OVERALL ELECTRICAL POWER PLAN
ET101	ELECTRICAL ENLARGED POWER PLAN
ET102	ELECTRICAL ROOF PLAN
ET200	OVERALL ELECTRICAL LIGHTING PLAN
ET201	ELECTRICAL ENLARGED LIGHTING PLAN
ET201P	ELECTRICAL ENLARGED LIGHTING PLAN - EGRESS PHOTOMETRIC
ET300	ELECTRICAL ONE LINE DIAGRAM
ET301	ELECTRICAL SCHEDULES
ET302	ELECTRICAL PANEL SCHEDULES
ET400	ELECTRICAL T24 COMPLIANCE DOCS
ET401	ELECTRICAL T24 COMPLIANCE DOCS
ET402	ELECTRICAL T24 COMPLIANCE DOCS
ET500	HOLOPHANE LIGHTING BADMINTON COURTS PLAN
ET501	HOLOPHANE LIGHTING BASKETBALL COURTS PLAN
ETF10	OVERALL ELECTRICAL FIRE ALARM PLAN
ETF11	ELECTRICAL ENLARGED FIRE ALARM PLAN
ETF12	ELECTRICAL ROOF FIRE ALARM PLAN

ELECTRICAL ABBREVIATIONS:

A/E	ARCHITECT/ENGINEER
ABV	ABOVE
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
AIC	AVAILABLE INTERRUPTING CURRENT
ALT	ALTERNATE
ALT SW	ALTERNATOR SWITCH
ARCH	ARCHITECT
ATS	AUTOMATIC TRANSFER SWITCH
BFG	BELOW FINAL GRADE
BKR	BREAKER
BLDG	BUILDING
BOL	BUILT IN OVERLOAD
BPC	BOLTED PRESSURE CONTACT SWITCH
CATV	CABLE TELEVISION
CB	CIRCUIT BREAKER
CCTV	CLOSED CIRCUIT TELEVISION
CKT	CIRCUIT
CLG	CEILING
CP	CONTROL PANEL
CS	COMBINATION STARTER
CT	CURRENT TRANSFORMER
DE	DUAL ELEMENT FUSES
DIR	DIRECT
DISC	DISCONNECT
DN	DOWN
EC	ELECTRICAL CONTRACTOR
ELEV	ELEVATION REFERENCE
EM	EMERGENCY
EMT	ELECTRIC METALLIC TUBING
ENT	ELECTRICAL NON-METALLIC TUBING
EOL	END OF LINE RESISTOR
EP	EXPLOSION PROOF
EWC	ELECTRIC WATER COOLER
F	FLUSH
FAAP	FIRE ALARM ANNUNCIATOR PANEL
FACP	FIRE ALARM CONTROL PANEL
FBO	FURNISHED BY OTHERS
FDR	FEEDER
FIXT	FIXTURE
FLA	FULL LOAD AMPS
FLR	FLOOR
FLUOR	FLUORESCENT
FS	FLOW SWITCH
FVNR	FULL VOLTAGE NON-REVERSING
GC	GENERAL CONTRACTOR
GFI	GROUND FAULT INTERRUPTER
GRC	GALVANIZED RIGID CONDUIT
GRD	GROUND
GYP	GYPSUM BOARD
HID	HIGH INTENSITY DISCHARGE
HOA	HAND-OFF-AUTO SWITCH
HP	HORSEPOWER
HPS	HIGH PRESSURE SODIUM
HV	HIGH VOLTAGE
HVAC	HEATING & VENTILATING - AIR CONDITIONING
HVC	HEATING VENTILATING CONTRACTOR
HW	HEAVYWALL
ID	INDIRECT
IL	INTERLOCK
IMC	INTERMEDIATE METAL CONDUIT
INC	INCANDESCENT
IU	IN UNIT
J-BOX	JUNCTION BOX
LG	LAY-IN GRID
LTG	LIGHTING
LV	LOW VOLTAGE
LVT	LINE VOLTAGE THERMOSTAT
MAG	MAGNETIC STARTER
MAN	MANUAL STARTER
MCC	MOTOR CONTROL CENTER
MDP	MAIN DISTRIBUTION PANEL
MLO	MAIN LUGS ONLY
MSB	MAIN SWITCHBOARD
MTD	MOUNTED
NIC	NOT IN CONTRACT
NU	NEAR UNIT
OU	ON UNIT
P	POLE
PB	PUSH BUTTON
PC	PHOTO CONTROL
PE SW	PNEUMATIC SWITCH
PEND	PENDANT
PLBG	PLUMBING CONTRACTOR
PNL	PANEL
R	RELAY
REC	RECESS
RECEPT	RECEPTACLE
RM	ROOM
RVS	REDUCED VOLTAGE STARTING
S	SPLINE
SEL SW	SELECTOR SWITCH
SP SW	SPEED SWITCH
SURF	SURFACE
SW	SWITCH
TC	TIME CLOCK
TCC	TEMPERATURE CONTROL CONTRACTOR
TCP	TEMPERATURE CONTROL PANEL
TS	TAMPER SWITCH
TYP	TYPICAL
UG	UNDERGROUND
UNIV	UNIVERSAL
USS	UNIT SUBSTATION
WP	WEATHERPROOF
XFMR	TRANSFORMER

DETECTORS:

SS — COMBINED SMOKE-GAS DETECTOR - CEILING MOUNTED
COMBINED SMOKE-HEAT DETECTOR - CEILING MOUNTED
R/S — DUCT SMOKE DETECTOR - RECTANGULAR/SQUARE
XX — GAS DETECTOR
XX DENOTES THE FOLLOWING
(CO) CARBON MONOXIDE
X XX — HEAT DETECTOR - CEILING MOUNTED
XX DENOTES THE FOLLOWING
(F) FIXED TEMPERATURE
(R) RATE OF RISE
(R/C) RATE COMPENSATION
(R/F) COMBINED RISE AND FIXED TEMPERATURE
X DENOTES THE FOLLOWING
(W) WALL MOUNTED
X — SMOKE DETECTOR
X DENOTES THE FOLLOWING:
(W) WALL MOUNTED
WF — FLOW SWITCH
VS — TAMPER SWITCH
P — MANUAL PULL STATION
PS — WATER PRESSURE SWITCH

NOTIFICATION DEVICES:

W — COMBINATION HORN-STROBE - CEILING / WALL MOUNTED
RTS — REMOTE ALARM INDICATING AND TEST SWITCH
W — STROBE - CEILING / WALL MOUNTED
W — COMBINATION SPEAKER-STROBE - CEILING / WALL MOUNTED

GENERAL NOTES

1. THE CONTRACTOR PROPOSING TO PERFORM THE ELECTRICAL WORK SHALL VISIT THE JOB SITE AND FULLY INFORM THEMSELVES OF ALL CONDITIONS THAT AFFECT THE WORK, OR COST THEREOF, AND EXAMINE THE DRAWINGS AND SPECIFICATIONS PRIOR TO SUBMITTING HIS BID.
2. ALL ELECTRICAL DRAWINGS ARE TO BE READ IN CONJUNCTION WITH THE PROJECT SPECIFICATIONS AND ALL OTHER DRAWINGS RELATED TO THE PERFORMANCE OF THE WORK.
3. THE CONTRACTOR RESPONSIBLE FOR THE EXECUTION OF THIS WORK SHALL BECOME THOROUGHLY FAMILIAR WITH THE PROJECT SPECIFICATIONS BEFORE COMMENCING ANY WORK. THE PROJECT SPECIFICATIONS AND DRAWINGS FORM THE BASIS OF THIS CONTRACT REQUIREMENTS AND INCLUDE THE TYPE AND GRADE OF MATERIALS TO BE INSTALLED, EQUIPMENT TO BE FURNISHED, THE MANNER BY WHICH TO BE INSTALLED AND WHERE TO BE LOCATED. IN THE EVENT OF A CONFLICT BETWEEN THE PROJECT SPECIFICATIONS AND DRAWINGS, SPECIFICATIONS GOVERN UNLESS THE ARCHITECT/ENGINEER DIRECTS OTHERWISE.
4. THE ELECTRICAL CONTRACTOR SHALL CHECK CAREFULLY ALL CONSTRUCTION DRAWINGS AND SPECIFICATIONS THAT ARE PART OF THIS PROJECT TO ENSURE THAT NO FIXTURE, OUTLET, ALARM STATION OR CONTROL AND POWER WIRING IS OMITTED. HE SHALL CONSULT ALL TRADES FURNISHING EQUIPMENT AND OBTAIN FROM THEM ALL DATA. IN SOME CASES EQUIPMENT, FIXTURES AND DEVICES ARE SHOWN ONLY. ASCERTAIN AND PROVIDE THE WIRING AND CONTROL STATIONS REQUIRED FOR THE PROPER FUNCTION OF BUILDING EQUIPMENT. NO EXTRA CHARGES SHALL BE ACCEPTED BY OWNER AFTER BIDDING FOR SUCH EQUIPMENT AND LABOR.
5. EQUIPMENT LABELS AND INSTRUCTIONS REGARDING THE APPLICATION AND INSTALLATION OF THE LISTED EQUIPMENT SHALL BE FOLLOWED TO ENSURE THAT THE EQUIPMENT IS BEING INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S LISTING INSTRUCTIONS. THE TEMPERATURE RATING OF THE EQUIPMENT TERMINATIONS MUST BE CAREFULLY CORRELATED WITH THE CONDUCTOR AMPACITY TO PREVENT OVERHEATING AND PREMATURE FAILURE.
6. COORDINATE WORK WITH OTHER TRADES AND INSTALL CONDUIT AND BOXES TO CLEAR EMBEDDED DUCTS, OPENINGS AND OTHER STRUCTURAL FEATURES.
7. ALL LIGHTING FIXTURES ARE TO BE LOCATED AS REQUIRED ON THE JOB TO CLEAR DUCTS, PIPING, EQUIPMENT, AND/OR MECHANICAL UNITS.
8. CONDUIT RUNS SHOWN ON DRAWINGS ARE DIAGRAMMATIC. ALL CONDUITS SHALL RUN CONCEALED, EXCEPT IN EQUIPMENT ROOMS AND WHERE APPROVED BY ARCHITECT.
9. FURNISH AND INSTALL EQUIPMENT DISCONNECT SWITCHES IN STRICT COMPLIANCE WITH CODE REQUIREMENTS.
10. POWER AND DATA DEVICES SHALL BE SPACED NO MORE THAN 4" APART. PROVIDE JUNCTION BOX MOUNTING BRACKET BETWEEN STUDS AS NEEDED.
11. ALL RECEPTACLES, TELEPHONE, AND DATA OUTLETS SHALL BE MOUNTED AT 18" ABOVE FINISHED FLOOR UNLESS OTHERWISE NOTED. ALL DEVICES SHALL BE NEW UNLESS OTHERWISE NOTED.
12. ALL FIRE ALARM SIGNAL DEVICES SHALL BE MOUNTED AT 80" AFF IN ACCORDANCE WITH ADA, UNLESS OTHERWISE NOTED.
13. DETERMINE, IN ADVANCE OF PURCHASE, THAT ALL ELECTRICAL MATERIALS AND EQUIPMENT TO BE INSTALLED SHALL FIT INTO THE ROOM OR SPACE ALLOCATED, AS INDICATED ON THE DRAWINGS, ALLOWING SUFFICIENT CLEARANCE FOR THE SAFE SERVICE AND/OR MAINTENANCE OF RELATED EQUIPMENT, INCLUDING THAT OF OTHER TRADES.
14. TELEPHONE AND DATA BOXES, CONDUITS, AND WIRING/CABLE SHALL BE PROVIDED BY EC. SECURITY CAMERAS SHALL BE PROVIDED BY NORTH SCHOOL DISTRICT INSTALLED BY EC. COOORDINATE ALL CAMERA LOCATIONS WITH SCHOOL DISTRICT.
15. CONDUCTORS SUPPLYING CIRCUITS SHALL NOT BE LESS THAN #12 AWG COPPER FOR ANY CIRCUIT.
16. AT THE COMPLETION OF THE JOB, IT WILL BE THE ELECTRICAL CONTRACTOR'S RESPONSIBILITY TO TURN OVER TO THE BUILDING MANAGER AN AS-BUILT-DRAWING IN REPRODUCIBLE FORM. THESE DRAWINGS DO NOT HAVE TO BE MADE FROM SCRATCH. THE ENGINEER'S REFLECTED CEILING AND ELECTRICAL/TELEPHONE PLANS MAY BE USED AS BACKGROUND WITH THE ACTUAL CIRCUITING CHANGES ADDED.
17. ELECTRICAL CONTRACTOR SHALL FURNISH AND INSTALL J-BOX AND 3/4"C FOR MECHANICAL THERMOSTAT + CONTROLS. COORDINATE FINAL LOCATION WITH MECHANICAL CONTRACTOR PRIOR TO ROUGH-IN.
18. ALL WORK IS TO BE DONE IN ACCORDANCE WITH THE 2022 CEC AND THE LATEST REQUIREMENTS OF ALL CODES AND REGULATIONS.
19. ALL EXTERIOR RECEPTACLES SHALL HAVE METAL COVERS.
20. EC SHALL UPSIZE WIRE AND CONDUIT AS REQUIRED FOR VOLTAGE DROP, BRANCH CIRCUITS SHALL BE INSTALLED WITH A MAXIMUM OF A 3% VOLTAGE DROP, AND FEEDERS SHALL BE INSTALLED WITH A MAXIMUM OF 2% VOLTAGE DROP. NO ELECTRICAL CIRCUITS SHALL EXCEED A VOLTAGE DROP OF MORE THAN 5%.
21. DRAWINGS ARE TO BE REVIEWED IN FULL DETAIL WITH SPECIFICATIONS. IN THE EVENT THAT THERE IS A CROSS DIRECTION, A REQUEST FOR INFORMATION (RFI) IS TO BE SENT TO THE ENGINEER OF RECORD. AS STATED IN SPECIFICATION DIV 1, THE HIGHER COST OF THE TWO OPTIONS IS TO BE TAKEN AS THE OPTION WHILE AT BID UNLESS CLARIFICATION FROM RFI.
22. ALL EXPOSED ELECTRICAL CONDUIT, CABLE, AND JUNCTION BOXES INSTALLED OPEN CEILING CEILINGS SHALL BE PAINTED. MC CABLE AND FLEXIBLE CONDUIT SHALL BE LIMITED IN EXPOSED OPEN CEILING LOCATIONS TO A '6-0" MAXIMUM LENGTH FOR INDIVIDUAL WHIPS FOR EQUIPMENT CONNECTIONS. INSTALL ALL CONDUIT, CABLE, AND JUNCTION BOXES IN A NEAT AND CONSISTENT MANNER. COLOR SELECTIONS BY ARCHITECT.
23. TYPE MC CABLE SHALL BE INSTALLED FOR BRANCH CIRCUITS IN ONLY CONCEALED LOCATIONS WITHIN THE SPACE THAT THE LIGHTING, EQUIPMENT, AND/OR RECEPTACLE DEVICES IT SERVES ARE LOCATED, UNLESS NOTED OTHERWISE.
24. ALL DATA, SECURITY, ADN ACCESS POINT CABLING SHALL BE PLENUM RATED CAT-6A. CABLE TERMINATION JACKS AND CABLING TO BE COLOR-CODED PER NORTH SCOTT SCHOOL DISTRICT'S STANDARDS. (DATA - BLUE, CAMERAS - GREEN) PROVIDE 10' SERVICE LOOPS AT END OF CABLE. DATA AND SECURITY CABLING IN BUILDING ADDITION SHALL BE PULLED TO NEAREST MDF OR IDF SPACE LOCATED IN THE BUILDING.
25. ALL LOW VOLTAGE CABLING SHALL BE PLENUM RATED WHEN INSTALLED IN MECHANICAL PLENUM RETURN SPACES.
26. ELECTRICAL EQUIPMENT SHALL BE LISTED BY A CITY OF IRVINE RECOGNIZED ELECTRICAL TESTING LABORATORY OR APPROVED BY THE DEPARTMENT PER CITY OF IRVINE BULLETIN #195.

DEFERRED SUBMITTALS TO TI SCOPE:

DEFERRED SUBMITTAL ITEMS SHALL BE SUBMITTED TO THE ARCHITECT AND ENGINEERS OF RECORD WHO SHALL REVIEW AND PROVIDE NOTATION INDICATING DOCUMENTS HAVE BEEN REVIEWED AND FOUND TO BE IN GENERAL CONFORMANCE WITH THE BUILDING DESIGN.

SUBMITTAL MATERIALS SHALL INCLUDE PLANS, DETAILS, AND CALCULATIONS PREPARED AND SIGNED BY A STATE REGISTERED ENGINEER.

CONTRACTOR SHALL SUBMIT ARCHITECT AND ENGINEER REVIEWED SUBMITTAL MATERIALS TO THE BUILDING OFFICIAL FOR REVIEW AND PERMIT APPROVAL. DEFERRED SUBMITTAL ITEMS SHALL NOT BE INSTALLED PRIOR TO OBTAINING THE BUILDING OFFICIAL'S APPROVAL OF THE SUBMITTAL.

1. FIRE ALARM SYSTEM WITH EMERGENCY VOICE/ALARM COMMUNICATION SYSTEM.

NOTE:
PORTIONS OF THE PROJECT THAT ARE DEFERRED SHALL BE SUBJECT TO THE CODES, STANDARDS, AND OTHER APPLICABLE REQUIREMENTS IN FORCE ON THE DATE THAT THE DEFERRED PLAN IS SUBMITTED TO OCFA.

PHASE 2 ELECTRICAL SCOPE OF WORK:

THE CONSTRUCTION OF THIS PROJECT IS PLANNED TO BE COMPLETED IN TWO PHASES. PHASE 1 WILL BE COMPLETED BY THE DEVELOPER (LINCOLN PROPERTIES), AND PHASE 2 WILL BE COMPLETED BY THE CITY OF IRVINE TO COMPLETE THE BUILDOUT. THE BUILDING IS NOT PLANNED TO RECIEVE A CERTIFICATE OF OCCUPANCY UNTIL PHASE 2 CONSTRUCTION IS COMPLETED. THEREFORE, ALL TITLE 24 DOCUMENTATION FOR INDOOR IS DEFERRED AND PROVIDED IN THE PHASE 2 PERMIT/CONSTRUCTION DOCUMENTATION PACKAGE.

PHASE 2 ELECTRICAL SCOPE INCLUDES:

1. ELECTRICAL SERVICES FOR PHASE 2 SPACES.
2. ADDITION OF COMMERCIAL KITCHEN.
3. INTERIOR LIGHTING TO COMPLETE PHASE 2 CONSTRUCTION.

FIRE ALARM GENERAL NOTES

1. PROVIDE A NEW FIRE ALARM SYSTEM WITH EMERGENCY VOICE NOTIFICATION PER THE CFC 2022.
2. FIRE ALARM SHALL BE DESIGN-BUILD BY CONTRACTOR. DEVICES ARE SHOWN FOR REFERENCE ONLY. IT WILL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY ANY ADDITIONAL REQUIREMENTS WITH THE FIRE MARSHALL AND ADJUST LAYOUT AS NECESSARY.
3. THE FOLLOWING FIRE ALARM DRAWINGS ARE SCHEMATIC ONLY. THE CONTRACTOR IS RESPONSIBLE FOR BIDDING A COMPLETE & OPERATIONAL FIRE ALARM SYSTEM THAT MEETS LOCAL CODE. PROVIDE DEVICES AS REQUIRED TO MEET LOCAL MINIMUM REQUIREMENTS & NFPA FIRE CODE.
4. CONTRACTOR IS RESPONSIBLE FOR TESTING THE SYSTEM TO CREATE A UL-LISTED, CODE-COMPLIANT FIRE ALARM SYSTEM AS REQUIRED BY THE LOCAL AUTHORITY HAVING JURISDICTION.
5. ALL FIRE ALARM PANELS SHALL BE AN APPROVED ADDRESSABLE TYPE.
6. A MAP INDICATING THE LOCATION OF ALL FIRE ALARM DEVICES SHALL BE POSTED DIRECTLY ADJACENT TO THE FIRE ALARM PANEL OR IN A LOCATION ACCEPTABLE TO THE FIRE PREVENTION BUREAU.
7. ALL SPEAKER/STROBE DEVICES MAY NOT BE SHOWN AS REQUIRED BY THE LOCAL JURISDICTION HAVING AUTHORITY. ALL DEVICES SHALL BE PROVIDED IN ACCORDANCE WITH NFPA 72, ADA, STATE & LOCAL CODES. A COMPLETE FIRE ALARM DEVICE LAYOUT SHALL BE PROVIDED BY THE FIRE ALARM CONTRACTOR.
8. CONDUIT & WIRING FOR ALL FIRE ALARM DEVICES TO BE RUN WITHIN COLUMNS OR WALLS WHERE APPLICABLE. ALL WIRING SHALL BE CONCEALED.
9. ALL FIRE ALARMS TO BE AUDIBLE & VISUAL, & COMPLY FULLY TO ICC/ANSI A117.1 SECTION 702. ALL VISUAL ALARMS TO BE SYNCHRONIZED THROUGHOUT.
10. DOOR LOCKS TO AUTOMATICALLY OPEN DURING A FIRE ALARM EVENT. PROVIDE ALL NECESSARY CABLING FROM THE DOOR SECURITY SYSTEM TO THE FIRE ALARM CONTROL PANEL.
11. UPON ACTIVATION OF A DUCT SMOKE DETECTOR, ALL MECHANICAL EQUIPMENT SHALL SHUT DOWN. RTU REMOTE TEST STATIONS SHALL HAVE LED INDICATOR.
12. PROVIDE ALL NECESSARY TAMPER AND FLOW SWITCHES FOR FIRE SUPPRESSION SYSTEM PER THE FIRE SUPPRESION DRAWINGS. COORDINATE EXACT LOCATION AND QUANTITY WITH THE FIRE SUPPRESION CONTRACTOR.
13. ALL JUNCTION BOXES HOUSING FIRE ALARM CABLE SHALL HAVE A RED COVER PLATE. COVER PLATE SHALL HAVE CIRCUIT INFORMATION.
14. ALL FIRE ALARM INITIATING DEVICES AND NOTIFICATION DEVICES SHALL BE LABELED WITH CIRCUIT INFORMATION AND ADDRESSIBLE SERIAL CODE AS APPLICABLE.
15. UTILIZE WIRING SIZES AND TYPES AS REQUIRED AND RECOMMENDED BY MANUFACTURER.
16. BATTERY BACK UP SHALL BE SIZED TO COMPLY WITH CODE REQUIREMENT AND LOCAL AMENDMENTS.
17. ALL BATTERIES INSTALLED SHALL BE NEW. FIELD LABEL ALL BATTERIES WITH DATE OF MANUFACTURING.
18. PROVIDE BOOSTER POWER SUPPLIES AS REQUIRED FOR CONNECTION ALL NOTIFICATION DEVICES INDICATED IN FLOOR PLANS. CIRCUITS RATED AT 3A SHALL NOT SERVE A LOAD TO EXCEED 2.5A. INCLUDE IN THE BID SMOKE DETECTOR IN ROOM HOUSING BOOSTERS IF NOT INDICATED IN FLOOR PLANS.
19. NOTIFICATION CIRUCITS VOLTAGE DROP SHALL NOT EXCEED 5% UNLESS OTHERWISE APPROVED BY THE MANUFACTURER AND/OR AHJ.
20. SLC CIRCUITS SHALL HAVE 20% SPARE CAPACITY FOR FUTURE EXPANSION.
21. ALL NOTIFICATION DEVICES SHALL BE SYNCHRONIZED AND SHALL COMPLY WITH ADA REQUIREMENTS. SET CANDELA RATINGS AS REQUIRED BY CODE AND/OR AS REQUIRED BY THE AHJ.
22. PROVIDE A NATURAL GAS DETECTOR AT EACH SOURCE OF NATURAL GAS INCLUDING IN THE FIRST ROOM SERVED BY EACH MAIN DUCT LEAVING EACH RTU/AHU. PROVIDED CENTRAL MONITORING STATION AND TIE INTO FACP.

THESE DRAWINGS AND SPECIFICATIONS ARE THE PROPERTY AND COPYRIGHT OF WARE MALCOMB AND SHALL NOT BE USED ON ANY OTHER WORK EXCEPT BY AGREEMENT WITH WARE MALCOMB. WRITTEN DIMENSIONS SHALL TAKE PRECEDENCE OVER SCALED DIMENSIONS AND SHALL BE VERIFIED ON THE JOB SITE. ANY DISCREPANCY SHALL BE BROUGHT TO THE NOTICE OF WARE MALCOMB PRIOR TO THE COMMENCEMENT OF ANY WORK

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ELECTRICAL LEGEND AND GENERAL NOTES

	DATE	REMARKS
1	09/22/2025	PLAN CHECK CORRECTIONS
2	10/15/2025	PLAN CHECK CORRECTIONS 2
3	02/04/2026	PLAN CHECK CORRECTIONS 3
4	01/26/2025	OC HEALTH DEPT
5	03/06/2026	PLAN CHECK CORRECTIONS 4
6	03/06/2026	OC HEALTH DEPT 2
7	04/30/2026	BID ADDENDUM 2

PA/PM:	TB
DRAWN BY.:	CM
JOB NO.:	LAX21-0174-02

06/06/2025

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CAUTION: IF THIS SHEET IS NOT 30"x42" IT IS A REDUCED PRINT

A. GENERAL REQUIREMENTS

1. SCOPE OF WORK

FURNISH AND INSTALL A COMPLETE ELECTRICAL SYSTEM AS SHOWN ON THE CONTRACT DRAWINGS. THE INSTALLATION SHALL BE COMPLETE IN EVERY DETAIL ESSENTIAL TO PROPER AND SATISFACTORY OPERATION, READY FOR USE AND IN CONDITION FOR SERVICE WHEN DELIVERED TO THE OWNER. ALL MANUFACTURED ITEMS SHALL BE ERECTED AND INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S DIRECTIONS AND RECOMMENDATIONS EXCEPT AS OTHERWISE SPECIFIED HEREIN.

2. APPROVALS

OBTAIN APPROVALS FROM INSPECTION AUTHORITIES FOR ELECTRICAL INSTALLATIONS REQUIRING SPECIFIC APPROVAL. PRINTS OF THE ELECTRICAL DRAWINGS, FOR THIS PURPOSE, WILL BE FURNISHED UPON REQUEST. REQUIRED WIRING DIAGRAMS SHALL BE PROVIDED AND SUBMITTED FOR APPROVAL BY THE CONTRACTOR. COPIES OF THE FINAL APPROVALS SHALL BE OBTAINED BEFORE COMMENCEMENT OF RELATED WORK.

3. CODES AND STANDARDS

a. THE WORK SHALL COMPLY WITH ALL APPLICABLE LOCAL, MUNICIPAL, AND NATIONAL CODES. WHERE THE CONSTRUCTION DOCUMENTS INDICATE MORE RESTRICTIVE REQUIREMENTS, THE CONSTRUCTION DOCUMENTS SHALL GOVERN. HOWEVER, THE CONSTRUCTION DOCUMENTS SHALL NOT BE INTERPRETED AS AUTHORITY TO VIOLATE ANY CODE OR REGULATION. IOWA IS CURRENTLY USING THE 2011 NEC.

b. MATERIALS, EQUIPMENT AND INSTALLATION SHALL CONFORM TO THE 2011"NATIONAL ELECTRIC CODE". STANDARDS OF THE NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION (NEMA), UNDERWRITER'S LABORATORIES (UL), NATIONAL FIRE PROTECTION ASSOCIATION (NFPA) AND ALL LAWS AND ORDINANCES OF LOCAL, STATE AND FEDERAL GOVERNING AGENCIES.

4. FEES

CONTRACTOR SHALL PAY ALL FEES AND OTHER CHARGES INCIDENTAL TO THE ELECTRICAL WORK. IN ADDITION CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING REQUIRED INSURANCE, PERMITS, LICENSES, ETC. RELATING TO THE ELECTRICAL WORK.

5. CONTRACTOR'S LIABILITY

a. THE CONTRACTOR SHALL AGREE THAT THE OWNER, THE ARCHITECT AND THE ENGINEER SHALL NOT IN ANY FORM OR MANNER BE ANSWERABLE OR ACCOUNTABLE FOR ANY VIOLATION OF ORDINANCES, CODES OR REGULATIONS OF ANY AUTHORITIES, UTILITIES, INSURANCE COMPANIES AND GOVERNMENT AGENCIES HAVING JURISDICTION, OR FOR ANY ACCIDENTS, INJURY, LOSS OR DAMAGE TO ANY PERSON OR PERSONS AND THEIR PROPERTIES ARISING FROM NEGLIGENCE OR CARELESSNESS ON THE PART OF THE CONTRACTOR (NOR ANYONE IN HIS EMPLOY), ANY OF HIS SUBCONTRACTORS, OR ANY OTHER PARTIES OR AGENTS TO THIS CONTRACT.

b. THE CONTRACTOR SHALL AGREE TO MAKE GOOD TO SAID OWNER, ARCHITECT, AND ENGINEER ANY LOSS, DAMAGE OR EXPENSE SO INCURRED, TOGETHER WITH REASONABLE ATTORNEY'S FEES.

6. EXAMINATION OF DRAWINGS AND SITE

a. THE ELECTRICAL CONTRACTOR SHALL OBTAIN A COMPLETE SET OF ARCHITECTURAL AND ENGINEERING DOCUMENTS AND COORDINATE WITH MECHANICAL, PLUMBING, ARCHITECTURAL, AND OTHER TRADES FOR EXACT DIMENSIONS, CLEARANCES, ROUGH-IN LOCATIONS, AND OTHER ADDITIONAL SCOPES OF WORK THAT MAY NOT BE SHOWN ON THE ELECTRICAL PLANS. THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR THE POWER TO OTHER TRADES EQUIPMENT AND HARDWARE. THIS SHALL INCLUDE, BUT NOT BE LIMITED TO, CONTROLS, FIRE AND SECURITY SYSTEMS, MOTORIZED DOORS, DAMPERS, LIFTS, AND OTHER SYSTEMS. UNLESS SPECIFICALLY NOTED OTHERWISE ON THE ELECTRICAL PLANS, THE ELECTRICAL CONTRACTOR SHALL FURNISH ALL SAFETY DISCONNECT SWITCHES TO MECHANICAL EQUIPMENT.

b. BY THE ACT OF HAVING SUBMITTED A BID, THE CONTRACTOR SHALL DEEM TO HAVE MADE SUCH AN EXAMINATION AND SHALL HAVE ACCEPTED THE PREVAILING CONDITIONS. NO SUBSEQUENT ALLOWANCE WILL BE MADE TO CONTRACTOR BECAUSE OF HIS NEGLECT IN COMPLYING WITH THE FOREGOING.

7. DRAWINGS AND SPECIFICATIONS

THE CONTRACTOR SHALL BE RESPONSIBLE FOR READING AND COMPLYING WITH BOTH THE DRAWINGS AND SPECIFICATIONS. IN THE EVENT OF A CONFLICT OR INCONSISTENCY BETWEEN THE DRAWINGS, NOTES, SPECIFICATIONS, OR CODES, THE REFERENCE WHICH PROVIDES THE MORE COMPLETE OR HIGHER STANDARD SHALL PREVAIL.

8. INTERPRETATION OF THE DOCUMENTS

CAREFULLY COMPARE THE DRAWINGS AND SPECIFICATIONS, CHECKING MEASUREMENTS AND CONDITIONS UNDER WHICH THIS INSTALLATION IS TO BE MADE. FOR CLARIFICATION BETWEEN VARIOUS DRAWINGS, BETWEEN DRAWINGS OR SPECIFICATION, OR BETWEEN SECTIONS OF THE SPECIFICATION, THE MATTER SHALL BE REFERRED TO THE ENGINEER BEFORE ANY WORK IS EXECUTED. THE CONTRACTOR SHALL STATE IN THEIR PROPOSAL ANY EXCEPTIONS NECESSARY TO MAKE THIS A COMPLETE, READY TO USE INSTALLATION. IF NOT STATED IN THE PROPOSAL, IT WILL NOT BE CONSIDERED EXTRA.

9. ELECTRICAL DRAWINGS

THE ELECTRICAL DRAWINGS ARE DIAGRAMMATIC AND SHALL NOT BE SCALED. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL DOORS, WALLS, FURNITURE, EQUIPMENT, ETC.. THE LOCATION OF RACEWAY SYSTEM COMPONENTS IS SCHEMATIC. THE EXACT LOCATION OF RACEWAY SYSTEM COMPONENTS SHALL BE DETERMINED BY THE CONTRACTOR IN THE FIELD. THE CONTRACTOR SHALL CONFIRM THE DIMENSIONS OF THE ACTUAL EQUIPMENT TO BE SUPPLIED FOR THIS PROJECT, AND VERIFY CLEARANCES AND ROUGH-INS PRIOR TO STARTING WORK.

10. PERMITS, APPLICATIONS AND RELEASES

THE CONTRACTOR SHALL OBTAIN AND PAY FOR ALL PERMITS INSPECTIONS, APPLICATIONS, RELEASES AND FEES REQUIRED BY LOCAL, STATE AND FEDERAL AGENCIES FOR THE EXECUTION OF THIS WORK. SCHEDULING OF ALL REQUIRED INSPECTIONS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.

B. INSTALLATION

1. CUTTING AND PATCHING

a. ALL CUTTING, DRILLING, PATCHING, ETC. NECESSARY FOR INSTALLATION OF EQUIPMENT UNDER THIS CONTRACT SHALL BE DONE BY THIS CONTRACTOR.

b. ALL DISTURBED CONSTRUCTION AND FINISHED SHALL BE RETURNED TO ITS ORIGINAL STATE. HOLES IN CONCRETE WALLS AND FLOORS SHALL BE CORE DRILLED AND SLEEVED. NO CUTTING OF STRUCTURAL MEMBERS WILL BE ALLOWED.

2. INSTALLATION OF WIRING

WIRE SHALL BE INSTALLED CONTINUOUS BETWEEN DEVICES, WITH SPLICES LOCATED ONLY IN JUNCTION BOXES, PULL BOXES, OUTLET BOXES OR IN CABINETS. CONDUCTORS SHALL BE OF SUFFICIENT LENGTH TO REACH THE FARTHEST TERMINAL IN PANELS. A MINIMUM OF 6" LOOPS SHALL REMAIN WHERE CONNECTIONS OR TAPS ARE TO BE MADE IN BRANCH CIRCUIT WIRING.

3. GROUNDING

CONTRACTOR SHALL INSTALL ENTIRE CONDUIT SYSTEM, INCLUDING BOXES, CABINETS, PANELS, ETC. SO AS TO INSURE PROPER GROUND CONTINUITY THROUGHOUT THE SYSTEM.

4. INSTALLATION OF WORK

a. CONTRACTOR SHALL BE RESPONSIBLE FOR EXACT LOCATION OF ALL EQUIPMENT AND IN CASE ANY OUTLETS DO NOT COME IN CORRECT LOCATION, HE SHALL MOVE SAME, DO NECESSARY CUTTING AND PATCHING.

b. OWNER RESERVES THE RIGHT TO CHANGE LOCATION OF OUTLETS WITHIN 10'-0" RADIUS BEFORE WORK IS INSTALLED WITHOUT EXTRA COST.

c. CHECK WITH HVAC CONTRACTOR AS TO LOCATION OF UNITS, DUCTS AND GRILLES AND PLUMBING CONTRACTOR AS TO LOCATION OF PIPING BEFORE INSTALLING THE WORK.

d. CONTRACTOR SHALL CONSULT WITH THE ARCHITECT AND REVIEW THE PLANS TO VERIFY THE EXACT LOCATIONS OF ALL OUTLETS ARE ABOVE COUNTERS WHERE CABINET WORK OCCURS, AND VERIFY THAT SWITCHES ARE AT THE CORRECT SIDE OF DOOR SWINGS.

e. THE CONTRACTOR SHALL CONSULT WITH THE EQUIPMENT SUPPLIERS FOR THE CORRECT SIZES OF ALL OUTLETS IN SUFFICIENT TIME BEFORE WALL CONSTRUCTION.

f. FAILURE OF THE CONTRACTOR TO COMPLY WITH ALL OF THE ABOVE SHALL MAKE HIM RESPONSIBLE FOR ANY RELOCATIONS AT HIS EXPENSE DUE TO CONFLICT WITH OTHER EQUIPMENT.

5. BALANCING OF LOADS

UPON CONNECTING ALL CIRCUITS TO PANELS, THE CONTRACTOR SHALL BALANCE THE LOAD IN AMPERES TO +/- 5% BETWEEN PHASES FOR EACH PANEL OR PER OWNERS SATISFACTION.

6. FIRE STOPPING

ALL PENETRATIONS IN WALL, FLOOR OR CEILINGS SHALL BE SUITABLY CLOSED UP AND SEALED WITH AN INTUMESCENT FIRE STOPPING COMPOUND LISTED IN THE MOST RECENT FACTORY MUTUAL RESEARCH CORPORATION (FMRC) APPROVAL GUIDE. FIRE STOPPING PRODUCTS SHALL BE MANUFACTURED BY 3M CO.

7. EQUIPMENT

ALL MATERIALS AND EQUIPMENT USED IN THIS INSTALLATION SHALL BE NEW, AND HAVE THE APPROPRIATE UL LISTING AND LABEL.

8. MISCELLANEOUS SUPPORTING MEMBERS

THE INSTALLATION OF ANGLES CHANNELS, AND OTHER MISCELLANEOUS STEEL, BOLTS, RODS, ETC. REQUIRED TO SUPPORT LIGHT FIXTURE, CONDUIT, RACEWAY, LADDER TRAY, OR OTHER ELECTRICAL EQUIPMENT OR DEVICES SHALL BE COORDINATED WITH THE G.C.

9. SAFETY

THE CONTRACTOR SHALL TAKE ALL STEPS NECESSARY TO ENSURE THE SAFETY OF THE OWNERS EMPLOYEES, BUILDING EMPLOYEES AND GUESTS, AS WELL AS THEIR OWN FORCES, BY ADEQUATELY PROTECTING ANY EXPOSED LIVE CONDUCTORS, OR DEVICES THROUGHOUT THE COURSE OF THIS WORK.

10. EQUIPMENT CONNECTIONS

PROVIDE FINAL CONNECTIONS FOR ALL EQUIPMENT FURNISHED UNDER OTHER DIVISIONS AND FOR ALL OWNER FURNISHED EQUIPMENT. PROVIDE A FLEXIBLE LIQUID TIGHT CONNECTION TO ALL VIBRATION PRODUCING EQUIPMENT.

11. TEMPORARY LIGHTING, POWER, FIRE, AND SAFETY

a. PROVIDE TEMPORARY LIGHTING AND POWER AS REQUIRED IN AREAS UNDERGOING WORK DURING CONSTRUCTION.

b. COMPLY WITH NFPA 241 FOR SAFEGUARDING DURING CONSTRUCTION AND ALTERATION OPERATIONS.

12. CABLING

BRANCH CIRCUITS TO RECEPTACLES, LIGHTING AND MISC. SMALL LOADS (20 AMP CIRCUITS), UNLESS SPECIFICALLY NOTED OTHERWISE, SHALL BE 2 - #12, 1 - #12 GND, 3/4" C.

C. MATERIAL AND EQUIPMENT

1. PROPOSALS SHALL BE BASED UPON THE FURNISHING OF ALL MATERIALS AND EQUIPMENT AS SPECIFIED, WHICH IN EVERY CASE SHALL BE NEW AND OF THE BEST GRADE AND QUALITY AVAILABLE.

2. EQUIPMENT AND MATERIALS SHALL BE WITHOUT BLEMISH OR DEFECT AND SHALL NOT BE USED FOR TEMPORARY POWER PURPOSES, WITHOUT THE ENGINEER'S PRIOR WRITTEN AUTHORIZATION.

3. ALL ITEMS OF EQUIPMENT OF ONE GENERIC TYPE, EXCEPT CONDUIT, CONDUIT FITTINGS, OUTLET BOXES, WIRE, AND CABLE, SHALL BE THE PRODUCT OF ONE MANUFACTURER THROUGHOUT UNLESS OTHERWISE INDICATED OR ACCEPTED BY THE ENGINEER.

4. CONDUITS

a. THE CONTRACTOR SHALL PROVIDE ALL CONDUITS SERVING ALL EQUIPMENT, INCLUDING BUT NOT LIMITED TO LIGHTING, RECEPTACLES, HEATING, AIR CONDITIONS, PLUMBING EQUIPMENT, TELEPHONE AND ELECTRICAL EQUIPMENT.

b. ALL PANEL AND SERVICE FEEDERS SHALL BE IN GALVANIZED IMC OR GRMC. ALL CONDUIT SHALL BE UL LABELED. EMT SHALL BE ACCEPTABLE FOR BRANCH CIRCUITS RUN ABOVE SUSPENDED CEILINGS OR CONCEALED IN INTERIOR PARTITIONS. EMT CONNECTORS SHALL BE COMPRESSION TYPE. CONDUIT UNDER SLAB ON GRADE SHALL BE GALVANIZED RIGID STEEL (HWG).

c. ALL APARTMENT PANEL FEEDERS AND SECONDARY CABLES SHALL BE COPPER.

d. ALL SECONDARY CABLES SHALL BE IN GRMC RIGID METALLIC CONDUIT PER LOCAL ORDINANCE.

e. MINIMUM SIZES OF CONDUIT SHALL BE 1/2" FOR INDIVIDUAL LIGHTING FIXTURE CONNECTION OR TO INDIVIDUAL LIGHT SWITCHES AND FOR ALL OTHER LOCATIONS. IF HVAC CONTROL WIRING IS REQUIRED TO BE RUN IN CONDUIT, IT SHALL BE MINIMUM OF 1/2" SIZE, UNLESS NOTED OTHERWISE ON DRAWINGS. ALL IN/UNDER FLOOR SLAB CONDUIT SHALL BE OF MINIMUM 3/4" SIZE.

f. SUPPORT ALL CONDUIT, INCLUDING SEISMIC AND SWAY BRACING, IN ACCORDANCE WITH THE NEC.

g. GENERALLY, ALL CONDUIT SHALL BE CONCEALED EXCEPT FOR UNFINISHED AREAS, SUCH AS EQUIPMENT ROOMS. EXPOSED CONDUIT SHALL BE ALLOWED ONLY AS NOTED ON PLAN AND AS APPROVED BY THE OWNER'S CONSTRUCTION MANAGER. PAINTING OF CONDUITS WILL BE BY GENERAL CONTRACTOR.

h. FLEXIBLE METAL CONDUIT

a. FLEXIBLE METAL CONDUIT IS NOT PERMITTED.

b. THE USE OF ROMEX, BX, ETC. IS NOT PERMITTED.

c. PROVIDE POLY PULL-STRING IN ALL EMPTY CONDUITS.

d. HOME RUNS AND MAIN CONDUIT RUNS ARE TO BE HELD TIGHT TO STRUCTURE ABOVE OR AS REQUIRED TO ALLOW PROPER CLEARANCE OF CEILING AND OTHER TRADES WORK.

e. ALL CONDUITS SHALL BE RUN PARALLEL OR PERPENDICULAR TO COLUMN LINES.

f. ALL CONDUITS MUST BE SIZED PER THE NEC.

5. OUTLET BOXES

a. UNLESS OTHERWISE NOTED, OUTLET BOXES SHALL BE GALVANIZED PRESSED STEEL, KNOCKOUT TYPE, WITH SUITABLE PLASTER RINGS AND COVERS OR PLATES.

b. UNUSED KNOCKOUT HOLES SHALL REMAIN CLOSED AND THOSE OPENED BY ERROR SHALL BE CLOSED WITH SNAP-IN BLANKS.

c. OUTLET BOXES SHALL NOT BE SMALLER THAN REQUIRED BY CODE FOR THE NUMBER AND SIZE OF WIRES TO BE INSTALLED.

d. OUTLET BOX AND COVE LOCATED ABOVE SUSPENDED CEILING SHALL BE PLENUM RATED.

e. OUTLET BOX MANUFACTURERS SHALL BE APPLETON, GARVIN, RACO (HUBBELL) & STEEL CITY.

6. JUNCTION AND PULL BOXES

a. PROVIDE JUNCTION BOXES, PULL BOXES, CABLE SUPPORTS, AND WIREWAYS AS REQUIRED FOR PROPER INSTALLATION OF THE ELECTRICAL WORK, WHETHER OR NOT SPECIFICALLY SHOWN ON THE DRAWINGS. COVERS SHALL BE ACCESSIBLE. SMALL JUNCTION BOXES SHALL BE SIMILAR TO OUTLET BOXES.

b. PULL BOXES, CABLE SUPPORT BOXES, AND LARGE JUNCTION BOXES FOR INDOOR USE SHALL BE MADE OF CODE GAUGE STEEL. COVERS SHALL BE HELD IN PLACE WITH STAINLESS STEEL SCREWS.

c. JUNCTION BOX AND PULL BOX LOCATED ABOVE SUSPENDED CEILING SHALL BE PLENUM RATED.

7. WIRING

a. CONDUCTORS FOR FEEDERS AND BRANCH CIRCUITS SHALL BE COPPER AND THE AWG SIZE AND TYPE AS SHOWN ON DRAWINGS MINIMUM WIRE SIZE SHALL BE #12. THE CONDUCTORS SHALL HAVE 600 VOLT INSULATION, TYPE THW, THWN OR THHN.

b. MINIMUM WIRE SIZE - 20 AMP. BRANCH CIRCUIT SHALL BE AWG LISTED SIZE PER DISTANCE SHOWN BELOW. DISTANCE SHALL BE MEASURED FROM THE PANELBOARD CIRCUIT BREAKER TO THE FURTHEST OUTLET.

1. #12 LESS THAN 80 FEET. (AT 120V)
2. #10 OVER 80 FEET. (AT 120V)

c. CONDUCTORS SHALL BE STRANDED FOR SIZES #8AWG AND LARGER.

d. ALL CONDUCTORS SHALL BE COPPER, ALUMINUM CONDUCTORS ARE NOT PERMITTED.

e. ALL WIRING SHALL BE IN EMT CONDUIT, UNLESS SPECIFICALLY NOTED OTHERWISE (I.E. LOW VOLTAGE PLENUM RATED WIRE).

f. THE USE OF SHARED NEUTRALS IS ALLOWED FOR LIGHTING AND NON-COMPUTER RECEPTACLE CIRCUITS AND SHALL BE INSTALLED IN ACCORDANCE WITH THE NEC. ALL OTHER EQUIPMENT SHALL HAVE A DEDICATED FULL SIZE NEUTRAL.

g. WIRE CONNECTORS SHALL BE EQUAL TO "SCOTCH LOCK" FOR #8 AWG WIRE AND SMALLER AND EQUAL TO T & B "LOCKTIGHT" FOR #6 AWG AND LARGER. EQUALS BY BUCHANAN OR IDEAL ARE ACCEPTABLE.

h. ALL WIRING TO BE COLOR-CODED AS FOLLOWS:

120/208 VOLT SYSTEM	277/480 VOLT SYSTEM
NEUTRAL - WHITE	NEUTRAL - GRAY
PHASE A OR L1 - BLACK	PHASE A OR L1 - BROWN
PHASE B OR L2 - RED	PHASE B OR L2 - ORANGE
PHASE C OR L3 - BLUE	PHASE C OR L3 - YELLOW
GROUND - GREEN	GROUND - GREEN

8. GROUNDING

a. PROVIDE COMPLETE WIRE GROUNDING CONDUCTOR SYSTEM, #12 AWG MINIMUM, SIZED AND INSTALLED IN ACCORDANCE WITH THE LATEST ADOPTED EDITION OF THE NEC.

b. ALL DEVICES SHALL BE BONDED TO THE CONDUIT SYSTEM. USE A BONDING JUMPER BETWEEN THE OUTLET BOX AND THE DEVICE GROUNDING TERMINAL. METAL-TO-METAL CONTACT BETWEEN THE DEVICES YOKE AND THE OUTLET BOX IS NOT ACCEPTABLE AS A BOND FOR EITHER SURFACE MOUNTED BOXES OR FLUSH TYPE BOXES. ALL JUNCTION BOXES, OUTLET BOXES AND PULL BOXES SHALL BE BONDED TO THE CONDUIT SYSTEM. ALL CONDUIT, INCLUDING FLEXIBLE CONDUIT, SHALL BE GROUNDED WITH GREEN GROUNDING CONDUCTOR.

c. ALL ENCLOSURES AND NON-CURRENT CARRYING METAL PARTS ARE TO BE GROUNDED. CONDUIT SYSTEM IS TO BE ELECTRICALLY CONTINUOUS. ALL LOCK NUTS MUST CUT THROUGH ENAMELED OR PAINTED SURFACES ON ENCLOSURES. WHERE ENCLOSURES AND NON-CURRENT CARRYING METAL PARTS ARE ISOLATED FROM THE CONDUIT SYSTEM, USE BONDING JUMPERS WITH APPROVED CLAMPS. ALL GROUND CLAMPS SHALL BE "PENN-UNION" OR EQUAL, SIMILAR TO "GPL" TYPE.

d. NO OTHER CIRCUITS ARE TO BE RUN IN SAME CONDUIT FEEDING ISOLATED GROUND RECEPTACLES.

9. SLEEVES

a. THE CONTRACTOR SHALL PROVIDE SLEEVES TO PROTECT EQUIPMENT OR FACILITIES IN THE INSTALLATION. EACH SLEEVE SHALL EXTEND THROUGH IT'S RESPECTIVE FLOOR, WALL OR PARTITION AND SHALL BE CUT FLUSH WITH EACH SURFACE EXCEPT SLEEVES THAT PENETRATE THE FLOOR, WHICH SHALL EXTEND 2" ABOVE THE FLOOR.

b. UNLESS OTHERWISE NOTED, ALL SLEEVES AND OPENINGS THROUGH FIRE RATED WALLS SHALL BE FIRE SEALED WITH CALCIUM SILICATE, SILICONE "RTV" FOAM, "3M" FIRE RATED SEALANTS OR EQUAL, SO AS TO RETAIN THE FIRE RATING OF THE FLOOR OR WALL. CONFORM TO UL ASSEMBLY RATING OF FLOOR OR WALL.

c. SLEEVES IN BEARING AND MASONRY WALLS, FLOORS AND PARTITIONS SHALL BE STANDARD WEIGHT BLACK STEEL PIPE FINISHED WITH SMOOTH EDGES. FOR OTHER THAN MASONRY PARTITIONS, THROUGH SUSPENDED CEILINGS, OR FOR CONCEALED VERTICAL CONDUIT. SLEEVES SHALL BE NO. 22.

10. TESTING AND INSPECTION

a. THE ELECTRICAL CONTRACTOR SHALL THOROUGHLY TEST THE ENTIRE ELECTRICAL SYSTEM FOR GROUNDS, SHORTS AND PROPER GROUNDING RESISTANCE. A MAXIMUM OF 5 OHMS RESISTANCE FROM NEUTRAL CONDUCTOR AND CONDUIT TO EARTH GROUND SHALL BE PERMITTED. ONLY A GROUND RESISTANCE MEASURING METER OF APPROVED TYPE SHALL BE USED. A COMMON OHM METER IS NOT ACCEPTABLE.

b. ALL MOTORS TO BE CHECKED FOR PROPER ROTATION AND SHALL BE TESTED UNDER LOAD WITH AMPERE READINGS TAKEN ON EACH PHASE AND THE RPM OF MOTORS RECORDED AT THE SAME TIME, CONTRACTOR TO MAKE ALL REQUIRED CHANGES TO CORRECT ANY DEFICIENCIES AND RETEST.

c. THE ELECTRICAL CONTRACTOR SHALL SEE THAT LOCAL INSPECTION AUTHORITIES ARE NOTIFIED WHEN INSPECTIONS ARE REQUIRED BY CODE AND SHALL GIVE ALL NECESSARY ASSISTANCE TO THE INSPECTOR WHEN HE IS MAKING AN INSPECTION.

d. THE ELECTRICAL CONTRACTOR WILL SATISFY ALL REGULATIONS HAVING JURISDICTION ON THIS PROJECT.

11. WIRING DEVICES

a. THIS CONTRACTOR SHALL FURNISH AND INSTALL SWITCHES AND RECEPTACLES AS SHOWN ON THE DRAWINGS AND NECESSARY FOR A COMPLETE INSTALLATION. COLOR OF DEVICES AND PLATES SHALL BE AS DIRECTED BY ARCHITECT. THE DEVICES SHALL BE OF THE TYPES AND RATINGS LISTED, OR EQUALS BY PASS & SEYMOUR, HUBBELL OR LEVITON. WEATHERPROOF GFI RECEPTACLES SHALL BE INSTALLED WHERE SHOWN ON DRAWINGS OR AS REQUIRED BY CODE.

1. LOW VOLTAGE SWITCHES: TO MATCH EXISTING
2. DUPLEX RECEPTACLES: 20A-120V LEVITON-5362
3. ISOLATED GROUND RECEPTACLES: 20A-120V LEVITON-5362-IG
4. GROUND FAULT CIRCUIT INTERRUPTING RECEPTACLE: 20A-120V, LEVITON 8899-HG
5. SURGE SUPPRESSION RECEPTACLE: 20A-120V PASS & SEYMOUR 8200-ISP

12. WALL PLATES

a. WALL PLATES SHALL BE AS SPECIFIED BY OWNER. WHERE STANDARD PLATES WILL NOT FIT WALL FINISH, UNPLASTERED BRICK OR SPECIAL FINISH WALLS, USE SPECIAL SIZE PLATES TO SUIT CONDITIONS. ALL WALL PLATES LINE UP AND FLUSH WITH MOUNTING SURFACE AND SECURELY ATTACHED IN PLACE.

b. WHERE SWITCHES, RECEPTACLES OR COMBINATIONS THEREOF ARE GROUNDED, USE GANG PLATES AND OUTLET BOXES TO SUIT THE SPECIFIC ARRANGEMENTS.

c. VERIFY MOUNTING HEIGHTS OF WIRING DEVICES WITH OWNER: IN GENERAL, RECEPTACLES 18" ABOVE FLOOR OR 6" ABOVE COUNTER TOP WHERE COUNTERS OCCUR, AND SWITCHES 3'-4" ABOVE FLOOR, EXCEPT WHERE SPECIFIC HEIGHTS ARE INDICATED. SPECIAL RECEPTACLE LOCATED AS DIRECTED BY ARCHITECT AND ENGINEER.

d. WALL PLATES SHALL BE OF THE SAME MANUFACTURER AS WIRING DEVICE.

13. LIGHTING FIXTURES & LAMPS:

a. UNLESS OTHERWISE NOTED, THE ELECTRICAL CONTRACTOR SHALL FURNISH AND INSTALL ALL LIGHTING FIXTURES AND LAMPS AS SHOWN ON THE DRAWINGS.

b. ALL RECESSED INCANDESCENT FIXTURES SHALL BE PROVIDED WITH APPLICABLE THERMAL PROTECTION.

c. WHERE FLUORESCENT FIXTURES ARE SPECIFIED, THEY SHALL BE PROVIDED WITH HIGH POWER FACTOR RAPID START ELECTRONIC BALLASTS, UL LISTED, C.B.M. CERTIFIED AND E.T.L. APPROVED WITH EFFICIENCY FACTORS IN ACCORDANCE WITH THE "NATIONAL APPLIANCE ENERGY CONSERVATION ACT OF 1987" AND AMENDMENTS WITH A THD OF LESS THAN 10%.

d. THIS CONTRACTOR SHALL FURNISH ADDITIONAL AUXILIARY SUPPORTING STEEL HANGER WIRES ADEQUATELY SIZED TO SUPPORT THE WEIGHT OF THE FIXTURE AND FASTENED TO BUILDING STRUCTURE (MINIMUM TWO PER FIXTURE) FOR FIXTURES NOT MOUNTED ON BUILDING FRAMEWORK. FIXTURES SHALL NOT BE SUPPORTED SOLELY BY THE CEILING STRUCTURE.

e. THIS CONTRACTOR SHALL VERIFY THE MODEL NUMBERS AND QUANTITY OF ALL LIGHTS AND FIXTURES PROVIDED. CONTACT THE TENANT'S CONSTRUCTION MANAGER IMMEDIATELY IF THE MODELS DIFFER FROM THOSE LISTED ON THE LIGHTING FIXTURE SCHEDULE OR IF THEY DO NOT HAVE PROPER THERMAL PROTECTION.

f. PROVIDE APPLICABLE FIRE RATED DRYWALL BOXES OVER RECESSED FIXTURES IN FIRE RATED CEILINGS AS REQUIRED BY CODES. FIELD COORDINATE AS REQUIRED TO AVOID CONFLICT.

g. THIS CONTRACTOR SHALL PROVIDE ANY NECESSARY FITTINGS, ACCESSORIES, ETC. AS NECESSARY TO MAKE A COMPLETE INSTALLATION.

h. REMOVE ALL DIRT, OIL OR GREASE FROM LIGHT FIXTURES. CLEAN ALL GLASS, LENSES, ETC. AND POLISH FIXTURES AND TRIM.

i. THIS CONTRACTOR SHALL SUPPLY 10% EXTRA OF EACH LAMP TYPE USED.

14. IDENTIFICATION

a. PROVIDE TYPED DIRECTORIES IN PANELBOARDS TO DEPICT ACTUAL EQUIPMENT CONNECTED TO INDIVIDUAL BREAKERS/SWITCHES.

15. SHOP DRAWINGS AND SUBMITTALS:

a. SUBMIT COMPLETE SHOP DRAWINGS FOR MANUFACTURED EQUIPMENT: CLEARLY MARK SUBMISSIONS FOR LIGHTING FIXTURES WITH THE TYPE LETTER OR LETTERS ASSIGNED TO EACH FIXTURE IN THE FIXTURES SCHEDULE AND INCLUDE A GRAPH SHOWING TYPICAL LIGHT DISTRIBUTION AND A TABLE OF CERTIFIED UTILIZATION FACTORS. ALL FIXTURE SUBMITTALS SHALL BE IN BROCHURE FORM.

b. PROVIDE SUFFICIENT INFORMATION AND DATA REQUIRED FOR THE ARCHITECT TO REASONABLY DETERMINE PROPER COMPLIANCE WITH THE SPECIFICATIONS.

c. IN ADDITION, THE CONTRACTOR SHALL SUBMIT A COMPLETE LIST OF MATERIALS PROPOSED, GIVING THE MANUFACTURER'S NAME, CATALOG NUMBER, OR OTHER MEANS OF IDENTIFICATION TO SHOW COMPLIANCE WITH THESE SPECIFICATIONS.

d. REVIEW OF SHOP DRAWINGS ARE RENDERED AS A SERVICE ONLY, AND SHALL NOT BE CONSIDERED AS A GUARANTEE OF MEASUREMENTS OR BUILDING CONDITIONS, NOR SHALL IT BE CONSTRUED AS RELIEVING THE CONTRACTOR OF BASIC RESPONSIBILITY UNDER THE CONTRACT. SHOP DRAWINGS SHALL BE SUBMITTED ON, BUT NOT BE LIMITED TO THE FOLLOWING SYSTEMS: LIGHTING FIXTURES IF FURNISHED BY CONTRACTOR, PANELS, WIRING DEVICES

16. FIELD RECORD DRAWINGS

CONTRACTOR SHALL SUBMIT `AS-BUILT' MARK-UPS TO RTM & ASSOCIATES WHEN PROJECT IS CLOSED, FOR UPDATING OF ELECTRONIC FILES.

17. INSTALLATION OF EQUIPMENT FURNISHED BY OTHERS

a. CONTRACTOR SHALL INSTALL ALL EQUIPMENT, WIRE AND CABLE FURNISHED TO HIM. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL INSTALLATION DRAWINGS AND WIRING DIAGRAMS FROM THE EQUIPMENT MANUFACTURER. ALL EQUIPMENT SHALL BE INSTALLED ACCORDING TO THE MANUFACTURER'S SPECIFICATIONS AND RECOMMENDATIONS.

b. CONTRACTOR SHALL MAKE FINAL CONNECTIONS AND TERMINATIONS TO THE OWNER, MECHANICAL, AND PLUMBING CONTRACTOR'S FURNISHED EQUIPMENT.

18. MATERIAL AND EQUIPMENT REQUIREMENTS

a. PROPOSAL SHALL BE BASED UPON THE FURNISHINGS OF ALL MATERIALS AND EQUIPMENT AS SPECIFIED, WHICH IN EVERY CASE SHALL BE NEW AND OF THE BEST GRADE AND QUALITY AVAILABLE.

b. EQUIPMENT AND MATERIALS SHALL BE WITHOUT BLEMISH OR DEFECT AND SHALL NOT BE USED FOR TEMPORARY POWER PURPOSES, WITHOUT THE ENGINEER'S WRITTEN AUTHORIZATION.

c. ALL ITEMS OF EQUIPMENT OF ONE GENERIC TYPE (SUCH AS FUSES OR CIRCUIT BREAKERS) EXCEPT CONDUIT FITTINGS, OUTLET BOXES, WIRE, AND CABLE, SHALL BE THE PRODUCT OF ONE MANUFACTURER THROUGHOUT UNLESS OTHERWISE INDICATED OR ACCEPTED BY THE ENGINEER.

19. SPECIAL SYSTEMS

REFER TO TECHNOLOGY DRAWINGS FROM GLUMAC (T, TN, TY, TA SERIES) FOR ELECTRICAL WORK SCOPE.

20. FIRE ALARM

a. ALL FIRE ALARM WIRING SHALL BE IN CONDUIT.

b. WIRING SHALL BE FIRE RATED FOR 2 HOURS AND SHALL MEET NFPA REQUIREMENTS FOR THIS TYPE OF INSTALLATION.

c. FIRE ALARM CALCULATIONS INCLUDING BATTERY, LOAD, VOLTAGE DROP, AND WIRE SIZING SHALL BE PREFORMED AND SUBMITTED BY THE FA CONTRACTOR AS PART OF THE FIRE ALARM SHOP DRAWING SUBMITTAL PROCESS AT WHICH TIME THE CONTRACTOR SHALL SUBMIT ALL REQUIRED INFORMATION TO THE APPROPRIATE CODE OFFICIALS.

d. PROVIDE ADEQUATE CAPACITY TO THE FIRE ALARM CONTROL PANEL AS REQUIRED TO CONNECT ALL THE DEVICES SHOWN ON THE PLANS.

e. FIRE ALARM DEVICES ARE SHOWN FOR REFERENCE ONLY. COORDINATE EXACT LOCATION AND INSTALLATION OF DEVICES WITH FIRE ALARM SHOP DRAWINGS.

f. PROVIDE NEW DETECTION AND NOTIFICATION DEVICES AND TIE INTO FIRE ALARM CONTROL PANEL. NEW DEVICES SHALL BE COMPATIBLE WITH FIRE ALARM SYSTEM.

g. PROVIDE FIRE ALARM ACCESSORIES AND HARDWARE AS REQUIRED FOR A COMPLETE AND OPERATIONAL SYSTEM. COORDINATE ALL WORK WITH FIRE ALARM MANUFACTURER.

h. FIRE ALARM SYSTEM INSTALLER SHALL VERIFY THAT SYSTEM COMPLIES WITH LOCAL FIRE MARSHALL REGULATIONS.

i. COORDINATE LOCATION OF ALL FIRE ALARM DEVICES WITH ARCHITECTURAL PLANS AND FINISHES.

j. ALL FIRE ALARM DEVICE ROUGH-INS SHALL BE INSTALLED IN ACCORDANCE WITH CITY APPROVED SHOP DRAWINGS.

k. LOCATE ALL NOTIFICATION DEVICES PER ADA REQUIREMENTS.

l. ALL VISUAL STROBE NOTIFICATION DEVICES IN THE SAME FIELD OF VIEW SHALL BE SYNCHRONIZED.

m. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO SECURE ANY REQUIRED PERMITS FOR FIRE ALARM WORK PRIOR TO THE START OF CONSTRUCTION.

21. OCCUPANCY SENSORS

a. CONTRACTOR'S WORK TO INCLUDE ALL LABOR, MATERIALS, TOOLS, APPLIANCES, CONTROL HARDWARE, SENSOR, WIRE, JUNCTION BOXES AND EQUIPMENT NECESSARY FOR AND INCIDENTAL TO THE DELIVERY, INSTALLATION AND FURNISHING OF A COMPLETELY OPERATIONAL OCCUPANCY SENSOR LIGHTING CONTROL SYSTEM, AS DESCRIBED HEREIN.

b. WALL SWITCH PRODUCTS MUST BE CAPABLE OF WITHSTANDING THE EFFECTS OF INRUSH CURRENT.

c. WALL SWITCH SENSORS SHALL BE CAPABLE OF DETECTION OF OCCUPANCY AT DESKTOP LEVEL UP TO 300 SQUARE FEET, AND GROSS MOTION UP TO 1000 SQUARE FEET.

d. WALL SWITCH SENSORS SHALL ACCOMMODATE LOADS FROM 0 TO 800 WATTS AT 120 VOLTS; 0 TO 1200 WATTS AT 277 VOLTS.

e. ALL SENSORS SHALL BE CAPABLE OF OPERATING NORMALLY WITH ELECTRONIC BALLASTS, PL LAMP SYSTEMS AND RATED MOTOR LOADS.

THESE DRAWINGS AND SPECIFICATIONS ARE THE PROPERTY AND COPYRIGHT OF WARE MALCOMB AND SHALL NOT BE USED ON ANY OTHER WORK EXCEPT BY AGREEMENT WITH WARE MALCOMB. WRITTEN DIMENSIONS SHALL TAKE PRECEDENCE OVER SCALED DIMENSIONS AND SHALL BE VERIFIED ON THE JOB SITE. ANY DISCREPANCY SHALL BE BROUGHT TO THE NOTICE OF WARE MALCOMB PRIOR TO THE COMMENCEMENT OF ANY WORK

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ELECTRICAL SPECIFICATIONS

	DATE	REMARKS
1	09/22/2025	PLAN CHECK CORRECTIONS
2	10/15/2025	PLAN CHECK CORRECTIONS 2
3	02/04/2026	PLAN CHECK CORRECTIONS 3
4	01/26/2025	OC HEALTH DEPT
5	03/06/2026	PLAN CHECK CORRECTIONS 4
6	03/06/2026	OC HEALTH DEPT 2
7	04/30/2026	BID ADDENDUM 2

PA/PM:	TB
DRAWN BY.:	CM
JOB NO.:	LAX21-0174-02

06/06/2025

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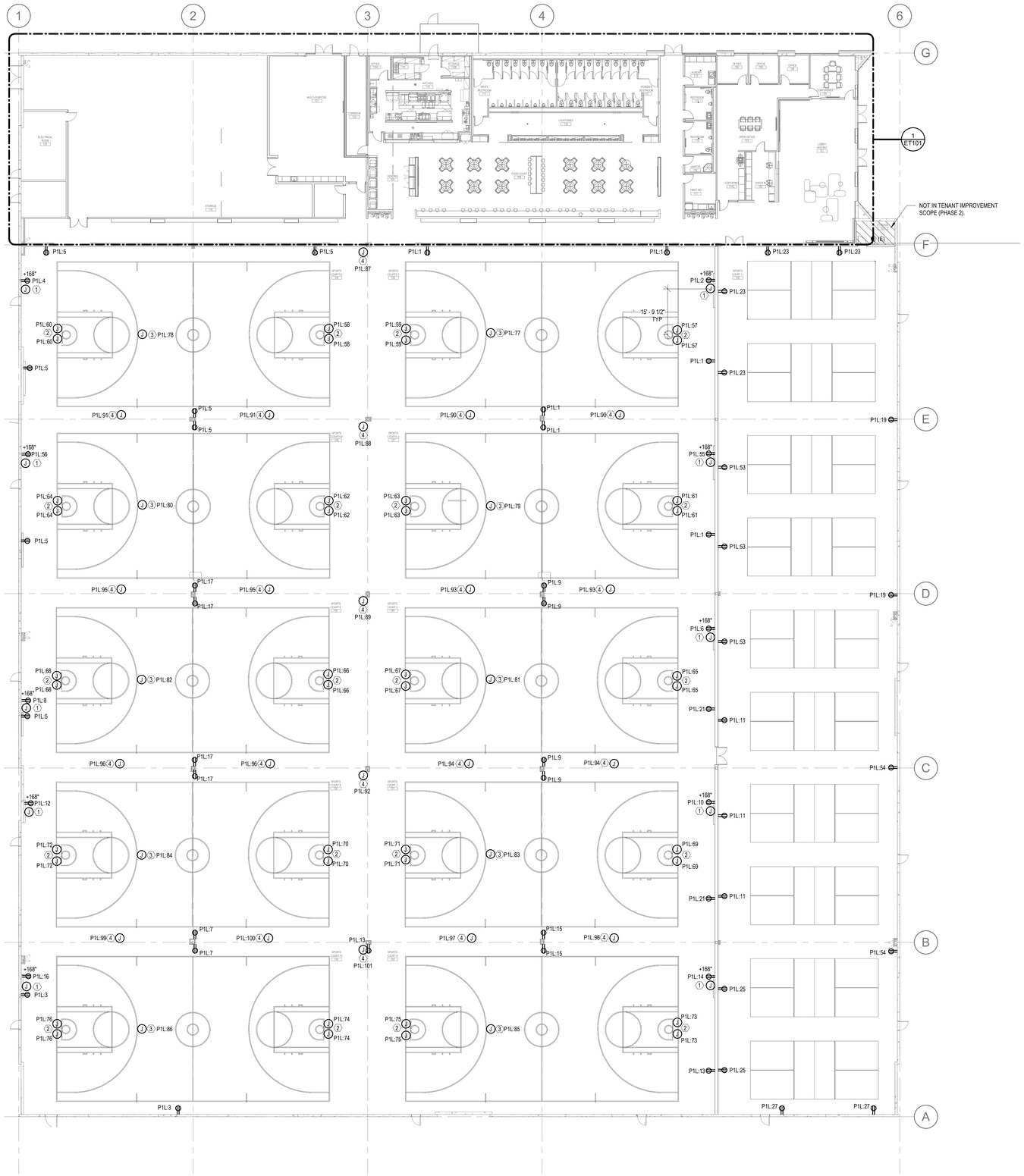
CAUTION: IF THIS SHEET IS NOT 30"x42" IT IS A REDUCED PRINT



1 ELECTRICAL FLOOR PLAN
1/16" = 1'-0"

GENERAL POWER NOTES

1. REFER TO GENERAL NOTES ON SHEET ET000.
2. REFER TO SPECIFICATIONS ON SHEET ET001.
3. ALL DEVICES ARE NEW , UNLESS OTHERWISE NOTED.
4. CIRCUITS ARE DESIGNATED BY THE NUMBER SHOWN ADJACENT TO EACH ELECTRICAL FIXTURE OR JUNCTION BOX. WIRING IS SHOWN ONLY UNDER SPECIAL CIRCUMSTANCES. PROVIDE CONDUITS, WIRE, ARMORED CABLE, AND BOXES REQUIRED TO ENERGIZE THE EQUIPMENT.
5. CIRCUIT NUMBERS ARE FOR GROUPING PURPOSES AND REFERENCE ONLY. FIELD CONDITIONS PREVAIL.
6. ALL BRANCH CIRCUITING WIRING SHALL RUN CONCEALED IN WALLS AND ABOVE HUNG CEILING, UNLESS OTHERWISE NOTED.
7. WHERE WIRING IS RUN IN OPEN CEILINGS, ALL CONDUITS SHALL BE EMT TYPE.
8. WHERE RECEPTACLES ARE SHOWN WITHOUT CIRCUIT NUMBERS, PROVIDE 120V-20A CIRCUIT FROM NEAREST PANEL TO RECEPTACLES. CONNECT NO MORE THAN (8) DUPLEX RECEPTACLES TO A SINGLE 120V-20A CIRCUIT.
9. GFCI RECEPTACLES SHALL BE USED WHERE REQUIRED BY GOVERNING CODES, INCLUDING ALL DEVICES SHOWN TO BE WITHIN 6 FEET OF SINK/WATER.
10. FOR ROOMS WITH SWITCHED RECEPTACLES SHOWN, PROVIDE ADDITIONAL POWER PACK IN CONJUNCTION WITH LIGHTING CONTROLS FOR CONTROLLED RECEPTACLE FUNCTIONALITY.
11. ALL RECEPTACLES INSTALLED IN WET LOCATIONS SHALL HAVE "IN-USE" TYPE COVERS AND MUST BE LISTED AS "EXTRA-DUTY" AS PER NEC 406.9(B)(1).
12. NOT USED
13. CONTROLLED RECEPTACLES SHOWN ON PLANS SHALL BE OCCUPANCY CONTROLLED BY OCCUPANCY SENSOR. TOP HALF SHALL BE CONTROLLED AND TURN ON WITH OCCUPANCY, AND TURN OFF ONCE THE SPACE HAS BEEN VACANT FOR 20 MINUTES. SWITCHED/OCCUPANCY CONTROLLED RECEPTACLES SHALL HAVE PERMANENT LABEL PER TITLE 24 REQUIREMENTS.
14. EC TO PROVIDE ALL REQUIRED CONDUITS, BACK BOXES, and STUB-UPS SHOWN ON GLUMAC DOCUMENTS DRAWINGS (T, TN, TY, TA SERIES DRAWINGS).
15. LOW VOLTAGE IS NOT PART OF PLAN CHECK, PERMIT ONLY.

#	KEYNOTES
1	PROVIDE POWER AND CONTROL CONNECTION FOR SCOREBOARD. COORDINATE FINAL LOCATION AND REQUIREMENT WITH SYSTEM VENDOR AND OWNER.
2	EC TO PROVIDE ELECTRICAL CONNECTION FOR BASKETBALL HOOP HOIST AND HEIGHT ADJUSTER. VERIFY FINAL CONNECTION REQUIREMENTS WITH THE HOOP PROVIDER PRIOR TO ROUGH-IN. CONTROLLER SWITCHES TO BE LOCATED AT CHECK-IN RECEPTION AND FINAL LOCATION TO BE COORDINATED WITH ARCHITECT AND OWNER PRIOR TO ROUGH-IN.
3	EC TO PROVIDE ELECTRICAL CONNECTION FOR VOLLEYBALL NET. VERIFY FINAL CONNECTION REQUIREMENTS WITH THE NET PROVIDER PRIOR TO ROUGH-IN. CONTROLLER SWITCHES TO BE LOCATED AT CHECK-IN RECEPTION AND FINAL LOCATION TO BE COORDINATED WITH ARCHITECT AND OWNER PRIOR TO ROUGH-IN.
4	EC TO PROVIDE ELECTRICAL CONNECTION FOR DIVIDING CURTAIN. VERIFY FINAL CONNECTION REQUIREMENTS WITH PROVIDER PRIOR TO ROUGH-IN. CONTROLLER SWITCHES TO BE LOCATED AT CHECK-IN RECEPTION AND FINAL LOCATION TO BE COORDINATED WITH ARCHITECT AND OWNER PRIOR TO ROUGH-IN.

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OVERALL ELECTRICAL POWER PLAN

	DATE	REMARKS
1	09/22/2025	PLAN CHECK CORRECTIONS
2	10/15/2025	PLAN CHECK CORRECTIONS 2
3	02/04/2026	PLAN CHECK CORRECTIONS 3
4	03/02/2026	OC HEALTH DEPT
5	03/06/2026	PLAN CHECK CORRECTIONS 4
6	03/06/2026	OC HEALTH DEPT 2
7	04/30/2026	BID ADDENDUM 2

PA/PM:	TB
DRAWN BY.:	CM
JOB NO.:	LAX21-0174-02

SHEET
ET100

06/06/2025
5/6/2026 10:03:16 AM

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ELECTRICAL KITCHEN EQUIPMENT SCHEDULE

TAG	QTY	NAME	AMPS	VOLTAGE/ PHASE	LOAD	CONNECTION TYPE	WIRE	ELEVATION	REMARKS
01	1	AIR CURTAIN	2.4 A	120V/1P	288 VA	EC	3/4"C, 1#12, #12N, #12G	18"	VERIFY REQUIREMENTS WITH SYSTEM DRAWINGS
2.0	1	WALK-IN COMPLEX - ON SLAB WITH RAMP	15.0 A	120V/1P	1800 VA	EC	3/4"C, 1#12, #12N, #12G	18"	VERIFY REQUIREMENTS WITH SYSTEM DRAWINGS
2.1	1	EVAPORATOR COIL, +35F	1.8 A	120V/1P	220 VA	EC	3/4"C, 1#12, #12N, #12G	18"	VERIFY REQUIREMENTS WITH SYSTEM DRAWINGS
2.2	1	CONDENSER, AIR COOLED	7.4 A	208V/1P	1540 VA	EC	3/4"C, 2#12, #12N, #12G	18"	VERIFY REQUIREMENTS WITH SYSTEM DRAWINGS
7.3	1	UNDER COUNTER DISHWASHER	22.0 A	208V/3P	7920 VA	15-30R	3/4"C, 1#10, #10N, #10G	18"	
13.0	2	FOOD SLICER, ELECTRIC	2.0 A	120V/1P	240 VA	5-15R	3/4"C, 1#12, #12N, #12G	48"	
15.0	2	REFRIGERATED PREP TABLE	3.9 A	120V/1P	470 VA	5-15R	3/4"C, 1#12, #12N, #12G	18"	
16.0	1	BACK COUNTER	16.0 A	120V/1P	1920 VA	5-20R	3/4"C, 1#12, #12N, #12G	48"	GFCI CONVENIENCE RECEPTACLE - RATING ASSUMES 20.0 AMP CIRCUIT
16.1	1	HOT FOOD WELL UNIT, DROP-IN	17.9 A	208V/1P	3720 VA	EC	3/4"C, 2#10, #10N, #10G	24"	
22.0	2	REFRIGERATOR, UNDERCOUNTER	3.0 A	120V/1P	360 VA	5-15R	3/4"C, 1#12, #12N, #12G	18"	
23.0	1	FRYER WITH FILTER	7.0 A	120V/1P	840 VA	5-15R	3/4"C, 1#12, #12N, #12G	12"	
27.1	2	HOT FOOD WELL	6.0 A	208V/1P	1240 VA	EC	3/4"C, 2#12, #12N, #12G	30"	
28.0	1	REFRIGERATED BASE, SELF-CONTAINED	12.6 A	120V/1P	1510 VA	5-15R	3/4"C, 1#12, #12N, #12G	10"	
32.0	1	FRYER WITH FILTER	5.6 A	120V/1P	670 VA	5-15R	3/4"C, 1#12, #12N, #12G	12"	
33.0	1	COMBI OVEN, GAS	12.0 A	120V/1P	1400 VA	5-20R	3/4"C, 1#12, #12N, #12G	24"	ADD DATA CONNECTION
34.0	1	EXHAUST HOOD - LEFT	16.0 A	120V/1P	1920 VA	EC	3/4"C, 1#12, #12N, #12G	18"	VERIFY REQUIREMENTS WITH SYSTEM DRAWINGS
34.1	1	EXHAUST HOOD - RIGHT	16.0 A	120V/1P	1920 VA	EC	3/4"C, 1#12, #12N, #12G	18"	VERIFY REQUIREMENTS WITH SYSTEM DRAWINGS
34.3	1	FIRE SUPPRESSION SYSTEM	15.0 A	120V/1P	1800 VA	EC	3/4"C, 2#12, #12N, #12G	18"	VERIFY REQUIREMENTS WITH SYSTEM DRAWINGS
38.0	1	ICE MACHINE	11.0 A	208V/1P	2280 VA	EC	3/4"C, 2#10, #10N, #10G	66"	
42.0	1	WORKTABLE WITH SINK	16.0 A	120V/1P	1920 VA	5-20R	3/4"C, 1#12, #12N, #12G	48"	GFCI CONVENIENCE RECEPTACLE - RATING ASSUMES 20.0 AMP CIRCUIT
44.0	1	MIXER, COUNTERTOP	4.0 A	120V/1P	800 VA	5-15R	3/4"C, 1#12, #12N, #12G	48"	
45.0	1	FOOD PROCESSOR	7.0 A	120V/1P	840 VA	5-15R	3/4"C, 1#12, #12N, #12G	48"	
46.0	2	BACK COUNTER W/ SINK	16.0 A	120V/1P	1920 VA	5-20R	3/4"C, 1#12, #12N, #12G	48"	GFCI CONVENIENCE RECEPTACLE - RATING ASSUMES 20.0 AMP CIRCUIT
47.0	1	COFFEE GRINDER	8.0 A	120V/1P	960 VA	5-15R	3/4"C, 1#12, #12N, #12G	40"	
48.0	1	COFFEE BREWER	13.7 A	120V/1P	1650 VA	EC	3/4"C, 1#12, #12N, #12G	40"	
53.0	2	POINT OF SALE SYSTEM	5.0 A	120V/1P	600 VA	5-15R	3/4"C, 1#12, #12N, #12G	38"	PROVIDE DATA CONNECTION. VERIFY WITH OWNER
55.0	2	MERCHANDISER, SELF-SERVICE	16.0 A	208V/1P	2820 VA	6-20R	3#10 & 1#10 GND, IN 3/4" C.	8"	
56.0	1	REFRIGERATOR, REACH-IN	5.6 A	120V/1P	672 VA	5-15R	3/4"C, 1#12, #12N, #12G	84"	

GENERAL ELECTRICAL FOOD SERVICE NOTES:

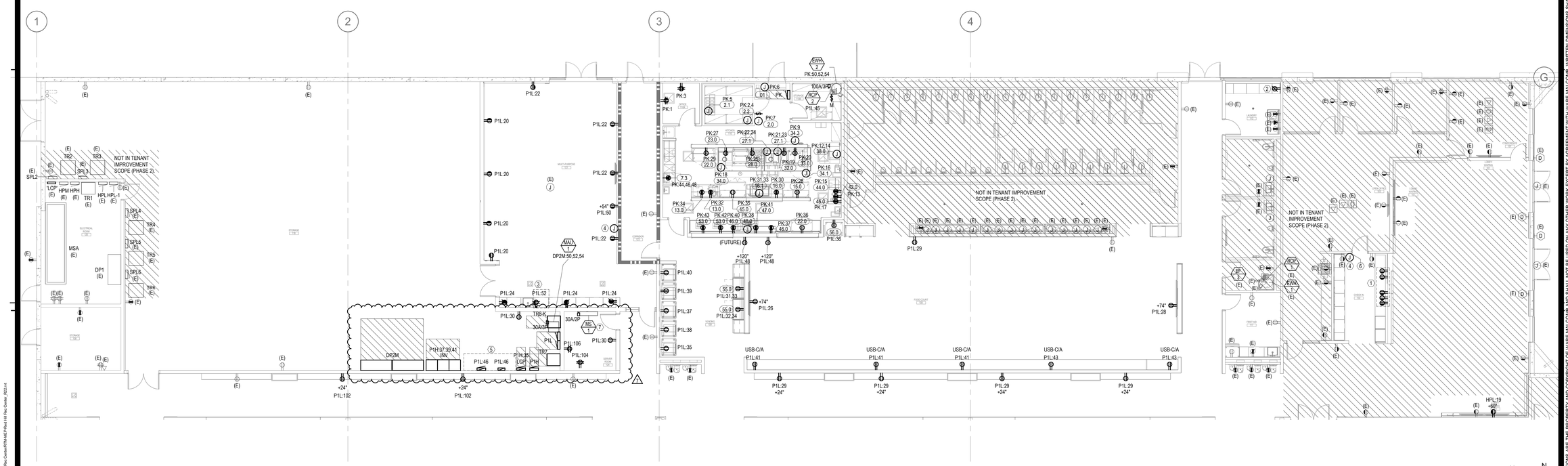
1. ELECTRICAL PLANS SHOW EQUIPMENT NUMBERS WHICH CORRESPONDS TO EQUIPMENT SHOWN ON FOOD SERVICE DRAWINGS. REFER TO FOOD SERVICE PLANS FOR COMPLETE DESCRIPTION OF EQUIPMENT AND POWER REQUIREMENTS.
2. VERIFY ROUGH-IN REQUIREMENTS, LOCATIONS, MOUNTING HEIGHTS, VOLTAGE, PHASE, AMPS, HP, KW, NEMA RATINGS, ETC FOR ALL FOOD SERVICE EQUIPMENT PRIOR TO ROUGH-IN. DEVICE LOCATIONS SHOWN ON ELECTRICAL PLANS ARE APPROXIMATE. REFER TO FOOD SERVICE EQUIPMENT PLANS AND SHOP DRAWINGS FOR EXACT ROUGH-IN LOCATIONS AND REQUIREMENTS.
3. FURNISH AND INSTALL DISCONNECT SWITCHES, INTERLOCKS, CONDUIT AND WIRING, AND INSTALL AS SPECIFICALLY OUTLINED WITHIN THE FOOD SERVICE CONSULTANT DRAWINGS.
4. FOR EQUIPMENT ITEM NOT PROVIDED WITH CORD AND PLUG CONNECTIONS. VERIFY THE EQUIPMENT CONTAINS AN INTEGRAL EQUIPMENT POWER SWITCH. IF EQUIPMENT IS NOT PROVIDED WITH MANUAL SWITCH PROVIDE A WALL MOUNTED DISCONNECT SWITCH FOR THE EQUIPMENT.
5. ALL EQUIPMENT JUNCTION BOXES SHAL INCLUDE FINAL CONNECTION TO THIER RESPECTIVE KITCHEN EQUIPMENT. VERIFY REQUIREMENTS WITH EQUIPMENT SUPPLIER AND PROVIDE ALL NECESSARY ITEMS TO MEET THE EQUIPMENT'S ELECTRICAL INSTALLATION REQUIREMENTS.

GENERAL POWER NOTES

1. REFER TO GENERAL NOTES ON SHEET ET000.
2. REFER TO SPECIFICATIONS ON SHEET ET001.
3. ALL DEVICES ARE NEW , UNLESS OTHERWISE NOTED.
4. CIRCUITS ARE DESIGNATED BY THE NUMBER SHOWN ADJACENT TO EACH ELECTRICAL FIXTURE OR JUNCTION BOX. WIRING IS SHOWN ONLY UNDER SPECIAL CIRCUMSTANCES. PROVIDE CONDUITS, WIRE, ARMORED CABLE, AND BOXES REQUIRED TO ENERGIZE THE EQUIPMENT.
5. CIRCUIT NUMBERS ARE FOR GROUPING PURPOSES AND REFERENCE ONLY. FIELD CONDITIONS PREVAIL.
6. ALL BRANCH CIRCUITING WIRING SHALL RUN CONCEALED IN WALLS AND ABOVE HUNG CEILING, UNLESS OTHERWISE NOTED.
7. WHERE WIRING IS RUN IN OPEN CEILINGS, ALL CONDUITS SHALL BE EMT TYPE.
8. WHERE RECEPTACLES ARE SHOWN WITHOUT CIRCUIT NUMBERS, PROVIDE 120V-20A CIRCUIT FROM NEAREST PANEL TO RECEPTACLES. CONNECT NO MORE THAN (8) DUPLEX RECEPTACLES TO A SINGLE 120V-20A CIRCUIT.
9. GFCI RECEPTACLES SHALL BE USED WHERE REQUIRED BY GOVERNING CODES, INCLUDING ALL DEVICES SHOWN TO BE WITHIN 6 FEET OF SINK/WATER.
10. FOR ROOMS WITH SWITCHED RECEPTACLES SHOWN, PROVIDE ADDITIONAL POWER PACK IN CONJUNCTION WITH LIGHTING CONTROLS FOR CONTROLLED RECEPTACLE FUNCTIONALITY.
11. ALL RECEPTACLES INSTALLED IN WET LOCATIONS SHALL HAVE "IN-USE" TYPE COVERS AND MUST BE LISTED AS "EXTRA-DUTY" AS PER NEC 406.9(B)(1).
12. NOT USED
13. CONTROLLED RECEPTACLES SHOWN ON PLANS SHALL BE OCCUPANCY CONTROLLED BY OCCUPANCY SENSOR. TOP HALF SHALL BE CONTROLLED AND TURN ON WITH OCCUPANCY, AND TURN OFF ONCE THE SPACE HAS BEEN VACANT FOR 20 MINUTES. SWITCHED/OCCUPANCY CONTROLLED RECEPTACLES SHALL HAVE PERMANENT LABEL PER TITLE 24 REQUIREMENTS.
14. EC TO PROVIDE ALL REQUIRED CONDUITS, BACK BOXES, and STUB-UPS SHOWN ON GLUMAC DOCUMENTS DRAWINGS (T, TN, TY, TA SERIES DRAWINGS).
15. LOW VOLTAGE IS NOT PART OF PLAN CHECK, PERMIT ONLY.

 # KEYNOTES

1 EC TO CIRCUIT CHECK-IN DESK RECEPTACLES TO EXISTING HPL-SPARE.
2 EC TO CIRCUIT RECEPTACLE TO EXISTING LOCAL HPL-15 CIRCUIT IN LAUNDRY 113'.
3 EC TO PROVIDE POWER AND DATA FOR AV RACK AS SHOWN. PROVIDE UNDERNEATH CABINET. COORDINATE EXACT LOCATION WITH IT DRAWINGS.
4 EC TO PROVIDE 2-GANG JUNCTION BOX AND 3/4"C WITH PULLSTRING UP TO ACCESSIBLE CEILING FOR TOUCH PANEL. PROVIDE AT +44"AFF. COORDINATE EXACT LOCATION WITH IT DRAWINGS.
5 LIGHTING CONTROL PANELS EQUIPMENT. COORDINATE FINAL REQUIREMENTS WITH LIGHTING PROVIDER.
6 EC TO PROVIDE GYM CONTROL SYSTEM FOR GYMNASIUM EQUIPMENT. VERIFY FINAL CONNECTION REQUIREMENTS WITH PROVIDER PRIOR TO ROUGH-IN. FINAL LOCATION TO BE COORDINATED WITH ARCHITECT AND OWNER PRIOR TO ROUGH-IN. CONTROLS TO BE CLEARLY IDENTIFIED WITH CORRESPONDING GYMNASIUM EQUIPMENT.
7 INDOOR UNIT TO BE POWERED FROM OUTDOOR UNIT. PROVIDE NECESSARY CONNECTIONS BETWEEN THE TWO UNITS PER MANUFACTURER'S INSTALLATION DOUMENTS.



1 TI ELECTRICAL ENLARGED POWER PLAN
1/8" = 1'-0"

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ELECTRICAL ENLARGED POWER PLAN

	DATE	REMARKS
1	09/22/2025	PLAN CHECK CORRECTIONS
2	10/15/2025	PLAN CHECK CORRECTIONS 2
3	02/04/2026	PLAN CHECK CORRECTIONS 3
4	02/06/2026	OC HEALTH DEPT 1
5	03/06/2026	PLAN CHECK CORRECTIONS 4
6	03/06/2026	OC HEALTH DEPT 2
7	04/30/2026	BID ADDENDUM 2

PA/PM:	TB
DRAWN BY.:	CM
JOB NO.:	LAX21-0174-02

06/06/2025

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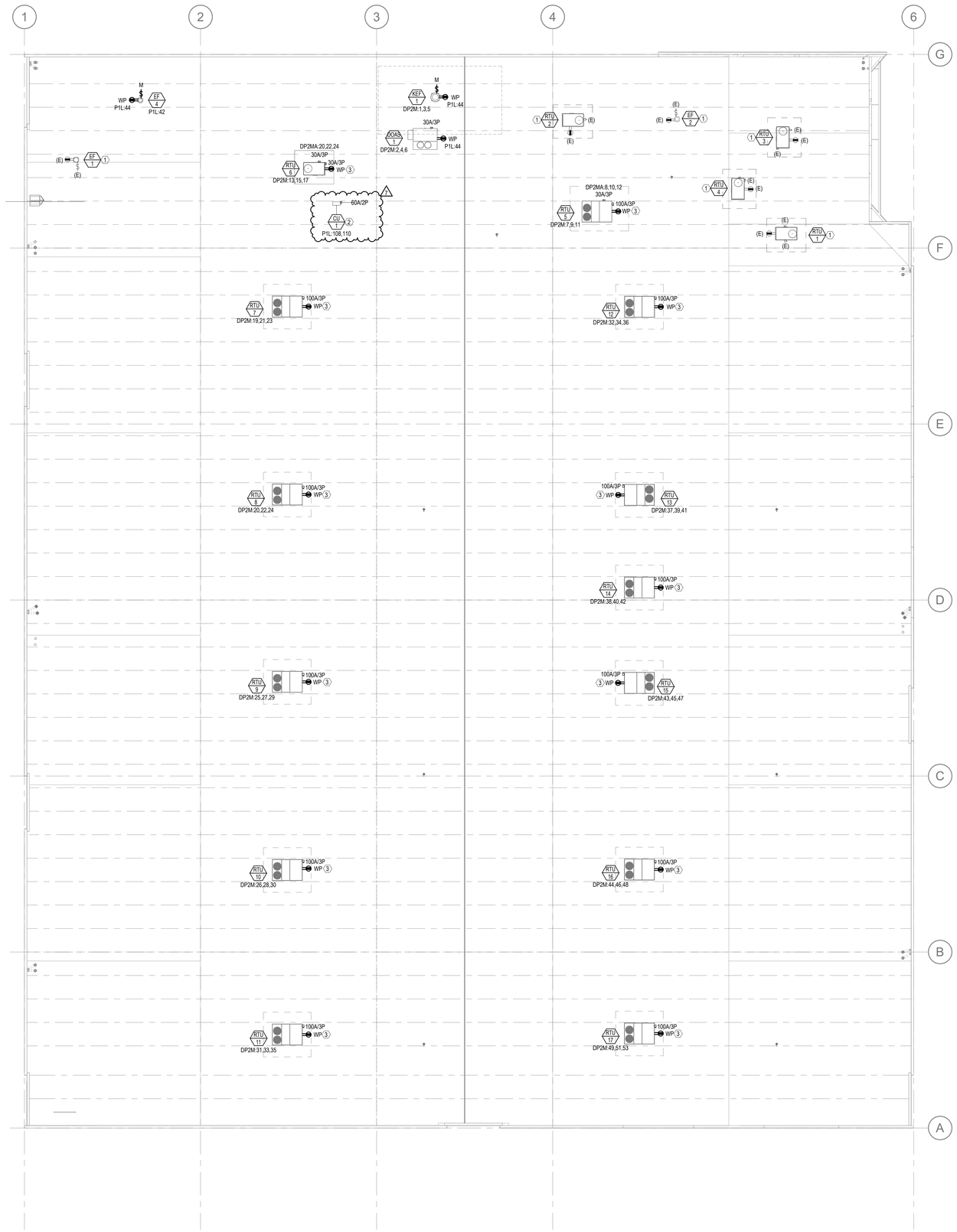

1 TI ELECTRICAL ROOF PLAN
1/16" = 1'-0"

GENERAL POWER NOTES

1. REFER TO GENERAL NOTES ON SHEET ET000.
2. REFER TO SPECIFICATIONS ON SHEET ET001.
3. ALL DEVICES ARE NEW , UNLESS OTHERWISE NOTED.
4. CIRCUITS ARE DESIGNATED BY THE NUMBER SHOWN ADJACENT TO EACH ELECTRICAL FIXTURE OR JUNCTION BOX. WIRING IS SHOWN ONLY UNDER SPECIAL CIRCUMSTANCES. PROVIDE CONDUITS, WIRE, ARMORED CABLE, AND BOXES REQUIRED TO ENERGIZE THE EQUIPMENT.
5. CIRCUIT NUMBERS ARE FOR GROUPING PURPOSES AND REFERENCE ONLY. FIELD CONDITIONS PREVAIL.
6. ALL BRANCH CIRCUITING WIRING SHALL RUN CONCEALED IN WALLS AND ABOVE HUNG CEILING, UNLESS OTHERWISE NOTED.
7. WHERE WIRING IS RUN IN OPEN CEILINGS, ALL CONDUITS SHALL BE EMT TYPE.
8. WHERE RECEPTACLES ARE SHOWN WITHOUT CIRCUIT NUMBERS, PROVIDE 120V-20A CIRCUIT FROM NEAREST PANEL TO RECEPTACLES. CONNECT NO MORE THAN (8) DUPLEX RECEPTACLES TO A SINGLE 120V-20A CIRCUIT.
9. GFCI RECEPTACLES SHALL BE USED WHERE REQUIRED BY GOVERNING CODES, INCLUDING ALL DEVICES SHOWN TO BE WITHIN 6 FEET OF SINK/WATER.
10. FOR ROOMS WITH SWITCHED RECEPTACLES SHOWN, PROVIDE ADDITIONAL POWER PACK IN CONJUNCTION WITH LIGHTING CONTROLS FOR CONTROLLED RECEPTACLE FUNCTIONALITY.
11. ALL RECEPTACLES INSTALLED IN WET LOCATIONS SHALL HAVE "IN-USE" TYPE COVERS AND MUST BE LISTED AS "EXTRA-DUTY" AS PER NEC 406.9(B)(1).
12. NOT USED
13. CONTROLLED RECEPTACLES SHOWN ON PLANS SHALL BE OCCUPANCY CONTROLLED BY OCCUPANCY SENSOR. TOP HALF SHALL BE CONTROLLED AND TURN ON WITH OCCUPANCY, AND TURN OFF ONCE THE SPACE HAS BEEN VACANT FOR 20 MINUTES. SWITCHED/OCCUPANCY CONTROLLED RECEPTACLES SHALL HAVE PERMANENT LABEL PER TITLE 24 REQUIREMENTS.
14. EC TO PROVIDE ALL REQUIRED CONDUITS, BACK BOXES, and STUB-UPS SHOWN ON GLUMAC DOCUMENTS DRAWINGS (T, TN, TY, TA SERIES DRAWINGS).
15. LOW VOLTAGE IS NOT PART OF PLAN CHECK, PERMIT ONLY.

 # KEYNOTES

1 EXISTING EQUIPMENT INSTALLED PREVIOUSLY DURING PHASE 1. SHOWN FOR COORDINATION PURPOSES.
2 INDOOR UNIT TO BE POWERED FROM OUTDOOR UNIT. PROVIDE NECESSARY CONNECTIONS BETWEEN THE TWO UNITS PER MANUFACTURER'S INSTALLATION DOUMENTS.
3 WP/GCFI RECEPTACLE IS PROVIDED WITH THE UNIT & SHALL HAVE INTEGRAL WIRING TO THE UNIT. THE RECEPTACLE SHALL NOT BE CONNECTED TO THE LOAD SIDE OF THE EQUIPMENT DISCONNECTION MEAN.

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ELECTRICAL ROOF PLAN

	DATE	REMARKS
1	09/22/2025	PLAN CHECK CORRECTIONS
2	10/15/2025	PLAN CHECK CORRECTIONS 2
3	02/04/2026	PLAN CHECK CORRECTIONS 3
4	01/06/2026	OC HEALTH DEPT 1
5	02/06/2026	PLAN CHECK CORRECTIONS 4
6	03/06/2026	OC HEALTH DEPT 2
7	04/30/2026	IBD ADDENDUM 2

PA/PM:	Approver
DRAWN BY.:	Author
JOB NO.:	LAX21-0174-02

06/06/2025

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Autodesk Docs://LAX21-0174-02_17300 Red Hill - Rec Center/RTM/ET Red Hill Rec Center_R22.rvt

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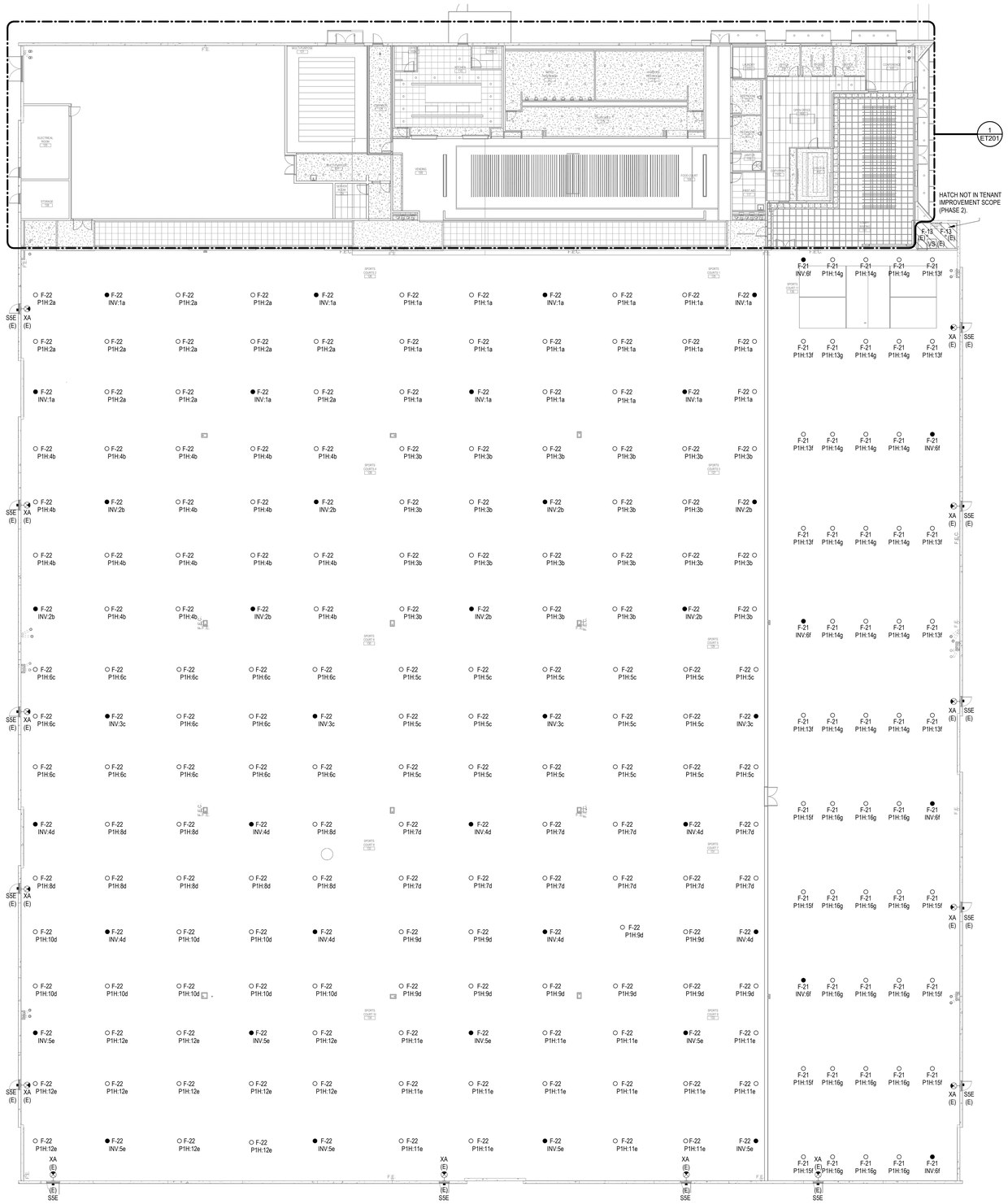

1 FIRST FLOOR LIGHTING PLAN
1/16" = 1'-0"

GENERAL LIGHTING NOTES

1. REFER TO GENERAL NOTES ON SHEET ET000.
2. REFER TO SPECIFICATIONS ON SHEET ET001.
3. REFER TO LIGHT FIXTURE SCHEDULE ON ET301.
4. EMERGENCY BATTERY PACKS AND NIGHT LIGHTS SHALL BE CIRCUITED TO LOCAL CIRCUIT AHEAD OF SWITCHING AND CONTROLS.
5. FIXTURES WITH 'NL' DESIGNATION SHALL OPERATE AS NIGHT LIGHT.
6. FOR ALL LIGHTING CONTROLS, PROVIDE ALL NECESSARY OCCUPANCY SENSORS, RELAYS, OVERRIDES, POWERPACKS, ETC. FOR A COMPLETE AND OPERATIONAL SYSTEM.
7. ALL WALL SWITCHES SHALL BE LOW-VOLTAGE SWITCHES. NO 277V SWITCHES WILL BE PERMITTED. PROVIDE ALL NECESSARY COMPONENTS, INCLUDING LOW VOLTAGE SWITCH, POWER PACK, RELAY, ETC. FOR A COMPLETE AND OPERATIONAL SYSTEM.
8. IN AREAS WITH OPEN CEILINGM CEILING MOUNTED VACANCY/OCCUPANCY SENSORS SHALL BE PENDANT MOUNTED.
9. CIRCUITS ARE DESIGNATED BY THE NUMBER SHOWN ADJACENT TO EACH LIGHT FIXTURE OR JUNCTION BOX. WIRING IS SHOWN ONLY UNDER SPECIAL CIRCUMSTANCES. PROVIDE ALL CONDUITS, WIRING, AND BOXES, AS WELL AS, CEILING OUTLETS AND WHIPS REQUIRED TO ENERGIZE LIGHTING FIXTURES AS SHOWN. UTILIZE #10 THHN WHEN FEEDER FROM THE LAST CONNECTED FIXTURE RUN IS LONGER THAN 80 FEET.
10. CIRCUIT NUMBERS ARE FOR GROUPING PURPOSES AND REFERENCE ONLY. FIELD CONDITIONS PREVAIL.
11. ELECTRICAL CONTRACTOR TO COORDINATE LIGHT FIXTURE MOUNTING WITH DUCTWORK, ATHLETIC EQUIPMENT AND FIRE PROTECTION.
12. WHERE WIRING IS RUN IN OPEN CEILING, ALL WIRING SHALL BE IN EMT TYPE.
13. ALL DRIVERS AND TRANSFORMERS FOR LIGHTING FIXTURES SHALL BE INSTALLED IN AN ACCESSIBLE LOCATION WITHIN THE MANUFACTURERS SUGGESTED DISTANCE. PLACEMENT OF DRIVERS AND TRANSFORMERS SHALL BE COORDINATED WITH OWNER AND CLEARLY LABELED.
14. FOR ALL WALL MOUNTED SENSORS SHOWN, PROVIDE DUAL TECHNOLOGY WALL SWITCH SENSORS WITH 20A, 120V POWER PACK. SENSORS DESIGNATED AS 'VS' SHALL BE SET TO MANUAL-ON/AUTO-OFF. SENSORS SHALL BE SET TO AUTO-OFF AFTER 20 MINUTE TIME OUT.
15. FOR ALL CEILING MOUNTED 'VS' SENSORS SHOWN, PROVIDE DUAL TECHNOLOGY (PIR & ULTRASONIC) LOW VOLTAGE CEILING MOUNTED SENSOR WITH 2000 SQ. FT. MINIMUM COVERAGE. PROVIDE 20A,120V RATED POWER PACKS FOR EACH LIGHTING ZONE SHOWN AT THE SENSOR. PROVIDE FIXTURES WITH 0-10V DIMMING AND ASSOCIATED LOW VOLTAGE DIMMER/OVERRIDE SWITCH (LOCATION OF SWITCH SHOWN ON PLANS) FOR MANUAL DIMMING/OVERRIDE. SENSORS DESIGNATED AS 'VS' SHALL OPERATE AS MANUAL-ON/AUTO-OFF. SENSORS SHALL BE SET TO AUTO-OFF AFTER 20 MINUTE TIME OUT.
16. FOR ALL CEILING MOUNTED 'OS' SENSORS SHOWN, PROVIDE DUAL TECHNOLOGY (PIR & ULTRASONIC) LOW VOLTAGE CEILING MOUNTED SENSOR WITH 2000 SQ. FT. MINIMUM COVERAGE. PROVIDE 20A,120V RATED POWER PACKS FOR EACH LIGHTING ZONE SHOWN AT THE SENSOR. PROVIDE FIXTURES WITH 0-10V DIMMING AND ASSOCIATED LOW VOLTAGE DIMMER/OVERRIDE SWITCH (LOCATION OF SWITCH SHOWN ON PLANS) FOR MANUAL DIMMING/OVERRIDE. SENSORS DESIGNATED AS 'OS' SHALL OPERATE AS AUTO-ON/AUTO-OFF. SENSORS SHALL BE SET TO AUTO-OFF AFTER 20 MINUTE TIME OUT.

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OVERALL ELECTRICAL LIGHTING PLAN

	DATE	REMARKS
1	09/22/2025	PLAN CHECK CORRECTIONS
2	10/15/2025	PLAN CHECK CORRECTIONS 2
3	02/04/2026	PLAN CHECK CORRECTIONS 3
4	02/06/2026	OCHA 1ST REVIEW
5	03/06/2026	PLAN CHECK CORRECTIONS 4
6	03/06/2026	OC HEALTH DEPT 2
7	04/30/2026	BID ADDENDUM 2

PA/PM:	TB
DRAWN BY.:	CM
JOB NO.:	LAX21-0174-02

06/06/2025

SHEET
ET200

5/8/2026 10:03:42 AM

Autodesk Docs://LAX21-0174-02_17300 Red Hill - Rec Center/RTM/AE/Red Hill Rec Center_R22.rvt

CAUTION: IF THIS SHEET IS NOT 30"x42" IT IS A REDUCED PRINT

KEYNOTES

1. PROVIDE A LIGHTING CONTROL PANEL FOR THE PROJECT. REFER TO SHEET ET301 FOR LIGHTING CONTROL SCHEDULE INFORMATION. COORDINATE THESE SPACES WITH OWNER AND EXISTING BUILDING CONTROLS.
2. IN 'LOBBY/WAITING 101' & 'CHECK-IN 102' SPACES, PROVIDE EACH LIGHT FIXTURE TYPE ON A DIFFERENT SWITCH LEVEL. CONFIRM SWITCH LEVELS WITH OWNER.
3. EC TO CIRCUIT F-5 IN AREA TO HPH:22.
4. EC TO CIRCUIT F-3, F-3E, F-13, F-10C, F-10DE, F-10F, F-10G, F-10H, F-10HE, F-10JE, F-10K, AND F-15C IN WEST SPORTS COURTS CORRIDOR TO P1H:22n.
5. EC TO CIRCUIT F-8, F-8E, F-9, F-9E, F-15D, AND F-15F IN FOOD COURT, FOOD COURT CORRIDOR, AND VENDING AREAS TO P1H:23m. EXISTING XA IS EXISTING TO REMAIN ON HPH:11. EC TO CIRCUIT NEW XA IN AREA TO HPH:11.
6. EC TO CIRCUIT F-6A IN EAST FOOD COURT AREA TO P1H:19m.
7. EC TO CIRCUIT F-6A IN WEST FOOD COURT AREA TO P1H:21m.
8. EC TO CIRCUIT F-13, F-13E, F-14, F-18, F-18E, AND F-19E IN KITCHEN AREA TO P1H:17. EXISTING XA IS EXISTING TO REMAIN ON HPH:11.
9. EC TO CIRCUIT F-6B, F-6BE, F13, AND F13E IN MULTI-PURPOSE AREA TO P1H:18. EXISTING XA IS EXISTING TO REMAIN ON HPH:11. EC TO CIRCUIT NEW XA IN MULTI-PURPOSE AREA TO HPH:11.
10. EC TO CIRCUIT F-11, F-11A, F-11B, F-11C IN LOBBY AREA TO HPH:24, THE EXISTING F11 CIRCUIT IN THE SPACE.
11. AREA IS EXEMPT FROM DAYLIGHT CONTROLS PER CALIFORNIA ENERGY CODE 130.1(D) EXCEPTION 3.
12. PROVIDE F-15D AND F-15F FIXTURES AND ROUGH-INS UP TO ACCESSIBLE CEILING. CONNECTION AND CONTROL TO BE PROVIDED IN PHASE 2.
13. REFER TO ARCHITECT DRAWINGS FOR ADDITIONAL INSTALLATION INFORMATION.
14. EC TO CIRCUIT F-3, F-3E, F-10A, F-10AE, F-10B, F-10BE, F-23A, AND F-23B IN EAST SPORTS COURTS CORRIDOR TO P1H:20n. EC TO CIRCUIT NEW XB IN EAST SPORTS COURTS CORRIDOR TO HPH:11.

GENERAL LIGHTING NOTES

1. REFER TO GENERAL NOTES ON SHEET ET000.
2. REFER TO SPECIFICATIONS ON SHEET ET001.
3. REFER TO LIGHT FIXTURE SCHEDULE ON ET301.
4. EMERGENCY BATTERY PACKS AND NIGHT LIGHTS SHALL BE CIRCUITED TO LOCAL CIRCUIT AHEAD OF SWITCHING AND CONTROLS.
5. FIXTURES WITH 'NL' DESIGNATION SHALL OPERATE AS NIGHT LIGHT.
6. FOR ALL LIGHTING CONTROLS, PROVIDE ALL NECESSARY OCCUPANCY SENSORS, RELAYS, OVERRIDES, POWERPACKS, ETC. FOR A COMPLETE AND OPERATIONAL SYSTEM.
7. ALL WALL SWITCHES SHALL BE LOW-VOLTAGE SWITCHES. NO 277V SWITCHES WILL BE PERMITTED. PROVIDE ALL NECESSARY COMPONENTS, INCLUDING LOW VOLTAGE SWITCH, POWER PACK, RELAY, ETC. FOR A COMPLETE AND OPERATIONAL SYSTEM.
8. IN AREAS WITH OPEN CEILINGM CEILING MOUNTED VACANCY/OCCUPANCY SENSORS SHALL BE PENDANT MOUNTED.
9. CIRCUITS ARE DESIGNATED BY THE NUMBER SHOWN ADJACENT TO EACH LIGHT FIXTURE OR JUNCTION BOX. WIRING IS SHOWN ONLY UNDER SPECIAL CIRCUMSTANCES. PROVIDE ALL CONDUITS, WIRING, AND BOXES, AS WELL AS, CEILING OUTLETS AND WHIPS REQUIRED TO ENERGIZE LIGHTING FIXTURES AS SHOWN. UTILIZE #10 THIN WHEN FEEDER FROM THE LAST CONNECTED FIXTURE RUN IS LONGER THAN 80 FEET.
10. CIRCUIT NUMBERS ARE FOR GROUPING PURPOSES AND REFERENCE ONLY. FIELD CONDITIONS PREVAIL.
11. ELECTRICAL CONTRACTOR TO COORDINATE LIGHT FIXTURE MOUNTING WITH DUCTWORK, ATHLETIC EQUIPMENT AND FIRE PROTECTION.
12. WHERE WIRING IS RUN IN OPEN CEILING, ALL WIRING SHALL BE IN EMT TYPE.
13. ALL DRIVERS AND TRANSFORMERS FOR LIGHTING FIXTURES SHALL BE INSTALLED IN AN ACCESSIBLE LOCATION WITHIN THE MANUFACTURERS SUGGESTED DISTANCE. PLACEMENT OF DRIVERS AND TRANSFORMERS SHALL BE COORDINATED WITH OWNER AND CLEARLY LABELED.
14. FOR ALL WALL MOUNTED SENSORS SHOWN, PROVIDE DUAL TECHNOLOGY WALL SWITCH SENSORS WITH 20A, 120V POWER PACK. SENSORS DESIGNATED AS 'VS' SHALL BE SET TO MANUAL-ON/AUTO-OFF. SENSORS SHALL BE SET TO AUTO-OFF AFTER 20 MINUTE TIME OUT.
15. FOR ALL CEILING MOUNTED 'VS' SENSORS SHOWN, PROVIDE DUAL TECHNOLOGY (PIR & ULTRASONIC) LOW VOLTAGE CEILING MOUNTED SENSOR WITH 2000 SQ. FT. MINIMUM COVERAGE. PROVIDE 20A,120V RATED POWER PACKS FOR EACH LIGHTING ZONE SHOWN AT THE SENSOR. PROVIDE FIXTURES WITH 0-10V DIMMING AND ASSOCIATED LOW VOLTAGE DIMMER/OVERRIDE SWITCH (LOCATION OF SWITCH SHOWN ON PLANS) FOR MANUAL DIMMING/OVERRIDE. SENSORS DESIGNATED AS 'VS' SHALL OPERATE AS MANUAL-ON/AUTO-OFF. SENSORS SHALL BE SET TO AUTO-OFF AFTER 20 MINUTE TIME OUT.
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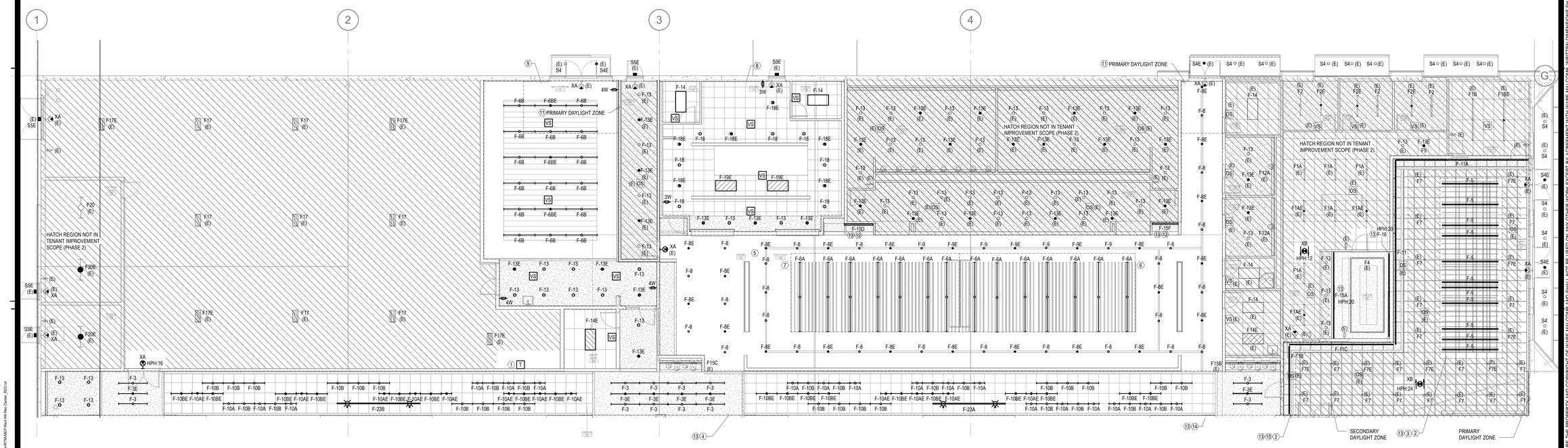

1 TI ELECTRICAL ENLARGED LIGHTING PLAN
1/8" = 1'-0"

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ELECTRICAL ENLARGED LIGHTING PLAN

REMARKS

	DATE	
1	09/22/2025	PLAN CHECK CORRECTIONS
2	10/15/2025	PLAN CHECK CORRECTIONS 2
3	02/04/2026	PLAN CHECK CORRECTIONS 3
4	02/06/2026	OC HEALTH DEPT 1
5	03/06/2026	PLAN CHECK CORRECTIONS 4
6	03/06/2026	OC HEALTH DEPT 2
7	04/30/2026	BID ADDENDUM 2

PA/PM:	TB
DRAWN BY.:	CM
JOB NO.:	LAX21-0174-02

06/06/2025

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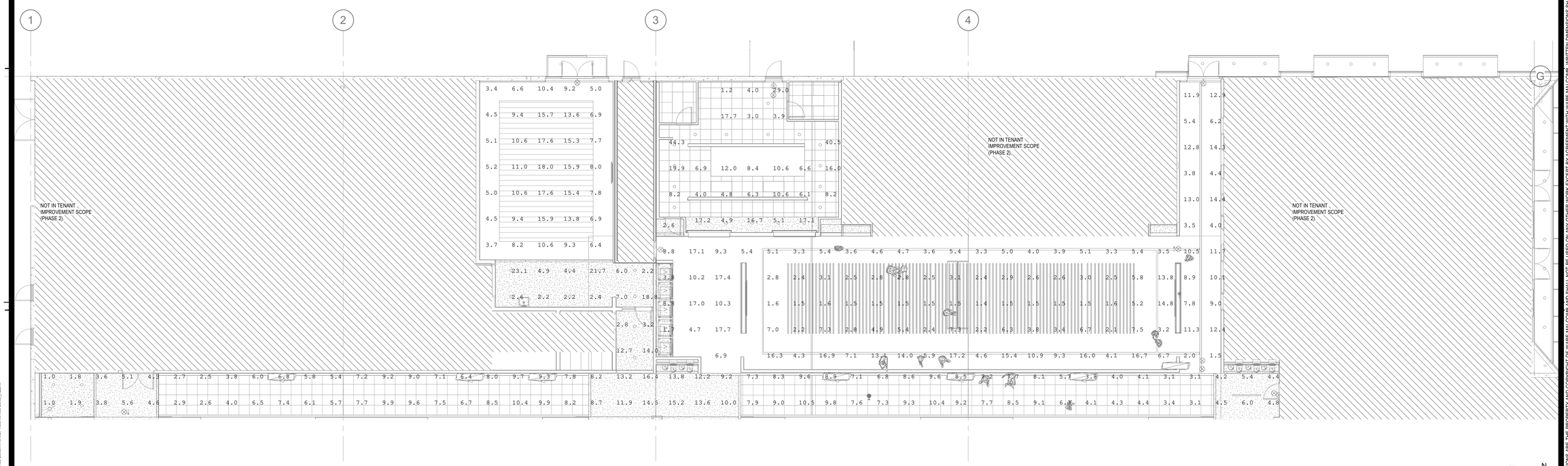
Calculation Summary							
Label	CalcType	Units	Avg	Max	Min	Avg/Min	Max/Min
CORRIDOR	Illuminance	Fc	7.15	16.4	1.0	7.15	16.40
FOOD COURT_108	Illuminance	Fc	6.45	17.7	1.4	4.61	12.64
KITCHEN_110	Illuminance	Fc	12.34	44.3	1.2	10.28	36.92
MULTI-PURPOSE_121	Illuminance	Fc	9.40	23.1	2.2	4.27	10.50

Calculation Summary							
Label	CalcType	Units	Avg	Max	Min	Avg/Min	Max/Min
CORRIDOR	Illuminance	Fc	7.15	16.4	1.0	7.15	16.40
FOOD COURT_108	Illuminance	Fc	6.45	17.7	1.4	4.61	12.64
KITCHEN_110	Illuminance	Fc	12.34	44.3	1.2	10.28	36.92
MULTI-PURPOSE_121	Illuminance	Fc	9.40	23.1	2.2	4.27	10.50

Luminaire Schedule	
Tag	Mounting Height
F-6	12
F-10	10, 12
F-18	9, 10
F-9	12
F-8	12
F-13	9, 10
F-19	9
F-3	11.5



1 TI ELECTRICAL ENLARGED LIGHTING PLAN - EGRESS PHOTOMETRIC
1/8" = 1'-0"

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ELECTRICAL ENLARGED LIGHTING PLAN - EGRESS PHOTOMETRIC

	DATE	REMARKS
1	09/22/2025	PLAN CHECK CORRECTIONS
2	10/15/2025	PLAN CHECK CORRECTIONS 2
3	02/04/2026	PLAN CHECK CORRECTIONS 3
4	01/26/2026	OC HEALTH DEPT
5	03/06/2026	PLAN CHECK CORRECTIONS 4
6	03/06/2026	OC HEALTH DEPT 2
7	04/30/2026	BID ADDENDUM 2

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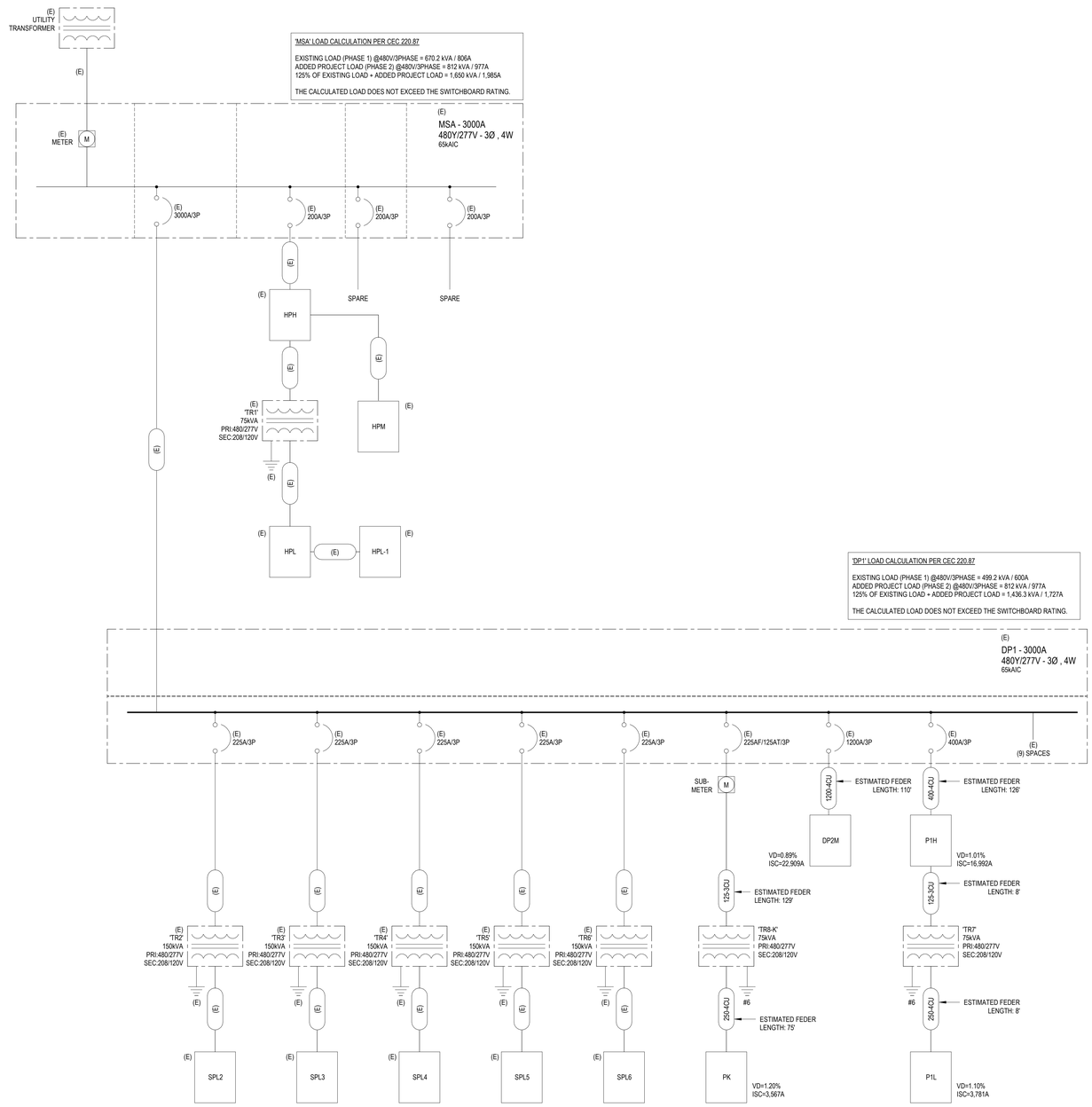
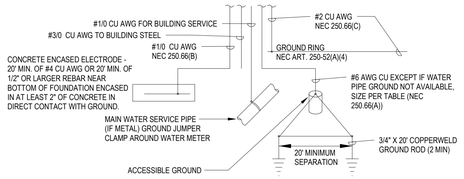


1 Oneline Diagram TI

ET300 SCALE: N.T.S.



2 GROUNDING DETAIL

ET300 SCALE: N.T.S.

FEEDER SCHEDULE

TAG	SETS	CURRENT CARRYING CONDUCTORS	GROUND	CONDUIT
20-2 CU	1	2#12	1#12	3/4"
20-3 CU	1	3#12	1#12	3/4"
20-4 CU	1	4#12	1#12	3/4"
25-2 CU	1	2#10	1#10	3/4"
25-3 CU	1	3#10	1#10	3/4"
25-4 CU	1	4#10	1#10	3/4"
30-2 CU	1	2#10	1#10	3/4"
30-3 CU	1	3#10	1#10	3/4"
30-4 CU	1	4#10	1#10	3/4"
35-2 CU	1	2#8	1#10	3/4"
35-3 CU	1	3#8	1#10	3/4"
35-4 CU	1	4#8	1#10	3/4"
40-2 CU	1	2#8	1#10	3/4"
40-3 CU	1	3#8	1#10	3/4"
40-4 CU	1	4#8	1#10	3/4"
45-2 CU	1	2#8	1#10	3/4"
45-3 CU	1	3#8	1#10	3/4"
45-4 CU	1	4#8	1#10	3/4"
50-2 CU	1	2#8	1#10	3/4"
50-3 CU	1	3#8	1#10	3/4"
50-4 CU	1	4#8	1#10	3/4"
60-2 CU	1	2#6	1#10	3/4"
60-3 CU	1	3#6	1#10	1"
60-4 CU	1	4#6	1#10	1"
70-2 CU	1	2#4	1#8	1"
70-3 CU	1	3#4	1#8	1"
70-4 CU	1	4#4	1#8	1-1/4"
80-2 CU	1	2#4	1#8	1"
80-3 CU	1	3#4	1#8	1"
80-4 CU	1	4#4	1#8	1-1/4"
90-2 CU	1	2#3	1#8	1-1/4"
90-3 CU	1	3#3	1#8	1-1/4"
90-4 CU	1	4#3	1#8	1-1/4"
100-2 CU	1	2#3	1#8	1-1/4"
100-3 CU	1	3#3	1#8	1-1/4"
100-4 CU	1	4#3	1#8	1-1/4"
110-3 CU	1	3#2	1#6	1-1/4"
110-4 CU	1	4#2	1#6	1-1/4"
125-3 CU	1	3#1	1#6	1-1/2"
125-4 CU	1	4#1	1#6	1-1/2"
150-3 CU	1	3#1/0	1#6	1-1/2"
150-4 CU	1	4#1/0	1#6	2"
175-3 CU	1	3#2/0	1#6	2"
175-4 CU	1	4#2/0	1#6	2"
200-3 CU	1	3#3/0	1#6	2-1/2"
200-4 CU	1	4#3/0	1#6	2-1/2"
225-3 CU	1	3#4/0	1#4	2-1/2"
225-4 CU	1	4#4/0	1#4	2-1/2"
250-3 CU	1	3#250	1#4	3"
250-4 CU	1	4#250	1#4	3"
300-3 CU	1	3#350	1#4	3"
300-4 CU	1	4#350	1#4	3"
350-3 CU	1	3#400	1#3	3"
350-4 CU	1	4#400	1#3	3"
400-3 CU	2	3#3/0	1#3	2-1/2"
400-4 CU	2	4#3/0	1#3	2-1/2"
450-3 CU	2	3#4/0	1#2	2"
450-4 CU	2	4#4/0	1#2	2-1/2"
500-3 CU	2	3#250	1#2	3"
500-4 CU	2	4#250	1#2	3"
600-3 CU	2	3#350	1#1	2-1/2"
600-4 CU	2	4#350	1#1	3"
700-3 CU	2	3#500	1#1/0	3"
700-4 CU	2	4#500	1#1/0	3-1/2"
800-3 CU	2	3#500	1#1/0	3"
800-4 CU	2	4#500	1#1/0	3-1/2"
900-3 CU	3	3#350	1#2/0	2-1/2"
900-4 CU	3	4#350	1#2/0	3"
1000-3 CU	3	3#400	1#2/0	3"
1000-4 CU	3	4#400	1#2/0	3"
1200-3 CU	4	3#350	1#3/0	2-1/2"
1200-4 CU	4	4#350	1#3/0	3"
1400-3 CU	4	3#500	1#4/0	3"
1400-4 CU	4	4#500	1#4/0	3-1/2"
1600-3 CU	5	3#400	1#4/0	3"
1600-4 CU	5	4#400	1#4/0	3"
1800-3 CU	5	3#500	1#250	3"
1800-4 CU	5	4#500	1#250	3-1/2"
2000-3 CU	6	3#400	1#250	3"
2000-4 CU	6	4#400	1#250	3"
2500-3 CU	7	3#500	1#350	3"
2500-4 CU	7	4#500	1#350	3-1/2"
3000-3 CU	8	3#500	1#400	3-1/2"
3000-4 CU	8	4#500	1#400	3-1/2"
3000-4CUS	8	4#500	1#3/0	4"
4000-4 CU	11	3#500	1#3/0	3-1/2"

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ELECTRICAL ONE LINE DIAGRAM

	DATE	REMARKS
1	09/22/2025	PLAN CHECK CORRECTIONS
2	10/15/2025	PLAN CHECK CORRECTIONS 2
3	02/04/2026	PLAN CHECK CORRECTIONS 3
4	02/06/2026	OC HEALTH DEPT
5	03/06/2026	PLAN CHECK CORRECTIONS 4
6	03/06/2026	OC HEALTH DEPT 2
7	04/30/2026	BID ADDENDUM 2

PA/PM:	TB
DRAWN BY.:	CM
JOB NO.:	LAX21-0174-02

06/06/2025

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LIGHTING FIXTURE SCHEDULE

TYPE	DESCRIPTION	FIXTURE TYPE	K	CRI	INPUT WATTS	VOLTS	MANUFACTURER	MODEL NO.	REMARKS
F-3	66" L, SQUERO RECESSED DIRECT	LED	3000	90	25.3	277	LUMENWERX	SQUR D HLO BK SW 90CRI 500LMF 30K 5FT6IN UNV D1 1C DTL B	
F-3E	66" L, SQUERO RECESSED DIRECT, EMERGENCY	LED	3000	90	25.3	277	LUMENWERX	SQUR D HLO BK SW 90CRI 500LMF 30K 5FT6IN UNV D1 1C EC 2EMB DTL B	
F-5	BIONIC PRO 3	LED	3000	90	195.8	277	PRUDENTIAL	BPRO3-LIN-FLSH-LED3-SO-PER PLAN-TMW-SAL-NU-UNV-RSC-X1-DM01-C80-60	REFER TO ARCHITECT DRAWINGS AND DETAILS FOR SHAPE AND LENGTH.
F-6A	160" L, VIA 3" PENDANT DIRECT	LED	3000	90	49.2	277	LUMENWERX	VIA3P D HLO FH NA SW 90CRI 500LMF NA 30K 160 UNV D1 1C STS W	
F-6B	72" L, VIA 3" PENDANT DIRECT	LED	3000	90	24.6	277	LUMENWERX	VIA3P D HLO FH NA SW 90CRI 500LMF NA 30K 72 UNV D1 1C STS W	
F-6BE	72" L, VIA 3" PENDANT DIRECT, EMERGENCY	LED	3000	90	24.6	277	LUMENWERX	VIA3P D HLO FH NA SW 90CRI 500LMF NA 30K 72 UNV D1 1C EMB STS W	
F-8	AERA 4" PENDANT CYLINDER DIRECT 12"	LED	3000	90	20.0	277	LUMENWERX	AE4CYP D 12IN FTMB BVL FTMB NOL SW 50DEG 2STP 90CRI 30K UNV 20W D1 1C FLR FTMB BPC BKS	
F-8E	AERA 4" PENDANT CYLINDER DIRECT 12", EMERGENCY	LED	3000	90	20.0	277	LUMENWERX	AE4CYP D 12IN FTMB BVL FTMB NOL SW 50DEG 2STP 90CRI 30K UNV 20W D1 +EB 1C FLR FTMB BPC BKS	
F-9	AERA 4" PENDANT CYLINDER ASYMMETRIC DIRECT 12"	LED	3000	90	20.0	277	LUMENWERX	AE4CYPASY D 12IN FTMB BVL FTMB NOL SW 50DEG 2STP 90CRI 30K NA UNV 20W NA D1 1C FLR FTMB BPC B KS	
F-9E	AERA 4" PENDANT CYLINDER ASYMMETRIC DIRECT 12", EMERGENCY	LED	3000	90	20.0	277	LUMENWERX	AE4CYPASY D 12IN FTMB BVL FTMB NOL SW 50DEG 2STP 90CRI 30K NA UNV 20W NA D1 +EB 1C FLR FTMB BPC B KS	
F-10A	24" L, 1" INTEGRATED LINEAR LED T-BAR GRID CEILING LIGHT	LED	3000	90	10.0	277	LUMENWERX	12525-2-30K-TB15	
F-10AE	24" L, 1" INTEGRATED LINEAR LED T-BAR GRID CEILING LIGHT, EMERGENCY	LED	3000	90	10.0	277	LUMENWERX	12525-2-30K-TB15 XEM8	
F-10B	48" L, 1" INTEGRATED LINEAR LED T-BAR GRID CEILING LIGHT	LED	3000	90	20.0	277	LUMENWERX	12525-4-30K-TB15	
F-10BE	48" L, 1" INTEGRATED LINEAR LED T-BAR GRID CEILING LIGHT, EMERGENCY	LED	3000	90	20.0	277	LUMENWERX	12525-4-30K-TB15 XEM8	
F-11	BILLET INDOOR WALLWASHER (BIW) - INTEGRAL	LED	3000	90	177.5	277	BOLD LIGHTING	BIW-S-426-B-V-U-B-B-W-9-30-0	
F-11A	BILLET INDOOR WALLWASHER (BIW) - INTEGRAL	LED	3000	90	127.5	277	BOLD LIGHTING	BIW-S-306-B-V-U-B-B-W-9-30-0	
F-11B	BILLET INDOOR WALLWASHER (BIW) - INTEGRAL	LED	3000	90	65.0	277	BOLD LIGHTING	BIW-S-156-B-V-U-B-B-W-9-30-0	
F-11C	BILLET INDOOR WALLWASHER (BIW) - INTEGRAL	LED	3000	90	100.0	277	BOLD LIGHTING	BIW-S-240-B-V-U-B-B-W-9-30-0	
F-13	AERA 3" DOWNLIGHT ROUND (AE3RR)	LED	3000	90	10.0	277	LUMENWERX	AE3RR-TRM-SW-OF-ASB-UNV-10W-D1 + AE3RRB-SW-10W-80DEG-2STP-90CRI-30K-TRM-FTMW-NA	
F-13E	AERA 3" DOWNLIGHT ROUND (AE3RR) EMERGENCY	LED	3000	90	10.0	277	LUMENWERX	AE3RR-TRM-SW-OF-ASB-UNV-10W-D1+EB + AE3RRB-SW-10W-80DEG-2STP-90CRI-30K-TRM-FTMW-NA	
F-14	MELLOW LIGHT IV LED 2X4 SPLIT DIFFUSER	LED	3500	90	28.0	277	ZUMTOBEL	MLIV-24-RF-HE-SD-935-DU	
F-14E	MELLOW LIGHT IV LED 2X4 SPLIT DIFFUSER EMERGENCY	LED	3500	90	28.0	277	ZUMTOBEL	MLIV-24-HE-SD-930-DU-EM	
F-15A	16'-6"L, LED TAPE LIGHT (PDS-NK EXTRUSION)	LED	3000	90	120.5	277	KLUS INSPIRING SOLUTIONS	A01588L10OD_2+K-VBT30-0720-24+DRIVER	
F-15D	5'-6"L, LED TAPE LIGHT (PDS-NK EXTRUSION)	LED	3000	90	40.2	277	KLUS INSPIRING SOLUTIONS	A01588L10OD_2+K-VBT30-0720-24+DRIVER	
F-15F	5'L, LED TAPE LIGHT (PDS-NK EXTRUSION)	LED	3000	90	36.5	277	KLUS INSPIRING SOLUTIONS	A01588L10OD_2+K-VBT30-0720-24+DRIVER	
F-16	K-HEHD-0960-24 LED STRIP	LED	3000	95	46.0	277	KLUS INSPIRING SOLUTIONS	K-HEHD30-0960-24 + REMOTE DRIVER	
F-18	RONDO RB6 6" DOWNLIGHT (FOR WET LOCATION)	LED	3000	80	19.3	277	OPUS	RB6 RDW SW90 40K 30LM U DIMA1 BW AHZ AMI MT	
F-18E	RONDO RB6 6" DOWNLIGHT (FOR WET LOCATION), EMERGENCY	LED	3000	80	19.3	277	OPUS	RB6 RDW SW90 40K 30LM U DIMA1 BW AHZ AMI MT BB8	
F-19E	2X4 WET RATED TROFFER, EMERGENCY	LED	3500	90	36.0	277	LITHONIA	2WRTL G L48 5000LM AFL MD MVOLT GZ1 30K 80CRI IE10WLCP	
F-21	BADMINTON COURT REFLECTED LIGHTING	LED	5000	80	161.8	277	HOLOPHANE	HOLO1 24000LM MD 50K 70CRI UPL	REFER TO ET500 FOR MORE INFORMATION.
F-22	BASKETBALL COURT LIGHTING	LED	5000	80	179.0	277	HOLOPHANE	HOLO1 30000LM WD 50K 70CRI	REFER TO ET501 FOR MORE INFORMATION.
F-23A	14' TRACK SPOT LIGHTING	LED	3000	90	107.8	277	LUMENWERX	SQUPCOMSPAT D 14FT HLO BK SW 90CRI 500LMF 30K UNV D1 1C GRD B 5MS50	
F-23B	16' TRACK SPOT LIGHTING	LED	3000	90	123.2	277	LUMENWERX	SQUPCOMSPAT D 16FT HLO BK SW 90CRI 500LMF 30K UNV D1 1C GRD B 5MS50	
XA	EXIT SIGN WALL MOUNTED SINGLE FACED	LED	0		5.0	277	LITHONIA	LXC W 1 RW EL NGP	
XB	EXIT SIGN WALL MOUNTED DOUBLE FACED	LED	0		5.0	277	LITHONIA	LXC W 2 RW EL NGP	

7

FIXTURE SCHEDULE NOTES:

1. PROVIDE ALL NECESSARY MOUNTING HARDWARE AND ACCESSORIES FOR A COMPLETE INSTALLATION OF FIXTURE(S) IN THE SPACE. COORDINATE ALL INSTALLATION REQUIREMENTS WITH ARCHITECTURAL DRAWINGS AND SPECIFICATIONS.

2. FINISHES TO BE COORDINATED WITH ARCHITECT PRIOR TO ORDERING.

3. THE LISTED FIXTURE PRODUCT IN THE APPROVED MANUFACTURERS COLUMN WITH A FULL PRODUCT NUMBER FOR EACH FIXTURE TYPE IS THE BASIS OF DESIGN. FINAL PRODUCT APROVAL WILL BE PROVIDED DURING THE SUBMITTAL PROCESS. ALTERNATIVES OR EQUALS SHALL PROVIDE PHOTOMETRICS AND STATISTICS EQUAL TO BASIS OF DESIGN.

MECHANICAL EQUIPMENT CONNECTION SCHEDULE

TAG 1	DESCRIPTION 2	LOAD 3	WIRE/CONDUIT 4	STARTER 5	VOLTAGE 6	LOCAL DISCONNECT 7	REMARKS
EF 4	EXHAUST FAN	0.75 HP	REFER TO PANEL 'P1L'	☐ PROVIDED BY MC ☐ IN MCC NEMA SIZE ☐ TYPE	120V 1P	☐ FUSED A FUSE ☒ NON-FUSED A SWITCH ☐ THERMAL SWITCH, 120V,1P	MANUFACTURER PROVIDED DISCONNECT. PROVIDE ADDITIONAL WIRING AS REQUIRED FOR DAMPER CONTROL.
RTU 5	ROOFTOP UNIT	55 MCA 70 MOCP	REFER TO PANEL 'DP2M'	☐ PROVIDED BY MC ☐ IN MCC NEMA SIZE ☐ TYPE	480V 3P	☐ FUSED A FUSE ☒ NON-FUSED A SWITCH ☐ THERMAL SWITCH, 120V,1P	DISCONNECT PROVIDED BY EC. SEPARETE POWER FOR EXHAUST 10A @480V 3PHASE
RTU 6	ROOFTOP UNIT	16 MCA 20 MOCP	REFER TO PANEL 'DP2M'	☐ PROVIDED BY MC ☐ IN MCC NEMA SIZE ☐ TYPE	480V 3P	☐ FUSED A FUSE ☒ NON-FUSED A SWITCH ☐ THERMAL SWITCH, 120V,1P	DISCONNECT PROVIDED BY EC. SEPARETE POWER FOR EXHAUST 10A @480V 3PHASE
RTU -	ROOFTOP UNIT (7,8,9,10,11,12,13, 14,15,16,17)	61 MCA 80 MOCP	REFER TO PANEL 'DP2M'	☐ PROVIDED BY MC ☐ IN MCC NEMA SIZE ☐ TYPE	480V 3P	☐ FUSED A FUSE ☒ NON-FUSED A SWITCH ☐ THERMAL SWITCH, 120V,1P	DISCONNECT PROVIDED BY EC. SEPARETE POWER FOR EXHAUST 10A @480V 3PHASE
EWH 2	ELECTRICAL WATER HEATER	24 kW	REFER TO PANEL 'PK'	☐ PROVIDED BY MC ☐ IN MCC NEMA SIZE ☐ TYPE	208V 3P	☐ FUSED A FUSE ☒ NON-FUSED A SWITCH ☐ THERMAL SWITCH, 120V,1P	DISCONNECT PROVIDED BY EC
RCP 2	RECIRCULATION PUMP	0.02 HP	REFER TO PANEL 'P1L'	☐ PROVIDED BY MC ☐ IN MCC NEMA SIZE ☐ TYPE	120V 1P	☐ FUSED A FUSE ☒ NON-FUSED A SWITCH ☐ THERMAL SWITCH, 120V,1P	DISCONNECT PROVIDED BY EC
KEF 1	KITCHEN EXHAUST FAN	1.83 HP	REFER TO PANEL 'DP2M'	☐ PROVIDED BY MC ☐ IN MCC NEMA SIZE ☐ TYPE	480V 3P	☐ FUSED A FUSE ☒ NON-FUSED A SWITCH ☐ THERMAL SWITCH, 120V,1P	DISCONNECT PROVIDED BY EC
MAU 1	MAKEUP AIR UNIT	0.69 HP	REFER TO PANEL 'DP2M'	☐ PROVIDED BY MC ☐ IN MCC NEMA SIZE ☐ TYPE	480V 3P	☐ FUSED A FUSE ☒ NON-FUSED A SWITCH ☐ THERMAL SWITCH, 120V,1P	DISCONNECT PROVIDED BY EC
DOAS 1	DEDICATED OUTDOOR AIR SYSTEM	15.3 MCA 20 MOCP	REFER TO PANEL 'DP2M'	☐ PROVIDED BY MC ☐ IN MCC NEMA SIZE ☐ TYPE	480V 3P	☐ FUSED A FUSE ☒ NON-FUSED A SWITCH ☐ THERMAL SWITCH, 120V,1P	DISCONNECT PROVIDED BY EC

SCHEDULE KEY NOTES

1. VERIFY FINAL LOCATION OF ALL EQUIPMENT WITH EQUIPMENT INSTALLER BEFORE INSTALLING FEEDERS.
2. SEE ARCHITECTURAL, MECHANICAL, PLUMBING AND FIRE PROTECTION DRAWINGS FOR MORE INFORMATION.
3. SIZE STARTER/FEEDER DISCONNECT PER FINAL EQUIPMENT REQUIREMENTS.
4. PROVIDE FEEDERS AS INDICATED, VERIFY WITH EQUIPMENT REQUIREMENTS.
5. COORDINATE FINAL STARTER WIRING REQUIREMENTS WITH MECHANICAL EQUIPMENT, PROVIDE ADDITIONAL WIRING AS REQUIRED FOR INSTALLATION STARTER(S) FOR MECHANICAL EQUIPMENT. PROVIDE OVERLOAD PROTECTION (FUSES OR MOTOR CIRCUIT PROTECTOR) PER SPECIFICATIONS, ACTUAL FIELD
6. VERIFY FINAL VOLTAGE AND PHASE REQUIREMENTS OF ALL EQUIPMENT WITH INSTALLER BEFORE INSTALLING FEEDERS.
7. EC TO PROVIDE LOCAL DISCONNECT WITHIN 5'-0" OF EQUIPMENT. NON-STANDARD ITEMS, TIMERS, METERS, INTERLOCKS, ETC.

SCHEDULE GENERAL NOTES

1. PROVIDE POWER CONNECTIONS TO ALL ARCHITECTURAL, MECHANICAL, PLUMBING, FIRE PROTECTION AND OWNER FURNISHED EQUIPMENT. REFER TO ARCHITECTURAL, MECHANICAL, PLUMBING, AND FIRE PROTECTION DRAWINGS FOR LOCATIONS AND POWER REQUIREMENTS. VERIFY ALL TECHNICAL DATA WITH FINAL SHOP DRAWINGS.
2. OVER CURRENT PROTECTION SIZES LISTED ARE FROM MANUFACTURER'S AND STANDARD MOTOR DATA. FURNISH FUSES BASED ON FUSE MANUFACTURER'S STANDARDS, ACTUAL FIELD MEASURED FULL LOAD CURRENT, AND EQUIPMENT MANUFACTURER'S REQUIREMENTS.
3. FLEXIBLE CONNECTIONS TO MOTORS SHALL BE IN FLEXIBLE CONDUIT. PROVIDE COPPER EQUIPMENT GROUND FROM DISCONNECT TO MOTOR CONNECTION.
4. EC TO COORDINATE WITH THE MECHANICAL EQUIPMENT SCHEDULES TO PROVIDE DISCONNECTS FOR THE MECHANICAL EQUIPMENT.

INVERTER SCHEDULE

CIRCUIT NO.	CIRCUIT VOLT.	AREA SERVED	CIRCUIT CONFIGURATION	VD%	LOAD
(1)	277V	EMERGENCY LIGHTING SPORTS COURTS 1&2	3/4"C, 1#12, #12N, #12G	1.07%	1432
(2)	277V	EMERGENCY LIGHTING SPORTS COURTS 3&4	3/4"C, 1#12, #12N, #12G	1.58%	1432
(3)	277V	EMERGENCY LIGHTING SPORTS COURTS 5&6	3/4"C, 1#12, #12N, #12G	0.98%	716
(4)	277V	EMERGENCY LIGHTING SPORTS COURTS 7&8	3/4"C, 1#12, #12N, #12G	2.35%	1432
(5)	277V	EMERGENCY LIGHTING SPORTS COURTS 9&10	3/4"C, 1#12, #12N, #12G	2.85%	1432
(6)	277V	EMERGENCY LIGHTING SPORTS COURTS 11	3/4"C, 1#12, #12N, #12G	1.05%	548
(7)	277V	SPARE	-	-	-
(8)	277V	SPARE	-	-	-
(9)	277V	SPARE	-	-	-
(10)	277V	SPARE	-	-	-
(11)	277V	SPARE	-	-	-
(12)	277V	SPARE	-	-	-

NOTES

1. INVERTER TO BE ISOLITE E3MAX-10500-3P-LC-IG-OG-C12 OR APPROVED EQUAL.
2. INVERTER SYSTEM ARE REQUIRED TO BE INSTALLED PER NFPA 111. TESTING AND COMMISSIONING OF THESE SYSTEMS WILL BE REQUIRED PRIOR TO RECIEVING A TCO OR CO FOR THIS PROJECT AND THE COMMISSIONING REPORT SHALL BE MADE AVAILALBE TO BE THE FIELD INSPECTOR.

LIGHTING CONTROL PANEL SCHEDULE - PHASE 2: IRVINE FIELD HOUSE

RELAY NO.	DESCRIPTION	CIRCUIT NO.	LOCAL L.V. SWITCH	LOCAL DS OVERRIDE	RELAY NO.	DESCRIPTION	CIRCUIT NO.	LOCAL L.V. SWITCH	LOCAL DS OVERRIDE
1	LIGHTING EAST FOOD COURT	P1H:19	m	-	13	LGT EAST SPORTS CORRIDOR	P1H:20	n	-
2	LIGHTING WEST FOOD COURT	P1H:21	m	-	14	LGT WEST SPORTS CORRIDOR	P1H:23	n	-
3	LIGHTING FOOD COURT/VENDING	P1H:23	m	-	15	SPARE	-	-	-
4	SPARE	-	-	-	16	SPARE	-	-	-
5	LIGHTING SPORTS COURTS 1	P1H:1	a	-	17	LIGHTING SPORTS COURTS 2	P1H:2	a	-
6	LIGHTING SPORTS COURTS 3	P1H:3	b	-	18	LIGHTING SPORTS COURTS 4	P1H:4	b	-
7	LIGHTING SPORTS COURTS 5	P1H:5	c	-	19	LIGHTING SPORTS COURTS 6	P1H:6	c	-
8	LTG SPORTS COURTS 7-NORTH	P1H:7	d	-	20	LTG SPORTS COURTS 8-NORTH	P1H:8	d	-
9	LTG SPORTS COURTS 7-SOUTH	P1H:9	d	-	21	LTG SPORTS COURTS 8-SOUTH	P1H:10	d	-
10	LIGHTING SPORTS COURTS 9	P1H:11	e	-	22	LIGHTING SPORTS COURTS 10	P1H:12	e	-
11	LTG SPORTS COURTS 11-OUTSIDE	P1H:13	f	-	23	LTG SPORTS COURTS 11-INSIDE	P1H:14	g	-
12	LTG SPORTS COURTS 11-OUTSIDE	P1H:15	f	-	24	LTG SPORTS COURTS 11-INSIDE	P1H:16	g	-
25	SPARE	-	-	-	28	SPARE	-	-	-
26	SPARE	-	-	-	29	SPARE	-	-	-
27	SPARE	-	-	-	30	SPARE	-	-	-

LIGHTING CONTROL NOTES

1. CONTRACTOR SHALL PROVIDE NEW LIGHTING CONTROL PANEL FOR INTERIOR FOOD COURT AND SPORTS COURTS.
2. EXTERIOR LIGHTS ARE TO ENERGIZE/DE-ENERGIZE BASED ON THE TIME OF DAY SCHEDULES & OUTSIDE LIGHT LEVELS MEASURED BY A BUILDING MOUNTED PHOTOCELL.
3. CONTRACTOR IS RESPONSIBLE FOR NECESSARY PROGRAMMING OF LIGHTING CONTROLS.

DETAILS OF OPERATION

THE LCP LIGHTING CONTROLS PROVIDE TIME OF DAY CONTROL WITH A CENTRAL BUILDING MOUNTED PHOTOCELL OVERRIDE FOR ALL EXTERIOR LIGHTING. THE OWNER DEFINES NORMAL HOURS OF OPERATION, CONTROLLED BY THE ASTRONOMICAL TIMER.

SPORTS COURTS CORRIDOR, FOOD COURT 108, VENDING 109 LIGHTS TO BE CONTROLLED VIA TIME OF DAY CONTROL. THROUGH THE LIGHTING CONTROL PANEL, LIGHTS TO BE ON 100% DURING OPERATORING HOURS AS DETERMINED BY THE OWNER. LOCAL OVERRIDE PER SWITCH LEG TO BE INTERGRATED INTO A TOUCHSCREEN WALL CONTROLLER BY THE MAIN RECEPTION DESK IN CHECK-IN 102. BASIS OF DESIGN TO BE nLIGHT UNITOUCH (NPOD TOUCH BK) OR APPROVED EQUAL. PASSWORD PROTECTED TOUCHSCREENS TO BE PROVIDED AT THE ENTRANCE OF BASKETBALL COURTS AND BADMINTON COURTS FOR LOCAL LIGHTING CONTROL.

LIGHT FIXTURES WITHOUT A SWITCH LEG TO BE CONTROLLED WITH LOCAL SENSORS AND OVERRIDES REFER TO THE FLOOR PLANS FOR LOCATIONS AND TYPE.

PROVIDE OCCUPANCY SENSORS ON THE FLOOR PLAN SET FOR 10 MINUTES TO TURN THE LIGHTS ON AFTER HOURS OF OPERATION.

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ELECTRICAL SCHEDULES

	DATE	REMARKS
1	09/22/2025	PLAN CHECK CORRECTIONS
2	10/15/2025	PLAN CHECK CORRECTIONS 2
3	02/04/2026	PLAN CHECK CORRECTIONS 3
4	01/26/2025	OC HEALTH DEPT
5	03/06/2026	PLAN CHECK CORRECTIONS 4
6	03/06/2026	OC HEALTH DEPT 2
7	04/30/2026	BID ADDENDUM 2 (partly cut off)

PA/PM:	TB
DRAWN BY.:	CM
JOB NO.:	LAX21-0174-02

06/06/2025

SHEET

ET301

5/6/2026 10:04:10 AM

Autodesk Docs://LAX21-0174-02_17300 Red Hill - Rec Center/RTM-MEP-Red Hill Rec Center_R22.rvt

CIRCUIT BREAKER PANELBOARD SCHEDULE

PANEL NAME: "DP2M"

LOCATION: STORAGE 118 **FED BY:** "DP1" **MOUNTING:** Surface

VOLTAGE: 480/277 Wye **ENCLOSURE:** Type 1 **MANUFACTURER:** **PANEL TYPE:**

MAIN TYPE: MCB **BUS RATING (A):** 1,200 **MCB RATING (A):** 1,200 **MIN. AIC RATING (A):** 35k

CKT	LOAD DESCRIPTION	CIRCUIT CONFIGURATION	VD%	CB	P	TYPE	A		B		C		TYPE	P	CB	VD%	CIRCUIT CONFIGURATION	LOAD DESCRIPTION	CKT
1							455	4240											2
3	KEF-1, ROOFTOP	3/4"C, 3#12, #12N, #12G	0.16%	20	3	S			455	4240				3	20	1.18%	3/4"C, 3#12, #12N, #12G	DOAS-1, ROOFTOP	4
5											455	4240							6
7							15242	2770											8
9	RTU-5, ROOFTOP	1-1/4"C, 3#4, #4N, #8G	0.98%	70	3				15242	2770				3	20	1.16%	3/4"C, 3#12, #12N, #12G	SEPERATE DISCONNECT RTU-5, RTU-5 ROOFTOP	10
11											15242	2770							12
13							4434	2770											14
15	RTU-6, ROOFTOP	3/4"C, 3#10, #10N, #10G	0.52%	30	3				4434	2770				3	20	0.56%	3/4"C, 3#12, #12N, #12G	SEPERATE DISCONNECT RTU-6, RTU-6 ROOFTOP	16
17											4434	2770							18
19							16905	16905											20
21	RTU-7, ROOFTOP	1-1/4"C, 3#2, #2N, #8G	0.31%	80	3				16905	16905				3	80	0.58%	1-1/4"C, 3#2, #2N, #8G	RTU-8, ROOFTOP	22
23											16905	16905							24
25							16905	16905											26
27	RTU-9, ROOFTOP	1-1/4"C, 3#2, #2N, #8G	0.84%	80	3				16905	16905				3	80	1.11%	1-1/4"C, 3#2, #2N, #8G	RTU-10, ROOFTOP	28
29											16905	16905							30
31							16905	16905											32
33	RTU-11, ROOFTOP	1-1/4"C, 3#2, #2N, #8G	1.35%	80	3				16905	16905				3	80	0.81%	1-1/4"C, 3#2, #2N, #8G	RTU-12, ROOFTOP	34
35											16905	16905							36
37							16905	16905											38
39	RTU-13, ROOFTOP	1-1/4"C, 3#2, #2N, #8G	1.07%	80	3				16905	16905				3	80	1.21%	1-1/4"C, 3#2, #2N, #8G	RTU-14, ROOFTOP	40
41											16905	16905							42
43							16905	16905											44
45	RTU-15, ROOFTOP	1-1/4"C, 3#2, #2N, #8G	1.33%	80	3				16905	16905				3	80	1.61%	1-1/4"C, 3#2, #2N, #8G	RTU-16, ROOFTOP	46
47											16905	16905							48
49							16905	172											50
51	RTU-17, ROOFTOP	1-1/4"C, 3#2, #2N, #8G	1.85%	80	3				16905	172				3	20	0.02%	3/4"C, 3#12, #12N, #12G	MAU-1, STORAGE ROOM 1	52
53											16905	172							54
55	SPARE	--	--	20	1	--	0	0					--	1	20	--	--	SPARE	56
57	SPARE	--	--	20	1	--			0	0			--	1	20	--	--	SPARE	58
59	SPARE	--	--	20	1	--					0	0	--	1	20	--	--	SPARE	60
61	SPARE	--	--	20	1	--	0	0					--	1	20	--	--	SPARE	62
63	SPARE	--	--	20	1	--			0	0			--	1	20	--	--	SPARE	64
65	SPARE	--	--	20	1	--					0	0	--	1	20	--	--	SPARE	66
67	SPACE	--	--	--	1	--	--	--					--	1	--	--	--	SPACE	68
69	SPACE	--	--	--	1	--			--	--			--	1	--	--	--	SPACE	70
71	SPACE	--	--	--	1	--					--	--	--	1	--	--	--	SPACE	72

	A	B	C
CONNECTED PHASE LOAD	216038 VA	216038 VA	216038 VA
***PHASE DIVERSIFIED LOAD**	216038 VA	216038 VA	216038 VA
***PHASE DIVERSIFIED AMPS**	780 A	780 A	780 A

CALCULATED PANEL AMPS: 780 A

(*DIVERSIFIED LOADS CALCULATED PER THE NATIONAL ELECTRIC CODE.)

NOTES/ACCESSORIES:
1. PROVIDE SPARE 20A, SINGLE-POLE BREAKERS IN ALL UNUSED SPACES.
2. L = LOCKOUT BREAKER G = GFI BREAKER S = SHUNT TRIP
3. KEF-1 TO SHUNT TRIP ONCE ANSUL SYSTEM IS ACTIVATED.

PANEL TOTALS	
TOTAL CONNECTED LOAD:	648115 VA
TOTAL DIVERSIFIED LOAD:	648115 VA
TOTAL CONNECTED:	780 A
TOTAL ESTIMATED DEMAND:	780 A

CIRCUIT BREAKER PANELBOARD SCHEDULE

PANEL NAME: "PK"

LOCATION: KITCHEN 110 **FED BY:** "TR8-K" **MOUNTING:** Surface

VOLTAGE: 120/208 Wye **ENCLOSURE:** Type 1 **MANUFACTURER:** **PANEL TYPE:**

MAIN TYPE: MCB **BUS RATING (A):** 250 **MCB RATING (A):** 250 **MIN. AIC RATING (A):** 10k

CKT	LOAD DESCRIPTION	CIRCUIT CONFIGURATION	VD%	CB	P	TYPE	A		B		C		TYPE	P	CB	VD%	CIRCUIT CONFIGURATION	LOAD DESCRIPTION	CKT
1	RECEPTS. KITCHEN OFFICE	3/4"C, 1#12, #12N, #12G	0.29%	20	1		360	770						2	20	0.24%	3/4"C, 2#12, #12N, #12G	CONDENSER, AIR COOLED	2
3	RECEPTS. KITCHEN OFFICE	3/4"C, 1#12, #12N, #12G	0.26%	20	1				360	770									4
5	EVAPORATOR COIL	3/4"C, 1#12, #12N, #12G	0.14%	20	1						220	288		1	20	0.08%	3/4"C, 1#12, #12N, #12G	AIR CURTAIN	6
7	WALK-IN COMPLEX	3/4"C, 1#12, #12N, #12G	0.74%	20	1	G	1800	0					--	1	20	--	--	SPARE	8
9	FIRE SUPPRESION SYSTEM	3/4"C, 1#12, #12N, #12G	0.68%	20	1	G			1800	0			--	1	20	--	--	SPARE	10
11	SPARE	--	--	20	1	--					0	1140	G	2	20	0.53%	3/4"C, 2#12, #12N, #12G	ICE MACHINE	12
13	WORKTABLE WITH SINK	3/4"C, 1#12, #12N, #12G	1.79%	20	1		1920	1140											14
15	MIXER COUNTERTOP	3/4"C, 1#12, #12N, #12G	0.72%	20	1				800	1920				1	20	1.18%	3/4"C, 1#12, #12N, #12G	EXHAUST HOOD	16
17	FOOD PROCESSOR	3/4"C, 1#12, #12N, #12G	0.80%	20	1						840	1920		1	20	1.66%	3/4"C, 1#12, #12N, #12G	EXHAUST HOOD	18
19	FRYER WITH FILTER	3/4"C, 1#12, #12N, #12G	0.27%	20	1	G	670	1400					G	1	20	0.55%	3/4"C, 1#12, #12N, #12G	COMBINE OVEN, GAS	20
21	HOT FOOD WELL	3/4"C, 2#12, #12N, #12G	0.18%	20	2	G			620	620			G	2	20	0.20%	3/4"C, 2#12, #12N, #12G	HOT FOOD WELL	22
23											620	620							24
25	REFRIGERATOR, BASE	3/4"C, 1#12, #12N, #12G	0.86%	20	1	G	1510												26
27	FRYER, FILTER 2	3/4"C, 1#12, #12N, #12G	0.60%	20	1	G			840	470			G	1	20	0.32%	3/4"C, 1#12, #12N, #12G	REFRIGRATOR, PREPTABLE	28
29	REFRIGERATOR,...	3/4"C, 1#12, #12N, #12G	0.29%	20	1	G					360	1920		1	20	1.36%	3/4"C, 1#12, #12N, #12G	RECEPT. BACK-COUNTER	30
31	HOT FOOD-WELL, DROP-IN	3/4"C, 2#10, #10N, #10G	0.52%	30	2	G	1860	240						1	20	0.25%	3/4"C, 1#12, #12N, #12G	FOOD SLICER	32
33									1860	240				1	20	0.27%	3/4"C, 1#12, #12N, #12G	WORKTABLE WITH SINK	34
35	REFRIGERATOR, PREPTABLE	3/4"C, 1#12, #12N, #12G	0.44%	20	1	G					470	360	G	1	20	0.32%	3/4"C, 1#12, #12N, #12G	REFRIGATOR, UNDERCOUNTER	36
37	BACK COUNTER WITH SINK	3/4"C, 1#12, #12N, #12G	1.77%	20	1		1920	1650					G	1	20	1.73%	3/4"C, 1#12, #12N, #12G	COFFEE BREWER	38
39	SPARE	--	--	20	1	--			0	1920				1	20	2.16%	3/4"C, 1#12, #12N, #12G	BACK COUNTER W/ SINK	40
41	COFFEE GRINDER	3/4"C, 1#12, #12N, #12G	0.97%	20	1						960	600		1	20	0.68%	3/4"C, 1#12, #12N, #12G	POINT OF SALE SYSTEM	42
43	POINT OF SALE SYSTEM	3/4"C, 1#12, #12N, #12G	0.77%	20	1		600	2640											44
45	SPARE	--	--	20	1	--			0	2640			G	3	30	0.98%	3/4"C, 3#10, #10N, #10G	UNDERCOUNTER DISHWASHER	46
47	SPARE	--	--	20	1	--					0	2640							48
49	SPARE	--	--	20	1	--	0	8000											50
51	SPARE	--	--	20	1	--			0	8000				3	100	0.07%	1-1/2"C, 3#1, #1N, #6G	EWH-2, STORAGE 110B	52
53	SPARE	--	--	20	1	--					0	8000							54
55	SPARE	--	--	20	1	--	0	--					--	1	--	--	--	SPACE	56
57	SPARE	--	--	20	1	--			0	--			--	1	--	--	--	SPACE	58
59	SPARE	--	--	20	1	--					0	--	--	1	--	--	--	SPACE	60

	A	B	C
CONNECTED PHASE LOAD	26480 VA	22860 VA	20958 VA
***PHASE DIVERSIFIED LOAD**	23684 VA	20446 VA	18745 VA
***PHASE DIVERSIFIED AMPS**	200 A	173 A	156 A

CALCULATED PANEL AMPS: 200 A

(*DIVERSIFIED LOADS CALCULATED PER THE NATIONAL ELECTRIC CODE.)

NOTES/ACCESSORIES:
1. PROVIDE SPARE 20A, SINGLE-POLE BREAKERS IN ALL UNUSED SPACES.
2. L = LOCKOUT BREAKER
3. G = GFI BREAKER

PANEL TOTALS	
TOTAL CONNECTED LOAD:	70298 VA
TOTAL DIVERSIFIED LOAD:	62875 VA
TOTAL CONNECTED:	195 A
TOTAL ESTIMATED DEMAND:	175 A

CIRCUIT BREAKER PANELBOARD SCHEDULE

PANEL NAME: "P1H"

LOCATION: STORAGE 118 **FED BY:** "DP1" **MOUNTING:** Surface

VOLTAGE: 480/277 Wye **ENCLOSURE:** Type 1 **MANUFACTURER:** **PANEL TYPE:**

MAIN TYPE: MCB **BUS RATING (A):** 400 **MCB RATING (A):** 400 **MIN. AIC RATING (A):** 35k

CKT	LOAD DESCRIPTION	CIRCUIT CONFIGURATION	VD%	CB	P	TYPE	A		B		C		TYPE	P	CB	VD%	CIRCUIT CONFIGURATION	LOAD DESCRIPTION	CKT
1	LIGHTING SC 1a	3/4"C, 1#12, #12N, #12G	1.86%	20	1		2506	1969						1	20	1.32%	3/4"C, 1#12, #12N, #12G	LIGHTING SC 2a	2
3	LIGHTING SC 3b	3/4"C, 1#10, #10N, #10G	2.26%	20	1				3580	2864				1	20	1.66%	3/4"C, 1#10, #10N, #10G	LIGHTING SC 4b	4
5	LIGHTING SC 5c	3/4"C, 1#10, #10N, #10G	2.36%	20	1						2864	2327		1	20	1.82%	3/4"C, 1#10, #10N, #10G	LIGHTING SC 6c	6
7	LIGHTING SC 7d-NORTH	3/4"C, 1#12, #12N, #12G	2.90%	20	1		1790	1432						1	20	2.17%	3/4"C, 1#12, #12N, #12G	LIGHTING SC 8d-NORTH	8
9	LIGHTING SC 7d-SOUTH	3/4"C, 1#12, #12N, #12G	3.18%	20	1				1790	1432				1	20	2.47%	3/4"C, 1#12, #12N, #12G	LIGHTING SC 8d-SOUTH	10
11	LIGHTING SC 9e	3/4"C, 1#10, #10N, #10G	2.99%	20	1						2506	1969		1	20	2.26%	3/4"C, 1#10, #10N, #10G	LIGHTING SC 10e	12
13	LIGHTING SC 11f-OUTSIDE	3/4"C, 1#12, #12N, #12G	2.40%	20	1		1618	2751						1	20	2.46%	3/4"C, 1#10, #10N, #10G	LIGHTING SC 11g-INSIDE	14
15	LIGHTING SC 11f-OUTSIDE	3/4"C, 1#12, #12N, #12G	2.60%	20	1				1133	2427				1	20	3.36%	3/4"C, 1#10, #10N, #10G	LIGHTING SC 11g-INSIDE	16
17	LIGHTING KITCHEN AREAS	3/4"C, 1#12, #12N, #12G	0.17%	20	1						429	543		1	20	0.13%	3/4"C, 1#12, #12N, #12G	LIGHTING MULTI-PURPOSE	18
19	LIGHTING EAST FOOD COURT	3/4"C, 1#12, #12N, #12G	0.19%	20	1		344	864						1	20	0.41%	3/4"C, 1#12, #12N, #12G	LGT EAST SPORTS CORRIODR	20
21	LIGHTING WEST FOOD COURT	3/4"C, 1#12, #12N, #12G	0.13%	20	1				344	1123				1	20	0.28%	3/4"C, 1#12, #12N, #12G	LGT WEST SPORTS CORRIODR	22
23	LIGHTING FOOD COURT/VENDING	3/4"C, 1#12, #12N, #12G	0.52%	20	1						1060	0	--	1	20	--	--	SPARE	24
25	SPARE	--	--	20	1	--	0	0					--	1	20	--	--	SPARE	26
27	SPARE	--	--	20	1	--			0	0			--	1	20	--	--	SPARE	28
29	SPARE	--	--	20	1	--					0	0	--	1	20	--	--	SPARE	30
31	SPARE	--	--	20	1	--	0	0					--	1	20	--	--	SPARE	32
33	SPARE	--	--	20	1	--			0	0			--	1	20	--	--	SPARE	34
35	LCP - STORAGE ROOM 1	3/4"C, 1#12, #12N, #12G	0.01%	20	1						500	0	--	1	20	--	--	SPARE	36
37							2864	22723											38
39	INV	3/4"C, 3#10, #10N, #10G	0.30%	25	3				2148	20880				3	125	2.00%	1-1/2"C, 3-1/0, 1/0N, #6G	TR7	40
41											2403	23252							42

	A	B	C
CONNECTED PHASE LOAD	38860 VA	37720 VA	37852 VA
***PHASE DIVERSIFIED LOAD**	42772 VA	41517 VA	41662 VA
***PHASE DIVERSIFIED AMPS**	154 A	150 A	150 A

CALCULATED PANEL AMPS: 154 A

(*DIVERSIFIED LOADS CALCULATED PER THE NATIONAL ELECTRIC CODE.)

NOTES/ACCESSORIES:
1. PROVIDE SPARE 20A, SINGLE-POLE BREAKERS IN ALL UNUSED SPACES.
2. L = LOCKOUT BREAKER
3. G = GFI BREAKER

PANEL TOTALS	
TOTAL CONNECTED LOAD:	114432 VA
TOTAL DIVERSIFIED LOAD:	125951 VA
TOTAL CONNECTED:	138 A
TOTAL ESTIMATED DEMAND:	151 A

CIRCUIT BREAKER PANELBOARD SCHEDULE

PANEL NAME: "P1L"

LOCATION: STORAGE 118 **FED BY:** "TR7" **MOUNTING:** Surface

VOLTAGE: 120/208 Wye **ENCLOSURE:** Type 1 **MANUFACTURER:** **PANEL TYPE:**

MAIN TYPE: MCB **BUS RATING (A):** 250 **MCB RATING (A):** 250 **MIN. AIC RATING (A):** 10k

CKT	LOAD DESCRIPTION	CIRCUIT CONFIGURATION	VD%	CB	P	TYPE	A		B		C		TYPE	P	CB	VD%	CIRCUIT CONFIGURATION	LOAD DESCRIPTION	CKT
1	WALL/POLE RECEPTS. COURT 1	3/4"C, 1#10, #10N, #10G	2.88%	20	1		1080	540						1	20	2.89%	3/4"C, 1#12, #12N, #12G	SCOREBOARDS COURTS 1	2
3	WALL RECEPTS. COURTS 1/2	3/4"C, 1#10, #10N, #10G	2.21%	20	1				360	540				1	20	2.32%	3/4"C, 1#12, #12N, #12G	SCOREBOARDS COURTS 2	4
5	WALL/POLE RECEPTS. COURT 2	3/4"C, 1#10, #10N, #10G	3.06%	20	1						1260	360		1	20	2.94%	3/4"C, 1#12, #12N, #12G	SCOREBOARDS COURTS 5	6
7	POLE RECEPTS. COURTS 8/10	3/4"C, 1#10, #10N, #10G	1.78%	20	1		360	360						1	20	2.79%	3/4"C, 1#12, #12N, #12G	SCOREBOARDS COURTS 6	8
9	POLE RECEPTS. COURTS 1/3	3/4"C, 1#10, #10N, #10G	2.96%	20	1				720	360				1	20	3.53%	3/4"C, 1#12, #12N, #12G	SCOREBOARDS COURTS 7	10
11	WALL RECEPTS. COURTS 11	3/4"C, 1#10, #10N, #10G	3.16%	20	1						540	360		1	20	3.14%	3/4"C, 1#12, #12N, #12G	SCOREBOARDS COURTS 8	12
13	WALL RECEPTS. COURTS 9	3/4"C, 1#10, #10N, #10G	2.49%	20	1		360	360						1	20	2.48%	3/4"C, 1#10, #10N, #10G	SCOREBOARDS COURTS 9	14
15	POLE RECEPTS. COURTS 7/9	3/4"C, 1#10, #10N, #10G	2.02%	20	1				360	360				1	20	2.25%	3/4"C, 1#10, #10N, #10G	SCOREBOARDS COURTS 10	16
17	POLE RECEPTS. COURTS 2/4	3/4"C, 1#10, #10N, #10G	2.49%	20	1						720	0	--	1	20	--	--	SPARE	18
19	WALL RECEPTS. COURTS 11	3/4"C, 1#10, #10N, #10G	1.85%	20	1		360	720						1	20	0.92%	3/4"C, 1#12, #12N, #12G	RECEPTS. MULTIPURPOSE	20
21	WALL RECEPTS. COURTS 3/5/7	3/4"C, 1#10, #10N, #10G	2.09%	20	1				360	720				1	20	0.98%	3/4"C, 1#12, #12N, #12G	RECEPTS. MULTIPURPOSE	22
23	WALL RECEPTS. COURTS 11	3/4"C, 1#10, #10N, #10G	2.24%	20	1						720	540		1	20	0.24%	3/4"C, 1#12, #12N, #12G	RECEPTS. MULTIPURPOSE	24
25	WALL RECEPTS. COURTS 11	3/4"C, 1#10, #10N, #10G	2.56%	20	1		360	180						1	20	0.24%	3/4"C, 1#12, #12N, #12G	TV'S FOOD COURTS WEST	26
27	WALL RECEPTS. COURTS 11	3/4"C, 1#10, #10N, #10G	2.96%	20	1				360	180				1	20	0.64%	3/4"C, 1#12, #12N, #12G	TV'S FOOD COURTS EAST	28
29	RECEPTS. FOOD COURT	3/4"C, 1#12, #12N, #12G	2.10%	20	1						900	360		1	20	0.15%	3/4"C, 1#12, #12N, #12G	RECEPT. ELEC AREA...	30
31	SELF SERVICE MACHINE	3/4"C, 2#12, #12N, #12G	1.28%	20	2	G	1410	1410					G	2	20	1.18%	3/4"C, 2#12, #12N, #12G	SELF SERVICE MACHINE	32
33									1410	1410									34
35	VENDING MACHINE	3/4"C, 1#12, #12N, #12G	0.63%	20	1	G					1000	672	G	1	20	1.49%	3/4"C, 1#12, #12N, #12G	FIDGE-REACH IN	36
37	VENDING MACHINE	3/4"C, 1#12, #12N, #12G	0.79%	20	1	G	1000	1000					G	1	20	0.69%	3/4"C, 1#12, #12N, #12G	VENDING MACHINE	38
39	VENDING MACHINE	3/4"C, 1#12, #12N, #12G	0.90%	20	1	G			1000	1000			G	1	20	1.00%	3/4"C, 1#12, #12N, #12G	VENDING MACHINE	40
41	RECEPTS. USB-C/A,FOOD COURT	3/4"C, 1#12, #12N, #12G	0.97%	20	1						540	559		1	20	2.02%	3/4"C, 1#12, #12N, #12G	EF-4, ROOFTOP	42
43	RECEPTS. USB-C/A,FOOD COURT	3/4"C, 1#12, #12N, #12G	1.12%	20	1		360	540						1	20	1.72%	3/4"C, 1#12, #12N, #12G	RECEPT. ROOFTOP	44
45	RCP-2, STORAGE 110B	3/4"C, 1#12, #12N, #12G	0.26%	20	1				100	500				1	20	0.28%	3/4"C, 1#12, #12N, #12G	LCP - MUSCO CONTROLS	46
47	SPARE	--	--	20	1	--					0	360		1	20	0.65%	3/4"C, 1#12, #12N, #12G	FURTURE DIGITAL MENUS	48
49	SPARE	--	--	20	1	--	0	180						1	20	0.19%	3/4"C, 1#12, #12N, #12G	DISPLAY MULTIPURPOSE	50
51	SPARE	--	--	20	1	--			0	360				1	20	0.14%	3/4"C, 1#12, #12N, #12G	AV RACK MULTIPURPOSE	52
53	WALL RECEPTS. COURTS 11	3/4"C, 1#10, #10N, #10G	2.36%	20	1						540	360		1	20	2.58%	3/4"C, 1#10, #10N, #10G	WALL RECEPTS. COURTS 11	54
55	SCOREBOARDS COURTS 3	3/4"C, 1#12, #12N, #12G	1.17%	20	1		180	180						1	20	0.98%	3/4"C, 1#12, #12N, #12G	SCOREBOARDS COURTS 4	56
57	BASKETBALL HOOP COURT 1A	3/4"C, 1#12, #12N, #12G	2.67%	20	1				559	559				1	20	0.80%	3/4"C, 1#12, #12N, #12G	BASKETBALL HOOP COURT 2A	58
59	BASKETBALL HOOP COURT 1B	3/4"C, 1#12, #12N, #12G	1.26%	20	1						559	559		1	20	2.07%	3/4"C, 1#12, #12N, #12G	BASKETBALL HOOP COURT 2B	60
61	BASKETBALL HOOP COURT 3A	3/4"C, 1#10, #10N, #10G	2.15%	20	1		559	559						1	20	1.03%	3/4"C, 1#10, #10N, #10G	BASKETBALL HOOP COURT 4A	62
63	BASKETBALL HOOP COURT 3B	3/4"C, 1#10, #10N, #10G	1.31%	20	1				559	559				1	20	1.79%	3/4"C, 1#10, #10N, #10G	BASKETBALL HOOP COURT 4B	64
65	BASKETBALL HOOP COURT 5A	3/4"C, 1#10, #10N, #10G	2.71%	20	1						559	559		1	20	1.59%	3/4"C, 1#10, #10N, #10G	BASKETBALL HOOP COURT 6A	66
67	BASKETBALL HOOP COURT 5B	3/4"C, 1#10, #10N, #10G	1.86%	20	1		559	559						1	20	2.36%	3/4"C, 1#10, #10N, #10G	BASKETBALL HOOP COURT 6B	68
69	BASKETBALL HOOP COURT 7A	3/4"C, 1#10, #10N, #10G	3.27%	20	1				559	559				1	20	2.15%	3/4"C, 1#10, #10N, #10G	BASKETBALL HOOP COURT 8A	70
71	BASKETBALL HOOP COURT 7B	3/4"C, 1#10, #10N, #10G	2.43%	20	1						559	559		1	20	2.92%	3/4"C, 1#10, #10N, #10G	BASKETBALL HOOP COURT 8B	72
73	BASKETBALL HOOP COURT 9A	3/4"C, 1#8, #8N, #8G	2.48%	20	1		559	559						1	20	1.76%	3/4"C, 1#8, #8N, #8G	BASKETBALL HOOP COURT 10A	74
75	BASKETBALL HOOP COURT 9B	3/4"C, 1#8, #8N, #8G	1.94%	20	1				559	559				1	20	2.26%	3/4"C, 1#8, #8N, #8G	BASKETBALL HOOP COURT 10B	76
77	VOLLEYBALL NET COURT 1	3/4"C, 1#12, #12N, #12G	2.25%	20	1						746	746		1	20	2.26%	3/4"C, 1#12, #12N, #12G	VOLLEYBALL NET COURT 2	78
79	VOLLEYBALL NET COURT 3	3/4"C, 1#10, #10N, #10G	2.09%	20	1		746	746						1	20	2.09%	3/4"C, 1#10, #10N, #10G	VOLLEYBALL NET COURT 4	80
81	VOLLEYBALL NET COURT 5	3/4"C, 1#10, #10N, #10G	2.83%	20	1				746	746				1	20	2.84%	3/4"C, 1#10, #10N, #10G	VOLLEYBALL NET COURT 6	82
83	VOLLEYBALL NET COURT 7	3/4"C, 1#8, #8N, #8G	2.33%	20	1						746	746		1	20	2.33%	3/4"C, 1#8, #8N, #8G	VOLLEYBALL NET COURT 8	84
85	VOLLEYBALL NET COURT 9	3/4"C, 1#8, #8N, #8G	2.81%	20	1		746	746						1	20	2.81%	3/4"C, 1#8, #8N, #8G	VOLLEYBALL NET COURT 10	86
87	DRAPER DIVIDER COURTS 1/2	3/4"C, 1#12, #12N, #12G	0.62%	20	1				559	559				1	20	1.55%	3/4"C, 1#12, #12N, #12G	DRAPER DIVIDER COURTS 3/4	88
89	DRAPER DIVIDER COURTS 5/6	3/4"C, 1#12, #12N, #12G	2.49%	20	1						559	1119		1	20	2.96%	3/4"C, 1#10, #10N, #10G	DRAPER DIVIDER COURTS 1/3	90
91	DRAPER DIVIDER COURTS 2/4	3/4"C, 1#10, #10N, #10G	2.21%	20	1		1119	559						1	20	2.05%	3/4"C, 1#10, #10N, #10G	DRAPER DIVIDER COURTS 7/8	92
93	DRAPER DIVIDER COURTS 3/5	3/4"C, 1#8, #8N, #8G	2.63%	20	1				1119	1119				1	20	3.36%	3/4"C, 1#8, #8N, #8G	DRAPER DIVIDER COURTS 5/9	94
95	DRAPER DIVIDER COURTS 4/6	3/4"C, 1#8, #8N, #8G	2.16%	20	1						1119	1119		1	20	2.89%	3/4"C, 1#8, #8N, #8G	DRAPER DIVIDER COURTS 6/8	96
97	DRAPER DIVIDER COURTS 7/9	3/4"C, 1#10, #10N, #10G	2.92%	20	1		559	559						1	20	3.38%	3/4"C, 1#10, #10N, #10G	DRAPER DIVIDER COURTS 7/9	98
99	DRAPER DIVIDER COURTS 8/10	3/4"C, 1#10, #10N, #10G	3.03%	20	1				559	559				1	20	2.55%	3/4"C, 1#10, #10N, #10G	DRAPER DIVIDER COURTS 8/10	100
101	DRAPER DIVIDER COURTS 9/10	3/4"C, 1#10, #10N, #10G	2.61%	20	1						559	360		1	20	0.40%	3/4"C, 1#12, #12N, #12G	RECPTS, CORRIDOR	102
103	SPARE	--	--	20	1	--	0	360						1	20	0.10%	3/4"C, 1#12, #12N, #12G	RECEPT SERVER 124	104
105	SPARE	--	--	20	1	--			0	360				1	20	0.04%	3/4"C, 1#12, #12N, #12G	RECEPT SERVER 124	106
107	SPARE	--	--	20	1	--					0	2288		2	40	0.69%	3/4"C, 2#8, #8N, #8G	CU-1, ROOF	108
109	SPARE	--	--	20	1	--	0	2288											110
111	SPARE	--	--	20	1	--			0	0			--	1	20	--	--	SPARE	112
113	SPARE	--	--	20	1	--					0	0	--	1	20	--	--	SPARE	114
115	SPARE	--	--	20	1	--	0	0					--	1	20	--	--	SPARE	116
117	SPARE	--	--	20	1	--			0	0			--	1	20	--	--	SPARE	118
119	SPARE	--	--	20	1	--					0	0	--	1	20	--	--	SPARE	120

7

	A	B	C
CONNECTED PHASE LOAD	22723 VA	20880 VA	23252 VA
***PHASE DIVERSIFIED LOAD**	22680 VA	20841 VA	23208 VA
***PHASE DIVERSIFIED AMPS**	191 A	174 A	196 A

CALCULATED PANEL AMPS: 196 A

(*DIVERSIFIED LOADS CALCULATED PER THE NATIONAL ELECTRIC CODE.)

NOTES/ACCESSORIES:
1. PROVIDE SPARE 20A, SINGLE-POLE BREAKERS IN ALL UNUSED SPACES.
2. L = LOCKOUT BREAKER G = GFI BREAKER
3. ALL EQUIPMENT UNDER KITCHEN HOOD TO HAVE SHUNT TRIP BREAKERS

PANEL TOTALS	
TOTAL CONNECTED LOAD:	66854 VA
TOTAL DIVERSIFIED LOAD:	66729 VA
TOTAL CONNECTED:	186 A
TOTAL ESTIMATED DEMAND:	185 A

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REGISTERED PROFESSIONAL ENGINEER VICTOR L. LEON No. E23782 Exp. 12/31/27 ELECTRICAL STATE OF CALIFORNIA

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IRVINE FIELDHOUSE
17300 RED HILL AVE.
IRVINE, CALIFORNIA 92614

ELECTRICAL PANEL SCHEDULES

	DATE	REMARKS
1	09/22/2025	PLAN CHECK CORRECTIONS
2	10/15/2025	PLAN CHECK CORRECTIONS 2
3	02/04/2026	PLAN CHECK CORRECTIONS 3
4	01/26/2026	OC HEALTH DEPT
5	03/06/2026	PLAN CHECK CORRECTIONS 4
6	03/06/2026	OC HEALTH DEPT 2
7	04/30/2026	BID ADDENDUM 2

PA/PM:	TB
DRAWN BY.:	CM
JOB NO.:	LAX21-0174-02

06/06/2025

SHEET
ET302

5/6/2026 10:04:14 AM

Autodesk Docs://LAX21-0174-02_17300 Red Hill - Rec Center/RTM-MEP-Red Hill Rec Center_R22.rvt

STATE OF CALIFORNIA

Electrical Power Distribution

CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE			NRCC-ELC-E
This document is used to demonstrate compliance with mandatory requirements in 130.5, for electrical systems in newly constructed nonresidential and hotel/motel occupancies and 160.6 and 160.9 for electrical systems in newly constructed multifamily occupancies. Additions and alterations to electrical service systems in nonresidential and hotel/motel occupancies will also use this document to demonstrate compliance per 141.0(a) or 141.0(b)2P for alterations. For multifamily addition or alterations compliance will be documented per 180.1(a) or 180.2 (b)4Bvii			
Project Name:	Red Hill - REC - CA	**Report Page:**	**(Page 1 of 7)**
Project Address:	17300 Red Hill Ave. Irvine, CA 92614	**Date Prepared:**	2025-08-13T13:11:12-04:00

A. GENERAL INFORMATION

01	Project Location (city)	IRVINE, CALIFORNIA	02	Climate Zone	8
			03	Occupancy Types Within Project:	GymnasiumOffice

B. PROJECT SCOPE

This table includes electrical systems that are within the scope of the permit application.

01	02	03	04	05	06	07
Electrical Service Designation/ Description	Scope of Work [1]	Rating[2] (kVA)	Utility Provided Metering System Exception to 130.5(a)/160.6(a)[3]	System subject to CA Elec Code Article 517 Exception to 130.5(a)and (b)	Demand Response Controls	Provides power to dwelling units/common living areas only in multifamily occupancy
ES101, E101, E300	New electrical service equipment and meter	2500	☒	☐	Where required, demand response controls must be specified which are capable of receiving and automatically responding to at least one standards based messaging protocol which enables demand response after receiving a demand response signal. Sections 120.2/160.3, 130.1/160.5, and 130.3/160.5, and mechanical, indoor lighting, and sign lighting Certificate of Compliance documents will indicate when demand response controls are required.	☐

[1]FOOTNOTES: Adding only new feeders and branch circuits triggers Voltage Drop 130.5(c)/160.6(c), no other requirements from 130.5/160.6 are required.
[2] If common use areas in a multifamily are submetered, rating is for submeter size serving common use areas.
[3] Applicable if the utility company is providing a metering system that indicates instantaneous kW demand and kWh for a utility-defined period.

STATE OF CALIFORNIA

Electrical Power Distribution

CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE			NRCC-ELC-E
Project Name:	Red Hill - REC - CA	**Report Page:**	**(Page 2 of 7)**
		Date Prepared:	2025-08-13T13:11:12-04:00

C. COMPLIANCE RESULTS

Results in this table are automatically calculated from data input and calculations in Tables F through J. 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.

01		02		03		04	05	06
Service Electrical Metering 130.5(a)/ 160.6(a) (See Table F)	AND	Separation for Monitoring 130.5(b)/ 160.6(b) (See Table G)	AND	Voltage Drop 130.5(c)/ 160.6(c) (See Table H)	AND	Controlled Receptacles 130.5(d)/ 160.6(d) (See Table I)	Electric Ready 160.9 (See Table J)	**Compliance Results**
	AND	Yes	AND	Yes	AND	Yes		COMPLIES with Exceptional Conditions

D. EXCEPTIONAL CONDITIONS

This table is auto-filled with uneditable comments because of selections made or data entered in tables throughout the form.

Table B indicates the project is exempt from 130.5(a) Service Electrical Metering requirements because the utility company has provided the project a metering system that indicates instantaneous kW demand and kWh for a utility-defined period.

E. ADDITIONAL REMARKS

This table includes remarks made by the permit applicant to the Authority Having Jurisdiction.

STATE OF CALIFORNIA

Electrical Power Distribution

CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE			NRCC-ELC-E
Project Name:	Red Hill - REC - CA	**Report Page:**	**(Page 3 of 7)**
		Date Prepared:	2025-08-13T13:11:12-04:00

G. SEPARATION OF ELECTRICAL CIRCUITS FOR ENERGY MONITORING

This table includes entirely new or complete replacement electrical power distribution systems to demonstrate compliance with 130.5(b)/160.6(b). Any load types that are not included in the service do not need to be shown. For multifamily occupancies, submetered systems that provide power to dwelling units do not need to meet these separation requirements and therefore load types on those submetered systems also do not need to be shown.

01	02	03	04	05	
Load Type per Table 130.5-B [1]	Minimum Required Separation of Load per Table 130.5-B	Compliance Method[2]	Location of Requirements in Construction Documents	Field Inspector Pass	Field Inspector Fail
ES101, E101, E300					
Charging stations for electrical vehicle	All loads in aggregate	Method 2: Switchboards/ motor control centers/ panelboard supply other distribution equipment with loads disaggregated for each load type	ES101, E101, E300, ET101, ET300	☐	☐
HVAC systems and components	All HVAC in aggregate and each HVAC load rated at least 50 kVA	Method 2: Switchboards/ motor control centers/ panelboard supply other distribution equipment with loads disaggregated for each load type	E101, E102, E300, ET101, E102, ET300	☐	☐
Lighting including exit, egress and exterior	All lighting disaggregated by floor, type or area	Method 2: Switchboards/ motor control centers/ panelboard supply other distribution equipment with loads disaggregated for each load type	ES102, E200, E300, ET200, ET300	☐	☐

STATE OF CALIFORNIA

Electrical Power Distribution

CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE			NRCC-ELC-E
Project Name:	Red Hill - REC - CA	**Report Page:**	**(Page 4 of 7)**
		Date Prepared:	2025-08-13T13:11:12-04:00

G. SEPARATION OF ELECTRICAL CIRCUITS FOR ENERGY MONITORING

This table includes entirely new or complete replacement electrical power distribution systems to demonstrate compliance with 130.5(b)/160.6(b). Any load types that are not included in the service do not need to be shown. For multifamily occupancies, submetered systems that provide power to dwelling units do not need to meet these separation requirements and therefore load types on those submetered systems also do not need to be shown.

01	02	03	04	05	
Load Type per Table 130.5-B [1]	Minimum Required Separation of Load per Table 130.5-B	Compliance Method[2]	Location of Requirements in Construction Documents	Field Inspector Pass	Field Inspector Fail
Plug Loads and appliances less than 25kVA	All plug loads separated by floor, type or area Groups of plug loads exceeding 25 kVA connected load in an area less than 5000 sf	Method 2: Switchboards/ motor control centers/ panelboard supply other distribution equipment with loads disaggregated for each load type	E101, E300, ET101, ET300	☐	☐

** NOTES: If "Other*" is selected under Compliance Method above, please indicate how compliance has been achieved in the space provided below.*

[1] FOOTNOTES: For each separate load type, up to 10% of the connected load may be of any type.
[2] Method 1: Switchboards/ motor control centers/ panelboard loads disaggregated for each load type.
Method 2: Switchboards/ motor control centers/ panelboard supply other distribution equipment with loads disaggregated for each load type.
Method 3: Branch circuits serve load types individually and provisions for adding future branch circuit monitoring.
Method 4: Complete metering system measures and reports loads by type.
See Chapter 8 of the Nonresidential Compliance Manual for more detail on Compliance Methods.

H. VOLTAGE DROP

This table includes entirely new or complete replacement electrical power distribution systems, or alterations that add, modify or replace both feeders and branch circuits to demonstrate compliance with 130.5(c)/ 160.6(c). For alterations, only the altered circuits must demonstrate compliance per 141.0(b)2Piii/ 180.2(b)4Bviic.

01	02				03	04	05	
Electrical Service Designation/Description	Combined Voltage Drop on Installed Feeder/Branch Circuit Conductors Compliance Method				Location of Voltage Drop Calculations[1]	Sheet Number for Voltage Drop Calculations in Construction Documents	Field Inspector Pass	Field Inspector Fail
ES101, E101, E300	☒	Voltage drop less than 5%	☐	Permitted by CA Elec Code (Exception to 130.5(c))*	In construction documents	E300, E301, E302, ET300, ET301	☐	☐

STATE OF CALIFORNIA

Electrical Power Distribution

CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE			NRCC-ELC-E
Project Name:	Red Hill - REC - CA	**Report Page:**	**(Page 5 of 7)**
		Date Prepared:	2025-08-13T13:11:12-04:00

H. VOLTAGE DROP

** NOTES: If "Permitted by CA Elec Code *" is selected under Compliance Method above, please indicate where the exception applies in the space provided below.*

[1] FOOTNOTES: Voltage drop calculations may be attached to the permit application outside the construction documents if allowed by the Authority Having Jurisdiction. Select "attached" if applicable. If calculations will be the responsibility of the installing contractor, select "Contractor Responsible".

I. CIRCUIT CONTROLS FOR 120-VOLT RECEPTACLES AND CONTROLLED RECEPTACLES

This table includes entirely new or complete replacement electrical power distribution systems to demonstrate compliance with 130.5(d)/ 160.6(d).. Both controlled and uncontrolled receptacles must be provided in office areas, lobbies, conference rooms, kitchen areas in office spaces, copy rooms and hotel/motel guest rooms.

01	02	03	04	05	06	07	
Room name or Description	Location/ Type of Controlled Receptacles[1]	Shut-Off Controls	Demand Responsive Controls	Permanent Durable Marking Will be Used	Location of Requirements in Construction Documents	Field Inspector Pass	Field Inspector Fail
OPEN OFFICE 103	50 % are controlled receptacle (hotel/motel room)	Occupancy Sensor	Included w capabilities per 110.12(e)	☒	E101	☐	☐
Lobby/Waiting 101, Check-In 102	50 % are controlled receptacle (hotel/motel room)	Occupancy Sensor	Included w capabilities per 110.12(e)	☒	E101	☐	☐
PRIVATE OFFICE 104	50 % are controlled receptacle (hotel/motel room)	Occupancy Sensor	Included w capabilities per 110.12(e)	☒	E101	☐	☐
PRIVATE OFFICE 105	50 % are controlled receptacle (hotel/motel room)	Occupancy Sensor	Included w capabilities per 110.12(e)	☒	E101	☐	☐
CONFERENCE 107	50 % are controlled receptacle (hotel/motel room)	Occupancy Sensor	Included w capabilities per 110.12(e)	☒	E101	☐	☐
Office 110A	50 % are controlled receptacle (hotel/motel room)	Occupancy Sensor	Included w capabilities per 110.12(e)	☒	ET101	☐	☐
Multi-Purpose 121	50 % are controlled receptacle (hotel/motel room)	Occupancy Sensor	Included w capabilities per 110.12(e)	☒	ET101	☐	☐

** NOTES: If "Other*" is selected under Shut-Off Controls above, please indicate how compliance has been achieved in the space provided below.*

[1] FOOTNOTES: Receptacles dedicated to refrigerators and water dispensers in kitchens, located a minimum of 6ft above the floor specifically for clocks, network copiers, fax machines, A/V and data equipment other than personal computers in copy rooms, circuits rated more than 20 Amps, or connected to a UPS that are intended to be in continuous use and are marked to differentiate them from other receptacles or circuits are excepted from the requirements. .

STATE OF CALIFORNIA

Electrical Power Distribution

CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE			NRCC-ELC-E
Project Name:	Red Hill - REC - CA	**Report Page:**	**(Page 6 of 7)**
		Date Prepared:	2025-08-13T13:11:12-04:00

K. 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

Form/Title
NRCI-ELC-E - Must be submitted for all buildings

L. DECLARATION OF REQUIRED CERTIFICATES OF ACCEPTANCE

Selections have been made based on information provided in previous tables of this document. If any selection needs to be changed, please explain why in Table 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

Form/Title	Systems/Spaces To Be Field Verified
NRCA-LTI-04-A - Must be submitted for demand response controls.	

STATE OF CALIFORNIA

Electrical Power Distribution

CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE			NRCC-ELC-E
Project Name:	Red Hill - REC - CA	**Report Page:**	**(Page 7 of 7)**
Project Address:	17300 Red Hill Ave. Irvine, CA 92614	**Date Prepared:**	2025-08-13T13:11:12-04:00

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT

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

Documentation Author Name:	Christopher Meyer	Documentation Author Signature:	*Christopher Meyer*
Company:	RTM Engineering Consultants	Signature Date:	2025.08.13
Address:	9035 Wadsworth Pkwy	CEA/ HERS Certification Identification (if applicable):	
City/State/Zip:	Westminster, CO 80021	Phone:	

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:	Victor Leon	Responsible Designer Signature:	*Victor Leon*
Company:	RTM Engineering Consultants	Date Signed:	2025.08.13
Address:	9035 Wadsworth Pkwy	License:	E23782
City/State/Zip:	Westminster, CO 80021	Phone:	563.726.6310

STATE OF CALIFORNIA

Indoor Lighting

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 for nonresidential and hotel/motel occupancies. It is also used to document compliance with requirements in 160.5, 170.2(e) and 180.2(b)4 for indoor lighting scopes using the prescriptive path for multifamily occupancies. Multifamily includes dormitory and senior living facilities.			
Project Name:	Red Hill - REC - CA	**Report Page:**	**(Page 1 of 17)**
Project Address:		**Date Prepared:**	2026-04-28T10:34:16-04:00

A. GENERAL INFORMATION

01	Project Location (city)	IRVINE, CALIFORNIA	04	Total Conditioned Floor Area (ft²)	107,910
02	Climate Zone	8	05	Total Unconditioned Floor Area (ft²)	0
03	Occupancy Types Within Project (select all that apply):		06	# of Stories (Habitable Above Grade)	1

● Gymnasium ● Office ● Restaurant

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 / 170.2(e) or 141.0(b)2 / 180.2(b)4 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	Area Category Method	107910	N/A	0
☐ New Lighting System - Parking Garage	N/A	0	N/A	0
Total Area of Work (ft²)	107910			

STATE OF CALIFORNIA

Indoor Lighting

CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE			NRCC-LTI-E
Project Name:	Red Hill - REC - CA	**Report Page:**	**(Page 2 of 17)**
		Date Prepared:	2026-04-28T10:34:16-04:00

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 /170.2(e)	Allowed Lighting Power per 140.6(b) /170.2(e) (Watts)							Adjusted Lighting Power per 140.6(a) /170.2(e) (Watts)					Compliance Results
	01	02	03	04		05		06	07		08		09
	Complete Building 140.6(c)1	Area Category 140.6(c)2 /170.2(e)4	Area Category Additional 140.6(c)2G / 170.2(e)4Av (+)	Tailored 140.6(c)3 /170.2(e)4B (+)	=	**Total Allowed** (Watts)	≥	Total Designed (Watts)	Adjustments: PAF Lighting Control Credits 140.6(a)2 /170.2(e)1B (-)	=	**Total Adjusted** (Watts) *Includes Adjustments		**05 must be >= 08 140.6 /170.2(e)**
	(See Table I)	(See Table I)	(See Table J)	(See Table K)				(See Table F)	(See Table P)				
Conditioned		76,384.6			=	76,384.6	≥	55,025.7		=	55025.7		COMPLIES
Unconditioned					=		≥			=			
Controls Compliance (See Table H for Details)													COMPLIES
Rated Power Reduction Compliance (See Table Q 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.

Track Lighting has been included in this project, details are provided in Table G.

E. ADDITIONAL REMARKS

This table includes remarks made by the permit applicant to the Authority Having Jurisdiction.

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Exp. 12/31/27
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rtm engineering consultants
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T:303.297.1038 : www.rtmec.com

IRVINE FIELDHOUSE

17300 RED HILL AVE.
IRVINE, CALIFORNIA 92614

ELECTRICAL T24 COMPLIANCE DOCS

	DATE	REMARKS
1	09/22/2025	PLAN CHECK CORRECTIONS
2	10/15/2025	PLAN CHECK CORRECTIONS 2
3	02/04/2026	PLAN CHECK CORRECTIONS 3
4	01/26/2025	OC HEALTH DEPT
5	03/06/2026	PLAN CHECK CORRECTIONS 4
6	03/06/2026	OC HEALTH DEPT 2
7	04/30/2026	BID ADDENDUM 2

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JOB NO.:	LAX21-0174-02

06/06/2025

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STATE OF CALIFORNIA
Indoor Lighting
CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE		NRCC-LTI-E
Project Name: Red Hill - REC - CA	Report Page:	(Page 3 of 17)
	Date Prepared:	2026-04-28T10:34:16-04:00

F. INDOOR LIGHTING FIXTURE SCHEDULE

This table includes all planned permanent and portable lighting other than dwelling unit/ hotel/ motel room lighting. Multifamily dwelling unit and hotel/motel room lighting is documented in Table T. If using Table T to document lighting in multifamily common use areas providing shared provisions for living, eating, cooking or sanitation, those luminaires are not included here.

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 / 170.2(e)2C	Design Watts	Field Inspector	
									Pass	Fail
F1A	48" L, VIA 3" RECESSED DIRECT, GRID INSTALL	No	NA	40.8	Mfr. Spec	5	No	204	☐	☐
F1AE	48" L, VIA 3" RECESSED DIRECT, GRID INSTALL, EMERGENCY	No	NA	40.8	Mfr. Spec	3	No	122.4	☐	☐
F1B	96" L, VIA 3" RECESSED DIRECT, GRID INSTALL	No	NA	81.6	Mfr. Spec	1	No	81.6	☐	☐
F1BE	96" L, VIA 3" RECESSED DIRECT, GRID INSTALL, EMERGENCY	No	NA	81.6	Mfr. Spec	1	No	81.6	☐	☐
F2	48" L, VIA 3" RECESSED DIRECT, GYP CEILING INSTALL	No	NA	40.8	Mfr. Spec	3	No	122.4	☐	☐
F2E	48" L, VIA 3" RECESSED DIRECT, GYP CEILING INSTALL, EMERGENCY	No	NA	40.8	Mfr. Spec	3	No	122.4	☐	☐
F4	41'(2X6'6"-2X14'), VIA 1.5" RECESSED PATTERN DIRECT	No	NA	287	Mfr. Spec	1	No	287	☐	☐
F7	AERA 4" PENDANT CYLINDER DIRECT 12"	No	NA	14	Mfr. Spec	19	No	266	☐	☐
F7E	AERA 4" PENDANT CYLINDER DIRECT 12", EMERGENCY	No	NA	14	Mfr. Spec	7	No	98	☐	☐

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CA Building Energy Efficiency Standards - 2022 Nonresidential Compliance
Report Version: 2022.0.000
Schema Version: rev 20220101
Compliance ID: ECA-240544-0426-0001
Report Generated: 2026-04-28 07:34:20

STATE OF CALIFORNIA
Indoor Lighting
CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE		NRCC-LTI-E
Project Name: Red Hill - REC - CA	Report Page:	(Page 4 of 17)
	Date Prepared:	2026-04-28T10:34:16-04:00

F. INDOOR LIGHTING FIXTURE SCHEDULE

F-11	BILLET INDOOR WALLWASHER (BIW) - INTEGRAL	No	NA	177.5	Mfr. Spec	1	No	177.5	☐	☐
F12A	11' L, VIA 3" PERIMETER LIGHTING	No	NA	55	Mfr. Spec	2	No	110	☐	☐
F12B	23' L, VIA 3" PERIMETER LIGHTING	No	NA	112.7	Mfr. Spec	1	No	112.7	☐	☐
F12C	28'6" L, VIA 3" PERIMETER LIGHTING	No	NA	142	Mfr. Spec	1	No	142	☐	☐
F12D	29'4" L, VIA 3" PERIMETER LIGHTING	No	NA	146	Mfr. Spec	1	No	146	☐	☐
F12F	34'9" L, VIA 3" PERIMETER LIGHTING	No	NA	173	Mfr. Spec	1	No	173	☐	☐
F14E	MELLOW LIGHT IV LED 2X4 SPLIT DIFFUSER EMERGENCY	No	NA	28	Mfr. Spec	1	No	28	☐	☐
F-15A	16'-6"L, LED TAPE LIGHT (PDS-NK EXTRUSION)	No	NA	120.5	Mfr. Spec	1	No	120.5	☐	☐
F-16	K-HEHD-0960-24 LED STRIP	No	NA	46	Mfr. Spec	1	No	46	☐	☐
F17	CRAFT II PERFORMACE MEDIUM HIGHBAY (MOUNTED AT 30' AFF)	No	NA	73.6	Mfr. Spec	7	No	515.2	☐	☐
F17E	CRAFT II PERFORMACE MEDIUM HIGHBAY WITH INTEGRAL BATTERY (MOUNTED AT 30' AFF)	No	NA	73.6	Mfr. Spec	4	No	294.4	☐	☐
F20	4' STRIP LIGHT	No	NA	23.8	Mfr. Spec	1	No	23.8	☐	☐
F20E	4' STRIP LIGHT EMERGENCY	No	NA	23.8	Mfr. Spec	2	No	47.6	☐	☐
F-13	AERA 3" DOWNLIGHT ROUND (AE3RR)	No	NA	10	Mfr. Spec	94	No	940	☐	☐
F-13E	AERA 3" DOWNLIGHT ROUND (AE3RR) EMERGENCY	No	NA	10	Mfr. Spec	51	No	510	☐	☐

Generated Date/Time: Documentation Software: Energy Code Ace

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CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE		NRCC-LTI-E
Project Name: Red Hill - REC - CA	Report Page:	(Page 5 of 17)
	Date Prepared:	2026-04-28T10:34:16-04:00

F. INDOOR LIGHTING FIXTURE SCHEDULE

F-14	MELLOW LIGHT IV LED 2X4 SPLIT DIFFUSER	No	NA	28	Mfr. Spec	5	No	140	☐	☐
F-3	66" L, SQUERO RECESSED DIRECT	No	NA	25.3	Mfr. Spec	12	No	303.6	☐	☐
F-5	BIONIC PRO 3	No	NA	195.8	Mfr. Spec	11	No	2,153.8	☐	☐
F-6A	160" L, VIA 3" PENDANT DIRECT	No	NA	49.2	Mfr. Spec	14	No	688.8	☐	☐
F-6B	72" L, VIA 3" PENDANT DIRECT	No	NA	24.6	Mfr. Spec	15	No	369	☐	☐
F-6BE	72" L, VIA 3" PENDANT DIRECT, EMERGENCY	No	NA	24.6	Mfr. Spec	3	No	73.8	☐	☐
F-8	AERA 4" PENDANT CYLINDER DIRECT 12"	No	NA	20	Mfr. Spec	25	No	500	☐	☐
F-8E	AERA 4" PENDANT CYLINDER DIRECT 12", EMERGENCY	No	NA	20	Mfr. Spec	21	No	420	☐	☐
F-9	AERA 4" PENDANT CYLINDER ASYMMETRIC DIRECT 12"	No	NA	20	Mfr. Spec	4	No	80	☐	☐
F-9E	AERA 4" PENDANT CYLINDER ASYMMETRIC DIRECT 12", EMERGENCY	No	NA	20	Mfr. Spec	3	No	60	☐	☐
F-10A	24" L, 1" INTEGRATED LINEAR LED T-BAR GRID CEILING LIGHT	No	NA	10	Mfr. Spec	18	No	180	☐	☐
F-10AE	24" L, 1" INTEGRATED LINEAR LED T-BAR GRID CEILING LIGHT, EMERGENCY	No	NA	10	Mfr. Spec	12	No	120	☐	☐
F-10B	48" L, 1" INTEGRATED LINEAR LED T-BAR GRID CEILING LIGHT	No	NA	20	Mfr. Spec	31	No	620	☐	☐

Generated Date/Time: Documentation Software: Energy Code Ace

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Indoor Lighting
CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE		NRCC-LTI-E
Project Name: Red Hill - REC - CA	Report Page:	(Page 6 of 17)
	Date Prepared:	2026-04-28T10:34:16-04:00

F. INDOOR LIGHTING FIXTURE SCHEDULE

F-10BE	48" L, 1" INTEGRATED LINEAR LED T-BAR GRID CEILING LIGHT, EMERGENCY	No	NA	20	Mfr. Spec	18	No	360	☐	☐
F-18	RONDO RB6 6" DOWNLIGHT (FOR WET LOCATION)	No	NA	19.3	Mfr. Spec	7	No	135.1	☐	☐
F-18E	RONDO RB6 6" DOWNLIGHT (FOR WET LOCATION), EMERGENCY	No	NA	19.3	Mfr. Spec	6	No	115.8	☐	☐
F-19E	2X4 WET RATED TROFFER, EMERGENCY	No	NA	36	Mfr. Spec	2	No	72	☐	☐
F-21	BADMINTON COURT REFLECTED LIGHTING	No	NA	161.8	Mfr. Spec	55	No	8,899	☐	☐
F-22	BASKETBALL COURT LIGHTING	No	NA	179	Mfr. Spec	187	No	33,473	☐	☐
F-3E	66" L, SQUERO RECESSED DIRECT, EMERGENCY	No	NA	25.3	Mfr. Spec	6	No	151.8	☐	☐
F-11A	BILLET INDOOR WALLWASHER (BIW) - INTEGRAL	No	NA	127.5	Mfr. Spec	1	No	127.5	☐	☐
F-11B	BILLET INDOOR WALLWASHER (BIW) - INTEGRAL	No	NA	65	Mfr. Spec	1	No	65	☐	☐
F-11C	BILLET INDOOR WALLWASHER (BIW) - INTEGRAL	No	NA	100	Mfr. Spec	1	No	100	☐	☐
F15B	10'-6"L, LED TAPE LIGHT (PDS-NK EXTRUSION)	No	NA	23.1	Mfr. Spec	1	No	23.1	☐	☐
F15C	8'L, LED TAPE LIGHT (PDS-NK EXTRUSION)	No	NA	17.6	Mfr. Spec	1	No	17.6	☐	☐
F-15D	5'-6"L, LED TAPE LIGHT (PDS-NK EXTRUSION)	No	NA	40.2	Mfr. Spec	1	No	40.2	☐	☐

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STATE OF CALIFORNIA
Indoor Lighting
CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE		NRCC-LTI-E
Project Name: Red Hill - REC - CA	Report Page:	(Page 7 of 17)
	Date Prepared:	2026-04-28T10:34:16-04:00

F. INDOOR LIGHTING FIXTURE SCHEDULE

F-15F	5'L, LED TAPE LIGHT (PDS-NK EXTRUSION)	No	NA	36.5	Mfr. Spec	1	No	36.5	☐	☐
F-23A	14' TRACK SPOT LIGHTING	Yes	NA	420	See Other Section	1	No	420	☐	☐
F-23B	16' TRACK SPOT LIGHTING	Yes	NA	480	See Other Section	1	No	480	☐	☐
F-14E	MELLOW LIGHT IV LED 2X4 SPLIT DIFFUSER EMERGENCY	No	NA	28	Mfr. Spec	1	No	28	☐	☐
							Total Designed Watts, CONDITIONED SPACES		4,545.5	

[1]*FOOTNOTE: Design Watts for small aperture and color changing luminaires which qualify per 140.6(a)4B /170.2(e)2D is adjusted to be 75% /80% 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) /160.5(b). Wattage used must be the maximum rated for the luminaire, not the lamp.*

G. MODULAR LIGHTING SYSTEMS

This table calculates wattage for modular lighting systems/ track lighting fixtures indicated on Table F and transfers wattage to Table F.

01	02	03														04
Name or Item Tag	Complete Track Description	Calculation Method per 130.0(c)6														Track Wattage
F-23A	14' TRACK SPOT LIGHTING	☒	i Installed Luminaires vs Default 30 W/ft	☐	ii Current Limiter	☐	iii Overcurrent Protection Panel	☐	iv Power supplied by driver, power supply or transformer[1]							
		Number of luminaires in system	x	Rated Watts per luminaire	=	Total Watts	OR	Linear ft of track or busway	x	Default W/LF 30	=	Total Watts				420
								14				420				
F-23B	16' TRACK SPOT LIGHTING	☒	i Installed Luminaires vs Default 30 W/ft	☐	ii Current Limiter	☐	iii Overcurrent Protection Panel	☐	iv Power supplied by driver, power supply or transformer[1]							

Generated Date/Time: Documentation Software: Energy Code Ace

CA Building Energy Efficiency Standards - 2022 Nonresidential Compliance
Report Version: 2022.0.000
Schema Version: rev 20220101
Compliance ID: ECA-240544-0426-0001
Report Generated: 2026-04-28 07:34:20

STATE OF CALIFORNIA
Indoor Lighting
CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE		NRCC-LTI-E
Project Name: Red Hill - REC - CA	Report Page:	(Page 8 of 17)
	Date Prepared:	2026-04-28T10:34:16-04:00

G. MODULAR LIGHTING SYSTEMS

	Number of luminaires in system	x	Rated Watts per luminaire	=	Total Watts	OR	Linear ft of track or busway	x	Default W/LF 30	=	Total Watts	480
							16				480	

[1]*FOOTNOTE: For power-over-Ethernet lighting systems, power provided to installed non-lighting devices may be subtracted from the total power rating of the power-over-Ethernet system.*

H. INDOOR LIGHTING CONTROLS (Not including PAFs)

This table includes lighting controls for conditioned and unconditioned spaces.

Building Level Controls

01	02	03	
		Field Inspector	
		Pass	Fail
Mandatory Demand Response 110.12(c)	Shut-off controls 130.1(c) / 160.5(b)4C		
Required >= 4,000W subject to multilevel	See Area/Space Level Controls	☐	☐

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Indoor Lighting
CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE		NRCC-LTI-E
Project Name: Red Hill - REC - CA	Report Page:	(Page 9 of 17)
	Date Prepared:	2026-04-28T10:34:16-04:00

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	Manual Area Controls 130.1(a) /160.5(b)4A	Multi-Level Controls 130.1(b) /160.5(b)4B	Shut-Off Controls 130.1(c) //160.5(b)4C	Primary/Sky lit Daylighting 130.1(d) /160.5(b)4D	Secondary Daylighting 130.1(d) /160.5(b)4D	Interlocked Systems 140.6(a)1/1 70.2(e)2A	Field Inspector	
								Pass	Fail
101/102 LOBBY/WAITING	Main Entry Lobby	Auth. Personnel	Dimmer	Occupancy Sensor	Included	Included	No	☐	☐
103 OPEN OFFICE	Office (>250 square feet)	Auth. Personnel	Dimmer	Occupancy Sensor	NA: Not daylit zone	NA: Not daylit zone	No	☐	☐
104 PRIVATE OFFICE	Office (<=250 square feet)	Auth. Personnel	Dimmer	Occupancy Sensor	NA: General Ltg < 120W	NA: Not daylit zone	No	☐	☐
105 PRIVATE OFFICE	Office (<=250 square feet)	Auth. Personnel	Dimmer	Occupancy Sensor	NA: General Ltg < 120W	NA: Not daylit zone	No	☐	☐
106 Private Office	Office (<=250 square feet)	Auth. Personnel	Dimmer	Occupancy Sensor	NA: General Ltg < 120W	NA: Not daylit zone	No	☐	☐
107 CONFERENCE	Conference, Multipurpose and Meeting Area	Auth. Personnel	Dimmer	Occupancy Sensor	NA: General Ltg < 120W	NA: Not daylit zone	No	☐	☐
108/109 FOOD COURT/VENDING	All Other Space Types	Auth. Personnel	Dimmer	Auto. Time Switch	NA: General Ltg < 120W	NA: Not daylit zone	No	☐	☐
110 KITCHEN	Kitchen/ Food Preparation	Auth. Personnel	Dimmer	Occupancy Sensor	NA: Not daylit zone	NA: Not daylit zone	No	☐	☐
110A OFFICE	Office (<=250 square feet)	Auth. Personnel	Dimmer	Occupancy Sensor	NA: Not daylit zone	NA: Not daylit zone	No	☐	☐
110B STORAGE	Storage - MF common areas	Auth. Personnel	Dimmer	Occupancy Sensor	NA: Not daylit zone	NA: Not daylit zone	No	☐	☐
111 MENS RESTROOM	Restroom	Auth. Personnel	NA: Restrooms	Occupancy Sensor	NA: Not daylit zone	NA: Not daylit zone	No	☐	☐

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Report Generated: 2026-04-28 07:34:20

STATE OF CALIFORNIA
Indoor Lighting
CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE		NRCC-LTI-E
Project Name: Red Hill - REC - CA	Report Page:	(Page 10 of 17)
	Date Prepared:	2026-04-28T10:34:16-04:00

H. INDOOR LIGHTING CONTROLS (Not including PAFs)

112 WOMENS RESTROOM	Restroom	Auth. Personnel	NA: Restrooms	Occupancy Sensor	NA: Not daylit zone	NA: Not daylit zone	No	☐	☐
113 LAUNDRY	Laundry	Auth. Personnel	Dimmer	Occupancy Sensor	NA: Not daylit zone	NA: Not daylit zone	No	☐	☐
114 RESTROOM	Restroom	Auth. Personnel	NA: Restrooms	Occupancy Sensor	NA: Not daylit zone	NA: Not daylit zone	No	☐	☐
115 RESTROOM	Restroom	Auth. Personnel	NA: Restrooms	Occupancy Sensor	NA: Not daylit zone	NA: Not daylit zone	No	☐	☐
116 JANITOR	All Other Space Types	Auth. Personnel	Dimmer	Occupancy Sensor	NA: Not daylit zone	NA: Not daylit zone	No	☐	☐
117 FIRST AID	All Other Space Types	Auth. Personnel	Dimmer	Occupancy Sensor	NA: Not daylit zone	NA: Not daylit zone	No	☐	☐
118 STORAGE	Storage - MF common areas	Auth. Personnel	Dimmer	NA: Elec. equip. rm	NA: Not daylit zone	NA: Not daylit zone	No	☐	☐
120 ELECTRICAL ROOM	Electrical, Mechanical, or Telephone Room	Auth. Personnel	NA: General Ltg <= 0.5W/SF	NA: Elec. equip. rm	NA: Not daylit zone	NA: Not daylit zone	No	☐	☐
121 MULTIPURPOSE	Classroom, Lecture, or Training Vocational	Auth. Personnel	Dimmer	Occupancy Sensor	NA: General Ltg < 120W	NA: Not daylit zone	No	☐	☐
122 STORAGE	Storage - MF common areas	Auth. Personnel	NA: General Ltg <= 0.5W/SF	Occupancy Sensor	NA: Not daylit zone	NA: Not daylit zone	No	☐	☐
123 CORRIDOR	Corridor	Auth. Personnel	NA: General Ltg <= 0.5W/SF	Occupancy Sensor	NA: Not daylit zone	NA: Not daylit zone	No	☐	☐
139 CORRIDOR	Corridor	Auth. Personnel	Dimmer	Auto. Time Switch	NA: Not daylit zone	NA: Not daylit zone	No	☐	☐
SPORTS COURTS - BASKETBALL	Sports Arena Class IV	Auth. Personnel	Dimmer	Auto. Time Switch	NA: Not daylit zone	NA: Not daylit zone	No	☐	☐
SPORTS COURTS - BADMINTON	Sports Arena Class IV	Auth. Personnel	Dimmer	Auto. Time Switch	NA: Not daylit zone	NA: Not daylit zone	No	☐	☐
119 STORAGE	Commercial Industrial Storage Area	Auth. Personnel	NA: General Ltg <= 0.5W/SF	NA: Elec. equip. rm	NA: Not daylit zone	NA: Not daylit zone	No	☐	☐

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CERTIFICATE OF COMPLIANCE		NRCC-LTI-E
Project Name: Red Hill - REC - CA	Report Page:	(Page 11 of 17)
	Date Prepared:	2026-04-28T10:34:16-04:00

H. INDOOR LIGHTING CONTROLS (Not including PAFs)

124 SERVER ROOM	Electrical, Mechanical, or Telephone Room	Readily Accessible	NA: Enclosed area w/ 1 luminaire <=2 Lamps	Occupancy Sensor	NA: Not daylit zone	NA: Not daylit zone	No	☐	☐
							Plan Sheet Showing Daylit Zones:		
							E200, ET201		

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/ft²)	Area (ft²)	Allowed Wattage (Watts)	Additional Allowance / Adjustment	
					Area Category	PAF
101/102 LOBBY/WAITING	Main Entry Lobby	0.7	1,815	1,270.5	No	No
103 OPEN OFFICE	Office (>250 square feet)	0.6	966	579.6	No	No
104 PRIVATE OFFICE	Office (<=250 square feet)	0.65	99	64.35	No	No
105 PRIVATE OFFICE	Office (<=250 square feet)	0.65	99	64.35	No	No
106 Private Office	Office (<=250 square feet)	0.65	103	66.95	No	No
107 CONFERENCE	Conference, Multipurpose and Meeting Area	0.75	249	186.75	No	No
108/109 FOOD COURT/VENDING	All Other Space Types	0.4	3,582	1,432.8	No	No
110 KITCHEN	Kitchen/ Food Preparation	0.95	818	777.1	No	No
110A OFFICE	Office (<=250 square feet)	0.65	58	37.7	No	No
110B STORAGE	Storage - MF common areas	0.45	72	32.4	No	No
111 MENS RESTROOM	Restroom	0.65	479	311.35	No	No
112 WOMENS RESTROOM	Restroom	0.65	578	375.7	No	No
113 LAUNDRY	Laundry	0.45	108	48.6	No	No

Generated Date/Time: Documentation Software: Energy Code Ace

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Report Generated: 2026-04-28 07:34:20

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ELECTRICAL T24 COMPLIANCE DOCS

	DATE	REMARKS
1	09/22/2025	PLAN CHECK CORRECTIONS
2	10/15/2025	PLAN CHECK CORRECTIONS 2
3	02/04/2026	PLAN CHECK CORRECTIONS 3
4	02/06/2026	90% CD'S
5	03/06/2026	PLAN CHECK CORRECTIONS 4
6	03/06/2026	OC HEALTH DEPT 2
7	04/30/2026	BID ADDENDUM 2

PA/PM:	TB
DRAWN BY.:	CM
JOB NO.:	LAX21-0174-02

06/06/2025

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5/6/2026 10:05:00 AM

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STATE OF CALIFORNIA
Indoor Lighting
CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE		NRCC-LTI-E
Project Name: Red Hill - REC - CA	Report Page:	(Page 12 of 17)
	Date Prepared:	2026-04-28T10:34:16-04:00

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

114 RESTROOM	Restroom	0.65	105	68.25	No	No
115 RESTROOM	Restroom	0.65	107	69.55	No	No
116 JANITOR	All Other Space Types	0.4	55	22	No	No
~~117 FIRST AID~~	~~All Other Space Types~~	~~0.4~~	~~132~~	~~52.8~~	~~No~~	~~No~~
118 STORAGE	Storage - MF common areas	0.45	4,306	1,937.7	No	No
~~120 ELECTRICAL ROOM~~	~~Electrical, Mechanical, or Telephone Room~~	~~0.4~~	~~617~~	~~246.8~~	~~No~~	~~No~~
121 MULTIPURPOSE	Classroom, Lecture, or Training Vocational	0.6	1,168	700.8	No	No
122 STORAGE	Storage - MF common areas	0.45	122	54.9	No	No
123 CORRIDOR	Corridor	0.4	235	94	No	No
139 CORRIDOR	Corridor	0.4	2,119	847.6	No	No
SPORTS COURTS - BASKETBALL	Sports Arena Class IV	0.75	70,981	53,235.75	No	No
SPORTS COURTS - BADMINTON	Sports Arena Class IV	0.75	18,250	13,687.5	No	No
~~119 STORAGE~~	~~Commercial Industrial Storage Area~~	~~0.4~~	~~187~~	~~74.8~~	~~No~~	~~No~~
124 SERVER ROOM	Electrical, Mechanical, or Telephone Room	0.4	110	44	No	No
		~~TOTALS:~~	~~107,520~~	~~76,384.6~~	~~See Tables J, or P for detail~~	

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.

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CERTIFICATE OF COMPLIANCE		NRCC-LTI-E
Project Name: Red Hill - REC - CA	Report Page:	(Page 13 of 17)
	Date Prepared:	2026-04-28T10:34:16-04:00

M. ADDITIONAL LIGHTING ALLOWANCE: TAILORED FLOOR AND TASK LIGHTING
This section does not apply to this project.

N. ADDITIONAL LIGHTING ALLOWANCE: TAILORED DECORATIVE /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 ONE-FOR-ONE 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.

T. DWELLING UNIT LIGHTING
This section does not apply to this project.

STATE OF CALIFORNIA
Indoor Lighting
CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE		NRCC-LTI-E
Project Name: Red Hill - REC - CA	Report Page:	(Page 14 of 17)
	Date Prepared:	2026-04-28T10:34:16-04:00

U. DECLARATION OF REQUIRED CERTIFICATES OF INSTALLATION
Selections have been made based on information provided in this document. If any selections 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

Form/Title
NRCI-LTI-E - Must be submitted for all buildings

STATE OF CALIFORNIA
Indoor Lighting
CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE		NRCC-LTI-E
Project Name: Red Hill - REC - CA	Report Page:	(Page 15 of 17)
	Date Prepared:	2026-04-28T10:34:16-04:00

V. DECLARATION OF REQUIRED CERTIFICATES OF ACCEPTANCE
Selections have been made based on information provided in this document. If any selections 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

Form/Title	Systems/Spaces To Be Field Verified
NRCA-LTI-02-A - Must be submitted for occupancy sensors and automatic time switch controls.	101/102 LOBBY/WAITING; 103 OPEN OFFICE; 104 PRIVATE OFFICE; 105 PRIVATE OFFICE; 106 Private Office; 107 CONFERENCE; 108/109 FOOD COURT/VENDING ; 110 KITCHEN; 110A OFFICE; 110B STORAGE; 111 MENS RESTROOM; 112 WOMENS RESTROOM; 113 LAUNDRY; 114 RESTROOM; 115 RESTROOM; 116 JANITOR; 117 FIRST AID; 121 MULTIPURPOSE; 122 STORAGE; 123 CORRIDOR; 139 CORRIDOR; SPORTS COURTS - BASKETBALL; SPORTS COURTS - BADMINTON; 124 SERVER ROOM
NRCA-LTI-03-A - Must be submitted for automatic daylight controls.	101/102 LOBBY/WAITING

STATE OF CALIFORNIA
Indoor Lighting
CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE		NRCC-LTI-E
Project Name: Red Hill - REC - CA	Report Page:	(Page 16 of 17)
	Date Prepared:	2026-04-28T10:34:16-04:00

V. DECLARATION OF REQUIRED CERTIFICATES OF ACCEPTANCE

NRCA-LTI-04-A - Must be submitted for demand responsive lighting controls.	101/102 LOBBY/WAITING; 103 OPEN OFFICE; 104 PRIVATE OFFICE; 105 PRIVATE OFFICE; 106 Private Office; 107 CONFERENCE; 108/109 FOOD COURT/VENDING ; 110 KITCHEN; 110A OFFICE; 110B STORAGE; 111 MENS RESTROOM; 112 WOMENS RESTROOM; 113 LAUNDRY; 114 RESTROOM; 115 RESTROOM; 116 JANITOR; 117 FIRST AID; 118 STORAGE; 120 ELECTRICAL ROOM; 121 MULTIPURPOSE; 122 STORAGE; 123 CORRIDOR; 139 CORRIDOR; SPORTS COURTS - BASKETBALL; SPORTS COURTS - BADMINTON; 119 STORAGE; 124 SERVER ROOM

STATE OF CALIFORNIA
Indoor Lighting
CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE		NRCC-LTI-E
Project Name: Red Hill - REC - CA	Report Page:	(Page 17 of 17)
Project Address:	Date Prepared:	2026-04-28T10:34:16-04:00

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT

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

Documentation Author Name: Nader Ibrahim	Documentation Author Signature: Nader Ibrahim
Company: RTM Engineering Consultants	Signature Date: 2026.04.28
Address: 9035 Wadsworth Pkwy	CEA/ HERS Certification Identification (if applicable):
City/State/Zip: Westminster, CO 80021	Phone:

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: Victor Leon	Responsible Designer Signature: Victor Leon
Company: RTM Engineering Consultants	Date Signed: 2026.04.28
Address: 9035 Wadsworth Pkwy	License: E23782
City/State/Zip: Westminster, CO 80021	Phone: 563.726.6310

THESE DRAWINGS AND SPECIFICATIONS ARE THE PROPERTY AND COPYRIGHT OF WARE MALCOMB AND SHALL NOT BE USED ON ANY OTHER WORK EXCEPT BY AGREEMENT WITH WARE MALCOMB. WRITTEN DIMENSIONS SHALL TAKE PRECEDENCE OVER SCALED DIMENSIONS AND SHALL BE VERIFIED ON THE JOB SITE. ANY DISCREPANCY SHALL BE BROUGHT TO THE NOTICE OF WARE MALCOMB PRIOR TO THE COMMENCEMENT OF ANY WORK

WARE MALCOMB
915 Wilshire Blvd, Suite #2150
Los Angeles, CA 90017
P 310.903.4000
ARCHITECTURE PLANNING INTERIORS CIVIL ENGINEERING BRANDING BUILDING MEASUREMENT

REGISTERED PROFESSIONAL ENGINEER VICTOR L. LEON No. E23782 Exp. 12/31/27 ELECTRICAL STATE OF CALIFORNIA

rtm engineering consultants
9035 Wadsworth Parkway | Suite 3200 | Westminster, CO 80021
T:303.297.1038 : www.rtmec.com

IRVINE FIELDHOUSE
17300 RED HILL AVE.
IRVINE, CALIFORNIA 92614

ELECTRICAL T24 COMPLIANCE DOCS

	DATE	REMARKS
1	09/22/2025	PLAN CHECK CORRECTIONS
2	10/15/2025	PLAN CHECK CORRECTIONS 2
3	02/04/2026	PLAN CHECK CORRECTIONS 3
4	01/26/2025	OC HEALTH DEPT
5	03/06/2026	PLAN CHECK CORRECTIONS 4
6	03/06/2026	OC HEALTH DEPT 2
7	04/30/2026	BID ADDENDUM 2

PA/PM:	TB
DRAWN BY.:	CM
JOB NO.:	LAX21-0174-02

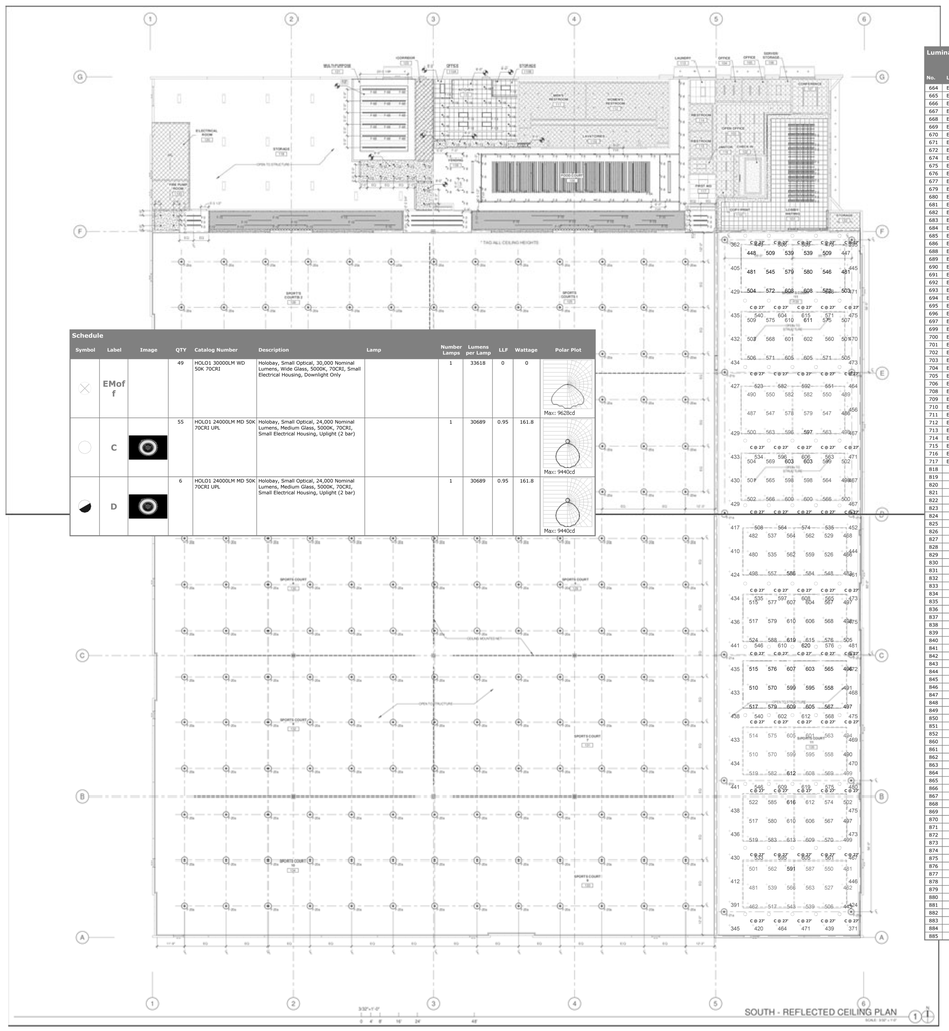
06/06/2025

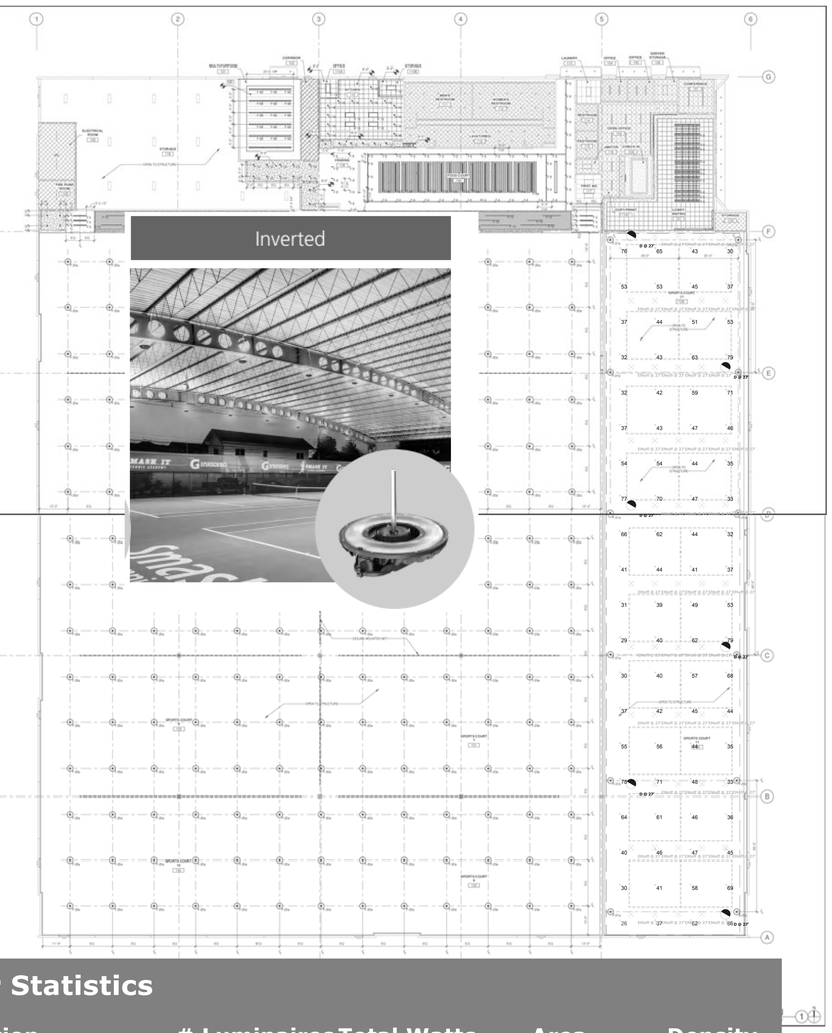
SHEET
ET402

5/6/2026 10:05:17 AM

Autodesk Docs://LAX21-0174-02_17300 Red Hill - Rec Center/RTM-MEP-Red Hill Rec Center_R22.rvt

CAUTION: IF THIS SHEET IS NOT 30"x42" IT IS A REDUCED PRINT





Plan View
Scale - 1" = 20ft

Schedule

Symbol	Label	Image	QTY	Catalog Number	Description	Lamp	Number Lamps	Lumens per Lamp	LLF	Wattage	Polar Plot
	EMoff		49	HOLO1 30000LM WD 50K 70CRI	Holoday, Small Optical, 30,000 Nominal Lumens, Wide Glass, 5000K, 70CRI, Small Electrical Housing, Downlight Only		1	33618	0	0	Max: 9628cd
	C		55	HOLO1 24000LM MD 50K 70CRI UPL	Holoday, Small Optical, 24,000 Nominal Lumens, Medium Glass, 5000K, 70CRI, Small Electrical Housing, Uplight (2 bar)		1	30689	0.95	161.8	Max: 9940cd
	D		6	HOLO1 24000LM MD 50K 70CRI UPL	Holoday, Small Optical, 24,000 Nominal Lumens, Medium Glass, 5000K, 70CRI, Small Electrical Housing, Uplight (2 bar)		1	30689	0.95	161.8	Max: 9940cd

Luminaire Locations

No.	Label	Location X	Location Y	Location Z	MH	Orientation	Aim Tilt	Aim X	Aim Y	Aim Z
664	EMoff	583.07	64.08	27.00	27.00	0.00	180.00	583.07	64.08	33.00
665	EMoff	593.08	64.08	27.00	27.00	0.00	180.00	593.08	64.08	33.00
666	EMoff	603.04	64.08	27.00	27.00	0.00	180.00	603.04	64.08	33.00
667	EMoff	583.07	92.24	27.00	27.00	0.00	180.00	583.07	92.24	33.00
668	EMoff	593.08	92.24	27.00	27.00	0.00	180.00	593.08	92.24	33.00
669	EMoff	603.04	92.24	27.00	27.00	0.00	180.00	603.04	92.24	33.00
670	EMoff	583.07	119.73	27.00	27.00	0.00	180.00	583.07	119.73	33.00
671	EMoff	593.08	119.73	27.00	27.00	0.00	180.00	593.08	119.73	33.00
672	EMoff	603.04	119.73	27.00	27.00	0.00	180.00	603.04	119.73	33.00
674	EMoff	613.06	119.73	27.00	27.00	0.00	180.00	613.06	119.73	33.00
675	EMoff	613.06	92.24	27.00	27.00	0.00	180.00	613.06	92.24	33.00
676	EMoff	572.97	92.24	27.00	27.00	0.00	180.00	572.97	92.24	33.00
677	EMoff	573.04	64.08	27.00	27.00	0.00	180.00	573.04	64.08	33.00
679	EMoff	583.07	32.88	27.00	27.00	0.00	180.00	583.07	32.88	33.00
680	EMoff	593.08	32.88	27.00	27.00	0.00	180.00	593.08	32.88	33.00
681	EMoff	603.04	32.88	27.00	27.00	0.00	180.00	603.04	32.88	33.00
682	EMoff	573.04	32.88	27.00	27.00	0.00	180.00	573.04	32.88	33.00
683	EMoff	613.06	32.88	27.00	27.00	0.00	180.00	613.06	32.88	33.00
684	EMoff	583.07	5.48	27.00	27.00	0.00	180.00	583.07	5.48	33.00
685	EMoff	593.08	5.48	27.00	27.00	0.00	180.00	593.08	5.48	33.00
686	EMoff	603.04	5.48	27.00	27.00	0.00	180.00	603.04	5.48	33.00
688	EMoff	613.06	5.87	27.00	27.00	0.00	180.00	613.06	5.87	33.00
689	EMoff	583.07	-27.73	27.00	27.00	0.00	180.00	583.07	-27.73	33.00
690	EMoff	593.08	-27.73	27.00	27.00	0.00	180.00	593.08	-27.73	33.00
691	EMoff	603.04	-27.73	27.00	27.00	0.00	180.00	603.04	-27.73	33.00
692	EMoff	573.04	-27.73	27.00	27.00	0.00	180.00	573.04	-27.73	33.00
693	EMoff	613.06	-27.73	27.00	27.00	0.00	180.00	613.06	-27.73	33.00
694	EMoff	583.07	-54.53	27.00	27.00	0.00	180.00	583.07	-54.53	33.00
695	EMoff	593.08	-54.53	27.00	27.00	0.00	180.00	593.08	-54.53	33.00
696	EMoff	603.04	-54.53	27.00	27.00	0.00	180.00	603.04	-54.53	33.00
697	EMoff	573.04	-54.53	27.00	27.00	0.00	180.00	573.04	-54.53	33.00
699	EMoff	583.07	-83.28	27.00	27.00	0.00	180.00	583.07	-83.28	33.00
700	EMoff	593.08	-83.28	27.00	27.00	0.00	180.00	593.08	-83.28	33.00
701	EMoff	603.04	-83.28	27.00	27.00	0.00	180.00	603.04	-83.28	33.00
702	EMoff	573.04	-83.28	27.00	27.00	0.00	180.00	573.04	-83.28	33.00
703	EMoff	613.06	-83.28	27.00	27.00	0.00	180.00	613.06	-83.28	33.00
704	EMoff	583.07	-112.69	27.00	27.00	0.00	180.00	583.07	-112.69	33.00
705	EMoff	593.08	-112.69	27.00	27.00	0.00	180.00	593.08	-112.69	33.00
706	EMoff	603.04	-112.69	27.00	27.00	0.00	180.00	603.04	-112.69	33.00
708	EMoff	613.06	-112.69	27.00	27.00	0.00	180.00	613.06	-112.69	33.00
709	EMoff	583.07	-139.81	27.00	27.00	0.00	180.00	583.07	-139.81	33.00
710	EMoff	593.08	-139.81	27.00	27.00	0.00	180.00	593.08	-139.81	33.00
711	EMoff	603.04	-139.81	27.00	27.00	0.00	180.00	603.04	-139.81	33.00
712	EMoff	573.04	-139.81	27.00	27.00	0.00	180.00	573.04	-139.81	33.00
713	EMoff	613.06	-139.81	27.00	27.00	0.00	180.00	613.06	-139.81	33.00
714	EMoff	583.07	-167.91	27.00	27.00	0.00	180.00	583.07	-167.91	33.00
715	EMoff	593.08	-167.91	27.00	27.00	0.00	180.00	593.08	-167.91	33.00
716	EMoff	603.04	-167.91	27.00	27.00	0.00	180.00	603.04	-167.91	33.00
717	EMoff	573.04	-167.91	27.00	27.00	0.00	180.00	573.04	-167.91	33.00
818	C	127.19	64.08	27.00	27.00	0.00	180.00	127.19	64.08	33.00
819	C	137.19	64.08	27.00	27.00	0.00	180.00	137.19	64.08	33.00
820	C	147.15	64.08	27.00	27.00	0.00	180.00	147.15	64.08	33.00
821	C	127.19	92.24	27.00	27.00	0.00	180.00	127.19	92.24	33.00
822	C	137.19	92.24	27.00	27.00	0.00	180.00	137.19	92.24	33.00
823	C	147.15	92.24	27.00	27.00	0.00	180.00	147.15	92.24	33.00
824	C	127.19	119.73	27.00	27.00	0.00	180.00	127.19	119.73	33.00
825	C	137.19	119.73	27.00	27.00	0.00	180.00	137.19	119.73	33.00
826	C	147.15	119.73	27.00	27.00	0.00	180.00	147.15	119.73	33.00
827	C	117.18	119.73	27.00	27.00	0.00	180.00	117.18	119.73	33.00
828	C	157.18	119.73	27.00	27.00	0.00	180.00	157.18	119.73	33.00
829	C	157.18	92.24	27.00	27.00	0.00	180.00	157.18	92.24	33.00
830	C	117.09	92.24	27.00	27.00	0.00	180.00	117.09	92.24	33.00
831	C	117.16	64.08	27.00	27.00	0.00	180.00	117.16	64.08	33.00
832	C	157.18	64.08	27.00	27.00	0.00	180.00	157.18	64.08	33.00
833	C	127.19	32.88	27.00	27.00	0.00	180.00	127.19	32.88	33.00
834	C	137.19	32.88	27.00	27.00	0.00	180.00	137.19	32.88	33.00
835	C	147.15	32.88	27.00	27.00	0.00	180.00	147.15	32.88	33.00
836	C	117.16	32.88	27.00	27.00	0.00	180.00	117.16	32.88	33.00
837	C	157.18	32.88	27.00	27.00	0.00	180.00	157.18	32.88	33.00
838	C	127.19	5.48	27.00	27.00	0.00	180.00	127.19	5.48	33.00
839	C	137.19	5.48	27.00	27.00	0.00	180.00	137.19	5.48	33.00
840	C	147.15	5.48	27.00	27.00	0.00	180.00	147.15	5.48	33.00
841	C	117.16	5.48	27.00	27.00	0.00	180.00	117.16	5.48	33.00
842	C	157.18	5.39	27.00	27.00	0.00	180.00	157.18	5.39	33.00
843	C	127.19	-27.73	27.00	27.00	0.00	180.00	127.19	-27.73	33.00
844	C	137.19	-27.73	27.00	27.00	0.00	180.00	137.19	-27.73	33.00
845	C	147.15	-27.73	27.00	27.00	0.00	180.00	147.15	-27.73	33.00
846	C	117.16	-27.73	27.00	27.00	0.00	180.00	117.16	-27.73	33.00
847	C	157.18	-27.73	27.00	27.00	0.00	180.00	157.18	-27.73	33.00
848	C	127.19	-54.53	27.00	27.00	0.00	180.00	127.19	-54.53	33.00
849	C	137.19	-54.53	27.00	27.00	0.00	180.00	137.19	-54.53	33.00
850	C	147.15	-54.53	27.00	27.00	0.00	180.00	147.15	-54.53	33.00
851	C	117.16	-54.53	27.00	27.00	0.00	180.00	117.16	-54.53	33.00
852	C	157.18	-54.53	27.00	27.00	0.00	180.00	157.18	-54.53	33.00
860	C	127.19	-112.69	27.00	27.00	0.00	180.00	127.19	-112.69	33.00
861	C	137.19	-112.69	27.00	27.00	0.00	180.00	137.19	-112.69	33.00
862	C	147.15	-112.69	27.00	27.00	0.00	180.00	147.15	-112.69	33.00
863	C	117.16	-112.69	27.00	27.00	0.00	180.00	117.16	-112.69	33.00
864	C	157.18	-112.69	27.00	27.00	0.00	180.00	157.18	-112.69	33.00
865	C	127.19	-139.81	27.00	27.00	0.00	180.00	127.19	-139.81	33.00
866	C	137.19	-139.81	27.00	27.00	0.00	180.00	137.19	-139.81	33.00
867	C	147.15	-139.81	27.00	27.00	0.00	180.00	147.15	-139.81	33.00
868	C	117.16	-139.81	27.00	27.00	0.00	180.00	117.16	-139.81	33.00
869	C	157.18	-139.81	27.00	27.00	0.00	180.00	157.18	-139.81	33.00
870	C	127.19	-167.91	27.00	27.00	0.00	180.00	127.19	-167.91	33.00
871	C	137.19	-167.91	27.00	27.00	0.00	180.00	137.19	-167.91	33.00
872	C	147.15	-167.91	27.00	27.00	0.00	180.00	147.15	-167.91	33.00
873	C	117.16	-167.91	27.00	27.00	0.00	180.00	117.16	-167.91	33.00
874	C	157.18	-167.91	27.00	27.00	0.00	180.00	157.18	-167.91	33.00
875	C	127.19	-83.53	27.00	27.00	0.00	180.00	127.19	-83.53	33.00
876	C	137.19	-83.53	27.00	27.00	0.00	180.00	137.19	-83.53	33.00
877	C	147.15	-83.53	27.00	27.00	0.00	180.00	147.15	-83.53	33.00
878	C	117.16	-83.53	27.00	27.00	0.00	180.00	117.16	-83.53	33.00
879	C	157.18	-83.53	27.00	27.00	0.00	180.00	157.18	-83.53	33.00
880	D	573.07	119.73	27.00	27.00	0.00	180.00	573.07	119.73	33.00
881	D	573.04	5.48	27.00	27.00	0.00	180.00	573.04	5.48	33.00
882	D	573.04	-112.69	27.00	27.00	0.00	180.00	573.04	-112.69	33.00
883	D	613.06	64.08	27.00	27.00	0.00	180.00	613.06	64.08	33.00
884	D	613.06	-54.53	27.00	27.00	0.00	180.00	613.06	-54.53	33.00
885	D	613.06	-167.91	27.00	27.00	0.00	180.00	613.06	-167.91	33.00

Power Statistics

Description	# Luminaires	Total Watts	Area	Density
Emergency Lights Only	6	970.80 W	17641.00 ft²	0.06 W/ft²
Power Density Zone # 3	55	8899.00 W	18662.00 ft²	0.48 W/ft²

Statistics

Description	Symbol	Avg	Max	Min	Max/Min	Avg/Min	UG
Badminton 1	+	532 lux	608 lux	447 lux	1.4:1	1.2:1	1.1
Badminton 2	+	560 lux	611 lux	501 lux	1.2:1	1.1:1	1.1
Badminton 3	+	544 lux	597 lux	486 lux	1.2:1	1.1:1	1.1
Badminton 4	+	556 lux	603 lux	498 lux	1.2:1	1.1:1	1.1
Badminton 5	+	529 lux	586 lux	466 lux	1.3:1	1.1:1	1.1
Badminton 6	+	565 lux	619 lux	497 lux	1.2:1	1.1:1	1.1
Badminton 7	+	559 lux	609 lux	491 lux	1.2:1	1.1:1	1.1
Badminton 8	+	559 lux	612 lux	490 lux	1.2:1	1.1:1	1.1
Badminton 9	+	566 lux	616 lux	497 lux	1.2:1	1.1:1	1.1
Badminton 10	+	523 lux	591 lux	443 lux	1.3:1	1.2:1	1.1
Emergency Lighting	+	49 lux	86 lux	26 lux	3.3:1	1.9:1	1.7
Off court	+	491 lux	620 lux	345 lux	1.8:1	1.4:1	1.2

GENERAL NOTES - SPORTS LIGHTING
THIS LIGHTING SYSTEM LAYOUT DIAGRAM IS PROVIDED ONLY FOR INFORMATIONAL PURPOSES AND TO HELP THE CUSTOMER OR END-USER (AS APPLICABLE)

UNDERSTAND HOW VARIOUS DEVICES ARE ARRANGED AND CONNECT TO EACH OTHER AND ARE INTENDED TO OPERATE. THIS LIGHTING SYSTEM LAYOUT DIAGRAM IS STRICTLY BASED ON THE INFORMATION PROVIDED TO ACUITY BRANDS LIGHTING, AND IS PROVIDED WITHOUT WARRANTY AS TO ACCURACY, COMPLETENESS, RELIABILITY OR OTHERWISE.

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GENERAL NOTES - SPORTS LIGHTING

1. Readings shown are based on a total LLF as 0.95 in the luminaire schedule at 3' (1m) above floor. Data references the extrapolated performance projections in a 25c ambient based on 10,000 hrs of LED testing (per IESNA LM-80-08 and projected per IESNA TM-21-11). LLF is based on fixture type cutsheet (if not preferred differently).

2. Please refer to the fixture labels for product type and mounting heights.

3. Product information can be obtained at https://www.acuitybrands.com/ or through your local agency.

4. Grid spacing is 10' x 10' on center.

5. Room surface reflectances are: 70/45/20.

Background Image Disclaimer
Please note this design utilizes an image format or converted image such as a PDF or JPEG formats for the background shown. These
types of formats can negatively impact accuracy when scaled resulting with inconsistent measurement of lighting levels on project.
Acuity Brands strongly suggests the use of AutoCAD formats for all design requests.

DISCLAIMER 2025

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This application design is not a professional engineering drawing, and the design, including reported data and calculated results, is provided for informational purposes only, without any warranty as to accuracy, completeness, safety or otherwise. The design is the result of calculations made using Visual® lighting application software, photometric/radiometric data measured in a laboratory, and certain computational and modeling assumptions.
Far-field photometric/radiometric data may have been used to perform one or more calculations. Photometric/radiometric data is typically collected under far-field measurement conditions; far-field data is not generally representative of near-field geometric conditions. When using far-field photometric/ radiometric data, the Visual software applies certain generalizing assumptions to approximate near-field performance. These approximations may result in significant inaccuracies in individual calculated luminous and/or radiant power quantities in areas where a source is in close proximity to a particular surface or point.
The modeling of radiant flux exchange used in the Visual software requires a uniform exitance across each reflecting surface. The Visual software approximates the uniform surface exitance condition by adaptively subdividing surfaces with non-uniform exitances into subsurfaces with sufficiently uniform exitance gradients. Practical restrictions, due to computer hardware limitations, may prevent the subdivision procedure from subdividing surfaces with high exitance gradients into subsurfaces with sufficiently uniform exitance gradients, introducing potential discretization error into calculated values.
Calculations performed by the Visual software assume that all reflected flux is reflected in a perfectly diffuse (Lambertian) and spectrally uniform manner across the spectral range being analyzed. If actual reflectance characteristics differ from these assumptions, observed luminous and/or radiant power quantities may differ from predicted quantities.
As a result of the computational limitations and simplifying modeling assumptions described above, and/or variations in actual product performance from tested product samples, the accuracy of calculated output values identifying expected radiometric quantities and any resulting derived radiation dose calculations may be adversely affected.
In addition, the accuracy of the application design may be adversely affected if information about the physical space provided to Acuity Brands Lighting is incomplete, inaccurate, outdated or not in the required format (including but not limited to floor plans, space layout, reflected ceiling plans, physical structures, electrical design or specifications), if incorrect assumptions are made because of such deficiencies in the information provided, or if typical assumptions made about the depicted physical space are not appropriate for the space. Furthermore, actual field performance may differ from performance calculated using laboratory measurements as the result of miscalculations related to deficiencies in the information provided about the physical space, degradation factors in the end- user environment (including, but not limited to, voltage variation and dirt accumulation), or other possible variations in field conditions. Finally, lamp lumen depreciation and/or depreciation in lamp radiant intensity may result in performance over time that differs from performance calculated using a new lamp. Light loss factors may have been used in the application design to estimate such depreciation, but flaws in these estimates may also result in performance over time that differs from calculated performance.
It is the obligation of the end-user to consult with appropriately qualified Professional Engineer(s) to determine whether this application design meets the applicable requirements for performance, code compliance, safety, suitability and effectiveness for use in a particular application. In no event will Acuity Brands Lighting be responsible for any loss resulting from any use of this application design.

WB- IRVINE REC RCP (BADMINTON)

Revised by: Cheryl Kite
Date 2/5/2026
Scale As Shown
Drawing No. 298333-3 A1
1 of 1

DESIGN SERVICES
A WARE MALCOMB COMPANY

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IRVINE FIELDHOUSE

17300 RED HILL AVE.
IRVINE, CALIFORNIA 92614

HOLOPHANE LIGHTING BADMINTON COURTS PLAN

	DATE	REMARKS
1	09/22/2025	PLAN CHECK CORRECTIONS
2	10/15/2025	PLAN CHECK CORRECTIONS 2
3	02/04/2026	PLAN CHECK CORRECTIONS 3
4	02/05/2026	OC HEALTH DEPT 1
5	03/06/2026	PLAN CHECK CORRECTIONS 4
6	03/06/2026	OC HEALTH DEPT 2
7	04/30/2026	BID ADDENDUM 2

PA/PM:	TB
DRAWN BY.:	CM
JOB NO.:	LAX21-0174-02

06/06/2025

SHEET
ET500

5/8/2026 10:08:07 AM

Autodesk Docs://LAX21-0174-02_17300 Red Hill - Rec Center/RTM-MEP-Rec Hill Rec Center_R22.rvt

CAUTION: IF THIS SHEET IS NOT 30"x42" IT IS A REDUCED PRINT

Statistics

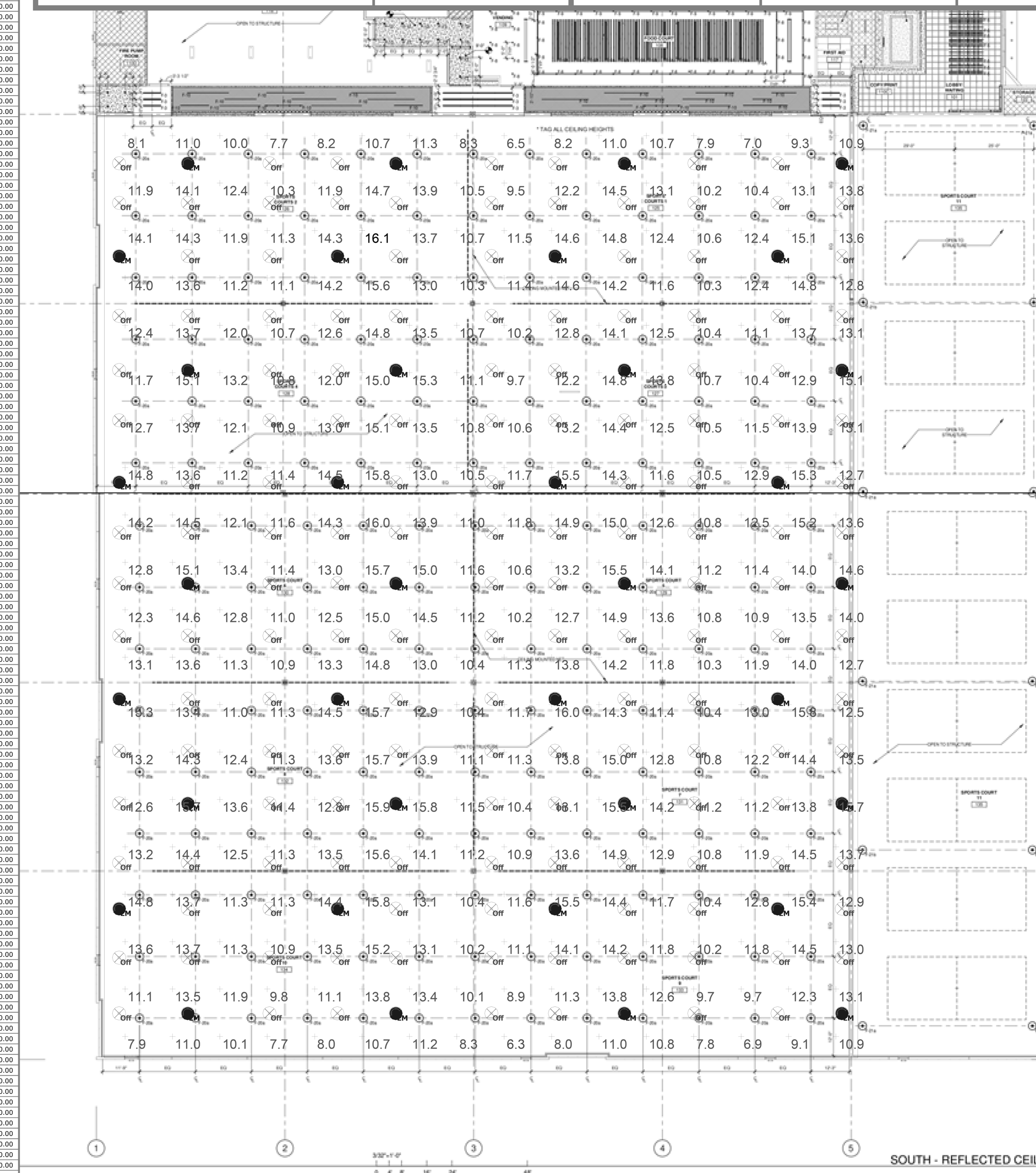
Description	Symbol	Avg	Max	Min	Max/Min	Avg/Min	UG
Basketball HoloBay	+	68.4 fc	82.9 fc	35.0 fc	2.4:1	2.0:1	1.5
Basketball HoloBay Emergency	+	12.5 fc	16.1 fc	6.3 fc	2.6:1	2.0:1	1.5

Luminaire Locations

No.	Label	Location X	Location Y	Location Z	MH	Orientation	Tilt	Aim X	Aim Y	Aim Z
1302	Off	353.95	95.37	32.00	32.00	0.00	0.00	353.95	95.37	0.00
1303	Off	353.95	59.60	32.00	32.00	0.00	0.00	353.95	59.60	0.00
1304	Off	353.95	-8.93	32.00	32.00	0.00	0.00	353.95	-8.93	0.00
1305	Off	353.95	-41.56	32.00	32.00	0.00	0.00	353.95	-41.56	0.00
1306	Off	353.95	-77.97	32.00	32.00	0.00	0.00	353.95	-77.97	0.00
1307	Off	353.95	-113.41	32.00	32.00	0.00	0.00	353.95	-113.41	0.00
1308	Off	353.95	-143.43	32.00	32.00	0.00	0.00	353.95	-143.43	0.00
1311	Off	353.95	-94.63	32.00	32.00	0.00	0.00	353.95	-94.63	0.00
1313	Off	353.95	107.91	32.00	32.00	0.00	0.00	353.95	107.91	0.00
1314	Off	353.95	42.48	32.00	32.00	0.00	0.00	353.95	42.48	0.00
1316	Off	353.95	-161.06	32.00	32.00	0.00	0.00	353.95	-161.06	0.00
1317	Off	353.95	-24.96	32.00	32.00	0.00	0.00	353.95	-24.96	0.00
1318	Off	353.95	26.58	32.00	32.00	0.00	0.00	353.95	26.58	0.00
1319	Off	423.03	107.91	32.00	32.00	0.00	0.00	423.03	107.91	0.00
1323	Off	423.03	-24.96	32.00	32.00	0.00	0.00	423.03	-24.96	0.00
1325	Off	423.03	-94.63	32.00	32.00	0.00	0.00	423.03	-94.63	0.00
1327	Off	423.03	-161.06	32.00	32.00	0.00	0.00	423.03	-161.06	0.00
1328	Off	401.55	95.37	32.00	32.00	0.00	0.00	401.55	95.37	0.00
1329	Off	441.52	95.37	32.00	32.00	0.00	0.00	441.52	95.37	0.00
1330	Off	423.03	95.37	32.00	32.00	0.00	0.00	423.03	95.37	0.00
1331	Off	401.55	59.60	32.00	32.00	0.00	0.00	401.55	59.60	0.00
1332	Off	423.03	59.60	32.00	32.00	0.00	0.00	423.03	59.60	0.00
1333	Off	441.52	26.58	32.00	32.00	0.00	0.00	441.52	26.58	0.00
1334	Off	423.03	26.58	32.00	32.00	0.00	0.00	423.03	26.58	0.00
1335	Off	401.55	-8.93	32.00	32.00	0.00	0.00	401.55	-8.93	0.00
1336	Off	441.52	-8.93	32.00	32.00	0.00	0.00	441.52	-8.93	0.00
1337	Off	423.03	-8.93	32.00	32.00	0.00	0.00	423.03	-8.93	0.00
1338	Off	401.55	-41.56	32.00	32.00	0.00	0.00	401.55	-41.56	0.00
1339	Off	441.52	-41.56	32.00	32.00	0.00	0.00	441.52	-41.56	0.00
1340	Off	423.03	-41.56	32.00	32.00	0.00	0.00	423.03	-41.56	0.00
1342	Off	441.52	-77.97	32.00	32.00	0.00	0.00	441.52	-77.97	0.00
1343	Off	423.03	-77.97	32.00	32.00	0.00	0.00	423.03	-77.97	0.00
1344	Off	401.55	-113.41	32.00	32.00	0.00	0.00	401.55	-113.41	0.00
1345	Off	441.52	-113.41	32.00	32.00	0.00	0.00	441.52	-113.41	0.00
1346	Off	423.03	-113.41	32.00	32.00	0.00	0.00	423.03	-113.41	0.00
1347	Off	441.52	-143.43	32.00	32.00	0.00	0.00	441.52	-143.43	0.00
1348	Off	423.03	-143.43	32.00	32.00	0.00	0.00	423.03	-143.43	0.00
1349	Off	441.52	7.01	32.00	32.00	0.00	0.00	441.52	7.01	0.00
1351	Off	401.55	-61.51	32.00	32.00	0.00	0.00	401.55	-61.51	0.00
1353	Off	441.52	-127.94	32.00	32.00	0.00	0.00	441.52	-127.94	0.00
1355	Off	401.55	7.01	32.00	32.00	0.00	0.00	401.55	7.01	0.00
1356	Off	401.55	78.56	32.00	32.00	0.00	0.00	401.55	78.56	0.00
1359	Off	441.52	78.56	32.00	32.00	0.00	0.00	441.52	78.56	0.00
1360	Off	441.52	59.60	32.00	32.00	0.00	0.00	441.52	59.60	0.00
1361	Off	441.52	-61.51	32.00	32.00	0.00	0.00	441.52	-61.51	0.00
1362	Off	401.55	-127.94	32.00	32.00	0.00	0.00	401.55	-127.94	0.00
1363	Off	401.55	42.48	32.00	32.00	0.00	0.00	401.55	42.48	0.00
1364	Off	401.55	26.58	32.00	32.00	0.00	0.00	401.55	26.58	0.00
1365	Off	401.55	-94.63	32.00	32.00	0.00	0.00	401.55	-94.63	0.00
1366	Off	401.55	-161.06	32.00	32.00	0.00	0.00	401.55	-161.06	0.00
1367	Off	401.55	107.91	32.00	32.00	0.00	0.00	401.55	107.91	0.00
1368	Off	401.55	-143.43	32.00	32.00	0.00	0.00	401.55	-143.43	0.00
1369	Off	401.55	-24.96	32.00	32.00	0.00	0.00	401.55	-24.96	0.00
1371	Off	375.67	78.56	32.00	32.00	0.00	0.00	375.67	78.56	0.00
1373	Off	375.67	7.01	32.00	32.00	0.00	0.00	375.67	7.01	0.00
1374	Off	375.67	-61.51	32.00	32.00	0.00	0.00	375.67	-61.51	0.00
1376	Off	375.67	-127.94	32.00	32.00	0.00	0.00	375.67	-127.94	0.00
1378	Off	471.79	78.56	32.00	32.00	0.00	0.00	471.79	78.56	0.00
1379	Off	471.79	7.01	32.00	32.00	0.00	0.00	471.79	7.01	0.00
1380	Off	471.79	-24.96	32.00	32.00	0.00	0.00	471.79	-24.96	0.00
1381	Off	471.79	-61.51	32.00	32.00	0.00	0.00	471.79	-61.51	0.00
1382	Off	471.79	-127.94	32.00	32.00	0.00	0.00	471.79	-127.94	0.00
1384	Off	513.84	78.56	32.00	32.00	0.00	0.00	513.84	78.56	0.00
1385	Off	513.84	7.01	32.00	32.00	0.00	0.00	513.84	7.01	0.00
1386	Off	513.84	-61.51	32.00	32.00	0.00	0.00	513.84	-61.51	0.00
1387	Off	513.84	-127.94	32.00	32.00	0.00	0.00	513.84	-127.94	0.00
1388	Off	562.36	107.91	32.00	32.00	0.00	0.00	562.36	107.91	0.00
1390	Off	562.36	42.48	32.00	32.00	0.00	0.00	562.36	42.48	0.00
1393	Off	562.36	-94.63	32.00	32.00	0.00	0.00	562.36	-94.63	0.00
1395	Off	562.36	-161.06	32.00	32.00	0.00	0.00	562.36	-161.06	0.00
1396	Off	491.89	95.37	32.00	32.00	0.00	0.00	491.89	95.37	0.00
1397	Off	536.02	95.37	32.00	32.00	0.00	0.00	536.02	95.37	0.00
1398	Off	582.70	95.37	32.00	32.00	0.00	0.00	582.70	95.37	0.00
1399	Off	471.79	95.37	32.00	32.00	0.00	0.00	471.79	95.37	0.00
1400	Off	513.84	95.37	32.00	32.00	0.00	0.00	513.84	95.37	0.00
1401	Off	491.89	59.60	32.00	32.00	0.00	0.00	491.89	59.60	0.00
1402	Off	536.02	59.60	32.00	32.00	0.00	0.00	536.02	59.60	0.00
1403	Off	582.70	59.60	32.00	32.00	0.00	0.00	582.70	59.60	0.00
1404	Off	375.67	59.60	32.00	32.00	0.00	0.00	375.67	59.60	0.00
1405	Off	471.79	59.60	32.00	32.00	0.00	0.00	471.79	59.60	0.00
1406	Off	513.84	59.60	32.00	32.00	0.00	0.00	513.84	59.60	0.00
1407	Off	562.36	59.60	32.00	32.00	0.00	0.00	562.36	59.60	0.00
1408	Off	536.02	26.58	32.00	32.00	0.00	0.00	536.02	26.58	0.00
1409	Off	582.70	26.58	32.00	32.00	0.00	0.00	582.70	26.58	0.00
1410	Off	375.67	26.58	32.00	32.00	0.00	0.00	375.67	26.58	0.00
1411	Off	562.36	26.58	32.00	32.00	0.00	0.00	562.36	26.58	0.00
1412	Off	491.89	-8.93	32.00	32.00	0.00	0.00	491.89	-8.93	0.00
1413	Off	536.02	-8.93	32.00	32.00	0.00	0.00	536.02	-8.93	0.00
1414	Off	582.70	-8.93	32.00	32.00	0.00	0.00	582.70	-8.93	0.00
1415	Off	375.67	-8.93	32.00	32.00	0.00	0.00	375.67	-8.93	0.00
1417	Off	513.84	-8.93	32.00	32.00	0.00	0.00	513.84	-8.93	0.00
1418	Off	562.36	-8.93	32.00	32.00	0.00	0.00	562.36	-8.93	0.00
1419	Off	491.89	-41.56	32.00	32.00	0.00	0.00	491.89	-41.56	0.00
1420	Off	536.02	-41.56	32.00	32.00	0.00	0.00	536.02	-41.56	0.00
1421	Off	582.70	-41.56	32.00	32.00	0.00	0.00	582.70	-41.56	0.00
1422	Off	375.67	-41.56	32.00	32.00	0.00	0.00	375.67	-41.56	0.00
1423	Off	471.79	-41.56	32.00	32.00	0.00	0.00	471.79	-41.56	0.00
1424	Off	513.84	-41.56	32.00	32.00	0.00	0.00	513.84	-41.56	0.00
1425	Off	562.36	-41.56	32.00	32.00	0.00	0.00	562.36	-41.56	0.00
1426	Off	491.89	-77.97	32.00	32.00	0.00	0.00	491.89	-77.97	0.00
1428	Off	582.70	-77.97	32.00	32.00	0.00	0.00	582.70	-77.97	0.00
1429	Off	375.67	-77.97	32.00	32.00	0.00	0.00	375.67	-77.97	0.00
1430	Off	513.84	-77.97	32.00	32.00	0.00	0.00	513.84	-77.97	0.00
1431	Off	562.36	-77.97	32.00	32.00	0.00	0.00	562.36	-77.97	0.00
1432	Off	491.89	-113.41	32.00	32.00	0.00	0.00	491.89	-113.41	0.00
1433	Off	536.02	-113.41	32.00	32.00	0.00	0.00	536.02	-113.41	0.00
1434	Off	375.67	-113.41	32.00	32.00	0.00	0.00	375.67	-113.41	0.00
1435	Off	513.84	-113.41	32.00	32.00	0.00	0.00	513.84	-113.41	0.00
1436	Off	562.36	-113.41	32.00	32.00	0.00	0.00	562.36	-113.41	0.00
1437	Off	491.89	-143.43	32.00	32.00	0.00	0.00	491.89	-143.43	0.00
1438	Off	471.79	-143.43	32.00	32.00	0.00	0.00	471.79	-143.43	0.00
1439	Off	513.84	-143.43	32.00	32.00	0.00	0.00	513.84	-143.43	0.00
1440	Off	582.70	-143.43	32.00	32.00	0.00	0.00	582.70	-143.43	0.00
1441	Off	536.02	78.56	32.00	32.00	0.00	0.00	536.02	78.56	0.00
1442	Off	582.70	78.56	32.00	32.00	0.00	0.00	582.70	78.56	0.00
1443	Off	491.89	42.48	32.00	32.00	0.00	0.00	491.89	42.48	0.00
1445	Off	536.02	7.01	32.00	32.00	0.00	0.00	536.02	7.01	0.00
1447	Off	582.70	-61.51	32.00	32.00	0.00	0.00	582.70	-61.51	0.00
1448	Off	536.02	-94.63	32.00	32.00	0.00	0.00	536.02	-94.63	0.00
1451	Off	536.02	-61.51	32.00	32.00	0.00	0.00	536.02	-61.51	0.00
1452	Off	536.02	-127.94	32.00	32.00	0.00	0.00	536.02	-127.94	0.00
1453	Off	536.02	-161.06	32.00	32.00	0.00	0.00	536.02	-161.06	0.00
1456	Off	491.89	-24.96	32.00	32.00	0.00	0.00	491.89	-24.96	0.00
1458	Off	491.89	-94.63	32.00	32.00	0.00	0.00	491.89	-94.63	0.00
1460	Off	491.89	-161.06	32.00	32.00	0.00	0.00	491.89	-161.06	0.00
1461	Off	582.70	-113.41	32.00	32.00	0.00	0.00	582.70	-113.41	0.00
1463	Off	513.84	26.58	32.00	32.00	0.00	0.00	513.84	26.58	0.00
1465	Off	582.70	7.01	32.00	32.00	0.00	0.00	582.70	7.01	0.00
1466	Off	582.70	-127.94	32.00	32.00	0.00	0.00	582.70	-127.94	0.00
1468	Off	491.89	26.58	32.00	32.00	0.00	0.00	491.89	26.58	0.00
1469	Off	491.89	107.91	32.00	32.00	0.00	0.00	491.89	107.91	0.00
1474	Off	471.79	-77.97	32.00	32.00	0.00	0.00	471.79	-77.97	0.00
1475	Off	536.02	107.91	32.00	32.00	0.00	0.00	536.02	107.91	0.00
1476	Off	536.02	-143.43	32.00	32.00	0.00	0.00	536.02	-143.43	0.00
1477	Off	536.02	-24.96	32.00	32.00	0.00	0.00	536.02	-24.96	0.00
1478	Off	471.79	-94.63	32.00	32.00	0.00	0.00	471.79	-94.63	0.00
1479	Off	471.79	26.58	32.00	32.00	0.00	0.00	471.79	26.58	0.00
1489	Off	471.79	42.48	32.00	32.00	0.00	0.00	471.79	42.48	0.00
1490	Off	471.79	-113.41	32.00	32.00	0.00	0.00	471.79	-113.41	0.00
1494	EM	441.52	107.91	32.00	32.00	0.00	0.00	441.52	107.91	0.00
1495	EM	375.67	107.91	32.00	32.00	0.00	0.00	375.67	107.91	0.00
1496	EM	513.84	107.91	32.00	32.00	0.00	0.00	513.84	107.91	0.00
1497	EM	582.70	107.91	32.00	32.00	0.00	0.00	582.70	107.91	0.00
1499	Off	375.67	95.37	32.00	32.00	0.00	0.00	375.67	95.37	0.00
1500	Off	562.36	95.37	32.00	32.00	0.00	0.00	562.36	95.37	0.00
1501	Off	471.79	107.91	32.00	32.00	0.00	0.00	471.79	107.91	0.00
1502	EM	353.95	78.56	32.00	32.00	0.00	0.00	353.95	78.56	0.00
1503	EM	423.03	78.56	32.00	32.00	0.00	0.00	423.03	78.56	0.00
1504	EM	562.36	78.56	32.00	32.00	0.00	0.00	562.36	78.56	0.00
1505	EM	491.89	78.56	32.00	32.00	0.00	0.00	491.89	78.56	0.00
1507	Off	562.36	-24.96	32.00	32.00	0.00	0.00	562.36	-24.96	0.00
1508	Off	375.67	-143.43	32.00	32.00	0.00	0.00	375.67	-143.43	0.00
1509	Off	562.36	-143.43	32.00	32.00	0.00	0.00	562.36	-143.43	0.00
1510	Off	423.03	42.48	32.00	32.00	0.00	0.00	423.03	42.48	0.00
1511	Off	536.02	42.48	32.00	32.00	0.00	0.00	536.02	42.48	0.00
1512	Off	401.55	-77.97	32.00	32.00	0.00	0.00	401.55	-77.97	0.00
1513	Off	536.02	-77.97	32.00	32.00	0.00	0.00	536.02	-77.97	0.00
1514	Off	471.79	-161.06	32.00	32.00	0.00	0.00	471.79	-161.06	0.00
1515	Off	471.79	-8.93	32.00	32.00	0.00	0.00	471.79	-8.93	0.00
1516	EM	353.95	7.01	32.00	32.00	0.00	0.00	353.95	7.01	0.00
1517	EM	353.95	-127.94	32.00	32.00	0.00	0.00	353.95	-127.94	0.00
1518	EM	353.95	-61.51	32.00	32.00	0.00	0.00	353.95	-61.51	0.00
1519	EM	423.03	7.01	32.00	32.00	0.00	0.00	423.03	7.01	0.00
1520	EM	423.03	-61.51	32.00	32.00	0.00	0.00	423.03	-61.51	0.00
1521	EM	423.03	-127.94	32.00	32.00	0.00	0.00	423.03	-127.94	0.00
1522	EM	441.52	-24.96	32.00	32.00	0.00	0.00	441.52	-24.96	0.00
1523	EM	441.52	-94.63	32.00	32.00	0.00	0.00	441.52	-94.63	0.00
1524	EM	441.52	-161.06	32.00	32.00	0.00	0.00	441.52	-161.06	0.00
1525	EM	441.52	42.48	32.00	32.00	0.00	0.00	441.52	42.48	0.00
1526	EM	375.67	42.48	32.00	32.00	0.00	0.00	375.67	42.48	0.00
1527	EM	375.67	-94.63	32.00	32.00	0.00	0.00	375.67	-94.63	0.00
1528	EM	375.67	-161.06	32.00	32.00	0.00	0.00	375.67	-161.06	0.00
1529	EM	562.36	7.01	32.00	32.00	0.00	0.00	562.36	7.01	0.00
1530	EM	562.36	-61.51	32.00	32.00	0.00	0.00	562.36	-61.51	0.00
1531	EM	562.36	-127.94	32.00	32.00	0.00	0.00	562.36	-127.94	0.00
1532	EM	491.89	-61.51	32.00	32.00	0.00	0.00	491.89	-61.51	0.00
1533	EM	491.89	-127.94	32.00	32.00	0.00	0.00	491.89	-127.94	0.00
1534	EM	582.70	-161.06	32.00	32.00	0.00	0.00	582.70	-161.06	0.00
1535	EM	491.89	7.01	32.00	32.00	0.00	0.00	491.89	7.01	0.00
1536	EM	582.70	-24.96	32.00	32.00	0.00	0.00	582.70	-24.96	0.00
1537	EM	582.70	-94.63	32.00	32.00	0.00	0.00	582.70	-94.63	0.00
1538	EM	513.84	42.48	32.00	32.00	0.00	0.00	513.84	42.48	0.00
1539	EM	582.70	42.48	32.00	32.00	0.00	0.00	582.70	42.48	0.00
1540	EM	513.84	-94.63	32.00	32.00	0.00	0.00	513.84	-94.63	0.00
1541	EM	513.84	-24.96	32.00	32.00	0.00	0.00	513.84	-24.96	0.00
1542	EM	513.84	-161.06	32.00	32.00	0.00	0.00	513.84	-161.06	0.00
1543	EM	375.67	-24.96	32.00	32.00	0.00	0.00	375.67	-24.96	0.00
1107	30L	-133.33	107.91	32.00	32.00	0.00	0.00	-133.33	107.91	0.00
1108	30L	-111.61	107.91	32.00	32.00	0.00	0.00	-111.61	107.91	0.00

Power Statistics

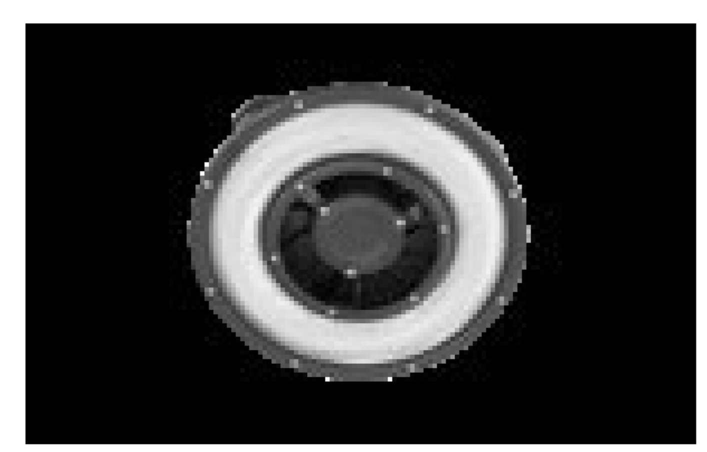
Description	# Luminaires	Total Watts	Area	Density
Power Density Basketball	187	33471.16 W	71971.34 ft²	0.47 W/ft²



Plan View
Scale - 1" = 20ft

Schedule

Symbol	Label	QTY	Manufacturer	Catalog Number	LLF	Lumens per Lamp	Number Lamps	Description	Wattage	Distribution
⊗	30L	187	Holophane	HOLO1 30000LM WD 50K 70CRI	0.95	33618	1	Holobay, Small Optical, 30,000 Nominal Lumens, Wide Glass, 5000K, 70CRI, Small Electrical Housing, Downlight Only	178.99	DIRECT, SC-0=1.56, SC-90=1.56
◐	EM	36	Holophane	HOLO1 30000LM WD 50K 70CRI	0.95	33618	1	Holobay, Small Optical, 30,000 Nominal Lumens, Wide Glass, 5000K, 70CRI, Small Electrical Housing, Downlight Only	178.99	DIRECT, SC-0=1.56, SC-90=1.56
⊗	Off	151	Holophane	HOLO1 30000LM WD 50K 70CRI	0	33618	1	Holobay, Small Optical, 30,000 Nominal Lumens, Wide Glass, 5000K, 70CRI, Small Electrical Housing, Downlight Only	178.99	DIRECT, SC-0=1.56, SC-90=1.56



GENERAL NOTES - INTERIORS

1. Readings shown are based on a total LLF of 0.97 as shown at 3.0' AFG. Data references the extrapolated performance projections in a 25c ambient based on 10,000 hrs of LED testing (per IESNA LM-80-08 and projected per IESNA TM-21-11).
2. Please refer to the "luminaire locations" for mounting heights.
3. Product information can be obtained at www.Holophane.com or through your local agency.
4. Reflectances are 80/50/20.
5. Design may not include any industrial equipment such as overhead ductwork, piping or conveyor systems. Actual lighting readings may vary.

DISCLAIMER 2025

This application design is not a professional engineering drawing, and the design, including reported data and calculated results, is provided for informational purposes only, without any warranty as to accuracy, completeness, safety or otherwise. The design is the result of calculations made using Visual® lighting application software, photometric/radiometric data measured in a laboratory, and certain computational and modeling assumptions.
Far-field photometric/radiometric data may have been used to perform one or more calculations. Photometric/radiometric data is typically collected under far-field measurement conditions; far-field data is not generally representative of near-field geometric conditions. When using far-field photometric/ radiometric data, the Visual software applies certain generalizing assumptions to approximate near-field performance. These approximations may result in significant inaccuracies in individual calculated luminous and/or radiant power quantities in areas where a source is in close proximity to a particular surface or point.
The modeling of radiant flux exchange used in the Visual software requires a uniform exitance across each reflecting surface. The Visual software approximates the uniform surface exitance condition by adaptively subdividing surfaces with non-uniform exitances into subsurfaces with sufficiently uniform exitance gradients. Practical restrictions, due to computer hardware limitations, may prevent the subdivision procedure from subdividing surfaces with high exitance gradients into subsurfaces with sufficiently uniform exitance gradients, introducing potential discretization error into calculated values.
Calculations performed by the Visual software assume that all reflected flux is reflected in a perfectly diffuse (Lambertian) and spectrally uniform manner across the spectral range being analyzed. If actual reflectance characteristics differ from these assumptions, observed luminous and/or radiant power quantities may differ from predicted quantities.
As a result of the computational limitations and simplifying modeling assumptions described above, and/or variations in actual product performance from tested product samples, the accuracy of calculated output values identifying expected radiometric quantities and any resulting derived radiation dose calculations may be adversely affected.
In addition, the accuracy of the application design may be adversely affected if information about the physical space provided to Acuity Brands Lighting is incomplete, inaccurate, outdated or not in the required format (including but not limited to floor plans, space layout, reflected ceiling plans, physical structures, electrical design or specifications), if incorrect assumptions are made because of such deficiencies in the information provided, or if typical assumptions made about the depicted physical space are not appropriate for the space. Furthermore, actual field performance may differ from performance calculated using laboratory measurements as the result of miscalculations related to deficiencies in the information provided about the physical space, degradation factors in the end- user environment (including, but not limited to, voltage variation and dirt accumulation), or other possible variations in field conditions. Finally, lamp lumen depreciation and/or depreciation in lamp radiant intensity may result in performance over time that differs from performance calculated using a new lamp. Light loss factors may have been used in the application design to estimate such depreciation, but flaws in these estimates may also result in performance over time that differs from calculated performance.
It is the obligation of the end-user to consult with appropriately qualified Professional Engineer(s) to determine whether this application design meets the applicable requirements for performance, code compliance, safety, suitability and effectiveness for use in a particular application. In no event will Acuity Brands Lighting be responsible for any loss resulting from any use of this application design.

Designer: Cheryl Kite
Date: 02/05/2026
Scale: As Shown
Drawing No.: 298333-0 B1
1 of 1

WB- IRVINE REC RCP B1 (BASKETBALL)

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HOLOPHANE LIGHTING BASKETBALL COURTS PLAN

	DATE	REMARKS
1	09/22/2025	PLAN CHECK CORRECTIONS
2	10/15/2025	PLAN CHECK CORRECTIONS 2
3	02/04/2026	PLAN CHECK CORRECTIONS 3
4	01/26/2026	OC HEALTH DEPT
5	03/06/2026	PLAN CHECK CORRECTIONS 4
6	03/06/2026	OC HEALTH DEPT 2
7	04/30/2026	BID ADDENDUM 2

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JOB NO.:	LAX21-0174-02

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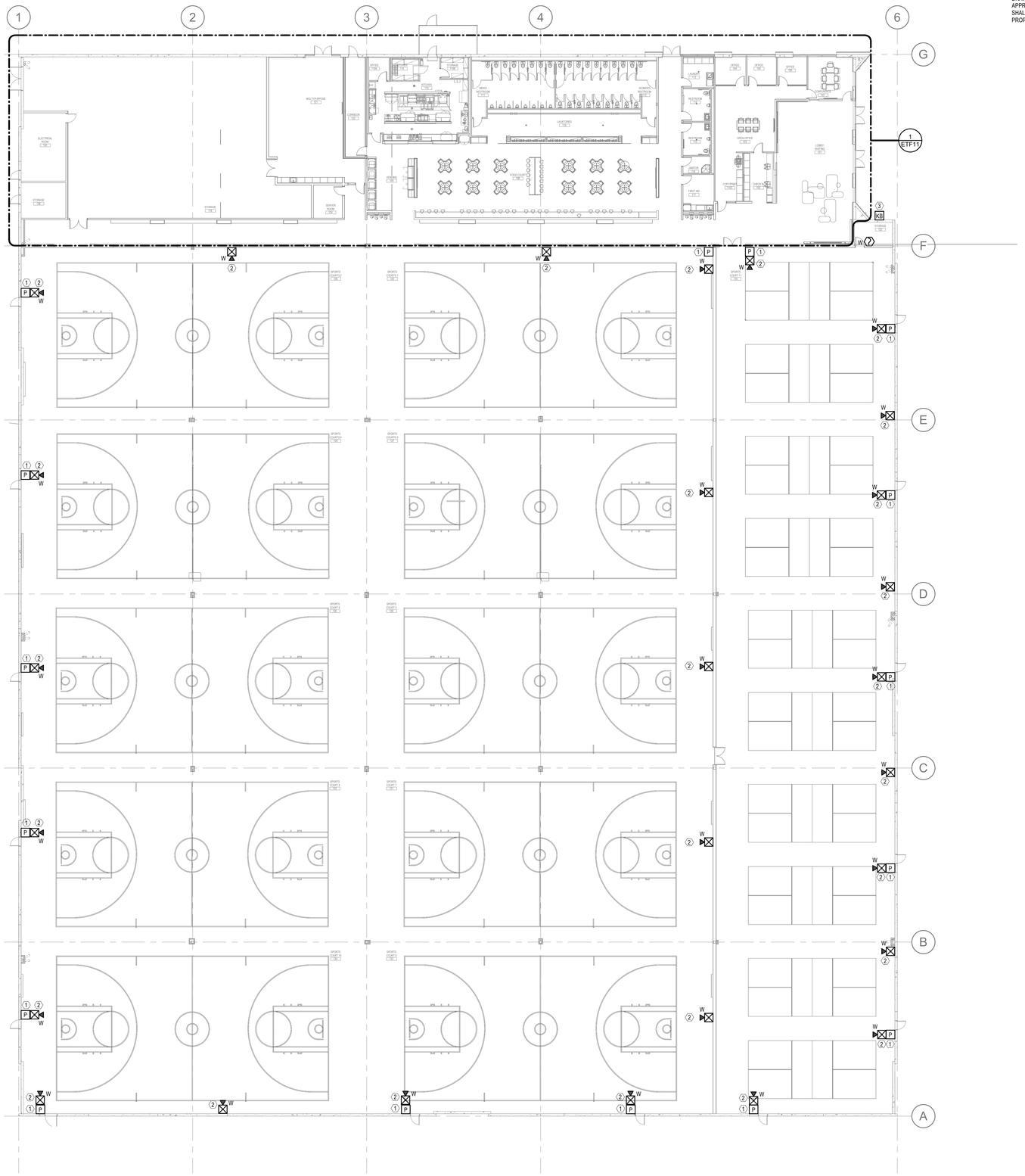

1 ELECTRICAL FLOOR PLAN
1/16" = 1'-0"

GENERAL FIRE ALARM NOTES

FIRE ALARM PLANS ARE PROVIDED FOR REFERENCE ONLY FOR GENERAL DESIGN INTENT AND BIDDING PURPOSES. AT NO TIME SHALL THESE PLANS BE USED FOR ACTUAL CONSTRUCTION PURPOSES. SEPARATE FIRE ALARM SHOP DRAWINGS SHALL BE SUBMITTED DIRECTLY TO OCFA FOR REVIEW AND APPROVAL WHICH SHALL BE USED FOR CONSTRUCTION. THE SHOP DRAWINGS SHALL COVER ALL NECESSARY MODIFICATIONS NEEDING TO BE TO SUPPORT PROPOSED TENANT IMPROVEMENT SCOPE.

GENERAL FIRE ALARM NOTES

1. REFER TO GENERAL NOTES ON SHEET ET000.
2. REFER TO SPECIFICATIONS ON SHEET ET001.
3. ALL DEVICES ARE NEW , UNLESS OTHERWISE NOTED.
4. REFER TO ARCHITECTURAL PLANS FOR FINAL MOUNTING HEIGHTS AND FINAL FIXTURE LOCATIONS.
5. CEILING DEVICES TO BE COORDINATED WITH ALL FINAL CEILING INSTALLATIONS.

 # KEYNOTES

1 PROVIDE PLASTIC GUARD FOR FIRE ALARM PULL STATION.
2 PROVIDE WIRE GUARD FOR FIRE ALARM NOTIFICATION DEVICE.
3 COORDINATE LOCATION OF KNOX BOX WITH 'AHJ' PRIOR TO ROUGH-IN.

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OVERALL ELECTRICAL FIRE ALARM PLAN

	DATE	REMARKS
1	09/22/2025	PLAN CHECK CORRECTIONS
2	10/15/2025	PLAN CHECK CORRECTIONS 2
3	02/04/2026	PLAN CHECK CORRECTIONS 3
4	01/26/2026	OC HEALTH DEPT
5	03/06/2026	PLAN CHECK CORRECTIONS 4
6	03/06/2026	OC HEALTH DEPT 2
7	04/30/2026	BID ADDENDUM 2

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GENERAL FIRE ALARM NOTES

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GENERAL FIRE ALARM NOTES

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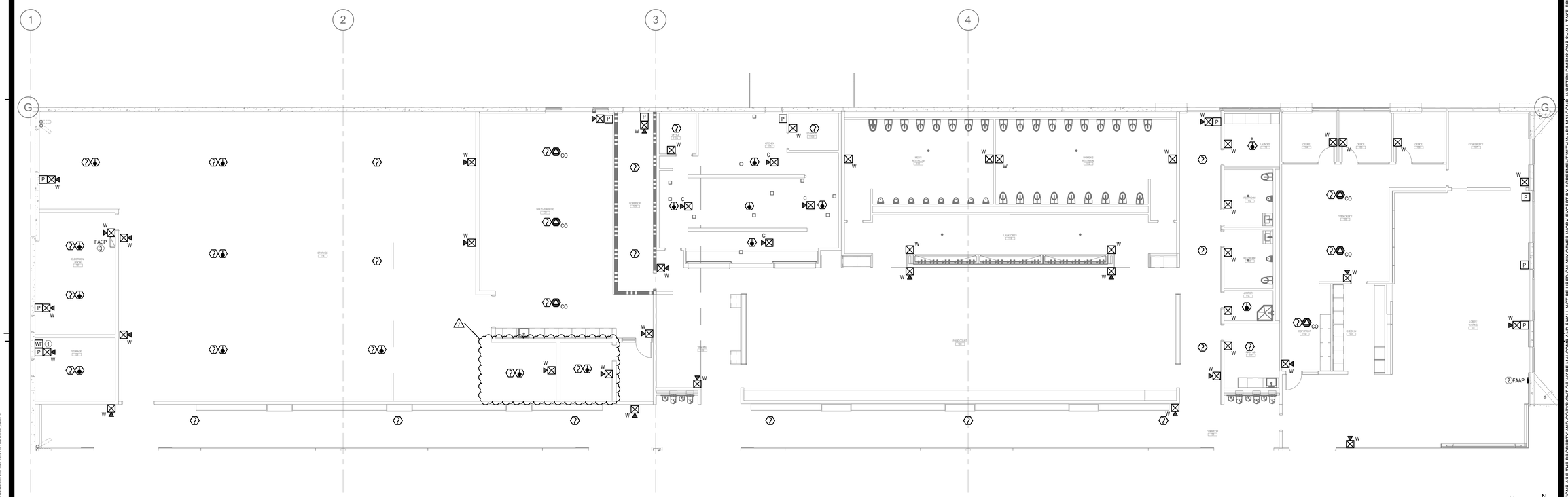
3. ALL DEVICES ARE NEW , UNLESS OTHERWISE NOTED.
4. REFER TO ARCHITECTURAL PLANS FOR FINAL MOUNTING HEIGHTS AND FINAL FIXTURE LOCATIONS.
5. CEILING DEVICES TO BE COORDINATED WITH ALL FINAL CEILING INSTALLATIONS.

#	KEYNOTES
1	FIRE ALARM CONTRACTOR TO DETERMINE FLOW OR TAMPER SWITCHES REQUIRED FOR SPRINKLER SYSTEM.
2	COORDINATE LOCATION OF FIRE ALARM ANNUNCIATOR PANEL WITH 'AHJ' PRIOR TO ROUGH-IN.
3	CIRCUIT FIRE ALARM EQUIPMENT TO EXISTING PANEL "HPL" OR PANEL "HPL-1". FIRE ALARM EQUIPMENT CIRCUIT TO BE PROVIDED WITH SURGE PROTECTION AND BREAKER LOCKOUT.



1 TI ELECTRICAL ENLARGED FIRE ALARM PLAN
1/8" = 1'-0"

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ELECTRICAL ENLARGED FIRE ALARM PLAN

	DATE	REMARKS
1	09/22/2025	PLAN CHECK CORRECTIONS
2	10/15/2025	PLAN CHECK CORRECTIONS 2
3	02/04/2026	PLAN CHECK CORRECTIONS 3
4	01/05/2026	OC HEALTH DEPT 1
5	03/06/2026	PLAN CHECK CORRECTIONS 4
6	03/06/2026	OC HEALTH DEPT 2
7	04/30/2026	BID ADDENDUM 2

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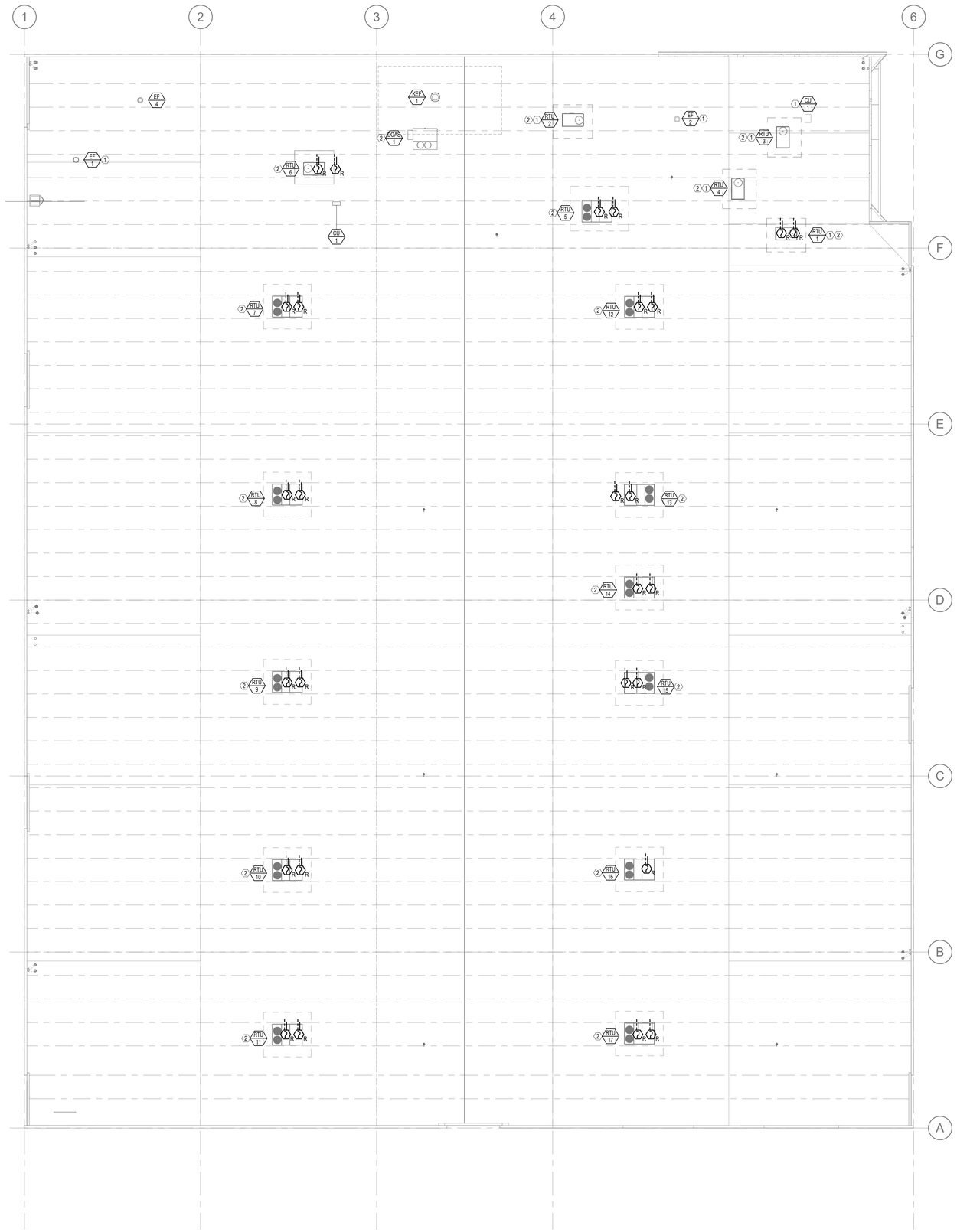

1 TI ELECTRICAL FIRE ALARM ROOF PLAN
1/16" = 1'-0"

GENERAL FIRE ALARM NOTES

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GENERAL FIRE ALARM NOTES

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3. ALL DEVICES ARE NEW , UNLESS OTHERWISE NOTED.
4. REFER TO ARCHITECTURAL PLANS FOR FINAL MOUNTING HEIGHTS AND FINAL FIXTURE LOCATIONS.
5. CEILING DEVICES TO BE COORDINATED WITH ALL FINAL CEILING INSTALLATIONS.

#	KEYNOTES
1	EXISTING EQUIPMENT INSTALLED PREVIOUSLY DURING PHASE 1. SHOWN FOR COORDINATION PURPOSES.
2	PROVIDE DUCT DETECTORS IN THE SUPPLY AND RETURN SIDE OF ALL MECHANICAL EQUIPMENT UNITS RATED FOR GREATER THAN 2000CFM. PROVIDE DETECTORS WITH ASSOCIATED REMOTE TEST SWITCHES.

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ELECTRICAL ROOF FIRE ALARM PLAN

	DATE	REMARKS
1	09/22/2025	PLAN CHECK CORRECTIONS
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3	02/04/2026	PLAN CHECK CORRECTIONS 3
4	01/06/2026	OC HEALTH DEPT
5	03/06/2026	PLAN CHECK CORRECTIONS 4
6	03/06/2026	OC HEALTH DEPT 2
7	04/30/2026	BID ADDENDUM 2

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