

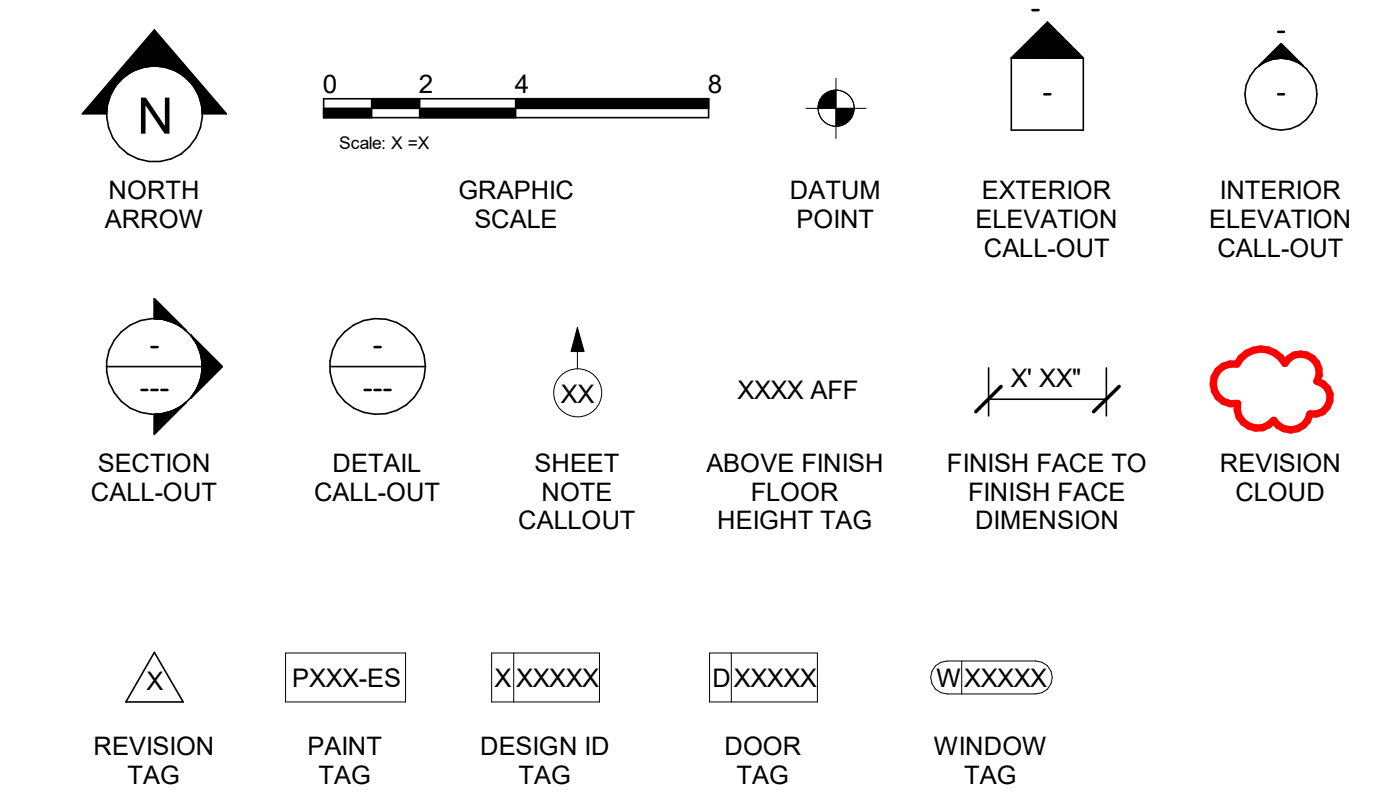
ABBREVIATIONS

A/C	AIR CONDITIONING
ACT	ACOUSTICAL CEILING TILE
ADJ	ADJUSTABLE
AFF	ABOVE FINISHED FLOOR
AMP	AMPERE
ARCH	ARCHITECT
BOH	BACK OF HOUSE
CAB	CABINET
CL	CENTER LINE
CLG	CEILING
CM	STARBUCKS CONSTRUCTION MANAGER
CTR	CENTER
CX	COMMISSIONING
CXA	COMMISSIONING AGENT
DEG	DEGREE
DET	DETAIL
DIA	DIAMETER
DM	DIMENSION
DM	STARBUCKS DESIGN MANAGER
DN	DOWN
EA	EACH
EL	ELEVATION
EQ	EQUAL
EXIST	EXISTING
EXT	EXTERIOR
FF&E	FURNITURE, FIXTURE, AND EQUIPMENT
FLR	FLOOR
FOH	FRONT OF HOUSE
FOIC	FURNISHED BY OWNER, INSTALLED BY CONTRACTOR
FOID	FURNISHED BY OWNER, INSTALLED BY OWNER
FT	FOOT/FEET
G	GROUND
GC	GENERAL CONTRACTOR
GWB	GYPSUM WALLBOARD
HC	HOLLOW CORE
HDW	HARDWARE
HM	HOLLOW METAL
HORIZ	HORIZONTAL
HR	HOUR
HT	HEIGHT
HVAC	HEATING, VENTILATING AND AIR CONDITIONING
I.D.	INSIDE DIAMETER
LEED	LEADERSHIP IN ENERGY AND ENVIRONMENTAL DESIGN
LL	LANDLORD
LV	LOW VOLTAGE
MAX	MAXIMUM
MEP	MECHANICAL, ELECTRICAL AND PLUMBING
MFR	MANUFACTURER
MIN	MINIMUM
NIC	NOT IN CONTRACT
NL	NIGHT LIGHT
NTS	NOT TO SCALE
OC	ON CENTER
O.D.	OUTSIDE DIAMETER
PLC	PLACE
R	RADIUS
REF	REFERENCE
REQ'D	REQUIRED
REV	REVISION
RND	ROUND
SB	STARBUCKS
SC	SOLID CORE
SF	SQUARE FEET
SHT	SHEET
SIM	SIMILAR
SPEC	SPECIFICATION
SQ	SQUARE
TEMP	TEMPORARY
TYP	TYPICAL
UC	UNDER COUNTER
UNO	UNLESS NOTED OTHERWISE
VERT	VERTICAL
VIF	VERIFY IN FIELD

RESPONSIBILITY LEGEND

GC	GENERAL CONTRACTOR
LL	LANDLORD
SB	STARBUCKS
WH	STARBUCKS WAREHOUSE (3PL)
VD	STARBUCKS VENDOR DIRECT

ARCHITECTURAL SYMBOL LEGEND



AERIAL MAP



VICINITY PLAN



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SCOPE OF WORK

MEDIUM & FULL REMODELS.
REMODEL AND EXPANSION OF EXISTING STARBUCKS COFFEE TENANT IMPROVEMENT.

SCOPE IS LIMITED TO:
-EXPANSION OF EXISTING TENANT SPACE AND COMBINING WITH THE NEIGHBORING TENANT SPACE
-REPLACEMENT AND/OR REPAIR OF EXISTING CASEWORK;
-MINOR EQUIPMENT CHANGES;
-NEW INTERIOR PARTITION;
-MODIFIED LIGHTING;
-RECONFIGURATION OF FLOOR SINKS TO MATCH CASEWORK/EQUIPMENT CHANGES;
-REVISED ELECTRICAL PANEL SCHEDULE TO MATCH EQUIPMENT.
-EXTERIOR MODIFICATIONS
-RELOCATION OF DRIVE THRU WINDOW

SITE WORK INCLUDES NEW CURB RAMP AND NEW ACCESSIBLE PATH OF TRAVEL STRIPING.

SEPARATE SUBMITTAL

- ALL EXTERIOR WALLS AND SITE WORK UNDER SEPARATE PERMIT.
- SIGNAGE

DEFERRED SUBMITTAL:

- FIRE SPRINKLER MODIFICATIONS.

GENERAL NOTES

- THE DRAWINGS AND PROJECT MANUAL TOGETHER CONSTITUTE THE CONTRACT DOCUMENTS FOR CONSTRUCTION. ALL GENERAL REQUIREMENTS ARE TO BE MET AND ALL MATERIALS, FINISHES AND SYSTEMS ARE TO BE INSTALLED AND PERFORM PER SPECIFICATIONS UNLESS OTHERWISE NOTED.
- GENERAL CONTRACTOR SHALL VISIT THE SITE, REVIEW THE BUILDING SHELL DRAWINGS AS SUBMITTED BY THE LANDLORD OR STARBUCKS AND BECOME THOROUGHLY FAMILIAR WITH THE SITE CONDITIONS PRIOR TO CONSTRUCTION.
- GENERAL CONTRACTOR SHALL CONSULT WITH STARBUCKS CONSTRUCTION MANAGER TO RESOLVE ANY CHANGES, OMISSIONS OR PLAN DISCREPANCIES PRIOR TO CONSTRUCTION.
- ALL WORK SHALL BE PERFORMED IN STRICT COMPLIANCE WITH LOCAL, COUNTY, STATE AND FEDERAL CODES AND ORDINANCES.
- GENERAL CONTRACTOR SHALL VERIFY THE LOCATION OF ALL UTILITIES.
- GENERAL CONTRACTOR TO VERIFY ALL DIMENSIONS, INCLUDING CLEARANCES REQUIRED BY OTHER TRADES AND NOTIFY STARBUCKS CONSTRUCTION MANAGER OF ANY DISCREPANCIES PRIOR TO PROCEEDING WITH THE WORK. ALL DIMENSIONS ARE TO THE FACE OF THE FINISHED SURFACE UNLESS NOTED OTHERWISE. ALL DIMENSIONS TO BE TAKEN FROM DESIGNATED DATUM POINT. DO NOT SCALE DRAWINGS.
- GENERAL CONTRACTOR SHALL PATCH AND REPAIR ALL EXISTING WALLS, FLOORS, CEILINGS, OR OTHER SURFACES IDENTIFIED TO REMAIN THAT MAY BECOME DAMAGED DURING THE COURSE OF THE WORK.
- THE GENERAL CONTRACTOR IS RESPONSIBLE FOR OBTAINING PERMITS FOR FIRE PROTECTION, PLUMBING, MECHANICAL, AND ELECTRICAL SYSTEMS PRIOR TO INSTALLATION OF SUCH SYSTEMS.
- GENERAL CONTRACTOR SHALL RETAIN ONE SET OF PERMIT PLANS ON-SITE TO DOCUMENT ALL CHANGES MADE DURING CONSTRUCTION. THE RECORD DRAWINGS SHALL BE ISSUED TO THE OWNER AT PROJECT CLOSE-OUT AS DESCRIBED IN THE GENERAL REQUIREMENTS OF THE PROJECT MANUAL.
- GENERAL CONTRACTOR IS RESPONSIBLE FOR COORDINATING DELIVERY OF MATERIALS FROM STARBUCKS CONTRACTED THIRD PARTY LOGISTICS DISTRIBUTION SERVICES AND VENDOR DIRECT SHIPMENTS. SEE THE PROJECT MANUAL FOR ADDITIONAL INFORMATION.
- RESPONSIBILITY FOR SUPPLY AND DELIVERY OF MATERIALS AND EQUIPMENT IS IDENTIFIED IN THE DRAWING SCHEDULE SHEETS UNDER THE COLUMN LABELED "RESPONSIBILITY".
- FOR THE PURPOSE OF THE DOCUMENTS, TO "INSTALL," SHALL MEAN TO PROVIDE ALL FASTENERS, MISCELLANEOUS HARDWARE, BLOCKING, ELECTRICAL CONNECTIONS, PLUMBING CONNECTIONS AND OTHER ITEMS REQUIRED FOR A COMPLETE AND OPERATIONAL INSTALLATION, UNLESS OTHERWISE NOTED.
- ALL ITEM SUBSTITUTIONS MUST BE APPROVED BY THE STARBUCKS CONSTRUCTION MANAGER.

SITE INFORMATION

CODE AUTHORITIES:

BUILDING CODE:	2022 CALIFORNIA BUILDING CODE
PLUMBING CODE:	2022 CALIFORNIA PLUMBING CODE
MECHANICAL CODE:	2022 CALIFORNIA MECHANICAL CODE
ELECTRICAL CODE:	2022 CALIFORNIA ELECTRICAL CODE
ENERGY CODE:	2022 CALIFORNIA ENERGY CODE
FIRE CODE:	2022 CALIFORNIA FIRE CODE
HEALTH CODE:	CALIFORNIA RETAIL FOOD CODE
ACCESSIBILITY CODE:	2022 CALIFORNIA BUILDING CODE & ADA

ZONING:

PARCEL NUMBER:	021028040
PERMITTED TYPE OF USE:	RETAIL SALES AND SERVICE
SPRINKLERED:	(E) BUILDING IS SPRINKLERED
LEASABLE AREA:	+/- 3,000 SQ. FT.
CONSTRUCTION TYPE:	V-B
PROPOSED USE:	NO CHANGE
OCCUPANCY:	A-2

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G007	CALGREEN NOTES
G008	CALGREEN NOTES
G009	CALGREEN NOTES
DEMOLITION	
D101	DEMOLITION FLOOR PLAN
D102	DEMO REFLECTED CEILING PLAN
D104	BUILDING DEMO ROOF PLAN
ARCHITECTURAL	
A001	ARCHITECTURAL SITE PLAN
A101	BUILDING FLOOR PLAN
A102	BUILDING FLOOR PENETRATION PLAN
A103	BUILDING ROOF PLAN
A201	BUILDING EXTERIOR ELEVATIONS
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A204	BUILDING EXTERIOR ELEVATIONS
A301	BUILDING SECTIONS
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A303	BUILDING DETAILS
A503	DRIVE THRU & SITE DETAILS
A505	TRASH ENCLOSURE
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A507	TRASH ENCLOSURE
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INTERIORS	
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I102	CASEWORK PLAN
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I104	RCP LIGHTING DIMENSION PLAN
I105	INTERIOR FINISH PLAN
I201	INTERIOR FINISH ELEVATIONS & SCHED.
I202	INTERIOR FINISH ELEVATIONS & SCHED.
I203	INTERIOR FINISH ELEVATIONS & SCHED.
I204	INTERIOR FINISH ELEVATIONS & SCHED.
I401	RESTROOM PLAN & ELEVATIONS
I401.1	RESTROOM ELEVATIONS
I501	FLOOR FINISH DETAILS
I502	CONSTRUCTION DETAILS
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I603	INTERIOR FINISHES SCHEDULES
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S0.02	STRUCTURAL GENERAL NOTES
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E-002	ELECTRICAL SPECIFICATIONS
E-003	ELECTRICAL ENERGY CODE FORMS
E-004	ELECTRICAL ENERGY CODE FORMS
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E-006	ELECTRICAL ENERGY CODE FORMS
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E-602	LUTRON CONTROL DIAGRAMS
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E-605	LUTRON CONTROL DIAGRAMS
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P-1101	PLUMBING SUPPLY PLAN
P-1103	PLUMBING WASTE AND VENT PLAN
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THESE DRAWINGS AND THE PROJECT MANUAL ARE CONFIDENTIAL AND SHALL REMAIN THE SOLE PROPERTY OF STARBUCKS CORPORATION, WHICH IS THE OWNER OF THE COPYRIGHT IN THIS WORK. THEY SHALL NOT BE REPRODUCED (IN WHOLE OR IN PART), SHARED WITH THIRD PARTIES OR USED IN ANY MANNER ON OTHER PROJECTS OR EXTENSIONS TO THIS PROJECT WITHOUT THE PRIOR WRITTEN CONSENT OF STARBUCKS CORPORATION. THESE DRAWINGS AND SPECIFICATIONS ARE INTENDED TO EXPRESS DESIGN INTENT FOR A PROTOTYPICAL STARBUCKS STORE (WHICH IS SUBJECT TO CHANGE AT ANY TIME) AND DO NOT REFLECT ACTUAL SITE CONDITIONS. NEITHER PARTY SHALL HAVE ANY OBLIGATION NOR LIABILITY TO THE OTHER (EXCEPT STATED ABOVE) UNTIL A WRITTEN AGREEMENT IS FULLY EXECUTED BY BOTH PARTIES.

STARBUCKS TEMPLATE VERSION: I2020-01-31-1

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STORE #: 3462

PROJECT #: 22121-104

ISSUE DATE:

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PRODUCTION DESIGNER: N. TOPPEL

CHECKED BY:

MCG PROJECT #: 23254

MCG PROJ. MANAGER: A. CHARLES

MCG PROJ. SPECIALIST: S. ZOMORODIAN

Revision Schedule

Rev	Date	By	Description
A	02/21/24		Government Agency

SHEET TITLE: GENERAL INFORMATION

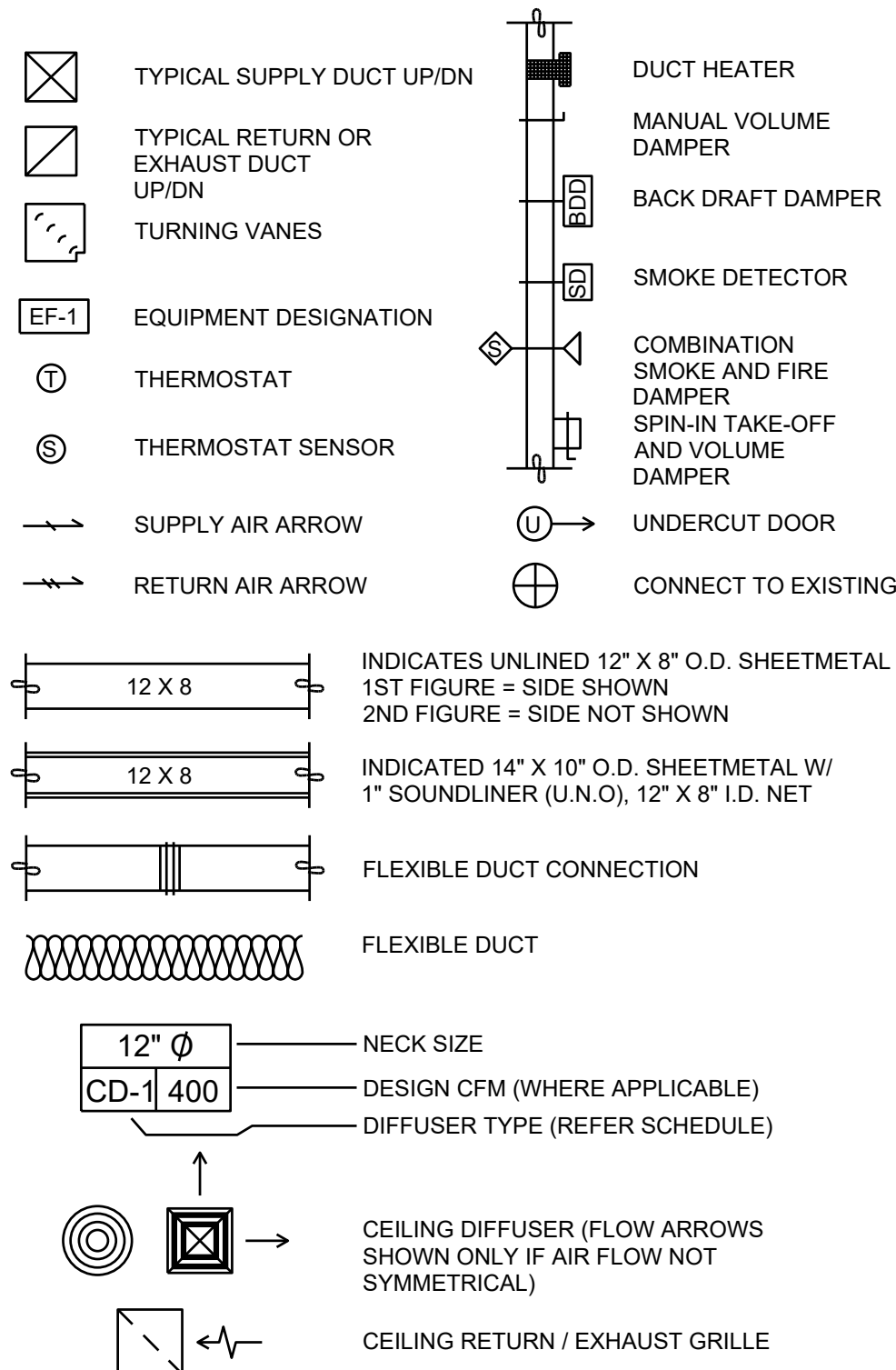
SCALE: AS SHOWN

SHEET NUMBER: G001

ABBREVIATIONS

AFF	ABOVE FINISHED FLOOR
AHJ	AUTHORITIES HAVING JURISDICTION
APPROX	APPROXIMATE
BLDG	BUILDING
CO2	CARBON DIOXIDE
CD	CEILING DIFFUSER
CLG	CEILING
CONST	CONSTRUCTION
CXA	COMMISSIONING AGENT
DEG	DEGREES
DM	STARBUCKS DESIGN MANAGER
DN	DOWN
DTL	DETAIL
DWG(S)	DRAWING(S)
EA	EACH
EC	ELECTRICAL CONTRACTOR
ECP	EQUIPMENT CONTROL PAC
EG	EXHAUST GRILLE
ELEC	ELECTRICAL
EM	EMERGENCY
EMS	ENERGY MANAGEMENT SYSTEM
EXIST	EXISTING
EXT	EXTERIOR
F&I	FURNISH & INSTALL
FLR	FLOOR
FT	FOOT/FEET
G	GAS PIPING
GC	GENERAL CONTRACTOR
HR	HOOR
HVAC	HEATING, VENTILATION, AIR CONDITIONING
I.D.	INSIDE DIAMETER
IAQ	INDOOR AIR QUALITY
LCP	LIGHTING CONTROL PANEL
LL	LANDLORD
LV	LOW VOLTAGE
MAX	MAXIMUM
MC	MECHANICAL CONTRACTOR
MECH	MECHANICAL
MEP	MECHANICAL, ELECTRICAL AND PLUMBING
MFG	MANUFACTURER
MIN	MINIMUM
N.T.S.	NOT TO SCALE
O.D.	OUTSIDE DIMENSION
OSA	OUTSIDE AIR
REF	REFERENCE
REQ'D	REQUIRED
REV	REVISION
RT	ROOFTOP
SF	SQUARE FEET
SHT	SHEET
SPECS	SPECIFICATION(S)
SST	STAINLESS STEEL
TEMP	TEMPORARY
TYP	TYPICAL
UNO	UNLESS NOTED OTHERWISE
WH	WATER HEATER
WSPH	WATER SOURCE HEAT PUMP

MECHANICAL SYMBOL LEGEND



IAQ MANAGEMENT PLAN

DURING CONSTRUCTION, CONTRACTOR SHALL COMPLY WITH LEED EQ CREDIT 3.1 AND CHAPTER 3 OF SMACNA'S IAQ GUIDELINES FOR OCCUPIED BUILDINGS UNDER CONSTRUCTION. CONTRACTOR SHALL PERFORM AND SUBMIT ALL INFORMATION AS REQUIRED BY LEED UNDER THE SUBMITTALS SECTION OF EQ CREDIT 3.1 AND OTHER SECTIONS. IF HVAC SYSTEM IS TO BE USED DURING CONSTRUCTION, INSTALL MERV 8 FILTERS AT EACH RETURN AIR GRILL AND COMPLY WITH SMACNA'S GUIDELINES REFERENCED BELOW.

TESTING, ADJUSTING, BALANCING

INDEPENDENT AIR BALANCE CONTRACTOR OR QUALIFIED MECHANICAL CONTRACTOR SHALL BE QUALIFIED TO TAB WORK BY NEBB OR AABC STANDARDS. BALANCER SHALL ACCURATELY BALANCE THE SUPPLY, RETURN AND OUTSIDE AIR, EXHAUST FAN(S), HYDRONIC (WHERE APPLICABLE) AND EXHAUST FAN(S) SYSTEMS TO PROVIDE AIR AND WATER QUANTITIES WITHIN 10% PLUS MINUS OF THE VALUES INDICATED ON THE DRAWINGS AND IN THE SPECIFICATIONS. OPERATE AUTOMATIC CONTROLS SYSTEMS AND VERIFY SETPOINTS FOR THERMOSTATS, CO2 SENSORS, DCV, EMS AND ECONOMIZER/OUTSIDE AIR DAMPER. SEE CONTROLS AND OPERATION NOTES AND HVAC SCHEDULES AND NOTES FOR DETAILS. IF DEFICIENCIES OR SITE CONDITIONS PREVENT COMPLETE AND PROPER BALANCING, CONTACT STARBUCKS PROJECT MANAGER FOR RESOLUTION. SUBMIT THREE (3) COPIES OF THE BALANCE REPORT TO THE ENGINEER, CONSTRUCTION MANAGER AND COMMISSIONING AGENT FOR APPROVAL. THE BALANCE REPORT SHALL INCLUDE NEBB OR AABC CREDENTIALS, EQUIPMENT/INSTRUMENT LIST WITH THE MOST RECENT CALIBRATION DATE AND BALANCE REPORTS FOR ALL HVAC AND EXHAUST SYSTEMS. INCLUDE A COPY OF THE BALANCE REPORT AS APPROVED BY THE ENGINEER WITH APPLICATION FOR FINAL CONTRACT PAYMENT.

ENERGY MANAGEMENT SYSTEM (EMS)

THE GENERAL CONTRACTOR SHALL INSTALL (OR DEMO AND REINSTALL FOR RENOVATIONS) THE VENSTAR SURVEYOR EMS SYSTEMS PRIOR TO THE LAST WEEK OF CONSTRUCTION. GENERAL CONTRACTOR TO PROVIDE ONE PERMANENT THERMOSTAT AND REMOTE SENSOR PER HVAC UNIT. LOCATE AND MOUNT THERMOSTAT(S) AND SENSOR(S) PER THE DRAWINGS. PROVIDE THERMOSTAT IDENTIFICATION LABELS PER SPECIFICATION REQUIREMENTS.

GENERAL CONTRACTOR TO PROGRAM, START-UP AND COMMISSION THE CONTROL SYSTEM. GENERAL CONTRACTOR IS TO COMPLETE FINAL CONNECTION AFTER DATA RACK AND NETWORK INSTALLATIONS. GENERAL CONTRACTOR VENDOR TO VERIFY SYSTEM OPERATION AND TROUBLESHOOT IF REQUIRED. GENERAL CONTRACTOR TO COMPLETE SURVEYOR'S STARBUCKS INSTALLATION SURVEY FORM AND PROVIDE TWO (2) COMPLETED COPIES OF THIS DOCUMENT TO THE CONSTRUCTION MANAGER AND COMMISSIONING AGENT PRIOR TO FINAL PAYMENT.

CONTROLS AND OPERATION NOTES

THE GENERAL CONTRACTOR SHALL PROVIDE AND INSTALL THE FOLLOWING COMPONENTS:

CONTROL WIRING
THE MECHANICAL CONTRACTOR SHALL PROVIDE ALL CONTROL WIRING IN CONDUIT NECESSARY FOR THE COMPLETE AND PROPER OPERATING TEMPERATURE CONTROL SYSTEM INCLUDING ALL MODES OF OPERATION AND INTERLOCK.

EXHAUST FANS
RESTROOM EXHAUST FAN(S) TO BE OPERATED IN CONJUNCTION WITH STORE HOURS UNLESS OTHERWISE NOTED OR APPROVED OR AS REQUIRED BY JURISDICTION (COORDINATE WITH ELECTRICAL).

THERMOSTAT
PERMANENT THERMOSTAT(S) AND REMOTE SENSOR(S) SHALL BE FURNISHED AND INSTALLED. ONE THERMOSTAT AND SENSOR IS PROVIDED FOR EACH AIR HANDLING UNIT. MOUNT THERMOSTAT(S) AND SENSOR(S) IN LOCATION & HEIGHT AS INCUBATED ON DRAWINGS. MECHANICAL CONTRACTOR TO PROVIDE THERMOSTAT IDENTIFICATION LABELS PER SPECIFICATION REQUIREMENTS. REFER TO THERMOSTAT SETUP INSTRUCTIONS BELOW FOR ADDITIONAL REQUIREMENTS.

THERMOSTAT SETUP INSTRUCTIONS
PROVIDE THE FOLLOWING SETUP AND PROGRAMMING:

- CONFIGURE AS FOLLOWS:
 - DEGREES "F" DISPLAY
 - 12 HOUR CLOCK
 - CONTINUOUS FAN OPERATION IN OCCUPIED MODE
 - DISABLE KEYBOARD PROGRAMMING
- SET TIME AND DATE
- SET TO DISPLAY CURRENT TEMPERATURE
- SET OCCUPIED START TIME AT 30 MIN. BEFORE OPENING. SET UNOCCUPIED START TIME AT 30 MIN. AFTER CLOSING. VERIFY HOURS WITH STORE MANAGER OR CONSTRUCTION MANAGER.
- SET POINTS SHALL BE AS FOLLOWS OR AS APPROPRIATE FOR CLIMATE:
 - OCCUPIED (5° F DEADBAND) (3° C DEADBAND)
 - HEATING: 70° F (21° C)
 - COOLING: 75° F (24° C)
 - UNOCCUPIED
 - HEATING: 60° F (15° C)
 - COOLING: 78° F (25° C)
- SET TWO (2) HOUR OCCUPIED OVERRIDE FUNCTION TO PROVIDE THE FOLLOWING SET POINT OVERRIDES:
 - HEATING: +2° F (1° C)
 - COOLING: -2° F (1° C)

DEMAND CONTROL VENTILATION (DCV)
THE CO2 SENSOR SHALL MODULATE THE AIR HANDLING UNIT OUTSIDE AIR DAMPER TO MAINTAIN 1000 PPM CO2 OR LESS

OCCUPIED MODE:

- FAN SHALL RUN CONTINUOUSLY WHILE BRINGING IN MINIMUM DCV OUTSIDE AIR AS INDICATED IN SCHEDULE.
- IF CO2 SENSOR SET POINT IS BELOW THE SETPOINT, THE AIR DAMPER SHALL BE OPEN TO THE CALCULATED DCV MINIMUM OUTSIDE AIR.
- IF CO2 SENSOR SETPOINT IS EXCEEDED, OUTSIDE AIR DAMPER SHALL MODULATE TO MAINTAIN 1000 PPM NOT TO EXCEED THE CALCULATED DESIGN MINIMUM OUTSIDE AIR. UPON CO2 PPM FALLING BELOW THE SETPOINT, THE AIR DAMPER SHALL RETURN TO DCV MINIMUM OUTSIDE AIR.
- THE ECONOMIZER SHALL HAVE PRIORITY OVER THE DCV CONTROLS, OUTSIDE AIR MAY EXCEED DCV MINIMUM AND DESIGN MINIMUM WHEN AIR CONDITIONS ARE APPROPRIATE TO DO SO.

UNOCCUPIED MODE:

- FAN SHALL CYCLE WITH HEATING AND OUTSIDE AIR DAMPER CLOSED. OUTSIDE DAMPER SHALL NOT BE CYCLED WITH CO2 PPM SETPOINT.

DUCTWORK AND ACCESSORIES

SHEET METAL DUCTWORK
SEE SPECIFICATIONS FOR SHEET METAL DUCT REQUIREMENTS. ALL EXPOSED DUCTWORK TO BE SPIRAL ROUND, OR RECTANGULAR LOCK-SEAM TYPE, AS SHOWN ON HVAC PLAN SHEET. ASSEMBLE AND INSTALL DUCTWORK IN ACCORDANCE WITH RECOGNIZED INDUSTRY PRACTICE FOR ACHIEVING AIR TIGHT (5% LEAKAGE) AND NOISELESS (NO OBJECTIONABLE NOISE) SYSTEMS, CAPABLE OF PERFORMING EACH INDICATED SERVICE. FURNISH AND INSTALL ALL REQUIRED DAMPERS, TRANSITIONS, CONNECTIONS TO AIR TERMINALS, AND OTHER ACCESSORIES NECESSARY FOR COMPLETE OPERATING SYSTEM. NO VARIATION OF DUCT CONFIGURATION OR SIZES WILL BE PERMITTED EXCEPT BY PERMISSION FROM THE ENGINEER.

DUCT SEALANT
SEAL ALL LONGITUDINAL AND TRANSVERSE JOINTS PER SPECIFICATIONS. COVER ALL FIELD JOINTS, JOINTS AROUND SPIN-IN FITTINGS, AND FASTENING SCREWS WITH MASTIC.

SUPPORTS
PROVIDE FASTENERS, ANCHORS, RODS, STRAPS, TRIM, AND ANGLES FOR SUPPORT OF DUCTWORK. SUPPORTS MUST COMPLY WITH LOCAL REGULATIONS AND CODE.

DAMPERS
PROVIDE VOLUME CONTROL DAMPERS WHERE INDICATED ON DRAWINGS AND AT POINTS ON LOW PRESSURE SUPPLY, RETURN, AND EXHAUST DUCTS WHERE BRANCHES ARE TAKEN FROM LARGER DUCTS. PROVIDE UL LISTED FIRE OR FIRE/SMOKE DAMPERS WHERE REQUIRED AND IN ACCORDANCE WITH NFPA AND LOCAL CODES. PROVIDE CONVENIENTLY LOCATED ACCESS DOORS OF AMPLIFIED SIZE AND QUANTITY FOR SERVICING THE DAMPERS. PROVIDE MOTORIZED DAMPERS AT ALL INTAKE & EXHAUST BUILDING OPENINGS. COORDINATE WITH OTHER TRADES FOR ACCESS PANELS, POWER AND FIRE ALARM INTERFACES. SEE SPECIFICATIONS FOR FURTHER REQUIREMENTS.

GRILLES, REGISTERS, AND DIFFUSERS
GRILLES, REGISTERS, AND DIFFUSERS SHALL BE AS SPECIFIED AND SHALL BE MECHANICAL CONTRACTOR SUPPLIED, UNLESS OTHERWISE NOTED. DIFFUSERS SHALL BE INSTALLED AS INDICATED ON THE DRAWINGS AND SCHEDULES. THE MECHANICAL CONTRACTOR SHALL PROVIDE ALL MISCELLANEOUS ITEMS NECESSARY FOR A COMPLETE AND PROPER INSTALLATION IN THE TYPE OF CEILING AND WALLS USED IN THIS PROJECT.

THERMAL INSULATION
PROVIDE EXTERNAL THERMAL INSULATION WITH AN INTEGRAL VAPOR BARRIER FACING OF SUFFICIENT THICKNESS TO MEET LOCAL ENERGY CODE REQUIREMENTS OR ASHRAE 90.1-2004, WHICHEVER IS MORE STRINGENT. PROVIDE INSULATION ON JUST AND OUTSIDE AIR DUCTS, AND ON CONCEALED PORTIONS OF SUPPLY AND RETURN AIR DUCTS. DO NOT EXTERNALLY INSULATE EXPOSED DUCTWORK AND PORTIONS OF DUCTWORK THAT ARE INTERNALLY LINED WITH CODE REQUIRED THICKNESS. INTERNALLY INSULATE EXPOSED SUPPLY DUCTWORK IF POSSIBILITY OF CONDENSATION. INTERNALLY INSULATE EXTERIOR DUCTWORK PER CODE.

ACOUSTICAL DUCT LINER
UNLESS OTHERWISE INDICATED ON THE PLANS, PROVIDE 1" (25MM) ACOUSTICAL DUCT LINER IN SUPPLY AND RETURN DUCTWORK WITHIN 10'-0" (305CM) OF THE DISCHARGE AND INTAKE OF AIR HANDLING UNITS. INCREASE DUCT SIZE INDICATED ON PLANS AS NEEDED TO ACCOMMODATE LINER. LINER TO BE PROVIDED AND FASTENED TO DUCT WITH MECHANICAL LINER FASTENERS IN ACCORDANCE WITH SMACNA AND SPECIFICATION REQUIREMENTS.

FLEXIBLE DUCTWORK
FLEXIBLE DUCT WORK SHALL ONLY BE INSTALLED AS SHOWN IN PLAN AND NOT ABOVE HARD LID CEILINGS. FLEXIBLE DUCTWORK SHALL NOT EXCEED 5'-0" (152CM) IN LENGTH AND TWO 45° ELBOWS. IT SHALL BE PULLED TAUT AND APPROPRIATELY FASTENED TO RIGID BRANCH DUCT & DIFFUSER. BENDS SHALL BE MINIMIZED AND WHERE NEEDED BE A FULL RADIUS BEND. SUPPORT BANDS SHALL BE INSTALLED SO AS TO NOT CRIMP FLEX DUCT. FLEXIBLE DUCTWORK SHALL MEET SPECIFICATION REQUIREMENTS.

HVAC EQUIPMENT AND MATERIALS

AIR HANDLING UNITS
AIR HANDLING UNITS SHALL BE AS SPECIFIED IN THE MECHANICAL SCHEDULE AND SHALL BE FURNISHED AND INSTALLED PER THE LEASE AGREEMENT. THE MECHANICAL CONTRACTOR IS RESPONSIBLE FOR COORDINATING DELIVERY, PROVIDING COMPLETE INSTALLATION INCLUDING CURBS, PIPING, VIBRATION ISOLATION, AND NECESSARY ACCESSORIES, AND PROVIDING WARRANTY.

FILTERS
IF OPERATING HVAC DURING CONSTRUCTION, PROVIDE THREE (3) SETS OF 2" (51MM) MERV6 PLEATED DISPOSABLE FILTERS (OR HIGHER RATING IF REQUIRED BY LEED). USE ONE SET UNTIL COMPLETION OF CONSTRUCTION. INSTALL ONE SET AT COMPLETION OF CONSTRUCTION (PRIOR TO TAB) AND DELIVER ONE SET OF MERV13 FILTERS TO STARBUCKS LABELED TO DENOTE THEIR RESPECTIVE AIR HANDLING UNIT.

EXHAUST FANS
EXHAUST FANS SHALL BE AS SPECIFIED AND PROVIDED PER THE LEASE AGREEMENT. THE MECHANICAL CONTRACTOR IS RESPONSIBLE FOR COORDINATING DISCHARGE LOCATION WITH NEW AND EXISTING VENTS AND INTAKES, PROVIDING COMPLETE INSTALLATION INCLUDING CURBS, BACKDRAFT DAMPER, DUCTWORK FROM RESTROOM GRILLE TO UNIT, NECESSARY ACCESSORIES AND PROVIDING WARRANTY.

AIR CURTAINS
AIR CURTAINS, WHEN REQUIRED, SHALL BE FURNISHED BY OWNER WITH WINDOW UNIT FROM READY-ACCESS AND INSTALLED BY THE GENERAL CONTRACTOR. COORDINATE WITH ELECTRICAL CONTRACTOR FOR LOCATION OF POWER CONNECTION.

NATURAL GAS PIPING
PROVIDE NATURAL GAS PIPING FROM GAS COMPANY METER TO EACH PIECE OF EQUIPMENT OR APPLIANCE IN ACCORDANCE WITH CODE AND SPECIFICATIONS. PRESSURE REGULATORS FOR MEDIUM PRESSURE SYSTEMS SHALL BE VENTED TO THE OUTDOORS. PROVIDE PIPING SUPPORT BLOCKING ON ROOF, COMPATIBLE WITH ROOFING SYSTEM.

BRACING AND ANCHORING
ALL MECHANICAL EQUIPMENT, FIXED OR FLEXIBLY MOUNTED, SHALL BE BRACED OR ANCHORED TO COMPLY WITH LOCAL CODES.

DUCT SMOKE DETECTOR
DUCT SMOKE DETECTORS SHALL COMPLY WITH UL 268A AND BE LABELED BY AN APPROVED AGENCY, APPROVED AND LISTED BY THE CALIFORNIA STATE FIRE MARSHALL FOR AIR DUCT INSTALLATION, AND SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S APPROVED INSTALLATION INSTRUCTIONS. COORDINATE WITH FIRE ALARM CONTRACTOR TO HAVE SMOKE DETECTOR SUPERVISED BY FIRE ALARM SYSTEM AND ENABLED TO ACTIVATE FIRE ALARM SYSTEM IN CASE OF DETECTED SMOKE.

GENERAL MECHANICAL NOTES

- MECHANICAL CONTRACTOR SHALL COORDINATE WITH THE GENERAL CONTRACTOR TO PATCH AND REPAIR ALL EXISTING WALLS, FLOORS, CEILINGS OR OTHER SURFACES IDENTIFIED TO REMAIN THAT MAY BECOME DAMAGED DURING THE COURSE OF WORK.
- DRAWINGS ARE DIAGRAMMATIC AND INDICATE GENERAL INTENT OR ARRANGEMENT OF SYSTEMS. FURNISH AND INSTALL ALL COMPONENTS NEEDED WHETHER INDICATED OR NOT TO PROVIDE A COMPLETE AND OPERATING SYSTEM.
- CONTRACTOR TO VERIFY ALL DIMENSIONS, INCLUDING CLEARANCES REQUIRED BY OTHER TRADES, AND NOTIFY STARBUCKS CONSTRUCTION MANAGER OF ANY DISCREPANCIES PRIOR TO PROCEEDING WITH THE WORK. ALL DIMENSIONS ARE TO THE FACE OF THE FINISHED SURFACE UNLESS NOTED OTHERWISE. ALL DIMENSIONS TO BE TAKEN FROM ACTUAL BUILDING DIMENSIONS.
- THE MECHANICAL CONTRACTOR SHALL COORDINATE HVAC WORK WITH OTHER TRADES. THE ARCHITECTURAL DRAWINGS AND SPECIFICATIONS SHALL TAKE PRECEDENCE OVER ALL OTHER DRAWINGS. SEE ARCHITECTURAL DRAWINGS AND SPECIFICATIONS FOR DIMENSIONED DIFFUSER LOCATIONS AND MOUNTING HEIGHTS WHERE EXPOSED. SEE SPECIFICATION SHEETS FOR MECHANICAL SPECIFICATION SECTIONS.
- NEW DUCTWORK AND EQUIPMENT SHALL NOT BE INSTALLED WHERE IT OBSTRUCTS ANY EXISTING OR NEW AREAS THAT REQUIRE ACCESS.
- DUCT LEAKAGE TESTING SHALL BE PERFORMED IN ACCORDANCE WITH SMACNA HVAC DUCT LEAKAGE TEST MANUAL. THE PERMITTED DUCT LEAKAGE SHALL BE NOT MORE THAN THE CALCULATED VALUE FROM CMC EQUATION 603.9.2. ($L_{max} = C_v^{0.65}$).

GENERAL NOTES

SCOPE
THE INTENT OF THE SPECIFICATIONS AND THE DRAWINGS IS TO PROVIDE A COMPLETE AND FULLY OPERATIONAL MECHANICAL SYSTEM. THE MECHANICAL CONTRACTOR SHALL FURNISH ALL LABOR, MATERIAL, AND EQUIPMENT NECESSARY TO COMPLETE THE MECHANICAL WORK.

SITE EXAMINATION
THE MECHANICAL CONTRACTOR SHALL THOROUGHLY EXAMINE ALL AREAS WHERE EQUIPMENT, DUCTWORK, AND PIPING WILL BE INSTALLED AND WILL REPORT ANY CONDITION THAT, IN HIS OPINION, PREVENTS THE PROPER INSTALLATION OF THE MECHANICAL WORK.

PENETRATIONS
WHERE PIPES AND DUCTS PENETRATE WALL, SEAL OPENINGS TO PREVENT AIR TRANSFER BETWEEN SPACES. USE FIRE RATED SEALANTS ON ALL FIRE SEPARATION PENETRATIONS, INCLUDING FLOORS. SEAL AROUND ALL PIPES AND DUCTS PENETRATING FIRE SEPARATIONS WITH NON-COMBUSTIBLE PACKING RETAINED BY METAL COLLARS. THE ASSEMBLY SHALL BE APPROVED BY STATE FIRE MARSHALL.

STANDARDS
EQUIPMENT AND MATERIALS SHALL CONFORM WITH THE APPROPRIATE PROVISIONS OF CSA, UL, ARL, ASME, ASTM, UL, NEMA, ANSI, SMACNA, ASHRAE, NFPA, AS APPLICABLE TO EACH INDIVIDUAL UNIT OR ASSEMBLY.

CODES
ALL WORK SHALL BE PERFORMED IN STRICT ACCORDANCE WITH ALL APPLICABLE PROVINCIAL AND LOCAL CODES AND ORDINANCES. IN CASE OF CONFLICT BETWEEN THE DRAWINGS AND SPECIFICATIONS AND THE CODES AND ORDINANCES, USE WHICHEVER IS MORE STRINGENT. THE MECHANICAL CONTRACTOR SHALL SATISFY CODE REQUIREMENTS AS A MINIMUM STANDARD WITHOUT ANY EXTRA COST TO STARBUCKS.

PERMITS AND FEES
THE MECHANICAL CONTRACTOR SHALL PROCURE AND PAY FOR ALL PERMITS, FEES, AND INSPECTIONS NECESSARY TO COMPLETE THE MECHANICAL WORK.

WARRANTY
THE MECHANICAL CONTRACTOR SHALL UNCONDITIONALLY WARRANT ALL WORK TO BE FREE OF DEFECTS IN MATERIAL AND WORKMANSHIP FOR A PERIOD OF ONE (1) YEAR FROM THE DATE OF FINAL ACCEPTANCE BY STARBUCKS AND WILL REPAIR OR REPLACE ANY DEFECTIVE WORK PROMPTLY AND WITHOUT CHARGE AND RESTORE ANY OTHER EXISTING WORK DAMAGED IN THE COURSE OF REPAIRING DEFECTIVE MATERIALS AND WORKMANSHIP.

LEED
ALL WORK, MATERIALS AND EQUIPMENT SHALL MEET LEED REQUIREMENTS & CODE. IN CASE OF CONFLICT, THE HIGHER STANDARD SHALL APPLY.

INSPECTION
INSTALLATION INSTRUCTIONS FOR ALL LISTED EQUIPMENT SHALL BE PROVIDED TO THE FIELD INSPECTOR AT THE TIME OF INSPECTION.

LANDLORD REQUIREMENTS

PRIOR TO BID: THE CONTRACTOR SHALL COORDINATE WITH LANDLORD / BUILDING OWNER FOR ANY CONSTRUCTION REQUIREMENTS / SPECIFICATIONS. IF LANDLORD / BUILDING OWNER DOES HAVE REQUIREMENTS, CONTRACTOR SHALL BECOME COMPLETELY FAMILIAR WITH REQUIREMENTS / SPECIFICATIONS AND ADHERE TO THEM. WHERE LANDLORD / BUILDING OWNER REQUIREMENTS ARE MORE STRINGENT THAN SHOWN IN THESE PLANS (IN THE OPINION OF THE ENGINEER), LANDLORD / BUILDING OWNER REQUIREMENTS SHALL GOVERN.



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HEATING, VENTILATING AND AIR CONDITIONING

SECTION 230516 - EXPANSION FITTINGS AND LOOPS FOR HVAC PIPING

- 1.1 REQUIREMENTS
A. PROVIDE FOR EXPANSION OF PIPING IN ACCORDANCE WITH INDUSTRY STANDARDS AND GOOD INSTALLATION PRACTICES.

END OF SECTION 230516

HEATING, VENTILATING AND AIR CONDITIONING

SECTION 230517 - SLEEVES AND SLEEVE SEALS FOR HVAC PIPING

- 1.1 SLEEVE-SEAL SYSTEMS
A. FIELD-ASSEMBLED, MODULAR SEALING-ELEMENT UNIT FOR FILLING ANNULAR SPACE BETWEEN PIPING AND SLEEVE.
1. SEALING ELEMENTS: EPDM RUBBER OR NBR.
2. PRESSURE PLATES: CARBON STEEL, PLASTIC OR STAINLESS STEEL.
3. CONNECTING BOLTS AND NUTS: CARBON STEEL WITH CORROSION-RESISTANT COATING OR STAINLESS STEEL.
- 1.2 SLEEVE-SEAL FITTINGS
A. MANUFACTURED PLASTIC, SLEEVE-TYPE, PLASTIC OR RUBBER WATERSTOP ASSEMBLY MADE FOR IMBEDDING IN CONCRETE SLAB OR WALL.
- 1.3 GROUT
A. NONSHRINK, FACTORY PACKAGED.
- 1.4 SLEEVE AND SLEEVE-SEAL SCHEDULE
A. EXTERIOR CONCRETE WALLS ABOVE GRADE:
1. PIPING SMALLER THAN NPS 6: CAST-IRON WALL OR GALVANIZED-STEEL WALL SLEEVES.
B. EXTERIOR CONCRETE WALLS BELOW GRADE:
1. PIPING SMALLER THAN NPS 6: CAST-IRON WALL OR GALVANIZED-STEEL WALL SLEEVES WITH SLEEVE-SEAL SYSTEM.
C. CONCRETE SLABS-ON-GRADE:
1. PIPING SMALLER THAN NPS 6: CAST-IRON WALL OR GALVANIZED-STEEL WALL SLEEVES WITH SLEEVE-SEAL SYSTEM.
D. CONCRETE SLABS ABOVE GRADE:
1. PIPING SMALLER THAN NPS 6: CAST-IRON WALL OR GALVANIZED-STEEL PIPE OR PVC-PIPE SLEEVES.
E. INTERIOR PARTITIONS:
1. PIPING SMALLER THAN NPS 6: CAST-IRON WALL OR GALVANIZED-STEEL PIPE OR PVC-PIPE SLEEVES.

END OF SECTION 230517

HEATING, VENTILATING AND AIR CONDITIONING

SECTION 230519 - METERS AND GAGES FOR HVAC PIPING

- 1.1 PRODUCTS
A. LIQUID-IN-GLASS THERMOMETERS:
1. COMPACT-STYLE, LIQUID-IN-GLASS THERMOMETERS:
a. CASE: CAST ALUMINUM OR PLASTIC 6-INCH SIZE.
b. CASE FORM: BACK ANGLE OR STRAIGHT
c. TUBE: GLASS WITH MAGNIFYING LENS AND BLUE OR RED ORGANIC LIQUID.
d. TUBE BACKGROUND: NONREFLECTIVE ALUMINUM WITH ETCHED SCALE IN DEG F.
B. DUCT-THERMOMETER MOUNTING BRACKETS: FLANGED BRACKET, FOR
C. THERMOWELLS:
1. MATERIAL FOR USE WITH COPPER TUBING: CNR OR CUNI
2. MATERIAL FOR USE WITH STEEL PIPING: CRES OR CSA
3. TYPE: STEPPED SHANK UNLESS STRAIGHT OR TAPERED SHANK IS INDICATED.
4. HEAT-TRANSFER MEDIUM: MIXTURE OF GRAPHITE AND GLYCERIN.
- D. PRESSURE GAGES:
1. DIRECT-MOUNTED, METAL-CASE, DIAL-TYPE PRESSURE GAGES:
a. CASE: LIQUID-FILLED OR SEALED; OPEN-FRONT, PRESSURE RELIEF.
b. PRESSURE-ELEMENT ASSEMBLY: BOURDON TUBE UNLESS OTHERWISE INDICATED.
c. PRESSURE CONNECTION: BRASS, WITH NPS 1/4 OR NPS 1/2 ASME B1.20.1 PIPE THREADS AND BOTTOM-OUTLET TYPE UNLESS BACK-OUTLET TYPE IS INDICATED.
d. DIAL: NONREFLECTIVE ALUMINUM WITH ETCHED SCALE IN PSI
e. WINDOW: GLASS
f. RING: STAINLESS STEEL
g. ACCURACY: GRADE A, PLUS OR MINUS 1 PERCENT OF MIDDLE HALF OF GRADE B, PLUS OR MINUS 2 PERCENT OF MIDDLE HALF OF GRADE C, PLUS OR MINUS 3 PERCENT OF MIDDLE HALF OF GRADE D, PLUS OR MINUS 5 PERCENT OF WHOLE SCALE RANGE.
E. GAGE ATTACHMENTS:
1. SNUBBERS: BRASS, WITH NPS 1/4 OR NPS 1/2 NPS 1/2 AND PISTON OR POROUS-METAL-TYPE SURGE-DAMPENING DEVICE. INCLUDE EXTENSION FOR USE ON INSULATED PIPING.
2. SIPHONS: LOOP-SHAPED SECTION OF BRASS, STAINLESS-STEEL OR STEEL PIPE WITH NPS 1/4 OR NPS 1/2 PIPE THREADS.
3. VALVES: BRASS OR STAINLESS-STEEL NEEDLE, WITH NPS 1/4 OR NPS 1/2, PIPE THREADS.

END OF SECTION 230519

HEATING, VENTILATING AND AIR CONDITIONING

SECTION 230548 - VIBRATION AND SEISMIC CONTROLS FOR HVAC

- 1.1 COMPONENTS
A. VIBRATION ISOLATORS:
1. OPEN-SPRING ISOLATORS: FREESTANDING, Laterally STABLE.
2. PIPE-RISER RESILIENT SUPPORT: ALL-DIRECTIONAL, ACOUSTICAL PIPE ANCHOR.
3. RESILIENT PIPE GUIDES.
4. RESTRAINED-AIR-SPRING ISOLATORS: FREESTANDING, SINGLE OR MULTIPLE, COMPRESSED-AIR BELLOWS WITH VERTICAL-LIMIT STOP RESTRAINT.
5. ELASTOMERIC HANGERS
6. SPRING HANGERS: COMBINATION COIL-SPRING AND ELASTOMERIC-INSERT HANGERS WITH SPRING AND INSERT IN COMPRESSION AND WITH VERTICAL-LIMIT STOP.
B. SEISMIC RESTRAINT DEVICES:
1. SNUBBERS: WELDED STRUCTURAL-STEEL SHAPES AND REPLACEABLE RESILIENT ISOLATION WASHERS AND BUSHINGS.
2. RESTRAINT CHANNEL BRACINGS: MFMA-4, SHOP- OR FIELD-FABRICATED BRACING ASSEMBLIES.
3. RESTRAINT CABLES: [ASTM A 603 GALVANIZED] [ASTM A 492 STAINLESS]-STEEL CABLES.
4. HANGER-ROD STIFFENER: STEEL TUBE OR STEEL SLOTTED-SUPPORT-SYSTEM, SLEEVE WITH INTERNALLY BOLTED CONNECTIONS OR REINFORCING STEEL ANGLE CLAMPED TO HANGER ROD.
5. RESILIENT ISOLATION WASHERS AND BUSHINGS: ONE-PIECE, MOLDED, OIL- AND WATER-RESISTANT NEOPRENE, WITH A FLAT WASHER FACE.
6. ANCHOR BOLTS: MECHANICAL TYPE, SEISMIC RATED.
C. VIBRATION ISOLATION EQUIPMENT BASES:
1. STEEL BASE: FACTORY-FABRICATED, WELDED, STRUCTURAL-STEEL BASES AND RAILS.
2. INERTIA BASE: FACTORY-FABRICATED, WELDED, STRUCTURAL-STEEL BASES AND RAILS READY FOR FIELD-APPLIED, CAST-IN-PLACE CONCRETE.

- 1.2 FIELD QUALITY CONTROL
A. TESTING: BY CONTRACTOR.

END OF SECTION 230548

HEATING, VENTILATING AND AIR CONDITIONING

SECTION 230553 - IDENTIFICATION FOR HVAC PIPING AND EQUIPMENT

- 1.1 QUALITY ASSURANCE
A. QUALITY STANDARD FOR PIPING IDENTIFICATION: ASME A13.1.
- 1.2 PRODUCTS
A. EQUIPMENT LABELS: METAL OR PLASTIC
B. WARNING SIGNS AND LABELS: 1/16 INCH OR 1/8 INCH THICK WITH FASTENERS OR ADHESIVE. LETTER SIZE NOT LESS THAN 1/4 INCH (6.4 MM) FOR NAME OF UNITS IF VIEWING DISTANCE IS LESS THAN 24 INCHES (600 MM), 1/2 INCH (13 MM) FOR VIEWING DISTANCES UP TO 72 INCHES (1830 MM), AND PROPORTIONATELY LARGER LETTERING FOR GREATER VIEWING DISTANCES. INCLUDE SECONDARY LETTERING TWO-THIRDS TO THREE-QUARTERS THE SIZE OF PRINCIPAL LETTERING.
C. PIPE LABELS: PRETENSIONED OR SELF-ADHESIVE.
D. DUCT LABELS: 1/16 INCH OR 1/8 INCH THICK WITH FASTENERS OR ADHESIVE. LETTER SIZE NOT LESS THAN 1/4 INCH FOR NAME OF UNITS IF VIEWING DISTANCE IS LESS THAN 24 INCHES, 1/2 INCH FOR VIEWING DISTANCES UP TO 72 INCHES, AND PROPORTIONATELY LARGER LETTERING FOR GREATER VIEWING DISTANCES. INCLUDE SECONDARY LETTERING TWO-THIRDS TO THREE-QUARTERS THE SIZE OF PRINCIPAL LETTERING.
E. STENCILS: ALUMINUM, BRASS, FIBERBOARD OR FIBERBOARD.
F. VALVE TAGS: BRASS, ALUMINUM OR STAINLESS STEEL; 0.032-INCH MINIMUM THICKNESS.
G. WARNING TAGS: 3 BY 5-1/4 INCHES MINIMUM; BRASS GROMMET AND WIRE FASTENERS.
H. THERMOSTAT LABELS: 1/8" (3MM) HIGH WHITE LETTERS ON KELLY GREEN OR BLACK PHENOLIC BACKGROUND (E.Q. "AC-1: WORKROOM").

END OF SECTION 230553

HEATING, VENTILATING AND AIR CONDITIONING

SECTION 230593 - TESTING, ADJUSTING, AND BALANCING FOR HVAC

- 1.1 SUMMARY
A. TAB FOR THE FOLLOWING:
1. BALANCING AIR SYSTEMS:
a. CONSTANT-VOLUME AIR SYSTEMS.
b. DUAL-DUCT SYSTEMS.
c. VARIABLE-AIR-VOLUME SYSTEMS.
d. MULTIZONE SYSTEMS.
e. INDUCTION-UNIT SYSTEMS.
2. TAB EQUIPMENT:
a. HEAT EXCHANGERS.
b. MOTORS.
c. CONDENSING UNITS.
d. HEAT-TRANSFER COILS.
3. TAB EXISTING SYSTEMS AND EQUIPMENT.
4. SOUND TESTS.
5. VIBRATION TESTS.
6. DUCT LEAKAGE TESTS.
7. CONTROL SYSTEM VERIFICATION.
- 1.2 QUALITY ASSURANCE
A. ASHRAE COMPLIANCE: APPLICABLE REQUIREMENTS IN ASHRAE 62.1, SECTION 7.2.2 - "AIR BALANCING."
B. ASHRAE/IESNA COMPLIANCE: APPLICABLE REQUIREMENTS IN ASHRAE/IESNA 90.1, SECTION 6.2.2.3 - "SYSTEM BALANCING."
- 1.3 EXECUTION
A. TOLERANCES: PLUS OR MINUS 10 PERCENT OF DESIGN VALUES.
B. FINAL REPORT: PREPARE A CERTIFIED WRITTEN REPORT; TABULATE AND DIVIDE THE REPORT INTO SEPARATE SECTIONS FOR TESTED SYSTEMS AND BALANCED SYSTEMS. INCLUDE THE FOLLOWING:
1. GENERAL PROJECT DATA
2. SYSTEM DIAGRAMS
3. AIR-HANDLING-UNIT TEST REPORTS
4. APPARATUS-COIL TEST REPORTS
5. FAN TEST REPORTS
6. DUCT TRAVERSE REPORTS
7. INSTRUMENT CALIBRATION REPORTS
C. INSPECTIONS: RANDOM CHECKS BY CONSTRUCTION MANAGER TO VERIFY FINAL TAB REPORT.

END OF SECTION 230593

HEATING, VENTILATING AND AIR CONDITIONING

SECTION 230713 - DUCT INSULATION

- 1.1 QUALITY ASSURANCE
A. SURFACE-BURNING CHARACTERISTICS: FLAME-SPREAD INDEX OF 25, AND SMOKE-DEVELOPED INDEX OF 50 FOR INSULATION INSTALLED INDOORS; OR 75, AND SMOKE-DEVELOPED INDEX OF 150 FOR INSULATION INSTALLED OUTDOORS; ACCORDING TO ASTM E 84.
B. ADHESIVES: VOC CONTENT OF 50 G/L OR LESS FOR INDOOR APPLICATIONS.
- 1.2 DUCT INSULATION SCHEDULE, GENERAL
A. PLENUMS AND DUCTS REQUIRING INSULATION:
1. INDOOR, CONCEALED SUPPLY AND OUTDOOR AIR.
2. INDOOR, EXPOSED SUPPLY (WHERE POSSIBILITY OF CONDENSATION).
3. INDOOR, EXPOSED OUTDOOR AIR.
4. INDOOR, CONCEALED RETURN LOCATED IN UNCONDITIONED SPACE.
5. INDOOR, EXPOSED RETURN LOCATED IN UNCONDITIONED SPACE.
6. INDOOR, CONCEALED OVEN AND WAREWASH EXHAUST.
7. INDOOR, EXPOSED OVEN AND WAREWASH EXHAUST.
8. INDOOR, CONCEALED EXHAUST BETWEEN ISOLATION DAMPER AND PENETRATION OF BUILDING EXTERIOR.
9. INDOOR, EXPOSED EXHAUST BETWEEN ISOLATION DAMPER AND PENETRATION OF BUILDING EXTERIOR.
10. OUTDOOR, CONCEALED SUPPLY AND RETURN.
11. OUTDOOR, EXPOSED SUPPLY AND RETURN.
B. ITEMS NOT INSULATED:
1. METAL DUCTS WITH DUCT LINER OF SUFFICIENT THICKNESS TO COMPLY WITH ENERGY CODE AND ASHRAE/IESNA 90.1.
2. FACTORY-INSULATED FLEXIBLE DUCTS.
3. FACTORY-INSULATED PLENUMS AND CASINGS.
4. FLEXIBLE CONNECTORS.
5. VIBRATION-CONTROL DEVICES.
6. FACTORY-INSULATED ACCESS PANELS AND DOORS.
- 1.3 INDOOR DUCT AND PLENUM INSULATION SCHEDULE
A. CONCEALED, ROUND AND FLAT-OVAL, SUPPLY-AIR DUCT INSULATION: FLEXIBLE ELASTOMERIC, MINERAL-FIBER BLANKET, MINERAL-FIBER BOARD OR POLYOLEFIN
B. CONCEALED, ROUND AND FLAT-OVAL, RETURN-AIR DUCT INSULATION: FLEXIBLE ELASTOMERIC, MINERAL-FIBER BLANKET, MINERAL-FIBER BOARD OR POLYOLEFIN
C. CONCEALED, ROUND AND FLAT-OVAL, OUTDOOR-AIR DUCT INSULATION: FLEXIBLE ELASTOMERIC, MINERAL-FIBER BLANKET, MINERAL-FIBER BOARD OR POLYOLEFIN
D. CONCEALED, ROUND AND FLAT-OVAL, EXHAUST-AIR DUCT INSULATION: FLEXIBLE ELASTOMERIC, MINERAL-FIBER BLANKET, MINERAL-FIBER BOARD OR POLYOLEFIN
E. CONCEALED, RECTANGULAR, SUPPLY-AIR DUCT INSULATION: FLEXIBLE ELASTOMERIC, MINERAL-FIBER BLANKET, MINERAL-FIBER BOARD OR POLYOLEFIN
F. CONCEALED, RECTANGULAR, RETURN-AIR DUCT INSULATION: FLEXIBLE ELASTOMERIC, MINERAL-FIBER BLANKET, MINERAL-FIBER BOARD OR POLYOLEFIN
G. CONCEALED, RECTANGULAR, OUTDOOR-AIR DUCT INSULATION: FLEXIBLE ELASTOMERIC, MINERAL-FIBER BLANKET, MINERAL-FIBER BOARD OR POLYOLEFIN
H. CONCEALED, RECTANGULAR, EXHAUST-AIR DUCT INSULATION BETWEEN ISOLATION DAMPER AND PENETRATION OF BUILDING EXTERIOR: FLEXIBLE ELASTOMERIC, MINERAL-FIBER BLANKET, MINERAL-FIBER BOARD OR POLYOLEFIN
I. CONCEALED, SUPPLY-AIR PLENUM INSULATION: FLEXIBLE ELASTOMERIC, MINERAL-FIBER BLANKET, MINERAL-FIBER BOARD OR POLYOLEFIN
J. CONCEALED, RETURN-AIR PLENUM INSULATION: FLEXIBLE ELASTOMERIC, MINERAL-FIBER BLANKET, MINERAL-FIBER BOARD OR POLYOLEFIN
K. CONCEALED, OUTDOOR-AIR PLENUM INSULATION: MINERAL-FIBER BLANKET OR MINERAL-FIBER BOARD
L. CONCEALED, EXHAUST-AIR PLENUM INSULATION: MINERAL-FIBER BLANKET OR MINERAL-FIBER BOARD
M. EXPOSED, ROUND AND FLAT-OVAL, SUPPLY-AIR DUCT INSULATION: FLEXIBLE ELASTOMERIC, MINERAL-FIBER BLANKET, MINERAL-FIBER BOARD OR POLYOLEFIN
N. EXPOSED, ROUND AND FLAT-OVAL, RETURN-AIR DUCT INSULATION: FLEXIBLE ELASTOMERIC, MINERAL-FIBER BLANKET, MINERAL-FIBER BOARD OR POLYOLEFIN
O. EXPOSED, ROUND AND FLAT-OVAL, OUTDOOR-AIR DUCT INSULATION: FLEXIBLE ELASTOMERIC, MINERAL-FIBER BLANKET, MINERAL-FIBER BOARD OR POLYOLEFIN
P. EXPOSED, ROUND AND FLAT-OVAL, EXHAUST-AIR DUCT INSULATION: FLEXIBLE ELASTOMERIC, MINERAL-FIBER BLANKET, MINERAL-FIBER BOARD OR POLYOLEFIN
Q. EXPOSED, RECTANGULAR, SUPPLY-AIR DUCT INSULATION: FLEXIBLE ELASTOMERIC, MINERAL-FIBER BLANKET, MINERAL-FIBER BOARD OR POLYOLEFIN
R. EXPOSED, RECTANGULAR, RETURN-AIR DUCT INSULATION: FLEXIBLE ELASTOMERIC, MINERAL-FIBER BLANKET, MINERAL-FIBER BOARD OR POLYOLEFIN
S. EXPOSED, RECTANGULAR, OUTDOOR-AIR DUCT INSULATION: FLEXIBLE ELASTOMERIC, MINERAL-FIBER BLANKET, MINERAL-FIBER BOARD OR POLYOLEFIN
T. EXPOSED, RECTANGULAR, EXHAUST-AIR DUCT INSULATION: FLEXIBLE ELASTOMERIC, MINERAL-FIBER BLANKET, MINERAL-FIBER BOARD OR POLYOLEFIN
U. EXPOSED, SUPPLY-AIR PLENUM INSULATION: FLEXIBLE ELASTOMERIC, MINERAL-FIBER BLANKET, MINERAL-FIBER BOARD OR POLYOLEFIN
V. EXPOSED, RETURN-AIR PLENUM INSULATION: FLEXIBLE ELASTOMERIC, MINERAL-FIBER BLANKET, MINERAL-FIBER BOARD OR POLYOLEFIN
W. EXPOSED, OUTDOOR-AIR PLENUM INSULATION: FLEXIBLE ELASTOMERIC, MINERAL-FIBER BLANKET, MINERAL-FIBER BOARD OR POLYOLEFIN
X. EXPOSED, EXHAUST-AIR PLENUM INSULATION: FLEXIBLE ELASTOMERIC, MINERAL-FIBER BLANKET, MINERAL-FIBER BOARD OR POLYOLEFIN.
- 1.4 ABOVEGROUND, OUTDOOR DUCT AND PLENUM INSULATION SCHEDULE
A. CONCEALED, ROUND AND FLAT-OVAL, SUPPLY-AIR DUCT INSULATION: MINERAL-FIBER BLANKET OR MINERAL-FIBER BOARD
B. CONCEALED, ROUND AND FLAT-OVAL, RETURN-AIR DUCT INSULATION: MINERAL-FIBER BLANKET OR MINERAL-FIBER BOARD
C. CONCEALED, ROUND AND FLAT-OVAL, OUTDOOR-AIR DUCT INSULATION: MINERAL-FIBER BLANKET OR MINERAL-FIBER BOARD
D. CONCEALED, RECTANGULAR, SUPPLY-AIR DUCT INSULATION: MINERAL-FIBER BLANKET OR MINERAL-FIBER BOARD
E. CONCEALED, RECTANGULAR, RETURN-AIR DUCT INSULATION: MINERAL-FIBER BLANKET OR MINERAL-FIBER BOARD
F. CONCEALED, SUPPLY-AIR PLENUM INSULATION: MINERAL-FIBER BLANKET OR MINERAL-FIBER BOARD
G. CONCEALED, RETURN-AIR PLENUM INSULATION: MINERAL-FIBER BLANKET OR MINERAL-FIBER BOARD
H. EXPOSED, ROUND AND FLAT-OVAL, SUPPLY-AIR DUCT INSULATION: MINERAL-FIBER BLANKET [MINERAL-FIBER BOARD OR MINERAL-FIBER PIPE AND TANK
I. EXPOSED, ROUND AND FLAT-OVAL, RETURN-AIR DUCT INSULATION: MINERAL-FIBER BLANKET OR MINERAL-FIBER BOARD
J. EXPOSED, RECTANGULAR, SUPPLY-AIR DUCT INSULATION: MINERAL-FIBER BLANKET OR MINERAL-FIBER BOARD
K. EXPOSED, RECTANGULAR, RETURN-AIR DUCT INSULATION: MINERAL-FIBER BLANKET OR MINERAL-FIBER BOARD
L. EXPOSED, SUPPLY-AIR PLENUM INSULATION: MINERAL-FIBER BLANKET OR MINERAL-FIBER BOARD
M. EXPOSED, RETURN-AIR PLENUM INSULATION: MINERAL-FIBER BLANKET OR MINERAL-FIBER BOARD

END OF SECTION 230713

HEATING, VENTILATING AND AIR CONDITIONING

SECTION 230800 - COMMISSIONING OF HVAC

- 1.1 COMMISSIONING PROCESS ACTIVITIES
A. TESTING PREPARATION
1. CERTIFY THAT HVAC&R SYSTEMS, SUBSYSTEMS, AND EQUIPMENT HAVE BEEN INSTALLED, CALIBRATED, AND STARTED AND ARE OPERATING ACCORDING TO THE CONTRACT DOCUMENTS.
2. CERTIFY THAT HVAC&R INSTRUMENTATION AND CONTROL SYSTEMS HAVE BEEN COMPLETED AND CALIBRATED, THAT THEY ARE OPERATING ACCORDING TO THE CONTRACT DOCUMENTS, AND THAT PRETEST SET POINTS HAVE BEEN RECORDED.
3. CERTIFY THAT TESTING, ADJUSTING, AND BALANCING PROCEDURES HAVE BEEN COMPLETED AND THAT TESTING, ADJUSTING, AND BALANCING REPORTS HAVE BEEN SUBMITTED, DISCREPANCIES CORRECTED, AND CORRECTIVE WORK APPROVED.
4. SET SYSTEMS, SUBSYSTEMS, AND EQUIPMENT INTO OPERATING MODE TO BE TESTED (E.G., NORMAL SHUTDOWN, NORMAL AUTO POSITION, NORMAL MANUAL POSITION, UNOCCUPIED CYCLE, EMERGENCY POWER, AND ALARM CONDITIONS).
5. INSPECT AND VERIFY THE POSITION OF EACH DEVICE AND INTERLOCK IDENTIFIED ON CHECKLISTS.
6. CHECK SAFETY CUTOUTS, ALARMS, AND INTERLOCKS WITH SMOKE CONTROL AND LIFE-SAFETY SYSTEMS DURING EACH MODE OF OPERATION.
7. TESTING INSTRUMENTATION: INSTALL MEASURING INSTRUMENTS AND LOGGING DEVICES TO RECORD TEST DATA AS DIRECTED BY THE CxA.
8. PROVIDE FOR ANY ADDITIONAL TESTING AND SUPPORT AS MAY BE REQUIRED BY LOCAL AUTHORITIES AND THE COMMISSIONING AGENT.
B. REQUIRED COMMISSIONING DOCUMENTATION:
1. SUBMITTALS DELIVERY AND REVIEW PLAN.
2. IDENTIFICATION OF INSTALLED SYSTEMS, ASSEMBLIES, EQUIPMENT, AND COMPONENTS.
3. CONSTRUCTION CHECKLISTS.
4. CERTIFICATE OF COMPLETION.
5. CERTIFICATE OF READINESS.
6. TEST AND INSPECTION REPORTS AND CERTIFICATES.
7. CORRECTIVE ACTION DOCUMENTS.
8. VERIFICATION OF TESTING, ADJUSTING, AND BALANCING REPORTS.
9. PROVIDE ANY ADDITIONAL DOCUMENTATION AS MAY BE REQUIRED BY LOCAL AUTHORITIES AND THE COMMISSIONING AGENT.

END OF SECTION 230800

HEATING, VENTILATING AND AIR CONDITIONING

SECTION 231123 - FACILITY NATURAL-GAS PIPING

- 1.1 SUMMARY
A. NATURAL-GAS PIPING WITHIN THE BUILDING AND DISTRIBUTION ON THE PROJECT SITE.
- 1.2 PERFORMANCE REQUIREMENTS
A. MINIMUM OPERATING-PRESSURE RATINGS:
1. PIPING AND VALVES: 100 PSIG (690 KPA) MINIMUM UNLESS OTHERWISE INDICATED.
2. SERVICE REGULATORS: 65 PSIG (450 KPA) MINIMUM UNLESS OTHERWISE INDICATED.
3. MINIMUM OPERATING PRESSURE OF SERVICE METER: 5 PSIG (34.5 KPA).
B. NATURAL-GAS SYSTEM PRESSURES WITHIN BUILDINGS: 0.5 PSIG (3.45 KPA) OR LESS.
- 1.3 MATERIALS
A. PIPING SPECIALTIES:
1. APPLIANCE FLEXIBLE CONNECTORS LISTED WITH CAPACITY MEETING OR EXCEEDING APPLIANCE RATING.
2. QUICK-DISCONNECT DEVICES.
3. Y-PATTERN STRAINERS.
4. WEATHERPROOF VENT CAP.
B. MANUAL GAS SHUTOFF VALVES:
1. TWO-PIECE, FULL OR REGULAR -PORT BRONZE BALL VALVES WITH BRONZE TRIM.
2. BRONZE PLUG VALVES.
3. CAST-IRON, NONLUBRICATED AND LUBRICATED PLUG VALVES.
4. PE BALL VALVES.
5. VALVE BOXES.
C. PRESSURE REGULATORS:
1. LINE PRESSURE REGULATORS.
2. APPLIANCE PRESSURE REGULATORS.
D. DIELECTRIC FITTINGS: DIELECTRIC UNIONS, DIELECTRIC FLANGES AND DIELECTRIC-FLANGE KITS
E. DETECTABLE WARNING TAPE FOR UNDERGROUND PIPING.
- 1.4 OUTDOOR PIPING SCHEDULE
A. UNDERGROUND PIPING: STEEL PIPE WITH WELDED JOINTS.
B. ABOVEGROUND PIPING: STEEL PIPE WITH THREADED JOINTS OR WELDED JOINTS
C. BRANCH PIPING IN CAST-IN-PLACE CONCRETE: ANNEALED-TEMPER COPPER TUBE WITH BRAZED OR FLARED JOINTS.
D. CONTAINMENT CONDUIT: STEEL PIPE WITH WELDED JOINTS.
- 1.5 INDOOR PIPING SCHEDULE FOR PRESSURES LESS THAN 0.5 PSIG (3.45 KPA)
A. ABOVEGROUND BRANCH PIPING NPS 1 (DN 25) AND SMALLER: STEEL PIPE WITH THREADED JOINTS.
B. ABOVEGROUND DISTRIBUTION PIPING: STEEL PIPE WITH THREADED OR WELDED JOINTS
C. UNDERGROUND PIPING: STEEL PIPE WITH THREADED OR WELDED JOINTS
D. CONTAINMENT CONDUIT AND VENT PIPING: STEEL PIPE WITH WELDED JOINTS.

END OF SECTION 231123



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HEATING, VENTILATING AND AIR CONDITIONING

SECTION 232300 - REFRIGERANT PIPING

- 1.1 PERFORMANCE REQUIREMENTS
- A. QUALITY STANDARDS: ASHRAE 15 AND ASME B31.5.
- B. LINE TEST PRESSURES FOR R-410A:
- SUCTION LINES FOR AIR-CONDITIONING APPLICATIONS: 300 PSIG (2068 KPA).
 - SUCTION LINES FOR HEAT-PUMP APPLICATIONS: 535 PSIG (3689 KPA).
 - HOT-GAS AND LIQUID LINES: 535 PSIG (3689 KPA).
- 1.2 PRODUCTS
- A. COPPER TUBE AND FITTINGS: TYPE K OR L, TYPE A OR B OR TYPE ACR.
- B. TIN-BRONZE BELLOW, FLEXIBLE CONNECTORS.
- C. VALVES AND SPECIALTIES:
- DIAPHRAGM PACKLESS VALVES.
 - PACKED-ANGLE VALVES.
 - CHECK VALVES.
 - SERVICE VALVES.
 - SOLENOID VALVES: 24, 120 OR 208 V AC.
 - SAFETY RELIEF VALVES.
 - THERMOSTATIC EXPANSION VALVES FOR 40 DEG F (4.4 DEG C) SUCTION TEMPERATURE; ADJUSTABLE OR NONADJUSTABLE SUPERHEAT.
 - HOT-GAS BYPASS VALVES WITH INTERNAL OR EXTERNAL EQUALIZER, 24, 120 OR 208 -V AC, AND SET PRESSURE.
 - STRAIGHT-TYPE STRAINERS.
 - ANGLE-TYPE STRAINERS.
 - MOISTURE/LIQUID INDICATORS.
 - REPLACEABLE-CORE FILTER DRYERS WITH ACTIVATED ALUMINA OR CHARCOAL MEDIA, 2-PSIG (14-KPA) MAXIMUM PRESSURE LOSS, AND RATED FLOW.
 - PERMANENT FILTER DRYERS WITH ACTIVATED ALUMINA OR CHARCOAL MEDIA, 2-PSIG (14-KPA) MAXIMUM PRESSURE LOSS, AND RATED FLOW.
 - MUFFLERS.
 - RECEIVERS.
 - LIQUID ACCUMULATORS.
- 1.3 REFRIGERANTS
- A. R-410A.
- 1.4 PIPING APPLICATION SCHEDULES
- A. PIPING APPLICATIONS FOR REFRIGERANT R-410A: MAXIMUM NPS 4 (DN 100).
- SUCTION LINES FOR CONVENTIONAL AIR-CONDITIONING APPLICATIONS: COPPER.
 - HOT-GAS AND LIQUID LINES, [AND SUCTION LINES FOR HEAT-PUMP APPLICATIONS]:
 - NPS 2 (DN 50) AND SMALLER: COPPER WITH BRAZED OR SOLDERED JOINTS.
 - SAFETY-RELIEF-VALVE DISCHARGE PIPING:
 - NPS 2 (DN 50) AND SMALLER: COPPER WITH BRAZED OR SOLDERED JOINTS.
- 1.5 INSULATION
- A. 3/4" (19MM) MINIMUM THICKNESS, SELF-SEALING CLOSED CELL FOAM INSULATION APPLIED TO SUCTION PIPING.
- B. PROVIDE LINE SET SHROUD WHERE MOUNTED EXTERIOR TO BUILDING INCLUDING ROOF TO PROTECT INSULATION.

END OF SECTION 232300

HEATING, VENTILATING AND AIR CONDITIONING

SECTION 233113 - METAL DUCTS

- 1.1 MATERIALS
- A. SINGLE-WALL RECTANGULAR DUCTS AND FITTINGS: COMPLY WITH SMACNA'S "HVAC DUCT CONSTRUCTION STANDARDS - METAL AND FLEXIBLE" BASED ON INDICATED STATIC-PRESSURE CLASS UNLESS OTHERWISE INDICATED.
- B. SINGLE-WALL ROUND AND FLAT-OVAL DUCTS AND FITTINGS: COMPLY WITH SMACNA'S "HVAC DUCT CONSTRUCTION STANDARDS - METAL AND FLEXIBLE", CHAPTER 3, "ROUND, OVAL, AND FLEXIBLE DUCT," BASED ON INDICATED STATIC-PRESSURE CLASS UNLESS OTHERWISE INDICATED. SPIRAL ROUND OR SPIRAL OVAL DUCTS SHALL BE USED WHERE EXPOSED.
- C. SHEET METAL MATERIALS:
- GALVANIZED SHEET STEEL.
 - FINISHES FOR SURFACES EXPOSED TO VIEW: MILL PHOSPHATIZED.
- D. DUCT LINER:
- FIBROUS GLASS, TYPE I, FLEXIBLE, TYPE II, RIGID
 - WATER-BASED LINER ADHESIVE: VOC CONTENT OF 80 G/L OR LESS FOR INTERIOR APPLICATIONS.
 - FLEXIBLE ELASTOMERIC.
 - NATURAL FIBER.
- E. SEALANT MATERIALS:
- TWO-PART TAPE SEALING SYSTEM: VOC CONTENT OF 250 G/L OR LESS FOR INTERIOR APPLICATIONS.
 - WATER-BASED JOINT AND SEAM SEALANT: VOC CONTENT OF 250 G/L OR LESS FOR INTERIOR APPLICATIONS.
 - FLANGED JOINT SEALANT: VOC CONTENT OF 250 G/L OR LESS FOR INTERIOR APPLICATIONS.
 - FLANGE GASKETS.
 - ROUND DUCT JOINT O-RING SEALS.
- 1.2 SEISMIC-RESTRAINT DEVICES
- A. CHANNEL SUPPORT SYSTEM.
- B. GALVANIZED OR STAINLESS-STEEL RESTRAINT CABLES.
- C. HANGER ROD STIFFENER: STEEL TUBE OR STEEL SLOTTED-SUPPORT-SYSTEM SLEEVE WITH INTERNALLY BOLTED CONNECTIONS OR REINFORCING STEEL ANGLE CLAMPED TO HANGER ROD.
- 1.3 DUCT CLEANING
- A. CLEAN NEW AND EXISTING DUCT SYSTEM(S) BEFORE TESTING, ADJUSTING, AND BALANCING.
- B. CLEAN THE FOLLOWING ITEMS:
- AIR OUTLETS AND INLETS.
 - SUPPLY, RETURN, AND EXHAUST FANS.
 - AIR-HANDLING UNITS.
 - COILS AND RELATED COMPONENTS.
 - RETURN-AIR DUCTS, DAMPERS, ACTUATORS, AND TURNING VANES.
 - SUPPLY-AIR DUCTS, DAMPERS, ACTUATORS, AND TURNING VANES.
 - DEDICATED EXHAUST AND VENTILATION COMPONENTS AND MAKEUP AIR SYSTEMS.
- 1.4 DUCT SCHEDULE
- A. ALL DUCTS SHALL BE GALVANIZED STEEL.
- 1.5 HANGERS AND SUPPORT
- A. HANGER RODS: ELECTROGALVANIZED, ALL-THREAD RODS OR GALVANIZED RODS WITH THREADS PAINTED WITH ZINC-CHROMATE PRIMER AFTER INSTALLATION.
- B. STRAP AND ROD SIZES: COMPLY WITH SMACNA'S "HVAC DUCT CONSTRUCTION STANDARDS - METAL AND FLEXIBLE," TABLE 5-1 (TABLE 5-1M), "RECTANGULAR DUCT HANGERS MINIMUM SIZE," AND TABLE 5-2, "MINIMUM HANGER SIZES FOR ROUND DUCT."
- C. STEEL CABLES FOR GALVANIZED-STEEL DUCTS: GALVANIZED STEEL COMPLYING WITH ASTM A 603.
- D. STEEL CABLE END CONNECTIONS: CADMIUM-PLATED STEEL ASSEMBLIES WITH BRACKETS, SWIVEL, AND BOLTS DESIGNED FOR DUCT HANGER SERVICE; WITH AN AUTOMATIC-LOCKING AND CLAMPING DEVICE.
- E. DUCT ATTACHMENTS: SHEET METAL SCREWS, BLIND RIVETS, OR SELF-TAPPING METAL SCREWS; COMPATIBLE WITH DUCT MATERIALS.
- F. TRAPEZE AND RISER SUPPORTS:
- SUPPORTS FOR GALVANIZED-STEEL DUCTS: GALVANIZED-STEEL SHAPES AND PLATES.
 - SUPPORTS FOR STAINLESS-STEEL DUCTS: STAINLESS-STEEL SHAPES AND PLATES.
 - SUPPORTS FOR ALUMINUM DUCTS: ALUMINUM OR GALVANIZED STEEL COATED WITH ZINC CHROMATE.

END OF SECTION 233113

HEATING, VENTILATING AND AIR CONDITIONING

SECTION 233300 - AIR DUCT ACCESSORIES

- 1.1 QUALITY ASSURANCE
- A. INSTALLATION STANDARDS: NFPA 90A, NFPA 90B, AND SMACNA'S "HVAC DUCT CONSTRUCTION STANDARDS - METAL AND FLEXIBLE."
- B. MOTORIZED AND NON-MOTORIZED DAMPERS USED FOR OUTSIDE AIR INTAKES, EXHAUST AND PRESSURE RELIEF (INCLUDING THOSE WITHIN PACKAGED HVAC EQUIPMENT) SHALL HAVE A MAXIMUM AIR LEAKAGE VALUE PER THE ENERGY CODE OR ASHRAE 90.1 WHEN TESTED PER AMCA STD. 500.
- 1.2 PRODUCTS
- A. BACKDRAFT AND PRESSURE RELIEF DAMPERS: MULTIPLE BLADE, PARALLEL ACTION, GRAVITY BALANCED WITH RETURN SPRINGS.
- B. BAROMETRIC RELIEF DAMPERS: HORIZONTAL OR VERTICAL MOUNTING; MULTIPLE BLADE; PARALLEL ACTION, GRAVITY BALANCED WITH RETURN SPRINGS.
- C. MANUAL VOLUME DAMPERS: MULTIPLE AND SINGLE BLADE, PARALLEL- AND OPPOSED-BLADE DESIGN WITH LINKAGE OUTSIDE AIRSTREAM.
- STANDARD, STEEL, MANUAL VOLUME DAMPERS.
 - STANDARD, ALUMINUM, MANUAL VOLUME DAMPERS.
 - LOW-LEAK, STEEL, MANUAL VOLUME DAMPERS.
 - LOW-LEAK, ALUMINUM, MANUAL VOLUME DAMPERS.
- D. CONTROL DAMPERS: PARALLEL, OPPOSED-BLADE DESIGN; GALVANIZED-STEEL, STAINLESS-STEEL OR ALUMINUM FRAME AND BLADES.
- E. FIRE DAMPERS: STATIC, DYNAMIC, STATIC AND DYNAMIC, REPLACEABLE, ELECTRIC OR PNEUMATIC HEAT-RESPONSIVE DEVICE.
- F. CEILING RADIATION DAMPERS: REPLACEABLE HEAT-RESPONSIVE DEVICE.
- G. SMOKE DAMPERS:
- CURTAIN TYPE WITH BLADES INSIDE AIRSTREAM, CURTAIN TYPE WITH BLADES OUTSIDE AIRSTREAM, MULTIPLE-BLADE TYPE OR CURTAIN TYPE WITH BLADES OUTSIDE AIRSTREAM EXCEPT WHEN LOCATED BEHIND GRILLE, WHERE BLADES MAY BE INSIDE AIRSTREAM.
 - LEAKAGE: CLASS I OR CLASS II.
- H. COMBINATION FIRE AND SMOKE DAMPERS: STATIC, DYNAMIC, STATIC AND DYNAMIC, REPLACEABLE, ELECTRIC OR PNEUMATIC HEAT-RESPONSIVE DEVICE.
- I. CORRIDOR DAMPERS: REPLACEABLE HEAT-RESPONSIVE DEVICE AND DAMPER MOTORS WITH MODULATING OR TWO-POSITION ACTION.
- J. FLANGE CONNECTORS.
- K. DUCT SILENCERS: FACTORY FABRICATED AND TESTED, ROUND OR RECTANGULAR.
- L. TURNING VANES: SINGLE OR DOUBLE-BLADE, GALVANIZED SHEET STEEL.
- M. REMOTE DAMPER OPERATORS.
- N. DUCT-MOUNTED ACCESS DOORS: DOUBLE WALL, RECTANGULAR, GALVANIZED SHEET STEEL WITH INSULATION.
- O. PRESSURE RELIEF ACCESS DOORS: SINGLE WALL OR DOUBLE WALL WITH INSULATION.
- P. FLEXIBLE CONNECTORS: INDOOR, OUTDOOR, INDOOR AND OUTDOOR, HIGH TEMPERATURE OR HIGH-CORROSIVE ENVIRONMENT, AND WITH THRUST LIMITS FOR FLEXIBLE CONNECTIONS AT HIGH-PRESSURE FAN DISCHARGE.
- Q. FLEXIBLE DUCTS: NONINSULATED OR INSULATED.
- R. DUCT SECURITY BARS.
- S. DUCT ACCESSORY HARDWARE.

END OF SECTION 233300

HEATING, VENTILATING AND AIR CONDITIONING

SECTION 233713 - DIFFUSERS, REGISTERS, AND GRILLES

- 1.1 PRODUCTS
- A. SEE MECHANICAL SCHEDULE FOR SPECIFIC DIFFUSERS, REGISTERS, AND GRILLES.
- B. DIFFUSERS: METAL CONSTRUCTION, EXCEPT USE ALUMINUM MATERIAL WHEN IN DAMP AREAS.
- ROUND CEILING DIFFUSERS, FULLY ADJUSTABLE AND TWO POSITION.
 - RECTANGULAR AND SQUARE CEILING DIFFUSERS, FIXED, TWO POSITION AND ADJUSTABLE.
 - LOUVER FACE DIFFUSERS.
 - LINEAR BAR DIFFUSERS WITH NARROW, WIDE OR PENCIL-PROOF CORE SPACING ARRANGEMENT.
 - LINEAR SLOT DIFFUSERS.
- C. REGISTERS AND GRILLES: METAL CONSTRUCTION, EXCEPT USE ALUMINUM MATERIAL WHEN IN DAMP AREAS.
- ADJUSTABLE BAR REGISTERS AND GRILLES.
 - FIXED FACE REGISTERS AND GRILLES.
 - LINEAR BAR GRILLES WITH GRID AND PERFORATED FACE ARRANGEMENT.
- D. EXTERIOR LOUVERS:
- WEATHERPROOF, RAINPROOF DESIGN.
 - FRAME STYLE SHALL BE COMPATIBLE WITH THE EXTERIOR FINISH OF BUILDING AND WALL CONSTRUCTION.
 - DRAINABLE BLADE CONSTRUCTION.
 - CAULK SLOTS.
 - GALVANIZED REMOVABLE BIRD SCREEN.
 - COORDINATE FINISH WITH ARCHITECT.

END OF SECTION 233713

HEATING, VENTILATING AND AIR CONDITIONING

SECTION 237413 - PACKAGED, OUTDOOR, CENTRAL-STATION AIR-HANDLING UNITS

- 1.1 MANUFACTURED UNITS
- A. CASING:
- GALVANIZED STEEL PAINTED WITH BAKED ENAMEL.
 - GALVANIZED-STEEL LINER.
 - INSULATED WITH FIBERGLASS.
 - GALVANIZED OR STAINLESS-STEEL DRAIN PAN WITH DRAIN CONNECTION ON BOTH SIDES.
- B. SUPPLY-AIR FAN: DIRECT DRIVEN, DOUBLE WIDTH FORWARD CURVED BACKWARD INCLINED, CENTRIFUGAL.
- SUPPLY-AIR FAN: BELT DRIVEN, FORWARD CURVED, CENTRIFUGAL.
- C. CONDENSER-COIL FAN: DIRECT-FORWARD PROPELLER.
- D. RELIEF-AIR FAN: PROPELLER, FORWARD CURVED OR BACKWARD INCLINED.
- E. SUPPLY-AIR REFRIGERANT COIL:
- ALUMINUM OR COPPER-PLATE FINS AND SEAMLESS COPPER TUBE.
 - BAKED PHENOLIC OR CATHODIC EPOXY COATING.
- F. OUTDOOR-AIR REFRIGERANT COIL:
- ALUMINUM OR COPPER-PLATE FINS AND SEAMLESS COPPER TUBE.
 - BAKED PHENOLIC OR CATHODIC EPOXY COATING.
- G. HOT-GAS REHEAT REFRIGERANT COIL:
- ALUMINUM OR COPPER-PLATE FINS AND SEAMLESS COPPER TUBE.
 - BAKED PHENOLIC OR CATHODIC EPOXY COATING.
- H. ELECTRIC-RESISTANCE HEATING:
- OPEN-COIL RESISTANCE WIRE.
 - STEP OR SCR CONTROLLER.
- I. REFRIGERANT CIRCUIT COMPONENTS:
- NUMBER OF REFRIGERANT CIRCUITS: NUMBER AS SCHEDULED.
 - COMPRESSOR: HERMETIC SCROLL.
 - REFRIGERANT: R-407C OR R-410A.
 - LOW-AMBIENT KIT.
 - HOT-GAS REHEAT VALVE.
 - HOT-GAS BYPASS VALVE.
 - FOUR-WAY REVERSING VALVE.
- J. FILTERS: DISPOSABLE, MINIMUM 90 PERCENT ARRESTANCE, AND MINIMUM MERV 6.
- K. GAS FURNACE:
- HEAT EXCHANGER AND DRAIN PAN: STAINLESS STEEL.
 - FUEL: NATURAL OR PROPANE.
 - IGNITION: ELECTRONIC.
 - HIGH-ALTITUDE MODEL OR KIT.
 - GRAVITY OR POWER VENT.
 - SINGLE-STAGE, TWO-STAGE OR MODULATING GAS CONTROL VALVE.
- L. OUTDOOR-AIR DAMPER: 0 TO 25 PERCENT, WITH MANUAL OR MOTORIZED DAMPER AND HOOD.
- M. OUTDOOR- AND RETURN-AIR MIXING DAMPERS: 0 TO 100 PERCENT ECONOMIZER WITH MOTORIZED DAMPERS AND HOOD.
- N. ELECTRICAL POWER CONNECTION: SINGLE WITH UNIT-MOUNTED DISCONNECT.
- O. BASIC UNIT CONTROLS:
- CONTROL BOARD TO BE COMPATIBLE WITH CONTROL SYSTEM (EMS, STANDARD AND DCV CONTROLS).
 - WALL-MOUNTED HUMIDISTAT OR SENSOR WITH CONCEALED OR EXPOSED SET POINT AND CONCEALED OR EXPOSED INDICATION.
 - REMOTE WALL OR UNIT-MOUNTED ANNUNCIATOR PANEL.
- P. ELECTRONIC CONTROLLERS:
- SAFETY CONTROLS.
 - SCHEDULED CONTROLS.
 - UNOCCUPIED PERIOD CONTROLS.
 - SUPPLY FAN CONTROLS.
 - REFRIGERANT CIRCUIT CONTROLS.
 - HOT-GAS REHEAT-COIL CONTROLS.
 - GAS FURNACE CONTROLS.
 - ELECTRIC-HEATING-COIL CONTROLS.
 - FIXED MINIMUM OUTDOOR-AIR CONTROLS.
 - ECONOMIZER DRY-BULB OR ENTHALPY-BASED CONTROLS.
 - CARBON DIOXIDE SENSOR INPUT CONTROLS FOR DEMAND CONTROLLED VENTILATION.
- Q. ACCESSORIES:
- GAS BURNER COMPARTMENT HEATER.
 - DUPLEX ELECTRICAL OUTLET.
 - LOW-AMBIENT KIT.
 - FILTER DIFFERENTIAL PRESSURE SWITCH.
 - COIL OR HAIL GUARDS.
 - CONCENTRIC DIFFUSER.
 - SPECIALLY COATED COIL WHEN IN MARINE ENVIRONMENTS.
- R. ROOF CURB:
- VIBRATION ISOLATORS.
 - WIND RESTRAINTS.
 - SEISMIC RESTRAINTS.

END OF SECTION 237413



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STORE #: 3462
PROJECT #: 22121-104
ISSUE DATE:
DESIGN MANAGER:
PRODUCTION DESIGNER: N. TOPPEL
CHECKED BY:
ACIES PROJECT #: 230664
ACIES PROJ. MANAGER: DE
ACIES PROJ. SPECIALIST: MP

Revision Schedule			
Rev	Date	By	Description
A	02/20/24	Acies	Government Agency Revision
B	03/15/24	Acies	Government Agency Revision

SHEET TITLE:
MECHANICAL SPECIFICATIONS
SCALE: AS SHOWN N.T.S.

SHEET NUMBER:
M-0003

PACKAGED ROOFTOP UNIT SCHEDULE																										
EQUIP. TAG	STATUS	MANUFACTURER & MODEL	COOLING							AMBIENT TEMP., °F	HEATING			INDOOR FAN			COMPRESSORS		ELECTRICAL DATA					WEIGHT (LBS.)	O.A. CFM	REMARKS
			NOMINAL TONS	TOTAL MBH	SENSIBLE MBH	ENT. AIR DB (°F)	ENT. AIR WB (°F)	SEER (EER)	EER		GAS INPUT	OUTPUT (MBH)	COP (TE%)	CFM	ESP IN-WG	BHP	RLA	LRA	V	PH	Hz	MCA	MOCF			
RTU 1	EXISTING	CARRIER MODEL: 48TCD407A2A5	6	70.5	56.0	80.0	67.0	(12.7)	11.0	105	72.0	59.0	(82%)	2,400	0.5	0.8	19.6	136	208 / 230	3	60	36	50	890	400	1 3 4 6
RTU 2	EXISTING	CARRIER MODEL: 48TCD407A2A5	6	70.5	56.0	80.0	67.0	(12.7)	11.0	105	72.0	59.0	(82%)	2,400	0.5	0.8	19.6	136	208 / 230	3	60	36	50	890	400	1 3 4 6
RTU 3	NEW	CARRIER MODEL: 50FCQM08A2	7.5	82.3	62.8	80.0	67.0	(15.0)	11.2	105	-	83.0	3.4	3,000	0.5	1.0	13.1 / 13.1	83 / 83	208 / 230	3	60	43	50	1120	600	2 3 4 5 6 7

NOTES:

1 EXISTING GAS HEATING / ELECTRIC COOLING PACKAGE ROOFTOP UNIT, MOUNTED ON ROOF CURB TO REMAIN. 2 NEW HEAT PUMP HEATING / ELECTRIC COOLING PACKAGED ROOFTOP, MOUNTED ON EXISTING 14" ROOF CURB. 3 VERIFY OR PROVIDE DUCT SMOKE DETECTOR IN THE SUPPLY AIR DUCT TO SHUTOFF THE ROOFTOP UNIT UPON DETECTION OF SMOKE PER 2022 CMC. SMOKE DETECTOR TO BE ACCESSIBLE FROM ROOF. 4 PROGRAMMABLE THERMOSTAT WITH ZONE SENSOR. 5 UNIT TO BE PROVIDED WITH ECONOMIZER, DISCONNECT SWITCH, HAIL FUARDS, AND BACKDRAFT DAMPER. 6 PROVIDE WITH MERV 13 FILTERS. 7 PROVIDE POWER EXHAUST, POWERED THROUGH UNIT CONNECTION.

FAN SCHEDULE (NEW)													
EQUIP. TAG	MANUFACTURER & MODEL	QUANTITY	SERVICE	LOCATION	AIR FLOW (cfm)	TOTAL STATIC PRESSURE (inWC)	REVOL./MINUTE (RPM)	MOTOR HP	ELECTRICAL DATA			WEIGHT (LBS.)	REMARKS
									V	PH	Hz		
EF 1	GREENHECK MODEL: G-090-VG	1	RESTROOMS	ROOF	375	0.25	1150	0.03	115	1	60	29	1 2 3 4

NOTES:

1 ROOFTOP FAN, MUSHROOM TYPE. LOCATE A MINIMUM 10 FEET AWAY FROM ANY FRESH AIR INTAKE. 2 DISCONNECT SWITCH, POWER WIRING TO BE INTERLOCKED WITH AC UNITS OPERATING SCHEDULE. (USE TIME CLOCKS) OR TO BE INTERLOCKED WITH LIGHTING CONTROL PANEL (COORDINATE WITH ELECTRICIAN). 3 MOUNT ON ROOF CURB. 4 PROVIDE BACKDRAFT DAMPER.

AIR CURTAIN SCHEDULE (NEW)													
EQUIP. TAG	MANUFACTURER & MODEL	QUANTITY	SERVICE	LOCATION	AIR FLOW (cfm)	TOTAL STATIC PRESSURE (inWC)	MOTOR HP	ELECTRICAL DATA				WEIGHT (LBS.)	REMARKS
								V	PH	Hz	FLA		
X15057	READY-ACCESS MODEL: RCM	1	DT WINDOW	SEE PLAN	-	-	-	115	1	60	5	60	2
X00801	MARS AIR MODEL: STD236-1UA-OB	1	DOOR	SEE PLAN	900	0.25	0.5	115	1	60	5.1	60	1
X00802	MARS AIR MODEL: STD242-1UA-OB	1	DOOR	SEE PLAN	1,400	0.25	0.5	115	1	60	5.1	65	1
X00803	MARS AIR MODEL: STD272-2UA-OB	1	DOOR	SEE PLAN	1,800	0.25	2 x 0.5	115	1	60	10.2	120	1

NOTES:

1 UNHEATED, FOR INSTALLATION ABOVE DOOR. INTERLOCK AUTOMATIC ACTIVATION WITH THE DOOR BELOW. INSTALL PER MANUFACTURER SPECIFICATIONS. 2 UNHEATED, IN-CEILING RECESSED AIR CURTAIN, INTERLOCK AUTOMATIC ACTIVATION WITH THE DRIVE-THRU WINDOW BELOW. INSTALL PER MANUFACTURER SPECIFICATIONS.

AIR DEVICE SCHEDULE (NEW)						
MARK	QTY	DESCRIPTION	MANUFACTURER	MODEL	REMARKS	SHIP
11108	7	SQ. SUPPLY - LAY-IN AND HARD LID	TITUS	OMNI #3	24X24, 10", 12" DUCT	GC
11165	3	EXHAUST FOR RESTROOM	TITUS	350RL #3 8X8	8X8, 8" DUCT	GC
10925	4	SQ. RETURN- HARD LID	TITUS	TDC #3 24X24	24X24, 16" DUCT	GC
11163	2	SQ. RETURN- LAY-IN	TITUS	350RL #3	24X24, 16", 8" DUCT	GC
ADL-1	6	LINEAR SLOT SUPPLY DIFFUSER	TITUS	FL-25, 4FT	4 FT. 1-SLOT, 2.5" SLOT WIDTH, 10" DUCT	GC
ADL-2	4	LINEAR SLOT SUPPLY DIFFUSER	TITUS	FL-20, 4FT	4FT. 1-SLOT, 2" SLOT WIDTH, 8" DUCT	GC
ADL-3	4	SQ. RESTROOM SUPPLY GRILLE	TITUS	300RL #3	12"X12", 8", 10" DUCT	GC



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SCALE: AS SHOWN N.T.S.

SHEET NUMBER:
M-0004

CERTIFICATE OF COMPLIANCE - NONRESIDENTIAL PERFORMANCE COMPLIANCE METHOD NRCC-PRF-E

Nonresidential Performance Compliance Method (Page 1 of 14)

Project Name: 230664 Starbucks Sperry & Rogers Patterson CA Date Prepared: 2023-11-22

A. General Information

1	Project Name	230664 Starbucks Sperry & Rogers Patterson CA			
2	Run Title	Title 24 Analysis			
3	Project Location	2952 Speno Dr			
4	City	Patterson	5	Standards Version	Compliance 2022
6	Zip code	95363	7	Compliance Software (version)	EnergyPro 9.2
8	Climate Zone	12	9	Building Orientation (deg)	0
10	Building Type(s)	• Nonresidential	11	Weather File	MODESTO-CITY_STYP20.epw
12	Project Scope	• Existing alteration	13	Number of Dwelling Units	0
14	Total Conditioned Floor Area in Scope (ft ²)	2832	15	Total # of hotel/motel rooms	0
16	Total Unconditioned Floor Area (ft ²)	0	17	Fuel Type	Natural gas
18	Nonresidential Conditioned Floor Area	2832	19	Total # of Stories (Habitable Above Grade)	1
20	Residential Conditioned Floor Area	0			

CA Building Energy Efficiency Standards - 2022 Nonresidential Compliance Report Version: 2022.0.000 Report Generated: 2023-11-22 12:29:59
 Schema Version: rev 20220601 Compliance ID: EnergyPro-5387-1123-0496

CERTIFICATE OF COMPLIANCE - NONRESIDENTIAL PERFORMANCE COMPLIANCE METHOD NRCC-PRF-E

Nonresidential Performance Compliance Method (Page 2 of 14)

B. PROJECT SUMMARY

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

Building Components Complying via Performance				Building Components Complying Prescriptively			
Envelope (See Table G)	Nonres	Performance	Solar Thermal Water Heating (See Table I3)	<input type="checkbox"/>	Performance	The following building components are ONLY eligible for prescriptive compliance and should be documented on the NRCC form listed if within the scope of the permit application (i.e. compliance will not be shown on the NRCC-PRF-E).	
	MultiFam	Not Included		<input checked="" type="checkbox"/>	Not Included		
Mechanical (See Table H)	Nonres	Performance	Covered Process: Commercial Kitchens (see Table J)	<input type="checkbox"/>	Performance	Indoor Lighting (Unconditioned) 140.6 & 170.2(e)	NRCC-LTI-E is required
	MultiFam	Not Included		<input checked="" type="checkbox"/>	Not Included	Outdoor Lighting 140.7 & 170.2(e)	NRCC-LTO-E is required
Domestic Hot Water (See Table I)	Nonres	Performance	Covered Process: Laboratory Exhaust (see Table J)	<input type="checkbox"/>	Performance	Sign Lighting 140.8 & 170.2(e)	NRCC-LTS-E is required
	MultiFam	Not Included		<input checked="" type="checkbox"/>	Not Included	Building Components Complying with Mandatory Measures	
Lighting (Indoor Conditioned, see Table K)	Nonres	Not Included	Photovoltaics (see Table F)	<input type="checkbox"/>	Performance	Electrical power systems, commissioning, solar ready, elevator and escalator requirements are mandatory and should be documented on the NRCC form listed if applicable (i.e. compliance will not be shown on the NRCC-PRF-E).	
	MultiFam	Not Included		<input checked="" type="checkbox"/>	Not Included	Electrical Power Distribution 110.11	NRCC-ELC-E is required
			Battery (see Table F)	<input type="checkbox"/>	Performance	Commissioning 120.8	NRCC-CXR-E is required
				<input checked="" type="checkbox"/>	Not Included	Solar and Battery 110.10	NRCC-SAB-E is required

CA Building Energy Efficiency Standards - 2022 Nonresidential Compliance Report Version: 2022.0.000 Report Generated: 2023-11-22 12:29:59
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CERTIFICATE OF COMPLIANCE - NONRESIDENTIAL PERFORMANCE COMPLIANCE METHOD NRCC-PRF-E

Nonresidential Performance Compliance Method (Page 3 of 14)

C1. COMPLIANCE SUMMARY

	COMPLIES ³		
	Time Dependent Valuation (TDV)		Source Energy Use
	Efficiency ¹ (kBtu/ft ² - yr)	Total ² (kBtu/ft ² - yr)	Total ² (kBtu/ft ² - yr)
Standard Design	387.98	n/a	n/a
Proposed Design	285.15	n/a	n/a
Compliance Margins	102.83	n/a	n/a
	Pass	n/a	n/a

¹ Efficiency measures include improvements like a better building envelope and more efficient equipment
² Compliance Totals include efficiency, photovoltaics and batteries
³ New Construction, Complete Addition Scope: Building complies when all efficiency and total compliance margins are greater than or equal to zero and unmet load hour limits are not exceeded
 Existing, Addition and Alteration Scope: Building complies when efficiency compliance margin is greater than or equal to zero and unmet load hour limits are not exceeded

CA Building Energy Efficiency Standards - 2022 Nonresidential Compliance Report Version: 2022.0.000 Report Generated: 2023-11-22 12:29:59
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CERTIFICATE OF COMPLIANCE - NONRESIDENTIAL PERFORMANCE COMPLIANCE METHOD NRCC-PRF-E

Nonresidential Performance Compliance Method (Page 4 of 14)

C2. TDV ENERGY COMPLIANCE RESULTS FOR PERFORMANCE COMPONENTS (Annual TDV Energy Use, kBtu/ft² - yr)

Energy Component	COMPLIES ²		
	Standard Design (TDV)	Proposed Design (TDV)	Compliance Margin (TDV) ¹
Space Heating	30.5	13.31	17.19
Space Cooling	107.77	84.4	23.37
Indoor Fans	146.73	80.08	66.65
Heat Rejection	0	0	0
Pumps & Misc.	0	0	0
Domestic Hot Water	19.4	23.78	-4.38
Indoor Lighting	83.58	83.58	0
Flexibility	---	---	---
EFFICIENCY COMPLIANCE TOTAL	387.98	285.15	102.83 (26.5%)
Photovoltaics	---	---	---
Batteries	---	---	---
TOTAL COMPLIANCE	387.98	285.15	102.83 (26.5%)

¹ Notes: This number in parenthesis following the Compliance Margin in column 4, represents the Percent Better than Standard.

CA Building Energy Efficiency Standards - 2022 Nonresidential Compliance Report Version: 2022.0.000 Report Generated: 2023-11-22 12:29:59
 Schema Version: rev 20220601 Compliance ID: EnergyPro-5387-1123-0496



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Revision Schedule			
Rev	Date	By	Description
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B	03/15/24	Acies	Government Agency Revision

SHEET TITLE:
T-24 FORMS
 N.T.S.

SCALE: AS SHOWN
 SHEET NUMBER:
M-0005

C3. TDV ENERGY RESULTS FOR NON-REGULATED COMPONENTS ¹			
Non-Regulated Energy Component	Standard Design (TDV)	Proposed Design (TDV)	Compliance Margin (TDV) ¹
Receptacle	92.37	92.37	---
Process	---	---	---
Other Ltg	---	---	---
Process Motors	---	---	---
TOTAL (TOTAL COMPLIANCE + NON-REGULATED COMPONENTS)	480.35	377.52	102.83 (21.4%)

¹ Notes: This table is not used for Energy Code Compliance.

C6. 'ABOVE CODE' QUALIFICATIONS
 This project is pursuing CalGreen Tier 1 This project is pursuing CalGreen Tier 2

C7. ENERGY USE SUMMARY						
Energy Component	Standard Design Site (MWh)	Proposed Design Site (MWh)	Margin (MWh)	Standard Design Site (MBtu)	Proposed Design Site (MBtu)	Margin (MBtu)
Space Heating	---	0.9	---	30.5	3.9	26.6
Space Cooling	7.4	5.9	1.5	---	---	---
Indoor Fans	15.2	8.3	6.9	---	---	---
Heat Rejection	---	---	---	---	---	---
Pumps & Misc.	---	---	---	---	---	---
Domestic Hot Water	2.1	2.5	-0.4	---	---	---
Indoor Lighting	9.3	9.3	0	---	---	---
Flexibility	---	---	---	---	---	---
EFFICIENCY TOTAL	34	26.9	7.1	30.5	3.9	26.6
Photovoltaics	---	---	---	---	---	---
Batteries	---	---	---	---	---	---
ENERGY USE SUBTOTAL	34	26.9	7.1	30.5	3.9	26.6
Receptacle	10.3	10.3	0	---	---	---
Process	---	---	---	---	---	---
Other Ltg	---	---	---	---	---	---
Process Motors	---	---	---	---	---	---
ENERGY USE TOTAL	44.3	37.2	7.1	30.5	3.9	26.6

C8. ENERGY USE INTENSITY (EUI)				
	Standard Design (kBtu/ft ² / yr)	Proposed Design (kBtu/ft ² / yr)	Margin (kBtu/ft ² / yr)	Margin Percentage
GROSS EUI ¹	64.14	46.2	17.94	27.97
NET EUI ¹	64.14	46.2	17.94	27.97

¹ Notes: Gross EUI is Energy Use Total (not including PV)/Total Building Area. Net EUI is Energy Use Total (including PV)/Total Building Area.

D1. EXCEPTIONAL CONDITIONS
 • The project uses the Simplified Geometry Performance Modeling Approach which is not capable of modeling daylighting controls and assumes the prescriptive Secondary Daylit Control requirements are met. PRESCRIPTIVE COMPLIANCE documentation (form NRCC-LTI-02-E) for the requirements of section 140.6(d) Automatic Daylighting Controls in Secondary Daylit Zones is required.

G1. ENVELOPE GENERAL INFORMATION (conditioned spaces only)			
01	02	03	04
Opaque Surfaces & Orientation	Total Gross Surface Area (ft ²)	Total Fenestration Area (ft ²)	Window to Wall Ratio (%)
North-Facing ¹	642	16	2.49
East-Facing ²	494	54	10.93
South-Facing ³	627	292.5	46.65
West-Facing ⁴	502	84.2	16.77
Total	2265	446.7	19.72
Roof	2832	0	0

Notes
¹North-Facing is oriented to within 45 degrees of true north, including 45 00'00" east of north (NE), but excluding 45 00'00" west of north (NW).
²East-Facing is oriented to within 45 degrees of true east, including 45 00'00" south of east (SE), but excluding 45 00'00" north of east (NE).
³South-Facing is oriented to within 45 degrees of true south, including 45 00'00" west of south (SW), but excluding 45 00'00" east of south (SE).
⁴West-Facing is oriented to within 45 degrees of true west, including 45 00'00" north of west (NW), but excluding 45 00'00" south of west (SW).

G4. NONRESIDENTIAL AIR BARRIER	
01	02
Building Story Name	Air Barrier
Com-Floor 1	No air barrier

G5. OPAQUE SURFACE ASSEMBLY SUMMARY										
01 Surface Name	02 Construction Type	03 Area (ft ²)	04 Framing Type	05 Cavity R-Value	06 Continuous R-Value		07 Units	08 Value	09 Description of Assembly Layers	10 Status ¹
					Interior	Exterior				
Slab On Grade ⁸	Underground Floor	2,832	N/A	0	N/A	N/A	F-factor	0.73	Slab Type =Unheated slab on grade Insulation Orientation =None Insulation R-Value =none	E
TPO Roof 4 insulation ¹⁰	Roof	2,832	Wood	0	N/A	29.34	U-factor	0.0304	Single Ply Roofing - 1/4 in. Cellular polyisocyanurate (unfaced) - 5 in. R29 Vapor permeable felt - 1/8 in. Plywood - 3/4 in. Composite-1 Air - Cavity - Wall Roof Ceiling - 4 in. or more Gypsum Board - 5/8 in.	E
R-19 Wall ¹²	Exterior Wall	2,265	Wood	19	N/A	N/A	U-factor	0.0716	Stucco - 7/8 in. Vapor permeable felt - 1/8 in. Composite-2 Gypsum Board - 5/8 in.	A

¹ Status: N - New, A - Altered, E - Existing



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SHEET NUMBER:
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G6A. OPAQUE DOOR SUMMARY (NONRESIDENTIAL)			
01	02	03	04
Assembly Name	Area (ft ²)	Overall U-factor	Status ¹
Hollow Metal Door32	21	0.7	A

¹ Status: N - New, A - Altered, E - Existing

G7A. FENESTRATION ASSEMBLY SUMMARY (NONRESIDENTIAL)								
01	02	03	04	05	06	07	08	09
Fenestration Assembly Name	Fenestration Type/ Product Type / Frame Type	Certification Method ¹	Assembly Method	Area (ft ²)	Overall U-factor	Overall SHGC	Overall VT	Status ²
DT Window	Vertical fenestration Operable window N/A	NFRC	Site built	16	0.36	0.25	0.5	N
Storefront Glazing	Vertical fenestration Curtain wall N/A	NFRC	Site built	430.7	0.32	0.25	0.5	N

¹ Notes: Newly installed fenestration shall have a certified NFRC Label Certificate or use the CEC default tables found in Table 110.6-A and Table 110.6-B. Center of Glass (COG) values are for the glass-only, determined by the manufacturer, and are shown for ease of verification. Site-built fenestration values are calculated per Nonresidential Appendix NA6 and are used in the analysis.
² Status: N - New, A - Altered, E - Existing

H5. GENERAL EXHAUST FAN SUMMARY							
01	02	03	04	05	06	07	08
System ID	Zone Name	Qty	CFM	Power	Power Units	Continuous Operation?	Status ¹
Starbucks 325	3-Starbucks 3	1	375	0.03	BHP	No	N

¹ Status: N - New, A - Altered, E - Existing

H8. SYSTEM SPECIAL FEATURES			
01	02	03	04
System Name	Equipment Type	Interlocks per 140.4(n) ¹	Other Special Features and Controls
RTU 1	Single Zone Air Conditioner (SZAC) Air System	N/A	Zone(s) With CO2 Sensor Vent. Control Fixed DB
RTU 2	Single Zone Air Conditioner (SZAC) Air System	N/A	Zone(s) With CO2 Sensor Vent. Control Fixed DB
RTU 3	Package SZ VAV Heat Pump Air System	N/A	Zone(s) With CO2 Sensor Vent. Control Fixed DB
DHW1 - SHW	Service Hot Water	N/A	Fixed Temperature Control

Notes: This table includes controls related to the performance path only. For projects using the prescriptive path, mandatory and prescriptive controls requirements are documented on the NRCC-MCH-E.
¹ Yes = interlocks are provided, No = interlocks are not provided, NA means no operable openings.

H9. NONRESIDENTIAL / COMMON USE AREA & HOTEL/MOTEL VENTILATION						
01	02	03	04	05	06	07
Zone Name	Mechanical Ventilation			Conditioned Area (sf)	DCV or Occupant Sensor Controls, or Both	
	Ventilation Function	# of People	Supply OA CFM			Exhaust CFM
1-Starbucks 1	Retail - Sales	6.09	182.75	0	731	DCV
2-Starbucks 2	Retail - Sales	6.26	187.75	0	751	DCV
3-Starbucks 3	Retail - Sales	11.25	337.5	375	1350	DCV

H1. DRY SYSTEM EQUIPMENT (FURNACES, AIR HANDLING UNITS, HEAT PUMPS, VRF, ECONOMIZERS ETC.)												
01	02	03	04				05				11	12
			Total Heating Output (kBtu/h)	Supp Heat Output (kBtu/h)	Efficiency Unit	Efficiency	Total Cooling Output (kBtu/h)	Efficiency Unit	Efficiency			
RTU 1	Single Zone Air Conditioner (SZAC) Air System	1	59	0	AFUE	82	67.69	EER	11	Fixed DB	E	
RTU 2	Single Zone Air Conditioner (SZAC) Air System	1	59	0	AFUE	82	67.69	EER	11	Fixed DB	E	
RTU 3	Package SZ VAV Heat Pump Air System	1	86.45	0	COP	3.4	79.02	EER	11.2	Fixed DB	N	

¹ Status: N - New, A - Altered, E - Existing

H3. NONRESIDENTIAL / COMMON USE AREA FAN SYSTEMS SUMMARY													
01	02	03	04				05				11	12	13
			CFM	Power	Power Units	Control	Fan Type	CFM	Power	Power Units			
RTU 1	1	182.75	2,400	0.8	BHP	Constant Vol	N/A	N/A	N/A	N/A	N/A	N/A	E
RTU 2	1	187.75	2,400	0.8	BHP	Constant Vol	N/A	N/A	N/A	N/A	N/A	N/A	E
RTU 3	1	337.5	3,000	1	BHP	VSD	N/A	N/A	N/A	N/A	N/A	N/A	N

¹ Status: N - New, A - Altered, E - Existing

H11. ZONAL SYSTEM AND TERMINAL UNIT SUMMARY												
01	02	03	04		05			06			11	12
			Rated Capacity (kBtu/h)	Airflow (cfm)	Design	Min.	Min. Ratio	Power	Power Units	Cycles		
1-Starbucks 1-Trm	Uncontrolled	1	N/A	N/A	2,400	N/A	0	N/A	N/A	N/A	N/A	<input type="checkbox"/>
2-Starbucks 2-Trm	Uncontrolled	1	N/A	N/A	2,400	N/A	0	N/A	N/A	N/A	N/A	<input type="checkbox"/>
3-Starbucks 3-Trm	Variable Air Volume No Reheat Box	1	N/A	N/A	3,000	1,500	0.5	N/A	N/A	N/A	N/A	<input type="checkbox"/>

I1. WATER HEATER EQUIPMENT SUMMARY													
01	02	03	04	05	06	07	08	09	10	11	12	13	14
Name	Heater Element Type	Tank Type	Qty	Tank Vol (gal)	Rated Input	Rated Input Unit	Efficiency	Efficiency Unit	Tank Insulation R-value Int/Ext	Standby Loss Fraction	1st Hr. Rating or Flow Rate (gal)	Heat Pump Type	Tank Location or Ambient Condition
Bradford White2	Electricity	Storage	1	50	23.99	kW	0.9	TE	N/A	0.01	N/A	N/A	N/A

L. DECLARATION OF REQUIRED CERTIFICATES OF INSTALLATION	
Building Component	Form/Title
Envelope	NRCI-ENV-01-E - Must be submitted for all buildings
Envelope	NRCI-ENV-E - Envelope (for all buildings)
Mechanical	NRCI-MCH-01-E - Must be submitted for all buildings
Mechanical	NRCI-MCH-E - For all buildings with Mechanical Systems
Plumbing	NRCI-PLB-01-E - Must be submitted for all buildings
Plumbing	NRCI-PLB-E - For all buildings with Plumbing Systems



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PROJECT NAME:
SPERRY AND ROGERS

PROJECT ADDRESS:
 2952 SPENO DR,
 PATTERSON, CA 95363

STORE #: 3462
 PROJECT #: 22121-104
 ISSUE DATE:
 DESIGN MANAGER:
 PRODUCTION DESIGNER: N. TOPPEL
 CHECKED BY:
 ACIES PROJECT #: 230664
 ACIES PROJ. MANAGER: DE
 ACIES PROJ. SPECIALIST: MP

Revision Schedule			
Rev	Date	By	Description
A	02/20/24	Acies	Government Agency Revision
B	03/15/24	Acies	Government Agency Revision

SHEET TITLE:
T-24 FORMS
 N.T.S.

SCALE: AS SHOWN
 SHEET NUMBER:
M-0007



M. DECLARATION OF REQUIRED CERTIFICATES OF ACCEPTANCE

Selections made by Documentation Author indicate which Certificates of Acceptance must be submitted for the features to be recognized for compliance. These documents must be provided to the building inspector during construction and must be completed through an Acceptance Test Technician Certification Provider (ATTCP).

Building Component	Form/Title
Envelope	NRCA-ENV-02-F - NRFC label verification for fenestration
Mechanical	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
Mechanical	NRCA-MCH-05-A - Air Economizer Controls
Mechanical	NRCA-MCH-06-A Demand Control Ventilation Systems must be submitted for all systems required to employ demand controlled ventilation (refer to) can vary outside ventilation flow rates based on maintaining interior carbon dioxide (CO2) concentration setpoints.
Mechanical	NRCA-MCH-07-A Supply Fan Variable Flow Controls
Mechanical	NRCA-MCH-12-A FDD for Packaged Direct Expansion Units


N. DECLARATION OF REQUIRED CERTIFICATES OF VERIFICATION

Selections made by Documentation Author indicate which Certificates of Verification must be submitted for the features to be recognized for compliance. These documents must be retained and provided to the building inspector during construction and can be found online

There are no Certificates of Verification applicable to this project

Documentation Author's Declaration Statement


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

Documentation Author Name: Srdjan Rebraca	Documentation Author Signature: 
Company: ACIES Engineering	Signature Date: 2023-11-22
Address: 400 N. McCarthy Blvd	CEA/HERS Certification Identification (if applicable): M28498
City/State/Zip: Milpitas, CA 95035	Phone: (408) 522 5255

Responsible Person's Declaration statement

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

- The information provided on this Certificate of Compliance is true and correct.
- 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)
- 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.
- 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.
- I understand that a registered 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, and I will take the necessary steps to accomplish this requirement.
- I understand that a registered copy of this Certificate of Compliance is required to be included with the documentation the builder provides to the building owner at occupancy, and I will take the necessary steps to accomplish these requirements.

Responsible Designer Name:	Responsible Designer Signature:	
Company: MCG Architecture	Date Signed:	
Address: 15635 Alton Parkway Suite 100	License #:	
City/State/Zip: Irvine, CA 92618	Title:	Scope:
Phone: 949.553.1117		
Responsible Designer Name: Srdjan Rebraca	Responsible Designer Signature: 	
Company: ACIES ENGINEERING	Date Signed: 2023-11-22	
Address: 400 N. McCarthy Blvd	License #: M28498	
City/State/Zip: Milpitas, CA 95035	Title:	Scope:
Phone: (408) 522 5255		



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SPERRY AND ROGERS

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STORE #: 3462
 PROJECT #: 22121-104
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 DESIGN MANAGER:
 PRODUCTION DESIGNER: N. TOPPEL
 CHECKED BY:
 ACIES PROJECT #: 230664
 ACIES PROJ. MANAGER: DE
 ACIES PROJ. SPECIALIST: MP

Revision Schedule			
Rev	Date	By	Description
A	02/20/24	Acies	Government Agency Revision
B	03/15/24	Acies	Government Agency Revision

SHEET TITLE: **T-24 FORMS**
 SCALE: AS SHOWN N.T.S.

SHEET NUMBER: **M-0008**





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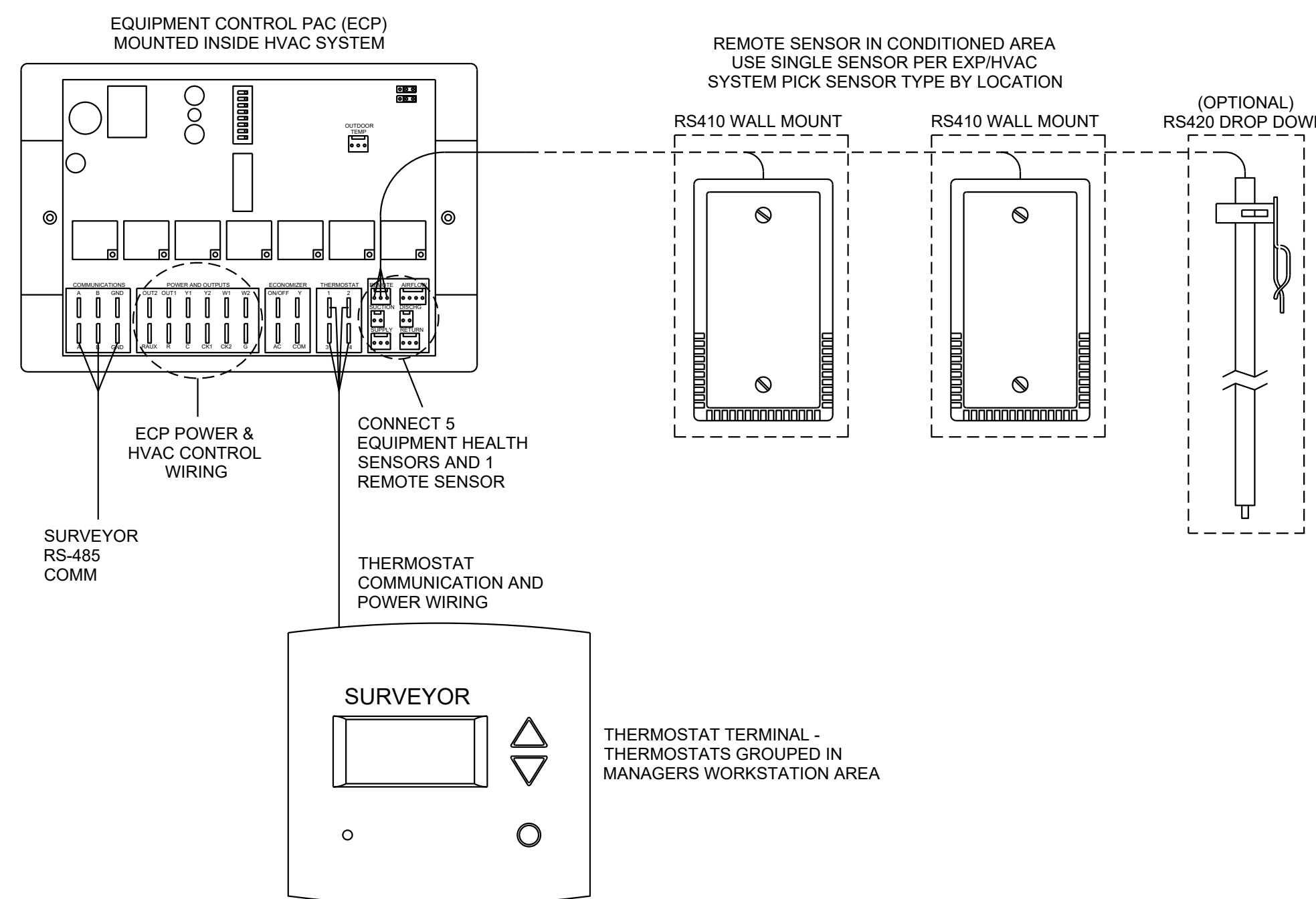
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GENERAL NOTES

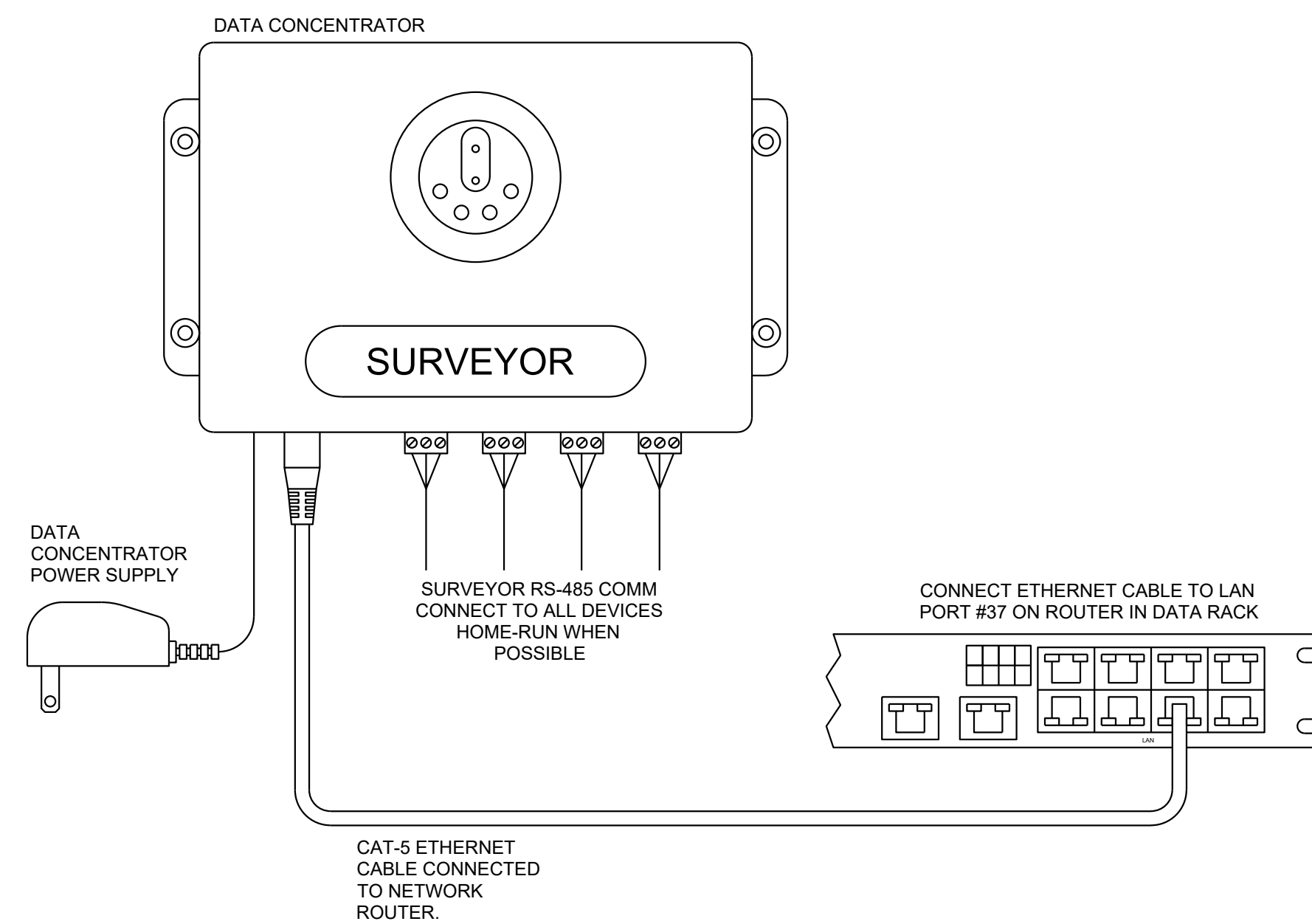
1. SURVEYOR ENERGY MANAGEMENT SYSTEM HARDWARE IS SUPPLIED BY STARBUCKS.
2. DRAWING FOR GENERAL INFORMATION, DESIGN INTENT, AND COORDINATION ONLY.
3. LOCAL BUILDING CODES TAKE PRECEDENCE OVER THIS DOCUMENT.
4. NOT ALL WIRING IS SHOWN ON THIS DRAWING. FOR CLARITY, ONLY ONE EXAMPLE OF EACH TYPE OF DEVICE IS SHOWN.
5. REFER TO THE SURVEYOR INSTALLATION INSTRUCTIONS FOR EACH COMPONENT FOR DETAILED WIRING AND ADDITIONAL CRITICAL INFORMATION.
6. CAUTION! INSTALLATION REQUIRES THE REMOVAL OF SAFETY COVERS AND EXPOSE THE INSTALLER TO HIGH VOLTAGE AND ELECTRICAL HAZARDS. USE OF A LICENSED ELECTRICIAN IS REQUIRED. FOLLOW ALL APPROPRIATE SAFETY PRECAUTIONS. ADDITIONAL SAFETY INFORMATION IS IN THE SURVEYOR INSTALLATION MANUALS.
7. WALL MOUNTED REMOTE SENSOR IS MOUNTED ON WALL 4 TO 5 FT AFF. AVOID AREAS WITH DIRECT AIRFLOW FROM SUPPLY REGISTERS.
8. USE A DROP DOWN SENSOR IF A WALL MOUNT SENSOR CANNOT BE INSTALLED DUE TO SPACE CONSTRAINTS (SEE NOTE 7 FOR REQUIREMENTS). THE SENSOR CLIPS TO THE T-BAR GRID AND ADJUSTED SO THE BOTTOM OF THE SENSOR IS 8 TO 9 FT AFF. ALLOW 2 FT OF CLEARANCE FROM METRO SHELVING AND AVOID AREAS WITH DIRECT AIRFLOW FROM SUPPLY REGISTERS.
9. FOR SURVEYOR EMS TECHNICAL SUPPORT AND SYSTEM COMMISSIONING, CONTACT SURVEYOR TECHNICAL SUPPORT, (855) 647-7660, OPTION 1 OR EMAIL INSTALLSUPPORT@VENSTAR.COM. HOURS 6:00 AM TO 8:00 PM PACIFIC, MON-FRI.

SURVEYOR EMS COMPONENTS			
VENSTAR PART	SBUX ITEM #	DESCRIPTION	QUANTITY
DC400	011029485	DATA CONCENTRATOR	1
OTS400	011029487	OUTDOOR TEMPERATURE SENSOR	1
ECP400	011029489	EQUIPMENT CONTROL PAC	1 PER HVAC
CT414	011029490	COMMUNICATING THERMOSTAT	1 PER HVAC
SP400	011029491	SENSOR PAC	1 PER HVAC
RS410	011029492	WALL MOUNT REMOTE SENSOR	1 PER FOH HVAC
RS420	011050767	NARROW DROP DOWN SENSOR	1 PER BOH HVAC

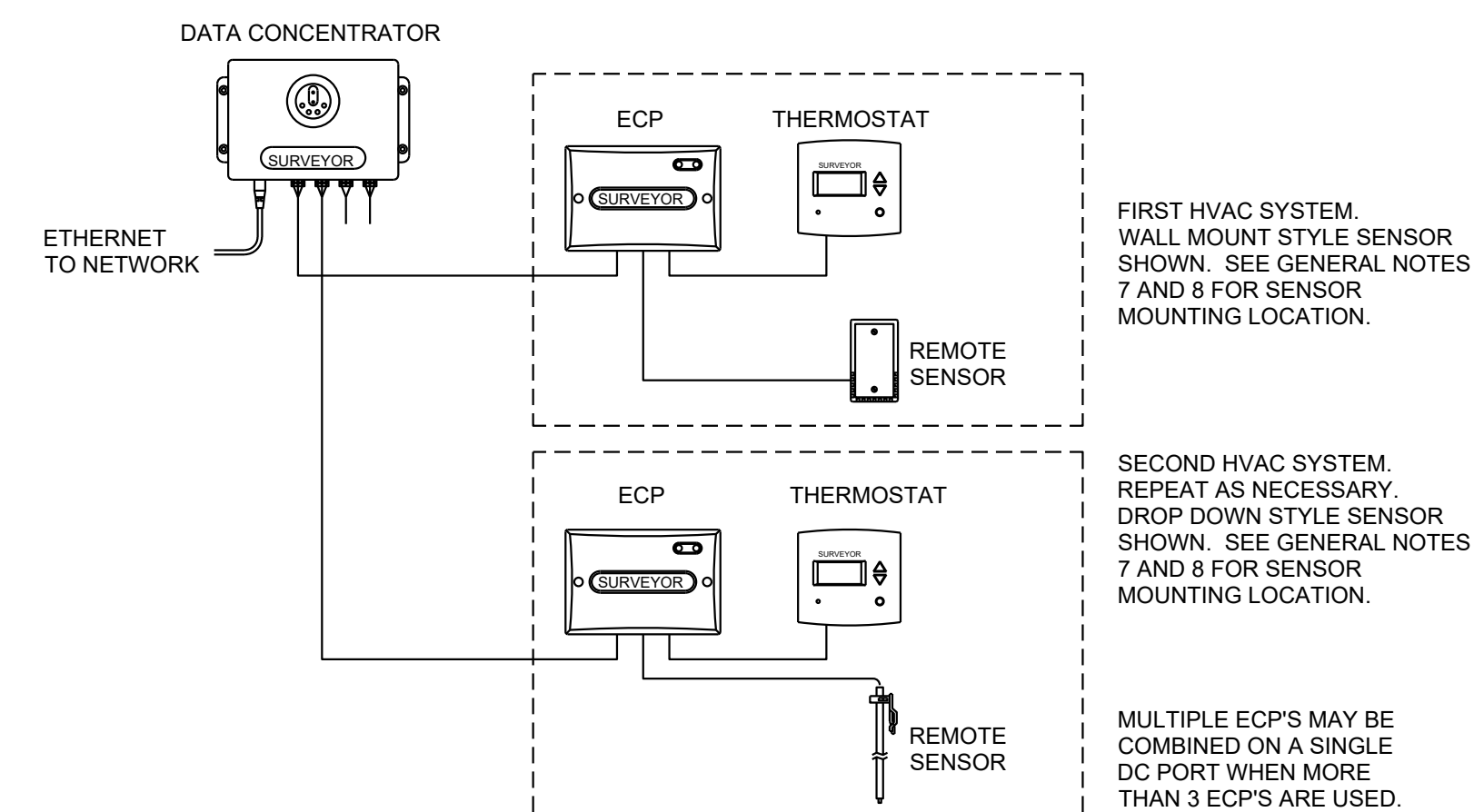


- NOTES:
1. OUTDOOR TEMPERATURE SENSOR CONNECTED TO ONE ECP ONLY PER LOCATION. FACE NORTH WHEN POSSIBLE.
 2. SEE GENERAL NOTES 7 AND 8 FOR REMOTE SENSOR MOUNTING LOCATION DETAILS.

3 Venstar EMS - No Lighting Control - HVAC Controls
Scale: 6" = 1'-0"



2 Venstar EMS - No Lighting Control - Data Concentrator
Scale: 6" = 1'-0"



1 Venstar EMS - No Lighting Control - Basic Low Voltage Wire Runs
Scale: 6" = 1'-0"

PROJECT NAME:
SPERRY AND ROGERS

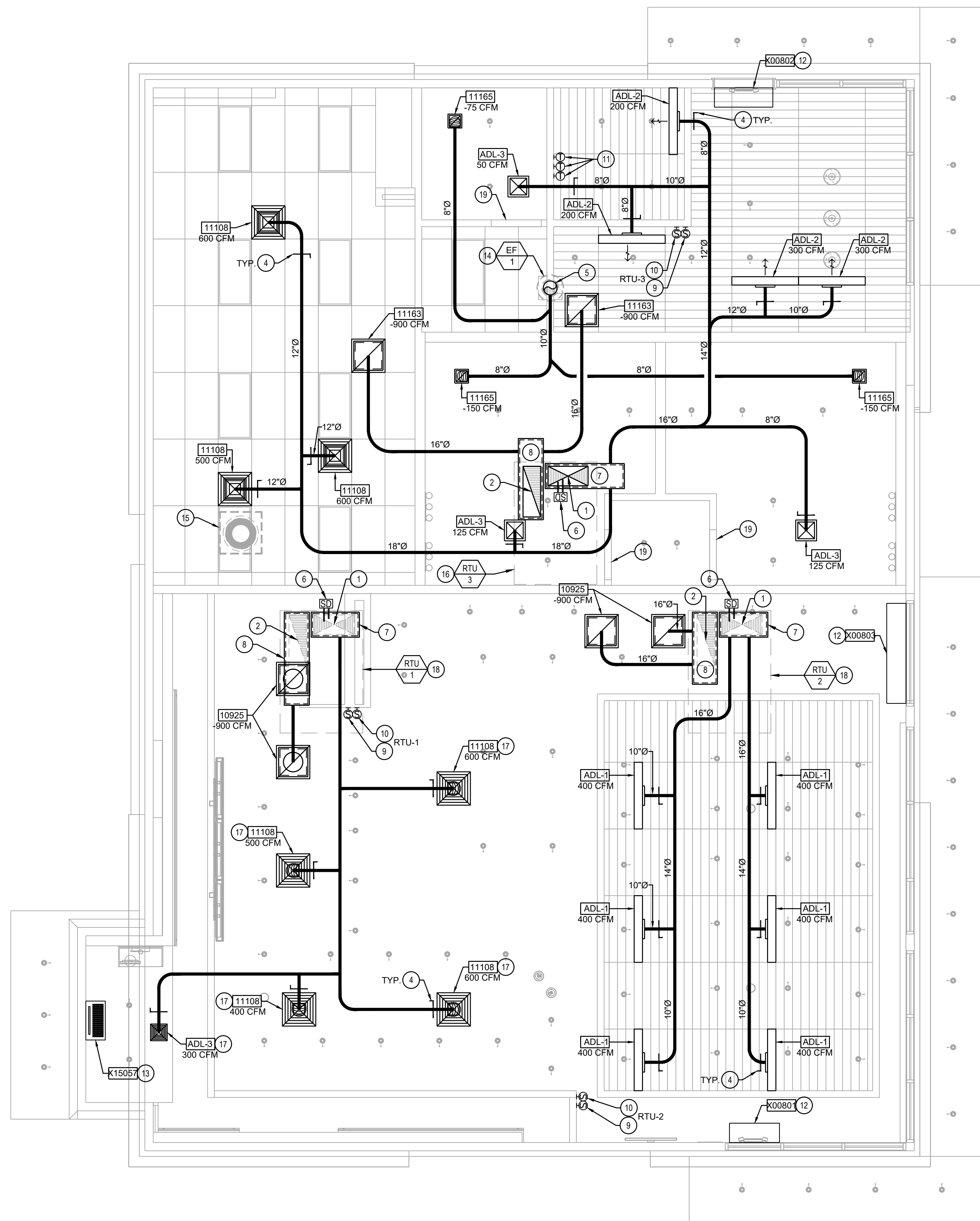
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STORE #: 3462
PROJECT #: 22121-104
ISSUE DATE:
DESIGN MANAGER:
PRODUCTION DESIGNER: N. TOPPEL
CHECKED BY:
ACIES PROJECT #: 230664
ACIES PROJ. MANAGER: DMP
ACIES PROJ. SPECIALIST: MP

Revision Schedule			
Rev	Date	By	Description
A	02/20/24	Acies	Government Agency Revision
B	03/15/24	Acies	Government Agency Revision

SHEET TITLE:
BOH - EMS, NO LIGHTING
SCALE: AS SHOWN N.T.S.
SHEET NUMBER:
M-0100





GENERAL NOTES

- A SEE MECHANICAL SPECIFICATIONS FOR FURTHER REQUIREMENTS.
- B SEE ARCHITECTURAL SHEETS FOR PAINTING AND COLORS OF ALL EXPOSED DUCTWORK, DIFFUSERS AND GRILLES.
- C SEE ARCHITECTURAL SHEETS FOR DIMENSIONED DIFFUSER AND EXPOSED DUCT LOCATIONS.
- D DIFFUSERS AND RETURN GRILLES SHALL BE CENTERED IN CEILING TILE, UNLESS OTHERWISE NOTED.
- E REFERENCE LANDLORD WORK LETTER FOR DIVISION OF MECHANICAL SCOPE OF WORK AND COORDINATE WITH STARBUCKS CONSTRUCTION MANAGER.
- F COORDINATE WITH ELECTRICAL CONTRACTOR FOR POWER CONNECTION TO ALL MECHANICAL EQUIPMENT.
- G DIMENSIONS ARE TO FINISH FACE U.O.N.
- H ROUND AND RECTANGULAR DUCTWORK ARE INTERCHANGEABLE IF CROSS SECTIONAL AREAS ARE EQUAL. CONTRACTOR TO VERIFY EXACT CEILING SPACE AND INTERCHANGE THE DUCT SIZE TO FIT THE CEILING SPACE WITHOUT ADDITIONAL FEE.
- I ALL EQUIPMENT AND DUCTWORK SHOWN ON THIS DRAWING TO BE REPOSITIONED OR REROUTED IF NECESSARY TO ACCOMMODATE FIELD CONDITIONS.
- J CONTRACTOR TO FIELD VERIFY ALL CEILING CLEARANCES PRIOR TO ANY DUCT FABRICATION.
- K PRIOR TO MECHANICAL PERMIT FINAL, A SMOKE DETECTOR SHUT-OFF TEST WILL BE REQUIRED. AS PER 2022 CMC.
- L MARK ROOFTOP EQUIPMENT TO PERMANENTLY IDENTIFY THE AREA SERVED. AS PER 2022 CMC.
- M EXCEPT FOR EXPOSED DUCTWORK, MAIN BRANCHES, SUPPLY AND RETURN PLENUMS AND AS NOTED IN PLANS, FLEXIBLE DUCT CAN BE INSTALLED IN LIEU OF RIGID DUCT. IF FLEXIBLE DUCT IS USED, IT SHALL BE UP-SIZED TO THE NEXT AVAILABLE EVEN DUCT DIAMETER TO COMPENSATE FOR FRICTION LOSSES. SUBSTITUTION OF RIGID DUCT SHALL BE APPROVED BY CONSTRUCTION MANAGER AND MECHANICAL ENGINEER.
- N TEMPERATURE THERMOSTAT AND SENSORS TO BE PROVIDED BY VENDOR VENDOR. COORDINATE WITH CONSTRUCTION MANAGER AND GENERAL CONTRACTOR.
- O AIR DIFFUSERS AND GRILLES TO BE PAINTED TO MATCH ADJACENT SURFACE.

SHEET NOTES

- 1 SUPPLY AIR DUCT UP TO RTU ON ROOF ABOVE.
- 2 RETURN AIR DUCT UP TO RTU ON ROOF ABOVE.
- 3 RECTANGULAR DUCT RUN BELOW STRUCTURAL ROOF BEAM.
- 4 MANUAL BALANCE DAMPER. TYPICAL.
- 5 EXISTING RESTROOM EXHAUST DUCT UP THROUGH THE ROOF TO EXHAUST FAN.
- 6 SMOKE DETECTOR IN SUPPLY AIR DUCT TO SHUT DOWN UNIT UPON DETECTION. AS PER CMC CODE. TYPICAL.
- 7 SUPPLY AIR PLENUM WITH 1" DUCT LINER.
- 8 RETURN AIR PLENUM WITH 1" DUCT LINER.
- 9 CO₂ SENSOR AT 60" AFF. COORDINATE FINAL LOCATION IN FIELD.
- 10 REMOTE TEMPERATURE SENSOR AT 60" AFF. COORDINATE FINAL LOCATION IN FIELD.
- 11 WALL MOUNTED THERMOSTAT AT 48" AFF.
- 12 CONTRACTOR TO FURNISH AND INSTALL AIR CURTAIN OVER DOOR. ACTIVATION TO BE INTERLOCKED WITH DOOR. SEE M-0004 FOR SPECIFICATIONS.
- 13 (N) IN-CEILING RECESSED DT WINDOW AIR CURTAIN, INSTALL PER MANUFACTURER'S INSTALLATION INSTRUCTIONS.
- 14 OUTLINE OF NEW ROOFTOP EXHAUST FAN.
- 15 ICE MACHINE'S CONDENSER, TO BE PROVIDED BY STARBUCKS AND INSTALLED BY CONTRACTOR ON THE ROOF. COORDINATE FINAL LOCATION IN THE FIELD WITH STARBUCKS CONSTRUCTION MANAGER. EXTEND REFRIGERANT PIPING FROM ICE MACHINE TO REMOTE CONDENSER. COORDINATE IN THE FILED ACTUAL ROUTING OF REFRIGERANT PIPING.
- 16 OUTLINE OF NEW ROOFTOP UNIT ABOVE.
- 17 PROVIDE HARD CEILING DIFFUSER WITH TITUS RAPID MOUNT (TRM) FRAME.
- 18 OUTLINE OF EXISTING ROOFTOP UNIT ABOVE.
- 19 PROVIDE 1" DOOR UNDERCUT.



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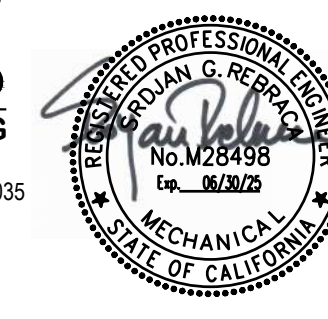
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STORE #: 3462
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CHECKED BY:
ACIES PROJECT #: 230664
ACIES PROJ. MANAGER: DE
ACIES PROJ. SPECIALIST: LL

Revision Schedule

Rev	Date	By	Description
A	02/20/24	Acies	Government Agency Revision
B	03/15/24	Acies	Government Agency Revision

SHEET TITLE:

MECHANICAL FLOOR PLAN

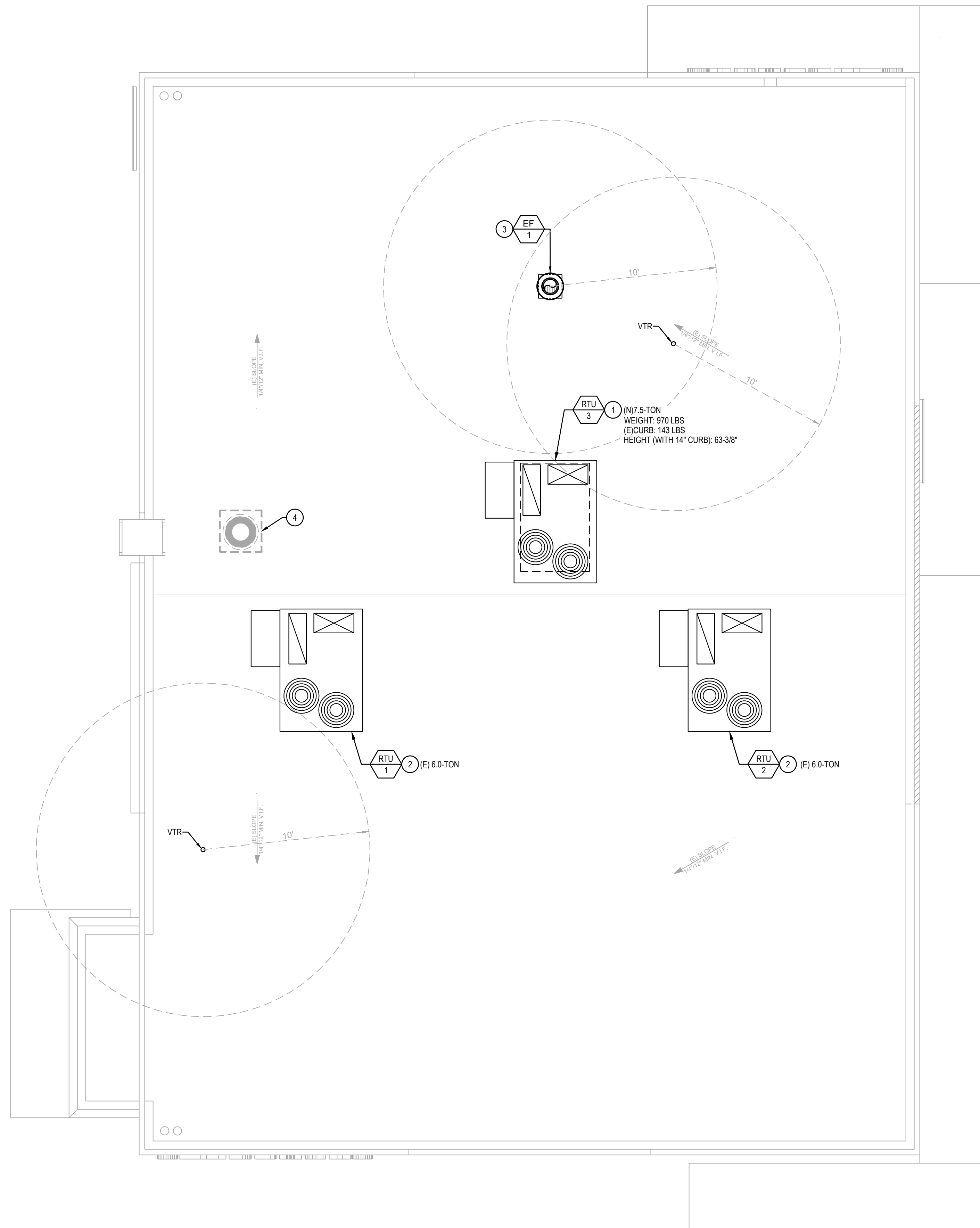
SCALE: AS SHOWN 1/4" = 1'-0"

SHEET NUMBER:

M-1101

1 Mechanical floor plan

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



GENERAL NOTES

- A CONTRACTOR TO VERIFY ALL ROOF PENETRATIONS IN THE FIELD, TO AVOID CONFLICT WITH EXISTING STRUCTURAL ELEMENTS.
- B DEMO AND REMOVE ANY UN-USED ROOFTOP EQUIPMENT. PATCH AND REPAIR ANY PENETRATIONS CAUSED BY REMOVAL PROCESS.

SHEET NOTES

- ① DEMO EXISTING 7.5-TON RTU (CARRIER 48HJD008) AND INSTALL NEW 7.5-TON ROOFTOP UNIT PER RTU SCHEDULE ON M-0004. MOUNT ON EXISTING ROOF CURB AND CONNECT TO ELECTRICAL AND PLUMBING UTILITIES PREVIOUSLY SERVING DEMOLISHED RTU.
- ② EXISTING 6-TON RTU (CARRIER 48TCDA07A2A5) TO REMAIN AND BE RE-USED.
- ③ NEW ROOF EXHAUST FAN, MOUNTED ON ROOF CURB. RE-USE EXISTING ROOF PENETRATION. VERIFY EXACT LOCATION IN THE FIELD.
- ④ ICE MACHINE'S CONDENSER, TO BE PROVIDED BY STARBUCKS AND INSTALLED BY CONTRACTOR ON THE ROOF. COORDINATE FINAL LOCATION IN THE FILED WITH STARBUCKS CONSTRUCTION MANAGER. CURB AND ROOF PENETRATION PROVIDED BY LL.



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PROJECT NAME:
SPERRY AND ROGERS

PROJECT ADDRESS:
 2952 SPENO DR,
 PATTERSON, CA 95363

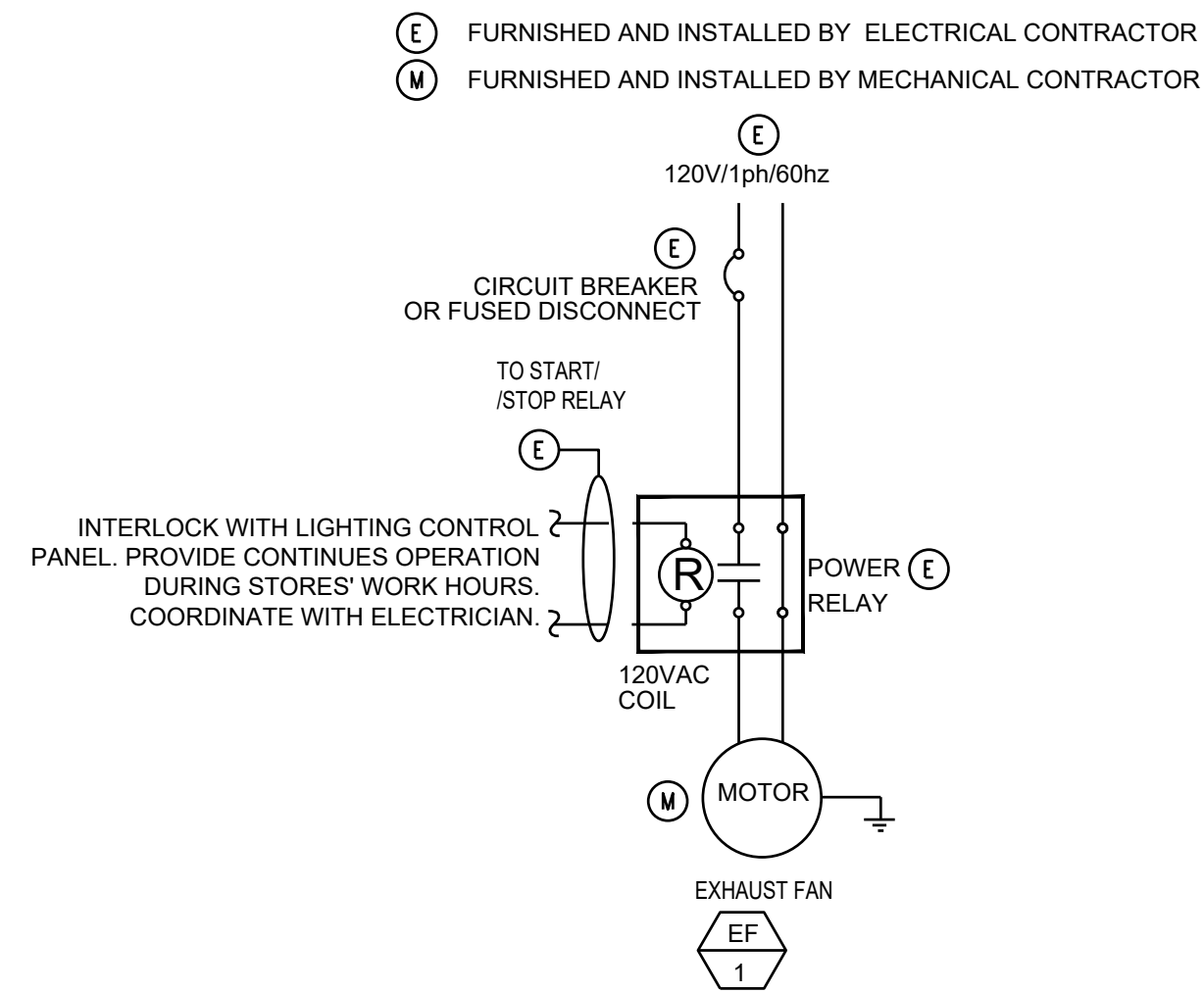
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 PROJECT #: 22121-104
 ISSUE DATE:
 DESIGN MANAGER:
 PRODUCTION DESIGNER: N. TOPPEL
 CHECKED BY:
 ACIES PROJECT #: 230664
 ACIES PROJ. MANAGER: DE
 ACIES PROJ. SPECIALIST: LL

Revision Schedule			
Rev	Date	By	Description
A	02/20/24	Acies	Government Agency Revision
B	03/15/24	Acies	Government Agency Revision

SHEET TITLE:
MECHANICAL ROOF PLAN

SCALE: AS SHOWN 1/4" = 1'-0"
 SHEET NUMBER:
 M-1102

① Mechanical roof plan
 Scale: 1/4" = 1'-0"



7 EXHAUST FAN WIRING
N.T.S.

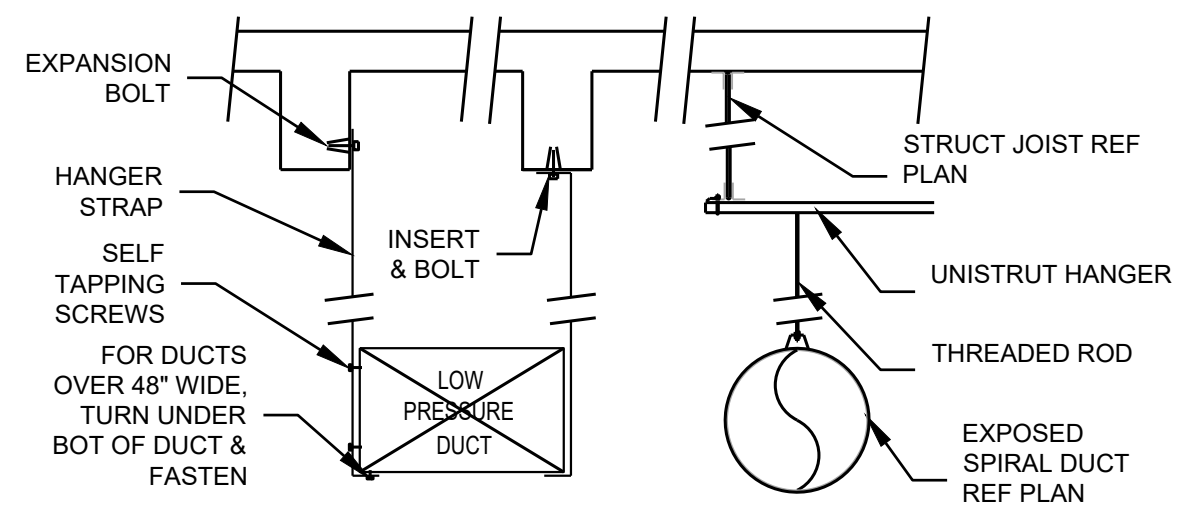
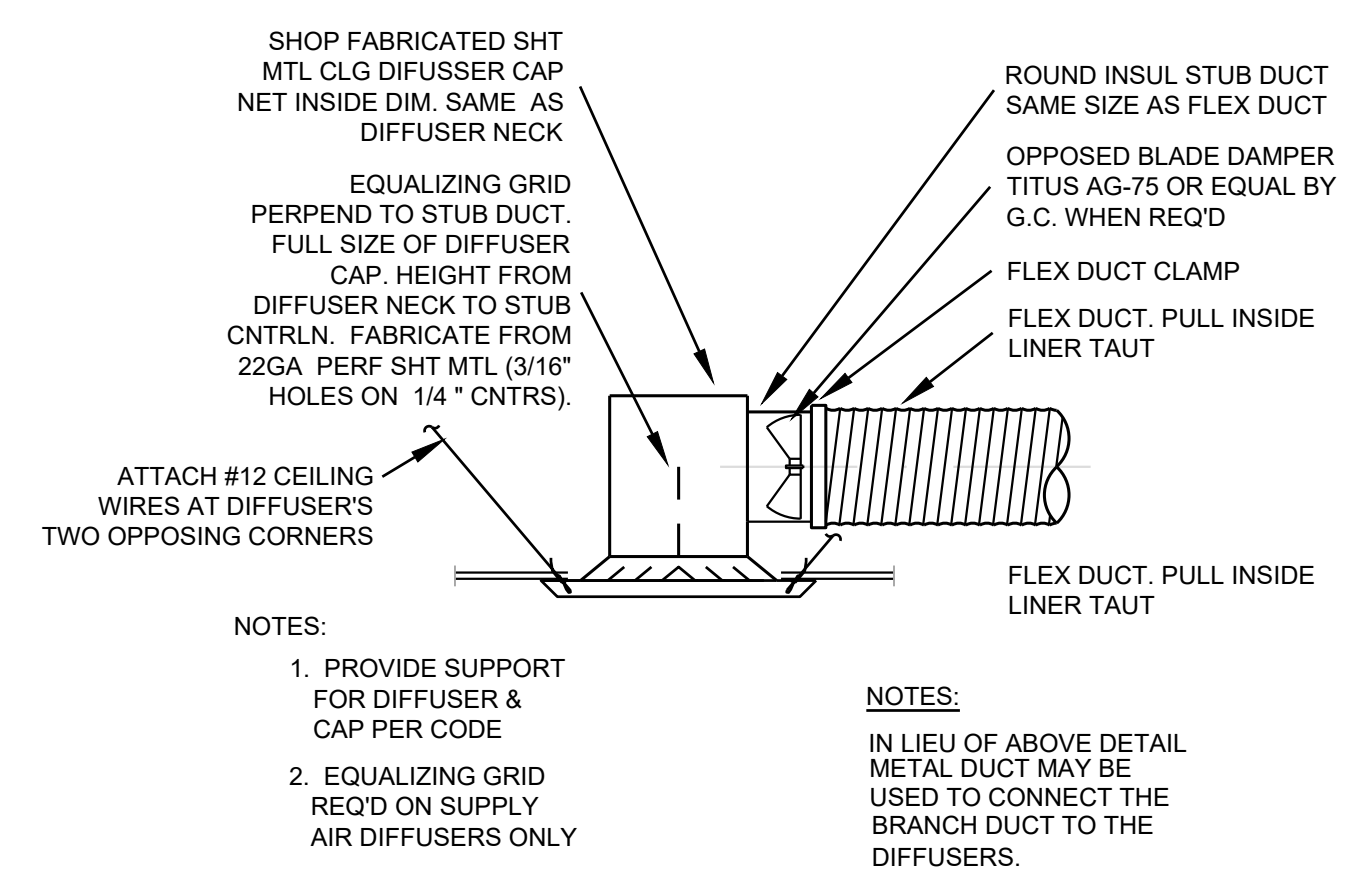


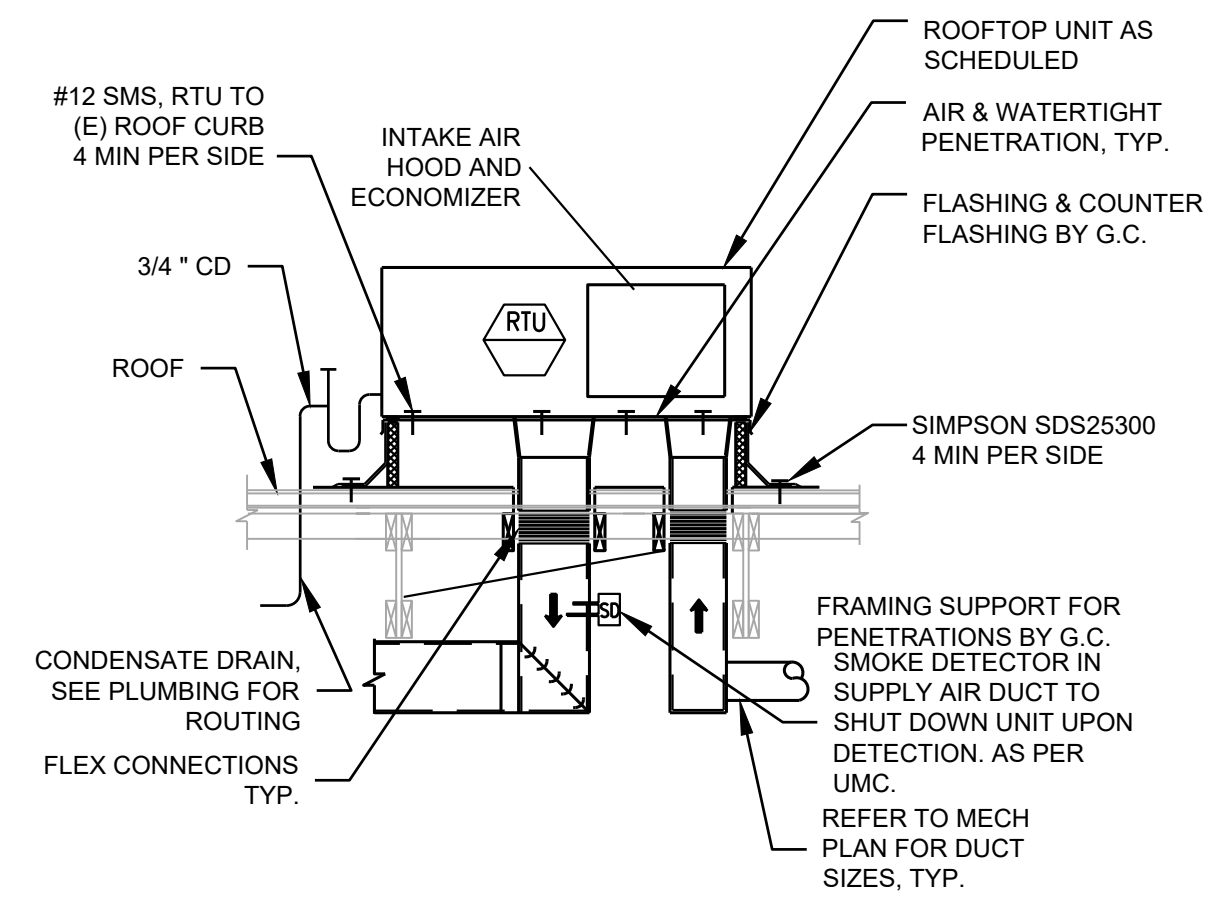
TABLE 6.5

MAXIMUM DIAMETER OF ROUND DUCT OR SIDE OF RECTANGULAR DUCT	HORIZONTAL SUPPORT ANGLE	HANGER
36"	1-1/2" x 1-1/2" x 1/8"	1/2" ROUND ROD OR 1" x 1" x 1/8" ANGLE
48"	2" x 2" x 1/8"	1/2" ROUND ROD OR 1" x 1" x 1/8" ANGLE
60"	2" x 2" x 1/8"	3/8" ROUND ROD OR 1" x 1" x 1/8" ANGLE
84"	2" x 2" x 1/8"	3/8" ROUND ROD OR 1" x 1" x 1/8" ANGLE

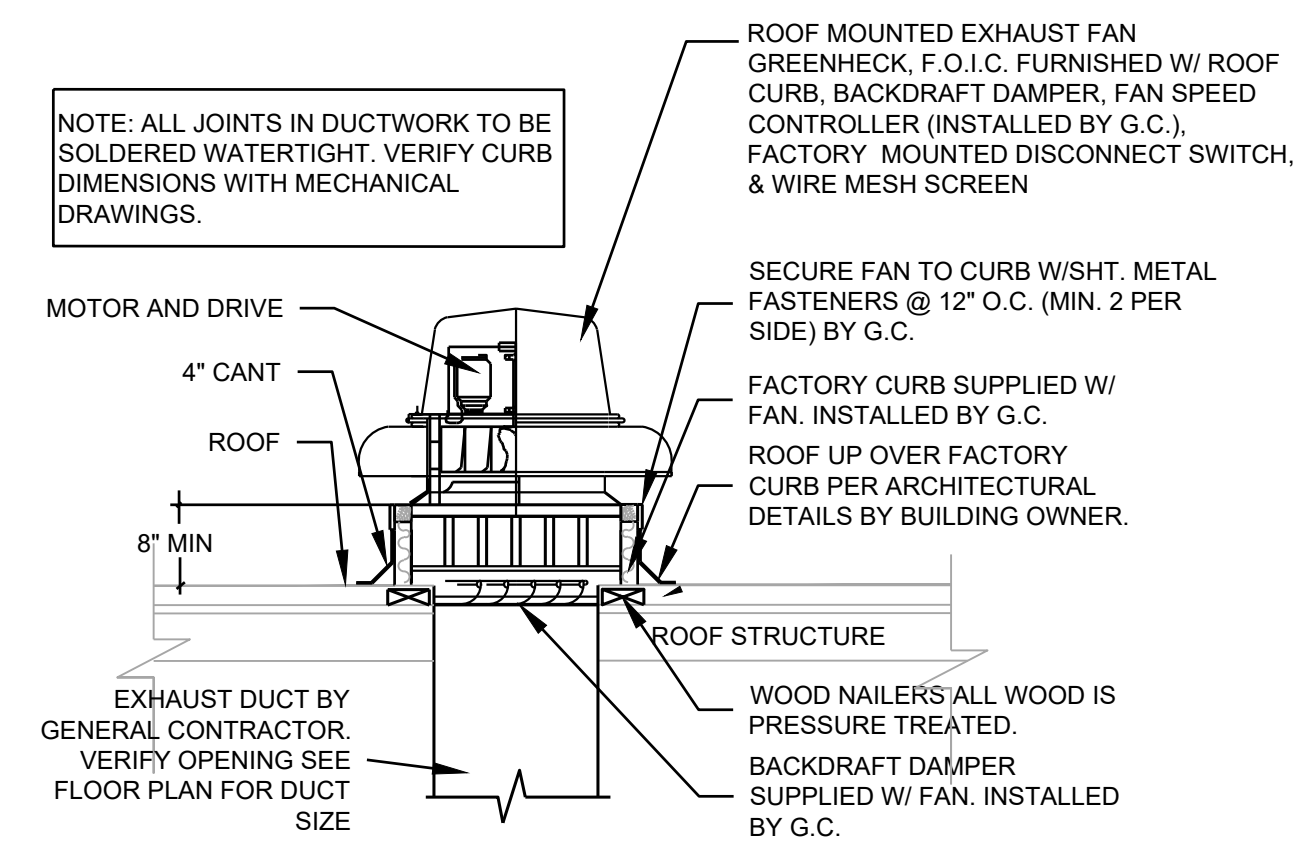
4 DUCT HANGING DETAIL
N.T.S.



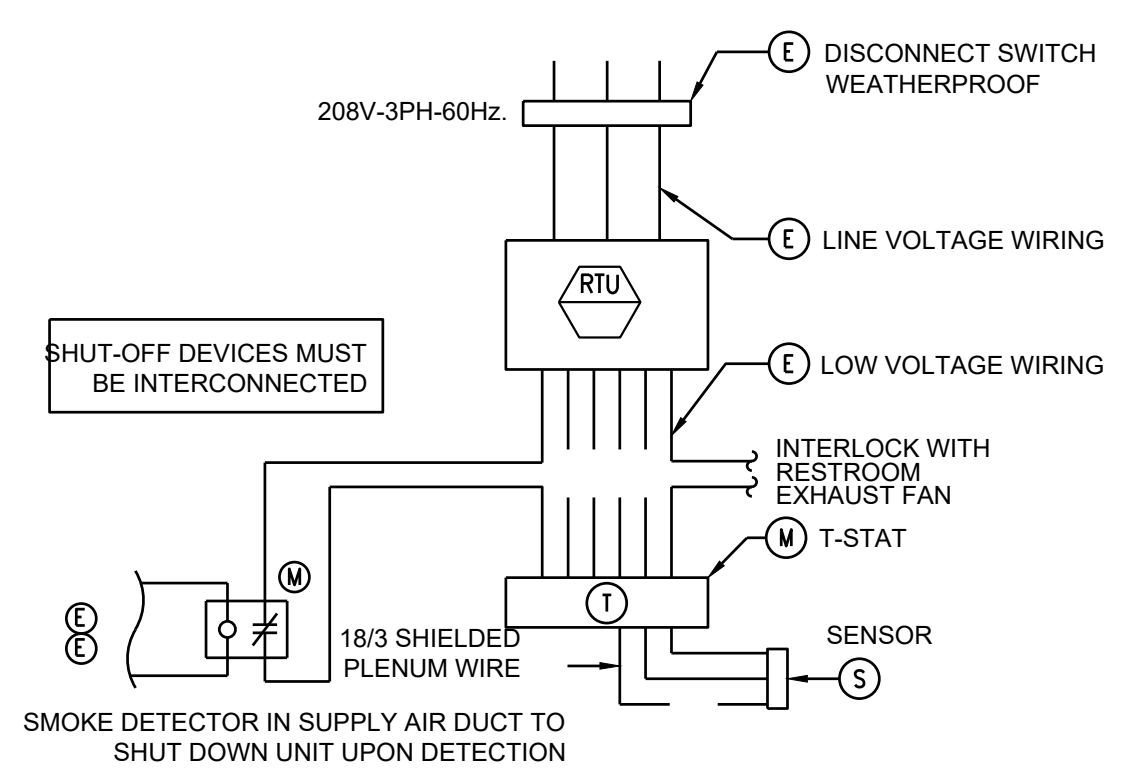
1 LAY-IN CEILING DIFFUSER
N.T.S.



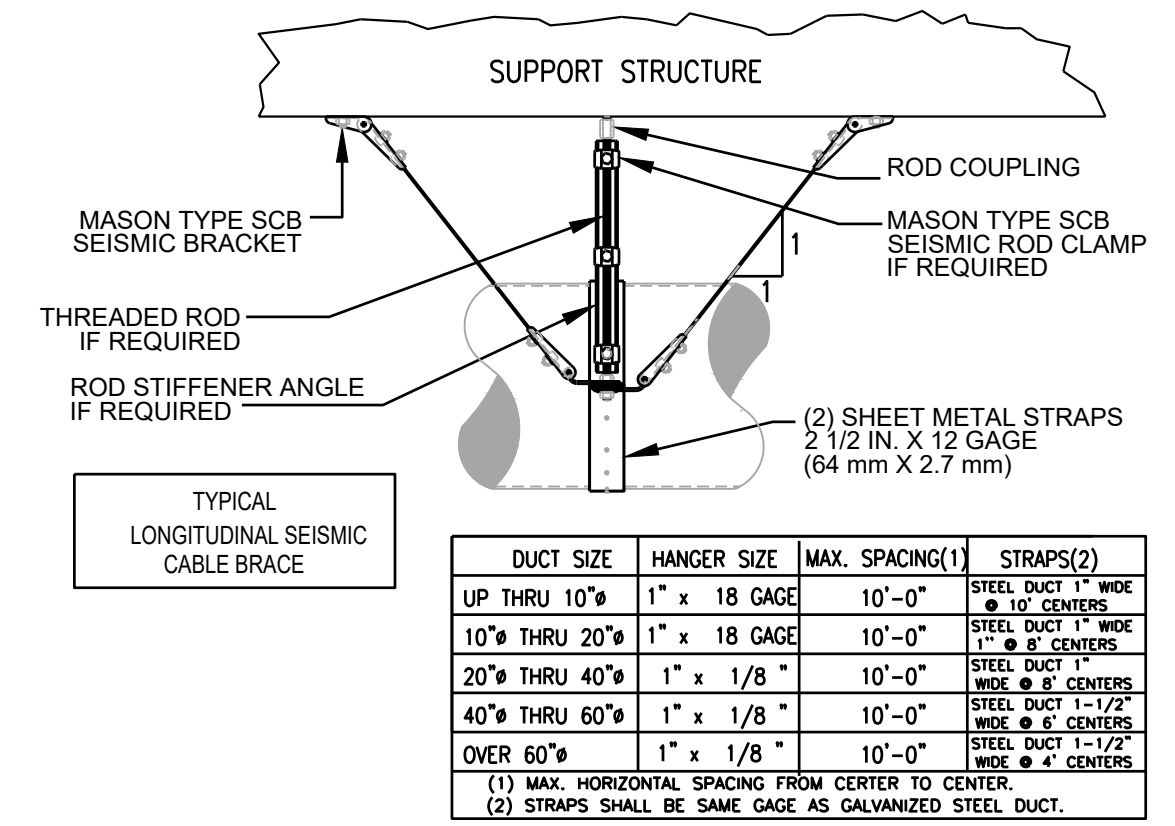
5 ROOF TOP AC UNIT
N.T.S.



2 MUSHROOM TYPE EXHAUST FAN
N.T.S.



6 RTU WIRING TYP.
N.T.S.



3 SEISMIC CABLE BRACE
N.T.S.



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Revision Schedule

Rev	Date	By	Description
A	02/20/24	Acies	Government Agency Revision
B	03/15/24	Acies	Government Agency Revision

SHEET TITLE:
MECHANICAL DETAILS

SCALE: AS SHOWN N.T.S.

SHEET NUMBER:
M-1105