

SECTION 15730 - PACKAGED ROOFTOP AIR-CONDITIONING UNITS

PART 1 - GENERAL

- 1.1 SECTION REQUIREMENTS**
- A. SUBMITTALS: PRODUCT DATA AND SHOP DRAWINGS.
 - B. COMPLY WITH ASHRAE 15.
 - C. EER: EQUAL TO OR GREATER THAN PRESCRIBED BY THE ENERGY CODE ADOPTED BY THE AUTHORITY HAVING JURISDICTION.
 - D. WARRANTIES: SUBMIT A WRITTEN WARRANTY, SIGNED BY THE MANUFACTURER, AGREEING TO THE REPAIR OR REPLACEMENT OF COMPONENTS THAT FAIL WITHIN 5 YEARS OF SUBSTANTIAL COMPLETION.

PART 2 - PRODUCTS

- 2.1 PACKAGE UNITS, 5 TO 20 TONS**
- A. FACTORY ASSEMBLED AND TESTED, CONSISTING OF COMPRESSORS, CONDENSERS, EVAPORATOR COILS, CONDENSER AND EVAPORATOR FANS, REFRIGERATION AND TEMPERATURE CONTROLS, FILTERS, AND DAMPERS.
 - 1. REFER TO ROOFTOP HEATING/COOLING UNIT SCHEDULE ON DRAWING M600 FOR CAPACITIES, AND MANUFACTURERS.
 - 2. EVAPORATOR FANS: BELT OR DIRECT DRIVEN, FORWARD CURVED CENTRIFUGAL.
 - 3. EXHAUST/RELIEF FANS: DIRECT DRIVE, FORWARD CURVED CENTRIFUGAL OR PROPELLER.
 - 4. CONDENSER FANS: DIRECT DRIVE PROPELLER.
 - 5. REFRIGERANT COILS: ALUMINUM FINS AND COPPER COIL.
 - 6. COMPRESSORS: SERVICEABLE; HERMETIC OR FULLY HERMETIC, WITH SAFETY CONTROLS, HOT GAS BYPASS, AND THERM OFF CONTROLS.
 - 7. HEAT EXCHANGERS: GAS-FIRED, WITH GAS CONTROLS, ELECTRONIC IGNITION, HIGH LIMIT CUTOUT, AND FORCED DRAFT PULLING SWITCH.
 - 8. ECONOMIZER CONTROLS (COMPARATIVE ENTHALPY, 100% CAPACITY).
 - 9. SMOKE DETECTORS: PHOTOELECTRIC IN SUPPLY AND/OR RETURN AS CALLED FOR IN SCHEDULE ON SHEET M600.
 - 10. OPERATING CONTROLS: TWO STAGE HEATING AND TWO STAGE COOLING ON UNITS 7-1/2 TONS AND OVER.
 - 11. ROOF CURB.
 - 12. CONTROL WIRING FROM T-STAT TO ROOFTOP UNIT: SHALL BE 18GA / 7 CONDUCTOR, RATED FOR PLENUM APPLICATIONS.
 - 13. CONTROL WIRING FROM T-STAT TO REMOTE T-SENSOR SHALL BE A SEPARATE 18GA / 2 CONDUCTOR SHIELDED, RATED FOR PLENUM APPLICATIONS.

PART 3 - EXECUTION

- 3.1 INSTALLATION**
- A. INSTALL UNITS LEVEL AND PLUMB AND FIRMLY ANCHORED.
 - B. CONNECT GAS PIPING TO BURNER WITH PIPE SAME SIZE AS GAS TRAIN INLET, AND PROVIDE UNION WITH SUFFICIENT CLEARANCE FOR REMOVAL AND SERVICE.
 - C. INSTALL UNITS TO TERMINATION IN ROOF MOUNTING FRAMES. TERMINATE DUCTS THROUGH ROOF STRUCTURE.
 - D. CONNECT UNITS TO WIRING SYSTEMS AND TO GROUND.

END OF SECTION 15730

SECTION 15810 - DUCTS AND ACCESSORIES

PART 1 - GENERAL

- 1.1 SECTION REQUIREMENTS**
- A. SUBMITTALS: PRODUCT DATA FOR FIRE AND SMOKE DAMPERS.
 - B. COMPLY WITH NFPA 90A FOR SYSTEMS SERVING SPACES MORE THAN 25,000 CU. FT. IN VOLUME OR BUILDING TYPES III, IV, AND V CONSTRUCTION MORE THAN 3 STORIES IN HEIGHT.
 - C. COMPLY WITH NFPA 90B FOR SYSTEMS SERVING SPACES IN 1 OR 2 FAMILY DWELLINGS OR SERVING SPACES LESS THAN 25,000 CU. FT.
 - D. COMPLY WITH NFPA 96, "VENTILATION CONTROL AND FIRE PROTECTION OF COMMERCIAL COOKING OPERATIONS," FOR KITCHEN HOOD DUCTS.
 - E. COMPLY WITH UL 181 AND UL 181A FOR DUCTS AND CLOSURES.
 - F. TESTING, ADJUSTING, AND BALANCING AGENCY QUALIFICATIONS: AAAC CERTIFIED (TO BE FURNISHED BY OWNER).

PART 2 - PRODUCTS

- 2.1 DUCTS**
- A. SPIRAL DUCT: SPIRAL LOCK SEAM, WITHOUT INSULATION, 600 GALVANIZED FINISH, ASTM A-663/924
 - 1. BASIS OF DESIGN MANUFACTURERS: KNOWN SPIROFLEX, ALTERNATES TO THE BASIS OF DESIGN MUST BE SUBMITTED FOR REVIEW.
 - 2. FITTINGS: FACTORY PRODUCED STANDING SEAM CONSTRUCTION WITH INTERNAL SEALING, FITTINGS WITH A MAJOR AXIS OF 30" OR SMALLER SHALL BE 20 GAUGE, FITTINGS WITH A MAJOR AXIS OF 37" OR SMALLER SHALL BE 28 GAUGE.
 - B. GALVANIZED STEEL SHEET: FORMING STEEL, ASTM A 653/633, G90 COATING DESIGNATION.
 - C. DUCT LINER: ASTM C 2071, TYPE II, WITH AN AIRSTREAM SURFACE COATED WITH A TEMPERATURE RESISTANT COATING. THICKNESS: 1-1/2 INCH, R-VALUE: 8.
 - 1. ADHESIVE: ASTM C 916, TYPE I.
 - 2. MECHANICAL FASTENERS: GALVANIZED STEEL PIN, LENGTH AS REQUIRED TO PENETRATE LINER PLUS A 1/8 INCH PROJECTION MAXIMUM INTO THE AIRSTREAM.
 - D. JOINT AND SEAM TAPS: COMPLY WITH UL 181A.
 - E. JOINT AND SEAM SEALANT: COMPLY WITH UL 181A.
 - F. RECTANGULAR METAL DUCT FABRICATION: COMPLY WITH SMACNA'S "HVAC DUCT CONSTRUCTION STANDARD" FOR METAL THICKNESS, REINFORCING TYPES AND INTERVALS, TIE ROD APPLICATIONS, AND JOINT TYPES AND INTERVALS.

2.2 ACCESSORIES

- A. VOLUME CONTROL DAMPERS: FACTORY FABRICATED VOLUME CONTROL DAMPERS, COMPLETE WITH REQUIRED HARDWARE AND ACCESSORIES. SINGLE BLADE AND MULTIPLE OPPOSED BLADE, STANDARD LEAKAGE RATING, AND SUITABLE FOR HORIZONTAL OR VERTICAL APPLICATIONS.
- B. FIRE DAMPERS: FACTORY-FABRICATED FIRE DAMPERS, COMPLETE WITH REQUIRED HARDWARE AND ACCESSORIES. UL LABELED ACCORDING TO UL 555, "FIRE DAMPERS."
- C. FLEXIBLE CONNECTORS: FLAME RETARDANT OR NONCOMBUSTIBLE FABRICS, COATINGS, AND ADHESIVES COMPLYING WITH UL 181, CLASS I.
- D. FLEXIBLE DUCTS: FACTORY FABRICATED, INSULATED, ROUND DUCT, WITH AN OUTER JACKET ENCLOSED 2 INCH THICK, GLASS FIBER INSULATION, R-VALUE: 6.0, AROUND A CONTINUOUS INNER LINER.

PART 3 - EXECUTION

- 3.1 INSTALLATION**
- A. DUCT SYSTEM PRESSURE CLASS: CONSTRUCT AND INSTALL EACH DUCT SYSTEM WITH 2 INCH POSITIVE AND NEGATIVE DUCT PRESSURE CLASSIFICATIONS.
 - B. CONCEALED DUCTS FROM VIEW IN FINISHED AND OCCUPIED SPACES. EXCEPT WHERE NOTED AS EXPOSED.
 - C. AVOID PASSING THROUGH ELECTRICAL EQUIPMENT SPACES AND ENCLOSURES.
 - D. SUPPORT AND CONNECT METAL DUCTS ACCORDING TO SMACNA'S "HVAC DUCT CONSTRUCTION STANDARD".
 - E. INSTALL DUCT ACCESSORIES ACCORDING TO APPLICABLE PORTIONS OF DETAILS OF CONSTRUCTION AS SHOWN IN SMACNA STANDARDS.
 - F. INSTALL LINER AND/OR INSULATION ON DUCTWORK PER THE MATERIAL SCHEDULE ON SHEET M600.
 - G. INSTALL VOLUME CONTROL DAMPERS IN LINED DUCT WITH METHODS TO AVOID DAMAGE TO LINER AND TO AVOID FROSTION OF DUCT LINER.
 - H. INSTALL FIRE AND SMOKE DAMPERS ACCORDING TO MANUFACTURERS UL APPROVED WRITTEN INSTRUCTIONS.
 - I. INSTALL FLEXIBLE UNITS IN DAMPERS.
 - J. PROVIDE SADDLE TAPS AT TEES FOR EXPOSED DUCTWORK.
- 3.2 TESTING, ADJUSTING, AND BALANCING**
- A. THE OWNER WILL SUPPLY AN INDEPENDENT BALANCE AGENT TO TO BALANCE AND ADJUST THE HVAC INSTALLATION. THE BALANCE AGENT IS RESPONSIBLE FOR ANY PENALTIES OR BILT CHARGES REQUIRED.
 - B. THE GC IS TO HAVE TRAINED STAFFED AVAILABLE DURING THE BALANCING TO CORRECT ISSUES NOTED BY THE BALANCE AGENT.
 - C. THE BALANCE AGENT IS TO BALANCE AIRFLOW WITHIN DISTRIBUTION SYSTEMS, INCLUDING SUBMANS, BRANCHES, AND TERMINALS TO INDICATED QUANTITIES +/- 10%. THE HOOD EXHAUST SYSTEM SHALL BE BALANCED TO A TOLERANCE OF +/- 10-15% AND THE MAKE-UP AIR SYSTEM TO A TOLERANCE OF -10-0%.
 - D. THE BALANCE AGENT IS TO SUPPLY A COPY OF THE BALANCE REPORT TO THE OWNER, ENGINEER AND GENERAL CONTRACTOR FOR REVIEW.

END OF SECTION 15810

SECTION 15850 - DIFFUSERS, REGISTERS, AND GRILLES

PART 1 - GENERAL

- 1.1 SECTION REQUIREMENTS**
- A. SUBMITTALS: NONE.
- PART 2 - PRODUCTS**
- 2.1 OUTLETS AND INLETS**
- A. DIFFUSERS:
 - 1. REFER TO GRILLS, REGISTERS, AND DIFFUSERS SCHEDULE FOR EQUIPMENT SCHEDULE.
 - 2. MANUFACTURER: AS SCHEDULED (NO SUBSTITUTIONS)
 - 3. MATERIAL: AS SCHEDULED.
 - 4. FINISH: AS SCHEDULED.
 - 5. MOUNTING: AS SCHEDULED.
 - B. WALL AND CEILING REGISTERS:
 - 1. REFER TO GRILLS, REGISTERS, AND DIFFUSERS SCHEDULE FOR EQUIPMENT SCHEDULE.
 - 2. MANUFACTURER: AS SCHEDULED (NO SUBSTITUTIONS)
 - 3. MATERIAL: AS SCHEDULED.
 - 4. FINISH: AS SCHEDULED.
 - 5. MOUNTING: COUNTERSUNK SCREW.
 - C. WALL AND CEILING GRILLES:
 - 1. REFER TO GRILLS, REGISTERS, AND DIFFUSERS SCHEDULE FOR EQUIPMENT SCHEDULE.
 - 2. MANUFACTURER: AS SCHEDULED (NO SUBSTITUTIONS)
 - 3. MATERIAL: AS SCHEDULED.
 - 4. FINISH: AS SCHEDULED.
 - 5. MOUNTING: COUNTERSUNK SCREW OR LAY IN DEPENDING LOCATION.

PART 3 - EXECUTION

- 3.1 INSTALLATION**
- A. COORDINATE LOCATION AND INSTALLATION WITH DUCT INSTALLATION AND INSTALLATION OF OTHER CEILING AND WALL MOUNTED ITEMS.
 - B. LOCATE CEILING DIFFUSERS, REGISTERS, AND GRILLES, AS INDICATED ON THE ARCHITECTURAL "REFLECTED CEILING PLANS." UNLESS OTHERWISE INDICATED, LOCATE UNITS IN CENTER OF ACOUSTICAL CEILING PANELS.

END OF SECTION 15850

HVAC GENERAL NOTES

- A. GENERAL NOTES APPLY TO HVAC SHEETS.
- B. WORK SHALL COMPLY WITH STATE AND LOCAL CODE REQUIREMENTS AS APPROVED AND AMENDED BY THE AUTHORITY HAVING JURISDICTION, INCLUDING APPLICABLE SECTIONS OF NFPA, THE MECHANICAL CODE, AND ANY INTERIM AMENDMENTS AT THE TIME OF THE PROPOSAL. PURCHASE PERMITS ASSOCIATED WITH THE WORK. OBTAIN INSPECTIONS REQUIRED BY CODE. SEE SHEET GOOD FOR THE PREVAILING CODES.
- C. CONTRACTOR AND SUBCONTRACTORS SHALL REVIEW A COMPLETE SET OF THE CONSTRUCTION DOCUMENTS.
- D. COORDINATE WORK WITH THE WORK OF OTHER TRADES, EQUIPMENT FURNISHED BY OTHERS, REQUIREMENTS OF THE OWNER, AND OF THE EXISTING CONDITIONS AT THE PROJECT SITE.
- E. DRAWINGS FOR THE MECHANICAL WORK ARE DIAGRAMMATIC, SHOWING THE GENERAL LOCATION, TYPE, LAYOUT, AND EQUIPMENT REQUIRED. THE DRAWING SHALL NOT BE SCALED FOR EXACT MEASUREMENTS. REFER TO ARCHITECTURAL DRAWINGS FOR DIMENSIONS. REFER TO MANUFACTURERS STANDARD INSTALLATION DRAWINGS FOR EQUIPMENT CONNECTIONS AND INSTALLATION REQUIREMENTS. PROVIDE DUCTWORK, CONNECTIONS, OFFSETS, ACCESSORIES, AND MATERIALS NECESSARY FOR A COMPLETE SYSTEM.
- F. DUCT DIMENSIONS ON PLANS INDICATE DIMENSIONS OF INTERNAL FREE AREA.
- G. PERFORATED CEILING DIFFUSERS SHALL BE 4-WAY UNLESS NOTED OTHERWISE.
- H. COORDINATE ROOF WORK WITH THE OWNER'S CONSTRUCTION MANAGER PRIOR TO CONSTRUCTION.
- I. UNLESS NOTED OTHERWISE, RECTANGULAR DUCT ELBOWS GREATER THAN 45° SHALL BE 90° ELBOWS WITH DOUBLE-THICKNESS TURNING VANES AND RECTANGULAR DUCT ELBOWS 45° OR LESS SHALL BE RADIUS ELBOWS WITH AN INSIDE RADIUS OF AT LEAST 1/2 THE WIDTH OF THE DUCT.
- J. REPLACE AIR FILTERS WITH NEW, CLEAN MERV 8 AIR FILTERS AT TURNOVER.
- K. THE TERM "FURNISH" MEANS SUPPLY AND DELIVER TO THE PROJECT SITE, READY FOR UNLOADING, UNPACKING, ASSEMBLY, INSTALLATION, AND SIMILAR OPERATIONS. THE TERM "INSTALL" DESCRIBES THE OPERATIONS AT THE PROJECT SITE INCLUDING THE ACTUAL UNLOADING, UNPACKING, ASSEMBLY, ERECTING, PLACING, ANCHORING, APPLYING, WORKING TO DIMENSION, FINISHING, CURING, PROTECTING, CLEANING, AND SIMILAR OPERATIONS. THE TERM "PROVIDE" MEANS TO FURNISH AND INSTALL, COMPLETE AND READY FOR THE INTENDED USE.
- L. INSTALL LABELING CALLED FOR IN THE MECHANICAL DRAWINGS USING ENGRAVED PHENOLIC PLATES (WHITE WITH BLACK LETTERING) FURNISHED BY TSV.
- M. PROVIDE P3000 12 GA. UNISTRUT WITH PG HSH FOR DUCT SUPPORTS AND OTHER UNISTRUT IN AREAS EXPOSED TO VIEW. SLOTTED UNISTRUT AND OTHER UNISTRUT WITH HOLES IS NOT ACCEPTABLE.

HVAC MATERIAL SCHEDULE

CATEGORY	APPLICATION	ALLOWABLE MATERIAL
DUCT	EXPOSED SUPPLY	RECT. LINED OR ROUND AS SHOWN, NO EXPOSED DUCT SEALING MASTIC
	EXPOSED RETURN	RECTANGULAR, NO EXPOSED DUCT SEALING MASTIC
	EXPOSED GENERAL EXHAUST	RECTANGULAR, NO EXPOSED DUCT SEALING MASTIC
	CONCEALED, SUPPLY	RECT. OR ROUND AS SHOWN, LINED OR INSULATED
	CONCEALED RETURN	RECT. OR ROUND AS SHOWN, LINED OR INSULATED
	CONCEALED GENERAL EXHAUST	RECT. OR ROUND AS SHOWN, LINED OR INSULATED
	CONCEALED, TYPE I HOOD EXHAUST.	RECT. 16 GA. BLACK IRON W/WRAP OR UL 1978 FACTORY-MANUFACTURED DUCT W/ WRAP. (SUBMIT SHOP DRAWINGS FOR FACTORY-MANUFACTURED DUCT PRIOR TO ORDERING FOR APPROVAL.)

HVAC ABBREVIATIONS

- AFB ABOVE FINISHED FLOOR
- CDJ CONDENSATE
- CU CONDENSING UNIT
- EF EXHAUST FAN
- EFFC EXISTING
- HO HOOD
- MJA MAKEUP AIR UNIT
- OPD OPPOSED BLADE DAMPER
- RG RETURN GRILLE
- RTU ROOFTOP UNIT
- SR SUPPLY REGISTER
- VSC VARIABLE SPEED CONTROL
- CCAS TENANT'S CO2 ALARM SUPPLIER
- CC GENERAL CONTRACTOR
- NES TENANT'S HVAC EQUIPMENT SUPPLIER
- TMS TENANT'S TEST AND BALANCE VENDOR
- TCC TENANT'S CABLING CONTRACTOR
- KES TENANT'S KITCHEN EQUIPMENT SUPPLIER
- HS TENANT'S HOOD SUPPLIER
- TCF TENANT DUCT CLEANER
- TEMS TENANT'S ENERGY MANAGEMENT SYSTEM SUPPLIER
- TMS TENANT'S MENU BOARD SUPPLIER
- TMS TENANT'S MILLWORK SUPPLIER
- TP TENANT'S PHONE SUPPLIER
- TRF TENANT'S REFRIG. SUPPLIER
- TSV TENANT'S SIGN VENDOR
- TUV TENANT'S UV SANITIZER SUPPLIER
- WCS TENANT'S WALK-IN COOLER SUPPLIER
- WHS TENANT'S WATER HEATER SUPPLIER

HVAC SYMBOLS

- CEILING SUPPLY DIFFUSER
- CEILING RETURN DIFFUSER
- SUPPLY REGISTER
- RETURN REGISTER
- FLEXIBLE DUCT
- MITERED CORNER WITH TURNING VANES
- DUCTWORK INTERNAL FREE DIMENSIONS
- RECTANGULAR TO ROUND TRANSITION
- GREASE DUCT CLEANOUT
- MITERED CORNER WITHOUT TURNING VANES
- GRIDPOINT THERMOSTAT
- GRIDPOINT ZONE SENSOR MODULE
- PLAN NOTE: SEE PLAN NOTES LISTED ON THE SAME SHEET FOR NOTE MEANING
- EQUIPMENT TAG: SEE EQUIPMENT SCHEDULE ON SHEET M600 FOR EQUIPMENT INFORMATION
- GRILL, REGISTER, OR DIFFUSER TAG: TAG SIZE REFER SIZE AIRFLOW (CFM)



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Issue/Revised	DATE	INITIAL	PERMIT SET
	12/20/24		

Drawn: _____
 Checked: _____

Project No:
 CMG 20-5136

Contract:
 HVAC SPECIFICATIONS

M010

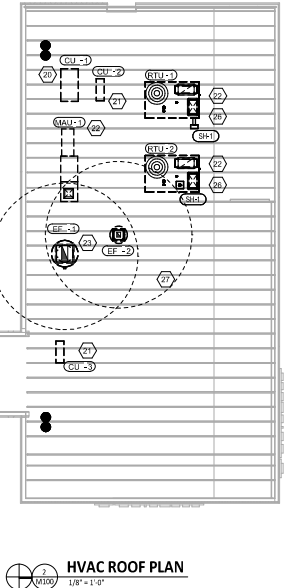
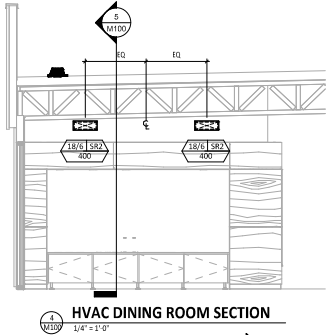
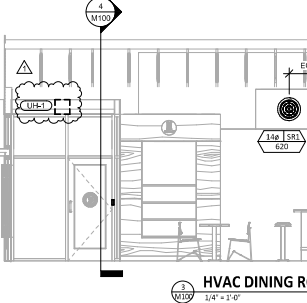
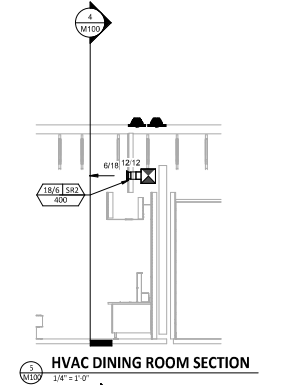
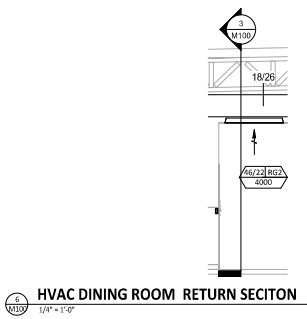
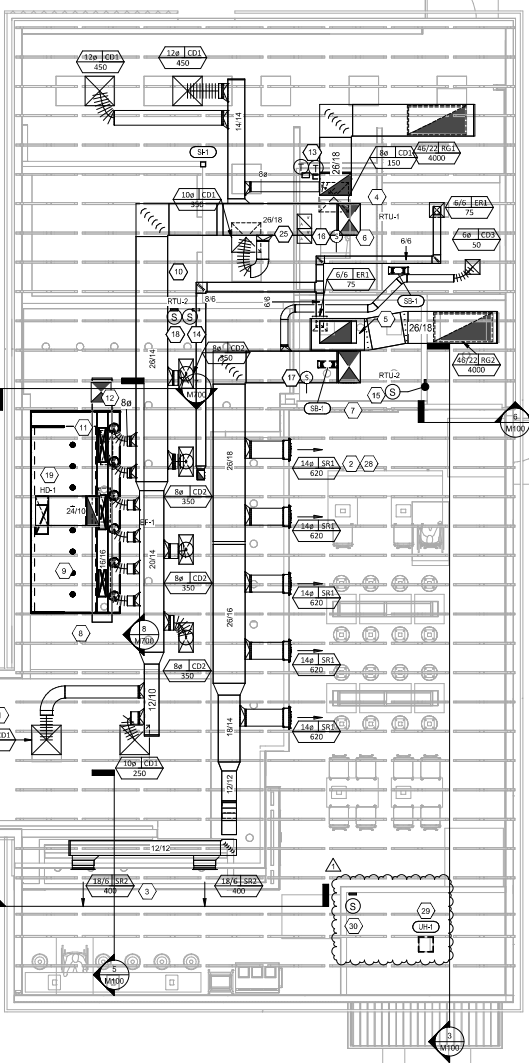


HVAC PLAN NOTES

- SEE ARCHITECTURAL REFLECTED CEILING PLAN FOR CEILING MOUNTED EQUIPMENT LOCATION. TYPICAL.
- PAINT DUCTWORK VISIBLE THROUGH DINING ROOM SUPPLY REGISTERS BLACK. TYPICAL. PENETRATIONS THROUGH SHEAR WALL SHALL BE LIMITED TO 2" DIAMETER OR A GROUP OF PENETRATIONS ALL CONTAINED WITHIN 10" DIAMETER. IF LARGER PENETRATIONS OR GROUPS OF PENETRATIONS ARE REQUIRED COORDINATE WITH STRUCTURAL ENGINEER FOR APPROPRIATE BRACING. SEE STRUCTURAL DRAWINGS FOR SHEAR WALL LOCATION.
- 26/18 DUCT UP FOR TRANSITION TO RTU-1 RETURN CONNECTION IN ROOF CURB. RTU-1 SHALL HAVE AN INTEGRAL SMOKE DETECTOR MOUNTED IN THE RETURN AIR STREAM. INTERLOCK SMOKE DETECTOR TO RTU-1 OPERATION.
- 26/18 DUCT UP FOR TRANSITION TO RTU-2 RETURN CONNECTION IN ROOF CURB. RTU-2 SHALL HAVE AN INTEGRAL SMOKE DETECTOR MOUNTED IN THE RETURN AIR STREAM. INTERLOCK SMOKE DETECTOR TO RTU-2 OPERATION.
- 26/18 DUCT UP FROM BUILDING SUPPLY THROUGH ROOF. TRANSITION TO RTU-1 SUPPLY CONNECTION IN ROOF CURB.
- 26/18 DUCT UP FROM BUILDING SUPPLY TO RTU-2 SUPPLY CONNECTION. TRANSITION IN ROOF CURB.
- 16/10 DUCT UP THROUGH ROOF. TRANSITION TO MAU-1 SUPPLY CONNECTION IN ROOF CURB.
- 24/10 DUCT UP FROM HOOD THROUGH ROOF TO EF-1 COMPLIANT WITH NEPA 96. PROVIDE RADIUSSED ELBOWS WITH AN INSIDE RADIUS OF 0.5W AT ELBOWS IN GREASE DUCT.
- 8/6 DUCT UP THROUGH ROOF. EF-1.
- 28/10 DUCT DOWN TO MAKEUP AIR PIP DUCT CONNECTION. TRANSITION TO SUPPLY PLENUM OPENING SIZE. TYPICAL FOR 3.
- 8" DIA. DUCT DOWN TO AC PIP DUCT CONNECTION. TRANSITION TO SUPPLY PLENUM OPENING SIZE. TYPICAL. CAP UNUSED DUCT CONNECTIONS.
- INSTALL GRIDPOINT THERMOSTATS FURNISHED BY TEMS FOR RTU-1 (15200) AND RTU-2 (15200) AT THIS LOCATION AT 48" AFF. COORDINATE WITH ELECTRICAL SWITCHING IN THIS AREA. PROVIDE THERMOSTAT WIRING FROM EACH THERMOSTAT TO THE CORRESPONDING ROOF TOP UNIT. PROVIDE CATSE CABLE FROM RTU-1 T5200 TO 180X RZ ABOVE ELECTRICAL PANELS (LEAVE 16" OF CABLE COILED UP INSIDE OR 180X RZ NOT 8" BEHIND WALL OF THERMOSTAT FOR FINAL CONNECTION TO THE EMS SYSTEM BY THE TEMS) AND LABEL BOTH ENDS OF CABLE "T5200". SEE GRIDPOINT INSTALLATION INSTRUCTIONS FOR TERMINATION INSTRUCTIONS.
- INSTALL GRIDPOINT ZONE SENSOR MODULE FURNISHED BY TEMS FOR RTU-1 AT THIS LOCATION 84" AFF DIRECTLY TO WALL (NO JUNCTION BOX). COORDINATE LOCATION WITH EQUIPMENT. PROVIDE 186-246 SHIELDED TWISTED PAIR FROM 25M TO RTU-1 THERMOSTAT T1 TERMINALS. SEE GRIDPOINT INSTALLATION INSTRUCTIONS FOR TERMINATION INSTRUCTIONS.
- INSTALL GRIDPOINT ZONE SENSOR MODULE FURNISHED BY TEMS FOR RTU-2 AT THIS LOCATION 60" AFF DIRECTLY TO WALL (NO JUNCTION BOX). COORDINATE LOCATION WITH EQUIPMENT. PROVIDE 186-246 SHIELDED TWISTED PAIR FROM 25M TO RTU-2 THERMOSTAT T1 TERMINALS. SEE GRIDPOINT INSTALLATION INSTRUCTIONS FOR TERMINATION INSTRUCTIONS.
- INSTALL GRIDPOINT SUPPLY PROBE FURNISHED BY TEMS FOR RTU-1 IN THE SUPPLY DUCTWORK UPSTREAM FROM THE FIRST BRANCH CONNECTION. PROVIDE 186-246 SHIELDED TWISTED PAIR FROM SUPPLY PROBE TO RTU-1 THERMOSTAT T2 TERMINALS. SEE GRIDPOINT INSTALLATION INSTRUCTIONS FOR TERMINATION INSTRUCTIONS.
- INSTALL GRIDPOINT SUPPLY PROBE FURNISHED BY TEMS FOR RTU-2 IN THE SUPPLY DUCTWORK UPSTREAM FROM THE FIRST BRANCH CONNECTION. PROVIDE 186-246 SHIELDED TWISTED PAIR FROM SUPPLY PROBE TO RTU-2 THERMOSTAT T2 TERMINALS. SEE GRIDPOINT INSTALLATION INSTRUCTIONS FOR TERMINATION INSTRUCTIONS.
- INSTALL REMOTE TEMPERATURE SENSOR FOR HOOD HD-1 AT THIS LOCATION 84" AFF. COORDINATE LOCATION WITH EQUIPMENT. PROVIDE (1) #18 G. THERMISTOR CABLE FROM TEMPERATURE SENSOR TO HOOD CONTROL PANEL.

HVAC PLAN NOTES

- INSTALL KITCHEN HOOD, HD-1, SUPPORT HOOD PER MANUFACTURER'S INSTALLATION INSTRUCTIONS AND AS DETAILED IN THE ARCHITECTURAL AND STRUCTURAL DRAWINGS. INSTALL HOOD ACCORDING TO THE REQUIREMENTS OF ITS LISTING. IN COMPLIANCE WITH NFPA 96, THE BUILDING CODE, AND APPLICABLE HEALTH JURISDICTION, HOOD SHALL HAVE AN INTEGRAL DUCT COLLAR TEMPERATURE SENSOR TO AUTOMATICALLY ENERGIZE THE EXHAUST AND MAKEUP AIR FANS IF COOKING TEMPERATURES ARE DETECTED. EXHAUST DUCT SYSTEM TO BE WEATHERED ON FACTORY-MANUFACTURED WATER AND AIR TIGHT. INSTALL CLEANOUTS PER CODE AND AS SHOWN. INSTALL HOOD PER DETAILS 2 AND 2M700. CHIPOTLE WILL PROVIDE AN INDEPENDENT TESTING AGENCY FOR TESTING THE INTEGRITY OF THE GREASE DUCT SYSTEM.
- INSTALL REMOTE CONDENSING UNIT FOR WALK-IN COOLER ON ROOF AS DETAILED IN THE ARCHITECTURAL AND STRUCTURAL DRAWINGS. CMG VENDOR TO INSTALL REFRIGERANT LINE SET, THERMOSTATIC EXPANSION VALVE, SOLENOID VALVE, TEMPERATURE CONTROL, SIGHT GLASS, FILTER DRIER, PRESSURE CONTROL, LOW AMBIENT CONTROLS, AND WEATHERPROOF HOUSING. TRAP AND SLOPE REFRIGERANT LINES PER MANUFACTURER'S RECOMMENDATIONS. INSTALLATION SHALL COMPLY WITH ASHRAE/ANSI STANDARD 15. INSTALL THE REFRIGERANT LINE SET UNDER THE ROOF DECK TO WITHIN 3" OF THE CONDENSING UNIT. CUT 2-1/2" HOLE IN WALK-IN COOLER ROOF FOR REFRIGERANT LINE SET AND SEAL PER THE COOLER MANUFACTURER'S INSTALLATION INSTRUCTIONS AFTER LINE SET IS INSTALLED.
- INSTALL REMOTE CONDENSER FOR ICE MACHINE ON ROOF AS DETAILED IN THE ARCHITECTURAL AND STRUCTURAL DRAWINGS. CMG VENDOR TO INSTALL REFRIGERANT LINE SET, THERMOSTATIC EXPANSION VALVE, SOLENOID VALVE, TEMPERATURE CONTROL, SIGHT GLASS, FILTER DRIER, PRESSURE CONTROL, LOW AMBIENT CONTROLS, AND WEATHERPROOF HOUSING. TRAP AND SLOPE REFRIGERANT LINES PER MANUFACTURER'S RECOMMENDATIONS. SEAL PIPING PENETRATIONS THROUGH ROOF. INSTALLATION SHALL COMPLY WITH ASHRAE/ANSI STANDARD 15. INSTALL THE REFRIGERANT LINE SET UNDER THE ROOF DECK TO WITHIN 3" OF THE REMOTE CONDENSER. IF REFRIGERANT PIPING TO ICE MAKER IS EXPOSED TO PUBLIC VIEW CONCEAL WITH A STAINLESS STEEL SHROUD AS SHOWN IN THE ARCHITECTURAL DRAWINGS.
- INSTALL ROOFTOP EQUIPMENT PER MANUFACTURER'S INSTALLATION INSTRUCTIONS AND AS DETAILED IN THE ARCHITECTURAL AND STRUCTURAL DRAWINGS.
- INSTALL EXHAUST FAN EF-1 PER DETAIL 5/M700 AND AS DETAILED IN THE ARCHITECTURAL AND STRUCTURAL DRAWINGS. INSTALL GREASE VIOLATOR SYSTEM FURNISHED BY CHIPOTLE ON EXHAUST FAN, EF-1.
- PROVIDE SUPPLY DIFFUSER CONNECTION TO SUPPLY SYSTEM PER DETAIL 1/M700. TYPICAL.
- PROVIDE AUDIO/VISUAL REMOTE SMOKE DETECTOR ANNUNCIATOR WITH REMOTE KEY OPERATED RESET. WIRE A UNIT BACK TO EACH SMOKE DETECTOR. MOUNT UNIT 60" AFF. TYPICAL.
- INSTALL REME HALO AIR PURIFIER FURNISHED BY TUV IN RTU PER DETAIL 6/M700. SEE ELECTRICAL DRAWINGS FOR POWER CONNECTION INFORMATION. INSTALL UV WARNING STICKERS ON FACE OF ENCLOSURE PER DETAIL AND ON ANY TUV ACCESS DOORS THROUGH WHICH THE REME HALO WOULD BE VISIBLE IF OPENED.
- MAINTAIN 30" CLEARANCE BETWEEN WATER HEATER FLUE TERMINATION AND OUTSIDE AIR INTAKES. MAINTAIN 12" CLEARANCE BETWEEN WATER HEATER COMBUSTION AIR INTAKE AND EXHAUST FAN EF-1 DISCHARGE. SEE PLUMBING DRAWINGS FOR MORE INFORMATION ON WATER HEATER FLUE AND COMBUSTION AIR TERMINATIONS.
- ADJUST SUPPLY REGISTERS SO THAT SUPPLY AIR HITS WALL ON OPPOSITE SIDE OF ROOM AS APPROXIMATELY 3'-0" FROM THE REGISTERS. SEE THE PIPING SCHEDULE.
- PROVIDE CEILING MOUNTED ELECTRIC UNIT HEATER (UH-1). SEE SCHEDULE ON SHEET M100.
- PROVIDE SENSOR FOR ELECTRIC UNIT HEATER (UH-1). MOUNT ON CEILING AWAY FROM UNIT HEATER AND EXTERIOR WALL.



1 M100 1/4" = 1'-0"



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STORE NO.: 5136
 BOSTON ROAD
 1655 BOSTON RD - RT 20
 SPRINGFIELD, MA 01129

Issue/Revision	Date	Description
1	04/14/25	CORP. UPDATES
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DATE: 11/20/24
 DRAWN: CMW
 CHECKED: LW
 PROJECT NO.: CMW 20-5136
 CONSOLE: HVAC PLAN
 SCALE: M100



SANITIZING EQUIPMENT SCHEDULE

TAG	COUNT	DESCRIPTION	FURNISHED BY	INSTALLED BY	BASIS FOR DESIGN			REMARKS
					MANUFACTURER	MODEL		
SB-1	2	BATHROOM AIR PURIFICATION UNIT	TUV	GC	RGF ENVIRONMENTAL GROUP	BRU ASSEMBLY		SEE ELECTRICAL SHEETS FOR CONNECTION INFORMATION.
SH-1	2	HVAC AIR PURIFICATION UNIT	TUV	GC	RGF ENVIRONMENTAL GROUP	REME-HALO		SEE DETAIL 6/2700 FOR INSTALLATION INFORMATION.
SI-1	3	ICE MACHINE TREATMENT SYSTEM	TUV	GC	RGF ENVIRONMENTAL GROUP	IMS-B-GA		SEE PLUMBING DRAWINGS FOR INSTALLATION INFORMATION.

FAN SCHEDULE

TAG	DESCRIPTION	AIRFLOW	E.S.P.	WEIGHT	ELECTRICAL			BASIS FOR DESIGN			REMARKS
					MOTOR POWER	V/P/H	FURNISHED BY	INSTALLED BY	MANUFACTURER	MODEL	
EF-1	UPBLAST DULB0HFA EXHAUST FAN	2,550 CFM	1.45 in-wg	183 lb	2 hp	208/3/60	HS	GC	CAPTIVE-AIRE	DULB0HFA	DIRECT DRIVE DULB0HFA UPBLAST EXHAUST FAN FURNISHED WITH WEATHERPROOF DISCONNECT AND VENTED ROOF CURB.
EF-2	DOWNBLAST RESTROOM EXHAUST FAN	150 CFM	0.60 in-wg	100 lb	0.18 hp	120/1/60	HS	GC	CAPTIVE-AIRE	DR12HFA	DIRECT DRIVE DOWNBLAST RESTROOM EXHAUST FAN FURNISHED WITH INTEGRAL DISCONNECT, SPEED CONTROL, BACKDRAFT DAMPER, AND CURB.

VIROGUARD SCHEDULE

TAG	COUNT	DESCRIPTION	DUCT CONNECTION SIZE	FAN	FURNISHED BY	INSTALLED BY	BASIS FOR DESIGN
VGS-1	1	VIROGUARD HOOD EXHAUST FAN ROOFTOP CONTAMINANT SYSTEM	18" X 18"	CAPTIVE-AIRE DULB0HFA	TDC	GC	ENVIRONMENTAL

CONDENSING UNIT SCHEDULE

TAG	DESCRIPTION	NOMINAL CAPACITY	NUMBER OF COMPRESSORS		REFRIGERANT		ELECTRICAL			BASIS FOR DESIGN			REMARKS		
			CIRCUITS	CIRCUITS	TYPE	CHARGE	WEIGHT	MOPC	FLA	V/P/H	FURNISHED BY	INSTALLED BY		MANUFACTURER	MODEL
CU-1	CONDENSING UNIT - WALK-IN COOLER		1	1	R-404A	10.4 lb	250 lb	15 A	9 A	208/2/60	WCS	GC	RUSSELL DOE	RFD060MARSARUN1	FURNISHED WITH WALK-IN COOLER
CU-2	REMOTE CONDENSER - LOW CAPACITY ICE MAKER		0	1	R-404A	11.46 lb	100 lb			120/1/60	KES	GC	HOSHIZAKI	URC-9F	FURNISHED WITH ICE MAKER
CU-3	REMOTE CONDENSER - SODA MACHINE ICE MAKER		0	1	R-404A	3.86 lb	100 lb			120/1/60	KES	GC	HOSHIZAKI	URC-5F	FURNISHED WITH ICE MAKER

MAKEUP AIR UNIT SCHEDULE

TAG	DESCRIPTION	AIRFLOW	E.S.P.	HEATING			WEIGHT	ELECTRICAL			BASIS FOR DESIGN			REMARKS
				INPUT	OUTPUT	EAT		MOTOR POWER	V/P/H	FURNISHED BY	INSTALLED BY	MANUFACTURER	MODEL	
MAU-1	DIRECT-FIRED MAKEUP AIR UNIT	1,300 CFM	0.50 in-wg	70,942 Btu/h	65,267 Btu/h	21 °F	495 lb	2 hp	208/3/60	HS	GC	CAPTIVE-AIRE	A1-0-250-150	12.5:1 MAX TURNDOWN. FURNISHED WITH DISCONNECT, ROOF CURB, SCREEN INTAKE, AND WASHABLE ALUMINUM FILTERS.

KITCHEN HOOD SCHEDULE

TAG	DESCRIPTION	MAX COOKING TEMP.	AIRFLOW	E.S.P.	EXHAUST PLENUM				PERFORATED SUPPLY PLENUMS								BASIS FOR DESIGN				REMARKS				
					NO.	WIDTH	LENGTH	WIDTH	MAU PLENUM				AC PLENUM				FURNISHED BY	INSTALLED BY	MANUFACTURER	MODEL					
									NO.	WIDTH	LENGTH	WIDTH	NO.	WIDTH	LENGTH	WIDTH									
HD-1	TYPE I CANOPY HOOD WITH PERFORATED MAU AND AC SUPPLY PLENUMS	600 °F	2,550 CFM	0.56 in-wg	1	10"	24"	13'-9"	4'-3"	54"	15"	1,300 CFM	3	6"	2'-4"	696 CFM	8	8"	8	1,029 lb	HS	GC	CAPTIVE-AIRE	5424-ND-ACPSM	MAT'L: 18 GA. TYPE 430 SS. FURNISHED WITH VERTICAL END PANELS, 24V GAS VALVE, VAPORPROOF INCANDESCENT LIGHT FIXTURES, 16" TALL HE SS FILTERS, INTEGRAL UTILITY CABINET, KITCHEN EXHAUST SUPPRESSION SYSTEM, DUCT COLLAR TEMPERATURE SENSOR, PREWIRE PACKAGE, SPARE FIRE STOP/DRY CONTACT, AND 4-POLE 20A CONTACTOR.

ROOFTOP UNIT SCHEDULE

TAG	DESCRIPTION	NOMINAL CAPACITY	EER	AIRFLOW			NET COOLING CAPACITY				HEATING CAPACITY			NUMBER OF REFRIGERANT		ELECTRICAL			FURNISHED BY	INSTALLED BY	BASIS FOR DESIGN		REMARKS			
				TOTAL	OA	E.S.P.	TOTAL	SENSIBLE	DB	EAT	COND. EAT	INPUT	OUTPUT	EAT	COMPRESSORS	CIRCUITS	TYPE	WEIGHT			MOPC	FLA		V/P/H	MANUFACTURER	MODEL
RTU-1	KITCHEN ROOFTOP UNIT	10 ton	11.2	4,000 CFM	500 CFM	1.0 in-wg	118,000 Btu/h	91,000 Btu/h	80 °F	67 °F	80 °F	250,000 Btu/h	205,000 Btu/h	65 °F	2	2	4-454B	1,445 lb	80 A	66 A	208/3/60	CMG	GC	CARRIER	48FFN12	FURNISHED WITH COMP. ENTHALPY ECON., BAROMETRIC RELIEF, RET. SMOKE DETECTOR W/ REMOTE KEYS, ANNUNCIATOR/RESET, M.O.D., MERV-8 FILTERS, CURB, HAL GUARD, TOOLLESS HINGED ACCESS PANELS, DISCONNECT, HOT GAS REHEAT & UNIT MOUNTED CONVENIENCE RECEPTACLE.
RTU-2	DINING ROOM ROOFTOP UNIT	10 ton	11.2	4,000 CFM	1,000 CFM	1.0 in-wg	118,000 Btu/h	91,000 Btu/h	80 °F	67 °F	80 °F	250,000 Btu/h	205,000 Btu/h	65 °F	2	2	4-454B	1,445 lb	80 A	66 A	208/3/60	CMG	GC	CARRIER	48FFN12	FURNISHED WITH COMP. ENTHALPY ECON., BAROMETRIC RELIEF, RET. SMOKE DETECTOR W/ REMOTE KEYS, ANNUNCIATOR/RESET, M.O.D., MERV-8 FILTERS, CURB, HAL GUARD, TOOLLESS HINGED ACCESS PANELS, DISCONNECT, HOT GAS REHEAT & UNIT MOUNTED CONVENIENCE RECEPTACLE.

AIR BALANCE SCHEDULE

TAG	SUPPLY FLOW	RETURN FLOW	EXHAUST FLOW	SUBTOTAL
EF-1	0 CFM	0 CFM	2,550 CFM	-2,550 CFM
EF-2	0 CFM	0 CFM	150 CFM	-150 CFM
MAU-1	1,300 CFM	0 CFM	0 CFM	1,300 CFM
RTU-1	4,000 CFM	3,500 CFM	0 CFM	500 CFM
RTU-2	4,000 CFM	3,000 CFM	0 CFM	1,000 CFM
NET PRESSURIZATION				100 CFM

CONTROL FUNCTIONS

- THE MAIN COOKING EXHAUST FAN AND MAKE UP AIR UNIT SHALL BE INTERLOCKED TO OPERATE TOGETHER. THIS CONTROL CIRCUIT IS ACTIVATED BY A SWITCH AND INCLUDES A FIRE PROTECTION OVERRIDE.
- THE TEMPERATURE IN EACH ZONE IS CONTROLLED BY SPACE TEMPERATURE SENSORS CONNECTED TO THE THERMOSTATS LOCATED IN THE OFFICE. ALL ZONES SHALL OPERATE WITH CONTINUOUS FAN OPERATION DURING OCCUPIED TIMES AND THERMOSTATS SHALL BE CLOSED TO MAINTAIN SET POINTS DURING UNOCCUPIED TIMES. OUTSIDE AIR DAMPERS SHALL BE OPEN CONTINUOUSLY WHEN EITHER IN OCCUPIED MODE OR WHEN THE HOOD SYSTEM IS ON AND SHALL BE CLOSED DURING UNOCCUPIED PERIODS.
- THE THERMOSTATS SHALL DETERMINE OCCUPIED/UNOCCUPIED STATUS BASED ON THE SCHEDULE IN THE ENERGY MANAGEMENT SYSTEM.

AIR TERMINAL SCHEDULE

TAG	DESCRIPTION	FACE SIZE	MATERIAL	FINISH	MOUNTING	FURNISHED BY	INSTALLED BY	BASIS FOR DESIGN			NOTES
								MANUFACTURER	MODEL		
CD1	PERFORATED CEILING DIFFUSER	24" X 24"	ALUMINUM	WHITE	LAY-IN CEILING	GC	GC	NAILOR	4320A TYPE L		PROVIDE WITH INTEGRAL OBD.
CD2	PERFORATED CEILING DIFFUSER	24" X 12"	ALUMINUM	WHITE	LAY-IN CEILING	GC	GC	NAILOR	4320A TYPE L		PROVIDE WITH INTEGRAL OBD, REMOVE 4-WAY DEFLECTORS.
CD3	PERFORATED CEILING DIFFUSER	12" X 12"	ALUMINUM	WHITE	SURFACE MOUNT	GC	GC	NAILOR	4320A TYPE S		PROVIDE WITH INTEGRAL OBD.
ER1	PERFORATED CEILING EXHAUST	12" X 12"	ALUMINUM	WHITE	SURFACE MOUNT	GC	GC	NAILOR	4330R TYPE S		PROVIDE INTEGRAL OBD.
RG1	PERFORATED CEILING RETURN	48" X 24"	ALUMINUM	WHITE	LAY-IN CEILING	GC	GC	NAILOR	4330R TYPE L		
RG2	PERFORATED CEILING RETURN	48" X 24"	ALUMINUM	WHITE	SURFACE MOUNT	GC	GC	NAILOR	4330R TYPE S		
SR1	ADJUSTABLE TURBO NOZZLE	5/8" NECK SIZE	ALUMINUM	WHITE	WALL	GC	GC	AIR CONCEPTS	AMB-14		PROVIDE WITH CONCEALED MOUNTING AND FACE-ACCESSIBLE OBD.
SR2	ARCHITECTURAL GRILLE	18"X6"	ALUMINUM	WHITE	WALL	GC	GC	AIR CONCEPTS	R6DD-1806-F		PROVIDE WITH CONCEALED MOUNTING AND FACE-ACCESSIBLE OBD.

ELECTRIC UNIT HEATER SCHEDULE

TAG	DESCRIPTION	MOUNTING	ELECTRICAL POWER	V/P/H	FURNISHED BY	INSTALLED BY	BASIS FOR DESIGN			REMARKS
							MANUFACTURER	MODEL		
UH-1	CEILING MOUNTED UNIT HEATER	CEILING	3 KW	208/1/60	GC	GC	INRECO	931000000		

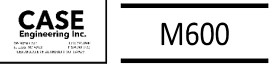


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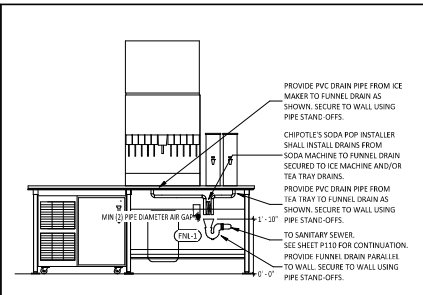


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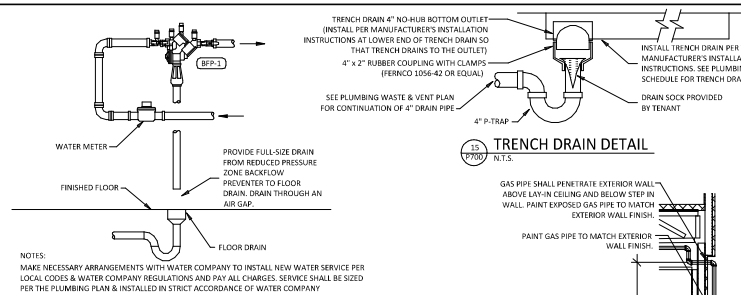
Issue/Revised:	DATE	INITIAL	PERMIT SET
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Drawn:		Checked:	
JW		LW	
Project No:	CMG 26-5136		
Contract:	MECHANICAL SCHEDULES		



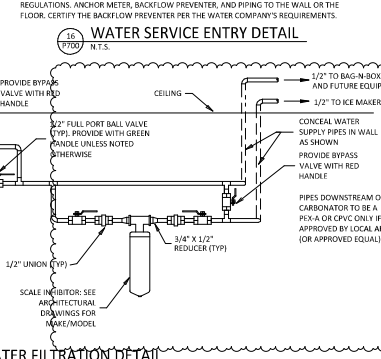
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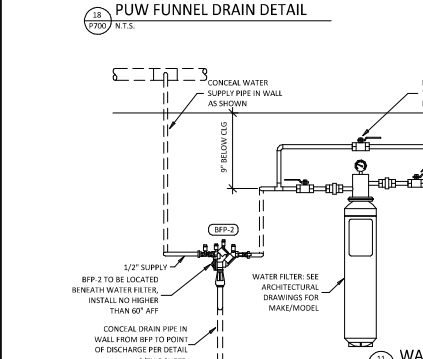
18 P700 N.T.S. PUW FUNNEL DRAIN DETAIL



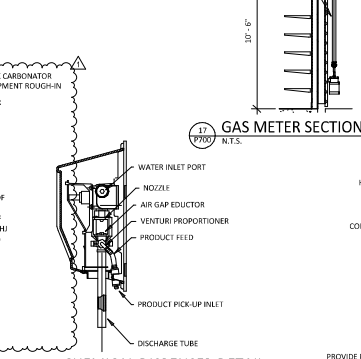
15 P700 N.T.S. TRENCH DRAIN DETAIL



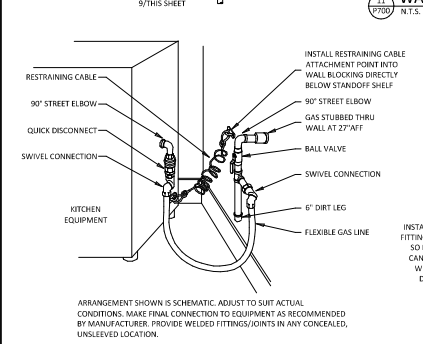
16 P700 N.T.S. WATER SERVICE ENTRY DETAIL



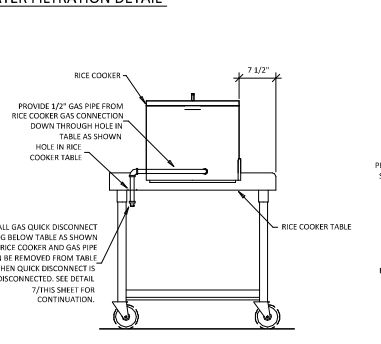
11 P700 N.T.S. WATER FILTRATION DETAIL



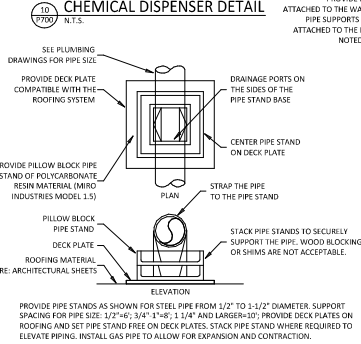
17 P700 N.T.S. GAS METER SECTION



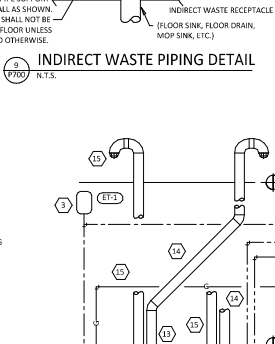
7 P700 N.T.S. KITCHEN GAS EQUIPMENT DETAIL



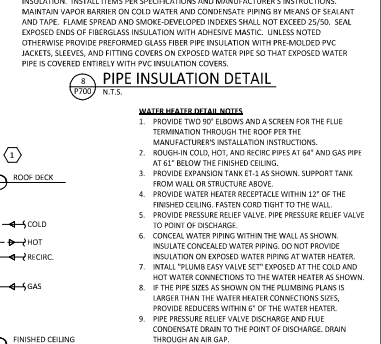
6 P700 N.T.S. RICE COOKER GAS CONNECTION DETAIL



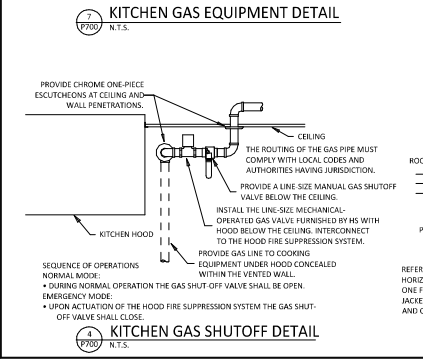
5 P700 N.T.S. ROOFTOP PIPING SUPPORT



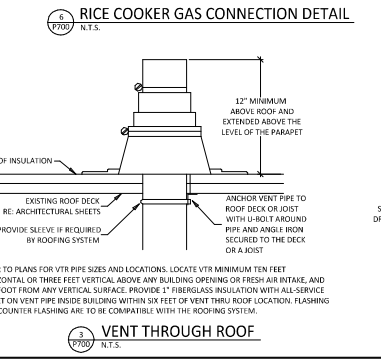
9 P700 N.T.S. INDIRECT WASTE PIPING DETAIL



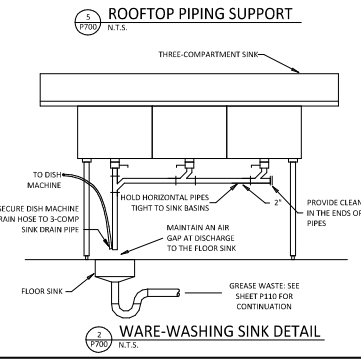
8 P700 N.T.S. PIPE INSULATION DETAIL



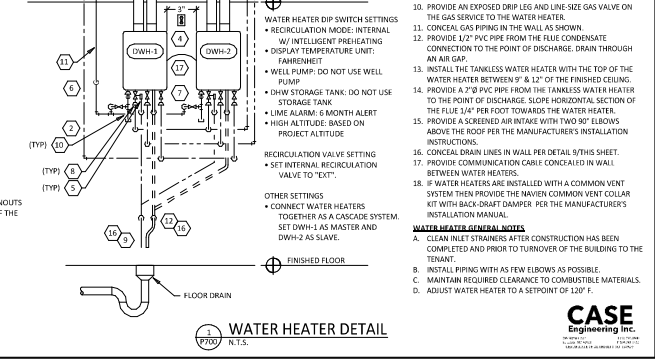
4 P700 N.T.S. KITCHEN GAS SHUTOFF DETAIL



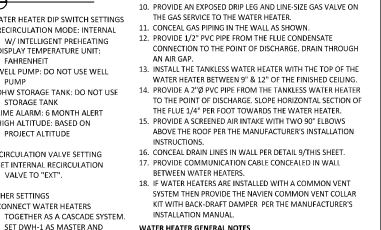
3 P700 N.T.S. VENT THROUGH ROOF



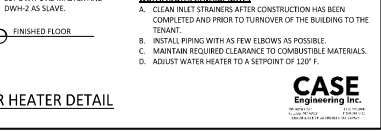
2 P700 N.T.S. WARE-WASHING SINK DETAIL



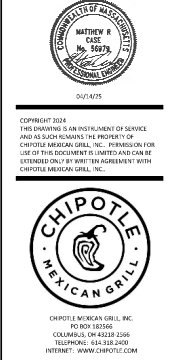
1 P700 N.T.S. WATER HEATER DETAIL



12 P700 N.T.S. SODA TERMINATION DETAIL



13 P700 N.T.S. RTU CONDENSATE TRAP DETAIL



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Issue/Revised:	DATE	PERMIT SET
1	04/14/25	COMP. UPDATES
Drawn:	Checked:	
Ta:	NH	
Project No:	CWS 26-5136	
Contract:		

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PLUMBING DETAILS

P700

ELECTRICAL SPECIFICATIONS

SECTION 16011 TEMPORARY & PERMANENT ELECTRICAL SERVICE PART 1 GENERAL

- DEFINITIONS
 - GFCI: Ground fault current interrupter.
 - RMS: Root Mean Square
 - SFOT: Single Pole, Double Throw
- USE CHANGES
- PERMANENT SERVICE: Coordinate with building owner and utility company to establish permanent service upon completion of the project. Contractor shall pay for all permits, aid-to-construction charges, and related fees associated with the new service.
- NOTIFICATION
 - Coordinate with owner to provide 72 hour written notification to other tenants of any power interruptions. Notification shall state the estimated time and duration of the electrical outage.
- QUALITY ASSURANCE
 - Standards: Comply with ANSI A10.6, NECA's "Temporary Electrical Facilities," and NFPA 70E.
 - Trade Jurisdictions: Assigned responsibilities for installation and operation of temporary utilities are not intended to interfere with trade regulators and union jurisdictions.
 - Electric Service: Comply with NECA, NEMA and UL standards and regulations for temporary electric service. Install service to comply with NFPA 70.
 - Comply with OSHA standards and regulations.

- PRODUCTS
 - Electrical Outlets: Properly configured, NEMA-polarized outlets to prevent insertion of 110- to 120-V plugs into higher-voltage outlets; equipped with ground-fault circuit interrupters, reset button, and pilot light
 - Power Distribution System Circuits: Where permitted and overhead and exposed for surveillance, wiring circuits, not exceeding 125 V ac, 20 A rating, and lighting circuits may be nonmetallic sheathed cable.
 - Main panelboard with disconnect.
 - Temporary lighting.
 - 120 volt receptacles with overcurrent protection.
 - Enclosures: NEMA AB 1 and NEMA K5 to meet environmental conditions of installed location.
- INSTALLATION
 - Electric Power Service: Provide weatherproof, grounded electric power service and distribution system of sufficient size, capacity, and power characteristics during construction period. Include meters, transformers, and overhead-protected disconnecting means.
 - Electric Distribution: Provide receptacle outlets adequate for connection of power tools and equipment.
 - Provide waterproof connections to connect separate lengths of electrical power cords if single lengths will not reach areas where construction activities are in progress. Do not exceed safe length-voltage ratio.
 - Provide metal conduit, tubing, or metallic cable for wiring exposed to possible damage. Provide rigid steel conduits for wiring exposed on grades, floors, decks, or other traffic areas.
 - Provide metal conduit enclosures or boxes for wiring devices.
 - Provide 4 gang outlets, spaced so 1 IDc foot (30 in) extension cord can reach each area for power hand tools and task lighting. Provide a separate 125 V ac, 20 A circuit for each outlet.
 - Lighting: Provide temporary lighting with local switching that provides adequate illumination for construction operations.
 - Provide one 100-W incandescent lamp (or equivalent) every 50 feet (15 m) in traffic areas.
 - Install exterior-type site lighting that will provide adequate illumination for construction operations, parking and traffic conditions, and signage visibility when the Work is being performed.

- SECTION 16050 - GROUNDING AND BONDING PART 1 - GENERAL
 - SUMMARY
 - This Section includes grounding of electrical systems and equipment. Grounding requirements specified in this Section may be supplemented by special requirements of systems described in other sections.
 - QUALITY ASSURANCE
 - Testing Agency Qualifications: Testing agency as defined by OSHA in 29 CFR 1910.7 or a member company of the International Electrical Testing Association and that is acceptable to authorities having jurisdiction
 - Testing Agency's Field Supervisor: Person currently certified by the International Electrical Testing Association to supervise on-site testing specified in Part 3.
 - Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.
 - Comply with UL 467.
 - PRODUCTS
 - For insulated conductors, comply with Division 16 Section "Wiring Methods."
 - Material: Copper.
 - Equipment Grounding Conductors: Insulated with green-colored insulation.
 - Grounding Electrical Conductors: Stranded cable type.
 - Bare Copper Conductors: Comply with the following:
 - Solid Conductors: ASTM B 3.
 - Assembly of Stranded Conductors: ASTM B 8.
 - CONNECTOR PRODUCTS
 - Comply with IEEE 837 and UL 467; listed for use for specific types, sizes, and combinations of conductors and connected items.
 - EXECUTION
 - APPLICATION
 - Use only copper conductors.
 - In raceways, use insulated equipment grounding conductors.
 - Equipment Grounding Conductor Terminations: Use bolted pressure clamps.
 - Grounding Bus: Install in electrical and telephone equipment rooms, in rooms housing service equipment, and elsewhere as indicated.
 - Use insulated spacers space 1 inch from wall and support from wall 6 inches above finished floor, unless otherwise indicated.
 - At doors, route the bus to the top of the door frame, across the top of the doorway, and down to the specified height above the floor.
 - EQUIPMENT GROUNDING CONDUCTORS
 - Comply with NFPA 70, Article 250, for sizes, sizes, and quantities of equipment grounding conductors, unless specific types, larger sizes, or more conductors than required by NFPA 70 are indicated.
 - INSTALLATION
 - Grounding Conductors: Route along shortest and straightest paths possible, unless otherwise indicated. Avoid obstructing access or placing conductors where they may be subjected to strain, impact, or damage.
 - CONNECTIONS
 - General: Make connections to galvanic action or electrolysis possibility is minimized. Select connectors, connection hardware, conductors, and connection methods so metals in direct contact will be galvanically compatible.
 - Equipment Grounding Conductor Terminations: For No. 8 AWG and larger, use pressure-type grounding lugs. No. 10 AWG and smaller grounding conductors may be terminated with wedge pressure-type connectors.
 - Tighten screws and bolts for grounding and bonding connectors and terminals according to manufacturer's published torque-tightening values. If manufacturer's torque values are not indicated, use those specified in UL 489A.
 - Compression Type Connectors: Use hydraulic compression tools to provide correct circumferential pressure for compression connectors. Use tools and dies recommended by connector manufacturer. Provide embossing die or other standard method to make a visible indication that a connector has been adequately compressed on grounding conductor.

- SECTION 16100 - WIRING METHODS PART 1 - GENERAL
 - SECTION REQUIREMENTS
 - Summary: Building wires and cables and associated splices, connectors, and terminations for wiring systems rated 600 V and less, and twisted-pair cables and raceways and boxes.
 - PRODUCTS
 - WIRES AND CABLES
 - Connectors and Splices: Wiring connectors of size, ampacity rating, material, and type and class for application and for service indicated.
 - RACEWAYS
 - Included Cover Enclosures: NEMA 250, steel enclosure with continuous hinge cover and flush hatch. Finish inside and out with manufacturer's standard enamel.
 - Cabinets: NEMA 250, Type 1, unless otherwise indicated. PART 3 - EXECUTION
 - ENCLOSURES
 - Hinged-Cover Enclosures: NEMA 250, steel enclosure with continuous hinge cover and flush hatch. Finish inside and out with manufacturer's standard enamel.
 - Cabinets: NEMA 250, Type 1, unless otherwise indicated. PART 3 - EXECUTION
 - INSTALLATION
 - Install wires and cables according to the NECA's "Standard of Installation."
 - Wiring at Ductiles: Install with at least 12 inches of slack conductor at each outlet.
 - Conceal wiring, unless otherwise indicated, within finished walls, ceilings, and floors.
 - Boxes and Enclosures: In damp or wet locations use NEMA 250, Type 4, stainless steel.
 - Use raceway fittings compatible with raceway and suitable for use and location. For intermediate metal conduit, use threaded rigid steel conduit fittings, unless otherwise indicated.
 - Raceways Embedded in Slabs: Install in middle third of the slab thickness where practical, and leave at least 1 -inch concrete cover.
 - Install exposed raceways parallel to or at right angles to nearby surfaces or structural members, and flush the surface corners as much as practical.
 - Join raceways with fittings designed for the purpose and make joints tight. Use bonding bushings or wedges at connections subject to vibration. Use bonding jumpers where joints cannot be made tight. Use insulating bushings to protect conductors.
 - Install pull wires in empty raceways. Use No. 14 AWG zinc-coated steel or monofilament plastic line having not less than 200-lb tensile strength. Leave not less than 18 inches of slack at each end of the pull wire.
 - Install raceway sealing fittings where required by the NEC and at wiring entrances to refrigerated spaces. Locate at suitable, approved, accessible locations and fill them with UL-listed sealing compound. For concealed raceways, install each fitting in a flush metal box with a knock cover plate having a finish similar to that of adjacent plates or surfaces.
 - Stop-up Connections for Equipment: Extend conductors to equipment with rigid metal conduit; flexible metal conduit may be used 3 inches above the floor.
 - Install a separate green ground conductor in surface metal raceway from the junction box supplying the raceway to receptacle and fixture ground terminals.
 - IDENTIFICATION MATERIALS AND DEVICES
 - Install at locations for most convenient viewing without interference with operation and maintenance of equipment.
 - Coordinate names, abbreviations, colors, and other designations used for electrical identification with corresponding designations indicated in the Contract Documents or required by codes and standards. Use consistent designations throughout Project.
 - Identify raceways and cables with color labeling as follows:
 - Series: Preidentified, snap-removed, colored plastic sleeves or colored encircling conduit, and place adjacent bands of two color markings in contact, side by side.
 - Band Locations: At changes in direction, at penetrations of walls and floors, at 50-foot maximum intervals in straight runs, and at 1-foot maximum intervals in congested areas.
 - Colors: As follows:
 - Telecommunication System: Green and yellow
 - Color-code system secondary service, feeder, and branch-circuit conductors throughout the secondary electrical system as follows:

20R	40B
Black	Brown
Phase B: Red	Orange
Phase C: Blue	Yellow
Neutral:	White
Ground:	Green
Ground:	Green

- SECTION 16140 - WIRING DEVICES PART 1 - GENERAL
 - SECTION REQUIREMENTS
 - Submitals: None.
 - Comply with NEMA WD 1.
 - Comply with NFPA 70, PART 2 - PRODUCTS
 - DEVICES
 - General: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction.
 - Color: Per Material Schedule on sheet E010.
 - Receptacles: Heavy-Duty grade, NEMA WD6, Configuration 5-20R unless otherwise indicated.
 - Ground Fault Circuit Interrupter Receptacles: Integral duplex receptacle; for installation in box without an adapter. Feed through type, with a 3/4-inch-deep outlet.
 - Isolated Ground Receptacles: Equipment grounding contacts connected only to the green grounding screw terminal of the device with inherent electrical isolation from mounting strap.
 - EXECUTION
 - Swap Switches: Heavy-duty, quiet type.
 - Wall Plate: Per Material Schedule on sheet E010.
 - Floor Service Fittings: Modular, above-floor, dual-service units suitable for wiring method used.
 - INSTALLATION
 - Install devices and assemblies plumb and vertical.
 - Mount devices flush with long dimension vertical unless otherwise indicated.
 - Protect devices and assemblies during painting.
 - Install wall plates when painting is complete and paint is cured.

- SECTION 16442 - PANELBOARDS PART 1 - GENERAL
 - SECTION REQUIREMENTS
 - Submitals: None.
 - Comply with NFPA 70.
 - Comply with NEMA PB 1, PART 2 - PRODUCTS
 - PANELBOARDS AND LOAD CENTERS
 - Manufacturers: Subject to compliance with requirement, provide products by one of the following:
 - Panelboards, Overcurrent Protective Devices, Relays, Contactors, and Accessories:
 - Square D Co.
 - Eaton Corp., Cutler-Hammer Products.
 - General Electric Co., Electrical Distribution & Control Div.
 - Siemens Energy & Automation.
 - Recessed:
 - Load Center Capacity, as shown on drawings.
 - Front: Secured to box with concealed trim clamps.
 - Doors: With concealed hinges, flush catches, and tumblers locked, all keyed alike.
 - Bus: Hard drawn copper of 98 percent conductivity.
 - Molded-Case Circuit Breakers: NEMA AB 1, plug-in type, Single-handle for multiple circuit breakers. Appropriate for application, including Type SWD for repetitive switching lightning loads and Type HACR for heating, air conditioning, and refrigerating equipment.
 - Contactors: NEMA C2, Class A combination contactors.
 - EXECUTION
 - Panelboards:
 - Mount panelboards on wall or ceiling. Provide 1" conduit with pull string from each I-box for 40-A data outlets, provide 1" conduit with pull string from each I-box to above office ceiling. Terminate conduit with conduit bushing.
 - Double-gang junction box for 40-A data outlets, provide 1" conduit with pull string from each I-box for 40-A data outlets, provide 1" conduit with pull string from each I-box to above office ceiling. Terminate conduit with conduit bushing.
 - Junction box for 40-A data outlets, provide 1" conduit with pull string from each I-box for 40-A data outlets, provide 1" conduit with pull string from each I-box to above office ceiling. Terminate conduit with conduit bushing.
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 - Contactors: NEMA C2, Class A combination contactors.
 - EXECUTION
 - Panelboards:
 - Mount panelboards on wall or ceiling. Provide 1" conduit with pull string from each I-box for 40-A data outlets, provide 1" conduit with pull string from each I-box to above office ceiling. Terminate conduit with conduit bushing.
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- SECTION 16500 - LIGHTING PART 1 - GENERAL
 - SECTION REQUIREMENTS
 - Submitals: None.
 - Comply with NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction.
 - Emergency Lighting Units, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction.
 - Coordinate ceiling-mounted luminaires with ceiling construction, mechanical work, and security and fire-prevention features required in ceiling space and on ceiling.
 - PRODUCTS
 - Fluorescent and Fixture Components, General:
 - Lenses, Diffusers, Covers, and Gobes: 100 percent virgin acrylic plastic or annealed crystal glass, unless otherwise indicated.
 - EXECUTION
 - INSTALLATION
 - Set units level, plumb, and square with ceiling and walls, and secure.
 - Support for Recessed and Semi-recessed Grid-Type Fluorescent Fixtures: Install ceiling support system rods or wires at a minimum of 4 rods or wires for each fixture, located not more than 6 inches from fixture corners.
 - Support for Suspended Fixtures: Support according to manufacturer's recommendations.
 - Lamping: Where specific lamp designations are not indicated, lamp units according to manufacturer's written instructions.

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 - SECTION REQUIREMENTS
 - Submitals: None.
 - Comply with NFPA 70, Article 100

LIGHTING CONTROL COMPONENTS SCHEDULE

DESCRIPTION	QUANTITY	FURNISHED BY	INSTALLED BY	MANUFACTURER	MODEL	REMARKS
FLIGHT LIGHTING CONTROL PANEL	1	TLS	GC	ACUTY	ARP INTENCOS SSPR W/VOULT FM DTC	8 RELAY PANEL FOR DIMMING CONTROL WITH FLUOR MOUNT ENCLOSURE, AND DIGITAL TIME CLOCK
WALL MOUNTED CHELSEA SWITCH	1	TLS	GC	ACUTY	CHELSEA	SEE LIGHTING CONTROL DIAGRAM FOR SWITCH CONFIGURATION
WALL MOUNTED DIMMER SWITCH	2	TLS	GC	COOPER	SALOK-W	SLIDE DIMMER COMPATIBLE WITH UP TO 100W LED LIGHTING. SET AT 50% IF DINING ROOM LIGHTS FLICKER AT THIS DIMMER SETTING THEN GC SHALL PROVIDE LUTRON DUAL 250W DIMMER AS REPLACEMENT.
WALL MOUNTED LINE VOLTAGE OCCUPANCY SENSOR	3	TLS	GC	HUBBELL	LHMTS 1-N WH	WHITE DUAL TECHNOLOGY SINGLE RELAY WITH 1 BUTTON AND NEUTRAL WIRING

ELECTRICAL LIGHTING PLAN NOTES

- INSTALL LC80 CHELSEA SWITCH AND CONNECT TO BLUE BOX AS SHOWN IN DETAIL 6/E710.
- FOR UNCRICULATED LIGHT FIXTURES, CONNECT TO RELAY CIRCUIT INDICATED NEXT TO THE FIXTURE TAG THROUGH THE LIGHTING CONTROL PANEL (LCP) UNLESS NOTED OTHERWISE.
- WALL MOUNT THE EMERGENCY LIGHT FIXTURE AT 6" BELOW THE CEILING UNLESS NOTED OTHERWISE.
- VERIFY MOUNTING HEIGHT OF EXIT SIGN PRIOR TO ROUGH IN. EXIT SIGN MUST BE VISIBLE FROM AREA SERVED AFTER BUILDING SYSTEMS HAVE BEEN INSTALLED. SEE ARCHITECTURAL ELEVATIONS FOR FURTHER INFORMATION.
- PROVIDE DOUBLE-POLE SINGLE-THROW LIGHT SWITCH IN OFFICE, CONTROL OF OFFICE LIGHT AND RESTROOM EXHAUST FAN.
- INSTALL LIGHT FIXTURES FURNISHED WITH THE WALK-IN COOLER. PROVIDE UNSWITCHED CONDUCTOR FROM LIGHTING CIRCUIT TO WALK-IN COOLER LIGHTING J-BOX AND FROM J-BOX TO LIGHT FIXTURES AS SHOWN. CONDUIT BETWEEN LIGHT FIXTURES SHALL BE ROUTED ON THE INTERIOR OF THE WALK-IN COOLER. SEAL INTERIOR AND EXTERIOR OF CONDUITS WHERE THEY PASS THROUGH THE WALK-IN COOLER ENVELOPE PER THE NEC.
- PROVIDE (2) GFIC RECEPTACLES FOR UNDERCAB LIGHTING AS SHOWN. CONNECT TO SWITCHED LEG OF THE KITCHEN LIGHTING CIRCUIT. SEE ELEVATIONS ON SHEET E700 FOR RECEPTACLE LOCATIONS, HEIGHTS, AND CIRCUITING. INSTALL RECEPTACLES IN A HORIZONTAL ORIENTATION.
- PROVIDE UNITS AS SHOWN ON THE ARCHITECTURAL RCP PER THE ARCHITECTURAL UNISTRUIT DETAIL, TYPICAL.
- CONNECT EXTERIOR LIGHTING CIRCUIT TO CIRCUIT SHOWN THROUGH THE EXTERIOR LIGHTING CONTROL PANEL PER DETAIL 5/E710.
- INSTALL WALL-MOUNTED OCCUPANCY SENSOR FURNISHED WITH LIGHTING SUPPLIER AT 42" AFF. ADJUST OCCUPANCY SENSOR TO PROVIDE AUTOMATIC ON/AUTOMATIC OFF OPERATION WITH A FIXED TIMER OF 30 MINUTES AND WITH BOTH THE PASSIVE INFRARED AND ULTRASONIC SENSORS ENABLED.
- WALL MOUNT THE EMERGENCY LIGHT FIXTURE AS SHOWN IN THE DINING ROOM INTERIOR ELEVATIONS ON SHEET E110.
- INSTALL WALL-MOUNTED DIMMERS ABOVE PANELBOARDS 6" ABOVE LAY-IN CEILING FOR CONTROL OF DINING ROOM OVERHEAD STRIP LED AND PENDANT LIGHTS. CONNECT DIMMERS TO RELAYS SHOWN THROUGH THE LIGHTING CONTROL PANEL SET DIMMERS AT 50%.
- CONNECT DINING ROOM (RELAY CIRCUITS R1, AND R3) OVERHEAD STRIP LED AND PENDANT LIGHTS TO THE RELAY INDICATED THROUGH THE CORRESPONDING WALL MOUNTED DIMMER INSTALLED ABOVE THE PANELBOARDS.
- INSTALL LIGHTING CONTROL SYSTEM PER DETAIL 6/E710.
- NOT USED.
- PENETRATIONS THROUGH SHEAR WALL SHALL BE LIMITED TO 10" DIAMETER (OR A GROUP OF PENETRATIONS ALL CONTAINED WITHIN 10" DIAMETER). IF LARGER PENETRATIONS OR GROUPS OF PENETRATIONS ARE REQUIRED COORDINATE WITH STRUCTURAL ENGINEER FOR APPROPRIATE BRACING. SEE STRUCTURAL DRAWINGS FOR SHEAR WALL LOCATION.
- INSTALL CHIME/STROBE FURNISHED WITH VEHICLE DETECTION SYSTEM ON WALL 12" BELOW CEILING AND CONNECT TO VEHICLE DETECTOR SYSTEM PER THE MANUFACTURER'S INSTALLATION INSTRUCTIONS.

LIGHTING CONTROL PANEL SCHEDULE: LCP

RELAY	PANEL	CIRCUIT	AREA SERVED	CONTROL	TIME ON	TIME OFF	DIMMER CONTROL	NOTES
R1	A	34	KITCHEN A	TIME/CLOCK	7:00:00 AM	12:00:00 AM	N/A	SINGLE POLE (NC)
R2	A	32	KITCHEN B	TIME/CLOCK	7:00:00 AM	12:00:00 AM	N/A	SINGLE POLE (NC)
R3			SPARE					SINGLE POLE (NC)
R4	A	30	DINING ROOM A	TIME/CLOCK	10:00:00 AM	12:00:00 AM	N/A	SINGLE POLE (NC)
R5	A	30	DINING ROOM B	TIME/CLOCK	10:00:00 AM	12:00:00 AM	N/A	SINGLE POLE (NC)
R6	A	30	DINING ROOM NL	TIME/CLOCK	10:00:00 AM	12:00:00 AM	N/A	SINGLE POLE (NC)
R7	A	28	RR EXHAUST FAN	TIME/CLOCK	7:00:00 AM	12:00:00 AM	N/A	SINGLE POLE (NC)
R8	A	42	EXT. LIGHTING/SIGNAGE	TIME/CLOCK	SUNSET -10IR	12:00:00 AM	N/A	SINGLE POLE (NC)

LIGHTING FIXTURE SCHEDULE

TAG	QUANTITY	TYPE	MOUNT	FURNISHED BY	INSTALLED BY	MANUFACTURER	MODEL	LAMP(S)	VOLTS	WATT S	SPECIAL REQUIREMENTS
A1	9	2x2 LED LENSED TROFFER	LAY-IN	TLS	GC	NORA LIGHTING	NPDBL-E22/34 W	(1) 3000K LED	120	30	COMPATIBLE WITH 0-10V DIMMING, FACTORY LOCKED TO 3000K.
B1	7	RECESSED 6IN CAN LIGHT	CEILING	TLS	GC	NORA LIGHTING	NHC-6G24ATFL with NTA-57W/M1 Trim	(1) 17W ECOSTRY ECO-PAR38C -17-GU24-27K-25D LED (25-2700K) W/ GU 24 BASE	120	17	LED TRIM FURNISHED WITH GU24 SOCKET ADAPTER
B2	35	RECESSED 6IN CAN LIGHT W/ LED TRIM	CEILING	TLS	GC	NORA LIGHTING	NHC-6G24ATFL WITH NLCBC-65132W/W LED TRIM	INTEGRAL 3000K LED	120	17	BLACK LED TRIM FURNISHED WITH GU24 SOCKET
B3	4	RECESSED 6IN CAN LIGHT W/ BLACK LED TRIM	CEILING	TLS	GC	NORA LIGHTING	NHC-6G24ATFL WITH NLCBC-651278B LED TRIM	INTEGRAL 3000K LED	120	12	BLACK LED TRIM FURNISHED WITH GU24 SOCKET
C0	2	LOW PROFILE LED - 1 FT	SURFACE	TLS	GC	NORA LIGHTING	ELJLED-12HW	INTEGRAL 3000K LED	120	5	FURNISHED WITH COVERS, CONNECTORS, AND ONE HARDWARE BOX OR CORD/PLUG PER SECTION
C2	6	LOW PROFILE LED - 3 FT	SURFACE	TLS	GC	NORA LIGHTING	ELJLED34H/W	INTEGRAL 3000K LED	120	12	FURNISHED WITH COVERS, CONNECTORS, AND ONE HARDWARE BOX OR CORD/PLUG PER SECTION
C3	6	LOW PROFILE LED - 4 FT	SURFACE	TLS	GC	NORA LIGHTING	ELJLED46H/W	INTEGRAL 3000K LED	120	15	FURNISHED WITH COVERS, CONNECTORS, AND ONE HARDWARE BOX OR CORD/PLUG PER SECTION
C4	6	LOW PROFILE LED - 5 FT	SURFACE	TLS	GC	NORA LIGHTING	ELJLED58H/W	INTEGRAL 3000K LED	120	18	FURNISHED WITH COVERS, CONNECTORS, AND ONE HARDWARE BOX OR CORD/PLUG PER SECTION
E1	3	EMERGENCY LIGHT - DUAL HEAD	VARIJOUS	TLS	GC	EXITRONIX	LED-90	(2) SPECIAL LED	120	2	90 MINUTE BATTERY BACKUP
E2	3	EXTERIOR REMOTE EMERGENCY LIGHT	VARIJOUS	TLS	GC	EXITRONIX	CLED-BL-WP WITH PMC-B-1 MOUNTING PLATE	(1) SPECIAL LED	4	1	LOW VOLTAGE REMOTE EMERGENCY LIGHT POWERED BY REMOTE-CAPABLE EXIT SIGN
E4	5	WHITE EXIT SIGN WITH EMERGENCY LIGHT - STANDARD RED LETTERS	VARIJOUS	TLS	GC	EXITRONIX	CLED-CAWH	(1) SPECIAL LED	120	2	90 MINUTE BATTERY BACKUP WITH INTEGRAL EMERGENCY LIGHT. REMOTE HEAD CAPABLE
E7	9	EMERGENCY LIGHT	VARIJOUS	TLS	GC	DUALITE	EV2	(2) 1W INTEGRAL LED	120	1	90 MINUTE BATTERY BACKUP
H1	8	HOOD LIGHT	SURFACE	THS/TLS	THS	FIGURE FURNISHED WITH HOOD	FURNISHED WITH HOOD	(1) TGP 116A19N1527K	120	23	INSTALL LAMP FURNISHED SEPARATELY BY LIGHTING SUPPLIER
J4	2	DECORATIVE PENDANT	SURFACE	TLS	GC	BARNLIGHT	BLE-C-OPT10-ASH-100-SBK-100-CAW	GREEN CREATIVE BA190MM/277 GU24R	120	9	WITH BLACK LAMP SHADE, BLACK CORD AND OAK LAMP HOLDER
P5	4	PENDANT	SURFACE	TLS	GC	HILITE MFG	HL-C-910B12-91/20W LBL	TGP FG25D4027COC	120	5	ADJUST CORD LENGTH FOR MOUNTING HEIGHT CALLED OUT FOR IN ARCHITECTURAL DRAWINGS
P6	2	DECORATIVE DINING ROOM PENDANT	SURFACE	TLS	GC	FLOS	FU009030B1503	INTEGRAL LED	120	48	HARDWIRED SET OF (3) 3MM BLACK WITH MULTICAPANDY AND 9M CABLES
T1	14	TRACK HEAD	TRACK	TLS	GC	JUNO	R60SL 30K 90CR POIM WFL BL	INTEGRAL LED	120	10	BLACK CYLINDER TRACK HEAD W/ UNIVERSAL 120V TRAC ADAPTER AND WIDE FLOOD BEAM
T-6	4	TRACK (8 FEET)	SUSPENDED	TLS	GC	JUNO	T 8FT BK	N/A	120	0	SINGLE CIRCUIT, BLACK FINISH
T-8	1	TRACK (8 FEET)	SUSPENDED	TLS	GC	JUNO	T 8FT BK	N/A	120	0	SINGLE CIRCUIT, BLACK FINISH
X9	2	LED CHANNEL LIGHT	SUSPENDED	TLS	GC	PARADIGM LED	PL-AMC-2415 W/ OPAL LENS AND END CAPS	PL-FLEXSR590-WW-WP-3000K	120		FURNISHED W/ REMOTE-MOUNTED NIEMA 3R DIMMABLE PL-FPS-0100-010M-24 LED DRIVER. SEE PLAN FOR LENGTHS.
TCL-0-5	1	CURRENT LIMITER (80W)	SURFACE	TLS	GC	JUNO	TCLFM11 BL W/ TCLCB 2A BLACK	N/A	120	0	BLACK CURRENT LIMITING END FEED
TCL-2	1	CURRENT LIMITER (240W)	SURFACE	TLS	GC	JUNO	TCLFM11 BL W/ TCLCB 3A BLACK	N/A	120	0	BLACK CURRENT LIMITING END FEED

LIGHTING FIXTURE SCHEDULE NOTES

- FLUORESCENT LAMPS NOT INCLUDED WITH THE FIXTURES RE TO BE MANUFACTURED BY SYLVANIA UNLESS OTHERWISE NOTED. PHELPS FLUORESCENT LAMPS WILL BE AN ACCEPTABLE ALTERNATE.
- SEE THE ARCHITECTURAL REFLECTED CEILING PLAN FOR EXACT LIGHT LOCATIONS.
- SEE THE ARCHITECTURAL LIGHTING DETAILS FOR FIXTURE CONSTRUCTION DETAILS.

LIGHTING FLOOR PLAN

1/4" = 1'-0"



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Issue/Revised: _____

12/20/24 INITIAL PERMIT SET

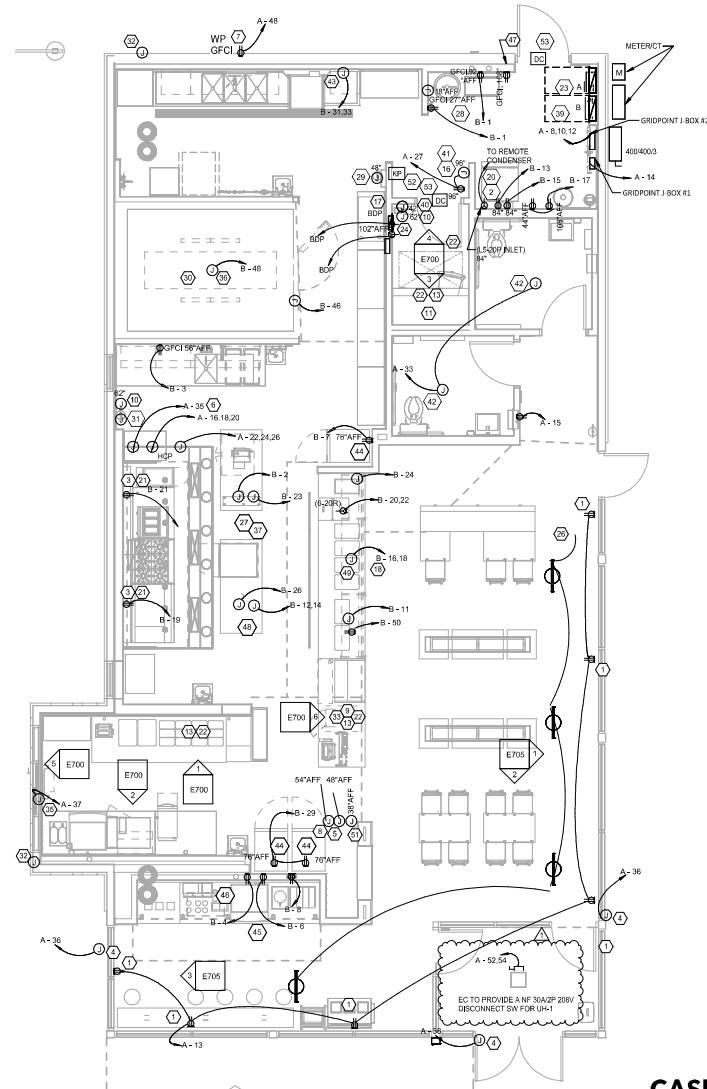
ELECTRICAL POWER PLAN NOTES

- SHOW ROOM WINDOW RECEPTACLE. COORDINATE EXACT RECEPTACLE HEIGHT IN THE FIELD. LOCATION SHALL BE IN THE DRYWALL IMMEDIATELY ABOVE THE MAIN STOREFRONT WINDOW AND AS SHOWN IN THE DINING ROOM ELECTRICAL ELEVATIONS ON SHEET E705.
- ICE MAKER ELECTRICAL TIE-IN. COORDINATE EXACT LOCATION WITH EQUIPMENT INSTALLER PRIOR TO ROUGH-IN. PROVIDE L5-20P FLANGED INLET WIRED TO THE REMOTE CONDENSER. PROVIDE 48" CORDS, ONE WITH 6-20P END AND ONE WITH L5-20P END. FROM ICE MAKER TO RECEPTACLE AND FLANGED INLET.
- CONNECT RECEPTABLES SERVING EQUIPMENT BELOW THE KITCHEN HOOD TO THE CIRCUITS SHOWN THROUGH THE RECEPTACLE INTEGRAL TO THE HOOD CONTROL PANEL. INTEGRAL CONTACTOR SHALL BE INTERLOCKED TO HOOD FIRE PROTECTION SYSTEM SO THAT RECEPTABLES ARE DE-ENERGIZED UPON ACTIVATION OF HOOD FIRE PROTECTION SYSTEM.
- JUNCTION BOX FOR EXTERIOR SIGN LIGHTING. COORDINATE EXACT LOCATION WITH CHIPOTLE'S CONSTRUCTION MANAGER AND THE SIGN INSTALLER PRIOR TO ROUGH-IN. CONNECT TO CIRCUIT SHOWN THROUGH THE EXTERIOR LIGHTING CONTACTOR PANEL AS SHOWN IN DETAIL SE710.
- PROVIDE JUNCTION BOX FOR THE KITCHEN EXHAUST SUPPRESSION SYSTEM PUSH BUTTON. PROVIDE A 1/2" CONDUIT FROM THE J-BOX TO 6" ABOVE THE CEILING AND TERMINATE WITH A CONDUIT BUSHING. COORDINATE EXACT LOCATION WITH THE KITCHEN EXHAUST SUPPRESSION SYSTEM INSTALLER AND THE FIRE MARSHALL PRIOR TO ROUGH-IN.
- HOOD CONTROL PANEL AND KITCHEN EXHAUST SUPPRESSION SYSTEM CABINET SHALL BE LOCATED WITHIN THE INTEGRAL HOOD UTILITY CABINET. PROVIDE FINAL ELECTRICAL CONNECTIONS PER THE MANUFACTURER'S INSTALLATION INSTRUCTIONS NECESSARY FOR A COMPLETE AND OPERATIONAL SYSTEM.
- PROVIDE A DUPLEX GFCI RECEPTACLE WITH WEATHERPROOF WHILE IN USE OUTLET COVER FOR IRRIGATION CONTROLLER.
- PROVIDE AN EMPTY SINGLE GANG J-BOX FOR VOLUME CONTROLS. INSTALL 1602 SPEAKER WIRE FURNISHED BY MISS FROM THE J-BOX TO THE AMPLIFIER IN THE OFFICE WITH 3' OF SLACK AT EACH END.
- COORDINATE DATA/POWER RECEPTACLE MOUNTING REQUIREMENTS WITH THE CASE WORK INSTALLER PRIOR TO ROUGH-IN.
- PROVIDE ROUGH-IN FOR LAUNCHPORT AS NOTED AND INSTALL LAUNCHPORT FURNISHED BY CHIPOTLE PER THE MANUFACTURER'S INSTALLATION INSTRUCTIONS WITH THE WALL STATION AT 62" AFF. PROVIDE A 4" X 2-1/2" DEEP OCTAGON J-BOX WITH 1-1/2" EXTENSION RING AT 62" AFF FOR THE WALL STATION INSTALLATION WITH A 1" CONDUIT WITH PULL STRING FROM THE J-BOX TO ABOVE THE OFFICE CEILING.
- PROVIDE AN EMPTY 2" CONDUIT WITH PULL STRING FROM THE BASE BUILDING'S TELEPHONE SERVICE ENTRANCE LOCATION TO THE SPACE ABOVE THE OFFICE CEILING.
- PROVIDE A SUITABLE LENGTH OF LIQUID-TIGHT CONDUIT TO THE EXHAUST FAN EF-1 TO ALLOW THE EXHAUST FAN TO HINGE COMPLETELY OPEN WHEN THE VIBROGLARD SYSTEM IS INSTALLED.
- AFTER THE FAX LINE, POS, AND OFFICE EQUIPMENT IS INSTALLED PROVIDE CHILDPROOF RECEPTACLE COVERS ON UNUSED I/O RECEPTABLES AT THE FAX LINE, POS, AND OFFICE.
- PROVIDE ONE PHASE, ONE NEUTRAL, AND ONE GROUND CONDUCTOR FROM THE ICE MAKER TO THE REMOTE CONDENSER CU.
- UNIT SHALL HAVE AN INTEGRAL NON-FUSED DISCONNECT SWITCH.
- INSTALL DOOR CHIME AT 98" AFF. SEE ARCHITECTURAL DOOR EQUIPMENT FOR EQUIPMENT INFORMATION.
- INSTALL THE BYPASS DISTRIBUTION PANEL (BDP) FURNISHED BY THE TENANT. INSTALL PER THE MANUFACTURER'S INSTALLATION INSTRUCTIONS AND DETAIL 3E710.
- ROUGH-INS TO SERVE LINE AND POS EQUIPMENT ARE UNDERGROUND. COORDINATE ROUGH-IN REQUIREMENTS AND LOCATIONS WITH EQUIPMENT MANUFACTURER PRIOR TO ROUGH-IN.
- ROOFTOP UNIT SHALL HAVE AN INTEGRAL UNIT-MOUNTED GFCI RECEPTACLE. PROVIDE CONNECTION TO CIRCUIT SHOWN.
- ICE MAKER RECEPTABLES SHALL BE CONCEALED BEHIND THE ICE MAKER. COORDINATE LOCATION WITH ACTUAL WIDTH OF ICE MAKER.
- PROVIDE VERTICAL METAL DIE CAST WEATHERPROOF WHILE IN USE OUTLET COVER ON RECEPTABLES AT COOL LINE AND NEXT TO PREP TABLE COVER SHALL BE INTERLOCKED TO HOOD FIRE PROTECTION SYSTEM FOR DOUBLE GANG BOXES. NO SUBSTITUTIONS SHALL BE ACCEPTED.
- LABEL BATTERY-PROTECTED RECEPTABLES "BATTERY-PROTECTED DISCONNECT AT PANEL BDP".
- LABEL MAIN DISCONNECT SWITCH AND PANEL A "WARNING: BATTERY-PROTECTED RECEPTABLES IN USE. DISCONNECT AT PANEL BDP".
- PROVIDE A NEMA 5-20P FLANGED INLET (E700 MODEL #H378C) AND A SINGLE NEMA 5-20P RECEPTACLE IN OFFICE FOR CONNECTION TO A CENTRAL UPS SYSTEM. CONNECT THE FLANGED INLET AND THE SINGLE RECEPTACLE TO THE TERMINAL BLOCK IN THE BDP PER THE MANUFACTURER'S INSTRUCTIONS. PROVIDE FINAL CONNECTION FROM FLANGED INLET TO THE OUTPUT OF THE UPS USING A 2-LONG 20A EXTENSION CORD. PLUG THE UPS INTO THE SINGLE RECEPTACLE.
- CONNECT RESTROOM EXHAUST FAN TO CIRCUIT SHOWN THROUGH THE LIGHTING CONTROL PANEL (LCP).
- INSTALL 1602 SPEAKER WIRE FURNISHED BY MISS. INSTALL SPEAKER WIRE BETWEEN SPEACERS IN THE DINING ROOM AS SHOWN AND TO THE VOLUME CONTROL IN THE KITCHEN WITH 3 FEET OF SLACK AT EACH END. SEE ARCHITECTURAL PLANS FOR SPEAKER LOCATIONS. ADJUST EACH SPEAKER 70W TAP SETTING TO BE 15 WATTS.
- PROVIDE POWER CONNECTIONS TO ISLAND PREP TABLE PER DETAIL 2E710. PROVIDE GFCI DUPLEX RECEPTABLES IN TWO J-BOXES INTEGRAL TO PREP TABLE FOR HOT HOLDING CABINET AND GENERAL RECEPTACLE.
- PROVIDE GFCI RECEPTACLE AND J-BOX AND INSTALL CO2 ALARM FURNISHED BY CO2AS AS SHOWN IN DETAIL 4E710.
- PROVIDE J-BOX AND INSTALL CO2 ALARM REMOTE DISPLAY UNIT FURNISHED BY CO2AS AS SHOWN IN DETAIL 4E710.
- INSTALL WALK-IN COOLER EXTERNAL READOUT THERMOMETER REMOTE PROBE ON WALL OPPOSITE FROM DOOR AS SHOWN. ROUTE TEMPERATURE PROBE WIRE ABOVE WALK-IN COOLER CEILING PANELS. SEAL PENETRATIONS THROUGH THE CEILING PANELS. AND SECURE VERTICAL PROBE WIRE TIGHT TO WALLS. NO EXCESS PROBE WIRE SHALL BE WITHIN THE WALK-IN COOLER.
- PROVIDE A J-BOX 6" BELOW THE LAY-IN CEILING WITH A 1/2" CONDUIT ROUTED TO THE HCP. PROVIDE 16 GA 2-CONDUCTOR LOW VOLTAGE WIRE FROM THE HOOD SUPPRESSION SYSTEM GAS VALVE BACK TO THE HCP WITH FINAL CONNECTION IN THE HCP BY THE FS INSTALLER. LOW-VOLTAGE WIRING FROM THE J-BOX TO THE GAS VALVE SHALL BE CONCEALED WITHIN FLEXIBLE METAL CONDUIT OR LIQUIDTIGHT FLEXIBLE METAL CONDUIT.
- PROVIDE 4" SQUARE J-BOX ON EXTERIOR WALL FOR MOUNTING OF EXTERIOR CAMERA. SEE ARCHITECTURAL ELEVATION FOR EXACT HEIGHT AND LOCATION. PROVIDE 3/4" CONDUIT WITH PULLSTRING FROM J-BOX TO ABOVE LAY-IN CEILING AREA IN KITCHEN. J-BOX SHALL NOT BE SURFACE MOUNTED. BRACKET OF CAMERA SHALL BE MOUNTED FLUSH TO EXTERIOR WALL FINISH.
- PROVIDE 1" CONDUITS FROM LOW-VOLTAGE J-BOXES AT POS COUNTER CONCEALED WITHIN THE SERVE LINE WRING CHASE TO THE WALL. THEN CONCEALED WITHIN THE WALL AND ABOVE THE CEILING TO ABOVE THE OFFICE CEILING.
- PROVIDE 3" CONDUIT (EMT, IMC, OR RMC) THROUGH ROOF ABOVE OFFICE. TERMINATE WITH WEATHERHEAD 12" ABOVE ROOF FOR FUTURE CELL BOOSTER.
- INSTALL VEHICLE DETECTOR SYSTEM FURNISHED BY TIS SURFACE-MOUNTED ON WALL IN ACCESSIBLE LOCATION ABOVE CEILING AND CONNECT TO STROBECHE AND DETECTOR LOOP PER THE MANUFACTURER'S INSTALLATION INSTRUCTIONS. MAKE FINAL ADJUSTMENTS TO LOOP SENSITIVITY PER THE MANUFACTURER'S INSTRUCTIONS. ONCE ALL COMPONENTS ARE INSTALLED AND OPERATIONAL, THE CHIMESTROBE LIGHT SHOULD STAY ILLUMINATED AND THERE SHOULD BE SINGLE CHIME WHEN A VEHICLE DRIVES OVER OR STOPS ON LOOP.
- SEAL INTERIOR AND EXTERIOR OF CONDUITS THAT PASS THROUGH THE WALK-IN COOLER ENVELOPE PER THE NEC.
- PROVIDE ISLAND PREP TABLE FOOD WARMER RECEPTACLE WITH GROUND PIN TOWARDS THE BOTTOM OF THE RECEPTACLE.
- INSTALL TRANSFORMER FURNISHED BY TUV WITH THE REME HALO AIR PURIFIER IN THE JUNCTION BOX ON THE EXTERIOR OF THE RTU PER DETAIL 6M700. CONNECT LINE SIDE OF THE TRANSFORMER TO THE RTU SERVICE RECEPTACLE CIRCUIT SO THAT REME HALO RUNS CONTINUOUSLY. CONNECT THE LOW VOLTAGE SIDE OF THE TRANSFORMER TO THE REME HALO USING THE INCLUDED BARREL PLUG.
- PROVIDE (2) 107"X104" JUNCTION BOXES (J-BOX #1/J-BOX #2) ON THE WALL ABOVE PANELBOARDS 6" BELOW THE LAY-IN CEILING AND MOUNTED ADJACENT TO EACH. PROVIDE CONDUITS AND WIRING SHOWN IN DETAIL BE710. TENS SHALL PROVIDE GRIDPOINT 3 PHASE METER AND TRANSFORMER WITHIN J-BOX #1 AND GRIDPOINT 10M-HUB WITHIN J-BOX #2. SEE GRIDPOINT INSTALLATION SHEET FOR DETAILS.
- PROVIDE HORIZONTAL SINGLE-GANG J-BOX BELOW FUTURE GRIDPOINT CONTROLLER LOCATION. PROVIDE CONDUITS AND WIRING AS SHOWN IN DETAIL BE710.
- INSTALL WIRED DOOR BUZZER AT 98" AFF. SEE ARCHITECTURAL DOOR EQUIPMENT FOR EQUIPMENT INFORMATION. CONNECT TO CIRCUIT SHOWN THROUGH THE TRANSFORMER FURNISHED WITH THE DOOR BUZZER. PROVIDE WIRING TO A BUTTON ADJACENT TO THE SERVICE DOOR AND CONNECT PER THE MANUFACTURER'S INSTALLATION INSTRUCTIONS.
- CONNECT BATH-ROOM SANITIZER TO CIRCUIT SHOWN SO THAT IT IS ENERGIZED AT ALL TIMES.
- PROVIDE POWER AND LOW VOLTAGE CONNECTIONS TO DISH SANITIZING MACHINE PER DETAIL 7E710. CONNECT THE DETERGENT DISPENSER TO THE DISH MACHINE USING THE INCLUDED WIRING HARNESS PER THE MANUFACTURER'S INSTALLATION INSTRUCTIONS.
- PROVIDE RECEPTACLE FOR 2-DOOR AND 1-DOOR REFRIGERATORS WITH GROUND PINS TOWARDS THE BOTTOM OF THE RECEPTACLE.
- PROVIDE CORD AND NEMA 5-20P PLUG FROM UTENSIL COUNTER ICE MAKER. THROUGH UTENSIL COUNTER, TO ICE MAKER RECEPTACLE.
- LABEL UTENSIL COUNTER RECEPTABLES "TRACTOR BEVERAGE", "ICE MAKER/MSB", AND "SODA FOUNTAIN".
- LABEL RECEPTACLE "UV INSECT TRAP".
- PROVIDE POWER CONNECTIONS TO ISLAND PREP TABLE PER DETAIL 2E710. PROVIDE GFCI DUPLEX RECEPTACLE IN THE J-BOX INTEGRAL TO PREP TABLE FOR UNDERCOUNTER REFRIGERATOR. PROVIDE FINAL CONNECTION TO CARVING STATION HEATER.
- IF NEUTRAL CONDUCTOR IS NOT PROVIDED FOR SERVE LINE HOT FOOD SERVER TERMINATE NEUTRAL IN JUNCTION BOX.
- PROVIDE A TWO-CONDUCTOR LOW VOLTAGE WIRE FROM MAU-1 TO THE HOOD CONTROL PANEL PER THE MANUFACTURER'S INSTALLATION INSTRUCTIONS.
- PROVIDE SINGLE-GANG J-BOX FOR DATA JACK AS SHOWN FOR KRONSOS TIME CLOCK.

PROVIDE A RECESSED J-BOX AT 98" AFF FOR THE INSTALLATION OF THE SECURITY SYSTEM KEYPAD WITH A 1/2" CONDUIT TO ABOVE THE LAY-IN CEILING. TERMINATE CONDUIT WITH A CONDUIT BUSHING.

PROVIDE A RECESSED J-BOX ABOVE DOOR AND 3" FROM LATCH SIDE OF DOOR FOR THE INSTALLATION OF THE SECURITY SYSTEM DOOR CONTACT WITH A 1/2" CONDUIT ABOVE LAY-IN CEILING. TERMINATE CONDUIT WITH CONDUIT BUSHING.

POWER ROOF PLAN
1/8" = 1'-0"



POWER FLOOR PLAN
1/4" = 1'-0"



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1/04/14/25		

Drawn: _____
JVV
DW

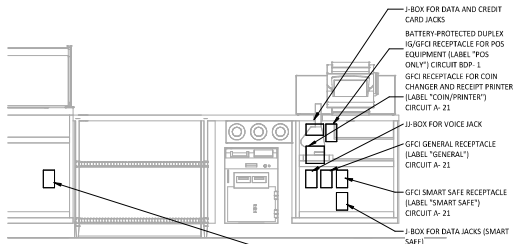
Checked: _____
JVV
DW

Project No:
CNG 20-5136

Contract:
ELECTRICAL POWER PLAN



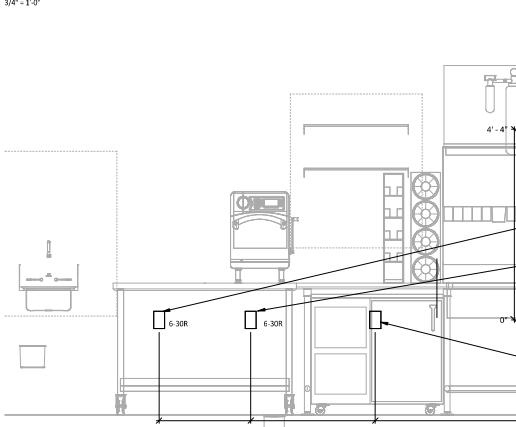
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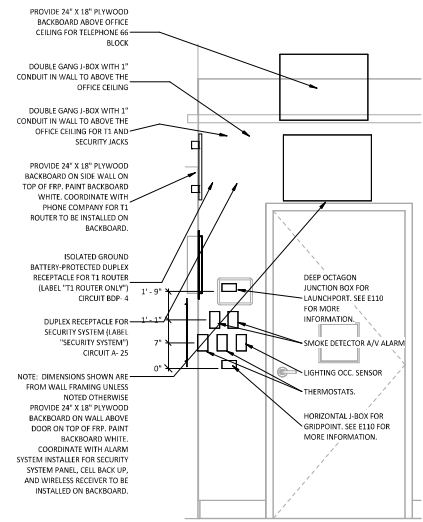
POS COUNTER ELECTRICAL ELEVATION



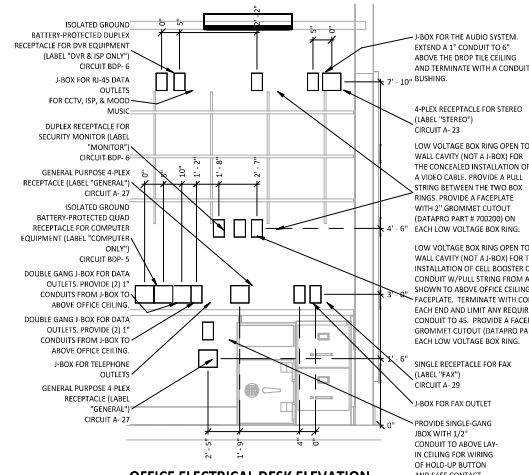
PICK-UP WINDOW ELECTRICAL ELEVATION



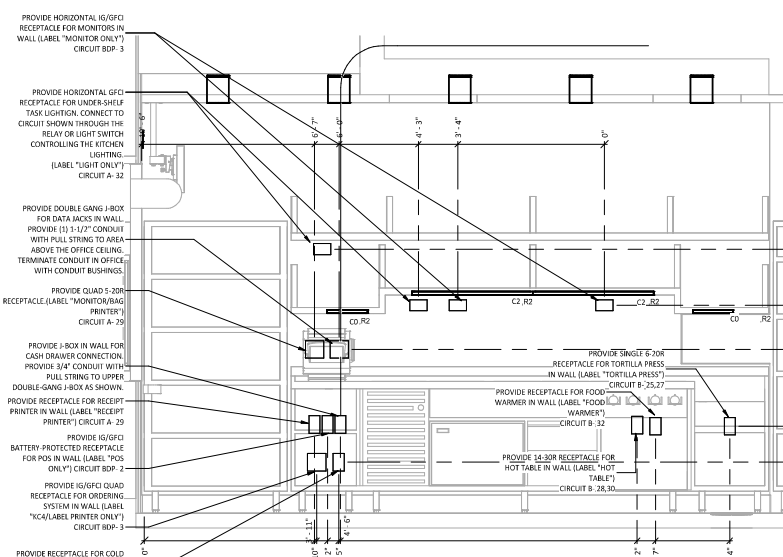
COLD SML ELECTRICAL ELEVATION



OFFICE DOOR ELECTRICAL ELEVATION



OFFICE ELECTRICAL DESK ELEVATION



DML ELECTRICAL ELEVATION



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 Project No: CMS 20-5136

ELECTRICAL INTERIOR ELEVATIONS
E700

