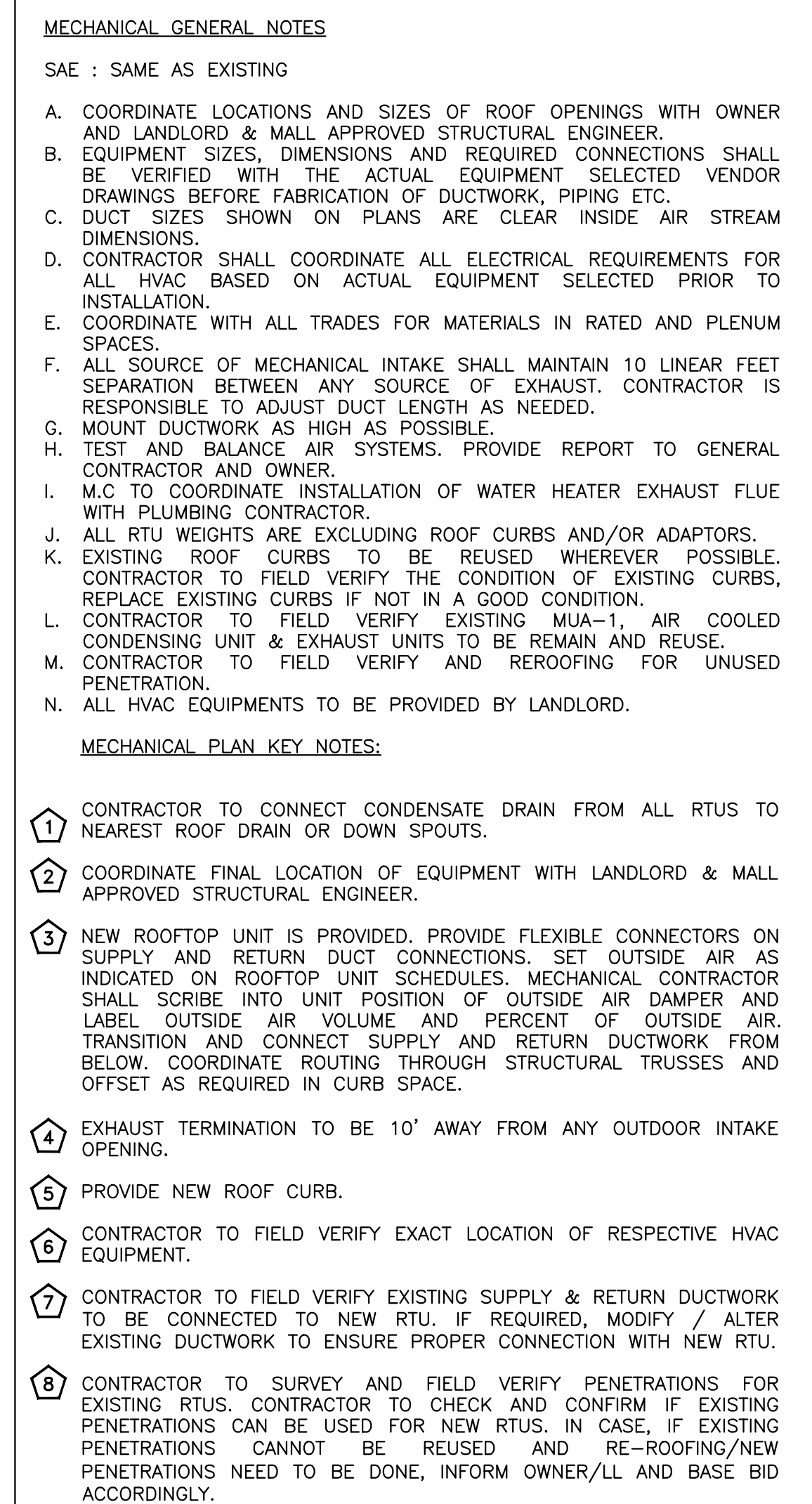


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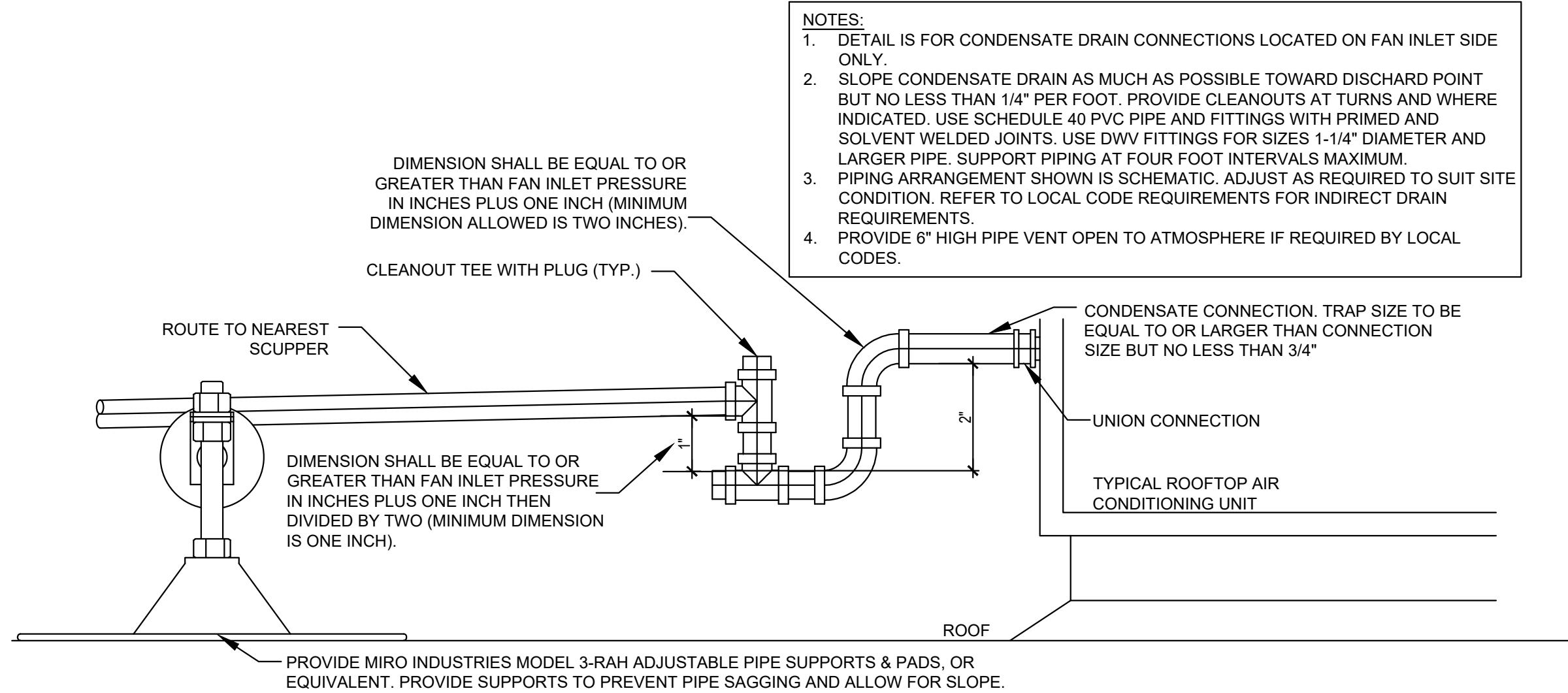


BLACK EYE PEAS

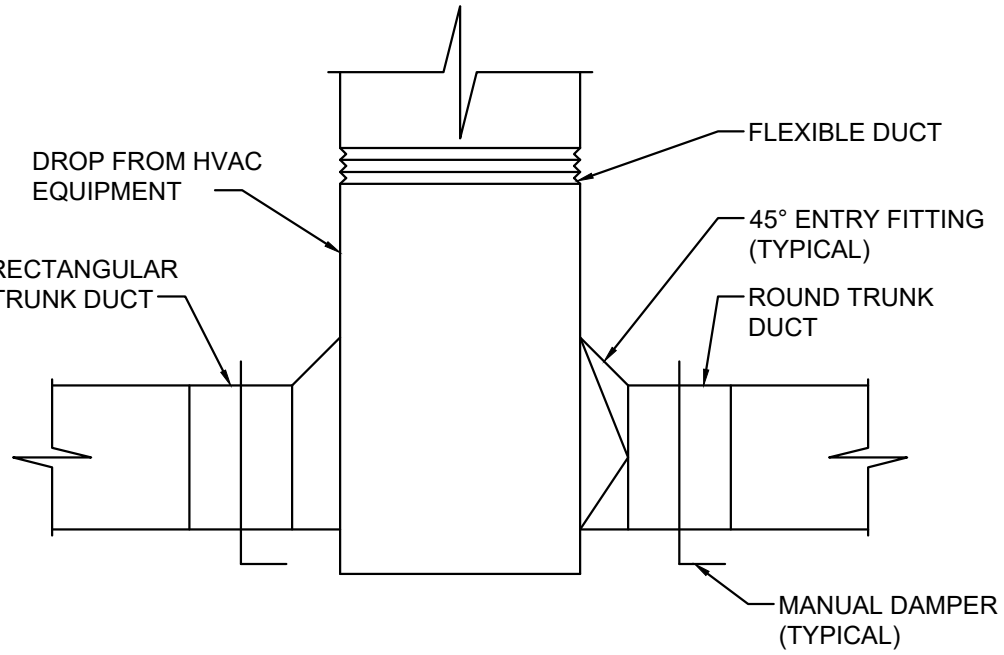
MECHANICAL ROOF PLAN

Sheet Number

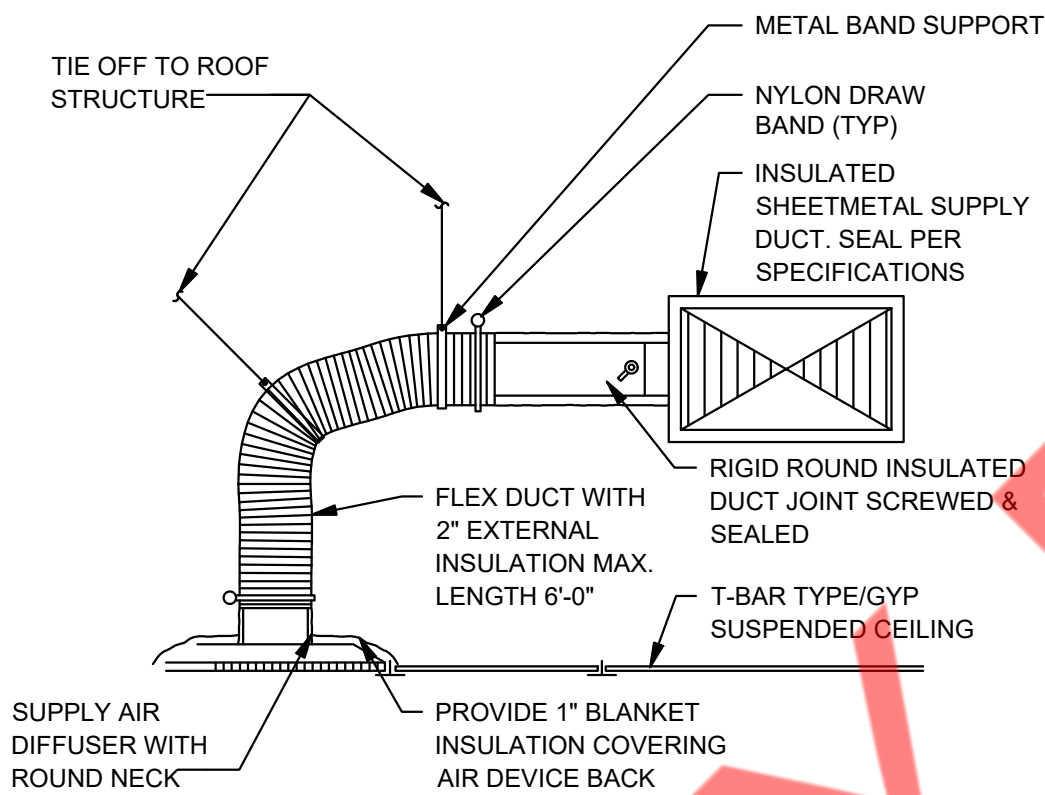
M-1.2



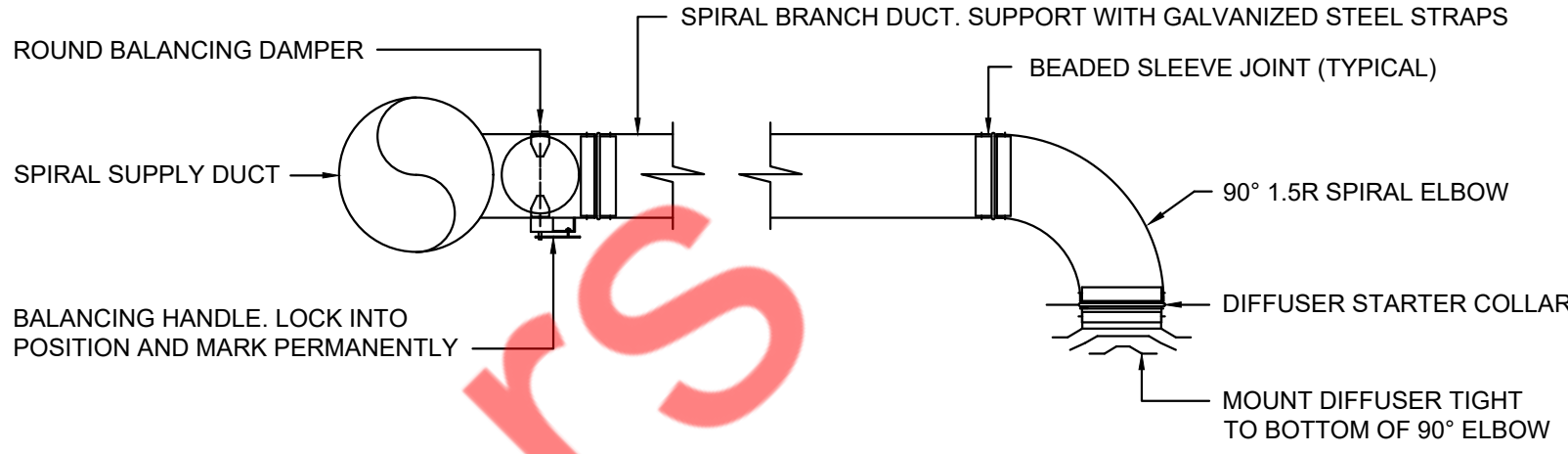
ROOFTOP UNIT CONDENSATE



ROOFTOP EQUIPMENT DUCT DROP DETAIL

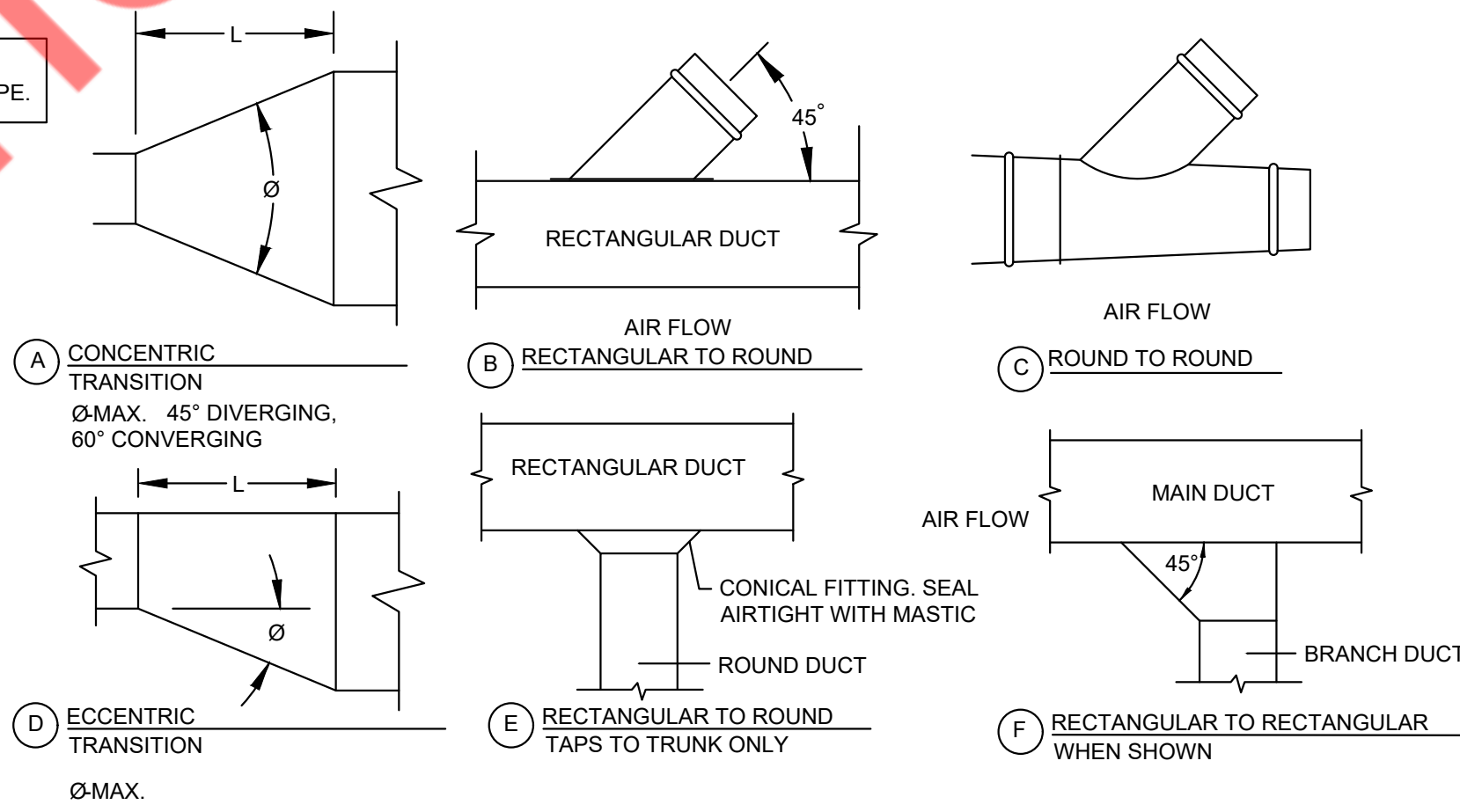


CEILING DIFFUSER DETAIL

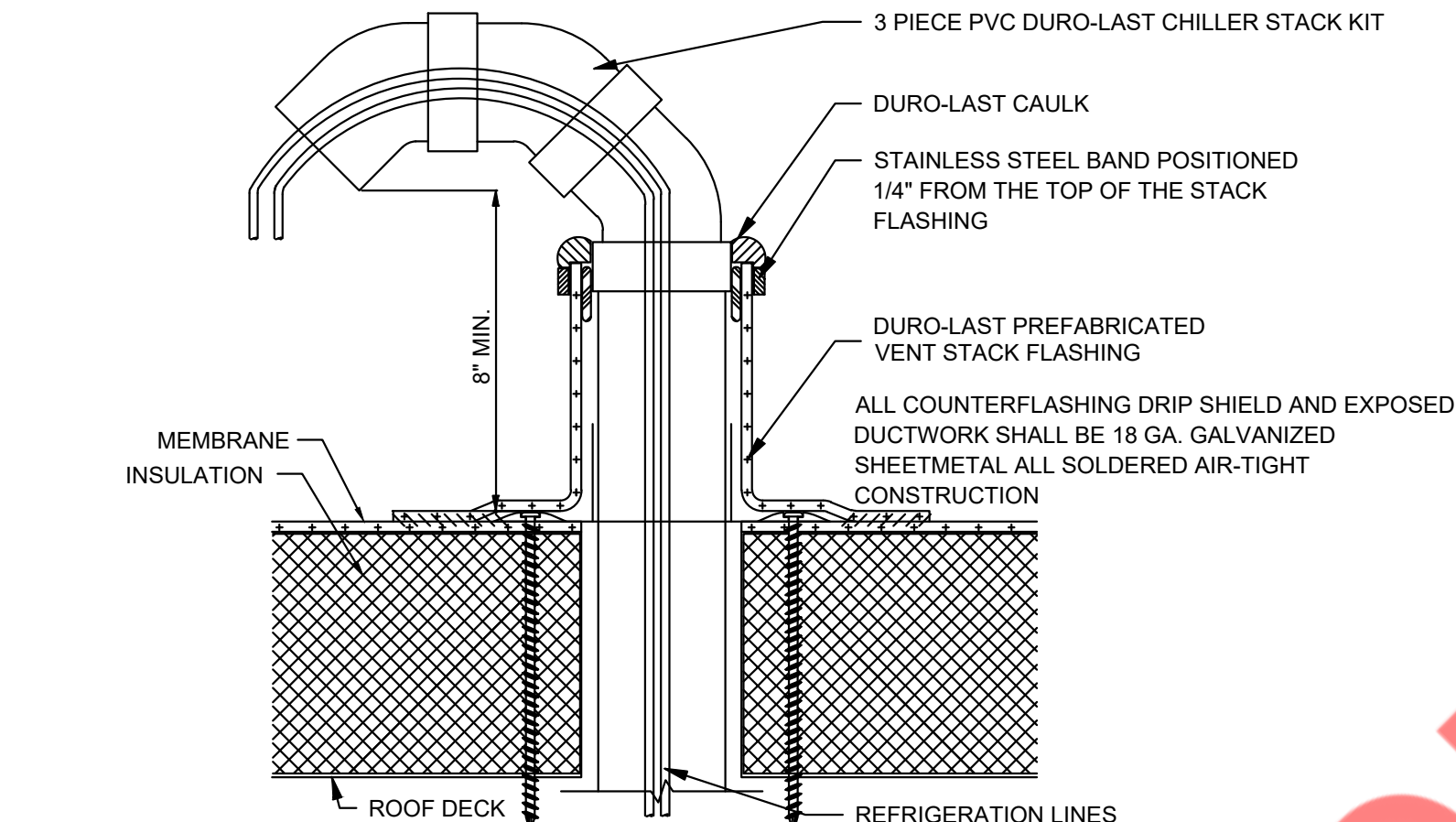


EXPOSED BRANCH DUCT INSTALLATION DETAIL

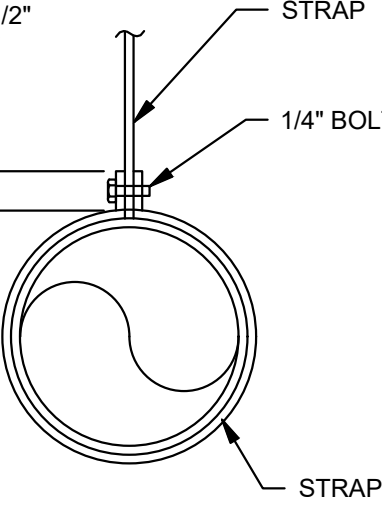
NOTE: USE PLAN AS GUIDE TO FITTING TYPE.



DUCT FITTING DETAILS

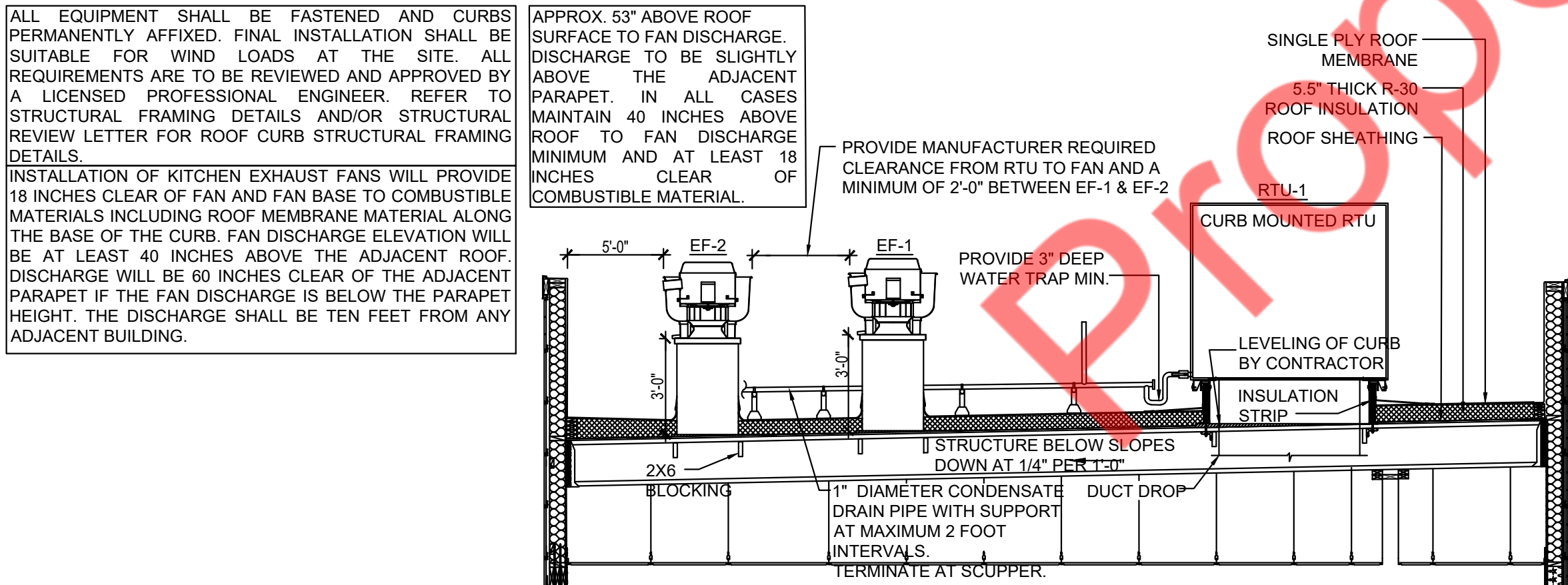


GOOSENECK WEATHERHOLD ROOF PENETRATION DETAIL

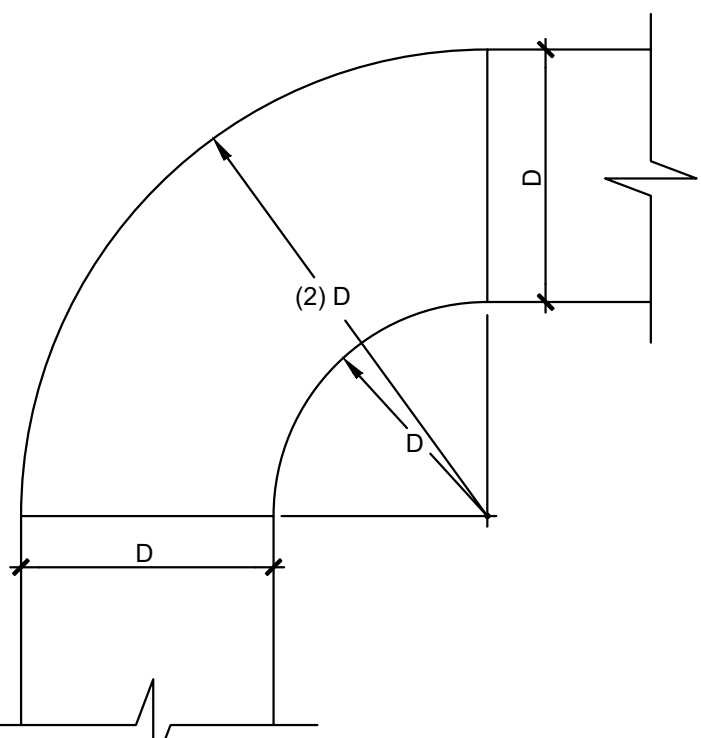


NOTE: FOR DUCT SUPPORT AND SEISMIC REQUIREMENTS, REFER TO SMACNA GUIDELINES AND LOCAL CODE REQUIREMENTS.

ROUND DUCT HANGER DETAIL

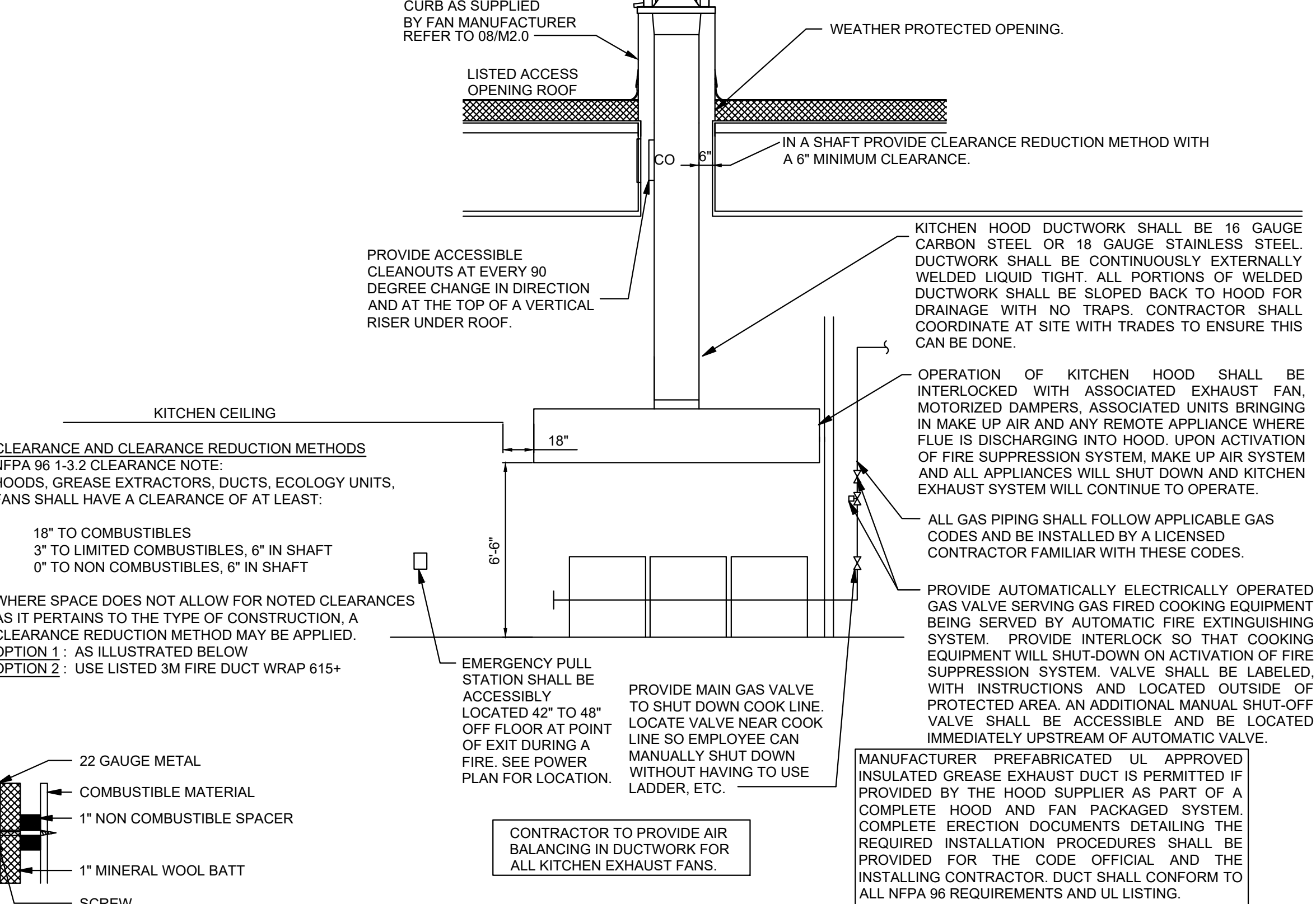


EXHAUST FAN AND RTU CURB DETAIL



RADIUS ELBOW

NO 90° BENDS IN GREASE DUCT ALLOWED UNLESS RADIUS ELBOWS WITH ACCESS PANELS ARE PROVIDED WITH CONSTRUCTION MANAGER APPROVAL.



MECHANICAL EXHAUST DUCT DETAIL

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HVAC DETAILS

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M-2.0

EXISTING FAN SCHEDULE

MARK	CFM	S.P.	VOLTS/ PHASE	FAN HP	AREA SERVED	MANUFACTURER / MODEL	WEIGHT (LBS)	NOTES
REF-1(E)	3250	1.50"	208 3	2	SAUTE HOOD (H-1)	CAPTIVE AIR NCA24B	190	③
REF-2(E)	1500	.750"	208 3	1/2	PIZZA OVEN HOOD (H-2)	CAPTIVE AIR NCA14B	112	③
REF-3(E)	1000	.500"	120 1	1/4	DISH WASHER HOOD (H-3)	CAPTIVE AIR NCA14B	112	①④
REF-4(E)	1100	.750"	120 1	1/3	KETTLE HOOD (H-4)	CAPTIVE AIR NCA14B	112	①
REF-5(E)	1100	.250"	120 1	1/4	BAR	CAPTIVE AIR NCA10B	96	①②⑦
REF-6(E)	750	.250"	115 1	1/6	PUBLIC TOILETS	CAPTIVE AIR DDD-1RSV	38	①②⑤
REF-7(E)	200	.250"	115 1	1/12	STORAGE/COOLER	CAPTIVE AIR DDD-10RS	29	①②⑥
F-1(E)	---	---	115 1	1/10	BAR	DAYTON 3CC76	---	⑧⑨
F-2(E)	---	---	115 1	1/10	BAR	DAYTON 3CC75	---	⑧⑨

NOTES:

① CONTRACTOR SHALL PROVIDE FACTORY MANUFACTURED CURB. ROOFING CONTRACTOR SHALL INSULATE CURB.

② PROVIDE WITH BACKDRAFT DAMPER.

③ CONTRACTOR SHALL PROVIDE VENTILATED ROOF CURB. ROOFING CONTRACTOR SHALL INSULATE CURB.

④ INTERLOCK WITH DISHWASHER.

⑤ INTERLOCK WITH LAUNDRY ROOM AND RESTROOM LIGHT SWITCHES.

⑥ PROVIDE WITH REMOTE MOUNTED THERMOSTAT.

⑦ PROVIDE WITH LOCAL ON/OFF SWITCH.

⑧ CONTROL WITH SWITCH AT HOSTESS STATION. REFER TO ARCHITECTURAL DRAWINGS FOR EXACT LOCATION.

⑨ CONTACT RICARD PUP(9173610700) FOR PRICING AND ORDERING INFORMATION. PROVIDE WITH THE FOLLOWING GRAINGER ACCESSORIES
-3M136.12 RPM AC GEAR MOTOR
-3X770.2.80" X 7/8" SHEAVE
-3X772.2.80" X 7/8" SHEAVE
-3X545, A-TYPE V-BELT(SIZED FOR FAN)

EXISTING AIR DEVICE SCHEDULE

MARK	RECT. NECK SIZE	ROUND NECK SIZE	FACE SIZE	THROW PATTERN	MOUNTING	MANUFACTURER / MODEL
A	----	16"Ø	ROUND (30")	SEE PLAN	SURFACE	TITUS TMR
B	----	10"Ø	24"X24"	SEE PLAN	SURFACE	METALAIRE 5800-1
C	----	12"Ø	24"X24"	SEE PLAN	LAY-IN	METALAIRE 5800-6
D	----	10"Ø	24"X24"	SEE PLAN	LAY-IN	METALAIRE 5800-6
E	----	10"Ø	12"X12"	SEE PLAN	SURFACE	METALAIRE 5800-1
F	----	10"Ø	12"X12"	SEE PLAN	LAY-IN	METALAIRE 5800-6
G	12"X12"	----	14"X14"	EXHAUST	SURFACE	METALAIRE RH
H	46"X22"	----	48"X24"	RETURN	LAY-IN	METALAIRE RH
J	46"X22"	----	48"X24"	RETURN	SURFACE	METALAIRE RH
K	22"X22"	----	24"X24"	RETURN	LAY-IN	METALAIRE RH
L	22"X22"	----	24"X24"	EXHAUST	SURFACE	METALAIRE RH
M	22"X22"	----	24"X24"	MAKE-UP AIR	SURFACE	METALAIRE RH

- NOTES:
- ① MECHANICAL CONTRACTOR SHALL PROVIDE SQUARE TO ROUND TRANSITION AS REQUIRED.
- ② MECHANICAL CONTRACTOR SHALL PROVIDE ROUND REDUCER TRANSITION AS REQUIRED.
- ③ MECHANICAL CONTRACTOR SHALL PROVIDE TRANSITION AS REQUIRED.

DRAWING LEGEND

DETAIL	DESCRIPTION
	SUPPLY DIFFUSER WITH RIGID ROUND ELBOW CONNECTION AND INSULATED FLEXIBLE DUCT RUNOUT
	RETURN GRILLE WITH RIGID ROUND ELBOW CONNECTION AND INSULATED FLEXIBLE DUCT RUNOUT
	THERMOSTAT
	TEMPERATURE SENSOR
	DUCT SMOKE DETECTOR
	RECTANGULAR OR ROUND SUPPLY OR RETURN DUCT (AS NOTED)
	ROUND INSULATED FLEXIBLE DUCT
	MANUAL BALANCE DAMPER
	ROUND TAKE-OFF FROM RECTANGULAR DUCT WITH MANUAL BALANCE DAMPER
	RECTANGULAR GREASE EXHAUST DUCT
	RECTANGULAR NON-GREASE EXHAUST DUCT
	HOOD MAKE-UP AIR DUCT
	DIFFUSER DESIGNATION

VENTILATION CALCULATIONS											
ROOM NAME	AREA (SQ.FT.)	NUMBER OF PEOPLE/5000sq.ft AS PER IMC 2018	NUMBER OF PEOPLE AS PER IMC 2018	NUMBER OF CHAIR	FINAL PEOPLE NO.	MIN OUTSIDE AIR AS PER IMC 2018	CFM/PRO PLE	REQ. OSA	PROVIDED OSA	EXHAUST AIRFLOW (CFM/SQ.FT)	TOTAL EXHAUST (CFM)
ENTRY-CHECKOUT	302	10	4	7	8	5	0.06	60		0	0
WAITING	210	5	11	5	7	7.5	0.06	70		0	0
BAR	875	100	88	21	21	30	0	630		0	0
DINING-1	1530	70	108	58	78	7.5	0.18	865		0	0
DINING-2	480	70	34	40	45	7.5	0.18	425		0	0
MEN TOILET	113	0	0	0	0	0	0	0		0	70
WOMEN TOILET	125	0	0	0	0	0	0	0		0	70
KITCHEN-SERVICE	1008	100	103	0	13	7.5	0.18	285		0.7	720
DISH WASHING	225	5	2	0	1	5	0.06	20		0	0
OFFICE	58	30	2	0	1	5	0.06	10		0	0
CORRIDOR	77	5	1	0	0	0	0.12	10		0	0
JANITOR + CL	62	0	0	0	0	0	0	0		0	70
Total	5105				174			2375			930

MECHANICAL EQUIPMENT SCHEDULE

MARK	CFM	OUTSIDE CFM	S.P.	VOLTS/ PHASE	FAN HP	MCA/ MOCP	EER/ SEER	HEATING		COOLING						WEIGHT LBS.	NOTES
								INPUT MBH	OUTPUT MBH	NOM. TONS	TOTAL MBH	SENSIBLE MBH	AMBIENT DB(F)	ENTERING DB(WB(F)	MANUFACTURER/ MODEL		
RTU-1(N)	7000	2300	0.75"	208 3	5	86.7 100	12.0 --	400.0	324.0	17.5	219.8	167.6	95	80/67	CARRIER 48TCFE20 OR EQUIVALENT	2650	①②③⑥⑦
RTU-2(N)	4000	1300	0.75"	208 3	3	53 60	12.0 --	250.0	205.0	10	124.1	96.2	95	80/67	CARRIER 48TCFE12 OR EQUIVALENT	1450	①②③⑥⑦
RTU-3(N)	3500	1200	0.75"	208 3	3	53 60	12.0 --	250.0	205.0	10	121.7	89.8	95	80/67	CARRIER 48TCFE12 OR EQUIVALENT	1450	①②③⑥⑦
RTU-4(N)	2975	1000	0.75"	208 3	3	45 50	12.0 --	224.0	184.0	8.5	100.2	70.6	95	80/67	CARRIER 48TCFE09 OR EQUIVALENT	1275	①②③⑥⑦
MUA-1(E)	3250	3250	0.375"	208 3	1	6.9 20	--	245.7	230.0	--	--	--	--	--	CAPTIVE AIRE NMHUA2-D.750-G15	850	①④⑤
UH-1(E)	175	--	--	208 3	--	--	--	1.5 KW	1.5 KW	--	--	--	--	--	MARKEL F3310	--	⑧⑫
CUH-1(E)	600	--	--	208 3	--	--	--	3.0 KW	3.0 KW	--	--	--	--	--	MARKEL F3483	--	⑨⑫
AC-4 & 5 (N)	3600	--	--	208 1	1/6	33.6 --	--	--	--	--	--	--	--	--	MARS LPV2144-2UD-OB	--	⑩⑫
AC-1(E)	2550	--	--	208 3	1/2	33.6 --	--	8.0 KW	8.0 KW	--	--	--	--	--	MARS 48CH	--	⑨⑩⑫
AC-2 & 3 (N)	2550	--	--	208 3	1/2	33.6 --	--	8.0 KW	8.0 KW	--	--	--	--	--	MARS 48CH	--	⑨⑩⑫

- NOTES: ALL NEW RTUS TO BE PROVIDED BY LANDLORD.
- ① CONTRACTOR SHALL INSTALL OWNER-FURNISHED ROOF CURB. ROOFING CONTRACTOR SHALL INSULATE CURB.
- ② PROVIDE WITH LOW AMBIENT CONTROLS.
- ③ COOLING LOADS LISTED AT ARI. STANDARDS
- ④ PROVIDE WITH OUTSIDE AIR STS TO INITIATE HEAT WHEN OUTSIDE AIR TEMPERATURE DROPS BELOW 55°F.
- ⑤ PROVIDE WITH TWO POSITION MOTORIZED OUTSIDE AIR DAMPER AND MODULATING GAS VALVE.
- ⑥ PROVIDE INTEGRAL DISCONNECT AND CONVENIENCE OUTLET OPTIONS WITH THE UNIT.
- ⑦ PROVIDE A TWO POSITION MOTORIZED OUTSIDE AIR DAMPER. DAMPER SHALL BE IN CLOSED POSITION DURING NIGHT-SET BACK HOURS DAMPER SHALL BE IN FULL OPEN POSITION (SET OUTSIDE AIR PER SCHEDULE) DURING OCCUPIED HOURS.
- ⑧ PROVIDE WITH UNIT MOUNTED THERMOSTAT.
- ⑨ PROVIDE UNIT WITH REMOTE MOUNTED HEATING / FAN-ONLY THERMOSTAT
- ⑩ PROVIDE UNIT WITH DOOR ACTIVATION SWITCH.
- ⑪ PROVIDE WITH TWO POSITION MOTORIZED OUTSIDE AIR DAMPER AND MODULATING GAS VALVE.
- ⑫ CONTRACTOR FURNISHED AND INSTALLED. WIRED BY ELECTRICAL CONTRACTOR.

AIR BALANCE SCHEDULE

MARK	OUTSIDE AIR	RETURN AIR	SUPPLY AIR	EXHAUST AIR	PRESSURE	PERCENT OUTSIDE AIR
RTU-1(N)	2300	4500	6800	--	+2300	33.8%
RTU-2(N)	1300	2700	4000	--	+1300	32.5%
RTU-3(N)	1200	2300	3500	--	+1200	34.3%
RTU-4(N)	1000	2000	3000	--	+1000	33.3%
MUA-1	3250	--	3250	--	3250	100.0%
REF-1	--	--	--	3250	-3250	--
REF-2	--	--	--	1500	-1500	--
REF-3	--	--	--	1000	-1000	--
REF-4	--	--	--	1100	-1100	--
REF-5	--	--	--	1100	-1100	--
REF-6	--	--	--	750	-750	--
REF-7	--	--	--	200	-200	--
TOTAL					+150	

EXISTING KITCHEN HOOD SCHEDULE

MARK	LENGTH	CAPTURE WIDTH	EXHAUST AIR/ COLLAR SIZE	MAKE-UP AIR/ COLLAR SIZE	MANUFACTURER/ MODEL	NOTES
H-1	13'-0"	54"	3250 (2)10"x15"	2880 (2)10"x16"	CAPTIVEAIRE 512ND-PSP	①
H-2	8'-7"	70"	1500 (2)8"x8"	--	CAPTIVEAIRE 1024-ND	①
H-3	6'-0"	36"	1100 (2)10"x10"	--	CAPTIVEAIRE 3630 VHI-G	①
H-4	3'-0"	36"	1100 (2)10"x10"	--	CAPTIVEAIRE 3624 VHI-G	①

- NOTES:
- ① HOOD PACKAGE SHALL BE FURNISHED BY OWNER AND INSTALLED BY THE MECHANICAL CONTRACTOR.

HOOD SYSTEM PACKAGE

THE HOOD PACKAGE LISTED BELOW SHALL BE FURNISHED BY THE OWNER THE MECHANICAL CONTRACTOR SHALL INSTALL THE COMPLETE SYSTEM THIS CONTRACTOR SHALL PROVIDE ANY AND ALL MATERIALS AND LABOR AS REQUIRED FOR A COMPLETE OPERABLE AND CODE COMPLIANT HOOD SYSTEM. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE EQUIPMENT WARRANTY, DELIVERY COORDINATION, RECEIVING, INSTALLATION, AND START-UP AS DESCRIBED IN THE SPECIFICATIONS.

EXHAUST FAN PACKAGE:

INCLUDES EXHAUST FAN REF-1 THRU REF-7 AND MUA-1 PER FAN SCHEDULE.

HOOD PACKAGE:

INCLUDES HOODS H-1 THRU H-4 PER HOOD SCHEDULE.

ROOF CURB PACKAGE:

INCLUDES ROOF CURBS FOR REF-1 THRU REF-7 AND MUA-1.

NOTES:

ALL LABOR AND MATERIALS FOR THE HOOD INSTALLATION, INCLUDING DUCTWORK SHALL BE PROVIDED BY THE MECHANICAL CONTRACTOR UNLESS SPECIALLY NOTED OTHERWISE.

ALL EXHAUST FANS, SUPPLY FANS AND ROOFTOP UNITS SHALL BE INTERLOCKED WITH HOOD FAN SWITCH.

GENERAL NOTES

- A. CONTRACTOR SHALL VERIFY THAT ALL EQUIPMENT, AS SHOWN ON THESE DRAWINGS, WILL NOT CONFLICT WITH ANY DRAINS , SCUTTLES, JOINTS , VENTS, PIPING OR OTHER EQUIPMENT.
- B. THE MECHANICAL CONTRACTOR SHALL PROVIDE COMPLETE INFORMATION AND COOPERATE WITH THE OTHER CONTRACTORS AND TRADES AS REQUIRED FOR COMPLETION AND COORDINATION OF THE COMPLETE PROJECT.
- C. THE MECHANICAL CONTRACTOR SHALL BE RESPONSIBLE FOR ADMINISTERING ALL WARRANTIES ON EQUIPMENT WHICH THEY FURNISH AND INSTALL. THIS INCLUDES ALL CONDENSERS, REFRIGERANT LINES, AND OTHER ITEMS FURNISHED BY OTHERS.
- D. ALL MAKE-UP AIR AND RTU OUTSIDE AIR INTAKE SHALL BE A MINIMUM OF 10'-00" AWAY FROM ANY EXHAUST FAN, RTU GAS EXHAUST OR PLUMBING VENT.
- E. PROVIDE VIBRATION ISOLATION DEVICES AND FLEXIBLE CONNECTIONS TO ALL MOVING MACHINERY.
- F. ALL DUCT DIMENSIONS SHOWN ON DRAWING ARE CLEAR INSIDE DIMENSIONS.
- G. THIS CONTRACTOR SHALL COORDINATE ALL DUCT AND DIFFUSER LOCATIONS WITH SPRINKLER PIPING, SPRINKLER HEADS AND LIGHTING LAYOUTS AS REQUIRED.
- H. THE CONTRACTOR SHALL COORDINATE WITH GENERAL CONTRACTOR AND OTHER TRADES, ALL REQUIRED OPENINGS AND EXCAVATIONS, ALL REQUIRED OPENINGS IN FOUNDATIONS, FLOORS, WALLS AND ROOF SHALL BE CONSTRUCTED INTO THE STRUCTURE WITH THE USE OF SLEEVES,CURBS,ETC. CUTTING AND PATCHING SHALL BE HELD TO A MINIMUM.
- I. ALL ITEMS PROJECTING THROUGH ROOFS SHALL BE FLASHED THROUGH CURBS OR PIPE SEALS A MINIMUM OF 12" ABOVE THE ROOF THE PIPE CURBS AND SEALS SHALL BE INSTALLED BY THE ROOFING CONTRACTOR INSURE THAT AMPLE BOOT OPENINGS ARE PROVIDED TO ACCOMMODATE ANY ELECTRICAL CONDUIT PENETRATIONS REQUIRED.
- J. ALL SUPPLY AND RETURN DIFFUSER SHALL BE PAINTED AS REQUIRED BY THE PAINTING CONTRACTOR.
- K. THERMOSTATS AND REMOTE SENSORS SHALL BE LOCATED GENERALLY AS SHOWN EXACT LOCATIONS SHALL BE FIELD COORDINATED TO AVOID INTERFERENCE WITH WALL MOUNTED WORK.
- L. ROOF CURBS FOR RTU-1 THRU RTU-4 SHALL BE FURNISHED WITH THE HVAC EQUIPMENT FURNISHED BY OWNER PACKAGE FOR INSTALLATION BY THE MECHANICAL CONTRACTOR VERIFY REQUIREMENTS FOR THE ROOF CURBS WITH THE EQUIPMENT SUPPLIER. THE GENERAL CONTRACTOR SHALL FLASH ALL ROOF CURBS. SHIM CURBS DEAD LEVEL. COORDINATE EXACT SIZE AND LOCATION OF ROOF OPENINGS WITH THE STRUCTURAL FRAMING.CUTTING OF STRUCTURAL MEMBERS IS NOT PERMITTED.
- M. ROOF CURBS FOR EXHAUST FANS REF-1 THRU REF-7 SHALL BE FURNISHED WITH THE HOOD AND FAN PACKAGE BY OWNER FOR INSTALLATION BY THE MECHANICAL CONTRACTOR. VERIFY REQUIREMENTS FOR THE ROOF CURBS WITH THE EQUIPMENT SUPPLIER. THE GENERAL CONTRACTOR SHALL FLASH ALL ROOF CURBS.SHIM CURBS DEAD LEVEL. COORDINATE EXACT SIZE AND LOCATION OF ROOF OPENINGS WITH THE STRUCTURAL FRAMING.CUTTING OF STRUCTURAL MEMBERS IS NOT PERMITTED.
- N. MECHANICAL CONTRACTOR TO FURNISH AND INSTALL 4" HIGH BLACK NAMEPLATES FOR ROOFTOP AND EXHAUST FANS.
- O. ROOFTOP UNITS SHALL BE SET TO RUN IN "FAN CONTINUOUS" MODE DURING OCCUPIED HOURS. DURING NIGHT SET-BACK HOURS, THE ROOFTOP UNITS SHALL RUN IN "FAN AUTO " MODE. CONTRACTOR SHALL COORDINATE NECESSARY CONTROL WIRING REQUIREMENTS WITH THE MANUFACTURER TO ACCOMPLISH THIS CONTROL SEQUENCE WITHOUT THE USE OF MANUAL SWITCH ON THE SUB-BASE.
- P. ALL EXPOSED DUCTWORK (ROUND OR RECTANGULAR) SHALL BE LINED WITH 1" INSULATION. LINER SHALL BE PAINTED BLACK (AT DIFFUSER) IF IT IS NOT DARK IN COLOR).
- Q. ALL HORIZONTAL EXHAUST DUCT RUNS SHALL BE "PITCHED" BACK TO SOURCE.
- R. ALL GREASE EXHAUST SHALL BE WRAPPED WITH UL LISTED FIRE WRAP(IF REQUIRED)SIMILAR TO "FIREMASTER" WRAP. INSTALLATION SHALL BE IN COMPLIANCE WITH ULTESTED INSTALLATION.
- S. ALL CONCEALED DUCTWORK TO BE EXTERNALLY WRAPPED WITH 1-1/2" INSULATION.

CONTROL NOTES

THE EQUIPMENT SUPPLIER SHALL PROVIDE ALL CONTROL WIRING DIAGRAMS FOR THE HVAC EQUIPMENT.24VOLT WIRING AND CONDUIT (IF REQUIRED) SHALL BE PROVIDED BY THE MECHANICAL CONTRACTOR. PROVIDE ADDITIONAL 24 VOLT TRANSFORMER(S) AS REQUIRED. ALL LINE VOLTAGE WIRING AND CONDUIT SHALL BE BY THE ELECTRICAL CONTRACTOR.

ROOF TOP AIR CONDITIONING UNITS:

FOR THE RTU'S, HEATING AND COOLING SHALL BE CONTROLLED FROM 24 VOLT THERMOSTATS WITH REMOTE SENSORS LOCATED APPROXIMATELY AS SHOWN ON THE PLANS. SENSORS SHALL BE MOUNTED AS 4'-6" A.F.F.THE THERMOSTATS SHALL BE LENNOX RS 300-229 SMS-1-UNITS INTERLOCKED 26K5701 REMOTE SENSORS.

THE ROOFTOP UNITS SHALL BE FITTED WITH A MIXED AIR SENSOR THAT WILL INITIALIZE FIRST STAGE HEAT WHEN THE UNIT IS RUNNING IN NEITHER COOLING FOR HEATING CYCLE AND THE MIXED AIR TEMPERATURE IS BELOW 54°F. UNIT SHALL RETURN TO STANDARD OPERATION MODE WHEN THE SENSORS CALL FOR HEATING OR COOLING.

EXHAUST & SUPPLY FANS:

REF-1, REF-2, AND MUA-1 SHALL BE CONTROLLED FROM THE HOOD CONTROL PANEL.
REF-3 SHALL BE CONTROLLED FROM THE DISHMACHINE.
FOR REF-4 , REF-5 , REF-6 AND REF-7 CONTROLS, REFER TO ELECTRICAL DRAWINGS.

SMOKE DETECTORS:

THE MECHANICAL CONTRACTOR SHALL PROVIDE SMOKE DETECTORS FOR EACH ROOF TOP UNIT AS INDICATED ON PLANS, CAPABLE OF SHUTTING DOWN THE RESPECTIVE FAN/AIR CONDITIONING UNIT UPON ACTIVATION. THE SMOKE DETECTORS SHALL BE 24V AND BE PROVIDED WITH REMOTE ALARM INDICATORS AND KEY TEST STATIONS FOR EACH DETECTOR TEST STATIONS SHALL BE MOUNTED ADJACENT TO EACH UNITS SENSOR ALL LINE VOLTAGE WIRING AND CONDUIT SHALL BE BY THE ELECTRICAL CONTRACTOR AND ALL OTHER WORK SHALL BE BY THE MECHANICAL CONTRACTOR.

REFRIGERATION NOTES

FREEZER/COOLER PIPING NOTES:

- ALL REFRIGERATION EQUIPMENT AND PIPING FOR THE FREEZER/COOLER SHALL BE PIPED BY THE REFRIGERATION CONTRACTOR PER MANUFACTURER'S REQUIREMENTS.

ICE MACHINE NOTES:

- THE ICE MACHINE, CONDENSER AND PRE-VACUUMED REFRIGERANT LINE SETS SHALL BE FURNISHED WITH THE KITCHEN EQUIPMENT PACKAGE. THE REFRIGERATION CONTRACTOR SHALL SET THE CONDENSER, EQUIPMENT SUPPORTS AND PIPE CURBS. THE REFRIGERATION CONTRACTOR SHALL RUN ALL REFRIGERANT PIPING BETWEEN THE CONDENSERS AND THE ICE MACHINE.
- ALL REFRIGERANT PIPING SHALL RUN AS STRAIGHT AS POSSIBLE, WITHOUT TRAPS.
- ALL INSTALLATION WORK SHALL BE DONE IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
- THE REFRIGERATION CONTRACTOR SHALL BE RESPONSIBLE FOR FACTORY AUTHORIZED STARTUP.

HVAC EQUIPMENT PACKAGE

THE HVAC PACKAGE LISTED BELOW SHALL BE FURNISHED BY LENNOX NATIONAL ACCOUNTS (BILLED DIRECTLY TO THE OWNER) AND INSTALLED BY THE MECHANICAL CONTRACTOR THIS CONTRACTOR SHALL PROVIDE ANY MATERIALS AND LABOR AS REQUIRED FOR A COMPLETE OPERABLE AND CODE COMPLIANT MECHANICAL SYSTEM. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE EQUIPMENT WARRANTY, DELIVERY COORDINATION, RECEIVING, INSTALLATION, AND START-UP AS DESCRIBED IN THE SPECIFICATIONS.

PACKAGED ROOFTOP UNIT PACKAGE:

HVAC EQUIPMENT PER MECHANICAL EQUIPMENT SCHEDULE.

THERMOSTAT PACKAGE:

THERMOSTATS FOR ALL HVAC EQUIPMENT AS PER CONTROL NOTES AND REMOTE SENSORS, WHERE SPECIFIED.

ROOF CURB PACKAGE:

INCLUDES ROOF CURBS FOR ALL ROOF MOUNTED EQUIPMENT PROVIDED IN THIS PACKAGE INCLUDING HVAC EQUIPMENT.

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Scale As Mentioned
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Drawn by: NYE
Checked by: NYE
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BLACK EYE PEAS
MECHANICAL SCHEDULES
Sheet Number
M-3.0

MECHANICAL SPECIFICATIONS

230500 COMMON WORK RESULTS FOR HVAC

- A. PROVIDE MATERIALS AND EQUIPMENT AND LABOR REQUIRED TO INSTALL HEATING, VENTILATING AND AIR CONDITIONING SYSTEM, COMPLETE AS INDICATED ON DRAWINGS, AS REQUIRED BY CODE AND AS SPECIFIED HEREIN.
- B. WITHOUT RESTRICTING THE GENERALITY OF THE FIRST STATEMENT, THE WORK TO BE PERFORMED UNDER THIS DIVISION SHALL INCLUDE, BUT IS NOT LIMITED TO, THE FOLLOWING:
1. HVAC WORK AS DESCRIBED IN SECTIONS 230500 THROUGH 233813.
- C. ELECTRICAL CONTRACTOR, UNLESS OTHERWISE NOTED, SHALL PROVIDE POWER WIRING FOR EACH ITEM OF ELECTRICAL EQUIPMENT AND MAKE FINAL CONNECTION TO MOTORS.
- D. FINISH PAINTING SHALL BE PERFORMED BY GENERAL CONTRACTOR, EXCEPT AS NOTED ELSEWHERE. CONTRACTOR SHALL RESTORE TO ORIGINAL CONDITION PAINTING DEFACED BY CONTRACTOR AFTER ORIGINAL PAINTING.
- E. ALL WORK SHALL CONFORM TO CODES, RULES, AND REGULATIONS:

1. NATIONAL ELECTRICAL CODE.
2. STANDARD FOR THE INSTALLATION OF AIR CONDITIONING AND VENTILATING SYSTEMS, NFPA 90A.
3. CODE FOR SAFETY TO LIFE FROM FIRE IN BUILDINGS AND STRUCTURES, NFPA 101.
4. FEDERAL OCCUPATIONAL SAFETY AND HEALTH STANDARDS.
5. STATE MECHANICAL CODE.
6. STATE BUILDING CODE.
7. STATE INDUSTRIAL COMMISSION REQUIREMENTS.
8. LOCAL BUILDING CODE REQUIREMENTS.
9. BUILDING INSURING AGENCY REQUIREMENTS.

- F. PERMITS REQUIRED BY LAWS, ORDINANCES AND BUILDING CODES HAVING JURISDICTION SHALL BE OBTAINED AT THE PROPER TIME BY AND AT EXPENSE OF CONTRACTOR.

- G. CONTRACTOR SHALL OBTAIN INSPECTIONS REQUIRED BY LAWS, ORDINANCES AND PUBLIC AUTHORITY HAVING JURISDICTION AND SHALL OBTAIN CERTIFICATES OF SUCH INSPECTIONS AND SUBMIT SAME TO ARCHITECT AND SHALL PAY FEES, CHARGES, ASSESSMENTS AND OTHER EXPENSES IN CONNECTION THEREWITH.
- H. PIPING AND EQUIPMENT LAYOUT ARE SCHEMATIC. EXACT LOCATIONS ARE DETERMINED BY STRUCTURAL AND OTHER CONDITIONS. DESIGN OF SYSTEM MAY NOT BE CHANGED. ONLY EXACT LOCATION OF PIPING AND DUCTS MAY BE REVISED TO SUIT CONSTRUCTION CONDITIONS AND AID IN COORDINATION WITH WORK OF OTHER CONTRACTORS.

- I. MATERIALS AND EQUIPMENT INSTALLED AS PART OF THE WORK SHALL MEET REQUIREMENTS OF THE CONTRACT DOCUMENTS AND NO MATERIALS OR EQUIPMENT SHALL BE ORDERED UNTIL REVIEWED BY OWNER, ARCHITECT OR RECORD IS RESPONSIBLE FOR APPROVING HVAC SUBMITTALS. HVAC UNITS SHALL NOT BE CONSIDERED AS ORDERED AND IN PROGRESS UNTIL SUBMITTALS ARE FORMALLY APPROVED AND RETURNED TO HVAC SUPPLIER.

- J. CATALOG DATA FOR EQUIPMENT REVIEWED BY OWNER SHALL NOT SUPERSEDE CONTRACT DOCUMENTS. REVIEW OF PRODUCTS SHALL NOT RELIEVE CONTRACTOR FROM RESPONSIBILITY FOR DEVIATIONS FROM DRAWINGS OR SPECIFICATIONS, PROVIDING PROPER CLEARANCE, FABRICATION PROCESS AND COORDINATION WITH OTHER TRADES.

- K. WHEN SUBMITTED FOR REVIEW, SHOP DRAWINGS SHALL BEAR CONTRACTOR'S CERTIFICATION THAT CONTRACTOR HAS REVIEWED, CHECKED AND APPROVED SHOP DRAWINGS, THAT THEY ARE IN HARMONY WITH REQUIREMENTS OF THE PROJECT AND WITH THE PROVISIONS OF CONTRACT DOCUMENTS AND THAT CONTRACTOR HAS VERIFIED ALL FIELD MEASUREMENTS AND CONSTRUCTION MATERIALS. CATALOG NUMBERS AND SIMILAR DATA, CONTRACTOR SHALL ALSO CERTIFY THAT WORK REPRESENTED BY THE SHOP DRAWINGS IS RECOMMENDED BY CONTRACTOR AND THE CONTRACTOR'S GUARANTEE WILL FULLY APPLY.

- L. CONTRACTOR SHALL VERIFY LOCATION OF UTILITIES AND NOTE CONDITIONS WHICH WOULD AFFECT THE WORK. DISCREPANCIES SHALL BE REPORTED PRIOR TO BID AWARD.

- M. PROVIDE INSTRUCTION TO OWNER'S OPERATING PERSONNEL AS NECESSARY, SHOWING LOCATIONS AND PROPER OPERATION OF MAJOR ITEMS OF EQUIPMENT AND SYSTEM COMPONENTS AND REFERRING TO OPERATING INSTRUCTION MANUAL DESCRIBED BELOW AS A GUIDE.

- N. COMPILE WRITTEN MANUAL OF OPERATING INSTRUCTIONS INCLUDING COPIES OF SHOP DRAWINGS AND LISTING OF EQUIPMENT SUPPLIERS. ASSEMBLE IN 8-1/2" X 11" HARD BACKED INDEXED BINDER. MANUAL SHALL BE AS FOLLOWS:

1. TITLE PAGE: TITLE OF JOB, OWNER, ADDRESS, DATE OF SUBMISSION, CONTRACTOR AND ENGINEER.
2. INDEX.
3. LIST OF MAJOR EQUIPMENT USED IN PROJECT ACCOMPANIED BY CONTRACTOR PURCHASE ORDER NUMBERS AND SUPPLIERS NAMES AND ADDRESSES.
4. ONE COPY OF EACH SHOP DRAWING GROUPED BY TYPES OF EQUIPMENT, I.E., ROOFTOP UNITS, FANS, ETC.
5. SECTION FOR EACH SYSTEM INCLUDING:
- a. BRIEF DESCRIPTION OF SYSTEM OPERATION WITH LOCATION OF MAJOR COMPONENTS.
- b. HVAC SYSTEM MAINTENANCE AND CALIBRATION INFORMATION, INCLUDING WIRING DIAGRAMS AND SCHEMATICS.

- O. SUBMIT A COMPLETED COPY TITLED "HVAC OPERATING INSTRUCTION MANUAL" ON BINDING EDGE OF BINDER TO ARCHITECT FOR APPROVAL. AFTER ARCHITECT'S REVIEW AND ANY CORRECTIONS REQUIRED ARE COMPLETED, SUBMIT A COPY OF THE MANUAL TO OWNER.

- P. WITHIN 90 DAYS AFTER DATE OF SYSTEM ACCEPTANCE, RECORD DRAWINGS OF ACTUAL INSTALLATION SHALL BE PROVIDED TO BUILDING OWNER. RECORD DRAWINGS SHALL INCLUDE AT A MINIMUM LOCATION AND PERFORMANCE DATA ON EACH PIECE OF EQUIPMENT, GENERAL CONFIGURATION OF DUCT DISTRIBUTION SYSTEM INCLUDING SIZES, AND AIR DESIGN FLOW RATES.

- Q. CONTRACTOR IS TO BECOME INFORMED OF EXACT DIMENSIONS OF FINISHED WORK WHERE PIPES AND EQUIPMENT ARE TO BE PLACED AND WILL ARRANGE THE WORK ACCORDINGLY, ASSUMING ALL RESPONSIBILITY FOR PROPER LOCATION AND COORDINATION OF THE WORK.

- R. IN ERECTION OF DUCTWORK, SPECIAL CARE SHALL BE USED PROVIDING SUPPORT.

- S. DUCTWORK SHALL BE PLACED SO AS TO AVOID INTERFERENCES WITH PLUMBING PIPES, ELECTRIC CONDUITS OR PIPES OF OTHER CONTRACTORS.

- T. DUCTWORK SHALL BE PROVIDED WITH SUFFICIENT DISTANCE FROM WALLS, PIPES, AND OTHER OBSTACLES TO PERMIT APPLICATION OF FULL THICKNESS OF INSULATION SPECIFIED.

230593 TESTING, ADJUSTING, & BALANCING HVAC

- A. CONTRACTOR SHALL COMPLETE INSTALLATION OF WOOD SYSTEM, ROOFTOP EQUIPMENT, AND CONTROL SYSTEM IN ACCORDANCE WITH DRAWINGS PRIOR TO PERFORMING TAB. CONTRACTOR SHALL PROGRAM THERMOSTATS IN ACCORDANCE WITH REQUIREMENTS LISTED AND FOLLOWING STATUS AS INDICATED IN TAB CONFIRMATION FORM. CONTRACTOR SHALL UTILIZE PERSONNEL AND SUBCONTRACTORS THAT ARE FULLY TRAINED AND CERTIFIED BY MANUFACTURER FOR EQUIPMENT BEING INSTALLED.

- B. QUALIFICATIONS:

1. BALANCER SHALL BE A MEMBER IN GOOD STANDING AND CERTIFIED WITH THE ASSOCIATED AIR BALANCE COUNCIL (AABC) OR THE NATIONAL ENVIRONMENTAL BALANCING BUREAU (NEBB). BALANCER SHALL BE TOTALLY INDEPENDENT, HAVING NO AFFILIATION WITH ANY PROJECT CONTRACTOR, DESIGN PROFESSIONAL, EQUIPMENT MANUFACTURER OR SUPPLIER OF HVAC RELATED EQUIPMENT. BALANCER SHALL HAVE BEEN REGULARLY ENGAGED IN TAB OF HEATING, VENTILATING, AND AIR CONDITIONING SYSTEMS FOR RESTAURANTS. BALANCER SHALL PROVIDE PROOF THAT PERSONNEL PERFORMING WORK HAVE SUCCESSFULLY COMPLETED AT LEAST FIVE RESTAURANT PROJECTS OF SIMILAR SIZE AND SCOPE. A COMPLETE LIST OF REFERENCE PROJECTS, INCLUDING NAME AND PHONE NUMBER OF CONFIRMING CONTACTS, SHALL BE SUBMITTED WITH QUOTE, IF REQUESTED.
2. INSTRUMENTS USED FOR TAB SHALL BE ACCURATELY CALIBRATED WITHIN TWELVE (12) MONTHS OF BALANCING AND MAINTAINED IN GOOD WORKING ORDER. PROVIDE RECORDS OF LAST CALIBRATION (AS REQUESTED) AND INCLUDE THIS SUMMARY IN THE FINAL TAB REPORT. ENGINEER OF RECORD, OR THEIR REPRESENTATIVE, MAY OBSERVE TAB ACTIVITIES.
3. UNLESS OTHERWISE NOTED, RESTAURATEUR SHALL PROCURE SERVICES OF AND CONTRACT DIRECTLY WITH AN INDEPENDENT TAB CONTRACTOR (BALANCER) MEETING QUALIFICATIONS OF THIS SECTION. BALANCER SHALL TEST, BALANCE, AND ADJUST ALL AIR MOVING EQUIPMENT (RTUS AND FANS), AIR DISTRIBUTION DUCTS AND AIR DEVICES, EXHAUST SYSTEMS, AND TEMPERATURE CONTROL SYSTEMS.
4. IF CONTRACTOR IS REQUIRED TO PROCURE TAB SERVICES DIRECTLY, CONTRACTOR

SHALL PROVIDE QUALIFICATIONS OF BALANCER TO RESTAURATEUR OR THEIR REPRESENTATIVE FOR APPROVAL. CONTRACTOR SHALL CONTRACT BALANCER AS SOON AS POSSIBLE AFTER CONSTRUCTION START TO COORDINATE THEIR WORK WITH OTHER TRADES. WHILE MEETING COMPLETION DATE, CONTRACTOR SHALL PREPARE A CRITICAL PATH SCHEDULE, COORDINATED WITH SUBCONTRACTORS, TO ACCOMPLISH ALL TASKS REQUIRED OF BALANCER.

5. CONTRACTORS SHALL COOPERATE AND ASSIST BALANCER AS REQUIRED. BALANCER SHALL INSPECT MECHANICAL, EXHAUST, AND CONTROL SYSTEM WORK. ANY DEVIATIONS FROM PLANS AND SPECIFICATIONS THAT MAY AFFECT PERFORMANCE OF THE SYSTEM SHALL BE REPORTED IN WRITING TO CONTRACTOR, ARCHITECT OF RECORD, ENGINEER AND RESTAURATEUR.

- C. CONTRACTOR SHALL COMPLETE THE FOLLOWING PRIOR TO TAB: PERMANENT POWER SHALL BE PROVIDED, ROOFTOP UNIT FULL INSTALLED AND STARTED, HOOD SYSTEMS AND FANS STARTED, COMPLETE CONTROL'S OPERATIONAL AND PROGRAMMED, DUCTWORK, DIFFUSER AND CEILING INSTALLATION COMPLETED. ADDITIONAL TAB COSTS ARE THE CONTRACTOR'S RESPONSIBILITY IF REQUIRED ITEMS ARE NOT COMPLETE AT START OF TAB PROCEDURES.

- D. DESIGN BALANCE DEVIATION TOLERANCES:

1. KITCHEN HOODS ARE UL LISTED AND SHALL BE BALANCED FROM 100% TO 105% OF DESIGN AIRFLOW. DO NOT SET EXHAUST RATE BELOW THAT SCHEDULED. INCREASE RTU AIRFLOW AS NEEDED TO ACHIEVE POSITIVE PRESSURE IN THE RESTAURANT.
2. TOTAL OF ALL AIR DISTRIBUTION DEVICES ON SAME ROOFTOP UNIT DUCT SYSTEM SHALL BE BALANCED TO 100% TO 105% OF DESIGN.
3. ROOFTOP UNITS SHALL PROVIDE OUTDOOR AIR CFM BETWEEN 100% TO 105% OF DESIGN FOR ALL SUPPLY FAN SPEEDS DURING REGULAR HOURS AND SHALL BE SET TO TRACK AIR VOLUME WITH THE SUPPLY FAN FOR THE FAN SPEED PROVIDED BY THE UNITS.
4. ECONOMIZERS SHALL PROVIDE REQUIRED OUTDOOR AIR WHEN CLOSED FOR BUSINESS (MINIMUM ONLY).
5. OVERALL SYSTEM SHALL BE BALANCED TO POSITIVE CFM AS SHOWN ON THE VENTILATION SCHEDULE WITH SUPPLY AND EXHAUST FANS IN OPERATION.
6. CONTACT RTU MANUFACTURER TO RESOLVE AIRFLOW DELIVERY IF ROOFTOP UNIT AIRFLOWS ARE BELOW DESIGN. THIS INCLUDES VERIFICATION OF DUCTWORK STATIC PRESSURE, ADJUSTMENT OF FAN RPM, REPLACEMENT OF DRIVES, ETC. RESTAURANT SHALL BE LEFT IN A POSITIVE AIR PRESSURE STATE.

- H. PLAN REVIEW: PROVIDE WRITTEN TESTING AND BALANCING PLAN REVIEW WITHIN FIVE (5) BUSINESS DAYS UPON RECEIPT OF CONTRACT. PLAN REVIEW SHALL INCLUDE RECOMMENDATIONS TO IMPROVE TESTING AND BALANCING. TRANSMIT THESE COMMENTS DIRECTLY TO CONTRACTOR. REVIEW WENDY'S RESTAURANT VENTILATION EQUIPMENT PRE-START AND START-UP FORMS.

- I. EQUIPMENT SUBMITTAL DATA: CONTRACTOR SHALL PROVIDE RESTAURANT EQUIPMENT SUBMITTAL DATA TO BALANCER. COMPLETED EQUIPMENT STARTUP AND CALIBRATION FORMS SHALL BE PROVIDED TO BALANCER PRIOR TO PERFORMING TAB.

- J. UPDATED DESIGN REQUIREMENTS: IF ANY, SHALL BE PROVIDED TO BALANCER PRIOR TO TAB. DESIGN REQUIREMENT CHANGES SHALL INCLUDE DATE OF THE CHANGE AND REFERENCES TO THE CONTRACT DOCUMENTS (ADDENDA, CHANGE ORDER, OR CONSTRUCTION CHANGE DIRECTIVE), WHICH DIRECTED THE CHANGE. CHANGES MADE WITHOUT RESTAURATEUR WRITTEN APPROVAL ARE INVALID.

- K. BALANCER TEST AND BALANCE REPORT:

1. PERFORM TAB WORK ASSOCIATED WITH THE RESTAURANT VENTILATION SYSTEM PER DESIGN DOCUMENTS. SUBMIT AN ELECTRONIC PDF COPY OF TABULATED REPORTS IN NEATLY ORGANIZED TYPED FORMS (WITH NUMBERED PAGES) WITH AABC OR NEBB FULLY COMPLETED, STAMPED AND SEALED REPORTS. REPORT SHALL BE PROVIDED WITHIN SEVEN (7) DAYS OF COMPLETION OF TESTS TO ARCHITECT OF RECORD, ENGINEER, CONTRACTOR AND RESTAURATEUR. REPORT SHALL INCLUDE START-UP CHECKLIST FORMS AND REPORTS PROVIDED TO BALANCER BY CONTRACTOR. EQUIPMENT TEST DATA AND DRAWINGS TO COINCIDE WITH TEST REPORT. IN ADDITION, REPORTS SHALL INCORPORATE:
2. A SUMMARY THAT SHALL INCLUDE A GENERAL DESCRIPTION OF PROJECT (BUILDING TYPE, SYSTEM TYPE, AND EQUIPMENT DESCRIPTION).
3. A DESCRIPTIVE LIST OF ALL EQUIPMENT AND TEST RESULTS THAT DO NOT MEET PLANS AND SPECIFICATIONS (INCLUDE PHOTOGRAPHS).
4. COPIES OF REDUCED PLAN DRAWINGS THAT UNIQUELY IDENTIFY AND CROSS REFERENCE AIR DEVICES AND HVAC EQUIPMENT.
5. PROVIDE BUILDING PRESSURE TABLES THAT INDICATE DESIGN AND ACTUAL RESULTS.
6. REPORTS THAT ARCHITECT AND/OR ENGINEER DETERMINES IS INACCURATE, OR INCOMPLETE, SHALL BE RETURNED FOR CORRECTION, COMPLETION, OR RE-TESTING AT BALANCERS COST. REVISED REPORTS SHALL BE SUBMITTED IN THEIR ENTIRETY. EACH REVISION SHALL BE HIGHLIGHTED AND SHALL INDICATE REVISION DATE. COVER PAGE SHALL INDICATE DATE OF FIRST EDITION AND REVISION DATE.

- L. CONTRACTOR'S RESPONSIBILITIES FOR TAB:

1. CONTRACTOR SHALL BE COMPLETELY FAMILIAR WITH ALL PROVISIONS AND RESPONSIBILITIES OF BALANCER AND SHALL PROVIDE COOPERATION AND SUPPORT REQUIRED.
2. CONTRACTOR SHALL CORRECT OR REPAIR DEFICIENCIES NOTED BY BALANCER IMMEDIATELY. IF DEFICIENCIES ARE NOT CORRECTED WHILE BALANCER IS ON SITE, AND DEFICIENCIES PREVENT COMPLETION OF TAB WORK, CONTRACTOR SHALL ASSUME COSTS FOR EXTENDING TAB, OR FOR FOLLOW-UP TAB VISITS.
3. CONTRACTOR SHALL PROVIDE DOCUMENTATION OF CORRECTION OF ANY OPEN ISSUES PRIOR TO SUBMISSION OF FINAL REPORT. SHOULD ANY OPEN HVAC SYSTEM ITEMS BE INCAPABLE OF CORRECTION WITHIN SEVEN DAY PERIOD FOR THE FINAL BALANCING REPORT, CONTRACTOR SHALL INFORM BALANCER AND OWNER IMMEDIATELY AND CONTRACTOR SHALL BE RESPONSIBLE FOR ALL COSTS, DELAYS, AND RESCHEDULING REQUIRED.
4. CONTRACTOR IS RESPONSIBLE FOR CORRECTION OF IDENTIFIED ITEMS AND FOR SUBSEQUENT TESTS IN EVENT OF THE FOLLOWING:
- a. NO PERMANENT POWER FOR THE RESTAURANT.
- b. DIFFUSERS NOT INSTALLED FOR TEST.
- c. CEILING TILES NOT INSTALLED.
- d. PASSWORD FOR RTU THERMOSTATS NOT PROVIDED.
- e. INOPERABLE EQUIPMENT.
- f. THERMOSTATS NOT PROGRAMMED.

5. ADDITIONAL RESPONSIBILITIES INCLUDE: PROVIDE REQUIRED SHOP DRAWINGS AND EQUIPMENT DATA INCLUDING ANY APPROVALS OF DESIGN MODIFICATIONS. PROVIDE SAFE AND CLEAR ACCESS TO ALL HVAC SYSTEMS AS NEEDED TO PERFORM TAB WORK (LADDERS, LIFTS, ROOF ACCESS, ACCESS PANELS AND THE LIKE). PROVIDE TAB TEST OPENINGS AS REQUIRED FOR TESTING AND BALANCING HVAC SYSTEMS. PROVIDE UPDATED JOB SCHEDULE AND TIMELY NOTICE PRIOR TO SCHEDULED EVENTS. MAKE TESTS AND CALIBRATION TO ESTABLISH ADEQUATE QUALITY, SAFETY, COMPLETED STATUS, AND SATISFACTORY OPERATION OF HVAC SYSTEMS AND COMPONENTS.

6. DURING TAB PERIOD, OPERATE HVAC EQUIPMENT AS NECESSARY TO PERMIT SYSTEMS TO BE TESTED AND BALANCED AS FULLY OPERATING FUNCTIONAL SYSTEMS. WORK HARMONIOUSLY WITH BALANCER TO EXPEDITE THE WORK. REMOVE AND REPLACE CEILING TILES AS NECESSARY TO PERFORM TAB WORK. REMOVE AND REPLACE EQUIPMENT, LIGHTS, OR OTHER ITEMS WHICH OBSTRUCT TESTING AND BALANCING OPERATIONS (WHERE EQUIPMENT, LIGHTS, OR OTHER ITEMS INTERFERE WITH FUTURE ADJUSTMENTS OF HVAC SYSTEM, SUCH EQUIPMENT, LIGHTS, OR OTHER ITEMS SHALL BE RELOCATED BY CONTRACTOR AS DIRECTED BY ENGINEER OF RECORD).

7. REPLACE BELTS AND DRIVES AS REQUIRED FOR PROPER BALANCING - DRIVES SHALL BE ADJUSTED AND ALIGNED BY CONTRACTOR TO PREVENT ABNORMAL BELT WEAR AND VIBRATION. ADJUST FAN SPEED AS REQUIRED NOT TO EXCEED MOTOR CAPACITY. CONTRACTOR SHALL ADJUST DAMPERS FOR THE BALANCER DURING TAB WORK. IDENTIFY CONCEALED DAMPER LOCATIONS WITH ORANGE TAPE. MANUALLY OPEN AND TEST DAMPE.
8. RS FOR SMOOTH VIBRATION-FREE OPERATION AND TIGHTEN PRIOR TO COMMENCEMENT OF TAB WORK. VERIFY THAT ALL CONTROLS ARE INSTALLED AND OPERATING AS REQUIRED IN BOTH STORE OPEN AND CLOSED MODES. BEFORE REQUESTING FINAL TESTING AND BALANCING, SUBMIT SIGNED STATEMENT THAT HVAC SYSTEMS ARE INSTALLED, ADJUSTED, SERVICED, OPERATING SATISFACTORILY, AND ARE READY FOR USE.

- N. SYSTEM READY NOTICE: ALLOW ADEQUATE TIME TO PERFORM TESTING AND BALANCING WORK. TAB IS REQUIRED TO BE PERFORMED PRIOR TO RESTAURANT OPENING. NOTIFY BALANCER UPON COMMENCEMENT OF TAB WORK RELATED TO HVAC SYSTEM AND COORDINATE PROPER TIME FOR NOTICE TO SCHEDULE TRAVEL AND PROVIDE THE DURATION REQUIRED FOR TEST AND BALANCING AND FOR ANY POSSIBLE CORRECTIONS.

- O. BALANCER RESPONSIBILITIES:

1. RECORD DATA REQUIRED BY AABC OR NEBB FORMS. TEST AND ADJUST SYSTEMS FOR DESIGN CFM OF SUPPLY, OUTSIDE AIR (IN MULTIPLE FAN SPEEDS), AND EXHAUST AIR. KITCHEN APPLIANCES SHOULD BE OPERATIONAL WHILE MAKING ADJUSTMENTS. HOOD SIDE SKIRTS SHALL BE IN PLACE ON THE CORRECT ENDS OF HOODS (FRY HOOD DUMP SKIRT HAS A CUT OUT). TEST AND RECORD SYSTEM STATIC PRESSURE PROFILES.

- ADJUST SUPPLY AND RETURN DUCTS TO DESIGN AIRFLOW. TEST AND ADJUST FANS. ADJUST ALL DIFFUSERS, GRILLES, AND REGISTERS TO MINIMIZE DRAFTS. PROVIDE BUILDING DIFFERENTIAL PRESSURE (INSIDE TO OUTSIDE) AT ALL OPERATIONAL CONDITIONS AND INCLUDE IN THE FINAL REPORT.
2. PROVIDE TABS IN THE REPORT THAT ITEMIZES ALL SUPPLY AND EXHAUST AIR CFM (SPECIFIED AND ACTUAL) TO SHOW THAT BUILDING SHOULD BE UNDER POSITIVE PRESSURE. SIZE, AK CATALOG FACTORS OF DIFFUSERS, GRILLES, REGISTERS, AND ALL TESTED EQUIPMENT SHALL BE IDENTIFIED AND LISTED. READINGS AND TEST OF DIFFUSERS, GRILLES, AND REGISTERS SHALL INCLUDE REQUIRED VELOCITY (FPM). REQUIRED CFM AND RESULTANT CFM, WHEN DIRECT CFM MEASURING INSTRUMENTS ARE USED, VELOCITIES ARE NOT REQUIRED.
3. BALANCER SHALL COMPLETE A WENDY'S TEST & BALANCE CONFIRMATION FORM WHILE PERFORMING SYSTEM TESTING. FORM SHALL BE SIGNED OFF WHEN TAB IS COMPLETE AND INCLUDED AT THE END OF TAB REPORT.

230700 HVAC INSULATION

- A. DUCT INSULATION AND APPURTENANCES SHALL HAVE FLAME SPREAD RATING NOT EXCEEDING TWENTY-FIVE (25) AND SMOKE DEVELOPED RATING NOT EXCEEDING FIFTY (50). DUCT INSULATION SHALL HAVE AN INSTALLED R-VALUE OF 6.

- B. CONCEALED SUPPLY DUCTWORK SHALL HAVE FLEXIBLE FIBERGLASS DUCT WRAP LAMINATED TO FOIL REINFORCED KRAFT VAPOR BARRIER FACING WITH 2" STAPLING FLANGE OF SUFFICIENT DENSITY AND THICKNESS TO MEET LOCAL CODE REQUIREMENTS. ONLY COMMERCIAL GRADE INSULATION PRODUCTS MAY BE USED.

- C. INSULATION SHALL NOT BE APPLIED UNTIL CONSTRUCTION HAS PROGRESSED SUFFICIENTLY TO ENSURE AGAINST PHYSICAL OR MOISTURE DAMAGE TO INSULATION. INSULATION DAMAGED THROUGH FAILURE TO OBSERVE THIS DIRECTIVE SHALL BE REPLACED AT THIS CONTRACTOR'S EXPENSE.

- D. HANGER RODS SHALL BE PERPENDICULAR TO DUCTWORK BEFORE INSULATION IS INSTALLED.

- E. INSTALL INSULATION ACCORDING TO MANUFACTURER'S RECOMMENDATIONS.

- F. INSULATION SHALL BE APPLIED OVER FLANGES, JOINTS AND SEAMS IN PIPING AND DUCTWORK.

- G. JOINTS AND SEAMS IN INSULATION SHALL BE PROPERLY SEALED TO MAINTAIN VAPOR BARRIER.

- H. INSULATION SHALL BE OWENS-CORNING, EQUAL PRODUCT BY ARMSTRONG, CERTAINTED, SCHULLER OR KNAUF MAY BE PROVIDED AT CONTRACTOR'S OPTION.

230800 COMMISSIONING OF HVAC

- A. THIS CONTRACTOR SHALL COORDINATE COMMISSIONING OF HVAC SYSTEMS AND SHALL ASSIST OWNERS TAB CONTRACTOR TO COMPLETION. CONTRACTOR IS RESPONSIBLE FOR CORRECTING DEFICIENCIES NOTED IN THE TAB REPORT.

- B. CONTRACTOR SHALL PROVIDE DOCUMENTATION OF TESTING AND COMMISSIONING TO BE INCLUDED IN OPERATING INSTRUCTIONS MANUAL (SEE GENERAL REQUIREMENTS) DOCUMENTATION SHALL INCLUDE:

1. CONSTRUCTION AND SYSTEM CHECKLISTS.
2. CERTIFICATE OF READINESS.
3. INTERIM AND FINAL TEST AND INSPECTION REPORTS AND CERTIFICATES.
4. APPROVED SUBMITTALS.
5. CERTIFICATE OF COMPLETION.
6. AS-BUILT DOCUMENTATION.

233133 METAL DUCTS

- A. THIS SECTION INCLUDES SPECIFICATIONS FOR DUCTWORK EXCEPT 'GREASE DUCT' (EXHAUST DUCT CONNECTED TO TYPE I HOODS WHERE GREASE LADEN VAPORS MAY BE PRESENT). REFER TO PLANS AND DETAILS FOR INFORMATION ON 'GREASE DUCT'.

- B. CONTRACTOR SHALL PROVIDE COMPLETE DUCT SYSTEM CONSISTING OF DUCTWORK, PLENUMS, FITTINGS AND CONNECTORS OF SIZE AND LOCATION AS INDICATED ON DRAWINGS.

- C. ALL PORTIONS OF DUCT SYSTEM SHALL BE DESIGNED, FABRICATED AND INSTALLED PER THE FOLLOWING REQUIREMENTS:

1. LATEST EDITION OF SMACNA "HVAC DUCT CONSTRUCTION STANDARDS" - METAL AND FLEXIBLE."
2. RIGID GALVANIZED SHEET METAL OF THICKNESS AND WITH STIFFENERS AS INDICATED IN SMACNA PER 2" WATER COLUMN CHART.
3. AIR VELOCITIES NO MORE THAN 2000 FPM AND STATIC PRESSURE IN DUCT OF 2" OR LESS.
4. SEALING PER SMACNA "CLASS B" OR AS REQUIRED TO MEET AIR BALANCE.
5. CROSS-BREAKING, STIFFENING, BRACES, TOES, ANGLES AND OTHER BRACING AND SUPPORT REQUIRED TO MAINTAIN DUCT CONFORMITY (TRUE TO SHAPE, PREVENT BUCKLING OR CAVITATION).
6. ALL VERTICAL DUCTS SHALL BE ABLE TO CARRY AN ADDITIONAL 100 LBS. SUSPENDED LOAD FROM HANGERS WITHOUT BUCKLING.
7. SEAMS OF ALL DUCTS AND JOINTS SHALL BE HAMMERED TO A SMOOTH SURFACE ON THE INSIDE.

- D. FLEXIBLE CONNECTIONS SHALL BE INSTALLED AT ROOFTOP UNIT SUPPLY AND RETURN AIR CONNECTIONS. CONNECTIONS SHALL BE AT LEAST 6" LONG, MADE OF NFPA 90A APPROVED FLAMEPROOF FABRIC.

- E. INSTALL HANGERS AND SUPPORTS WITHIN 24 INCHES OF EACH ELBOW AND WITHIN 48 INCHES OF EVERY BRANCH CONNECTION. HANGERS EXPOSED TO VIEW SHALL BE THREADED ROD AND ANGLE OR CHANNEL SUPPORTS.

- F. ROUND SHEET METAL DUCT: PROVIDE SPIRAL SEAM (ALL SIZES) OR SNAP LOCK (DUCT CONCEALED ABOVE CEILINGS SIZES UP TO 10") GALVANIZED STEEL COMPLYING WITH SMACNA STANDARDS. SPIRAL SEAM DUCTWORK SHALL HAVE SMACNA SEAM TYPE RL-1. ROUND EXPOSED DUCTWORK SHALL BE SPIRAL SEAM (ALL SIZES).

- G. EXPOSED DUCTWORK: EXPOSED DUCTWORK SHALL BE CLEANED OF DEBRIS AND OIL, THEN WIPED DOWN WITH VINEGAR OR OTHER SURFACE PREPARING CHEMICAL TO PREPARE DUCT FOR PAINT.

- H. PROVIDE VOLUME CONTROLLER AND EXTRACTOR AT BRANCH TAKEOFFS IN SUPPLY AND RETURN AND AT OTHER LOCATIONS IN SUPPLY AND RETURN MAIN DUCTS AS REQUIRED TO PROPERLY BALANCE SYSTEMS. DAMPER SHALL BE AS SPECIFIED IN SECTION 233300.

- I. PROVIDE TURNING VANES IN ELBOWS OF RECTANGULAR SUPPLY DUCTS. BLADES SHALL BE HOLLOW-FORMED DOUBLE THICKNESS VANES.

- J. PROVIDE SUPPLY, RETURN, AND EXHAUST REGISTERS, GRILLES AND DIFFUSERS AS INDICATED ON DRAWINGS AND/OR SCHEDULES. VERIFY AIR DEVICE REQUIREMENTS WITH GENERAL CONTRACTOR PRIOR TO ORDERING.

- K. PROVIDE FLEXIBLE SUPPLY AIR DUCTWORK UL 181, CLASS 1, TWO-PLY VINYL FILM SUPPORTED BY HELICALLY WOUND SPRING-STEEL WIRE, R-6 FIBERGLASS BLANKET INSULATION WITH METALIZED FILM VAPOR BARRIER OUTER JACKET IN LENGTHS THAT DO NOT EXCEED SIX FEET, AT AIR DEVICE CONNECTIONS (GRILLES, REGISTERS AND DIFFUSERS).

233300 DAMPERS

- A. CONTRACTOR SHALL PROVIDE RECTANGULAR AND ROUND GALVANIZED STEEL MANUAL AND/OR MOTORIZED VOLUME CONTROL DAMPERS THAT SHALL BE:

1. NO MORE THAN 6" IN ONE DIMENSION (LARGER DAMPERS SHALL BE OPPOSED-BLADE WITH EACH BLADE BEING NO MORE THAN 6").
2. MINIMUM OF 16 GAUGE AND AT LEAST 2 GAUGES HEAVIER THAN DUCT INSTALLED IN.
3. CHANNEL FRAME WITH BRACED CORNERS, CONCEALED LINKAGE, TEFLON FILLED BEARINGS, BLADE STOPS
4. REPLACEABLE BUTYL RUBBER SEALS INSTALLED ALONG TOP, BOTTOM AND SIDES OF FRAME AS WELL AS ALONG ALL SIDES OF EACH BLADE
5. 6" LONG CONTROL SHAFT WITH INSULATION SHIELD-OFF.
6. LOCKING QUADRANT MANUAL HANDLES OR MOTORIZED OPERATORS COMPATIBLE WITH CONTROL SYSTEM.
7. OPERATE FROM FULL OPEN TO FULL CLOSED.

- B. PROVIDE ACCESS AND PROPER CLEARANCES AS REQUIRED TO OPERATE DAMPERS.

- C. CHECK DAMPERS FOR PROPER OPERATION BEFORE AND AFTER INSTALLATION.

- D. INSTALL BALANCE DAMPERS WHERE INDICATED ON DRAWINGS AND ELSEWHERE AS NECESSARY TO OBTAIN PROPER SYSTEM BALANCE.

233418 ROOF EXHAUST FAN

- A. ROOF MOUNTED UP BLAST EXHAUST FAN SHALL BE CENTRIFUGAL DIRECT DRIVE TYPE. FAN SHALL BE CONSTRUCTED OF SPUN ALUMINUM WITH STRUCTURAL ELEMENTS OF MINIMUM 16 GAUGE MARINE ALLOY ALUMINUM.

- B. INTEGRAL MOTOR SHALL BE HEAVY DUTY TYPE WITH PERMANENTLY LUBRICATED SEALED BEARINGS ENCLOSED IN WEATHER-TIGHT COMPARTMENT AND SEPARATED FROM THE EXHAUST AIR STREAM.

- C. THE WHEEL SHALL BE CENTRIFUGAL BACKWARD INCLINED TYPE WITH COMPLETELY ALUMINUM CONSTRUCTION WITH CONE INLET AND DYNAMICALLY BALANCED TO MINIMIZE VIBRATION.

- D. FANS SHALL BEAR THE AMCA CERTIFIED RATINGS SEAL FOR SOUND AND AIR PERFORMANCE AND SHALL BE UL LISTED AND CSA APPROVED. CAPACITIES AS SHOWN ON THE DRAWINGS.

- E. WIRING SHALL BE BY ELECTRICAL CONTRACTOR.

- F. VERIFY MANUFACTURER MAKE AND MODEL OF EXHAUST FANS WITH HOOD DRAWINGS.

233713 AIR DISTRIBUTION DEVICES

- A. DIFFUSERS, REGISTERS AND GRILLES SHALL BE PROVIDED BY CONTRACTOR.

- B. COORDINATE AIR DISTRIBUTION DEVICE LOCATIONS WITH AFFECTED CONTRACTORS BEFORE INSTALLING DUCTWORK. CHANGES IN LOCATION FROM THE DRAWINGS MUST BE APPROVED BY OWNER BEFORE INSTALLATION.

- C. SUSPEND CEILING AIR DEVICES FROM STRUCTURE ON WIRE HANGERS OR FROM RIGID DUCTWORK. CEILING MUST NOT BE USED TO SUPPORT AIR DISTRIBUTION DEVICES.

- D. SECURELY FASTEN SIDE WALL AIR DEVICES TO RIGID DUCTWORK OR STRUCTURE.

233813 - COMMERCIAL-KITCHEN HOODS

- A. PROVIDE SUBMITTALS ON TYPE I HOODS, FILTERS AND BAFFLES, AND LIGHTING FIXTURES.

- B. COORDINATE WITH KITCHEN EQUIPMENT LAYOUT, LIGHTING FIXTURES, HVAC EQUIPMENT, PLUMBING, SPRINKLER SYSTEM, AND FIRE-SUPPRESSION SYSTEM COMPONENTS.

- C. TYPE I HOOD SHALL BE MANUFACTURED OF STAINLESS STEEL ASTM A 666, TYPE 304 STEEL WITH MINIMUM THICKNESS OF 0.050".

- D. TYPE I HOODS SHALL BE WELDED AT ALL JOINTS EXPOSED TO GREASE WITH CONTINUOUS WELDS, HAVE EASILY ACCESSIBLE FILTERS/BAFFLES, AND MAKE-UP AIR DIFFUSERS EASILY ACCESSIBLE FOR CLEANING. HOODS SHALL BE FABRICATED ACCORDING TO FSF2 AND UL 710 LISTED AND LABELED.

- E. PROVIDE ACCESS PANELS FOR FIRE DAMPERS AND FUSIBLE LINKS.

- F. DUCT-COLLAR FIRE DAMPERS - COLLAR AND DAMPER SHALL COMPLY WITH UL 710 TESTING AND LISTING REQUIRED FOR THE ENTIRE HOOD.

- G. LIGHTING FIXTURES - LIGHTING FIXTURES ARE PROVIDED IN THE LIGHTING PACKAGE. LED HEAT RATED LAMPS AT 3500K ARE REQUIRED. SUBSTITUTION OF CFL OR INCANDESCENT LAMPS IS NOT AUTHORIZED.

- H. HOOD CONTROLS - HOOD CONTROLS SHALL BE ENCLOSED WITHIN A WALL MOUNTED CONTROL PANEL, FACTORY WIRED AND FABRICATED OF STAINLESS STEEL. ON-OFF SWITCHES SHALL START AND STOP THE EXHAUST FAN WITH AN INTERLOCK FOR THE SUPPLY FAN TO OPERATE SIMULTANEOUSLY. INTERLOCK EXHAUST FAN WITH EXHAUST FAN. EXHAUST FAN SYSTEM TO OPERATE FAN DURING FIRE SUPPRESSION-AGENT RELEASE AND TO REMAIN IN OPERATION UNTIL MANUALLY STOPPED.

THERMOSTATIC CONTROLS:

- A. GENERAL:

THE SUPPLY OF HEATING AND COOLING ENERGY TO EACH ZONE SHALL BE INDIVIDUALLY CONTROLLED BY THERMOSTATIC CONTROLS RESPONDING TO TEMPERATURE WITHIN THE ZONE. FOR THE PURPOSES OF SECTION 6.4.3.1, A DWELLING UNIT SHALL BE PERMITTED TO BE CONSIDERED A SINGLE ZONE.

- B. DEADBAND:

WHERE USED TO CONTROL BOTH HEATING AND COOLING, ZONE THERMOSTATIC CONTROLS SHALL BE CAPABLE OF PROVIDING A TEMPERATURE RANGE OR DEAD BAND OF AT LEAST 5°F WITHIN WHICH THE SUPPLY OF HEATING AND COOLING ENERGY TO THE ZONE IS SHUT OFF OR REDUCED TO A MINIMUM. EXCEPTIONS: THERMOSTATS THAT REQUIRE MANUAL CHANGEOVER BETWEEN HEATING AND COOLING MODES.

- C. SETBACK CONTROLS:

HEATING SYSTEMS LOCATED IN CLIMATE ZONES 2-8 SHALL BE EQUIPPED WITH CONTROLS THAT HAVE THE CAPABILITY TO AUTOMATICALLY RESTART AND TEMPORARILY OPERATE THE SYSTEM AS REQUIRED TO MAINTAIN ZONE TEMPERATURES ABOVE A HEATING SETPOINT ADJUSTABLE DOWN TO 55°F OR LOWER. COOLING SYSTEMS LOCATED IN CLIMATE ZONES 1B, 2B, AND 3B SHALL BE EQUIPPED WITH CONTROLS THAT HAVE THE CAPABILITY TO AUTOMATICALLY RESTART AND TEMPORARILY OPERATE THE SYSTEM AS REQUIRED TO MAINTAIN ZONE TEMPERATURES BELOW A COOLING SETPOINT ADJUSTABLE UP TO 90°F OR HIGHER OR TO PREVENT HIGH SPACE HUMIDITY LEVELS.

- D. AUTOMATIC SHUTDOWN:

HVAC SYSTEMS SHALL BE EQUIPPED WITH AT LEAST ONE OF THE FOLLOWING: CONTROLS THAT CAN START AND STOP THE SYSTEM UNDER DIFFERENT TIME SCHEDULES FOR SEVEN DIFFERENT DAY-TYPES PER WEEK, ARE CAPABLE OF RETAINING PROGRAMMING AND TIME SETTING DURING LOSS OF POWER FOR A PERIOD OF AT LEAST TEN HOURS, AND INCLUDE AN ACCESSIBLE MANUAL OVERRIDE, OR EQUIVALENT FUNCTION, THAT ALLOWS TEMPORARY OPERATION OF THE SYSTEM FOR UP TO TWO HOURS. EXCEPTION: RESIDENTIAL OCCUPANCIES MAY USE CONTROLS THAT CAN START AND STOP THE SYSTEM UNDER TWO DIFFERENT TIME SCHEDULES PER WEEK.

- E. SETPOINT OVERLAP RESTRICTION:

WHERE HEATING AND COOLING TO A ZONE ARE CONTROLLED BY SEPARATE ZONE THERMOSTATS, HEATING AND COOLING SETPOINTS LOCATED WITHIN THE SAME ZONE, SWITCHING MECHANICAL STOPS, OR FOR DDG SYSTEMS, SOFTWARE PROGRAMMING, SHALL BE PROVIDED TO PREVENT THE HEATING SETPOINT FROM EXCEEDING THE COOLING SETPOINT MINUS ANY APPLICABLE PROPORTIONAL BAND.

- F. HEAT PUMP SUPPLEMENTARY HEAT :

HEAT PUMPS HAVING SUPPLEMENTARY ELECTRIC RESISTANCE HEAT SHALL HAVE CONTROLS THAT, EXCEPT DURING DEFROST, PREVENT SUPPLEMENTARY HEAT OPERATION WHERE THE HEAT PUMP CAN PROVIDE THE HEATING LOAD.

VIRGINIA BUILDING DEPARTMENT NOTES:

ALL WORK SHALL COMPLY WITH APPLICABLE SECTIONS OF 2018 VIRGINIA BUILDING CODES, BASE CODE - THE INTERNATIONAL BUILDING CODE 2018, AND ALL AMENDMENTS AND RULES AND REGULATIONS OF THE DEPARTMENT OF BUILDINGS TO DATE.

1. ALL HEATING AND COOLING LOADS CALCULATED PER ASHRAE/ACCA 183.

2. VENTILATION FOR ALL AREA SHALL COMPLY WITH INTERNATIONAL MECHANICAL CODE 2018 CHAPTER 4.

3. AS PER 408.2.5 OF INTERNATIONAL ENERGY CONSERVATION CODE 2018, CONSTRUCTION DOCUMENT SHALL REQUIRE THAT, WITHIN 90 DAYS AFTER THE DATE OF SYSTEM ACCEPTANCE, RECORD DRAWINGS OF THE ACTUAL INSTALLATION BE PROVIDED TO THE BUILDING OWNER OR THE DESIGNATED REPRESENTATIVE OF THE BUILDING OWNER.

4. AS PER 408.3.2 OF INTERNATIONAL ENERGY CONSERVATION CODE 2018, CONSTRUCTION DOCUMENT SHALL REQUIRE THAT AN OPERATING MANUAL AND A MAINTAINED MANUAL BE PROVIDED TO THE BUILDING OWNER WITHIN 90 DAYS AFTER

THE DATE OF SYSTEM ACCEPTANCE THE CONTRACTOR SHALL ENGAGE THE SERVICES OF A PROFESSIONAL ENGINEER TO PROVIDE THE REQUIRED SPECIAL INSPECTIONS AND TESTS.

5. TESTS WILL BE CONDUCTED UNDER DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT OR OTHER PERSON HAVING LESS THAN FIVE (5) YEARS EXPERIENCE SUPERVISING THE INSTALLATION OF SUCH MECHANICAL SYSTEMS. THE TESTS WILL SHOW COMPLIANCE WITH INTERNATIONAL BUILDING CODE 2018 REQUIREMENTS AS OUTLINES IN SECTION [BC 1704].

6. THE LICENSED PROFESSIONAL ENGINEER, ARCHITECT OR OTHER PERSON HAVING NOT LESS THAN FIVE (5) YEARS EXPERIENCE SUPERVISING THE INSTALLATION OF SUCH MECHANICAL SYSTEMS AND CONDUCTING SUCH TESTS WILL FILE DOCUMENTATION AND REPORTS OF TESTS THAT THE SYSTEM COMPLIES WITH THE CONSTRUCTION DOCUMENTS AND APPLICABLE LAWS.

7. TESTS OF MECHANICAL SYSTEMS SHALL BE PERFORMED IN ACCORDANCE WITH THE FOLLOWING SECTIONS OF THE INTERNATIONAL MECHANICAL CODE 2018:

- A. VENTILATION SYSTEM BALANCING -IMC 2018 - 403.7
- B. SMOKE CONTROL SYSTEMS - IMC 2018 - 513.3

8. THE FOLLOWING WORK ITEMS, COMPONENTS, MATERIALS, CAPACITIES,

SCOPE OF WORK

USE EXISTING 800 AMP 208V - 3Ø SERVICE. USE EXISTING 800 AMP 208V - 3Ø ELECTRICAL MAIN DISTRIBUTION PANEL(MDP). USE EXISTING PANELS (E, L,M,R,K1,K2 AND K3) 208/120V-3Ø. PROVIDE ALL NECESSARY EQUIPMENT AND ALL WIRING AND LIGHTING FOR NEW BUSINESS SPACE. BUILDOUT INCLUDING KITCHEN. COORDINATE WITH G.C. FOR LOW VOLTAGE WIRING DETAIL.

POWER GENERAL NOTES

- A. VERIFY EXACT LOCATIONS OF HVAC AND PLUMBING EQUIPMENT, CONDUIT STUB-UPS AND POWER CONNECTIONS PRIOR TO ROUGH-IN.
- B. VERIFY EXACT LOCATION, MOUNTING HEIGHTS AND CONDUIT ROUTING FOR ALL THERMOSTATS, TEMPERATURE SENSORS, HUMIDISTATS AND CO₂ SENSORS PRIOR TO ROUGH-IN.
- C. REFER TO MECHANICAL AND PLUMBING DRAWINGS FOR ADDITIONAL ELECTRICAL REQUIREMENTS. COORDINATE PROVISIONS FOR CONTROL CONDUIT AND WIRING AS REQUIRED FOR INTERLOCKING OF FANS, MOTORS, ETC. REFER TO SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
- D. MOUNT DEVICES INSTALLED ON EQUIPMENT ON NON-REMOVABLE PANEL. COORDINATE LOCATION PRIOR TO COMMENCING ROUGH-IN WORK.
- E. REFER TO EQUIPMENT SPECIFICATIONS FOR DATA AND POWER REQUIREMENTS AND LOCATIONS OF ALL MENU BOARDS AND SIGNS.
- F. VERIFY MOUNTING HEIGHTS OF ALL RECEPTACLES WITH EQUIPMENT SUPPLIED PRIOR TO INSTALLATION.
- G. ALL EQUIPMENT ELECTRICAL OUTLETS ARE DIMENSIONED TO CENTERLINE OF BOX FROM ABOVE FINISHED FLOOR.
- H. ELECTRICAL CONTRACTOR TO PROVIDE CORD & PLUG CONNECTIONS FOR EQUIPMENT AS REQUIRED.
- I. ALL 120V, 20A OUTLETS IN THE FOOD PREP AREA SHALL BE GROUND FAULT INTERRUPT TYPE.
- J. PROVIDE "UP" OUTLET AT ROOFTOP EQUIPMENT.
- K. ROUTE ALL CONDUIT ROOF PENETRATIONS OUTSIDE OF CURB. DO NOT PENETRATE BOTTOM OF RTU UNITS AND EXHAUST FAN CURBS.

LOW VOLTAGE GENERAL NOTES

- A. ALL P.O.S. (POINT OF SALE) CIRCUITS SHALL HAVE AN ISOLATED GROUND WIRE BACK TO THE PANEL. ALL P.O.S. EQUIPMENT SHALL BE WIRED INDEPENDENTLY OF ANY NON-P.O.S. EQUIPMENT.
- B. ALL RECEPTACLES FOR P.O.S. EQUIPMENT SHALL BE ISOLATED GROUND WITH SURGE SUPPRESSOR TYPE. ALL RECEPTACLES FOR P.O.S. EQUIPMENT SHALL BE SINGLE UNIT, UNLESS A DUPLEX RECEPTACLE CAN BE USED TO SUPPLY TWO P.O.S. UNITS. DUPLEX RECEPTACLES MAY BE USED IN THE MANAGER'S OFFICE FOR NON-P.O.S. EQUIPMENT (COMPUTER, MUSIC, FIRE ALARM, SECURITY, ETC.).
- C. ALL CIRCUITS FOR P.O.S EQUIPMENT SHALL BE CONNECTED TO THE SAME PHASE OF POWER IN THE PANEL. ALL BRANCH CIRCUIT BREAKERS SUPPLYING P.O.S. EQUIPMENT SHALL HAVE LOCKING HANDLE DEVICES.
- D. EACH RECEPTACLE TYPE (LOCKING OR STRAIGHT BLADE) SHALL MATCH THAT OF THE EQUIPMENT FURNISHED. WHERE P.O.S. EQUIPMENT IS FURNISHED WITHOUT A PLUG THE RECEPTACLE SHALL BE LOCKING TYPE. COORDINATE RECEPTACLE TYPES WITH THE P.O.S. EQUIPMENT SUPPLIER.

GENERAL ELECTRICAL NOTES

- A. INCLUDE ALLOWANCE FOR UNFORESEEN CONDITIONS THAT MAY AFFECT THE SCOPE OF WORK. MINOR DEVIATIONS REQUIRED FOR ACCOMPLISHING THE INTENT OF THIS DESIGN SHALL BE INCLUDED IN THE ALLOWANCE.
- B. SWITCHBOARDS, PANELBOARDS, DISCONNECT SWITCHES, TRANSFORMERS AND CONTACTORS SHALL BE "LISTED" AND "IDENTIFIED" AS RATED FOR MINIMUM OF 75°C CONDUCTOR TERMINATION.
- C. ELECTRICAL DESIGN IS BASED ON INSTALLATION OF 75°C CONDUCTORS CONNECTED TO TERMINAL LUGS AND EQUIPMENT U.L. LISTED FOR MINIMUM 75°C. CONDUCTORS TERMINATED ON EQUIPMENT WITH LOWER RATING (60°C) OR NO RATING SHOWN SHALL HAVE CONDUCTOR SIZE INCREASED TO CONFORM TO ADOPTED ELECTRICAL CODE AND UL/CUL NO. 489 REQUIREMENTS.
- D. CONDUIT INSTALLED INDOORS SHALL BE ELECTRICAL METALLIC TUBING (EMT), MINIMUM 1/2" OR AS NOTED.
- E. CONDUIT INSTALLED BELOW SLAB SHALL BE RIGID STEEL, IMC, PVC OR HDPE, MINIMUM 3/4", IF PVC OR HDPE IS USED, TRANSITION TO RIGID STEEL BEFORE TURNING UP AND PENETRATING FLOOR SLAB.
- F. CONDUCTORS SHALL BE MINIMUM #12 THHN/THWN COPPER UNLESS NOTED OTHERWISE ON PLANS OR IN SPECIFICATIONS. BRANCH CIRCUITS SHALL BE PROVIDED WITH (2) #12 CONDUCTORS AND (1) #12 EQUIPMENT GROUND CONDUCTOR UNLESS NOTED OTHERWISE.
- G. BRANCH CIRCUITS SHOWN WITH TWO GROUNDING CONDUCTORS SHALL HAVE ONE EQUIPMENT GROUND CONDUCTOR (GREEN) AND ONE ISOLATED GROUND CONDUCTOR (GREEN W/YELLOW STRIP) INSTALLED IN RACEWAY.
- H. DIRECT CURRENT WIRING SHALL BE (2) #10 IN 1/2" CONDUIT UNLESS NOTED OTHERWISE.
- I. CONTROL VOLTAGE WIRING SHALL BE PLENUM RATED OR INSTALLED IN CONDUIT.
- J. THERMOSTATS, TEMPERATURE SENSORS, CARBON DIOXIDE SENSORS AND HUMIDISTATS: UNLESS NOTED OTHERWISE, PROVIDE WALL BOX AT +3'-10" AFF WITH 1/2" CONDUIT STUBBED OUT TO ABOVE ACCESSIBLE CEILING WITH NYLON BUSHINGS AND PULLSTRING.
- K. PROVIDE FLEXIBLE CONNECTIONS ONLY FOR FINAL CONNECTION TO EQUIPMENT, 6'-0" MAXIMUM LENGTH. PROVIDE LIQUID TIGHT FLEXIBLE CONNECTION AT EXTERIOR LOCATIONS AND WHERE EXPOSURE TO MOISTURE IS POSSIBLE.
- L. ALL EMPTY CONDUITS SHALL BE PROVIDED WITH A PULL WIRE.
- M. ALL RACEWAYS SHALL CONTAIN A GROUNDING ELECTRODE SIZED PER THE ADOPTED ELECTRICAL CODE.
- N. COORDINATE WORK ABOVE THE CEILING WITH OTHER TRADES TO PROVIDE THE GREATEST POSSIBLE CLEARANCE. CONDUIT RUNS SHALL BE RUN THROUGH TRUSSES WHERE POSSIBLE.
- O. VERIFY EXACT PLACEMENT OF ALL DEVICES SHOWN ON CONSTRUCTION DOCUMENTS PRIOR TO FINAL PLACEMENT.
- P. ALL RECESSED PANELBOARDS SHALL BE INSTALLED WITH MINIMUM OF (3) 3/4" CONDUITS STUBBED UP TO ACCESSIBLE CEILING SPACE FOR FUTURE USE.
- Q. ALL PANELBOARDS, SWITCHBOARDS AND LINE VOLTAGE CONTROL EQUIPMENT SHALL BE FIELD MARKED TO WARN QUALIFIED PERSONS OF POTENTIAL ELECTRIC ARC FLASH HAZARDS. MARKING SHALL BE LOCATED SO AS TO BE CLEARLY VISIBLE TO QUALIFIED PERSONS BEFORE EXAMINATION, ADJUSTING, SERVICING OR MAINTENANCE OF EQUIPMENT. MARKING SHALL BE SELF-ADHESIVE, COMMERCIAL LABEL CONFORMING TO ADOPTED CODES.
- R. LIGHT SWITCHES, ELECTRICAL OUTLETS, THERMOSTATS AND OTHER ENVIRONMENTAL CONTROLS SHALL HAVE OPERABLE PARTS OF THE CONTROLS LOCATED NO HIGHER THAN 48" AND NO LOWER THAN 15" ABOVE THE FLOOR. IF THE REACH IS OVER AN OBSTRUCTION BETWEEN 20" AND 25" IN DEPTH, THE MAXIMUM HEIGHT IS REDUCED TO 44" FOR FORWARD APPROACH OR 46" FOR SIDE APPROACH, PROVIDED THE OBSTRUCTION IS NO MORE THAN 24" IN DEPTH. OBSTRUCTIONS SHALL NOT EXTEND MORE THAN 25" FROM THE WALL BENEATH A CONTROL.
- S. TERMS:
 - SHALL - ACTION THAT IS REQUIRED WITHOUT OPTION OR QUALIFICATION.
 - FURNISH - CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING.
 - INSTALL - CONTRACTOR SHALL BE RESPONSIBLE FOR LABOR AND CONSTRUCTION EQUIPMENT NECESSARY TO SET IN PLACE, CONNECT, CALIBRATE AND/OR TEST EQUIPMENT FURNISHED BY HIM OR OTHERS.
 - PROVIDE - CONTRACTOR SHALL FURNISH AND INSTALL.

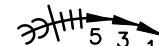


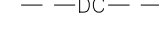
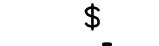
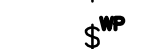
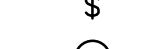

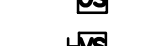



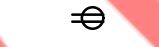


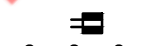
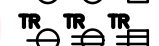
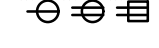
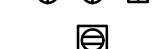
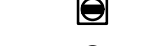






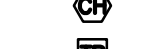


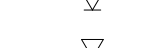


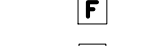







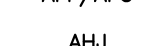
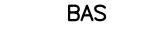

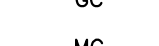

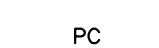
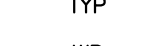
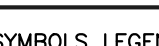





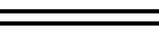

LIGHTING GENERAL NOTES

- A. CONNECT EXIT SIGNS, EMERGENCY AND NIGHT LIGHTS TO UNSWITCHED LIGHTING CIRCUIT, NOT CONTROLLED BY OCCUPANCY SENSORS, SWITCHES OR CONTACTORS.
- B. PROVIDE DEDICATED NEUTRAL WITH ALL DIMMING SYSTEM CIRCUITS. NO COMMON NEUTRALS SHALL BE ALLOWED.
- C. REFER TO ARCHITECTURAL REFLECTED CEILING PLAN AND DETAILS FOR LOCATION OF ALL LIGHTING FIXTURES AND ALL OTHER EQUIPMENT INSTALLED IN THE CEILING SYSTEM. VERIFY MOUNTING HEIGHTS AND FINISHES WITH ARCHITECT PRIOR TO ROUGH-IN.
- D. REFER TO POWER PLANS FOR LOCATIONS OF ELECTRICAL EQUIPMENT.
- E. PROVIDE (2) ADDITIONAL #12 CONDUCTORS FOR ALL 0-10V DIMMING CIRCUITS.

SECURITY SYSTEM GENERAL NOTES

- A. PROVIDE 120V CONNECTIONS TO THE FOLLOWING SYSTEMS:
 - A.A. CCTV HEAD END EQUIPMENT
 - A.B. BURGLAR ALARM PANEL & SYSTEM
 - A.C. SECURITY SYSTEM (INCLUDING SECURITY CAMERAS)
- B. PROVIDE EXTERIOR TRENCHING AND CONDUIT WITH PULL STRINGS AS REQUIRED FOR OUTDOOR SECURITY CAMERA INSTALLATIONS. PROVIDE BACK BOX MOUNTED ON NEARBY SITE POLE OR BUILDING SURFACE WITH PROVISIONS FOR POWER AND LOW VOLTAGE (COAXIAL) CONNECTIONS.
- C. SECURITY VENDOR TO FURNISH ALL SECURITY EQUIPMENT AND LOW VOLTAGE CABLING. COORDINATE EXACT SCOPE OF INSTALLATION IN FIELD.
- D. SECURITY VENDOR TO SET UP, TEST, AND TRAIN RESTAURANT MANAGEMENT/ PERSONNEL ON CCTV AND BURGLAR ALARM SYSTEMS.
- E. CONFIRM EXACT QUANTITIES AND LOCATIONS OF ALL DEVICES PRIOR TO SECURITY EQUIPMENT ROUGH-IN WITH SECURITY VENDOR AND POPEYES CONSTRUCTION MANAGER.

POS LEGEND

	HOME RUN TO PANEL. CIRCUIT NUMBERS, PHASE, NEUTRAL AND GROUND CONDUCTORS INDICATED ALONG WITH ISOLATED GROUND CONDUCTOR IF APPLICABLE.
	PARTIAL CIRCUIT
	CONDUIT INSTALLED CONCEALED ABOVE CEILING OR IN WALL
	CONDUIT INSTALLED CONCEALED BELOW FLOOR SLAB OR UNDERGROUND
	CONDUIT INSTALLED WITH DIRECT CURRENT POWER WIRING
	CONDUIT TURNED UP OR DOWN AS NOTED
	SINGLE POLE SWITCH, +3'-10" OR AS NOTED
	THREE-WAY SWITCH, +3'-10" OR AS NOTED
	WEATHERPROOF TOGGLE SWITCH, +3'-10" OR AS NOTED
	KEYED SWITCH, +3'-10" OR AS NOTED
	CEILING MOUNTED DAYLIGHT SENSOR
	WALL MOUNTED OCCUPANCY SENSOR, +3'-10" OR AS NOTED
	CEILING MOUNTED OCCUPANCY SENSOR
	WALL MOUNTED VACANCY SENSOR, +3'-10" OR AS NOTED
	CEILING MOUNTED VACANCY SENSOR
	CEILING MOUNTED INTERIOR DAYLIGHT HARVESTING PHOTOCCELL SENSOR
	POWER PACK, INSTALLED ABOVE ACCESSIBLE CEILING
	SIMPLEX RECEPTACLE, +18" OR AS NOTED
	ISOLATED GROUND SIMPLEX RECEPTACLE, +18" OR AS NOTED
	DUPLEX RECEPTACLE, +18" OR AS NOTED
	ISOLATED GROUND DUPLEX RECEPTACLE, +18" OR AS NOTED
	CONTROLLED DUPLEX RECEPTACLE, +18" OR AS NOTED
	QUADRUPLX RECEPTACLE, +18" OR AS NOTED
	ISOLATED GROUND QUADRUPLX RECEPTACLE, +18" OR AS NOTED
	QUADRUPLX RECEPTACLE WITH ONE OUTLET CONTROLLED, +18" OR AS NOTED
	GROUND FAULT INTERRUPTING RECEPTACLE, +18" OR AS NOTED
	TAMPER RESISTANT RECEPTACLE, +18" OR AS NOTED
	WEATHERPROOF GROUND FAULT INTERRUPTING RECEPTACLE, +18" OR AS NOTED
	RECEPTACLE INSTALLED HORIZONTALLY, BOTTOM AT +6" ABOVE COUNTER TOP
	RECEPTACLE INSTALLED FLUSH IN CEILING
	ISOLATED GROUND RECEPTACLE INSTALLED FLUSH IN CEILING
	SPECIAL RECEPTACLE, NEMA STYLE AS NOTED, +18" OR AS NOTED
	JUNCTION BOX
	DISCONNECT SWITCH, TOP AT +6'-0" OR AS NOTED
	DISCONNECT SWITCH PROVIDED WITH EQUIPMENT.
	COMBINATION MOTOR STARTER/DISCONNECT SWITCH FURNISHED BY MECHANICAL CONTRACTOR, INSTALLED BY ELECTRICAL CONTRACTOR
	MOTOR CONNECTION
	LIGHTING CONTACTOR, INSTALLED AS NOTED
	TIME CLOCK, +6'-2" OR AS NOTED
	CONTROL OR POWER RELAY, INSTALLED AS NOTED
	PUSHBUTTON, TOP AT +4'-6" OR AS NOTED
	DOOR BELL CHIME, +6'-0" OR AS NOTED
	CONTROL TRANSFORMER, INSTALLED AS NOTED
	THERMOSTAT, TEMPERATURE SENSOR, CARBON DIOXIDE SENSOR AND HUMIDISTAT PROVIDED BY MECHANICAL CONTRACTOR, +3'-10" OR AS NOTED
	ELECTRICALLY OPERATED DAMPER, PROVIDED BY MECHANICAL CONTRACTOR
	DATA OUTLET, +18" WITH 3/4" CONDUIT TO ABOVE CEILING
	DATA OUTLET, +6" ABOVE COUNTER WITH 3/4" CONDUIT TO ABOVE CEILING
	TELEPHONE/DATA OUTLET, +18" WITH 1" CONDUIT TO ABOVE CEILING
	TELEPHONE/DATA OUTLET, +6" ABOVE COUNTER WITH 1" CONDUIT TO ABOVE CEILING
	FIRE ALARM CONTROL PANEL, FLUSH MOUNTED, TOP AT +6'-0"
	MANUAL FIRE ALARM PULL STATION, +3'-10" PER ADA
	FIRE ALARM HORN AND 75cd STROBE, +80" TO BOTTOM OF DEVICE PER ADA
	STROBE ONLY (75cd UNO), +80" TO BOTTOM OF DEVICE PER ADA
	FIRE ALARM HORN AND 115cd STROBE, CEILING MOUNTED
	STROBE ONLY (115cd UNO), CEILING MOUNTED
	AREA TYPE PHOTOELECTRIC SMOKE DETECTOR, CEILING MOUNTED, OR AS NOTED
	DUCT TYPE PHOTOELECTRIC SMOKE DETECTOR WITH SAMPLING TUBES AND REMOTE INDICATOR LIGHT MOUNTED FLUSH IN CEILING BELOW DETECTOR
	FIRE ALARM SYSTEM RELAY
	SPRINKLER FLOW SWITCH, PROVIDED BY PLUMBING CONTRACTOR
	SPRINKLER TAMPER SWITCH, PROVIDED BY PLUMBING CONTRACTOR
	FIRE SPRINKLER SYSTEM BELL (GONG), +10'-0" AFG
	COMBINATION FIRE/SMOKE DAMPER PROVIDED BY MECHANICAL CONTRACTOR
	ABOVE FINISHED FLOOR/GRADE
	AUTHORITY HAVING JURISDICTION
	BUILDING AUTOMATION SYSTEM
	ELECTRICAL CONTRACTOR
	FIRE ALARM
	GENERAL CONTRACTOR
	MECHANICAL CONTRACTOR
	NIGHT LIGHT
	NON-FUSED
	PLUMBING CONTRACTOR
	TYPICAL
	WEATHERPROOF

SYMBOLS LEGEND NOTES:
MOUNTING HEIGHTS INDICATED ARE MEASURED FROM FINISHED FLOOR TO THE CENTERLINE OF THE DEVICE UNLESS NOTED OTHERWISE.

Comm # 211008
Scale As Mentioned
Designed by: Designer
Drawn by: NYE
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BLACK EYE PEAS

ELECTRICAL NOTES & LEGEND

Sheet Number

E0.1

BASIC ELECTRICAL

1. THE WORK COVERED BY DIVISION 16 CONSISTS OF FURNISHING ALL LABOR, EQUIPMENT, SUPPLIES, AND MATERIALS (EXCEPT AS OTHERWISE SPECIFIED OR SHOWN ON THE DRAWINGS) REQUIRED TO PERFORM ALL OPERATIONS NECESSARY FOR THE INSTALLATION OF COMPLETE ELECTRICAL SYSTEMS. ALL WORK SHALL BE IN STRICT ACCORDANCE WITH THE SPECIFICATIONS AND DRAWINGS.
2. COORDINATE ALL WORK WITH OTHER TRADES AND EXISTING CONDITIONS TO PREVENT CONFLICTS CAUSING UNNECESSARY EXPENSE OR DELAYS IN THE INSTALLATION OF WORK. WHEN CONFLICTS ARISE, REMOVE AND RELOCATE ITEMS CAUSING SUCH CONFLICTS AT NO ADDITIONAL COST TO THE OWNER. REFER TO OTHER DISCIPLINE'S DRAWINGS, RELEVANT EQUIPMENT DRAWINGS, AND SHOP DRAWINGS TO DETERMINE AVAILABLE CLEARANCES AND POSSIBLE OBSTRUCTIONS. MAKE ANY NECESSARY OFFSETS OR TRANSITIONS AS REQUIRED TO CLEAR STRUCTURAL MEMBERS, EXISTING EQUIPMENT, ETC. TO FACILITATE INSTALLATION OF THE WORK IN THE MANNER INDICATED.
3. ALL WORK SHALL COMPLY WITH THE LOCALLY ADOPTED ELECTRICAL CODE AND ALL APPLICABLE LAWS, CODES, RECOMMENDATIONS, REGULATIONS, AND INTERIM AMENDMENTS, OF THE GOVERNMENTAL BODIES HAVING JURISDICTION INCLUDING ADA COMPLIANCE. ALL ELECTRICAL WORK SHALL BE PERFORMED IN COMPLIANCE WITH ALL APPLICABLE GOVERNING SAFETY REGULATIONS, INCLUDING OSHA REGULATIONS. ALL SAFETY LIGHTS, GUARDS AND SIGNS REQUIRED FOR THE PERFORMANCE OF THE ELECTRICAL WORK SHALL BE PROVIDED BY AND OPERATED BY THE ELECTRICAL CONTRACTOR.
4. THE INTENT OF THE DRAWINGS IS TO INDICATE THE GENERAL EXTENT OF WORK REQUIRED FOR THE PROJECT. THE DRAWINGS FOR ELECTRICAL WORK ARE DIAGRAMMATIC, SHOWING THE LOCATION, TYPE, DEVICES AND EQUIPMENT REQUIRED. THE DRAWINGS SHALL NOT BE SCALED FOR EXACT MEASUREMENTS. PROVIDE ALL FIXTURES, DEVICES, ACCESSORIES, OFFSETS, AND MATERIALS NECESSARY TO FACILITATE THE SYSTEM'S FUNCTIONING AS INDICATED BY THE DESIGN AND THE EQUIPMENT FURNISHED BY OTHERS.
5. ELECTRICAL DESIGN FOR THIS INSTALLATION IS BASED ON FIELD INSPECTIONS AND PREVIOUS DESIGN DRAWINGS FOR THE EXISTING BUILDING. ELECTRICAL CONTRACTOR IS TO FIELD VERIFY EXISTING CONDITIONS PRIOR TO BIDDING. ALLOWANCES ARE TO BE INCLUDED FOR UNFORESEEN EXISTING CONDITIONS THAT MAY EFFECT THE CONTRACTOR'S SCOPE OF WORK. MINOR DEVIATIONS REQUIRED FOR ACCOMPLISHING THE INTENT OF THIS DESIGN IS TO BE INCLUDED IN THIS ALLOWANCE.
6. ELECTRICAL CONTRACTOR TO FIELD VERIFY ALL EXISTING UTILITIES. ANY ITEM DAMAGED BY THIS CONTRACTOR IS TO BE REPAIRED IMMEDIATELY AND AT NO COST TO THE OWNER.
7. ROOF PENETRATIONS SHALL COMPLY WITH "SMACNA" AND "NRC4" STANDARDS, AND WITH THE REQUIREMENTS OF THE EXISTING ROOFING WARRANTY, IF APPLICABLE. DO NOT PERFORM ROOFING PENETRATIONS IN A MANNER WHICH WOULD VOID OR OTHERWISE LIMIT THE EXISTING ROOFING WARRANTY.
8. ALL EQUIPMENT AND COMPONENTS FURNISHED AND/OR INSTALLED SHALL BE LISTED AND LABELED BY A NATIONALLY RECOGNIZED TESTING LABORATORY (NRTL).
9. TEMPORARY ELECTRICAL SERVICE:

- A. PROVIDE TEMPORARY ELECTRICAL SERVICE FOR POWER AND LIGHTING DURING CONSTRUCTION. MAINTAIN DURING CONSTRUCTION AND REMOVE SERVICE AFTER CONSTRUCTION IS COMPLETED. THE TEMPORARY SYSTEM SHALL CONSIST OF AN ELECTRICAL SERVICE, DISTRIBUTION SYSTEM, LOAD-CENTER PANEL, GROUNDING, 15 AMP AND/OR 20 AMP BRANCH CIRCUITS, GROUNDED TYPE RECEPTABLES AND LIGHTING FIXTURES.
- B. PROVIDE AND INSTALL SUFFICIENT NUMBER OF TEMPORARY LIGHT FIXTURES FOR A SAFE INSTALLATION FOR ALL TRADES THROUGHOUT THE BUILDING. ALL LAMPS FOR GENERAL ILLUMINATION SHALL BE PROTECTED FROM ACCIDENTAL CONTACT OR BREAKAGE BY SUITABLE FIXTURE OR LAMPHOLDER WITH A GUARD. (NO EXCEPTIONS.)

10. WARRANTIES:

- A. CONTRACTOR SHALL WARRANT ALL WORK PERFORMED AND MATERIAL & LABOR PROVIDED UNDER CONTRACT AGAINST DEFECTS IN MATERIAL AND WORKMANSHIP FOR ONE YEAR FROM SUBSTANTIAL COMPLETION. PROVIDE ALL SERVICES AS REQUIRED TO IMMEDIATELY REPAIR OR REPLACE, AT NO ADDITIONAL COST, ANY DEFECTIVE PART OF THE INSTALLATION RESULTING FROM THE SUPPLY OF FAULTY WORKMANSHIP OR MATERIAL. LACK OF MAINTENANCE, ACCIDENTS, OR CARELESSNESS ON THE PART OF THE OWNER SHALL NOT BE INCLUDED IN THIS WARRANTY.
- B. ALL LAMPS ARE TO BE WARRANTED ACCORDING TO LAMP MANUFACTURER, WHICH IS ALSO BASED ON AVERAGE LIFE DATA FOR EACH SPECIFIC TYPE OF LAMP. PROVIDE LABOR TO REPLACE ALL DEFECTIVE LAMPS THAT ARE WITHIN LAMP MANUFACTURER'S WARRANTY PERIOD.
- C. ALL EQUIPMENT, APPARATUS AND APPLIANCES WHICH ARE SPECIFIED AND/OR COME WITH WARRANTIES LONGER THAN ONE YEAR SHALL BE REGISTERED WITH THE MANUFACTURER IN THE OWNER'S NAME.

11. EXCAVATION:

- A. PROVIDE ALL EXCAVATION AND BACKFILL AS NECESSARY TO INSTALL THE CONDUIT SYSTEMS AS SHOWN ON THE DRAWINGS.
- B. CARE SHALL BE TAKEN IN EXCAVATING THAT WALLS AND FOOTINGS AND ADJACENT LOAD BEARING SOILS ARE NOT DISTURBED IN ANY WAY. WHERE RACEWAYS MUST CROSS UNDER A WALL FOOTING, THE EXCAVATION SHALL BE KEPT AT A MINIMUM.
- C. CONDUIT SHALL BE SUPPORTED DIRECTLY ON UNDISTURBED SOIL, DO NOT EXCAVATE BEYOND INDICATED DEPTH. IF EXISTING SOIL IS UNSUITABLE (SOFT SPOT OR ROCK), EXCAVATE TO SOLID SUBGRADE, OR 6" FOR ROCK, BELOW BOTTOM OF WORK AND PROVIDE SUB-BASE MATERIAL AS REQUIRED.
- D. IMMEDIATELY AFTER INSTALLATION, THE TRENCH SHALL BE CAREFULLY BACKFILLED WITH EARTH FREE FROM CLODS, BRICK, ETC. TO A DEPTH ONE-HALF THE RACEWAY DIAMETER AND THEN FIRMLY TAMPED IN SUCH A MANNER AS NOT TO DISTURB ALIGNMENT OR JOINTS OF THE CONDUIT. THEREAFTER THE BACKFILL SHALL BE TAMPED EVERY VERTICAL FOOT.

12. CUTTING AND PATCHING:

- A. NO STRUCTURAL MEMBERS SHALL BE CUT, DRILLED, OR PENETRATED WITHOUT PRIOR APPROVAL FROM THE ARCHITECT.
- B. PROVIDE CUTTING, PATCHING, AND PATCH PAINTING IN EXISTING STRUCTURES, AS REQUIRED FOR THE INSTALLATION OF WORK OF THIS SECTION. EXTENT OF CUTTING SHALL BE MINIMIZED. USE CORE DRILLS, POWER SAWS, AND OTHER MACHINES WHICH WILL PROVIDE NEAT, MINIMUM OPENINGS. REFER TO STRUCTURAL DRAWINGS FOR LIMITS AND SUPPORTS TO BE FURNISHED BY OTHERS FOR THE ELECTRICAL WORK. ALL OTHER LIMITS AND SUPPORTS REQUIRED FOR THE ELECTRICAL WORK SHALL BE FURNISHED BY DIVISION 16. PATCHING SHALL MATCH AND EQUAL ADJACENT MATERIALS AND SURFACES AND SHALL BE PERFORMED BY CRAFTSMAN SKILLED IN THE RESPECTIVE CRAFT REQUIRED. PATCHED FINISHES SHALL BE APPROVED BY THE ARCHITECT.
- C. ALL PUBLIC AND PRIVATE PROPERTY DAMAGED AS A RESULT OF WORK PERFORMED UNDER THIS CONTRACT SHALL BE REPAIRED AND REPLACED BY THIS CONTRACTOR, TO THE SATISFACTION OF THE AUTHORITIES HAVING REGULATORY JURISDICTION AND BUILDING OWNER.

GROUNDING

1. EXTENT OF ELECTRICAL GROUNDING AND BONDING WORK IS INDICATED BY DRAWINGS AND AS SPECIFIED HEREIN. GROUNDING AND BONDING WORK IS DEFINED TO ENCOMPASS SYSTEMS, CIRCUITS, AND EQUIPMENT.
2. EXCEPT AS OTHERWISE INDICATED, PROVIDE ELECTRICAL GROUNDING AND BONDING SYSTEMS INDICATED WITH ASSEMBLY OF MATERIALS, INCLUDING, BUT NOT LIMITED TO, CABLES/WIRES, CONNECTORS, SOLDERLESS LUG TERMINALS, GROUNDING ELECTRODES AND PLATE ELECTRODES, BONDING JUMPER BRAID, AND ADDITIONAL ACCESSORIES NEEDED FOR A COMPLETE INSTALLATION. WHERE MORE THAN ONE TYPE COMPONENT PRODUCT MEETS INDICATED REQUIREMENTS, SELECTION IS INSTALLER'S OPTION. WHERE MATERIALS OR COMPONENTS ARE NOT INDICATED, PROVIDE PRODUCTS WHICH COMPLY WITH BUILDING CODES, UL, AND IEEE REQUIREMENTS AND WITH ESTABLISHED INDUSTRY STANDARDS FOR THOSE APPLICATIONS INDICATED.
3. INSTALL ELECTRICAL GROUNDING AND BONDING SYSTEMS AS INDICATED, IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS AND APPLICABLE PORTIONS OF THE BUILDING CODES, NECA'S "STANDARD OF INSTALLATION", AND IN ACCORDANCE WITH RECOGNIZED INDUSTRY PRACTICES TO ENSURE THAT PRODUCTS COMPLY WITH REQUIREMENTS.
4. RACEWAY SYSTEMS SHALL NOT BE USED AS GROUNDING METHOD. ALL BRANCH AND FEEDER CONDUITS TO HAVE A GROUNDING CONDUCTOR INSTALLED WITH PHASE AND NEUTRAL CONDUCTORS. SIZE OF GROUND CONDUCTOR TO BE IN ACCORDANCE WITH THE ADOPTED ELECTRICAL CODE. TERMINATE FEEDER AND BRANCH CIRCUIT INSULATED EQUIPMENT GROUNDING CONDUCTORS WITH GROUNDING LUG, BUS, OR BUSHING.

5. INSTALLATION OF ELECTRICAL GROUNDING AND BONDING SYSTEMS:

- A. GROUNDING ELECTRODE CONDUCTORS, WHERE NOT INSTALLED AS PART OF A BRANCH CIRCUIT OR FEEDER, SHALL BE INSTALLED IN PVC CONDUIT, TO PROTECT THE WIRING FROM PHYSICAL DAMAGE.
- B. CONNECT GROUNDING ELECTRODE CONDUCTORS TO METAL COLD WATER PIPE AND ALL OTHER TYPES OF METAL PIPING WITHIN THE BUILDING USING A SUITABLY SIZED GROUND CLAMP. PROVIDE CONNECTIONS TO FLANGED PIPING TO STREET SIDE OF FLANGE. PROVIDE BONDING AS DESCRIBED IN ADOPTED ELECTRICAL CODE INCLUDING BONDING JUMPER AROUND WATER METER.
- C. CONNECT TOGETHER SYSTEM NEUTRAL, SERVICE EQUIPMENT ENCLOSURES, EXPOSED NON-CURRENT CARRYING METAL PARTS OF ELECTRICAL EQUIPMENT, METAL RACEWAY SYSTEMS, GROUNDING CONDUCTOR IN RACEWAYS AND CABLES, RECEPTACLE GROUND CONNECTORS, AND PLUMBING SYSTEMS.
- D. THE UTILITY COMPANY METER SOCKET SHALL BE GROUNDED TO A 1/2" X 10" COPPER CLAD STEEL GROUND ROD WITH COPPER WIRE INSTALLED IN P.V.C. CONDUIT. THE GROUND ROD SHALL BE DRIVEN INTO THE EARTH WITH THE TOP 1'-0" BELOW GRADE, AS NEAR AS POSSIBLE TO THE LOCATION OF THE METER SOCKET WITH THE TOP 1'-0" BELOW FINISHED GRADE.

IDENTIFICATION

1. ENGRAVED, PLASTIC-LAMINATED LABELS, SIGNS, AND INSTRUCTION PLATES: ENGRAVING STOCK MELAMINE PLASTIC LAMINATE, 1/16-INCH MINIMUM THICK FOR SIGNS UP TO 20 SQUARE INCHES, OR 8 INCHES IN LENGTH; 1/8-INCH THICK FOR LARGER SIZES. ENGRAVED LEGEND IN WHITE LETTERS ON BLACK FACE AND PUNCHED FOR MECHANICAL FASTENERS.
2. CABLE TIES: FUNGUS-INERT, SELF-EXTINGUISHING, ONE-PIECE, SELF-LOCKING NYLON CABLE TIES, 0.18-INCH MINIMUM WIDTH, 50-LB MINIMUM TENSILE STRENGTH, AND SUITABLE FOR A TEMPERATURE RANGE FROM MINUS 50 F TO 350 F. PROVIDE TIES IN SPECIFIED COLORS WHEN USED FOR COLOR-CODING.
3. SELF ADHESIVE, COMMERCIALY AVAILABLE ARC FLASH HAZARD LABELS. LABELS TO CONFORM TO THE ADOPTED ELECTRICAL CODE AND A.N.S.I. Z535.4.
4. CONDUCTOR COLOR CODING: PROVIDE COLOR CODING FOR SECONDARY SERVICE, FEEDER, AND BRANCH CIRCUIT CONDUCTORS THROUGHOUT THE PROJECT SECONDARY ELECTRICAL SYSTEM PER WIRES AND CABLING SECTION.
5. APPLY EQUIPMENT IDENTIFICATION LABELS OF ENGRAVED PLASTIC- LAMINATE ON EACH MAJOR UNIT OF ELECTRICAL EQUIPMENT IN BUILDING, INCLUDING CENTRAL OR MASTER UNIT OF EACH ELECTRICAL SYSTEM. THIS INCLUDES COMMUNICATION/SIGNAL/ALARM SYSTEMS, UNLESS UNIT IS SPECIFIED WITH ITS OWN SELF-EXPLANATORY IDENTIFICATION. EXCEPT AS OTHERWISE INDICATED, PROVIDE SINGLE LINE OF TEXT, WITH 1/4-INCH-HIGH LETTERING ON 1-INCH-HIGH LABEL (1-1/2-INCH-HIGH WHERE TWO LINES ARE REQUIRED), WHITE LETTERING IN BLACK FIELD. TEXT SHALL MATCH TERMINOLOGY AND NUMBERING OF THE CONTRACT DOCUMENTS AND SHOP DRAWINGS. APPLY LABELS FOR EACH UNIT OF THE FOLLOWING CATEGORIES OF ELECTRICAL EQUIPMENT.
- A. PANELBOARDS, ELECTRICAL CABINETS, AND ENCLOSURES
B. ELECTRICAL SWITCHGEAR AND SWITCHBOARDS
C. MOTOR STARTERS AND/OR VFDs FURNISHED BY THIS CONTRACTOR
D. DISCONNECT SWITCHES
E. CONTACTORS

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2. CABLE TIES: FUNGUS-INERT, SELF-EXTINGUISHING, ONE-PIECE, SELF-LOCKING NYLON CABLE TIES, 0.18-INCH MINIMUM WIDTH, 50-LB MINIMUM TENSILE STRENGTH, AND SUITABLE FOR A TEMPERATURE RANGE FROM MINUS 50 F TO 350 F. PROVIDE TIES IN SPECIFIED COLORS WHEN USED FOR COLOR-CODING.
3. SELF ADHESIVE, COMMERCIALY AVAILABLE ARC FLASH HAZARD LABELS. LABELS TO CONFORM TO THE ADOPTED ELECTRICAL CODE AND A.N.S.I. Z535.4.
4. CONDUCTOR COLOR CODING: PROVIDE COLOR CODING FOR SECONDARY SERVICE, FEEDER, AND BRANCH CIRCUIT CONDUCTORS THROUGHOUT THE PROJECT SECONDARY ELECTRICAL SYSTEM PER WIRES AND CABLING SECTION.
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C. MOTOR STARTERS AND/OR VFDs FURNISHED BY THIS CONTRACTOR
D. DISCONNECT SWITCHES
E. CONTACTORS

WIRES AND CABLES

1. CONDUCTORS: PROVIDE SOLID CONDUCTORS FOR POWER AND LIGHTING CIRCUITS NO. 10 AWG AND SMALLER. PROVIDE STRANDED CONDUCTORS FOR SIZES NO. 8 AWG AND LARGER.
2. CONDUCTOR MATERIAL: COPPER FOR ALL WIRES AND CABLES.
3. INSULATION: PROVIDE THHN/THWN INSULATION FOR ALL CONDUCTORS NO. 14 AWG THRU NO. 10 AWG. FOR ALL OTHER SIZES PROVIDE THHN/THWN OR XHHW INSULATION AS APPROPRIATE FOR THE LOCATION WHERE INSTALLED.
4. ALUMINUM CONDUCTORS ARE NOT APPROVED OR ACCEPTABLE.
5. ALUMINUM CONDUCTORS:
- A. AT THE CONTRACTOR'S OPTION, ALUMINUM CONDUCTORS WILL BE ALLOWED FOR COPPER SIZES RATED FOR 100 AMPERES AND LARGER BUT SIZE MUST BE INCREASED TO EQUAL OR EXCEED THE COPPER AMPACITY IN ACCORDANCE WITH ADOPTED ELECTRICAL CODE. RACEWAY AND PULL BOXES MUST BE INCREASED TO CONFORM TO ADOPTED ELECTRICAL CODE. ALL ALUMINUM CONDUCTORS MUST BE MADE BASED ON COMPACT STRANDED, AA-8000 SERIES ALUMINUM ALLOY MATERIAL EQUAL TO "STABILOY" ALCAN CABLE.
- B. IF ALUMINUM CABLE IS TO BE INSTALLED ON THIS PROJECT, CONTRACTOR IS TO NOTIFY ENGINEER IN WRITING, AT TIME OF SUBMITTAL DRAWINGS. CONTRACTOR IS TO LIST ALL FEEDERS THAT WILL BE CHANGED TO ALUMINUM, AND INDICATE THE REVISED ALUMINUM CONDUIT SIZE.
- C. CONNECTORS AND TERMINATIONS INSTALLED WITH ALUMINUM-ALLOY CONDUCTORS SHALL BE COMPRESSION TYPE ONLY, AND ONLY THOSE LISTED BY UNDERWRITER'S LABORATORIES STRANDED 486-B AND MARKED "AL7CU" FOR 75C RATED CIRCUITS.
- D. IF THE CONTRACTOR DECIDES TO EXERCISE THE OPTION OF ALUMINUM CONDUCTORS FOR CONNECTIONS TO EQUIPMENT PROVIDED AND/OR INSTALLED BY OTHER TRADES, THEN THIS CONTRACTOR SHALL REIMBURSE THE EQUIPMENT SUPPLIER FOR ANY COST ASSOCIATED WITH THE MODIFICATIONS REQUIRED TO THAT EQUIPMENT.
- E. ENDS OF ALL CONDUCTORS ARE TO BE BRUSHED CLEAN AND PRIOR TO FINAL CONNECTION, EXPOSED PORTION OF CONDUCTOR TO BE COVERED WITH ALUMINUM OXIDE INHIBITOR. CONDUCTOR TERMINATION MADE WITH SET-SCREW TERMINAL LUGS ARE TO BE TORQUED, USING A TORQUE WRENCH, IN ACCORDANCE WITH LUG MANUFACTURER SPECIFICATIONS OR ACCORDING TO UL STANDARD 486B. AT THE COMPLETION OF THE PROJECT CONTRACTOR IS TO CHECK TORQUE VALUES ON ALL ALUMINUM TERMINATIONS. CONTRACTOR IS TO SUBMIT IN WRITING, AT TIME OF RECORD DRAWINGS, A COMPLETE LIST OF APPLIED TORQUE VALUES FOR ALL ALUMINUM TERMINATIONS.
6. VARIABLE FREQUENCY DRIVE CABLES: WHERE A VFD IS INSTALLED, PROVIDE A VFD CABLING SYSTEM FROM THE VFD TO THE CONTROLLED EQUIPMENT MANUFACTURED MEETING THE FOLLOWING SPECIFICATIONS:
- 6.1. ASTM B3 AND B8
6.2. UL 44, UL 1277
6.3. COLOR CODE PER IEC 60384-14-58-679 METHOD 4
6.4. IEEE 1202/7T4 FLAME TEST
6.5. CONDUCTORS SHALL BE CLASS B STRANDED, UNCOATED ANNEALED COPPER; EACH CONDUCTOR SHALL BE INSULATED WITH BLACK POLYETHYLENE. A 5 MIL UNCOATED COPPER TAPE SHIELD, HELICALLY WRAPPED OVER THE TWISTED ASSEMBLY WITH A 50% OVERLAP AND IN CONTACT WITH THE GROUND WIRE. WITH A FLAME RETARDANT PVC JACKET OUTER JACKET.

1. INSTALLATION OF WIRES AND CABLES:

- A. ALL BRANCH CIRCUIT WIRES, FEEDER CABLES, ETC., SHALL BE CONTINUOUS FROM OUTLET TO OUTLET. NO JOINTS SHALL BE MADE EXCEPT IN OUTLET, JUNCTION OR PULL BOXES, PANELBOARD AND SWITCHBOARD GUTTERS, FOR THE SPLICING OF EXISTING FEEDER CONDUCTORS, COMPRESSION TYPE BUTT SPLICES WITH COLD SHRINK INSULATION KITS ARE TO BE USED.
- B. TIGHTEN ELECTRICAL CONNECTORS AND TERMINALS, INCLUDING SCREWS AND BOLTS, IN ACCORDANCE WITH MANUFACTURER'S PUBLISHED TORQUE TIGHTENING VALUES. WHERE MANUFACTURER'S TORQUE REQUIREMENTS ARE NOT INDICATED, TIGHTEN CONNECTORS AND TERMINALS TO COMPLY WITH TIGHTENING TORQUE'S SPECIFIED IN UL 486A AND UL 486B.
- C. TERMINALS ON SWITCHES AND CONVENIENCE OUTLETS SHALL NOT BE USED TO "FEED THROUGH" TO THE NEXT SWITCH OR OUTLET. WHERE MORE THAN ONE GROUND, COMMON NEUTRAL, OR COMMON PHASE CONDUCTOR ENTERS A BOX, ALL LIKE CONDUCTORS SHALL BE IN GOOD ELECTRICAL CONTACT WITH EACH OTHER AND THE ARRANGEMENT SHALL BE SUCH, THAT THE DISCONNECTING OR REMOVAL OF A DEVICE FED FROM THE BOX, WILL NOT INTERFERE WITH OR INTERRUPT SERVICE TO THE REMAINDER OF THE BRANCH CIRCUIT WIRING.

208Y/120 VOLTS NORMAL	PHASE
BLACK	A
RED	B
BLUE	C
WHITE	NEUTRAL
GREEN	GROUND
GREEN W/ YELLOW STRIP	ISOLATED GROUND

RACEWAYS

1. THIS SECTION INCLUDES RACEWAYS FOR ELECTRICAL WIRING. TYPES OF RACEWAYS IN THIS SECTION INCLUDE THE FOLLOWING:
- A. ELECTRICAL METALLIC TUBING (EMT)
B. INTERMEDIATE METAL CONDUIT (IMC)
C. FLEXIBLE METAL CONDUIT
D. LIQUID-TIGHT FLEXIBLE CONDUIT
E. RIGID METAL CONDUIT
F. RIGID NONMETALLIC CONDUIT (PVC)
G. SURFACE RACEWAYS
H. WIREWAY
I. METAL CLAD (MC) AND ALUMINUM CLAD (AC) CABLE
2. WIREWAYS:
- A. ELECTRICAL WIREWAYS SHALL BE OF TYPES, SIZES, AND NUMBER OF CHANNELS AS INDICATED. FITTINGS AND ACCESSORIES INCLUDING BUT NOT LIMITED TO COUPLINGS, OFFSETS, ELBOWS, EXPANSION JOINTS, ADAPTERS, HOLD-DOWN STRAPS, AND END CAPS SHALL MATCH AND MATE WITH WIREWAY AS REQUIRED FOR A COMPLETE SYSTEM. WHERE FEATURES ARE NOT INDICATED, SELECT TO FULFILL WIRING REQUIREMENTS AND COMPLY WITH APPLICABLE PROVISIONS OF ADOPTED ELECTRICAL CODE.
4. SURFACE RACEWAYS:
- A. SIZES AND CHANNELS AS INDICATED, MINIMUM SIZE TO BE EQUAL TO WIRE/OLD #500 SERIES. PROVIDE FITTINGS THAT MATCH AND MATE WITH RACEWAY. PROVIDE EFFECT OF GALVANIZING STEEL WITH SNAP-ON COVERS, WITH 1/8-INCH MOUNTING SCREW KNOCKOUTS IN BASE APPROXIMATELY 8 INCHES ON-CENTER. FINISH WITH MANUFACTURER'S STANDARD PRIME COATING SUITABLE FOR PAINTING. PROVIDE RACEWAYS OF TYPE SUITABLE FOR EACH APPLICATION REQUIRED.
5. WIRING METHOD:
- A. OUTDOORS: USE THE FOLLOWING WIRING METHODS:
A.1. EXPOSED: INTERMEDIATE METAL CONDUIT.
A.2. CONCEALED: INTERMEDIATE METAL CONDUIT.
A.3. UNDERGROUND, RIGID NONMETAL CONDUIT.
A.4. CONNECTION TO VIBRATING EQUIPMENT: INCLUDING TRANSFORMERS AND HYDRAULIC, PNEUMATIC OR ELECTRIC SOLENOID OR MOTOR-DRIVEN EQUIPMENT: LIQUID-TIGHT FLEXIBLE METAL CONDUIT.
A.5. INDOORS OR OUTDOORS: CONNECTION TO VIBRATING EQUIPMENT AND HYDRAULIC, PNEUMATIC, OR ELECTRIC SOLENOID OR MOTOR-DRIVEN EQUIPMENT IN MOIST OR HUMID LOCATION OR CORROSIVE ATMOSPHERE, OR WHERE SUBJECT TO WATER SPRAY OR DRIPPING OIL GREASE, OR WATER: LIQUID-TIGHT FLEXIBLE METAL CONDUIT.
- B. INDOORS: USE THE FOLLOWING WIRING METHODS:
B.1. CONNECTION TO VIBRATING EQUIPMENT: INCLUDING TRANSFORMERS AND HYDRAULIC, PNEUMATIC OR ELECTRIC SOLENOID OR MOTOR-OPERATED EQUIPMENT: FLEXIBLE METAL CONDUIT.
B.2. EXPOSED: ELECTRICAL METALLIC TUBING CONDUIT.
B.3. CONCEALED: ELECTRICAL METALLIC TUBING.
B.4. CONCEALED, IN CONCRETE EMBEDDED, STRUCTURAL INTERIOR WALLS, OR CONDUIT IN MOIST OR HUMID LOCATION OR CORROSIVE ATMOSPHERE, OR UNDER CONCRETE FLOOR (SLAB ON GRADE): INTERMEDIATE METAL OR RIGID METAL CONDUIT.
B.5. P.V.C. CONDUIT CAN BE INSTALLED BELOW FLOOR SLAB INDOORS, ONLY IF RIGID STEEL ELBOWS ARE USED WHEN PASSING THRU FLOOR SLAB. MINIMUM SIZE P.V.C. CONDUIT THAT CAN BE INSTALLED IS 3/4" UNLESS NOTED OTHERWISE. ALL P.V.C. CONDUIT JOINTS ARE TO BE GLUED AND SEALED TO PREVENT MOISTURE FROM ENTERING RACEWAY SYSTEM. CONDUITS FOUND TO CONTAIN MOISTURE WILL BE REPAIRED OR REPLACED AS REQUIRED PRIOR TO INSTALLATION OF CONDUCTORS.
- D. METAL CLAD (MC) AND ALUMINUM CLAD (AC) CABLE
D.1. MC AND AC CABLE MAY BE USED IN LIEU OF E.M.T. CONDUIT IF ACCEPTABLE TO LOCAL AUTHORITIES AND INSTALLED PER ELECTRICAL CODE REGARDING SUPPORT, GROUNDING AND CABLE TERMINATIONS. ALL MC AND AC CABLE NOT INSTALLED PER THE ADOPTED CODE SHALL BE REMOVED, REINSTALLED AND CORRECTED AT CONTRACTOR'S EXPENSE WITH NO EXTENSION IN THE CONSTRUCTION SCHEDULE.
D.2. MC AND AC CABLE MUST BE SUPPORTED AND SECURED BY STAPLES, CABLE TIES, STRAPS, HANGERS, OR SIMILAR FITTINGS, DESIGNED AND INSTALLED SO AS NOT TO DAMAGE THE CABLE.
D.3. MC AND AC CABLE, WITH FOUR OR LESS CONDUCTORS SIZED NO LARGER THAN 10 AWG, MUST BE SECURED WITHIN 12 IN. OF EVERY OUTLET BOX, JUNCTION BOX, CABINET, OR FITTING AND AT INTERVALS NOT EXCEEDING 6 FT.
D.4. MC AND AC CABLE MUST BE SUPPORTED AT INTERVALS NOT EXCEEDING 6 FT. CABLES INSTALLED HORIZONTALLY THROUGH WOODEN OR METAL FRAMING MEMBERS ARE CONSIDERED SECURED AND SUPPORTED WHERE SUCH SUPPORT DOESN'T EXCEED 6 FT INTERVALS.
D.5. MAY NOT BE USED IN EXTERIOR APPLICATIONS
6. CONDUIT SHALL BE INSTALLED AS A COMPLETE SYSTEM, CONTINUOUS FROM OUTLET TO OUTLET, CABINET OR FITTING, AND BE SO MECHANICALLY AND ELECTRICALLY CONNECTED THAT ADEQUATE ELECTRICAL CONTINUITY FROM ONE CONDUIT TO ANOTHER IS SECURED. THE ENTIRE SYSTEMS SHALL BE SECURELY FASTENED IN PLACE WITHIN 3' OF EACH OUTLET OR JUNCTION BOX, CABINET OR FITTING, AND AT INTERVALS NOT EXCEEDING 10', EXCEPT AS OTHERWISE SPECIFIED OR SHOWN. SINGLE CONDUITS FOR FEEDERS SHALL BE HUNG WITH GRINNEL, CRANE, OR EQUAL, MALLEABLE SPLIT RING HANGERS WITH ROD SUSPENSION SPACED NOT OVER 10' APART FROM CONSTRUCTION ABOVE. GROUPS OF HORIZONTAL FEEDER AND BRANCH CIRCUIT CONDUITS SHALL BE CLAMPED TO UNISTRUT, OR EQUAL, STEEL CHANNELS AND SUSPENDED FROM RODS SUPPORTED FROM STRUCTURE, SPACED NOT OVER 10' APART FROM CONSTRUCTION ABOVE. WHERE POSSIBLE CONDUITS MAY BE CLAMPED DIRECTLY TO THE STEEL JOISTS.
7. USE RACEWAY FITTINGS THAT ARE OF TYPES COMPATIBLE WITH THE ASSOCIATED RACEWAY AND SUITABLE FOR THE USE AND LOCATION. FOR INTERMEDIATE METAL CONDUIT, USE THREADED RIGID STEEL CONDUIT FITTINGS. FOR EMT CONDUITS: FITTINGS ARE TO BE COMPRESSION OR SET SCREW TYPE.
8. 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 12 INCHES OF SLACK AT EACH END OF THE PULL WIRE.
9. TELEPHONE AND SIGNAL SYSTEM RACEWAYS 2-INCH TRADE SIZE AND SMALLER, IN ADDITION TO THE ABOVE REQUIREMENTS, INSTALL RACEWAYS IN MAXIMUM LENGTHS OF 150 FEET AND WITH A MAXIMUM OF TWO, 90 BENDS OR EQUIVALENT. INSTALL PULL OR JUNCTION BOXES WHERE NECESSARY TO COMPLY WITH THESE REQUIREMENTS.
10. ALL CONDUITS ABOVE LAY-IN CEILING SYSTEM SHALL NOT BE SUPPORTED FROM CEILING SUSPENSION WIRES.
11. PROVIDE 36" MINIMUM RADIUS RIGID STEEL CONDUIT ELBOWS FOR PRIMARY SERVICE CONDUITS UNDER THE TRANSFORMER PAD.
12. CONDUITS CAPPED OUTSIDE OF BUILDING FOR FUTURE ADDITION SHALL BE A MINIMUM OF 1'-6" BELOW FINISH GRADE, CAPPED AND PAINTED WITH BITUMINOUS PAINT, WHICH SHALL BE THOROUGHLY DRY, BEFORE BACKFILL IS INSTALLED.
13. METAL CLAD (MC) AND ALUMINUM CLAD (AC) CABLES:
- A. ALL HOMERUNS TO PANELBOARDS SHALL REMAIN IN E.M.T. CONDUIT.
B. MC AND AC CABLES SHALL NOT BE USED IN EXPOSED AREAS.
C. ALL FITTINGS SHALL BE LISTED FOR USE WITH MC AND AC CABLE USED.
D. CONDUCTORS IN MC AND AC CABLE SHALL COMPLY WITH SECTION "WIRES & CABLES".

CABINET, BOXES AND FITTINGS

1. THIS SECTION INCLUDES CABINETS, BOXES, AND FITTINGS FOR ELECTRICAL INSTALLATIONS AND CERTAIN TYPES OF ELECTRICAL FITTINGS NOT COVERED IN OTHER SECTIONS
2. METAL OUTLET, DEVICE, AND SMALL WIRING BOXES:
- A. GENERAL: CONFORM TO UL 514A, "METALLIC OUTLET BOXES, ELECTRICAL," AND UL 514B, "FITTINGS FOR CONDUIT AND OUTLET BOXES." BOXES SHALL BE OF TYPE, SHAPE, SIZE, AND DEPTH TO SUIT EACH LOCATION AND APPLICATION.
- B. STEEL BOXES: CONFORM TO NEMA OS 1, "SHEET STEEL OUTLET BOXES, DEVICE BOXES, COVERS, AND BOX SUPPORTS." BOXES SHALL BE SHEET STEEL WITH STAMPED KNOCKOUTS, THREADED SCREW HOLES AND ACCESSORIES SUITABLE FOR EACH LOCATION INCLUDING MOUNTING BRACKETS AND STRAPS, CABLE CLAMPS, EXTERIOR RINGS AND FIXTURE STUDS.
- C. CAST-IRON FLOOR BOXES: FULLY ADJUSTABLE, WATERPROOF, WITH THREADED RACEWAY ENTRANCES, RECTANGULAR BOX OPENING, ADJUSTING RINGS, GASKETS, BRASS FLOOR PLATES, AND POLYCARBONATE CARPET FLANGE. WHERE INDICATED, PROVIDE MULTI-SECTION BOXES WITH INDIVIDUAL HINGED SECTION COVERS AND PROVIDE FOR A DUPLEX RECEPTACLE UNDER ONE OR MORE OF THE COVERS.
3. PULL AND JUNCTION BOXES:
- A. COMPLY WITH UL 50, "ELECTRICAL CABINETS AND BOXES", FOR BOXES OVER 100 CUBIC INCHES VOLUME. BOXES SHALL HAVE SCREWED OR BOLTED ON COVERS OF MATERIAL SAME AS BOXES AND SHALL BE OF SIZE AND SHAPE TO SUIT APPLICATION.
- B. STEEL BOXES: SHEET STEEL WITH WELDED SEAMS. WHERE NECESSARY TO PROVIDE A RIGID ASSEMBLY, CONSTRUCT WITH INTERNAL STRUCTURAL STEEL BRACING.
- C. HOT-DIPPED GALVANIZED STEEL BOXES: SHEET STEEL WITH WELDED SEAMS. WHERE NECESSARY TO PROVIDE A RIGID ASSEMBLY, CONSTRUCT WITH INTERNAL STRUCTURAL STEEL BRACING. HOT-DIP GALVANIZED AFTER FABRICATION.
4. CABINETS:
- A. COMPLY WITH UL 50, "ELECTRICAL CABINETS AND BOXES." SHEET STEEL, NEMA 1 CLASS EXCEPT AS OTHERWISE INDICATED. CABINET SHALL CONSIST OF A BOX AND A FRONT CONSISTING OF A ONE-PIECE FRAME AND A HINGED DOOR. ARRANGE DOOR TO CLOSE AGAINST A RABBIT PLACED ALL AROUND THE INSIDE EDGE OF THE FRAME. DOOR SHALL BE SECURED BY TWO SCREWS. PROVIDE CONCEALED FASTENERS, NOT OVER 24-INCHES APART, TO HOLD FRONTS TO CABINET BOXES AND PROVIDE FOR ADJUSTMENT. PROVIDE FLUSH OR CONCEALED DOOR HINGES NOT OVER 24-INCHES APART AND NOT OVER 6-INCHES FROM TOP AND BOTTOM OF DOOR FOR FLUSH CABINETS. MAKE THE FRONT APPROXIMATELY 3/4 INCH LARGER THAN THE BOX ALL AROUND. FOR SURFACE MOUNTED CABINETS MAKE FRONT SAME HEIGHT AND WIDTH AS BOX.
- B. DOORS: DOUBLE DOORS FOR CABINETS WIDER THAN 24-INCHES. TELEPHONE CABINETS WIDER THAN 48-INCHES MAY HAVE SLIDING OR REMOVABLE DOORS.
- C. LOCKS: COMBINATION SPRING CATCH AND KEY LOCK, WITH ALL LOCKS FOR CABINETS OF THE SAME SYSTEM KEYS ALIKE. LOCKS MAY BE OMITTED ON SIGNAL, POWER, AND LIGHTING CABINETS LOCATED WITHIN WIRE CLOSETS AND MECHANICAL-ELECTRICAL ROOMS. LOCKS SHALL BE OF A TYPE TO PERMIT DOORS TO LATCH CLOSED WITHOUT LOCKING.
5. STEEL ENCLOSURES WITH HINGED DOORS:
- A. COMPLY WITH UL 50, "CABINETS AND ENCLOSURES", AND NEMA ICS 6, "ENCLOSURES FOR INDUSTRIAL CONTROLS AND SYSTEMS." SHEET STEEL 16 GAGE MINIMUM, WITH CONTINUOUS WELDED SEAMS. NEMA CLASS AS INDICATED ARRANGED FOR SURFACE MOUNTING.
- B. DOORS: HINGED DIRECTLY TO CABINET AND REMOVABLE, WITH APPROXIMATELY 3/4-INCH FLANGE AROUND ALL EDGES, SHAPED TO COVER EDGE OF BOX. PROVIDE HANDLE OPERATED, KEY LOCKING LATCH. INDIVIDUAL DOOR WIDTH SHALL BE NO GREATER THAN 24-INCHES. PROVIDE MULTIPLE DOORS WHERE REQUIRED.
- C. ENCLOSURE: WHERE DOOR GASKETING IS REQUIRED, PROVIDE NEOPRENE GASKET ATTACHED WITH OIL-RESISTANT ADHESIVE, AND HELD IN PLACE WITH STEEL RETAINING STRIPS. FOR ALL ENCLOSURES OF CLASS HIGHER THAN NEMA 1, USE HUBBED RACEWAY ENTRANCES.
6. WEATHERPROOF PULL AND SPLICE BOXES:
- A. BOXES TO BE NEMA 12 AND 13 RATED, ALL STEEL CONSTRUCTION CONFORMING TO J.I.C. STANDARD EGP-1-1997. EXTERNAL MOUNTING FEET FOR SURFACE MOUNTING. OIL-RESISTANT GASKET ATTACHED TO INSIDE OF DOOR COVER. CONTINUOUS HINGE AND EXTERNAL SCREW CLAMP FOR QUICK OPENING AND CLOSING.
7. FIRESTOP FOR RECESSED WALL BOXES:
- A. INSTALLATIONS OF MULTIPLE BOXES (LESS THAN 24" APART) WITH MAXIMUM 4-11/16" BY 4-11/16" FLUSH DEVICE UL LISTED METAL OUTLET BOXES IN FIRE RATED GYPSUM WALL BOARD WALL ASSEMBLIES FRAMED WITH MINIMUM 3-1/2" WIDE WOOD OR STEEL STUDS AND CONSTRUCTED AS SPECIFIED IN THE INDIVIDUAL U300 OR U400 SERIES WALL AND PARTITION DESIGNS IN THE FIRE RESISTANCE DIRECTORY. 3M #MP-45 MOLDABLE PUTTY PADS ARE TO BE INSTALLED ON THE EXTERIOR SURFACES OF THE FLUSH DEVICE BOX IN 1 AND 2 HOUR FIRE RATED WALLS AND PARTITIONS.
8. FLOOR BOXES IN SLABS ON GRADE AND WET LOCATIONS TO BE NEMA TYPE 4, CAST-IRON BOXES WITH THREADED HUBS. FLOOR BOXES LOCATED IN SLABS ABOVE GRADE CAN BE STAMPED STEEL. PLASTIC FLOOR BOXES ARE NOT APPROVED.
- A. INSTALL IN CONCRETE FLOOR SLABS SO THEY ARE COMPLETELY ENVELOPED IN CONCRETE EXCEPT FOR THE TOP. WHERE NORMAL SLAB THICKNESS WILL NOT ENVELOP BOX AS SPECIFIED ABOVE, PROVIDE INCREASED THICKNESS OF THE SLAB. PROVIDE EACH COMPARTMENT OF EACH FLOOR BOX WITH GROUNDING TERMINAL CONSISTING OF A WASHER-IN-HEAD MACHINE SCREW, NOT SMALLER THAN NO. 10-32, SCREWED INTO A TAPPED HOLE IN THE BOX. ADJUST COVERS OF FLOOR BOXES FLUSH WITH FINISHED FLOOR.
9. PULL AND SPLICE BOXES LOCATED OUTDOORS OR WHERE INDICATED ON DRAWINGS ARE TO BE WEATHERPROOF TYPE J.I.C. BOXES. CONDUIT TERMINATIONS ARE TO BE ACCOMPLISHED BY USING MEYER HUBS.
10. ELECTRICALLY GROUND METALLIC CABINETS, BOXES, AND ENCLOSURES. WHERE WIRING TO ITEM INCLUDES A GROUNDING CONDUCTOR, PROVIDE A GROUNDING TERMINAL IN THE INTERIOR OF THE CABINET, BOX OR ENCLOSURE.

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BLACK EYE PEAS

ELECTRICAL SPECIFICATIONS

WIRING DEVICES

1. THIS SECTION INCLUDES THE FOLLOWING:
- A. RECEPTACLES
B. LIGHTING AND EQUIPMENT SWITCHES
C. WALL PLATES
D. FLOOR SERVICE OUTLETS
E. OCCUPANCY SENSORS
F. MANUAL DIMMERS
2. MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE PRODUCTS BY ONE OF THE FOLLOWING:
- A. WIRING DEVICES & ACCESSORIES:
A.1. COPPER WIRING DEVICES
A.2. CROUSE-HINDS CO.
A.3. HUBBELL INC.
A.4. LEVITON
A.5. PASS AND SEYMOUR INC.
- B. FLOOR BOXES:
B.1. AMERICAN ELECTRIC, STEEL CITY
B.2. WALKER / WIREMOLD COMPANY
B.3. RACO, INC. HUBBELL INC.
B.4. RACEWAY COMPONENTS, INC.
- C. DIMMERS:
C.1. HUBBELL INC.
C.5. LEVITON LIGHTING CONTROLS
C.6. LUTRON LIGHTING
- D. OCCUPANCY SENSOR LIGHTING CONTROL:
D.1. HUBBELL INC.
D.2. LEVITON MANUFACTURING INC.
D.3. WATT STOPPER INC.
D.4. SENSOR SWITCH
D.5. GREENGATE
3. WIRING DEVICES:
A. PROVIDE WIRING DEVICES, IN TYPES, CHARACTERISTICS, GRADES, COLORS, AND ELECTRICAL RATINGS FOR APPLICATIONS INDICATED WHICH ARE UL LISTED AND WHICH COMPLY WITH NEMA WD 1 AND OTHER APPLICABLE UL AND NEMA STANDARDS. ALL DEVICES TO BE SPECIFICATION GRADE (HEAVY DUTY U.L. GRADE), WITH GREEN HEXAGONAL EQUIPMENT GROUND SCREW, METAL PASTER EARS AND SIDE TERMINAL SCREWS FOR BACK AND SIDE WIRING.
- B. ALL WIRING DEVICES ARE TO BE PROVIDED BY THE SAME MANUFACTURER UNLESS NOTED OTHERWISE.
- C. ALL WIRING DEVICES AND COVERPLATES SHALL BE:
C.1. WHITE.
C.2. WHITE – WHERE INSTALLED IN WHITE CEILINGS.
C.3. BLACK – WHERE INSTALLED IN DARK CEILINGS.
C.4. ORANGE – WHERE SUPPLYING A UPS CIRCUIT. (DEVICE ONLY, COVERPLATE SHALL BE AS ABOVE).
- D. RECEPTACLES:
D.1. DUPLEX RECEPTACLE, 15 AMP, 125 VOLT, 2–POLE, 3–WIRE, GROUNDING TYPE WITH NEMA CONFIGURATION 5–15R, MEETS FEDERAL SPEC. WC–596–F. LEVITON #5252.
D.2. SINGLE RECEPTACLE, 20 AMP, 125 VOLT, 2–POLE, 3–WIRE, GROUNDING TYPE WITH NEMA CONFIGURATION 5–20R, MEETS FEDERAL SPEC. WC–596–F. LEVITON #5351.
D.3. DUPLEX RECEPTACLE, 20 AMP, 125 VOLT, 2–POLE, 3–WIRE, GROUNDING TYPE WITH NEMA CONFIGURATION 5–20R, MEETS FEDERAL SPEC. WC–596–F. LEVITON #5352.
D.4. GROUND FAULT INTERRUPTER RECEPTACLE, 20 AMP, 125 VOLT, 2–POLE, 3–WIRE, GROUNDING TYPE WITH NEMA CONFIGURATION 5–20R; UL943 APPROVED, SELF–TESTING, SOLID STATE GROUND FAULT SENSING LEVEL WITH 5 MILLIAMPERES GROUND FAULT TRIP LEVEL. LED INDICATOR LIGHT WITH TEST/RESET BUTTONS THAT MATCH THE COLOR OF THE FACE. LEVITON #G5362–WT*.
D.5. USB RECEPTACLE, 20A, 125V, 2–POLE, 3–WIRE, GROUNDING TYPE WITH NEMA CONFIGURATION 5–20R, (2) VERTICAL USB PORTS WITH 3.6A CHARGING CAPACITY (MINIMUM), MEETS FEDERAL SPEC. WC–596–F. LEVITON #T5832
D.5.1. WHERE SHOWN AS A QUAD RECEPTACLE ON PLANS, PROVIDE (2) USB RECEPTACLES AS SPECIFIED ABOVE.
- D.6. WEATHERPROOF RECEPTACLE SHALL BE A GROUND–FAULT INTERRUPTER WITH THOMAS & BETTS #KXSV, DIE–CAST ALUMINUM “SMALL” COVER PLATE, LOCATE BOX VERTICAL IN WALL. PLATE TO BE LISTED AND LABELED “SUITABLE FOR WET LOCATIONS WHILE IN USE.
- D.7. ISOLATED GROUND DUPLEX RECEPTACLE, 20 AMP, 125 VOLT, 2–POLE, 3–WIRE, FACE WITH ORANGE TRIANGLE, GROUND SCREW ISOLATED FROM MOUNTING YOKE, NEMA CONFIGURATION 5–20RIG. LEVITON #5362–IG.
- D.8. CONTROLLED DUPLEX RECEPTACLE, 20 AMP, 125 VOLT, 2–POLE, 3–WIRE, GROUNDING TYPE WITH NEMA CONFIGURATION 5–20R, PERMANENTLY LABELED WITH CONTROLLED SYMBOL, MEETS FEDERAL SPEC. WC–596–F. LEVITON #5362–2.
- D.8.1. WHERE SHOWN AS A QUAD RECEPTACLE ON PLANS, PROVIDE (1) CONTROLLED RECEPTACLE AND (1) DUPLEX RECEPTACLE AS SPECIFIED ABOVE.
- D.9. HEAVY DUTY RECEPTACLES SHALL BE OF THE SAME MANUFACTURER AS THE CONVENIENCE OUTLETS AND HAVE THE RATINGS AND CHARACTERISTICS (VOLTAGE, AMPS, POLES, WIRES) AS SHOWN ON DRAWINGS.
- E. SWITCHES:
E.1. TOGGLE TYPE SWITCH, 20 AMP, 120/277 VOLT AC SINGLE–POLE, QUITE TYPE, WITH MOUNTING YOKE INSULATED FROM MECHANISM, EQUIPPED WITH PASTER EARS, SIDE–WIRED SCREW TERMINALS, MEETS FEDERAL SPEC WS–896. LEVITON #1121–2.
E.1.1. DOUBLE–POLE, 3–WAY, AND 4–WAY SWITCHES SHALL BE OF THE SAME MAKE AS FOR SINGLE–POLE.
- E.2. KEY TYPE SWITCH, 20 AMP, 120/277 VOLT AC SINGLE–POLE, WITH MOUNTING YOKE INSULATED FROM MECHANISM, EQUIPPED WITH PASTER EARS, SIDE–WIRED SCREW TERMINALS, POLISHED METAL TOP AND PROVIDE WITH ONE STEEL KEY. LEVITON #1121–2L.
- E.2.1. DOUBLE–POLE, 3–WAY, AND 4–WAY SWITCHES SHALL BE OF THE SAME MAKE AS FOR SINGLE–POLE.
- E.3. WHEN A LIGHTED HANDLE IS INDICATED WITH SWITCHING DEVICE, PROVIDE SWITCH DEVICE WITH 1/25 WATT NEON PILOT INTEGRAL WITH TOGGLE HANDLE, RATED 120/277 VOLT. GLOWS WHEN SWITCH IS “OFF”. PASS & SEYMOUR #20AC1–CSL.
- E.4. WHEN A PILOT LIGHT IS INDICATED WITH SWITCHING DEVICE, PROVIDE SWITCH DEVICE WITH 1/25 WATT NEON PILOT INTEGRAL WITH TOGGLE HANDLE, RATED 120/277 VOLT. GLOWS WHEN SWITCH IS “ON”. PASS & SEYMOUR #20AC1–RPL.
- F. FLOOR RECEPTACLES:
F.1. TYPE ‘A’: HUBBELL #B–2436, RECTANGULAR SINGLE–GANG, WATERTIGHT BOX WITH ONE S–3825 DUPLEX FLAP COVER. BOX COVER PLATE SHALL BE BRASS. COVER TO BE PROVIDED WITH BRASS CARPET FLANGE FOR FLUSH INSTALLATION IN LINOLEUM, WOOD OR CARPET FLOORS. EACH FLOOR OUTLET SHALL BE COMPLETE WITH ONE 20 AMP, 125 VOLT DUPLEX BROWN RECEPTACLE AS SPECIFIED UNDER “RECEPTACLES”.
- F.2. TYPE ‘B’: HUBBELL #B–4233, RECTANGULAR DOUBLE–GANG, FULLY ADJUSTABLE, WATERTIGHT BOX WITH ONE S–3825 DUPLEX FLAP COVER COMPLETE WITH ONE 20 AMP, 125 VOLT DUPLEX BROWN RECEPTACLE AS SPECIFIED UNDER “RECEPTACLES”. ALSO PROVIDE ONE #S–2625 COVER PLATE WITH ONE #S–3067 SPLIT NOZZLE FOR PROTECTION OF TELEPHONE/COMPUTER CABLES. BOX COVER PLATES SHALL BE BRASS. COVER TO BE PROVIDED WITH BRASS CARPET FLANGE FOR FLUSH INSTALLATION IN LINOLEUM, WOOD OR CARPET FLOORS.
- F.3. TYPE ‘C’: HUBBELL #B–2436, RECTANGULAR SINGLE–GANG BOX, BRASS PLATE #S2425 WITH 3/4 PLUG OPENING FOR CONNECTION OF FLEXIBLE CONDUIT FROM EQUIPMENT. COVER TO BE PROVIDED WITH BRASS CARPET FLANGE FOR FLUSH INSTALLATION IN LINOLEUM, WOOD OR CARPET FLOORS.

WIRING DEVICES

- G. WALL PLATES: SINGLE AND COMBINATION, OF TYPES, SIZES, AND WITH GANGING AND CUTOUTS AS INDICATED. PROVIDE PLATES WHICH MATE WITH WIRING DEVICES TO WHICH ATTACHED. PROVIDE METAL SCREWS FOR SECURING PLATES TO DEVICES WITH SCREW HEADS TO MATCH FINISH OF PLATES. PROVIDE WALL PLATES WITH ENGRAVED LEGEND WHERE INDICATED. CONFORM TO REQUIREMENTS OF SECTION “ELECTRICAL IDENTIFICATION.”
- H. OCCUPANCY SENSOR LIGHTING CONTROL:
H.1. WALL MOUNTED OCCUPANCY SENSOR TO BE PASSIVE INFRARED COVERING 1200 (OR 800) SQUARE FEET, RATED FOR 120/277 VOLT, 1500 WATTS MAXIMUM LOAD OF INCANDESCENT OR FLUORESCENT LIGHT. SENSOR TO HAVE 180° FIELD OF VIEW, OFF/AUTO/ON SLIDE SWITCH, ADJUSTABLE TIME–OUT FROM 1 TO 20 MINUTES, AND LED MOVEMENT INDICATOR PILOT. SENSOR TO BE MOUNTED IN A SINGLE–GANG WALL BOX AT SAME ELEVATION AS STANDARD WALL SWITCHES.
H.1.1. WATT STOPPER #FW–100 SINGLE REALY (OR #PW–200 DUAL REALY).
- H.2. CEILING MOUNTED OCCUPANCY SENSOR TO BE DUAL TECHNOLOGY WITH ULTRASONIC & PASSIVE INFRARED TYPE SENSORS. SENSORS TO HAVE TWO–WAY OR ONE–WAY DISTRIBUTION DEPENDING ON MOUNTING LOCATION CAPABLE OF ADJUSTING THE SENSITIVITY AND LENGTH OF OPERATION BASED ON PAST ACTIVITY LEVEL OF THE AREA’S OCCUPANTS. CUSTOM PERFORMANCE CONTROLS TO BE LOCATED BEHIND THE SENSOR LENS FOR FIELD MODIFICATION OF SENSOR DESIGN. UNIT TO BE MOUNTED TO RECESSED JUNCTION BOX.
H.2.1. WATT STOPPER #DT–355, 800W @ 120V (1200W @ 277V)
- I. MANUAL DIMMERS:
I.1. PROVIDE AND INSTALL AC DIMMER CONTROLS FOR LIGHTING FIXTURES; WATTAGE AS INDICATED BELOW, 120 VOLT, 60 HERTZ, WITH PRESET SLIDE CONTROLS AND PUSHBUTTON FOR ON/OFF CONTROLS, SINGLE–POLE.:
I.1.1. ID1 = 1000 WATTS, LEVITON #P110–1LX (120/277V INCANDESCENT)
I.1.2. D1 = 1200/1500 VA, LEVITON #P710–LEZ (120/277V LED)
I.1.3. LD2 = 400 VA, LEVITON #PE04–1LX (ELECTRONIC LOW VOLTAGE)
I.1.4. LD3 = 1000 VA, LEVITON #IPM10–1LX (MAGNETIC LOW VOLTAGE)
I.1.5. FD1 = 1200/1500 VA, LEVITON #IP710–DLX (120/277V FLUORESCENT 0–10V)
I.1.6. FD2 = 1000 VA, LEVITON #IPX10–10 (120V FLUORESCENT LINE VOLTAGE)
I.1.7. FD3 = 1200 VA, LEVITON #IPX12–70 (277V FLUORESCENT LINE VOLTAGE)

4. INSTALLATION OF WIRING DEVICES AND ACCESSORIES:

- A. GROUPS OF SWITCHES OR SWITCH AND OUTLET COMBINATIONS SHALL BE MOUNTED UNDER ONE COVER PLATE. COVER PLATES SHALL FIT THE DEVICES SECURELY AND SHALL COVER THE WALL OPENING COMPLETELY TO PROVIDE A NEAT AND FINISHED APPEARANCE FLUSH WITH SURROUNDING SURFACES.
- B. TERMINALS ON ALL WIRING DEVICES SHALL NOT BE USED TO FEED–THROUGH TO THE NEXT DEVICES.
- C. INSTALL WALL–MOUNTED RECEPTACLES WITH GROUND SLOT UP.
- D. RECEPTACLE MOUNTED ABOVE COUNTER–TOP TO BE INSTALLED HORIZONTAL, WITH LONG DIMENSION PARALLEL TO FLOOR AND COUNTER–TOP.

FUSES

1. MANUFACTURER: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE PRODUCTS OF ONE OF THE FOLLOWING (FOR EACH TYPE AND RATING OF OVERCURRENT PROTECTIVE DEVICE):
A. BUSSMANN DIV; MCGRAW_EDISON CO.
B. FERRAZ SHAWMUT, INC.
C. LITTELFUSE, INC.
2. EXCEPT AS OTHERWISE INDICATED, PROVIDE FUSES OF TYPES, SIZES, RATINGS, AND AVERAGE TIME/CURRENT AND PEAK LET–THROUGH CURRENT CHARACTERISTICS INDICATED, WHICH COMPLY WITH MANUFACTURER’S STANDARD DESIGN, MATERIALS, AND CONSTRUCTION IN ACCORDANCE WITH PUBLISHED PRODUCT INFORMATION, AND WITH INDUSTRY STANDARDS AND CONFIGURATIONS. ALL FUSES TO BE FOR USE WITH FUSE REJECTION CLIPS.
3. ALL FUSES FOR THIS PROJECT SHALL BE OF THE SAME MANUFACTURER TO INSURE SELECTIVE COORDINATION.
4. EXCEPT WHERE NOTED OTHERWISE, THREE (3) SPARE FUSES OF EACH SIZE INSTALLED SHALL BE PROVIDED TO THE OWNER.
5. INSTALL FUSES WITH MANUFACTURER’S NAMETAG FACING OUTWARD.
6. SERVICE ENTRANCE AND FEEDER CIRCUITS 601 AMPERES AND LARGER, FUSES SHALL BE BOLT–ON U.L. LISTED CLASS L, CURRENT–LIMITING WITH 200,000 AMPERES R.M.S. SYMMETRICAL INTERRUPTING RATING.
7. FEEDER CIRCUITS, EXCEPT MOTOR CIRCUITS, 600 AMPERES AND SMALLER SHALL BE PLUG–IN CARTRIDGE U.L. CLASS RK–1, CURRENT–LIMITING WITH 200,000 AMPERES R.M.S. SYMMETRICAL INTERRUPTING RATING.
8. MOTOR, TRANSFORMERS, AND INDUCTIVE TYPE CIRCUITS 600 AMPERES AND SMALLER SHALL BE PLUG–IN CARTRIDGE U.L. CLASS RK–5 DUAL–ELEMENT WITH TIME DELAY. THEY SHALL ALSO HAVE CURRENT–LIMITING LINKS AND 200,000 AMPERES INTERRUPTING RATING. FUSE REDUCED SHALL BE USED WHERE SWITCH FUSE CLIPS ARE SPACED LARGER THAN FUSE SIZE SHOWN ON DRAWING.
9. PLUG FUSES FOR INDIVIDUAL MOTOR PROTECTION SHALL BE BUSSMANN FUSTAT, DUAL–ELEMENT, 10,000 AMPERES R.M.S. SYMMETRICAL INTERRUPTING RATING TYPE “ST” WITH FUSTAT ADAPTER SIZED FOR PLUG–FUSE INSTALLED. SIZE OF FUSE TO BE ACCORDING TO SPECIFICATIONS FOR “DISCONNECT SWITCHES”.

SUPPORTING DEVICES

1. THIS SECTION INCLUDES SECURE SUPPORT FROM THE BUILDING STRUCTURE FOR ELECTRICAL ITEMS BY MEANS OF HANGERS, SUPPORTS, ANCHORS, SLEEVES, INSERTS, SEALS, AND ASSOCIATED FASTENINGS.
2. COATING: SUPPORTS, SUPPORT HARDWARE, AND FASTENERS SHALL BE PROTECTED WITH ZINC COATING OR WITH TREATMENT OF EQUIVALENT CORROSION RESISTANCE USING APPROVED ALTERNATIVE TREATMENT, FINISH, OR INHERENT MATERIAL CHARACTERISTIC. PRODUCTS FOR USE OUTDOORS SHALL BE HOT–DIP GALVANIZED.
3. INSTALL SUPPORTING DEVICES TO FASTEN ELECTRICAL COMPONENTS SECURELY AND PERMANENTLY IN ACCORDANCE WITH MANUFACTURER’S REQUIREMENTS.
4. SUPPORT INDIVIDUAL HORIZONTAL RACEWAYS BY SEPARATE PIPE HANGERS. SPRING STEEL FASTENERS MAY BE USED IN LIEU OF HANGERS ONLY FOR 3/4–INCH AND SMALLER RACEWAYS SERVING LIGHTING AND RECEPTACLE BRANCH CIRCUITS ABOVE SUSPENDED CEILINGS ONLY. FOR HANGER RODS WITH SPRING STEEL FASTENERS, USE 1/4–INCH–DIAMETER OR LARGER THREADED STEEL. USE SPRING STEEL FASTENERS THAT ARE SPECIFICALLY DESIGNED FOR SUPPORTING SINGLE CONDUITS OR TUBING. CONDUITS ABOVE LAY–IN CEILING SYSTEM SHALL NOT BE SUPPORTED FROM CEILING SUSPENSION WIRES.
5. INSTALL INDIVIDUAL AND MULTIPLE (TRAPEZE) RACEWAY HANGERS AND RISER CLAMPS AS NECESSARY TO SUPPORT RACEWAYS. PROVIDE U–BOLTS, CLAMPS, ATTACHMENTS AND OTHER HARDWARE NECESSARY FOR HANGER ASSEMBLY AND FOR SECURING HANGER RODS AND CONDUITS.
6. SUPPORT PARALLEL RUNS OF HORIZONTAL RACEWAYS TOGETHER ON TRAPEZE–TYPE HANGERS
7. DO NOT CUT HOLES IN REINFORCED CONCRETE BEAMS OR CUT REINFORCING BARS IN CONCRETE WITH OUT WRITTEN APPROVAL OF STRUCTURAL ENGINEER.
8. UNLESS OTHERWISE INDICATED, FASTEN ELECTRICAL ITEMS AND THEIR SUPPORTING HARDWARE SECURELY TO THE BUILDING STRUCTURE, INCLUDING BUT NOT LIMITED TO CONDUITS, RACEWAYS, CABLES, CABLE TRAYS, BUSWAYS, CABINETS, PANELBOARDS, TRANSFORMERS, BOXES, DISCONNECT SWITCHES, AND CONTROL COMPONENTS.

DISCONNECTS, CONTACTORS

1. MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE PRODUCTS BY ONE OF THE FOLLOWING:
A. GENERAL ELECTRIC CO.
B. SQUARE D COMPANY.
C. EATON CORPORATION
D. SIEMENS, I.T.E.
E. ALLEN–BRADLEY CO.
F. FURNAS CO.
2. TEMPERATURE RATINGS: ALL CONDUCTOR TERMINALS AND EQUIPMENT ENCLOSURES TO BE U.L. LISTED FOR USE WITH MINIMUM 75C RATED CONDUCTORS.
3. DISCONNECT SWITCHES:
A. PROVIDE CIRCUIT AND MOTOR DISCONNECT SWITCHES OF TYPES, SIZES AND ELECTRICAL CHARACTERISTICS INDICATED ON DRAWING. FUSIBLE OR NON–FUSED TYPE, RATED 250 OR 600 VOLTS, 60 HZ, 2– OR 3–POLES, SOLID NEUTRAL, AND INCORPORATING QUICK–MAKE, QUICK–BREAK TYPE SWITCHES; CONSTRUCT SO THAT SWITCH BLADES ARE VISIBLE IN OFF POSITION WITH DOOR OPEN. SWITCH SHALL HAVE A DUAL COVER INTERLOCK TO PREVENT UNAUTHORIZED OPENING OF THE SWITCH DOOR WHEN HANDLE IS IN THE “ON” POSITION, AND TO PREVENT CLOSING OF THE SWITCH MECHANISM WITH THE DOOR OPEN. EQUIP WITH OPERATING HANDLE WHICH IS INTEGRAL PART OF ENCLOSURE BASE AND WHOSE POSITION IS EASILY RECOGNIZABLE, AND IS PADLOCKABLE IN OFF POSITION; CONSTRUCT CURRENT CARRYING PARTS OF HIGH–CONDUCTIVITY COPPER, WITH SILVER–TUNGSTEN TYPE SWITCH CONTACTS, AND POSITIVE PRESSURE TYPE REINFORCED FUSE CLIPS. PROVIDE SWITCH IN NEMA 1 OR NEMA TYPE 3R ENCLOSURE AS INDICATED OR REQUIRED. INSTALL ENGRAVED PLASTIC PLATE AS TO WHAT EACH SWITCH CONTROLS.
- B. EQUIPMENT REQUIRING A DISCONNECTING MEANS, RATED FOR 120 OR 208 VOLT SINGLE PHASE, UP TO 50 AMPERES MAY BE PROVIDED WITH A SNAP–SWITCH TYPE TOGGLE DEVICE AT THE EQUIPMENT. THE DEVICE IS TO HAVE AN AMPERE AND VOLTAGE RATING EQUAL TO OR GREATER THAN THE BRANCH CIRCUIT FEEDING THE EQUIPMENT. IF EQUIPMENT IS MOTOR RELATED, THEN THE SWITCH MUST BE HORSEPOWER RATED. REFER TO SECTION 16140 FOR MINIMUM SPECIFICATIONS FOR TOGGLE SWITCHES. SWITCHES LOCATED OUTDOORS OR IN COOLER/FREEZER APPLICATIONS ARE TO BE MOUNTED IN A DIE–CAST ALUMINUM DEVICE BOX WITH GASKETED WEATHERPROOF COVER PLATE.
4. RELAYS AND CONTACTORS:
A. GENERAL POWER PURPOSE RELAYS, FOR CONTROL OF MISCELLANEOUS MOTORS, TO BE PROVIDED AND INSTALLED WITH NUMBER OF POLES AND COIL VOLTAGE AS SHOWN ON DRAWINGS. RELAY TO BE HORSEPOWER RATED FOR THE MOTOR LOAD TO WHICH IT CONTROLS. RELAY TO BE MOUNTED IN A NEMA TYPE 1 ENCLOSURE.
- B. LIGHTING CONTACTORS TO BE PROVIDED AND INSTALLED WITH THE NUMBER OF POLES, COIL VOLTAGE, AND LOAD CONTACT RATINGS AS SHOWN ON DRAWINGS. CONTACTORS TO BE PROVIDED WITH SILVER ALLOY DOUBLE BREAK CONTACTS RATED FOR TUNGSTEN AND BALLAST LIGHTING LOADS. CONTACTS TO BE CONVERTIBLE WITH NORMALLY OPEN AND NORMALLY CLOSED INDICATORS. RELAY TO BE MOUNTED IN A NEMA TYPE 1 ENCLOSURE.
6. INSTALLATION OF DISCONNECTS AND STARTERS:
A. SURFACE MOUNT ON WALLS OR COLUMNS APPROXIMATELY 5’–0” TO CENTERLINE ABOVE THE FLOOR WHERE POSSIBLE.
- B. DISCONNECT SWITCHES MOUNTED ON ROOFTOP AIR CONDITIONING UNITS TO BE CAULKED BETWEEN SWITCH AND UNIT TO PROVIDE WEATHERPROOF SEAL. ELECTRICAL CONTRACTOR TO VERIFY EXACT MOUNTING LOCATION ON UNIT SO AS NOT TO COVER UP ANY REMOVABLE PANELS.
- C. WHEN RELAYS OR CONTACTORS ARE INDICATED TO BE LOCATED ABOVE THE CEILING, THE EQUIPMENT IS TO BE READILY ACCESSIBLE AND SOUND INSULATED FROM THE MOUNTING SUPPORTS.

- A. ALL SINGLE POLE BREAKERS TO BE RATED FOR “SWITCHING DUTY” (SWD) AND FOR OPERATION ON FLUORESCENT LIGHTING SOURCES.

- B. ALL CIRCUIT BREAKERS PROTECTING HIGH INTENSITY DISCHARGE (HID) LIGHTING TO BE RATED AND LABELED “HID” FOR OPERATION ON H.I.D. LIGHTING SOURCES

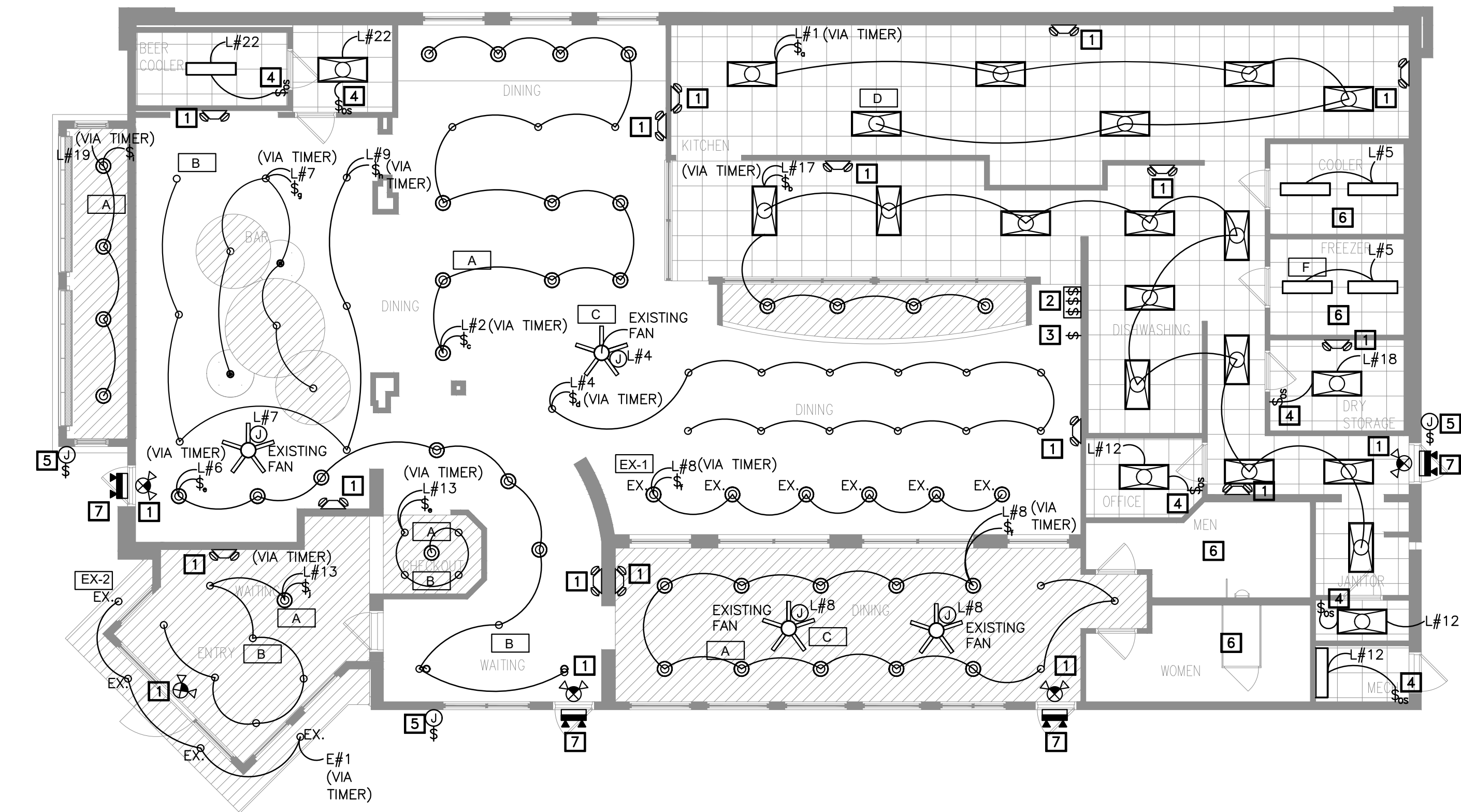
- C. CIRCUIT BREAKERS USED ON HEATING, AIR CONDITIONING, OR REFRIGERATION EQUIPMENT SHALL BE TYPE “HACR” AND U.L. LISTED FOR SUCH USE.

5. PANELBOARD MANUFACTURER TO PROVIDE A COMPLETE “ARC FLASH STUDY”. ALL SUBMITTALS WILL BE REJECTED UNLESS THIS STUDY IS PROVIDED AT THE TIME OF SHOP DRAWING REVIEW.

PANELBOARDS

1. MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE PANELBOARD PRODUCTS OF ONE OF THE FOLLOWING (FOR EACH TYPE AND RATING OF PANELBOARD AND ENCLOSURE):
A. GENERAL ELECTRIC COMPANY
B. SQUARE D COMPANY
C. EATON CORPORATION
D. SIEMENS, I.T.E.
2. POWER DISTRIBUTION PANELS: PROVIDE DEAD–FRONT SAFETY–TYPE DISTRIBUTION PANELBOARDS RATED 208/120, 3–PHASE, 4–WIRE. SHORT CIRCUIT RATING OF PANEL AND DEVICES TO BE 22,000 RMS MINIMUM UNLESS NOTED OTHERWISE ON THE DRAWINGS. PANELBOARDS SWITCHING AND PROTECTIVE DEVICES IN SOLDERLESS PRESSURE–TYPE LINE SIDE CONNECTORS APPROVED FOR COPPER CONDUCTORS.
3. 120/208 VOLT LIGHTING AND APPLIANCE PANELBOARDS: PROVIDE DEAD–FRONT SAFETY TYPE LIGHTING AND APPLIANCE PANELBOARDS AS INDICATED, WITH SWITCHING AND PROTECTIVE DEVICES IN QUANTITIES, RATINGS, TYPES AND ARRANGEMENTS SHOWN, WITH ANTI–TURN SOLDERLESS PRESSURE TYPE LUG CONNECTORS. APPROVED FOR USE WITH COPPER CONDUCTORS; CONSTRUCT UNIT FOR CONNECTING FEEDERS TO PANEL; EQUIP WITH COPPER, COPPER PLATED OR ALUMINUM BUS BARS, FULL–SIZED NEUTRAL BAR, WITH BOLT–IN TYPE HEAVY–DUTY, QUICK–MAKE, QUICK–BREAK, SINGLE–POLE CIRCUIT BREAKERS, WITH TOGGLE HANDLES THAT INDICATE WHEN TRIPPED. PROVIDE SUITABLE LUGS ON NEUTRAL BUS FOR EACH OUTGOING FEEDER REQUIRED; AND PROVIDE BARE UNINSULATED GROUNDING BARS SUITABLE FOR BOLTING TO ENCLOSURES. SELECT ENCLOSURES FABRICATED BY SAME MANUFACTURER AS PANELBOARDS, WHICH MATE AND MATCH PROPERLY WITH PANELBOARDS. MINIMUM INTERRUPTING CAPACITY OF MANUFACTURED PANELBOARDS TO BE 10,000 A.I.C. UNLESS NOTED OTHERWISE ON THE DRAWINGS.
4. MOLDED–CASE CIRCUIT BREAKERS: PROVIDE FACTORY ASSEMBLED, MOLDED CASE CIRCUIT BREAKERS OF FRAME SIZE INDICATED. PROVIDE BREAKERS WITH PERMANENT THERMAL AND INSTANTANEOUS MAGNETIC TRIPS IN EACH POLE AND AMPERE RATING AS INDICATED. CONSTRUCT WITH OVER CENTER, TRIP–FREE, TOGGLE TYPE OPERATING MECHANISMS WITH QUICK–MAKE, QUICK–BREAK ACTION AND POSITIVE HANDLE INDICATION. CONSTRUCT BREAKERS FOR MOUNTING AND OPERATING IN ANY PHYSICAL POSITION AND OPERATING IN AN AMBIENT TEMPERATURE OF 40C. PROVIDE BREAKERS WITH MECHANICAL SCREW TYPE REMOVABLE CONNECTOR LUGS, AL/CU RATED. ALL BREAKERS TO BE BOLT–IN TYPE CONSTRUCTION. ALL BREAKERS TO BE UL489 LISTED.

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1 REFLECTED CEILING PLAN
1/8" = 1'-0"

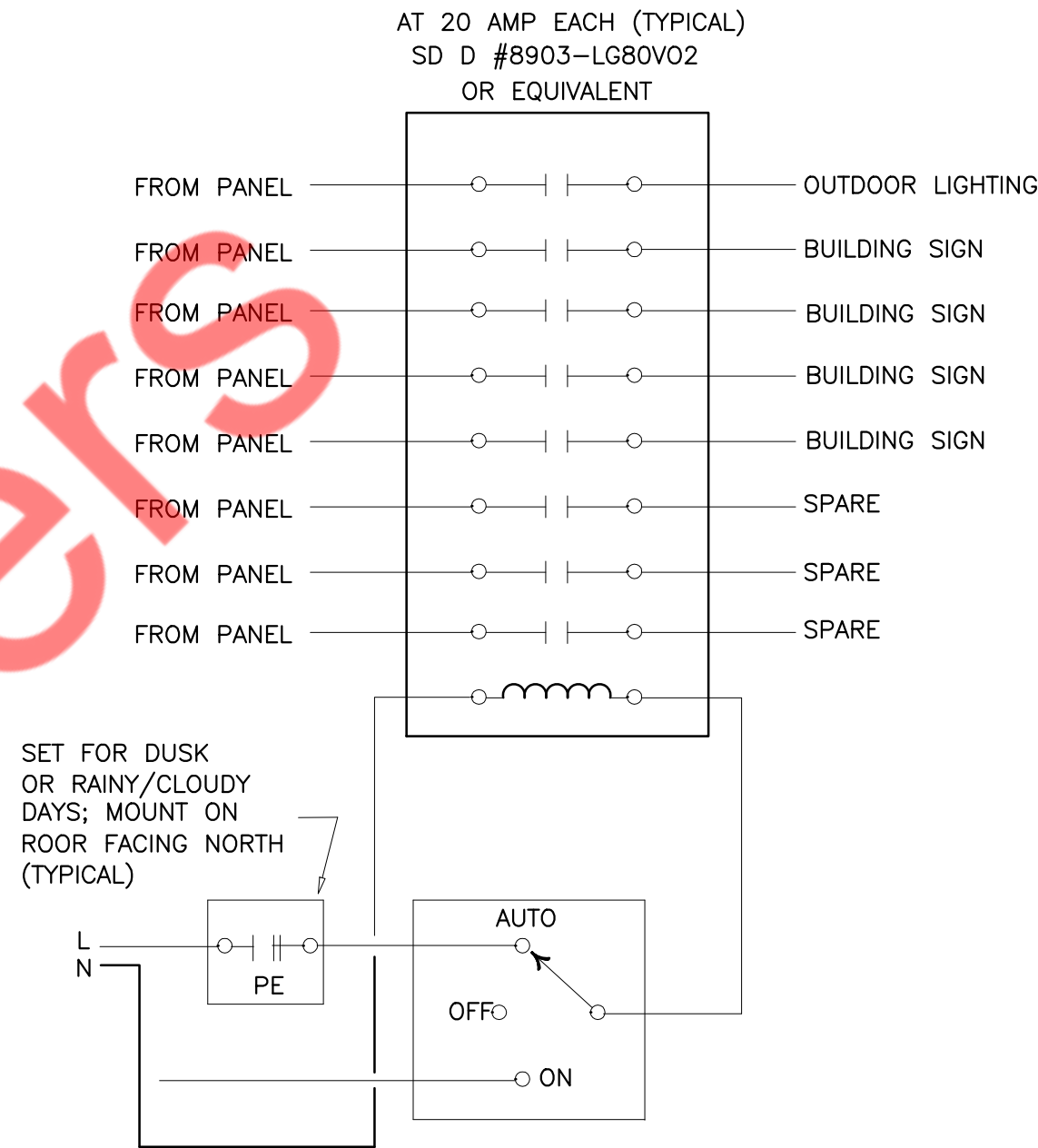
LIGHT FIXTURE SCHEDULE				
	Type Mark	Manufacturer	Description	Comments
	A	COOPER LIGHTING	ACOUSTIC LIGHTING PENDANT LUMINAIRE	28" FELT DRUM - PURPLE FELT FINISH
	B	Cooper Industries, Inc.	6" CEILING MOUNT PORTFOLIO LERS6B	
	C	EXISTING	EXISTING CEILING FANS TO REMAIN	EXISTING CEILING FANS TO BE CLEANED AND REMAIN WHEN FUNCTIONAL
	D	ENVIRROUTE	2' X 4' LED TROFFER	INSTALL WITHIN NEW ACCOUSTICAL CEILING TILE. REFER TO ELECTRICAL.
	EX 1	EXISTING	EXISTING FIXTURE TO REMAIN	EXISTING FIXTURE TO REMAIN
	EX 2	Cooper Industries, Inc.	6" CEILING MOUNT	EXISTING OUTDOOR FIXTURE TO REMAIN
	F	EXISTING	EXISTING LIGHT FIXTURE TO REMAIN	EXISTING LIGHT FIXTURE TO REMAIN
	G	Cooper Industries, Inc.	FABRIQUE 146-P LED VERTICAL CYLINDER PENDANT	INSTALLED OVER BAR AREA WITHIN THE SOUND CLOUD PANELS
	EM	Cooper SURE-LITES-APEL	EMRGENCY EGRESS FIXTURE W/ BACKUP	-
	EX	SURE-LITE#APCH7-R	EMRGENCY EGRESS EXIT SIGN W/ BACKUP	-
	EX-1	PERHC-DB-00-30	LED EXTERIOR EMERGENCY FIXTURE	-

LUMINAIRE SCHEDULE GENERAL NOTES:

- VERIFY ALL LUMINAIRE COLORS, TRIMS, LENGTHS, ETC. WITH THE ARCHITECT PRIOR TO PLACING FINAL PURCHASE ORDERS. SUBMISSION PF SHOP DRAWINGS WILL BE INTERPRETED AS HAVING BEEN COORDINATED WITH THE ARCHITECTURAL DRAWINGS .
- PROVIDE ALL LENGTHS, FEEDS, ACCESSORIES, CONNECTORS, WIRING, POWER SUPPLIES, DRIVERS ETC. FOR A COMPLETE INSTALLATION. THE E.C. SHALL VERIFY THE COMPLETE BILL OF MATERIAL WITH MANUFACTURER'S REPRESENTATIVE AND ENSURE ALL EQUIPMENT ARE INCLUDED IN BID PRICE. COORDINATE INSTALLATION WITH ARCHITECTURAL DETAILS.
- VERIFY FINAL LUMINAIRE LOCATIONS WITH OTHER CEILING MOUNTED EQUIPMENTS SUCH AS DIFFUSER WITH ARCHITECTURAL REFLECTED CEILING PLANS.
- VERIFY EXACT MOUNTING HEIGHT AND LOCATIONS OF ALL WALL MOUNTED LUMINAIRE WITH ARCHITECTURAL PLANS AND ELEVATIONS PRIOR TO ROUGH-IN
- ANY PROPOSED ALTERNATE LUMINAIRES SHALL BE APPROVED BY THE ARCHITECT PRIOR TO FINAL BID PRICING.
- SHOULD THE CONTRACTOR PROPOSE TO FURNISH MATERIALS, EQUIPMENT AND DEVICES OTHER THAN THOSE SPECIFIED AND LISTED, THE CONTRACTOR SHALL SUBMIT A WRITTEN REQUEST FOR SUBSTITUTIONS, TO THE ENGINEERS AT LEAST TEN (10) BUSINESS DAYS PRIOR TO BID OPENING. THE REQUEST SHALL BE AN ALTERNATE TO THE ORIGINAL BID AND SHALL INCLUDE A COMPLETE SPECIFICATIONS CUTSHEET SUBMITTAL AS OUTLINED IN THE SPECIFICATIONS, COMPLETE WITH DESCRIPTIVE (MANUFACTURER, BRAND NAME, CATALOG NUMBER, ETC.) AND TECHNICAL DATA FOR ALL ITEMS. INDICATE ANY ADDITIONS OR DEDUCTIONS TO THE CONTRACT PRICE WITH THE SUBSTITUTION SUBMITTAL AND ON THE BID FORM.
- ALL FIXTURES INDICATED AS EMERGENCY SHALL BE PROVIDED WITH 90-MINUTE BATTERY PACK AND ALL FLORECENT FIXTURES INDICATED AS EMERGENCY SHALL BE PROVIDED WITH 1300LUMENS, 90MINUTE BATTERY PACK.
- PROVIDE SHATTER-RESISTANT LAMPS OR PROVIDE CLEAR LENSES ON ALL FIXTURES LOCATED ABOVE ALL KITCHEN AREA.
- VERIFY FINAL SELECTION OF LIGHT FIXTURES WITH ARCHITECT.

CONTACTOR DIAGRAM NOTES:

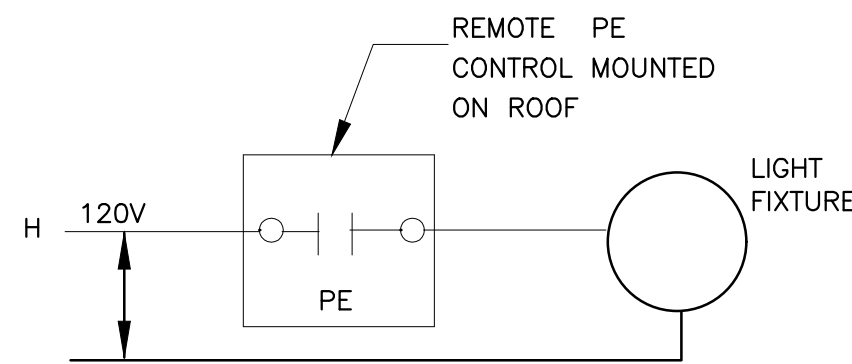
- THE LIGHTING CONTACTORS SHALL BE HELD MAGNETICALLY IN A NEMA 1 ENCLOSURE. THE SIGN & CANOPY LIGHTING SHALL BE SET TO COME ON FIRST, EVEN ON RAINY/CLOUDY DAYS AND THE PARKING LOT LIGHTING SHALL BE SET TO COME ON LATER. THE CONTROLS SHALL BE WIRED SO THAT EACH GROUP OF LIGHTING (SIGNAGE/CANOPY) IS INDEPENDENT, AND MAY BE MANUALLY SWITCHED OFF AT CLOSING WITH ITS SELECTOR SWITCH VIA TIME DELAY RELAY - SEE CONTACTOR DIAGRAM DETAIL THIS SHEET.



02-LIGHTING CONTACTOR DIAGRAM

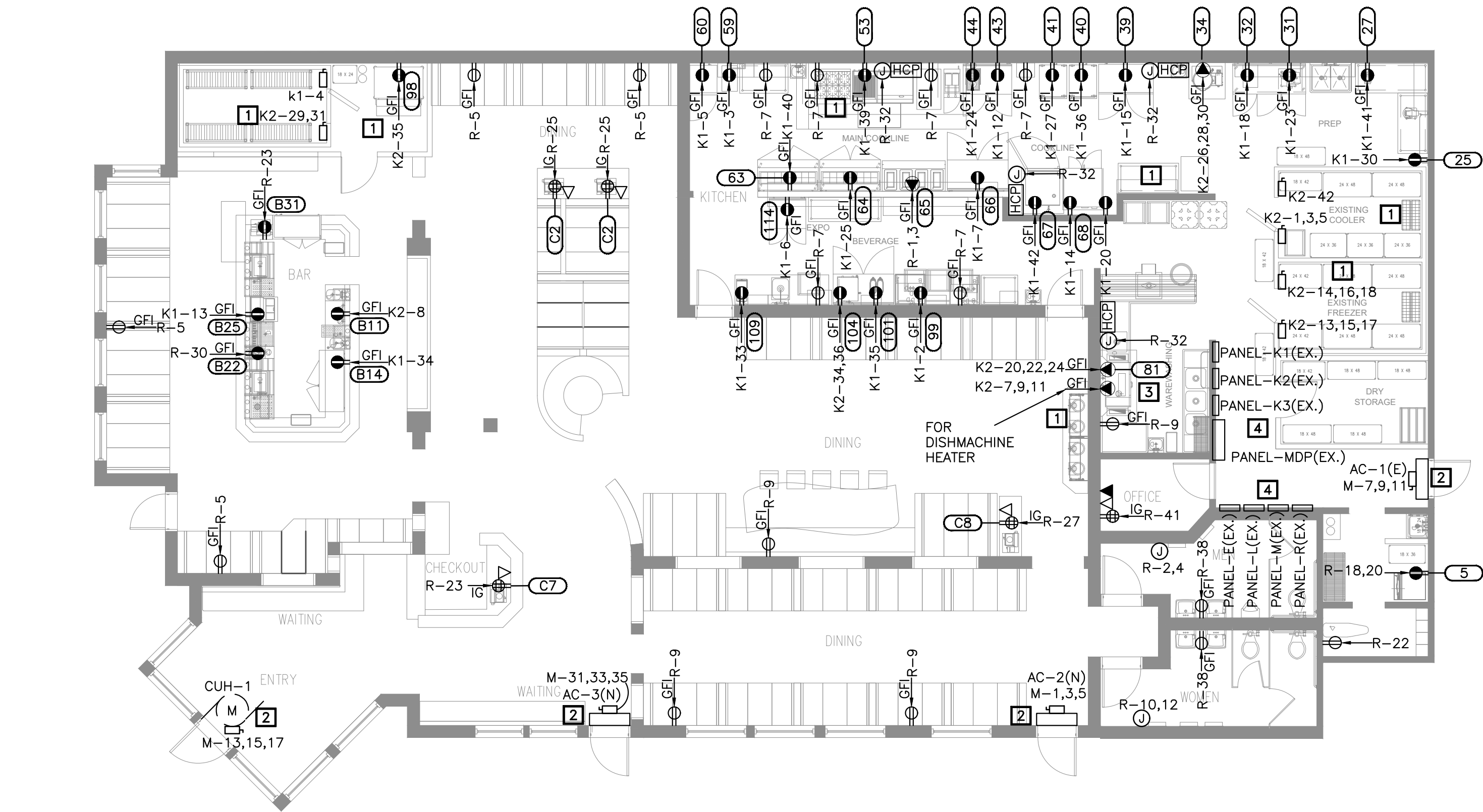
LIGHTING PLAN KEYED NOTES: 7

- CONNECT ALL EMERGENCY EGRESS AND NIGHT LIGHTING FIXTURES TO THE NEAREST LIGHTING BRANCH CIRCUIT AHEAD OF ALL SWITCHING AND CONTROLS PER STATE AND LOCAL CODES.
- LIGHTING SWITCH BANK FOR SPACE. COORDINATE FINAL LOCATION WITH ARCHITECT/OWNER.
- TIME CLOCK MANUAL OVERRIDE SWITCH.
- PROVIDE WALL MOUNTED OCCUPANCY SENSOR WITH SWITCH.
- PROVIDE WEATHERPROOF JUNCTION BOX AND TOGGLE TYPE 20A-1P DISCONNECT SWITCH IN AN ACCESSIBLE LOCATION FOR SIGNAGE. COORDINATE EXACT REQUIREMENTS WITH SIGN CONTRACTOR. VERIFY LOCATION PRIOR TO ROUGH-IN.
- EXISTING LIGHTING FIXTURES ALONG WITH ITS CIRCUIT AND CONTROL TO REMAIN. E.C. SHALL VERIFY THE OPERABLE CONDITION OF FIXTURE, CIRCUIT AND CONTROL IN FIELD. REPLACE IF INOPERABLE. BASE BID ACCORDINGLY.
- WEATHER PROOF EXTERIOR EMERGENCY LIGHTS. COORDINATE EXACT LOCATION WITH ARCHITECT/OWNER.

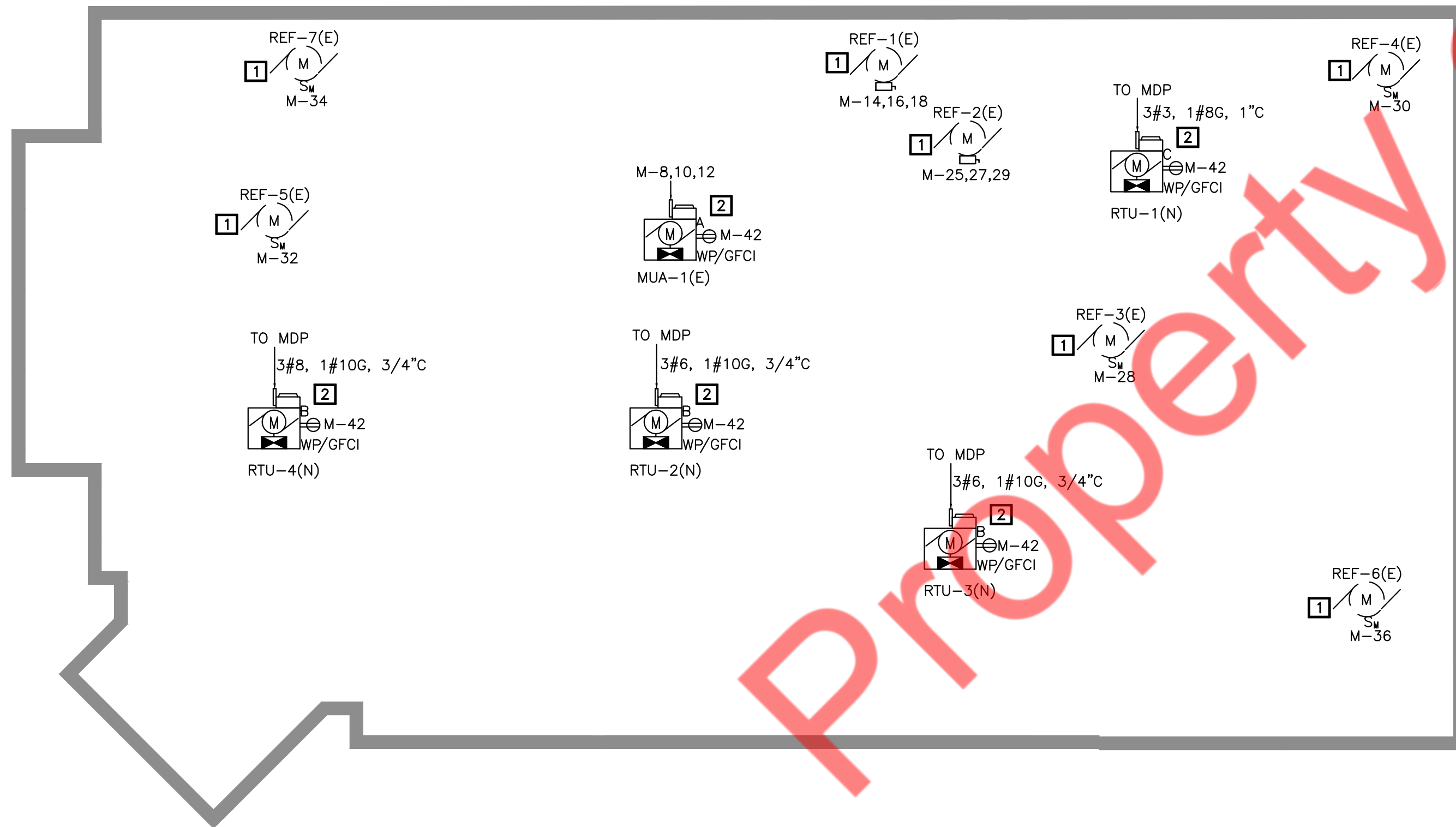


03-DETAIL (PE CONTROL FOR OUTDOOR FIXTURES)

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1 ELECTRICAL FLOOR POWER PLAN
1/8" = 1'-0"



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

POWER PLAN GENERAL NOTES:

- EXISTING MECHANICAL/PLUMBING EQUIPMENTS ON CEILING/ROOF SHALL REMAIN CONNECTED TO EXISTING ELECTRICAL PANELS. E.C. SHALL COORDINATE WITH ARCHITECT/OWNER FOR EXISTING ELECTRICAL CONNECTIONS FEEDING TO ALL TYPE OF EQUIPMENTS. E.C. SHALL VERIFY ALL CIRCUIT CONNECTIONS AND THEIR OPERABLE CONDITIONS IN FIELD. INFORM ENGINEER ON RECORD FOR ANY DISCREPANCY.
- PRIOR TO ANY FLOOR SLAB CUTTING/TRENCHING/CORING/ETC. GC SHALL X-RAY SLAB PRIOR TO ANY WORK STARTING. GC SHALL COORDINATE X-RAY WITH ON-SITE MALL OPERATIONS MANAGER PRIOR TO WORK STARTING.
- ALL EXISTING AND NEW PENETRATIONS THROUGH RATED WALLS SHALL BE PROTECTED BY AN APPROVED FIRE STOP SYSTEM. COORDINATE WITH ON-SITE MALL OPERATIONS MANAGER.
- ALL FLOOR PENETRATIONS MUST BE SLEEVED AND SEALED LIQUID TIGHT.
- ATTACHMENT TO UNDERSIDE OF METAL DECK/SLAB AND OR/BOTTOM CHORD OF JOISTS NOT ALLOWED. ANY ATTACHMENTS TO LANDLORD'S STRUCTURE SHALL BE FROM TOP CHORD OF JOISTS ONLY.
- ANY PENETRATIONS OF, OR MODIFICATIONS TO, STRUCTURAL STEEL OR CONCRETE MUST BE COORDINATED WITH ON-SITE MALL OPERATIONS MANAGER AND MAY NEED TO BE REVIEWED BY MALL APPROVED STRUCTURAL ENGINEER AT TENANT'S COST. HOT WORK PERMIT MUST BE OBTAINED A MINIMUM OF 24 HOURS IN ADVANCE OF HOT WORK. A NEW HOT WORK PERMIT MUST BE OBTAINED EACH DAY THAT HOT WORK WILL BE PERFORMED.
- HOT WORK PERMIT MUST BE OBTAINED A MINIMUM OF 24 HOURS IN ADVANCE OF HOT WORK. A NEW HOT WORK PERMIT MUST BE OBTAINED EACH DAY THAT HOT WORK WILL BE PERFORMED.
- TENANT GC MUST CONTRACT WITH A CERTIFIED FIRESTOP PROFESSIONAL TO FIRE STOP ALL FLOOR PENETRATIONS TO PROVIDE A RATING REQUIRED BY CODE AND CRITERIA.

FLOOR POWER PLAN KEYED NOTES: 1

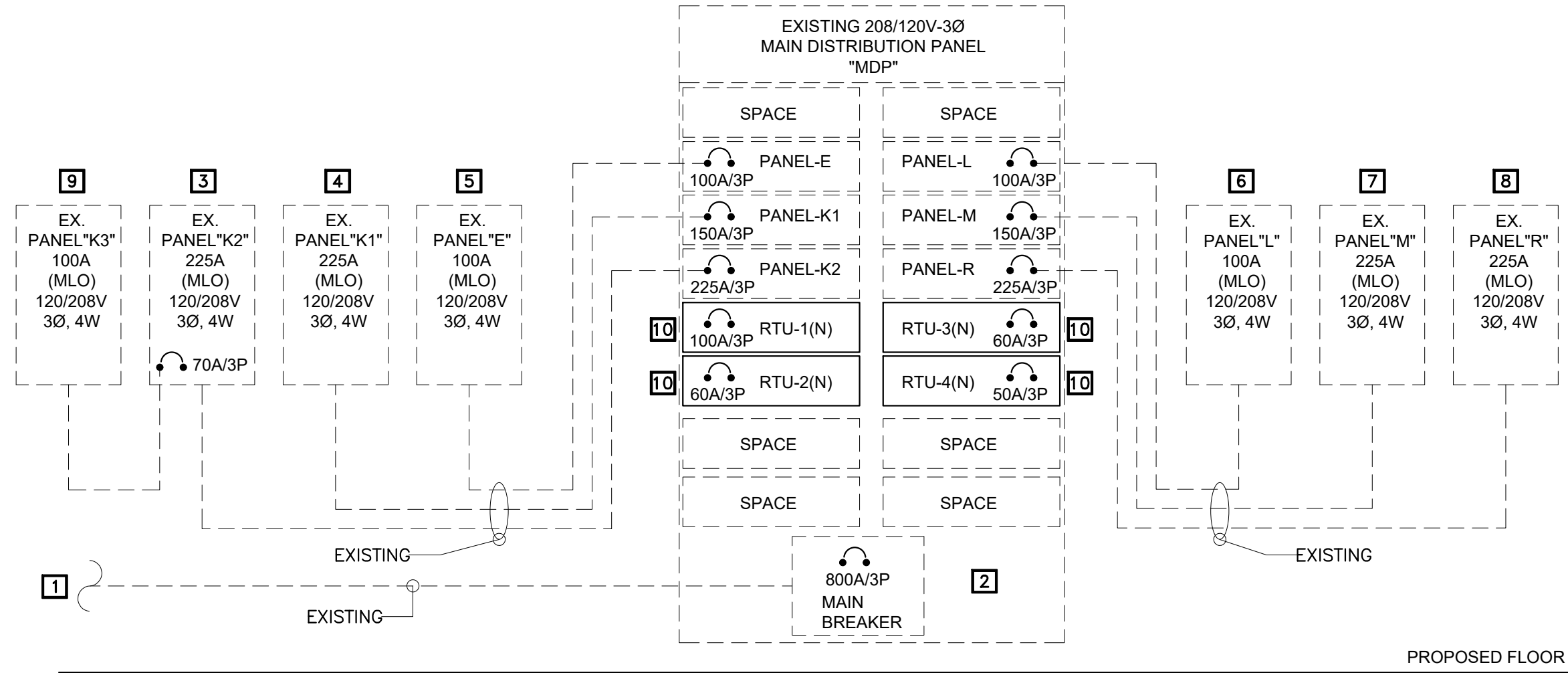
- EXISTING ELECTRICAL EQUIPMENT ALONG WITH ITS CIRCUIT AND CONTROL TO REMAIN. E.C. SHALL VERIFY RATING AND OPERABLE CONDITION OF CIRCUIT AND CONTROL. REPLACE IF INOPERABLE. BASE BID ACCORDINGLY.
- E.C. SHALL COORDINATE WITH MECHANICAL CONTRACTOR FOR EXACT LOCATION AND POWER REQUIREMENT OF MECHANICAL EQUIPMENT. PROVIDE NEW CIRUIT AND DISCONNECT WHERE EVER REQUIRED.
- EXISTING PLUMBING EQUIPMENTS ALONG WITH ITS CIRCUIT AND CONTROL TO REMAIN. E.C. SHALL VERIFY RATING AND OPERABLE CONDITION OF EQUIPMENTS IN FIELD. REPLACE IF INOPERABLE. BASE BID ACCORDINGLY.
- EXISTING ELECTRICAL PANELS TO REMAIN. E.C. SHALL VERIFY EXACT LOCATION OF PANELS IN FIELD.

ELECTRICAL EQUIPMENT SCHEDULE					
EQUIPMENT DETAIL	TYPE	QUANT.	VOLTS	PHASE	AMPS
25-PLANETARY MIXER	GENERAL	1	115	1	5
27-FOOD PROCESSOR	GENERAL	1	115	1	7
31-FOOD SLICER	GENERAL	1	115	1	3
32-REFRIGERATED WORKTOP	GENERAL	1	115	1	4
34-ELECTRIC KETTLE	GENERAL	1	208	3	33
39-REACH-IN REFRIGERATOR	GENERAL	1	115	1	5.4
40-HEATED CABINET	GENERAL	1	115	1	16.7
41-HEATED CABINET	GENERAL	1	115	1	16.7
43-WORKTOP FREEZER	GENERAL	1	115	1	3.2
44-FRY WARMER	GENERAL	1	115	1	4.8
53-REFRIGERATED QUIPMENT	GENERAL	1	115	1	8.1
59-ICE CREAM CABINET	GENERAL	1	115	1	2.1
60-REACH-IN REFRIGERATOR	GENERAL	1	115	1	2.2
63-SALAD/SANDWICH PREP	GENERAL	1	115	1	6.5
64-SALAD/SANDWICH PREP	GENERAL	1	115	1	6.5
65-HOT WELLS	GENERAL	1	208	1	18.32
66-WORKTOP REFRIGERATOR	GENERAL	1	115	1	4
67-COMBI OVEN	GENERAL	1	115	1	8
68-DOUBLE CONVECTION	GENERAL	2	115	1	9.8
81-DISH MACHINE	GENERAL	1	208	3	55
93-ICE MAKER	GENERAL	1	115	1	8
98-ICE MAKER	GENERAL	1	115	1	8
99-SODA ICE DISPENSER	GENERAL	1	115	1	15
101-WT REFRIGERATOR	GENERAL	1	115	1	2
104-COFFEE TEA BREWER	GENERAL	1	208	1	25
109-COFFEE BREWER	GENERAL	1	115	1	14
114-REFRIGERATED WORKTOP	GENERAL	1	115	1	2
B11-UC GLASS WASHER	GENERAL	1	115	1	16
B14-BBC REFRIGERATED	GENERAL	1	115	1	2.7
B22-BLENDER STATION	GENERAL	1	115	1	10
B25-BOTTLE COOLER	GENERAL	1	115	1	1.4
B30-BOTTLE COOLER	GENERAL	1	115	1	1.4
B31-BBC REFRIGERATED	GENERAL	1	115	1	2.1

ROOF POWER PLAN KEYED NOTES: 1

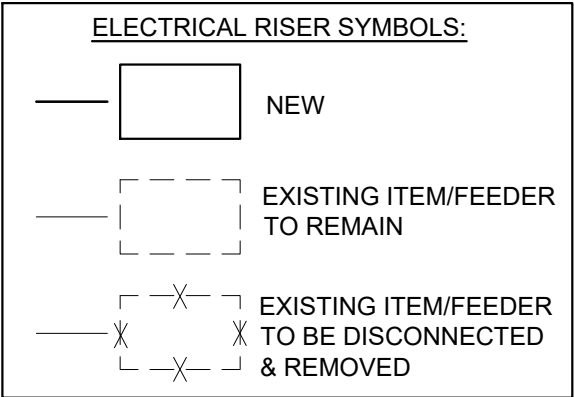
- EXISTING MECHANICAL EQUIPMENT ALONG WITH ITS CIRCUIT AND CONTROL TO REMAIN. E.C. SHALL VERIFY RATING AND OPERABLE CONDITION OF CIRCUIT AND CONTROL. REPLACE IF INOPERABLE. BASE BID ACCORDINGLY.
- E.C. SHALL COORDINATE WITH MECHANICAL CONTRACTOR FOR EXACT LOCATION AND POWER REQUIREMENT OF MECHANICAL EQUIPMENT. PROVIDE NEW CIRCUIT AND DISCONNECT ACCORDINGLY.

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ELECTRICAL RISER KEYED NOTES:

- EXISTING 800A, 120/208V, 3Ø ELECTRICAL SERVICE FEEDER FROM EXISTING METER TO REMAIN. E.C. SHALL VERIFY EXACT POWER DISTRIBUTION IN FIELD. INFORM ENGINEER ON RECORD FOR ANY DISCREPANCY.
- EXISTING 800A, 120/208V, 3Ø ELECTRICAL MAIN DISTRIBUTION PANEL "MDP" TO REMAIN. E.C. SHALL COORDINATE WITH OWNER/LANDLORD FOR EXACT LOCATION OF THE SWITCHBOARD IN FIELD. E.C. SHALL VERIFY EXACT RATING AND OPERABLE CONDITION OF PANEL AND ITS OUTGOING FEEDERS IN FIELD. REPLACE IF INOPERABLE. BASE BID ACCORDINGLY.
- EXISTING 225A, 120/208V, 3Ø ELECTRICAL PANEL "K2" TO REMAIN. E.C. TO VERIFY LOCATION, RATING AND OPERABLE CONDITION OF THE PANEL IN FIELD. REPLACE IF FOUND IN OPERABLE. BASE BID ACCORDINGLY.
- EXISTING 225A, 120/208V, 3Ø ELECTRICAL PANEL "K1" TO REMAIN. E.C. TO VERIFY LOCATION, RATING AND OPERABLE CONDITION OF THE PANEL IN FIELD. REPLACE IF FOUND IN OPERABLE. BASE BID ACCORDINGLY.
- EXISTING 100A, 120/208V, 3Ø ELECTRICAL PANEL "E" TO REMAIN. E.C. TO VERIFY LOCATION, RATING AND OPERABLE CONDITION OF THE PANEL IN FIELD. REPLACE IF FOUND IN OPERABLE. BASE BID ACCORDINGLY.
- EXISTING 100A, 120/208V, 3Ø ELECTRICAL PANEL "L" TO REMAIN. E.C. TO VERIFY LOCATION, RATING AND OPERABLE CONDITION OF THE PANEL IN FIELD. REPLACE IF FOUND IN OPERABLE. BASE BID ACCORDINGLY.
- EXISTING 225A, 120/208V, 3Ø ELECTRICAL PANEL "M" TO REMAIN. E.C. TO VERIFY LOCATION, RATING AND OPERABLE CONDITION OF THE PANEL IN FIELD. REPLACE IF FOUND IN OPERABLE. BASE BID ACCORDINGLY.
- EXISTING 225A, 120/208V, 3Ø ELECTRICAL PANEL "R" TO REMAIN. E.C. TO VERIFY LOCATION, RATING AND OPERABLE CONDITION OF THE PANEL IN FIELD. REPLACE IF FOUND IN OPERABLE. BASE BID ACCORDINGLY.
- EXISTING 100A, 120/208V, 3Ø ELECTRICAL PANEL "K3" TO REMAIN. E.C. TO VERIFY LOCATION, RATING AND OPERABLE CONDITION OF THE PANEL IN FIELD. REPLACE IF FOUND IN OPERABLE. BASE BID ACCORDINGLY.
- E.C. TO VERIFY POWER REQUIREMENT FOR MECHANICAL EQUIPMENTS AND PROVIDE NEW BREKAER AND BRANCH CIRCUIT ACCORDINGLY.



GENERAL NOTE:

- E.C. SHALL VERIFY INCOMING SERVICE AMPERAGE, WIRE SIZING AND DISTRIBUTION.
- ELECTRICAL CONTRACTOR TO COORDINATE FAULT CURRENT (ISC) RATING WITH UTILITY COMPANY AND AHJ PRIOR TO BID.
- CONTRACTOR SHALL INSPECT EXISTING ELECTRICAL GEAR PROPOSED FOR REUSE OR PROPOSED TO TIE INTO TO VERIFY SUITABILITY FOR REUSE OR CONNECTION THERETO AND NOTIFY ARCHITECT / ENGINEER OF ANY GROUND DEFICIENCIES.
- E.C. SHALL VERIFY IF THE DEDICATED METER EXISTS FOR THE SPACE. PROVIDE NEW METER AND CT CABINET IF REQUIRED. COORDINATE WITH OWNER/LANDLORD FOR PROVIDING NEW METER.
- FINAL CONNECTION OF TENANT'S ELECTRICAL SERVICE SHALL BE BY LANDLORD'S REQUIRED ELECTRICAL CONTRACTOR AT TENANT'S EXPENSE. VERIFY REQUIREMENTS WITH ON-SITE MALL OPERATIONS MANAGER.

PANEL SCHEDULE GENERAL NOTES:

- ALL CIRCUITING SHOWN IS FOR REFERENCE PURPOSE ONLY. E.C. SHALL VERIFY CIRCUITING OF THE EXISTING DEVICES IN FIELD AND INFORM ENGINEER OF DISCREPANCIES.
- ELECTRICAL CONTRACTOR TO VERIFY THE EXACT PANEL SIZES AND INCOMING FEEDER SIZE.
- ELECTRICAL CONTRACTOR SHALL VERIFY EXACT CIRCUIT NUMBER & BREAKER SIZE OF EXISTING DEVICES IN FIELD.
- EXISTING MECHANICAL/PLUMBING EQUIPMENTS ON CEILING/ROOF SHALL REMAIN CONNECTED TO EXISTING ELECTRICAL PANELS. E.C. SHALL COORDINATE WITH ARCHITECT/OWNER FOR EXISTING ELECTRICAL CONNECTIONS FEEDING TO ALL TYPE OF EQUIPMENTS. E.C. SHALL VERIFY ALL CIRCUIT CONNECTIONS AND THEIR OPERABLE CONDITIONS IN FIELD. INFORM ENGINEER ON RECORD FOR ANY DISCREPANCY.

PANEL:	E	(EXISTING)										MOUNTING:	RECESSED	
120/208	VOLTS		3	PHASE	4	WIRE					PANEL LOCATION:		EXISTING	
MLO	100A		BUS:	125A	MINIMUM						FED FROM:		MDP	
NOTE:														
CKT NO.	TRIP AMPS	DESCRIPTION OF LOAD	LOAD TYPE	LOAD (KVA)	MINIMUM BRANCH CIRCUIT	PER PHASE (KVA)			MINIMUM BRANCH CIRCUIT	LOAD (KVA)	LOAD TYPE	DESCRIPTION OF LOAD	TRIP AMPS	CKT NO.
						A	B	C						
1	20	LTG - EXTERIOR	L	0.20	2#12, 1#12, 3/4"C	0.70			EXISTNG	0.50	L	LIGHTING CONTROL	20	2
3	20	LTG - EXTERIOR	L	0.50	EXISTING		0.50					SPARE	20	4
5	20	LTG - EXTERIOR	L	1.00	EXISTING			1.00				SPARE	20	6
7	20	LTG - EXTERIOR	L	0.50	EXISTING	1.00			EXISTING	0.50	L	BUILDING SIGNAGE - REAR	20	8
9	20	LTG - EXTERIOR	L	0.50	EXISTING		1.00		EXISTING	0.50	L	BUILDING SIGNAGE - FRONT	20	10
11	20	SPARE						0.00				SPARE	20	12
13	20	SPARE				0.00						SPARE	20	14
15	20	SPARE					0.00					SPARE	20	16
17	20	SPARE						0.00				SPARE	20	18
19	20	LTG - EXTERIOR		0.50	EXISTNG	0.50						SPARE	20	20
21	20	LTG - EXTERIOR		0.50	EXISTNG		0.50					SPARE	20	22
23	20	LTG - EXTERIOR		1.00	EXISTNG			1.00				SPARE	20	24
25	20	LTG - EXTERIOR		0.50	EXISTNG	0.50						SPARE	20	26
27	20	LTG - EXTERIOR		0.50	EXISTNG		0.50					SPARE	20	28
29	30	SPARE						0.00				SPARE	20	30
						2.70	2.50	2.00						

PANEL:		L	(EXISTING)									MOUNTING:		RECESSED				
120/208		VOLTS		3	PHASE		4	WIRE								PANEL LOCATION:		EXISTING
MLO		100A		BUS:	125A		MINIMUM									FED FROM:		MDP
NOTE:																		
CKT NO.	TRIP AMPS	DESCRIPTION OF LOAD	LOAD TYPE	LOAD (KVA)	MINIMUM BRANCH CIRCUIT	PER PHASE (KVA)			MINIMUM BRANCH CIRCUIT	LOAD (KVA)	LOAD TYPE	DESCRIPTION OF LOAD	TRIP AMPS	CKT NO.				
						A	B	C										
1	20	LIGHTING - KITCHEN	L	0.50	2#12, 1#12, 3/4"C	1.00			2#12, 1#12, 3/4"C	0.50	L	LIGHTING - DINING	20	2				
3	20	LIGHTING - UTILITY	L	1.00	EXISTNG		2.00		2#12, 1#12, 3/4"C	1.00	L	LIGHTING - DINING	20	4				
5	20	LTG & HEAT - FREEZER/COOLER	L	1.00	2#12, 1#12, 3/4"C			2.00	2#12, 1#12, 3/4"C	1.00	L	LIGHTING - DINING	20	6				
7	20	LTG- BAR	L	1.00	2#12, 1#12, 3/4"C	2.00			2#12, 1#12, 3/4"C	1.00	L	LIGHTING - DINING	20	8				
9	20	LTG- BAR	L	1.00	2#12, 1#12, 3/4"C		2.00		EXISTNG	1.00	L	LIGHTING - DINING	20	10				
11	20	LTG - LAV/REF-6	L	1.00	EXISTING			2.00	2#12, 1#12, 3/4"C	1.00	L	OFFICE/JANITOR/MECH.	20	12				
13	20	LTG- ENTRANCE	L	1.00	2#12, 1#12, 3/4"C	2.00			EXISTNG	1.00	H	CEILING FANS	20	14				
15	20	LTG - NL/EM/EXIT	L	0.50	EXISTING		1.00		EXISTNG	0.50	H	CEILING FANS	20	16				
17	20	LTG - KITCHEN	L	1.00	2#12, 1#12, 3/4"C			2.00	EXISTNG	1.00	L	DRY STORAGE	20	18				
19	20	LTG - BAR	L	1.00	2#12, 1#12, 3/4"C	1.00						SPARE	20	20				
21	20	SPARE					1.00		2#12, 1#12, 3/4"C	1.00	L	LTG - BEER COOLER	20	22				
23	20	SPARE						0.00				SPARE	20	24				
25	20	SPARE				0.00						SPARE	20	26				
27	20	SPARE					0.00					SPARE	20/2P	28				
29	30	SPARE						0.00						30				
						6.00	6.00	6.00										

PANEL:	M	(EXISTING)										MOUNTING:		RECESSED	
120/208	VOLTS		3	PHASE	4	WIRE				PANEL LOCATION: EXISTING					
MLO	225A		BUS:	225A	MINIMUM				FED FROM: MDP						
NOTE:															
CKT NO.	TRIP AMPS	DESCRIPTION OF LOAD	LOAD TYPE	LOAD (KVA)	MINIMUM BRANCH CIRCUIT	PER PHASE (KVA)			MINIMUM BRANCH CIRCUIT	LOAD (KVA)	LOAD TYPE	DESCRIPTION OF LOAD	TRIP AMPS	CKT NO.	
						A	B	C							
1	30/3P	AC-2 (N)	H	2.80	3#10, 1#10, 3/4"C	2.80						SPARE	20/3P	2	
3			H	2.80			2.80				4				
5			H	2.80				2.80						6	
7	30/3P	AC-1(E)	H	2.80	EXISTING	4.60			EXISTING	1.80	H	MUA-1 (E)	20/3P	8	
9			H	2.80			4.60			1.80	H			10	
11			H	2.80				4.60		1.80	H			12	
13	20/3P	CUH-1(E)	H	1.90	EXISTING	2.80			EXISTING	0.90	H	REF-1(E)	20/3P	14	
15			H	1.90			2.80			0.90	H			16	
17			H	1.90				2.80		0.90	H			18	
19	20/3P	UH-1 (E)	H	0.50	EXISTING	0.50						SPARE	20/3P	20	
21			H	0.50			0.50							22	
23			H	0.50				0.50						24	
25	20/3P	REF-2(E)	H	0.30	EXISTING	0.80			EXISTING	0.50	H	BAR FANS F-1 (E) , F-2 (E)	20	26	
27			H	0.30			0.90		EXISTING	0.60	H	REF-3 (E)	20	28	
29			H	0.30				0.90	EXISTING	0.60	H	REF-4 (E)	20	30	
31	30/3P	AC-3 (N)	H	2.80	3#10, 1#10, 3/4"C	3.40			EXISTING	0.60	H	REF-5 (E)	20	32	
33			H	2.80			3.40		EXISTING	0.60	H	REF-7 (E)	20	34	
35			H	2.80				3.40	EXISTING	0.60	H	REF-6 (E)	20	36	
37	15	AC-4 (N)	H	0.58	2#12, 1#12, 3/4"C	0.58						SPARE	20	38	
39	15	AC-5 (N)	H	0.58	2#12, 1#12, 3/4"C		0.58					SPARE	20	40	
41		SPACE						0.90	2#12, 1#12, 3/4"C	0.90	R	WP/GFCI SERVICE RECEPATCLE	20	42	
						15.48	15.58	15.90							

Comm # 211008
Scale As Mentioned
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Drawn by: NYE
Checked by: NYE
Issue: Date
Schematic Design 01/11/2022
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Permit Set 06/23/2022
Revision Number Date

PANEL:	K1	(EXISTING)									MOUNTING:	RECESSED		
120/208	VOLTS		3	PHASE	4	WIRE					PANEL LOCATION:	EXISTING		
MLO	225A		BUS:	225A	MINIMUM						FED FROM:	EXISTING		
NOTE:														
CKT NO.	TRIP AMPS	DESCRIPTION OF LOAD	LOAD TYPE	LOAD (KVA)	MINIMUM BRANCH CIRCUIT	PER PHASE (KVA)			MINIMUM BRANCH CIRCUIT	LOAD (KVA)	LOAD TYPE	DESCRIPTION OF LOAD	TRIP AMPS	CKT NO.
						A	B	C						
1	20	SPARE				1.80			2#12, 1#12, 3/4"C	1.80	E	99-SODA ICE DISPENSER	20	2
3	20	59-ICE CREAM CABINET	E	0.30	2#12, 1#12, 3/4"C		1.02		2#12, 1#12, 3/4"C	0.72	M	BEER COOLER EVAPORATOR	20	4
5	20	60-REACH IN REFRIGERATOR	E	0.30	2#12, 1#12, 3/4"C			0.53	2#12, 1#12, 3/4"C	0.23	E	114-WT REFRIGERATOR	20	6
7	20	66-WT REFRIGERATOR	E	0.40	2#12, 1#12, 3/4"C	0.40						SPARE	20	8
9	20	SPARE					0.00					SPARE	20	10
11	20	SPARE						0.37	2#12, 1#12, 3/4"C	0.37	E	43-WT FRIDGE	20	12
13	20	B25-BOTTLE COOLER	E	0.10	2#12, 1#12, 3/4"C	1.20			2#12, 1#12, 3/4"C	1.10	E	68-DOUBLE CONVECTION OVEN	20	14
15	20	39-REACH IN REFRIGERATOR	E	0.62	2#12, 1#12, 3/4"C		0.62					SPARE	20	16
17	20	SPARE						0.46	2#12, 1#12, 3/4"C	0.46	E	32-WT REFRIGERATOR	20	18
19	20	SPARE				1.10			2#12, 1#12, 3/4"C	1.10	E	68-DOUBLE CONVECTION OVEN	20	20
21	20	SPARE					0.00					SPARE	20	22
23	20	31-SLICER	E	0.35	2#12, 1#12, 3/4"C			0.90	2#12, 1#12, 3/4"C	0.55	E	44-FRY WARMER	20	24
25	20	64-SANDWICH UNIT	E	0.75	2#12, 1#12, 3/4"C	0.75						SPARE	20	26
27	30	41-HEATED CABINET	E	1.80	2#12, 1#12, 3/4"C		1.80					SPARE	20	28
29	20	SPARE						0.58	2#12, 1#12, 3/4"C	0.58	E	25-PLANETORY MIXER	20	30
31	20	SPARE				0.00						SPARE	20	32
33	20	109-COFFEE BREWER	E	0.23	2#12, 1#12, 3/4"C		0.54		2#12, 1#12, 3/4"C	0.31	E	B14-BACKBAR COLLER	20	34
35	20	101-WT RREFRIGERATOR	E	0.23	2#12, 1#12, 3/4"C			2.03	2#12, 1#12, 3/4"C	1.80	E	40-HEATED CABINET	30	36
37	20	SPARE				0.00						SPARE	20	38
39	20	53-REFIGERATED EQUIPMENT BASE	E	0.93	2#12, 1#12, 3/4"C		1.68		2#12, 1#12, 3/4"C	0.75	E	63-SANDWICH UNIT	20	40
41	20	27-FOOD PROCESSOR	E	0.81	2#12, 1#12, 3/4"C			1.73	2#12, 1#12, 3/4"C	0.92	E	67-COMBI OVEN	20	42
						5.25	5.66	6.59						

- PANEL SCHEDULE GENERAL NOTES:
- ALL CIRCUITING SHOWN IS FOR REFERENCE PURPOSE ONLY. E.C. SHALL VERIFY CIRCUITING OF THE EXISTING DEVICES IN FIELD AND INFORM ENGINEER OF DISCREPANCIES.
 - ELECTRICAL CONTRACTOR TO VERIFY THE EXACT PANEL SIZES AND INCOMING FEEDER SIZE.
 - ELECTRICAL CONTRACTOR SHALL VERIFY EXACT CIRCUIT NUMBER & BREAKER SIZE OF EXISTING DEVICES IN FIELD.
 - EXISTING MECHANICAL/PLUMBING EQUIPMENTS ON CEILING/ROOF SHALL REMAIN CONNECTED TO EXISTING ELECTRICAL PANELS. E.C. SHALL COORDINATE WITH ARCHITECT/OWNER FOR EXISTING ELECTRICAL CONNECTIONS FEEDING TO ALL TYPE OF EQUIPMENTS. E.C. SHALL VERIFY ALL CIRCUIT CONNECTIONS AND THEIR OPERABLE CONDITIONS IN FIELD. INFORM ENGINEER ON RECORD FOR ANY DISCREPANCY.

PANEL:	K2	(EXISTING)											MOUNTING:	RECESSED		
120/208	VOLTS		3	PHASE	4	WIRE								PANEL LOCATION:	EXISTING	
MLO	225A		BUS:	225A	MINIMUM									FED FROM:	EXISTING	
NOTE:																
CKT NO.	TRIP AMPS	DESCRIPTION OF LOAD	LOAD TYPE	LOAD (KVA)	MINIMUM BRANCH CIRCUIT	PER PHASE (KVA)			MINIMUM BRANCH CIRCUIT	LOAD (KVA)	LOAD TYPE	DESCRIPTION OF LOAD	TRIP AMPS	CKT NO.		
1	20/3P	COOLER CONDENSER	M	1.80	EXISTING	1.80	B	C				SPARE	20/2P	2		
3			M	1.80			1.80							4		
5			M	1.80				1.80						6		
7	50/3P	DISHMACHINE BOOSTER HEATER	E	5.00	3#8, 1#10, 3/4"C	5.72	5.00		2#12, 1#12, 3/4"C	0.72	E	B11-GLASS WASHER	20	8		
9			E	5.00				0.00		SPARE	20/2P			10		
11			E	5.00			5.00	0.00						12		
13	20/3P	FREEZER CONDENSOR	M	1.80	EXISTING	3.60			EXISTING	1.80	E	FREEZER EVAPORATOR	20/3P	14		
15			M	1.80			3.60	1.80		E	16					
17			M	1.80				3.60		1.80	E			18		
19	20/2P	SPARE				6.60			3#6, 1#10, 3/4"C	6.60	E	81-DSIH WASHER / MACHINE	60/3P	20		
21							6.60			6.60	E			22		
23			E	1.80				8.40		6.60	E			24		
25	20/3P	MIXER	E	1.80	EXISTING	6.10			3#8, 1#10, 3/4"C	4.30	E	34-KETTLE	45/3P	26		
27			E	1.80			6.10	4.30		E	28					
29			M	1.80				6.10		4.30	E			30		
31	20/3P	BEER COOLER CONDENSER	M	1.80	EXISTING	3.60			EXISTING	1.80	M	BOOSTER	20	32		
33			M	1.80			5.10			3.30	E			34		
35			20	98-ICE MAKER		E	0.80	2#12, 1#12, 3/4"C			4.10			3.30	E	104-COFFEE,TEA BREWER
37	100/3P	PANEL K3	O	0.50	EXISTING	0.50						SPARE	60/2P	38		
39			O	0.50			0.50				40					
41			O	0.50				1.22		0.72	E			COOLER EVAPORATOR	20	42
						27.92	28.70	30.22								

PANEL:		R	(EXISTING)									MOUNTING:		RECESSED
120/208	VOLTS		3	PHASE	4	WIRE					PANEL LOCATION:		EXISTING	
MLO	225A		BUS:	225A	MINIMUM						FED FROM:		MDP	
NOTE:														
CKT NO.	TRIP AMPS	DESCRIPTION OF LOAD	LOAD TYPE	LOAD (KVA)	MINIMUM BRANCH CIRCUIT	PER PHASE (KVA)			MINIMUM BRANCH CIRCUIT	LOAD (KVA)	LOAD TYPE	DESCRIPTION OF LOAD	TRIP AMPS	CKT NO.
1	20/2P	65-HOT WELL	E	1.80	2#12, 1#12, 3/4"C	3.60			EXISTING	1.80	O	MENS - HAND DRYER	20/2P	2
3			E	1.80			3.60			1.80	O			4
5	20	DINING - GENERAL RECEPTACLE	R	1.80	2#12, 1#12, 3/4"C			1.80				SPARE	20/2P	6
7	20	KITCHEN - GENERAL RECEPTACLE	R	1.80	2#12, 1#12, 3/4"C	1.80								8
9	30	DINING - GENERAL RECEPTACLE	R	1.80	2#12, 1#12, 3/4"C		1.80		EXISTING	0.00	O	WOMENS - HAND DRYER	20/2P	10
11	20	SPARE					0.00			0.00	O			12
13	20/2P	EBH -BASE BOARD HEATER	H	1.80	EXISTING	1.80						SPARE	20/2P	14
15			H	1.80			1.80				16			
17	20/2P	EBH -BASE BOARD HEATER	H	1.80	EXISTING			4.20	2#12, 1#12, 3/4"C	2.40	E	WASHER DRYER	30/2P	18
19			H	1.80		4.20				2.40	E			20
21	20	SPARE					1.80		EXISTING	1.80	E	IRON CENTER	20	22
23	20	POS	R	1.80	2#12, 1#12, 3/4"C			3.60	EXISTING	1.80	R	TTB	20	24
25	20	POS	R	0.54	2#12, 1#12, 3/4"C	0.64			EXISTING	0.10	M	RCP-1	20	26
27	20	POS	R	1.08	2#12, 1#12, 3/4"C		2.88		EXISTING	1.80	O	WH-1	20	28
29	20							1.80	2#12, 1#12, 3/4"C	1.80	E	B22-BLENDER STATION	20	30
31	20					1.80			2#12, 1#12, 3/4"C	1.80	E	HCP-HOOD CONTROL PANEL	20	32
33	20						1.80		EXISTING	1.80	O	AUDIO SYATEM	20	34
35	20							1.80	EXISTING	1.80	E	FAAP	20	36
37	20					1.80			2#12, 1#12, 3/4"C	1.80	R	WASHROOM GFI RECEPTACLE	20	38
39	20	MAG LOCKS	R	1.80	EXISTING		1.80					SPARE	20	40
41	20	OFFICE QUAD RECEPTACLE	R	1.80	2#12, 1#12, 3/4"C			1.80				SPARE	20	42
						15.64	15.48	15.00						

PANEL:		K3	(EXISTING)									MOUNTING:		RECESSED	
120/208	VOLTS		3	PHASE	4	WIRE					PANEL LOCATION:		EXISTING		
MLO	100A		BUS:	125A	MINIMUM						FED FROM:		EXISTING		
NOTE:															
CKT NO.	TRIP AMPS	DESCRIPTION OF LOAD	LOAD TYPE	LOAD (KVA)	MINIMUM BRANCH CIRCUIT	PER PHASE (KVA)			MINIMUM BRANCH CIRCUIT	LOAD (KVA)	LOAD TYPE	DESCRIPTION OF LOAD	TRIP AMPS	CKT NO.	
1	20/2P	SPARE				0.00	B	C				SPARE	30	2	
3							0.00								
5	20/2P	SPARE						0.00				SPARE	20	6	
7						0.00									
9	20	HOOD LIGHT	L	1.80	EXISTING		1.80					SPACE		10	
11		SPACE						0.00				SPACE		12	
13		SPACE				0.00						SPACE		14	
15		SPACE					0.00					SPACE		16	
17		SPACE						0.00				SPACE		18	
19		SPACE				0.00						SPACE		20	
21		SPACE					0.00					SPACE		22	
23		SPACE						0.00				SPACE		24	
25		SPACE				0.00						SPACE		26	
27		SPACE					0.00					SPACE		28	
29		SPACE						0.00				SPACE		30	
						0.00	1.80	0.00							

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PLUMBING FIXTURE SCHEDULE					
SYMBOL	FIXTURE TYPE	MANUF.	MODEL	DESCRIPTION	ACCESSORIES/OPTION
WC	WATER CLOSET (ACCESSIBLE)	EXISTING TO REMAIN	EXISTING TO REMAIN	EXISTING TO REMAIN	EXISTING TO REMAIN
LAV	LAVATORY (ACCESSIBLE)	EXISTING TO REMAIN	EXISTING TO REMAIN	EXISTING TO REMAIN	EXISTING TO REMAIN
FD	FLOOR DRAIN	SIOUX CHIEF/ ZURN	832-35D-NR/ #ZN415-B-3NH	FLOOR DRAIN WITH 5" ROUND NICKEL BRONZE ADJUSTABLE STRAINER & 3" BOTTOM OUTLET.	PROVIDE WITH TRAP PRIMER CONNECTION AND WITH ASSE 1072 APPROVED TRAP SEAL DEVICE. TRAP SEAL DEVICE SHALL BE TRAP PROSET TRAPGUARD OR APPROVED EQUAL, INSTALL PER MANUFACTURERS RECOMMENDATIONS. PROVIDE DRAIN IN CUSTOMER AREAS WITH VANDAL RESISTANT SCREWS.
FS	FLOOR SINK	SIOUX CHIEF/ ZURN	#861-3PN-D/ #Z1900-3NH-K-4	12" SQUARE TOP FLOOR SINK W/8" DEEP & 3" BOTTOM OUTLET.	SET FLOOR SINK LEVEL WITH FINISH FLOOR.
TP	TRAP PRIMER	PPP	P1-500	AUTOMATIC OPERATION 1/2" INLET AND OUTLET. SERVICE UP TO FOUR FLOOR DRAIN WITH DISTRIBUTION UNIT.	INSTALL IN ACCESSIBLE LOCATION WITH PRIMER LOCATED MINIMUM OF 6" ABOVE FLOOD LEVEL OF FLOOR DRAIN RIM. PROVIDE ACCESS PANEL AS REQUIRED.
MV	MIXING VALVE	SYMMONS	7-225-CK "MAXLINE"	1/2" INLETS AND OUTLET, THERMOSTATIC CONTROLLER WITH INTEGRAL CHECKS, ALL BRASS BODY WITH DUAL STAINLESS STEEL STRAINER, VANDAL RESISTANT TEMPERATURE ADJUSTMENT HANDLE.	SET TO 105°F. MOUNT I ACCESSIBLE LOCATION.

GENERAL NOTES	
A.	CONTRACTORS AND SUB-CONTRACTORS SHALL CAREFULLY REVIEW THE CONSTRUCTION DOCUMENTS. INFORMATION REGARDING THE COMPLETE WORK IS DISPERSED THROUGHOUT THE DOCUMENT SET AND CANNOT BE ACCURATELY DETERMINED WITHOUT REFERENCE TO THE COMPLETE DOCUMENT SET.
B.	COORDINATE WITH THE WORK OF OTHER SECTIONS. EQUIPMENT FURNISHED BY OTHERS, REQUIREMENTS OF THE OWNER, AND WITH THE CONSTRAINTS OF THE EXISTING CONDITIONS OF THE PROJECT SITE. PROVIDE PIPE RISES, DROPS, AND OFFSETS AS REQUIRED FOR FIELD INSTALLATION AND TRADE COORDINATION. NOTIFY ARCHITECT OF ANY DISCREPANCIES BEFORE STARTING WORK.
C.	DRAWINGS FOR PLUMBING WORK ARE DIAGRAMMATIC, SHOWING THE GENERAL LOCATION, TYPE, LAYOUT AND EQUIPMENT REQUIRED. THE DRAWINGS SHALL NOT BE SCALED FOR EXACT MEASUREMENT. REFER TO ARCHITECTURAL DRAWINGS FOR DIMENSIONS. REFER TO MANUFACTURER'S STANDARD INSTALLATION DRAWINGS FOR EQUIPMENT CONNECTIONS AND INSTALLATION REQUIREMENTS. PROVIDE PIPING, CONNECTIONS, FITTINGS, VALVES, OFFSETS AND ALL MATERIALS NECESSARY FOR A COMPLETE SYSTEM.
D.	ALL WORK SHALL COMPLY WITH STATE AND LOCAL CODE REQUIREMENTS AS APPROVED AND AMENDED BY THE GOVERNING CITY AND THE AUTHORITY HAVING JURISDICTION. PURCHASE ALL PERMITS ASSOCIATED WITH THE WORK. OBTAIN ALL INSPECTIONS REQUIRED BY CODE.
E.	PROVIDE WATER HAMMER ARRESTORS THROUGHOUT WATER SYSTEMS AS REQUIRED PER "WATER HAMMER ARRESTERS" DETAIL.
F.	PROVIDE BACKFLOW PREVENTION DEVICES IN WATER LINES FEEDING PLUMBING FIXTURES AND/OR EQUIPMENT AS SHOWN ON PLANS AND ELSEWHERE AS REQUIRED BY AUTHORITY HAVING JURISDICTION. USE DEVICES OF APPROVED MANUFACTURER AND TYPE IN ACCORDANCE WITH REQUIREMENTS OF THE AUTHORITY HAVING JURISDICTION.
G.	CONTRACTOR SHALL VERIFY WATER PRESSURE PRIOR TO CONSTRUCTION. IF PRESSURE AT BUILDING ENTRY PRIOR TO ALL LOCALLY REQUIRED DEVICES IS LESS THAN 60 PSIG STATIC, CONTACT OWNER'S REPRESENTATIVE. IF PRESSURE EXCEEDS 80 PSIG, PROVIDE PRESSURE REDUCING VALVE.
H.	SUSPEND HORIZONTAL SERVICE PIPING FROM UNDERSIDE OF ROOF OR FLOOR STRUCTURE UNLESS OTHERWISE INDICATED. INSTALL PIPING AS HIGH AS POSSIBLE. EXTEND PIPING DOWN IN WALLS, PARTITIONS AND CHASES TO SERVE FIXTURES AND EQUIPMENT.
I.	VERIFY SERVICE CONNECTION POINTS, SIZES, ELEVATIONS AND METERING LOCATIONS FOR PROJECT WITH LOCAL UTILITY COMPANIES AND/OR CIVIL ENGINEER, AS APPLICABLE.
J.	WATER ENTRY SERVICE PIPING, NEW AND/OR REVISED. CONTRACTOR SHALL ENSURE AND PROVIDE MINIMUM 10'-0" LINEAR FEET OF METAL PIPING MATERIAL BELOW GRADE IN CONTACT WITH EARTH FOR CONNECTION OF ELECTRICAL SERVICE GROUNDING.
K.	PLUMBING CONTRACTOR SHALL EXECUTE ALL WORK SO THAT IT PROCEEDS WITH A MINIMUM OF INTERFERENCE.
L.	FLOOR DRAINS SHALL HAVE 6" DEEP SEAL TRAPS.
M.	PLUMBING CONTRACTOR SHALL BE RESPONSIBLE FOR CONNECTING WATER SUPPLY TO THE COFFEE MAKERS, TEA BREWERS, AND ICE MACHINES.
N.	WRAP ALL CONDENSATE PIPE IN FREEZER WITH HEAT TRACING TAPE AND INSULATE ALL CONDENSATE DRAIN PIPING. ROUTE COOLER CONDENSATE DRAIN PIPING TO HUB DRAIN/FLOOR DRAIN AS INDICATED.
O.	POT SINKS SHALL BE ANCHORED TO WALL AND SEALED WITH SILICONE CAULKING.
P.	INSTALL GAS VALVE (FBC) IN GAS LINE TO COOKING EQUIPMENT. INTERLOCK WITH HOOD FIRE PROTECTION SYSTEM. VERIFY REQUIREMENTS WITH HOOD SUPPLIER. INSTALL UNIONS AT THE SOLENOID VALVE.
Q.	PROVIDE SHUTOFF COCKS, QUICK DISCONNECTS AND FLEXIBLE LINES AT GAS EQUIPMENT.
R.	PROVIDE VACUUM BREAKERS AT FIXTURES WITH HOSE THREAD CONNECTIONS.
S.	PROVIDE DIELECTRIC UNIONS AT ALL DISSIMILAR METAL PIPE CONNECTIONS.
T.	LAVATORY FAUCETS SHALL LIMIT HOT WATER FLOW TO 0.5 GPM AND HOT WATER TEMPERATURE TO 110° F.

PLUMBING LEGEND	
----	DOMESTIC COLD WATER PIPING
----	DOMESTIC HOT WATER PIPING
----	FILTERED WATER
----	HOT WATER RECIRC
----	VENT PIPING
----	WASTE (SANITARY SEWER)
----	UNDERGROUND WASTE (SANITARY SEWER)
—○—	PIPE UP
—○—	PIPE DOWN
☒	FLOOR DRAIN
☒	HUB DRAIN
☒	FLOOR SINK
AFF	ABOVE FINISHED FLOOR
PC	PLUMBING SUB-CONTRACTOR
GC	GENERAL CONTRACTOR
MC	MECHANICAL SUB-CONTRACTOR
EC	ELECTRICAL SUB-CONTRACTOR
FCO	FLOOR CLEAN OUT
WCO	WALL CLEAN OUT
CCO	GRADE CLEAN OUT
FD	FLOOR DRAIN
FS	FLOOR SINK
CW	COLD WATER
HW	HOT WATER
TW	TEMPERED WATER
FW	FILTERED WATER
AAV	AIR ADMITTANCE VALVE (STUDOR VENT)
☎	TIE INTO EXISTING
CODP	CLEAN OUT DECK PLATE
⓪	EQUIPMENT TAG (NEW)
⓪	EQUIPMENT TAG (EXISTING)

FOODSERVICE PLUMBING SCHEDULE		
ID	DESCRIPTION	REMARKS
5	STACKED WASHER/DRYER	
7	MOP SINK W/ FAUCET (EXISTING)	
14	WALK-IN COOLER/FREEZER (EXISTING)	
29	TWO COMPARTMENT SINK (EXISTING)	
35	HAND SINK (EXISTING)	
49	FRYER	
51	GRIDDLE	
52	CHARBROILER	
54	RANGE	
55	HAND SINK (EXISTING)	
58	DIPPING WELL (EXISTING)	
59	ICE CREAM CABINET	
67	COMBI OVEN	
68	DOUBLE CONVECTION OVEN	
77	MOBILE SOAK SINK	
81	DISHMACHINE	
83	HAND INK (EXISTING)	
87	THREE COMPARTMENT SINK (EXISTING)	
90	HAND SINK (EXISTING)	
93	ICE MAKER	
94	SODA & ICE DISPENSER	
98	ICE MAKER	
99	SODA & ICE DISPENSER	
102	TEA DISPENSER	
104	TEA BREWER	
107	FAUSET (EXISTING)	
108	WORK TABLE W/ SINK	
109	COFFEE BREWER	
B4	ICE MACHINE W/ BIN & FILTER (EXISTING)	
B10	DUMP SINK	
B13	HAND SINK (EXISTING)	
B22	BLENDER STATION	
B23	BEER DRAINER	
B28	ICE BIN W/ SPEED RAIL	
THIS SCHEDULE IS A PARTIAL LISTING OF THE EQUIPMENT SUPPLIED BY THE FOOD SERVICE EQUIPMENT CONTRACTOR (FSEC). REFER TO FSEC DRAWINGS FOR COMPLETE LISTING OF EQUIPMENT, TYPES, SIZES, AND LOCATIONS. PLUMBING CONTRACTOR (PC) TO PROVIDE NECESSARY ITEMS TO INSTALL FSEC EQUIPMENT (INCLUDING VALVES, UNIONS, FITTINGS, ETC.) TO MAKE COMPLETE SYSTEM. THIS LISTING DOES NOT SUPERSEDE THE FSEC DRAWINGS.		

Comm #211008

ScaleAs Mentioned

Designed by:Designer

Drawn by:NYE

Checked by:NYE

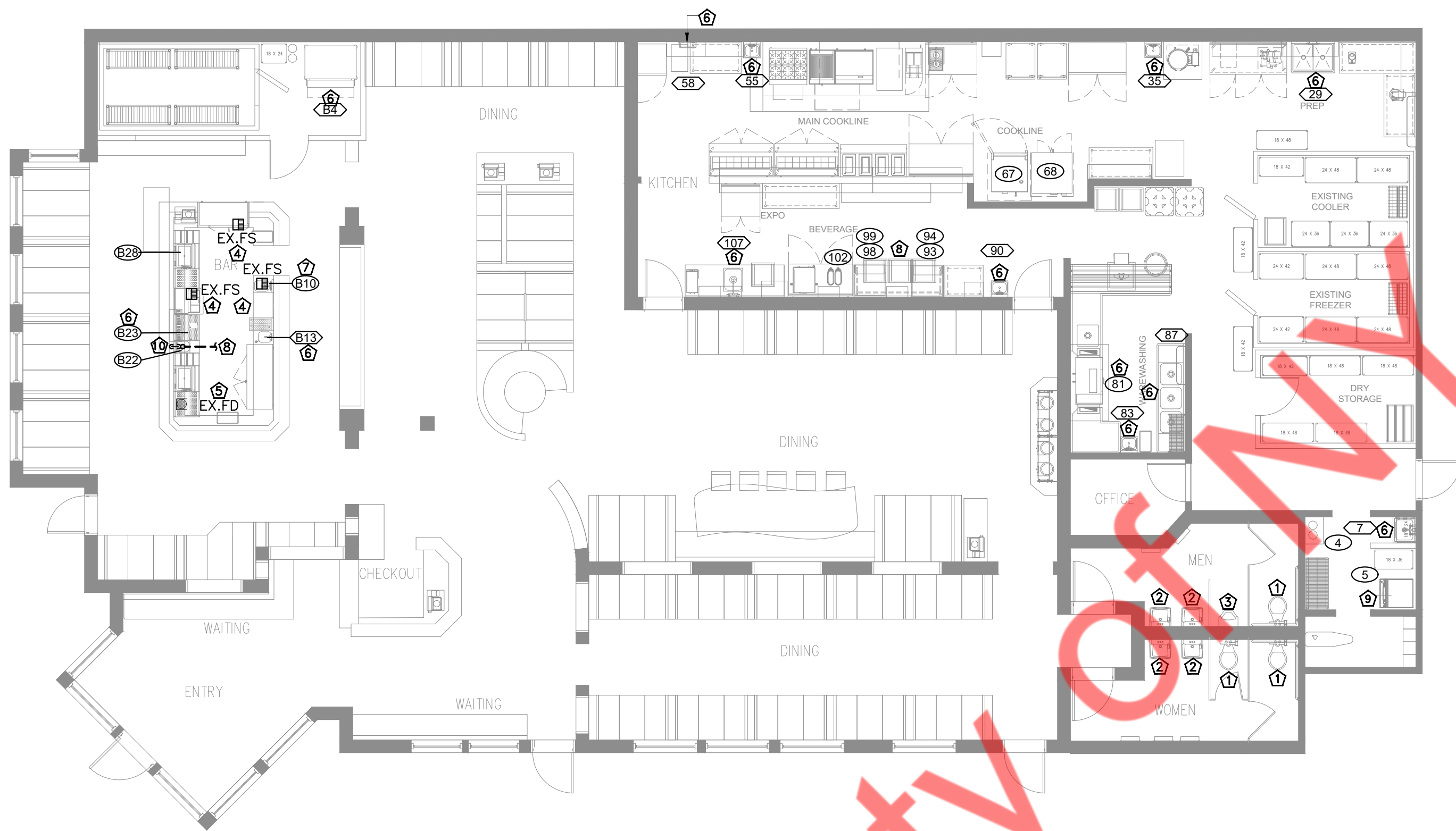
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1 SANITARY WASTE AND VENT PLAN
1/8" = 1'-0"

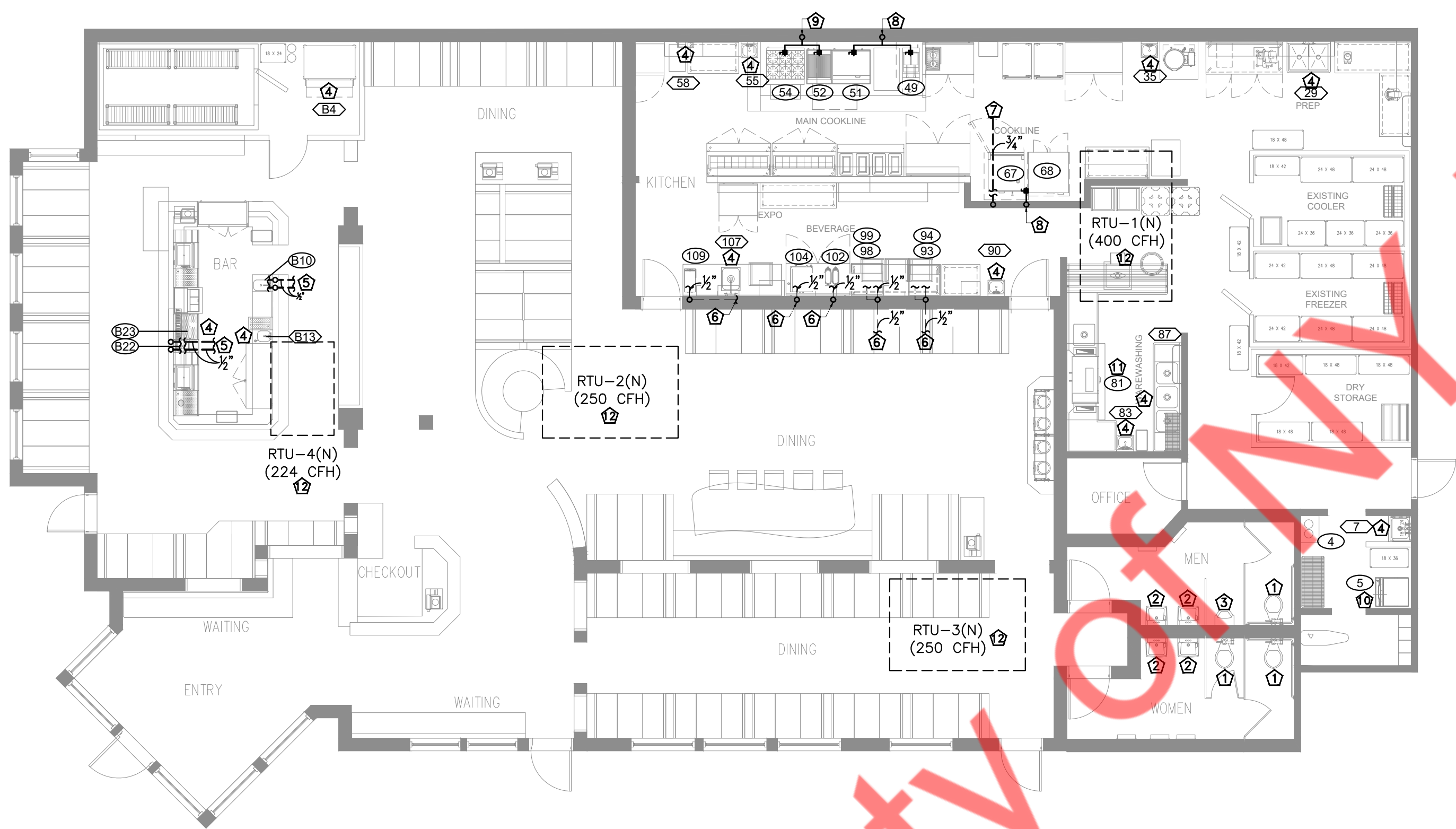
PLUMBING KEYNOTES

- EXISTING WATER CLOSET TO REMAIN WITH EXISTING SANITARY, VENT LINES WITH ASSOCIATED ACCESSORIES AND FITTINGS.
- EXISTING LAVATORY TO REMAIN WITH EXISTING SANITARY, VENT LINES WITH ASSOCIATED ACCESSORIES AND FITTINGS.
- EXISTING URINAL TO REMAIN WITH EXISTING SANITARY, VENT LINES WITH ASSOCIATED ACCESSORIES AND FITTINGS.
- EXISTING FLOOR SINK WITH EXISTING PLUMBING CONNECTION TO REMAIN.
- EXISTING FLOOR DRAIN WITH EXISTING PLUMBING CONNECTION TO REMAIN.
- EXISTING PLUMBING FIXTURE WITH EXISTING SANITARY, VENT LINES TO REMAIN WITH ASSOCIATED ACCESSORIES AND FITTINGS. CONTRACTOR TO VERIFY IN FIELD CONDITION OF EXISTING PIPING AND REPLACE IF REQUIRED.
- PIPE INDIRECT DRAIN FROM DUMP SINK TO ADJACENT FLOOR SINK. PROVIDE AIR GAP MINIMUM OF TWICE THE EFFECTIVE OPENING OF THE INDIRECT WASTE PIPE. CONNECT NEW 3" SANITARY PIPING TO EXISTING SANITARY LINE. CONTRACTOR TO VERIFY IN FIELD FOR EXACT LOCATION, INVERT AND SIZE.
- PROVIDE INDIRECT DRAIN FROM ICE MAKER TO ADJACENT FLOOR SINK. CONSULT ICE MACHINE INSTRUCTION MANUAL FOR INDIRECT PIPING REQUIREMENTS.
- NEW WASHER/DRYER COMBO WITH EXISTING SANITARY, VENT LINES TO REMAIN WITH ASSOCIATED ACCESSORIES AND FITTINGS. CONTRACTOR TO VERIFY IN FIELD CONDITION OF EXISTING PIPING AND REPLACE IF REQUIRED.
- PLUMBING CONTRACTOR SHALL PROVIDE AIR ADMITTANCE VALVE FOR BAR SINK VENTILATION.

GENERAL NOTES

- PLEASE REFER TO P1.1, FS-1.0 AND FS-1.1 FOR THE FOOD SERVICE TAG SCHEDULE.
- ALL COLD AND HOT WATER LINES MUST BE INSULATED. PEX LINES NOT ALLOWED.
- RELIEF VALVE DRAIN FOR HOT WATER HEATER MUST BE PIPED TO NEAREST DRAIN.
- GC SHALL SCOPE AND CLEAN-OUT ALL SANITARY AND GREASE LINES WITHIN TENANT SPACE AT POINT OF SUBSTANTIAL COMPLETION AND PRIOR TO TENANT OCCUPATIONS. GC SHALL SCOPE LINES IN PRESENCE OF ON-SITE MALL OPERATIONS MANAGER AND TURN OVER COPY OF SCOPE VIDEO TO ON-SITE MALL OPERATIONS MANAGER.
- PROVIDE FLOOR DRAIN WITH CLEANOUT AND EXHAUST DUCT AND FAN IN TOILET AREA.
- PROVIDE WATER METER WITH REMOTE READOUT ACCESSIBLE TO LANDLORD. VERIFY REQUIREMENTS WITH ON-SITE MALL OPERATIONS MANAGER.
- PROVIDE WATERPROOF MEMBRANE IN WATER AREAS, SUCH AS UPPER LEVEL TOILET ROOMS. PROVIDE FLOOR DRAINS IN ALL TOILET ROOM AREAS. COORDINATE LOCATIONS OF WATERPROOF MEMBRANE WITH ON-SITE MALL OPERATIONS MANAGER.
- WATERPROOF MEMBRANE MUST BE WATER TESTED AND APPROVED BY ON-SITE MALL OPERATIONS MANAGER.
- CPVC/PVC PRODUCTS RESIST ATTACK FROM A WIDE RANGE OF CHEMICALS THAT ARE CORROSIVE TO METALLIC PIPING. CPVC PRODUCTS CAN, HOWEVER, BE DAMAGED BY CONTACT WITH CHEMICALS FOUND IN SOME CONSTRUCTION AND ANCILLARY PRODUCTS SUCH AS THREAD SEALANTS, ANTI-FREEZE SOLUTIONS, FIRE STOP MATERIALS, ETC. IT IS IMPORTANT TO VERIFY THE COMPATIBILITY OF MATERIALS THAT COME IN CONTACT WITH THE CPVC/PVC SYSTEMS PRIOR TO USE TO ENSURE LONG TERM PERFORMANCE.
- CPVC/PVC NEW CONSTRUCTION:
 - ALL UNDERGROUND PIPING FOR SANITARY WASTE AND GREASE WASTE LINES SHALL BE PVC ONLY WHEN CODE PERMITS.
 - ALL WASTE PIPING, WHEN EXPOSED IN RETURN AIR PLENUMS, SHALL BE CAST IRON OR FIRE WRAPPED PVC ONLY WHEN CODE PERMITS.
 - ALL WASTE PIPING ENCLOSED IN 5/8" TYPE "X" DRYWALL, FIRE TAPED AND SEALED BY CODE, SHALL BE PVC ONLY WHEN CODE PERMITS.
- PRIOR TO ANY FLOOR SLAB CUTTING/TRENCHING/CORING/ETC. GC SHALL X-RAY SLAB PRIOR TO ANY WORK STARTING. GC SHALL COORDINATE X-RAY WITH ON-SITE MALL OPERATIONS MANAGER PRIOR TO WORK STARTING.
- ALL EXISTING AND NEW PENETRATIONS THROUGH RATED WALLS SHALL BE PROTECTED BY AN APPROVED FIRE STOP SYSTEM. COORDINATE WITH ON-SITE MALL OPERATIONS MANAGER.
- ALL FLOOR PENETRATIONS MUST BE SLEEVED AND SEALED LIQUID TIGHT.
- ATTACHMENT TO UNDERSIDE OF METAL DECK/SLAB AND OR/BOTTOM CHORD OF JOISTS NOT ALLOWED. ANY ATTACHMENTS TO LANDLORD'S STRUCTURE SHALL BE FROM TOP CHORD OF JOISTS ONLY.
- ANY PENETRATIONS OF, OR MODIFICATIONS TO, STRUCTURAL STEEL OR CONCRETE MUST BE COORDINATED WITH ON-SITE MALL OPERATIONS MANAGER AND MAY NEED TO BE REVIEWED BY MALL APPROVED STRUCTURAL ENGINEER AT TENANT'S COST.
- CPVC/PVC EXISTING CONSTRUCTION:
 - WHEN EXISTING WASTE PIPING IS EXPOSED IN A SECOND LEVEL CEILING OF SHOPPING CENTER, OR EXISTING WASTE PIPING ON GRADE IS BEING REPLACED, THE FOLLOWING REQUIREMENTS SHALL BE MET:
 - ALL UNDERGROUND PIPING FOR SANITARY WASTE AND GREASE WASTE LINES SHALL BE PVC ONLY WHEN CODE PERMITS.
 - ALL WASTE PIPING WHEN EXPOSED IN RETURN AIR PLENUM SHALL BE CAST IRON OR FIRE WRAPPED PVC ONLY WHEN CODE PERMITS.
 - ALL WASTE PIPING ENCLOSED IN 5/8" TYPE "X" DRYWALL, FIRE TAPED AND SEALED BY CODE, SHALL BE PVC ONLY WHEN CODE PERMITS.
- FOOD TENANTS RENOVATING AN EXISTING LOCATION SHALL CAMERA THE INTERIOR OF ALL SANITARY WASTE AND GREASE WASTE PIPING WITHIN THEIR LEASED AREA TO REPLACE OR CORRECT DEFICIENCIES IN PIPING INSTALLATION OR CONDITION OF EXISTING PIPING. WHEN PIPING IS REPLACED IT SHALL MEET THE REQUIREMENTS LISTED ABOVE.
- ALL DOMESTIC WATER PIPING TO BE COPPER PIPING TYPE "L", OR PER CODE.
- PVC/CPVC SHALL NOT BE USED FOR COMPRESSED AIR OR GASSES.
- ALL PIPING SYSTEMS EXPAND AND CONTRACT WITH CHANGES IN TEMPERATURE. THIS ISSUE MUST BE ADDRESSED WITH APPROPRIATE SYSTEM DESIGN TO PREVENT DAMAGE TO THE SYSTEM.
- THREADING SCHEDULE 40 CPVC PIPE IS NOT A RECOMMENDED PRACTICE DUE TO INSUFFICIENT WALL THICKNESS. THREAD ONLY SCHEDULE 80 OR HEAVIER WALLS.
- ALL SOLVENT-CEMENTED CONNECTIONS IN THE SYSTEM MUST BE FULLY CURED PROPERLY PRIOR TO FILLING THE SYSTEM WITH WATER.
- PIPE MUST BE ADEQUATELY ANCHORED/RESTRAINED TO PREVENT MOVEMENT DURING OPERATION.
- AIR MUST BE REMOVED FROM THE SYSTEM TO PREVENT IT FROM BEING LOCKED IN THE SYSTEM WHEN PRESSURE IS APPLIED.
- HOT WORK PERMIT MUST BE OBTAINED A MINIMUM OF 24 HOURS IN ADVANCE OF HOT WORK. A NEW HOT WORK PERMIT MUST BE OBTAINED EACH DAY THAT HOT WORK WILL BE PERFORMED.
- TENANT GC MUST CONTRACT WITH A CERTIFIED FIRESTOP PROFESSIONAL TO FIRE STOP ALL FLOOR PENETRATIONS TO PROVIDE A RATING REQUIRED BY CODE AND CRITERIA.

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1 PLUMBING WATER AND GAS PLAN
1/8" = 1'-0"

PLUMBING KEYNOTES

- EXISTING WATER CLOSET WITH EXISTING COLD WATER PIPING TO REMAIN. CONTRACTOR TO VERIFY IN FIELD CONDITION OF EXISTING PIPING AND REPLACE IF REQUIRED.
- EXISTING LAVATORY WITH EXISTING COLD WATER & HOT WATER PIPING TO REMAIN. CONTRACTOR TO VERIFY IN FIELD CONDITION OF EXISTING PIPING AND REPLACE IF REQUIRED.
- EXISTING URINAL WITH EXISTING COLD WATER PIPING TO REMAIN. CONTRACTOR TO VERIFY IN FIELD CONDITION OF EXISTING PIPING AND REPLACE IF REQUIRED.
- EXISTING PLUMBING FIXTURE WITH EXISTING WATER PIPING TO REMAIN. CONTRACTOR TO VERIFY IN FIELD CONDITION OF EXISTING PIPING AND REPLACE IF REQUIRED.
- CONNECT NEW 1/2" CW/HW PIPING TO EXISTING CW/HW PIPING. CONTRACTOR TO FIELD VERIFY EXACT SIZE AND LOCATION OF EXISTING PIPING.
- CONNECT NEW 1/2" FCW PIPING TO EXISTING FCW PIPING. CONTRACTOR TO FIELD VERIFY EXACT SIZE AND LOCATION OF EXISTING PIPING.
- CONNECT NEW 3/4" CW PIPING TO EXISTING CW PIPING. CONTRACTOR TO FIELD VERIFY EXACT SIZE AND LOCATION OF EXISTING PIPING.
- CONNECT NEW 1 1/4" GAS PIPING TO EXISTING GAS PIPING. CONTRACTOR TO VERIFY IN FIELD CONDITION OF EXISTING PIPING AND REPLACE IF REQUIRED.
- CONNECT NEW 1 1/2" GAS PIPING TO EXISTING GAS PIPING. CONTRACTOR TO VERIFY IN FIELD CONDITION OF EXISTING PIPING AND REPLACE IF REQUIRED.
- NEW WASHER/DRYER COMBO WITH EXISTING WATER PIPING TO REMAIN. CONTRACTOR TO VERIFY IN FIELD CONDITION OF EXISTING PIPING AND REPLACE IF REQUIRED.
- NEW DISHWASHER WITH EXISTING WATER PIPING TO REMAIN. CONTRACTOR TO VERIFY IN FIELD CONDITION OF EXISTING PIPING AND REPLACE IF REQUIRED.
- CONTRACTOR TO FIELD VERIFY ROUTING OF EXISTING PIPING AND ENSURE GAS PIPING IS IN GOOD CONDITION. REPLACE PIPING IF REQUIRED.

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