HVAC ELECTRICAL COORDINATION SCHEDULE

ABBREVIATIONS		CONTRACTOR TYPE		MOTOR CONTROL TYPE		CONTROL TYPE	
DD	LOCAL DISCONNECT	EC	ELECTRICAL CONTRACTOR	CS	COMBINATION STARTER	TC	TIMECLOCK
MC	MOTOR CONTROL (POWER)	EX	EXISTING	MCC	MOTOR CONTROL STARTER	CPT	CONTROL POWER TRANSFORMER
SD	DUCT SMOKE DETECTOR	FC	FIRE PROTECTION CONTRACTOR	MG	MAGNETIC STARTER OR CONTACT	BAS	BUILDING AUTOMATION SYSTEM
EN	CONTROLS	GC	GENERAL CONTRACTOR	MS	MANUAL STARTER	LOW	LOW VOLTAGE CONTROLS
TS	TOGGLE SWITCH	MC	MECHANICAL CONTRACTOR	VFD	VARIABLE FREQUENCY DRIVE	LINE	LINE VOLTAGE CONTROLS
CB	CIRCUIT BREAKER (CIRCUIT BREAKER AT SOURCE PANELBOARD)	MFR	MANUFACTURER	MSR	MANUAL STARTER W/ CONTROL RELAY	LVTS	LOW VOLTAGE ACTING LINE VOLTAGE THERMOSTAT
FUSE	FUSE AT LOCAL DISCONNECT (VERIFY FIELD RATING)	PC	PLUMBING CONTRACTOR	OV	OVERCURRENT PROTECTION	MAN	MANUAL
FLA	OPERATING FULL LOAD AMPS	OR	OWNER OR OTHERS			FA	FIRE ALARM
MCA	MINIMUM CIRCUIT AMPACITY					CO	CARBON MONOXIDE SENSOR
CP	CORD AND PLUG CONNECTION					INT	INTEGRAL TO EQUIPMENT

EQUIPMENT MARK	DESCRIPTION	VOLTS (V)	PHASE	EMERGENCY	BHP (HP)	HP (HP)	HTG (kW)	WATTS	FLA (A)	MCA (A)	OCP (A)	DC TYPE	DC FURN	DC INST	DC WIRE	MC TYPE	MC FURN	MC INST	MC WIRE	CN TYPE	CN FURN	CN INST	CN WIRE	SD TYPE
AC-ECR	DUCTLESS SPLIT HIGH WALL UNIT	208	1							15			EC	EC	EC	MG	MFR	MFR	MFR	LOW	MFR	MFR	MFR	-
CU-ECR	DUCTLESS SPLIT OUTDOOR CONDENSING UNIT	208	1						25	40			EC	EC	EC	MG	MFR	MFR	MFR	LOW	MFR	MFR	MFR	-

HVAC EQUIPMENT ORDERING SCHEDULE

MARK	TYPE	eP RO#	CURB AES MODEL # (CONTRACTOR SUPPLIED)	CURB DIMENSIONS (OUTSIDE DIMENSION)
CU-ECR / AC-ECR	DUCTLESS SPLIT SYSTEM PKA-RLF036HA-KIT	K-0039100	42486 (IF REQUIRED)	50"x20"x18"

MECHANICAL LEGEND

SYMBOL	DESCRIPTION
PLAN-VIEW LINE TYPES	
	WORK SHOWN FADED INDICATES EXISTING WORK TO REMAIN OR NEW WORK BY OTHERS AS APPLICABLE
	WORK SHOWN BOLD CONTINUOUS INDICATES NEW WORK
MECHANICAL AIR DEVICES	
RG	RETURN GRILLE
CD	CEILING DIFFUSER
MECHANICAL DUCTWORK	
UP	SUPPLY DUCT WITH ELBOW TURNED UP
DN	SUPPLY DUCT WITH ELBOW TURNED DOWN
UP	RETURN DUCT WITH ELBOW TURNED UP
DN	RETURN DUCT WITH ELBOW TURNED DOWN
UP	EXHAUST DUCT WITH ELBOW TURNED UP
DN	EXHAUST DUCT WITH ELBOW TURNED DOWN
	SUPPLY DUCT
	RETURN DUCT
	BRANCH TAKEOFF
MECHANICAL STATS & SENSORS	
T	LOW VOLTAGE THERMOSTAT WITH LOCKABLE GUARD
MECHANICAL MISCELLANOUS	
	CONNECT TO EXISTING (FIELD VERIFY EXISTING UTILITY SERVICE TYPE, PRIOR TO MAKING CONNECTION)

GENERAL NOTES

A. REFER TO HEATING, VENTILATING & AIR CONDITIONING SPECIFICATIONS AND GENERAL CONDITIONS FOR ADDITIONAL REQUIREMENTS.
B. ALL DIFFUSERS AND CEILING GRILLES SHALL BE COORDINATED WITH LAY-IN CEILING GRID AND PROVIDED BY MECHANICAL CONTRACTOR.
C. PROVIDE BALANCING DAMPERS FOR EACH DIFFUSER, REGISTER AND GRILLE AT POINTS ON SUPPLY, RETURN, AND EXHAUST SYSTEMS WHERE BRANCHES LEAD OFF FROM LARGER DUCTS OR IN DIFFUSERS AS REQUIRED FOR AIR BALANCING. INSTALL AT A MINIMUM OF TWO DUCT WIDTHS FROM BRANCH TAKEOFF WHERE PRACTICAL.
D. NO PROVISION HAS BEEN MADE FOR RETURN AIR FROM THE BACK ROOM AS IT HAS BEEN OUR EXPERIENCE THAT ACCEPTABLE CONSTRUCTION TOLERANCES IN THIS AREA RESULTS IN LEAKAGE IN AN AMOUNT EQUAL TO THAT SUPPLIED.
E. ALL NEW EXHAUST FANS AND RTUs SPECIFIED ARE INCLUDED IN KROGER'S DIRECT BUY PROGRAM, AND SHALL BE PROVIDED BY KROGER AND INSTALLED BY HVAC CONTRACTOR, UNLESS OTHERWISE NOTED.
F. ALL HVAC DUCT SMOKE DETECTORS ARE TO BE PROVIDED BY HVAC CONTRACTOR.
G. PROVIDE BACKDRAFT DAMPERS FOR NON-KITCHEN EXHAUST FANS.
H. THE STORE'S MECHANICAL DESIGN SHALL BE ELIGIBLE TO EARN ENERGY STAR CERTIFICATION.
I. SUPPLY AND RETURN DUCTWORK FROM ROOFTOP UNITS TO BE INTERNALLY INSULATED A MINIMUM OF TEN FEET FOR SOUND ATTENUATION.
J. PROVIDE TURNING VANES IN ALL RECTANGULAR MITERED ELBOWS.
K. ONLY ITEMS REQUIRED FOR THE OPERATION OF THE ELEVATOR ARE ALLOWED TO BE IN OR PASS THROUGH THE ELEVATOR EQUIPMENT ROOM.
L. ALL DIFFUSERS ARE 4-WAY UNLESS OTHERWISE INDICATED.
M. RUNOUTS TO CEILING DIFFUSERS ARE THE SAME SIZE AS THE DIFFUSER NECK UNLESS NOTED OTHERWISE.
N. SUPPLY, RETURN AND OUTSIDE AIR DUCT TO BE EXTERNALLY INSULATED WHERE LOCATED ABOVE CEILING SPACE. REFER TO SPECIFICATION 230700.
O. DUCT SMOKE DETECTORS SHALL BE PROVIDED BY CONTRACTOR.

KEYED NOTES

M23 KROGER FURNISHED SPLIT SYSTEM PROVIDED WITH LOW AMBIENT KIT AND WIND BAFFLES. MOUNT PER MANUFACTURER'S RECOMMENDATIONS. REUSING EXISTING MOUNTING APPARATUS AS POSSIBLE, REPLACE CURB IF NOT. ROUTE REFRIGERANT LINES THROUGH ROOF TO CONDENSING UNIT PER MANUFACTURER'S GUIDELINES. ROUTE INSULATED CONDENSATE TO CONNECT TO EXISTING SPLIT SYSTEM CONDENSATE DRAIN IN AREA. COORDINATE ORDERING OF REFRIGERANT LINESET WITH OWNER'S PROJECT MANAGER. REFERENCE HSD-11-F01 FOR ADDITIONAL INFORMATION.

M89 RELOCATE EXISTING TEMPERATURE SENSOR TO LOCATION AS SHOWN.

M90 EXISTING ROOFTOP UNIT TO REMAIN. BALANCE TO THE SCHEDULED AIRFLOW. CLEAN AND VERIFY PROPER OPERATION: CLEAN COILING, HEATING COILS, RECHARGE REFRIGERANT, REPLACE BELT, DRIVE, AND MOTOR AS REQUIRED, REPLACE FILTERS, CHECK COMPRESSOR AND FAN AMPS, REPAIR/REPLACE REQUIRED PARTS. OWNER'S PROJECT MANAGER RECONFIRMING REQUIRED PRIOR TO BID. ENGINEER FIELD VERIFY EXACT LOCATION AND ORIENTATION PRIOR TO BID.

M92 MECHANICAL CONTRACTOR TO PROVIDE BID ALTERNATE FOR HAV DIFFUSERS TO SERVE BREAK ROOM AND ALL ASSOCIATE CONTROLS FOR COMPLETE OPERATION. VAV DIFFUSER TO BE ACCUTHERM THE-RMA-FUSE MODEL TF-HC OR APPROVED EQUAL.

M93 KITCHEN HOODS WITH EQUIPMENT CHANGES BENEATH THEM REQUIRE THE CONTRACTOR TO HIRE A CERTIFIED FIRE SYSTEM CONTRACTOR TO MODIFY THE EXISTING HOOD FIRE SYSTEM AS NEEDED TO MEET STATE AND LOCAL CODES.

EXISTING HVAC ROOFTOP UNITS SCHEDULE

EQUIPMENT MARK	DESCRIPTION	LOCATION	STATUS	WEIGHT (lbs)	MANUFACTURER	MODEL	MIN EER	MIN COP	EMERGENCY	VOLTS	PHASE	CFM (cfm)	ESP (in WC)	FAN RPM (rpm)	BHP (hp)	HP (hp)	OA/CFM (cfm)	CO2 CFM (cfm)	NOMINAL TONS	MAT CLG DB (Deg F)	MAT CLG WB (Deg F)	CLG MBH (mbh)	CLG SENS (mbh)	LAT DB (Deg F)	LAT CLG WB (Deg F)	MAT HTG (Deg F)	HTG MBH (mbh)	LAT HTG (Deg F)	MIN HTG RISE	GAS HTG IN (mbh)	GAS HTG OUT (mbh)	FLA (amps)	MCA (amps)	OCP (amps)	ACCESSORIES
RTU-12	PACKAGED OUTDOOR ROOFTOP UNIT	ROOF	EXISTING	EX	AAON	RM-C10-0-0-SA02-20-2	EX	EX		480	3	6000	0.5	0	1.84			780		78	67	120	90	55						180	145.8				EX

HVAC DUCTLESS SPLIT SYSTEM (INDOOR UNITS) SCHEDULE

EQUIPMENT MARK	DESCRIPTION	LOCATION	STATUS	FED FROM	WEIGHT	MANUFACTURER	MODEL	EMERGENCY	VOLTS	PHASE	NOMINAL TONS	CLG MBH (mbh)	CLG SENS (mbh)	FLA (amps)	MCA (amps)	OCP (amps)
AC-ECR	DUCTLESS SPLIT HIGH WALL UNIT			CU-ECR		MITSUBISHI	PKA-RLF036HA5		208	1	3	36	33	1		15
CU-ECR	DUCTLESS SPLIT OUTDOOR CONDENSING UNIT					MITSUBISHI	PUY-A36NHA5		208	1	3	36	33		25	40

HVAC VENTILATION SCHEDULE

NUMBER	NAME	AREA	LEVEL	CEILING HEIGHT	AIR CHGS	OA CHGS	OA/AREA	OA PER PEOPLE	OA PER SQ FT	REQ SUP	ACT SUP	REQ OA	ACT OA	ACT RET	ACT EXH	CRIT OA	PRESSURE	PCT OPERABLE	NATURAL VENTILATION
113E	BACK ROOM	1048 SF	FIN 1 ROOM	12' - 0"	0	0		0		0	0	0	0	0	0	0	0	0	
114A	MEN	164 SF	FIN 1 ROOM	11' - 0"	0	0				80	100	8	0	0	80	0	0	0	
114B	WOMEN	158 SF	FIN 1 ROOM	11' - 0"	0	0				80	100	8	0	0	80	0	0	0	
117	BREAKROOM	1 SF	FIN 1 ROOM	11' - 0"	0	0		5	0.06	720	800	72	80	800	0	0.0803	0	0	
118	CLICKLIST	1 SF	FIN 1 ROOM	9' - 0"	0	0		7.5	0.06	900	1000	90	100	1000	0	0.072	0	0	

HVAC LOAD SCHEDULE

NOTE: THESE COOLING LOAD CALCULATIONS ARE BASED ON THE CLTD/CLF (COOLING LOAD TEMPERATURE DIFFERENCE/COOLING LOAD FACTOR) METHOD. ASSUMPTIONS AND EXECUTION OF THESE METHODS ARE PER ASHRAE 1SD-2007.

HVAC LOAD SCHEDULE

COOLING LOAD BREAKDOWN		COSENS	TOTAL SENSIBLE HEAT GAIN TO SPACE
CROOF	SENSIBLE HEAT GAIN FROM ROOF	CFAN	SENSIBLE HEAT GAIN FROM AIR HANDLER FAN
CWALL	SENSIBLE HEAT GAIN FROM EXTERIOR WALLS	COAS	SENSIBLE HEAT GAIN FROM OUTDOOR VENTILATION AIR
CPART	SENSIBLE HEAT GAIN FROM PARTITIONS	CTSENS	TOTAL SENSIBLE HEAT GAIN
CGLASS	SENSIBLE HEAT GAIN FROM GLAZING	CPLAT	LATENT HEAT GAIN FROM PEOPLE
CSOLAR	SENSIBLE HEAT GAIN FROM SOLAR GAIN THROGH GLAZING	COAL	LATENT HEAT GAIN FROM OUTDOOR VENTILATION AIR
CLIGHTS	SENSIBLE HEAT GAIN FROM INTERIOR LIGHTING	CTLAT	TOTAL LATENT HEAT GAIN
CEQUIP	SENSIBLE HEAT GAIN FROM PLUG LOADS, COMPUTERS, ETC	CTOT	TOTAL HEAT GAIN (SENSIBLE + LATENT)
CPSENS	SENSIBLE HEAT GAIN FROM PEOPLE		

HEATING LOAD BREAKDOWN	
HROOF	HEAT LOSS FROM ROOF
HWALL	HEAT LOSS FROM EXTERIOR WALLS
HPART	HEAT LOSS FROM PARTITIONS
HGLASS	HEAT LOSS FROM GLAZING
HSLAB	HEAT LOSS FROM SLAB
HSPACE	TOTAL HEAT LOSS FROM SPACE
HOA	HEAT LOSS FROM OUTDOOR VENTILATION AIR
HTOT	TOTAL HEAT LOSS

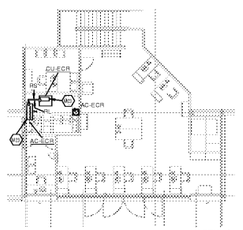
EQUIPMENT MARK	CROOF	CWALL	CPART	CGLASS	CSOLAR	CLIGHTS	CEQUIP	CPSENS	COSENS	CFAN	COAS	CTSENS	CPLAT	COAL	CTLAT	CTOT	HROOF	HWALL	HPART	HGLASS	HSLAB	HSPACE	HOA	HTOT	HCU
RTU-12	0	19.2	2	0	0	10.5	10.2	4.4	42.5	0.7	18	99.9	0.8	21.1	24	122.9	8.8	48.5	0	0	0	56.4	60.7	114.1	

AIR DEVICE SCHEDULE

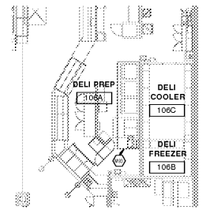
GENERAL NOTES:
A. ALL AIR DEVICES ARE 4-WAY THROW UNLESS OTHERWISE NOTED IN SCHEDULES OR ON DRAWINGS.
B. REFER TO SPECIFICATION SECTION 23 37 00 FOR ADDITIONAL INFORMATION AND APPROVED ALTERNATES.
C. CONFIRM AIR DEVICE MOUNTING STYLES WITH ARCHITECTURAL REFLECTED CEILING PLAN.

D. BORDER STYLE:
"A": SURFACE MOUNTED (FOR DRYWALL MOUNTED DIFFUSERS ONLY).
"B": LAY-IN, PROVIDE WITH TRIM FRAME FOR DRYWALL CEILING. SEE HD-4 AND HD-7, SHEET M3.1 FOR ADDITIONAL INFORMATION.
"C": DIFFUSER MOUNTED ON RIGID DUCT.
REMARKS:
1. WITH ADJUSTABLE DISCHARGE PATTERN.
2. WITH 45-DEGREE ANGLE BLADES. INSTALL WITH BLADES ANGLED UPWARD.
3. WITH FACE-OPERABLE DAMPER.
4. PROVIDE OPPOSSED BLADE DAMPER IN NECK OF GRILLE IN DRYWALL CEILING.
5. BOTTOM FACE DIMENSION: 55x55, NECK SIZE 28x28.
6. BOTTOM FACE DIMENSION: 58x58, NECK SIZE: 28x28.
7. BOTTOM FACE DIMENSION: 59x59, NECK SIZE: 38x38.
8. BOTTOM FACE DIMENSION: 30x30, NECK SIZE 24x24.
9. DIFFUSERS WITH NECK SIZE OF 20" OR LESS HAVE OUTSIDE DIAMETER LESS THAN 48". 24" NECK SIZE HAS OUTSIDE DIAMETER OF 54.5".
54.5", 30" AND 36" NECK SIZE HAVE OUTSIDE DIAMETER OF 61.5"

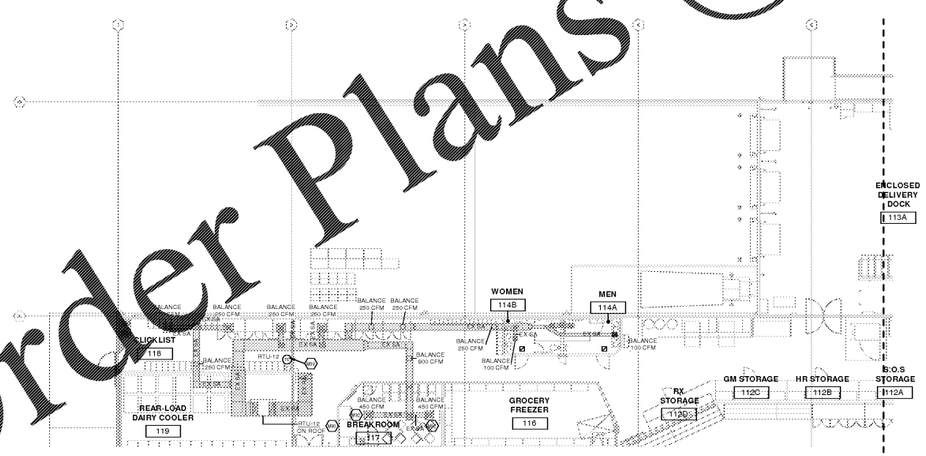
SYMBOL	TYPE	BASIS OF DESIGN (TITLE, UNLESS NOTED OTHERWISE):	MOUNTING: CEILING	MOUNTING: DUCT	MOUNTING: WALL	BORDER	REMARKS
CD	CEILING DIFFUSER	TDC-A		●		A	



② HVAC MEZZANINE PLAN
3/32" = 1'-0"



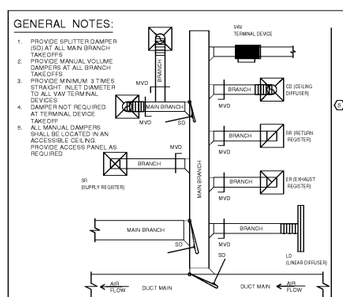
③ HVAC FLOOR PLAN - DELI
3/32" = 1'-0"



① MECHANICAL FLOOR PLAN
3/32" = 1'-0"

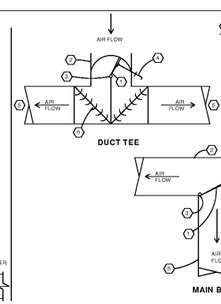
GENERAL NOTES:

1. PROVIDE SPLITTER DAMPER (SD) AT ALL MAIN BRANCH TAKEOFFS.
2. PROVIDE MANUAL VOLUME DAMPERS AT ALL BRANCH TAKEOFFS.
3. PROVIDE MINIMUM 3 TIMES STRAIGHT INLET DIAMETER TO ALL VAV TERMINAL DEVICES.
4. DAMPER NOT REQUIRED AT TERMINAL DEVICE TAKEOFF.
5. ALL MANUAL DAMPERS SHALL BE LOCATED IN AN ACCESSIBLE CEILING. PROVIDE ACCESS PANEL AS REQUIRED.



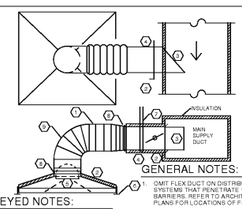
233300.00-01 - MANUAL DAMPER DETAIL

SCALE: NONE



KEYED NOTES:

1. 20 GAUGE DOUBLE SHEET METAL AIR FOIL FULL DEPTH OF MAIN DUCT UP TO 12" WIDE. BRANCHES 18 GAUGE ON WIDER BRANCHES
2. MAIN DUCT.
3. GALVANIZED 3/16" ROD
4. VENTLOCK NO. 630-0 DAMPER BLADE, BRACKET & LOCKING BALL. JOINT WITH 1/4@
5. GALVANIZED OPERATOR PAD
6. BRANCH MAIN DUCT
6. DOUBLE THICKNESS TURNING VANES (TYPICAL)
7. 3" RADIUS MINIMUM



KEYED NOTES:

1. MAXIMUM LENGTH OF INSUL. FLEX DUCT 6 EQUALS 5 FEET. FLEX NOT PERMITTED IN INACCESSIBLE CEILINGS
2. INSULATED DUCT, COLLAR AND SEAL PROVIDED BY HVAC CONTRACTOR
3. SEAL
4. SPIN IN FITTING WITH MANUAL VOLUME DAMPER
5. INTERNAL BUTTERFLY DAMPER FOR DRYWALL APPLICATIONS ONLY. (PROVIDE KEY FOR ADJUSTMENT)

GENERAL NOTES:

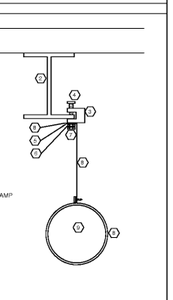
1. OMIT FLEX DUCT ON DISTRIBUTION SYSTEMS THAT PENETRATE 1-HR FIRE BARRIERS. REFER TO ARCHITECTURAL PLANS FOR LOCATIONS OF FIRE BARRIERS.

SECURE TO CEILING PER MANUFACTURER'S RECOMMENDATIONS AND PER CEILING FINISH. PROVIDE GRID CLIPS PER MFGR REQUIREMENTS. PROVIDE FRAMING FOR DRYWALL.

6. SECURE TO STRUCTURE
7. HANGER. SECURE TO STRUCTURE AND DUCTWORK
8. PEEL BACK INSULATION AND PROVIDE STRAPPING AND SHEET METAL SCREWS AT FLEX CONNECTION TO DUCT. THEN PROVIDE STRAPPING AROUND INSULATION.
9. SUPPORT FLEX TO PREVENT COLLAPSING

233713.00-04 - DIFFUSER INSTALLATION TYPICAL

SCALE: NONE



KEYED NOTES:

1. FLOOR/ROAN ABOVE
2. FLOOR/ROOF SUPPORT BEAM
3. BEAM CLAMP
4. SET SCREW PROVIDED WITH BEAM CLAMP
5. WASHER
6. ADJUSTING NUT
7. 1/4" DIAMETER BOLT.
8. 1" WIDE DUCT HANGER STRAP
9. DUCT

233113.00-02 - DUCT SUPPORT DETAIL

SCALE: NONE

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HVAC FLOOR PLAN

No.	Description	Date

BID ISSUE

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