ISCO RIVERPORT

7000 TRANSPORT COURT
LOUISVILLE, KY 40258

ABBREVIATIONS

NOTE: NOT ALL ABBREVIATIONS MAY BE USED.

(A)	ABANDON	GC	GENERAL CONTRACTOR	PSI	POUNDS PER SQUARE INCH
(D)	DEMOLISH	GND	GROUND	PSIA	POUNDS PER SQUARE INCH ABSOLUTE
(E)	EXISTING	GPM	GALLONS PER MINUTE	PSIG	POUNDS PER SQUARE INCH GAUGE
(N)	NEW	GPH	GALLONS PER HOUR	PVC	POLYVINYL CHLORIDE
(R)	RELOCATE	H	HEIGHT	QD	QUICK DISCONNECT
		HB	HOSE BIBB	R	RADIUS
A/C	AIR CONDITIONING	HL	HIGH LIMIT	RA	RETURN AIR
AAV	AUTOMATIC AIR VENT	HOA	HAND–OFF–AUTO SWITCH	REQD	REQUIRED
AD	ACCESS DOOR	HP	HORSEPOWER	REV	REVISION
AFC	ABOVE FINISHED CEILING	HPR	HEAT PUMP RETURN	RH	RELATIVE HUMIDITY
AFF	ABOVE FINISHED FLOOR	HPS	HEAT PUMP SUPPLY	RL	REFRIGERANT LIQUID
AL	ALUMINUM	HPWS	HEAT PUMP, WATER SOURCE	RLA	RUNNING LOAD AMPS
AOP	ANALOG OUTPUT PNEUMATIC	HT	HEIGHT	RM	ROOM
AP	ACCESS PANEL	HTG	HEATING	RP	RADIANT PANEL
BD	BLOWDOWN	HTR	HEATER	RPM	REVOLUTIONS PER MINUTE
BDD	BACKDRAFT DAMPER	HVAC	HEATING, VENTILATING, AND AIR CONDITIONING	RS	REFRIGERANT SUCTION
BFP	BACKFLOW PREVENTER	HX	HEAT EXCHANGER	RV	RELIEF VENT
BOB	BOTTOM OF BEAM	IA	INSTRUMENT AIR	SA	SUPPLY AIR, SOUND ATTENUATOR
BOD	BOTTOM OF DUCT	ID	INSIDE DIMENSIONS	SD	SMOKE DETECTOR
BOJ	BOTTOM OF JOIST	IN	INCH	SF	SQUARE FEET
BOP	BOTTOM OF PIPE	INS	INSULATION	SFD	SMOKE/FIRE DAMPER
BTU	BRITISH THERMAL UNIT	KV	KILOVOLT	SP	STATIC PRESSURE
C/A	COMBUSTION AIR	KVA	KILOVOLT AMPS	SPEC	SPECIFICATION(S)
CAP	CAPACITY	KW	KILOWATT	SQ	SQUARE
CFH	CUBIC FEET PER HOUR	KWH	KILOWATT HOUR	SQ IN	SQUARE INCH
CFM	CUBIC FEET PER MINUTE	L	LENGTH	SS	STAINLESS STEEL
CLG	CEILING	LAT	LEAVING AIR TEMPERATURE	STD	STANDARD(S)
COND	CONDENSATE	LBS	POUNDS	STL	STEEL
CPVC	CHLORINATED POLYVINYL CHLORIDE	LCP	LOCAL CONTROL PANEL	STR	STRUCTURAL
CR	CONDENSATE RETURN	LDB	LEAVING DRY BULB	TCP	TEMPERATURE CONTROL PANEL
DB	DRY BULB	LF	LINEAR FOOT	TCV	TEMPERATURE CONTROL VALVE
DBA	DECIBEL	LPR	LOW PRESSURE CONDENSATE RETURN	TEMP	TEMPERATURE
DCW	DOMESTIC COLD WATER	LPS	LOW PRESSURE STEAM	TOB	TOP OF BEAM
DEMO	DEMOLITION	LRA	LOCKED ROTOR AMPS	TOC	TOP OF CURB
DHW	DOMESTIC HOT WATER	LWB	LEAVING WET BULB	TOD	TOP OF DUCT
DI	DIGITAL INPUT	LWT	LEAVING WATER TEMPERATURE	TOJ	TOP OF JOIST
DIA	DIAMETER	MAD	MANUAL AIR DAMPER	TSTAT	THERMOSTAT
DIM	DIMENSION	MAU	MAKE–UP AIR	TXV	THERMOSTATIC EXPANSION VALVE
DM	DAMPER MOTOR	MAV	MANUAL AIR VENT	TYP	TYPICAL
DN	DOWN	MAX	MAXIMUM	UL	UNDERWRITER'S LABORATORIES
DPI	DIFFERENTIAL PRESSURE INDICATOR	MBH	THOUSAND BTU	UNO	UNLESS NOTED OTHERWISE
DWG	DRAWING(S)	MCC	MOTOR CONTROL CENTER	V	VOLTS
DX	DIRECT EXPANSION	MD	MANUAL DAMPER	VAV	VARIABLE AIR VOLUME
EA	EXHAUST AIR	MEZZ	MEZZANINE	VD	VOLUME DAMPER
EC	ELECTRICAL CONTRACTOR	MFR	MANUFACTURER	VFD	VARIABLE FREQUENCY DRIVE
ELEC	ELECTRIC OR ELECTRICAL	MIN	MINIMUM	VR	VACUUM RETURN
ELEV	ELEVATION	MOD	MOTOR OPERATED DAMPER	VTR	VENT THROUGH ROOF
EQUIP	EQUIPMENT	MTD	MOUNTED	VVT	VARIABLE VOLUME AND TEMPERATURE
ETR	EXISTING TO REMAIN	MTR	MOTOR	W	WIDTH
EWB	ENTERING WET BULB	N/A	NOT APPLICABLE	W/	WITH
EWT	ENTERING WATER TEMPERATURE	NC	NORMALLY CLOSED	WB	WET BULB
EXH	EXHAUST	NIC	NOT IN CONTRACT	WG	WATER GAUGE (INCHES)
EX	EXISTING	NO	NORMALLY OPEN	WHSE	WAREHOUSE
FA	FRESH AIR	NOM	NOMINAL	W/O	WITH OUT
FD	FIRE DAMPER	NRS	NON–RISING STEM	XFMR	TRANSFORMER
FI	FLOW INDICATOR	NTS	NOT TO SCALE	XP	EXPLOSION PROOF
FLD	FLOOR DRAIN	OA	OUTSIDE AIR	Z	ZONE
FLG	FLANGE	OBD	OPPOSED BLADE DAMPER	ZD	ZONE DAMPER
FLM	FLOW METER	OD	OUTSIDE DIMENSIONS		
FLR	FLOOR	OE	OPEN END DUCT		
FOB	FLAT ON BOTTOM	OS&Y	OUTSIDE SCREW AND YOKE		
FOT	FLAT ON TOP	P	PRESSURE		
FPM	FEET PER MINUTE	PC	PLUMBING CONTRACTOR		
FS	FLOW SWITCH	PD	PUMPED CONDENSATE DRAIN		
FT	FOOT OR FEET	PG	PIPE GUARD		
GA	GAUGE	PH	PHASE		
GALV	GALVANIZED	PS	PRESSURE SWITCH		

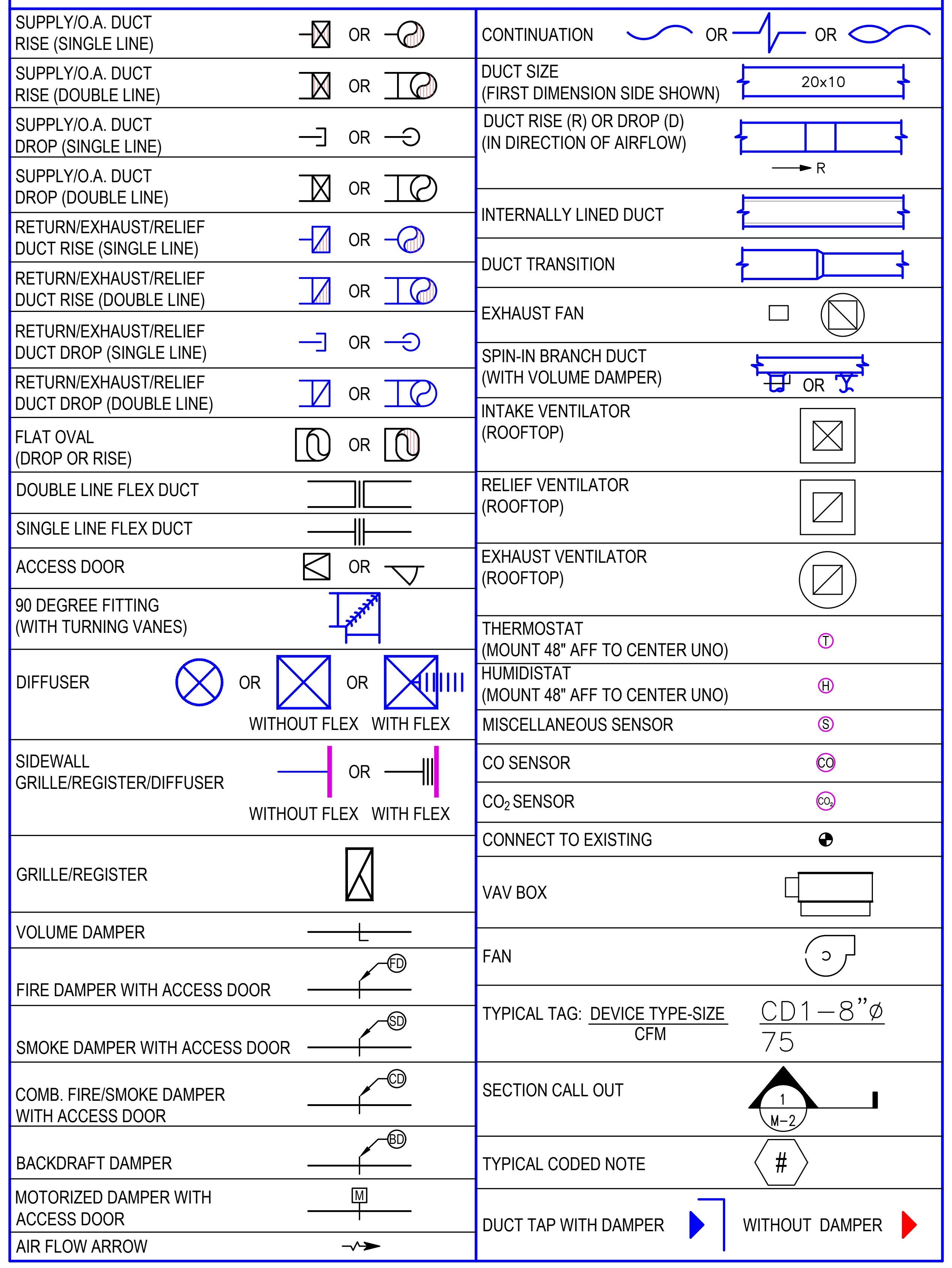
EQUIPMENT NOTATION

NOTE: NOT ALL NOTATIONS MAY BE USED.

AC–1	AIR CONDITIONING UNIT
ACC–1	AIR COOLED CONDENSER
ACCU–1	AIR COOLED CONDENSING UNIT
ACF–1	AIR CURTAIN FAN
AHU–1	AIR HANDLING UNIT
ARU–1	AIR ROTATION UNIT
AS–1	AIR SEPARATOR
B–1	BOILER
BB–1	BASEBOARD HEATER
BDS–1	BLOWDOWN SEPARATOR
BFP–1	BOILER FEEDWATER PUMP
BPD–1	BY–PASS DAMPER
CC–1	COOLING COIL
CD1	CEILING DIFFUSER
CH–1	CHILLER
CP–1	CONTROL PANEL
CR–1	CONDENSATE RECEIVER
CRAC–1	COMPUTER ROOM AIR CONDITIONER
CRU–1	CONDENSATE RETURN UNIT
CT–1	COOLING TOWER
CU–1	CONDENSING UNIT
CUH–1	CABINET UNIT HEATER
D–1	DEAERATOR
DH–1	DUCT HEATER
EF–1	EXHAUST FAN
EG1	EXHAUST GRILLE
ET–1	EXPANSION TANK
EUH–1	ELECTRIC UNIT HEATER
EWH–1	ELECTRIC WALL HEATER
F–1	FURNACE
FCU–1	FAN COIL UNIT
FTR–1	FIN TUBE RADIATION
GIV–1	GRAVITY INTAKE VENTILATOR
GRV–1	GRAVITY RELIEF VENT
H–1	HUMIDIFIER
HC–1	HEATING COIL
HP–1	HEAT PUMP
HRC–1	HEAT RECOVERY COIL
HRU–1	HEAT RECOVERY UNIT
HVLS–1	HIGH VOLUME LOW SPEED FAN
HWC–1	HOT WATER COIL
HX–1	HEAT EXCHANGER
LV–1	LOUVER
MAU–1	MAKE–UP AIR UNIT
MOD–1	MOTOR OPERATED DAMPER
P–1	PUMP
PDH–1	POOL DEHUMIDIFICATION UNIT
PHC–1	PRE–HEAT COIL
PTAC–1	PACKAGED TERMINAL AIR CONDITIONER
RAC–1	ROOM AIR CONDITIONER
RF–1	RETURN FAN
RG1	RETURN GRILLE
RH–1	RADIANT UNIT HEATER
RHC–1	RE–HEAT COIL
RTU–1	ROOFTOP UNIT
SA–1	SOUND ATTENUATOR
SF–1	SUPPLY FAN
SG1	SUPPLY GRILLE
UH–1	UNIT HEATER
UV–1	UNIT VENTILATOR
VAV–1	VARIABLE AIR VOLUME TERMINAL
VFD–1	VARIABLE FREQUENCY DRIVE
WCC–1	WATER COOLED CONDENSER
ZD–1	ZONE DAMPER

DUCTWORK SYMBOLS LIST

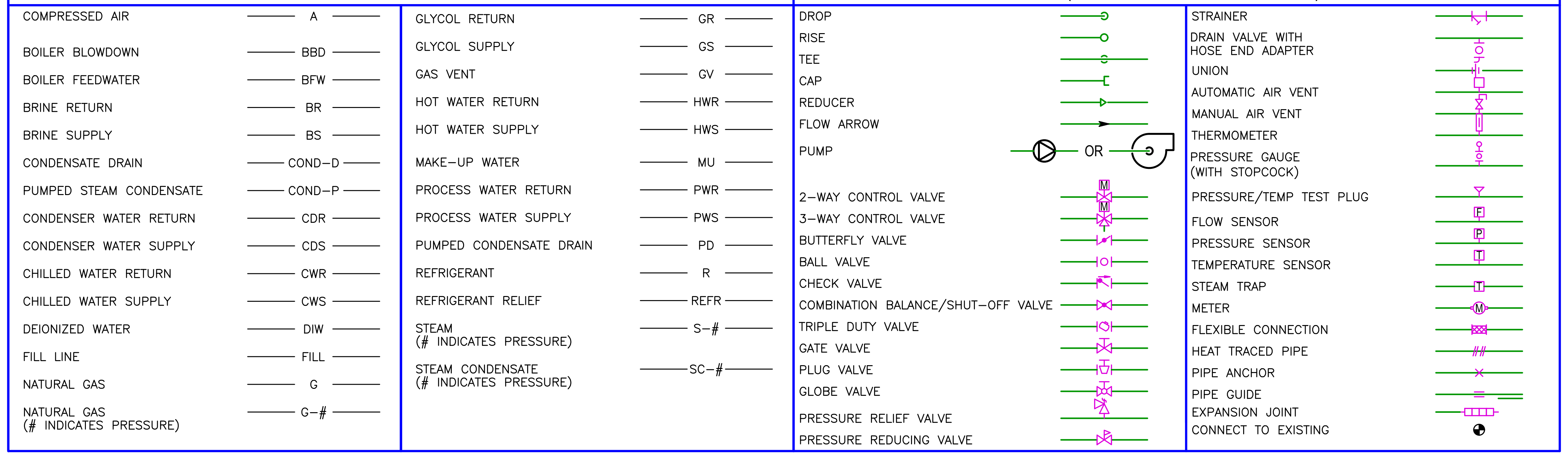
NOTE: NOT ALL SYMBOLS MAY BE USED.



SUPPLY/O.A. DUCT RISE (SINGLE LINE)	OR	CONTINUATION	OR OR
SUPPLY/O.A. DUCT RISE (DOUBLE LINE)	OR	DUCT SIZE (FIRST DIMENSION SIDE SHOWN)	20x10
SUPPLY/O.A. DUCT DROP (SINGLE LINE)	OR	DUCT RISE (R) OR DROP (D) (IN DIRECTION OF AIRFLOW)	R
SUPPLY/O.A. DUCT DROP (DOUBLE LINE)	OR	INTERNALLY LINED DUCT	
RETURN/EXHAUST/RELIEF DUCT RISE (SINGLE LINE)	OR	DUCT TRANSITION	
RETURN/EXHAUST/RELIEF DUCT RISE (DOUBLE LINE)	OR	EXHAUST FAN	
RETURN/EXHAUST/RELIEF DUCT DROP (SINGLE LINE)	OR	SPIN-IN BRANCH DUCT (WITH VOLUME DAMPER)	OR
RETURN/EXHAUST/RELIEF DUCT DROP (DOUBLE LINE)	OR	INTAKE VENTILATOR (ROOFTOP)	
FLAT OVAL (DROP OR RISE)	OR	RELIEF VENTILATOR (ROOFTOP)	
DOUBLE LINE FLEX DUCT		EXHAUST VENTILATOR (ROOFTOP)	
SINGLE LINE FLEX DUCT		THERMOSTAT (MOUNT 48" AFF TO CENTER UNO)	T
ACCESS DOOR	OR	HUMIDISTAT (MOUNT 48" AFF TO CENTER UNO)	H
90 DEGREE FITTING (WITH TURNING VANES)		MISCELLANEOUS SENSOR	S
DIFFUSER	OR OR WITHOUT FLEX WITH FLEX	CO SENSOR	CO
SIDEWALL GRILLE/REGISTER/DIFFUSER	OR WITHOUT FLEX WITH FLEX	CO_2 SENSOR	CO_2
GRILLE/REGISTER		CONNECT TO EXISTING	
VOLUME DAMPER		VAV BOX	
FIRE DAMPER WITH ACCESS DOOR	FD	FAN	
SMOKE DAMPER WITH ACCESS DOOR	SD	TYPICAL TAG: DEVICE TYPE-SIZE / CFM	CD1–8"ø / 75
COMB. FIRE/SMOKE DAMPER WITH ACCESS DOOR	CD	SECTION CALL OUT	1 / M–2
BACKDRAFT DAMPER	BD	TYPICAL CODED NOTE	#
MOTORIZED DAMPER WITH ACCESS DOOR	M	DUCT TAP WITH DAMPER	WITHOUT DAMPER
AIR FLOW ARROW			

PIPING SYMBOLS LIST

NOTE: NOT ALL SYMBOLS MAY BE USED.



PIPING LABELS

COMPRESSED AIR	A	GLYCOL RETURN	GR
BOILER BLOWDOWN	BBD	GLYCOL SUPPLY	GS
BOILER FEEDWATER	BFW	GAS VENT	GV
BRINE RETURN	BR	HOT WATER RETURN	HWR
BRINE SUPPLY	BS	HOT WATER SUPPLY	HWS
CONDENSATE DRAIN	COND–D	MAKE–UP WATER	MU
PUMPED STEAM CONDENSATE	COND–P	PROCESS WATER RETURN	PWR
CONDENSER WATER RETURN	CDR	PROCESS WATER SUPPLY	PWS
CONDENSER WATER SUPPLY	CDS	PUMPED CONDENSATE DRAIN	PD
CHILLED WATER RETURN	CWR	REFRIGERANT	R
CHILLED WATER SUPPLY	CWS	REFRIGERANT RELIEF	REFR
DEIONIZED WATER	DIW	STEAM (# INDICATES PRESSURE)	S–#
FILL LINE	FILL	STEAM CONDENSATE (# INDICATES PRESSURE)	SC–#
NATURAL GAS	G		
NATURAL GAS (# INDICATES PRESSURE)	G–#		

PIPING (FITTINGS, VALVES, AND MISCELLANEOUS)

DROP	STRAINER
RISE	DRAIN VALVE WITH HOSE END ADAPTER
TEE	UNION
CAP	AUTOMATIC AIR VENT
REDUCER	MANUAL AIR VENT
FLOW ARROW	THERMOMETER
PUMP (OR)	PRESSURE GAUGE (WITH STOPCOCK)
2–WAY CONTROL VALVE (M)	PRESSURE/TEMP TEST PLUG
3–WAY CONTROL VALVE (M)	FLOW SENSOR (F)
BUTTERFLY VALVE	PRESSURE SENSOR (P)
BALL VALVE	TEMPERATURE SENSOR (T)
CHECK VALVE	STEAM TRAP (T)
COMBINATION BALANCE/SHUT–OFF VALVE	METER (M)
TRIPLE DUTY VALVE	FLEXIBLE CONNECTION
GATE VALVE	HEAT TRACED PIPE
PLUG VALVE	PIPE ANCHOR
GLOBE VALVE	PIPE GUIDE
PRESSURE RELIEF VALVE	EXPANSION JOINT
PRESSURE REDUCING VALVE	CONNECT TO EXISTING

DRAWING INDEX

DWG.	SHEET TITLE
M–C	MECHANICAL COVER
M–1	FLOOR PLAN – MECHANICAL
M–2	FLOOR PLAN – MECHANICAL
M–3	ROOF CURB DETAILS – MECHANICAL
M–4	REFLECTED CEILING PLAN – MECHANICAL
M–5	SECTIONS – MECHANICAL
M–6	DETAILS – MECHANICAL
M–7	SCHEDULES – MECHANICAL
M–8	SCHEDULES – MECHANICAL

PROJECT NOTES

THESE CONTRACT DOCUMENTS HAVE BEEN PREPARED IN ACCORDANCE WITH THE 2015 INTERNATIONAL MECHANICAL CODE PROVISIONS FOR MECHANICAL CODES AND 2017 BUILDING CODES.

CONTRACT DRAWINGS ARE DIAGRAMMATIC, INTENDED TO CONVEY SCOPE OF WORK, AND SHOW GENERAL ARRANGEMENT OF EQUIPMENT AND SERVICES. FIELD VERIFY DIMENSIONS AND EXISTING CONDITIONS PRIOR TO EXECUTION OF WORK. REFER TO DETAILS AND SCHEDULES FOR ADDITIONAL INFORMATION OR REQUIREMENTS. DO NOT SCALE DRAWINGS.

INSTALL DUCTWORK AND ACCESSORIES IN SUCH A MANNER FOR EASE OF BALANCING AND SERVICE. (FIELD VERIFY).

FIELD COORDINATE FINAL LOCATION OF AIR DEVICES WITH WORK OF OTHER TRADES.

EQUIPMENT SCHEDULES ARE PROVIDED FOR INFORMATION PURPOSES AND ARE SUPERSEDED BY SHOP DRAWINGS. REFER TO SHOP DRAWINGS FOR MANUFACTURER'S INSTALLATION AND OPERATION INSTRUCTIONS, AND PERFORMANCE CRITERIA.

A SET OF CONSTRUCTION DRAWINGS SHALL BE MAINTAINED AT THE JOB SITE TO BE USED TO DOCUMENT DATA, INCLUDING BUT NOT LIMITED TO LOCATIONS AND EQUIPMENT SCHEDULES.

TRENCHING, SAW CUTTING, CORING, FLASHING, OR STRUCTURAL WORK IS BY OTHERS. STRUCTURAL FRAMING AND SUPPORTS SHALL PROVIDE NECESSARY SUPPORT WITH A MINIMUM CLEARANCE OF 1/2 INCH IN ALL DIRECTIONS.

EVERY SUPPLY OR EXHAUST RUN–OUT SHALL BE EQUAL TO THE AIR DEVICE NECK SIZE, WITH A VOLUME DAMPER FOR BALANCING.

THERMOSTATS SHALL BE MOUNTED 48 INCHES ABOVE FINISHED FLOOR IN ACCORDANCE WITH AMERICAN DISABILITIES ACT REQUIREMENTS.

MAINTAIN 42 INCHES OF WORK SPACE CLEARANCE IN FRONT OF ALL SERVICE PANELS. WORK SPACE SHALL PERMIT HINGED SERVICE PANELS TO SWING OPEN AT LEAST 90 DEGREES.

WHEN RETURN AIR IS DRAWN THROUGH A PLENUM CAVITY, THE PLENUM SHALL BE CONSIDERED A "NON–COMBUSTIBLE PLENUM", FREE OF COMBUSTIBLE MATERIALS IN ACCORDANCE WITH THE 2015 INTERNATIONAL MECHANICAL CODE, SECTION 602.

COVERINGS, LININGS, INSULATION, AND ADHESIVES, INSTALLED UNDER THIS CONTRACT SHALL MEET FLAME SPREAD RATING OF 25 AND SMOKE DEVELOPED RATING OF 50 PER ASTM E84. THICKNESS OF INSULATION SHALL BE IN ACCORDANCE WITH THE 2015 INTERNATIONAL MECHANICAL CODE, SECTION 604.

FIRE RATED FLOOR AND WALL PENETRATIONS SHALL BE FIRE STOPPED WITH UL APPROVED MATERIALS MEETING THE TESTING REQUIREMENTS OF ASTM E814, OR IN ACCORDANCE WITH THE REQUIREMENTS OF THE AUTHORITIES HAVING JURISDICTION, FOR THE REQUIRED RATING OF THE STRUCTURE.

ALL SHEETMETAL DUCTWORK, HANGERS, AND SUPPORTS SHALL BE CONSTRUCTED AND INSTALLED IN ACCORDANCE WITH THE 2015 INTERNATIONAL MECHANICAL CODE, SECTION 603 AND SMACNA "HVAC DUCT CONSTRUCTION STANDARDS". DUCTWORK SIZES INDICATED ON DRAWINGS ARE INSIDE DIMENSIONS. MAXIMUM FLEXIBLE DUCT LENGTH SHALL BE 7 FEET.

VENTILATION AIR SHALL BE PROVIDED TO THE FACILITY IN ACCORDANCE WITH THE REQUIREMENTS OF THE 2015 INTERNATIONAL MECHANICAL CODE, SECTION 401.

GAS PIPING SHALL BE ASTM A53 SCHEDULE 40 CONTINUOUS WELD OR SEAMLESS PIPE.

ALL FITTINGS ON GAS PIPING INSTALLED IN A PLENUM SPACE SHALL BE BUTT WELDED.

ALL FITTINGS 2" AND SMALLER SHALL BE THREADED BLACK MALLEABLE FITTINGS OR PRESSED STYLE FITTINGS. ALL FITTINGS 2 1/2" AND LARGER SHALL BE BUTT WELDED.

GAS PIPING 2 1/2" AND LARGER SHALL BE WELDED, PIPING 2" AND UNDER SHALL BE THREADED OR PRESSED.

PRESSURE TEST PIPING IN ACCORDANCE WITH INTERNATIONAL FUEL GAS CODE SECTION 406.1 WITH A KUHLMAN LEAK DETECTOR. PRESSURE TEST TO 30 PSI TEST PRESSURE FOR A MINIMUM OF 30 MINUTES.

AIR DISTRIBUTION SYSTEMS SHALL BE EQUIPPED WITH A PHOTOELECTRIC SMOKE DETECTOR IN ACCORDANCE WITH THE 2015 INTERNATIONAL MECHANICAL CODE, SECTION 606. EACH SMOKE DETECTOR SHALL BE WIRED TO SHUT DOWN ITS RESPECTIVE AIR DISTRIBUTION SYSTEM. LOCAL AUDIBLE AND VISUAL INDICATION SHALL BE PROVIDED AS PART OF THIS CONTRACT AT LOCATIONS INDICATED ON THE DRAWINGS. INTERCONNECTION WIRING BETWEEN AIR DISTRIBUTION SYSTEMS OR FIRE ALARM PANELS, IF REQUIRED, ARE NOT PART OF THIS CONTRACT. SMOKE DETECTOR POWER WIRING, IF REQUIRED, IS NOT PART OF THIS CONTRACT. WHEN THE FACILITY IS PROTECTED BY A CENTRAL FIRE ALARM PANEL, IN LIEU OF INSTALLING THE LOCAL AUDIBLE AND VISUAL ALARM, THE ALARM WILL BE TURNED OVER TO THE OWNER.

FIRE DAMPERS SHALL BE INSTALLED PER NPFA 90A 2018 EDITION.

DESIGN BUILDER:
ARCO
DESIGN/BUILD
1235 NORTH LOOP WEST | SUITE 1200 281.310.8900
HOUSTON, TX 77008

DESIGNER/ ENGINEER:

1235 NORTH LOOP WEST | SUITE 1200 281.310.8900
HOUSTON, TX 77008

OWNER:
ISCO

PROJECT TITLE:
ISCO
RIVERPORT

7000 TRANSPORT
COURT
LOUISVILLE, KY 40258

ESTD 1951
PERFECTION
GROUP

SEAL:
WILLIAM JOHN
ALBRECHT, JR.
22435

SUBMITTALS / REVISIONS:

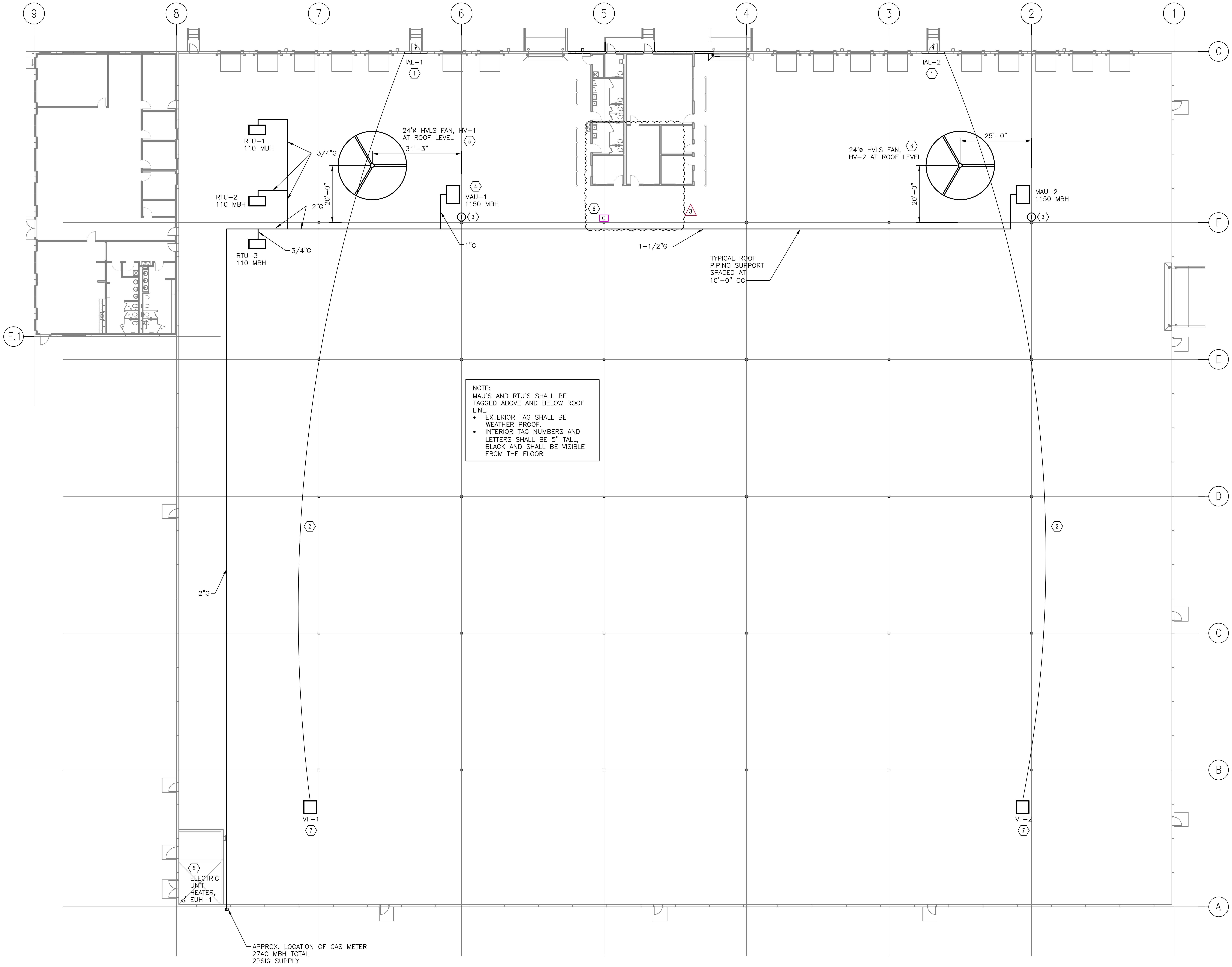
NO.	DATE	DESCRIPTION
	2025.07.07	ISSUED FOR PERMIT

PROJECT NO.: 25089
DRAWN BY: TDJ

SHEET TITLE:
MECHANICAL COVER

SHEET NUMBER:
M-C

Issue Date



NOTE:
MAU'S AND RTU'S SHALL BE TAGGED ABOVE AND BELOW ROOF LINE.
- EXTERIOR TAG SHALL BE WEATHER PROOF.
- INTERIOR TAG NUMBERS AND LETTERS SHALL BE 5" TALL, BLACK AND SHALL BE VISIBLE FROM THE FLOOR

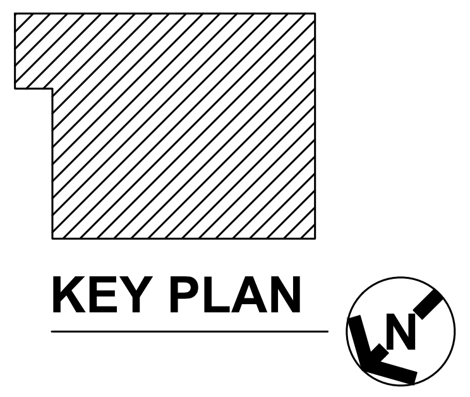
1 **FLOOR PLAN - MECHANICAL**
1/16"=1'-0"
0 8' 16' 32'

GENERAL NOTES

A. GENERAL CONTRACTOR IS RESPONSIBLE FOR PAINTING ROOF MOUNTED GAS PIPING.

CODED NOTES

1. INSTALL INTAKE AIR LOUVER IN WALL OPENING. VERIFY FINAL MOUNTING HEIGHT AND LOCATION PRIOR TO INSTALLATION. CAULKING AROUND LOUVER BY GENERAL CONTRACTOR.
2. INTERLOCK BETWEEN SUMMER VENTILATION INTAKE AIR LOUVER AND SUMMER VENTILATION FAN BY OTHERS.
3. VERIFY FINAL LOCATION AND MOUNTING HEIGHT OF MAKE UP AIR UNIT CONTROL PANEL WITH GENERAL CONTRACTOR PRIOR TO INSTALLATION. MOUNT AT 10'-0" UNLESS DIRECTED OTHERWISE.
4. INSTALL DISCHARGE AIR HEAD AT MAKE UP AIR UNIT SUPPLY PER DETAIL ON SHEET M-4.
5. COORDINATE WITH GENERAL CONTRACTOR UNIT HEATER LOCATION AND MOUNTING HEIGHT PRIOR TO INSTALLATION.
6. FAN CONTROLLER SERVING HVLS-1 & 2. 120V TO CONTROLLER BY PERFECTION MECHANICAL. CONDUIT DROP DOWN TO CONTROLLER POSITION BY ELECTRICAL CONTRACTOR. MOUNT ON COLUMN AT 10'-0" AFF UNLESS DIRECTED OTHERWISE.
7. VENTILATION FAN STARTER SUPPLIED BY PERFECTION MECHANICAL AND INSTALLED AND WIRED BY ELECTRICAL CONTRACTOR.
8. COORDINATE LOCATION IN FIELD TO BE CENTERED BETWEEN SPRINKLER HEADS.



DESIGN BUILDER:
ARCO DESIGN/BUILD
1235 NORTH LOOP WEST | SUITE 1200 281.310.8900
HOUSTON, TX 77008

DESIGNER/ ENGINEER:
1235 NORTH LOOP WEST | SUITE 1200 281.310.8900
HOUSTON, TX 77008

OWNER:
ISCO

PROJECT TITLE:
ISCO
RIVERPORT

7000 TRANSPORT
COURT
LOUISVILLE, KY 40258

ESTD 1951
PERFECTION
GROUP

SEAL:
WILLIAM JOHN
ALBRECHT, JR.
22435

SUBMITTALS / REVISIONS:

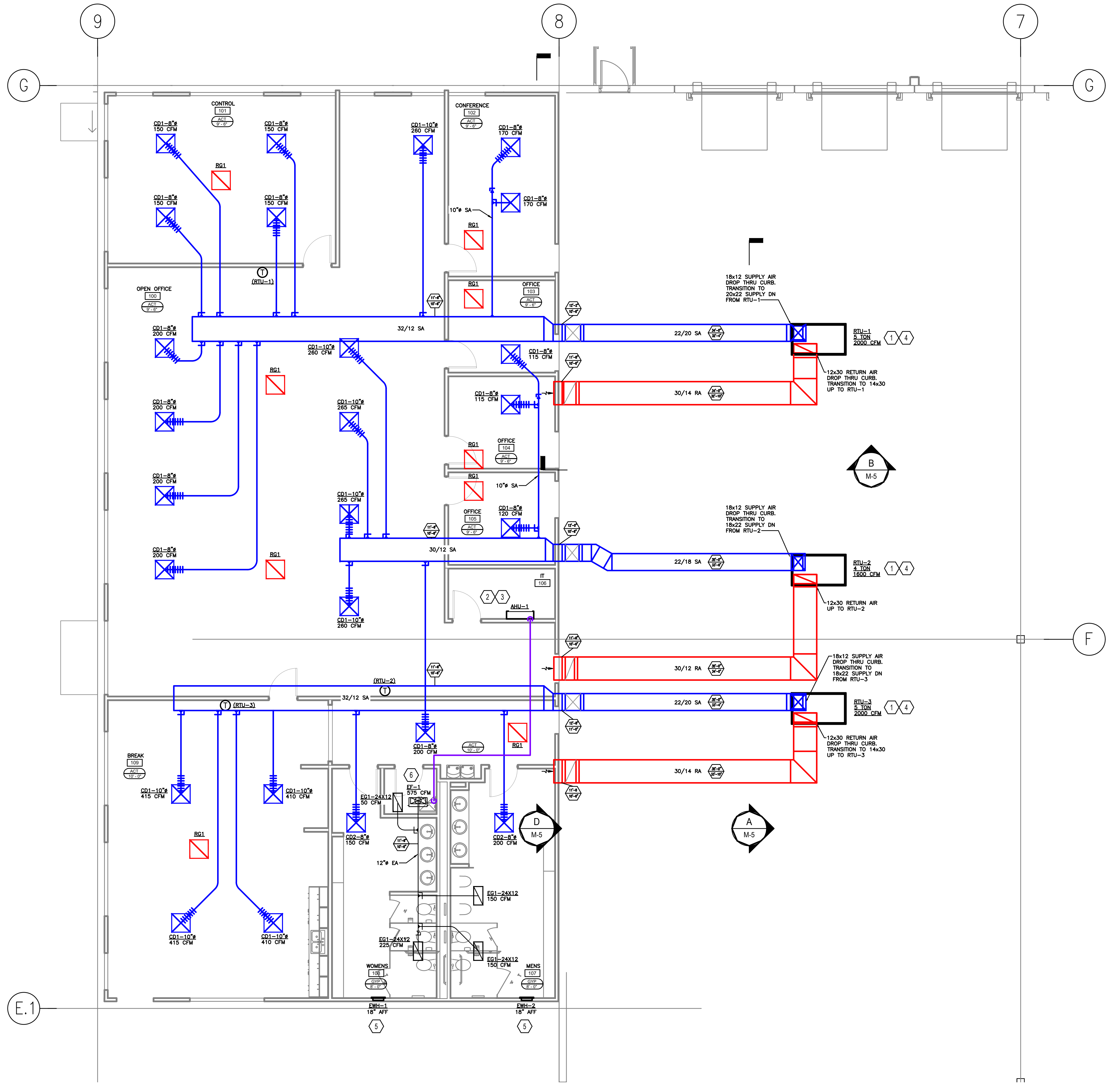
NO.	DATE	DESCRIPTION
	2025.07.07	ISSUED FOR PERMIT
1	2025.07.15	ENGINEERING CHANGE
2	2025.10.29	ENGINEERING CHANGE
3	2025.11.14	REVISION

PROJECT NO.: 25089
DRAWN BY: TDJ

SHEET TITLE:
FLOOR PLAN -
MECHANICAL

SHEET NUMBER:
M-1

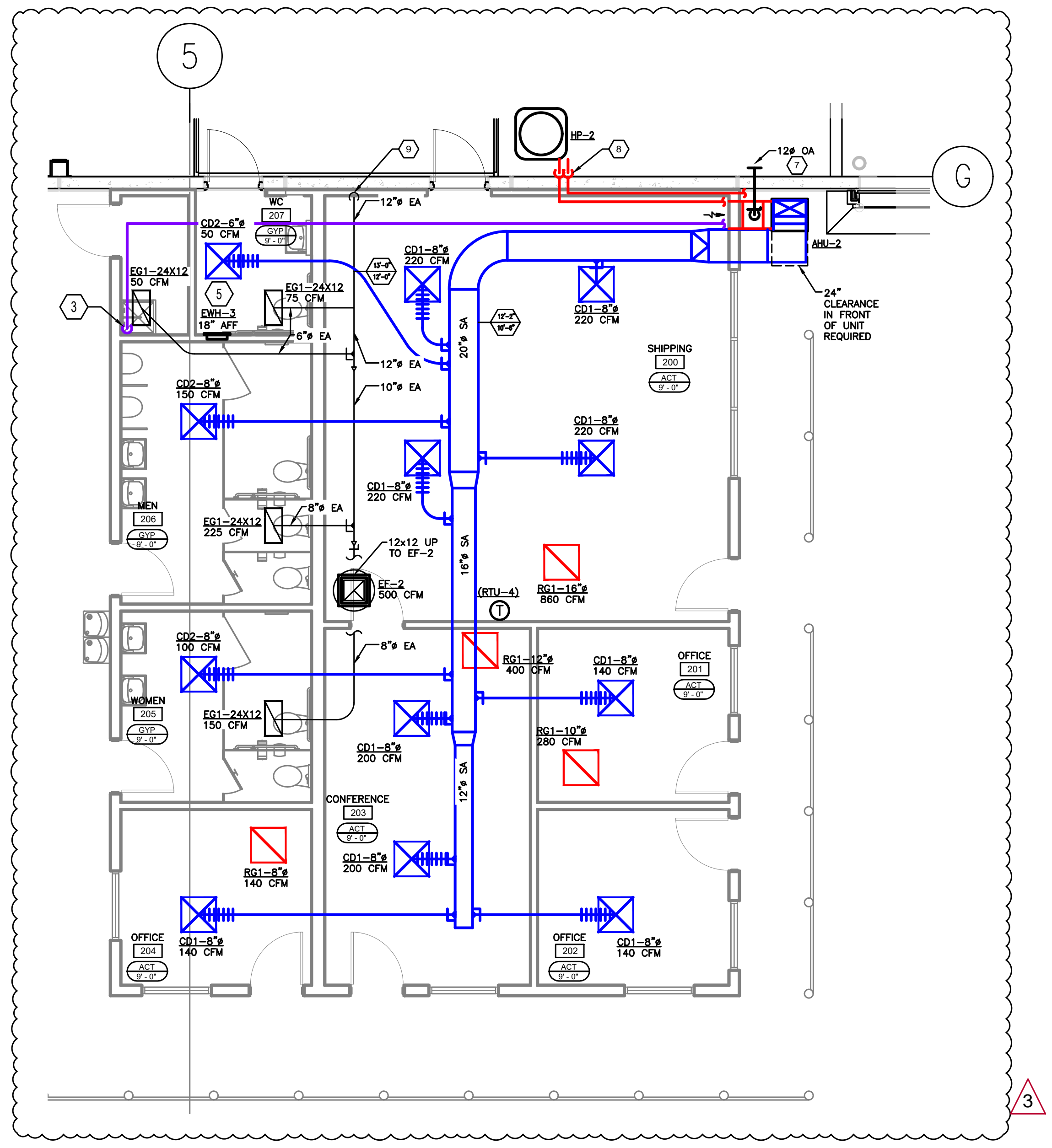
Issue Date



1 FLOOR PLAN - MECHANICAL

1/8"=1'-0"

0 4' 8' 16'



2 FLOOR PLAN - MECHANICAL

1/8"=1'-0"

0 4' 8' 16'

GENERAL NOTES

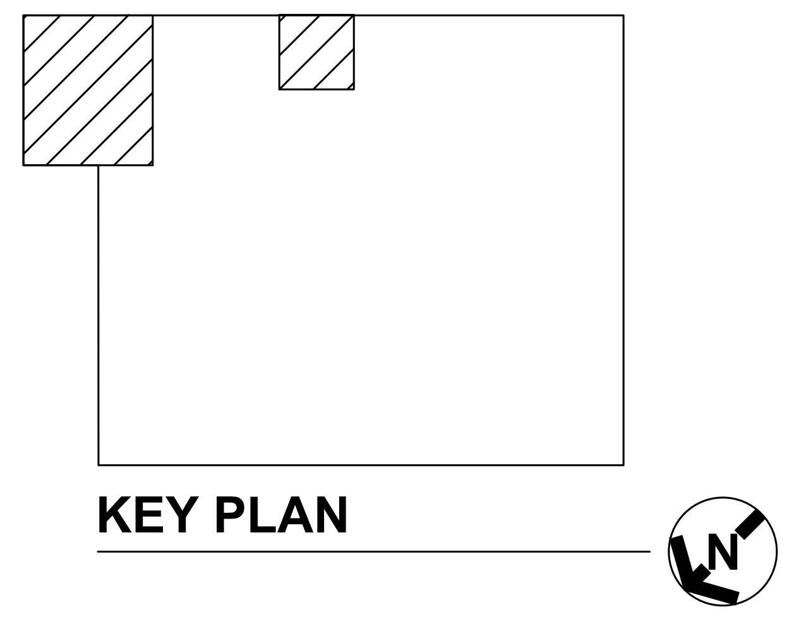
A. VERIFY MOUNTING HEIGHT AND FINAL LOCATION OF ROOFTOP UNIT THERMOSTATS PRIOR TO INSTALLATION.

B. ALL DUCT SIZES SHOWN ARE SHEETMETAL SIZES. SUPPLY AND RETURN DUCTWORK DROP TO BE LINED, ALL RECTANGULAR SUPPLY DUCTWORK TO BE LINED, ALL ROUND SUPPLY AND OUTSIDE AIR DUCTWORK TO BE WRAPPED.

CODED NOTES

1. REFERENCE SHEET M–3 FOR EQUIPMENT CURB LOCATION.
2. COORDINATE WALL MOUNTED AHU–1 WITH GENERAL CONTRACTOR BEFORE INSTALLATION.
3. TERMINATE 3/4" PVC CONDENSATE DRAIN AT SINK WITH AIR GAP.
4. INSTALL SMOKE DETECTOR IN RTU RETURN AIR PATH.
5. COORDINATE ELECTRIC WALL HEATER LOCATIONS WITH GENERAL CONTRACTOR BEFORE INSTALLATION.
6. ROUTE 8"ø UP THROUGH ROOF WITH B–VENT DUCT AND TERMINATE WITH VENT CAP 18" MAX HEIGHT. TRANSITION DUCT AS REQUIRED FROM INLINE EXHAUST FAN EF–1. SEE DETAIL 7 ON SHEET M–6.
7. PROVIDE 12"ø OA DUCT WITH BALANCE DAMPER IN HORIZONTAL THROUGH WALL. TERMINATE WITH WALL VENT AND BIRDSCREEN. EXTERNALLY WRAP DUCT.
8. EXTEND REFRIGERANT LINESET BETWEEN INDOOR AND OUTDOOR CONDENSING UNIT ON GRADE. REFRIGERANT LINES TO ENTER THE BUILDING ABOVE SHIPPING OFFICE ACT CEILING.
9. 12"ø EA DUCT ROUTED UP WALL AND SUPPORTED EVERY 10' WITH RISER CLAMPS OR SIMILAR. DUCT TO ROUTE TIGHT TO DECK BEFORE PENETRATING THE ROOF AT EF–2.

3



KEY PLAN

DESIGN BUILDER:

ARCO DESIGN/BUILD

1235 NORTH LOOP WEST | SUITE 1200
HOUSTON, TX 77008
281.310.8900

DESIGNER/ ENGINEER:

1235 NORTH LOOP WEST | SUITE 1200
HOUSTON, TX 77008
281.310.8900

OWNER:

ISCO

PROJECT TITLE:

ISCO
RIVERPORT

7000 TRANSPORT
COURT
LOUISVILLE, KY 40258

ESTD 1951
PERFECTION
GROUP

SEAL:

WILLIAM JOHN
ALBRECHT, JR.
22435

SUBMITTALS / REVISIONS:

NO.	DATE	DESCRIPTION
	2025.07.07	ISSUED FOR PERMIT
1	2025.07.15	ENGINEERING CHANGE
2	2025.11.05	ENGINEERING CHANGE
3	2026.01.29	REVISION

PROJECT NO.: 25089

DRAWN BY: TDJ

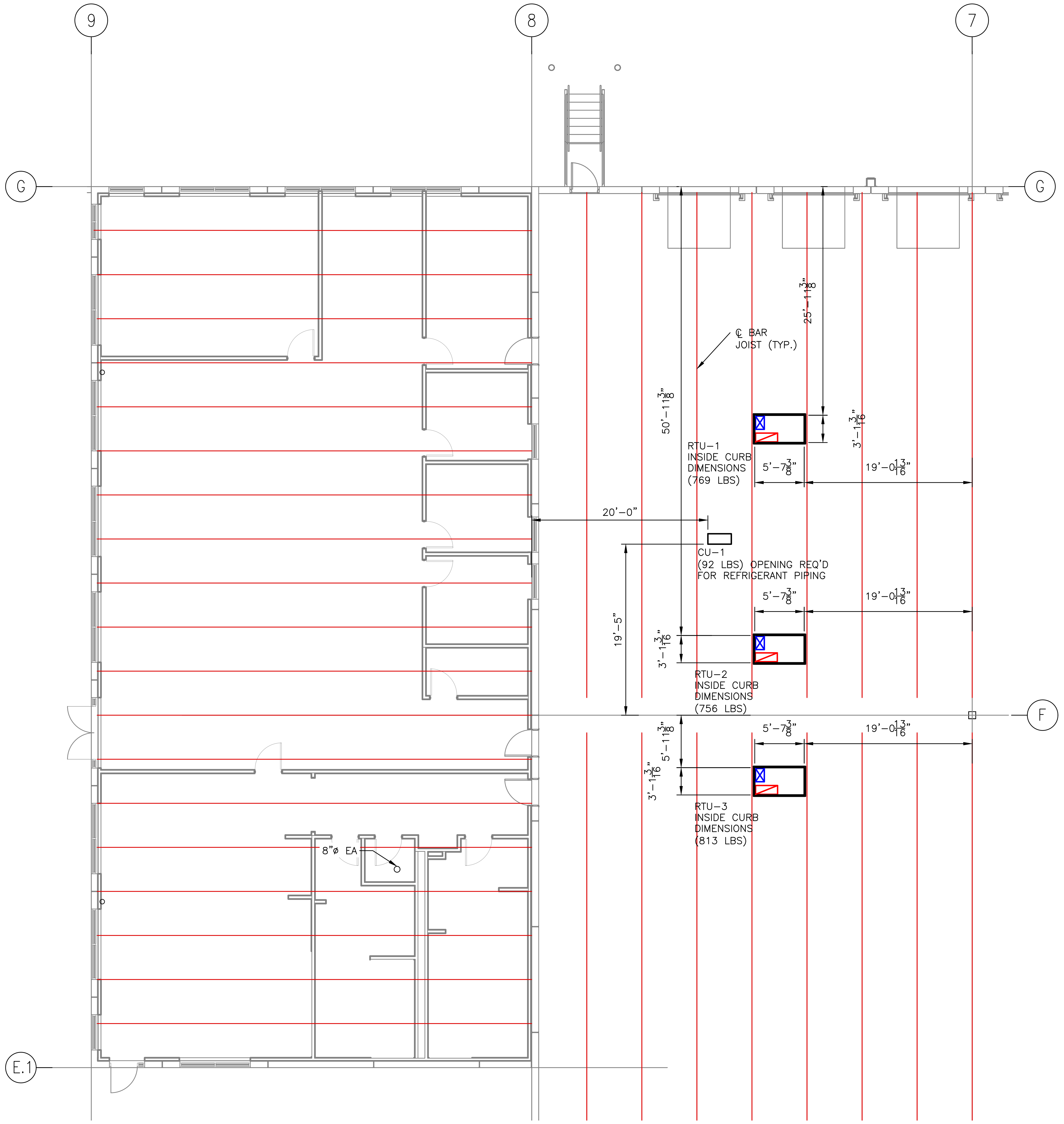
SHEET TITLE:

FLOOR PLAN -
MECHANICAL

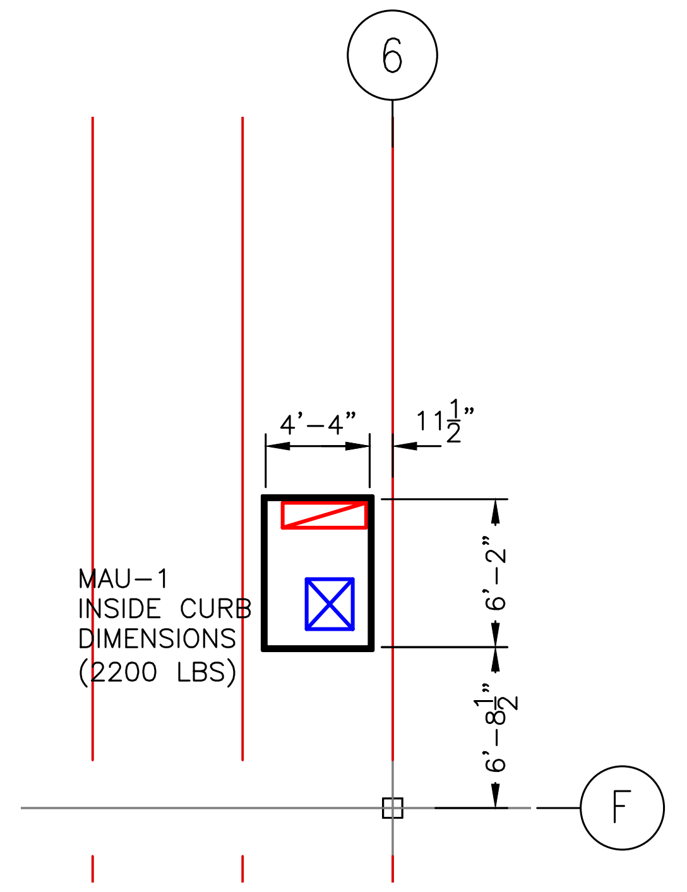
SHEET NUMBER:

M-2

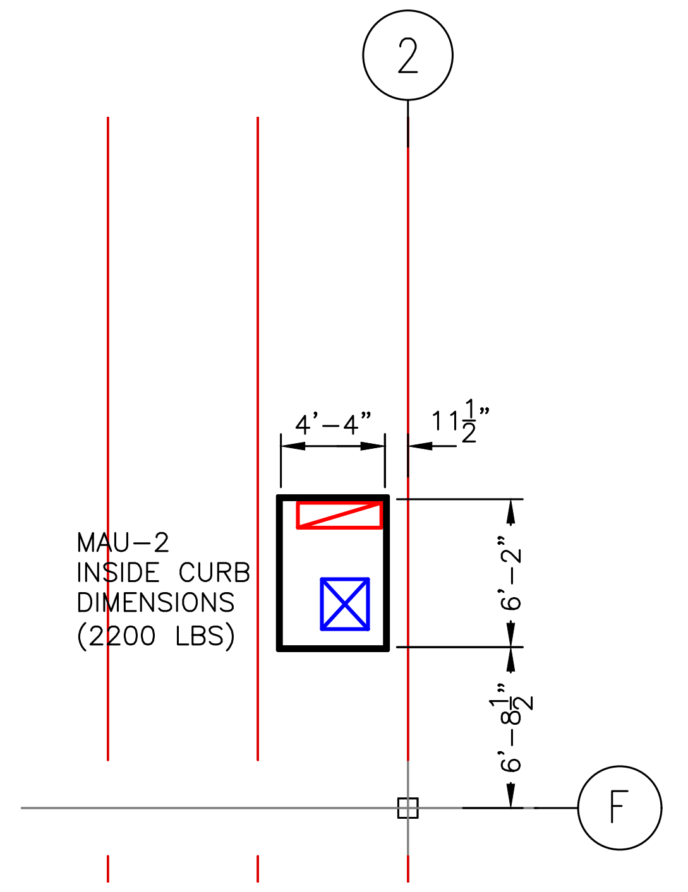
Issue Date



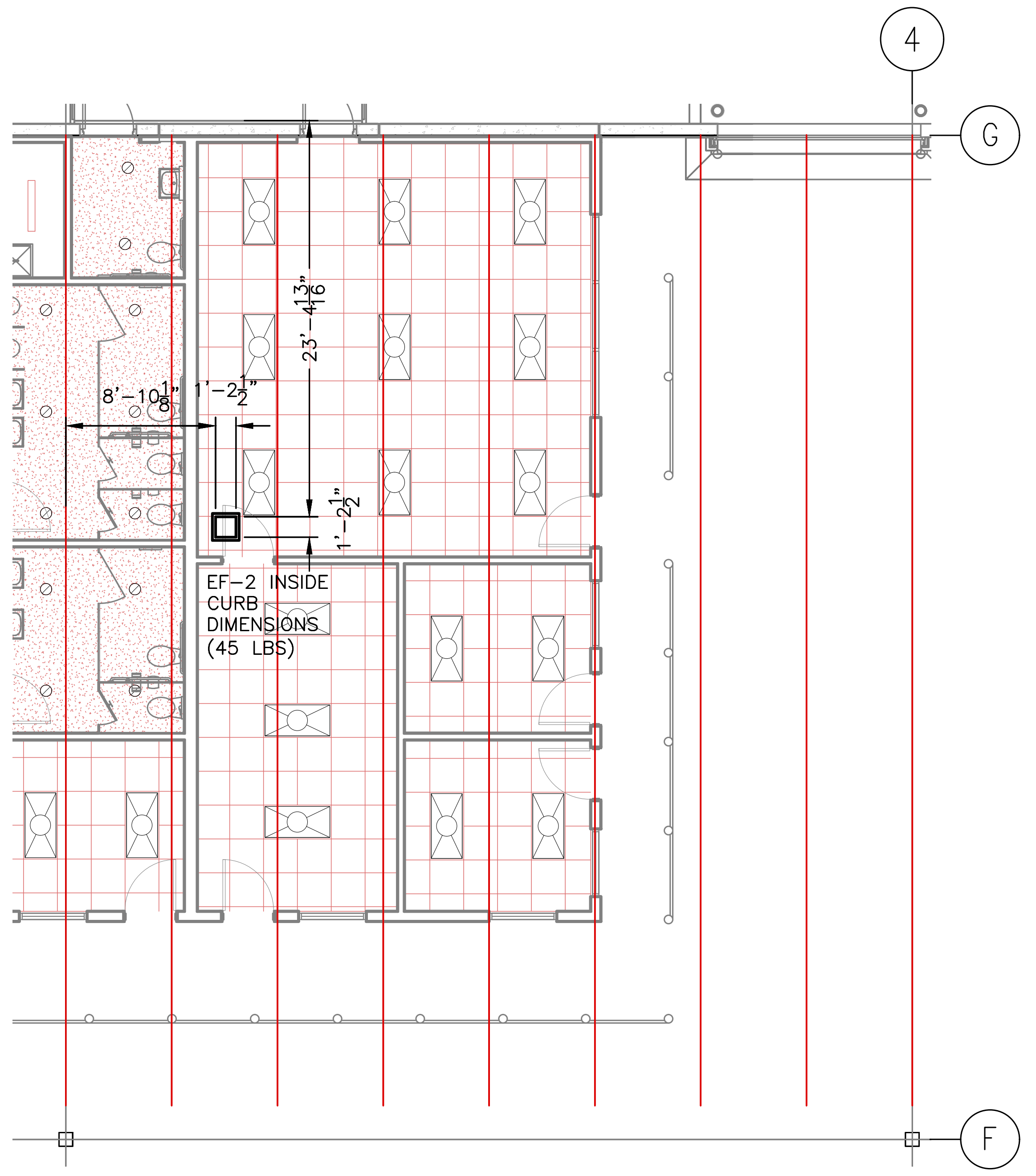
1 OFFICE ROOF PLAN - MECHANICAL
1/8"=1'-0"



2 ROOF PLAN - MAU-1
1/8"=1'-0"

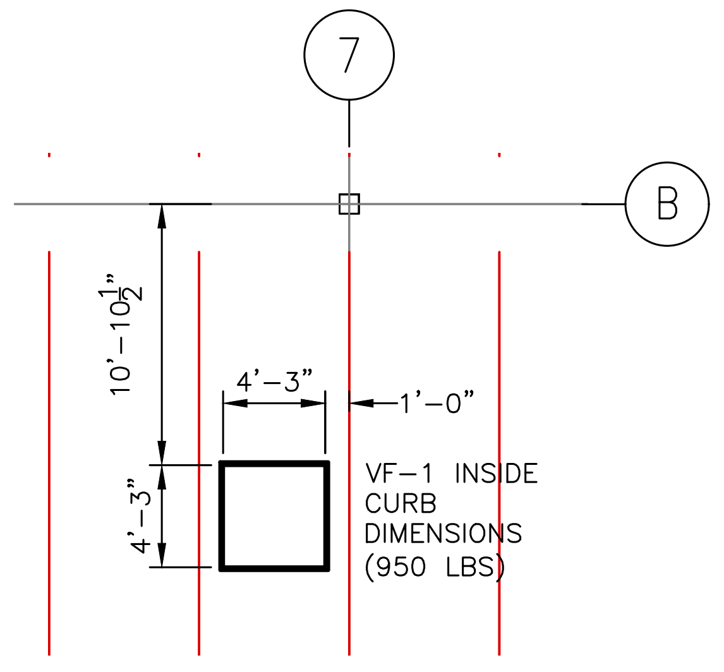


3 ROOF PLAN - MAU-2
1/8"=1'-0"

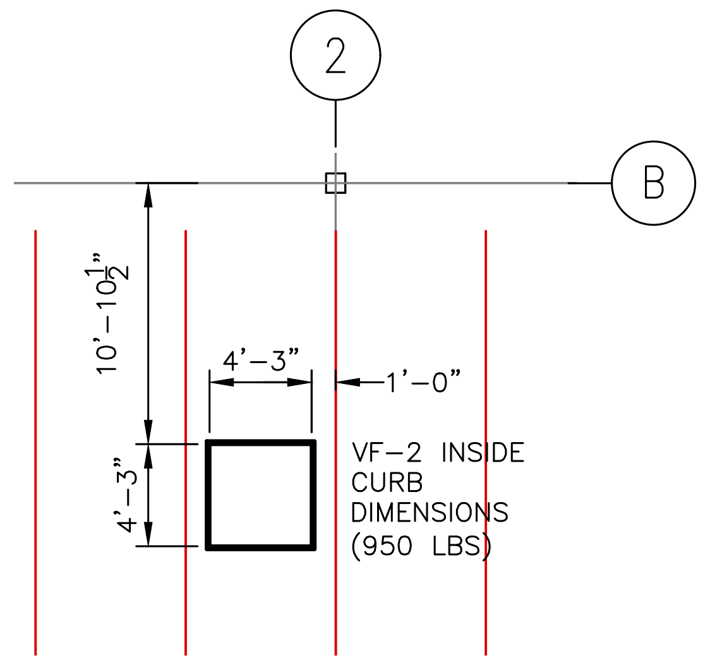


4 ROOF OPENING PLAN - EF-2
1/8"=1'-0"

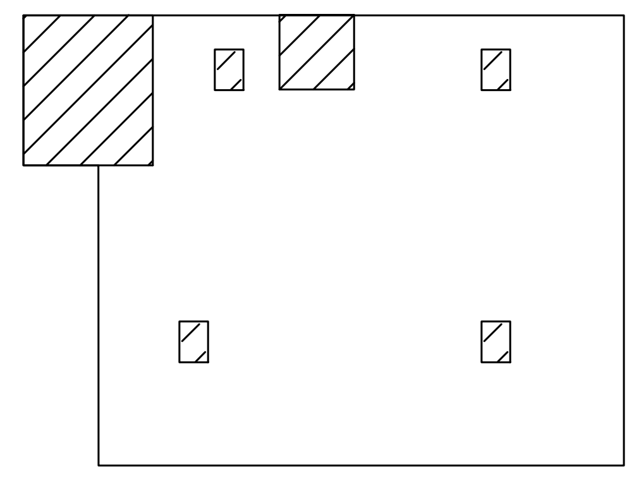
1



5 ROOF OPENING PLAN - VF-1
1/8"=1'-0"



6 ROOF OPENING PLAN - VF-2
1/8"=1'-0"



KEY PLAN

DESIGN BUILDER:

ARCO DESIGN/BUILD

1235 NORTH LOOP WEST | SUITE 1200
HOUSTON, TX 77008
281.310.8900

DESIGNER/ ENGINEER:

1235 NORTH LOOP WEST | SUITE 1200
HOUSTON, TX 77008
281.310.8900

OWNER:

ISCO

PROJECT TITLE:

ISCO
RIVERPORT

7000 TRANSPORT
COURT
LOUISVILLE, KY 40258

ESTD 1951
PERFECTION
GROUP

SEAL:

WILLIAM JOHN ALBRECHT, JR.
22435

SUBMITTALS / REVISIONS:

NO.	DATE	DESCRIPTION
0	2025.07.07	ISSUED FOR PERMIT
1	2026.01.29	REVISION

PROJECT NO.: 25089
DRAWN BY: TDJ

SHEET TITLE:

ROOF CURB DETAILS - MECHANICAL

These drawings are the property of the registered Designer/ Engineer and may not be copied, reproduced or used without their written permission.

SHEET NUMBER:

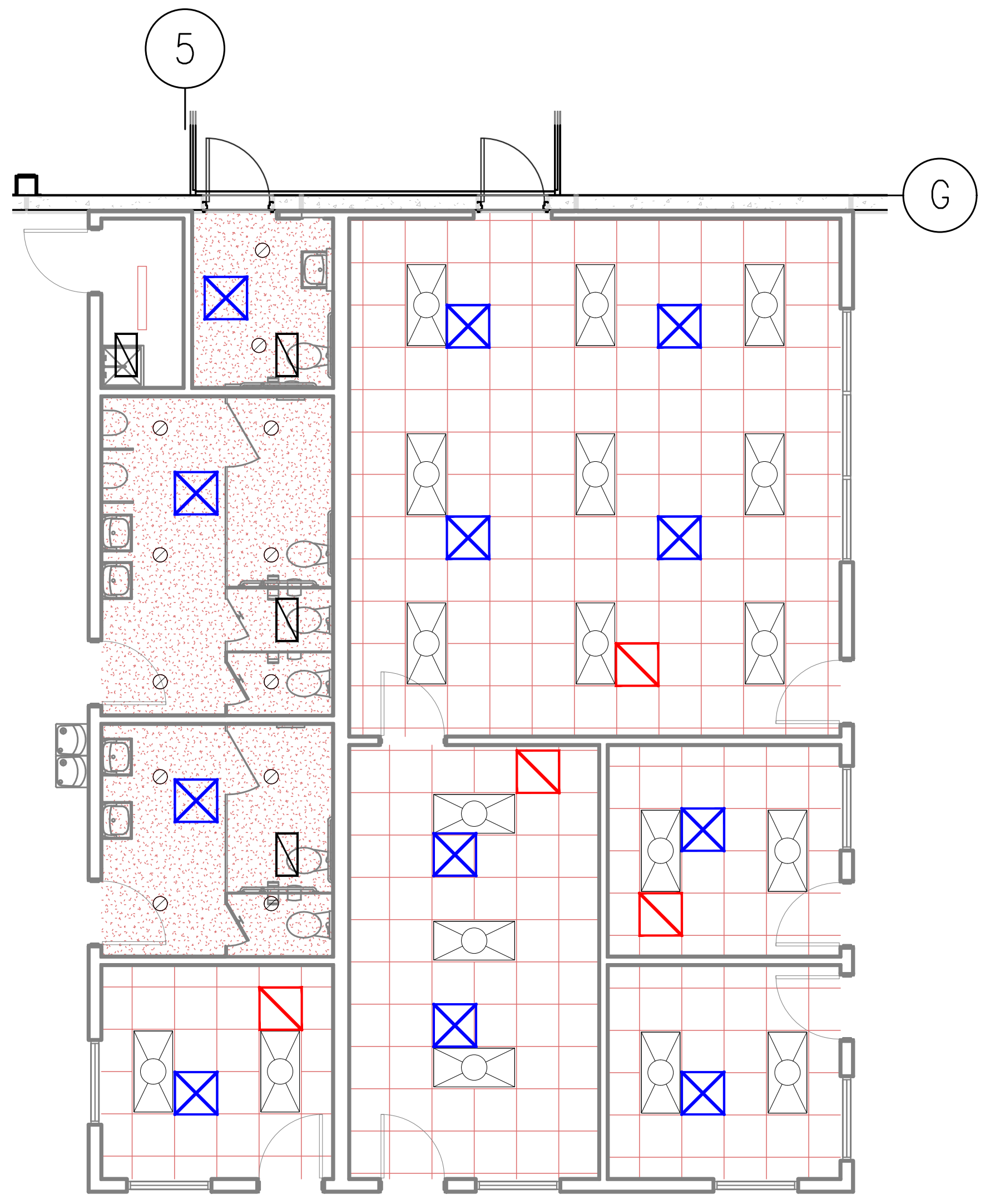
M-3

Issue Date

1 **REFLECTED CEILING PLAN - MECHANICAL**

1/8"=1'-0"

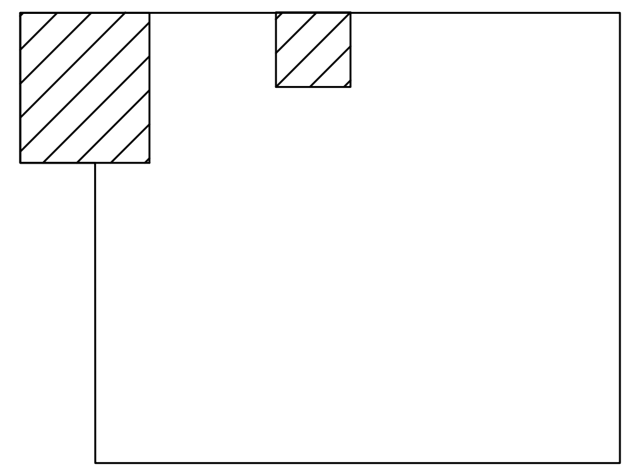
0 4' 8' 16'



2 **REFLECTED CEILING PLAN - MECHANICAL**

1/8"=1'-0"

0 4' 8' 16'



KEY PLAN

DESIGN BUILDER:

ARCO DESIGN/BUILD

1235 NORTH LOOP WEST | SUITE 1200 281.310.8900
HOUSTON, TX 77008

DESIGNER/ ENGINEER:

1235 NORTH LOOP WEST | SUITE 1200 281.310.8900
HOUSTON, TX 77008

OWNER:

ISCO

PROJECT TITLE:

ISCO
RIVERPORT

7000 TRANSPORT
COURT
LOUISVILLE, KY 40258

ESTD 1951
PERFECTION
GROUP

SEAL:

WILLIAM JOHN ALBRECHT, JR.
22435

SUBMITTALS / REVISIONS:

NO.	DATE	DESCRIPTION
	2025.07.07	ISSUED FOR PERMIT

PROJECT NO.: 25089
DRAWN BY: TDJ

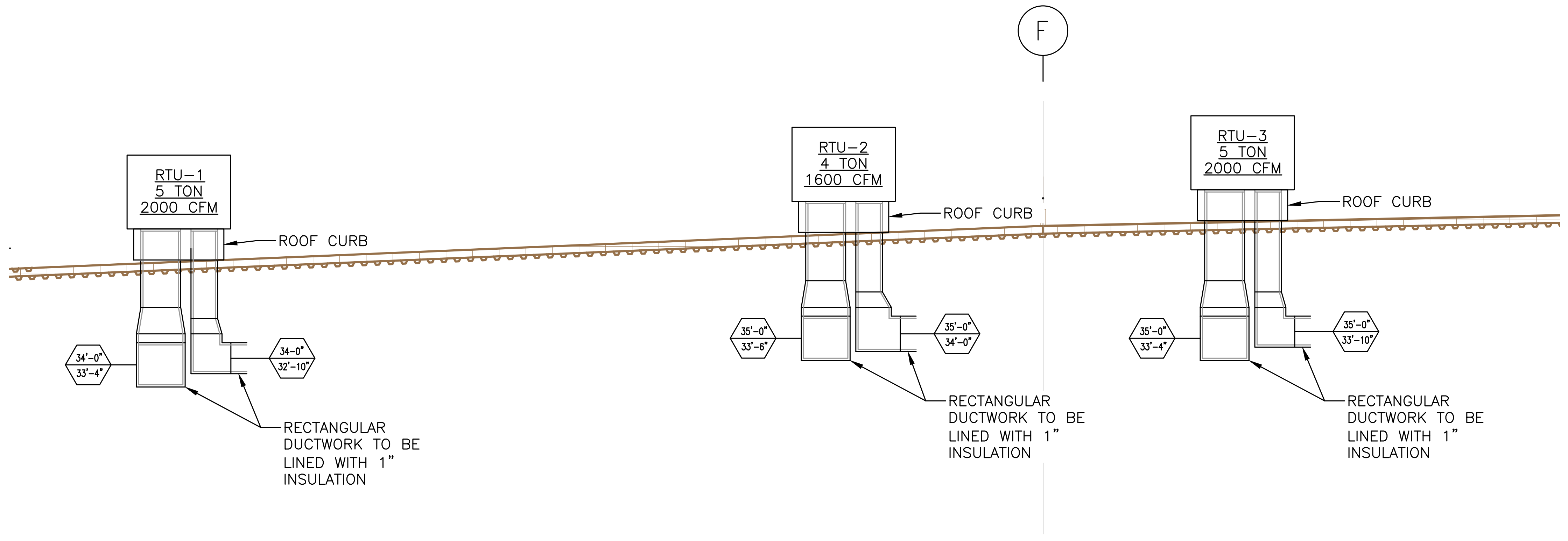
SHEET TITLE:

REFLECTED CEILING
PLANS - MECHANICAL

SHEET NUMBER:

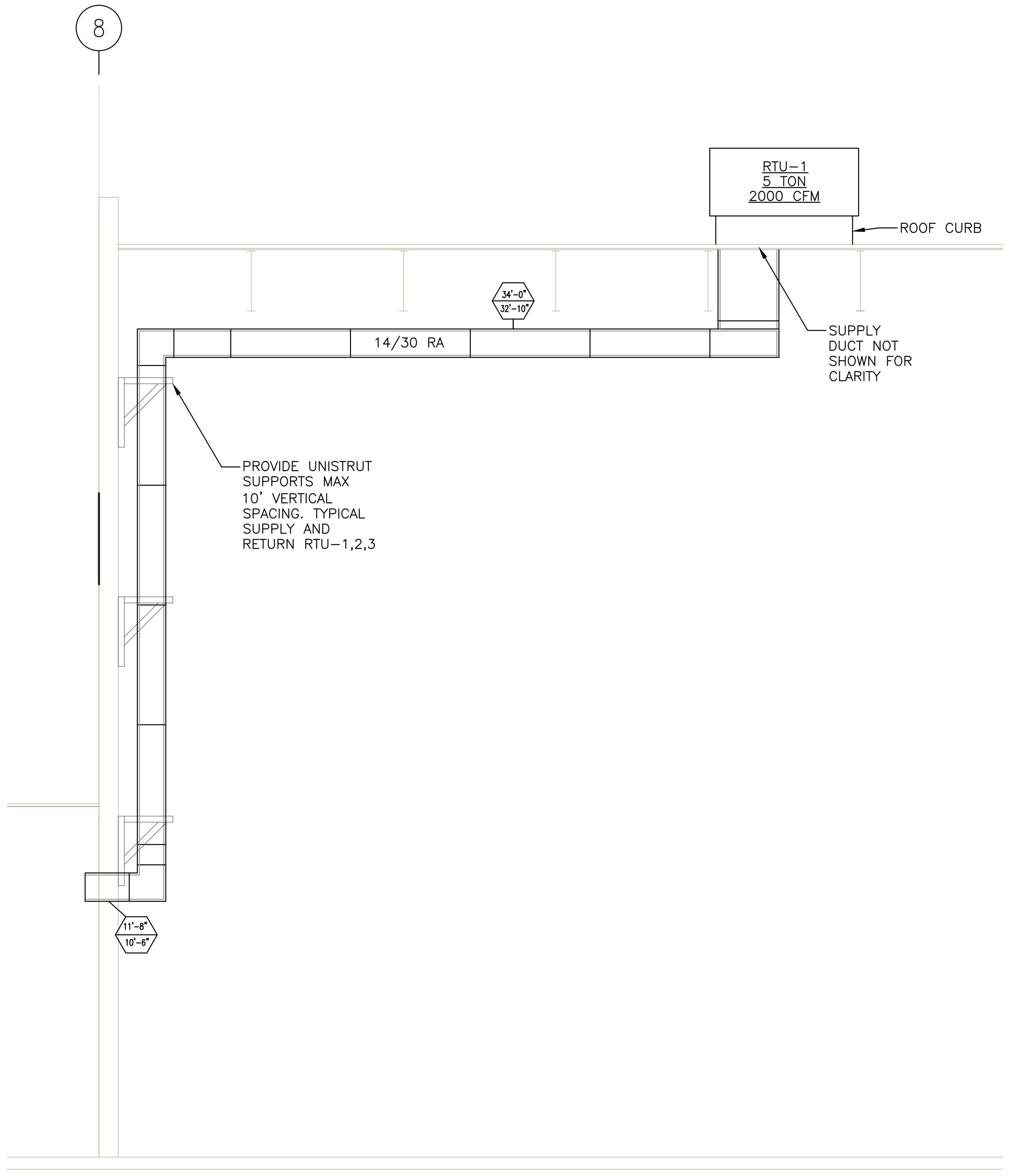
M-4

Issue Date



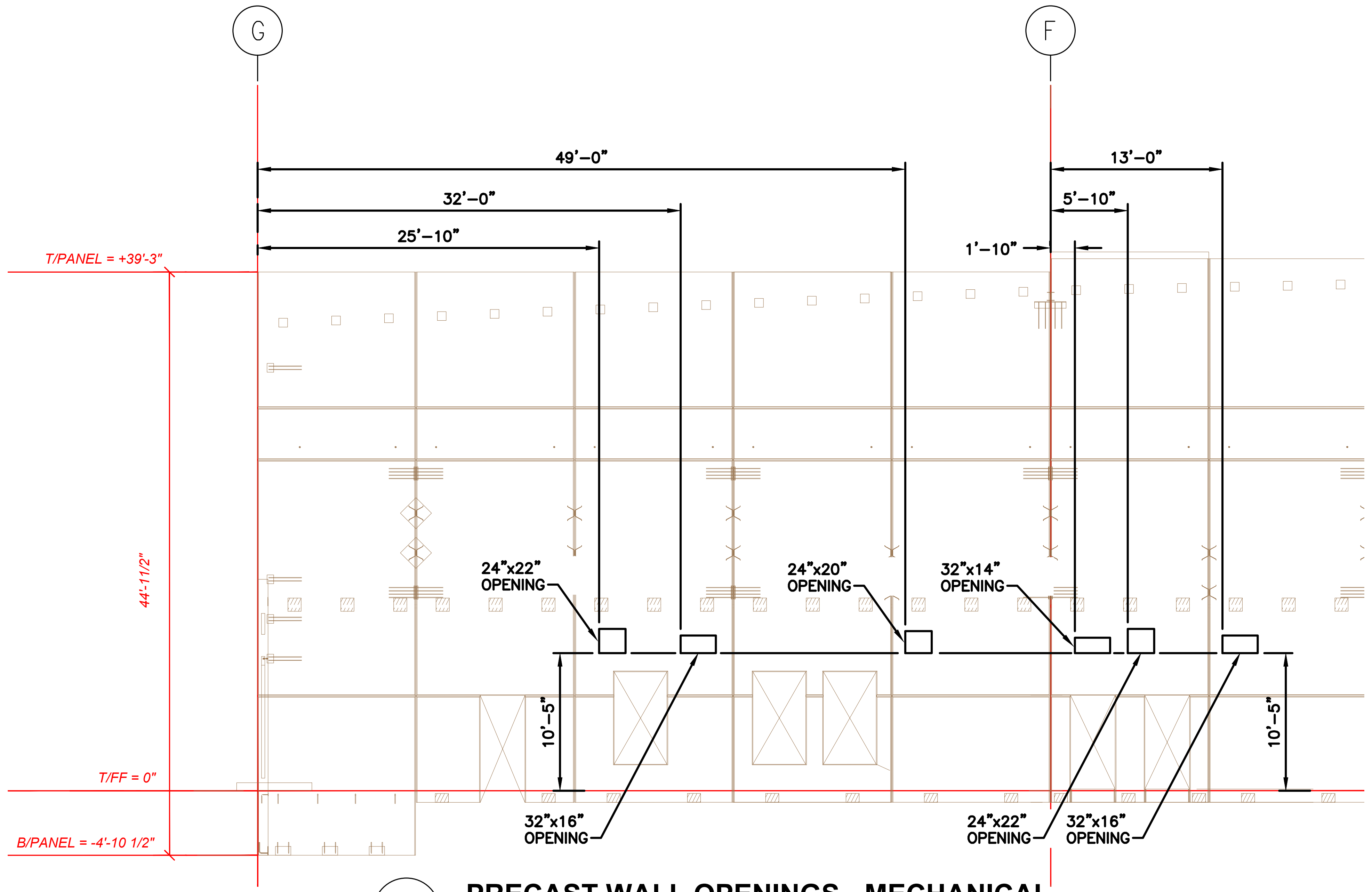
A OFFICE ROOFTOP EQUIPMENT - MECHANICAL

1/4"=1'-0"



B OFFICE ROOFTOP EQUIPMENT - MECHANICAL

1/4"=1'-0"



D PRECAST WALL OPENINGS - MECHANICAL

1/8"=1'-0"

3

DESIGN BUILDER:

ARCO DESIGN/BUILD

1235 NORTH LOOP WEST | SUITE 1200 281.310.8900
HOUSTON, TX 77008

DESIGNER/ ENGINEER:

1235 NORTH LOOP WEST | SUITE 1200 281.310.8900
HOUSTON, TX 77008

OWNER:

ISCO

PROJECT TITLE:

ISCO
RIVERPORT

7000 TRANSPORT
COURT
LOUISVILLE, KY 40258

ESTD 1951
PERFECTION
GROUP

SEAL:

WILLIAM JOHN ALBRECHT, JR.
22435

SUBMITTALS / REVISIONS:

NO.	DATE	DESCRIPTION
	2025.07.07	ISSUED FOR PERMIT
1	2025.07.15	ENGINEERING CHANGE
2	2025.11.05	ENGINEERING CHANGE
3	2025.11.14	REVISION

PROJECT NO.: 25089
DRAWN BY: TDJ

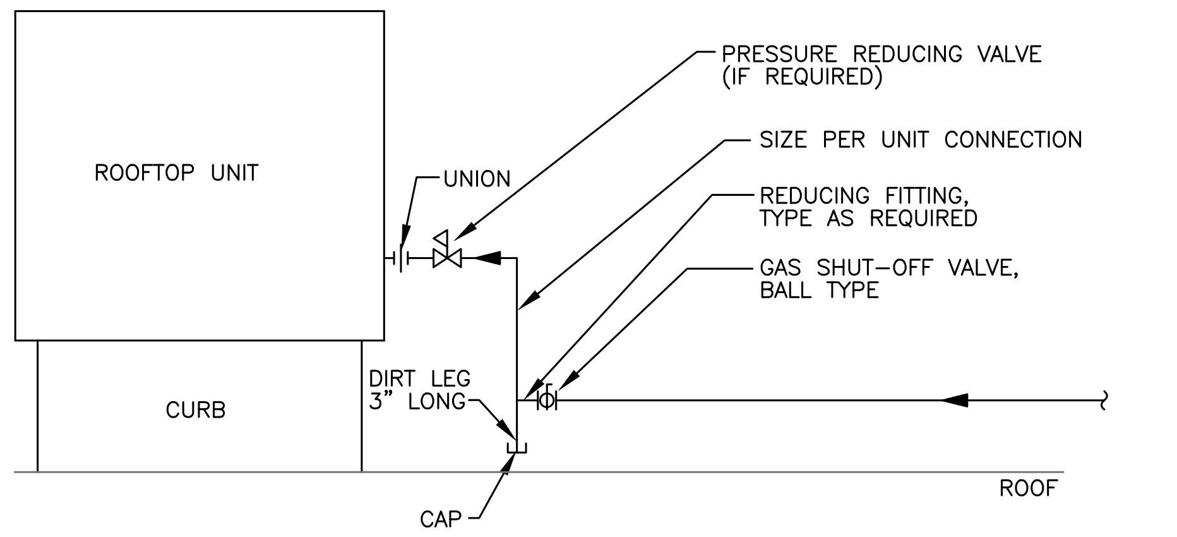
SHEET TITLE:

SECTIONS -
MECHANICAL

SHEET NUMBER:

M-5

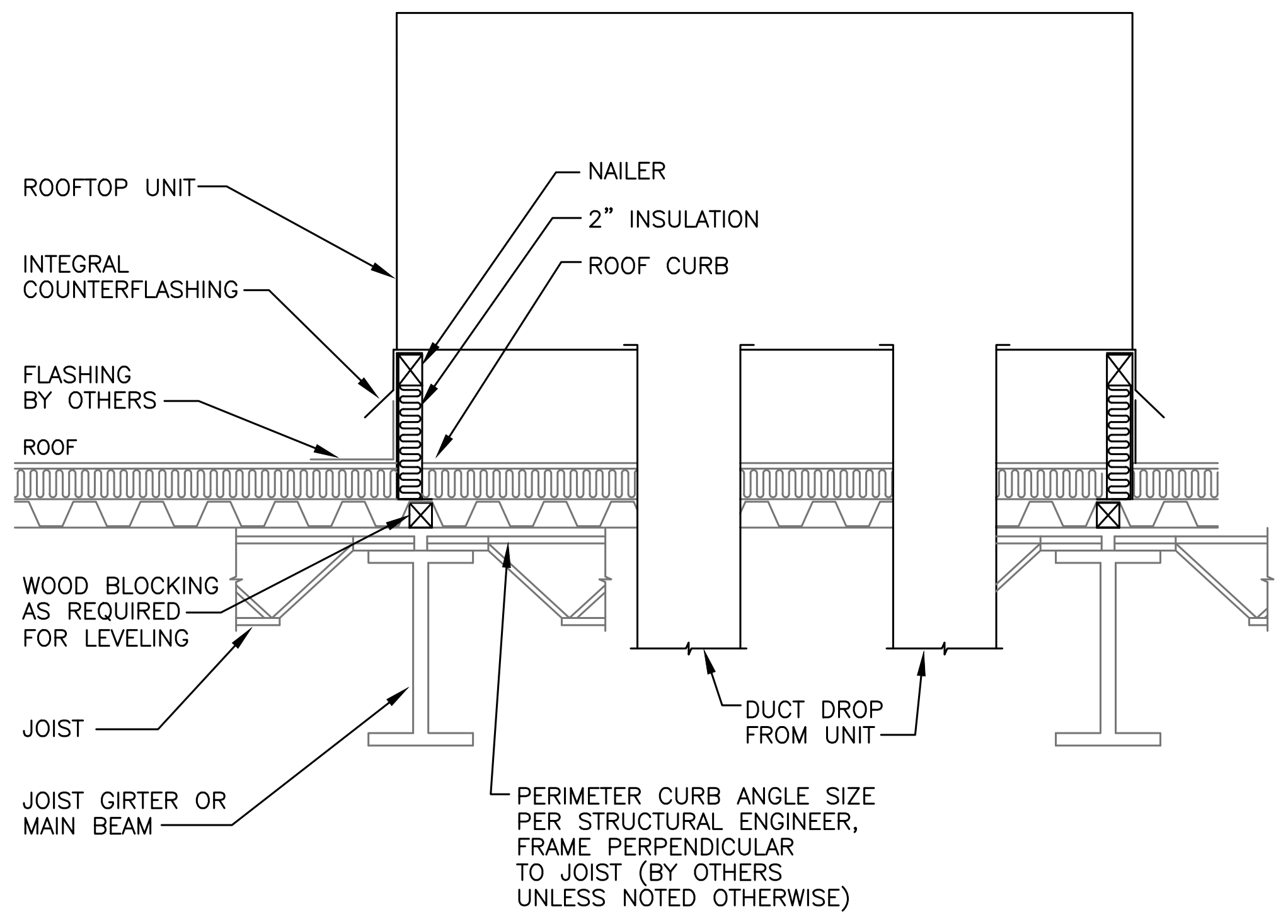
Issue Date



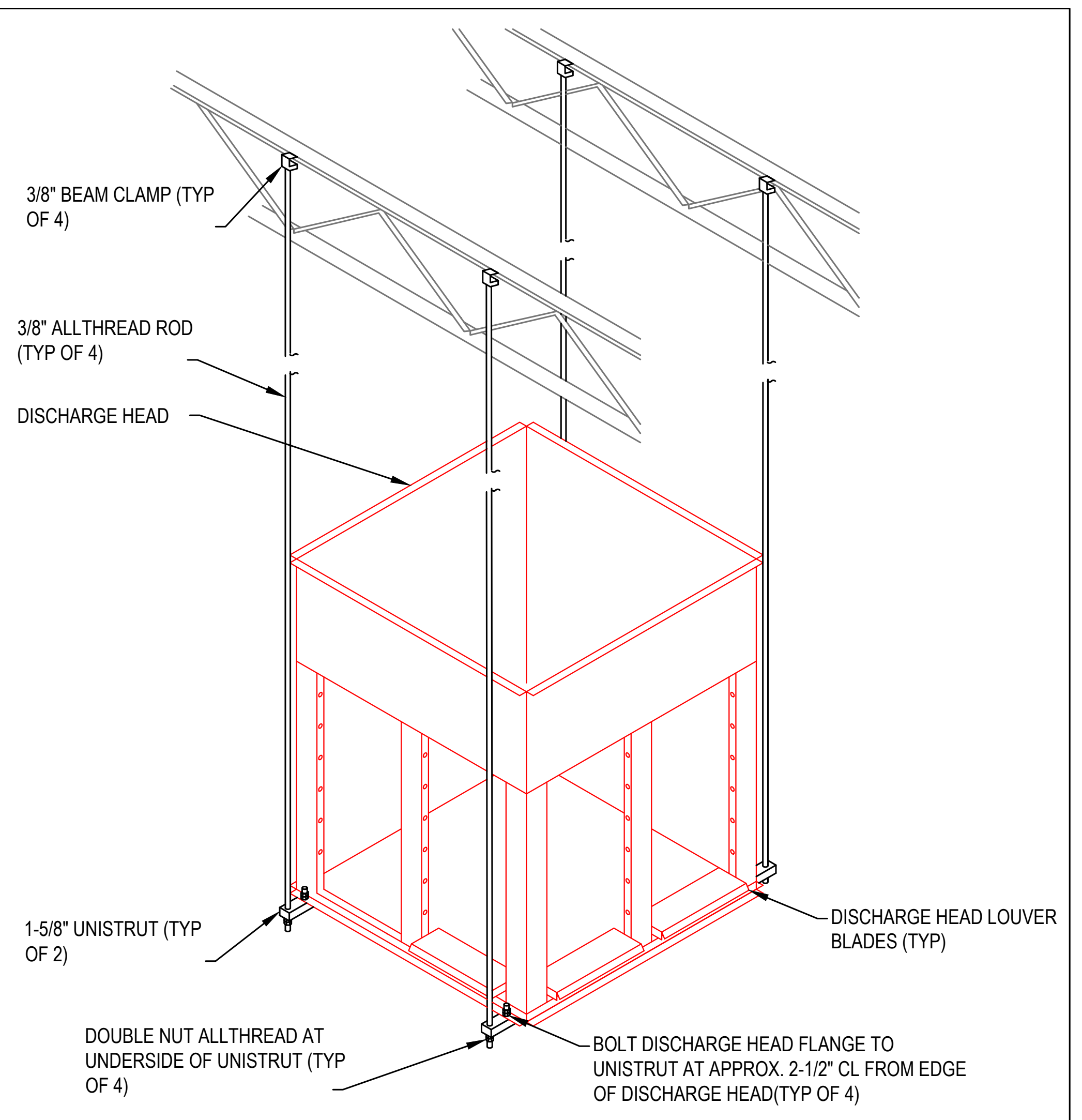
NOTES

1. SUPPORT PIPING AS REQUIRED.
2. REFERENCE PLAN DRAWINGS FOR PIPE SIZES AND ROUTING.

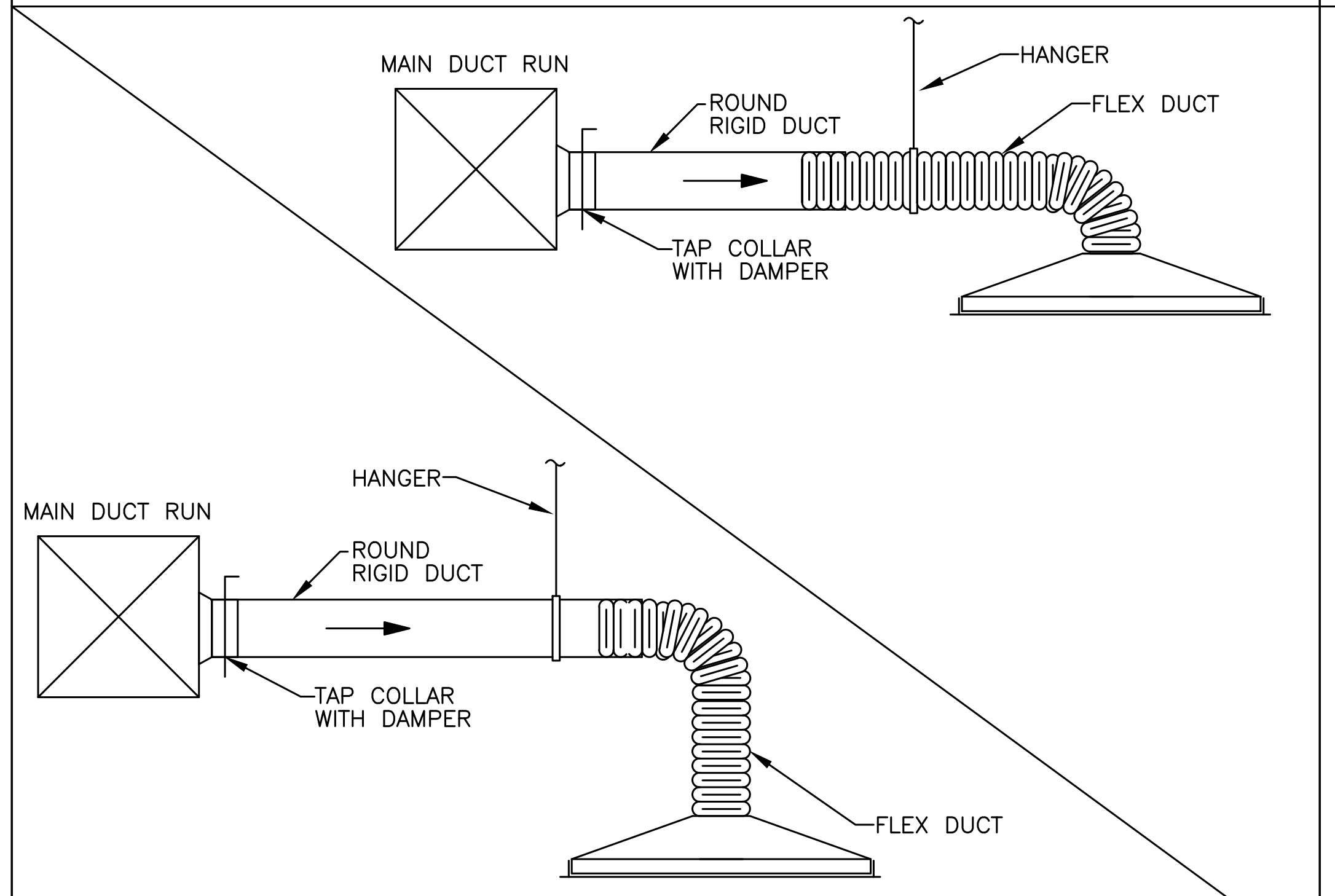
1
M–1
ROOFTOP UNIT GAS HOOKUP
NOT TO SCALE



2
M–1
ROOF CURB
NOT TO SCALE



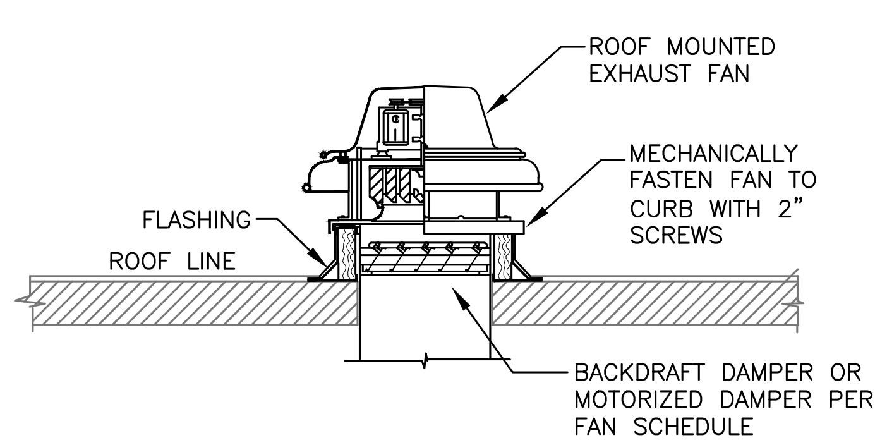
3
M–1
DISCHARGE HEAD - MOUNTING DETAIL
NOT TO SCALE



NOTES

1. PROVIDE HANGER(S) AS REQUIRED TO SUPPORT RIGID AND FLEXIBLE DUCTWORK.
2. HARD 90° ELBOW REQUIRED IF HEIGHT FROM ROUND PIPE TO AIR DEVICE EXCEEDS 5'–0".
3. MAXIMUM FLEX DUCT LENGTH 7'–0".
4. ENSURE FLEX DUCT IS NOT RESTRICTING AIR FLOW AT BEND.

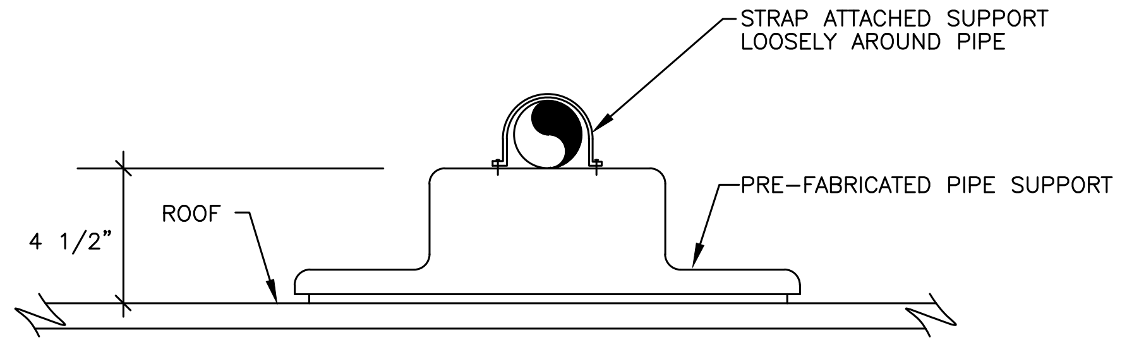
4
M–2
CEILING SUPPLY AIR DEVICE HOOKUP
NOT TO SCALE



NOTES

1. PREFABRICATED ROOF CURB BY FAN SUPPLIER, UNLESS NOTED OTHERWISE.
2. REFERENCE PLAN DRAWINGS FOR DUCT SIZE.
3. REFERENCE FAN SCHEDULE.
4. ROOF CUT AND PATCH BY OTHERS, UNLESS NOTED OTHERWISE.

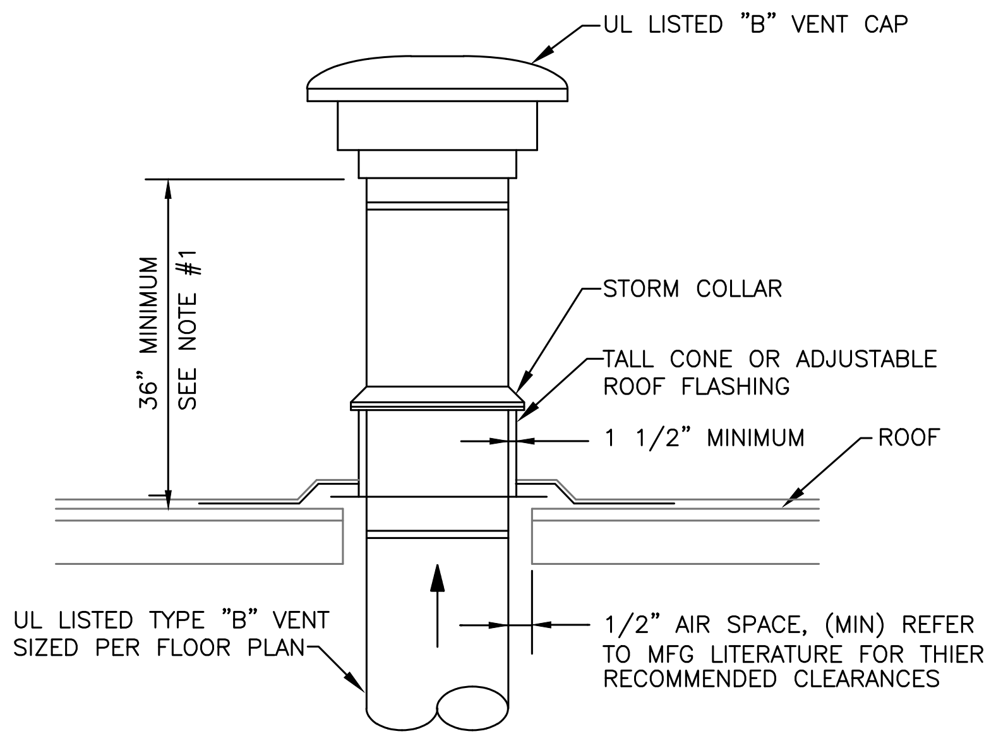
5
M–2
CENTRIFUGAL ROOF EXHAUST FAN
NOT TO SCALE



NOTES

1. REFERENCE PLAN DRAWINGS AND/OR SPECIFICATIONS FOR PIPE SIZE AND INSULATION REQUIREMENTS

6
M–1
PIPE SUPPORT ACROSS ROOF
NOT TO SCALE



NOTES

1. VENT TO BE 3'–0"(MIN) ABOVE ROOF AND 2'–0" ABOVE ANY PORTION OF THE BUILDING WITHIN 10'–0". (REFER TO APPLICABLE CODE)
2. REFERENCE SPECIFICATIONS FOR FIRE STOP OR OTHER REQUIREMENTS.
3. MAINTAIN REQUIRED CLEARANCE FROM INTAKE AIR OPENINGS. (REFER TO APPLICABLE CODE)
4. ROOF CUT AND PATCH BY OTHERS, UNLESS NOTED OTHERWISE.

7
M–2
TYPE "B" VENT THROUGH ROOF
NOT TO SCALE

DESIGN BUILDER:
ARCO DESIGN/BUILD
1235 NORTH LOOP WEST | SUITE 1200
HOUSTON, TX 77008
281.310.8900

DESIGNER/ ENGINEER:
1235 NORTH LOOP WEST | SUITE 1200
HOUSTON, TX 77008
281.310.8900

OWNER:
ISCO

PROJECT TITLE:
ISCO RIVERPORT

7000 TRANSPORT
COURT
LOUISVILLE, KY 40258

ESTD 1951
PERFECTION
GROUP

SEAL:
WILLIAM JOHN
ALBRECHT, JR.
22435

SUBMITTALS / REVISIONS:

NO.	DATE	DESCRIPTION
	2025.07.07	ISSUED FOR PERMIT

PROJECT NO.: 25089
DRAWN BY: TDJ

SHEET TITLE:
DETAILS - MECHANICAL

SHEET NUMBER:
M-6

Issue Date

RTU-1 VENTILATION AIR SCHEDULE

ROOM NUMBER	ROOM NAME	Az AREA	OCCUPANCY CLASSIFICATION	TABLE 6.2.2.1 OCCUPANT DENSITY PEOPLE/1000 SF	Pz POPULATION	TABLE 6.2.2.1 Rp PEOPLE OUTSIDE AIR	TABLE 6.2.2.1 Ra AREA OUTSIDE AIR	TABLE 6.2.2.1 Ra AREA OUTSIDE AIR CALC	Vbz OUTSIDE AIR CFM	TABLE 6.2.2.2 Ez AIR DISTRIBUTION EFFICIENCY	Voz OUTSIDE AIR REQUIRED	DESIGN CFM	OUTSIDE AIR % REQUIRED	SYSTEM % OUTSIDE AIR	ACTUAL OUTSIDE AIR CFM	NOTES
0	0	0														
100	OPEN OFFICE	1,150	OFFICE SPACE	5	14	5	0.06	69	139	0.8	174	1250	14%	21%	267	
101	CONTROL	300	OFFICE SPACE	5	3	5	0.06	18	33	0.8	42	375	11%	21%	80	
102	CONFERENCE	227	CONFERENCE/MEETING	50	10	5	0.06	13.62	64	0.8	80	375	21%	21%	80	
TOTALS		1,677			27				236		296	2,000			427	

OUTSIDE VENTILATION AIR DESIGN PER ASHRAE STANDARD 62.1-2016 IN ACCORDANCE WITH OMC SECTION 403.3 AND IMC SECTION 403.3

Vbz = (Rp * Pz) + (Ra * Az)

Vbz = BREATHING ZONE OUTDOOR AIR FLOW
Rp = OUTDOOR AIR FLOW RATE PER PERSON (TABLE 6-1)
Pz = ZONE POPULATION - MAXIMUM OCCUPANCY (TABLE 6-1)
Ra = OUTDOOR AIR FLOW RATE PER UNIT AREA (TABLE 6-1)
Az = ZONE FLOOR AREA

Voz = Vbz / Ez

Voz = ZONE OUTDOOR AIR FLOW
Vbz = BREATHING ZONE OUTDOOR AIR FLOW (CALCULATED)
Ez = ZONE AIR DISTRIBUTION EFFECTIVENESS (TABLE 6-2)
Ez = 0.80 (BASED ON CEILING SUPPLY, CEILING RETURN)
Ez = 1.0 (BASED ON CEILING SUPPLY, LOW RETURN)

** TRANSFER AIR IS PERMITTED TO PROVIDE MAKE-UP AIR TO KITCHENS, BATHS, TOILET ROOMS, ELEVATORS, AND SMOKING LOUNGES. THE AMOUNT OF TRANSFER AIR AND EXHAUST AIR SHALL BE SUFFICIENT TO PROVIDE FLOW RATES AS SPECIFIED IN TABLE 403.3. DOORS SHALL BE UNDERCUT 1", OR DOOR GRILLES OF SUFFICIENT SIZE SHALL BE PROVIDED BY GENERAL CONTRACTOR.

RTU-2 VENTILATION AIR SCHEDULE

ROOM NUMBER	ROOM NAME	Az AREA	OCCUPANCY CLASSIFICATION	TABLE 6.2.2.1 OCCUPANT DENSITY PEOPLE/1000 SF	Pz POPULATION	TABLE 6.2.2.1 Rp PEOPLE OUTSIDE AIR	TABLE 6.2.2.1 Ra AREA OUTSIDE AIR	TABLE 6.2.2.1 Ra AREA OUTSIDE AIR CALC	Vbz OUTSIDE AIR CFM	TABLE 6.2.2.2 Ez AIR DISTRIBUTION EFFICIENCY	Voz OUTSIDE AIR REQUIRED	DESIGN CFM	OUTSIDE AIR % REQUIRED	SYSTEM % OUTSIDE AIR	ACTUAL OUTSIDE AIR CFM	NOTES
0	0	0														
100	OPEN OFFICE	1,005	OFFICE SPACE	5	6	5	0.06	60.3	90	0.8	113	1055	11%	13%	138	
103	OFFICE	115	OFFICE SPACE	5	1	5	0.06	6.9	12	0.8	15	115	13%	13%	15	
104	OFFICE	115	OFFICE SPACE	5	1	5	0.06	6.9	12	0.8	15	115	13%	13%	15	
105	OFFICE	115	OFFICE SPACE	5	1	5	0.06	6.9	12	0.8	15	115	13%	13%	15	
-	CORRIDOR	155	CORRIDORS	0	0	0	0.06	9.3	9	0.8	12	200	6%	13%	26	
TOTALS		1,505			9				135		170	1,600			209	

OUTSIDE VENTILATION AIR DESIGN PER ASHRAE STANDARD 62.1-2016 IN ACCORDANCE WITH OMC SECTION 403.3 AND IMC SECTION 403.3

Vbz = (Rp * Pz) + (Ra * Az)

Vbz = BREATHING ZONE OUTDOOR AIR FLOW
Rp = OUTDOOR AIR FLOW RATE PER PERSON (TABLE 6-1)
Pz = ZONE POPULATION - MAXIMUM OCCUPANCY (TABLE 6-1)
Ra = OUTDOOR AIR FLOW RATE PER UNIT AREA (TABLE 6-1)
Az = ZONE FLOOR AREA

Voz = Vbz / Ez

Voz = ZONE OUTDOOR AIR FLOW
Vbz = BREATHING ZONE OUTDOOR AIR FLOW (CALCULATED)
Ez = ZONE AIR DISTRIBUTION EFFECTIVENESS (TABLE 6-2)
Ez = 0.80 (BASED ON CEILING SUPPLY, CEILING RETURN)
Ez = 1.0 (BASED ON CEILING SUPPLY, LOW RETURN)

** TRANSFER AIR IS PERMITTED TO PROVIDE MAKE-UP AIR TO KITCHENS, BATHS, TOILET ROOMS, ELEVATORS, AND SMOKING LOUNGES. THE AMOUNT OF TRANSFER AIR AND EXHAUST AIR SHALL BE SUFFICIENT TO PROVIDE FLOW RATES AS SPECIFIED IN TABLE 403.3. DOORS SHALL BE UNDERCUT 1", OR DOOR GRILLES OF SUFFICIENT SIZE SHALL BE PROVIDED BY GENERAL CONTRACTOR.

RTU-3 VENTILATION AIR SCHEDULE

ROOM NUMBER	ROOM NAME	Az AREA	OCCUPANCY CLASSIFICATION	TABLE 6.2.2.1 OCCUPANT DENSITY PEOPLE/1000 SF	Pz POPULATION	TABLE 6.2.2.1 Rp PEOPLE OUTSIDE AIR	TABLE 6.2.2.1 Ra AREA OUTSIDE AIR	TABLE 6.2.2.1 Ra AREA OUTSIDE AIR CALC	Vbz OUTSIDE AIR CFM	TABLE 6.2.2.2 Ez AIR DISTRIBUTION EFFICIENCY	Voz OUTSIDE AIR REQUIRED	DESIGN CFM	OUTSIDE AIR % REQUIRED	SYSTEM % OUTSIDE AIR	ACTUAL OUTSIDE AIR CFM	NOTES
0	0	0														
107	MEN	200	RESTROOMS	0	0	0	0.06	12	12	0.8	15	225	7%	12%	27	
108	WOMEN	180	RESTROOMS	0	0	0	0.06	10.8	11	0.8	14	175	8%	12%	21	
109	BREAK	835	BREAK ROOM	25	21	5	0.06	50.1	155	0.8	194	1600	12%	12%	194	
TOTALS		1,215			21				178		223	2,000			243	

OUTSIDE VENTILATION AIR DESIGN PER ASHRAE STANDARD 62.1-2016 IN ACCORDANCE WITH OMC SECTION 403.3 AND IMC SECTION 403.3

Vbz = (Rp * Pz) + (Ra * Az)

Vbz = BREATHING ZONE OUTDOOR AIR FLOW
Rp = OUTDOOR AIR FLOW RATE PER PERSON (TABLE 6-1)
Pz = ZONE POPULATION - MAXIMUM OCCUPANCY (TABLE 6-1)
Ra = OUTDOOR AIR FLOW RATE PER UNIT AREA (TABLE 6-1)
Az = ZONE FLOOR AREA

Voz = Vbz / Ez

Voz = ZONE OUTDOOR AIR FLOW
Vbz = BREATHING ZONE OUTDOOR AIR FLOW (CALCULATED)
Ez = ZONE AIR DISTRIBUTION EFFECTIVENESS (TABLE 6-2)
Ez = 0.80 (BASED ON CEILING SUPPLY, CEILING RETURN)
Ez = 1.0 (BASED ON CEILING SUPPLY, LOW RETURN)

** TRANSFER AIR IS PERMITTED TO PROVIDE MAKE-UP AIR TO KITCHENS, BATHS, TOILET ROOMS, ELEVATORS, AND SMOKING LOUNGES. THE AMOUNT OF TRANSFER AIR AND EXHAUST AIR SHALL BE SUFFICIENT TO PROVIDE FLOW RATES AS SPECIFIED IN TABLE 403.3. DOORS SHALL BE UNDERCUT 1", OR DOOR GRILLES OF SUFFICIENT SIZE SHALL BE PROVIDED BY GENERAL CONTRACTOR.

1

AHU-2 VENTILATION AIR SCHEDULE

ROOM NUMBER	ROOM NAME	Az AREA	OCCUPANCY CLASSIFICATION	TABLE 6.2.2.1 OCCUPANT DENSITY PEOPLE/1000 SF	Pz POPULATION	TABLE 6.2.2.1 Rp PEOPLE OUTSIDE AIR	TABLE 6.2.2.1 Ra AREA OUTSIDE AIR	TABLE 6.2.2.1 Ra AREA OUTSIDE AIR CALC	Vbz OUTSIDE AIR CFM	TABLE 6.2.2.2 Ez AIR DISTRIBUTION EFFICIENCY	Voz OUTSIDE AIR REQUIRED	DESIGN CFM	OUTSIDE AIR % REQUIRED	SYSTEM % OUTSIDE AIR	ACTUAL OUTSIDE AIR CFM	NOTES
200	SHIPPING	568	OFFICE SPACE	5	3	5	0.06	34.08	49	0.8	62	880	7%	25%	220	
201	OFFICE	110	OFFICE SPACE	5	1	5	0.06	6.6	12	0.8	15	140	11%	25%	35	
202	OFFICE	110	OFFICE SPACE	5	1	5	0.06	6.6	12	0.8	15	140	11%	25%	35	
203	CONFERENCE	242	CONFERENCE/MEETING	50	13	5	0.06	14.52	80	0.8	100	400	25%	25%	100	
204	OFFICE	110	OFFICE SPACE	5	1	5	0.06	6.6	12	0.8	15	140	11%	25%	35	
205	WOMEN	120	RESTROOMS	0	0	0	0.06	7.2	7	0.8	9	100	9%	25%	25	
206	MEN	165	RESTROOMS	0	0	0	0.06	9.9	10	0.8	13	150	9%	25%	38	
207	WC	54	RESTROOMS	0	0	0	0.06	3.24	3	0.8	5	50	10%	25%	13	
TOTALS		1,479			19				184		234	2,000			500	

OUTSIDE VENTILATION AIR DESIGN PER ASHRAE STANDARD 62.1-2016 IN ACCORDANCE WITH OMC SECTION 403.3 AND IMC SECTION 403.3

Vbz = (Rp * Pz) + (Ra * Az)

Vbz = BREATHING ZONE OUTDOOR AIR FLOW
Rp = OUTDOOR AIR FLOW RATE PER PERSON (TABLE 6-1)
Pz = ZONE POPULATION - MAXIMUM OCCUPANCY (TABLE 6-1)
Ra = OUTDOOR AIR FLOW RATE PER UNIT AREA (TABLE 6-1)
Az = ZONE FLOOR AREA

Voz = Vbz / Ez

Voz = ZONE OUTDOOR AIR FLOW
Vbz = BREATHING ZONE OUTDOOR AIR FLOW (CALCULATED)
Ez = ZONE AIR DISTRIBUTION EFFECTIVENESS (TABLE 6-2)
Ez = 0.80 (BASED ON CEILING SUPPLY, CEILING RETURN)
Ez = 1.0 (BASED ON CEILING SUPPLY, LOW RETURN)

** TRANSFER AIR IS PERMITTED TO PROVIDE MAKE-UP AIR TO KITCHENS, BATHS, TOILET ROOMS, ELEVATORS, AND SMOKING LOUNGES. THE AMOUNT OF TRANSFER AIR AND EXHAUST AIR SHALL BE SUFFICIENT TO PROVIDE FLOW RATES AS SPECIFIED IN TABLE 403.3. DOORS SHALL BE UNDERCUT 1", OR DOOR GRILLES OF SUFFICIENT SIZE SHALL BE PROVIDED BY GENERAL CONTRACTOR.

DESIGN BUILDER:
ARCO
DESIGN/BUILD

1235 NORTH LOOP WEST | SUITE 1200 281.310.8900
HOUSTON, TX 77008

DESIGNER/ ENGINEER:

1235 NORTH LOOP WEST | SUITE 1200 281.310.8900
HOUSTON, TX 77008

OWNER:
ISCO

PROJECT TITLE:

ISCO
RIVERPORT

7000 TRANSPORT
COURT
LOUISVILLE, KY 40258

ESTD 1951
PERFECTION
GROUP

SEAL:

WILLIAM JOHN
ALBRECHT, JR.
22435

SUBMITTALS / REVISIONS:

NO.	DATE	DESCRIPTION
	2025.07.07	ISSUED FOR PERMIT
1	2025.11.14	REVISION

PROJECT NO.: 25089
DRAWN BY: TDJ

SHEET TITLE:

SCHEDULES -
MECHANICAL

SHEET NUMBER:

M-7

Issue Date

ROOFTOP UNIT SCHEDULE - GAS HEAT

TAG	MANUFACTURER	MODEL	AREA SERVED	SUPPLY AIR (CFM)	VENTILATION AIR (CFM)	ESP (IN WG)	TONS	COOLING TOTAL (MBH)	COOLING SENSIBLE (MBH)	HEATING INPUT (MBH)	HEATING OUTPUT (MBH)	EFFICIENCY (%)	SUPPLY FAN HP	ENTERING AIR DB (DEG F)	ENTERING AIR WB (DEG F)	ELECTRICAL VOLT/PHASE	ELECTRICAL MCA	ELECTRICAL MOCP	ACCESSORIES
RTU-1	CARRIER	48FEEA06	EXTERIOR OFFICE	2000	427	1	5	62	46.17	110	88	80%	1.36 BHP	80	67	460/3	13	20	1,2,3,4,5,8,10,20,21,23
RTU-2	CARRIER	48FEEA05	INTERIOR OFFICE	1600	209	1	4	52	37.66	110	88	80%	1.02 BHP	80	67	460/3	10	15	1,2,3,4,5,8,10,20,21,23
RTU-3	CARRIER	48GEEM06	BREAK ROOM	2000	243	1	5	62	46.71	110	88	80%	1.23 BHP	80	67	460/3	12	15	1,2,3,4,5,8,10,20,22,23
RTU-4	CARRIER	48FEEA06	REMOTE OFFICE	2000	500	1	5	62	46.17	110	88	80%	1.36 BHP	80	67	460/3	13	20	1,2,3,4,5,8,10,20,21,23

ACCESSORIES

1. ROOF CURB - 14" HIGH
2. THROWAWAY FILTERS 2"
3. SINGLE ENTHALPY CONTROLS
4. BAROMETRIC RELIEF DAMPERS
5. ECONOMIZER
6. 2-POSITION - SPRING RETURN DAMPER FOR 25% OUTSIDE AIR
7. MANUAL OUTSIDE AIR DAMPER
8. SMOKE DETECTOR
9. CONCENTRIC DIFFUSER
10. PROGRAMMABLE THERMOSTAT
11. VARIABLE FREQUENCY DRIVE
12. BELT DRIVEN
13. DIRECT DRIVE
14. HIGH STATIC DRIVE MOTOR
15. DEMAND CONTROL VENTILATION
16. LOW AMBIENT CONTROLS
17. SIDE DISCHARGE
18. BACNET COMM INTERFACE
19. SOUND INSULATION IN CURB
20. CONVENIENCE OUTLET
21. ONE STAGE COOLING
22. TWO STAGE COOLING
23. NON-FUSED DISCONNECT

Perfection Mechanical Services, Inc.
DELTA P Calculations:

JOB NAME: ISCO RIVERPORT
DATE: 11/14/2025
BY: TDJ
Note: Keep Delta P Below 0.3 For Low Pressure Gas Pipe Below 2" and 5 PSIG Can Be Screwed Vs. Welded

	PSIG	Inches water column
House Pressure:	2	55.40
Maximum allowable drop =		13.85

Note: pressure drops are given in inches of water column

Section #	Branch #	MBH	Pipe Length (feet)	Pipe Size (inches)	1 Gas Pressure (Delta P) BRANCH 1	2 Gas Pressure (Delta P) BRANCH 2	3 Gas Pressure (Delta P) BRANCH 3	4 Gas Pressure (Delta P) BRANCH 4	5 Gas Pressure (Delta P) BRANCH 5
TOTALS		2,630	625		10.8591	8.5443	6.6151	6.6653	6.2191
1	1,2,3,4,5	2,630	290	2	6.168942	6.168942	6.168942	6.168942	6.168942
2	1,2,3,4	2,520	10	2	0.195300	0.195300	0.195300	0.195300	
3	1,2	2,300	54	2	0.878518	0.878518			
4	1	1,150	211	1.5	3.616371				
5	2	1,150	10	1		1.301508			
6	3,4	220	10	0.75			0.200720	0.200720	
7	3	110	10	0.75			0.050180		
8	4	110	20	0.75				0.100360	
9	5	110	10	0.75					0.050180
9		2630			10.8591	8.5443	6.6151	6.6653	6.2191

EXHAUST FAN SCHEDULE

TAG	MANUFACTURER	MODEL	AREA SERVED	LOCATION	FAN TYPE	BACKDRAFT DAMPER TYPE	BACKDRAFT DAMPER SIZE	AIRFLOW (CFM)	EXTERNAL SP (IN WG)	SONES	FAN MOTOR (RPM)	DRIVE TYPE	WEIGHT (LBS)	INLET SIZE (IN)	OUTLET SIZE (IN)	ELECTRICAL VOLT/PHASE	ELECTRICAL HP	ELECTRICAL WATTS	ELECTRICAL MCA	ELECTRICAL MOCP	ACCESSORIES
VF-1	AMERICAN COOLAIR	JBCMO 42	WAREHOUSE	WAREHOUSE	UPBLAST	MOTORIZED		28000		42	1040	BELT	950			460/3	5	10 A			1,14,23
VF-2	AMERICAN COOLAIR	JBCMO 42	WAREHOUSE	WAREHOUSE	UPBLAST	MOTORIZED		28000		42	1040	BELT	950			460/3	5	10 A			1,14,23
EF-1	GREENHECK	CSP-A700-VG	RESTROOMS	OFFICE	CENTRIFUGAL	GRAVITY		575	0.375		1076	DIRECT	39			115/1	1/8	97 W	5.1	15	15,21,22
EF-2	GREENHECK	G-100-VG	RESTROOMS	OFFICE	CENTRIFUGAL	GRAVITY	12X12	500	0.5		1375	DIRECT	45	12	12	115/1	1/4				1,15,21,22

ACCESSORIES

1. 14" INSULATED ROOF CURB
2. EC MOTOR
3. BACKDRAFT DAMPER TRAY
4. BACKDRAFT DAMPER (SHIPPED LOOSE)
5. GALVANIZED BIRD SCREEN
6. NEMA-1 TOGGLE SWITCH
7. SPEED CONTROLLER
8. VIBRATION ISOLATION KIT
9. HANGING BRACKET
10. VARIABLE FREQUENCY DRIVE
11. EXPLOSION PROOF MOTOR
12. SPARK PROOF MOTOR
13. VARIABLE SPEED MOTOR
14. MOTOR OUT OF AIRSTREAM
15. CONTINUOUS OPERATION
16. CONTROLLED BY THERMOSTAT
17. CONTOLLED BY LIGHT SWITCH
18. CONTROLLED BY OCCUPANCY SENSOR
19. MANUAL ON/OFF SWITCH
20. CONTROLLED BY BAS OR TIME CLOCK
21. VARI-GREEN MOTOR
22. CONTROL DIAL FOR BALANCING
23. MOTOR STARTER PROVIDED BY MECHANICAL CONTRATOR. INSTALLATION AND WIRING BY ELECTRICAL CONTRACTOR.

MAKE-UP AIR UNIT SCHEDULE

TAG	MANUFACTURER	MODEL	AREA SERVED	LOCATION	AIRFLOW (CFM)	VENTILATION AIR (CFM)	ESP (IN WG)	HEATING INPUT (MBH)	HEATING OUTPUT (MBH)	EFFICIENCY (%)	GAS PRESSURE (PSI)	ELECTRICAL VOLT/PHASE	ELECTRICAL HP	ACCESSORIES
MAU-1	RUPP	RAM-M 20	WAREHOUSE	WAREHOUSE	12500	0	0.15	1150000	1058000	92%	2-5	460/3	7.5	1,4,9,11,13,15,17,19
MAU-2	RUPP	RAM-M 20	WAREHOUSE	WAREHOUSE	12500	0	0.15	1150000	1058000	92%	2-5	460/3	7.5	1,4,9,11,13,15,17,19

ACCESSORIES

1. ROOF CURB - 14" HIGH
2. THROWAWAY FILTERS
3. AIR INLET SCREENS
4. REMOTE CONTROL PANEL
5. CLOGGED FILTER LIGHT
6. UNIT-MOUNTED ANALYZER INDICATORS
7. INTAKE DAMPER
8. SMOKE DETECTOR
9. THREE-WAY DISCHARGE HEAD DIFFUSER
10. MAXITROL DISCHARGE AIR CONTROLS
11. VARIABLE FREQUENCY DRIVE
12. BURNER ON/OFF THERMOSTAT
13. NON-FUSED DISCONNECT SWITCH
14. MOTOR STARTER
15. CONVENIENCE OUTLET
16. LOW LIMIT CONTROLS
17. HORIZONTAL IN, DOWN DISCHARGE
18. INDIRECT FIRED UNIT WITH 100% OUTSIDE AIR
19. SPACE PRESSURE CONTROLLER

LOUVER SCHEDULE

TAG	MANUFACTURER	MODEL	LOCATION	SERVICE	MAX AIRFLOW (CFM)	VELOCITY (FPM)	MAX DELTA P (IN WG)	FRAME SIZE (W x H) (IN)	GROSS AREA (SQ FT)	FREE AREA (SQ FT)	MATERIAL	DAMPER MAT'L	ACCESSORIES
IAL-1	ARROW UNITED	EA-680-D	WAREHOUSE	VENTILATION	28000	1419		96 x 80	53.33	19.7	ALUMINUM	ALUMINUM	1,2,3,4,6
IAL-2	ARROW UNITED	EA-680-D	WAREHOUSE	VENTILATION	28000	1419		96 x 80	53.33	19.7	ALUMINUM	ALUMINUM	1,2,3,4,6

ACCESSORIES

1. MILL FINISH ALUMINUM
2. ANODIZED FINISH
3. MESH BIRD SCREEN
4. CHANNEL FRAME
5. FLANGE FRAME
6. MOTOR OPERATED DAMPER (115V)
7. GRAVITY DAMPER

ELECTRIC CEILING HEATER SCHEDULE

TAG	MANUFACTURER	MODEL	AREA SERVED	HEAT OUTPUT (MBH)	KW	ELECTRICAL VOLT/PHASE	ELECTRICAL A	ACCESSORIES
EWH-1	BERKO	FRC 4020F	MENS RR	6.82	2	208/1	9.6	7,8
EWH-2	BERKO	FRC 4020F	WOMENS RR	6.82	2	208/1	9.6	7,8
EWH-3	BERKO	FRC 4020F	WAREHOUSE RR	6.82	2	208/1	9.6	7,8
EUH-1	BERKO	HUHAA324	PUMP ROOM	7.5	2	208/1	11	5,7,9

ACCESSORIES

1. RECESSED CEILING MOUNT
2. SURFACE MOUNTING ENCLOSURE
3. TRIM RING FOR PERMANENT CEILING
4. 24V TRANSFORMER
5. DISCONNECT SWITCH (WIRED BY ELEC CONTRACTOR)
6. TIME-DELAY RELAY
7. INTEGRATED THERMOSTAT
8. RECESSED WALL MOUNT
9. SUSPENSION BRACKET

HVLS FAN SCHEDULE

TAG	MANUFACTURER	MODEL	SIZE (FT DIA)	MAX RPM	EXT TUBE (FT)	FAN BLADES (QTY)	WEIGHT (LBS)	ELECTRICAL VOLT/PHASE	ELECTRICAL WATTS	ELECTRICAL FLA	ELECTRICAL MCA	ELECTRICAL MOCP	ACCESSORIES
HVLS-1	BAF	CB6	24	52	5	6	231	460/3/60	1100	3.5			1,2,4,5,6,7,8,9
HVLS-2	BAF	CB6	24	52	5	6	231	460/3/60	1100	3.5			1,2,4,5,6,7,8,9

1. MILL FINISH
2. ALUMINUM WINGLET
3. 48" DROP TUBE
4. 3 FT FLEXIBLE POWER CORD
5. PLUG AND PLAY NETWORK COMMUNICATION TERMINATED W/ CAT5e CABLE
6. FIRE ALARM PIGTAIL W/ LOW VOLTAGE NC EM FIRE ALARM RELAY
7. ALARM RELAY
8. BRAIDED GALV. STEEL SAFETY CABLE AND GUY WIRES
9. UL LISTED
10. 42" DROP TUBE

AIR DEVICE SCHEDULE

TAG	DESIGN BASIS MFGR	DESIGN BASIS MODEL NUMBER	TYPE	NECK SIZE (IN)	FRAME SIZE (IN)	PATTERN	NUMBER OF SLOTS	MATERIAL	FINISH	REMARKS /NOTES
CD1	PRICE	SCD	SUPPLY	REF PLAN	24X24	4-WAY	N/A	STEEL	WHITE	3
CD2	PRICE	SCD	SUPPLY	REF PLAN	24X24	4-WAY	N/A	STEEL	WHITE	4
RG1	PRICE	80	RETURN	22X22	24X24	EGGCRATE	N/A	STEEL	WHITE	3
RG2	PRICE	80	RETURN	22X10	24X12	EGGCRATE	N/A	STEEL	WHITE	3
TG1	PRICE	80	TRANSFER	22X22	24X24	EGGCRATE	N/A	STEEL	WHITE	3
TG2	PRICE	80	TRANSFER	22X10	24X12	EGGCRATE	N/A	STEEL	WHITE	3
EG1	PRICE	80	EXHAUST	22X10	24X12	EGGCRATE	N/A	STEEL	WHITE	4

REMARKS/NOTES

1. DAMPER IN DIFFUSER NECK
2. FIRE BLANKET
3. LAY-IN
4. SURFACE MOUNT
5. DUCT MOUNT
6. CENTER NOTCH
7. SOUND BOOT
8. LAY-IN WITH DRYWALL FRAME
9. FILTER GRILLE
10. OPPOSED BLADE DAMPER
11. SQUARE TO ROUND ADAPTER

SPLIT SYSTEM HEAT PUMP SCHEDULE

INDOOR UNIT

TAG	MANUFACTURER	MODEL	MATING UNIT TAG	LOCATION	AREA SERVED	AIRFLOW (CFM)	EXT SP (IN WG)	VENT AIR (CFM)	LINE SET LENGTH (FT)	TONS	ELECTRIC HEAT (KW)	ELECTRICAL VOLT/PHASE	ELECTRICAL FLA	ELECTRICAL MCA	ELECTRICAL MOCP	ACCESSORIES
AHU-2	CARRIER	FJ5A	HPU-2	WAREHOUSE	REMOTE OFFICE	2000	1	500	50	5	15	460/3		25.5	30	1,2,3,4,5

OUTDOOR UNIT

TAG	MANUFACTURER	MODEL	MATING UNIT TAG	LOCATION	COOLING TOTAL (MBH)	COOLING SENSIBLE (MBH)	SEER2	HEATING AT 47° F COP	HEATING AT 17° F COP	CAPACITY (MBH)	UNIT WEIGHT (lbs)	ELECTRICAL VOLT/PHASE	ELECTRICAL FLA	ELECTRICAL MCA	ELECTRICAL MOCP	ACCESSORIES
HPU-2	CARRIER	27SCA	AHU-2	EXTERIOR	57.94	44.65	14.5	3.74	2.6			460/3		9.8	15	6,7,9

ACCESSORIES

1. BACnet INTERFACE
2. PROGRAMMABLE THERMOSTAT
3. STANDARD THERMOSTAT
4. CONDENSATE PUMP
5. AIR HANDLER DRIP PAN
6. HAIL GUARDS
7. WIND BAFFLE
8. CONDENSER WALL BRACKET
9. OUTDOOR UNIT STAND

DUCTLESS SPLIT SYSTEM SCHEDULE

EVAPORATOR

TAG	MANUFACTURER	MODEL	MATING UNIT	AREA SERVED	LOCATION	AIRFLOW (CFM)	VENTILATION AIR (CFM)	DISCHARGE CONFIGURATION	GAS HEAT INPUT	EFFICIENCY (%)	ELECTRICAL VOLT/PHASE	ELECTRICAL FAN FLA	ELECTRICAL MCA	ELECTRICAL MOCP	ACCESSORIES
AHU-1	MITSUBISHI	PKA-A12HA7	CU-1	IT ROOM	WALL MTD	435	0	HORIZONTAL	N/A	N/A	208-230/1	0.33	-	-	2,11,15

CONDENSING UNIT

TAG	MANUFACTURER	MODEL	MATING UNIT	LOCATION	OMC 1102 CLASSIFICATIONS BY SECTION SECTIONS 1103.3 (FOR AHU)	1103.1	1104	COOLING TOTAL (MBH)	COOLING SENSIBLE (MBH)	ELECTRICAL VOLT/PHASE	ELECTRICAL	ELECTRICAL MCA/WSA	ELECTRICAL MOCP/OPD	ACCESSORIES
CU-1	MITSUBISHI	PUY-A12NKA7	AHU-1	OUTDOOR	HIGH PROBILITY	A1	25 LBS / 1000 CF	12	9.72	208-230/1		11	28	13

ACCESSORIES

1. SMOKE DETECTOR PROVDED/INSTALLED BY ALARM SYSTEM C
2. THERMOSTAT
3. CONCENTRIC VENT TERMINATION KIT
4. INFINITY UNZONED USER INTERFACE THERMOSTAT
5. HIGH/LOW PRESSURE SWITCHES
6. ELECTRIC REHEAT
7. LIQUID LINE SOLENOID VALVE
8. START ASSIST - CAPACITOR AND RELAY
9. HEATING PISTON UPGRADE
10. CRANKCASE HEATER
11. CONDENSATE PUMP
12. LOW AMBIENT CONTROL
13. WIND BAFFLE
14. WINTER START CONTROL
15. 100' LINE SET

DESIGN BUILDER:
ARCO
DESIGN/BUILD

1235 NORTH LOOP WEST | SUITE 1200 281.310.8900
HOUSTON, TX 77008

DESIGNER/ ENGINEER:

1235 NORTH LOOP WEST | SUITE 1200 281.310.8900
HOUSTON, TX 77008

OWNER:
ISCO

PROJECT TITLE:

ISCO
RIVERPORT

7000 TRANSPORT
COURT
LOUISVILLE, KY 40258

ESTD 1951
PERFECTION
GROUP

SEAL:

WILLIAM JOHN ALBRECHT, JR.
22435

SUBMITTALS / REVISIONS:

NO.	DATE	DESCRIPTION
0	2025.07.07	ISSUED FOR PERMIT
1	2025.07.15	ENGINEERING CHANGE
2	2025.11.14	REVISION

PROJECT NO.: 25089
DRAWN BY: TDJ

SHEET TITLE:

SCHEDULES -
MECHANICAL

SHEET NUMBER:

M-8

Issue Date