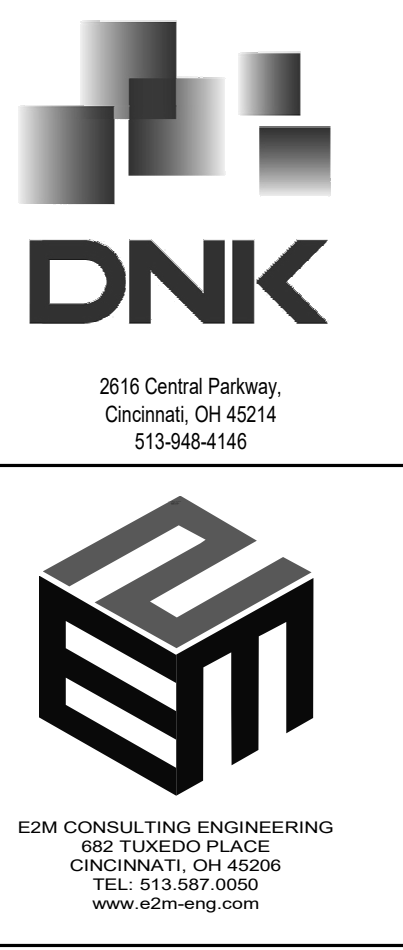






- PLAN NOTES**
- PROVIDE AND INSTALL DUCTLESS SPLIT WALL CASSETTE ABOVE DOOR IN LOCATION SHOWN. PROVIDE WITH CONDENSATE PIPING AND CONDENSATE PUMP. EXTEND CONDENSATE PIPING ABOVE CEILING TO SS IN JANITORS CLOSET 113. REFER TO M-501 FOR SPECIFICATIONS AND M-601 FOR DETAILS.
  - PROVIDE WITH NEW CEILING EXHAUST FAN. INSTALL PER MANUFACTURERS INSTRUCTIONS. REFER TO M-501 FOR SPECIFICATIONS AND M-601 FOR DETAILS.
  - PROVIDE WITH NEW 7 DAY PROGRAMMABLE THERMOSTAT IN LOCATION SHOWN. REFER TO M-501 FOR SPECIFICATIONS.
  - INSTALL NEW GAS FIRED UNIT HEATER AT HIGHEST POSSIBLE ELEVATION IN LOCATION SHOWN. INSTALL PER MANUFACTURERS INSTRUCTIONS AND MAINTAIN ALL REQUIRED CLEARANCES. PROVIDE WITH ALL MOUNTING EQUIPMENT, WIRED WALL THERMOSTAT, AND ALL REQUIRED ACCESSORIES REQUIRED TO MAKE COMPLETE.
  - PROVIDE NEW MANUFACTURER APPROVED WIRED WALL THERMOSTAT TO CONTROL GAS FIRED UNIT HEATER. INSTALL PER MANUFACTURERS INSTRUCTIONS.
  - EXHAUST DUCT UP THROUGH ROOF IN LOCATION SHOWN. CAP WITH ROOF EXHAUST CAP. MAINTAIN A MINIMUM OF 10' BETWEEN ALL OUTDOOR AIR INTAKE LOCATIONS AND ALL EXHAUST, COMBUSTION, AND RELIEF PIPING. COORDINATE ALL PENETRATIONS TO AVOID ALL STRUCTURAL MEMBERS. FIELD VERIFY EXACT LOCATION.
  - EXTEND COMBUSTION AND RELIEF PIPING UP TO CONCENTRIC VENT KIT ON ROOF. COORDINATE EXACT PENETRATION LOCATION WITH NEW ROOF TOP UNIT LOCATION. MAINTAIN A MINIMUM OF 10' BETWEEN ALL OUTDOOR AIR INTAKE LOCATIONS AND ALL EXHAUST, VENT, COMBUSTION AND RELIEF PIPING LOCATIONS.
  - DUCT SMOKE DETECTOR REMOTE SWITCH. MOUNT AT 8'-0" AFF.
  - ALARM DEVICES FOR DUCT MOUNTED SMOKE DETECTORS. ALARMS SHALL BE LABELED TO IDENTIFY WHICH UNIT THEY SERVE. MOUNT AT 8'-0" AFF.
  - EXTEND DUCT UP TO NEW RTU ABOVE. REFER TO M102 FOR MORE INFORMATION.
  - PROVIDE ACOUSTICAL DUCT LINING IN FIRST 10' OF RETURN AIR DUCT. INSTALL PER MANUFACTURERS INSTRUCTIONS.
  - NATURAL VENTILATION PROVIDED FOR THIS AREA IN ACCORDANCE WITH OMC 402.1 & 402.2. SEE NATURAL VENTILATION SCHEDULE ON M501.



2018 Central Parkway,  
Cincinnati, OH 45214  
513-864-1416

682 TUXEDO PLACE  
CINCINNATI, OH 45206  
TEL: 513-587-6500  
www.e2m-eng.com

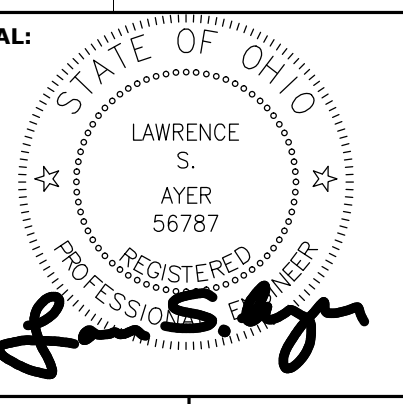
**RENOVATION PROJECT  
FIRST FINANCIAL BANK BRANCH ROSELAWN**

7152 Reading Road  
Cincinnati, Ohio 45237

ALL REPORTS, PLANS, SPECIFICATIONS AND NOTES PREPARED BY THE ARCHITECT OR ARCHITECTS IN ASSISTANCE WITH THE ENGINEER SHALL BE THE PROPERTY OF THE ENGINEER. NO PART OF THIS REPORT, PLAN, SPECIFICATION OR NOTE SHALL BE REPRODUCED OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, INCLUDING PHOTOCOPYING, RECORDING, OR BY ANY INFORMATION STORAGE AND RETRIEVAL SYSTEM, WITHOUT THE WRITTEN PERMISSION OF THE ENGINEER.

**REVISIONS**

No.	Date	Description
1	08/18/22	PERMIT & BID
2	10/24/22	RE-BID ISSUE
3	01/09/23	BULLETIN 4
4	2/14/23	BULLETIN 5
5	2/15/23	BULLETIN 6
6	2/15/23	BULLETIN 6
7	2/15/23	BULLETIN 6
8	05/17/23	BULLETIN 10



**PROJECT NO.:** 22138  
**ISSUED BY:** E2M

**DRAWN BY:** DCA  
**REVIEWED BY:** KJR

**ISSUE DATE:** 08/18/2022

**SHEET TITLE:**  
MECHANICAL PLAN

**DISCIPLINE SHEET NUMBER:**  
M101

1 MECHANICAL PLAN  
M101 SCALE: 3/16" = 1'-0"



ROOM	AREA (SQ FT)	OPENING FREE AREA (SQ FT)	% FREE AREA
ENTRY 100	45	21	46.7%
EXIT 101	51	21	41.2%
TOTAL	96	42	43.8%

### SMACNA HVAC DUCTWORK SHEET METAL GAUGES

MAXIMUM DUCT DIMENSIONS	SMACNA PRESSURE CLASS													
	0.50 W.C.		1.00 W.C.		2.00 W.C.		3.00 W.C.		4.00 W.C.		6.00 W.C.		10.00 W.C.	
	A	B	A	B	A	B	A	B	A	B	A	B	A	B
4"-8"	24	-	24	-	24	24	24	24	24	24	24	24	24	24
9"-10"	24	-	24	-	24	-	24	24	24	24	24	24	24	24
11"-12"	24	-	24	-	24	-	24	24	24	24	24	24	24	24
13"-14"	24	-	24	-	24	24	24	24	24	24	24	24	24	24
15"-16"	24	-	24	-	24	24	24	24	24	24	24	24	24	24
17"-18"	24	-	24	24	24	24	24	24	24	24	24	24	24	24
19"-20"	24	24	24	24	24	24	24	24	24	24	24	24	24	24
21"-22"	22	24	22	24	18	24	18	24	18	24	16	22	-	18
23"-24"	22	24	22	24	18	24	18	24	18	24	16	22	-	18
25"-26"	20	24	20	24	18	24	18	24	16	22	-	20	-	18
27"-28"	18	24	18	24	18	24	18	24	16	22	-	20	-	18
29"-30"	18	24	18	24	18	24	18	24	16	22	-	18	-	18
31"-36"	18	24	18	24	16	24	16	20	-	20	-	18	-	18
37"-42"	16	24	16	24	-	22	-	20	-	18	-	16	-	16
43"-48"	16	24	16	22	-	22	-	18	-	18	-	16	-	16
49"-54"	-	24	-	22	-	20	-	18	-	18	-	16	-	16
55"-60"	-	24	-	22	-	20	-	18	-	16	-	16	-	16
61"-72"	-	22	-	18	-	18	-	16	-	16	-	16	-	16
73"-84"	-	22	-	18	-	16	-	16	-	16	-	16	-	16
85"-96"	-	20	-	18	-	16	-	16	-	16	-	16	-	16
97"-108"	-	18	-	16	-	16	-	16	-	16	-	16	-	16
109"-120"	-	16	-	16	-	16	-	16	-	16	-	16	-	16

- NOTES:
- THIS TABLE IS BASED ON THE FOLLOWING:
    - 1.1. COLUMN A: DUCT GAUGE REQUIREMENT WITH NO REINFORCEMENT
    - 1.2. COLUMN B: DUCT GAUGE WITH REINFORCEMENT AS INDICATED BELOW
    - 1.2.1. 0.50" W.C. PRESSURE CLASS, 5 FEET REINFORCING SPACING FOR SPACING 17" - 120"
    - 1.2.2. 1.00" W.C. PRESSURE CLASS, 5 FEET REINFORCING SPACING FOR SPACING 17" - 100" AND 4 FEET SPACING FOR 109" - 120"
    - 1.2.3. 2.00" W.C. PRESSURE CLASS, 5 FEET REINFORCING SPACING FOR 13" - 84" AND 4 FEET SPACING FOR 85" - 108" AND 3 FEET SPACING FOR 109" - 120"
    - 1.2.4. 3.00" W.C. PRESSURE CLASS, 5 FEET REINFORCING SPACING FOR 6" - 100"
    - 1.2.5. 4.00" W.C. PRESSURE CLASS, 5 FEET REINFORCING SPACING FOR 4" - 60"
    - 1.2.6. 6.00" W.C. PRESSURE CLASS, 5 FEET REINFORCING SPACING FOR 4" - 48"
    - 1.2.7. 10.00" W.C. PRESSURE CLASS, 5 FEET REINFORCING SPACING FOR 4" - 42", 4 FEET SPACING FOR 43" - 54", 3 FEET SPACING FOR 55" - 72" AND 2 FEET SPACING FOR 73" - 100"

### UNIT HEATER SCHEDULE

MARK	MANUFACTURER	MODEL	TYPE	CAPACITY (BTU)		ELECTRIC DATA			NOTES
				INPUT	OUTPUT	VOLTS	PHASE	HERTZ	
UH-1	REVERBERRY	UH-30	UNIT HEATER	30,000	24,000	120	1	60	1.2
UH-2	REVERBERRY	UH-75	UNIT HEATER	75,000	60,000	120	1	60	1.2
UH-3	REVERBERRY	UH-75	UNIT HEATER	75,000	60,000	120	1	60	1.2

- NOTES:
1. PROVIDE WIRED WALL THERMOSTAT.
  2. MOUNT AT HIGHEST ELEVATION POSSIBLE PER MANUFACTURER'S INSTRUCTIONS.

### REGISTER, DIFFUSER AND GRILLE SCHEDULE

MARK	MANUFACTURER	SD-06	SD-08	RD-06	RD-08	RD-12	RD-14	ELECTRIC DATA		NOTES
								PRICE	PRICE	
EF-1	GREENHECK / SP-A00	70	0.250	900	120	1	15W	YES	1.2	
EF-2	GREENHECK / SP-A00	70	0.250	900	120	1	15W	YES	1.2	
EF-3	GREENHECK / SP-A00	75	0.250	900	120	1	15W	YES	1.2	

- NOTES:
1. DIFFUSERS SHALL BE 4-WAY FLOW UNLESS OTHERWISE NOTED
  2. PROVIDE WITH DRYWALL WALL MOUNTING FRAME WHERE REQUIRED.

### DUCT SMOKE DETECTOR SEQUENCE OF OPERATION

ACTIVATION OF A DUCT SMOKE DETECTOR SHALL INITIATE AN AUDIBLE AND VISUAL ALARM ALARM DEVICE. BE SHALL LOCATED IN AN AREA CONSTANTLY ATTENDED BY BUILDING OCCUPANTS DURING NORMAL HOURS OF OPERATION. THE ACTIVATION OF ANY DUCT SMOKE DETECTOR SHALL INITIATE THE SHUTDOWN OF ALL FOUR (4) AIR HANDLERS. ACTIVATION OF A DUCT SMOKE DETECTOR WILL SIGNAL THE FIRE ALARM PANEL. THE FIRE ALARM PANEL IS MONITORED BY THIRD PARTY. DUCT SMOKE DETECTORS SHALL BE PROVIDED WITH A REMOTE TEST SWITCH.

### EXHAUST FAN SCHEDULE

MARK	MANUFACTURER / MODEL #	FAN DATA			MOTOR DATA			BACKDRIFT DAMPER	NOTES
		CFM	SP	RPM	PHASE	HZ	WATTS / HP		
EF-1	GREENHECK / SP-A00	70	0.250	900	120	1	15W	YES	1.2
EF-2	GREENHECK / SP-A00	70	0.250	900	120	1	15W	YES	1.2
EF-3	GREENHECK / SP-A00	75	0.250	900	120	1	15W	YES	1.2

- NOTES:
1. PROVIDE WITH SPEED CONTROLLER
  2. PROVIDE WITH DIAL ON MOTOR POTENTIOMETER.

### DUCTLESS SPLIT SYSTEM SCHEDULE

MARK	SERVES	MANUFACTURER	EXTERIOR MODEL NUMBER	INTERIOR MODEL NUMBER	COOLING BTU HEATING BTU	CFM (HIGH)	ELECTRICAL OUTDOOR				ELECTRICAL INDOOR				NOTES	ACCESSORIES
							VOLTAGE	PHASE	HZ	MOCIP	VOLTAGE	PHASE	HZ	SEER		
CU-1WC-1	IT ROOM	CARRIER	38MAR012-AA3	40MAH021-843	12,000 / 12,100	380	208	1	60	20A	POWERED FROM OUTDOOR UNIT	22.5	1	1,2,3,4,5		

- NOTES:
1. OUTDOOR UNIT SHALL BE MOUNTED ON EQUIPMENT PAD APPROVED BY THE MANUFACTURER.
- ACCESSORIES:
1. ISOLATION RELAY
  2. ISOLATION RELAY
  3. LOW AMBIENT CONTROL AND WINTER START
  4. WIND BAFFLE
  5. WIRED THERMOSTAT, 2-STAGE COOLING (STAGE 1: DS-1, STAGE 2: DS-2)

### Outdoor Air Calculations Per ASHRAE Standard 62.1

Room Number	Room Name	Room System Area	Room System Number	Occupancy Category (Table 6.1)	Exhaust Occupancy Category (Table 6.4)	Minimum Ventilation Known Occupancy		Minimum Ventilation Default Values		Minimum Exhaust Rate (Table 6.4)	Total Exhaust Rate	Breathing Zone Outdoor Air (Zp)	System #1 Max Zp: 0.25		System #2 Max Zp: 0.23	
						CFM Per Person (Rp)	CFM Per Person (Rq)	CFM Per Person (P1)	CFM Per Person (P2)				Supply	Outdoor Air	Supply	Outdoor Air
100	Entry	45 FT²	1	General - Corridors		0.06				2.70						
101	Exit	51 FT²	1	General - Corridors		0.06				3.06						
102	Lobby	410 FT²	1	Miscellaneous Spaces - Banks or Bank Lobbies		7.50	0.06	4.00		54.60	0.19	675	68			
103	Teller Area	125 FT²	1	Miscellaneous Spaces - Banks or Bank Lobbies		7.50	0.06	2.00		22.50	0.19	150	28			
104	Work Area	80 FT²	1	Office Buildings - Office Space		5.00	0.06	1.00		9.60	0.12	100	12			
105	Night Drop	155 FT²	2	General - Storage Rooms		5.00	0.12			18.60	0.19		125	21		
106	IT Closet	66 FT²		Unoccupied												
107	Break Room	158 FT²	2	General - Break Rooms		5.00	0.06	4.00		29.48	0.21		175	33		
108	Office	93 FT²	1	Office Buildings - Office Space		5.00	0.06	1.00		10.58	0.11	125	13			
109	Office	88 FT²	1	Office Buildings - Office Space		5.00	0.06	1.00		10.28	0.13	100	13			
110	Office	94 FT²	1	Office Buildings - Office Space		5.00	0.06	1.00		10.64	0.13	100	13			
111	Huddle Room	90 FT²	1	General - Conference Meeting		5.00	0.06	4.00		25.40	0.25	125	32			
112	Training	99 FT²	2	Office Buildings - Office Space		5.00	0.06	1.00		8.54	0.11		100	9		
113	Janitor Closet	73 FT²	2	Not Applicable - Exhaust Only	Janitor Trash Recycle								75			
114	Women's RR	72 FT²	2	Not Applicable - Exhaust Only	Toilets - Public								70			
115	Mens RR	52 FT²	2	Not Applicable - Exhaust Only	Toilets - Public								70			
116	Corridor	112 FT²	2	General - Corridors		0.06				6.72	0.07		125	7		
117	Corridor	65 FT²	2	General - Corridors		0.06				3.90			100	4		
118	Community Room	478 FT²	2	General - Conference Meeting		5.00	0.06	16.00		108.68	0.23		600	121		

Notes: 3.0 Ton System 16% Outdoor Air People: 14 System Efficiency: 0.80 Occupant Diversity: 1.00 4.0 Ton System 12% Outdoor Air People: 21 System Efficiency: 0.80 Occupant Diversity: 1.00 167 CFM O.A. Required 181 CFM O.A. Required

### PACKAGED ROOFTOP UNITS SCHEDULE

MARK	MANUFACTURER	DIRECT	
		RT107	RT107
MODEL #	48PCFA05A2A0-00A0	48PCFA05A2A0-00A0	48PCFA05A2A0-00A0
CONFIGURATION	CONVERTIBLE	CONVERTIBLE	CONVERTIBLE
DISCHARGE	DOWNFLOW	DOWNFLOW	DOWNFLOW
APPLICATION TYPE	CONSTANT VOLUME	CONSTANT VOLUME	CONSTANT VOLUME
HEAT TYPE	GAS	GAS	GAS
DESIGN CFM	1375	1340	1340
NOMINAL CAP	4 TON	4 TON	4 TON
COOLING STAGES	1	1	1
TOTAL COOLING MBH	77.34	77.34	47.34
SENS. TOTAL MBH	31.89	31.89	31.89
SEER	14.0	14.0	14.0
REFRIGERANT TYPE	R410A	R410A	R410A
HEATER QTY	1	1	1
GAS INPUT MBH	62110	62110	62110
OUTPUT BTU	6686	6686	6686
VOLTAGE/PHASE	208V/3 /60Hz	208V/3 /60Hz	208V/3 /60Hz
MCA	27	27	27
MOCIP	30	30	30
SINGLE POINT POWER	YES	YES	YES
HINGED PANELS	YES	YES	YES
SUPPLY FAN	MED-STATIC	MED-STATIC	MED-STATIC
FILTERS	2"	2"	2"
CRANKCASE HEATER	YES	YES	YES
LOW AMBIENT	YES	YES	YES
ROOF CURB (14")	YES	YES	YES
ECONOMIZER	YES	YES	YES
HOT GAS REHEAT	NO	NO	NO
POWER EXHAUSTER	NO	NO	NO
HALL GUARD	YES	YES	YES
TXV OPTION	YES	YES	YES
ELEC. DISCONNECT	YES	YES	YES
CONV. RECEPTACLE	UNPOWERED	UNPOWERED	UNPOWERED
RTRN DUCT SMOKE DETECTOR	YES	YES	YES
ROOF CURB	14"	14"	14"
UNIT WEIGHT	697 LBS	709 LBS	709 LBS
DIMENSIONS (L x W x H)	74.30" x 45.50" x 23.30"	74.30" x 46.50" x 33.30"	74.30" x 46.50" x 33.30"
NOTES	1,2,3,4	1,2,3,4	1,2,3,4

- NOTES:
1. PROVIDE HIGH PRESSURE AND FREEZE-STAT CONTROLS.
  2. PROVIDE RETURN AIR DUCT SMOKE DETECTOR AND AUDIBLE AND VISUAL ALARM.
  3. ALTERNATE MANUFACTURERS: TRANE, YORK, MODULAR.
  4. PROVIDE WITH RAVAL DEVICES APR CONTROL VALVE EQUAL TO MODEL R4PR-10-2

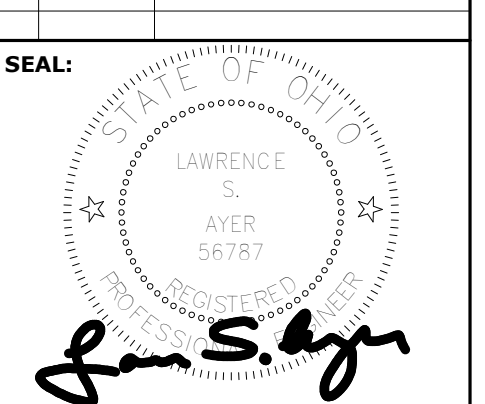
### PROJECT GENERAL NOTES

1. THE DRAWINGS ARE DIAGRAMMATIC ONLY AND INDICATE THE GENERAL ARRANGEMENT OF THE SYSTEMS AND ARE TO BE FOLLOWED INsofar AS POSSIBLE. IF DEVIATIONS FROM THE LAYOUTS ARE NECESSITATED BY FIELD CONDITIONS, DETAILED LAYOUTS OF THE PROPOSED DEPARTURES SHALL BE SUBMITTED IN WRITING TO THE ENGINEER FOR REVIEW BEFORE PROCEEDING WITH THE WORK.
2. THE MECHANICAL CONTRACTOR SHALL REVIEW ALL DRAWINGS IN DETAIL AS THEY MAY RELATE TO THEIR WORK.
3. EACH CONTRACTOR SHALL INSPECT THE SITE ON WHICH THE WORK IS TO BE PERFORMED, AND THE OBSTACLES THAT MAY BE ENCOUNTERED, AND ALL RELEVANT MATTERS CONCERNING THE WORK.
4. THE CONTRACTOR SHALL FILE ALL NECESSARY NOTICES, OBTAIN AND PAY FOR ALL PERMITS, FEES, AND OTHER COSTS INCLUDING UTILITY CONNECTIONS OR EXTENSION, IN CONNECTION WITH THE WORK. AS NECESSARY, HE SHALL FILE ALL REQUIRED PLANS, PREPARE ALL DOCUMENTS AND OBTAIN ALL NECESSARY APPROVALS OF ALL UTILITY AND GOVERNMENTAL DEPARTMENTS HAVING JURISDICTION.
5. IGNORANCE OF CODES, RULES, AND REGULATIONS, UTILITY COMPANY REQUIREMENTS, LAWS, ETC. SHALL NOT DIMINISH OR ABSOLVE CONTRACTOR'S RESPONSIBILITIES TO PROVIDE AND COMPLETE ALL WORK IN COMPLIANCE WITH SUCH.
6. ALL MATERIALS FURNISHED AND ALL WORK INSTALLED SHALL COMPLY WITH THE CURRENT EDITION OF THE OHIO MECHANICAL CODES, NATIONAL FIRE CODES OF THE NATIONAL FIRE PROTECTION ASSOCIATION AND WITH THE REQUIREMENTS OF ALL GOVERNMENTAL AGENCIES OR DEPARTMENTS HAVING JURISDICTION.

### MECHANICAL PLAN SYMBOL LEGEND

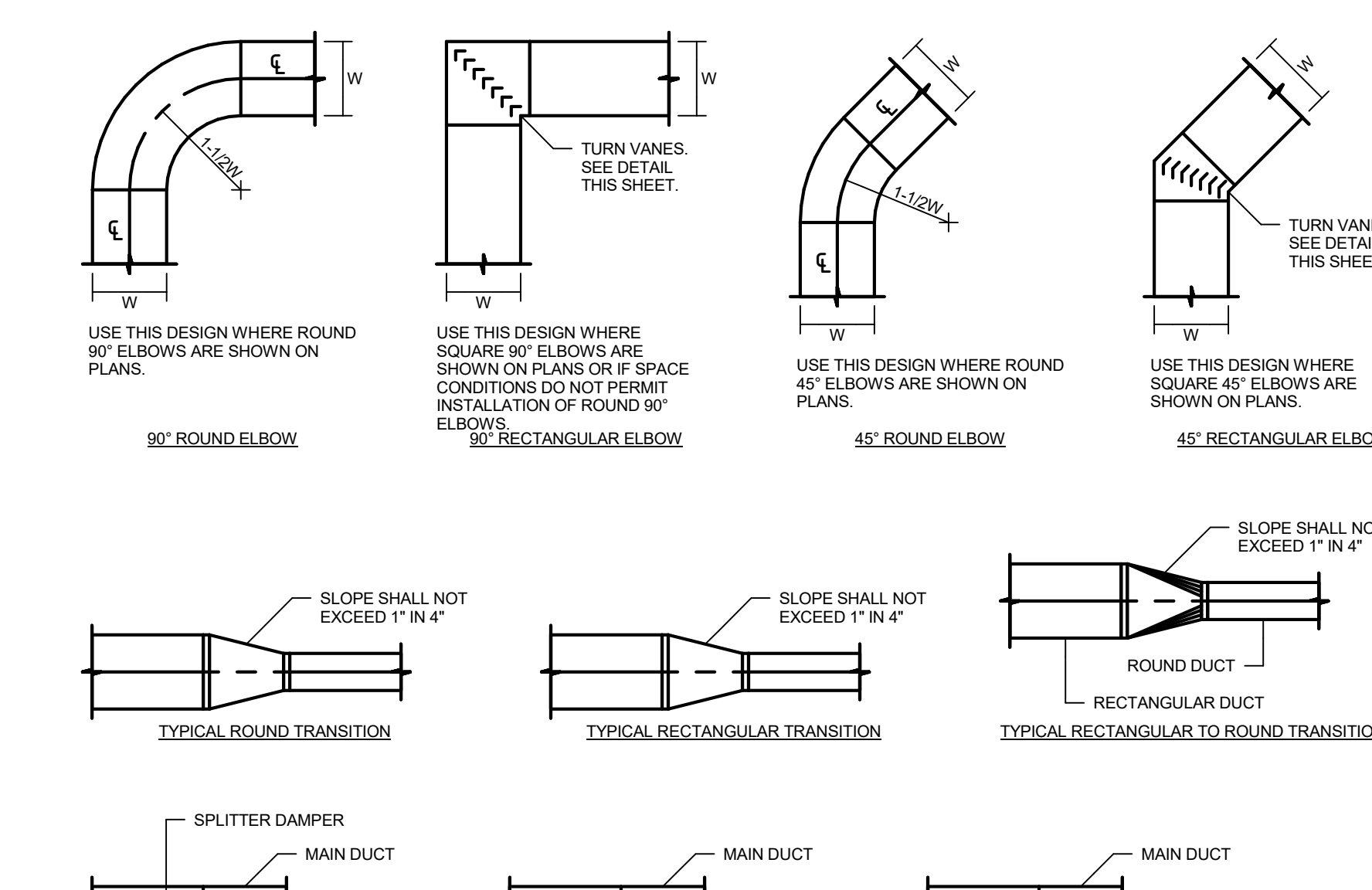
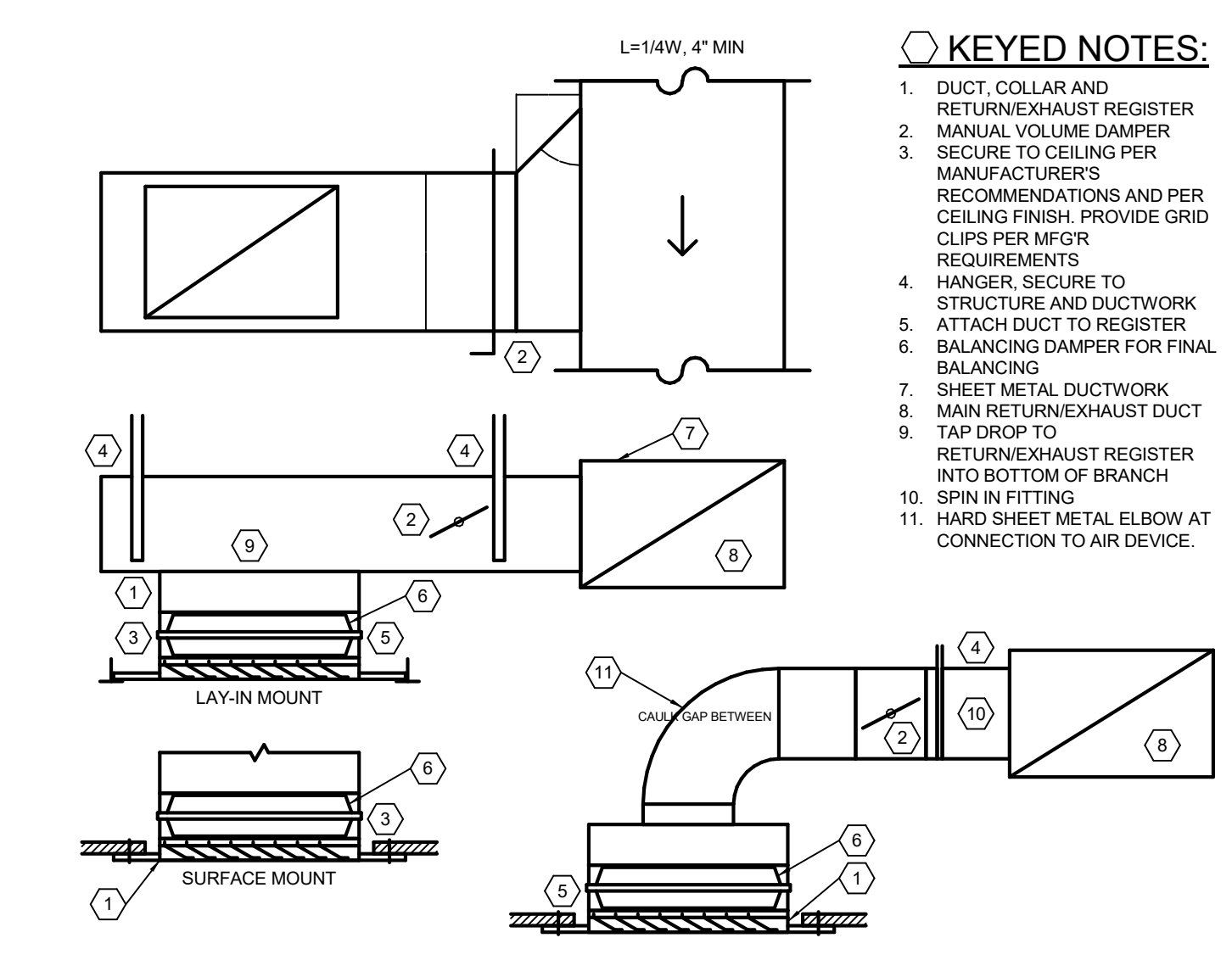
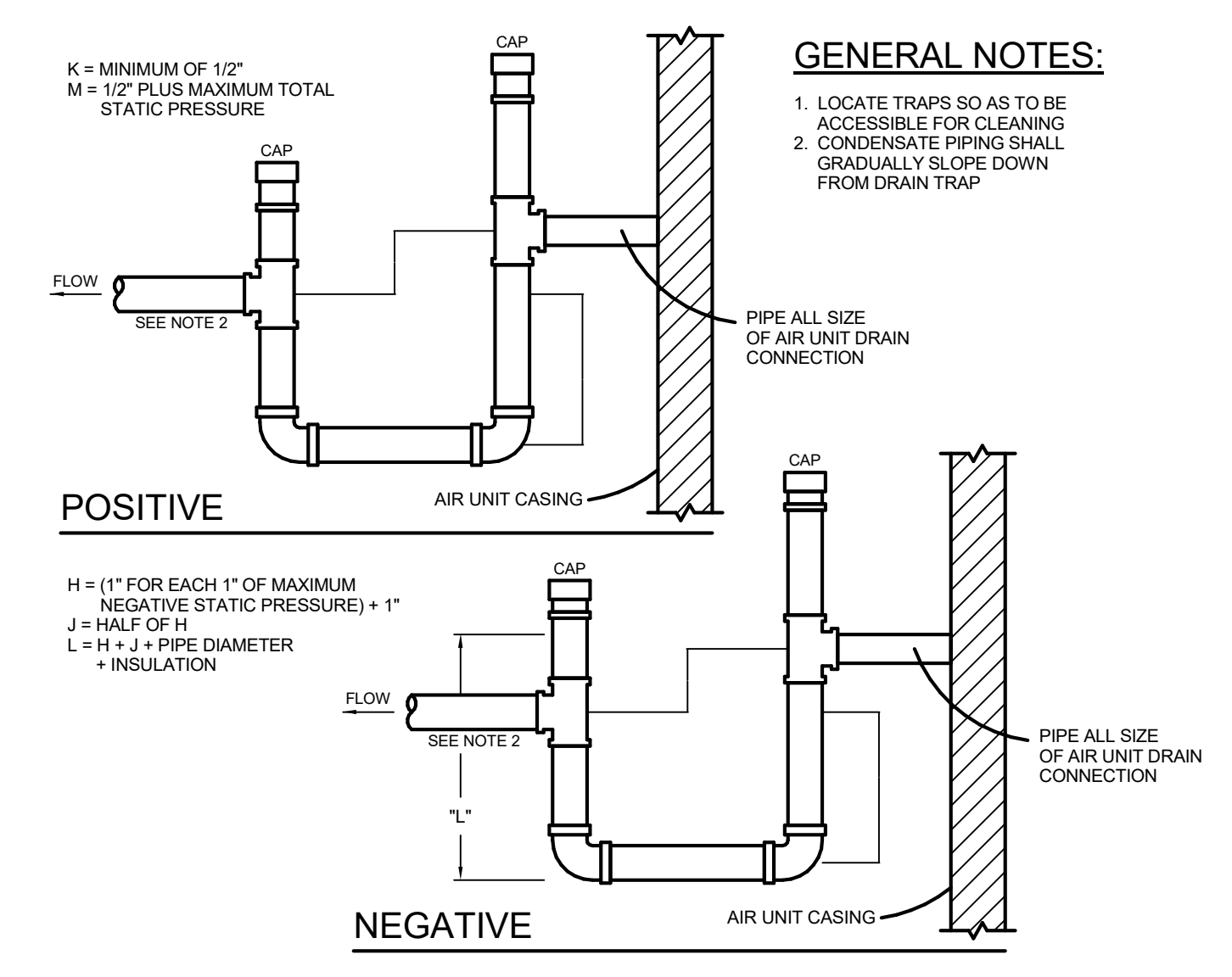
DUCT LEGEND (NOT ALL SYMBOLS MAY BE USED)	
	NEW METAL DUCTWORK.

REVISIONS		
No.	Date	Description
08/18/22		PERMIT & BID



PROJECT NO. E2M 22138	ISSUED BY: E2M
DRAWN BY: DCA	REVIEWED BY: KJR
ISSUE DATE: 08/18/2022	

SHEET TITLE:	
MECHANICAL DETAILS	
DISCIPLINE SHEET NUMBER:	
M601	



**DUCTLESS SPLIT DETAIL NOTES**

1	DX COOLING COIL
2	CONDITIONED OUTLET AIR
3	AIR FILTER
4	FAN MOTOR
5	3/4" CONDENSATE DRAIN WITH TRAP
6	REFRIGERANT LINES (NOT TO BE EXPOSED TO OCCUPANTS), MAXIMUM PIPING LENGTH EQUAL TO 100'-0", MAXIMUM ELEVATION DIFFERENCE EQUAL TO 50'-0"
7	OUTLET LOUVER
8	INLET AIR

