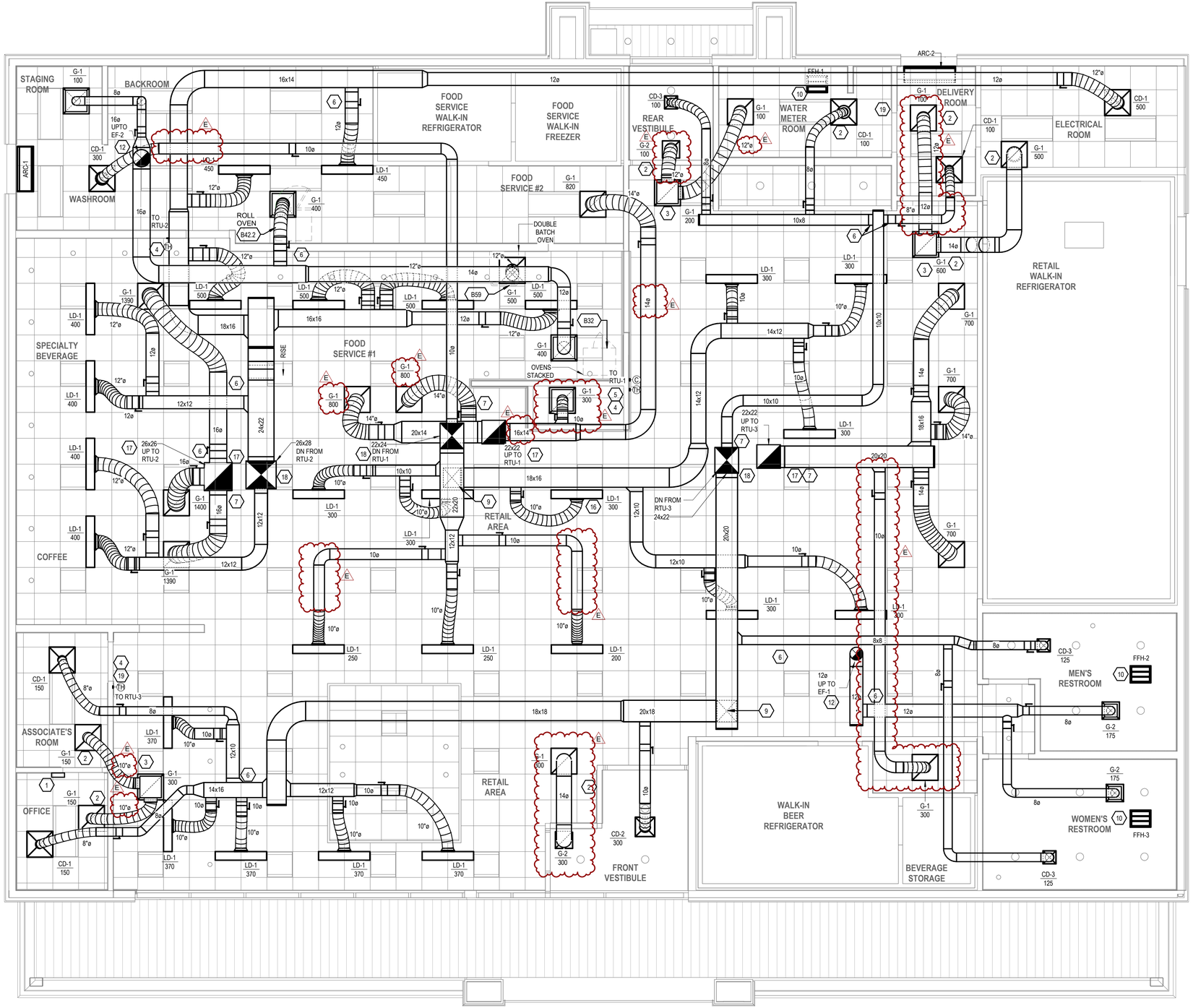

1 M1.0 HVAC FLOOR PLAN
1/4" = 1'-0"

KEY NOTES

1. REMOTE TEST STATION FOR SMOKE DETECTORS FOR RTU-1, 2, & 3. TEST STATION TO BE MOUNTED ON THE MANAGER'S WALL. SECURITY CONTRACTOR SHALL WIRE RTU FACTORY MOUNTED SMOKE DETECTORS TO SECURITY/FIRE ALARM PANEL. MECHANICAL CONTRACTOR SHALL PROVIDE TEST STATION AND WIRING BETWEEN COMPONENTS AS WELL AS WIRING TO SHUT DOWN THE A/C FAN UPON ACTIVATION OF THE SMOKE DETECTOR. G.C. TO TEST THE SMOKE DETECTOR FUNCTIONS WITH THE WAWA PROJECT MANAGER.
2. TRANSFER AIR DUCT ASSEMBLY.
3. PROVIDE SEALED 20" X 20" PLENUM BOX ASSEMBLY ABOVE TRANSFER GRILLE TO ALLOW FLEX TRANSFER DUCT CONNECTIONS.
4. WALL MOUNTED SENSOR(S) FOR EACH MECHANICAL UNIT PER ROOFTOP UNIT SCHEDULE ON SHEET M3.0 G.C. SHALL INSTALL AND WIRE TO UNIT, BAS CONTRACTOR SHALL CONNECT TO MECHANICAL UNIT ONLY.
5. WALL MOUNTED CO2 SENSOR AND WIRE TO RTU-3. SENSOR TO MONITOR CO2 LEVELS THROUGH REMOTE BAS INTERFACE.
6. ROUTE DUCT THROUGH ANGLED WEB MEMBER AND SUPPORT AT PANEL POINT.
7. DUCTWORK TO RUN WITHIN JOIST SPACING. MECHANICAL CONTRACTOR TO COORDINATE MECHANICAL WORK WITH ALL TRADES PRIOR TO INSTALLATION.
8. ROUTE DUCT THRU OPEN WEBBING OF JOIST GIRDER.
9. CONNECT TO BOTTOM OF MAIN DUCT.
10. HEATER SHALL BE A MINIMUM OF 12" AWAY FROM ANY WALL.
11. NOT USED
12. EXHAUST DUCT UP TO ROOF MOUNTED EXHAUST FAN. SEE ROOF PLAN FOR CONTINUATION.
13. NOT USED
14. NOT USED
15. NOT USED
16. LINEAR DIFFUSER DEFLECTORS TO BE POSITIONED 5DEG TO DIRECT AIR AWAY FROM EXPRESS CASE.
17. RETURN DUCT PLENUM UP TO RTU FULL SIZE OF UNIT CONNECTION.
18. SUPPLY DUCT PLENUM DOWN FROM RTU FULL SIZE OF UNIT CONNECTION.
19. PROVIDE WALL MOUNTED THERMOSTAT IN THIS LOCATION. MOUNTING HEIGHT SHALL BE 5 FT. ABOVE FINISH FLOOR. SET THERMOSTAT TO 60 °F (ADJ)

PERMITTING NOTE:

A. ALL REFRIGERATION EQUIPMENT INCLUDING WALK-IN COOLERS AND REFRIGERATORS WILL BE SUBMITTED UNDER A SEPARATE PERMIT.

SHEET GENERAL NOTE:

1. MECHANICAL CONTRACTOR SHALL ADJUST ALL LINEAR SLOT DIFFUSERS TO A GENERALLY VERTICAL FLOW. ADJUSTMENT SHALL BE MADE SO AS TO AVOID AIRFLOWS ON SENSORS, REFRIGERATION CASES, OR OPEN FOOD REFRIGERATION EQUIPMENT.
2. SUBMIT TESTING AND BALANCING REPORT WITH FLOOR PLAN INDICATING LOCATION OF INLETS AND OUTLETS WITH TAGS THAT MATCH THE TESTING AND BALANCING REPORT.
3. CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ALL VOLUME DAMPERS IN LOCATIONS ACCESSIBLE TO ALLOW FOR BALANCING.

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CLIENT NAME
WAWA INC.
260 W. BALTIMORE PIKE
WAWA,PA 19063

PROJECT NAME
W50FB PA v2025.Q1
WAWA STORE #8241
4015 LEHIGH STREET
ALLENTOWN, PA 18103

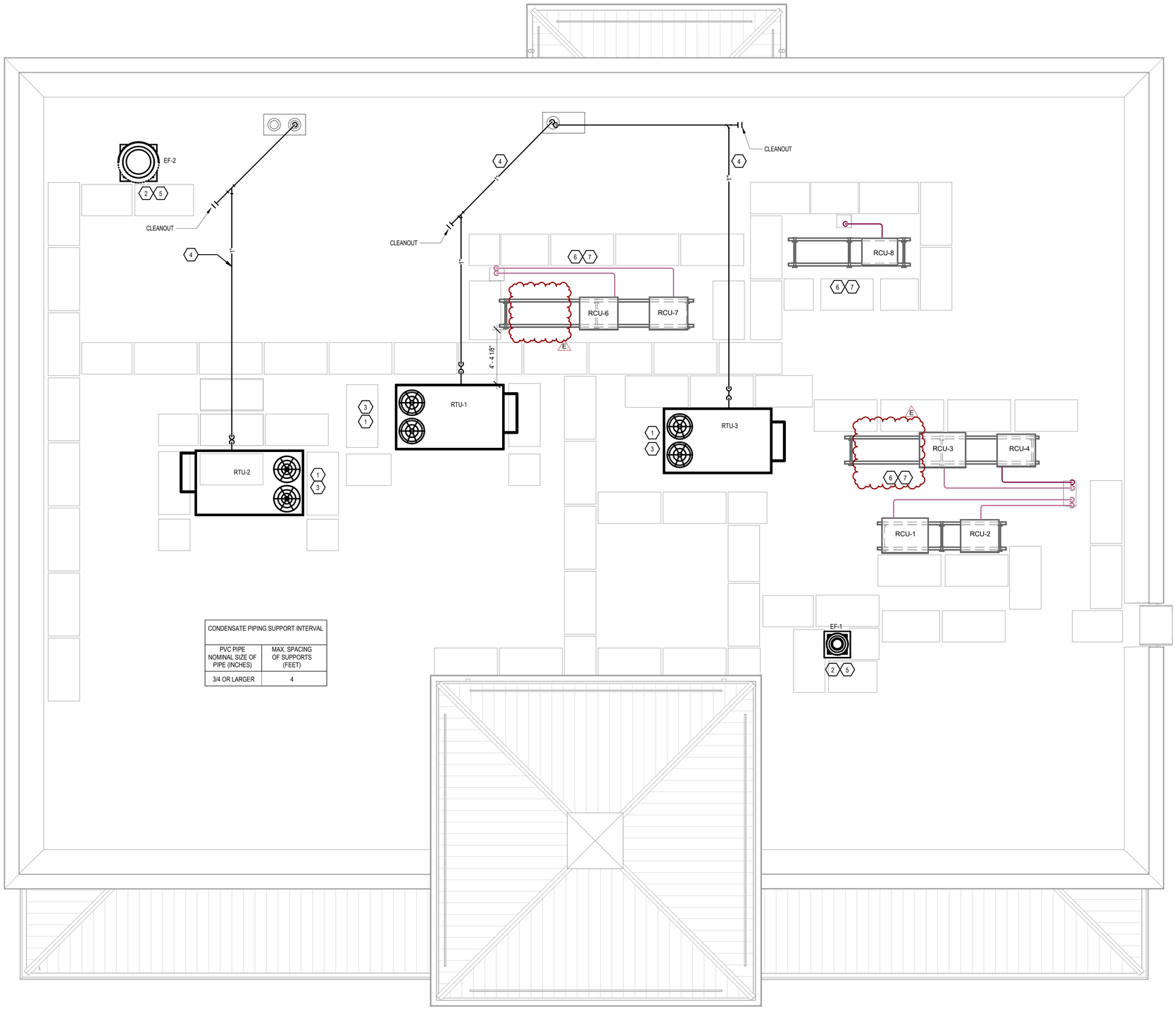
SHEET TITLE
HVAC FLOOR PLAN

RELEASE	DATE
ISSUED FOR PERMIT	04/26/2024
REV B-CLIENT COMMENTS	10/30/2024
REV C - ISSUED FOR CONSTRUCTION	01/27/2025
REV. E - REF UPDATES	08/26/2025

PROTOTYPE	W50FB PA v2025.Q1
PROJECT NO.	60659812
DRAWN	DA
CHECKED	FA

8241
ALLENTOWN, PA

M1.0



CONDENSATE PIPING SUPPORT INTERVAL	
PVC PIPE NOMINAL SIZE OF PIPE (INCHES)	MAX. SPACING OF SUPPORTS (FEET)
3/4 OR LARGER	4

SHEET NOTES

1. FACTORY INSTALLED SMOKE DETECTOR IN MAIN SUPPLY AND RETURN OF EACH ROOF TOP UNIT.
2. INSTALL ROOF MOUNTED EXHAUST FAN PER DETAIL ON SHEET M3.0 COORDINATE EXACT LOCATION OF FAN PENETRATION WITH ARCHITECTURAL ROOF PLAN. TRANSITION GALVANIZED DUCT WORK AS NECESSARY FROM FAN INTO CEILING/JOIST SPACE. SEE SHEET M1.0 FOR CONTINUATION.
3. PROVIDE FLEXIBLE CONNECTIONS BETWEEN ALL DUCT WORK AND MECHANICAL UNITS.
4. ROUTE SCH. 40 PVC CONDENSATE DRAIN PIPING ALONG ROOF. SUPPORT PIPING PER DETAIL ON SHEET M3.0
5. MAINTAIN A MINIMUM 10' CLEARANCE BETWEEN OUTSIDE AIR INTAKES AND EXHAUST TERMINATIONS ON ROOF.
6. REFER TO REFRIGERATION DRAWING FOR ADDITIONAL INFORMATION.
7. PROVIDE CONDENSER PANEL IN LOCATION SHOWN. LOCATION SHOULD BE FIELD COORDINATED WITH OTHER TRADES. WHENEVER IT ENCROACHES AN EQUIPMENT'S MAINTENANCE AND OPERATIONS CLEARNANCES. REFER TO STRUCTURAL DRAWINGS FOR MOUNTING PANEL ON UNISTRUT SYSTEM.

GENERAL NOTES

A. FOR SPECIFIC SEISMIC AND WIND LOADING REQUIREMENT SEE STRUCTURAL PLANS AND SPECIFICATIONS

1 M2.0 HVAC ROOF PLAN
1/4" = 1'-0"

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CLIENT NAME
WAWA INC.
260 W. BALTIMORE PIKE
WAWA,PA 19063

PROJECT NAME
W50FB PA v2025.Q1
WAWA STORE #8241
4015 LEHIGH STREET
ALLENTOWN, PA 18103

SHEET TITLE
HVAC ROOF PLAN

COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL ENGINEER
FRANCIS C. CONSTANTINO
PE083797

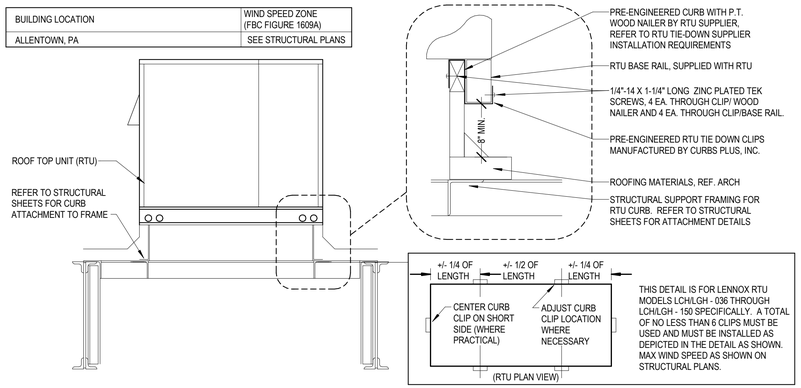
RELEASE	DATE
ISSUED FOR PERMIT	04/26/2024
REV B-CLIENT COMMENTS	10/30/2024
REV C - ISSUED FOR CONSTRUCTION	01/27/2025
REV. E - REF UPDATES	08/26/2025

PROTOTYPE	W50FB PA v2025.Q1
PROJECT NO.	60659812
DRAWN	DA
CHECKED	FA

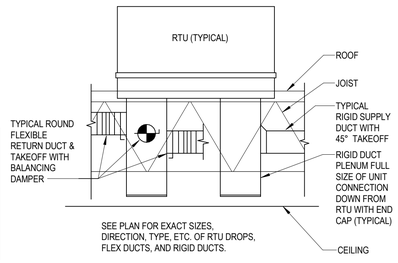
8241
ALLENTOWN, PA

Wawa

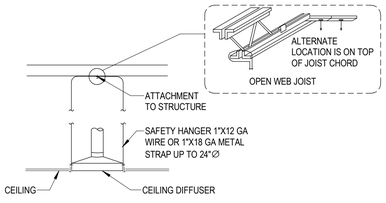
M2.0



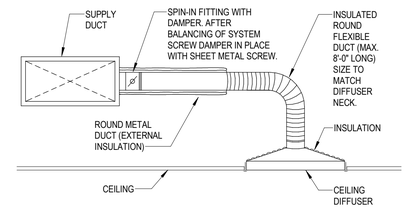
1 M3.0 HVAC RTU TIE-DOWN DETAIL
NOT TO SCALE



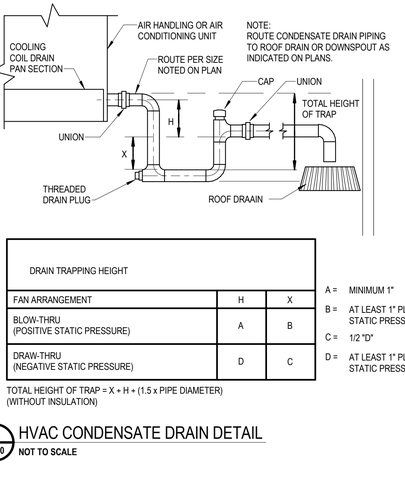
2 M3.0 TYPICAL DUCT PLENUM DETAIL
NOT TO SCALE



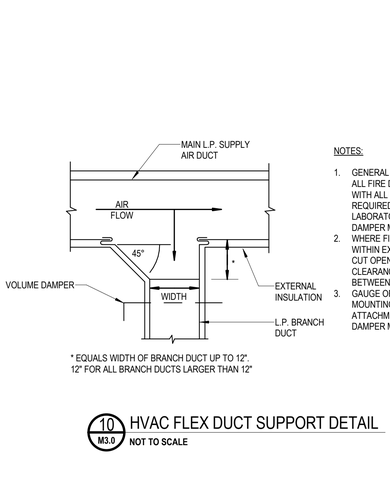
3 M3.0 HVAC CEILING MOUNTED AIR DIFFUSER SUPPORT DETAIL
NOT TO SCALE



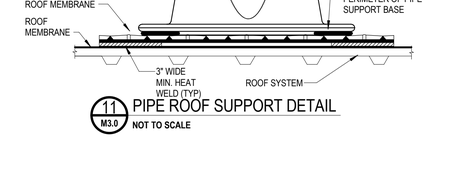
4 M3.0 HVAC CEILING MOUNTED AIR DIFFUSER SUPPORT DETAIL
NOT TO SCALE



5 M3.0 HVAC FLEX DUCT SUPPORT DETAIL
NOT TO SCALE



6 M3.0 AIR CURTAIN INSTALLATION DETAIL
NOT TO SCALE



7 M3.0 ROOF FAN MOUNTING DETAIL
NOT TO SCALE

8 M3.0 HVAC SUPPLY DIFFUSER TAKE OFF DETAIL
NOT TO SCALE

DRAIN TRAPPING HEIGHT		
FAN ARRANGEMENT	H	X
BLOW-THRU (POSITIVE STATIC PRESSURE)	A	B
DRAW-THRU (NEGATIVE STATIC PRESSURE)	D	C

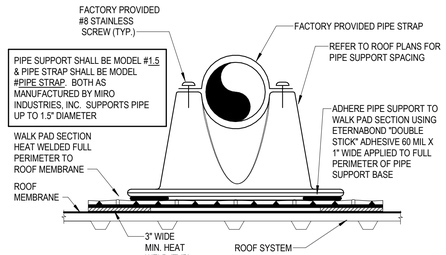
A = MINIMUM 1"
B = AT LEAST 1" PLUS CASING STATIC PRESSURE
C = 1/2 "D"
D = AT LEAST 1" PLUS CASING STATIC PRESSURE

TOTAL HEIGHT OF TRAP = X + H + (1.5 x PIPE DIAMETER)
(WITHOUT INSULATION)

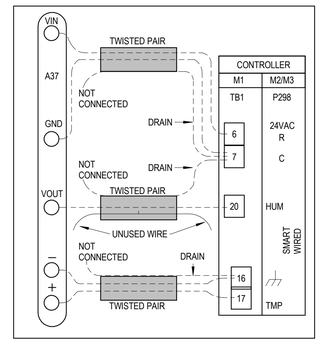
9 M3.0 HVAC CONDENSATE DRAIN DETAIL
NOT TO SCALE

NOTES:
1. GENERAL ARRANGEMENT SHOWN. INSTALL ALL FIRE DAMPERS IN STRICT ACCORDANCE WITH ALL INSTALLATION PROCEDURES REQUIRED BY THE UNDERWRITERS LABORATORY INC. AS FURNISHED BY DAMPER MFGR.
2. WHERE FIRE DAMPER IS TO BE MOUNTED WITHIN EXISTING CEILING, WALL OR FLOOR, CUT OPENING AS REQUIRED TO MAINTAIN CLEARANCES STIPULATED BY THE MFGR. BETWEEN WALL OR FLOOR AND SLEEVE.
3. GAUGE OF SHEETMETAL SLEEVE, MOUNTING ANGLES, METHODS OF ATTACHMENT, ETC. AS DIRECTED BY FIRE DAMPER MFGR.

10 M3.0 HVAC FLEX DUCT SUPPORT DETAIL
NOT TO SCALE



11 M3.0 PIPE ROOF SUPPORT DETAIL
NOT TO SCALE



TYPICAL LENNOX SENSOR WIRING DIAGRAM.
INSTALLER TO USE SEPARATE TWISTED-PAIR, SHEILDED CABLES AS NOTED.

WIRE RUNS OF 50' (15m) OR LESS:
USE THREE SEPARATE SHIELDED CABLES CONTAINING 20AWG MINIMUM, TWISTED PAIR CONDUCTORS WITH OVERALL SHIELD (BELDEN TYPE 8762 OR 88760 [PLENUM] OR EQUIVALENT). CONNECT CABLE SHIELD DRAIN WIRES AS SHOWN IN DIAGRAM.

WIRE RUNS OF 150' (46m) OR LESS:
USE THREE SEPARATE SHIELDED CABLES CONTAINING 18AWG MINIMUM,TWISTED PAIR CONDUCTORS WITH OVERALL SHIELD (BELDEN TYPE 8762 OR 88760 [PLENUM] OR EQUIVALENT). CONNECT CABLE SHIELD DRAIN WIRES AS SHOWN IN DIAGRAM.

12 M3.0 TEMPERATURE/HUMIDITY SENSOR WIRING DIAGRAM
NOT TO SCALE

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CLIENT NAME
WAWA INC.
260 W. BALTIMORE PIKE
WAWA,PA 19063

PROJECT NAME
W50FB PA v2025 Q1
WAWA STORE #8241
2015 LEHIGH STREET
ALLENTOWN, PA 18103

SHEET TITLE
HVAC DETAILS

RELEASE	DATE
ISSUED FOR PERMIT	04/28/2024
REV C- ISSUED FOR CONSTRUCTION	01/27/2025
REV E - REF UPDATES	09/26/2025

PROTOTYPE	PROJECT NO.	DRAWN	CHECKED
W50FB PA v2025 Q1	60699812	DA	FA

8241
ALLENTOWN, PA
Wawa

M3.0

OUTSIDE AIR CALCULATION

AREA SERVED	AREA (SQFT)	PEOPLE / 1000 SQFT	# PEOPLE	CFM/ PERSON	PEOPLE O.A. (CFM)	CFM/ SQFT	SQFT OUTSIDE AIR (CFM)	TOTAL CFM CALCULATED	CFM SUPPLIED
RETAIL BOTT.	735	15	12	7.5	90	0.12	89	179	
RETAIL RGHT	530	15	8	7.5	60	0.12	64	124	
RETAIL LEFT	690	15	11	7.5	83	0.12	83	166	
STAGING	40	2	1	10	10	0.12	5	15	
BACKROOM	125	20	3	7.5	23	0.12	15	38	
							RTU-1	522	680
SPL. BEV.	130	20	3	7.5	23	0.12	15	38	
COFFEE	125	20	3	7.5	23	0.12	16	39	
FOOD SVC. 1	425	20	9	7.5	68	0.12	51	119	
FOOD SVC. 2	200	20	4	7.5	30	0.12	24	54	
WASH ROOM	115	20	3	7.5	23	0.12	37	47	
							RTU-2	297	820
DELIVERY RM	65	2	1	10	10	0.12	8	18	
FRONT VEST.	85	10	1	5	5	0.06	6	11	
REAR VEST.	50	10	1	5	5	0.06	3	8	
ASSOCIATE	75	5	1	5	5	0.06	5	10	
CHECKOUT	775	15	12	7.5	90	0.12	93	183	
OFFICE	65	5	1	5	5	0.06	4	9	
							RTU-3	239	600

NOTES:
1. OCCUPANCY LOAD VENTILATION RATES ARE BASED ON NET OCCUPIABLE SPACE IN ACCORDANCE WITH THE JURISDICTION'S LATEST ACCEPTED VERSION OF THE INTERNATIONAL MECHANICAL CODE, TABLE 403.3.1.1.
2. ANTICIPATED NUMBER OF PEOPLE IS BASED ON AN OCCUPANCY LOAD FACTOR (# PEOPLE/SF) VALUE (BASED ON THE JURISDICTION'S LATEST ACCEPTED VERSION OF THE INTERNATIONAL MECHAICAL CODE, TABLE 403.3.1.1).

AIR BALANCE SCHEDULE

SYSTEM	CFM
RTU-1	+680
RTU-2	+820
RTU-3	+600
EF-1	-350
EF-2	-1400
BUILDING POSITIVE PRESSURE	+350

MECHANICAL GENERAL NOTES

1. REFER TO WRITTEN BOOK SPECIFICATIONS FOR ADDITIONAL INFORMATION.
2. THE WORK TO BE DONE UNDER THESE SPECIFICATIONS AND THE DRAWINGS CONSISTS OF FURNISHING ALL EQUIPMENT, MATERIALS, LABOR AND SERVICES, AND PERFORMING ALL OPERATIONS TO COMPLETE THE MECHANICAL CONSTRUCTION WORK FOR THIS PROJECT. ANY WORK NOT SPECIFICALLY COVERED BY THESE SPECIFICATIONS OR INDICATED ON THE MECHANICAL/ELECTRICAL/PLUMBING PLANS, BUT NECESSARY TO COMPLETE OR PERFECT ANY PART OF THIS INSTALLATION IN A SUBSTANTIAL MANNER, SHALL BE PROVIDED WITHOUT EXTRA COST TO OWNER.
3. THE TERM "FURNISH" SHALL MEAN TO OBTAIN AND SUPPLY TO THE JOB SITE. THE TERM "INSTALL" SHALL MEAN TO FIX IN POSITION AND CONNECT FOR USE. THE TERM "PROVIDE" SHALL MEAN TO FURNISH AND INSTALL. THE TERM "MECHANICAL WORK" OR "WORK" SHALL MEAN ALL LABOR, MATERIAL, EQUIPMENT, SCAFFOLDING, RIGGING, TOOLS, SUPERVISION, SERVICES AND OTHER INCIDENTALS NECESSARY FOR COMPLETE AND OPERABLE INSTALLATION.
4. THE CONTRACTOR SHALL FURNISH AND INSTALL ALL EQUIPMENT, MATERIALS AND LABOR TO PROVIDE A COMPLETE AND OPERATIONAL SYSTEM AS INDICATED ON THE DESIGN DOCUMENTS.
5. CONTRACTOR SHALL OBTAIN ALL PERMITS, INSPECTIONS AND APPROVALS PRIOR TO AND DURING CONSTRUCTION.
6. ALL MATERIALS, EQUIPMENT AND INSTALLATIONS SHALL BE IN STRICT ACCORDANCE WITH JURISDICTION'S LATEST ACCEPTED VERSION OF THE INTERNATIONAL BUILDING CODE - MECHANICAL, SMACNA, UL, STATE CODES, LOCAL CODES, MANUFACTURER'S RECOMMENDATIONS, AND ALL AUTHORITIES HAVING JURISDICTION.
7. CONTRACTOR SHALL PROVIDE ALL ROOFING OPENINGS, FLASHINGS, AUXILIARY STEEL, THREADED RODS, VIBRATION ISOLATORS, TURNBUCKLES, ETC. TO SUPPORT HIS EQUIPMENT ON OR FROM THE STRUCTURE.
8. CONTRACTOR SHALL COORDINATE ALL WORK WITH OTHER TRADES AND IN FIELD PRIOR TO INSTALLATION OF ANY WORK. REPORT ALL CONFLICTS IMMEDIATELY TO ARCHITECT AND ENGINEER.
9. THE DRAWINGS INDICATE DIAGRAMMATICALLY THE EXTENT, GENERAL CHARACTER AND LOCATION OF THE WORK INCLUDED. OFFSETS OR CHANGES IN DUCT SHAPE TO AVOID STRUCTURAL OR OTHER INTERFERENCES, AND WORK INDICATED BUT HAVING MINOR DETAILS OBVIOUSLY OMITTED SHALL BE PROVIDED WITHOUT EXTRA COST.
10. ANY CHANGES AND/OR MODIFICATIONS MUST BE REVIEWED AND APPROVED BY THE ENGINEER OR OWNER'S REPRESENTATIVE PRIOR TO CONSTRUCTION.
11. REMOVE ALL TRASH, DEBRIS AND DEMOLITION MATERIAL FROM PREMISES AT THE END OF EACH WORK DAY.
12. SCHEDULE ALL WORK, CUTTING AND BUILDING SERVICE INTERRUPTIONS WITH BUILDING OWNER AND CONSTRUCTION MANAGER, PRIOR TO COMPLETING WORK.
13. ALL DUCT DIMENSIONS ARE INSIDE CLEAR DIMENSIONS.
14. THE MAXIMUM FLEXIBLE DUCT LENGTH PERMITTED IS 8'-0". THIS DUCTWORK SHALL BE INSTALLED WITHOUT KINKS OR 90° BENDS.
15. ALL FLEXIBLE DUCTWORK SHALL BE FLEX-VENT TYPE KM INSULATED WITH POLYMER INNER FILM AND METALIZED OUTER JACKET, OR APPROVED EQUAL. SIZE SHALL BE SAME AS DIFFUSER NECK SIZE, UNLESS INDICATED OTHERWISE
16. FIELD ADJUST THE DIRECTION OF BLOW FOR ALL SUPPLY AIR DEVICES SO THAT THE DEVICES DO NOT BLOW DIRECTLY INTO SOFFITS, CURTAIN WALLS, REFRIGERATED CASES OR EXHAUST HOODS.
17. ALL NEW AND EXISTING PIPES AND DUCTS SHALL HAVE UL FIRE RATED SLEEVES AND/OR FIRE RATED DAMPERS, WHEN PASSING THROUGH FIRE RATED CONSTRUCTION.
18. COORDINATE LOCATION OF NEW DUCTWORK, AIR DEVICES AND EQUIPMENT WITH LIGHT FIXTURES, SPRINKLER PIPING AND HYDRONIC PIPING.
19. CONTRACTOR SHALL VERIFY FIELD CONDITIONS AT THE SITE AND NOTIFY THE OWNER/ENGINEER OF ANY DISCREPANCIES PRIOR TO COMMENCING WITH WORK.
20. ALL WALL MOUNTED TEMPERATURE, HUMIDITY, AND CO2 SENSORS SHALL BE INSTALLED AT AN ELEVATION 54" ABOVE FINISHED FLOOR TO THE TOP UNLESS OTHERWISE NOTED ON DRAWINGS. COORDINATE FINAL LOCATIONS WITH EQUIPMENT, FURNITURE, TENANT AND ARCHITECT PRIOR TO INSTALLATION.
21. ALL DUCTWORK SHALL BE GALVANIZED STEEL CONSTRUCTED AT 2" PRESSURE CLASS. ALL CONCEALED DUCTWORK BELOW TRUSSES SHALL BE INSULATED WITH 1-1/2" FIBERGLASS DUCT WRAP WITH WIRE SUPPORT BANDS ON 24" CENTERS. ALL CONCEALED DUCTWORK ABOVE THE TRUSSES SHALL BE INSULATED WITH 1-1/2" OF FIBERGLASS DUCT WRAP WITH WIRE SUPPORT BANDS ON 24" CENTERS. ALL INTERIOR EXPOSED DUCTWORK BELOW TRUSSES SHALL BE INSULATED WITH 1" RIGID FIBERGLASS DUCT BOARD WITH FOIL AND SCRIM FACING. ALL EXTERIOR EXPOSED DUCTWORK SHALL BE INSULATED WITH 4" RIGID FIBERGLASS BOARD WITH WEATHERPROOF MEMBRANE.
22. VERIFY ALL EQUIPMENT VOLTAGES, WIRING REQUIREMENTS, AND REQUIRED BREAKER SIZES WITH THE ELECTRICAL CONTRACTOR PRIOR TO ORDERING EQUIPMENT.
23. ALL ACCESS DOORS REQUIRED IN GENERAL CONSTRUCTION ARE TO BE PROVIDED AND INSTALLED BY THE GENERAL CONTRACTOR. IT IS THE RESPONSIBILITY OF THE MECHANICAL CONTRACTOR TO IDENTIFY SIZE, TYPE AND LOCATION OF SUCH DOORS FOR PROPER ACCESS TO ALL CONCEALED MECHANICAL EQUIPMENT, VALVES AND OTHER RELATED DEVICES. THE MECHANICAL CONTRACTOR SHALL IDENTIFY THESE REQUIREMENTS ON A COORDINATED SHOP DRAWING PRIOR TO SYSTEM FABRICATION AND INSTALLATION.
24. AFTER THE HEATING AND AIR CONDITIONING SYSTEM INSTALLATIONS ARE COMPLETE, THE CONTRACTOR SHALL BALANCE THE SYSTEM AND PRESENT OWNER & ARCHITECT WITH A WRITTEN BALANCING REPORT BY A CERTIFIED INDEPENDENT TESTING LAB. DAMPER HANDLES SHALL BE FASTENED INTO DUCTWORK WITH SHEETMETAL SCREWS AFTER BALANCING TO ASSURE CORRECT BALANCED AIRFLOW.
25. PROVIDE ELBOWS OR TEES WITH TURNING VANES FOR ALL CHANGES IN SUPPLY DUCT DIRECTION. PROVIDE BRANCH DUCT DAMPERS WITH LOCKING QUADRANTS FOR ALL BRANCHES AND TAKE-OFFS. PROVIDE RAISED QUADRANTS FOR INSULATED DUCTWORK. ALL VOLUME DAMPER HANDLES ARE TO PROTRUDE NEATLY THROUGH DUCT INSULATION AND BE TAGGED SO THAT THEY ARE CLEARLY VISIBLE.
26. PROVIDE FLEXIBLE CONNECTIONS AT ALL DUCT CONNECTIONS TO VIBRATING EQUIPMENT. THESE CONNECTIONS SHALL BE INSTALLED IN CLOSE PROXIMITY TO SUCH EQUIPMENT.
27. THE MECHANICAL CONTRACTOR SHALL HAVE A QUALIFIED HVAC TECHNICIAN FROM THE UNIT MANUFACTURER PROVIDE AN EQUIPMENT OPERATION CHECK AFTER UNIT START-UP AND PRIOR TO CERTIFIED AIR BALANCING. THE CERTIFICATION, SIGNED BY THE TECHNICIAN, MUST BE INCLUDED IN THE GENERAL CONTRACTOR CLOSING DOCUMENTS FOR THE STORE.
28. PROVIDE CONDENSATE DRAIN PIPING SIZED PER PLAN. PROVIDE TRAP FOR EACH ROOFTOP UNIT PER DETAIL ON PLANS. PIPE DRAIN TO GUTTER OR DOWNSPOUT PER PLAN.

HVAC LEGEND

SYMBOL	DESCRIPTION
10x8 8"ø	NEW RECTANGULAR OR ROUND DUCT
12"ø	FLEXIBLE DUCT
	SUPPLY AIR DUCTWORK UP THROUGH PLAN
	RETURN AIR DUCTWORK UP THROUGH PLAN
	EXHAUST AIR DUCTWORK UP THROUGH PLAN
	90° ELBOW WITH TURNING VANES
	MANUAL AIR VOLUME CONTROL DAMPER
	4 WAY SUPPLY DIFFUSER
	3 WAY SUPPLY DIFFUSER
	2 WAY OPPOSED SUPPLY DIFFUSER
	2 WAY CORNER SUPPLY DIFFUSER
	RETURN AIR DEVICE
	EXHAUST AIR DEVICE
	VAV PLAQUE FACE DIFFUSER
ARC-X	AIR CURTAIN
LD-X	LINEAR SLOT DIFFUSER WITH PLENUM
T	TEMPERATURE SENSOR
TH	COMBINATION TEMPERATURE/HUMIDITY SENSOR
C	CO2 SENSOR
A / XXX CFM	TYPE MARK / CFM
RTU-10	MECHANICAL EQUIPMENT TAG
	CONDENSATE PIPING
	CLEAN OUT
EF-X	ROOF MOUNTED EXHAUST FAN
EF-X	INLINE EXHAUST FAN
RTU-X	PACKAGED ROOFTOP AIR CONDITIONER

ABBREVIATIONS

DB°F	DRY BULB DEGREES FAHRENHEIT	LD	LINEAR DIFFUSER
A/C	AIR CONDITIONING	L.P.	LOW PRESSURE
ARC	AIR CURTAIN	MAX	MAXIMUM
A.F.F.	ABOVE FINISHED FLOOR	MBH	1000 BTU PER HOUR
BAS	BUILDING AUTOMATION SYSTEM	MCA	MINIMUM CIRCUIT AMPACITY
BTU	BRITISH THERMAL UNIT	MIN	MINIMUM
CD	CEILING DIFFUSER	MOCP	MAXIMUM OVER CURRENT PROTECTION
CFM	CUBIC FEET PER MINUTE	MPH	MILES PER HOUR
CO2	CARBON DIOXIDE	O.A.	OUTSIDE AIR
D	DIAMETER	O.C.	ON CENTER
EER	ENERGY EFFICIENCY RATIO	PVC	POLYVINYL CHLORIDE
EF	EXHAUST FAN	REQ'D	REQUIRED
FFH	FAN FORCED HEATER	RTU	PACKAGED ROOF TOP HVAC UNIT
G	GRILLE	SCH	SCHEDULE
G.C.	GENERAL CONTRACTOR	SEER	SEASONAL ENERGY EFFICIENCY RATIO
GFCI	GROUND FAULT CIRCUIT INTERRUPTER	SF	SQUARE FOOT
HP	HORSEPOWER	TYP.	TYPICAL
IEER	INTEGRATED ENERGY EFFICIENCY RATIO	V	VOLTS
IN.	INCHES WATER COLUMN	W	WITH
LBS.	POUNDS	WB°F	WET BULB DEGREES FAHRENHEIT

HVAC AIR DEVICE SCHEDULE

TYPE MARK	MANUFACTURER	MODEL	SERVICE	DESCRIPTION	MOUNTING TYPE	MATERIAL	NECK SIZE	FACE SIZE	NOTES
CD-1	PRICE	AMD	SUPPLY	LOUVERED FACE DIRECTIONAL DIFFUSER	LAY-IN	ALUMINUM	18"X18"	24"X24"	1,6
CD-2	PRICE	AMD	SUPPLY	LOUVERED FACE DIRECTIONAL DIFFUSER	SURFACE	ALUMINUM	12"X12"	NECK+5"	5,6
CD-3	PRICE	AMD	SUPPLY	LOUVERED FACE DIRECTIONAL DIFFUSER	SURFACE	ALUMINUM	9"X9"	NECK+5"	5,6
G-1	PRICE	630FF	RETURN/TRANSFER	LOUVERED FACE FILTER RETURN GRILLE	LAY-IN	ALUMINUM	20"x20"	NECK+3-3/4"	4
G-2	PRICE	630FF	EXHAUST/TRANSFER	LOUVERED FACE FILTER RETURN GRILLE	SURFACE	ALUMINUM	12"X12"	NECK+3-3/4"	4
LD-1	PRICE	TBD/4	SUPPLY	48" INSULATED PLENUM W/ (4) 1" SLOTS	LAY-IN	ALUMINUM	SEE PLAN	N/A	2,3

NOTES:
--NO SUBSTITUTIONS PERMITTED--
1. FOR LAY-IN CEILINGS PROVIDE WITH 18"X18" FULL FACE APPEARANCE DIFFUSER NECK. PROVIDE WITH FACTORY SQUARE TO ROUND NECK ADAPTER MODEL "SR". ROUND NECK SIZE SHALL BE EQUAL TO FLEX SIZE SERVING DIFFUSER.
2. PROVIDE WITH PLENUM INTERNALLY LINED WITH COATED FIBERBOARD. EXTERNALLY INSULATE PLENUM UPON INSTALLATION WITH DUCT WRAP INSULATION.
3. PROVIDE WITH CENTER NOTCH OPTION (CN) AS REQUIRED WHEN USED IN 24" T-BAR CEILING.
4. "QR" STYLE (1/4 TURN FASTENERS ONLY) - OMIT HINGE. FILTER TYPE RETURN GRILLES PROVIDED SOLELY FOR MAINTENANCE PURPOSES. OMIT FILTER UPON INSTALLATION.
5. PROVIDE WITH TYPE 6 BEVELED SURFACE MOUNT FRAME AND FACTORY SQUARE TO ROUND NECK ADAPTER MODEL "SR".
6. PROVIDE WITH BACKPAN INSULATION.

HVAC AIR CURTAIN SCHEDULE

MARK	AREA SERVED	BASIS OF DESIGN		NOZZLE CFM	UNIT POWER		MOUNTING HEIGHT	NOTES
		MANUFACTURER	MODEL		HP	VOLTAGE	PHASE		
ARC-1	WASHROOM	POWERED AIRE	BCE-1-36	2170	0.5	120 V	1	7'-2"	1-4
ARC-2	DELIVERY ROOM	POWERED AIRE	BCE-1-48	2155	0.5	120 V	1	7'-2"	1-4

NOTES:
--NO SUBSTITUTIONS PERMITTED--
1. MOUNT INSIDE BUILDING ABOVE DOOR AT 7'-2" A.F.F. MOUNTING HEIGHT IS FROM BOTTOM OF AIR CURTAIN.
2. PROVIDE ALL NECESSARY MOUNTING BRACKETS AND ACCESSORIES.
3. PROVIDE WITH MODEL SM-300 COMMERCIAL MAGNETIC REED DOOR SWITCH.
4. AIR CURTAIN CONTROLLED BY MAGNETIC REED DOOR SWITCH, FAN ON WHEN DOOR IS OPEN.

HVAC EXHAUST FAN SCHEDULE

MARK	CFM	EXT. STATIC PRESSURE	FAN TYPE	DRIVE TYPE	SONES	HP	FAN RPM	VOLTAGE	PHASE	BASIS OF DESIGN		NOTES
										MANUFACTURER	MODEL	
EF-1	350	0.250 in-wg	DOWNBLAST	DIRECT	6.1	1/12	1550	120 V	1	PENNBARRY	DX10R	1,2
EF-2	1400	0.375 in-wg	DOWNBLAST	DIRECT	9.5	1/3	1300	120 V	1	PENNBARRY	DX16S	1,2

NOTES:
--NO SUBSTITUTIONS PERMITTED--
1. PROVIDE WITH FACTORY DISCONNECT, FACTORY WIRED SOLID STATE SPEED CONTROLLER, 18" HIGH ROOF CURB WITH DAMPER TRAY, BACKDRAFT DAMPER, AND BIRD SCREEN.
2. WIRE FOR CONTINUOUS OPERATION.
3. PROVIDE WITH FACTORY DISCONNECT & FACTORY WIRED SOLID STATE SPEED CONTROLLER. FAN SHALL BE WIRED TO EMERGENCY SHUTOFF SWITCH PROVIDED BY OTHERS. REFERENCE ARCHITECTURAL AND ELECTRICAL DRAWINGS.

HVAC ELECTRIC HEATING UNIT SCHEDULE

MARK	CFM	FAN TYPE	VOLTAGE	PHASE	HEATING CAPACITY	BASIS OF DESIGN		NOTES
						MANUFACTURER	MODEL	
FFH-1	150	FAN FORCED CLG HEATER	120 V	1	1500 W	QMARK	EFF-1500	1-3
FFH-2	150	FAN FORCED CLG HEATER	120 V	1	1500 W	QMARK	EFF-1500	1-3
FFH-3	150	FAN FORCED CLG HEATER	120 V	1	1500 W	QMARK	EFF-1500	1-3

NOTES:
--NO SUBSTITUTIONS PERMITTED--
1. COORDINATE MOUNTING FRAME TYPE WITH ARCHITECTURAL DRAWINGS.
2. PROVIDE FACTORY ACCESSORIES AS REQUIRED FOR RECESSED CEILING INSTALLATION.
3. PROVIDE WITH INTERNAL DISCONNECT SWITCH, FACTORY FAN DELAY SWITCH, FACTORY HIGH TEMPERATURE CUTOUT SWITCH, AND INTEGRAL THERMOSTAT (OR WALL MOUNTED THERMOSTAT AS INDICATED).

E

HVAC ROOF TOP UNIT SCHEDULE

MARK	AREA SERVED	NOMINAL TONS	SUPPLY AIR FAN DATA				GAS HEAT			UNIT POWER				WEIGHT (LBS. RTU ONLY)	COOLING CAPACITY					EER [IEER] (SEER)	BASIS OF DESIGN		NOTES
			CFM	OUTSIDE AIR (CFM)	E.S.P. (IN.)	HP	INPUT MBH	OUTPUT MBH	CONTROL STAGES	VOLTAGE	PHASE	MCA	MOCP		TOTAL COOLING MBH	SENSIBLE COOLING MBH	EDB (°F)	EWB (°F)	AMBIENT (DB°F/WB°F)		MANUFACTURER & PRODUCT LINE	MODEL	
RTU-1	RETAIL	8.5	3400	680	0.5	3.75	130	104	2	208 V	3	46	50	1309	100.8	75.6	80	67	92/75	12.1 [15.7]	LENNOX ENLIGHT	LGT102H4E	1-20
RTU-2	FOOD SERVICE	12.5	5000	820	0.5	3.75	130	67	2	208 V	3	64	80	1312	146.1	108.1	80	67	92/75	11.0[14.6]	LENNOX ENLIGHT	LCT150H4E	2-20
RTU-3	RETAIL/CHECKOUT	7.5	3000	600	0.5	3.75	130	104	2	208 V	3	46	50	1302	95.1	68.5	80	67	92/75	12.3 [15.7]	LENNOX ENLIGHT	LGT092H4E	2-20

NOTES:
1. PROVIDE CO2 SENSOR FOR INTERLINK WITH BUILDING AUTOMATION SYSTEM.
2. PROVIDE LENNOX HUMIDITROL HOT GAS REHEAT OPTION.
3. PROVIDE REMOTE WALL MOUNTED COMBINATION TEMPERATURE/HUMIDITY SENSOR AND HUMIDITROL PACKAGE.
4. REFER TO CONTROL SYSTEM NOTES FOR CONTROL COMPONENTS REQUIREMENTS.
5. PROVIDE HIGH/LOW PRESSURE SWITCH, OVERLOAD PROTECTION, FREEZE PROTECTION, LOSS OF CHARGE SWITCH AND ANTI-SHORT CYCLE TIMER.
6. PROVIDE THRU THE BASE ELECTRICAL AND SINGLE POINT CONNECTION.
7. PROVIDE WITH FACTORY 2" THROW AWAY PLEATED MERV 8 FILTERS.
8. PROVIDE WITH 18" ROOF CURB.
9. PROVIDE FACTORY 15 AMP GFCI SERVICE OUTLET WITH WEATHERPROOF COVER. COORDINATE WITH ELECTRICAL CONTRACTOR TO PROVIDE FIELD WIRING TO RECEPTACLE.
10. PROVIDE WITH FACTORY INSTALLED DISCONNECT.
11. PROVIDE WITH HIGH PERFORMACE SINGLE ENTHALPY ECONOMIZER AND POWERED EXHAUST FAN.
12. PROVIDE MANUFACTURER'S MOTOR AND DRIVE PACKAGE AS REQUIRED TO MEET SCHEDULED AIR CAPACITIES AND PRESSURE DROP.
13. PROVIDE HINGED ACCESS DOOR.
14. PROVIDE BUILDING AUTOMATION SYSTEM (BAS) EQUIPMENT - REFER TO BAS SYSTEM MASTER SPEC FOR SYSTEM DETAILS AND EQUIPMENT PART NUMBERS.
15. PROVIDE FACTORY INSTALLED BACNET BAS INTERFACE WITH RETURN AIR SENSOR, OUTSIDE AIR SENSOR AND DISCHARGE AIR SENSOR.
16. PROVIDE LENNOX DIRTY FILTER SWITCH.
17. CORROSSION RESISTANT REVERSIBLE DRAIN PAN WITH OVERFLOW SWITCH.
18. PROVIDE WITH FACTORY CONDENSATE PAN WATER LEVEL MONITORING DEVICE FOR COMPLIANCE WITH IMC, SECTION 307.2.3.
19. PROVIDE WITH FACTORY INSTALLED SUPPLY AND RETURN SMOKE DETECTORS. PROVIDE REMOTE TEST STATIONS(RTS).
20. PROVIDE EQUIPMENTS OPERATIONS CHECK (EOC) AND GUIDE SETUP.

RTU-1, 2, & 3 SEQUENCE OF OPERATION

GENERAL: TEMPERATURE SETPOINT : 74°F COOLING, 68°F HEATING HUMIDITY SETPOINT : 50 % RELATIVE HUMIDITY
SUPPLY AIR BLOWER SPEED
UNIT HAS FOLLOWING SUPPLY AIR BLOWER SPEED SETTINGS THAT PERTAIN TO THIS INSTALLATION:
- COOLING AIR BLOWER SPEED
- HEATING AIR BLOWER SPEED

COOLING MODE
- Y1 DEMAND: COMPRESSOR 1 OPERATES AND SUPPLY AIR BLOWER OPERATES AT COOLING SPEED.
- Y2 DEMAND: ALL COMPRESSORS OPERATE AND SUPPLY AIR BLOWER OPERATES AT COOLING SPEED.

DEHUMIDIFICATION MODE
- IF THE UNIT RECEIVES A CALL FOR DEHUMIDIFICATION, ECONOMIZER FREE COOLING IS LOCKED OUT (ON UNITS EQUIPPED WITH ECONOMIZER).
- CALL FOR DEHUMIDIFICATION, NO Y1, Y2 DEMAND: 1ST STAGE COMPRESSOR OPERATES, SUPPLY AIR BLOWER OPERATES AT COOLING SPEED, AND THE REHEAT VALVE IS ENERGIZED.
- Y1 DEMAND WITH A CALL FOR DEHUMIDIFICATION: ALL COMPRESSORS OPERATE, SUPPLY AIR BLOWER OPERATES AT COOLING SPEED AND THE REHEAT VALVE IS ENERGIZED.
- Y2 DEMAND WITH A CALL FOR DEHUMIDIFICATION: ALL COMPRESSORS OPERATE, SUPPLY AIR BLOWER OPERATES AT COOLING SPEED, AND THE REHEAT VALVE IS DE-ENERGIZED.

HEATING MODE (GAS HEAT)
- W1 DEMAND: 1ST STAGE GAS HEAT IS ENERGIZED AND THE SUPPLY AIR BLOWER OPERATES AT HEATING SPEED.
- W2 DEMAND: 2ND STAGE GAS HEAT IS ENERGIZED AND THE SUPPLY AIR BLOWER OPERATES AT HEATING SPEED.

MODULATING OUTDOOR AIR DAMPER
- THE MINIMUM DAMPER POSITION FOR ÖCCUPIED HIGH BLOWER"IS ADJUSTED DURING UNIT SETUP TO PROVIDE MINIMUM FRESH AIR REQUIREMENTS PER RTU SCHEDULE.
- WHEN SUPPLY AIR BLOWER IS OFF, THE OUTDOOR AIR DAMPER IS CLOSED.
- WHEN UNIT IS IN OCCUPIED MODE AND SUPPLY AIR BLOWER IS OPERATING, THE OUTDOOR AIR DAMPER IS AT MINIMUM "HIGH BLOWER"POSITION.

RTU-1, 2, & 3 TEST AND BALANCE NOTES

1. TEST AND BALANCE CONTRACTOR TO OBTAIN INITIAL BALANCE OF COOLING CFM FOR RTU USING FAN SHEAVE ADJUSTMENT TO WITHIN +/- 5% SCHEDULED COOLING CFM. PRODIGY CONTROLLER MAY BE USED FOR FINAL 5% TO OBTAIN COOLING CFM.
2. SET MINIMUM OUTSIDE AIR DAMPER POSITION FOR COOLING AND VERIFY OUTSIDE AIR CFM PER RTU SCHEDULE.
3. NOT USED
4. NOT USED
5. USING PRODIGY CONTROLLER, VERIFY HEATING CFM EQUALS COOLING CFM.
6. ALL PRODIGY CONTROLLER SETTINGS OTHER THAN THOSE MENTIONED ABOVE SHALL REMAIN AS THEIR DEFAULT VALUE AS SET FROM THE FACTORY.
7. VERIFY POSITIVE BUILDING PRESSURE THROUGH ALL FAN STAGES.

LENNOX SETUP PARAMETERS / MID-ATLANTIC STORES (R3)

UNIT ID CONFIGURATION (MECHANICAL CONTRACTOR TO DEFINE / AS APPLICABLE):
- **BACNET CONFIGURATION**: GO TO SETTINGS>GENERAL>CONFIGURATION ID1 POSITION 5 SET TO "B"
- **NETWORK CONFIGURATION:** GOT TO SETUP>NETWORK INTEGRATION, SET TO BACNET
- **CONTROL MODE:** SET CONTROL MODE TO ROOM SENSOR: SET CO2, TEMP, & HUMIDITY TO "NO".
- **ENTHALPY CONFIGURATION:** CHANGE CONFIG ID1 POSITION 2 FROM D (DUAL ENTHALPY) TO S (SINGLE ENTHALPY)
- **FRESH AIR COOLING**: SETUP>TEST & BALANCE>DAMPER. SCROLL TO FRESH AIR COOLING SET TO "NO"
- **FRESH AIR HEAT:** SETUP>TEST & BALANCE>DAMPER. SCROLL TO FRESH AIR HEAT SET TO "NO"

INDIVIDUAL PARAMETER CONFIGURATIONS (MECHANICAL CONTRACTOR TO DEFINE / AS APPLICABLE):
- PARAMETER 105 DEHUMID MODE: 7 NO CONDITIONS
- PARAMETER 106 DEHUMID SETPOINT: 50, THIS IS A CENTERED SET POINT (+ / -)
- PARAMETER 107 DEHUMIDI DEADBAND: 3 (DEFAULT) THIS IS THE ACTUAL + / - VALUE
- PARAMETER 117 CO2 DAMPER MAX OPEN %: 50
- PARAMETER 118 CO2 START OPEN PPM: 1200
- PARAMETER 119 CO2 FULL OPEN PPM: 1500
- PARAMETER 131 FREECOOLMAX DAMPER: 100%
- PARAMETER 137 OCC HEAT SET POINT: 68 (BACK UP)
- PARAMETER 139 OCC COOLING SET POINT: 72 (BACK UP)
- PARAMETER 154 OCC BLOWER MODE: ON-CONTINUOUS 1
- PARAMETER 155 FREE COOL LOCK OUT SET POINT: 29 (DISABLED)
- PARAMETER 159 FREE COOL SUPPLY SET POINT: 55 (DEFAULT)
- PARAMETER 160 ECON FREE COOL SET POINT: 55 (DEFAULT)
- PARAMETER 161 ECON FREE COOL OFFSET: 10 (DEFAULT)
- PARAMETER 162 FREE COOL ENTHALPY SET POINT (SINGLE ENTHALPY): 19 MA (50% HUM + 60F)
- PARAMETER 163 ECON FREE COOL ENTHALPY OFFSET: 1 (DEFAULT)
- PARAMETER 164 ECONOMIZER PROFILE: 2 (DEFAULT)

CFM VALUES / MSAV FAN SPEEDS (AIR BALANCER TO DEFINE / IF APPLICABLE):
- HEAT CFM VALUE: PER THE HVAC SCHEDULE
- HIGH COOL CFM VALUE: PER THE HVAC SCHEDULE
- LOW COOL CFM VALUE: MATCH THE HIGH COOL CFM VALUE
- VENTILATION CFM VALUE: MATCH THE HIGH COOL CFM VALUE

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CLIENT NAME
WAWA INC.
260 W. BALTIMORE PIKE
WAWA,PA 19063

PROJECT NAME
W50FB PA v2025 Q1
WAWA STORE #8241
2015 HIGH STREET
ALLENTOWN, PA 18103

SHEET TITLE
HVAC SCHEDULES & NOTES

RELEASE	DATE
ISSUED FOR PERMIT	04/26/2024
REV B-CLIENT COMMENTS	10/30/2024
REV C- ISSUED FOR CONSTRUCTION	01/27/2025
REV E - REF UPDATES	08/26/2025

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL ENGINEER FRANCIS C. CONSTANTINO PE036797

PROTOTYPE	W50FB PA v2025 Q1
PROJECT NO.	60699812
DRAWN	DA
CHECKED	FA

8241
ALLENTOWN, PA
Wawa
M4.0