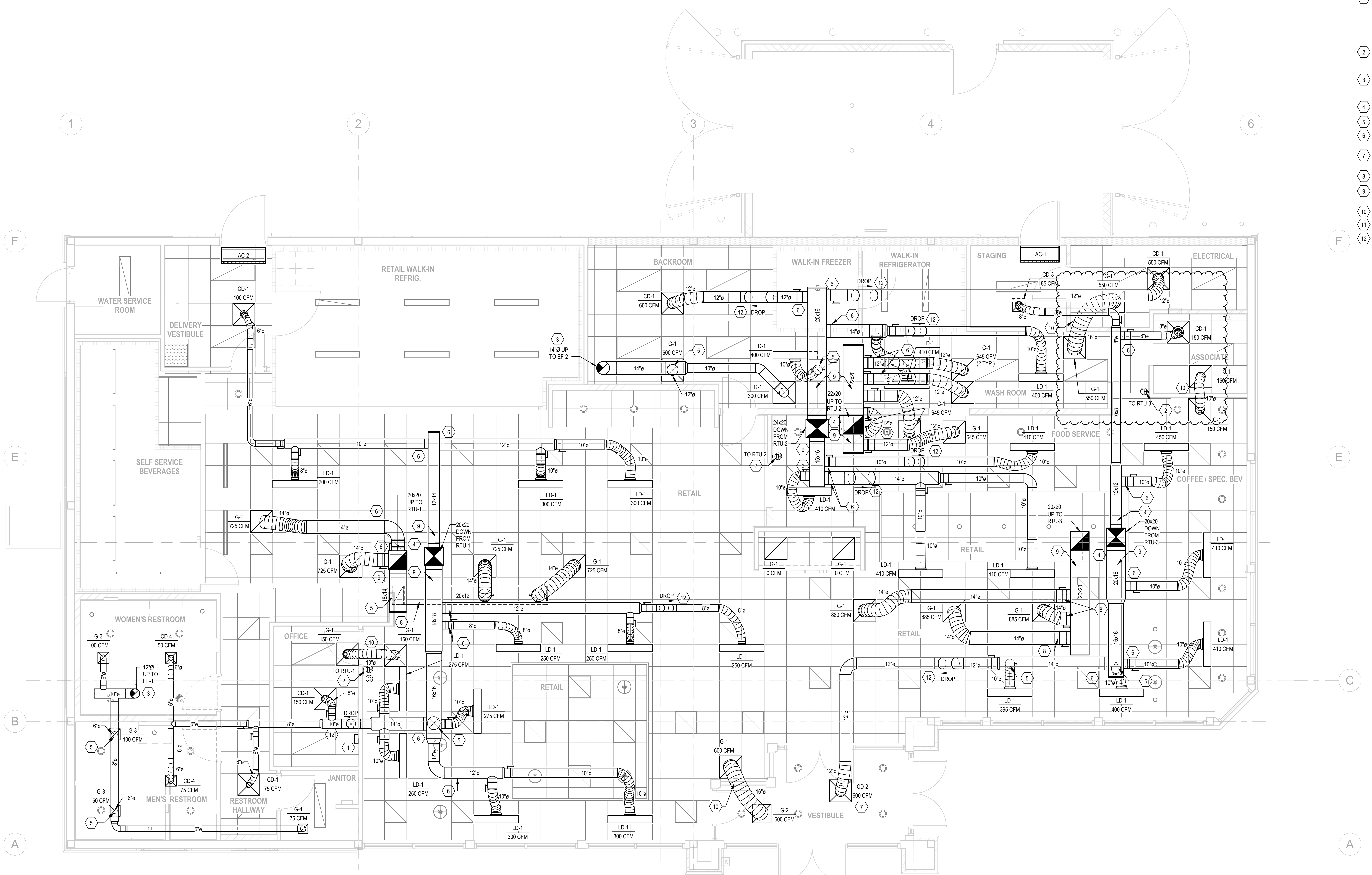
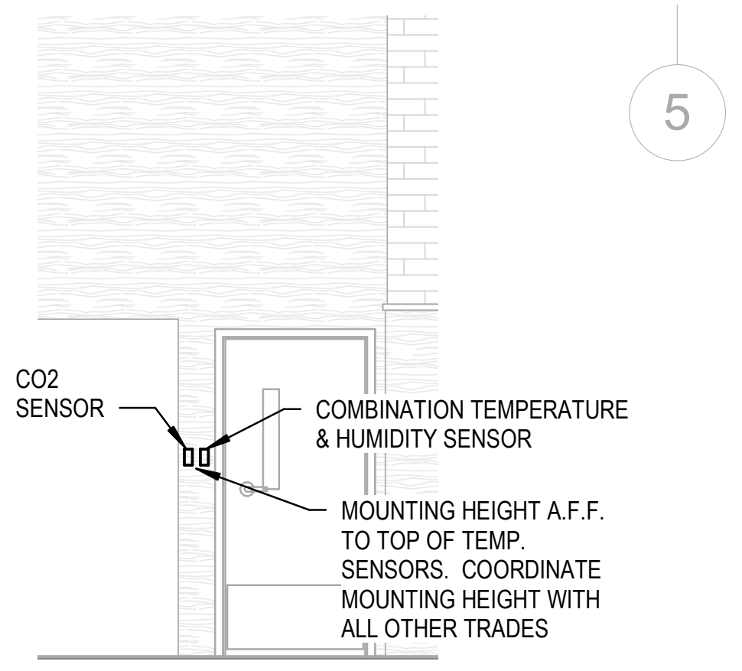


1 HVAC FLOOR PLAN
M1.0
1/4" = 1'-0"



2 HVAC SENSOR ELEVATION
M1.0
1/4" = 1'-0"

KEY NOTES:

1. REMOTE TEST STATIONS FOR SMOKE DETECTORS FOR RTU-1, 2, & 3. TEST STATIONS TO BE MOUNTED ON THE MANAGER'S OFFICE WALL. SECURITY CONTRACTOR SHALL WIRE RTU FACTORY MOUNTED SMOKE DETECTORS TO SECURITY/FIRE ALARM PANEL. MECHANICAL CONTRACTOR SHALL PROVIDE TEST STATION AND WIRING BETWENN 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. 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.
3. COORDINATE EXACT LOCATION OF EXHAUST FAN PENETRATION WITH ARCHITECTURAL ROOF PLAN. INSTALL GALVANIZED DUCTWORK DOWN FROM FAN, INTO CEILING/JOIST SPACE, AND CONNECT TO CEILING GRILLES.
4. REFER TO TYPICAL DUCT PLENUM DETAIL ON SHEET M3.0.
5. DUCT TAKE OFF ON BOTTOM OF DUCT. PROVIDE DAMPER AFTER TAKE OFF.
6. COORDINATE DUCT WITH STRUCTURE IN THIS LOCATION. COORDINATE TAKEOFF LOCATIONS WITH TRUSS WEB OPENINGS.
7. PROVIDE SURFACE MOUNT ADAPTER FRAME TO ALLOW ACCESS TO CEILING ABOVE THROUGH DIFFUSER OPENING. SEE AIR DEVICE SCHEDULE.
8. ROUTE DUCT UNDER STRUCTURAL MEMBERS AT THIS LOCATION.
9. COORDINATE AND ROUTE MAIN DUCT HIGH IN JOIST SPACE. AVOID CONFLICTS WITH UTILITIES.
10. TRANSFER AIR DUCT ASSEMBLY.
11. NOT USED.
12. ROUTE DUCT UNDER STRUCTURE JOIST.

PERMITTING NOTE:

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

SHEET GENERAL NOTE:

A. 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.

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
← ☒ →	2 WAY OPPOSED SUPPLY DIFFUSER
↑ ☒ →	2 WAY CORNER SUPPLY DIFFUSER
☒ →	1 WAY SUPPLY DIFFUSER
◩	RETURN AIR DEVICE
☒	EXHAUST AIR DEVICE
AC-X	AIR CURTAIN
LD-X	LINEAR SLOT DIFFUSER WITH PLENUM
(TH)	COMBINATION TEMPERATURE/HUMIDITY SENSOR
Ⓣ	TEMPERATURE SENSOR
Ⓒ	CO2 SENSOR
A XXX CFM	TYPE MARK CFM
RTU-10	MECHANICAL EQUIPMENT TAG
X"ø	CONDENSATE PIPING
EF-X	INLINE MOUNTED EXHAUST FAN
EF-X	ROOF MOUNTED EXHAUST FAN
RTU-X	PACKAGED ROOFTOP AIR CONDITIONER

CUHACI PETERSON®

2600 Maitland Center Parkway
Suite #200
Maitland, FL 32751

P (407) 661-9100
F (407) 661-9101
c-p.com
Florida Corporate Certificate #AA C000526

CLIENT NAME
WAWA
260 WEST BALTIMORE PIKE
WAWA, PENNSYLVANIA 19063

PROJECT NAME
WAWA F110 v2021.1
STORE #5444
SR 50 & SR 419 (CHULUOTA RD)
ORLANDO, FL

SHEET TITLE
HVAC FLOOR PLAN

Revision Schedule

No.	Description	Date
	PERMIT SET	04/27/2023
	PRE-BID SET	08/23/2023
	BID-SET	09/21/2023
A	CONSTRUCTION SET	02/21/2024

PROJECT NO.
2220440

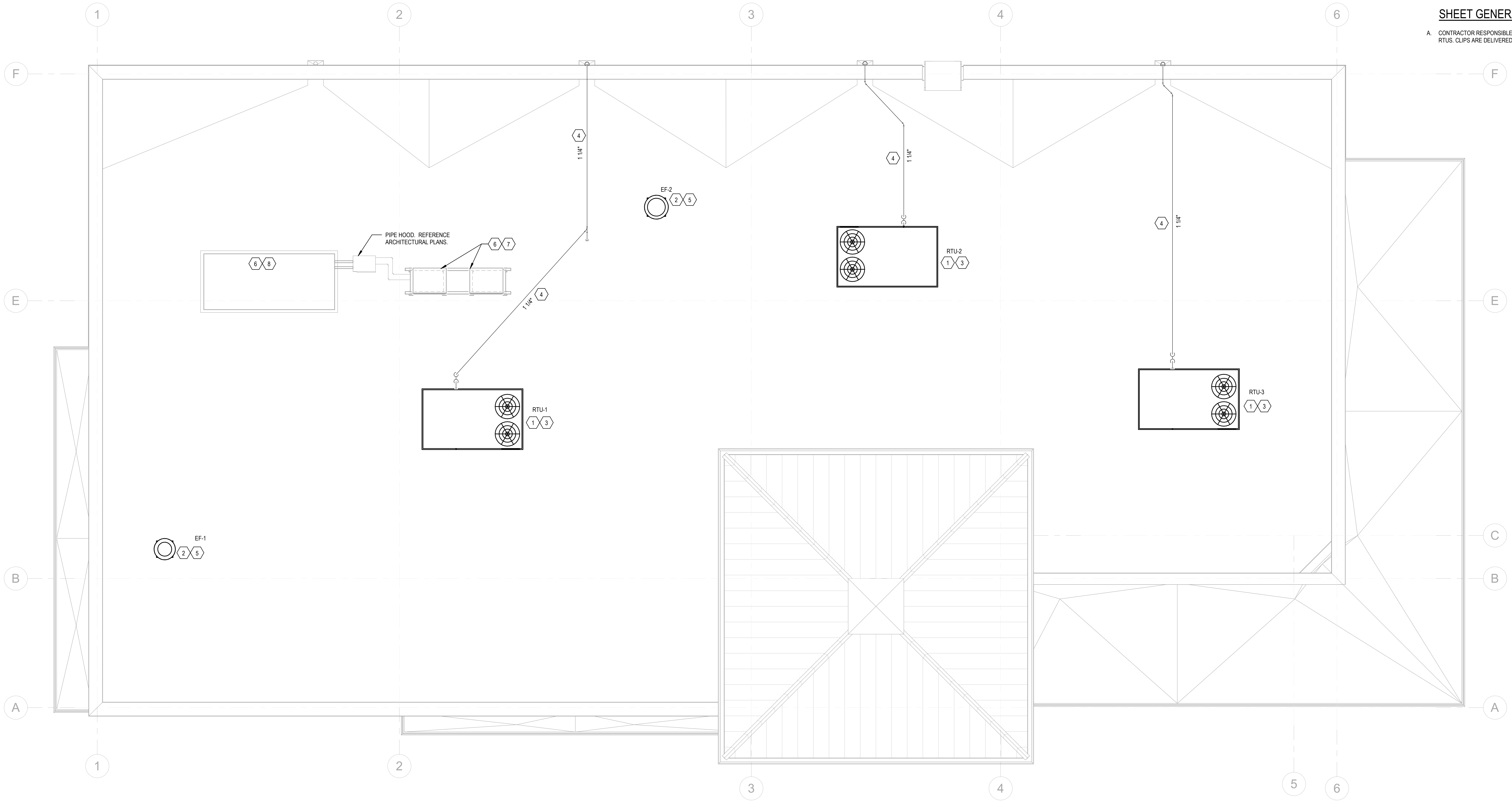
DATE
04-27-2023

DRAWN
JGF

CHECKED
ESD

M1.0

2/13/2024 3:20:51 PM



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

KEY NOTES:

1. FACTORY INSTALLED SMOKE DETECTORS IN MAIN SUPPLY AND RETURN OF EACH ROOFTOP 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 DUCTWORK AS NECESSARY FROM FAN INTO CEILING/JOIST SPACE. SEE SHEET M1.0 FOR CONTINUATION.
3. PROVIDE FLEXIBLE CONNECTIONS BETWEEN ALL DUCTWORK 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. FOOD SERVICE REFRIGERATION EQUIPMENT PROVIDED BY OTHERS.
7. FOOD SERVICE REFRIGERATION EQUIPMENT MOUNTED ON PRE-ENGINEERED RACK. REFER TO "CONDENSING UNIT ROOFING SUPPORT DETAIL" ON ARCHITECTURAL SHEETS FOR FLORIDA PRODUCT APPROVAL INFORMATION.
8. FOR SPECIFIC WIND LOADING REQUIREMENTS NOT TO EXCEED 140 MPH, SEE STRUCTURAL DRAWINGS.

SHEET GENERAL NOTE:

A. CONTRACTOR RESPONSIBLE FOR USING CURBS PLUS CLIPS ON ALL RTUS. CLIPS ARE DELIVERED TO SITE AS SEPARATE PACKAGE.

2600 Maitland Center Parkway
Suite #200
Maitland, FL 32751

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CLIENT NAME
WAWA
260 WEST BALTIMORE PIKE
WAWA, PENNSYLVANIA 19063

PROJECT NAME
WAWA F110 v2021.1
STORE #5444
SR 50 & SR 419 (CHULUOTA RD)
ORLANDO, FL

SHEET TITLE
HVAC ROOF PLAN

Revision Schedule

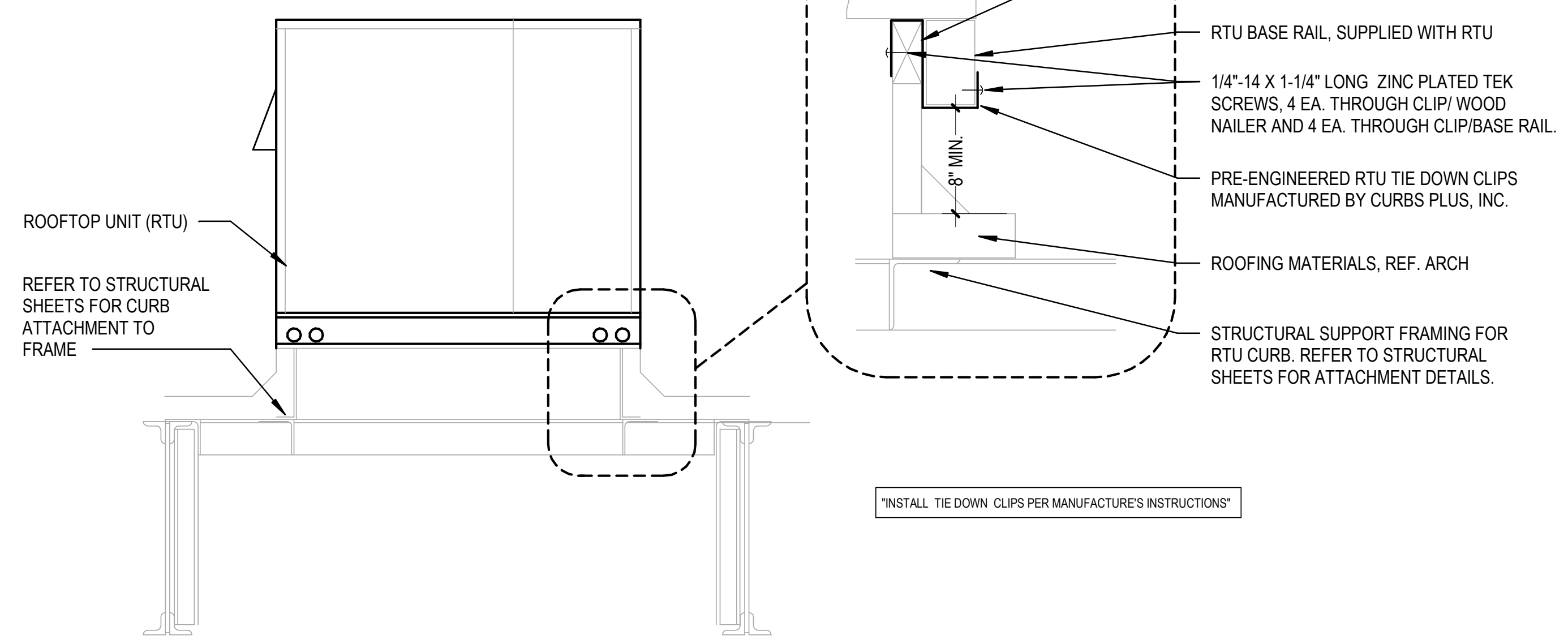
No.	**Description**	**Date**
	PERMIT SET	04/27/2023
	PRE-BID SET	08/23/2023
	BID-SET	09/21/2023
A	CONSTRUCTION SET	02/21/2024

PROJECT NO. 2220440
DATE 04-27-2023
DRAWN JGF
CHECKED ESD

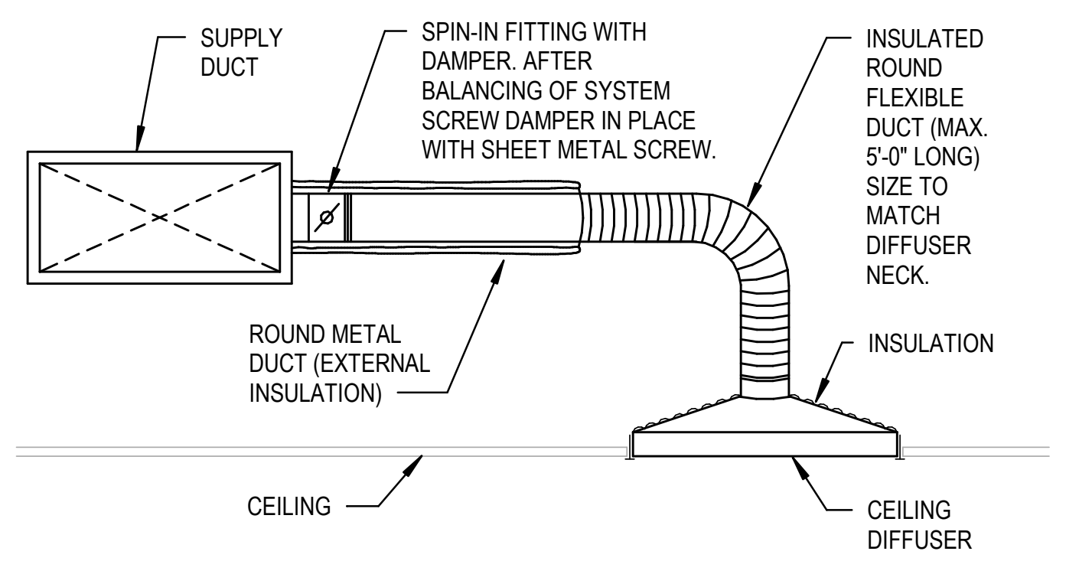
M2.0

2/13/2024 3:20:52 PM

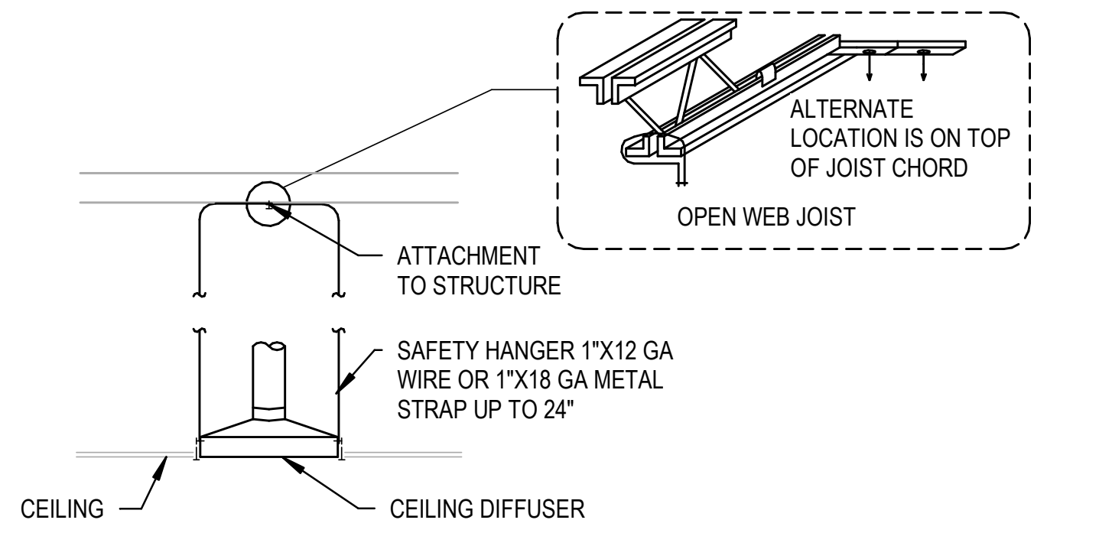
BUILDING LOCATION	WIND SPEED ZONE (FBC FIGURE 1609A)
ORLANDO, FL	140 MPH



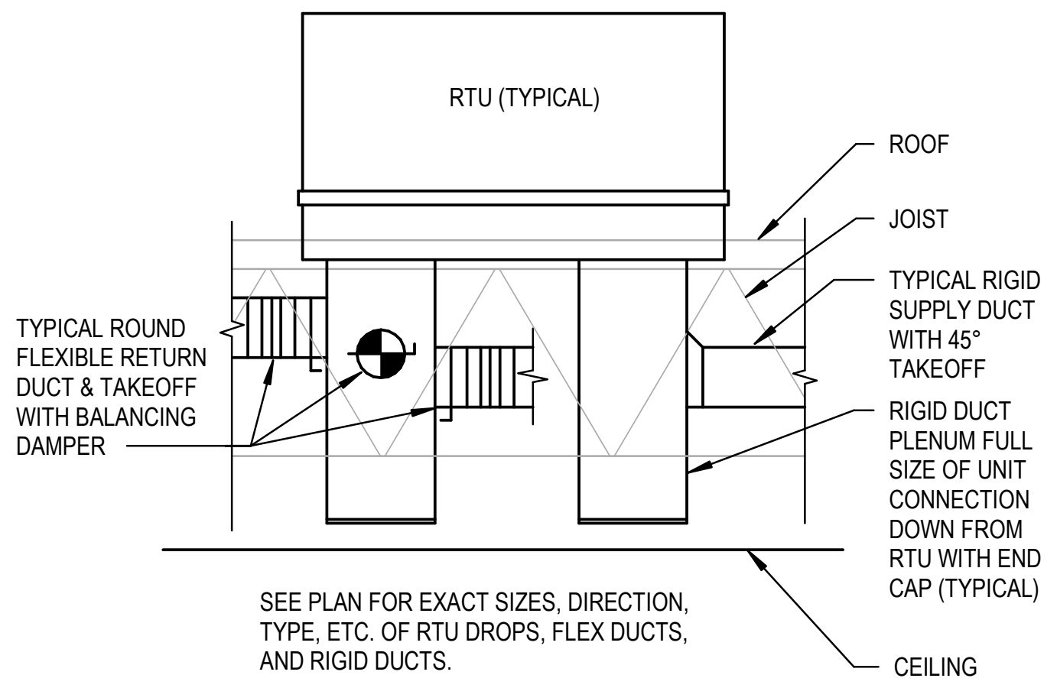
1 RTU TIE-DOWN DETAIL
M3.0 NOT TO SCALE



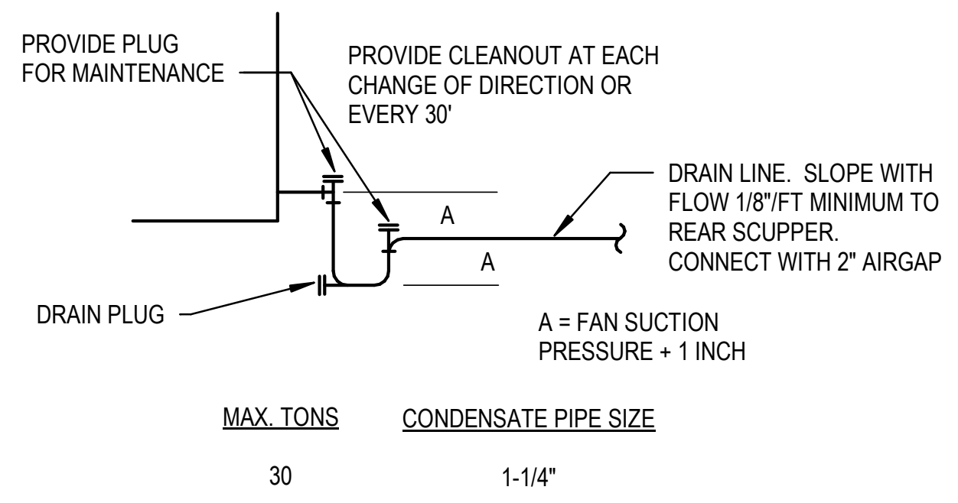
2 CEILING DIFFUSER RUNOUT DETAIL
M3.0 NOT TO SCALE



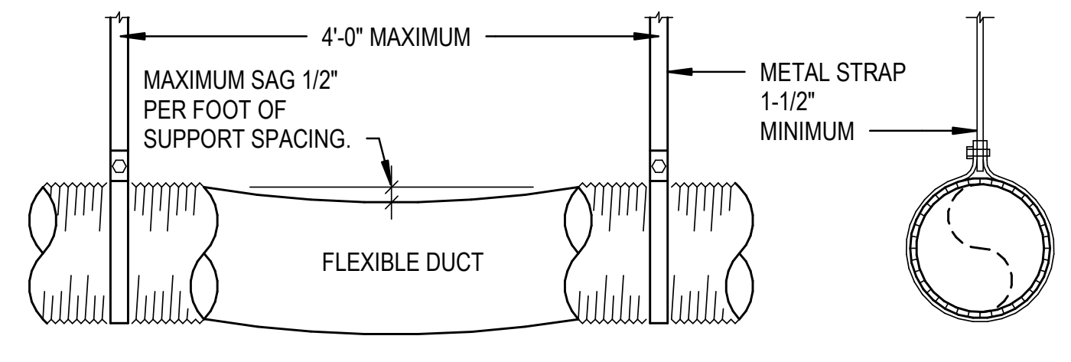
3 CEILING MOUNTED AIR DIFFUSER SUPPORT DETAIL
M3.0 NOT TO SCALE



4 TYPICAL DUCT PLENUM DETAIL
M3.0 NOT TO SCALE



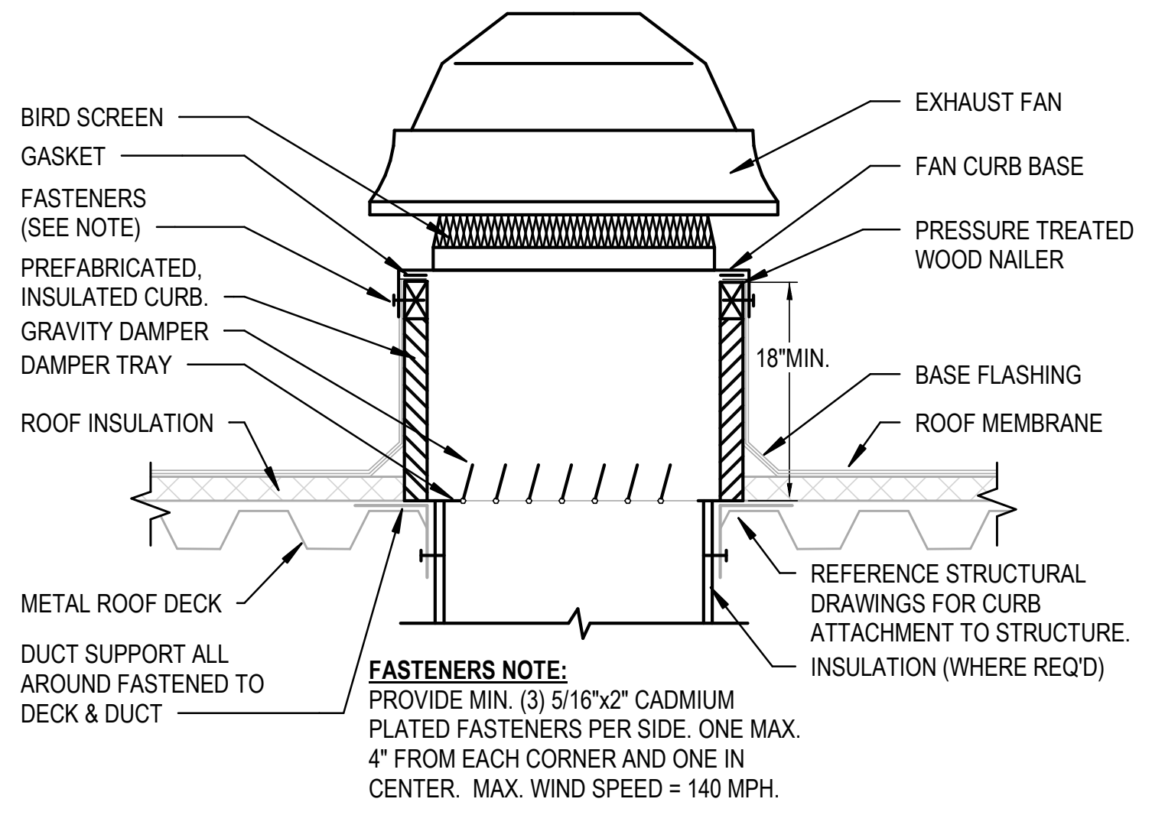
5 CONDENSATE DRAIN TRAP DETAIL
M3.0 NOT TO SCALE



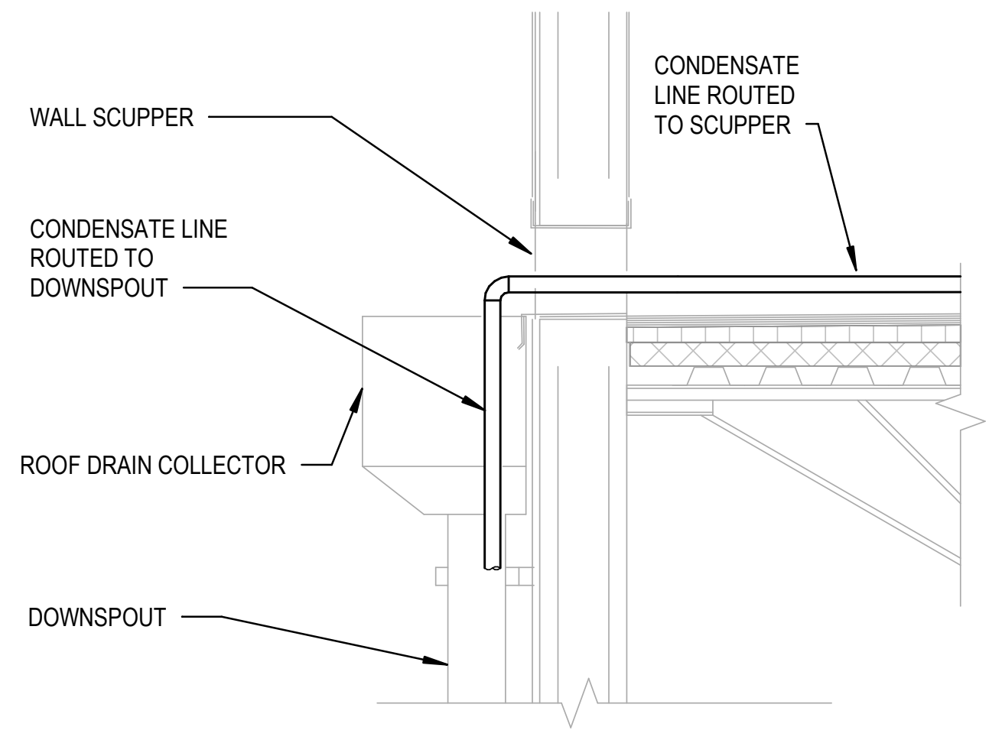
NOTES:

1. DUCT SHOULD EXTEND STRAIGHT FOR SEVERAL INCHES FROM A CONNECTION BEFORE BENDING.
2. SUPPORT SYSTEM MUST NOT DAMAGE DUCT OR CAUSE OUT OF ROUND SHAPE.

6 FLEX DUCT SUPPORT DETAIL
M3.0 NOT TO SCALE

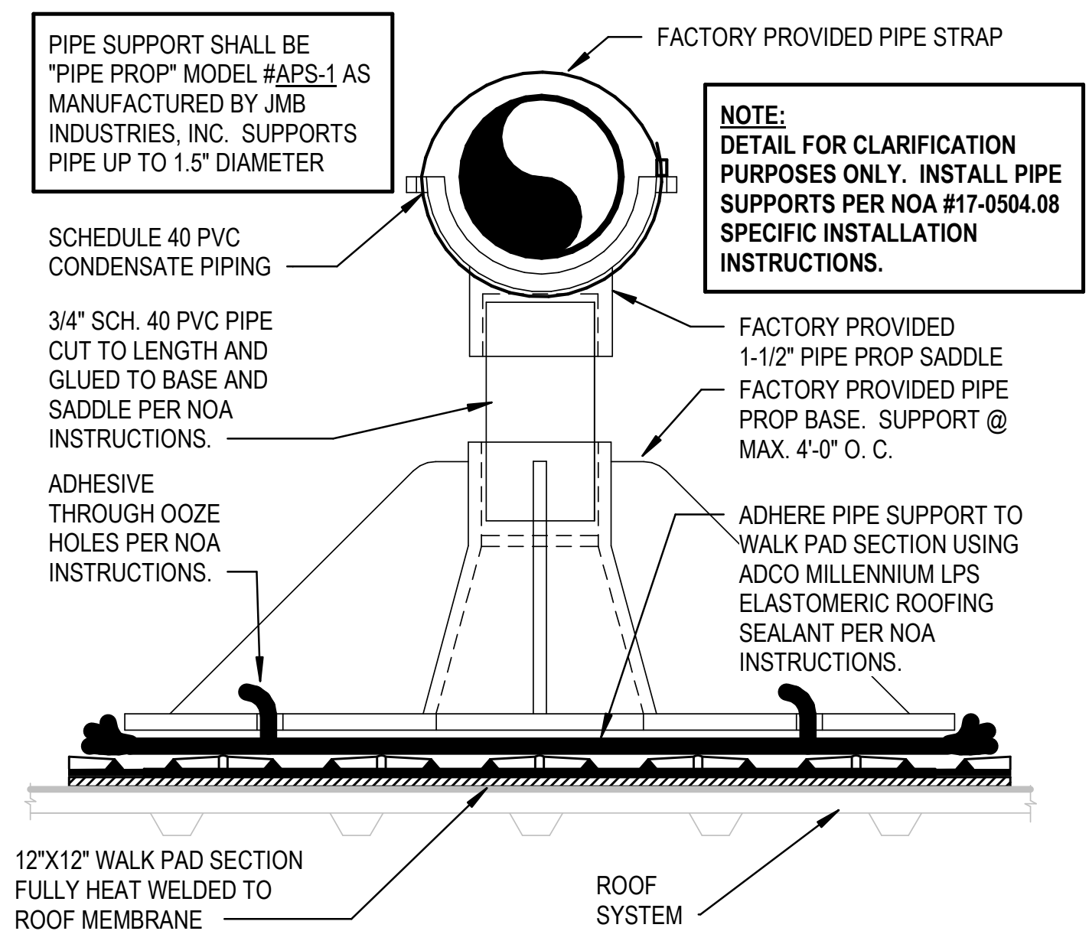


7 ROOF FAN MOUNTING DETAIL
M3.0 NOT TO SCALE

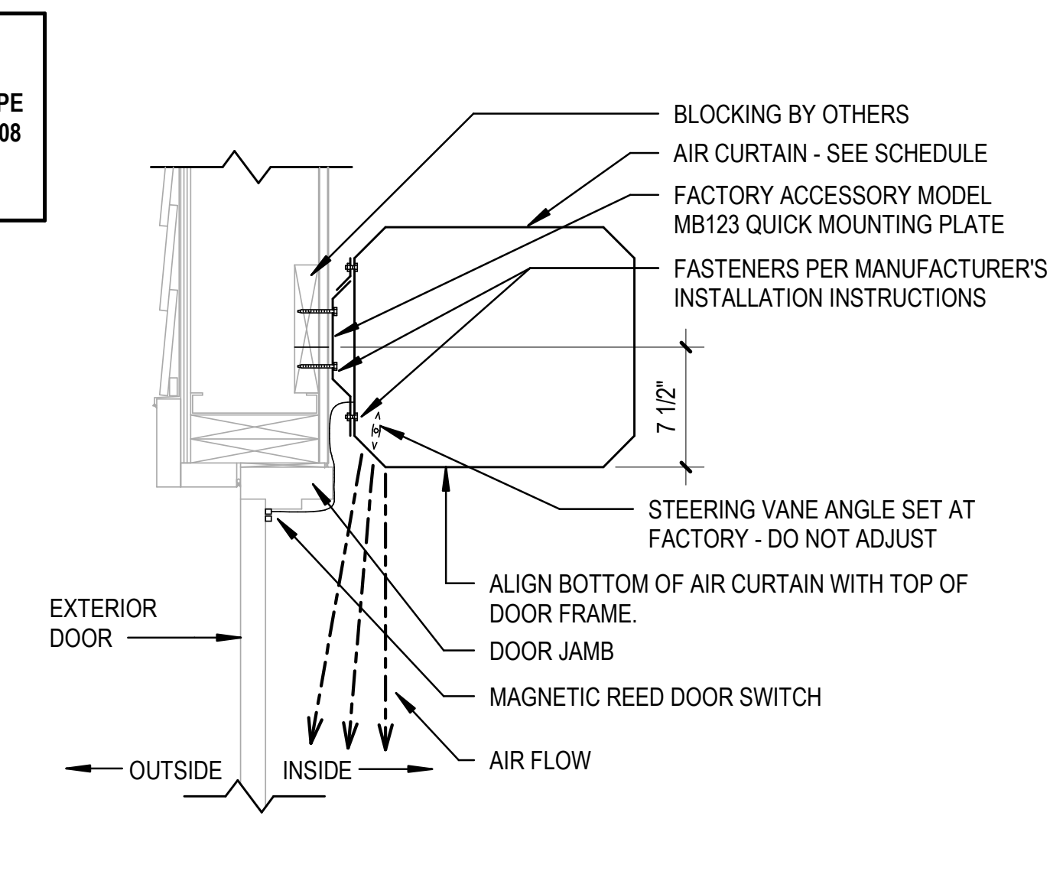


ROUTE CONDENSATE DRAIN PIPING TO DOWNSPOUT AS INDICATED ON ROOF PLAN.

8 CONDENSATION TERMINATION DETAIL
M3.0 NOT TO SCALE



9 CONDENSATE PIPE ROOF SUPPORT DETAIL.
M3.0 NOT TO SCALE



10 AIR CURTAIN INSTALLATION DETAIL
M3.0 NOT TO SCALE

RTU-1, 2, & 3 SEQUENCE OF OPERATION

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 (ELECTRIC HEAT)

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

MODULATING OUTDOOR AIR DAMPER

- THE MINIMUM DAMPER POSITION FOR “OCCUPIED LOW BLOWER” AND “OCCUPIED HIGH BLOWER” IS ADJUSTED DURING UNIT SETUP TO PROVIDE MINIMUM FRESH AIR REQUIREMENTS PER RTU SCHEDULE AT ALL SUPPLY AIR BLOWER SPEEDS.
- WHEN SUPPLY AIR BLOWER IS OFF, THE OUTDOOR AIR DAMPER IS CLOSED.
- WHEN UNIT IS IN OCCUPIED MODE AND SUPPLY AIR BLOWER IS OPERATING BELOW THE “MIDPOINT” BLOWER SPEED, THE OUTDOOR AIR DAMPER IS AT MINIMUM “LOW BLOWER” POSITION.
- WHEN UNIT IS IN OCCUPIED MODE AND SUPPLY AIR BLOWER IS OPERATING AT A SPEED EQUAL TO OR ABOVE THE “MIDPOINT” BLOWER SPEED, THE OUTDOOR AIR DAMPER IS AT MINIMUM “HIGH BLOWER” POSITION.
- NOTE - THE “MIDPOINT” BLOWER SPEED IS AN AVERAGE OF THE MINIMUM AND MAXIMUM BLOWER SPEED (MINIMUM SPEED + MAXIMUM SPEED DIVIDED BY 2).

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.

HVAC GENERAL NOTES

1. ALL MECHANICAL WORK SHALL BE IN STRICT ACCORDANCE WITH THE THE 2020 FLORIDA BUILDING CODE - MECHANICAL, SMACNA, UL, LOCAL CODES, MANUFACTURER'S RECOMMENDATIONS, AND ALL AUTHORITIES HAVING JURISDICTION.
2. CONTRACTOR TO VISIT SITE AND VERIFY ALL CLEARANCES BEFORE FABRICATION OF DUCTWORK AND PROVIDE ADDITIONAL OFFSET AND/OR CHANGES IN DUCT SIZES TO MEET FIELD CONDITIONS AND COORDINATE WITH ELECTRICAL, PLUMBING AND FIRE PROTECTION SUBCONTRACTOR BEFORE ANY CONSTRUCTION WORK.
3. SUPPLY AIR, RETURN AIR, OUTSIDE AIR AND EXHAUST AIR DUCTWORK SHALL BE SHEET METAL CONSTRUCTION. DUCT SHALL BE INSTALLED SECURELY SUPPORTED, HUNG OR SUSPENDED FROM THE STRUCTURE. JOINTS SHALL BE SEALED WITH 3" WIDE GLASS FABRIC TAPE OR FOSTER 30/30 MASTIC OR EQUAL. DUCT CONSTRUCTION, SEALING AND INSTALLATION SHALL BE IN STRICT ACCORDANCE WITH THE 2020 FLORIDA BUILDING CODE - MECHANICAL AND THE JURISDICTION'S LATEST CODE ACCEPTED SMACNA STANDARDS.
4. OUTSIDE AIR INTAKES (ROOFTOP UNITS, GRAVITY ROOF VENTS, LOUVERS) SHALL MAINTAIN A MINIMUM OF 10'-0" FROM ANY EXHAUST OR SANITARY VENT.
5. PROVIDE ALL MECHANICAL EQUIPMENT WITH MANUFACTURER'S RECOMMENDED SERVICE AREA CLEARANCES.
6. ALL ROOFTOP UNITS SHALL BE CONSTRUCTED AND INSTALLED TO WITHSTAND LOCAL WIND LOAD DESIGN.
7. SMOKE DETECTORS SHALL BE FURNISHED AND INSTALLED IN RTU BY THE UNIT MANUFACTURER, WIRED TO THE KEY SWITCH BY THE MECHANICAL CONTRACTOR, AND WIRED TO THE FIRE ALARM BY THE FIRE ALARM CONTRACTOR. SMOKE DETECTORS SHALL BE INSTALLED IN ACCORDANCE WITH NFPA 72, NATIONAL FIRE ALARM CODE; NFPA 90A, STANDARD FOR INSTALLATION OF AIR-CONDITIONING AND VENTILATING SYSTEMS, THE 2020 FLORIDA BUILDING CODE - MECHANICAL, AND THE MANUFACTURER'S INSTALLATION INSTRUCTIONS. PROVIDE A VISIBLE/AUDIBLE NOTIFICATION PANEL. MAKE: SYSTEM SENSOR SSK45I OR EQUAL, COMPATIBLE WITH BUILDING FIRE ALARM SYSTEM.
8. PLANS AND DIAGRAMS ARE SCHEMATIC ONLY AND SHOULD NOT BE SCALED.
9. HVAC CONTRACTOR IS RESPONSIBLE FOR ANY ADDED ELECTRICAL COSTS WHICH MAY RESULT FROM SUBSTITUTED EQUIPMENT.
10. PROVIDE EXTERNAL DUCT INSULATION FOR SUPPLY, RETURN AND OUTSIDE AIR DUCTWORK. DUCTWORK INSULATION SHALL BE FOIL FACED FIBERGLASS DUCT WRAP WITH A MINIMUM THERMAL RESISTANCE (R) OF 6.0. INSULATION SHALL HAVE VAPOR BARRIER. INSTALL PER MFR. REQUIREMENTS.
11. COORDINATE CEILING MOUNTED DIFFUSERS, REGISTERS, AND GRILLES AND OTHER CEILING MOUNTED EQUIPMENT WITH LIGHTING FIXTURES.
12. TURNING VANES SHALL BE PROVIDED IN ALL SUPPLY DUCT RECTANGULAR ELBOWS WITH ANGLES BETWEEN 15 DEGREES AND LESS THAN 90 DEGREES PER THE SMACNA HVAC DUCT CONSTRUCTION STANDARDS MANUAL.
13. DUCT DIMENSIONS SHOWN ON DRAWINGS ARE CLEAR INSIDE DIMENSIONS.
14. DUCTWORK, DIFFUSERS, REGISTERS, GRILLES, AND OTHER ITEMS OF THE AIR HANDLING SYSTEM SHALL NOT BE SUPPORTED BY THE CEILING OR CEILING SUSPENSION SYSTEM.
15. UNLESS OTHERWISE NOTED, INSTALL DUCTWORK AS HIGH AS POSSIBLE, TIGHT TO BOTTOM OF STRUCTURE. COORDINATE DUCT ELEVATION WITH STORM LEADERS, WATER PIPING, SANITARY DRAINS AND MAJOR ELECTRICAL CONDUITS.
16. CONTRACTOR TO PROVIDE ALL SUPPLEMENTARY STEEL REQUIRED TO SUSPEND MECHANICAL EQUIPMENT & MATERIALS. INSTALLATION OF EQUIPMENT SHALL COMPLY WITH MANUFACTURER'S SPECIFICATIONS AND CLEARANCE REQUIREMENTS FOR SERVICING OF EQUIPMENT.
17. VERIFY VOLTAGE WITH ELECTRICAL CONTRACTOR BEFORE ORDERING EQUIPMENT.
18. PROVIDE A TRAP IN ALL CONDENSATE PIPING SERVING AIR HANDLING UNITS AND ROOFTOP UNITS. SLOPE CONDENSATE LINE 1/8" PER FOOT. CONDENSATE LINES SHALL BE PVC SCH. 40. ALL CONDENSATE DRAIN PIPING SHALL BE PROPERLY SUPPORTED. SEE "CONDENSATE DRAIN TRAP" DETAIL.
19. GUARANTEE, FOR ONE YEAR AFTER DATE OF ACCEPTANCE BY THE OWNER, ALL EQUIPMENT, MATERIALS AND WORKMANSHIP TO BE FREE FROM DEFECT.
20. DO NOT CUT STRUCTURAL MEMBERS WITHOUT PRIOR WRITTEN APPROVAL OF THE STRUCTURAL ENGINEER.
21. FLEXIBLE AND RIGID ROUND DUCT TAKE-OFFS FOR DIFFUSERS SHALL BE THE SAME SIZE AS DIFFUSER NECK. MAXIMUM FLEXIBLE DUCT LENGTH SHALL BE 8'-0". FLEXIBLE DUCT SHALL BE THERMAFLEX TYPE M-KC OR EQUAL. FLEXIBLE DUCT SHALL BE INSULATED FIBERGLASS, R-6, CLASS 1, UL181 LISTED AND COMPLY WITH NFPA 90A AND NFPA 90B.
22. ALL WALL MOUNTED TEMPERATURE, HUMIDITY, AND CO2 SENSORS SHALL BE INSTALLED AT AN ELEVATION OF 54" ABOVE FINISHED FLOOR TO THE TOP UNLESS OTHERWISE NOTED ON DRAWINGS. LOCATION OF THE WALL MOUNTED SENSORS SHALL BE COORDINATED WITH OTHER TRADES FOR A NEAT APPEARANCE. FINAL LOCATION OF SENSORS SHALL BE SUBJECT TO THE APPROVAL OF THE ENGINEER OR THEIR REPRESENTATIVE IN THE FIELD.
23. PROVIDE FLEXIBLE NEOPRENE DUCT CONNECTORS ON THE DISCHARGE AND ENTERING SIDES OF PACKAGED ROOFTOP UNITS, FANS, AND OTHER VIBRATING EQUIPMENT TO WHICH DUCTWORK IS ATTACHED.
24. THE GENERAL CONTRACTOR IS RESPONSIBLE FOR ALL TRADES' INSTALLATION SCHEDULES. COORDINATE WORK SCHEDULE WITH GENERAL CONTRACTOR.
25. REFER TO ARCHITECTURAL DRAWINGS FOR ALL RELATED CONSTRUCTION DETAILS AS APPLICABLE TO THE HVAC SYSTEM. CHASE AND WALL PENETRATIONS INTENDED FOR DUCTWORK AND PIPING SHALL BE VERIFIED WITH ARCHITECTURAL DRAWINGS PRIOR TO INSTALLATION.
26. MECHANICAL EQUIPMENT, DUCTWORK AND PIPING IS SHOWN AT APPROXIMATE LOCATIONS. FIELD MEASURE FINAL DUCTWORK AND PIPING LOCATIONS PRIOR TO FABRICATION AND MAKE ADJUSTMENTS AS REQUIRED TO FIT THE DUCTWORK AND PIPING WITHIN THE AVAILABLE SPACE. FIELD VERIFY FINAL LOCATIONS TO INSTALL EQUIPMENT IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS REGARDING SERVICE CLEARANCE AND PROPER AIRFLOW CLEARANCE AROUND EQUIPMENT.
27. WHEN THE INTENT OF THE DRAWINGS AND SPECIFICATIONS IS NOT CLEAR, OR IS CAPABLE OF MORE THAN ONE INTERPRETATION, SUCH MATTERS WILL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT/ENGINEER IN WRITING BEFORE THE SUBMISSION OF BIDS. THE ARCHITECT/ENGINEER SHALL MAKE CORRECTION OR EXPLANATION IN WRITING.
28. PLANS AND SPECIFICATIONS ARE INTENDED AS A GENERAL DESCRIPTION OF THE WORK TO BE PERFORMED. ALL ITEMS NOT SPECIFICALLY MENTIONED OR SHOWN, BUT NECESSARY FOR THE COMPLETION OF THE INSTALLATION, SHALL BE FURNISHED AND INSTALLED BY THIS CONTRACTOR. THIS CONTRACTOR SHALL THOROUGHLY ACQUAINT HIMSELF WITH THE MECHANICAL, ARCHITECTURAL, STRUCTURAL, AND ELECTRICAL PLANS BEFORE SUBMITTING HIS FINAL BID. NO ADDITIONAL COMPENSATION WILL BE ALLOWED DUE TO THE CONTRACTOR'S FAILURE TO FAMILIARIZE HIMSELF/ HERSELF WITH THE PLANS.
29. CONTRACTOR TO ALLOW SUFFICIENT TIME (APPROXIMATELY 2 WEEKS) FOR EQUIPMENT REVIEW. CONTRACTOR SHALL SUBMIT THE FOLLOWING EQUIPMENT FOR REVIEW (1 HARD COPY) PRIOR TO ORDERING AND INSTALLATION: ROOFTOP UNITS, AIR HANDLING UNITS AND AIR COOLED CONDENSERS, DIFFUSERS AND REGISTERS, EXHAUST FANS AND MAKE UP AIR FANS, DUCT INSULATION, DUCT CONSTRUCTION STANDARDS.
30. AFTER THE HEATING AND AIR CONDITIONING SYSTEM INSTALLATIONS ARE COMPLETE, THE CONTRACTOR SHALL HAVE EACH SYSTEM TESTED, ADJUSTED, AND BALANCED BY AN INDEPENDENT TESTING AND BALANCING CONTRACTOR. SEE SPECIFICATIONS FOR TESTING AND BALANCING CONTRACTOR CERTIFICATIONS AND REQUIREMENTS. UPON COMPLETION OF TEST AND BALANCE OF ALL SYSTEMS, THE CONTRACTOR SHALL PRESENT THE OWNER AND ARCHITECT WITH A WRITTEN TEST AND BALANCE REPORT IN A TIMELY MANNER PER SPECIFICATIONS.

HVAC ROOFTOP UNIT SCHEDULE

			SUPPLY AIR FAN DATA				ELECTRIC HEAT		UNIT POWER				WEIGHT	COOLING CAPACITY						BASIS OF DESIGN		
MARK	AREA SERVED	NOMINAL TONS	COOLING CFM	OUTSIDE AIR	E.S.P. (IN.)	HP	KW @ VOLTAGE LISTED	CONTROL STAGES	VOLTAGE	PHASE	MCA	MOCP	(LBS. RTU ONLY)	TOTAL COOLING MBH	SENSIBLE COOLING MBH	EDB (°F)	EWB (°F)	AMBIENT (DB°F/WB°F)	EER (SEER) [IEER]	MANUFACTURER PRODUCT LINE	MODEL	NOTES
RTU-1	RETAIL	8.5	3400 CFM	500	0.5	3.75	22.5	1	208 V	3	70	70	1357	98.1	75.4	76.5	63.9	92/75	12.3 [15.7]	LENNOX ENLIGHT	LCT102H4E	1-20
RTU-2	FOOD SERVICE	10	4000 CFM	775	0.5	3.75	N/A	N/A	208 V	3	54	60	1396	117	91.1	75.2	62.5	92/75	12.2 [15.5]	LENNOX ENLIGHT	LCT120H4E	2-20
RTU-3	RETAIL	7.5	3000 CFM	350	0.5	3.75	22.5	1	208 V	3	70	70	1350	91.8	68.7	76.1	63.5	92/75	12.5 [15.7]	LENNOX ENLIGHT	LCT092H4E	2-20

NOTES:
--NO SUBSTITUTIONS PERMITTED--

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 MODEL 21W06
4. REFER TO CONTROL SYSTEM NOTES FOR CONTROL COMPONENTS REQUIREMENTS.
5. PROVIDE 5-MINUTE 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 MOTORIZED DAMPER AND OUTSIDE AIR INTAKE HOOD.
12. PROVIDE MANUFACTURER'S MOTOR AND DRIVE PACKAGE AS REQUIRED TO MEET SCHEDULED AIR CAPACITIES AND PRESSURE DROP.
13. PROVIDE FACTORY APPLIED PHENOLIC COATING FOR CORROSION PROTECTION ON CONDENSER COILS AND EVAPORATOR COILS.
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.
16. PROVIDE LENNOX DIRTY FILTER SWITCH.
17. PROVIDE LENNOX IMC CONTROL BOARD (STANDARD ON L-SERIES UNITS)
18. TEMPERATURE SETPOINT: 74°F COOLING, 68°F HEATING HUMIDITY SETPOINT: 50% RELATIVE HUMIDITY.
19. PROVIDE WITH FACTORY CONDENSATE PAN WATER LEVEL MONITORING DEVICE FOR COMPLIANCE WITH 2020 FBC MECHANICAL,SECTION 307.2.3.
20. PROVIDE WITH FACTORY INSTALLED SUPPLY AND RETURN SMOKE DETECTORS.

AIR BALANCE SCHEDULE

SYSTEM	CFM
RTU-1	+500
RTU-2	+775
RTU-3	+350
EF-1	-325
EF-2	-800
BUILDING POSITIVE PRESSURE	+500

OUTSIDE AIR CALCULATION

AREA SERVED	AREA (SQFT)	PEOPLE / 1000 SQFT	# PEOPLE	CFM/ PERSON	PEOPLE O.A. REQ'D (CFM)	CFM/ SQFT	SQFT OUTSIDE AIR (CFM)	TOTAL CFM CALCULATED	CFM SUPPLIED
OFFICE	95	5	2	5	10	0.06	6	16	
HALLWAY	86	-	-	-	-	0.06	6	6	
DELIVERY	104	2	1	10	10	0.12	13	23	
RETAIL	1657	15	25	7.5	188	0.12	199	387	
							RTU-1	432	500
FOOD SVC	421	20	9	7.5	68	0.12	51	119	
BACKROOM	311	20	7	7.5	53	0.12	38	91	
WASHROOM	134	20	3	7.5	23	0.12	17	40	
							RTU-2	250	775
ASSOCIATES	60	5	2	5	10	0.06	4	14	
COFFEE	306	20	7	7.5	53	0.12	37	90	
RETAIL	439	15	7	7.5	53	0.12	53	106	
STAGING	58	2	1	10	10	0.12	7	17	
							RTU-3	227	350

NOTES:

1. OCCUPANCY LOAD VENTILATION RATES ARE BASED ON NET OCCUPIABLE SPACE IN ACCORDANCE WITH THE FLORIDA MECHANICAL CODE (2020), TABLE 403.3.1.1.
2. ANTICIPATED NUMBER OF PEOPLE IS BASED ON AN OCCUPANCY LOAD FACTOR (# PEOPLE/SF) VALUE (BASED ON THE FLORIDA MECHANICAL CODE (2020), TABLE 403.3.1.1).

LENNOX SETUP PARAMETERS / FLORIDA STORES (R2)

UNIT ID CONFIGURATIONS (MECHANICAL CONTRACTOR TO DEFINE / AS APPLICABLE):

- **BACNET CONFIGURATION:** GO TO SETTINGS>GENERAL>CONFIGURATION ID1 POSITION 5 SET TO "B".
- **NETWORK CONFIGURATION:** GO TO SETUP>NETWORK INTEGRATION, SET TO BACNET
- **CONTROL MODE:** SET CONTROL MODE TO ROOM SENSOR: CO2, TEMP & HUMIDITY (PER UNIT, AS NEEDED).

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 DEHUMID 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 137 OCCHEAT SET POINT: 68 (BACK UP)
- PARAMETER 139 OCC COOLING SET POINT: 72 (BACK UP)
- PARAMETER 154 OCC BLOWER MODE: ON-CONTINUOUS 1

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

HVAC EXHAUST FAN SCHEDULE

										BASIS OF DESIGN		
MARK	CFM	EXT. STATIC PRESSURE	FAN TYPE	DRIVE TYPE	SONES	HP	FAN RPM	VOLTAGE	PHASE	MANUFACTURER	MODEL	NOTES
EF-1	325 CFM	0.25 in-wg	DOWNBLAST	DIRECT	7.5	1/10	1576	120 V	1	GREENHECK	G-080	1,2
EF-2	800 CFM	0.25 in-wg	DOWNBLAST	DIRECT	12.4	1/2	1390	120 V	1	GREENHECK	G-120	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 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"	1,7
CD-2	PRICE	AMD	SUPPLY	LOUVERED FACE DIRECTIONAL DIFFUSER	SURFACE	ALUMINUM	18"X18"	24"X24"	5,7
CD-3	PRICE	AMD	SUPPLY	LOUVERED FACE DIRECTIONAL DIFFUSER	LAY-IN	ALUMINUM	9"X9"	NECK+5"	5,7
CD-4	PRICE	AMD	SUPPLY	LOUVERED FACE DIRECTIONAL DIFFUSER	SURFACE	ALUMINUM	6"X6"	NECK+5"	6,7
G-1	PRICE	630FF	RETURN/TRAN/EXH	LOUVERED FACE FILTER RETURN GRILLE	LAY-IN	ALUMINUM	20"x20"	NECK+3-3/4"	
G-2	PRICE	630FF	TRANSFER	LOUVERED FACE FILTER RETURN GRILLE	SURFACE	ALUMINUM	16"X16"	NECK+3-3/4"	4
G-3	PRICE	630FF	EXHAUST	LOUVERED FACE FILTER RETURN GRILLE	SURFACE	ALUMINUM	8"x8"	NECK+3-3/4"	4
G-4	PRICE	630FF	EXHAUST	LOUVERED FACE FILTER RETURN GRILLE	SURFACE	ALUMINUM	6"x6"	NECK+3-3/4"	4
LD-1	PRICE	TBDI4	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 LAY-IN STYLE FACE DIFFUSER AND ALUMINUM PLASTER FRAME MODEL APF. COORDINATE LOCATION WITH CEILING FRAMING INSTALLER.
7. PROVIDE WITH FACTORY BACK PAN INSULATION.

HVAC AIR CURTAIN SCHEDULE

		BASIS OF DESIGN				UNIT POWER			
MARK	AREA SERVED	MANUFACTURER	MODEL	NOZZLE CFM	HP	VOLTAGE	PHASE	MOUNTING HEIGHT	NOTES
AC-1	STAGING	POWERED AIRE	BCE-1-42	2170 CFM	0.5	120 V	1	7'-2"	1-4
AC-2	DELIVERY VESTIBULE	POWERED AIRE	BCE-1-48	2155 CFM	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.

CUHACI PETERSON®
2600 Maitland Center Parkway
Suite #200
Maitland, FL 32751

P (407) 661-9100
F (407) 661-9101
c-p.com
Florida Corporate Certificate #AA C000526

CLIENT NAME
WAWA
260 WEST BALTIMORE PIKE
WAWA, PENNSYLVANIA 19063

PROJECT NAME
WAWA F110 v2021.1
STORE #5444
SR 50 & SR 419 (CHULUOTA RD)
ORLANDO, FL

SHEET TITLE
HVAC SCHEDULES, NOTES, AND DETAILS

Revision Schedule

No.	Description	Date
	PERMIT SET	04/27/2023
	PRE-BID SET	08/23/2023
	BID-SET	09/21/2023
A	CONSTRUCTION SET	02/21/2024

PROJECT NO. 220440
DATE 04-27-2023
DRAWN JGF
CHECKED ESD

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